

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 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				Ground Investigations Information
		Source of Information	Dates Shown	Distance from Proposed Scheme	Further Comments	
KP-C1	Existing A9	OS Map	1970s to present	Online - along full length	<p>Potential for Made Ground associated with embankment constructed from materials of unknown composition.</p> <p>Potential for contaminants associated with A9 traffic.</p>	<p>Made ground generally consisting of bituminous road surface and sub-base of concrete, with limestone and sandstone fill noted throughout. Silty, fine to coarse sand and angular to subangular fine to coarse gravel of psammite and pelite with low to high cobble and boulder content was encountered at a number of locations.</p> <p>No visual or olfactory evidence of contamination was noted from either GI. Fragments of white geotextile material, gravel of plastics, polystyrene, glass, ceramics, wood and metal and a French drain were noted during the 2016 Preliminary GI.</p> <p>No exceedances of assessment criteria were noted within soils samples selected for laboratory analysis.</p> <p>Concentrations of carbon dioxide were found in excess of both long term and short term workplace exposure limits and oxygen was noted to be depleted (below 16% v/v) on occasion.</p>

Source Reference	Historical Land Use / Source	Desk Study Information				Ground Investigations Information
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KP-C2	Highland Main Line railway and associated railway land	OS map	1867 - present	Online - crosses proposed scheme at ch4200 and ch12700	<p>Potential for made ground to be present associated with areas of embankment constructed from materials of unknown compositions.</p> <p>Potential for contaminants associated with railway use.</p>	<p>Made ground generally consisting of silty, gravelly fine to coarse sand with gravel sized fragments being subangular to subrounded of various lithologies. Made ground was also observed as cement bonded sand and gravel and gravel of red brick, paper and wood.</p> <p>Exceedances of assessment criteria were noted in soils selected for laboratory analysis from one location (ch12700) at depths between 0.3 and 1.0 mbgl. Elevated total petroleum hydrocarbons (aromatics), naphthalene, benzo(a)anthracene, benzo(b)fluoranthene, and benzo(a)pyrene concentrations were observed.</p> <p>Concentrations of carbon dioxide were found in excess of both long term and short term workplace exposure limits and oxygen was noted to be depleted (below 16% v/v) on occasion.</p>
KP-C4	Saw Mill (Killiecrankie)	OS Map	1867 – 1900	ch1550 (275m south-west)	n/a	Not investigated
KP-C5	Tank	OS Map	1988 - 1995	ch2500 (60m north)	Contents of tank are unknown. Potential for spillage or leakage of contents.	Not investigated
KP-C6	Urrard House Sand & Gravel Pit	OS Map	1898-1900	ch2550 (225m south-west)	<p>It is unknown if the pit has been subsequently infilled.</p> <p>Potential for contaminants associated with infill material.</p>	Not investigated
KP-C7	Old Limekiln 2	OS Map	1867 - 1995	ch2700(250m north-east)	Although present until 1995, marked as disused/ old from 1867.	Not investigated
KP-C8	Old Limekiln 1	OS Map	1867- 1900	ch2700 (200m south-west)	n/a	Not investigated
KP-C9	Old Limekiln 3	OS Map	1867 - 1995	ch2900 (215m north-east)	Although present until 1995, marked as disused/old from 1900.	Not investigated

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KP-C10	Old Limekiln 4	OS Map	1867 - 1900	ch3250 (200m south-west)	n/a	Not investigated
KP-C11	Old Limekiln 5	OS Map	1867 - 1900	ch3450 (220m north-east)	n/a	Not investigated
KP-C12	Old Limekiln 6	OS Map	1867 only	ch3800 (165m north) and Aldclune Junction (65m north-east)	n/a	Not investigated
KP-C13	Old Limekiln 7	OS Map	1867 - 1900	Online - Aldclune Junction southbound	n/a	Not investigated
KP-C14	Old Quarry (west of Garry Crossing)	OS Map	1900 only	ch4550 (30m north)	It is unknown if the quarry has been subsequently infilled. Potential for contaminants associated with infill material.	Not investigated
KP-C15	Shierglas Quarry	OS Map	1973 - Present	Online – ch4950 – ch5250 and Shierglas Farmhouse and Quarry access road	Limestone quarry in current operation by Breedon Aggregates and first shown on 1973 edition map. Potential for contaminants associated with historic and current site activities.	Made ground consisting of sandy gravel (limestone) was noted in one location. No visual or olfactory evidence of contamination was noted. Three soils samples were selected for laboratory analysis and no exceedances of assessment criteria were noted. Concentrations of carbon dioxide were found in excess of both long term and short term workplace exposure limits and oxygen was noted to be depleted (below 16% v/v).
KP-C16	Old Limekiln 8	OS Map	1867 – 1900	ch5025 (30m north)	n/a	Not investigated
KP-C17	Old Quarry	OS Map	1898	Online - ch5200	It is unknown if the quarry has been subsequently infilled. Potential for contaminants associated with infill material.	Not investigated

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KP-C18	Old Limekiln 9	OS Map	1867 – 1900	Online - Garrybank Left In Left Out access road	n/a	Not investigated
KP-C19	Mill Lade	OS Map	1900 only	ch6400 (160m north-east)	Marked in 1900 only.	Not investigated
KP-C20	Old Limekiln 10	OS Map	1867 – 1900	ch6350 (135m south-west)	n/a	Not investigated
KP-C21	Quarry	OS Map	1867 – 1900	Online - Bast/5 Core Path Diversion and Balnastuartach Field access road	It is unknown if the quarry has been subsequently infilled. Potential for contaminants associated with infill material.	Not investigated
KP-C22	Old Limekiln 11	OS Map	1867 - 1900	Online -Balnastruartach Field access road	n/a	Not investigated
KP-C23	Blair Atholl Depot (with associated Saw Mill and waste transfer site)	OS Map	1971 - Present	ch7100 (250m north)	Operational Depot. Provides road and vehicle maintenance and waste transfer station services. Waste transfer license permits industrial wastes, battery acid and waste oil from households.	Not investigated
KP-C24	Black Island Gravel Pit to west of Blair Atholl	OS Map	1985 - 1995	ch8050 (225m north)	It is unknown if the gravel pit has been subsequently infilled. Potential for contaminants associated with infill material.	Not investigated
KP-C25	Tanks	OS Map	1971 - 1995	Online – Bast/138 NMU access road	Contents of tanks are unknown. Potential for spillages or leakages of contents.	Not investigated
KP-C26	Tanks	OS Map	1971 - 1995	ch8050 (120m north)	Contents of tanks are unknown. Potential for spillages or leakages of contents.	Not investigated

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KP-C27	Rifle Range	OS Map	1971 & 1973	Online - ch8925 to ch9075	Potential for contaminants associated with the former Rifle Range.	Not investigated
KP-C28	Old Limekiln 14	OS Map	1900 only	ch10200 (250m south-east)	n/a	Not investigated
KP-C29	Old Limekiln 13	OS Map	1867 only	ch10300 (250m south-east)	n/a	Not investigated
KP-C30	Old Limekiln 12	OS Map	1867 – 1900	ch10250 (190m south-east)	n/a	Not investigated
KP-C31	Old Limekiln 15	OS Map	1867 only	ch10800 (265m south)	n/a	Not investigated
KP-C32	Old Limekiln 16	OS Map	1867 only	ch11100 (215m south-west)	n/a	Not investigated
KP-C53	Made ground	Archaeological Metal Detecting Survey	Unknown	ch2650 (extent unknown)	Area described as made ground at Killiecrankie Battlefield	Not investigated
KP-C93	Killiecrankie Landfill	SEPA consultation	Unknown	ch900	n/a	Not investigated

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KP-C33 to KP-C53, KP-C63, KP-C64, KP-C69, KP-C73, KP-C76, KP-C77, KP-C79 to KP-C83, KP-C92, PGG-C12 to PGG-C28, PGG-C30, PGG-C32 & PGG-C33	53 Septic Tanks	Landowner Consultation	n/a	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 or the property land boundary. NB. Not all locations are shown on Figure 10.2.	Not investigated
PGG-C3	Storage Tanks	OS map	1972-1973	Online - ch13250	Marked in 1973, assumed destroyed during construction of the existing A9 – Could potentially be stores of hydrocarbons.	Not investigated
PGG-C4	Disused quarry	OS map	1974-present	ch19850 (80m north)	Potentially infilled with made ground of unknown composition with associated sources of potential contamination.	Not investigated
PGG-C5	Disused quarry	OS map	1973	Online - ch14350	Potentially infilled with made ground of unknown composition with associated sources of potential contamination.	Not investigated
PGG-C6	Disused quarry	OS map	1975	Online - ch16425	Potentially infilled with made ground of unknown composition with associated sources of potential contamination.	Made ground of cobbles encountered to 0.4mbgl, when a pipe and cable was uncovered and in a separate location, sandy slightly clayey material with various gravel sized fragments of mixed lithologies was recorded. No visual or olfactory evidence of contamination was noted.

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PGG-C7	Sand and gravel pit	OS map Aerial photographs	1991-present (marked as disused from 2006)	Online - ch11750, Bruar Junction northbound and Pitagowan Field access road	Potentially infilled with made ground of unknown composition with associated sources of potential contamination. Extent of potentially backfilled pit appears to be larger on aerial photographs than shown on historical maps.	Made ground of dark brown gravelly, fine to medium sand with fragments of red brick, sandstone, pelite, blue/brown plastic pipe and pottery. No olfactory evidence of contamination was noted. Concentrations of carbon dioxide were found in excess of both long term and short term workplace exposure limits and oxygen was noted to be depleted (below 16% v/v).
PGG-C8	Storage Tank	OS map	1972-1973	ch13700 (70m south)	Could potentially be stores of hydrocarbons.	Not investigated
PGG-C9	Calvine Garage and former petrol station	OS map	1972-present (noted as closed in Envirocheck Report)	ch13350 (115m south)	Petrol station indicates potential for hydrocarbon contamination to be present on site.	Not investigated
PGG-C10	3 Septic Tanks	Landowner consultation	n/a	ch20100(50m south)	Located by property, exact location of tanks unknown. Outfall understood to be located at rear of property, south of existing A9.	Not investigated
	Side Roads	Ground Investigations (Advanced and Preliminary)	n/a	Multiple locations along the proposed scheme: Ch1200, ch5050, ch10750, ch13300, ch17000 and ch17700	Numerous side roads encountered along the proposed scheme, not indicated on Figure 10.2	Made ground consisting of bituminous material, road tarmacadam and/or inert sand and gravel was encountered. No visual or olfactory evidence of contamination was noted. No exceedances of assessment criteria were noted within soils samples selected for laboratory analysis. Concentrations of carbon dioxide were found in excess of both long term and short term workplace exposure limits and oxygen was noted to be depleted (below 16% v/v) on occasion.
	No obvious source	Ground Investigation (Advanced and Preliminary)	n/a	ch3600 and ch1220	Two locations along the proposed scheme have made ground recorded from the ground investigation but no obvious source present. Not indicated on figure 10.2.	Made ground of light grey/ dark brown fine to coarse sand with mixed gravel/cobble content. One location (ch3600) had fragments of tree with peat lenses. No visual or olfactory evidence of contamination was noted. No exceedances of assessment criteria were noted within soils samples selected for laboratory analysis.