

Appendix 16

Supporting Chapter 16 – Geology and Soils

Appendix 16.1 – Land and Groundwater Contamination Assessment

Appendix 16.1– Land and Groundwater Contamination Assessment

1.1 Introduction

- 1.1.1 Within the vicinity of the A720 Sheriffhall Roundabout, both former and present land use may have resulted in the presence of potentially toxic or other hazardous material, which may pose a threat to human health, controlled water or other sensitive receptors. These areas may impose constraints on the construction and operation phases of the road should it require excavation or avoidance.
- 1.1.2 This assessment of potential contamination sources has been prepared to accompany Chapter 16 – Geology and Soils of this ES.

1.2 Methodology and Review

- 1.2.1 Contaminated land, as defined in Part IIA of Environmental Protection Act 1990, is assessed through the identification and assessment of pollutant linkages (contaminant-pathway-receptor relationships). Implicit in the guidance is the application of risk assessment to assess whether potential pollutant linkages may be significant.
- 1.2.2 The UK has adopted a risk-based methodology for assessing the potential significance of land contamination. The risk-based methodology adopted in this Environmental Statement is based upon that described in guidance published in the Environment Agency's Model Procedures for the Management of Land Contamination 2004 (CLR11) together with the supporting guidance referenced within this document. The methodology adopted relies on the development of a site-specific conceptual site model (CSM) consisting of three components:
- A source of contamination, for example due to historical site operations;
 - A pathway, a route by which receptors can become exposed to contaminants. Examples include vapour inhalation, soil ingestion and groundwater migration;
 - A receptor, a target that may be exposed to contaminants via the identified pathways. Examples include human occupiers/users of the site, waterways, groundwater, property or ecosystems.
- 1.2.3 For a potential risk to either environmental and/or human health receptors to exist, a plausible pollutant linkage involving each of these components must exist. If one of the components is absent then a pollutant linkage, and thereby potentially unacceptable risk, is also unlikely to exist. Where all three components are or maybe present, a potentially complete pollutant linkage can be considered to exist. This does not automatically imply the presence of unacceptable risk, but further investigation of the potential pollutant linkages is required.
- 1.2.4 Previous studies have provided information on past land use and potential contamination sources. The AECOM DMRB Stage 2 Assessment (2017) Report, carried out prior to the detailed intrusive ground investigation, included a preliminary CSM and initial risk assessment with respect to the impact of the new road scheme on potential contaminated land. For the Stage 3 assessment, the preliminary CSM has been updated with respect to the findings of the 2018 ground investigation and 2018/2019 monitoring data and the latest Scheme design layout.
- 1.2.5 The potential sources of contamination on or in the vicinity of the site, receptors on or near the site, and pathways on or near the site are discussed below.

Potential Sources of Contamination

- 1.2.6 The potential sources of contamination that have been identified within or close to the geotechnical site study area from the previous desk study (Preliminary Sources Study Report (PSSR), July 2014) are included in Table A16.1 and their locations are shown on Figure 16.6 – Plan of Potential Contamination Sources in Appendix A16.1-1.

- 1.2.7 The potential sources were originally identified from historic and current uses of the site and surrounding area and the site walkover. DoE Industry Profiles have been used to assess the potential for contaminants to be present on the PSSR site study area and immediate surroundings associated with these former and current uses. Additional sources have been included based on further investigation and inspection of the site (as indicated on Table A16.1-1).

Table A16.1-1 Potential Contamination Sources

Reference Number on Figure 16.6	Source Name	Location	Distance from Scheme Extents Boundary	Source of Information	Potential Associated Contaminants
S1	Disused railway	Eastern section of the site.	Within boundary	OS Maps 1895 – present. Line closed 1969.	Made ground - possible metals, fuel oils, sulphates, PAH, asbestos.
S2	Borders Railway	East of site, running north south.	Within boundary	Current site plans.	Made ground - possible metals, fuel oils, sulphates, PAH, PCB's, asbestos.
S3	Existing A720 and minor roads	Existing road network located across entire site.	Within boundary	Current site plans.	Made ground - possible blaes fill, hydrocarbons, coal tars.
S4	Historical sand pit	Southeast of Sheriffhall Roundabout.	Within boundary.	OS Maps 1895 – 1969.	Infilled materials – possible metals, hydrocarbons, organic materials, asbestos, ground gas.
S5	Historical sand pit	To north of site.	134m	OS Maps 1895 – 1938.	Colliery discard/ infilled waste – possible metals, fuel, oils, asbestos, ground gas.
S6	Historical sand pit	To north of site.	212m	OS Maps 1932 – 1938.	Colliery discard/ infilled waste – possible metals, fuel, oils, asbestos, ground gas.
S7	Registered Waste Transfer Site	To north of site.	134m	PSSR 2014 Envirocheck information.	Waste materials – possible metals, sulphide, asbestos, pH, hydrocarbons, PCB's, dioxins & furans, ground gas.
S8*	Fly tipped rubbish	North of A720, adjacent to A6106 Millerhill Road.	Within boundary.	Site inspection.	Builders waste – possible metals, hydrocarbons, asbestos.
S9	Farm dump	North of A720, close to A6106 Millerhill Road.	Within boundary.	Site inspection.	Builders waste/ farm waste – possible metals, hydrocarbons, PAH from burnt materials, asbestos, ground gas.
S10*	Farm dump	North of A720, close to A7 North.	Within boundary.	Site inspection.	Builders waste/ farm waste – possible metals, hydrocarbons, asbestos, ground gas.
S11	Clearway Landscaping Fuel Dealers (inactive)	North of A720, adjacent to A7 North.	16m	PSSR 2014 Envirocheck information.	Fuel – hydrocarbons, VOC's.
S12*	Electrical sub-station	To north of site near Sheriffhall P&R.	455m	2017 utility plans.	Hydrocarbons, PCB's.
S13*	Electrical sub-station	To north of site near Sheriffhall P&R.	510m	2017 utility plans.	Hydrocarbons, PCB's.
S14*	Electrical sub-station	To north of site near Sheriffhall P&R.	415m	2017 utility plans.	Hydrocarbons, PCB's.

Reference Number on Figure 16.6	Source Name	Location	Distance from Scheme Extents Boundary	Source of Information	Potential Associated Contaminants
S15*	Possible spoil (mound)	West of Sheriffhall Roundabout, adjacent to A720.	Within boundary.	OS Maps 1993 – present.	Made ground - unknown contaminants/ ground gas.
S16	Pond	West of Sheriffhall Roundabout, adjacent to A720.	Within boundary.	OS Maps 1993 – present.	Possible some infilling - unknown contaminants.
S17	Possible spoil (mound)	West of Sheriffhall Roundabout, adjacent to A720.	At Scheme boundary.	OS Maps 1993 – present.	Made ground - unknown contaminants/ ground gas.
S18	Disused sewage works	West of Sheriffhall Roundabout, south of A720.	14m	OS Maps 1978 – 1993. Works buildings still present.	Made ground – possible metals, cyanides, nitrates, nitrites, sulphide, asbestos, pH, hydrocarbons, PCB's, ground gas.
S19	Historical sand pit	West of Sheriffhall Roundabout, near the A772 Gilmerton Road.	133m	OS Maps 1958 – 1968.	Possibly infilled with waste materials including colliery spoil, ground gas.
S20*	Farm dump	South of Sheriffhall Roundabout.	Within boundary.	Site inspection.	Farm & domestic waste - possible metals, sulphide, asbestos, pH, hydrocarbons, PCB's, ground gas.
S21	Agricultural land	Site wide.	Within boundary.	-	Variety of chemicals including pesticides, insecticides and fertilisers.
S22	Colliery spoil	Site wide.	Within boundary.	Historical and recent GI's.	Made ground – metals, PAH.
S23	Historical sand pit	South of the Sheriffhall Roundabout, near the B6392 Gilmerton Road.	202m	OS Maps 1932 – 1938.	Colliery discard/ infilled waste – possible metals, fuel, oils, asbestos, ground gas.
S24	Disused waterworks.	To south of site, east of the A7 South.	193m	OS Maps 1909 – 1938.	Made ground –range of potential contaminants.
S25	Open cast	To south of site, at A7 South.	436m	PSSR 2014 Envirocheck information/ Coal Authority.	Made ground – metals, PAH.
S26	Disused waterworks	To south of site.	914m	OS Maps 1909 – 1938.	Made ground –range of potential contaminants.
S27	Waste Transfer Station/ Registered Landfill Site	To south of site.	737m	PSSR 2014 Envirocheck information.	Waste materials – possible metals, sulphide, asbestos, pH, hydrocarbons, PCB's, dioxins & furans, ground gas.
S28	Electrical sub-station	To south of site, near the A7 South.	184m	2017 utility plans.	Hydrocarbons, PCB's.

Reference Number on Figure 16.6	Source Name	Location	Distance from Scheme Extents Boundary	Source of Information	Potential Associated Contaminants
S29*	Tanks	To south of site, near the A7 South.	180m	Current site plans.	Unknown
S30*	Electrical sub-station	To south of site, near the A7 South.	63m	2017 utility plans.	Hydrocarbons, PCB's.
S31	Melville Nurseries	South of the A720, adjacent to the A772 Gilmerton Road.	395m	OS Maps 1946 – present.	Variety of chemicals including pesticides, insecticides and fertilisers, hydrocarbons, organic waste.
S32*	Tank	To south of site, near the A772 Gilmerton Road.	295m	Current site plans.	Unknown
S33	Historical tank	To the south of site, near the A772 Gilmerton Road.	300m	OS Maps 1988 – 1993.	Unknown. Possible fuel oil – hydrocarbons.
S34*	Electrical sub-station	To the south of site, near the A772 Gilmerton Road.	285m	2017 utility plans.	Hydrocarbons, PCB's.

*Reference Number * - additional source to PSSR added.*

- 1.2.8 The Environmental Health Officer of Midlothian Council indicated that no information regarding potential contaminants was available for the proposed road alignment.
- 1.2.9 A response from the Information Governance Unit of the City of Edinburgh indicated that no land has been identified as contaminated land within the area of interest. The response noted the presence of former shafts within and just outwith the area of interest. There were no other sites listed within or close to the proposed scheme extents.
- 1.2.10 The proposed road scheme is not within an area which has been designated as contaminated land as defined in Part IIA of Environmental Protection Act 1990.
- 1.2.11 The potential sources listed in Table A16.1-2 have been updated from the original list based on the revised scheme extents. A buffer zone of 250m from the site boundary has been considered. A perceived significance is included based on a subjective assessment of the possible influence of potential contaminants to the scheme.

Table A16.1-2 Updated Potential Contamination Sources within 250m of Scheme Extents

Reference Number on Figure 16.6	Source Name	Location	Distance from Scheme Extents Boundary	Perceived Significance
S1	Disused railway	Eastern section of the site.	Within boundary	Low
S2	Borders Railway	East of site, running north south.	Within boundary	Medium
S3	Existing A720 and minor roads	Existing road network located across entire site.	Within boundary	Medium
S4	Historical sand pit	Southeast of Sheriffhall Roundabout.	Within boundary	High
S5	Historical sand pit	To north of site.	134m	Low
S6	Historical sand pit	To north of site.	212m	Low
S7	Registered Waste Transfer Site	To north of site.	134m	Low
S8	Fly tipped rubbish	North of A720, adjacent to A6106 Millerhill Road.	Within boundary	Low
S9	Farm dump	North of A720, close to A6106 Millerhill Road.	Within boundary	Medium
S10	Farm dump	North of A720, close to A7 North.	Within boundary	Medium
S11	Clearway Landscaping Fuel Dealers (inactive)	North of A720, adjacent to A7 North.	16m	Medium
S15	Possible spoil (mound)	West of Sheriffhall Roundabout, adjacent to A720.	Within boundary	Medium
S16	Pond	West of Sheriffhall Roundabout, adjacent to A720.	Within boundary	Medium
S17	Possible spoil (mound)	West of Sheriffhall Roundabout, adjacent to A720.	At Scheme boundary	Medium
S18	Disused sewage works	West of Sheriffhall Roundabout, south of A720.	14m	Medium
S19	Historical sand pit	West of Sheriffhall Roundabout, near the A772 Gilmerton Road.	133m	Low
S20	Farm dump	South of Sheriffhall Roundabout.	Within boundary	Low
S21	Agricultural land	Site wide.	Within boundary	Low
S22	Colliery spoil	Site wide.	Within boundary.	Medium
S23	Historical sand pit	South of the Sheriffhall Roundabout, near the A772 Gilmerton Road.	202m	Low
S24	Disused waterworks.	To south of site, east of the A7 South.	193m	Low
S28	Electrical sub-station	To south of site, near the A7 South.	184m	Low
S29	Tanks	To south of site, near the A7 South.	180m	Low

Reference Number on Figure 16.6	Source Name	Location	Distance from Scheme Extents Boundary	Perceived Significance
S30	Electrical sub-station	To south of site, near the A7 South.	63m	Low
S31	Melville Nurseries	South of the A720, adjacent to the A772 Gilmerton Road.	395m (Nursery site extends within Scheme boundary buffer zone)	Low

Potential Sensitive Receptors

1.2.12 Potentially sensitive receptors with respect to current ground conditions at the proposed scheme are considered to be:

- Shallow and deep groundwater underlying the proposed scheme area, perched groundwater may also be present within potential made ground deposits. It is noted that locally groundwater is likely to have been impacted by former mining and quarrying activities;
- Surface waters i.e. Dean Burn and unnamed streams flowing within the vicinity of the site.
- Nearby residents;
- Future site end-users – Non-motorised road users e.g. pedestrians, cyclists;
- Construction/ maintenance workers; and,
- Flora and fauna.

Pathways of Migration or Exposure

1.2.13 For a pollutant linkage to exist between the contaminant sources identified and the above receptors, a pathway must exist. The potential pathways are identified below:

1.2.14 Human Health Receptors

- Construction and maintenance workers by direct contact with contaminated soil and/or groundwater, inhalation of vapours / gases and windblown dust and ingestion;
- Current and future site end users (members of the public using the roads) by direct contact with contaminated soil, inhalation and ingestion of wind-blown dust (the latter mainly during construction phase);
- Off-site receptors (residents and workers) by direct contact and ingestion of wind-blown dust, contaminated groundwater migrating off site and contaminated water supplies migrating off site via underground utility services;
- Off-site receptors by inhalation of vapours / ground gases migrating off-site through preferential pathways (via groundwater and through permeable unsaturated deposits); and
- Consumption of contaminated produce by off-site receptors.

1.2.15 Water Environment

- Lateral and vertical migration of contamination (leachate) through permeable strata within potential made ground and drift deposits and via service runs, mine shafts and piles;
- Migration of perched groundwater within drift deposits;
- Vertical migration of potentially contaminated shallow groundwater into the deeper bedrock aquifer if hydraulically connected or viable pathway present e.g. mine shafts, piled foundations;
- Migration of potentially contaminated groundwater through fissures in bedrock;
- Lateral migration of contaminants within groundwater towards hydraulically connected surface waters. Preferential pathways for contaminated groundwater migration exist via pipes, disused mine shafts and workings and services and / or voids; and,
- Migration of contaminants via surface water run-off and soakaways.

1.2.16 Ecology

- Uptake via root for vegetation; and

- Direct contact, inhalation or ingestion of potentially contaminated soil and/or groundwater by fauna.

1.2.17 Property Receptors - Buildings / Structures

- Contact between foundations and soils;
- Attack and penetration of water supply pipes (e.g. by corrosive and organic compounds); and
- Off-site migration of mine gas through permeable strata.

Historical Ground Investigation Information

1.2.18 The following historical ground investigation reports were reviewed for sites which were within the A720 proposed scheme extents:

- 1985 Norwest Holst Soil Engineering Ltd. Edinburgh City Bypass Gilmerton Section. Site and Mineral Investigation for Lothian Regional Council;
- 1985 Wimpey Laboratories – Edinburgh City Bypass Millerhill Section. Report on Site Investigation for Lothian Regional Council;
- 1986 Norwest Holst Soil Engineering Ltd. A7 Dalkeith Western By-pass Site Investigation for the Scottish Development Department;
- 1988 Whatlings (Foundations) Limited. for A7 Dalkeith Western Bypass Site Investigation for the Scottish Development Department;
- 2008 Soil Mechanics. Waverley Railway Project Factual Report on Ground Investigation for Scottish Borders Council;
- 2011 Soil Mechanics. Borders Railway, Dialogue Period Ground Investigation, Phase 1. Factual Report on Ground Investigation for Transport Scotland;
- 2011 Soil Mechanics. Borders Railway, Dialogue Period Ground Investigation, Phase 2 Factual Report on Ground Investigation for Transport Scotland;
- 2012 BAM Ritchies. Ground Investigation Report. Borders Rail Mining GI for Network Rail;
- 2013 BAM Ritchies – Ground Investigation Report. Borders Rail Civils GI for Network Rail.

1.2.19 There were no descriptions of grossly contaminated ground in the exploratory holes carried out within the proposed scheme extents or surrounding area. The anthropogenic materials recorded in the made ground materials within the historical ground investigation report logs included brick and ash.

1.2.20 The historical ground investigation exploratory holes are included on Figure 16.7 Zoning Drawing in Appendix 16.1-1.

A720 Sheriffhall Roundabout Improvement Ground Investigation Findings

1.2.21 The 2018 Ground Investigation Factual Report for the A720 Sheriffhall Roundabout Improvements carried out by Soil Engineering Geoservices Ltd. (SEGL) recorded made ground in 179 exploratory holes. The ground investigation noted the following anthropogenic materials recorded in the made ground materials:

- Made ground materials typically included descriptions with brick, concrete, blaes, ash, ceramics, plastic, wire, glass, tarmac. Pottery, geotextile, metal and cloth were occasionally recorded. Made ground which included anthropogenic material was recorded in 136 exploratory holes;
- Asphalt materials tested on the A7 road (BH PC02) indicated the likelihood of coal tars. The potential re-use of road materials is discussed in ES Chapter 17 Materials;
- BH70A – a hydrocarbon odour was recorded in made ground and natural soils from 0.75 – 8.5m depth; and,

- Fly tipped materials observed across the site during the ground investigation fieldworks included old farm equipment, builders rubbish, scrap containers, fridges, tarmac.

- 1.2.22 The 2019 SEGL ground investigation has been completed and the Factual Report is being finalised. The findings of the investigations are reported in the SEGL Factual Reports and will be summarised in the Ground Investigation Report currently in preparation by AECOM. The 2019 GI groundwater, surface water and ground gas monitoring information is included in the Stage 2 Generic Assessment Criteria Screening in this Appendix.
- 1.2.23 The 2018 and 2019 SEGL ground investigation exploratory holes are included on Figure 16.7 Zoning Drawing in Appendix 16.1-1.

Stage 2 Generic Assessment Criteria Screening

- 1.2.24 To provide an assessment of the potential significance of contaminant concentrations detected in soil and groundwater samples collected from the site, AECOM has undertaken a Stage 2 GQRA (Generic Quantitative Risk Assessment) utilising Generic Assessment Criteria (GAC) considered to be protective of human health and / or water environment receptors. GAC are intended to provide a conservative means of initial assessment. Where contaminant concentrations are less than the appropriate GAC, it is considered unlikely that the contaminant concentrations will pose a potentially unacceptable risk to human health / water environment. Where a contaminant concentration exceeds the GAC, it does not automatically follow that an unacceptable risk exists, but that further assessment may be necessary to quantify the risk taking into account site-specific input parameters.
- 1.2.25 The results from the geoenvironmental laboratory testing on selected samples collected from the 2018 ground investigation and 2018/ 2019 post-fieldwork monitoring results were screened against Generic Assessment Criteria (GAC) derived for the protection of human health and the water environment.

Human Health

- 1.2.26 As the proposed works involve the upgrading of the A720 and adjacent roads with associated footways and cycle ways the soil data have been assessed against GAC selected for a commercial/industrial end-use. For the majority of chemicals of potential concern (CoPC), GAC have been developed by AECOM using the general procedure described in technical information supporting the Environment Agency's Contaminated Land Exposure Assessment (CLEA) model. For a small number of CoPC with limited toxicological data, Regional Screening Levels (RSL) developed by the United States Environmental Protection Agency (USEPA) were used. The GAC hierarchy used for a sandy soil with at Total Organic Carbon range ≥ 0.58 to $< 1.45\%$ is listed below.
- 1.2.27 Commercial/ Industrial:
- AECOM (modified LQM/CIEH Suitable 4 Use Levels (2015)). Commercial. 1% SOM.
 - AECOM GAC, modified EIC/AGS/CL:AIRE Soil Generic Assessment Criteria for Human Health Risk Assessment 2010. Commercial/ Industrial, 1% SOM.
 - Defra (2014) SP1010: Development of Category 4 Screening Levels for Assessment of Land Contamination - Policy Companion Document, December 2014. Commercial. 1% SOM.
 - Defra (2014) SP1010: Development of Category 4 Screening Levels for Assessment of Land Contamination - Policy Companion Document, December 2014. Commercial. 6% SOM.
 - US Environmental Protection Agency, Regional Screening Levels, May 2019. Industrial (no vapours).
- 1.2.28 Public Open Space (Park):
- AECOM (modified LQM/CIEH Suitable 4 Use Levels (2014)) Public Open Space (park). 1% SOM.

- 1.2.29 Tables summarising the available analytical data screened against human health GAC for soil are presented as Tables 1 to 4 included in Appendix 16.1-2.
- 1.2.30 A review of the 2018 GI soil data obtained from the site shows that the majority of sample results were detected at concentrations below their respective GAC, which were considered to be protective of human health based upon a commercial/industrial end use and, for comparison purposes, public open spaces (park).
- 1.2.31 The following exceedances were recorded:

Table A16.1-3 Human Health Soil GAC Exceedances (2018 GI)

Analyte	GAC (mg/kg)		Location of exceedance	Concentration (mg/kg)	Relevant Strata
	Commercial / Industrial	Public Open Space – Park			
Benzo(a)pyrene	35 ^{#3}	12 ^{#3}	BH09 at 1.0m	38	Made Ground
Dibenz(a,h)anthracene	3.5 ^{#3}	1.3 ^{#3}	BH09 at 1.0m	4.8	Made Ground

#GAC Sources for soil are listed in the Stage 2 Screening Tables.

- 1.2.32 A total of 53 samples were screened for the presence of asbestos. No asbestos containing materials were detected in any of the samples.
- 1.2.33 Although not included as part of this human health risk assessment, an initial review of the 2019 GI soil sample results does not indicate any human health GAC exceedances.

Water Environment

- 1.2.34 Risk to the water environment is assessed using a tiered approach based on that described in the Environment Agency's Remedial Targets Methodology (RTM). The RTM adopts a tiered approach consistent with that described in Model Procedures for the Management of Land Contamination (CLR11) published by the Environment Agency. In the first instance, consideration is given to whether the concentrations of potential contaminants in soil pore water are sufficient to impact identified water environment receptors when dilution, dispersion and attenuation along migration pathways are ignored. The pore water concentration is compared against a water target value (WTV) applicable to the receptor of interest, e.g. a body of groundwater or surface watercourse. Where direct measurements of soil pore water concentrations are not available, data obtained from laboratory leachate analyses are preferred. Consideration is also given to the concentrations of contaminants recorded in groundwater directly beneath potential soil source area. Since this assessment utilises largely generic assumptions about the characteristics and behaviour of contaminants, pathways and receptors that are likely to be conservative for a wide range of site conditions, it is equivalent to a GQRA.
- 1.2.35 Guidance on the selection of appropriate WTV for groundwater has been published by SEPA¹. Water environment receptors for this site include groundwater with resource potential and surface water bodies. Superficial glacial till and glacial fluvial deposits underlie the Proposed Scheme. It is assumed that the deposits are in hydraulic continuity with the nearby surface water features. There are no known abstractions from the superficial deposits in the Scheme Extents or PSSR study area. The Coal Measures are classified by SEPA as the 'Dalkeith Bedrock' groundwater body. The strata are further classified by SEPA as being moderately permeable, with variable permeability and thickness of overlying superficial deposits. The BGS classifies the strata in the area as a moderately productive aquifer, in which flow is virtually all through fractures and other discontinuities.

¹ Assigning Groundwater Assessment Criteria for Pollutant Inputs. Wat-PS-10-01. Version 3.0. August 2014
DMRB Stage 3 Environmental Statement
Geology and Soils - Appendix
November 2019

- 1.2.36 The nearest surface water body to the Scheme is the Dean Burn which runs eastwards to the south of the existing A720.
- 1.2.37 It is considered appropriate to assess risks to the water environment using GAC selected from hierarchies protective of Drinking Water Standards (DWS) and Aquatic Toxicity – Scotland - Freshwater. The GAC hierarchy used for assessment of the water environment are listed below.
- 1.2.38 Water Environment. Drinking Water Standards – Scotland:
- The Water Supply (Water Quality) (Scotland) Regulations 2001 No. 207.
 - Assigning Groundwater Assessment Criteria for Pollutant Inputs. Version 2.1, June 2011. WAT_PS_10_01.
 - Guidelines for Drinking-water Quality (4th Edition incl. the First Addendum). World Health Organisation. 2017.
 - WHO, Petroleum Products in Drinking-Water. Background document for development of WHO Guidelines for Drinking-water Quality WHO/SDE/WSH/05.08/123, 2008.
 - Drinking Water Guidelines Calculated using WHO Methodology.
 - US Environmental Protection Agency, Regional Screening Levels, May 2019. Tap water.
- 1.2.39 Water Environment. Aquatic Toxicity - Scotland – Freshwater
- The Water Environment (River Basin Management Planning etc.) (Miscellaneous Amendments) (Scotland) Regulations 2015. Scottish SI 2015 No. 211. AA-EQS Inland.
 - The Water Environment (River Basin Management Planning etc.) (Miscellaneous Amendments) (Scotland) Regulations 2015. Scottish SI 2015 No. 211. MAC-EQS Inland.
 - SEPA - Supporting Guidance (WAT-SG-53) Environmental Quality Standards for Discharges to Surface Waters. v6. Dec 2015. Fresh EQS – MAC.
 - The Scotland River Basin District (Surface Water Typology, Environmental Standards, Condition Limits & Groundwater Threshold Values) Directions 2009 - Freshwater – AA.
 - European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2015. S.I. No. 386 of 2015. Ireland - AA-EQS Inland.
 - European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2015. S.I. No. 386 of 2015. Ireland - MAC-EQS Inland.
 - PNEC derived for EU REACH registration dossiers – Freshwater.

Soil Leachate Screening

- 1.2.40 Stage 2 screening tables summarising the 2018 GI analytical data and exceedances of water environment GAC for leachate results are presented within Appendix 16.1-2.
- 1.2.41 A review of the 2018 GI soil leachate data obtained from the site shows that the majority of sample results were detected at concentrations below their respective GAC, which were considered to be protective of the water environment based on both drinking water standards (DWS) and environmental quality standards (EQS).
- 1.2.42 The following exceedances were recorded:

Table A16.1-4 Soil Leachate GAC Exceedances (2018 GI)

Analyte	DWS GAC (µg/l)	Location of DWS exceedance and result value (µg/l)	EQS GAC (µg/l)	Location of EQS exceedance and result value (µg/l)	Maximum Concentration (µg/l)	Location of Maximum Exceedance
Fluoranthene	4 ^{#2}	-	0.0063 ^{#7}	BH105 at 3.0m = 0.01 BH107 at 3.0m = 0.01 BH15 at 0.5m = 0.01 BH23 at 0.5m = 0.01 BH52 at 1.0m = 0.01 BH70A at 2.0m = 0.06 BH82 at 1.0m = 0.01 BH87 at 2.0m = 0.01 MEIA-C-S12 at 0.45m = 0.01 MEIA-E1-S3b at 0.8m = 0.01 TP07 at 1.0m = 0.01 TP12S at 0.5m = 0.02 TP31 at 1.5m = 0.02 TP32 at 1.0m = 0.01 TP33 at 1.0m = 0.01 TP34 at 2.0m = 0.01 TP35 at 1.5m = 0.02	0.06	BH70A at 2.0m
Benzo(a) pyrene	0.01 ^{#13}	BH52 at 1.0m = 0.03 BH70A at 2.0m = 0.02 TP33 at 1.0m = 0.02	0.00017 ^{#7}	BH52 at 1.0m = 0.03 BH70A at 2.0m = 0.02 MEIA-C-S12 at 0.45m = 0.01 TP12S at 0.5m = 0.01 TP33 at 1.0m = 0.02	0.03	BH52 at 1.0m
Copper	2000 ^{#13}	-	1 ^{#9}	BH09 at 1.0m = 4.7 BH12 at 0.3m = 4.9 BH15 at 0.5m = 6.5 BH18 at 1.0m = 2.1 BH23 at 0.5m = 1.4 BH41A-M at 0.5m = 5.2 BH60-M at 0.3m = 1.7 BH60-M at 1.5m = 1.5 BH70 at 0.5m = 1.7 BH70A at 2.0m = 1.1 BH87 at 2.0m = 1.1 BH88 at 4.0m = 1.2 MEIA-C-S12 at 0.45m = 2 MEIA-E1-S3b at 0.8m = 3.9 MEIA-G-S1 at 0.3m = 1.4 TP28 at 1.0m = 1.7 TP33 at 1.0m = 1.2	6.5	BH15 at 0.5m
Iron	200 ^{#13}	BH09 at 1.0m = 310 BH12 at 0.3m = 320 BH15 at 0.5m = 590 BH18 at 1.0m = 280 BH52 at 1.0m = 320 BH60-M at 0.3m = 1100 BH60-M at 1.5m = 1600 BH70 at 0.5m = 330 BH70A at 2.0m = 280 BH82 at 1.0m = 580 BH87 at 2.0m = 560 BH88 at 1.0m = 920 BH88 at 4.0m = 630 MEIA-C-S12 at 0.45m = 480 MEIA-E2-S2 at 0.4m = 760	1000 ^{#9}	BH60-M at 0.3m = 1100 BH60-M at 1.5m = 1600	1600	BH60-M at 1.5m

MEIA-G-S1 at 0.3m =
260
TP07 at 1.0m = 290
TP32 at 1.0m = 380
TP35 at 1.5m = 760

Lead	10 ^{#13}	-	1.2 ^{#7}	BH09 at 1.0m = 1.9 BH15 at 0.5m = 4.1 BH18 at 1.0m = 1.5 BH41A-M at 0.5m = 2 MEIA-G-S1 at 0.3m = 1.9	4.1	BH15 at 0.5m
Manganese	50 ^{#13}	TP33 at 1.0m = 95	123 ^{#9}	-	95	TP33 at 1.0m
Nickel	20 ^{#13}	-	4 ^{#7}	BH15 at 0.5m = 5	5	BH15 at 0.5m
Zinc	-	-	11.9 ^{#9}	BH107 at 3.0m = 14 BH12 at 0.3m = 15 BH15 at 0.5m = 27 BH18 at 1.0m = 12 BH41A-M at 0.5m = 39 MEIA-C-S12 at 0.45m = 15 MEIA-E1-S3b at 0.8m = 12 MEIA-G-S1 at 0.3m = 52 TP07 at 1.0m = 14 TP12S at 0.5m = 12	52	MEIA-G-S1 at 0.3m

#GAC Sources for soil leachate are listed in the Stage 2 Screening Tables.

1.2.43 Although not included as part of this water environment risk assessment, an initial review of the 2019 GI soil leachate sample results indicates similar GAC exceedances for fluoranthene and benzo(a) pyrene as above. A number of copper and zinc leachate results also exceeded the EQS GAC's (within one order of magnitude).

Groundwater Screening

1.2.44 Stage 2 screening tables summarising the 2018 & 2019 GI analytical data and exceedances of water environment GAC for groundwater results are presented within Appendix 16.1-2.

1.2.45 A review of the groundwater data obtained from the site during the 2018 and 2019 GI monitoring shows that the majority of sample results were detected at concentrations below their respective GAC, which were considered to be protective of the water environment based on both drinking water standards (DWS) and environmental quality standards (EQS).

1.2.46 The following exceedances were recorded:

Table A16.1-5 Groundwater GAC Exceedances (2018/2019 GI's)

Analyte	DWS GAC (µg/l)	Location of DWS exceedance and result value (µg/l)	EQS GAC (µg/l)	Location of EQS exceedance and result value (µg/l)	Maximum Concentration (µg/l)	Location of Maximum Exceedance
TPH >C10-C12 Aliphatics	300 ^{#1}	BH12 at 9.6m = 320 BH51 at 2.40m = 340 BH62-M at 19.74m = 350 BH74 at 0.50m = 350	-	-	350	BH62-M, at 19.74m, BH74 at 0.50m
TPH >C10-C12 Aromatics	90 ^{#1}	BH12 at 9.6m = 140 BH51 at 2.40m = 150 BH62-M at 19.74m = 160 BH74 at 0.50m = 170	-	-	170	BH74 at 0.50m
TPH >C12-C16 Aromatics	90 ^{#1}	BH12 at 9.6m = 240 BH51 at 2.40m = 270 BH62-M at 19.74m = 280 BH74 at 0.50m = 310	-	-	310	BH74 at 0.50m

TPH >C16-C21 Aromatics	90 ^{#1}	BH62-M at 19.74m = 100 BH74 at 0.50m = 120	-	-	120	BH74 at 0.50m
Fluoranthene	4 ^{#2}	-	0.0063 ^{#7}	BH12 at 9.64m = 0.02 BH28A at 2.92m = 0.01 BH36 at 3.24m = 0.14 BH36 at 5.10m = 0.03 BH37 at 10.82m = 0.01 BH40 at 1.44m = 0.03 BH40 at 2.06m = 0.2 BH50 at 3.98m = 0.08 BH51 at 2.40m = 0.02 BH55-M at 16.61m = 0.07 BH59-M at 14.98m = 0.09 BH62-M at 19.48 = 0.01 BH70A at 5.88m = 0.01 BH70A at 6.55m = 0.05 BH72-M at 4.0m = 0.01 BH74 at 0.50m = 0.1 BH74 at 1.7m = 0.06 BH76 at 1.54m = 0.03 BH80-M at 21.47m = 0.01 BH89 at 2.31m = 0.03 BH90 at 4.93m = 0.01 TP22 at 0.1m = 0.01 TP23 at 0.1m = 0.04	0.14	BH36 at 3.24m
Benzo(a)pyrene	0.01 ^{#14}	BH36 at 5.10m = 0.02 BH40 at 2.06m = 0.2 BH55-M at 16.61m = 0.03 BH59-M at 14.98m = 0.04 BH70A at 6.55m = 0.03 BH74 at 0.50m = 0.04 BH89 at 2.31m = 0.02 BH91 at 7.33m = 0.02 BH110 at 6.41m = 0.03 TP23 at 0.1m = 0.06	0.00017 ^{#7}	BH36 at 3.24m = 0.02 BH40 at 2.06m = 0.2 BH50 at 3.98m = 0.01 BH55-M at 16.61 = 0.03 BH59-M at 14.98m = 0.04 BH70A at 6.55m = 0.03 BH74 at 0.50m = 0.04 BH74 at 1.7m = 0.01 BH76 at 1.54m = 0.01 BH89 at 2.31m = 0.02 BH91 at 7.33m = 0.02 BH93 at 1.01m = 0.01	0.2	BH40 at 2.06m

				BH110 at 6.41m = 0.03 TP23 at 0.1m = 0.06	
Benzo(b&k) fluoranthene	-	-	0.03 ^{#12}	BH36 at 5.1m = 0.04 BH40 at 2.06m = 0.3 BH50 at 3.98m = 0.05 BH59-M at 14.98m = 0.1 BH74 at 1.7m = 0.04 BH89 at 2.31m = 0.04 TP23 at 0.1m = 0.04	BH40 at 2.06m
PAHs (sum of 4: benzo(b)fluoranthene; benzo(k)fluoranthene; benzo(ghi)perylene; indeno(1,2,3-cd)pyrene)	0.1 ^{#14}	BH40 at 2.06m = 0.6 BH55-M at 16.61m = 0.11 BH59-M at 14.98m = 0.18 BH70A at 6.55m = 0.11 BH74 at 0.5m = 0.16	-	-	0.6 BH40 at 2.06m
Benzo(g,h,i)perylene + indeno(1,2,3-cd)pyrene	-	-	0.002 ^{#12}	BH05-M at 12.05m = 0.02 BH26-M at 25.4m = 0.02 BH28A at 3.54m = 0.02 BH28-M at 24.88m = 0.02 BH29 at 5.14m = 0.02 BH36 at 3.24m = 0.02 BH36 at 5.1m = 0.04 BH40 at 1.44m = 0.03 BH40 at 2.06m = 0.3 BH41-M at 17.94m = 0.02 BH45-M at 17.61m = 0.02 BH50 at 3.98m = 0.05 BH55-M at 16.61m = 0.06 BH59-M at 14.98m = 0.08 BH70A at 5.88m = 0.02 BH70A at 6.55m = 0.05 BH74 at 0.5m = 0.08 BH74 at 1.7m = 0.04 BH76 at 1.54m = 0.02 BH76 at 1.58m = 0.04 BH89 at 2.31m	0.3 BH40 at 2.06m

= 0.03
TP22 at 0.1m =
0.02
TP23 at 0.1m =
0.04

Phenol	5800 ^{#8}	-	7.7 ^{#10}	BH41-M at 17.94m =31	31	BH41-M at 17.94
Aldrin+ Dieldrin+ Endrin+ Isodrin	-	-	0.01 ^{#7}	BH05-M at 12.05m = 0.39 BH12 at 9.64m = 0.24 BH26-M at 25.4m = 0.13 BH28-M at 24.88m = 0.13 BH29 at 5.14m = 0.16 BH41-M at 17.94m = 1.02 BH45-M at 17.61m = 1.04 BH51 at 2.4m = 0.3 BH55-M at 16.61m = 0.03 BH59-M at 14.98m = 0.11 BH62-M at 19.74m = 0.04 BH70A at 6.55m = 0.03 BH74 at 0.5m = 0.56 BH80-M at 21.47m = 0.23	1.04	BH45-M at 17.61m
Aldrin	0.03 ^{#14}	BH05-M at 12.05m = 0.19 BH12 at 9.64m = 0.14 BH26-M at 25.4m = 0.11 BH28-M at 24.88m = 0.11 BH29 at 5.14m = 0.06 BH41-M at 17.94m = 0.82 BH45-M at 17.61m = 1 BH51 at 2.4m = 0.1 BH59-M at 14.98m = 0.09 BH74 at 0.5m = 0.54 BH80-M at 21.47m = 0.21	0.01 ^{#7}	BH05-M at 12.05m = 0.19 BH12 at 9.64m = 0.14 BH26-M at 25.4m = 0.11 BH28-M at 24.88m = 0.11 BH29 at 5.14m = 0.06 BH41-M at 17.94m = 0.82 BH45-M at 17.61m = 1 BH51 at 2.4m = 0.1 BH59-M at 14.98m = 0.09 BH62-M at 19.74m = 0.02 BH74 at 0.5m = 0.54 BH80-M at 21.47m = 0.21	1	BH45-M at 17.61m
Aldrin + Dieldrin	0.03 ^{#11}	BH05-M at 12.05m = 0.29 BH12 at 9.64m = 0.19 BH26-M at 25.4m = 0.12 BH28-M at 24.88m = 0.12 BH29 at 5.14m = 0.11 BH41-M at 17.94m = 0.92 BH45-M at 17.61m = 1.02 BH51 at 2.4m = 0.2 BH59-M at 14.98m = 0.1 BH74 at 0.5m = 0.55 BH80-M at 21.47m = 0.22	-	-	1.02	BH45-M at 17.61m
Diazinon	0.1 ^{#11}	-	0.01 ^{#10}	BH62-M at	0.06	BH62-M at 19.74m

				19.74m = 0.06		
Boron	1000 ^{#14}	BH28A at 2.92m = 64000 BH62-M at 19.48m = 47000 BH70A at 5.88m = 180000 BH74 at 1.7m = 260000 TP22 at 0.1m = 85000 TP23 at 0.1m = 340000	2000 ^{#10}	BH28A at 2.92m = 64000 BH62-M at 19.48m = 47000 BH70A at 5.88m = 180000 BH74 at 1.7m = 260000 TP22 at 0.1m = 85000 TP23 at 0.1m = 340000	340000	TP23 at 0.1m
Cadmium	5 ^{#14}	-	0.08 ^{#7}	BH05-M at 10.8m = 0.1 BH74 at 1.7m = 0.1	0.1	BH05-M at 10.8m, BH74 at 1.7m
Copper	2000 ^{#14}	-	1 ^{#10}	BH28A at 2.92m = 1.4 BH28A at 3.54m = 4 BH28-M at 24.88m = 1.8 BH29 at 4.93m = 1.2 BH29 at 5.14m = 1.3 BH36 at 3.24m = 13 BH36 at 5.10m = 5.6 BH40 at 1.44m = 2.1 BH40 at 2.06m = 2.8 BH50 at 3.98m = 1.1 BH51 at 2.4m = 1.6 BH74 at 1.7m = 1.2 BH76 at 1.54m = 2.2 BH76 at 1.58m = 2.3 BH93 at 1.01m = 1.6	13	BH36 at 3.24m
Iron	200 ^{#14}	BH05-M at 10.8m = 39000 BH28A at 2.92m = 38000 BH28-M at 22.5m = 4700 BH29 at 4.93m = 640000 BH36 at 3.24m = 660 BH36 at 5.1m = 2900000 BH37 at 10.82m = 1400000 BH40 at 2.06m = 210 BH41-M at 17.94m = 240 BH45-M at 17.28m = 10000 BH45-M at 17.61m = 2100 BH50 at 3.98m = 98000 BH59-M at 14.98m = 600 BH62-M at 19.48m = 790 BH70A at 5.88m = 20000 BH70A at 6.55m = 450 BH72-M at 4.0m = 310000 BH74 at 1.7m = 24000 BH76 at 1.58m = 240000 BH80-M at 21.47m = 660 BH93 at 1.01m = 320 TP22 at 0.1m = 5100 TP23 at 0.1m = 3100000	1000 ^{#10}	BH05-M at 10.8m = 39000 BH28A at 2.92m = 38000 BH28-M at 22.5m = 4700 BH29 at 4.93m = 640000 BH36 at 5.1m = 2900000 BH37 at 10.82m = 1400000 BH45-M at 17.28m = 10000 BH45-M at 17.61m = 2100 BH50 at 3.98m = 98000 BH70A at 5.88m = 20000 BH72-M at 4.0m = 310000 BH74 at 1.7m = 24000 BH76 at 1.58m	3100000	TP23 at 0.1m

= 240000
TP22 at 0.1m =
5100
TP23 at 0.1m =
3100000

Manganese	50 ^{#14}	BH05-M at 10.8m = 220 BH05-M at 12.05m = 350 BH110 at 6.41m = 83 BH26-M at 25.4m = 1100 BH28A at 3.54m = 340 BH29 at 4.93m = 860 BH36 at 5.1m = 820 BH37 at 10.82m = 4700 BH41-M at 17.94m = 420 BH45-M at 17.28m = 1200 BH45-M at 17.61m = 630 BH59-M at 14.98m = 330 BH62-M at 19.74m = 630 BH62-M at 19.48m = 500 BH70A at 5.88m = 300 BH72-M at 4.0m = 440 BH74 at 0.5m = 4000 BH74 at 1.7m = 240 BH76 at 1.54m = 340 BH76 at 1.58m = 610 BH80-M at 21.47m = 230 BH89 at 2.31m = 2000 BH90 at 4.93m = 590 BH93 at 1.01m = 720 TP23 at 0.1m = 1400	123 ^{#10}	BH05-M at 10.8m = 220 BH05-M at 12.05m = 350 BH26-M at 25.4m = 1100 BH28A at 3.54m = 340 BH29 at 4.93m = 860 BH36 at 5.1m = 820 BH37 at 10.82m = 4700 BH41-M at 17.94m = 420 BH45-M at 17.28m = 1200 BH45-M at 17.61m = 630 BH59-M at 14.98m = 330 BH62-M at 19.74m = 630 BH62-M at 19.48m = 500 BH70A at 5.88m = 300 BH72-M at 4.0m = 440 BH74 at 0.5m = 4000 BH74 at 1.7m = 240 BH76 at 1.54m = 340 BH76 at 1.58m = 610 BH80-M at 21.47m = 230 BH89 at 2.31m = 2000 BH90 at 4.93m = 590 BH93 at 1.01m = 720 TP23 at 0.1m = 1400	4700	BH37 at 10.82m
Mercury	1 ^{#14}	BH36 at 5.1m = 5	0.07 ^{#6}	BH05-M at 10.8m = 0.1 BH29 at 4.93m = 0.41 BH36 at 5.1m = 5 BH72-M at 4.0m = 0.1	5	BH36 at 5.1m
Nickel	20 ^{#14}	BH26-M at 25.4m = 51 BH45-M at 17.28m = 26	4 ^{#7}	BH26-M at 25.4m = 51 BH36 at 3.24m = 11 BH36 at 5.1m = 8 BH45-M at 17.28m = 26 BH74 at 0.5m = 5 BH89 at 2.31m	51	BH26-M at 25.4m

= 9						
Zinc	6000 ^{#8}	-	11.9 ^{#10}	BH05-M at 12.05m = 14 BH26-M at 25.4m = 20 BH28-M at 24.88m = 37 BH59-M at 14.98m = 17 BH62-M at 19.48m = 12 BH74 at 0.5m = 14	37	BH28-M at 24.88m
Chromium VI	50 ^{#14}	-	3.4 ^{#10}	BH40 at 1.44m = 5	5	BH40 at 1.44m
Chromium III	50 ^{#14}	-	4.7 ^{#12}	BH41-M at 17.94m = 5 BH93 at 1.01m = 30	30	BH93 at 1.01m
Thiocyanate	0.004 ^{#6} (mg/l)	TP23 at 0.1m = 7	-	-	7	TP23 at 0.1m
Sulphate	250 ^{#3} (mg/l)	BH26-M at 25.4m = 470 BH28A at 3.54m = 360	400 ^{#10} (mg/l)	BH26-M at 25.4m = 470	470	BH26-M at 25.4m

#GAC Sources for groundwater are listed in the Stage 2 Screening Tables.

Surface Water Screening

- 1.2.47 Stage 2 screening tables summarising the 2018 and 2019 GI data and exceedances of water environment GAC for surface water results are presented within Appendix 16.1-2. Surface water samples were obtained at nine locations along the Dean Burn.
- 1.2.48 A review of the surface water data obtained from the site during the 2018 and 2019 GI monitoring shows that the majority of sample results were detected at concentrations below their respective GAC, which were considered to be protective of the water environment based on both drinking water standards (DWS) and environmental quality standards (EQS).
- 1.2.49 The following exceedances were recorded:

Table A16.1-6 Surface Water GAC Exceedances (2018/2019 GI)

Analyte	DWS GAC (µg/l)	Location of DWS exceedance	EQS GAC (µg/l)	Location of EQS exceedance	Maximum Concentration (µg/l)	Location of Maximum Exceedance
TPH >C10-C12 Aromatics	90 ^{#1}	SW06 = 120	-	-	120	SW06
TPH >C12-C16 Aromatics	90 ^{#1}	SW05 = 150 SW06 = 190	-	-	190	SW06
Fluoranthene	4 ^{#2}	-	0.0063 ^{#7}	SW01-EW 2 = 0.01 SW02 = 0.02 SW03-EW 2 = 0.01 SW04-EW 2 = 0.01 SW05 = 0.02 SW05-EW 2 = 0.01 SW06 = 0.01 SW08 = 0.01 SW10 = 0.01	0.02	SW02, SW05
Benzo(a) pyrene	0.01 ^{#14}	SW08 = 0.03	0.00017 ^{#7}	SW02 = 0.01 SW05 = 0.01 SW08 = 0.03 SW10 = 0.01	0.03	SW08
Benzo(g,h,i) perylene + indeno(1,2,3-cd) pyrene	-	-	0.002 ^{#12}	SW02 = 0.03 SW05 = 0.03	0.03	SW02, SW05
Aldrin+ Dieldrin+ Endrin+ Isodrin	-	-	0.01 ^{#7}	SW01-EW 2 = 0.04 SW02-EW 2 = 0.07 SW04-EW 2 = 0.03 SW06-EW 2 = 0.03	0.07	SW02
Aldrin	0.03 ^{#14}	SW02-EW 2 = 0.05	0.01 ^{#7}	SW01-EW 2 = 0.02 SW02-EW 2 = 0.05	0.05	SW02
Aldrin + Dieldrin	0.03 ^{#11}	SW02-EW 2 = 0.06	-	-	0.06	SW02
Malathion	0.1 ^{#11}	-	0.01 ^{#10}	SW04-EW 2 = 0.02 SW06-EW 2 = 0.02	0.02	SW04, SW06
Boron	1000 ^{#14}	SW05 = 180000 SW06 = 180000	2000 ^{#10}	SW05 = 180000 SW06 = 180000	180000	SW05, SW06
Copper	2000 ^{#14}	-	1 ^{#10}	SW01 = 4.5 SW01-EW 2 = 2.5 SW03 = 6.2 SW03-EW 2 = 2.5 SW04-EW 2 = 2.5 SW05 = 3.8 SW05-EW 2 = 3.1 SW06 = 3.9 SW06-EW 2 = 2.3 SW07-EW 1 = 3.8 SW08-EW 1 = 1.1 SW10-EW 1 = 3.9	6.2	SW03
Iron	200 ^{#14}	SW01 = 420 SW02 = 1300 SW03 = 1400 SW05 = 550 SW06 = 850 SW08-EW 1 =	1000 ^{#10}	SW02 = 1300 SW03 = 1400	1400	SW03

		470 SW10-EW 1 = 320				
Manganese (filtered)	50 ^{#14}	SW08-EW 1 = 52	123 ^{#10}	-	52	SW08
Nickel	20 ^{#14}	-	4 ^{#7}	SW01 = 11 SW01-EW 2 = 19 SW03 = 11 SW03-EW 2 = 14 SW04-EW 2 = 14 SW05 = 14 SW05-EW 2 = 13 SW06 = 14 SW06-EW 2 = 13 SW07-EW 1 = 14 SW10-EW 1 = 18	19	SW01
Zinc	6000 ^{#8}	-	11.9 ^{#10}	SW01-EW 2 = 120 SW02-EW 2 = 18 SW03 = 76 SW03-EW 2 = 74 SW04-EW 2 = 73 SW05 = 23 SW05-EW 2 = 71 SW06 = 31 SW06-EW 2 = 60 SW07-EW 1 = 39 SW08-EW 1 = 71 SW10-EW 1 = 40	120	SW01

#GAC Sources for surface waters are listed in the Stage 2 Screening Tables.

Ground Gas

- 1.2.50 Ground gas monitoring has been carried out on 38 boreholes as part of the 2018/2019 post fieldwork ground investigation monitoring regime. The ground gas monitoring included up to 8 visits between July 2018 and July 2019.
- 1.2.51 The 2018/2019 ground gas monitoring results are included in Appendix 16.1-3 along with historical monitoring data from the 2008 Soil Mechanics Waverley Railway Project and the 2011 Soil Mechanics Borders Railway Dialogue Period Ground Investigation, Phase 2.
- 1.2.52 Elevated ground gas concentrations have been identified as a significant risk factor for human health and confined spaces. The gas concentrations based on methane, carbon dioxide, depleted oxygen, carbon monoxide and hydrogen sulphide have been compared to the following assessment criteria:
- HSE EH40/2005 Workplace Exposure Limits, 3rd Edition, 2018;
 - CIRIA R149 Protecting development from methane, 1995;
 - CIRIA C665 Assessing risks posed by hazardous ground gases to buildings, 2007;
 - BS 8485:2015+A1:2019 Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings.
- 1.2.53 The following range of ground gas measurements were recorded for the 2018/2019 monitoring:
- Methane: 0.1 – 1.4% v/v (by volume) (maximum readings);
 - Methane: <0.1 – 1.3% v/v (steady state);
 - Carbon dioxide: 0.2 – 10.4% v/v (initial readings);
 - Carbon dioxide: <0.1 – 14.8% v/v (steady state);
 - Oxygen: 0.4 – 21.9% v/v (steady state);

- Carbon monoxide: <1 – 34ppm;
- Hydrogen sulphide: <1 – 2ppm;
- Barometric pressure: 972 – 1021mbars;
- Gas flow rate: <0.1 – 12.1l/hr.

1.2.54 The following range of ground gas measurements were recorded for the 2008 and 2011 Borders Railway ground investigations:

- Methane: Not detected – 0.1% v/v;
- Carbon dioxide: Not detected – 2.1% v/v;
- Oxygen: 6.7 – 20.5% v/v;
- Carbon monoxide: Not detected;
- Hydrogen sulphide: Not detected;
- Barometric pressure: 991 – 1018mbars;
- Gas flow rate: -0.8 – 5 l/hr.

1.2.55 Methane concentrations were detected above the critical concentration of 1% v/v in one borehole (BH36 2018 GI) on one monitoring visit only. The localised recording of methane on the site suggests elevated methane at concentrations of concern are unlikely to be present.

1.2.56 Carbon dioxide readings were elevated above the HSE long term workplace exposure limit (0.5% v/v - 8 hour TWA (Time Weighted Average) reference period) in 35 boreholes (2018/ 2019 GI) on a number of occasions. Readings were elevated above the short-term workplace exposure limit (1.5% v/v – 15 minute reference period) in 27 boreholes on a number of occasions.

1.2.57 Normal levels of oxygen are generally between 19% and 21% v/v. Depleted oxygen levels (steady state) below 19% v/v were recorded in 23 boreholes (2018/ 2019 GI) on a number of occasions. Very low levels of oxygen (at or below 16% v/v) were recorded in 12 boreholes (2018 GI). The readings of low oxygen generally coincided with the monitoring wells screened in bedrock/ Coal Measures.

1.2.58 Carbon monoxide readings were generally below the HSE long term workplace exposure limit (30ppm - 8 hour TWA reference period). One peak value of 34ppm was recorded in one borehole (BH72-M: 2018 GI) ;

1.2.59 All monitoring readings for hydrogen sulphide were below the HSE long term workplace exposure limit (5ppm - 8 hour TWA reference period).

1.3 Revised Conceptual Site Model and Risk Assessment

1.3.1 Previous studies have provided information on past land use and potential contamination sources. The AECOM DMRB Stage 2 Assessment (2017) Report, carried out prior to the detailed intrusive ground investigation, included a preliminary CSM and initial risk assessment with respect to the impact of the new road scheme on potential contaminated land. The preliminary CSM has been updated with respect to the findings of the 2018 ground investigation and monitoring and the latest scheme design layout.

1.3.2 The revised assessment has been undertaken for potential source-pathway-receptor linkages based on current DEFRA (Guidelines for Environmental Risk Assessment and Management) and CIRIA (Construction Industry Research and Information Association) C552 guidance. The guidance document describes a method for the classification of the severity and likelihood of identified risks. This assessment is based on consideration of both:

- The likelihood of an event (probability – takes into account both the presence of the hazard and receptor and the integrity of the pathway);
- The severity of the potential consequence (takes into account both the potential severity of the hazard and the sensitivity of the receptor).

1.3.3 The method of dealing with identified risks and the level of significance of those risks will be a function of site use. The risks associated with each potential pollutant linkage take into account the findings of the site investigation works undertaken at the site.

1.3.4 A revised CSM summarising potentially viable contaminant linkages with risk assessment is provided below

1.3.5 The findings of the 2018 and the additional 2019 investigations are reported in the Ground Investigation Factual Reports and will be summarised in the Ground Investigation Report (GIR) currently in preparation by AECOM. Presently the final factual reporting for the 2019 ground investigation is not yet complete and as such the soil and soil leachate results are not part of the risk assessment screening.

Table A16.1-7. Revised Conceptual Site Model and Risk Assessment

Source (Potential Contaminants)	Receptors	Potential Pathway	Baseline Conditions		Construction Phase		Comments / Mitigation	Operation Phase		
			Severity / Likelihood	Risk Category	Severity / Likelihood	Risk Category		Severity / Likelihood	Risk Category	
Contaminants within soils and groundwater associated with potential contaminant sources (as Table A16.1-2)	Human Health									
	Site end users – non-motorised road users	Dermal contact and ingestion of contaminated soils / soil derived dust	Mild / Low Likelihood	Low	-	-	Made ground is present across the site in areas of man-made development and engineering infrastructure. Of the soil samples screened using both commercial/industrial and public open space GAC's, there were exceedances of benzo(a)pyrene and dibenzo(a,h)anthracene in BH09 at 1.0m only. These exceedances are localised and within one order of magnitude of the GAC's. Further investigation of soils at this location will be carried out as part of the earthworks screening and reuse will be based on a risk assessment outcome.	Mild / Low Likelihood	Low	
		Inhalation of contaminated dust / volatile contaminants	Mild / Low Likelihood	Low	-	-	Groundwater quality beneath the site is reported to be poor, primarily due to pressures resulting from historical mining activity.	Mild / Low Likelihood	Low	
		Dermal contact and ingestion of contaminated groundwater	Mild / Low Likelihood	Low	-	-	Operational phase - Potentially viable dermal contact, ingestion, dust and inhalation pathways are not considered to be present due to the majority of the site being sealed and minimal human traffic present on unsealed areas of the site.	Mild / Low Likelihood	Low	
	Surrounding site users	Dermal contact and ingestion of contaminated soils / soil derived dust	Mild / Low Likelihood	Low	Mild / Low Likelihood	Low	Made ground is present across the site in areas of man-made development and engineering infrastructure. As above for soil exceedances. Very short exposure times apply during construction works with assumed dust control measures employed during the works. Road construction works should remove or provide a barrier to any made ground materials.	Mild / Low Likelihood	Low	
		Inhalation of contaminated dust / volatile contaminants	Mild / Low Likelihood	Low	Medium / Low Likelihood	Moderate / Low	Operational Phase - Earthworks screening should negate future site users contact with contaminated soil in areas of soft landscaping. Users of neighboring sites are unlikely to come into direct contact with contaminants.	Mild / Low Likelihood	Low	
		Consumption of Contaminated Produce	Mild / Low Likelihood	Low	Mild / Low Likelihood	Low		Mild / Unlikely	Very Low	
		Dermal contact and ingestion of contaminated groundwater	Mild / Low Likelihood	Low	Mild / Low Likelihood	Low	Groundwater quality beneath the site is reported to be poor, primarily due to pressures resulting from historical mining activity. Due to the nature of the development, adjacent site users are unlikely to come into contact with the groundwater. The potential for exposure to soil and groundwater contamination that may be encountered during ground works at the site may be mitigated by adopting appropriate health and safety procedures.	Mild / Unlikely	Very Low	

As above	Construction /maintenance workers	Dermal contact and ingestion of contaminated soils / soil derived dust	-	-	Medium / Low Likelihood	Moderate / Low	Made ground is present across the site. A complete pollutant linkage is likely to result during the construction works. Very short exposure times apply for these receptors and the potential for exposure to soil and groundwater contamination is likely to be limited. Mitigation includes adopting appropriate health and safety procedures i.e. suitable PPE	Mild / Low Likelihood	Low
		Inhalation of contaminated dust / volatile contaminants	-	-	Medium / Low Likelihood	Moderate / Low		Mild / Low Likelihood	Low
Water Environment									
Shallow groundwater (perched within the made ground and unit within drift deposits)	Leaching of contaminants to shallow groundwater through permeable strata within made ground and drift deposits	Medium / Low Likelihood	Moderate / Low	Medium / Low Likelihood	Moderate / Low	The site is primarily underlain by glacial till, alluvial and fluvio-glacial deposits (sand and gravel). The glacial till deposits are normally classed as a non-aquifer due to their low permeability. The sand and gravel deposits are considered to have resource potential in the southern part of the site and may allow limited groundwater flow and facilitate the vertical and lateral migration of contaminants. The Coal Measures are classed as a moderately productive aquifer. Of the 26 samples analysed for PAH in soil leachate (2018 GI), 17 exceeded the EQS GAC for fluoranthene and 5 exceeded the DWS and EQS GAC's for benzo(a)pyrene. All fluoranthene exceedances were within one order of magnitude of the GAC with benzo(a)pyrene exceedances within two orders of magnitude.	Mild / Low Likelihood	Low	
	Preferential pathways via underground service runs, mine shafts, piles.	Medium / Low Likelihood	Moderate / Low	Medium / Low Likelihood	Moderate / Low	Of the 32 samples analysed for metals in soil leachate (2018 GI), there were several exceedances with regards to copper, iron, lead, manganese, nickel and zinc. Of these exceedances, all were within one order of magnitude of the GAC's.	Mild / Low Likelihood	Low	
	Surface water run-off and soakaways	Mild / Low Likelihood	Low	Medium / Low Likelihood	Moderate / Low	A wide range of exceedances were recorded for the groundwater samples. Boron and iron concentrations were generally much higher than their Stage 2 GAC's. Six water samples exceeded both the DWS and EQS GAC's for boron. Twenty three samples exceeded the iron DWS, whilst fifteen samples exceeded the EQS. The borehole locations for these results are spread across the site, including the areas of the disused railway (S1), the historical sand pit (S4), pond (S16) and agricultural land (S21). These groundwater results reflect the existing poor aquifer water quality.	Mild / Low Likelihood	Low	
	Hydraulic continuity between the perched groundwater and the groundwater within drift deposits	Medium / Low Likelihood	Moderate / Low	Medium / Low Likelihood	Moderate / Low	Construction Phase - Piling risk assessment / good working practice is required to minimise risk during piling works. Earthworks screening required to reduce leachate risk to sensitive water environment receptors. Operational Phase - The final Scheme layout will be predominantly hardstanding, and as such will limit the potential for infiltration from the surface soils and reduce vertical migration of potential contaminants.	Mild / Low Likelihood	Low	
Groundwater within bedrock	Vertical migration of contaminated shallow groundwater into deeper bedrock aquifer	Medium / Low Likelihood	Moderate / Low	Medium / Low Likelihood	Moderate / Low		Mild / Low Likelihood	Low	

	Migration through fissures in bedrock	Medium / Low Likelihood	Moderate / Low	Medium / Low Likelihood	Moderate / Low		Mild / Low Likelihood	Low	
As above	Dean Burn, unnamed streams and ponds	Lateral migration of contaminants within shallow groundwater towards hydraulically connected surface waters	Medium / Low Likelihood	Moderate / Low	Medium / Low Likelihood	Moderate / Low	Dean Burn flows from west to east intersecting the proposed road scheme and shallow groundwater may discharge to this surface water feature. Surface water sampling (2018/ 2019 GI) was undertaken at 9 locations along the Dean Burn. The majority of exceedances are typically within one order of magnitude of the GAC's. Boron exceeded the EQS & DWS GAC's at SW05 and SW06 on the first sampling visit, with concentrations in line with those encountered within boreholes. SW05 and SW06 are located within an area of agricultural land. The second sampling visit saw the boron concentration within these locations drop significantly to levels below the GAC's. The remaining exceedances (generally within an order of magnitude of the GAC's) include other metals, pesticides and PAHs.	Mild / Low Likelihood	Low
		Migration of contaminants via surface water run-off and soakaways	Medium / Low Likelihood	Moderate / Low	Medium / Low Likelihood	Moderate / Low		Mild / Low Likelihood	Low
							Construction Phase - During earthworks there is a potential for contaminants to be mobilised and facilitate migration towards surface waters. Good site management procedures are required to be implemented to avoid contamination impacts to the surface waters. Operation Phase – Scheme design should mitigate the run off risk and reduce the potential for contaminants to impact the surface waters.		
Ecological Receptors									
Wildlife sites, local biodiversity sites	Migration of contaminants via groundwater	Minor / Low Likelihood	Very Low	Minor / Low Likelihood	Very Low	Observations from site visits indicate that there were no signs of distressed vegetation on site, and no sensitive ecological receptors were identified in the vicinity of the site.	Minor / Low Likelihood	Very Low	
	Plant uptake via roots	Minor / Low Likelihood	Very Low	Minor / Low Likelihood	Very Low	Road construction works should provide imported clean topsoil for landscaping areas.	Minor / Low Likelihood	Very Low	
	Direct contact with contaminated soils e.g. ingestion	Medium / Low Likelihood	Moderate / Low	Mild / Low Likelihood	Low	Road construction works should remove or provide a barrier to any made ground materials.	Minor / Low Likelihood	Very Low	
Pets and grazing animals on nearby fields	Dermal contact and ingestion of contaminated soils / soil derived dust	Minor / Low Likelihood	Very Low	Medium / Low Likelihood	Moderate / Low	Made ground is present across the site in areas of man-made development and engineering infrastructure. Of the soil samples retrieved and screened using both commercial/industrial and public open space GAC, there was exceedance of benzo(a)pyrene and dibenzo(a,h)anthracene in BH09 at 1.0m only. These exceedances are localised and within one order of magnitude of the GAC.	Mild / Low Likelihood	Low	
	Inhalation of contaminated dust	Mild / Low Likelihood	Low	Mild / Low Likelihood	Low		Mild / Low Likelihood	Low	

	Consumption of contaminated produce	Mild / Low Likelihood	Low	Mild / Low Likelihood	Low		Mild / Low Likelihood	Low	
As above	Vegetation including crops growing in nearby fields	Uptake via root	Minor / Low Likelihood	Very Low	Minor / Low Likelihood	Very Low	Observations from site visits indicate that there were no signs of distressed vegetation on site, and no sensitive ecological receptors were identified in the vicinity of the site. Road construction works should provide imported clean topsoil for landscaping areas.	Minor / Low Likelihood	Very Low
Property Receptors – Buildings / Structures									
	Existing and proposed roads, structures	Direct contact between foundations and soils	Mild / Low Likelihood	Low	Mild / Low Likelihood	Low	Made ground across the site may affect building materials. Concrete classification will be undertaken based on geotechnical chemical test results. Other potential contaminants will be screened during the earthworks, as per the Earthworks Specification.	Mild / Low Likelihood	Low
		Preferential migration along existing services	Mild / Low Likelihood	Low	Mild / Low Likelihood	Low	No visual evidence of contamination that may affect structures and roads were noted during the site investigation. Based on the chemical results from the ground investigation, it is not anticipated that concentrations of hydrocarbons, phenols and pH levels will affect structures and roads.	Mild / Low Likelihood	Low
Gases (mine gas and ground gas resulting from infilled pits/ made ground)	Human Health								
	Site end users – non-motorised road users	Inhalation of gases (mine gas and ground gas)	Medium / Unlikely	Low	-	-	Ground gas monitoring was carried out on 38 boreholes over 8 visits between July 2018 and July 2019. Methane was encountered above the critical concentration of 1% v/v in one borehole during one monitoring round only. The localised recording of methane on the site suggests elevated methane at concentrations of concern is unlikely to be present.	Medium / Unlikely	Low
	Surrounding site users	Inhalation of gases and vapours as a result of offsite gas migration via preferential pathways incl. service runs	Medium / Unlikely	Low	Medium / Unlikely	Low	Carbon dioxide concentrations were above the HSE long term workplace exposure limit in 35 boreholes on a number of occasions and were above the short term exposure limit in 27 boreholes on a number of occasions. Oxygen was depleted in 23 boreholes on a number of occasions. Very low levels of oxygen were recorded in 13 boreholes, generally encountered in wells screened in the bedrock / Coal Measures.	Medium / Unlikely	Low
	Construction / maintenance workers	Inhalation of gases and vapours accumulated in confined spaces	-	-	Severe / Low Likelihood	Moderate	Carbon monoxide was encountered above the HSE long term workplace exposure limit on one occasion in one borehole. Construction Phase - Adequate H&S site controls are expected to be implemented where work is to be carried out in confined spaces. Operational Phase – There is a low risk to site end users and surrounding site users. Maintenance workers should employ standard good practice site controls if working in confined spaces.	Medium / Unlikely	Low
Property Receptors – Buildings/ Structures									
	Existing / proposed	Preferential migration along existing services	Medium / Unlikely	Low	Medium / Unlikely	Low	Methane concentrations encountered during gas monitoring were typically below the detection limit of the gas analyser. One reading was recorded at 1.3% in BH36 (2018 GI: adjacent to the historical sand	Medium / Unlikely	Low

As above	roads	(explosive risk)	pit S4). The elevated methane concentration detected was below the LEL of 5%.					
		Confined spaces (explosive risk)	Medium / Unlikely	Low	Medium / Unlikely	Low	Medium / Unlikely	Low
	Surrounding buildings	Preferential migration along existing and proposed service lines (explosive risk)	Medium / Unlikely	Low	Medium / Unlikely	Low	Medium / Unlikely	Low

Notes:

(a) Classification of severity, likelihood and risk category taken from CIRIA C552, Contaminated Land Risk Assessment, A guide to good practice, 2001. Classification used is included in ES Chapter 16 Geology and Soils.

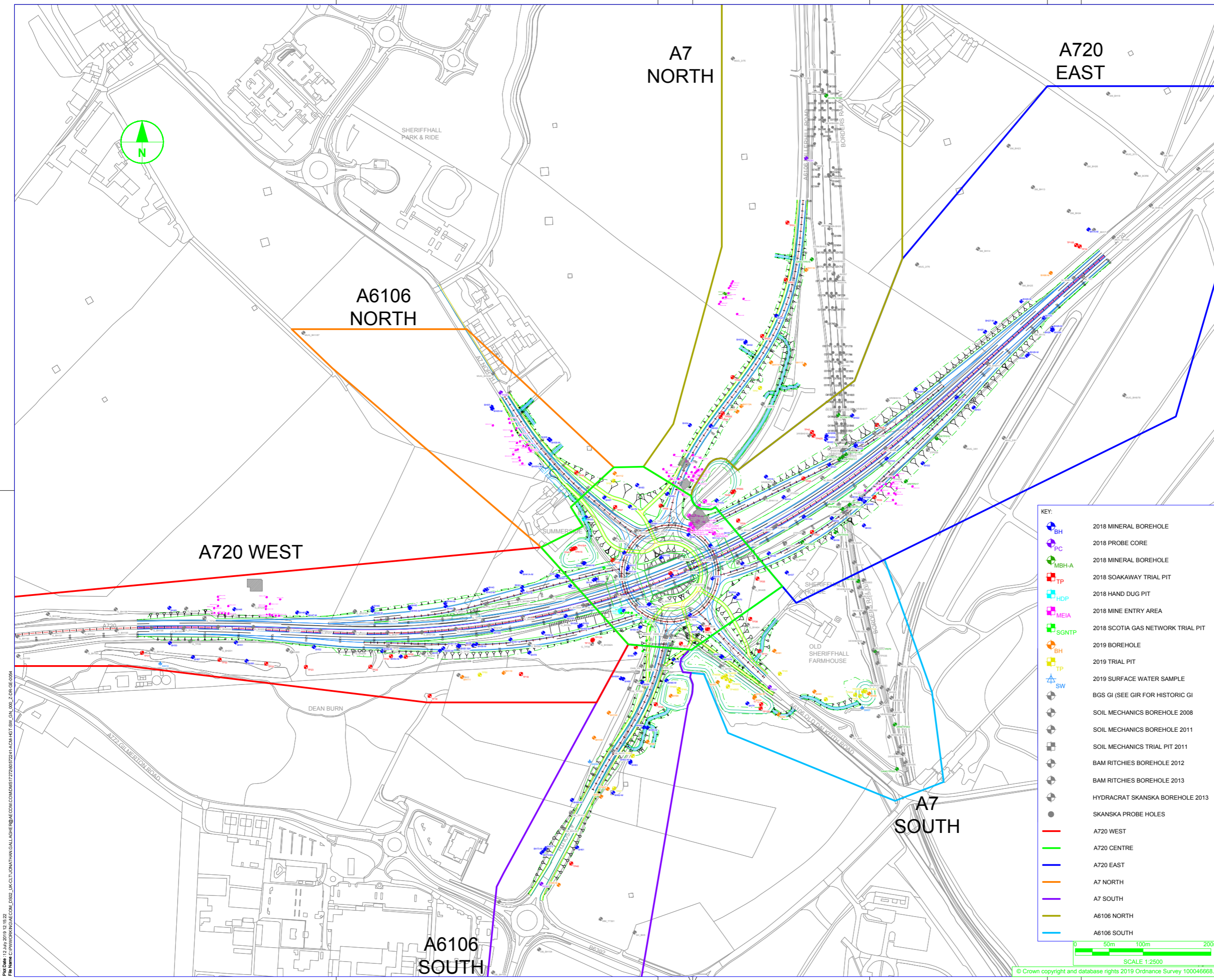
(b) The estimated overall risk category is the highest risk classification associated with a particular source.

(c) Fly tipped and dumped materials on the site are assumed will be cleared prior/ during the construction works and should not impact the proposed scheme.

1.3.6 In summary, the risk categories guidance based on the CIRIA C552 guidance (Table A16.1-6 and Table A16.1-7) range from very low to moderate as follows:

- Baseline Phase. Moderate/ low risk from potential contaminants within soil and groundwater for the water environment (shallow and deep groundwater; surface waters) and ecological receptors.
- Construction Phase. Moderate/ low risk from potential contaminants within soil and groundwater for the surrounding site users, the water environment (shallow and deep groundwater; surface waters) and pets and grazing animals. A moderate risk was associated with ground gases to construction workers during the site activities.
- Operation Phase. Low and very low risk categories are associated with the road scheme operational phase once mitigation controls are considered.

Appendix 16.1.1 – Potential Contamination Sources and Zoning Plan



SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX

IT IS ASSUMED THAT ALL WORKS ON THIS DRAWING WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROPRIATE METHOD STATEMENT.

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT.

EXCEPTIONAL RISKS RELATING TO THE WORKS ASSOCIATED WITH THIS DRAWING ARE IDENTIFIED BELOW.

CONSTRUCTION

NOT FOR CONSTRUCTION

MAINTENANCE / OPERATION / DECOMMISSIONING / DEMOLITION

NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DOCUMENTATION.
2. DO NOT SCALE FROM THIS DRAWING, USE ONLY PRINTED DIMENSIONS.
3. ALL DIMENSIONS IN MILLIMETRES, ALL CHAINAGES, LEVELS AND COORDINATES ARE IN METRES UNLESS DEFINED OTHERWISE.
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE PROJECT HEALTH & SAFETY FILE FOR ANY IDENTIFIED POTENTIAL RISKS.

First Issue	04/07/19	P01.1
Revision Details	By	Check
Purpose of issue	INITIAL STATUS OR WIP	

Client



TRANSPORT SCOTLAND
CORPORAL ALBA

Project Title

A720 SHERIFFHALL ROUNDABOUT

Drawing Title

ZONING PLAN

Designed	Drawn	Checked	Approved	Date
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Internal Project No.	Suitability			
60572241	S0			
Scale @ A1	Zone			
1:2500	Geotechnical			

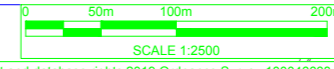
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Drawing Number	Originator	Volume	Rev
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Location	Type	Role	Number
SW_GN_000_Z-DR-GE-0054			

- KEY:**
- 2018 MINERAL BOREHOLE
 - 2018 PROBE CORE
 - 2018 MINERAL BOREHOLE
 - 2018 SOAKAWAY TRIAL PIT
 - 2018 HAND DUG PIT
 - 2018 MINE ENTRY AREA
 - 2018 SCOTIA GAS NETWORK TRIAL PIT
 - 2019 BOREHOLE
 - 2019 TRIAL PIT
 - 2019 SURFACE WATER SAMPLE
 - BGS GI (SEE GIR FOR HISTORIC GI)
 - SOIL MECHANICS BOREHOLE 2008
 - SOIL MECHANICS BOREHOLE 2011
 - SOIL MECHANICS TRIAL PIT 2011
 - BAM RITCHIES BOREHOLE 2012
 - BAM RITCHIES BOREHOLE 2013
 - HYDRACRAT SKANSKA BOREHOLE 2013
 - SKANSKA PROBE HOLES
 - A720 WEST
 - A720 CENTRE
 - A720 EAST
 - A7 NORTH
 - A7 SOUTH
 - A6106 NORTH
 - A6106 SOUTH



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Appendix 16.1.2 – Stage 2 Screening Tables

Table 1
Stage 2 Screening Assessment
Soil
Sheriffhall Roundabout

Location ID	BH09	BH09	BH09	BH09	BH101	BH101	BH101	BH101	BH101	BH102	BH102	BH102	BH102	BH102	BH102	BH102	BH102	BH103	BH103	BH105	BH105	BH105
Sample Depth (m)	0.3	1.0	1.0	2.0	2.2	4.0	5.0	5.0	5.0	1.5-1.55	2.0	4.0-4.1	4.0-4.1	5.0	6.9	2.0	5.5	1.5	1.5	1.5	1.5	3.0
Sample Type	ES	ES	WAC	ES	ES	ES	ES	WAC	ES	ES	ES	WAC	ES	ES	ES	ES	ES	ES	ES	ES	WAC	ES
Sample Date	18/05/18	18/05/18	18/05/18	18/05/18	13/06/18	13/06/18	14/03/18	14/03/18	15/03/18	15/03/18	15/03/18	15/03/18	15/03/18	15/03/18	15/03/18	21/03/18	22/03/18	27/03/18	27/03/18	27/03/18	27/03/18	27/03/18
Soil Type	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG
Lab Report No.	749242	749242	749305	749242	725622	725622	725622	725622	726157	739994	726127	726157	739994	739994	726968	726968	726968	726968	726968	726968	726968	726968

Chemical Group	Chemical Name	Output Unit	EQL	GAC Human Health Commercial (0.58-1.45% TOC)	GAC Human Health Public Open Space (Park) (0.58-1.45% TOC)	Location Data																			
						BH09	BH09	BH09	BH09	BH101	BH101	BH101	BH101	BH101	BH102	BH102	BH102	BH102	BH102	BH102	BH102	BH103	BH103	BH105	BH105
	Loss on ignition	%	0.1			-	-	-	-	-	-	-	-	-	27	-	-	2.9	17	-	-	-	-		
	Boron (Water Soluble)	mg/kg	1	240,000 ^{#3}	46,000 ^{#3}	<1	<1	-	<1	1	<1	1	-	<1	-	1	-	-	-	2	2	<1	<1		
	Asbestos Identification	None				ND	ND	-	-	ND	-	-	ND	-	-	-	-	-	ND	-	-	ND	-		
Field	pH	pH Units	0.01			6.4	8.7	-	8.1	7.9	8.4	8.3	-	8.1	-	8.2	-	-	-	7.9	7.9	8.2	10.3		
TPH	>C5-C6 Aliphatics	mg/kg	0.01	2,000 ^{#3}	55,000 ^{#3}	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	<0.01	-		
	>C6-C8 Aliphatics	mg/kg	0.01	4,300 ^{#3}	81,000 ^{#3}	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	<0.01	-		
	>C8-C10 Aliphatics	mg/kg	0.01	1,000 ^{#3}	8,700 ^{#3}	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	<0.01	-		
	>C10-C12 Aliphatics	mg/kg	1	5,000 ^{#3}	16,000 ^{#3}	-	-	-	-	2	<1	-	-	-	-	-	-	-	-	-	-	<1	-		
	>C12-C16 Aliphatics	mg/kg	1	37,000 ^{#3}	23,000 ^{#3}	-	-	-	-	3	1	-	-	-	-	-	-	-	-	-	-	<1	-		
	>C16-C21 Aliphatics	mg/kg	1			-	-	-	-	3	2	-	-	-	-	-	-	-	-	-	-	<1	-		
	>C16-C35 Aliphatics	mg/kg	1	1,400,000 ^{#3}	410,000 ^{#3}	-	-	-	-	12 ^{#7}	5 ^{#7}	-	-	-	-	-	-	-	-	-	-	6 ^{#7}	-		
	>C21-C35 Aliphatics	mg/kg	1			-	-	-	-	9	3	-	-	-	-	-	-	-	-	-	-	5	-		
	>EC6-EC7 Aromatics	mg/kg	0.01			-	-	-	-	<0.5	<0.05	-	-	-	-	-	-	-	-	-	-	<0.01	-		
	>EC7-EC8 Aromatics	mg/kg	0.01	28,000 ^{#3}	70,000 ^{#3}	-	-	-	-	<0.5	<0.05	-	-	-	-	-	-	-	-	-	-	<0.01	-		
	>EC8-EC10 Aromatics	mg/kg	0.01	1,800 ^{#3}	4,800 ^{#3}	-	-	-	-	<0.5	<0.05	-	-	-	-	-	-	-	-	-	-	0.011	-		
	>EC10-EC12 Aromatics	mg/kg	1	9,100 ^{#3}	7,900 ^{#3}	-	-	-	-	5	<1	-	-	-	-	-	-	-	-	-	-	<1	-		
	>EC12-EC16 Aromatics	mg/kg	1	34,000 ^{#3}	9,800 ^{#3}	-	-	-	-	15	<1	-	-	-	-	-	-	-	-	-	-	<1	-		
>EC16-EC21 Aromatics	mg/kg	1	28,000 ^{#3}	7,500 ^{#3}	-	-	-	-	19	<1	-	-	-	-	-	-	-	-	-	-	<1	-			
>EC21-EC35 Aromatics	mg/kg	1	28,000 ^{#3}	7,800 ^{#3}	-	-	-	-	20	<1	-	-	-	-	-	-	-	-	-	-	<1	-			
BTEX	Benzene	mg/kg	0	12 ^{#3}	64 ^{#3}	-	-	-	-	0.067	<0.005	-	-	-	-	-	-	-	-	-	<0.001	-			
	Toluene	mg/kg	0	28,000 ^{#3}	70,000 ^{#3}	-	-	-	-	0.34	0.006	-	-	-	-	-	-	-	-	-	<0.001	-			
	Ethylbenzene	mg/kg	0	2,700 ^{#3}	10,000 ^{#3}	-	-	-	-	<0.05	<0.005	-	-	-	-	-	-	-	-	-	<0.001	-			
	Xylene Total	mg/kg	0	2,700 ^{#3}	9,400 ^{#3}	-	-	-	-	0.12 ^{#5}	<0.005 ^{#6}	-	-	-	-	-	-	-	-	-	-	<0.001	-		
	Xylene (o)	mg/kg	0	3,100 ^{#3}	9,900 ^{#3}	-	-	-	-	0.12	<0.005	-	-	-	-	-	-	-	-	-	-	<0.001	-		
Total BTEX	mg/kg	0			-	-	-	-	0.577 ^{#5}	0.021 ^{#5}	-	-	-	-	-	-	-	-	-	-	<0.004 ^{#6}	-			
Oxygenates	MTBE	mg/kg	0	3,340 ^{#4}		-	-	-	-	<0.05	<0.005	-	-	-	-	-	-	-	-	-	<0.001	-			
PAH	Naphthalene	mg/kg	0.01	90 ^{#3}	670 ^{#3}	-	-	0.9	-	3.5	0.03	2.2	2.2	0.08	-	1.4	1.4	-	-	-	<0.02	<0.1	<0.02		
	Acenaphthylene	mg/kg	0.01	72,000 ^{#3}	28,000 ^{#3}	-	-	2.9	-	0.05	<0.01	0.04	<0.1	0.01	-	0.02	<0.1	-	-	-	<0.02	<0.1	<0.02		
	Acenaphthene	mg/kg	0.01	71,000 ^{#3}	28,000 ^{#3}	-	-	6.8	-	0.06	<0.01	0.04	<0.1	<0.01	-	0.03	<0.1	-	-	-	<0.02	<0.1	<0.02		
	Fluorene	mg/kg	0.01	59,000 ^{#3}	19,000 ^{#3}	-	-	4.8	-	0.28	<0.01	0.19	0.2	0.01	-	0.13	0.1	-	-	-	<0.02	<0.1	<0.02		
	Phenanthrene	mg/kg	0.01	22,000 ^{#3}	6,200 ^{#3}	-	-	38	-	1.9	0.02	1.4	1.4	0.04	-	0.72	0.7	-	-	-	<0.02	<0.1	<0.02		
	Anthracene	mg/kg	0.01	520,000 ^{#3}	150,000 ^{#3}	-	-	17	-	0.28	<0.01	0.2	0.2	0.01	-	0.11	0.1	-	-	-	<0.02	<0.1	<0.02		
	Fluoranthene	mg/kg	0.01	23,000 ^{#3}	6,300 ^{#3}	-	-	100	-	0.35	0.01	0.33	0.3	0.02	-	0.13	0.1	-	-	-	<0.02	<0.1	<0.02		
	Pyrene	mg/kg	0.01	54,000 ^{#3}	15,000 ^{#3}	-	-	85	-	0.33	0.01	0.3	0.3	0.02	-	0.12	0.1	-	-	-	<0.02	<0.1	<0.02		
	Benz(a)anthracene	mg/kg	0.01	170 ^{#3}	54 ^{#3}	-	-	37	-	0.32	<0.01	0.27	0.3	0.01	-	0.14	0.1	-	-	-	<0.02	<0.1	<0.02		
	Chrysene	mg/kg	0.01	350 ^{#3}	110 ^{#3}	-	-	37	-	0.33	0.01	0.22	0.2	0.02	-	0.11	0.1	-	-	-	<0.02	<0.1	<0.02		
	Benzo(a)pyrene	mg/kg	0.01	35 ^{#3}	12 ^{#3}	-	-	38	-	0.2	<0.01	0.17	0.2	0.01	-	0.08	<0.1	-	-	-	<0.02	<0.1	<0.02		
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.01	510 ^{#3}	170 ^{#3}	-	-	19	-	0.06	<0.01	0.05	<0.1	0.01	-	0.02	<0.1	-	-	-	<0.02	<0.1	<0.02		
	Dibenz(a,h)anthracene	mg/kg	0.01	3.5 ^{#3}	1.3 ^{#3}	-	-	4.8	-	0.03	<0.01	0.03	<0.1	<0.01	-	0.01	<0.1	-	-	-	<0.02	<0.1	<0.02		
	Benzo(g,h,i)perylene	mg/kg	0.01	3,900 ^{#3}	1,500 ^{#3}	-	-	26	-	0.27	0.01	0.2	0.2	0.01	-	0.09	<0.1	-	-	-	<0.02	<0.1	<0.02		
	Benzo(b)fluoranthene	mg/kg	0.01	45 ^{#3}	15 ^{#3}	-	-	-	-	0.29	0.01	0.25	-	0.02	-	0.11	-	-	-	-	<0.02	-	<0.02		
	Benzo(k)fluoranthene	mg/kg	0.01	1,200 ^{#3}	420 ^{#3}	-	-	-	-	0.05	<0.01	0.05	-	0.01	-	0.02	-	-	-	-	<0.02	-	<0.02		
	Benzo(b)&(k)fluoranthene	mg/kg	0.01			-	-	65	-	0.34 ^{#7}	0.02 ^{#7}	0.3 ^{#7}	0.3	0.03 ^{#7}	-	0.13 ^{#7}	0.1	-	-	-	<0.04 ^{#8}	<0.1	<0.04 ^{#8}		
	Coronene	mg/kg	0.01			-	-	5.6	-	-	-	-	<0.1	-	-	-	<0.1	-	-	-	-	-	-		
	PAH (Sum)	mg/kg	1.6			-	-	490	-	-	-	-	5.9	-	-	-	3	-	-	-	-	-	-		
	PAH 16 Total	mg/kg	0.01			-	-	-	-	8.3	0.1	5.9	-	0.28	-	3.2	-	-	-	-	-	<0.02	-	<0.02	
Phenolics	Phenols	mg/kg	0.01			-	-	-	-	0.43	<0.01	0.08	-	-	-	-	-	-	-	-	<0.02	-	<0.02		
	Phenols (Mono)	mg/kg	1			-	-	-	-	<1	<1	<1	-	<1	-	<1	-	-	-	-	<1	-	<1		
Herbicides	Atrazine	mg/kg	0.01	9,400 ^{#3}	2,400 ^{#3}	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	Simazine	mg/kg	0.01	19 ^{#1}		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	Prometryn	mg/kg	0.01	33,000 ^{#1}		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	Propazine	mg/kg	0.01	16,000 ^{#1}		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	Terbutryn	mg/kg	0.01	820 ^{#1}		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Organochlorine Pesticides	Aldrin	mg/kg	0.01	170 ^{#3}	30 ^{#3}	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	Dieldrin	mg/kg	0.01	160 ^{#3}	30 ^{#3}	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	Endrin	mg/kg	0.01	250 ^{#1}		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	Heptachlor	mg/kg	0.01	0.63 ^{#1}		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	Heptachlor epoxide	mg/kg	0.01	0.33 ^{#1}		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	DDT	mg/kg	0.01	8.5 ^{#1}		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	DDD	mg/kg	0.01																						

Table 1
Stage 2 Screening Assessment
Soil
Sheriffhall Roundabout

Location ID	BH09	BH09	BH09	BH09	BH101	BH101	BH101	BH101	BH101	BH102	BH102	BH102	BH102	BH102	BH102	BH102	BH102	BH102	BH102	BH103	BH103	BH103	BH103	BH105	BH105	BH105
Sample Depth (m)	0.3	1.0	1.0	2.0	2.2	4.0	5.0	5.0	1.5-1.55	2.0	4.0-4.1	4.0-4.1	5.0	6.9	2.0	5.5	1.5	1.5	3.0							
Sample Type	ES	ES	WAC	ES	ES	ES	ES	WAC	ES	ES	WAC	ES	WAC	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	WAC	ES	
Sample Date	18/05/18	18/05/18	18/05/18	18/05/18	13/06/18	13/06/18	14/03/18	14/03/18	15/03/18	15/03/18	15/03/18	15/03/18	15/03/18	15/03/18	15/03/18	21/03/18	22/03/18	27/03/18	27/03/18	27/03/18	27/03/18	27/03/18	27/03/18	27/03/18	27/03/18	
Soil Type	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	
Lab Report No.	749242	749242	749305	749242	725622	725622	725622	725622	726157	739994	726127	726157	739994	739994	726968	726968	726968	726968	726968	726968	726968	726968	726968	726968	726968	

Chemical Group	Chemical Name	Output Unit	EQL	GAC Human Health Commercial (0.58-1.45% TOC)	GAC Human Health Public Open Space (Park) (0.58-1.45% TOC)	BH09	BH09	BH09	BH09	BH101	BH101	BH101	BH101	BH102	BH102	BH102	BH102	BH102	BH102	BH102	BH103	BH103	BH103	BH103	BH105	BH105	BH105
	Selenium	mg/kg	3	12,000 ^{#3}	1,800 ^{#3}	<3	<3	-	<3	<3	<3	<3	-	<3	-	<3	-	-	-	-	<3	<3	<3	-	<3	-	<3
	Vanadium	mg/kg	1	9,000 ^{#3}	5,000 ^{#3}	31	44	-	29	18	26	18	-	16	-	40	-	-	-	-	13	37	26	-	26	-	26
	Zinc	mg/kg	1	730,000 ^{#3}	170,000 ^{#3}	100	130	-	65	27	51	29	-	23	-	43	-	-	-	-	22	35	51	-	50	-	50
	Chromium (hexavalent)	mg/kg	1	33 ^{#3}	220 ^{#3}	-	-	-	-	<1	<1	<1	-	<1	-	<1	-	-	-	-	<1	<1	<1	-	<1	-	<1
Organics	Fraction Organic Carbon	%	0.1			-	-	-	-	13	2.7	13	-	8.7	-	-	-	-	-	-	9.4	22	-	-	-	-	0.6
Inorganics	Ammoniacal Nitrogen	mg/kg	0.5			-	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	<0.5	<0.5	-	-	-	-	-
	Sulphur	%	0.01			0.03	0.05	-	0.02	0.18	0.02	0.18	-	0.08	-	0.11	-	-	-	-	0.08	0.2	0.04	-	0.12	-	0.12
	Cyanide (Free)	mg/kg	1	150 ^{#1}		<1	<1	-	<1	<1	<1	<1	-	<1	-	<1	-	-	-	-	-	-	<1	-	<1	-	<1
	Cyanide Total	mg/kg	1	1200 ^{#1}		<1	<1	-	<1	<1	<1	<1	-	<1	-	<1	-	-	-	-	-	-	<1	-	<1	-	<1
	Cyanides-complex	mg/kg	1			<1	<1	-	<1	<1	<1	<1	-	<1	-	<1	-	-	-	-	-	-	<1	-	<1	-	<1
	Thiocyanate	mg/kg	10	230 ^{#1}		<10	<10	-	<10	<10	<10	<10	-	<10	-	<10	-	-	-	-	-	-	<10	-	<10	-	<10
	Easily Liberated Sulphide (Moisture Corrected)	mg/kg	10			-	-	-	-	<10	<10	<10	-	<10	-	<10	-	-	-	-	-	-	<10	-	<10	-	<10
PCBs	Tetrachlorobiphenyl, 3,3,4,4- (PCB 77)	mg/kg	0	0.16 ^{#1}		-	-	-	-	<0.00005	-	-	-	-	-	-	-	-	-	-	<0.00005	<0.00005	-	-	-	-	-
	Tetrachlorobiphenyl, 3,4,4,5- (PCB 81)	mg/kg	0	0.048 ^{#1}		-	-	-	-	<0.00005	-	-	-	-	-	-	-	-	-	-	<0.00005	<0.00005	-	-	-	-	-
	Pentachlorobiphenyl, 2,3,3,4,4- (PCB 105)	mg/kg	0	0.49 ^{#1}		-	-	-	-	<0.00005	-	-	-	-	-	-	-	-	-	-	<0.00005	<0.00005	-	-	-	-	-
	Pentachlorobiphenyl, 2,3,4,4,5- (PCB 114)	mg/kg	0	0.5 ^{#1}		-	-	-	-	<0.00005	-	-	-	-	-	-	-	-	-	-	<0.00005	<0.00005	-	-	-	-	-
	PCB 118	mg/kg	0	0.49 ^{#1}		-	-	-	-	<0.00005	-	-	-	-	-	-	-	-	-	-	0.00007	<0.00005	-	-	-	-	-
	Pentachlorobiphenyl, 2,3,4,4,5- (PCB 123)	mg/kg	0	0.49 ^{#1}		-	-	-	-	<0.00005	-	-	-	-	-	-	-	-	-	-	<0.00005	<0.00005	-	-	-	-	-
	Pentachlorobiphenyl, 3,3,4,4,5- (PCB 126)	mg/kg	0	0.00015 ^{#1}		-	-	-	-	<0.00005	-	-	-	-	-	-	-	-	-	-	<0.00023	<0.00009	-	-	-	-	-
	Hexachlorobiphenyl, 2,3,3,4,4,5- (PCB 156)	mg/kg	0	0.5 ^{#1}		-	-	-	-	<0.00005	-	-	-	-	-	-	-	-	-	-	<0.00005	<0.00005	-	-	-	-	-
	Hexachlorobiphenyl, 2,3,3,4,4,5- (PCB 157)	mg/kg	0	0.5 ^{#1}		-	-	-	-	<0.00005	-	-	-	-	-	-	-	-	-	-	<0.00005	<0.00005	-	-	-	-	-
	Hexachlorobiphenyl, 2,3,4,4,5,5- (PCB 167)	mg/kg	0	0.51 ^{#1}		-	-	-	-	<0.00005	-	-	-	-	-	-	-	-	-	-	<0.00005	<0.00005	-	-	-	-	-
	Hexachlorobiphenyl, 3,3,4,4,5,5- (PCB 169)	mg/kg	0	0.00051 ^{#1}		-	-	-	-	<0.00005	-	-	-	-	-	-	-	-	-	-	<0.00005	<0.00005	-	-	-	-	-
	Heptachlorobiphenyl, 2,3,3,4,4,5,5- (PCB 189)	mg/kg	0	0.52 ^{#1}		-	-	-	-	<0.00005	-	-	-	-	-	-	-	-	-	-	<0.00005	<0.00005	-	-	-	-	-

Comments
 #1 USEPA RSL (Nov 2018)
 #2 Defra C4SL 12/2014
 #3 AECOM (modified LQM/CIEH S4ULs)
 #4 AECOM (modified EIC)
 #5 ESDAT Combined with Non-Detect Multiplier of 1. Some Analytes are missing from this Combined Compound.
 #6 ESDAT Combined. Some Analytes are missing from this Combined Compound.
 #7 ESDAT Combined with Non-Detect Multiplier of 1.
 #8 ESDAT Combined.

Abbreviations
 ND = Not Detected
 ES = Environmental Sample
 WAC = Waste Acceptance Criteria
 MG = Made Ground
 NAT = Natural
 GAC: Generic Assessment Criteria
 (blank): No assessment criteria available
 -: Not analysed

Key
 XXX Exceedance of GAC HH COM/19 SA9 0.58-1.45% TOC
 XXX Exceedance of GAC HH POS PRK SA9 0.58-1.45% TOC

Table 1
Stage 2 Screening Assessment
Soil
Sheriffhall Roundabout

Location ID	BH107	BH107	BH107	BH107	BH12	BH12	BH12	BH12	BH13	BH13	BH14
Sample Depth (m)	1.2	1.2	3.0	5.0	-	0.3	1.0	2.0	1.0-1.1	1.0-1.1	0.3
Sample Type	ES	WAC	ES	ES	ACM	ES	ES	ES	ES	WAC	ES
Sample Date	03/04/18	03/04/18	03/04/18	03/04/18	08/08/18	08/08/18	08/08/18	08/08/18	19/04/18	19/03/18	16/05/18
Soil Type	MG	MG	MG	NAT	MG	MG	NAT	NAT	MG	MG	MG
Lab Report No.	727995	728019	727995	727995	760206	760206	760206	760206	733561	733555	739434

Chemical Group	Chemical Name	Output Unit	EQL	GAC Human Health Commercial (0.58-1.45% TOC)	GAC Human Health Public Open Space (Park) (0.58-1.45% TOC)											
	Selenium	mg/kg	3	12,000 ^{#3}	1,800 ^{#3}	<3	-	<3	<3	-	<3	<3	<3	<3	-	<3
	Vanadium	mg/kg	1	9,000 ^{#3}	5,000 ^{#3}	22	-	23	16	-	28	22	16	47	-	33
	Zinc	mg/kg	1	730,000 ^{#3}	170,000 ^{#3}	42	-	47	37	-	130	52	28	95	-	160
	Chromium (hexavalent)	mg/kg	1	33 ^{#3}	220 ^{#3}	<1	-	<1	<1	-	<1	<1	<1	<1	-	<1
Organics	Fraction Organic Carbon	%	0.1			0.2	-	0.2	0.7	-	2.6	0.5	0.6	2.2	-	6.5
Inorganics	Ammoniacal Nitrogen	mg/kg	0.5			-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	-	<0.5
	Sulphur	%	0.01			0.01	-	0.04	<0.01	-	0.03	<0.01	<0.01	0.04	-	0.03
	Cyanide (Free)	mg/kg	1	150 ^{#1}		<1	-	<1	<1	-	<1	<1	<1	<1	-	<1
	Cyanide Total	mg/kg	1	1200 ^{#1}		<1	-	<1	<1	-	<1	<1	<1	<1	-	<1
	cyanides-complex	mg/kg	1			<1	-	<1	<1	-	<1	<1	<1	<1	-	-
	Thiocyanate	mg/kg	10	230 ^{#1}		<10	-	<10	<10	-	<10	<10	<10	<10	-	-
	Easily Liberated Sulphide (Moisture Corrected)	mg/kg	10			<10	-	<10	<10	-	<10	<10	<10	<10	-	-
PCBs	Tetrachlorobiphenyl, 3,3,4,4- (PCB 77)	mg/kg	0	0.16 ^{#1}		<0.00005	-	-	-	-	<0.00005	-	-	-	-	<0.00005
	Tetrachlorobiphenyl, 3,4,4,5- (PCB 81)	mg/kg	0	0.048 ^{#1}		<0.00005	-	-	-	-	<0.00005	-	-	-	-	<0.00005
	Pentachlorobiphenyl, 2,3,3,4,4- (PCB 105)	mg/kg	0	0.49 ^{#1}		<0.00005	-	-	-	-	<0.00005	-	-	-	-	<0.00005
	Pentachlorobiphenyl, 2,3,4,4,5- (PCB 114)	mg/kg	0	0.5 ^{#1}		<0.00005	-	-	-	-	<0.00005	-	-	-	-	<0.00005
	PCB 118	mg/kg	0	0.49 ^{#1}		<0.00005	-	-	-	-	<0.00005	-	-	-	-	<0.00005
	Pentachlorobiphenyl, 2,3,4,4,5- (PCB 123)	mg/kg	0	0.49 ^{#1}		<0.00005	-	-	-	-	<0.00005	-	-	-	-	<0.00005
	Pentachlorobiphenyl, 3,3,4,4,5- (PCB 126)	mg/kg	0	0.00015 ^{#1}		<0.00005	-	-	-	-	<0.00005	-	-	-	-	<0.00005
	Hexachlorobiphenyl, 2,3,3,4,4,5- (PCB 156)	mg/kg	0	0.5 ^{#1}		<0.00005	-	-	-	-	<0.00005	-	-	-	-	<0.00005
	Hexachlorobiphenyl, 2,3,3,4,4,5- (PCB 157)	mg/kg	0	0.5 ^{#1}		<0.00005	-	-	-	-	<0.00005	-	-	-	-	<0.00005
	Hexachlorobiphenyl, 2,3,4,4,5,5- (PCB 167)	mg/kg	0	0.51 ^{#1}		<0.00005	-	-	-	-	<0.00005	-	-	-	-	<0.00005
	Hexachlorobiphenyl, 3,3,4,4,5,5- (PCB 169)	mg/kg	0	0.00051 ^{#1}		<0.00005	-	-	-	-	<0.00005	-	-	-	-	<0.00005
	Heptachlorobiphenyl, 2,3,3,4,4,5,5- (PCB 189)	mg/kg	0	0.52 ^{#1}		<0.00005	-	-	-	-	<0.00005	-	-	-	-	<0.00005

Comments

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- #8 ESDAT Combined.

Abbreviations

- ND = Not Detected
- ES = Environmental Sample
- WAC = Waste Acceptance
- MG = Made Ground
- NAT = Natural
- GAC: Generic Assessment
- (blank): No assessment cr
- : Not analysed

Table 2
Stage 2 Screening Assessment
Soil
Sheriffhall Roundabout

Location ID	BH15	BH15	BH18	BH21	BH22	BH23	BH23	BH23	BH26-M	BH26-M	BH27-M	BH34	BH39	BH41A-M	BH50	BH52	BH60-M	BH60-M	BH60-M
Sample Depth (m)	0.5	1.5	1.0	0.3-0.5	0.3	0.5	1.0	2.0	1.0	1.5	0.5	1.5	1.0	0.5	0.5	1.0	0.3	0.5	0.5
Sample Type	ES	ES	ES	ES	ES	ES	WAC	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	WAC
Sample Date	29/03/18	29/03/18	05/04/18	26/03/18	16/03/18	14/03/18	14/03/18	14/03/18	13/03/18	13/03/18	12/03/18	24/04/18	09/05/18	31/05/18	13/02/19	16/05/18	10/08/18	10/08/18	10/08/18
Soil Type	MG	NAT	MG	MG	NAT	MG	MG	MG	MG	MG	NAT	MG	MG	MG	MG	MG	MG/NAT	NAT	NAT
Lab Report No.	727306	727306	729594	752876	725423	725423	725423	725423	723492	756042	756042	732770	737158	743184	719464	739434	761279	761279	761314

Chemical Group	Chemical Name	Output Unit	EQL	GAC Human Health Commercial (0.58-1.45% TOC)	GAC Human Health Public Open Space (Park) (0.58-1.45% TOC)																		
	Mercury	mg/kg	1	1,100 ^{#3}	240 ^{#3}	<1	<1	<1	-	<1	<1	-	59	<1	-	-	<1	<1	<1	<1	<1	<1	-
	Nickel	mg/kg	1	980 ^{#3}	800 ^{#3}	25	13	15	-	15	30	-	26	17	-	-	28	24	35	12	33	21	17
	Selenium	mg/kg	3	12,000 ^{#3}	1,800 ^{#3}	<3	<3	<3	-	<3	<3	-	<3	<3	-	-	<3	<3	<3	<3	<3	<3	<3
	Vanadium	mg/kg	1	9,000 ^{#3}	5,000 ^{#3}	32	21	23	-	24	39	-	22	11	-	-	29	29	36	-	29	29	-
	Zinc	mg/kg	1	730,000 ^{#3}	170,000 ^{#3}	200	66	100	-	42	170	-	78	32	-	-	62	54	280	70	79	67	57
	Chromium (hexavalent)	mg/kg	1	33 ^{#3}	220 ^{#3}	<1	<1	<1	-	<1	<1	-	<1	<1	-	-	<1	<1	<1	<1	<1	<1	<1
Organics	Fraction Organic Carbon	%	0.1			5	1.2	3.3	-	0.6	3.6	-	1.8	2.1	-	-	9.5	-	5.3	-	2.8	1	0.6
Inorganics	Ammoniacal Nitrogen	mg/kg	0.5			<0.5	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	<0.5	-	<0.5	<0.5	<0.5
	Sulphur	%	0.01			0.07	0.04	0.01	-	<0.01	0.04	-	0.05	0.09	-	-	0.1	0.02	0.05	-	0.03	<0.01	<0.01
	Cyanide (Free)	mg/kg	1	150 ^{#1}		<1	<1	<1	-	<1	<1	-	<1	<1	-	-	<1	<1	<1	<1	<1	<1	<1
	Cyanide Total	mg/kg	1	1200 ^{#1}		<1	<1	<1	-	<1	<1	-	<1	<1	-	-	<1	<1	<1	<1	<1	<1	<1
	cyanides-complex	mg/kg	1			<1	<1	<1	-	<1	<1	-	<1	<1	-	-	<1	<1	<1	<1	<1	<1	<1
	Thiocyanate	mg/kg	10	230 ^{#1}		<10	<10	<10	-	<10	<10	-	<10	<10	-	-	<10	<10	<10	<10	<10	<10	<10
	Easily Liberated Sulphide (Moisture Corrected)	mg/kg	10			<10	<10	<10	-	<10	<10	-	<10	<10	-	-	<10	<10	<10	<10	<10	<10	<10
PCBs	Tetrachlorobiphenyl, 3,3,4,4- (PCB 77)	mg/kg	0	0.16 ^{#1}		<0.00005	-	<0.00005	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00005	-
	Tetrachlorobiphenyl, 3,4,4,5- (PCB 81)	mg/kg	0	0.048 ^{#1}		<0.00005	-	<0.00005	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00005	-
	Pentachlorobiphenyl, 2,3,3,4,4- (PCB 105)	mg/kg	0	0.49 ^{#1}		<0.00005	-	<0.00005	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00005	-
	Pentachlorobiphenyl, 2,3,4,4,5- (PCB 114)	mg/kg	0	0.5 ^{#1}		<0.00005	-	<0.00005	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00005	-
	PCB 118	mg/kg	0	0.49 ^{#1}		0.00005	-	<0.00005	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00005	-
	Pentachlorobiphenyl, 2,3,4,4,5- (PCB 123)	mg/kg	0	0.49 ^{#1}		<0.00005	-	<0.00005	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00005	-
	Pentachlorobiphenyl, 3,3,4,4,5- (PCB 126)	mg/kg	0	0.00015 ^{#1}		<0.00005	-	<0.00005	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00005	-
	Hexachlorobiphenyl, 2,3,3,4,4,5- (PCB 156)	mg/kg	0	0.5 ^{#1}		<0.00005	-	<0.00005	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00005	-
	Hexachlorobiphenyl, 2,3,3,4,4,5- (PCB 157)	mg/kg	0	0.5 ^{#1}		<0.00005	-	<0.00005	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00005	-
	Hexachlorobiphenyl, 2,3,4,4,5,5- (PCB 167)	mg/kg	0	0.51 ^{#1}		<0.00005	-	<0.00005	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00005	-
	Hexachlorobiphenyl, 3,3,4,4,5,5- (PCB 169)	mg/kg	0	0.00051 ^{#1}		<0.00005	-	<0.00005	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00005	-
	Heptachlorobiphenyl, 2,3,3,4,4,5,5- (PCB 189)	mg/kg	0	0.52 ^{#1}		<0.00005	-	<0.00005	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00005	-

Comments

- #1 USEPA RSL (Nov 2018)
- #2 Defra C4SL 12/2014
- #3 AECOM (modified LQM/CIEH S4ULs)
- #4 AECOM (modified EIC)
- #5 ESDAT Combined with Non-Detect Multiplier of 1. Some Analytes are missing from this Combined Compound.
- #6 ESDAT Combined. Some Analytes are missing from this Combined Compound.
- #7 ESDAT Combined with Non-Detect Multiplier of 1.
- #8 ESDAT Combined.

Abbreviations

- ND = Not Detected
- ES = Environmental Sample
- WAC = Waste Acceptance Criteria
- MG = Made Ground
- NAT = Natural
- GAC: Generic Assessment Criteria
- (blank): No assessment criteria available
- : Not analysed

Key

- XXX Exceedance of GAC HH COM/19 SA9 0.58-1.45% TOC
- XXX Exceedance of GAC HH POS PRK SA9 0.58-1.45% TOC

Table 2
 Stage 2 Screening Assessment
 Soil
 Sheriffhall Roundabout

Location ID	BH60-M	BH62-M	BH70	BH70	BH70A	BH70A	BH70A	BH72	BH78	BH82	BH84
Sample Depth (m)	1.5	1.0	0.5	1.0	1.0	2.0	5.5	0.05	2.0	1.0	0.5
Sample Type	ES	ES	ES	WAC	ES	ES	ES	ES	ES	ES	ES
Sample Date	10/08/18	06/03/19	04/04/18	04/04/18	24/05/18	24/05/18	24/05/18	01/05/18	02/05/18	22/05/18	25/05/18
Soil Type	NAT	MG	MG	MG	MG	MG	NAT	MG	MG	MG	MG
Lab Report No.	761279	723492	729594	729701	741967	741967	741967	737931	737173	741995	742753

Chemical Group	Chemical Name	Output Unit	EQL	GAC Human Health Commercial (0.58-1.45% TOC)	GAC Human Health Public Open Space (Park) (0.58-1.45% TOC)	BH60-M	BH62-M	BH70	BH70	BH70A	BH70A	BH70A	BH72	BH78	BH82	BH84
	Loss on ignition	%	0.1			-	-	-	-	-	-	-	-	-	-	-
	Trietazine	mg/kg	0.01			-	-	<0.01	-	-	-	-	-	-	-	-
	HCH - Total (5) Isomers	mg/kg	0.01			-	-	<0.01	-	-	-	-	-	-	-	-
	Boron (Water Soluble)	mg/kg	1	240,000 ^{#3}	46,000 ^{#3}	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1
	Asbestos Identification	None				-	ND	ND	-	-	-	-	-	-	-	ND
Field	pH	pH Units	0.01			6.8	7.2	6.7	-	7.2	7.9	8.1	-	8.6	8.1	7.9
TPH	>C5-C6 Aliphatics	mg/kg	0.01	2,000 ^{#3}	55,000 ^{#3}	-	-	<0.01	-	-	<0.01	-	-	-	-	-
	>C6-C8 Aliphatics	mg/kg	0.01	4,300 ^{#3}	81,000 ^{#3}	-	-	<0.01	-	-	<0.01	-	-	-	-	-
	>C8-C10 Aliphatics	mg/kg	0.01	8,700 ^{#3}	166,000 ^{#3}	-	-	<0.01	-	-	<0.01	-	-	-	-	-
	>C10-C12 Aliphatics	mg/kg	1	5,000 ^{#3}	16,000 ^{#3}	-	-	<1	-	-	<1	-	-	-	-	-
	>C12-C16 Aliphatics	mg/kg	1	37,000 ^{#3}	23,000 ^{#3}	-	-	<1	-	-	6	-	-	-	-	-
	>C16-C21 Aliphatics	mg/kg	1			-	-	<1	-	-	15	-	-	-	-	-
	>C16-C35 Aliphatics	mg/kg	1	1,400,000 ^{#3}	410,000 ^{#3}	-	-	<2 ^{#3}	-	-	39 ^{#7}	-	-	-	-	-
	>C21-C35 Aliphatics	mg/kg	1			-	-	<1	-	-	24	-	-	-	-	-
	>EC6-EC7 Aromatics	mg/kg	0.01			-	-	<0.01	-	-	<0.01	-	-	-	-	-
	>EC7-EC8 Aromatics	mg/kg	0.01	28,000 ^{#3}	70,000 ^{#3}	-	-	<0.01	-	-	<0.01	-	-	-	-	-
	>EC8-EC10 Aromatics	mg/kg	0.01	4,800 ^{#3}	4,800 ^{#3}	-	-	<0.01	-	-	<0.01	-	-	-	-	-
	>EC10-EC12 Aromatics	mg/kg	1	9,100 ^{#3}	7,900 ^{#3}	-	-	<1	-	-	6	-	-	-	-	-
	>EC12-EC16 Aromatics	mg/kg	1	34,000 ^{#3}	9,800 ^{#3}	-	-	<1	-	-	43	-	-	-	-	-
	>EC16-EC21 Aromatics	mg/kg	1	28,000 ^{#3}	7,500 ^{#3}	-	-	<1	-	-	130	-	-	-	-	-
>EC21-EC35 Aromatics	mg/kg	1	28,000 ^{#3}	7,800 ^{#3}	-	-	<1	-	-	240	-	-	-	-	-	
BTEX	Benzene	mg/kg	0	12 ^{#3}	64 ^{#3}	-	-	<0.005	-	-	<0.002	-	-	-	-	-
	Toluene	mg/kg	0	28,000 ^{#3}	70,000 ^{#3}	-	-	<0.005	-	-	<0.002	-	-	-	-	-
	Ethylbenzene	mg/kg	0	2,700 ^{#3}	10,000 ^{#3}	-	-	<0.005	-	-	<0.002	-	-	-	-	-
	Xylene Total	mg/kg	0	2,700 ^{#3}	9,400 ^{#3}	-	-	<0.005 ^{#6}	-	-	<0.002 ^{#6}	-	-	-	-	-
	Xylene (o)	mg/kg	0	3,100 ^{#3}	9,900 ^{#3}	-	-	<0.005	-	-	<0.002	-	-	-	-	-
Oxygenates	MTBE	mg/kg	0	3,340 ^{#4}		-	-	<0.005	-	-	<0.002	-	-	-	-	-
PAH	Naphthalene	mg/kg	0.01	90 ^{#3}	670 ^{#3}	<0.01	<0.01	0.01	<0.1	0.11	6.8	0.32	12	<0.01	0.03	0.02
	Acenaphthylene	mg/kg	0.01	72,000 ^{#3}	28,000 ^{#3}	<0.01	<0.01	0.01	<0.1	0.01	0.32	0.02	0.24	<0.01	0.01	<0.01
	Acenaphthene	mg/kg	0.01	71,000 ^{#3}	28,000 ^{#3}	<0.01	<0.01	0.01	<0.1	0.01	6.3	0.3	8.7	<0.01	0.06	0.02
	Fluorene	mg/kg	0.01	59,000 ^{#3}	19,000 ^{#3}	<0.01	<0.01	0.01	<0.1	0.01	7.6	0.35	6.7	<0.01	0.07	0.02
	Phenanthrene	mg/kg	0.01	22,000 ^{#3}	6,200 ^{#3}	0.02	0.01	0.12	<0.1	0.14	28	1.1	36	<0.01	0.4	0.08
	Anthracene	mg/kg	0.01	520,000 ^{#3}	150,000 ^{#3}	<0.01	<0.01	0.03	<0.1	0.03	8.6	0.41	8.6	<0.01	0.15	0.02
	Fluoranthene	mg/kg	0.01	23,000 ^{#3}	6,300 ^{#3}	0.04	0.01	0.21	0.2	0.27	23	0.9	28	<0.01	0.78	0.07
	Pyrene	mg/kg	0.01	54,000 ^{#3}	15,000 ^{#3}	0.04	0.01	0.18	0.1	0.23	18	0.67	20	<0.01	0.67	0.06
	Benz(a)anthracene	mg/kg	0.01	170 ^{#3}	54 ^{#3}	0.02	<0.01	0.09	<0.1	0.1	7.6	0.25	9	<0.01	0.38	0.02
	Chrysene	mg/kg	0.01	350 ^{#3}	110 ^{#3}	0.03	<0.01	0.09	<0.1	0.1	6.2	0.24	9.4	<0.01	0.35	0.04
	Benzo(a)pyrene	mg/kg	0.01	35 ^{#3}	12 ^{#3}	0.03	<0.01	0.09	<0.1	0.1	6.1	0.21	7.6	<0.01	0.36	0.03
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.01	510 ^{#3}	170 ^{#3}	0.02	<0.01	0.05	<0.1	0.04	2.3	0.09	3.4	<0.01	0.19	0.02
	Dibenz(a,h)anthracene	mg/kg	0.01	3.5 ^{#3}	1.3 ^{#3}	<0.01	<0.01	0.01	<0.1	0.02	0.64	0.03	0.85	<0.01	0.05	<0.01
	Benzo(g,h,i)perylene	mg/kg	0.01	3,900 ^{#3}	1,500 ^{#3}	0.02	<0.01	0.06	<0.1	0.06	2.7	0.11	3.7	<0.01	0.23	0.02
	Benzo(b)fluoranthene	mg/kg	0.01	45 ^{#3}	15 ^{#3}	0.04	0.01	0.12	-	0.13	7.4	0.25	10	<0.01	0.43	0.04
	Benzo(k)fluoranthene	mg/kg	0.01	1,200 ^{#3}	420 ^{#3}	0.01	<0.01	0.04	-	0.05	2.5	0.1	3.7	<0.01	0.14	0.01
	Benzo(b)&(k)fluoranthene	mg/kg	0.01			0.05 ^{#7}	0.02 ^{#7}	0.16 ^{#7}	0.2	0.18 ^{#7}	9.9 ^{#7}	0.35 ^{#7}	13.7 ^{#7}	<0.02 ^{#8}	0.57 ^{#7}	0.05 ^{#7}
	Coronene	mg/kg	0.01			-	-	-	<0.1	-	-	-	-	-	-	-
	PAH (Sum)	mg/kg	1.6			-	-	-	<1.6	-	-	-	-	-	-	-
	PAH 16 Total	mg/kg	0.01			0.27	0.04	1.2	-	1.4	130	5.4	170	<0.01	4.3	0.47
Phenolics	Phenols	mg/kg	0.01			0.01	<0.01	0.1	-	0.01	0.46	0.01	0.28	-	0.01	0.01
	Phenols (Mono)	mg/kg	1			<1	<1	<1	-	<1	<1	<1	-	-	<1	<1
Herbicides	Atrazine	mg/kg	0.01	9,400 ^{#3}	2,400 ^{#3}	-	-	<0.01	-	-	-	-	-	-	-	-
	Simazine	mg/kg	0.01	19 ^{#1}		-	-	<0.01	-	-	-	-	-	-	-	-
	Prometryn	mg/kg	0.01	33,000 ^{#1}		-	-	<0.01	-	-	-	-	-	-	-	-
	Propazine	mg/kg	0.01	16,000 ^{#1}		-	-	<0.01	-	-	-	-	-	-	-	-
	Terbutryn	mg/kg	0.01	820 ^{#1}		-	-	<0.01	-	-	-	-	-	-	-	-
Organochlorine Pesticides	Aldrin	mg/kg	0.01	170 ^{#3}	30 ^{#3}	-	-	<0.01	-	-	-	-	-	-	-	-
	Dieldrin	mg/kg	0.01	160 ^{#3}	30 ^{#3}	-	-	<0.01	-	-	-	-	-	-	-	-
	Endrin	mg/kg	0.01	250 ^{#1}		-	-	<0.01	-	-	-	-	-	-	-	-
	Heptachlor	mg/kg	0.01	0.63 ^{#1}		-	-	<0.01	-	-	-	-	-	-	-	-
	Heptachlor epoxide	mg/kg	0.01	0.33 ^{#1}		-	-	<0.01	-	-	-	-	-	-	-	-
	DDT	mg/kg	0.01	8.5 ^{#1}		-	-	<0.02	-	-	-	-	-	-	-	-
	DDD	mg/kg	0.01	9.6 ^{#1}		-	-	<0.01	-	-	-	-	-	-	-	-
	chlordan	mg/kg	0.01			-	-	<0.01	-	-	-	-	-	-	-	-
	DDE	mg/kg	0.01			-	-	<0.01	-	-	-	-	-	-	-	-
	Endosulfan	mg/kg	0.01	7,000 ^{#1}		-	-	<0.01	-	-	-	-	-	-	-	-
Halogenated Benzenes	Hexachlorobenzene	mg/kg	0.01	86 ^{#3}	29 ^{#3}	-	-	<0.01	-	-	-	-	-	-	-	-
Metals	Arsenic	mg/kg	2	640 ^{#3}	170 ^{#3}	3	5	4	-	5	4	4	-	5	3	6
	Boron	mg/kg	1	240,000 ^{#3}	46,000 ^{#3}	-	-	-	-	4	3	2	-	-	2	-
	Cadmium	mg/kg	1	190 ^{#3}	530 ^{#3}	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1
	Chromium (III+VI)	mg/kg	1	Use CrIII or CrVI ^{#3}	Use CrIII or CrVI ^{#3}	12	20	18	-	18	14	19	-	20	13	18
	Copper	mg/kg	1	68,000 ^{#3}	44,000 ^{#3}	16	27	23	-	26	22	21	-	25	13	30
	Iron	mg/kg	1	820,000 ^{#1}		16,000	14,000	15,000	-	19,000	18,000	25,000	-	41,000	19,000	2700
	Lead	mg/kg	3	2,300 ^{#2}		12	28	36	-	41	31	18	-	16	13	24
	Manganese	mg/kg	1	26,000 ^{#1}		320	230	520	-	540	480	590	-	1100	420	820

Table 2
Stage 2 Screening Assessment
Soil
Sheriffhall Roundabout

Location ID	BH60-M	BH62-M	BH70	BH70	BH70A	BH70A	BH70A	BH70A	BH72	BH78	BH82	BH84
Sample Depth (m)	1.5	1.0	0.5	1.0	1.0	2.0	5.5	0.05	2.0	1.0	0.5	
Sample Type	ES	ES	ES	WAC	ES	ES	ES	ES	ES	ES	ES	ES
Sample Date	10/08/18	06/03/19	04/04/18	04/04/18	24/05/18	24/05/18	24/05/18	01/05/18	02/05/18	22/05/18	25/05/18	
Soil Type	NAT	MG	MG	MG	MG	MG	NAT	MG	MG	MG	MG	
Lab Report No.	761279	723492	729594	729701	741967	741967	741967	737931	737173	741995	742753	

Chemical Group	Chemical Name	Output Unit	EQL	GAC Human Health Commercial (0.58-1.45% TOC)	GAC Human Health Public Open Space (Park) (0.58-1.45% TOC)											
	Mercury	mg/kg	1	1,100 ^{#3}	240 ^{#3}	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1
	Nickel	mg/kg	1	980 ^{#3}	800 ^{#3}	12	19	19	-	22	19	22	-	27	18	30
	Selenium	mg/kg	3	12,000 ^{#3}	1,800 ^{#3}	<3	<3	<3	-	<3	<3	<3	-	<3	<3	<3
	Vanadium	mg/kg	1	9,000 ^{#3}	5,000 ^{#3}	17	27	26	-	30	25	28	-	38	24	32
	Zinc	mg/kg	1	730,000 ^{#3}	170,000 ^{#3}	41	42	94	-	100	82	73	-	84	70	93
	Chromium (hexavalent)	mg/kg	1	33 ^{#3}	220 ^{#3}	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1
Organics	Fraction Organic Carbon	%	0.1			0.4	3.3	3.5	-	2.9	2.4	1.1	-	0.2	0.6	2.6
Inorganics	Ammoniacal Nitrogen	mg/kg	0.5			<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	<0.5	<0.5
	Sulphur	%	0.01			<0.01	0.11	0.02	-	0.04	0.03	0.02	-	0.01	0.01	0.02
	Cyanide (Free)	mg/kg	1	150 ^{#1}		<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1
	Cyanide Total	mg/kg	1	1200 ^{#1}		<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1
	cyanides-complex	mg/kg	1			<1	<1	<1	-	-	-	-	-	<1	<1	<1
	Thiocyanate	mg/kg	10	230 ^{#1}		<10	<10	<10	-	<10	<10	<10	-	-	<10	<10
	Easily Liberated Sulphide (Moisture Corrected)	mg/kg	10			<10	<10	<10	-	<10	<10	<10	-	-	<10	<10
PCBs	Tetrachlorobiphenyl, 3,3,4,4- (PCB 77)	mg/kg	0	0.16 ^{#1}		-	-	-	-	-	-	-	-	-	-	-
	Tetrachlorobiphenyl, 3,4,4,5- (PCB 81)	mg/kg	0	0.048 ^{#1}		-	-	-	-	-	-	-	-	-	-	-
	Pentachlorobiphenyl, 2,3,3,4,4- (PCB 105)	mg/kg	0	0.49 ^{#1}		-	-	-	-	-	-	-	-	-	-	-
	Pentachlorobiphenyl, 2,3,4,4,5- (PCB 114)	mg/kg	0	0.5 ^{#1}		-	-	-	-	-	-	-	-	-	-	-
	PCB 118	mg/kg	0	0.49 ^{#1}		-	-	-	-	-	-	-	-	-	-	-
	Pentachlorobiphenyl, 2,3,4,4,5- (PCB 123)	mg/kg	0	0.49 ^{#1}		-	-	-	-	-	-	-	-	-	-	-
	Pentachlorobiphenyl, 3,3,4,4,5- (PCB 126)	mg/kg	0	0.00015 ^{#1}		-	-	-	-	-	-	-	-	-	-	-
	Hexachlorobiphenyl, 2,3,3,4,4,5- (PCB 156)	mg/kg	0	0.5 ^{#1}		-	-	-	-	-	-	-	-	-	-	-
	Hexachlorobiphenyl, 2,3,3,4,4,5- (PCB 157)	mg/kg	0	0.5 ^{#1}		-	-	-	-	-	-	-	-	-	-	-
	Hexachlorobiphenyl, 2,3,4,4,5,5- (PCB 167)	mg/kg	0	0.51 ^{#1}		-	-	-	-	-	-	-	-	-	-	-
	Hexachlorobiphenyl, 3,3,4,4,5,5- (PCB 169)	mg/kg	0	0.00051 ^{#1}		-	-	-	-	-	-	-	-	-	-	-
	Heptachlorobiphenyl, 2,3,3,4,4,5,5- (PCB 189)	mg/kg	0	0.52 ^{#1}		-	-	-	-	-	-	-	-	-	-	-

Comments

- #1 USEPA RSL (Nov 2018)
- #2 Defra C4SL 12/2014
- #3 AECOM (modified LQM/CIEH S4ULs)
- #4 AECOM (modified EIC)
- #5 ESDAT Combined with Non-Detect Multiplier of 1. Some Analytes are missing from this Combined Compound.
- #6 ESDAT Combined. Some Analytes are missing from this Combined Compound.
- #7 ESDAT Combined with Non-Detect Multiplier of 1.
- #8 ESDAT Combined.

Abbreviations

- ND = Not Detected
- ES = Environmental Sample
- WAC = Waste Acceptance C
- MG = Made Ground
- NAT = Natural
- GAC: Generic Assessment C
- (blank): No assessment criteria
- : Not analysed

Table 3
Stage 2 Screening Assessment
Soil
Sheriffhall Roundabout

Location ID	BH85	BH87	BH87	BH88	BH88	BH88	BH88	BH88	BH88	MEIA-A-S8	MEIA-C-S12	MEIA-C-S9	MEIA-C-S9	MEIA-D-Z11	MEIA-E1-S2	MEIA-E1-S2	MEIA-E1-S2	MEIA-E1-S3	MEIA-E2-S14	MEIA-E2-S2
Sample Depth (m)	0.5	2.0	4.0	0.3	1.0	2.0	2.0	4.0	5.0	0.7	0.45	0.6	0.6	1.0	0.6	0.6	0.6	0.8	0.4	0.4
Sample Type	ES	ES	ES	ES	ES	ES	WAC	ES	ES	ES	ES	ES	WAC	ES	ES	WAC	ES	ES	ES	ES
Sample Date	29/05/18	22/05/18	22/05/18	21/05/18	21/05/18	21/05/18	21/05/18	21/05/18	21/05/18	04/05/18	16/05/18	16/05/18	16/05/18	01/05/18	17/05/18	17/05/18	17/05/18	17/05/18	22/05/18	18/05/18
Soil Type	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	NAT	NAT	MG
Lab Report No.	742104	741995	741995	749242	749242	749242	749305	749242	749242	739827	739434	739434	739506	739827	739299	739344	739299	741995	741995	749242

Chemical Group	Chemical Name	Output Unit	EQL	GAC Human Health Commercial (0.58-1.45% TOC)	GAC Human Health Public Open Space (Park) (0.58-1.45% TOC)																				
	Mercury	mg/kg	1	1,100 ^{#3}	240 ^{#3}	<1	<1	<1	-	-	-	-	-	-	<1	<1	<1	-	<1	<1	-	<1	<1	-	
	Nickel	mg/kg	1	980 ^{#3}	800 ^{#3}	26	37	28	18	23	29	-	37	37	48	13	9	-	22	34	-	23	23	28	
	Selenium	mg/kg	3	12,000 ^{#3}	1,800 ^{#3}	<3	<3	<3	<3	<3	<3	-	<3	<3	<3	<3	<3	-	<3	<3	-	<3	<3	<3	
	Vanadium	mg/kg	1	9,000 ^{#3}	5,000 ^{#3}	38	35	36	29	30	31	-	30	32	39	18	15	-	28	42	-	34	39	28	
	Zinc	mg/kg	1	730,000 ^{#3}	170,000 ^{#3}	170	67	52	110	75	68	-	52	59	370	120	49	-	200	390	-	290	220	71	
	Chromium (hexavalent)	mg/kg	1	33 ^{#3}	220 ^{#3}	<1	<1	<1	-	-	-	-	-	-	<1	<1	<1	-	<1	<1	-	<1	<1	-	
Organics	Fraction Organic Carbon	%	0.1			3	0.8	0.5	2.4	1.1	1.2	-	0.6	0.7	-	1.2	0.4	-	-	4	-	2	-	-	
Inorganics	Ammoniacal Nitrogen	mg/kg	0.5			<0.5	<0.5	<0.5	-	-	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	-	-		
	Sulphur	%	0.01			0.03	0.01	<0.01	0.02	0.01	0.01	-	0.01	0.01	0.06	0.02	0.01	-	-	0.05	-	0.02	0.02	<0.01	
	Cyanide (Free)	mg/kg	1	150 ^{#1}		<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	<1	
	Cyanide Total	mg/kg	1	1200 ^{#1}		<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	<1	
	Cyanides-complex	mg/kg	1			<1	-	-	<1	<1	<1	-	<1	<1	<1	<1	<1	-	-	-	-	-	<1		
	Thiocyanate	mg/kg	10	230 ^{#1}		<10	<10	<10	<10	<10	<10	-	<10	<10	-	<10	<10	-	-	<10	-	<10	-	<10	
	Easily Liberated Sulphide (Moisture Corrected)	mg/kg	10			<10	<10	<10	-	-	-	-	-	-	<10	<10	-	-	-	-	-	-	-	-	

Comments
#1 USEPA RSL (Nov 2018)
#2 Defra C4SL 12/2014
#3 AECOM (modified LQM/CIEH S4ULs)
#4 AECOM (modified EIC)
#6 ESDAT Combined. Some Analytes are missing from this Combined Compound.
#7 ESDAT Combined with Non-Detect Multiplier of 1.
#8 ESDAT Combined.

Abbreviations
ND = Not Detected
ES = Environmental Sample
WAC = Waste Acceptance Criteria
MG = Made Ground
NAT = Natural
GAC: Generic Assessment Criteria
(blank): No assessment criteria available
- : Not analysed

Key
XXX Exceedance of GAC HH COM/19 SA9 0.58-1.45% TOC
XXX Exceedance of GAC HH POS PRK SA9 0.58-1.45% TOC

Table 3
Stage 2 Screening Assessment
Soil
Sheriffhall Roundabout

Location ID	MEIA-E2-S2	MEIA-G-S1	MEIA-J1-S10	MEIA-J2-S2
Sample Depth (m)	0.4	0.3	0.8	0.4
Sample Type	WAC	ES	ES	ES
Sample Date	18/05/18	18/05/18	06/06/18	16/05/18
Soil Type	MG	MG	MG	NAT
Lab Report No.	749305	749242	743060	739299

Chemical Group	Chemical Name	Output Unit	EQL	GAC Human Health Commercial (0.58-1.45% TOC)	GAC Human Health Public Open Space (Park) (0.58-1.45% TOC)				
	Loss on ignition	%	0.1			-	-	-	-
	Trietazine	mg/kg	0.01			-	-	-	-
	HCH : Total (5) Isomers	mg/kg	0.01			-	-	-	-
	Boron (Water Soluble)	mg/kg	1	240,000 ^{#3}	46,000 ^{#3}	-	<1	1	<1
	Asbestos Identification	None				-	ND	ND	ND
Field	pH	pH Units	0.01				6.6	6.6	7.1
TPH	>C5-C6 Aliphatics	mg/kg	0.01	2,000 ^{#3}	55,000 ^{#3}	-	-	-	-
	>C6-C8 Aliphatics	mg/kg	0.01	4,300 ^{#3}	81,000 ^{#3}	-	-	-	-
	>C8-C10 Aliphatics	mg/kg	0.01	1,000 ^{#3}	8,700 ^{#3}	-	-	-	-
	>C10-C12 Aliphatics	mg/kg	1	5,000 ^{#3}	16,000 ^{#3}	-	-	-	-
	>C12-C16 Aliphatics	mg/kg	1	37,000 ^{#3}	23,000 ^{#3}	-	-	-	-
	>C16-C21 Aliphatics	mg/kg	1			-	-	-	-
	>C16-C35 Aliphatics	mg/kg	1	1,400,000 ^{#3}	410,000 ^{#3}	-	-	-	-
	>C21-C35 Aliphatics	mg/kg	1			-	-	-	-
	>EC6-EC7 Aromatics	mg/kg	0.01			-	-	-	-
	>EC7-EC8 Aromatics	mg/kg	0.01	28,000 ^{#3}	70,000 ^{#3}	-	-	-	-
	>EC8-EC10 Aromatics	mg/kg	0.01	1,800 ^{#3}	4,800 ^{#3}	-	-	-	-
	>EC10-EC12 Aromatics	mg/kg	1	9,100 ^{#3}	7,900 ^{#3}	-	-	-	-
	>EC12-EC16 Aromatics	mg/kg	1	34,000 ^{#3}	9,800 ^{#3}	-	-	-	-
	>EC16-EC21 Aromatics	mg/kg	1	28,000 ^{#3}	7,500 ^{#3}	-	-	-	-
>EC21-EC35 Aromatics	mg/kg	1	28,000 ^{#3}	7,800 ^{#3}	-	-	-	-	
BTEX	Benzene	mg/kg	0	12 ^{#3}	64 ^{#3}	-	-	-	-
	Toluene	mg/kg	0	28,000 ^{#3}	70,000 ^{#3}	-	-	-	-
	Ethylbenzene	mg/kg	0	2,700 ^{#3}	10,000 ^{#3}	-	-	-	-
	Xylene Total	mg/kg	0	2,700 ^{#3}	9,400 ^{#3}	-	-	-	-
	Xylene (o)	mg/kg	0	3,100 ^{#3}	9,900 ^{#3}	-	-	-	-
	Total BTEX	mg/kg				-	-	-	-
Oxygenates	MTBE	mg/kg	0	3,340 ^{#4}		-	-	-	-
PAH	Naphthalene	mg/kg	0.01	90 ^{#3}	670 ^{#3}	<0.1	-	<0.01	<0.01
	Acenaphthylene	mg/kg	0.01	72,000 ^{#3}	28,000 ^{#3}	<0.1	-	<0.01	<0.01
	Acenaphthene	mg/kg	0.01	71,000 ^{#3}	28,000 ^{#3}	<0.1	-	<0.01	<0.01
	Fluorene	mg/kg	0.01	59,000 ^{#3}	19,000 ^{#3}	<0.1	-	<0.01	<0.01
	Phenanthrene	mg/kg	0.01	22,000 ^{#3}	6,200 ^{#3}	<0.1	-	<0.01	<0.01
	Anthracene	mg/kg	0.01	520,000 ^{#3}	150,000 ^{#3}	<0.1	-	<0.01	<0.01
	Fluoranthene	mg/kg	0.01	23,000 ^{#3}	6,300 ^{#3}	<0.1	-	<0.01	<0.01
	Pyrene	mg/kg	0.01	54,000 ^{#3}	15,000 ^{#3}	<0.1	-	<0.01	<0.01
	Benz(a)anthracene	mg/kg	0.01	170 ^{#3}	54 ^{#3}	<0.1	-	0.01	<0.01
	Chrysene	mg/kg	0.01	350 ^{#3}	110 ^{#3}	<0.1	-	<0.01	<0.01
	Benzo(a)pyrene	mg/kg	0.01	35 ^{#3}	12 ^{#3}	<0.1	-	<0.01	<0.01
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.01	510 ^{#3}	170 ^{#3}	<0.1	-	<0.01	<0.01
	Dibenz(a,h)anthracene	mg/kg	0.01	3 ^{#3}	1.3 ^{#3}	<0.1	-	<0.01	<0.01
	Benzo(g,h,i)perylene	mg/kg	0.01	3,900 ^{#3}	1,500 ^{#3}	<0.1	-	<0.01	<0.01
	Benzo(b)fluoranthene	mg/kg	0.01	45 ^{#3}	15 ^{#3}	-	-	<0.01	<0.01
	Benzo(k)fluoranthene	mg/kg	0.01	1,200 ^{#3}	420 ^{#3}	-	-	<0.01	<0.01
	Benzo(b)&(k)fluoranthene	mg/kg	0.01			<0.1	-	<0.02 ^{#8}	<0.02 ^{#8}
	Coronene	mg/kg	0.01			<0.1	-	-	-
	PAH (Sum)	mg/kg	1.6			<1.6	-	-	-
PAH 16 Total	mg/kg	0.01			-	-	0.01	<0.01	
Phenolics	Phenols	mg/kg	0.01			-	-	<0.01	<0.01
	Phenols (Mono)	mg/kg	1			-	-	-	-
Herbicides	Atrazine	mg/kg	0.01	9,400 ^{#3}	2,400 ^{#3}	-	-	-	-
	Simazine	mg/kg	0.01	19 ^{#1}		-	-	-	-
	Prometryn	mg/kg	0.01	33,000 ^{#1}		-	-	-	-
	Propazine	mg/kg	0.01	16,000 ^{#1}		-	-	-	-
	Terbutryn	mg/kg	0.01	820 ^{#1}		-	-	-	-
Organochlorine Pesticides	Aldrin	mg/kg	0.01	170 ^{#3}	30 ^{#3}	-	-	-	-
	Dieldrin	mg/kg	0.01	160 ^{#3}	30 ^{#3}	-	-	-	-
	Endrin	mg/kg	0.01	250 ^{#1}		-	-	-	-
	Heptachlor	mg/kg	0.01	0.63 ^{#1}		-	-	-	-
	Heptachlor epoxide	mg/kg	0.01	0.33 ^{#1}		-	-	-	-
	DDT	mg/kg	0.01	8.5 ^{#1}		-	-	-	-
	DDD	mg/kg	0.01	9.6 ^{#1}		-	-	-	-
	chlordan	mg/kg	0.01			-	-	-	-
	DDE	mg/kg	0.01			-	-	-	-
	Endosulfan	mg/kg	0.01	7,000 ^{#1}		-	-	-	-
Haloogenated Benzenes	Hexachlorobenzene	mg/kg	0.01	86 ^{#3}	29 ^{#3}	-	-	-	-
Metals	Arsenic	mg/kg	2	640 ^{#3}	170 ^{#3}	-	5	7	5
	Boron	mg/kg	1	240,000 ^{#3}	46,000 ^{#3}	-	-	-	2
	Cadmium	mg/kg	1	190 ^{#3}	530 ^{#3}	-	3	<1	<1
	Chromium (III+VI)	mg/kg	1	Use CrIII or CrVI ^{#3}	Use CrIII or CrVI ^{#3}	-	13	27	30
	Copper	mg/kg	1	68,000 ^{#3}	44,000 ^{#3}	-	37	31	23
	Iron	mg/kg	1	820,000 ^{#1}		-	24,000	3500	31,000
	Lead	mg/kg	3	2,300 ^{#2}		-	130	47	20
	Manganese	mg/kg	1	26,000 ^{#1}		-	630	440	280

Table 3
Stage 2 Screening Assessment
Soil
Sheriffhall Roundabout

Location ID	MEIA-E2-S2	MEIA-G-S1	MEIA-J1-S10	MEIA-J2-S2
Sample Depth (m)	0.4	0.3	0.8	0.4
Sample Type	WAC	ES	ES	ES
Sample Date	18/05/18	18/05/18	06/06/18	16/05/18
Soil Type	MG	MG	MG	NAT
Lab Report No.	749305	749242	743060	739299

Chemical Group	Chemical Name	Output Unit	EQL	GAC Human Health Commercial (0.58-1.45% TOC)	GAC Human Health Public Open Space (Park) (0.58-1.45% TOC)				
	Mercury	mg/kg	1	1,100 ^{#3}	240 ^{#3}	-	-	<1	<1
	Nickel	mg/kg	1	980 ^{#3}	800 ^{#3}	-	29	29	19
	Selenium	mg/kg	3	12,000 ^{#3}	1,800 ^{#3}	-	<3	<3	<3
	Vanadium	mg/kg	1	9,000 ^{#3}	5,000 ^{#3}	-	47	37	36
	Zinc	mg/kg	1	730,000 ^{#3}	170,000 ^{#3}	-	1000	89	55
	Chromium (hexavalent)	mg/kg	1	33 ^{#3}	220 ^{#3}	-	-	<1	<1
Organics	Fraction Organic Carbon	%	0.1			-	-	1.7	0.6
Inorganics	Ammoniacal Nitrogen	mg/kg	0.5			-	-	<0.5	<0.5
	Sulphur	%	0.01			-	0.05	0.02	<0.01
	Cyanide (Free)	mg/kg	1	150 ^{#1}		-	<1	<1	<1
	Cyanide Total	mg/kg	1	1200 ^{#1}		-	<1	<1	<1
	cyanides-complex	mg/kg	1			-	<1	-	-
	Thiocyanate	mg/kg	10	230 ^{#1}		-	<10	-	-
	Easily Liberated Sulphide (Moisture Corrected)	mg/kg	10			-	-	-	-

Comments

- #1 USEPA RSL (Nov 2018)
- #2 Defra C4SL 12/2014
- #3 AECOM (modified LQM/ClEH S4ULs)
- #4 AECOM (modified EIC)
- #6 ESDAT Combined. Some Analytes are missing from this Combined Compound.
- #7 ESDAT Combined with Non-Detect Multiplier of 1.
- #8 ESDAT Combined.

Abbreviations

- ND = Not Detected
- ES = Environmental Sample
- WAC = Waste Acceptance C
- MG = Made Ground
- NAT = Natural
- GAC: Generic Assessment C
- (blank): No assessment critere
- : Not analysed

Table 4
Stage 2 Screening Assessment
Soil
Sheriffhall Roundabout

Location ID	TP07	TP07	TP07	TP08	TP12S	TP14	TP14	TP19	TP22	TP23	TP28	TP28	TP29	TP30	TP30	TP31	TP31	TP32	TP32
Sample Depth (m)	0.5	0.5	1.0	0.4	0.5	0.5	2.5	0.2	0.1	0.1	0.5	1.0	0.4	0.2	0.5	1.5	2.0	1.0	2.0
Sample Type	ES	WAC	ES	ES	ES	ES	ES	ES	ES	ES	WAC	ES	ES	ES	ES	ES	WAC	ES	ES
Sample Date	20/04/18	20/04/18	20/04/18	20/04/18	08/03/18	01/06/18	01/06/18	06/03/18	15/05/18	15/05/18	12/03/18	12/03/18	20/04/18	13/03/18	13/03/18	17/05/18	17/05/18	17/05/18	17/05/18
Soil Type	MG	MG	MG	MG	MG	MG	MG	MG	NAT	NAT	MG	MG	MG	MG	MG	MG	MG	MG	MG/NAT
Lab Report No.	731480	731581	731480	731480	723604	743477	743477	723604	739656	739656	723604	723604	731480	729596	729596	739350	739401	739350	739350

Chemical Group	Chemical Name	Output Unit	EQL	GAC Human Health Commercial (0.58-1.45% TOC)	GAC Human Health Public Open Space (Park) (0.58-1.45% TOC)	TP07	TP07	TP07	TP08	TP12S	TP14	TP14	TP19	TP22	TP23	TP28	TP28	TP29	TP30	TP30	TP31	TP31	TP32	TP32
	Loss on ignition	%	0.1			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Trietazine	mg/kg	0.01			-	-	<0.01	-	<0.1	-	-	-	-	-	-	-	-	-	<0.01	-	-	-	-
	Boron (Water Soluble)	mg/kg	1	240,000 ⁹³	46,000 ⁹³	1	-	<1	2	<1	<1	<1	<1	6	2	-	<1	<1	1	<1	<1	-	<1	<1
	HCH : Total (5) Isomers	mg/kg	0.01			-	-	<0.01	-	<0.2	-	-	-	-	-	-	-	-	-	<0.01	-	-	-	-
	Asbestos Identification	None				ND	-	-	ND	ND	ND	-	-	-	-	-	ND	ND	ND	ND	ND	-	ND	-
Field	pH	pH Units	0.01			7.3	-	7.4	7.1	8.4	7.7	7.5	7.2	6.8	7.5	-	8.2	7.1	7	8.2	8.2	-	7.3	7.2
TPH	>C5-C6 Aliphatics	mg/kg	0.01	2,000 ⁹³	55,000 ⁹³	<0.01	-	-	<0.01	<0.01	-	-	<0.01	-	-	-	<0.01	<0.01	-	<0.1	<0.01	-	-	-
	>C6-C8 Aliphatics	mg/kg	0.01	4,300 ⁹³	81,000 ⁹³	<0.01	-	-	<0.01	<0.01	-	-	<0.01	-	-	-	<0.01	<0.01	-	<0.1	<0.01	-	-	-
	>C8-C10 Aliphatics	mg/kg	0.01	1,000 ⁹³	8,700 ⁹³	<0.01	-	-	<0.01	<0.01	-	-	<0.01	-	-	-	<0.01	<0.01	-	<0.1	<0.01	-	-	-
	>C10-C12 Aliphatics	mg/kg	1	5,000 ⁹³	16,000 ⁹³	<1	-	-	<1	<5	-	-	<1	-	-	-	<1	<1	-	<1	<1	-	-	-
	>C12-C16 Aliphatics	mg/kg	1	37,000 ⁹³	23,000 ⁹³	<1	-	-	<1	<5	-	-	<1	-	-	-	<1	<1	-	<1	<1	-	-	-
	>C16-C21 Aliphatics	mg/kg	1			<1	-	-	<1	<5	-	-	<1	-	-	-	<1	2	-	<1	<1	-	-	-
	>C16-C35 Aliphatics	mg/kg	1	1,400,000 ⁹³	410,000 ⁹³	<2 ⁹³	-	-	3 ⁹⁷	17 ⁹⁷	-	-	<2 ⁹⁶	-	-	-	4 ⁹⁷	31 ⁹⁷	-	<2 ⁹⁶	<2 ⁹⁶	-	-	-
	>C21-C35 Aliphatics	mg/kg	1			<1	-	-	2	12	-	-	<1	-	-	-	3	29	-	<1	<1	-	-	-
	>EC6-EC7 Aromatics	mg/kg	0.01			<0.01	-	-	<0.01	<0.01	-	-	<0.01	-	-	-	<0.01	<0.01	-	<0.1	<0.01	-	-	-
	>EC7-EC8 Aromatics	mg/kg	0.01	28,000 ⁹³	70,000 ⁹³	<0.01	-	-	<0.01	<0.01	-	-	<0.01	-	-	-	<0.01	<0.01	-	<0.1	<0.01	-	-	-
	>EC8-EC10 Aromatics	mg/kg	0.01	1,800 ⁹³	4,800 ⁹³	<0.01	-	-	<0.01	<0.01	-	-	<0.01	-	-	-	<0.01	<0.01	-	<0.1	<0.01	-	-	-
	>EC10-EC12 Aromatics	mg/kg	1	9,100 ⁹³	7,900 ⁹³	<1	-	-	<1	<5	-	-	<1	-	-	-	<1	<1	-	<1	<1	-	-	-
	>EC12-EC16 Aromatics	mg/kg	1	34,000 ⁹³	9,800 ⁹³	<1	-	-	<1	<5	-	-	<1	-	-	-	1	<1	-	<1	<1	-	-	-
	>EC16-EC21 Aromatics	mg/kg	1	28,000 ⁹³	7,500 ⁹³	<1	-	-	3	19	-	-	<1	-	-	-	3	<1	-	<1	<1	-	-	-
	>EC21-EC35 Aromatics	mg/kg	1	28,000 ⁹³	7,800 ⁹³	<1	-	-	5	78	-	-	<1	-	-	-	3	<1	-	<1	<1	-	-	-
BTEX	Benzene	mg/kg	0	12 ⁹³	64 ⁹³	<0.001	-	-	<0.002	<0.002	-	-	<0.001	-	-	-	0.002	<0.002	-	<0.01	0.001	-	-	-
	Toluene	mg/kg	0	28,000 ⁹³	70,000 ⁹³	<0.001	-	-	<0.002	<0.002	-	-	<0.001	-	-	-	<0.001	<0.002	-	<0.01	<0.001	-	-	-
	Ethylbenzene	mg/kg	0	2,700 ⁹³	10,000 ⁹³	<0.001	-	-	<0.002	<0.002	-	-	<0.001	-	-	-	<0.001	<0.002	-	<0.01	<0.001	-	-	-
	Xylene Total	mg/kg	0	2,700 ⁹³	9,400 ⁹³	<0.001 ⁹⁶	-	-	<0.002 ⁹⁶	<0.002 ⁹⁶	-	-	<0.001 ⁹⁶	-	-	-	<0.001 ⁹⁶	<0.002 ⁹⁶	-	<0.01 ⁹⁶	<0.001 ⁹⁶	-	-	-
	Xylene (o)	mg/kg	0	3,100 ⁹³	9,900 ⁹³	<0.001	-	-	<0.002	<0.002	-	-	<0.001	-	-	-	<0.001	<0.002	-	<0.01	<0.001	-	-	-
	Total BTEX	mg/kg				<0.004 ⁹⁶	-	-	<0.008 ⁹⁶	<0.008 ⁹⁶	-	-	<0.004 ⁹⁶	-	-	-	0.005 ⁹⁶	<0.008 ⁹⁶	-	<0.04 ⁹⁶	0.004 ⁹⁶	-	-	-
Oxygenates	MTBE	mg/kg	0	3,340 ⁹⁴		<0.001	-	-	<0.002	<0.002	-	-	<0.001	-	-	-	<0.001	<0.002	-	<0.01	<0.001	-	-	-
PAH	Naphthalene	mg/kg	0.01	90 ⁹³	670 ⁹³	<0.01	<0.1	<0.01	0.01	0.12	0.08	<0.01	<0.01	<0.01	<0.01	-	0.15	0.04	<0.01	0.01	<0.01	<0.1	<0.01	<0.01
	Acenaphthylene	mg/kg	0.01	72,000 ⁹³	28,000 ⁹³	<0.01	<0.1	<0.01	0.01	0.14	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.05	<0.01	<0.01	<0.01	<0.01	<0.1	0.01	<0.01
	Acenaphthene	mg/kg	0.01	71,000 ⁹³	28,000 ⁹³	<0.01	<0.1	<0.01	0.01	0.13	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.05	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01
	Fluorene	mg/kg	0.01	59,000 ⁹³	19,000 ⁹³	<0.01	<0.1	<0.01	0.01	0.13	0.01	<0.01	<0.01	<0.01	<0.01	-	<0.05	0.01	<0.01	0.01	<0.01	<0.1	0.01	<0.01
	Phenanthrene	mg/kg	0.01	22,000 ⁹³	6,200 ⁹³	0.01	<0.1	<0.01	0.18	2.1	0.08	0.01	0.01	0.01	0.01	-	0.19	0.04	0.02	0.07	<0.01	<0.1	0.04	0.01
	Anthracene	mg/kg	0.01	520,000 ⁹³	150,000 ⁹³	<0.01	<0.1	<0.01	0.04	0.67	0.01	<0.01	<0.01	<0.01	<0.01	-	<0.05	0.01	<0.01	0.01	<0.01	<0.1	0.01	<0.01
	Fluoranthene	mg/kg	0.01	23,000 ⁹³	6,300 ⁹³	0.01	<0.1	<0.01	0.45	5.5	0.05	0.01	0.01	0.01	0.01	-	0.16	0.02	0.03	0.03	<0.01	<0.1	0.05	0.02
	Pyrene	mg/kg	0.01	54,000 ⁹³	15,000 ⁹³	0.01	<0.1	<0.01	0.41	4.8	0.04	0.01	0.01	0.01	0.01	-	0.16	0.02	0.03	0.03	<0.01	<0.1	0.03	0.01
	Benz(a)anthracene	mg/kg	0.01	170 ⁹³	54 ⁹³	0.01	<0.1	<0.01	0.21	2.7	0.02	<0.01	<0.01	<0.01	<0.01	-	0.09	0.02	0.01	0.01	<0.01	<0.1	0.02	0.01
	Chrysene	mg/kg	0.01	350 ⁹³	110 ⁹³	0.01	<0.1	<0.01	0.19	2.3	0.02	0.01	0.01	0.01	0.01	-	0.09	0.01	0.02	0.01	<0.01	<0.1	0.01	<0.01
	Benzo(a)pyrene	mg/kg	0.01	35 ⁹³	12 ⁹³	0.01	<0.1	<0.01	0.24	3	0.02	0.01	<0.01	<0.01	0.01	-	0.1	0.01	0.02	0.01	<0.01	<0.1	0.02	0.01
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.01	510 ⁹³	170 ⁹³	0.01	<0.1	<0.01	0.13	1.5	0.01	<0.01	<0.01	<0.01	<0.01	-	0.05	0.01	0.01	0.01	<0.01	<0.1	0.01	0.01
	Dibenz(a,h)anthracene	mg/kg	0.01	3.5 ⁹³	1.3 ⁹³	<0.01	<0.1	<0.01	0.03	0.37	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.05	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01
	Benzo(g,h,i)perylene	mg/kg	0.01	3,900 ⁹³	1,500 ⁹³	0.01	<0.1	<0.01	0.16	1.6	0.01	<0.01	<0.01	<0.01	<0.01	-	0.07	0.01	0.01	0.01	<0.01	<0.1	0.01	0.01
	Benzo(b)fluoranthene	mg/kg	0.01	45 ⁹³	15 ⁹³	0.01	-	<0.01	0.31	4	0.02	0.01	0.01	0.01	0.01	-	0.16	0.02	0.02	0.01	<0.01	<0.1	0.02	<0.01
	Benzo(k)fluoranthene	mg/kg	0.01	1,200 ⁹³	420 ⁹³	<0.01	-	<0.01	0.1	1.4	0.01	<0.01	<0.01	<0.01	<0.01	-	0.05	0.01	0.01	0.01	<0.01	<0.1	0.01	0.01
	Benzo(b)&(k)fluoranthene	mg/kg	0.01			0.02<																		

Table 4
Stage 2 Screening Assessment
Soil
Sheriffhall Roundabout

Location ID	TP33	TP33	TP33	TP33	TP34	TP35	TP35	TP35	TP35	TP39	TP39	TP42
Sample Depth (m)	1.0	1.5	3.0	4.0	2.0	1.5	2.5	4.0	0.8	1.1	0.1	
Sample Type	ES	WAC	ES	ES	ES	ES	WAC	ES	ES	ES	ES	
Sample Date	16/05/18	16/05/18	16/05/18	16/05/18	14/05/18	15/05/18	15/05/18	15/05/18	06/06/18	06/06/18	06/06/18	
Soil Type	MG	MG	MG	MG	MG	MG	NAT	MG	MG	MG	MG	
Lab Report No.	739434	739506	739434	739434	739656	739656	739746	739656	745262	745262	745262	

Chemical Group	Chemical Name	Output Unit	EQL	GAC Human Health Commercial (0.58-1.45% TOC)	GAC Human Health Public Open Space (Park) (0.58-1.45% TOC)	TP33	TP33	TP33	TP33	TP34	TP35	TP35	TP35	TP39	TP39	TP42
	Loss on ignition	%	0.1			-	-	-	-	-	-	-	-	-	-	-
	Trietazine	mg/kg	0.01			-	-	-	-	-	-	-	-	-	-	-
	Boron (Water Soluble)	mg/kg	1	240,000 ⁹³	46,000 ⁹³	<1	-	<1	<1	<1	<1	-	<1	<1	-	1
	HCH : Total (5) Isomers	mg/kg	0.01			-	-	-	-	-	-	-	-	-	-	-
	Asbestos Identification	None				ND	-	-	-	ND	ND	-	ND	-	-	ND
Field	pH	pH Units	0.01			6.8	-	7.2	7.4	7.8	7.7	-	7.8	7.9	-	6.7
TPH	>C5-C6 Aliphatics	mg/kg	0.01	2,000 ⁹³	55,000 ⁹³	<0.01	-	-	-	<0.05	-	-	-	-	-	-
	>C6-C8 Aliphatics	mg/kg	0.01	4,300 ⁹³	81,000 ⁹³	<0.01	-	-	-	<0.05	-	-	-	-	-	-
	>C8-C10 Aliphatics	mg/kg	0.01	1,000 ⁹³	8,700 ⁹³	<0.01	-	-	-	<0.05	-	-	-	-	-	-
	>C10-C12 Aliphatics	mg/kg	1	5,000 ⁹³	16,000 ⁹³	<1	-	-	-	<1	-	-	-	-	-	-
	>C12-C16 Aliphatics	mg/kg	1	37,000 ⁹³	23,000 ⁹³	<1	-	-	-	<1	-	-	-	-	-	-
	>C16-C21 Aliphatics	mg/kg	1			<1	-	-	-	<1	-	-	-	-	-	-
	>C16-C35 Aliphatics	mg/kg	1	1,400,000 ⁹³	410,000 ⁹³	4 ⁹⁷	-	-	-	<2 ⁹⁸	-	-	-	-	-	-
	>C21-C35 Aliphatics	mg/kg	1			3	-	-	-	<1	-	-	-	-	-	-
	>EC6-EC7 Aromatics	mg/kg	0.01			<0.01	-	-	-	<0.05	-	-	-	-	-	-
	>EC7-EC8 Aromatics	mg/kg	0.01	28,000 ⁹³	70,000 ⁹³	<0.01	-	-	-	<0.05	-	-	-	-	-	-
	>EC8-EC10 Aromatics	mg/kg	0.01	1,800 ⁹³	4,800 ⁹³	<0.01	-	-	-	<0.05	-	-	-	-	-	-
	>EC10-EC12 Aromatics	mg/kg	1	9,100 ⁹³	7,900 ⁹³	<1	-	-	-	<1	-	-	-	-	-	-
	>EC12-EC16 Aromatics	mg/kg	1	34,000 ⁹³	9,800 ⁹³	<1	-	-	-	<1	-	-	-	-	-	-
	>EC16-EC21 Aromatics	mg/kg	1	28,000 ⁹³	7,500 ⁹³	<1	-	-	-	<1	-	-	-	-	-	-
	>EC21-EC35 Aromatics	mg/kg	1	28,000 ⁹³	7,800 ⁹³	<1	-	-	-	<1	-	-	-	-	-	-
BTEX	Benzene	mg/kg	0	12 ⁹³	64 ⁹³	<0.001	-	-	-	<0.005	-	-	-	-	-	-
	Toluene	mg/kg	0	28,000 ⁹³	70,000 ⁹³	<0.001	-	-	-	<0.005	-	-	-	-	-	-
	Ethylbenzene	mg/kg	0	2,700 ⁹³	10,000 ⁹³	<0.001	-	-	-	<0.005	-	-	-	-	-	-
	Xylene Total	mg/kg	0	2,700 ⁹³	9,400 ⁹³	<0.001 ⁹⁶	-	-	-	<0.005 ⁹⁶	-	-	-	-	-	-
	Xylene (o)	mg/kg	0	3,100 ⁹³	9,900 ⁹³	<0.001	-	-	-	<0.005	-	-	-	-	-	-
	Total BTEX	mg/kg				<0.004 ⁹⁵	-	-	-	<0.02 ⁹⁵	-	-	-	-	-	-
Oxygenates	MTBE	mg/kg	0	3,340 ⁹⁴		<0.001	-	-	-	<0.005	-	-	-	-	-	-
PAH	Naphthalene	mg/kg	0.01	90 ⁹³	670 ⁹³	0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.1	0.01	0.17	<0.5	0.2
	Acenaphthylene	mg/kg	0.01	72,000 ⁹³	28,000 ⁹³	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	0.14	0.8	<0.02
	Acenaphthene	mg/kg	0.01	71,000 ⁹³	28,000 ⁹³	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	0.21	<0.5	0.03
	Fluorene	mg/kg	0.01	59,000 ⁹³	19,000 ⁹³	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	0.23	<0.5	0.04
	Phenanthrene	mg/kg	0.01	22,000 ⁹³	6,200 ⁹³	0.06	<0.1	<0.01	<0.01	0.01	0.01	0.3	0.01	1.3	<0.5	0.26
	Anthracene	mg/kg	0.01	520,000 ⁹³	150,000 ⁹³	0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	0.45	0.64	0.06
	Fluoranthene	mg/kg	0.01	23,000 ⁹³	6,300 ⁹³	0.09	<0.1	0.01	0.01	0.01	0.01	0.4	0.01	2.7	2.1	0.31
	Pyrene	mg/kg	0.01	54,000 ⁹³	15,000 ⁹³	0.08	<0.1	<0.01	0.01	0.01	0.01	0.3	0.01	2.7	3	0.29
	Benz(a)anthracene	mg/kg	0.01	170 ⁹³	54 ⁹³	0.04	<0.1	<0.01	<0.01	<0.01	<0.01	0.2	<0.01	1.5	1.7	0.17
	Chrysene	mg/kg	0.01	350 ⁹³	110 ⁹³	0.04	<0.1	0.01	<0.01	0.01	<0.01	0.2	<0.01	1.5	1.2	0.16
	Benzo(a)pyrene	mg/kg	0.01	35 ⁹³	12 ⁹³	0.04	<0.1	<0.01	<0.01	<0.01	<0.01	0.2	<0.01	2	6.1	0.18
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.01	510 ⁹³	170 ⁹³	0.02	<0.1	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	1.1	3.1	0.09
	Dibenz(a,h)anthracene	mg/kg	0.01	3.5 ⁹³	1.3 ⁹³	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	0.21	0.65	0.02
	Benzo(g,h,i)perylene	mg/kg	0.01	3,900 ⁹³	1,500 ⁹³	0.03	<0.1	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	1.3	4.1	0.12
	Benzo(b)fluoranthene	mg/kg	0.01	45 ⁹³	15 ⁹³	0.05	<0.1	<0.01	<0.01	0.01	0.01	-	<0.01	2.4	7.1	0.24
	Benzo(k)fluoranthene	mg/kg	0.01	1,200 ⁹³	420 ⁹³	0.02	-	<0.01	<0.01	<0.01	<0.01	-	<0.01	0.7	2.1	0.08
	Benzo(b)&(k)fluoranthene	mg/kg	0.01			0.07 ⁹⁷	-	<0.02 ⁹⁸	<0.02 ⁹⁸	0.02 ⁹⁷	0.02 ⁹⁷	0.3	<0.02 ⁹⁸	3.1 ⁹⁷	9.2 ⁹⁷	0.32 ⁹⁷
	Coronene	mg/kg	0.01			-	<0.1	-	-	-	-	<0.1	-	-	-	-
	PAH (Sum)	mg/kg	1.6			-	<1.6	-	-	-	-	1.8	-	-	-	-
	PAH 16 Total	mg/kg	0.01			0.49	-	0.02	0.02	0.05	0.04	-	0.04	19	33	2.3
Phenolics	Phenols	mg/kg	0.01			<0.01	-	0.15	-	<0.01	<0.01	-	<0.01	<0.05	<0.5	<0.02
	Phenols (Mono)	mg/kg	1			-	-	-	-	<1	<1	-	<1	-	-	-
Herbicides	Atrazine	mg/kg	0.01	9,400 ⁹³	2,400 ⁹³	-	-	-	-	-	-	-	-	-	-	-
	Simazine	mg/kg	0.01	19 ⁹¹		-	-	-	-	-	-	-	-	-	-	-
	Prometryn	mg/kg	0.01	33,000 ⁹¹		-	-	-	-	-	-	-	-	-	-	-
	Propazine	mg/kg	0.01	16,000 ⁹¹		-	-	-	-	-	-	-	-	-	-	-
	Terbutryn	mg/kg	0.01	820 ⁹¹		-	-	-	-	-	-	-	-	-	-	-
Organochlorine Pesticides	Aldrin	mg/kg	0.01	170 ⁹³	30 ⁹³	-	-	-	-	-	-	-	-	-	-	-
	Dieldrin	mg/kg	0.01	160 ⁹³	30 ⁹³	-	-	-	-	-	-	-	-	-	-	-
	Endrin	mg/kg	0.01	250 ⁹¹		-	-	-	-	-	-	-	-	-	-	-
	Heptachlor	mg/kg	0.01	0.63 ⁹¹		-	-	-	-	-	-	-	-	-	-	-
	Heptachlor epoxide	mg/kg	0.01	0.33 ⁹¹		-	-	-	-	-	-	-	-	-	-	-
	DDT	mg/kg	0.01	8.5 ⁹¹		-	-	-	-	-	-	-	-	-	-	-
	DDD	mg/kg	0.01	9.6 ⁹¹		-	-	-	-	-	-	-	-	-	-	-
	chlordane	mg/kg	0.01			-	-	-	-	-	-	-	-	-	-	-
	DDE	mg/kg	0.01			-	-	-	-	-	-	-	-	-	-	-
	Endosulfan	mg/kg	0.01	7,000 ⁹¹		-	-	-	-	-	-	-	-	-	-	-
Halogenated Benzenes	Hexachlorobenzene	mg/kg	0.01	86 ⁹³	29 ⁹³	-	-	-	-	-	-	-	-	-	-	-
Metals	Arsenic	mg/kg	2	640 ⁹³	170 ⁹³	4	-	4	4	5	5	-	4	4	-	6
	Boron	mg/kg	1	240,000 ⁹³	46,000 ⁹³	3	-	3	2	1	1	-	2	-	-	-
	Cadmium	mg/kg	1	190 ⁹³	530 ⁹³	<1	-	<1	<1	<1	<1	-	<1	<1	-	<1
	Chromium (III+VI)	mg/kg	1	Use CrIII or CrVI ⁹³	Use CrIII or CrVI ⁹³	19	-	21	23	21	22	-	24	16	-	18
	Copper	mg/kg	1	68,000 ⁹³	44,000 ⁹³	22	-	22	20	17	18	-	21	23	-	36
	Iron	mg/kg	1	820,000 ⁹¹		-	-	-	-	-	26,000	-	35,000	21,000	-	21,000
	Lead	mg/kg	3	2,300 ⁹²		42	-	29	16	19	21	-	14	31	-	63

Table 4
Stage 2 Screening Assessment
Soil
Sheriffhall Roundabout

Location ID	TP33	TP33	TP33	TP33	TP34	TP35	TP35	TP35	TP39	TP39	TP42
Sample Depth (m)	1.0	1.5	3.0	4.0	2.0	1.5	2.5	4.0	0.8	1.1	0.1
Sample Type	ES	WAC	ES	ES	ES	ES	WAC	ES	ES	ES	ES
Sample Date	16/05/18	16/05/18	16/05/18	16/05/18	14/05/18	15/05/18	15/05/18	15/05/18	06/06/18	06/06/18	06/06/18
Soil Type	MG	MG	MG	MG	MG	MG	NAT	MG	MG	MG	MG
Lab Report No.	739434	739506	739434	739434	739656	739656	739746	739656	745262	745262	745262

Chemical Group	Chemical Name	Output Unit	EQL	GAC Human Health Commercial (0.58-1.45% TOC)	GAC Human Health Public Open Space (Park) (0.58-1.45% TOC)												
						650	-	410	680	850	740	-	410	530	-	410	
	Manganese	mg/kg	1	26,000 ^{#1}													
	Mercury	mg/kg	1	1,100 ^{#3}	240 ^{#3}	<1	-	<1	<1	<1	<1	-	<1	<1	-	<1	
	Nickel	mg/kg	1	980 ^{#3}	800 ^{#3}	22	-	24	29	27	27	-	34	22	-	22	
	Selenium	mg/kg	3	12,000 ^{#3}	1,800 ^{#3}	<3	-	<3	<3	<3	<3	-	<3	<3	-	<3	
	Vanadium	mg/kg	1	9,000 ^{#3}	5,000 ^{#3}	30	-	27	29	30	31	-	33	30	-	32	
	Zinc	mg/kg	1	730,000 ^{#3}	170,000 ^{#3}	88	-	76	52	67	73	-	61	88	-	140	
	Chromium (hexavalent)	mg/kg	1	33 ^{#3}	220 ^{#3}	<1	-	<1	<1	<1	<1	-	<1	<1	-	<1	
Organics	Fraction Organic Carbon	%	0.1			1.2	-	1.3	0.8	0.6	0.8	-	0.9	1.6	-	3.4	
Inorganics	Ammoniacal Nitrogen	mg/kg	0.5			<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	
	Sulphur	%	0.01			0.01	-	0.02	<0.01	0.01	0.01	-	0.01	0.03	-	0.04	
	Cyanide (Free)	mg/kg	1	150 ^{#1}		<1	-	<1	<1	<1	<1	-	<1	<1	-	<1	
	Cyanide Total	mg/kg	1	1200 ^{#1}		<1	-	<1	<1	<1	<1	-	<1	<1	-	<1	
	Cyanides-complex	mg/kg	1			-	-	-	-	<1	<1	-	<1	-	-	-	
	Thiocyanate	mg/kg	10	230 ^{#1}		<10	-	-	<10	<10	<10	-	<10	-	-	-	
	Easily Liberated Sulphide (Moisture Corrected)	mg/kg	10			<10	-	-	<10	<10	<10	-	<10	-	-	-	
PCBs	Tetrachlorobiphenyl, 3,3,4,4- (PCB 77)	mg/kg	0	0.16 ^{#1}		-	-	-	-	-	-	-	-	-	-	-	
	Tetrachlorobiphenyl, 3,4,4,5- (PCB 81)	mg/kg	0	0.048 ^{#1}		-	-	-	-	-	-	-	-	-	-	-	
	Pentachlorobiphenyl, 2,3,3,4,4- (PCB 105)	mg/kg	0	0.49 ^{#1}		-	-	-	-	-	-	-	-	-	-	-	
	Pentachlorobiphenyl, 2,3,4,4,5- (PCB 114)	mg/kg	0	0.5 ^{#1}		-	-	-	-	-	-	-	-	-	-	-	
	PCB 118	mg/kg	0	0.49 ^{#1}		-	-	-	-	-	-	-	-	-	-	-	
	Pentachlorobiphenyl, 2,3,4,4,5- (PCB 123)	mg/kg	0	0.49 ^{#1}		-	-	-	-	-	-	-	-	-	-	-	
	Pentachlorobiphenyl, 3,3,4,4,5- (PCB 126)	mg/kg	0	0.00015 ^{#1}		-	-	-	-	-	-	-	-	-	-	-	
	Hexachlorobiphenyl, 2,3,3,4,4,5- (PCB 156)	mg/kg	0	0.5 ^{#1}		-	-	-	-	-	-	-	-	-	-	-	
	Hexachlorobiphenyl, 2,3,3,4,4,5- (PCB 157)	mg/kg	0	0.5 ^{#1}		-	-	-	-	-	-	-	-	-	-	-	
	Hexachlorobiphenyl, 2,3,4,4,5,5- (PCB 167)	mg/kg	0	0.51 ^{#1}		-	-	-	-	-	-	-	-	-	-	-	
	Hexachlorobiphenyl, 3,3,4,4,5,5- (PCB 169)	mg/kg	0	0.00051 ^{#1}		-	-	-	-	-	-	-	-	-	-	-	
	Heptachlorobiphenyl, 2,3,3,4,4,5,5- (PCB 189)	mg/kg	0	0.52 ^{#1}		-	-	-	-	-	-	-	-	-	-	-	

Comments

- #1 USEPA RSL (Nov 2018)
- #2 Defra C4SL 12/2014
- #3 AECOM (modified LQM/CI/EH S4ULs)
- #4 AECOM (modified EIC)
- #5 ESDAT Combined with Non-Detect Multiplier of 1. Some Analytes are missing from this Combined Compound.
- #6 ESDAT Combined. Some Analytes are missing from this Combined Compound.
- #7 ESDAT Combined with Non-Detect Multiplier of 1.
- #8 ESDAT Combined.

Abbreviations

- ND = Not Detected
- ES = Environmental Sample
- WAC = Waste Acceptance C
- MG = Made Ground
- NAT = Natural
- GAC: Generic Assessment C
- (blank): No assessment criteria
- : Not analysed

Table 1
Stage 2 Screening Assessment
Soil Leachate
Sheriffhall Roundabout

Location ID	MEIA-E1-S3	MEIA-E2-S2	MEIA-G-S1	TP07	TP12S	TP14	TP28	TP30	TP31	TP32	TP33	TP34	TP35
Sample Depth (m)	0.80	0.40	0.30	1.00	0.50	0.50	1.00	0.50	1.50	1.00	1.00	2.00	1.50
Sample Date	17/05/18	18/05/18	18/05/18	20/04/18	08/03/18	01/06/18	12/03/18	13/03/18	17/05/18	17/05/18	16/05/18	14/05/18	15/05/18
Soil Type	NAT	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG
Lab Report No.	739299	749242	749242	731480	723604	743477	723604	723604	739350	739350	739434	739656	739656

Chemical Group	Chemical Name	Output Unit	EQL	GAC_W TV_SC_DWS	GAC_W TV_SC_EQS-Fresh													
Field	pH	pH Units	0.01			7.27	6.98	6.92	6.83	7.83	6.81	7.38	7.93	7.68	7.16	7.02	7.67	7.2
BTEX	Benzene	µg/L	1	1 ^{#13}	10 ^{#7}	-	-	-	-	-	<1	-	-	-	-	-	-	-
	Toluene	µg/L	1	700 ^{#10}	74 ^{#9}	-	-	-	-	-	<1	-	-	-	-	-	-	-
	Ethylbenzene	µg/L	1	300 ^{#10}	20 ^{#9}	-	-	-	-	-	<1	-	-	-	-	-	-	-
	Xylene (m & p)	µg/L	1			-	-	-	-	-	<1	-	-	-	-	-	-	-
	Xylene (o)	µg/L	1			-	-	-	-	-	<1	-	-	-	-	-	-	-
Oxygenates	MTBE	µg/L	1	1,800 ^{#15}	5,100 ^{#12}	-	-	-	-	-	<1	-	-	-	-	-	-	-
PAH	Naphthalene	µg/L	0.01	6 ^{#15}	2 ^{#7}	0.04	-	0.04	0.04	-	0.05	0.05	0.03	0.05	0.03	0.03	0.03	0.04
	Acenaphthylene	µg/L	0.01	18 ^{#15}		<0.01	-	<0.01	<0.01	-	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01
	Acenaphthene	µg/L	0.01	18 ^{#15}		0.01	-	0.01	0.02	-	0.01	<0.01	0.01	0.01	0.01	0.01	0.01	0.02
	Fluorene	µg/L	0.01	12 ^{#15}		0.01	-	0.01	0.01	-	0.01	<0.01	0.01	0.02	0.01	0.01	0.01	0.02
	Phenanthrene	µg/L	0.01	4 ^{#15}		0.01	-	0.02	0.02	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.03
	Anthracene	µg/L	0.01	90 ^{#15}	0.1 ^{#7}	<0.01	-	<0.01	0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
	Fluoranthene	µg/L	0.01	4 ^{#2}	0.0063 ^{#7}	0.01	-	0.01	0.02	-	<0.01	<0.01	0.02	0.01	0.01	0.01	0.01	0.02
	Pyrene	µg/L	0.01	9 ^{#15}		<0.01	-	0.01	0.02	-	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	0.01
	Benz(a)anthracene	µg/L	0.01	3.5 ^{#15}		<0.01	-	0.01	0.01	-	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	0.01
	Chrysene	µg/L	0.01	7 ^{#15}		<0.01	-	0.01	0.01	-	<0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	0.03
	Benzo(a)pyrene	µg/L	0.01	0.01 ^{#13}	0.00017 ^{#7}	<0.01	-	<0.01	0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01
	Indeno(1,2,3-c,d)pyrene	µg/L	0.01	Use PAHs (sum of 4) ^{#13}	see BaP and notes ^{#7}	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Dibenz(a,h)anthracene	µg/L	0.01	0.07 ^{#15}		<0.01	-	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
	Benzo(g,h,i)perylene	µg/L	0.01	Use PAHs (sum of 4) ^{#13}	see BaP and notes ^{#7}	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	0.01
	Benzo(b)fluoranthene	µg/L	0.01	Use PAHs (sum of 4) ^{#13}	see BaP and notes ^{#7}	<0.01	-	<0.01	0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Benzo(k)fluoranthene	µg/L	0.01	Use PAHs (sum of 4) ^{#13}	see BaP and notes ^{#7}	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	PAH 16 Total	µg/L	0.01			0.08	-	0.12	0.18	-	0.08	0.06	0.11	0.11	0.11	0.11	0.07	0.21
PAHs (sum of 4)	µg/L	0.01	0.1 ^{#13}		<0.01	-	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Phenolics	Phenols	µg/L	0.5			<0.5	-	0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	0.7
	Phenols (Mono)	µg/L	100			-	-	<100	<100	-	<100	<100	-	<100	-	<100	<100	<100
Metals	Arsenic	µg/L	0.2	10 ^{#13}	50 ^{#9}	0.3	<0.2	0.3	<0.2	0.2	<0.2	0.8	<0.2	<0.2	0.3	<0.2	<0.2	
	Boron	µg/L	50	1,000 ^{#13}	2,000 ^{#9}	-	<50	<50	-	-	-	-	-	-	-	-	-	
	Cadmium	µg/L	0.02	5 ^{#13}	0.06 ^{#7}	<0.02	<0.02	0.03	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	
	Chromium (III+VI)	µg/L	1	50 ^{#13}	Use CrIII or CrVI ^{#11}	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	
	Copper	µg/L	0.5	2,000 ^{#13}	1 ^{#9}	3.9	<0.5	1.4	0.9	<0.5	1	1.7	0.9	<0.5	0.9	1.2	0.5	<0.5
	Iron	µg/L	10	200 ^{#13}	1,000 ^{#9}	200	760	260	290	170	80	120	60	110	380	-	-	760
	Lead	µg/L	0.3	10 ^{#13}	1.2 ^{#7}	0.5	<0.3	1.9	1	0.5	0.6	0.9	0.6	<0.3	0.4	0.7	0.4	<0.3
	Manganese	µg/L	1	50 ^{#13}	123 ^{#9}	2	4	5	9	3	9	2	<1	2	5	95	4	2
	Mercury	µg/L	0.05	1 ^{#13}	0.07 ^{#6}	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
	Nickel	µg/L	1	20 ^{#13}	4 ^{#7}	<1	<1	1	<1	<1	<1	<1	1	<1	<1	1	<1	<1
	Selenium	µg/L	0.5	10 ^{#13}		<0.5	<0.5	<0.5	<0.5	0.7	<0.5	0.6	0.9	<0.5	<0.5	<0.5	<0.5	
	Vanadium	µg/L	2		20 ^{#9}	3	<2	4	<2	<2	3	<2	<2	<2	<2	<2	<2	
	Zinc	µg/L	2		11.9 ^{#9}	12	7	52	14	12	10	5	11	2	10	10	6	6
	Chromium (hexavalent)	µg/L	3	Use Chromium (total) ^{#13}	3.4 ^{#9}	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	
	Inorganics	Ammoniacal Nitrogen	mg/L	0.05			<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.09	<0.05
Sulphur		µg/L	50,000			<50,000	<50,000	<50,000	<50,000	<50,000	<50,000	<50,000	<50,000	<50,000	<50,000	<50,000	<50,000	
Cyanide (Free)		mg/L	0.05	Use Cyanide Total ^{#13}	0.001 ^{#9}	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Cyanide Total		mg/L	0.05	0.05 ^{#13}	0.001 ^{#9}	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Cyanides-complex		µg/L	50	Use Cyanide Total ^{#13}		-	<50	<50	<50	<50	-	<50	-	-	-	<50	<50	
Thiocyanate		mg/L	1			-	<1	<1	<1	<1	-	<1	<1	-	-	<1	<1	
Sulphate	mg/L	0.5	250 ^{#3}	400 ^{#9}	-	-	0.6	7.4	-	-	-	-	-	-	-	-		
Easily Liberated Sulphide (Moisture Corrected)	mg/L	0.1			-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	0.1		

Comments

- #2 WHO DWG 2017
- #3 WHO 2017 - Taste
- #5 WFD England/Wales. 2015 - Freshwater Standards
- #6 Water Env't Regs (Scotland) 2015. MAC-EQS Inland
- #7 Water Env't Regs (Scotland) 2015. AA-EQS Inland
- #9 SEPA WAT-SG-53 Fresh EQS - AA - 2015
- #10 SEPA GW RVPV 2011
- #11 Scotland RBD 2009 - Fresh AA
- #12 PNEC (EU REACH) - Freshwater
- #13 DWS Scotland 2001
- #15 AECOM DWG (WHO method)

Key

- XXX Exceedance of CW/WE Water. DWS - Scotland
- XXX Exceedance of CW/WE Water. Aquatic Toxicity - Scotland - Fresh

- GAC: Generic Assessment Criteria
- (blank): No assessment criteria available
- : Not analysed
- MG: Made Ground
- NAT: Natural

Table 1
Stage 2 Screening Assessment
Groundwater
Sheriffhall Roundabout

Location ID	BH05-M	BH05-M	BH110	BH12	BH26-M	BH28A	BH28A	BH28-M	BH28-M	BH29	BH14	BH36
Sample Depth (m)	10.8	12.05	6.41	9.64	25.4	2.92	3.54	22.5	24.88	4.93	5.14	3.24
Sample Type	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
Sample Date	13/06/18	19/12/18	23/05/19	18/12/18	19/12/18	13/06/18	19/12/18	13/06/18	19/12/18	14/06/18	19/12/18	19/12/18
Lab Report No.	745559	792061	824795	791976	792061	745559	792061	745559	792061	745820	792061	792743

Chemical Group	Chemical Name	Output Unit	EQL	GAC_WTV_SC_DWS	GAC_WTV_SC_EQS-Fresh													
	Dichloroethene	µg/L	1			-	-	-	-	-	-	-	-	-	-	-	-	
	Methylphenols	µg/L	10		100 ^{#10}	-	-	-	-	-	-	-	-	-	-	-	-	
	Trietazine	mg/L	1E-05				<0.1	<0.00002	<0.00005	<0.1	<0.00001	-	-	<0.1	-	<0.05	<0.0001	
	Boron (Water Soluble) (Filtered)	µg/L	50		1,000 ^{#14}	2,000 ^{#10}	-	-	110	-	-	-	-	-	-	-	-	
	PAH : Total :- (Polynuclear Aromatic Hydrocarbons)	µg/L	0.01				-	0.08	0.09	0.06	0.01	-	0.05	-	0.03	-	0.02	0.61
	HCH : Total (5) Isomers	µg/L	0.01				-	<0.1	-	<0.05	<0.01	<0.01	-	-	<0.01	-	<0.05	<0.1
	Cyfluthrin	mg/L	1E-05				-	<0.00001	<0.00002	<0.00001	<0.00001	-	-	-	0.00008	-	<0.00001	<0.0001
Field	pH	pH_Units	0			7.11	7.21	7.15	7.14	6.6	7.28	7.55	7.24	7.24	7.45	7.31	-	
TPH	>C5-C6 Aliphatics	µg/L	0.01		15,000 ^{#1}		<10	<10	<0.01	<10	-	-	-	<10	-	<10	<10	
	>C6-C8 Aliphatics	µg/L	0.01		15,000 ^{#1}		<10	<10	<0.01	<10	-	-	-	<10	-	<10	<10	
	>C8-C10 Aliphatics	µg/L	0.01		300 ^{#1}		-	-	<0.01	-	-	-	-	-	-	-	-	
	>C10-C12 Aliphatics	µg/L	0.01		300 ^{#1}		-	<10	<10	0.32	<10	-	-	<10	-	<10	<20	
	>C12-C16 Aliphatics	µg/L	0.01		300 ^{#1}		-	<10	<10	0.12	<10	-	-	<10	-	<10	20	
	>C16-C21 Aliphatics	µg/L	0.01		300 ^{#1}		-	<10	<10	<0.1	<10	-	-	<10	-	40	60	
	>C16-C35 Aliphatics	µg/L					-	20 ^{#22}	<20 ^{#23}	<0.2 ^{#23}	<20 ^{#23}	-	-	<20 ^{#23}	-	80 ^{#22}	110 ^{#22}	
	>C21-C35 Aliphatics	µg/L	0.01		300 ^{#1}		-	10	<10	<0.1	<10	-	-	<10	-	40	50	
	>EC6-EC7 Aromatics	µg/L	0.01		1 ^{#14}	10 ^{#7}	-	<10	<10	<0.01	<10	-	-	<10	-	<10	<10	
	>EC7-EC8 Aromatics	µg/L	0.01		700 ^{#11}	50 ^{#12}	-	<10	<10	<0.01	<10	-	-	<10	-	<10	<10	
	>EC8-EC10 Aromatics	µg/L	0.01		300 ^{#1}		-	<10	<10	<0.01	<10	-	-	<10	-	<10	<10	
	>EC10-EC12 Aromatics	µg/L	0.01		90 ^{#1}		-	<10	<10	0.14	<10	-	-	<10	-	<10	<20	
	>EC12-EC16 Aromatics	µg/L	0.01		90 ^{#1}		-	<10	<10	0.24	<10	-	-	<10	-	<10	20	
	>EC16-EC21 Aromatics	µg/L	0.01		90 ^{#1}		-	<10	<10	<0.1	<10	-	-	<10	-	<10	30	
>EC21-EC35 Aromatics	µg/L	0.01		90 ^{#1}		-	<10	<10	<0.1	<10	-	-	<10	-	<10	<20		
BTEX	Benzene	µg/L	1		1 ^{#14}	10 ^{#7}	<1	<1	<1	<1	-	-	<1	-	<1	<1		
	Toluene	µg/L	1		700 ^{#11}	74 ^{#10}	<1	<1	<1	<1	-	-	<1	-	<1	<1		
	Ethylbenzene	µg/L	1		300 ^{#11}	20 ^{#10}	<1	<1	<1	<1	-	-	<1	-	<1	<1		
	Xylene (m & p)	µg/L	1				<1	<1	<1	<1	-	-	<1	-	<1	<1		
	Xylene Total	µg/L			500 ^{#11}	30 ^{#10}	<2 ^{#21}	<2 ^{#21}	<2 ^{#21}	<2 ^{#21}	-	-	<2 ^{#21}	-	<2 ^{#21}	<2 ^{#21}		
	Xylene (o)	µg/L	1		190 ^{#8}		<1	<1	<1	<1	-	-	<1	-	<1	<1		
	Total BTEX	µg/L					<5 ^{#21}	<5 ^{#21}	<5 ^{#21}	<5 ^{#21}	-	-	<5 ^{#21}	-	<5 ^{#21}	<5 ^{#21}		
Oxygenates	MTBE	µg/L	1		1,800 ^{#16}	5,100 ^{#13}	<1	<1	<1	<1	-	-	<1	-	<1	<1		
Chlorinated Hydrocarbons	Chloromethane	µg/L	1		190 ^{#8}		-	-	-	-	-	-	-	-	-	-		
	Vinyl chloride	µg/L	1		0.5 ^{#14}		-	-	-	-	-	-	-	-	-	-		
	Chloroethane	µg/L	1		21,000 ^{#8}		-	-	-	-	-	-	-	-	-	-		
	1,1-dichloroethene	µg/L	1		7 ^{#11}		-	-	-	-	-	-	-	-	-	-		
	Dichloromethane	µg/L	50		5 ^{#11}	20 ^{#7}	-	-	-	-	-	-	-	-	-	-		
	trans-1,2-dichloroethene	µg/L	1		50 ^{#11}		-	-	-	-	-	-	-	-	-	-		
	1,1-dichloroethane	µg/L	1		2.8 ^{#8}		-	-	-	-	-	-	-	-	-	-		
	cis-1,2-dichloroethene	µg/L	1		50 ^{#11}		-	-	-	-	-	-	-	-	-	-		
	Chloroform	µg/L	1		Use trihalomethanes ^{#14}	2.5 ^{#7}	-	-	-	-	-	-	-	-	-	-		
	1,1,1-trichloroethane	µg/L	1		200 ^{#11}	100 ^{#10}	-	-	-	-	-	-	-	-	-	-		
	Carbon tetrachloride	µg/L	1		3 ^{#14}	12 ^{#7}	-	-	-	-	-	-	-	-	-	-		
	Trichloroethene	µg/L	1		Use PCE + TCE ^{#14}	10 ^{#7}	-	-	-	-	-	-	-	-	-	-		
	1,1,2-trichloroethane	µg/L	1		5 ^{#11}	400 ^{#10}	-	-	-	-	-	-	-	-	-	-		
	Tetrachloroethene	µg/L	1		Use PCE + TCE ^{#14}	10 ^{#7}	-	-	-	-	-	-	-	-	-	-		
Sum of PCE and TCE	µg/L			10 ^{#14}		-	-	-	-	-	-	-	-	-	-			
VOC	2,2-dichloropropane	µg/L	1				-	-	-	-	-	-	-	-	-	-		
	Bromochloromethane	µg/L	1		83 ^{#8}		-	-	-	-	-	-	-	-	-	-		
	1,1-dichloropropene	µg/L	1				-	-	-	-	-	-	-	-	-	-		
	1,2-dichloroethane	µg/L	1		3 ^{#14}	10 ^{#7}	-	-	-	-	-	-	-	-	-	-		
	1,2-dichloropropane	µg/L	1		5 ^{#11}		-	-	-	-	-	-	-	-	-	-		
	Dibromomethane	µg/L	1		8.3 ^{#8}		-	-	-	-	-	-	-	-	-	-		
	Bromodichloromethane	µg/L	1		60 ^{#2}		-	-	-	-	-	-	-	-	-	-		
	cis-1,3-dichloropropene	µg/L	1				-	-	-	-	-	-	-	-	-	-		
	trans-1,3-dichloropropene	µg/L	1				-	-	-	-	-	-	-	-	-	-		
	1,3-dichloropropane	µg/L	1		20 ^{#11}		-	-	-	-	-	-	-	-	-	-		
	Chlorodibromomethane	µg/L	1		Use trihalomethanes ^{#14}		-	-	-	-	-	-	-	-	-	-		
	1,1,1,2-tetrachloroethane	µg/L	1		0.57 ^{#8}		-	-	-	-	-	-	-	-	-	-		
	Styrene	µg/L	1		20 ^{#11}	50 ^{#10}	-	-	-	-	-	-	-	-	-	-		
	Bromoform	µg/L	1		Use trihalomethanes ^{#14}		-	-	-	-	-	-	-	-	-	-		
	Isopropylbenzene	µg/L	1		450 ^{#8}		-	-	-	-	-	-	-	-	-	-		
	1,1,2,2-tetrachloroethane	µg/L	1		0.076 ^{#8}	140 ^{#10}	-	-	-	-	-	-	-	-	-	-		
	1,2,3-trichloropropane	µg/L	1		0.00075 ^{#8}		-	-	-	-	-	-	-	-	-	-		

Table 1
Stage 2 Screening Assessment
Groundwater
Sheriffhall Roundabout

Location ID	BH05-M	BH05-M	BH110	BH12	BH26-M	BH28A	BH28A	BH28-M	BH28-M	BH29	BH29	BH36
Sample Depth (m)	10.8	12.05	6.41	9.64	25.4	2.92	3.54	22.5	24.88	4.93	5.14	3.24
Sample Type	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
Sample Date	13/06/18	19/12/18	23/05/19	18/12/18	19/12/18	13/06/18	19/12/18	13/06/18	19/12/18	14/06/18	19/12/18	19/12/18
Lab Report No.	745559	792061	824795	791976	792061	745559	792061	745559	792061	745820	792061	792743

Chemical Group	Chemical Name	Output Unit	EQL	GAC_WTV_SC_DWS	GAC_WTV_SC_EQS-Fresh												
	n-propyl benzene	µg/L	1	660 ^{RB}		-	-	-	-	-	-	-	-	-	-	-	-
	1,3,5-trimethyl benzene	µg/L	1	60 ^{RB}		-	-	-	-	-	-	-	-	-	-	-	-
	tert-butyl benzene	µg/L	1	690 ^{RB}		-	-	-	-	-	-	-	-	-	-	-	-
	1,2,4-trimethyl benzene	µg/L	1	56 ^{RB}		-	-	-	-	-	-	-	-	-	-	-	-
	sec-butyl benzene	µg/L	1	2,000 ^{RB}		-	-	-	-	-	-	-	-	-	-	-	-
	p-isopropyl toluene	µg/L	1			-	-	-	-	-	-	-	-	-	-	-	-
	Hexachlorobutadiene	µg/L	1	0.1 ^{#11}	0.6 ^{RB}	-	<1	-	<1	-	-	-	-	-	-	-	<1
	1,2-Dichloroethene	µg/L		50 ^{#2}		-	-	-	-	-	-	-	-	-	-	-	-
	Trihalomethanes	µg/L		100 ^{#14}		-	-	-	-	-	-	-	-	-	-	-	-
PAH	Naphthalene	µg/L	0.01	6 ^{#16}	2 ^{#7}	<0.01	<1 - 0.01	0.02	<0.02	0.01	0.01	0.01	<0.01	0.02	-	0.01	<1 - 0.02
	Acenaphthylene	µg/L	0.01	18 ^{#16}		<0.01	<1 - 0.01	<0.01	<0.02	0.01	<0.01	0.01	<0.01	0.01	-	0.01	<0.01
	Acenaphthene	µg/L	0.01	18 ^{#16}		<0.01	<1 - 0.01	<0.01	<0.02	0.01	<0.01	0.01	<0.01	0.01	-	0.01	<1 - 0.01
	Fluorene	µg/L	0.01	12 ^{#16}		<0.01	<1 - 0.01	<0.01	<0.02	0.01	0.01	0.01	<0.01	0.01	-	0.01	<1 - 0.01
	Phenanthrene	µg/L	0.01	4 ^{#16}		<0.01	<1 - 0.02	<0.01	<1 - 0.02	0.01	0.02	0.01	<0.01	0.01	-	0.01	<1 - 0.09
	Anthracene	µg/L	0.01	90 ^{#16}	0.1 ^{#7}	<0.01	<1 - 0.01	<0.01	<0.02	0.01	<0.01	0.01	<0.01	0.01	-	0.01	<1 - 0.02
	Fluoranthene	µg/L	0.01	4 ^{#2}	0.0063 ^{#7}	<0.01	<1 - 0.01	<0.01	<1 - 0.02	0.01	0.01	0.01	<0.01	0.01	-	0.01	<1 - 0.14
	Pyrene	µg/L	0.01	9 ^{#16}		<0.01	<1 - 0.01	0.01	<0.02	0.01	0.01	0.01	<0.01	0.01	-	0.01	<1 - 0.13
	Benz(a)anthracene	µg/L	0.01	3.5 ^{#16}		<0.01	<1 - 0.01	0.01	<0.02	0.01	<0.01	0.01	<0.01	0.01	-	0.01	<1 - 0.04
	Chrysene	µg/L	0.01	7 ^{#16}		0.02	<1 - 0.01	0.02	<1 - 0.02	0.01	0.03	0.01	<0.01	0.01	-	0.01	<1 - 0.06
	Benzo(a)pyrene	µg/L	0.01	0.01 ^{#14}	0.00017 ^{#7}	<0.01	<1 - 0.01	0.03	<0.02	0.01	<0.01	0.01	<0.01	0.01	-	0.01	<1 - 0.02
	Indeno(1,2,3-c,d)pyrene	µg/L	0.01	Use PAHs (sum of 4) ^{#14}	see BaP and notes ^{#7}	<0.01	<1 - 0.01	<0.01	<0.02	0.01	<0.01	0.01	<0.01	0.01	-	0.01	<1 - 0.01
	Dibenz(a,h)anthracene	µg/L	0.01	0.07 ^{#16}		<0.01	<1 - 0.01	<0.01	<0.02	0.01	<0.01	0.01	<0.01	0.01	-	0.01	<1 - 0.01
	Benzo(g,h,i)perylene	µg/L	0.01	Use PAHs (sum of 4) ^{#14}	see BaP and notes ^{#7}	<0.01	<1 - 0.01	<0.01	<0.02	0.01	<0.01	0.01	<0.01	0.01	-	0.01	<1 - 0.01
	Benzo(b)fluoranthene	µg/L	0.01	Use PAHs (sum of 4) ^{#14}	see BaP and notes ^{#7}	<0.01	0.01	<0.01	<0.02	0.01	0.01	0.01	<0.01	0.01	-	0.01	0.02
	Benzo(k)fluoranthene	µg/L	0.01	Use PAHs (sum of 4) ^{#14}	see BaP and notes ^{#7}	<0.01	0.01	<0.01	<0.02	0.01	<0.01	0.01	<0.01	0.01	-	0.01	0.02
	Benzo(b)&(k)fluoranthene	µg/L	1		0.03 ^{#12}	<0.02 ^{#23}	<1	-	<1	0.02 ^{#22}	0.02 ^{#22}	0.02 ^{#22}	<0.02 ^{#23}	0.02 ^{#22}	-	0.02 ^{#22}	<1
	PAHs (Sum of total)	µg/L	0.01			0.02	-	-	-	-	0.1	-	<0.01	-	-	-	-
	PAHs (sum of 4)	µg/L		0.1 ^{#14}		<0.04 ^{#23}	0.04 ^{#18}	-	<0.08 ^{#19}	0.04 ^{#22}	0.04 ^{#22}	0.04 ^{#22}	<0.04 ^{#23}	0.04 ^{#22}	-	0.04 ^{#22}	0.06 ^{#18}
	PAH 16 Total	µg/L	0.01			0.02	-	-	-	-	0.1	-	<0.01	-	-	-	-
	benzo(g,h,i)perylene + indeno(1,2,3-cd)pyrene	µg/L			0.002 ^{#12}	<0.02 ^{#23}	0.02 ^{#18}	-	<0.04 ^{#19}	0.02 ^{#22}	<0.02 ^{#23}	0.02 ^{#22}	<0.02 ^{#23}	0.02 ^{#22}	-	0.02 ^{#22}	0.02 ^{#18}
SVOC	2-methylnaphthalene	µg/L	1	36 ^{RB}		-	<1	-	<1	-	-	-	-	-	-	-	<1
	4-bromophenyl phenyl ether	µg/L	1			-	<1	-	<1	-	-	-	-	-	-	-	<1
	4-chlorophenyl phenyl ether	µg/L	1			-	<1	-	<1	-	-	-	-	-	-	-	<1
	Azobenzene	µg/L	1	0.12 ^{RB}		-	<1	-	<1	-	-	-	-	-	-	-	<1
	Bis(2-chloroethoxy) methane	µg/L	1	59 ^{RB}		-	<1	-	<1	-	-	-	-	-	-	-	<1
	Bis(2-chloroethyl) ether	µg/L	1	0.014 ^{RB}		-	<1	-	<1	-	-	-	-	-	-	-	<1
	Carbazole	µg/L	1			-	<1	-	<1	-	-	-	-	-	-	-	<1
	Dibenzofuran	µg/L	1	7.9 ^{RB}		-	<1	-	<1	-	-	-	-	-	-	-	<1
	Hexachlorocyclopentadiene	µg/L	1	0.41 ^{RB}		-	<1	-	<1	-	-	-	-	-	-	-	<1
	Hexachloroethane	µg/L	1	0.33 ^{RB}		-	<1	-	<1	-	-	-	-	-	-	-	<1
Phenolics	2-methylphenol	µg/L	1	930 ^{RB}		-	<1	-	<1	-	-	-	-	-	-	-	<1
	2-nitrophenol	µg/L	1			-	<1	-	<1	-	-	-	-	-	-	-	<1
	2,4-dimethylphenol	µg/L	1	360 ^{RB}		-	<1	-	<1	-	-	-	-	-	-	-	<1
	4-chloro-3-methylphenol	µg/L	1	1,400 ^{RB}	40 ^{#10}	-	<1	-	<1	-	-	-	-	-	-	-	<1
	4-methylphenol	µg/L	1	1,900 ^{RB}		-	<1	-	<1	-	-	-	-	-	-	-	<1
	4-nitrophenol	µg/L	10			-	<10	-	<10	-	-	-	-	-	-	-	<10
	Phenol	µg/L	1	5,800 ^{RB}	7.7 ^{#10}	-	<1	-	<1	-	-	-	-	-	-	-	<1
	2-chloronaphthalene	µg/L	1	750 ^{RB}		-	<1	-	<1	-	-	-	-	-	-	-	<1
	2,4-dinitrophenol	µg/L	10	39 ^{RB}		-	<1	-	<1	-	-	-	-	-	-	-	<1
	Phenols	µg/L	0.5			<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5
	Phenols (Mono)	µg/L	100			-	<100	<100	<100	<100	-	<100	<100	<100	-	<100	<100
Herbicides	Atrazine	µg/L	0.01	0.1 ^{#11}	0.6 ^{#7}	-	<100	<0.02	<0.05	<100	<0.01	-	-	<100	-	<50	<0.1
	Simazine	µg/L	0.01	0.1 ^{#11}	1 ^{#7}	-	<100	<0.02	<0.05	<100	<0.01	-	-	<100	-	<50	<0.1
	Prometryn	µg/L	0.01	600 ^{RB}		-	<100	<0.02	<0.05	<100	<0.01	-	-	<100	-	<50	<0.1
	Propazine	µg/L	0.01	340 ^{RB}		-	<100	<0.02	<0.05	<100	<0.01	-	-	<100	-	<50	<0.1
	Terbutryn	µg/L	0.01	13 ^{RB}		-	<100	<0.02	<0.05	<100	<0.01	-	-	<100	-	<50	<0.1
Pesticides	Parathion	µg/L	0.01	0.1 ^{#11}		-	<0.1	<0.01	<0.05	<0.01	<0.01	-	-	<0.01	-	<0.05	<0.1
	Pirimiphos-methyl	µg/L	0.01	0.85 ^{RB}	0.015 ^{#10}	-	<0.1	<0.01	<0.05	<0.01	<0.01	-	-	<0.01	-	<0.05	<0.1
	Bifenthrin	µg/L	0.1	300 ^{RB}		-	-	<0.1	-	-	-	-	-	-	-	-	-
	Cyhalothrin/Karate	µg/L	0.1	20 ^{RB}		-	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	<0.1	<0.1	<0.1
	Cypermethrins(total)	µg/L	0.1		0.0001 ^{#10}	-	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	<0.1	<0.1	<0.1
	Deltamethrin	µg/L	0.01			-	<0.01	<0.02	<0.01	<0.01	-	-	<0.01	-	<0.01	<0.01	<0.1
	Fluvalinate	µg/L	0.1	200 ^{RB}		-	<0.1	<0.1	-	<0.1	-	-	<0.1	-	<0.1	<0.1	<0.1

Table 1
Stage 2 Screening Assessment
Groundwater
Sheriffhall Roundabout

Location ID	BH05-M	BH05-M	BH110	BH12	BH26-M	BH28A	BH28A	BH28-M	BH28-M	BH29	BH29	BH36
Sample Depth (m)	10.8	12.05	6.41	9.64	25.4	2.92	3.54	22.5	24.88	4.93	5.14	3.24
Sample Type	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
Sample Date	13/06/18	19/12/18	23/05/19	18/12/18	19/12/18	13/06/18	19/12/18	13/06/18	19/12/18	14/06/18	19/12/18	19/12/18
Lab Report No.	745559	792061	824795	791976	792061	745559	792061	745559	792061	745820	792061	792743

Chemical Group	Chemical Name	Output Unit	EQL	GAC_WTV_SC_DWS	GAC_WTV_SC_EQS-Fresh	BH05-M	BH05-M	BH110	BH12	BH26-M	BH28A	BH28A	BH28-M	BH28-M	BH29	BH29	BH36
	Permethrin	µg/L	0.01	0.1 ^{#11}	0.001 ^{#10}	-	<0.1	<0.02	<0.05	<0.01	-	-	-	<0.01	-	<0.05	<0.1
	Aldrin+Dieldrin+Endrin+Isodrin	µg/L			0.01 ^{#7}	-	0.39 ^{#20}	-	0.24 ^{#20}	0.13 ^{#20}	<0.03 ^{#21}	-	-	0.13 ^{#20}	-	0.16 ^{#20}	<0.3 ^{#21}
Organochlorine Pesticides	Aldrin	µg/L	0.01	0.03 ^{#14}	Use Aldrin+Dieldrin+Endrin+Isodrin ^{#7}	-	0.19	<0.01	0.14	0.11	<0.01	-	-	0.11	-	0.06	<0.1
	Dieldrin	µg/L	0.01	0.03 ^{#14}	Use Aldrin+Dieldrin+Endrin+Isodrin ^{#7}	-	<0.1	<0.01	<0.05	<0.01	<0.01	-	-	<0.01	-	<0.05	<0.1
	Endrin	µg/L	0.01	0.1 ^{#11}	Use Aldrin+Dieldrin+Endrin+Isodrin ^{#7}	-	<0.1	<0.01	<0.05	<0.01	<0.01	-	-	<0.01	-	<0.05	<0.1
	g-BHC (Lindane)	µg/L	0.01	0.1 ^{#11}		-	<0.1	<0.01	<0.05	<0.01	<0.01	-	-	<0.01	-	<0.05	<0.1
	Heptachlor	µg/L	0.01	0.03 ^{#14}		-	<0.1	<0.01	<0.05	<0.01	<0.01	-	-	<0.01	-	<0.05	<0.1
	Heptachlor epoxide	µg/L	0.01	0.03 ^{#14}		-	<0.1	<0.01	<0.05	<0.01	<0.01	-	-	<0.01	-	<0.05	<0.1
	DDT	µg/L	0.01	1 ^{#2}	0.01 ^{#7}	-	<0.1	<0.01	<0.05	<0.01	<0.01	-	-	<0.01	-	<0.05	<0.1
	DDD	µg/L	0.01	0.032 ^{#6}		-	<0.1	<0.01	<0.05	<0.01	<0.01	-	-	<0.01	-	<0.05	<0.1
	Aldrin + Dieldrin	µg/L		0.03 ^{#11}		-	0.29 ^{#22}	-	0.19 ^{#22}	0.12 ^{#22}	<0.02 ^{#23}	-	-	0.12 ^{#22}	-	0.11 ^{#22}	<0.2 ^{#23}
	chlordane	µg/L	0.01	0.1 ^{#11}		-	<0.1	<0.01	<0.05	<0.01	<0.01	-	-	<0.01	-	<0.05	<0.1
DDE	µg/L	0.01			-	<0.1	<0.01	<0.05	<0.01	<0.01	-	-	<0.01	-	<0.05	<0.1	
Endosulfan	µg/L	0.01		20 ^{#2}	0.005 ^{#7}	-	<0.1	<0.01	<0.05	<0.01	<0.01	-	-	<0.01	-	<0.05	<0.1
Organophosphorous Pesticides	Azinophos methyl	µg/L	0.01	56 ^{#6}	0.01 ^{#10}	-	<0.1	<0.01	<0.05	<0.01	<0.01	-	-	<0.01	-	<0.05	<0.1
	Diazinon	µg/L	0.01	0.1 ^{#11}	0.01 ^{#10}	-	<0.1	<0.01	<0.05	<0.01	<0.01	-	-	<0.01	-	<0.05	<0.1
	Dichlorvos	µg/L	0.01	0.26 ^{#6}	0.001 ^{#12}	-	<0.1	<0.01	<0.05	<0.01	<0.01	-	-	<0.01	-	<0.05	<0.1
	Dimethoate	µg/L	0.01	0.1 ^{#11}	0.48 ^{#10}	-	<0.1	<0.01	<0.05	<0.01	<0.01	-	-	<0.01	-	<0.05	<0.1
	Fenitrothion	µg/L	0.01	0.1 ^{#11}	0.01 ^{#10}	-	<0.1	<0.01	<0.05	<0.01	<0.01	-	-	<0.01	-	<0.05	<0.1
	Malathion	µg/L	0.01	0.1 ^{#11}	0.01 ^{#10}	-	<0.1	<0.01	<0.05	<0.01	<0.01	-	-	<0.01	-	<0.05	<0.1
	Mevinphos (Phosdrin)	µg/L	0.01	0.1 ^{#11}	0.02 ^{#6}	-	<0.1	<0.01	<0.05	<0.01	<0.01	-	-	<0.01	-	<0.05	<0.1
PCBs	Tetrachlorobiphenyl, 3,3,4,4- (PCB 77)	µg/L	0.005	0.006 ^{#6}		-	<0.005	-	<0.005	<0.005	-	-	-	<0.005	-	-	<0.005
	Tetrachlorobiphenyl, 3,4,4,5- (PCB 81)	µg/L	0.005	0.0004 ^{#6}		-	<0.005	-	<0.005	<0.005	-	-	-	<0.005	-	-	<0.005
	Pentachlorobiphenyl, 2,3,3,4,4- (PCB 105)	µg/L	0.005	0.004 ^{#6}		-	<0.005	-	<0.005	<0.005	-	-	-	<0.005	-	-	<0.005
	Pentachlorobiphenyl, 2,3,4,4,5- (PCB 114)	µg/L	0.005	0.004 ^{#6}		-	<0.005	-	<0.005	<0.005	-	-	-	<0.005	-	-	<0.005
	PCB 118	µg/L	0.005	0.004 ^{#6}		-	<0.005	-	<0.005	<0.005	-	-	-	<0.005	-	-	<0.005
	Pentachlorobiphenyl, 2,3,4,4,5- (PCB 123)	µg/L	0.005	0.004 ^{#6}		-	<0.005	-	<0.005	<0.005	-	-	-	<0.005	-	-	<0.005
	Pentachlorobiphenyl, 3,3,4,4,5- (PCB 126)	µg/L	0.005	0.0000012 ^{#6}		-	<0.005	-	<0.005	<0.005	-	-	-	<0.005	-	-	<0.005
	Hexachlorobiphenyl, 2,3,3,4,4,5- (PCB 156)	µg/L	0.005	0.004 ^{#6}		-	<0.005	-	<0.005	<0.005	-	-	-	<0.005	-	-	<0.005
	Hexachlorobiphenyl, 2,3,3,4,4,5- (PCB 157)	µg/L	0.005	0.004 ^{#6}		-	<0.005	-	<0.005	<0.005	-	-	-	<0.005	-	-	<0.005
	Hexachlorobiphenyl, 2,3,4,4,5,5- (PCB 167)	µg/L	0.005	0.004 ^{#6}		-	<0.005	-	<0.005	<0.005	-	-	-	<0.005	-	-	<0.005
Hexachlorobiphenyl, 3,3,4,4,5,5- (PCB 169)	µg/L	0.005	0.000004 ^{#6}		-	<0.005	-	<0.005	<0.005	-	-	-	<0.005	-	-	<0.005	
Heptachlorobiphenyl, 2,3,3,4,4,5,5- (PCB 189)	µg/L	0.005	0.004 ^{#6}		-	<0.005	-	<0.005	<0.005	-	-	-	<0.005	-	-	<0.005	
Anilines	2-nitroaniline	µg/L	1	190 ^{#6}		-	<1	-	<1	-	-	-	-	-	-	-	<1
	3-nitroaniline	µg/L	1			-	<1	-	<1	-	-	-	-	-	-	-	<1
	4-chloroaniline	µg/L	1	0.37 ^{#6}		-	<1	-	<1	-	-	-	-	-	-	-	<1
	4-nitroaniline	µg/L	1	3.8 ^{#6}		-	<1	-	<1	-	-	-	-	-	-	-	<1
Explosives	2,4-Dinitrotoluene	µg/L	1	0.24 ^{#6}		-	<1	-	<1	-	-	-	-	-	-	-	<1
	2,6-dinitrotoluene	µg/L	1	0.049 ^{#6}		-	<1	-	<1	-	-	-	-	-	-	-	<1
	Nitrobenzene	µg/L	1	8 to 63 ^{#2}		-	<1	-	<1	-	-	-	-	-	-	-	<1
Halogenated Benzenes	Chlorobenzene	µg/L	1	300 ^{#2}		-	-	-	-	-	-	-	-	-	-	-	-
	Bromobenzene	µg/L	1	62 ^{#6}		-	-	-	-	-	-	-	-	-	-	-	-
	2-chlorotoluene	µg/L	1	240 ^{#6}		-	-	-	-	-	-	-	-	-	-	-	-
	4-chlorotoluene	µg/L	1	250 ^{#6}		-	-	-	-	-	-	-	-	-	-	-	-
	1,3-dichlorobenzene	µg/L	1			-	<1	-	<1	-	-	-	-	-	-	-	<1
	1,4-dichlorobenzene	µg/L	1	80 ^{#11}		-	<1	-	<1	-	-	-	-	-	-	-	<1
	1,2-dichlorobenzene	µg/L	1	600 ^{#11}		-	<1	-	<1	-	-	-	-	-	-	-	<1
	1,2,4-trichlorobenzene	µg/L	1	70 ^{#11}	Refer to 'Trichlorobenzene (total)' ^{#7}	-	<1	-	<1	-	-	-	-	-	-	-	<1
	Hexachlorobenzene	µg/L	0.01	0.1 ^{#11}	0.05 ^{#6}	-	<0.1	<0.01	<0.05	<0.01	<0.01	-	-	<0.01	-	<0.05	<0.1
Trichlorobenzene (total)	µg/L		20 ^{#2}	0.4 ^{#7}	-	<1 ^{#21}	-	<1 ^{#21}	-	-	-	-	-	-	-	<1 ^{#21}	
Halogenated Hydrocarbons	Dichlorodifluoromethane	µg/L	1	200 ^{#6}		-	-	-	-	-	-	-	-	-	-	-	-
	Bromomethane	µg/L	1	7.5 ^{#6}		-	-	-	-	-	-	-	-	-	-	-	-
	Trichlorofluoromethane	µg/L	1	5,200 ^{#6}		-	-	-	-	-	-	-	-	-	-	-	-
	1,2-dibromoethane	µg/L	1	0.4 ^{#11}		-	-	-	-	-	-	-	-	-	-	-	-
Halogenated Phenols	2-chlorophenol	µg/L	1	91 ^{#6}	50 ^{#10}	-	<1	-	<1	-	-	-	-	-	-	-	<1
	2,4-dichlorophenol	µg/L	1	46 ^{#6}	4.2 ^{#10}	-	<1	-	<1	-	-	-	-	-	-	-	<1
	2,4,5-trichlorophenol	µg/L	1	1,200 ^{#6}		-	<1	-	<1	-	-	-	-	-	-	-	<1
	2,4,6-trichlorophenol	µg/L	1	200 ^{#11}		-	<1	-	<1	-	-	-	-	-	-	-	<1
	Pentachlorophenol	µg/L	1	9 ^{#2}	0.4 ^{#7}	-	<1	-	<1	-	-	-	-	-	-	-	<1
Phthalates	Bis(2-ethylhexyl) phthalate	µg/L	5	6 ^{#11}	1.3 ^{#7}	-	<5	-	<5	-	-	-	-	-	-	-	<5
	Butyl benzyl phthalate	µg/L	1	16 ^{#6}	7.5 ^{#10}	-	<1	-	<1	-	-	-	-	-	-	-	<1
	Di-n-butyl phthalate	µg/L	1.5	900 ^{#6}	8 ^{#10}	-	<1.5	-	<1.5	-	-	-	-	-	-	-	<1.5
	Di-n-octyl phthalate	µg/L	1	200 ^{#6}	20 ^{#10}	-	<1	-	<1	-	-	-	-	-	-	-	<1

Table 1
Stage 2 Screening Assessment
Groundwater
Sheriffhall Roundabout

Location ID	BH05-M	BH05-M	BH110	BH12	BH26-M	BH28A	BH28A	BH28-M	BH28-M	BH29	BH29	BH36
Sample Depth (m)	10.8	12.05	6.41	9.64	25.4	2.92	3.54	22.5	24.88	4.93	5.14	3.24
Sample Type	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
Sample Date	13/06/18	19/12/18	23/05/19	18/12/18	19/12/18	13/06/18	19/12/18	13/06/18	19/12/18	14/06/18	19/12/18	19/12/18
Lab Report No.	745559	792061	824795	791976	792061	745559	792061	745559	792061	745820	792061	792743

Chemical Group	Chemical Name	Output Unit	EQL	GAC_WTV_SC_DWS	GAC_WTV_SC_EQS-Fresh												
	Diethyl phthalate	µg/L	1	15,000 ^{#3}	200 ^{#10}	-	<1	-	<1	-	-	-	-	-	-	-	<1
	Dimethyl phthalate	µg/L	1		800 ^{#10}	-	<1	-	<1	-	-	-	-	-	-	-	<1
Solvents	Isophorone	µg/L	1	78 ^{#3}		-	<1	-	<1	-	-	-	-	-	-	-	<1
Metals	Arsenic	µg/L	0.2	10 ^{#14}	50 ^{#10}	-	-	-	-	-	-	-	-	-	-	-	-
	Arsenic (Filtered)	µg/L	0.2	10 ^{#14}	50 ^{#10}	0.5	0.2	<0.2	0.5	0.3	1.4	2.2	0.6	0.3	0.4	0.6	0.9
	Boron	µg/L	10	1,000 ^{#14}	2,000 ^{#10}	-	100	-	-	130	64,000	40	-	100	-	40	130
	Boron (Filtered)	µg/L	10	1,000 ^{#14}	2,000 ^{#10}	-	-	-	190	-	-	-	-	-	-	-	-
	Cadmium	µg/L	0.02	5 ^{#14}	0.08 ^{#7}	-	-	-	-	-	-	-	-	-	-	-	-
	Cadmium (Filtered)	µg/L	0.02	5 ^{#14}	0.08 ^{#7}	0.1	0.03	<0.02	<0.1	<0.1	<0.02	<0.1	<0.02	0.03	0.04	<0.02	0.03
	Chromium (III+VI)	µg/L	1	50 ^{#14}	Use CrIII or CrVI ^{#12}	-	-	-	-	-	-	-	-	-	-	-	-
	Chromium (III+VI) (Filtered)	µg/L	1	50 ^{#14}	Use CrIII or CrVI ^{#12}	<1	2	<1	<1	1	<1	<5	1	2	<1	3	<1
	Copper	µg/L	0.5	2,000 ^{#14}	1 ^{#10}	-	-	-	-	-	-	-	-	-	-	-	-
	Copper (Filtered)	µg/L	0.5	2,000 ^{#14}	1 ^{#10}	0.8	1	<0.5	0.8	<0.5	1.4	4	<0.5	1.8	1.2	1.3	13
	Iron	µg/L	10	200 ^{#14}	1,000 ^{#10}	39,000	90	140	20	<10	38,000	90	4700	10	640,000	20	660
	Lead	µg/L	0.3	10 ^{#14}	1.2 ^{#7}	-	-	-	-	-	-	-	-	-	-	-	-
	Lead (Filtered)	µg/L	0.3	10 ^{#14}	1.2 ^{#7}	<0.3	<0.3	<0.3	<1.5	<0.3	<0.3	<0.3	<0.3	<0.3	0.3	<0.3	<0.3
	Manganese	µg/L	1	50 ^{#14}	123 ^{#10}	-	-	-	-	-	-	-	-	-	-	-	-
	Manganese (Filtered)	µg/L	1	50 ^{#14}	123 ^{#10}	220	350	83	<1	1100	1	340	<1	<1	860	<1	25
	Mercury	µg/L	0.05	1 ^{#14}	0.07 ^{#6}	-	-	-	-	-	-	-	-	-	-	-	-
	Mercury (Filtered)	µg/L	0.05	1 ^{#14}	0.07 ^{#6}	0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.05	<0.05	0.41	<0.05	<0.05
	Nickel	µg/L	1	20 ^{#14}	4 ^{#7}	-	-	-	-	-	-	-	-	-	-	-	-
	Nickel (Filtered)	µg/L	1	20 ^{#14}	4 ^{#7}	4	2	2	<1	51	2	<5	2	1	3	<1	11
	Selenium	µg/L	0.5	10 ^{#14}		-	-	-	-	-	-	-	-	-	-	-	-
Selenium (Filtered)	µg/L	0.5	10 ^{#14}		0.8	<0.5	1	<0.5	<0.5	7.7	3	1.1	1.2	0.7	<0.5	0.7	
Vanadium	µg/L	2	86 ^{#3}	20 ^{#10}	-	-	-	-	-	-	-	-	-	-	-	-	
Vanadium (Filtered)	µg/L	2	86 ^{#3}	20 ^{#10}	<2	<2	<2	<2	<2	<2	<10	<2	<2	<2	<2	<2	
Zinc	µg/L	2	6,000 ^{#3}	11.9 ^{#10}	-	-	-	-	-	-	-	-	-	-	-	-	
Zinc (Filtered)	µg/L	2	6,000 ^{#3}	11.9 ^{#10}	<2	14	<2	<2	20	<2	<10	<2	37	<2	6	<2	
Chromium (hexavalent)	µg/L	3	Use Chromium (total) ^{#14}	3.4 ^{#10}	<3	-	-	<3	-	<3	-	<3	-	<3	-	<3	
Chromium (hexavalent) (Filtered)	µg/L	3	Use Chromium (total) ^{#14}	3.4 ^{#10}	-	<3	<3	-	<3	-	<3	-	<3	-	<3	-	
Inorganics	Ammoniacal Nitrogen	mg/L	0.05			0.14	-	-	<0.05	-	<0.05	-	0.07	-	0.08	-	0.07
	Ammoniacal Nitrogen (Filtered)	mg/L	0.05			-	<0.05	<0.05	-	0.19	-	<0.05	-	<0.05	-	0.05	-
	Sulphur	µg/L	50,000			<50,000	56,000	<50,000	<50,000	440,000	74,000	360,000	<50,000	86,000	<50,000	51,000	230,000
	Cyanide (Free)	mg/L	0.05	Use Cyanide Total ^{#14}	0.001 ^{#10}	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Cyanide Total	mg/L	0.05	0.05 ^{#14}	0.001 ^{#5}	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
	cyanides-complex	µg/L	50	Use Cyanide Total ^{#14}		-	<50	<50	<50	<50	-	<50	-	<50	-	<50	
	Thiocyanate	mg/L	1	0.004 ^{#3}		-	<1	<1	<1	<1	<1	<1	-	<1	-	<1	
	Sulphate	mg/L	0.5	250 ^{#3}	400 ^{#10}	-	-	-	160	-	-	-	-	-	-	-	220
	Sulphate (Filtered)	mg/L	0.5	250 ^{#3}	400 ^{#10}	-	61	40	-	470	-	360	-	95	-	55	-
	Hardness as CaCO3	mg/L	10			530	380	310	1100	840	500	220	-	600	-	370	420
Easily Liberated Sulphide (Moisture Corrected)	mg/L	0.05			<0.1	<0.05	<0.1	<0.05	<0.05	<0.1	<0.05	<0.1	<0.05	-	<0.05	<0.05	
COD	mg/L	5			-	-	-	-	-	101	-	-	-	-	-	-	

Comments

- #1 WHO Petroleum DWG 2008
- #2 WHO DWG 2017
- #3 WHO 2017 - Taste
- #5 WFD England/Wales. 2015 - Freshwater Standards
- #6 Water Env't Regs (Scotland) 2015. MAC-EQS Inland
- #7 Water Env't Regs (Scotland) 2015. AA-EQS Inland
- #8 USEPA RSL (tapwater) [May 2019]
- #9 SEPA WAT-SG-53 Fresh EQS - MAC - 2015
- #10 SEPA WAT-SG-53 Fresh EQS - AA - 2015
- #11 SEPA GW RPV 2011
- #12 Scotland RBD 2009 - Fresh AA
- #13 PNEC (EU REACH) - Freshwater
- #14 DWS Scotland 2001
- #16 AECOM DWG (WHO method)
- #17 ESDAT Combined with Non-Detect Multiplier of 1. Some analytes are reported multiple times; the lowest non-detect or the highest detect is used. Some Analytes are missing from this Combined Compound.
- #18 ESDAT Combined with Non-Detect Multiplier of 1. Some analytes are reported multiple times; the lowest non-detect or the highest detect is used.
- #19 ESDAT Combined. Some analytes are reported multiple times; the lowest non-detect or the highest detect is used.
- #20 ESDAT Combined with Non-Detect Multiplier of 1. Some Analytes are missing from this Combined Compound.
- #21 ESDAT Combined. Some Analytes are missing from this Combined Compound.

Key

XXX	Exceedance of CW/WE Water. DWS - Scotland
XXX	Exceedance of CW/WE Water. Aquatic Toxicity - Scotland - Freshwater

- #22 ESDAT Combined with Non-Detect Multiplier of 1.
- #23 ESDAT Combined.
- GAC: Generic Assessment Criteria
- (blank): No assessment criteria available
- : Not analysed

Table 1
 Stage 2 Screening Assessment
 Groundwater
 Sheriffhall Roundabout

Location ID	BH36	BH37	BH40	BH40	BH41-M	BH45-M	BH45-M	BH50
Sample Depth (m)	5.10	10.82	1.44	2.06	17.94	17.28	17.61	3.98
Sample Type	GW	GW	GW	GW	GW	GW	GW	GW
Sample Date	12/06/18	06/02/19	14/06/18	19/12/18	19/12/18	13/06/18	19/12/18	13/06/18
Lab Report No.	745559	801282	745820	792061	792061	745559	792061	745559

Chemical Group	Chemical Name	Output Unit	EQL	GAC_WTV_SC_DWS	GAC_WTV_SC_EQS-Fresh								
	Dichloroethene	µg/L	1			-	-	-	-	-	-	-	-
	Methylphenols	µg/L	10		100 ^{#10}	<10	<10	-	-	-	-	-	-
	Trietazine	mg/L	1E-05			-	<0.00001	-	-	<0.1	-	<0.02	-
	Boron (Water Soluble) (Filtered)	µg/L	50	1,000 ^{#14}	2,000 ^{#10}	-	-	-	-	-	-	-	-
	PAH : Total :- (Polynuclear Aromatic Hydrocarbons)	µg/L	0.01			-	0.11	-	2.9	0.05	-	0.02	-
	HCH : Total (5) Isomers	µg/L	0.01			-	<0.01	-	-	<0.1	-	<0.02	-
	Cyfluthrin	mg/L	1E-05			-	<0.00001	-	-	<0.00001	-	<0.00001	-
Field	pH	pH_Units	0			7.34	-	7.12	7.13	6.7	6.01	6.67	7.12
TPH	>C5-C6 Aliphatics	µg/L	0.01	15,000 ^{#1}		<10	<10	-	<10	<10	-	<10	<10
	>C6-C8 Aliphatics	µg/L	0.01	15,000 ^{#1}		<10	<10	-	<10	<10	-	<10	<10
	>C8-C10 Aliphatics	µg/L	0.01	300 ^{#1}		<10	-	-	-	-	-	-	<10
	>C10-C12 Aliphatics	µg/L	0.01	300 ^{#1}		<10	<10	-	<10	10	-	<10	<10
	>C12-C16 Aliphatics	µg/L	0.01	300 ^{#1}		<10	<10	-	<10	<10	-	<10	<10
	>C16-C21 Aliphatics	µg/L	0.01	300 ^{#1}		<10	<10	-	<10	<10	-	<10	<10
	>C16-C35 Aliphatics	µg/L				<20 ^{#23}	<20 ^{#23}	-	<20 ^{#23}	<20 ^{#23}	-	<20 ^{#23}	<20 ^{#23}
	>C21-C35 Aliphatics	µg/L	0.01	300 ^{#1}		<10	<10	-	<10	<10	-	<10	<10
	>EC6-EC7 Aromatics	µg/L	0.01	1 ^{#14}	10 ^{#7}	<10	<10	-	<10	<10	-	<10	<10
	>EC7-EC8 Aromatics	µg/L	0.01	700 ^{#11}	50 ^{#12}	<10	<10	-	<10	<10	-	<10	<10
	>EC8-EC10 Aromatics	µg/L	0.01	300 ^{#1}		<10	<10	-	<10	<10	-	<10	<10
	>EC10-EC12 Aromatics	µg/L	0.01	90 ^{#1}		<10	<10	-	<10	10	-	<10	<10
	>EC12-EC16 Aromatics	µg/L	0.01	90 ^{#1}		<10	<10	-	10	20	-	10	<10
	>EC16-EC21 Aromatics	µg/L	0.01	90 ^{#1}		<10	<10	-	10	40	-	30	<10
	>EC21-EC35 Aromatics	µg/L	0.01	90 ^{#1}		<10	<10	-	<10	30	-	20	<10
BTEX	Benzene	µg/L	1	1 ^{#14}	10 ^{#7}	<1	<1 - 180	-	<1	<1	-	<1	<1
	Toluene	µg/L	1	700 ^{#11}	74 ^{#10}	<1	<1	-	<1	<1	-	<1	<1
	Ethylbenzene	µg/L	1	300 ^{#11}	20 ^{#10}	<1	<1	-	<1	<1	-	<1	<1
	Xylene (m & p)	µg/L	1			<1	<1	-	<1	<1	-	<1	<1
	Xylene Total	µg/L		500 ^{#11}	30 ^{#10}	<2 ^{#21}	<2 ^{#21}	-	<2 ^{#21}	<2 ^{#21}	-	<2 ^{#21}	<2 ^{#21}
	Xylene (o)	µg/L	1	190 ^{#8}		<1	<1	-	<1	<1	-	<1	<1
	Total BTEX	µg/L				<5 ^{#21}	184 ^{#17}	-	<5 ^{#21}	<5 ^{#21}	-	<5 ^{#21}	<5 ^{#21}
Oxy genates	MTBE	µg/L	1	1,800 ^{#16}	5,100 ^{#13}	<1	<1	-	<1	<1	-	<1	<1
Chlorinated Hydrocarbons	Chloromethane	µg/L	1	190 ^{#8}		-	-	-	-	-	-	-	-
	Vinyl chloride	µg/L	1	0.5 ^{#14}		-	-	-	-	-	-	-	-
	Chloroethane	µg/L	1	21,000 ^{#8}		-	-	-	-	-	-	-	-
	1,1-dichloroethene	µg/L	1	7 ^{#11}		-	-	-	-	-	-	-	-
	Dichloromethane	µg/L	50	5 ^{#11}	20 ^{#7}	-	-	-	-	-	-	-	-
	trans-1,2-dichloroethene	µg/L	1	50 ^{#11}		-	-	-	-	-	-	-	-
	1,1-dichloroethane	µg/L	1	2.8 ^{#8}		-	-	-	-	-	-	-	-
	cis-1,2-dichloroethene	µg/L	1	50 ^{#11}		-	-	-	-	-	-	-	-
	Chloroform	µg/L	1	Use trihalomethanes ^{#14}	2.5 ^{#7}	-	-	-	-	-	-	-	-
	1,1,1-trichloroethane	µg/L	1	200 ^{#11}	100 ^{#10}	-	-	-	-	-	-	-	-
	Carbon tetrachloride	µg/L	1	3 ^{#14}	12 ^{#7}	-	-	-	-	-	-	-	-
	Trichloroethene	µg/L	1	Use PCE + TCE ^{#14}	10 ^{#7}	-	-	-	-	-	-	-	-
	1,1,2-trichloroethane	µg/L	1	5 ^{#11}	400 ^{#10}	-	-	-	-	-	-	-	-
	Tetrachloroethene	µg/L	1	Use PCE + TCE ^{#14}	10 ^{#7}	-	-	-	-	-	-	-	-
	Sum of PCE and TCE	µg/L		10 ^{#14}		-	-	-	-	-	-	-	-
VOC	2,2-dichloropropane	µg/L	1			-	-	-	-	-	-	-	-
	Bromochloromethane	µg/L	1	83 ^{#8}		-	-	-	-	-	-	-	-
	1,1-dichloropropene	µg/L	1			-	-	-	-	-	-	-	-
	1,2-dichloroethane	µg/L	1	3 ^{#14}	10 ^{#7}	-	-	-	-	-	-	-	-
	1,2-dichloropropane	µg/L	1	5 ^{#11}		-	-	-	-	-	-	-	-
	Dibromomethane	µg/L	1	8.3 ^{#8}		-	-	-	-	-	-	-	-
	Bromodichloromethane	µg/L	1	60 ^{#2}		-	-	-	-	-	-	-	-
	cis-1,3-dichloropropene	µg/L	1			-	-	-	-	-	-	-	-
	trans-1,3-dichloropropene	µg/L	1			-	-	-	-	-	-	-	-
	1,3-dichloropropane	µg/L	1	20 ^{#11}		-	-	-	-	-	-	-	-
	Chlorodibromomethane	µg/L	1	Use trihalomethanes ^{#14}		-	-	-	-	-	-	-	-
	1,1,1,2-tetrachloroethane	µg/L	1	0.57 ^{#8}		-	-	-	-	-	-	-	-
	Styrene	µg/L	1	20 ^{#11}	50 ^{#10}	-	-	-	-	-	-	-	-
	Bromoform	µg/L	1	Use trihalomethanes ^{#14}		-	-	-	-	-	-	-	-
	Isopropylbenzene	µg/L	1	450 ^{#8}		-	-	-	-	-	-	-	-
	1,1,2,2-tetrachloroethane	µg/L	1	0.076 ^{#8}	140 ^{#10}	-	-	-	-	-	-	-	-
	1,2,3-trichloropropane	µg/L	1	0.00075 ^{#8}		-	-	-	-	-	-	-	-

Table 1
Stage 2 Screening Assessment
Groundwater
Sheriffhall Roundabout

Location ID	BH36	BH37	BH40	BH40	BH41-M	BH45-M	BH45-M	BH50
Sample Depth (m)	5.10	10.82	1.44	2.06	17.94	17.28	17.61	3.98
Sample Type	GW	GW	GW	GW	GW	GW	GW	GW
Sample Date	12/06/18	06/02/19	14/06/18	19/12/18	19/12/18	13/06/18	19/12/18	13/06/18
Lab Report No.	745559	801282	745820	792061	792061	745559	792061	745559

Chemical Group	Chemical Name	Output Unit	EQL	GAC_WTV_SC_DWS	GAC_WTV_SC_EQS-Fresh								
	n-propylbenzene	µg/L	1	660 ^{RB}		-	-	-	-	-	-	-	-
	1,3,5-trimethylbenzene	µg/L	1	60 ^{RB}		-	-	-	-	-	-	-	-
	tert-butylbenzene	µg/L	1	690 ^{RB}		-	-	-	-	-	-	-	-
	1,2,4-trimethylbenzene	µg/L	1	56 ^{RB}		-	-	-	-	-	-	-	-
	sec-butylbenzene	µg/L	1	2,000 ^{RB}		-	-	-	-	-	-	-	-
	p-isopropyltoluene	µg/L	1			-	-	-	-	-	-	-	-
	Hexachlorobutadiene	µg/L	1	0.1 ^{#11}	0.6 ^{RB}	<10	<10	-	-	<1	-	-	-
	1,2-Dichloroethene	µg/L		50 ^{#2}		-	-	-	-	-	-	-	-
	Trihalomethanes	µg/L		100 ^{#14}		-	-	-	-	-	-	-	-
PAH	Naphthalene	µg/L	0.01	6 ^{#16}	2 ^{#7}	<10 - 0.03	<10 - 0.01	0.04	0.4	<1 - 0.02	-	0.01	0.02
	Acenaphthylene	µg/L	0.01	18 ^{#16}		<0.01	<0.01	<0.01	0.1	<1 - 0.01	-	0.01	<0.01
	Acenaphthene	µg/L	0.01	18 ^{#16}		<0.01	<10 - 0.01	0.01	0.1	<1 - 0.01	-	0.01	0.01
	Fluorene	µg/L	0.01	12 ^{#16}		<10 - 0.02	<10 - 0.01	0.01	0.1	<1 - 0.01	-	0.01	0.03
	Phenanthrene	µg/L	0.01	4 ^{#16}		<10 - 0.08	<10 - 0.02	0.05	0.4	<1 - 0.01	-	0.01	0.1
	Anthracene	µg/L	0.01	90 ^{#16}	0.1 ^{#7}	<10 - 0.01	<0.01	0.01	0.1	<1 - 0.01	-	0.01	0.01
	Fluoranthene	µg/L	0.01	4 ^{#2}	0.0063 ^{#7}	<10 - 0.03	<10 - 0.01	0.03	0.2	<1 - 0.01	-	0.01	0.08
	Pyrene	µg/L	0.01	9 ^{#16}		<10 - 0.04	<10 - 0.01	0.04	0.5	<1 - 0.01	-	0.01	0.08
	Benz(a)anthracene	µg/L	0.01	3.5 ^{#16}		<10 - 0.01	<10 - 0.01	<0.01	0.1	<1 - 0.01	-	0.01	0.02
	Chrysene	µg/L	0.01	7 ^{#16}		<10 - 0.04	<10 - 0.01	0.04	0.2	<1 - 0.01	-	0.01	0.04
	Benzo(a)pyrene	µg/L	0.01	0.01 ^{#14}	0.00017 ^{#7}	<0.01	<0.01	<0.01	0.2	<1 - 0.01	-	0.01	0.01
	Indeno(1,2,3-c,d)pyrene	µg/L	0.01	Use PAHs (sum of 4) ^{#14}	see BaP and notes ^{#7}	<0.01	<0.01	<0.01	0.1	<1 - 0.01	-	0.01	0.01
	Dibenz(a,h)anthracene	µg/L	0.01	0.07 ^{#16}		<0.01	<0.01	<0.01	0.1	<1 - 0.01	-	0.01	<0.01
	Benzo(g,h,i)perylene	µg/L	0.01	Use PAHs (sum of 4) ^{#14}	see BaP and notes ^{#7}	<10 - 0.03	<0.01	0.02	0.2	<1 - 0.01	-	0.01	0.04
	Benzo(b)fluoranthene	µg/L	0.01	Use PAHs (sum of 4) ^{#14}	see BaP and notes ^{#7}	<10 - 0.03	<10 - 0.01	0.01	0.2	0.01	-	0.01	0.04
	Benzo(k)fluoranthene	µg/L	0.01	Use PAHs (sum of 4) ^{#14}	see BaP and notes ^{#7}	<0.01	<10 - 0.01	<0.01	0.1	0.01	-	0.01	<0.01
	Benzo(b)&(k)fluoranthene	µg/L	1		0.03 ^{#12}	0.04 ^{#18}	0.02 ^{#18}	0.02 ^{#22}	0.3 ^{#22}	<1	-	0.02 ^{#22}	0.05 ^{#22}
	PAHs (Sum of total)	µg/L	0.01			0.32	-	0.26	-	-	-	-	0.49
	PAHs (sum of 4)	µg/L		0.1 ^{#14}		0.08 ^{#18}	0.04 ^{#18}	0.05 ^{#22}	0.6 ^{#22}	0.04 ^{#18}	-	0.04 ^{#22}	0.1 ^{#22}
	PAH 16 Total	µg/L	0.01			0.32	-	0.26	-	-	-	-	0.49
	benzo(g,h,i)perylene + indeno(1,2,3-cd)pyrene	µg/L			0.002 ^{#12}	0.04 ^{#18}	<0.02 ^{#19}	0.03 ^{#22}	0.3 ^{#22}	0.02 ^{#18}	-	0.02 ^{#22}	0.05 ^{#22}
SVOC	2-methylnaphthalene	µg/L	1	36 ^{RB}		<10	<10	-	-	<1	-	-	-
	4-bromophenyl phenyl ether	µg/L	1			<10	<10	-	-	<1	-	-	-
	4-chlorophenyl phenyl ether	µg/L	1			<10	<10	-	-	<1	-	-	-
	Azobenzene	µg/L	1	0.12 ^{RB}		<10	<10	-	-	<1	-	-	-
	Bis(2-chloroethoxy) methane	µg/L	1	59 ^{RB}		<10	<10	-	-	<1	-	-	-
	Bis(2-chloroethyl) ether	µg/L	1	0.014 ^{RB}		<10	<10	-	-	<1	-	-	-
	Carbazole	µg/L	1			<10	<10	-	-	<1	-	-	-
	Dibenzofuran	µg/L	1	7.9 ^{RB}		<10	<10	-	-	<1	-	-	-
	Hexachlorocyclopentadiene	µg/L	1	0.41 ^{RB}		<10	<10	-	-	<1	-	-	-
	Hexachloroethane	µg/L	1	0.33 ^{RB}		<10	<10	-	-	<1	-	-	-
Phenolics	2-methylphenol	µg/L	1	930 ^{RB}		<10	<10	-	-	<1	-	-	-
	2-nitrophenol	µg/L	1			<10	<10	-	-	<1	-	-	-
	2,4-dimethylphenol	µg/L	1	360 ^{RB}		<10	<10	-	-	<1	-	-	-
	4-chloro-3-methylphenol	µg/L	1	1,400 ^{RB}	40 ^{#10}	<10	<10	-	-	<1	-	-	-
	4-methylphenol	µg/L	1	1,900 ^{RB}		-	-	-	250	-	-	-	-
	4-nitrophenol	µg/L	10			-	-	-	<10	-	-	-	-
	Phenol	µg/L	1	5,800 ^{RB}	7.7 ^{#10}	<10	<10	-	-	31	-	-	-
	2-chloronaphthalene	µg/L	1	750 ^{RB}		<10	<10	-	-	<1	-	-	-
	2,4-dinitrophenol	µg/L	10	39 ^{RB}		<10	<10	-	-	-	-	-	-
	Phenols	µg/L	0.5			<0.5	<0.5	<0.5	<5	<0.5	-	81	<0.5
	Phenols (Mono)	µg/L	100			<100	<100	-	<100	<100	-	<100	100
Herbicides	Atrazine	µg/L	0.01	0.1 ^{#11}	0.6 ^{#7}	-	<0.01	-	-	<100	-	<20	-
	Simazine	µg/L	0.01	0.1 ^{#11}	1 ^{#7}	-	<0.01	-	-	<100	-	<20	-
	Prometryn	µg/L	0.01	600 ^{RB}		-	<0.01	-	-	<100	-	<20	-
	Propazine	µg/L	0.01	340 ^{RB}		-	<0.01	-	-	<100	-	<20	-
	Terbutryn	µg/L	0.01	13 ^{RB}		-	<0.01	-	-	<100	-	<20	-
Pesticides	Parathion	µg/L	0.01	0.1 ^{#11}		-	<0.01	-	-	<0.1	-	<0.02	-
	Pirimiphos-methyl	µg/L	0.01	0.85 ^{RB}	0.015 ^{#10}	-	<0.01	-	-	<0.1	-	<0.02	-
	Bifenthrin	µg/L	0.1	300 ^{RB}		-	<0.1	-	-	-	-	-	-
	Cyhalothrin/Karate	µg/L	0.1	20 ^{RB}		-	<0.1	-	-	<0.1	-	<0.1	-
	Cypermethrins (total)	µg/L	0.1		0.0001 ^{#10}	-	<0.1	-	-	<0.1	-	<0.1	-
	Deltamethrin	µg/L	0.01			-	<0.01	-	-	<0.01	-	<0.01	-
	Fluralinate	µg/L	0.1	200 ^{RB}		-	<0.1	-	-	<0	-	<0	-

Table 1
Stage 2 Screening Assessment
Groundwater
Sheriffhall Roundabout

Location ID	BH36	BH37	BH40	BH40	BH41-M	BH45-M	BH45-M	BH50
Sample Depth (m)	5.10	10.82	1.44	2.06	17.94	17.28	17.61	3.98
Sample Type	GW	GW	GW	GW	GW	GW	GW	GW
Sample Date	12/06/18	06/02/19	14/06/18	19/12/18	19/12/18	13/06/18	19/12/18	13/06/18
Lab Report No.	745559	801282	745820	792061	792061	745559	792061	745559

Chemical Group	Chemical Name	Output Unit	EQL	GAC_WTV_SC_DWS	GAC_WTV_SC_EQS-Fresh								
	Permethrin	µg/L	0.01	0.1 ^{#11}	0.001 ^{#10}	-	<0.01	-	-	<0.1	-	<0.02	-
	Aldrin+Dieldrin+Endrin+Isodrin	µg/L			0.01 ^{#7}	-	<0.03 ^{#21}	-	-	1.02 ^{#20}	-	1.04 ^{#20}	-
Organochlorine Pesticides	Aldrin	µg/L	0.01	0.03 ^{#14}	Use Aldrin+Dieldrin+Endrin+Isodrin ^{#7}	-	<0.01	-	-	0.82	-	1	-
	Dieldrin	µg/L	0.01	0.03 ^{#14}	Use Aldrin+Dieldrin+Endrin+Isodrin ^{#7}	-	<0.01	-	-	<0.1	-	<0.02	-
	Endrin	µg/L	0.01	0.1 ^{#11}	Use Aldrin+Dieldrin+Endrin+Isodrin ^{#7}	-	<0.01	-	-	<0.1	-	<0.02	-
	g-BHC (Lindane)	µg/L	0.01	0.1 ^{#11}		-	<0.01	-	-	<0.1	-	<0.02	-
	Heptachlor	µg/L	0.01	0.03 ^{#14}		-	<0.01	-	-	<0.1	-	<0.02	-
	Heptachlor epoxide	µg/L	0.01	0.03 ^{#14}		-	<0.01	-	-	<0.1	-	<0.02	-
	DDT	µg/L	0.01	1 ^{#2}	0.01 ^{#7}	-	<0.01	-	-	<0.1	-	<0.02	-
	DDD	µg/L	0.01	0.032 ^{#8}		-	<0.01	-	-	<0.1	-	<0.02	-
	Aldrin + Dieldrin	µg/L		0.03 ^{#11}		-	<0.02 ^{#23}	-	-	0.92 ^{#22}	-	1.02 ^{#22}	-
	chlordane	µg/L	0.01	0.1 ^{#11}		-	<0.01	-	-	<0.1	-	<0.02	-
	DDE	µg/L	0.01			-	<0.01	-	-	<0.1	-	<0.02	-
Endosulfan	µg/L	0.01		20 ^{#2}	0.005 ^{#7}	-	<0.01	-	-	<0.1	-	<0.02	-
Organophosphorous Pesticides	Azinophos methyl	µg/L	0.01	56 ^{#8}	0.01 ^{#10}	-	<0.01	-	-	<0.1	-	<0.02	-
	Diazinon	µg/L	0.01	0.1 ^{#11}	0.01 ^{#10}	-	<0.01	-	-	<0.1	-	<0.02	-
	Dichlorvos	µg/L	0.01	0.26 ^{#8}	0.001 ^{#12}	-	<0.01	-	-	<0.1	-	<0.02	-
	Dimethoate	µg/L	0.01	0.1 ^{#11}	0.48 ^{#10}	-	<0.01	-	-	<0.1	-	<0.02	-
	Fenitrothion	µg/L	0.01	0.1 ^{#11}	0.01 ^{#10}	-	<0.01	-	-	<0.1	-	<0.02	-
	Malathion	µg/L	0.01	0.1 ^{#11}	0.01 ^{#10}	-	<0.01	-	-	<0.1	-	<0.02	-
	Mevinphos (Phosdrin)	µg/L	0.01	0.1 ^{#11}	0.02 ^{#9}	-	<0.01	-	-	<0.1	-	<0.02	-
PCBs	Tetrachlorobiphenyl, 3,3,4,4- (PCB 77)	µg/L	0.005	0.006 ^{#8}		<0.005	<0.005	-	-	<0.005	-	<0.005	-
	Tetrachlorobiphenyl, 3,4,4,5- (PCB 81)	µg/L	0.005	0.0004 ^{#8}		<0.005	<0.005	-	-	<0.005	-	<0.005	-
	Pentachlorobiphenyl, 2,3,3,4,4- (PCB 105)	µg/L	0.005	0.004 ^{#8}		<0.005	<0.005	-	-	<0.005	-	<0.005	-
	Pentachlorobiphenyl, 2,3,4,4,5- (PCB 114)	µg/L	0.005	0.004 ^{#8}		<0.005	<0.005	-	-	<0.005	-	<0.005	-
	PCB 118	µg/L	0.005	0.004 ^{#8}		<0.005	<0.005	-	-	<0.005	-	<0.005	-
	Pentachlorobiphenyl, 2,3,4,4,5- (PCB 123)	µg/L	0.005	0.004 ^{#8}		<0.005	<0.005	-	-	<0.005	-	<0.005	-
	Pentachlorobiphenyl, 3,3,4,4,5- (PCB 126)	µg/L	0.005	0.0000012 ^{#8}		<0.005	<0.005	-	-	<0.005	-	<0.005	-
	Hexachlorobiphenyl, 2,3,3,4,4,5- (PCB 156)	µg/L	0.005	0.004 ^{#8}		<0.005	<0.005	-	-	<0.005	-	<0.005	-
	Hexachlorobiphenyl, 2,3,3,4,4,5- (PCB 157)	µg/L	0.005	0.004 ^{#8}		<0.005	<0.005	-	-	<0.005	-	<0.005	-
	Hexachlorobiphenyl, 2,3,4,4,5,5- (PCB 167)	µg/L	0.005	0.004 ^{#8}		<0.005	<0.005	-	-	<0.005	-	<0.005	-
	Hexachlorobiphenyl, 3,3,4,4,5,5- (PCB 169)	µg/L	0.005	0.000004 ^{#8}		<0.005	<0.005	-	-	<0.005	-	<0.005	-
Heptachlorobiphenyl, 2,3,3,4,4,5,5- (PCB 189)	µg/L	0.005	0.004 ^{#8}		<0.005	<0.005	-	-	<0.005	-	<0.005	-	
Anilines	2-nitroaniline	µg/L	1	190 ^{#8}		<10	<10	-	-	<1	-	-	-
	3-nitroaniline	µg/L	1			<10	<10	-	-	<1	-	-	-
	4-chloroaniline	µg/L	1	0.37 ^{#8}		<10	<10	-	-	<1	-	-	-
	4-nitroaniline	µg/L	1	3.8 ^{#8}		<10	<10	-	-	<1	-	-	-
Explosives	2,4-Dinitrotoluene	µg/L	1	0.24 ^{#8}		<10	<10	-	-	<1	-	-	-
	2,6-dinitrotoluene	µg/L	1	0.049 ^{#8}		<10	<10	-	-	<1	-	-	-
	Nitrobenzene	µg/L	1	8 to 63 ^{#2}		<10	<10	-	-	<1	-	-	-
Halogenated Benzenes	Chlorobenzene	µg/L	1	300 ^{#2}		-	-	-	-	-	-	-	-
	Bromobenzene	µg/L	1	62 ^{#8}		-	-	-	-	-	-	-	-
	2-chlorotoluene	µg/L	1	240 ^{#8}		-	-	-	-	-	-	-	-
	4-chlorotoluene	µg/L	1	250 ^{#8}		-	-	-	-	-	-	-	-
	1,3-dichlorobenzene	µg/L	1			<10	<10	-	-	<1	-	-	-
	1,4-dichlorobenzene	µg/L	1	80 ^{#11}		<10	<10	-	-	<1	-	-	-
	1,2-dichlorobenzene	µg/L	1	600 ^{#11}		<10	<10	-	-	<1	-	-	-
	1,2,4-trichlorobenzene	µg/L	1	70 ^{#11}	Refer to 'Trichlorobenzene (total)' ^{#7}	<10	<10	-	-	<1	-	-	-
	Hexachlorobenzene	µg/L	0.01	0.1 ^{#11}	0.05 ^{#8}	<10	<0.01	-	-	<0.1	-	<0.02	-
Trichlorobenzene (total)	µg/L		20 ^{#2}	0.4 ^{#7}	<10 ^{#21}	<10 ^{#21}	-	-	<1 ^{#21}	-	-	-	
Halogenated Hydrocarbons	Dichlorodifluoromethane	µg/L	1	200 ^{#8}		-	-	-	-	-	-	-	-
	Bromomethane	µg/L	1	7.5 ^{#8}		-	-	-	-	-	-	-	-
	Trichlorofluoromethane	µg/L	1	5,200 ^{#8}		-	-	-	-	-	-	-	-
	1,2-dibromoethane	µg/L	1	0.4 ^{#11}		-	-	-	-	-	-	-	-
Halogenated Phenols	2-chlorophenol	µg/L	1	91 ^{#8}	50 ^{#10}	<10	<10	-	-	<1	-	-	-
	2,4-dichlorophenol	µg/L	1	46 ^{#8}	4.2 ^{#10}	<10	<10	-	-	<1	-	-	-
	2,4,5-trichlorophenol	µg/L	1	1,200 ^{#8}		<10	<10	-	-	<1	-	-	-
	2,4,6-trichlorophenol	µg/L	1	200 ^{#11}		<10	<10	-	-	<1	-	-	-
	Pentachlorophenol	µg/L	1	9 ^{#2}	0.4 ^{#7}	<10	<10	-	-	<1	-	-	-
Phthalates	Bis(2-ethylhexyl) phthalate	µg/L	5	6 ^{#11}	1.3 ^{#7}	<10	<10	-	-	<6	-	-	-
	Butyl benzyl phthalate	µg/L	1	16 ^{#8}	7.5 ^{#10}	<10	<10	-	-	<1	-	-	-
	Di-n-butyl phthalate	µg/L	1.5	900 ^{#8}	8 ^{#10}	<10	<10	-	-	<1.5	-	-	-
	Di-n-octyl phthalate	µg/L	1	200 ^{#8}	20 ^{#10}	<10	<10	-	-	<1	-	-	-

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	Diethyl phthalate	µg/L	1	15,000 ^{#8}	200 ^{#10}	<10	<10	-	-	<1	-	-	-
	Dimethyl phthalate	µg/L	1		800 ^{#10}	<10	<10	-	-	<1	-	-	-
Solvents	Isophorone	µg/L	1	78 ^{#8}		<10	<10	-	-	<1	-	-	-
Metals	Arsenic	µg/L	0.2	10 ^{#14}	50 ^{#10}	-	5	-	-	-	-	-	-
	Arsenic (Filtered)	µg/L	0.2	10 ^{#14}	50 ^{#10}	0.8	-	0.2	0.4	1.3	0.6	3.6	0.6
	Boron	µg/L	10	1,000 ^{#14}	2,000 ^{#10}	320	-	-	120	100	-	100	<50
	Boron (Filtered)	µg/L	10	1,000 ^{#14}	2,000 ^{#10}	-	-	-	-	-	-	-	-
	Cadmium	µg/L	0.02	5 ^{#14}	0.08 ^{#7}	-	0.04	-	-	-	-	-	-
	Cadmium (Filtered)	µg/L	0.02	5 ^{#14}	0.08 ^{#7}	0.04	-	<0.02	0.03	<0.02	0.04	<0.02	<0.02
	Chromium (III+VI)	µg/L	1	50 ^{#14}	Use CrIII or CrVI ^{#12}	-	3	-	-	-	-	-	-
	Chromium (III+VI) (Filtered)	µg/L	1	50 ^{#14}	Use CrIII or CrVI ^{#12}	<1	-	<1	<1	5	<1	2	1
	Copper	µg/L	0.5	2,000 ^{#14}	1 ^{#10}	-	<0.5	-	-	-	-	-	-
	Copper (Filtered)	µg/L	0.5	2,000 ^{#14}	1 ^{#10}	5.6	-	2.1	2.8	<0.5	<0.5	<0.5	1.1
	Iron	µg/L	10	200 ^{#14}	1,000 ^{#10}	2,900,000	1,400,000	-	210	240	10,000	2100	98,000
	Lead	µg/L	0.3	10 ^{#14}	1.2 ^{#7}	-	<0.3	-	-	-	-	-	-
	Lead (Filtered)	µg/L	0.3	10 ^{#14}	1.2 ^{#7}	<0.3	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
	Manganese	µg/L	1	50 ^{#14}	123 ^{#10}	-	4700	-	-	-	-	-	-
	Manganese (Filtered)	µg/L	1	50 ^{#14}	123 ^{#10}	820	-	-	11	420	1200	630	14
	Mercury	µg/L	0.05	1 ^{#14}	0.07 ^{#6}	-	<0.05	-	-	-	-	-	-
	Mercury (Filtered)	µg/L	0.05	1 ^{#14}	0.07 ^{#6}	5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Nickel	µg/L	1	20 ^{#14}	4 ^{#7}	-	2	-	-	-	-	-	-
	Nickel (Filtered)	µg/L	1	20 ^{#14}	4 ^{#7}	8	-	2	3	2	26	3	2
	Selenium	µg/L	0.5	10 ^{#14}	-	-	<0.5	-	-	-	-	-	-
	Selenium (Filtered)	µg/L	0.5	10 ^{#14}	-	1.7	-	0.6	<0.5	<0.5	<0.5	<0.5	2.4
	Vanadium	µg/L	2	86 ^{#8}	20 ^{#10}	-	4	-	-	-	-	-	-
	Vanadium (Filtered)	µg/L	2	86 ^{#8}	20 ^{#10}	<2	-	<2	<2	<2	<2	<2	<2
Zinc	µg/L	2	6,000 ^{#8}	11.9 ^{#10}	-	<2	-	-	-	-	-	-	
Zinc (Filtered)	µg/L	2	6,000 ^{#8}	11.9 ^{#10}	<2	-	<2	5	3	11	3	<2	
Chromium (hexavalent)	µg/L	3	Use Chromium (total) ^{#14}	3.4 ^{#10}	<3	<3	5	-	-	<3	-	<3	
Chromium (hexavalent) (Filtered)	µg/L	3	Use Chromium (total) ^{#14}	3.4 ^{#10}	-	-	-	<3	<3	-	<3	-	
Inorganics	Ammoniacal Nitrogen	mg/L	0.05			0.11	<0.05	<0.05	-	-	0.53	-	0.17
	Ammoniacal Nitrogen (Filtered)	mg/L	0.05			-	-	-	<0.05	<0.05	-	0.05	-
	Sulphur	µg/L	50,000			75,000	<50,000	72,000	140,000	140,000	110,000	140,000	<50,000
	Cyanide (Free)	mg/L	0.05	Use Cyanide Total ^{#14}	0.001 ^{#10}	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05
	Cyanide Total	mg/L	0.05	Use Cyanide Total ^{#14}	0.001 ^{#5}	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	cyanides-complex	µg/L	50	Use Cyanide Total ^{#14}		<50	<50	-	<50	<50	-	<50	<50
	Thiocyanate	mg/L	1	0.004 ^{#8}		<1	<1	-	<1	<1	-	<1	<1
	Sulphate	mg/L	0.5	250 ^{#3}	400 ^{#10}	-	83	-	-	-	-	-	-
	Sulphate (Filtered)	mg/L	0.5	250 ^{#3}	400 ^{#10}	-	-	-	130	120	-	140	-
	Hardness as CaCO3	mg/L	10			6600	2500	-	340	440	-	410	590
	Easily Liberated Sulphide (Moisture Corrected)	mg/L	0.05			<0.1	<0.1	<0.1	<0.05	<0.05	<0.1	<0.05	<0.1
COD	mg/L	5			40	-	-	-	-	-	-	240	

Comments

- #1 WHO Petroleum DWG 2008
- #2 WHO DWG 2017
- #3 WHO 2017 - Taste
- #5 WFD England/Wales. 2015 - Freshwater Standards
- #6 Water Env't Regs (Scotland) 2015. MAC-EQS Inland
- #7 Water Env't Regs (Scotland) 2015. AA-EQS Inland
- #8 USEPA RSL (tapwater) [May 2019]
- #9 SEPA WAT-SG-53 Fresh EQS - MAC - 2015
- #10 SEPA WAT-SG-53 Fresh EQS - AA - 2015
- #11 SEPA GW RPV 2011
- #12 Scotland RBD 2009 - Fresh AA
- #13 PNEC (EU REACH) - Freshwater
- #14 DWS Scotland 2001
- #16 AECOM DWG (WHO method)
- #17 ESDAT Combined with Non-Detect Multiplier of 1. Some analytes are reported multiple times; the lowest non-detect or the highest detect is used. Some Analytes are missing
- #18 ESDAT Combined with Non-Detect Multiplier of 1. Some analytes are reported multiple times; the lowest non-detect or the highest detect is used.
- #19 ESDAT Combined. Some analytes are reported multiple times; the lowest non-detect or the highest detect is used.
- #20 ESDAT Combined with Non-Detect Multiplier of 1. Some Analytes are missing from this Combined Compound.
- #21 ESDAT Combined. Some Analytes are missing from this Combined Compound.

Key

- XXX Exceedance of CW/WE Water. DWS - Scotland
- XXX Exceedance of CW/WE Water. Aquatic Toxicity - Scotland - Freshwat

- #22 ESDAT Combined with Non-Detect Multiplier of 1.
- #23 ESDAT Combined.
- GAC: Generic Assessment Criteria
- (blank): No assessment criteria available
- : Not analysed

Table 2
Stage 2 Screening Table
Groundwater
Sheriffhall Roundabout

Location ID	BH51	BH55-M	BH59-M	BH62-M	BH62-M	BH70A	BH70A	BH72-M	BH74	BH74	BH76	BH76
Sample Depth (m)	2.40	16.61	14.98	19.74	19.48	5.88	6.55	4.00	0.50	1.70	1.54	1.58
Sample Type	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
Sample Date	18/12/18	19/12/18	19/12/18	18/12/18	12/06/18	12/06/18	19/12/18	06/02/19	18/12/18	12/06/18	19/12/18	14/06/18
Lab Report No.	791976	792743	792743	791976	745559	745559	792743	801282	791976	745559	792061	745820

Chemical Group	Chemical Name	Output Unit	EQL	GAC_WTV_SC_DWS	GAC_WTV_SC_EQS-Fresh												
	Dichloroethene	µg/L	1			-	-	-	-	-	<1	<1	-	-	-	-	-
	Methylphenols	µg/L	10		100 ^{#10}	-	-	-	-	-	-	-	-	-	-	-	-
	Trietazine	mg/L	1E-05			<0.0001	<0.00001	<0.00001	<0.00001	-	-	<0.00001	0	<0.00001	-	-	-
	Boron (Water Soluble) (Filtered)	µg/L	50		1,000 ^{#14}												
	PAH : Total :- (Poly nuclear Aromatic Hydrocarbons)	µg/L	0.01			0.1	0.53	0.68	<0.02	-	-	0.39	0.08	0.74	-	0.24	-
	HCH : Total (5) Isomers	µg/L	0.01			<0.1	<0.01	<0.01	<0.01	-	-	<0.01	0	<0.01	-	-	-
	Cyfluthrin	mg/L	1E-05			<0.00001	0.00088	0.0007	<0.00001	-	-	0.00034	0	<0.00001	-	-	-
Field	pH	pH_Units	0			7.29	-	-	7.3	7.18	6.67	-	-	6.92	7.07	6.49	6.62
TPH	>C5-C6 Aliphatics	µg/L	0.01		15,000 ^{#1}	<0.01	<10	<10	<0.01	-	<10	<10	<10	<0.01	-	<10	-
	>C6-C8 Aliphatics	µg/L	0.01		15,000 ^{#1}	<0.01	<10	<10	<0.01	-	<10	<10	<10	<0.01	-	<10	-
	>C8-C10 Aliphatics	µg/L	0.01		300 ^{#1}	<0.01	-	-	<0.01	-	<10	-	-	<0.01	-	-	-
	>C10-C12 Aliphatics	µg/L	0.01		300 ^{#1}	0.34	<10	<10	0.35	-	<10	<20	<10	0.35	-	<10	-
	>C12-C16 Aliphatics	µg/L	0.01		300 ^{#1}	0.15	<10	<10	0.16	-	<10	<20	<10	0.15	-	<10	-
	>C16-C21 Aliphatics	µg/L	0.01		300 ^{#1}	<0.1	<10	<10	<0.1	-	<10	<20	<10	<0.1	-	<10	-
	>C16-C35 Aliphatics	µg/L				<0.2 ^{#23}	<20 ^{#23}	30 ^{#22}	<0.2 ^{#23}	-	<20 ^{#23}	<40 ^{#23}	<20 ^{#23}	<0.2 ^{#23}	-	20 ^{#22}	-
	>C21-C35 Aliphatics	µg/L	0.01		300 ^{#1}	<0.1	<10	20	<0.1	-	<10	<20	<10	<0.1	-	10	-
	>EC6-EC7 Aromatics	µg/L	0.01		1 ^{#14}	<0.01	<10	<10	<0.01	-	<10	<10	<10	<0.01	-	<10	-
	>EC7-EC8 Aromatics	µg/L	0.01		700 ^{#11}	<0.01	<10	<10	<0.01	-	<10	<10	<10	<0.01	-	<10	-
	>EC8-EC10 Aromatics	µg/L	0.01		300 ^{#1}	<0.01	<10	<10	<0.01	-	<10	<10	<10	<0.01	-	<10	-
	>EC10-EC12 Aromatics	µg/L	0.01		90 ^{#1}	0.15	<10	<10	0.16	-	<10	<20	<10	0.17	-	<10	-
	>EC12-EC16 Aromatics	µg/L	0.01		90 ^{#1}	0.27	<10	<10	0.28	-	<10	<20	<10	0.31	-	<10	-
	>EC16-EC21 Aromatics	µg/L	0.01		90 ^{#1}	<0.1	<10	10	0.1	-	<10	<20	<10	0.12	-	<10	-
	>EC21-EC35 Aromatics	µg/L	0.01		90 ^{#1}	<0.1	<10	<10	<0.1	-	<10	<20	<10	<0.1	-	10	-
BTEX	Benzene	µg/L	1		1 ^{#14}	<1	<1	<1	<1	-	<1	<1	<1 - 200	<1	-	<1	-
	Toluene	µg/L	1		700 ^{#11}	<1	<1	<1	<1	-	<1	<1	<1	<1	-	<1	-
	Ethylbenzene	µg/L	1		300 ^{#11}	<1	<1	<1	<1	-	<1	<1	<1	<1	-	<1	-
	Xylene (m & p)	µg/L	1			<1	<1	<1	<1	-	<1	<1	<1	<1	-	<1	-
	Xylene Total	µg/L			500 ^{#11}	<2 ^{#21}	<2 ^{#21}	<2 ^{#21}	<2 ^{#21}	-	<2 ^{#21}	<2 ^{#21}	<2 ^{#21}	<2 ^{#21}	-	<2 ^{#21}	-
	Xylene (o)	µg/L	1		190 ^{#8}	<1	<1	<1	<1	-	<1	<1	<1	<1	-	<1	-
	Total BTEX	µg/L				<5 ^{#21}	<5 ^{#21}	<5 ^{#21}	<5 ^{#21}	-	<5 ^{#21}	<5 ^{#21}	204 ^{#17}	<5 ^{#21}	-	<5 ^{#21}	-
Oxygenates	MTBE	µg/L	1		1,800 ^{#16}	<1	<1	<1	<1	-	<1	<1	<1	<1	-	<1	-
Chlorinated Hydrocarbons	Chloromethane	µg/L	1		190 ^{#8}	-	-	-	-	-	<1	<1	-	-	-	-	-
	Vinyl chloride	µg/L	1		0.5 ^{#14}	-	-	-	-	-	<1	<1	-	-	-	-	-
	Chloroethane	µg/L	1		21,000 ^{#8}	-	-	-	-	-	<1	<1	-	-	-	-	-
	1,1-dichloroethene	µg/L	1		7 ^{#11}	-	-	-	-	-	<1	<1	-	-	-	-	-
	Dichloromethane	µg/L	50		5 ^{#11}	-	-	-	-	-	<50	<50	-	-	-	-	-
	trans-1,2-dichloroethene	µg/L	1		50 ^{#11}	-	-	-	-	-	<1	<1	-	-	-	-	-
	1,1-dichloroethane	µg/L	1		2.8 ^{#8}	-	-	-	-	-	<1	<1	-	-	-	-	-
	cis-1,2-dichloroethene	µg/L	1		50 ^{#11}	-	-	-	-	-	<1	<1	-	-	-	-	-
	Chloroform	µg/L	1		Use trihalomethanes ^{#14}	-	-	-	-	-	<1	<1	-	-	-	-	-
	1,1,1-trichloroethane	µg/L	1		200 ^{#11}	-	-	-	-	-	<1	<1	-	-	-	-	-
	Carbon tetrachloride	µg/L	1		3 ^{#14}	-	-	-	-	-	<1	<1	-	-	-	-	-
	Trichloroethene	µg/L	1		Use PCE + TCE ^{#14}	-	-	-	-	-	<1	<1	-	-	-	-	-
	1,1,2-trichloroethane	µg/L	1		5 ^{#11}	-	-	-	-	-	<1	<1	-	-	-	-	-
	Tetrachloroethene	µg/L	1		Use PCE + TCE ^{#14}	-	-	-	-	-	<1	<1	-	-	-	-	-
	Sum of PCE and TCE	µg/L			10 ^{#14}	-	-	-	-	-	<2 ^{#23}	<2 ^{#23}	-	-	-	-	-
VOC	2,2-dichloropropane	µg/L	1			-	-	-	-	-	<1	<1	-	-	-	-	-
	Bromochloromethane	µg/L	1		83 ^{#8}	-	-	-	-	-	<1	<1	-	-	-	-	-
	1,1-dichloropropene	µg/L	1			-	-	-	-	-	<1	<1	-	-	-	-	-
	1,2-dichloroethane	µg/L	1		3 ^{#14}	-	-	-	-	-	<1	<1	-	-	-	-	-
	1,2-dichloropropane	µg/L	1		5 ^{#11}	-	-	-	-	-	<1	<1	-	-	-	-	-
	Dibromomethane	µg/L	1		8.3 ^{#8}	-	-	-	-	-	<1	<1	-	-	-	-	-
	Bromodichloromethane	µg/L	1		60 ^{#22}	-	-	-	-	-	<1	<1	-	-	-	-	-
	cis-1,3-dichloropropene	µg/L	1			-	-	-	-	-	<1	<1	-	-	-	-	-
	trans-1,3-dichloropropene	µg/L	1			-	-	-	-	-	<1	<1	-	-	-	-	-
	1,3-dichloropropane	µg/L	1		20 ^{#11}	-	-	-	-	-	<1	<1	-	-	-	-	-
	Chlorodibromomethane	µg/L	1		Use trihalomethanes ^{#14}	-	-	-	-	-	<1	<1	-	-	-	-	-
	1,1,1,2-tetrachloroethane	µg/L	1		0.57 ^{#8}	-	-	-	-	-	<1	<1	-	-	-	-	-
	Styrene	µg/L	1		20 ^{#11}	-	-	-	-	-	<1	<1	-	-	-	-	-
	Bromof orm	µg/L	1		Use trihalomethanes ^{#14}	-	-	-	-	-	<1	<1	-	-	-	-	-
	Isopropylbenzene	µg/L	1		450 ^{#8}	-	-	-	-	-	<1	<1	-	-	-	-	-
	1,1,2,2-tetrachloroethane	µg/L	1		0.076 ^{#8}	-	-	-	-	-	<1	<1	-	-	-	-	-
	1,2,3-trichloropropane	µg/L	1		0.00075 ^{#8}	-	-	-	-	-	<1	<1	-	-	-	-	-

Table 2
Stage 2 Screening Table
Groundwater
Sheriffhall Roundabout

Location ID	BH51	BH55-M	BH59-M	BH62-M	BH62-M	BH70A	BH70A	BH72-M	BH74	BH74	BH76	BH76
Sample Depth (m)	2.40	16.61	14.98	19.74	19.48	5.88	6.55	4.00	0.50	1.70	1.54	1.58
Sample Type	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
Sample Date	18/12/18	19/12/18	19/12/18	18/12/18	12/06/18	12/06/18	19/12/18	06/02/19	18/12/18	12/06/18	19/12/18	14/06/18
Lab Report No.	791976	792743	792743	791976	745559	745559	792743	801282	791976	745559	792061	745820

Chemical Group	Chemical Name	Output Unit	EQL	GAC_WTV_SC_DWS	GAC_WTV_SC_EQS-Fresh												
	n-propyl benzene	µg/L	1	660 ^{RB}		-	-	-	-	-	<1	<1	-	-	-	-	-
	1,3,5-trimethyl benzene	µg/L	1	60 ^{RB}		-	-	-	-	-	<1	<1	-	-	-	-	-
	tert-butyl benzene	µg/L	1	690 ^{RB}		-	-	-	-	-	<1	<1	-	-	-	-	-
	1,2,4-trimethyl benzene	µg/L	1	56 ^{RB}		-	-	-	-	-	<1	<1	-	-	-	-	-
	sec-butyl benzene	µg/L	1	2,000 ^{RB}		-	-	-	-	-	<1	<1	-	-	-	-	-
	p-isopropyl toluene	µg/L	1			-	-	-	-	-	<1	<1	-	-	-	-	-
	Hexachlorobutadiene	µg/L	1	0.1 ^{#11}	0.6 ^{RB}	<1	<1	-	<1	-	-	<1	-	<1	-	-	-
	1,2-Dichloroethene	µg/L		50 ^{#2}		-	-	-	-	-	<2 ^{#23}	<2 ^{#23}	-	-	-	-	-
	Trihalomethanes	µg/L		100 ^{#14}		-	-	-	-	-	<4 ^{#23}	<4 ^{#23}	-	-	-	-	-
PAH	Naphthalene	µg/L	0.01	6 ^{#16}	2 ^{#7}	<0.02	<1 - 0.02	0.03	<0.02	0.04	<0.01	<1 - 0.01	0.02	<0.02	0.01	0.01	<0.01
	Acenaphthylene	µg/L	0.01	18 ^{#16}		<0.02	<1 - 0.01	0.01	<0.02	<0.01	<0.01	<1 - 0.01	<0.01	<0.02	<0.01	0.01	<0.01
	Acenaphthene	µg/L	0.01	18 ^{#16}		<0.02	<1 - 0.01	0.01	<0.02	<0.01	<0.01	<1 - 0.01	0.01	<1 - 0.08	<0.01	0.01	<0.01
	Fluorene	µg/L	0.01	12 ^{#16}		<0.02	<1 - 0.02	0.02	<0.02	0.01	0.01	<1 - 0.01	0.01	<1 - 0.06	0.01	0.01	<0.01
	Phenanthrene	µg/L	0.01	4 ^{#16}		<1 - 0.02	<1 - 0.08	0.07	<0.02	0.02	<0.01	<1 - 0.03	0.01	<1 - 0.08	0.03	0.05	0.02
	Anthracene	µg/L	0.01	90 ^{#16}	0.1 ^{#7}	<0.02	<1 - 0.02	0.02	<0.02	<0.01	<0.01	<1 - 0.01	<0.01	<1 - 0.04	0.01	0.01	0.01
	Fluoranthene	µg/L	0.01	4 ^{#2}	0.0063 ^{#7}	<1 - 0.02	<1 - 0.07	0.09	<0.02	0.01	0.01	<1 - 0.05	0.01	<1 - 0.1	0.06	0.03	<0.01
	Pyrene	µg/L	0.01	9 ^{#16}		<1 - 0.02	<1 - 0.08	0.09	<0.02	<0.01	0.01	<1 - 0.05	0.01	<1 - 0.08	0.06	0.04	0.06
	Benz(a)anthracene	µg/L	0.01	3.5 ^{#16}		<1 - 0.02	<1 - 0.03	0.05	<0.02	<0.01	<0.01	<1 - 0.03	0.01	<1 - 0.04	0.01	0.01	<0.01
	Chrysene	µg/L	0.01	7 ^{#16}		<1 - 0.02	<1 - 0.04	0.06	<0.02	0.01	0.01	<1 - 0.03	<0.01	<1 - 0.04	0.02	0.01	0.01
	Benzo(a)pyrene	µg/L	0.01	0.01 ^{#14}	0.00017 ^{#7}	<0.02	<1 - 0.03	0.04	<0.02	<0.01	<0.01	<1 - 0.03	<0.01	<1 - 0.04	0.01	0.01	<0.01
	Indeno(1,2,3-c,d)pyrene	µg/L	0.01	Use PAHs (sum of 4) ^{#14}	see BaP and notes ^{#7}	<0.02	<1 - 0.02	0.03	<0.02	<0.01	<0.01	<1 - 0.02	<0.01	<1 - 0.04	0.01	0.01	<0.01
	Dibenz(a,h)anthracene	µg/L	0.01	0.07 ^{#16}		<0.02	<1 - 0.01	0.01	<0.02	<0.01	0.01	<1 - 0.01	<0.01	<1 - 0.02	0.01	0.01	<0.01
	Benzo(g,h,i)perylene	µg/L	0.01	Use PAHs (sum of 4) ^{#14}	see BaP and notes ^{#7}	<0.02	<1 - 0.04	0.05	<0.02	<0.01	0.01	<1 - 0.03	<0.01	<1 - 0.04	0.03	0.01	0.03
	Benzo(b)fluoranthene	µg/L	0.01	Use PAHs (sum of 4) ^{#14}	see BaP and notes ^{#7}	<0.02	0.03	0.05	<0.02	<0.01	<0.01	0.03	<0.01	0.04	0.03	0.02	0.01
	Benzo(k)fluoranthene	µg/L	0.01	Use PAHs (sum of 4) ^{#14}	see BaP and notes ^{#7}	<0.02	0.02	0.05	<0.02	<0.01	<0.01	0.03	<0.01	0.04	<0.01	0.01	<0.01
	Benzo(b)&(k)fluoranthene	µg/L	1		0.03 ^{#12}	<1	<1	0.1 ^{#22}	<1	<0.02 ^{#23}	<0.02 ^{#23}	<1	<0.02 ^{#23}	<1	0.04 ^{#22}	0.03 ^{#22}	0.02 ^{#22}
	PAHs (Sum of total)	µg/L	0.01			-	-	-	-	0.09	0.06	-	-	-	0.3	-	0.14
	PAHs (sum of 4)	µg/L		0.1 ^{#14}		<0.08 ^{#19}	0.11 ^{#18}	0.18 ^{#22}	<0.08 ^{#19}	<0.04 ^{#23}	0.04 ^{#22}	0.11 ^{#18}	<0.04 ^{#23}	0.16 ^{#18}	0.08 ^{#22}	0.05 ^{#22}	0.06 ^{#22}
	PAH 16 Total	µg/L	0.01			-	-	-	-	0.09	0.06	-	-	-	0.3	-	0.14
benzo(g,h,i)perylene + indeno(1,2,3-cd)pyrene	µg/L			0.002 ^{#12}	<0.04 ^{#19}	0.06 ^{#18}	0.08 ^{#22}	<0.04 ^{#19}	<0.02 ^{#23}	0.02 ^{#22}	0.05 ^{#18}	<0.02 ^{#23}	0.08 ^{#18}	0.04 ^{#22}	0.02 ^{#22}	0.04 ^{#22}	
SVOC	2-methylnaphthalene	µg/L	1	36 ^{RB}		<1	<1	-	<1	-	<1	-	<1	-	-	-	
	4-bromophenyl phenyl ether	µg/L	1			<1	<1	-	<1	-	<1	-	<1	-	-	-	
	4-chlorophenyl phenyl ether	µg/L	1			<1	<1	-	<1	-	<1	-	<1	-	-	-	
	Azobenzene	µg/L	1	0.12 ^{RB}		<1	<1	-	<1	-	<1	-	<1	-	-	-	
	Bis(2-chloroethoxy) methane	µg/L	1	59 ^{RB}		<1	<1	-	<1	-	<1	-	<1	-	-	-	
	Bis(2-chloroethyl) ether	µg/L	1	0.014 ^{RB}		<1	<1	-	<1	-	<1	-	<1	-	-	-	
	Carbazole	µg/L	1			<1	<1	-	<1	-	<1	-	<1	-	-	-	
	Dibenzofuran	µg/L	1	7.9 ^{RB}		<1	<1	-	<1	-	<1	-	<1	-	-	-	
	Hexachlorocyclopentadiene	µg/L	1	0.41 ^{RB}		<1	<1	-	<1	-	<1	-	<1	-	-	-	
	Hexachloroethane	µg/L	1	0.33 ^{RB}		<1	<1	-	<1	-	<1	-	<1	-	-	-	
Phenolics	2-methylphenol	µg/L	1	930 ^{RB}		<1	<1	-	<1	-	<1	-	<1	-	-	-	
	2-nitrophenol	µg/L	1			<1	<1	-	<1	-	<1	-	<1	-	-	-	
	2,4-dimethylphenol	µg/L	1	360 ^{RB}		<1	<1	-	<1	-	<1	-	<1	-	-	-	
	4-chloro-3-methylphenol	µg/L	1	1,400 ^{RB}	40 ^{#10}	<1	<1	-	<1	-	<1	-	<1	-	-	-	
	4-methylphenol	µg/L	1	1,900 ^{RB}		<1	<1	-	<1	-	<1	-	<1	-	-	-	
	4-nitrophenol	µg/L	10			<10	<10	-	<10	-	<10	-	<10	-	-	-	
	Phenol	µg/L	1	5,800 ^{RB}	7.7 ^{#10}	<1	<1	-	<1	-	<1	-	<1	-	-	-	
	2-chloronaphthalene	µg/L	1	750 ^{RB}		<1	<1	-	<1	-	<1	-	<1	-	-	-	
	2,4-dinitrophenol	µg/L	10	39 ^{RB}		-	-	-	-	-	-	-	-	-	-	-	
	Phenols	µg/L	0.5			<1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	<0.5	<0.5
Phenols (Mono)	µg/L	100			<100	<100	<100	<100	100	<100	<100	<100	<100	<0.5	<100	<0.5	
Herbicides	Atrazine	µg/L	0.01	0.1 ^{#11}	0.6 ^{#7}	<0.1	<0.01	<0.01	<0.01	-	-	<0.01	0	<0.01	-	-	-
	Simazine	µg/L	0.01	0.1 ^{#11}	1 ^{#7}	<0.1	<0.01	<0.01	<0.01	-	-	<0.01	0	<0.01	-	-	-
	Prometryn	µg/L	0.01	600 ^{RB}		<0.1	<0.01	<0.01	<0.01	-	-	<0.01	0	<0.01	-	-	-
	Propazine	µg/L	0.01	340 ^{RB}		<0.1	<0.01	<0.01	<0.01	-	-	<0.01	0	<0.01	-	-	-
	Terbutryn	µg/L	0.01	13 ^{RB}		<0.1	<0.01	<0.01	<0.01	-	-	<0.01	0	<0.01	-	-	-
Pesticides	Parathion	µg/L	0.01	0.1 ^{#11}		<0.1	<0.01	<0.01	<0.01	-	-	<0.01	0	<0.01	-	-	-
	Pirimiphos-methyl	µg/L	0.01	0.85 ^{RB}	0.015 ^{#10}	<0.1	<0.01	<0.01	<0.01	-	-	<0.01	0	<0.01	-	-	-
	Bifenthrin	µg/L	0.1	300 ^{RB}		-	-	-	-	-	-	0	-	-	-	-	-
	Cyhalothrin/Karate	µg/L	0.1	20 ^{RB}		<0.1	<0.1	<0.1	<0.1	-	-	<0.1	0	<0.1	-	-	-
	Cypermethrins(total)	µg/L	0.1		0.0001 ^{#10}	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	0	<0.1	-	-	-
	Deltamethrin	µg/L	0.01			<0.01	<0.01	<0.01	<0.01	-	-	<0.01	0	<0.01	-	-	-
Fluvalinate	µg/L	0.1	200 ^{RB}		-	-	-	-	-	-	-	0	-	-	-	-	

Table 2
Stage 2 Screening Table
Groundwater
Sheriffhall Roundabout

Location ID	BH51	BH55-M	BH59-M	BH62-M	BH62-M	BH70A	BH70A	BH72-M	BH74	BH74	BH76	BH76
Sample Depth (m)	2.40	16.61	14.98	19.74	19.48	5.88	6.55	4.00	0.50	1.70	1.54	1.58
Sample Type	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
Sample Date	18/12/18	19/12/18	19/12/18	18/12/18	12/06/18	12/06/18	19/12/18	06/02/19	18/12/18	12/06/18	19/12/18	14/06/18
Lab Report No.	791976	792743	792743	791976	745559	745559	792743	801282	791976	745559	792061	745820

Chemical Group	Chemical Name	Output Unit	EQL	GAC_WTV_SC_DWS	GAC_WTV_SC_EQS-Fresh												
	Permethrin	µg/L	0.01	0.1 ^{#11}	0.001 ^{#10}	<0.1	<0.01	<0.01	<0.01	-	-	<0.01	0	<0.01	-	-	-
	Aldrin+Dieldrin+Endrin+Isodrin	µg/L			0.01 ^{#7}	0.3 ^{#20}	0.03 ^{#20}	0.11 ^{#20}	0.04 ^{#20}	-	-	0.03 ^{#20}	0#20	0.56 ^{#20}	-	-	-
Organochlorine Pesticides	Aldrin	µg/L	0.01	0.03 ^{#14}	Use Aldrin+Dieldrin+Endrin+Isodrin ^{#7}	0.1	0.01	0.09	0.02	-	-	0.01	0	0.54	-	-	-
	Dieldrin	µg/L	0.01	0.03 ^{#14}	Use Aldrin+Dieldrin+Endrin+Isodrin ^{#7}	<0.1	<0.01	<0.01	<0.01	-	-	<0.01	0	<0.01	-	-	-
	Endrin	µg/L	0.01	0.1 ^{#11}	Use Aldrin+Dieldrin+Endrin+Isodrin ^{#7}	<0.1	<0.01	<0.01	<0.01	-	-	<0.01	0	<0.01	-	-	-
	g-BHC (Lindane)	µg/L	0.01	0.1 ^{#11}		<0.1	<0.01	<0.01	<0.01	-	-	<0.01	0	<0.01	-	-	-
	Heptachlor	µg/L	0.01	0.03 ^{#14}		<0.1	<0.01	<0.01	<0.01	-	-	<0.01	0	<0.01	-	-	-
	Heptachlor epoxide	µg/L	0.01	0.03 ^{#14}		<0.1	<0.01	<0.01	<0.01	-	-	<0.01	0	<0.01	-	-	-
	DDT	µg/L	0.01	1 ^{#2}	0.01 ^{#7}	<0.1	<0.01	<0.01	<0.01	-	-	<0.01	0	<0.01	-	-	-
	DDD	µg/L	0.01	0.032 ^{#3}		<0.1	<0.01	<0.01	<0.01	-	-	<0.01	0	<0.01	-	-	-
	Aldrin + Dieldrin	µg/L		0.03 ^{#11}		0.2 ^{#22}	0.02 ^{#22}	0.1 ^{#22}	0.03 ^{#22}	-	-	0.02 ^{#22}	0#22	0.55 ^{#22}	-	-	-
	chlordane	µg/L	0.01	0.1 ^{#11}		<0.1	<0.01	<0.01	<0.01	-	-	<0.01	0	<0.01	-	-	-
	DDE	µg/L	0.01			<0.1	<0.01	<0.01	<0.01	-	-	<0.01	0	<0.01	-	-	-
	Endosulfan	µg/L	0.01		20 ^{#2}	0.005 ^{#7}	<0.1	<0.01	<0.01	<0.01	-	-	<0.01	0	<0.01	-	-
Organophosphorous Pesticides	Azinophos methyl	µg/L	0.01	56 ^{#3}	0.01 ^{#10}	<0.1	<0.01	<0.01	<0.01	-	-	<0.01	0	<0.01	-	-	-
	Diazinon	µg/L	0.01	0.1 ^{#11}	0.01 ^{#10}	<0.1	<0.01	<0.01	0.06	-	-	<0.01	0	<0.01	-	-	-
	Dichlorvos	µg/L	0.01	0.26 ^{#3}	0.001 ^{#12}	<0.1	<0.01	<0.01	<0.01	-	-	<0.01	0	<0.01	-	-	-
	Dimethoate	µg/L	0.01	0.1 ^{#11}	0.48 ^{#10}	<0.1	<0.01	<0.01	<0.01	-	-	<0.01	0	<0.01	-	-	-
	Fenitrothion	µg/L	0.01	0.1 ^{#11}	0.01 ^{#10}	<0.1	<0.01	<0.01	<0.01	-	-	<0.01	0	<0.01	-	-	-
	Malathion	µg/L	0.01	0.1 ^{#11}	0.01 ^{#10}	<0.1	<0.01	<0.01	<0.01	-	-	<0.01	0	<0.01	-	-	-
	Mevinphos (Phosdrin)	µg/L	0.01	0.1 ^{#11}	0.02 ^{#3}	<0.1	<0.01	<0.01	<0.01	-	-	<0.01	0	<0.01	-	-	-
PCBs	Tetrachlorobiphenyl, 3,3,4,4- (PCB 77)	µg/L	0.005	0.006 ^{#3}		<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	-	-	-	-	-
	Tetrachlorobiphenyl, 3,4,4,5- (PCB 81)	µg/L	0.005	0.0004 ^{#3}		<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	-	-	-	-	-
	Pentachlorobiphenyl, 2,3,3,4,4- (PCB 105)	µg/L	0.005	0.004 ^{#3}		<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	-	-	-	-	-
	Pentachlorobiphenyl, 2,3,4,4,5- (PCB 114)	µg/L	0.005	0.004 ^{#3}		<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	-	-	-	-	-
	PCB 118	µg/L	0.005	0.004 ^{#3}		<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	-	-	-	-	-
	Pentachlorobiphenyl, 2,3,4,4,5- (PCB 123)	µg/L	0.005	0.004 ^{#3}		<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	-	-	-	-	-
	Pentachlorobiphenyl, 3,3,4,4,5- (PCB 126)	µg/L	0.005	0.0000012 ^{#3}		<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	-	-	-	-	-
	Hexachlorobiphenyl, 2,3,3,4,4,5- (PCB 156)	µg/L	0.005	0.004 ^{#3}		<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	-	-	-	-	-
	Hexachlorobiphenyl, 2,3,3,4,4,5- (PCB 157)	µg/L	0.005	0.004 ^{#3}		<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	-	-	-	-	-
	Hexachlorobiphenyl, 2,3,4,4,5,5- (PCB 167)	µg/L	0.005	0.004 ^{#3}		<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	-	-	-	-	-
	Hexachlorobiphenyl, 3,3,4,4,5,5- (PCB 169)	µg/L	0.005	0.000004 ^{#3}		<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	-	-	-	-	-
	Heptachlorobiphenyl, 2,3,3,4,4,5,5- (PCB 189)	µg/L	0.005	0.004 ^{#3}		<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	-	-	-	-	-
Anilines	2-nitroaniline	µg/L	1	190 ^{#3}		<1	<1	-	<1	-	-	<1	-	<1	-	-	-
	3-nitroaniline	µg/L	1			<1	<1	-	<1	-	-	<1	-	<1	-	-	-
	4-chloroaniline	µg/L	1	0.37 ^{#3}		<1	<1	-	<1	-	-	<1	-	<1	-	-	-
	4-nitroaniline	µg/L	1	3.8 ^{#3}		<1	<1	-	<1	-	-	<1	-	<1	-	-	-
Explosives	2,4-Dinitrotoluene	µg/L	1	0.24 ^{#3}		<1	<1	-	<1	-	-	<1	-	<1	-	-	-
	2,6-dinitrotoluene	µg/L	1	0.049 ^{#3}		<1	<1	-	<1	-	-	<1	-	<1	-	-	-
	Nitrobenzene	µg/L	1	8 to 63 ^{#2}		<1	<1	-	<1	-	-	<1	-	<1	-	-	-
Halogenated Benzenes	Chlorobenzene	µg/L	1	300 ^{#2}		-	-	-	-	-	<1	<1	-	-	-	-	-
	Bromobenzene	µg/L	1	62 ^{#3}		-	-	-	-	-	<1	<1	-	-	-	-	-
	2-chlorotoluene	µg/L	1	240 ^{#3}		-	-	-	-	-	<1	<1	-	-	-	-	-
	4-chlorotoluene	µg/L	1	250 ^{#3}		-	-	-	-	-	<1	<1	-	-	-	-	-
	1,3-dichlorobenzene	µg/L	1			<1	<1	-	<1	-	<1	<1	-	<1	-	-	-
	1,4-dichlorobenzene	µg/L	1			<1	<1	-	<1	-	<1	<1	-	<1	-	-	-
	1,2-dichlorobenzene	µg/L	1	80 ^{#11}		<1	<1	-	<1	-	<1	<1	-	<1	-	-	-
	1,2-dichlorobenzene	µg/L	1	600 ^{#11}		<1	<1	-	<1	-	<1	<1	-	<1	-	-	-
	1,2,4-trichlorobenzene	µg/L	1	70 ^{#11}	Refer to 'Trichlorobenzene (total)' ^{#7}	<1	<1	-	<1	-	<1	<1	-	<1	-	-	-
	Hexachlorobenzene	µg/L	0.01	0.1 ^{#11}	0.05 ^{#3}	<0.1	<0.01	<0.01	<0.01	-	-	<0.01	0	<0.01	-	-	-
Trichlorobenzene (total)	µg/L		20 ^{#2}	0.4 ^{#7}	<1 ^{#21}	<1 ^{#21}	-	<1 ^{#21}	-	-	<1 ^{#21}	-	<1 ^{#21}	-	-	-	
Halogenated Hydrocarbons	Dichlorodifluoromethane	µg/L	1	200 ^{#3}		-	-	-	-	-	<1	<1	-	-	-	-	-
	Bromomethane	µg/L	1	7.5 ^{#3}		-	-	-	-	-	<1	<1	-	-	-	-	-
	Trichlorofluoromethane	µg/L	1	5,200 ^{#3}		-	-	-	-	-	<1	<1	-	-	-	-	-
	1,2-dibromoethane	µg/L	1	0.4 ^{#11}		-	-	-	-	-	<1	<1	-	-	-	-	-
Halogenated Phenols	2-chlorophenol	µg/L	1	91 ^{#3}	50 ^{#10}	<1	<1	-	<1	-	<1	<1	-	<1	-	-	-
	2,4-dichlorophenol	µg/L	1	46 ^{#3}	4.2 ^{#10}	<1	<1	-	<1	-	<1	<1	-	<1	-	-	-
	2,4,5-trichlorophenol	µg/L	1	1,200 ^{#3}		<1	<1	-	<1	-	<1	<1	-	<1	-	-	-
	2,4,6-trichlorophenol	µg/L	1	200 ^{#11}		<1	<1	-	<1	-	<1	<1	-	<1	-	-	-
	Pentachlorophenol	µg/L	1	9 ^{#2}	0.4 ^{#7}	<1	<1	-	<1	-	<1	<1	-	<1	-	-	-
Phthalates	Bis(2-ethylhexyl) phthalate	µg/L	5	6 ^{#11}	1.3 ^{#7}	<5	<5	-	<5	-	<5	<5	-	<5	-	-	-
	Butyl benzyl phthalate	µg/L	1	16 ^{#3}	7.5 ^{#10}	<1	<1	-	<1	-	<1	<1	-	<1	-	-	-
	Di-n-butyl phthalate	µg/L	1.5	900 ^{#3}	8 ^{#10}	<1.5	<1.5	-	<1.5	-	<1.5	<1.5	-	<1.5	-	-	-
	Di-n-octyl phthalate	µg/L	1	200 ^{#3}	20 ^{#10}	<1	<1	-	<1	-	<1	<1	-	<1	-	-	-

Table 2
Stage 2 Screening Table
Groundwater
Sheriffhall Roundabout

Location ID	BH51	BH55-M	BH59-M	BH62-M	BH62-M	BH70A	BH70A	BH72-M	BH74	BH74	BH76	BH76
Sample Depth (m)	2.40	16.61	14.98	19.74	19.48	5.88	6.55	4.00	0.50	1.70	1.54	1.58
Sample Type	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
Sample Date	18/12/18	19/12/18	19/12/18	18/12/18	12/06/18	12/06/18	19/12/18	06/02/19	18/12/18	12/06/18	19/12/18	14/06/18
Lab Report No.	791976	792743	792743	791976	745559	745559	792743	801282	791976	745559	792061	745820

Chemical Group	Chemical Name	Output Unit	EQL	GAC_WTV_SC_DWS	GAC_WTV_SC_EQS-Fresh												
	Diethyl phthalate	µg/L	1	15,000 ^{#3}	200 ^{#10}	<1	<1	-	<1	-	-	<1	-	<1	-	-	-
	Dimethyl phthalate	µg/L	1		800 ^{#10}	<1	<1	-	<1	-	-	<1	-	<1	-	-	-
Solvents	Isophorone	µg/L	1	78 ^{#3}		<1	<1	-	<1	-	-	<1	-	<1	-	-	-
Metals	Arsenic	µg/L	0.2	10 ^{#14}	50 ^{#10}	-	-	-	-	-	-	0.6	-	-	-	-	-
	Arsenic (Filtered)	µg/L	0.2	10 ^{#14}	50 ^{#10}	1.2	<0.2	1	<0.2	<0.2	<0.2	<0.2	-	1.7	0.8	0.3	0.3
	Boron	µg/L	10	1,000 ^{#14}	2,000 ^{#10}	-	30	100	-	47,000	180,000	150	-	-	260,000	80	-
	Boron (Filtered)	µg/L	10	1,000 ^{#14}	2,000 ^{#10}	70	-	-	40	-	-	-	240	-	-	-	-
	Cadmium	µg/L	0.02	5 ^{#14}	0.08 ^{#7}	-	-	-	-	-	-	-	0.03	-	-	-	-
	Cadmium (Filtered)	µg/L	0.02	5 ^{#14}	0.08 ^{#7}	<0.02	0.03	<0.02	0.02	<0.02	0.04	0.04	-	0.07	0.1	0.03	0.05
	Chromium (III+VI)	µg/L	1	50 ^{#14}	Use CrIII or CrVI ^{#12}	-	-	-	-	-	-	-	<1	-	-	-	-
	Chromium (III+VI) (Filtered)	µg/L	1	50 ^{#14}	Use CrIII or CrVI ^{#12}	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1
	Copper	µg/L	0.5	2,000 ^{#14}	1 ^{#10}	-	-	-	-	-	-	-	0.6	-	-	-	-
	Copper (Filtered)	µg/L	0.5	2,000 ^{#14}	1 ^{#10}	1.6	0.5	0.7	<0.5	<0.5	<0.5	0.8	-	1	1.2	2.2	2.3
	Iron	µg/L	10	200 ^{#14}	1,000 ^{#10}	60	100	600	30	790	20,000	450	310,000	150	24,000	170	240,000
	Lead	µg/L	0.3	10 ^{#14}	1.2 ^{#7}	-	-	-	-	-	-	-	<0.3	-	-	-	-
	Lead (Filtered)	µg/L	0.3	10 ^{#14}	1.2 ^{#7}	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	0.3	<0.3	<0.3	<0.3
	Manganese	µg/L	1	50 ^{#14}	123 ^{#10}	-	-	-	-	-	-	-	440	-	-	-	-
	Manganese (Filtered)	µg/L	1	50 ^{#14}	123 ^{#10}	20	<1	330	630	500	300	4	-	4000	240	340	610
	Mercury	µg/L	0.05	1 ^{#14}	0.07 ^{#6}	-	-	-	-	-	-	-	0.1	-	-	-	-
	Mercury (Filtered)	µg/L	0.05	1 ^{#14}	0.07 ^{#6}	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05
	Nickel	µg/L	1	20 ^{#14}	4 ^{#7}	-	-	-	-	-	-	-	3	-	-	-	-
	Nickel (Filtered)	µg/L	1	20 ^{#14}	4 ^{#7}	2	3	3	1	1	2	1	-	5	4	2	3
	Selenium	µg/L	0.5	10 ^{#14}		-	-	-	-	-	-	-	0.8	-	-	-	-
Selenium (Filtered)	µg/L	0.5	10 ^{#14}		8.2	1	<0.5	<0.5	<0.5	3	1.4	-	1	1	<0.5	<0.5	
Vanadium	µg/L	2	86 ^{#3}	20 ^{#10}	-	-	-	-	-	-	-	<2	-	-	-	-	
Vanadium (Filtered)	µg/L	2	86 ^{#3}	20 ^{#10}	<2	<2	<2	<2	<2	<2	<2	-	4	2	<2	<2	
Zinc	µg/L	2	6,000 ^{#3}	11.9 ^{#10}	-	-	-	-	-	-	-	<2	-	-	-	-	
Zinc (Filtered)	µg/L	2	6,000 ^{#3}	11.9 ^{#10}	4	7	17	5	12	2	8	-	14	3	9	2	
Chromium (hexavalent)	µg/L	3	Use Chromium (total) ^{#14}	3.4 ^{#10}	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	
Chromium (hexavalent) (Filtered)	µg/L	3	Use Chromium (total) ^{#14}	3.4 ^{#10}	-	-	-	-	-	-	-	-	-	-	<3	-	
Inorganics	Ammoniacal Nitrogen	mg/L	0.05			<0.05	0.08	0.09	<0.05	0.05	<0.05	0.26	0.07	0.22	0.05	-	<0.05
	Ammoniacal Nitrogen (Filtered)	mg/L	0.05			-	-	-	-	-	-	-	-	-	-	<0.05	-
	Sulphur	µg/L	50,000			<50,000	60,000	120,000	<50,000	<50,000	54,000	51,000	<50,000	<50,000	<50,000	<50,000	<50,000
	Cyanide (Free)	mg/L	0.05	Use Cyanide Total ^{#14}	0.001 ^{#10}	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Cyanide Total	mg/L	0.05	0.05 ^{#14}	0.001 ^{#5}	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Cyanides-complex	µg/L	50	Use Cyanide Total ^{#14}		<50	<50	<50	<50	<50	-	<50	<50	<50	-	<50	<50
	Thiocyanate	mg/L	1	0.004 ^{#3}		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Sulphate	mg/L	0.5	250 ^{#3}	400 ^{#10}	74	65	100	90	-	-	62	57	77	-	-	-
	Sulphate (Filtered)	mg/L	0.5	250 ^{#3}	400 ^{#10}	-	-	-	-	-	-	-	-	-	-	19	-
	Hardness as CaCO3	mg/L	10			270	410	280	320	320	580	470	690	400	420	120	610
	Easily Liberated Sulphide (Moisture Corrected)	mg/L	0.05			<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.1	<0.05	<0.1	<0.05	<0.1
	COD	mg/L	5			-	-	-	-	-	-	-	-	-	105	-	-

Comments

- #1 WHO Petroleum DWG 2008
- #2 WHO DWG 2017
- #3 WHO 2017 - Taste
- #5 WFD England/Wales. 2015 - Freshwater Standards
- #6 Water Env't Regs (Scotland) 2015. MAC-EQS Inland
- #7 Water Env't Regs (Scotland) 2015. AA-EQS Inland
- #8 USEPA RSL (tapwater) [May 2019]
- #9 SEPA WAT-SG-53 Fresh EQS - MAC - 2015
- #10 SEPA WAT-SG-53 Fresh EQS - AA - 2015
- #11 SEPA GW RPV 2011
- #12 Scotland RBD 2009 - Fresh AA
- #13 PNEC (EU REACH) - Freshwater
- #14 DWS Scotland 2001
- #16 AECOM DWG (WHO method)
- #17 ESDAT Combined with Non-Detect Multiplier of 1. Some analytes are reported multiple times; the lowest non-detect or the highest detect is used. Some Analytes are missing from this Combined Compound.
- #18 ESDAT Combined with Non-Detect Multiplier of 1. Some analytes are reported multiple times; the lowest non-detect or the highest detect is used.
- #19 ESDAT Combined. Some analytes are reported multiple times; the lowest non-detect or the highest detect is used.

Key

- XXX Exceedance of CW/WE Water. DWS - Scotland
- XXX Exceedance of CW/WE Water. Aquatic Toxicity - Scotland - Freshwater
- #20 ESDAT Combined with Non-Detect Multiplier of 1. Some Analytes are missing from this Combined Compound.
- #21 ESDAT Combined. Some Analytes are missing from this Combined Compound.
- #22 ESDAT Combined with Non-Detect Multiplier of 1.
- #23 ESDAT Combined.
- GAC: Generic Assessment Criteria
- (blank): No assessment criteria available
- : Not analysed

Table 2
Stage 2 Screening Table
Groundwater
Sheriffhall Roundabout

Location ID	BH80-M	BH89	BH90	BH91	BH93	TP22	TP23
Sample Depth (m)	21.47	2.31	4.93	7.33	1.01	0.10	0.10
Sample Type	GW	GW	GW	GW	GW	GW	GW
Sample Date	20/12/18	23/05/19	23/05/19	23/05/19	23/05/19	14/06/18	15/05/18
Lab Report No.	792743	824795	824795	824795	824795	745493	739656

Chemical Group	Chemical Name	Output Unit	EQL	GAC_WTV_SC_DWS	GAC_WTV_SC_EQS-Fresh							
	Dichloroethene	µg/L	1			-	-	-	-	-	-	-
	Methy lphenols	µg/L	10		100 ^{#10}	-	<10	<10	<10	<10	-	-
	Trietazine	mg/L	1E-05			<0.00001	<0.00002	<0.00002	<0.00002	<0.00002	-	-
	Boron (Water Soluble) (Filtered)	µg/L	50	1,000 ^{#14}	2,000 ^{#10}	-	150	90	150	80	-	-
	PAH : Total :- (Poly nuclear Aromatic Hy drocarbons)	µg/L	0.01			0.06	0.69	0.09	0.08	0.01	-	-
	HCH : Total (5) Isomers	µg/L	0.01			<0.01	-	-	-	-	-	-
	Cyfluthrin	mg/L	1E-05			0.00039	<0.00002	<0.00002	<0.00002	<0.00002	-	-
Field	pH	pH_Units	0			-	7.44	7.47	7.31	7.48	7.25	6.69
TPH	>C5-C6 Aliphatics	µg/L	0.01	15,000 ^{#1}		<10	<10	<10	<10	<10	-	-
	>C6-C8 Aliphatics	µg/L	0.01	15,000 ^{#1}		<10	<10	<10	<10	<10	-	-
	>C8-C10 Aliphatics	µg/L	0.01	300 ^{#1}		-	-	-	-	-	-	-
	>C10-C12 Aliphatics	µg/L	0.01	300 ^{#1}		<20	<10	<10	<10	<10	-	-
	>C12-C16 Aliphatics	µg/L	0.01	300 ^{#1}		<20	<10	<10	<10	<10	-	-
	>C16-C21 Aliphatics	µg/L	0.01	300 ^{#1}		<20	<10	<10	<10	<10	-	-
	>C16-C35 Aliphatics	µg/L				<40 ^{#23}	<20 ^{#23}	<20 ^{#23}	<20 ^{#23}	<20 ^{#23}	-	-
	>C21-C35 Aliphatics	µg/L	0.01	300 ^{#1}		<20	<10	<10	<10	<10	-	-
	>EC6-EC7 Aromatics	µg/L	0.01	1 ^{#14}	10 ^{#7}	<10	<10	<10	<10	<10	-	-
	>EC7-EC8 Aromatics	µg/L	0.01	700 ^{#11}	50 ^{#12}	<10	<10	<10	<10	<10	-	-
	>EC8-EC10 Aromatics	µg/L	0.01	300 ^{#1}		<10	<10	<10	<10	<10	-	-
	>EC10-EC12 Aromatics	µg/L	0.01	90 ^{#1}		<20	<10	<10	<10	<10	-	-
	>EC12-EC16 Aromatics	µg/L	0.01	90 ^{#1}		<20	<10	<10	<10	<10	-	-
	>EC16-EC21 Aromatics	µg/L	0.01	90 ^{#1}		<20	<10	<10	<10	<10	-	-
>EC21-EC35 Aromatics	µg/L	0.01	90 ^{#1}		<20	<10	<10	<10	<10	-	-	
BTEX	Benzene	µg/L	1	1 ^{#14}	10 ^{#7}	<1	<1	<1	<1	<1	-	-
	Toluene	µg/L	1	700 ^{#11}	74 ^{#10}	<1	<1	<1	<1	<1	-	-
	Ethy lbenzene	µg/L	1	300 ^{#11}	20 ^{#10}	<1	<1	<1	<1	<1	-	-
	Xylene (m & p)	µg/L	1			<1	<1	<1	<1	<1	-	-
	Xylene Total	µg/L		500 ^{#11}	30 ^{#10}	<2 ^{#21}	-	-	-	-	-	-
	Xylene (o)	µg/L	1	190 ^{#8}		<1	<1	<1	<1	<1	-	-
	Total BTEX	µg/L				<5 ^{#21}	-	-	-	-	-	-
Oxy genates	MTBE	µg/L	1	1,800 ^{#16}	5,100 ^{#13}	<1	<1	<1	<1	<1	-	-
Chlorinated Hy drocarbons	Chloromethane	µg/L	1	190 ^{#8}		-	-	-	-	555	-	-
	Vinyl chloride	µg/L	1	0.5 ^{#14}		-	-	-	-	-	-	-
	Chloroethane	µg/L	1	21,000 ^{#8}		-	-	-	-	-	-	-
	1,1-dichloroethene	µg/L	1	7 ^{#11}		-	-	-	-	-	-	-
	Dichloromethane	µg/L	50	5 ^{#11}	20 ^{#7}	-	-	-	-	-	-	-
	trans-1,2-dichloroethene	µg/L	1	50 ^{#11}		-	-	-	-	-	-	-
	1,1-dichloroethane	µg/L	1	2.8 ^{#8}		-	-	-	-	-	-	-
	cis-1,2-dichloroethene	µg/L	1	50 ^{#11}		-	-	-	-	-	-	-
	Chloroform	µg/L	1	Use trihalomethanes ^{#14}	2.5 ^{#7}	-	-	-	-	-	-	-
	1,1,1-trichloroethane	µg/L	1	200 ^{#11}	100 ^{#10}	-	-	-	-	-	-	-
	Carbon tetrachloride	µg/L	1	3 ^{#14}	12 ^{#7}	-	-	-	-	-	-	-
	Trichloroethene	µg/L	1	Use PCE + TCE ^{#14}	10 ^{#7}	-	-	-	-	-	-	-
	1,1,2-trichloroethane	µg/L	1	5 ^{#11}	400 ^{#10}	-	-	-	-	-	-	-
	Tetrachloroethene	µg/L	1	Use PCE + TCE ^{#14}	10 ^{#7}	-	-	-	-	-	-	-
Sum of PCE and TCE	µg/L		10 ^{#14}		-	-	-	-	-	-	-	
VOC	2,2-dichloropropane	µg/L	1			-	-	-	-	-	-	-
	Bromochloromethane	µg/L	1	83 ^{#8}		-	-	-	-	-	-	-
	1,1-dichloropropene	µg/L	1			-	-	-	-	-	-	-
	1,2-dichloroethane	µg/L	1	3 ^{#14}	10 ^{#7}	-	-	-	-	-	-	-
	1,2-dichloropropane	µg/L	1	5 ^{#11}		-	-	-	-	-	-	-
	Dibromomethane	µg/L	1	8.3 ^{#8}		-	-	-	-	-	-	-
	Bromodichloromethane	µg/L	1	60 ^{#2}		-	-	-	-	-	-	-
	cis-1,3-dichloropropene	µg/L	1			-	-	-	-	-	-	-
	trans-1,3-dichloropropene	µg/L	1			-	-	-	-	-	-	-
	1,3-dichloropropane	µg/L	1	20 ^{#11}		-	-	-	-	-	-	-
	Chlorodibromomethane	µg/L	1	Use trihalomethanes ^{#14}		-	-	-	-	-	-	-
	1,1,1,2-tetrachloroethane	µg/L	1	0.57 ^{#8}		-	-	-	-	-	-	-
	Sty rene	µg/L	1	20 ^{#11}	50 ^{#10}	-	-	-	-	-	-	-
	Bromoform	µg/L	1	Use trihalomethanes ^{#14}		-	-	-	-	-	-	-
	Isopropy lbenzene	µg/L	1	450 ^{#8}		-	-	-	-	-	-	-
	1,1,1,2-tetrachloroethane	µg/L	1	0.076 ^{#8}	140 ^{#10}	-	-	-	-	-	-	-
	1,2,3-trichloropropane	µg/L	1	0.00075 ^{#8}		-	-	-	-	-	-	-

Table 2
Stage 2 Screening Table
Groundwater
Sheriffhall Roundabout

Location ID	BH80-M	BH89	BH90	BH91	BH93	TP22	TP23
Sample Depth (m)	21.47	2.31	4.93	7.33	1.01	0.10	0.10
Sample Type	GW	GW	GW	GW	GW	GW	GW
Sample Date	20/12/18	23/05/19	23/05/19	23/05/19	23/05/19	14/06/18	15/05/18
Lab Report No.	792743	824795	824795	824795	824795	745493	739656

Chemical Group	Chemical Name	Output Unit	EQL	GAC_WTV_SC_DWS	GAC_WTV_SC_EQS-Fresh							
	n-propyl benzene	µg/L	1	660 ^{RS}		-	-	-	-	-	-	-
	1,3,5-trimethyl benzene	µg/L	1	60 ^{RS}		-	-	-	-	-	-	-
	tert-butyl benzene	µg/L	1	690 ^{RS}		-	-	-	-	-	-	-
	1,2,4-trimethyl benzene	µg/L	1	56 ^{RS}		-	-	-	-	-	-	-
	sec-butyl benzene	µg/L	1	2,000 ^{RS}		-	-	-	-	-	-	-
	p-isopropyl toluene	µg/L	1			-	-	-	-	-	-	-
	Hexachlorobutadiene	µg/L	1	0.1 ^{#11}	0.6 ^{RS}	-	<10	<10	<10	<10	-	-
	1,2-Dichloroethene	µg/L		50 ^{#2}		-	-	-	-	-	-	-
	Trihalomethanes	µg/L		100 ^{#14}		-	-	-	-	-	-	-
PAH	Naphthalene	µg/L	0.01	6 ^{#16}	2 ^{#7}	<0.01	<10 - 0.06	<10 - 0.01	<10 - 0.01	<0.01	0.08	0.09
	Acenaphthylene	µg/L	0.01	18 ^{#16}		<0.01	<10 - 0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Acenaphthene	µg/L	0.01	18 ^{#16}		0.01	<10 - 0.06	<0.01	<0.01	<0.01	<0.01	0.02
	Fluorene	µg/L	0.01	12 ^{#16}		<0.01	<10 - 0.03	<10 - 0.01	<10 - 0.01	<0.01	<0.01	0.02
	Phenanthrene	µg/L	0.01	4 ^{#16}		0.01	<10 - 0.13	<0.01	<0.01	<0.01	0.02	0.04
	Anthracene	µg/L	0.01	90 ^{#16}	0.1 ^{#7}	<0.01	<10 - 0.02	<10 - 0.01	<10 - 0.01	<0.01	<0.01	0.01
	Fluoranthene	µg/L	0.01	4 ^{#2}	0.0063 ^{#7}	0.01	<10 - 0.03	<10 - 0.01	<0.01	<0.01	0.01	0.04
	Pyrene	µg/L	0.01	9 ^{#16}		0.01	<10 - 0.04	<10 - 0.02	<10 - 0.01	<0.01	0.01	0.04
	Benz(a)anthracene	µg/L	0.01	3.5 ^{#16}		0.01	<10 - 0.03	<10 - 0.01	<10 - 0.01	<0.01	<0.01	0.02
	Chrysene	µg/L	0.01	7 ^{#16}		0.01	<10 - 0.18	<10 - 0.01	<10 - 0.01	<0.01	0.01	0.02
	Benzo(a)pyrene	µg/L	0.01	0.01 ^{#14}	0.00017 ^{#7}	<0.01	<10 - 0.02	<0.01	<10 - 0.02	<10 - 0.01	<0.01	0.06
	Indeno(1,2,3-c,d)pyrene	µg/L	0.01	Use PAHs (sum of 4) ^{#14}	see BaP and notes ^{#7}	<0.01	<10 - 0.01	<0.01	<0.01	<0.01	<0.01	0.01
	Dibenz(a,h)anthracene	µg/L	0.01	0.07 ^{#16}		<0.01	<10 - 0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Benzo(g,h,i)perylene	µg/L	0.01	Use PAHs (sum of 4) ^{#14}	see BaP and notes ^{#7}	<0.01	<10 - 0.02	<0.01	<0.01	<0.01	0.01	0.03
	Benzo(b)fluoranthene	µg/L	0.01	Use PAHs (sum of 4) ^{#14}	see BaP and notes ^{#7}	<0.01	<10 - 0.03	<10 - 0.01	<0.01	<0.01	<0.01	0.03
	Benzo(k)fluoranthene	µg/L	0.01	Use PAHs (sum of 4) ^{#14}	see BaP and notes ^{#7}	<0.01	<10 - 0.01	<0.01	<0.01	<0.01	<0.01	0.01
	Benzo(b)&(k)fluoranthene	µg/L	1		0.03 ^{#12}	<0.02 ^{#23}	-	-	-	-	<0.02 ^{#23}	0.04 ^{#22}
	PAHs (Sum of total)	µg/L	0.01			-	-	-	-	-	0.14	0.44
	PAHs (sum of 4)	µg/L		0.1 ^{#14}		<0.04 ^{#23}	-	-	-	-	0.04 ^{#22}	0.08 ^{#22}
	PAH 16 Total	µg/L	0.01			-	-	-	-	-	0.14	0.44
	benzo(g,h,i)perylene + indeno(1,2,3-cd)pyrene	µg/L			0.002 ^{#12}	<0.02 ^{#23}	-	-	-	-	0.02 ^{#22}	0.04 ^{#22}
SVOC	2-methylnaphthalene	µg/L	1	36 ^{RS}		-	<10	<10	<10	<10	-	-
	4-bromophenyl phenyl ether	µg/L	1			-	<10	<10	<10	<10	-	-
	4-chlorophenyl phenyl ether	µg/L	1			-	<10	<10	<10	<10	-	-
	Azobenzene	µg/L	1	0.12 ^{RS}		-	<10	<10	<10	<10	-	-
	Bis(2-chloroethoxy) methane	µg/L	1	59 ^{RS}		-	<10	<10	<10	<10	-	-
	Bis(2-chloroethyl) ether	µg/L	1	0.014 ^{RS}		-	<10	<10	<10	<10	-	-
	Carbazole	µg/L	1			-	<10	<10	<10	<10	-	-
	Dibenzofuran	µg/L	1	7.9 ^{RS}		-	<10	<10	<10	<10	-	-
	Hexachlorocyclopentadiene	µg/L	1	0.41 ^{RS}		-	<10	<10	<10	<10	-	-
	Hexachloroethane	µg/L	1	0.33 ^{RS}		-	<10	<10	<10	<10	-	-
Phenolics	2-methylphenol	µg/L	1	930 ^{RS}		-	<10	<10	<10	<10	-	-
	2-nitrophenol	µg/L	1			-	<10	<10	<10	<10	-	-
	2,4-dimethylphenol	µg/L	1	360 ^{RS}		-	<10	<10	<10	<10	-	-
	4-chloro-3-methylphenol	µg/L	1	1,400 ^{RS}	40 ^{#10}	-	<10	<10	<10	<10	-	-
	4-methylphenol	µg/L	1	1,900 ^{RS}		-	-	-	-	-	-	-
	4-nitrophenol	µg/L	10			-	-	-	-	-	-	-
	Phenol	µg/L	1	5,800 ^{RS}	7.7 ^{#10}	-	<10	<10	<10	<10	-	-
	2-chloronaphthalene	µg/L	1	750 ^{RS}		-	<10	<10	<10	<10	-	-
	2,4-dinitrophenol	µg/L	10	39 ^{RS}		-	<10	<10	<10	<10	-	-
	Phenols	µg/L	0.5			<0.5	<0.5	<0.5	<0.5	<0.5	-	-
	Phenols (Mono)	µg/L	100			<100	<100	<100	<100	<100	-	-
Herbicides	Atrazine	µg/L	0.01	0.1 ^{#11}	0.6 ^{#7}	<0.01	<0.02	<0.02	<0.02	<0.02	-	-
	Simazine	µg/L	0.01	0.1 ^{#11}	1 ^{#7}	<0.01	<0.02	<0.02	<0.02	<0.02	-	-
	Prometryn	µg/L	0.01	600 ^{RS}		<0.01	<0.02	<0.02	<0.02	<0.02	-	-
	Propazine	µg/L	0.01	340 ^{RS}		<0.01	<0.02	<0.02	<0.02	<0.02	-	-
	Terbutryn	µg/L	0.01	13 ^{RS}		<0.01	<0.02	<0.02	<0.02	<0.02	-	-
Pesticides	Parathion	µg/L	0.01	0.1 ^{#11}		<0.01	<0.01	<0.01	<0.01	<0.01	-	-
	Pirimiphos-methyl	µg/L	0.01	0.85 ^{RS}	0.015 ^{#10}	<0.01	<0.01	<0.01	<0.01	<0.01	-	-
	Bifenthrin	µg/L	0.1	300 ^{RS}		-	<0.1	<0.1	<0.1	<0.1	-	-
	Cyhalothrin/Karate	µg/L	0.1	20 ^{RS}		<0.1	<0.1	<0.1	<0.1	<0.1	-	-
	Cypermethrins(total)	µg/L	0.1		0.0001 ^{#10}	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
	Deltamethrin	µg/L	0.01			<0.01	<0.02	<0.02	<0.02	<0.02	-	-
	Fluvalinate	µg/L	0.1	200 ^{RS}		-	<0.1	<0.1	<0.1	<0.1	-	-

Table 2
Stage 2 Screening Table
Groundwater
Sheriffhall Roundabout

Location ID	BH80-M	BH89	BH90	BH91	BH93	TP22	TP23
Sample Depth (m)	21.47	2.31	4.93	7.33	1.01	0.10	0.10
Sample Type	GW	GW	GW	GW	GW	GW	GW
Sample Date	20/12/18	23/05/19	23/05/19	23/05/19	23/05/19	14/06/18	15/05/18
Lab Report No.	792743	824795	824795	824795	824795	745493	739656

Chemical Group	Chemical Name	Output Unit	EQL	GAC_WTV_SC_DWS	GAC_WTV_SC_EQS-Fresh							
	Permethrin	µg/L	0.01	0.1 ^{#11}	0.001 ^{#10}	<0.01	<0.02	<0.02	<0.02	<0.02	-	-
	Aldrin+Dieldrin+Endrin+Isodrin	µg/L			0.01 ^{#7}	0.23 ^{#20}	-	-	-	-	-	-
Organochlorine Pesticides	Aldrin	µg/L	0.01	0.03 ^{#14}	Use Aldrin+Dieldrin+Endrin+Isodrin ^{#7}	0.21	<0.01	<0.01	<0.01	<0.01	-	-
	Dieldrin	µg/L	0.01	0.03 ^{#14}	Use Aldrin+Dieldrin+Endrin+Isodrin ^{#7}	<0.01	<0.01	<0.01	<0.01	<0.01	-	-
	Endrin	µg/L	0.01	0.1 ^{#11}	Use Aldrin+Dieldrin+Endrin+Isodrin ^{#7}	<0.01	<0.01	<0.01	<0.01	<0.01	-	-
	g-BHC (Lindane)	µg/L	0.01	0.1 ^{#11}		<0.01	<0.01	<0.01	<0.01	<0.01	-	-
	Heptachlor	µg/L	0.01	0.03 ^{#14}		<0.01	<0.01	<0.01	<0.01	<0.01	-	-
	Heptachlor epoxide	µg/L	0.01	0.03 ^{#14}		<0.01	<0.01	<0.01	<0.01	<0.01	-	-
	DDT	µg/L	0.01	1 ^{#2}	0.01 ^{#7}	<0.01	<0.01	<0.01	<0.01	<0.01	-	-
	DDD	µg/L	0.01	0.032 ^{#6}		<0.01	<0.01	<0.01	<0.01	<0.01	-	-
	Aldrin + Dieldrin	µg/L		0.03 ^{#11}		0.22 ^{#22}	-	-	-	-	-	-
	chlordane	µg/L	0.01	0.1 ^{#11}		<0.01	<0.01	<0.01	<0.01	<0.01	-	-
	DDE	µg/L	0.01			<0.01	<0.01	<0.01	<0.01	<0.01	-	-
	Endosulfan	µg/L	0.01	20 ^{#2}	0.005 ^{#7}	<0.01	<0.01	<0.01	<0.01	<0.01	-	-
	Organophosphorous Pesticides	Azinophos methyl	µg/L	0.01	56 ^{#3}	0.01 ^{#10}	<0.01	<0.01	<0.01	<0.01	<0.01	-
Diazinon		µg/L	0.01	0.1 ^{#11}	0.01 ^{#10}	<0.01	<0.01	<0.01	<0.01	<0.01	-	-
Dichlorvos		µg/L	0.01	0.26 ^{#8}	0.001 ^{#12}	<0.01	<0.01	<0.01	<0.01	<0.01	-	-
Dimethoate		µg/L	0.01	0.1 ^{#11}	0.48 ^{#10}	<0.01	<0.01	<0.01	<0.01	<0.01	-	-
Fenitrothion		µg/L	0.01	0.1 ^{#11}	0.01 ^{#10}	<0.01	<0.01	<0.01	<0.01	<0.01	-	-
Malathion		µg/L	0.01	0.1 ^{#11}	0.01 ^{#10}	<0.01	<0.01	<0.01	<0.01	<0.01	-	-
Mevinphos (Phosdrin)		µg/L	0.01	0.1 ^{#11}	0.02 ^{#9}	<0.01	<0.01	<0.01	<0.01	<0.01	-	-
PCBs	Tetrachlorobiphenyl, 3,3,4,4- (PCB 77)	µg/L	0.005	0.006 ^{#6}		<0.005	<0.005	<0.005	<0.005	<0.005	-	-
	Tetrachlorobiphenyl, 3,4,4,5- (PCB 81)	µg/L	0.005	0.0004 ^{#6}		<0.005	<0.005	<0.005	<0.005	<0.005	-	-
	Pentachlorobiphenyl, 2,3,3,4,4- (PCB 105)	µg/L	0.005	0.004 ^{#6}		<0.005	<0.005	<0.005	<0.005	<0.005	-	-
	Pentachlorobiphenyl, 2,3,4,4,5- (PCB 114)	µg/L	0.005	0.004 ^{#6}		<0.005	<0.005	<0.005	<0.005	<0.005	-	-
	PCB 118	µg/L	0.005	0.004 ^{#6}		<0.005	<0.005	<0.005	<0.005	<0.005	-	-
	Pentachlorobiphenyl, 2,3,4,4,5- (PCB 123)	µg/L	0.005	0.004 ^{#6}		<0.005	<0.005	<0.005	<0.005	<0.005	-	-
	Pentachlorobiphenyl, 3,3,4,4,5- (PCB 126)	µg/L	0.005	0.0000012 ^{#6}		<0.005	<0.005	<0.005	<0.005	<0.005	-	-
	Hexachlorobiphenyl, 2,3,3,4,4,5- (PCB 156)	µg/L	0.005	0.004 ^{#6}		<0.005	<0.005	<0.005	<0.005	<0.005	-	-
	Hexachlorobiphenyl, 2,3,3,4,4,5- (PCB 157)	µg/L	0.005	0.004 ^{#6}		<0.005	<0.005	<0.005	<0.005	<0.005	-	-
	Hexachlorobiphenyl, 2,3,4,4,5,5- (PCB 167)	µg/L	0.005	0.004 ^{#6}		<0.005	<0.005	<0.005	<0.005	<0.005	-	-
	Hexachlorobiphenyl, 3,3,4,4,5,5- (PCB 169)	µg/L	0.005	0.000004 ^{#6}		<0.005	<0.005	<0.005	<0.005	<0.005	-	-
	Heptachlorobiphenyl, 2,3,3,4,4,5,5- (PCB 189)	µg/L	0.005	0.004 ^{#6}		<0.005	<0.005	<0.005	<0.005	<0.005	-	-
Anilines	2-nitroaniline	µg/L	1	190 ^{#3}		-	<10	<10	<10	<10	-	-
	3-nitroaniline	µg/L	1			-	<10	<10	<10	<10	-	-
	4-chloroaniline	µg/L	1	0.37 ^{#3}		-	<10	<10	<10	<10	-	-
	4-nitroaniline	µg/L	1	3.8 ^{#3}		-	<10	<10	<10	<10	-	-
Explosives	2,4-Dinitrotoluene	µg/L	1	0.24 ^{#3}		-	<10	<10	<10	<10	-	-
	2,6-dinitrotoluene	µg/L	1	0.049 ^{#3}		-	<10	<10	<10	<10	-	-
	Nitrobenzene	µg/L	1	8 to 63 ^{#2}		-	<10	<10	<10	<10	-	-
Halogenated Benzenes	Chlorobenzene	µg/L	1	300 ^{#2}		-	-	-	-	-	-	-
	Bromobenzene	µg/L	1	62 ^{#3}		-	-	-	-	-	-	-
	2-chlorotoluene	µg/L	1	240 ^{#3}		-	-	-	-	-	-	-
	4-chlorotoluene	µg/L	1	250 ^{#3}		-	-	-	-	-	-	-
	1,3-dichlorobenzene	µg/L	1			-	<10	<10	<10	<10	-	-
	1,4-dichlorobenzene	µg/L	1	80 ^{#11}		-	<10	<10	<10	<10	-	-
	1,2-dichlorobenzene	µg/L	1	600 ^{#11}		-	<10	<10	<10	<10	-	-
	1,2,4-trichlorobenzene	µg/L	1	70 ^{#11}	Refer to 'Trichlorobenzene (total)' ^{#7}	-	<10	<10	<10	<10	-	-
	Hexachlorobenzene	µg/L	0.01	0.1 ^{#11}	0.05 ^{#6}	<0.01	<10	<10	<10	<10	-	-
	Trichlorobenzene (total)	µg/L		20 ^{#2}	0.4 ^{#7}	-	-	-	-	-	-	-
Halogenated Hydrocarbons	Dichlorodifluoromethane	µg/L	1	200 ^{#3}		-	-	-	-	-	-	-
	Bromomethane	µg/L	1	7.5 ^{#3}		-	-	-	-	-	-	-
	Trichlorofluoromethane	µg/L	1	5,200 ^{#3}		-	-	-	-	-	-	-
	1,2-dibromoethane	µg/L	1	0.4 ^{#11}		-	-	-	-	-	-	-
Halogenated Phenols	2-chlorophenol	µg/L	1	91 ^{#3}	50 ^{#10}	-	<10	<10	<10	<10	-	-
	2,4-dichlorophenol	µg/L	1	46 ^{#3}	4.2 ^{#10}	-	<10	<10	<10	<10	-	-
	2,4,5-trichlorophenol	µg/L	1	1,200 ^{#3}		-	<10	<10	<10	<10	-	-
	2,4,6-trichlorophenol	µg/L	1	200 ^{#11}		-	<10	<10	<10	<10	-	-
	Pentachlorophenol	µg/L	1	9 ^{#2}	0.4 ^{#7}	-	<10	<10	<10	<10	-	-
Phthalates	Bis(2-ethylhexyl) phthalate	µg/L	5	6 ^{#11}	1.3 ^{#7}	-	<10	<10	<10	<10	-	-
	Butyl benzyl phthalate	µg/L	1	16 ^{#3}	7.5 ^{#10}	-	<10	<10	<10	<10	-	-
	Di-n-butyl phthalate	µg/L	1.5	900 ^{#3}	8 ^{#10}	-	<10	<10	<10	<10	-	-
	Di-n-octyl phthalate	µg/L	1	200 ^{#3}	20 ^{#10}	-	<10	<10	<10	<10	-	-

Table 2
Stage 2 Screening Table
Groundwater
Sheriffhall Roundabout

Location ID	BH80-M	BH89	BH90	BH91	BH93	TP22	TP23
Sample Depth (m)	21.47	2.31	4.93	7.33	1.01	0.10	0.10
Sample Type	GW	GW	GW	GW	GW	GW	GW
Sample Date	20/12/18	23/05/19	23/05/19	23/05/19	23/05/19	14/06/18	15/05/18
Lab Report No.	792743	824795	824795	824795	824795	745493	739656

Chemical Group	Chemical Name	Output Unit	EQL	GAC_WTV_SC_DWS	GAC_WTV_SC_EQS-Fresh							
	Diethyl phthalate	µg/L	1	15,000 ^{#3}	200 ^{#10}	-	<10	<10	<10	<10	-	-
	Dimethyl phthalate	µg/L	1		800 ^{#10}	-	<10	<10	<10	<10	-	-
Solvents	Isophorone	µg/L	1	78 ^{#3}		-	<10	<10	<10	<10	-	-
Metals	Arsenic	µg/L	0.2	10 ^{#14}	50 ^{#10}	-	-	-	-	-	-	-
	Arsenic (Filtered)	µg/L	0.2	10 ^{#14}	50 ^{#10}	2	0.5	0.3	<0.2	0.5	0.9	1.9
	Boron	µg/L	10	1,000 ^{#14}	2,000 ^{#10}	20	-	-	-	-	85,000	340,000
	Boron (Filtered)	µg/L	10	1,000 ^{#14}	2,000 ^{#10}	-	-	-	-	-	-	-
	Cadmium	µg/L	0.02	5 ^{#14}	0.08 ^{#7}	-	-	-	-	-	-	-
	Cadmium (Filtered)	µg/L	0.02	5 ^{#14}	0.08 ^{#7}	<0.02	0.08	<0.02	0.02	0.04	<0.02	<0.02
	Chromium (III+VI)	µg/L	1	50 ^{#14}	Use CrIII or CrVI ^{#12}	-	-	-	-	-	-	-
	Chromium (III+VI) (Filtered)	µg/L	1	50 ^{#14}	Use CrIII or CrVI ^{#12}	<1	<1	<1	4	30	<1	<1
	Copper	µg/L	0.5	2,000 ^{#14}	1 ^{#10}	-	-	-	-	-	-	-
	Copper (Filtered)	µg/L	0.5	2,000 ^{#14}	1 ^{#10}	<0.5	0.5	0.9	<0.5	1.6	<0.5	<0.5
	Iron	µg/L	10	200 ^{#14}	1,000 ^{#10}	660	160	90	120	320	5100	3,100,000
	Lead	µg/L	0.3	10 ^{#14}	1.2 ^{#7}	-	-	-	-	-	-	-
	Lead (Filtered)	µg/L	0.3	10 ^{#14}	1.2 ^{#7}	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
	Manganese	µg/L	1	50 ^{#14}	123 ^{#10}	-	-	-	-	-	-	-
	Manganese (Filtered)	µg/L	1	50 ^{#14}	123 ^{#10}	230	2000	590	31	720	39	1400
	Mercury	µg/L	0.05	1 ^{#14}	0.07 ^{#6}	-	-	-	-	-	-	-
	Mercury (Filtered)	µg/L	0.05	1 ^{#14}	0.07 ^{#6}	<0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05
	Nickel	µg/L	1	20 ^{#14}	4 ^{#7}	-	-	-	-	-	-	-
	Nickel (Filtered)	µg/L	1	20 ^{#14}	4 ^{#7}	1	9	2	<1	2	3	2
	Selenium	µg/L	0.5	10 ^{#14}		-	-	-	-	-	-	-
	Selenium (Filtered)	µg/L	0.5	10 ^{#14}		<0.5	0.7	<0.5	0.7	0.6	<0.5	<0.5
	Vanadium	µg/L	2	86 ^{#3}	20 ^{#10}	-	-	-	-	-	-	-
	Vanadium (Filtered)	µg/L	2	86 ^{#3}	20 ^{#10}	<2	<2	<2	<2	<2	<2	<2
Zinc	µg/L	2	6,000 ^{#6}	11.9 ^{#10}	-	-	-	-	-	-	-	
Zinc (Filtered)	µg/L	2	6,000 ^{#6}	11.9 ^{#10}	5	<2	6	<2	4	<2	2	
Chromium (hexavalent)	µg/L	3	Use Chromium (total) ^{#14}	3.4 ^{#10}	<3	-	-	-	-	<3	<300	
Chromium (hexavalent) (Filtered)	µg/L	3	Use Chromium (total) ^{#14}	3.4 ^{#10}	-	<3	<3	<3	<3	-	-	
Inorganics	Ammoniacal Nitrogen	mg/L	0.05			0.24	-	-	-	-	0.23	16
	Ammoniacal Nitrogen (Filtered)	mg/L	0.05			-	0.09	0.18	<0.05	0.26	-	-
	Sulphur	µg/L	50,000			63,000	<50,000	<50,000	<50,000	<50,000	<50,000	590,000
	Cyanide (Free)	mg/L	0.05	Use Cyanide Total ^{#14}	0.001 ^{#10}	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Cyanide Total	mg/L	0.05	0.05 ^{#14}	0.001 ^{#5}	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Cyanides-complex	µg/L	50	Use Cyanide Total ^{#14}		<50	<50	<50	<50	<50	<50	<50
	Thiocyanate	mg/L	1	0.004 ^{#6}		<1	<1	<1	<1	<1	<1	7
	Sulphate	mg/L	0.5	250 ^{#3}	400 ^{#10}	63	-	-	-	-	-	-
	Sulphate (Filtered)	mg/L	0.5	250 ^{#3}	400 ^{#10}	-	63	95	59	99	-	-
	Hardness as CaCO3	mg/L	10			230	550	700	550	330	170	2700
	Easily Liberated Sulphide (Moisture Corrected)	mg/L	0.05			<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	0.8
	COD	mg/L	5			-	-	-	<5	<5	-	-

Comments

- #1 WHO Petroleum DWG 2008
- #2 WHO DWG 2017
- #3 WHO 2017 - Taste
- #5 WFD England/Wales. 2015 - Freshwater Standards
- #6 Water Env't Regs (Scotland) 2015. MAC-EQS Inland
- #7 Water Env't Regs (Scotland) 2015. AA-EQS Inland
- #8 USEPA RSL (tapwater) [May 2019]
- #9 SEPA WAT-SG-53 Fresh EQS - MAC - 2015
- #10 SEPA WAT-SG-53 Fresh EQS - AA - 2015
- #11 SEPA GW RPV 2011
- #12 Scotland RBD 2009 - Fresh AA
- #13 PNEC (EU REACH) - Freshwater
- #14 DWS Scotland 2001
- #16 AECOM DWG (WHO method)
- #17 ESDAT Combined with Non-Detect Multiplier of 1. Some analytes are reported multiple times; the lowest non-detect or the highest detect is used. Some Analytes are missing
- #18 ESDAT Combined with Non-Detect Multiplier of 1. Some analytes are reported multiple times; the lowest non-detect or the highest detect is used.
- #19 ESDAT Combined. Some analytes are reported multiple times; the lowest non-detect or the highest detect is used.

Key

- XXX Exceedance of CW/WE Water. DWS - Scotland
- XXX Exceedance of CW/WE Water. Aquatic Toxicity - Scotland - Freshwat
- #20 ESDAT Combined with Non-Detect Multiplier of 1. Some Analytes are missing
- #21 ESDAT Combined. Some Analytes are missing from this Combined Compound
- #22 ESDAT Combined with Non-Detect Multiplier of 1.
- #23 ESDAT Combined.
- GAC: Generic Assessment Criteria
- (blank): No assessment criteria available
- : Not analysed

Table 1
 Stage 2 Screening Assessment
 Surface Water
 Sheriffhall Roundabout

Location ID	SW01	SW01 EW 2	SW02	SW02 EW 2	SW03	SW03 EW 2	SW04 EW 2	SW05	SW05 EW 2	SW06	SW06 EW 2	SW07 EW 1	SW08 EW 1	SW10 EW 1
Sample Type	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
Sample Date	14/06/18	18/12/2018	14/06/2018	18/12/2019	14/06/2018	18/12/2018	18/12/2018	12/06/2018	18/12/2018	12/06/2018	18/12/2018	24/05/2019	24/05/2019	24/05/2019
Lab Report No.	745820	791976	745820	791976	645820	791976	791976	745559	791976	745559	791976	824795	824795	824795

Chemical Group	Chemical Name	Output Unit	EQL	GAC_WTV_SC_DWS	GAC_WTV_SC_EQS-Fresh	SW01	SW01 EW 2	SW02	SW02 EW 2	SW03	SW03 EW 2	SW04 EW 2	SW05	SW05 EW 2	SW06	SW06 EW 2	SW07 EW 1	SW08 EW 1	SW10 EW 1	
Field	Methylphenols	µg/L	10		100 ^{#10}	-	-	-	-	-	-	-	-	-	-	-	<10	<10	<10	
	Trietazine	mg/L	1E-05			<0.00001	<0.00001	-	<0.00001	-	<0.00001	<0.00001	<0.00001	<0.00001	-	<0.00001	<0.00002	<0.00002	<0.00002	
	Boron (Water Soluble) (Filtered)	µg/L	50	1,000 ^{#14}	2,000 ^{#10}	-	-	-	-	-	-	-	-	-	-	-	-	160	80	180
	PAH : Total :- (Polynuclear Aromatic Hydrocarbons)	µg/L	0.01			-	-	-	-	-	-	-	-	-	-	-	-	0.14	0.13	0.17
	HCH : Total (5) Isomers	µg/L	0.01			<0.01	<0.01	-	<0.01	-	-	<0.01	<0.01	-	-	-	<0.01	-	-	-
	Cyfluthrin	mg/L	1E-05			-	0.00004	-	<0.00001	-	-	0.00004	-	-	-	-	0.00005	<0.00002	<0.00002	<0.00002
Field	pH	pH Units	0.01			7.69	7.38	7.31	7.19	7.54	7.48	7.57	7.82	7.56	8.02	7.5	8.11	7.24	7.77	
TPH	>C5-C6 Aliphatics	µg/L	0.01	15000 ^{#1}		<10	<10	<10	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	
	>C6-C8 Aliphatics	µg/L	0.01	15000 ^{#1}		<10	<10	<10	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	
	>C8-C10 Aliphatics	µg/L	0.01	300 ^{#1}		<10	<10	<10	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	
	>C10-C12 Aliphatics	µg/L	0.01	300 ^{#1}		<100	<10	<100	<10	<100	-	140	240	<10	280	<10	<10	<10	<10	
	>C12-C16 Aliphatics	µg/L	0.01	300 ^{#1}		<100	<10	<100	<10	<100	-	<100	<100	<10	130	<10	<10	<10	<10	
	>C16-C21 Aliphatics	µg/L	0.01	300 ^{#1}		<100	<10	<100	<10	<100	-	<100	<100	<10	<100	<10	<10	<10	<10	
	>C21-C35 Aliphatics	µg/L	0.01	300 ^{#1}		<100	<10	<100	<10	<100	-	<100	<100	<10	<100	<10	<10	<10	<10	
	>EC6-EC7 Aromatics	µg/L	0.01	1 ^{#14}	10 ^{#7}	<10	<10	<10	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	
	>EC7-EC8 Aromatics	µg/L	0.01	700 ^{#11}	50 ^{#12}	<10	<10	<10	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	
	>EC8-EC10 Aromatics	µg/L	0.01	300 ^{#1}		<10	<10	<10	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	
	>EC10-EC12 Aromatics	µg/L	0.01	90 ^{#1}		<100	<10	<100	<10	<100	-	<100	<100	<10	120	<10	<10	<10	<10	
	>EC12-EC16 Aromatics	µg/L	0.01	90 ^{#1}		<100	<10	<100	<10	<100	-	<100	150	<10	190	<10	<10	<10	<10	
	>EC16-EC21 Aromatics	µg/L	0.01	90 ^{#1}		<100	<10	<100	<10	<100	-	<100	<100	<10	<100	<10	<10	<10	<10	
	>EC21-EC35 Aromatics	µg/L	0.01	90 ^{#1}		<100	<10	<100	<10	<100	-	<100	<100	<10	<100	<10	<10	<10	<10	
BTEX	Benzene	µg/L	1	1 ^{#14}	10 ^{#7}	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	Toluene	µg/L	1	700 ^{#11}	74 ^{#10}	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	Ethylbenzene	µg/L	1	300 ^{#11}	20 ^{#10}	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	Xylene (m & p)	µg/L	1			<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	Xylene Total	µg/L	1	500 ^{#11}	30 ^{#10}	<2 ^{#19}	<2 ^{#19}	<2 ^{#19}	<2 ^{#19}	-	<2 ^{#19}	<2 ^{#19}	<2 ^{#19}	<2 ^{#19}	<2 ^{#19}	<2 ^{#19}	<2 ^{#19}	<2 ^{#19}	<2 ^{#19}	
	Xylene (o)	µg/L	1	190 ^{#8}		<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Total BTEX	µg/L	1			<5 ^{#19}	<5 ^{#19}	<5 ^{#19}	<5 ^{#19}	-	<5 ^{#19}	<5 ^{#19}	<5 ^{#19}	<5 ^{#19}	<5 ^{#19}	<5 ^{#19}	<5 ^{#19}	<5 ^{#19}	<5 ^{#19}		
Oxygenates	MTBE	µg/L	1	1,800 ^{#16}	5,100 ^{#13}	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Chlorinated Hydrocarbons	Chloromethane	µg/L	1	190 ^{#8}		-	-	-	-	-	-	-	-	<1	-	-	-	-		
	Vinyl chloride	µg/L	1	0.5 ^{#14}		-	-	-	-	-	-	-	-	<1	-	-	-	-		
	Chloroethane	µg/L	1	21,000 ^{#8}		-	-	-	-	-	-	-	-	<1	-	-	-	-		
	1,1-dichloroethene	µg/L	1	7 ^{#11}		-	-	-	-	-	-	-	-	<1	-	-	-	-		
	Dichloromethane	µg/L	50	5 ^{#11}	20 ^{#7}	-	-	-	-	-	-	-	-	<50	-	-	-	-		
	trans-1,2-dichloroethene	µg/L	1	50 ^{#11}		-	-	-	-	-	-	-	-	<1	-	-	-	-		
	1,1-dichloroethane	µg/L	1	2.8 ^{#8}		-	-	-	-	-	-	-	-	<1	-	-	-	-		
	cis-1,2-dichloroethene	µg/L	1	50 ^{#11}		-	-	-	-	-	-	-	-	<1	-	-	-	-		
	Chloroform	µg/L	1	Use trihalomethanes ^{#14}	2.5 ^{#7}	-	-	-	-	-	-	-	-	<1	-	-	-	-		
	1,1,1-trichloroethane	µg/L	1	200 ^{#11}	100 ^{#10}	-	-	-	-	-	-	-	-	<1	-	-	-	-		
	Carbon tetrachloride	µg/L	1	3 ^{#14}	12 ^{#7}	-	-	-	-	-	-	-	-	<1	-	-	-	-		
	Trichloroethene	µg/L	1	Use PCE + TCE ^{#14}	10 ^{#7}	-	-	-	-	-	-	-	-	<1	-	-	-	-		
	1,1,2-trichloroethane	µg/L	1	5 ^{#11}	400 ^{#10}	-	-	-	-	-	-	-	-	<1	-	-	-	-		
	Tetrachloroethene	µg/L	1	Use PCE + TCE ^{#14}	10 ^{#7}	-	-	-	-	-	-	-	-	<1	-	-	-	-		
Sum of PCE and TCE	µg/L	1	10 ^{#14}		-	-	-	-	-	-	-	-	<2 ^{#21}	-	-	-	-			
VOC	2,2-dichloropropane	µg/L	1			-	-	-	-	-	-	-	-	<1	-	-	-	-		
	Bromochloromethane	µg/L	1	83 ^{#8}		-	-	-	-	-	-	-	-	<1	-	-	-	-		
	1,1-dichloropropene	µg/L	1			-	-	-	-	-	-	-	-	<1	-	-	-	-		
	1,2-dichloroethane	µg/L	1	3 ^{#14}	10 ^{#7}	-	-	-	-	-	-	-	-	<1	-	-	-	-		
	1,2-dichloropropane	µg/L	1	5 ^{#11}		-	-	-	-	-	-	-	-	<1	-	-	-	-		
	Dibromomethane	µg/L	1	8.3 ^{#8}		-	-	-	-	-	-	-	-	<1	-	-	-	-		
	Bromodichloromethane	µg/L	1	60 ^{#2}		-	-	-	-	-	-	-	-	<1	-	-	-	-		
	cis-1,3-dichloropropene	µg/L	1			-	-	-	-	-	-	-	-	<1	-	-	-	-		
	trans-1,3-dichloropropene	µg/L	1			-	-	-	-	-	-	-	-	<1	-	-	-	-		
	1,3-dichloropropane	µg/L	1	20 ^{#11}		-	-	-	-	-	-	-	-	<1	-	-	-	-		
	Chlorodibromomethane	µg/L	1	Use trihalomethanes ^{#14}		-	-	-	-	-	-	-	-	<1	-	-	-	-		
	1,1,1,2-tetrachloroethane	µg/L	1	0.57 ^{#8}		-	-	-	-	-	-	-	-	<1	-	-	-	-		
	Styrene	µg/L	1	20 ^{#11}	50 ^{#10}	-	-	-	-	-	-	-	-	<1	-	-	-	-		
	Bromoform	µg/L	1	Use trihalomethanes ^{#14}		-	-	-	-	-	-	-	-	<1	-	-	-	-		
	Isopropylbenzene	µg/L	1	450 ^{#8}		-	-	-	-	-	-	-	-	<1	-	-	-	-		
	1,1,2,2-tetrachloroethane	µg/L	1	0.076 ^{#8}	140 ^{#10}	-	-	-	-	-	-	-	-	<1	-	-	-	-		
	1,2,3-trichloropropane	µg/L	1	0.00075 ^{#8}		-	-	-	-	-	-	-	-	<1	-	-	-	-		
	n-propylbenzene	µg/L	1	660 ^{#8}		-	-	-	-	-	-	-	-	<1	-	-	-	-		
	1,3,5-trimethylbenzene	µg/L	1	60 ^{#8}		-	-	-	-	-	-	-	-	<1	-	-	-	-		
	tert-butylbenzene	µg/L	1	690 ^{#8}		-	-	-	-	-	-	-	-	<1	-	-	-	-		
	1,2,4-trimethylbenzene	µg/L	1	56 ^{#8}		-	-	-	-	-	-	-	-	<1	-	-	-	-		
	sec-butylbenzene	µg/L	1	2,000 ^{#8}		-	-	-	-	-	-	-	-	<1	-	-	-	-		
	p-isopropyltoluene	µg/L	1			-	-	-	-	-	-	-	-	<1	-	-	-	-		
Hexachlorobutadiene	µg/L	1	0.1 ^{#11}	0.6 ^{#8}	-	<1	-	<1	-	-	-	-	-	<1	<1	<10	<10	<10		
1,2-Dichloroethene	µg/L																			

Table 1
Stage 2 Screening Assessment
Surface Water
Sheriffhall Roundabout

Location ID	SW01	SW01 EW 2	SW02	SW02 EW 2	SW03	SW03 EW 2	SW04 EW 2	SW05	SW05 EW 2	SW06	SW06 EW 2	SW07 EW 1	SW08 EW 1	SW10 EW 1
Sample Type	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
Sample Date	14/06/18	18/12/2018	14/06/2018	18/12/2019	14/06/2018	18/12/2018	18/12/2018	12/06/2018	18/12/2018	12/06/2018	18/12/2018	24/05/2019	24/05/2019	24/05/2019
Lab Report No.	745820	791976	745820	791976	645820	791976	791976	745559	791976	745559	791976	824795	824795	824795

Chemical Group	Chemical Name	Output Unit	EQL	GAC_WTV_SC_DWS	GAC_WTV_SC_EQS-Fresh	SW01	SW01 EW 2	SW02	SW02 EW 2	SW03	SW03 EW 2	SW04 EW 2	SW05	SW05 EW 2	SW06	SW06 EW 2	SW07 EW 1	SW08 EW 1	SW10 EW 1
	Indeno(1,2,3-c,d)pyrene	µg/L	0.01	Use PAHs (sum of 4) ^{#14}	see BaP and notes ^{#7}	<0.01	<0.01	0.01	<0.02	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01
	Dibenz(a,h)anthracene	µg/L	0.01	0.07 ^{#16}	see BaP and notes ^{#7}	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01
	Benzo(g,h,i)perylene	µg/L	0.01	Use PAHs (sum of 4) ^{#14}	see BaP and notes ^{#7}	<0.01	<0.01	0.02	<0.02	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01
	Benzo(b)fluoranthene	µg/L	0.01	Use PAHs (sum of 4) ^{#14}	see BaP and notes ^{#7}	<0.01	<0.01	0.02	<0.02	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01
	Benzo(k)fluoranthene	µg/L	0.01	Use PAHs (sum of 4) ^{#14}	see BaP and notes ^{#7}	<0.01	<0.01	0.01	<0.02	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01
	Benzo(b)fluoranthene + indeno(1,2,3-cd)pyrene	µg/L	1		0.03 ^{#12}	<0.02 ^{#21}	<1	0.03 ^{#20}	<1	<0.02 ^{#21}	<0.02 ^{#21}	<0.02 ^{#21}	0.02 ^{#20}	<0.02 ^{#21}	<0.02 ^{#21}	<1	-	-	-
	PAHs (sum of 4)	µg/L		0.1 ^{#14}		<0.04 ^{#21}	<0.04 ^{#17}	0.06 ^{#20}	<0.08 ^{#17}	<0.04 ^{#21}	<0.04 ^{#21}	<0.04 ^{#21}	0.05 ^{#20}	<0.04 ^{#21}	<0.04 ^{#21}	<0.04 ^{#17}	-	-	-
	PAH 16 Total	µg/L	0.01			0.03	0.06	0.31	0.04	0.01	0.03	0.03	0.19	0.06	0.08	<0.02	-	-	-
	benzo(g,h,i)perylene + indeno(1,2,3-cd)pyrene	µg/L			0.02 ^{#12}	<0.02 ^{#21}	<0.02 ^{#17}	0.03 ^{#20}	<0.04 ^{#17}	<0.02 ^{#21}	<0.02 ^{#21}	<0.02 ^{#21}	0.03 ^{#20}	<0.02 ^{#21}	<0.02 ^{#21}	<0.04 ^{#17}	-	-	-
	SVOC	2-methylnaphthalene	µg/L	1	36 ^{#8}		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10
4-bromophenyl phenyl ether		µg/L	1			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10
4-chlorophenyl phenyl ether		µg/L	1			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10
Azobenzene		µg/L	1	0.12 ^{#8}		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10
Bis(2-chloroethoxy) methane		µg/L	1	59 ^{#8}		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10
Bis(2-chloroethyl) ether		µg/L	1	0.014 ^{#8}		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10
Carbazole		µg/L	1			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10
Dibenzofuran		µg/L	1	7.9 ^{#8}		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10
Hexachlorocyclopentadiene		µg/L	1	0.41 ^{#8}		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10
Hexachloroethane		µg/L	1	0.33 ^{#8}		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10
Phenolics	2-methylphenol	µg/L	1	930 ^{#8}		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10
	2-nitrophenol	µg/L	1			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10
	2,4-dimethylphenol	µg/L	1	360 ^{#8}		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10
	4-chloro-3-methylphenol	µg/L	1	1,400 ^{#8}	40 ^{#10}	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10
	4-methylphenol	µg/L	1	1,900 ^{#8}		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10
	4-nitrophenol	µg/L	10			<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
	Phenol	µg/L	1	5,800 ^{#8}	7.7 ^{#10}	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10
	2-chloronaphthalene	µg/L	1	750 ^{#8}		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10
	2,4-dinitrophenol	µg/L	10	39 ^{#8}		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
	Phenols	µg/L	0.5			<0.5	<0.5	86	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5
Phenols (Mono)	µg/L	100			<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Herbicides	Atrazine	µg/L	0.01	0.1 ^{#11}	0.6 ^{#7}	<0.01	<0.01	<1	<0.01	<1	<0.01	<0.01	<0.01	<0.01	<1	<0.01	<0.02	<0.02	<0.02
	Simazine	µg/L	0.01	0.1 ^{#11}	1 ^{#7}	<0.01	<0.01	<1	<0.01	<1	<0.01	<0.01	<0.01	<0.01	<1	<0.01	<0.02	<0.02	<0.02
	Prometryn	µg/L	0.01	600 ^{#8}		<0.01	<0.01	<1	<0.01	<1	<0.01	<0.01	<0.01	<0.01	<1	<0.01	<0.02	<0.02	<0.02
	Propazine	µg/L	0.01	340 ^{#8}		<0.01	<0.01	<1	<0.01	<1	<0.01	<0.01	<0.01	<0.01	<1	<0.01	<0.02	<0.02	<0.02
	Terbutryn	µg/L	0.01	13 ^{#8}	0.02	<0.01	<0.01	<1	<0.01	<1	<0.01	<0.01	<0.01	<0.01	<1	<0.01	0.02	<0.02	0.02
Pesticides	Parathion	µg/L	0.01	0.1 ^{#11}		<0.01	<0.01	<1	<0.01	<1	<0.01	<0.01	<0.01	<1	<0.01	<0.01	<0.01	<0.01	<0.01
	Pirimiphos-methyl	µg/L	0.01	0.85 ^{#8}	0.015 ^{#10}	<0.01	<0.01	<1	<0.01	<1	<0.01	<0.01	<0.01	<1	<0.01	<0.01	<0.01	<0.01	<0.01
	Bifenthrin	µg/L	0.1	300 ^{#8}		<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<0.1
	Cyhalothrin/Karate	µg/L	0.1	20 ^{#8}		<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<0.1
	Cypermethrin(total)	µg/L	0.1		0.0001 ^{#10}	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<0.1
	Deltamethrin	µg/L	0.01			<0.01	<0.01	<1	<0.01	<1	<0.01	<0.01	<0.01	<1	<0.01	<0.02	<0.02	<0.02	<0.02
	Fluvalinate	µg/L	0.1	200 ^{#8}		<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<0.1
	Permethrin	µg/L	0.01	0.1 ^{#11}	0.001 ^{#10}	<0.01	<0.01	<1	<0.01	<1	<0.01	<0.01	<0.01	<1	<0.01	<0.02	<0.02	<0.02	<0.02
	Aldrin+Dieldrin+Endrin+Isodrin	µg/L			0.01 ^{#7}	<0.03 ^{#19}	0.04 ^{#18}	<1	0.07 ^{#18}	<1	0.03 ^{#18}	<0.03 ^{#18}	<1	0.03 ^{#18}	<1	<1	<1	<1	<1
	Organochlorine Pesticides	Aldrin	µg/L	0.01	0.03 ^{#14}	Use Aldrin+Dieldrin+Endrin+Isodrin	<0.01	0.02	<1	0.05	<1	0.01	<0.01	<1	<0.01	<1	0.01	<0.01	<0.01
Dieldrin		µg/L	0.01	0.03 ^{#14}	Use Aldrin+Dieldrin+Endrin+Isodrin	<0.01	<0.01	<1	<0.01	<1	<0.01	<0.01	<1	<0.01	<1	<0.01	<0.01	<0.01	<0.01
Endrin		µg/L	0.01	0.1 ^{#11}	Use Aldrin+Dieldrin+Endrin+Isodrin	<0.01	<0.01	<1	<0.01	<1	<0.01	<0.01	<1	<0.01	<1	<0.01	<0.01	<0.01	<0.01
γ-BHC (Lindane)		µg/L	0.01	0.1 ^{#11}		<0.01	<0.01	<1	<0.01	<1	<0.01	<0.01	<1	<0.01	<1	<0.01	<0.01	<0.01	<0.01
Heptachlor		µg/L	0.01	0.03 ^{#14}		<0.01	<0.01	<1	<0.01	<1	<0.01	<0.01	<1	<0.01	<1	<0.01	<0.01	<0.01	<0.01
Heptachlor epoxide		µg/L	0.01	0.03 ^{#14}		<0.01	<0.01	<1	<0.01	<1	<0.01	<0.01	<1	<0.01	<1	<0.01	<0.01	<0.01	<0.01
DDT		µg/L	0.01	1 ^{#2}	0.01 ^{#7}	<0.01	<0.01	<1	<0.01	<1	<0.01	<0.01	<1	<0.01	<1	<0.01	<0.01	<0.01	<0.01
DDD		µg/L	0.01	0.032 ^{#8}		<0.01	<0.01	<1	<0.01	<1	<0.01	<0.01	<1	<0.01	<1	<0.01	<0.01	<0.01	<0.01
Aldrin + Dieldrin		µg/L		0.03 ^{#11}		<0.02 ^{#21}	0.03 ^{#20}	<1	0.06 ^{#20}	<1	0.02 ^{#20}	<0.02 ^{#21}	<1	0.02 ^{#20}	<0.02 ^{#21}	<1	<1	<1	<1
chlordane		µg/L	0.01	0.1 ^{#11}		<0.01													

Table 1
Stage 2 Screening Assessment
Surface Water
Sheriffhall Roundabout

Location ID	SW01	SW02 EW 2	SW02	SW02 EW 2	SW03	SW03 EW 2	SW04 EW 2	SW05	SW05 EW 2	SW06	SW06 EW 2	SW07 EW 1	SW08 EW 1	SW10 EW 1
Sample Type	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
Sample Date	14/06/18	18/12/2018	14/06/2018	18/12/2019	14/06/2018	18/12/2018	18/12/2018	12/06/2018	18/12/2018	12/06/2018	18/12/2018	24/05/2019	24/05/2019	24/05/2019
Lab Report No.	745820	791976	745820	791976	645820	791976	791976	745559	791976	745559	791976	824795	824795	824795

Chemical Group	Chemical Name	Output Unit	EQL	GAC_WTV_SC_DWS	GAC_WTV_SC_EQS-Fresh	SW01	SW02 EW 2	SW02	SW02 EW 2	SW03	SW03 EW 2	SW04 EW 2	SW05	SW05 EW 2	SW06	SW06 EW 2	SW07 EW 1	SW08 EW 1	SW10 EW 1	
Halogenated Benzenes	2,6-dinitrotoluene	µg/L	1	0.049 ^{#8}		-	<1	-	<1	-	-	-	-	-	-	<1	<10	<10	<10	
	Nitrobenzene	µg/L	1	8 to 63 ^{#2}		-	<1	-	<1	-	-	-	-	-	-	<1	<10	<10	<10	
	Chlorobenzene	µg/L	1	300 ^{#2}		-	-	-	-	-	-	-	-	<1	-	-	-	-	-	
	Bromobenzene	µg/L	1	62 ^{#8}		-	-	-	-	-	-	-	-	<1	-	-	-	-	-	
	2-chlorotoluene	µg/L	1	240 ^{#8}		-	-	-	-	-	-	-	-	<1	-	-	-	-	-	
	4-chlorotoluene	µg/L	1	250 ^{#8}		-	-	-	-	-	-	-	-	<1	-	-	-	-	-	
	1,3-dichlorobenzene	µg/L	1			-	<1	-	<1	-	-	-	-	<1	-	<1	<10	<10	<10	
	1,4-dichlorobenzene	µg/L	1	80 ^{#11}		-	<1	-	<1	-	-	-	-	<1	-	<1	<10	<10	<10	
	1,2-dichlorobenzene	µg/L	1	600 ^{#11}		-	<1	-	<1	-	-	-	-	<1	-	<1	<10	<10	<10	
	1,2,4-trichlorobenzene	µg/L	1	70 ^{#11}	Refer to Trichlorobenzene (total)	-	<1	-	<1	-	-	-	-	<1	-	<1	<10	<10	<10	
Hexachlorobenzene	µg/L	0.01	0.1 ^{#11}	0.05 ^{#6}	<0.01	<1	-	<1	-	-	<0.01	<0.01	-	-	<1	<0.01	<0.01	<0.01		
Trichlorobenzene (total)	µg/L			20 ^{#2}	0.4 ^{#7}	-	<1 ^{#10}	-	<1 ^{#10}	-	-	-	-	-	<1 ^{#10}	-	-	-		
Halogenated Hydrocarbons	Dichlorodifluoromethane	µg/L	1	200 ^{#8}		-	-	-	-	-	-	-	<1	-	-	-	-	-		
	Bromomethane	µg/L	1	7.5 ^{#8}		-	-	-	-	-	-	-	<1	-	-	-	-	-		
	Trichlorofluoromethane	µg/L	1	5,200 ^{#8}		-	-	-	-	-	-	-	<1	-	-	-	-	-		
	1,2-dibromoethane	µg/L	1	0.4 ^{#11}		-	-	-	-	-	-	-	<1	-	-	-	-	-		
Halogenated Phenols	2-chlorophenol	µg/L	1	91 ^{#8}	50 ^{#10}	-	<1	-	<1	-	-	-	-	-	<1	<10	<10	<10		
	2,4-dichlorophenol	µg/L	1	46 ^{#8}	4.2 ^{#10}	-	<1	-	<1	-	-	-	-	-	<1	<10	<10	<10		
	2,4,5-trichlorophenol	µg/L	1	1,200 ^{#8}		-	<1	-	<1	-	-	-	-	-	<1	<10	<10	<10		
	2,4,6-trichlorophenol	µg/L	1	200 ^{#11}		-	<1	-	<1	-	-	-	-	-	<1	<10	<10	<10		
	Pentachlorophenol	µg/L	1	9 ^{#2}	0.4 ^{#7}	-	<1	-	<1	-	-	-	-	-	<1	<10	<10	<10		
Phthalates	Bis(2-ethylhexyl) phthalate	µg/L	5	6 ^{#11}	1.3 ^{#7}	-	<5	-	<5	-	-	-	-	-	<5	<10	<10	<10		
	Butyl benzyl phthalate	µg/L	1	16 ^{#8}	7.5 ^{#10}	-	<1	-	<1	-	-	-	-	-	<1	<10	<10	<10		
	Di-n-butyl phthalate	µg/L	1.5	900 ^{#8}	8 ^{#10}	-	<1.5	-	<1.5	-	-	-	-	-	<1.5	<10	<10	<10		
	Di-n-octyl phthalate	µg/L	1	200 ^{#8}	20 ^{#10}	-	<1	-	<1	-	-	-	-	-	<1	<10	<10	<10		
	Diethylphthalate	µg/L	1	15,000 ^{#8}	200 ^{#10}	-	<1	-	<1	-	-	-	-	-	<1	<10	<10	<10		
	Dimethyl phthalate	µg/L	1		800 ^{#10}	-	<1	-	<1	-	-	-	-	-	<1	<10	<10	<10		
Solvents	Isophorone	µg/L	1	78 ^{#8}		-	<1	-	<1	-	-	-	-	-	<1	<10	<10	<10		
Metals	Arsenic (Filtered)	µg/L	0.2	10 ^{#14}	50 ^{#10}	0.6	0.2	0.7	0.4	0.4	0.2	0.3	0.5	0.2	0.5	0.3	0.4	0.4	0.5	
	Boron	µg/L	10	1,000 ^{#14}	2,000 ^{#10}	160	130	80	60	-	120	110	180,000	110	180,000	110	-	-	-	
	Cadmium (Filtered)	µg/L	0.02	5 ^{#14}	0.08 ^{#7}	0.03	0.07	<0.02	<0.02	0.05	0.04	0.04	0.03	0.04	0.03	0.04	<0.02	<0.02	<0.02	
	Chromium (III+VI) (Filtered)	µg/L	1	50 ^{#14}	Use CrIII or CrVI ^{#12}	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	3	<1	<1
	Copper (Filtered)	µg/L	0.5	2,000 ^{#14}	1 ^{#10}	4.5	2.5	0.9	0.7	6.2	2.5	2.5	3.8	3.1	3.9	2.3	3.8	1.1	3.9	
	Iron	µg/L	10	200 ^{#14}	1,000 ^{#10}	420	110	1300	40	1400	80	80	550	70	850	90	100	470	320	
	Lead (Filtered)	µg/L	0.3	10 ^{#14}	1.2 ^{#7}	0.4	<0.03	<0.3	<0.03	0.4	<0.03	<0.03	<0.3	<0.03	<0.3	<0.03	<0.3	<0.3	<0.3	
	Manganese (Filtered)	µg/L	1	50 ^{#14}	123 ^{#10}	10	22	16	2	2	3	11	<1	6	<1	21	14	52	35	
	Mercury (Filtered)	µg/L	0.05	4 ^{#14}	0.07 ^{#6}	<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	
	Nickel (Filtered)	µg/L	1	20 ^{#14}	4 ^{#7}	11	19	3	2	11	14	14	14	13	14	13	14	3	18	
	Selenium (Filtered)	µg/L	0.5	10 ^{#14}		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	Vanadium (Filtered)	µg/L	2	86 ^{#8}	20 ^{#10}	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
	Zinc (Filtered)	µg/L	2	6,000 ^{#8}	11.9 ^{#10}	10	120	3	18	76	74	73	23	71	31	60	39	71	40	
	Chromium (hexavalent)	µg/L	3	Use Chromium (total) ^{#14}	3.4 ^{#10}	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	-	
	Chromium (hexavalent) (Filtered)	µg/L	3	Use Chromium (total) ^{#14}	3.4 ^{#10}	-	-	-	-	-	-	-	-	-	-	-	<3	<3	<3	
	Inorganics	Ammoniacal Nitrogen	mg/L	0.05			<0.05	0.85	0.46	0.43	<0.05	0.05	0.08	0.14	0.14	0.05	0.05	-	-	-
		Ammoniacal Nitrogen (Filtered)	mg/L	0.05			-	-	-	-	-	-	-	-	-	-	-	0.11	0.22	2.3
Sulphur		µg/L	50,000			<50,000	<50,000	<50,000	<50,000	<50,000	<50,000	<50,000	<50,000	<50,000	<50,000	<50,000	<50,000	<50,000	<50,000	
Cyanide (Free)		mg/L	0.05	Use Cyanide Total ^{#14}	0.001 ^{#10}	<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	
Cyanide Total		mg/L	0.05	0.05 ^{#14}	0.001 ^{#5}	<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	
Cyanides-complex		µg/L	50	Use Cyanide Total ^{#14}		<50	<50	<50	<50	-	<50	<50	<50	<50	<50	<50	<50	<50	<50	
Thiocyanate		mg/L	1	0.004 ^{#8}		<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Sulphate (Filtered)		mg/L	0.5	250 ^{#3}	400 ^{#10}	-	-	-	-	-	-	-	-	-	-	-	-	67	43	71
Hardness as CaCO3		mg/L	10			270	350	170	180	-	340	330	300	330	310	330	360	260	390	
Easily Liberated Sulphide (Moisture Corrected)		mg/L	0.05			<0.1	<0.05	<0.1	<0.05	<0.1	<0.05	<0.05	<0.1	<0.05	<0.1	<0.05	<0.1	<0.1	<0.1	
COD	mg/L	5			26	26	59	24	-	-	24	25	-	31	25	31	40	66		

Comments

- #1 WHO Petroleum DWG 2008
 - #2 WHO DWG 2017
 - #3 WHO 2017 - Taste
 - #5 WFD England/Wales. 2015 - Freshwater Standards
 - #6 Water Env't Regs (Scotland) 2015. MAC-EQS Inland
 - #7 Water Env't Regs (Scotland) 2015. AA-EQS Inland
 - #8 USEPA RSL (tapwater) [May 2019]
 - #9 SEPA WAT-SG-53 Fresh EQS - MAC - 2015
 - #10 SEPA WAT-SG-53 Fresh EQS - AA - 2015
 - #11 SEPA GW RPV 2011
 - #12 Scotland RBD 2009 - Fresh AA
 - #13 PNEC (EU REACH) - Freshwater
 - #14 DWS Scotland 2001
 - #16 AECOM DWG (WHO method)
 - #17 ESDAT Combined. Some analytes are reported multiple times; the lowest non-detect or the highest detect is used.
 - #18 ESDAT Combined with Non-Detect Multiplier of 1. Some Analytes are missing from this Combined Compound.
 - #19 ESDAT Combined. Some Analytes are missing from this Combined Compound.
 - #20 ESDAT Combined with Non-Detect Multiplier of 1.
 - #21 ESDAT Combined.
- GAC: Generic Assessment Criteria
(blank): No assessment criteria available

Key

- XXX Exceedance of CW/WE Water. DWS - Scotland
- XXX Exceedance of CW/WE Water. Aquatic Toxicity - Scotland - Freshwater

Appendix 16.1.3 – Ground Gas Monitoring Results

Appendix 16.1-3

Table 1. Summary of 2018/2019 Gas Monitoring Results

BH Ref	GI Summary Zone Reference	Monitoring Period	Number of Rounds	Barometric Pressure mb	Flow l/hr	CH4 Maximum %v/v	CH4 Steady State %v/v	CH4 LEL % Peak State	CO2 Initial %v/v	CO2 Steady State %v/v	O2 Steady State %v/v	CO ppm	H2S ppm
BH02	A6106 North Section	11/07/2018 - 06/03/2019	8	973 - 1018	<0.1 - 2.3	0.3	0.1 - 0.3	2 - 6	1.5	0.4 - 1.6	16.7 - 20.7	<1 - 5	<1
BH05-M	A7 North Section	12/07/2018 - 06/03/2019	8	973 - 1017	<0.1 - 12.1	0.4	0.1 - 0.4	2 - 8	2.0	1.2 - 2.0	0.4 - 8.8	<1 - 2	<1
BH06	A720 Central Section	11/07/2018 - 06/03/2019	8	975 - 1018	<0.1 - 4.0	0.3	0.1 - 0.3	2 - 6	2.0	0.2 - 2.0	17.8 - 21.2	<1 - 4	<1
BH08	A7 North Section	11/07/2018 - 06/03/2019	8	975 - 1018	<0.1 - 0.5	0.3	<0.1 - 0.3	2 - 6	2.0	0.1 - 2.0	19.8 - 21.2	<0.1 - 1	<1 - 1
BH09	A720 Central Section	12/07/2018 - 06/03/2019	8	976 - 1017	<0.1 - 0.4	0.1	<0.1 - 0.1	2	2.7	0.1 - 5.8	16.5 - 21.0	<1 - 2	<1
BH10A	A720 Central Section	12/07/2018 - 06/03/2019	8	977 - 1017	<0.1 - 2.8	0.3	0.1 - 0.2	2 - 6	1.2	0.1 - 1.2	11.1 - 21.8	<1 - 2	<1
BH11A	A720 Central Section	12/07/2018 - 06/03/2019	8	977 - 1017	<0.1 - 4.4	0.3	<0.1 - 0.3	<1 - 6	2.9	0.2 - 2.9	14.9 - 21.1	<1 - 2	<1
BH12	A720 Central Section	13/09/2018 - 06/03/2019	4	975 - 1013	0.3 - 0.4	0.2	<0.1 - 0.1	<1 - 4	0.8	0.1 - 0.6	19.7 - 21.2	<1 - 1	<1
BH13	A720 Central Section	12/07/2018 - 06/03/2019	8	977 - 1017	<0.1 - 3.0	0.2	<0.1 - 0.2	<1 - 4	1.9	0.1 - 2.1	14.6 - 21.2	<1 - 1	<1
BH26-M	A720 East Section	11/07/2018 - 06/03/2019	8	974 - 1020	<0.1 - 0.3	0.3	<0.1 - 0.3	2 - 6	1.7	0.1 - 1.3	19.4 - 21.3	<1 - 3	<1
BH28A	A720 East Section	11/07/2018 - 06/03/2019	8	976 - 1019	0.1 - 0.4	0.4	<0.1 - 0.4	<1 - 8	2.4	0.9 - 2.4	18.1 - 20.6	<1 - 2	<1
BH28-M	A720 East Section	11/07/2018 - 06/03/2019	8	975 - 1019	0.1 - 0.4	0.3	<0.1 - 0.2	<1 - 6	2.1	0.1 - 2.1	20.2 - 21.0	<1 - 3	<1
BH29	A720 East Section	11/07/2018 - 06/03/2019	8	976 - 1019	<0.1 - 0.4	0.3	<0.1 - 0.3	2 - 6	2.0	0.1 - 2.0	19.2 - 21.1	<1 - 3	<1
BH36	A720 East Section	11/07/2018 - 06/03/2019	8	975 - 1018	0.1 - 0.4	1.4	0.1 - 1.3	2 - 28	1.9	0.1 - 3.5	19.1 - 21.1	<1 - 2	<1
BH37	A720 East Section	11/07/2018 - 06/03/2019	8	975 - 1018	<0.1 - 0.3	0.3	<0.1 - 0.3	<1 - 6	2.0	0.4 - 2.0	16.4 - 20.7	<1 - 2	<1
BH40	A720 Central Section	12/07/2018 - 06/03/2019	8	977 - 1018	<0.1 - 0.5	0.3	0.1 - 0.2	2 - 6	1.1	0.1 - 1.0	19.7 - 21.4	<1 - 3	<1
BH41-M	A720 West Section	12/07/2018 - 06/03/2019	8	977 - 1017	<0.1 - 0.5	0.2	0.1 - 0.2	2 - 4	0.5	0.1 - 0.3	19.8 - 21.8	<1 - 2	<1
BH45-M	A720 West Section	12/07/2018 - 06/03/2019	8	973 - 1017	<0.1 - 3.5	0.2	<0.1 - 0.2	<1 - 4	4.0	0.1 - 4.0	14.2 - 21.8	<1 - 2	<1

BH Ref	GI Summary Zone Reference	Monitoring Period	Number of Rounds	Barometric Pressure mb	Flow l/hr	CH4 Maximum %v/v	CH4 Steady State %v/v	CH4 LEL % Peak State	CO2 Initial %v/v	CO2 Steady State %v/v	O2 Steady State %v/v	CO ppm	H2S ppm
BH50	A720 West Section	12/07/2018 - 06/03/2019	8	974 - 1016	<0.1 - 0.4	0.2	<0.1 - 0.2	2 - 4	1.8	0.2 - 1.7	16.4 - 21.1	<1 - 1	<1
BH51	A720 West Section	12/07/2018 - 06/03/2019	8	975 - 1017	<0.1 - 0.3	0.2	<0.1 - 0.2	<1 - 4	2.6	0.2 - 3.3	15.1 - 20.9	<1 - 1	<1
BH52	A720 West Section	12/07/2018 - 06/03/2019	8	974 - 1017	<0.1 - 0.4	0.2	<0.1 - 0.2	<1 - 4	3.0	0.2 - 3.0	17.3 - 21.0	<1 - 1	<1
BH53-M	A720 West Section	12/07/2018 - 06/03/2019	8	975 - 1017	<0.1 - 2.8	0.2	<0.1 - 0.2	<1 - 4	4.5	0.1 - 4.5	11.9 - 21.3	<1 - 2	<1
BH55-M	A720 West Section	12/07/2018 - 06/03/2019	8	975 - 1017	<0.1 - 4.4	0.1	<0.1 - 0.1	<1 - 2	10.4	0.1 - 10.5	2.6 - 21.1	<1 - 4	<1
BH59-M	A720 West Section	12/07/2018 - 06/03/2019	8	976 - 1017	<0.1 - 0.4	0.2	<0.1 - 0.2	<1 - 4	0.2	0.1 - 0.3	20.6 - 21.3	<1 - 2	<1
BH62-M	A7 South Section	11/07/2018 - 06/03/2019	8	975 - 1017	<0.1 - 0.5	0.3	0.1 - 0.3	2 - 6	2.9	0.1 - 3.0	1.8 - 21.1	<1 - 4	<1
BH70A	A720 Central Section	11/07/2018 - 06/03/2019	8	975 - 1018	<0.1 - 0.5	0.3	0.1 - 0.2	2 - 6	10.2	0.3 - 14.8	1.6 - 19.8	<1 - 3	<1
BH72-M	A6106 South Section	11/07/2018 - 06/03/2019	8	976 - 1017	<0.1 - 0.4	0.2	<0.1 - 0.2	<1 - 6	0.6	<0.1 - 0.7	19.5 - 21.5	<1 - 34	<1
BH74	A6106 South Section	11/07/2018 - 06/03/2019	8	976 - 1018	<0.1 - 0.4	0.3	0.1 - 0.3	2 - 6	2.2	0.1 - 3.7	19.0 - 21.1	<1 - 4	<1
BH76	A720 East Section	11/07/2018 - 06/03/2019	8	973 - 1018	<0.1 - 0.5	0.3	0.1 - 0.3	2 - 6	3.4	0.2 - 3.6	18.3 - 21.4	<1 - 3	<1
BH80-M	A7 South Section	11/07/2018 - 06/03/2019	8	972 - 1016	<0.1 - 6.5	0.3	0.1 - 0.3	2 - 6	3.4	0.1 - 3.4	1.7 - 21.1	<1 - 4	<1
BH82	A720 Central Section	12/07/2018 - 06/03/2019	8	978 - 1018	<0.1 - 0.4	0.3	0.1 - 0.3	2 - 6	1.6	0.1 - 1.7	19.7 - 21.7	<1 - 5	<1
BH87	A720 West Section	12/07/2018 - 07/11/2018	7	982 - 1016	<0.1 - 0.5	0.1	<0.1 - 0.1	<1 - 2	5.3	1.5 - 7.7	15.5 - 21.1	<1 - 2	<1
BH89	A6106 South Section	23/05/2019 - 29/07/2019	6	1001 - 1021	<0.1 - 0.5	0.2	<0.1 - 0.2	<1 - 4	0.7	0.1 - 0.7	20.7 - 21.9	<1 - 4	<1
BH90	A6106 South Section	23/05/2019 - 29/07/2019	6	1001 - 1020	0.1 - 0.3	0.2	<0.1 - 0.2	<1 - 4	3.0	2.5 - 3.0	17.3 - 19.2	<1 - 3	<1 - 2
BH91	A6106 South Section	23/05/2019 - 29/07/2019	6	1000 - 1020	<0.1 - 0.3	0.2	<0.1 - 0.2	<1 - 4	1.2	0.5 - 1.2	19.8 - 21.3	<1 - 2	<1
BH93	A6106 South Section	23/05/2019 - 30/07/2019	6	1003 - 1016	<0.1 - 0.2	0.4	<0.1 - 0.4	<1 - 8	0.3	0.1 - 0.5	20.6 - 21.7	<1 - 2	<1
BH109	A7 South Section	23/05/2019 - 29/07/2019	6	1000 - 1016	<0.1 - 0.6	0.6	<0.1 - 0.6	<1 - 12	1.2	0.3 - 1.4	17.6 - 21.0	<1 - 4	<1
BH110	A720 West Section	23/05/2019 - 29/07/2019	6	1000 - 1016	<0.1 - 0.9	0.2	<0.1 - 0.2	<1 - 4	1.3	0.4 - 1.3	15.3 - 21.3	<1 - 4	<1

Data Sources:

- 2019 Addendum Monitoring: SEGL. Addendum Report on Gas and Groundwater Monitoring for A720 Sheriffhall Roundabout Improvement. Project No. TC8086. October 2019.
- 2019 Ground Investigation: SEGL. Report on a Ground Investigation for A720 Sheriffhall Roundabout Improvement. Project No. TC8086A. October 2019.

Key:

mb - millibars

l/hr - litres per hour

%v/v - volumetric concentration

LEL – Lower Explosive Limit

ppm - parts per million

Appendix 16.1-3

Table 2. Summary of Historical Ground Investigation Gas Monitoring Results

Project	BH Ref	GI Summary Zone Reference	Monitoring Period	Number of Rounds	Barometric Pressure mb	Flow l/hr	CH4 %v/v	CO2 %v/v	O2 %v/v	CO ppm	H2S ppm
2008 Waverley Railway Project	BH206	A6106 North Section	18/07/2007	1	1012	-0.80	ND	ND	19.8	ND	ND
2008 Waverley Railway Project	BH207A	A6106 North Section	18/07/2007	1	1011	0.00	ND	ND	20.2	ND	ND
2008 Waverley Railway Project	BH301	A720 East Section	18/07/2007	1	1012	0.00	0.1	0.8	16.4	ND	ND
2008 Waverley Railway Project	BH303	A6106 South Section	23/05/2007 - 18/07/2007	5	992 - 1009	0.00 - 5.00	ND	1.2 - 2.1	18.4 - 20.3	ND	ND
2008 Waverley Railway Project	BH304	A6106 South Section	23/05/2007 - 18/07/2007	5	992 - 1009	0.00 - 0.10	ND	0.8 - 1.9	18.7 - 20.0	ND	ND
2008 Waverley Railway Project	BH306	A6106 South Section	23/05/2007 - 18/07/2007	5	992 - 1009	0.00 - 0.60	ND	0.4 - 1.7	18.3 - 20.2	ND	ND
2011 Borders Rail Phase 2	2BH188	A6106 North Section	21/06/2011 & 30/06/2011	2	991 & 1018	0.00 - 0.60	ND	ND & 0.7	19.6 & 20.5	ND	ND
2011 Borders Rail Phase 2	2BH191	A720 East Section	21/06/2011 & 30/06/2011	2	992 & 1018	0.00	ND	ND & 0.4	6.7 & 20.5	ND	ND

Data Source:

- Soil Mechanics. Waverley Railway Project Factual Report on Ground Investigation for Scottish Borders Council, 2008;
- Soil Mechanics. Borders Railway, Dialogue Period Ground Investigation, Phase 2 Factual Report on Ground Investigation for Transport Scotland, 2011.

Key:

mb - millibars

l/hr - litres per hour

%v/v - volumetric concentration

ppm - parts per million

ND – Not detected