

Appendix A10.1: Contaminated Land Sources

1.1.1 This appendix provides details of potential contamination sources within 250m of the proposed scheme, supporting Chapter 10 (Geology, Soils and Groundwater). The potential contaminated land sources presented in Table 1 were obtained from review of historical and current maps; Ground Investigation (GI) data; consultation; and site survey information. The location of these potential sources are presented on Figure 10.2.

Table 1: Contaminated Land Sources

Source Reference	Historical Land Use / Source	Desk Study Information				Advanced and Preliminary Ground Investigation Information
		Source of Information	Dates Shown	Distance from Proposed Scheme	Further Comments	
Online						
PK-C1	Existing A9	OS Map	1970s - Present	Online - along full length of route, except between ch4900 and ch5250.	<p>Potential for made ground associated with embankment construction from materials of unknown composition.</p> <p>Potential for contaminants associated with A9 traffic.</p>	<p>Made ground generally consisting of silty, fine to coarse sand and angular to sub-rounded gravel of mixed lithologies and on occasion tarmacadam. In addition multicoloured stained brown sand/gravel was noted at one location (ch6030).</p> <p>No exceedances of assessment criteria were noted within the soil samples selected for laboratory analysis.</p> <p>One groundwater sample was sent for laboratory analysis which noted a marginally elevated concentration of mercury against the Scottish Environment Protection Agency (SEPA) defined Resource Protection Value (RPV) on one occasion.</p> <p>Gas monitoring has recorded concentrations of carbon dioxide (CO₂) and carbon monoxide (CO) above the HSE published occupational exposure limits for both long and short term reference periods. Oxygen (O₂) concentrations were also noted to be below the 19% limit set by the 1954 Mines and Quarries Act.</p>
PK-C2	Highland Main Line railway and associated railway land	OS Map	1867 - Present	Online – in close proximity for majority of the proposed scheme, crossing at ch400 to ch600 and ch4600	<p>Potential for contaminants associated with embankment construction from materials of unknown composition.</p> <p>Potential for contaminants associated with railway use.</p>	<p>Made ground was recorded in two locations in proximity to PK-C2. Made ground generally consisted of brown slightly clayey fine to coarse sand with sub-rounded to rounded, fine to coarse gravel of mixed lithologies.</p> <p>No exceedances of assessment criteria were recorded for soil samples or groundwater samples sent for laboratory analysis.</p>

Source Reference	Historical Land Use / Source	Desk Study Information				Advanced and Preliminary Ground Investigation Information
		Source of Information	Dates Shown	Distance from Proposed Scheme	Further Comments	
PK-C3	Curling Pond	OS Map	1900 - 1938	Online ch2900	Potential for infill material of unknown composition to be present.	Not investigated
PK-C4	Gravel Pit	OS Map	1867 - 1938	Online ch1750	It is unknown if the gravel pit has been subsequently infilled. Potential for contaminants associated with infill material.	Not investigated
PK-C5	Saw Mill	OS Map	1900 only	Online ch5350	n/a	Not investigated
PK-C6	Old Limekiln	OS Map	1867 – 1900	Online ch4025	Marked as 'Old Limekiln' in 1900.	One GI location was in close proximity to the expected footprint of the source, although no made ground was encountered. No exceedances of assessment criteria were noted for the one soil sample selected for laboratory analysis. Gas monitoring recorded concentrations of CO ₂ above the HSE published occupational exposure limits for long term reference periods.
PK-C24	Old Limekiln	OS Map	1867 – 1900	Online ch1900	Marked as 'Old Limekiln' in 1900'	One GI location was within the potential footprint of the source. No made ground was recorded.
PK-C26	Old Saw Mill	OS Map	1900 only	Online ch5525	n/a	Not investigated
PK-C37	Septic Tank	Landowner Consultation	Unknown	Online ch4600	Locations shown on Figure 10.2 are the septic tank locations as provided by landowners during the consultation process which may be the approximate location of the septic tank or the associated property land boundary.	Two GI locations within the property land boundary, no made ground was recorded.
PK-C46	Septic Tank		Unknown	Online ch5550		Not investigated
PK-C56	Septic Tank		Unknown	Online ch3650		Not investigated

Source Reference	Historical Land Use / Source	Desk Study Information				Advanced and Preliminary Ground Investigation Information
		Source of Information	Dates Shown	Distance from Proposed Scheme	Further Comments	
PK-C57	Septic Tank		Unknown	Online ch3650		Not investigated
Offline						
PK-C8	Graveyard	OS Map	1867-1995	ch1450 (185m south)	n/a	Not investigated
PK-C9	Old Limekiln	OS Map	1867 – 1900	ch1350 (185m south)	Marked as 'Old' from the 1867 edition onwards.	Not investigated
PK-C11	Graveyard	OS Map	1867 - Present	ch500 (140m north-east)	Surrounded by 'Earthworks'. Graveyard present from 1867, earthworks are present from 1976 onwards.	Not investigated
PK-C12	Mill Dam	OS Map	1867 - 1990	ch3600 (160m west)	Potential for contaminants associated with fill material to be present.	Not investigated
PK-C13	Pitlochry Power Station (hydroelectric)	OS Map	1976 – Present	ch2900 (170m north)	Hydroelectric Power Station – Dam located to the south of Pitlochry at Port-na-Craig.	Not investigated
PK-C14	Electric Sub Station	OS Map	1976 – 1995	ch3000 (120m north)	n/a	Not investigated
PK-C15	Laboratory	OS Map	1983 – 1995	ch2900 (50m north)	The ownership and the nature of the laboratory is unclear from the OS mapping. Currently the building is within a group of land plots which belong to the Pitlochry Festival Theatre and the Pitlochry Festival Society.	Not investigated
PK-C16	Electric Sub Station	OS Map	1983 - 1995	ch2650 (95m north)	n/a	Not investigated

Source Reference	Historical Land Use / Source	Desk Study Information				Advanced and Preliminary Ground Investigation Information
		Source of Information	Dates Shown	Distance from Proposed Scheme	Further Comments	
PK-C19	Curling Pond	OS Map	1867 – 1900	ch4700 (25m west)	Labelled as 'Curling Pond; in 1867 and 1900. A pond is still present in the approximate location at present day. It is unclear if there has been any partial infill, therefore the potential still exists for the presence of contaminants associated with infill material.	One GI location in close proximity to the expected footprint of the source. No made ground was recorded, although there was a layer of peat. Gas monitoring recorded concentrations of CO ₂ above the HSE published occupational exposure limits for both long and short term reference periods. O ₂ concentrations were also noted to be below the 19% limit set by the 1954 Mines and Quarries Act.
PK-C20	Gravel Pit	OS Map	1867 only	ch5500 (180m west)	It is unknown if the gravel pit has been subsequently infilled. Potential for contaminants associated with infill material.	Not investigated
PK-C21	Gravel Pit	OS Map	1867 only	ch5400 (70m west)	It is unknown if the gravel pit has been subsequently infilled. Potential for contaminants associated with infill material.	Not investigated
PK-C22	Mill Dam	OS Map	1867 – 1938	ch2100 (210m north-east)	Likely to have been subsequently infilled with material of unknown composition. Potential for contaminants associated with infill material.	Not investigated
PK-C23	Gravel Pit	OS Map	1900 – 1938	ch2425 (100m north-east)	It is unknown if the gravel pit has been subsequently infilled. Potential for contaminants associated with infill material.	Not investigated
PK-C25	Fonab Cemetery	OS Map	1976 – Present	ch2150 (110m north-east)	n/a	Not investigated
PK-C27	Fisheries Laboratory	OS Map	1977 - Present	ch5850 (160m west)	n/a	Not investigated
PK-C28	Burial Ground	OS Map	1900- Present	ch5950 (120m west)	n/a	Not investigated

Source Reference	Historical Land Use / Source	Desk Study Information				Advanced and Preliminary Ground Investigation Information
		Source of Information	Dates Shown	Distance from Proposed Scheme	Further Comments	
PK-C30, PK-C32 to PK-C36, PK-C38, PK-C40 to PK-C45, PK-C47 to PK-C48, PK-C50 to PK-C52, PK-C58	Septic Tanks	Landowner Consultation	Unknown	Multiple locations along the proposed scheme	Locations shown on Figure 10.2 are the septic tank locations as provided by landowners during the consultation process, which may be the approximate location of the septic tank or the associated property land boundary.	Not investigated
N/A	A924 Side Road**	Ground Investigation	Unknown		n/a	Made ground consisting of sands and gravels and/or tarmacadam/concrete recorded to a maximum depth of 0.7mbgl at two locations. No exceedances of assessment criteria were noted for the one soil sample selected for laboratory analysis. Gas monitoring recorded concentrations of CO ₂ above the HSE published occupational exposure limits for long term reference periods and O ₂ concentrations below the 19% limit set by the 1954 Mine and Quarries Act at one location.
N/A	B8019 Side Road** (General Wade's Military Road)	Ground Investigation	Unknown		n/a	Made ground consisting of gravelly silty sand with tarmacadam recorded to a maximum depth of 0.4mbgl at one location, and brown slightly clayey fine to coarse sand with angular to sub-rounded gravel to a maximum depth of 0.70mbgl Gas monitoring recorded concentrations of CO ₂ above the HSE published occupational exposure limits for long term reference periods and O ₂ concentrations below the 19% limit set by the 1954 Mine and Quarries Act.

Source Reference	Historical Land Use / Source	Desk Study Information				Advanced and Preliminary Ground Investigation Information
		Source of Information	Dates Shown	Distance from Proposed Scheme	Further Comments	
N/A	Minor/ Residential Side Roads**	Ground Investigation	Unknown		n/a	<p>Seven locations encountered made ground generally consisting of sand and gravel of mixed lithologies (including pelite, schist, psammite and fragments of tarmacadam) with one location consisting of concrete to a maximum depth of 0.17mbgl.</p> <p>One exceedance of assessment criteria for benzo(a)pyrene was noted in one location at ch1550 within the seven soil samples selected for laboratory analysis.</p> <p>Gas monitoring recorded concentrations of CO₂ above the HSE published occupational exposure limits for both long and short term reference periods and O₂ concentrations below the 19% limit set by the 1954 Mine and Quarries Act.</p>
N/A	No obvious source**	Ground Investigation	Unknown	Multiple locations along the proposed scheme.	Four locations along the proposed scheme had made ground appearing with no obvious source.	<p>Made ground of clayey fine to coarse sand with angular to rounded gravel of mixed lithologies. One location had black organic debris present and a strong organic odour noted at 1.20mbgl. One location had a large concrete obstruction at 0.15m.</p> <p>No exceedances of assessment criteria were noted within soils samples selected for laboratory analysis.</p>

* Source References correlate to numbering on Historical Features Plans.

** Not indicated on Figure 10.2