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Appendix A12.1: Contaminated Land Sources

Table 1: Potentially Contaminated Land Sites within 250m of the Preferred Route Options

Source Reference	Source Name / Location	Source Type	Source Origin	Comment	2016 Ground Investigation Infromation
GE05	Filling Station Tesco	Garage / Depot	PSSR	Information from THC (ref IN-GAR-1250). Data retrieved from Trading Standards File I300.	Not investigated
GE06	Aberdeen to Inverness railway line	Railways	PSSR	Made Ground associated with the Aberdeen to Inverness Railway Line which runs parallel to the existing A96 for much of the length of the proposed Scheme. It is known to have opened in 1855 and is in current use.	Not investigated
GE07	Inverness to Lossiemouth fuel pipeline	Fuel oil pipeline	PSSR	Pipeline which runs alongside the existing A96 for much of the length of the proposed Scheme.	Two boreholes located adjacent to GE07 recorded elevated carbon dioxide levels during one round of gas monitoring.
GE09	Stratton Farm petrol tank	Fuel	PSSR	Information from THC (ref IN-GAR-1065). Data retrieved from Trading Standards File BP331.	Not investigated
GE10	Smithton Junction – made ground	Made Ground / Fill	PSSR		One GI location within expected footprint of potential source, however, no made ground was encountered.
					One round of gas monitoring was undertaken at this location with no elevated/depleted concentrations of methane, carbon dioxide, carbon monoxide, hydrogen sulphide and oxygen recorded.
					One gw sample collected with concentrations of cadmium and mercury marginally above the SEPA derived resource protection values (RPV).
GE11	Millton Mill Dam	Industrial	PSSR		One GI location within expected footprint of potential source, however, no made ground was encountered.
GE12	Borrow pit	Industrial	PSSR	Information from THC (ref IN-MIN-1106). Data retrieved from planning application.	Not investigated
GE13	Allanfearn Waste Water Treatment Works	Sewage Treatment Works	PSSR	A sewage treatment works (Caledonian Water Ltd) at Allanfearn.	Not investigated
GE14	Milltown Mills	Industrial	PSSR	Shown on 1871 map only as disused.	Not investigated



Source Reference	Source Name / Location	Source Type	Source Origin	Comment	2016 Ground Investigation Infromation
GE15	Allanfearn Railway Station	Railways	PSSR	Originally opened in 1855 named Culloden Station (1870 map). It was closed in May 1965.	Not investigated
GE16	Allanfearn pond	Made Ground / Fill	PSSR		Not investigated
GE17	Allanfearn petrol farm tank	Fuel	PSSR	Information from THC (ref IN-GAR-1118). Data retrieved from Trading Standards File I108.	Not investigated
GE18	Allanfearn chimney / furnace	Industrial	PSSR	Unknown purpose but RCHAMS have a record of Farm chimney, Allanfearn, -19th century. 'A typical circular brick chimney, with beaded top, with the ruins of an engine and boiler house'.	Not investigated
GE21	Tile and brickworks	Made Ground / Fill	PSSR	Tile works were noted on the 1871 until 1959 historical maps. The Culloden Brick and Tile Company brickworks were opened in 1847 and remained in use until 1891. The adjacent field was excavated to at least 20' (6m) deep. This area is likely to have been infilled. Site walkover noted this location is now agricultural	Not investigated
				grassland. Location is depressed below the level of the exisitng A96. No visible signs of infill, however this may be present. No signs of waterlogging.	



Source Reference	Source Name / Location	Source Type	Source Origin	Comment	2016 Ground Investigation Infromation
GE22	Pit 2	Other	PSSR	Information from THC (ref. IN-MIN-1014). Site walkover noted this location is now rough ground, which is not cultivated. Likely any former pit has been infilled. Some signs of recent superficial tipping of material (primarily earth / gravel type material).	Eight GI locations were within the expected footprint of potential source with five locations encountering made ground to a total proven depth of 5.75mbgl). A sulphurous odour and putrescible material (rotting wood)
					were noted during excavation.
					Gas monitoring at one location has recorded concentrations of methane and carbon dioxide above the HSE published occupational exposure limits for both long and short term reference periods.
					Nine soil samples were sent for laboratory analysis and did not exceed generic assessment criteria (GAC) for a public space nor a commercial/industrial scenario. Concentrations of beryllium and benzo(a)pyrene are above the residential generic assessment criteria within one sample each. Asbestos was not indentified.
					Three rounds of gw sampling from one borehole had concentrations of nitrate consistently above the RPV (50mg/l) and occassionaly ammoniacal nitrogen marginally above the RPV for ammonium (0.5mg/l).
GE24	Upper Cullernie Farm petrol tank	Fuel	PSSR	Information from THC (ref IN-GAR-1180). Data retrieved from Trading Standards File I105.	Not investigated
GE26	Sand pit 1	Mineral Extraction	PSSR		Not investigated
GE28	Norboard Factory	Industrial	PSSR	The Norboard Factory produces wooden panels for the building industry. It also has a biomass energy plant that uses waste wood products from the factory to generate electricity.	Not investigated
GE31	Dalcross Railway Station	Railways	PSSR	Originally opened in 1855, it was closed in May 1965.	Not investigated
GE33	Sand pit 2	Mineral Extraction	PSSR		Not investigated
GE34	Gravel pit 2	Mineral Extraction	PSSR		Not investigated
GE35	Gravel pit 3	Mineral Extraction	PSSR		Not investigated
GE36	Gravel pit 4	Mineral Extraction	PSSR		Not investigated

Source Source Name / Source Type Source Origin Comment 2016 Ground Investigation Infromation Reference Location GE39 Inverness Airport Aviation PSSR Current Inverness Airport. Not investigated GE40 Culblair Farm petrol tank Fuel PSSR Information from THC (ref IN-GAR-1124). Data retrieved Not investigated from Trading Standards File I115. Culblair Mill Dam PSSR GE41 Industrial Believed to be in current use as an ornamental water Not investigated feature. GE44 Milton of Gollanfield Mill PSSR Industrial Hunters lodge hotel and filling station. Not investigated Dam GE46 Former railway land -Railways PSSR Not investigated Gollanfield Station. GE47 Filling station Fuel PSSR Information from THC (ref IN-VDL-1001). Data retrieved Not directly investigated, however, one GI location is in from Trading Standards File I134. proximity Two soil samples were sent for laboratory analysis and did not exceed GAC for residential, public space and commercial/industrial scenarios. Asbestos was not indentified. GE49 Smithy 2 Industrial PSSR Not directly investigated, however, one GI location is in proximity. Two soil samples were sent for laboratory analysis and did not exceed GAC for residential, public space and commercial/industrial scenarios. Asbestos was not indentified. PSSR GE50 Poultry farm Other Not investigated PSSR GE51 **Gollanfield Home Farm** Fuel Information from THC (ref IN-WDS-1123). Data retrieved Not investigated petrol tank from Trading Standards File I216. Gravel pit 6 **Mineral Extraction** PSSR GE53 Not investigated GE54 Smithy 3 Industrial PSSR Not investigated GE56 Gravel pit 7 Mineral Extraction PSSR Not investigated

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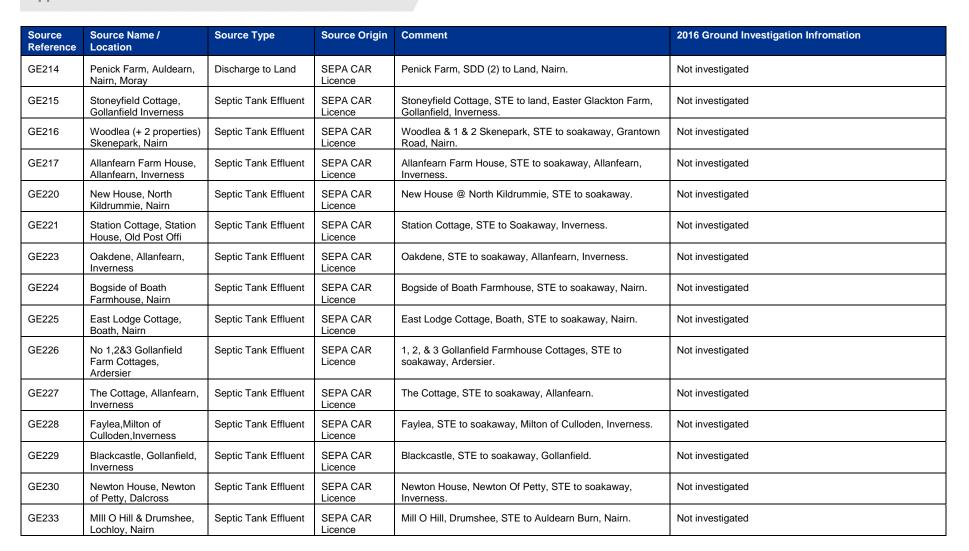




Source Reference	Source Name / Location	Source Type	Source Origin	Comment	2016 Ground Investigation Infromation
GE57	Blackcastle Quarry	Mineral Extraction	PSSR	Information from THC (ref NA-MIN-1099). Data retrieved from PPC Licence by SEPA. It is understood that part of the quarry has been decommissioned and landscaped.	16 GI locations were within the expected footprint of potential source with two locations encountering made ground to a total proven depth of 3.2mbgl.
					Gas monitoring from one location within the extent of Blackcastle Quarry recorded concentrations of carbon monoxide above the HSE published occupational exposure limits for both long and short term reference periods on four separate occassions. In addition concentrations of Hydrosgen Sulphide exceeded the occupational exposure limits for the long term reference period on one occassion.
					15 soil samples were sent for laboratory analysis and did not exceed GAC for both public space and commercial/industrial scenarios. One sample had a lead concentrations above the residential GAC. Asbestos was not indentified.
					Three groundwater samples were sent for laboratory analysis from installed boreholes. Only one had a concentration of cadmium marginally above the RPV.
GE58	Smithy 4	Industrial	PSSR		Not investigated
GE59	Depot	Garage / Depot	PSSR		Not investigated
GE60	Ross Timber Products	Industrial	PSSR	Current saw mill - Ross Timber Products, The Pines, Newlands, Nairn, Morayshire, IV12 5NX.	Not investigated
GE78	Skene Park Farm petrol tank	Fuel	PSSR	Information from THC (ref NA-GAR-1023). Data retrieved from Trading Standards File I201.	Not investigated
GE84	Sand pit 3	Mineral Extraction	PSSR		Not investigated
GE87	Sand pit 4	Mineral Extraction	PSSR		Not investigated
GE98	Old sand pit	Mineral Extraction	PSSR	No obvious signs of old pit observed during site walkover. Location is now agricultural land.	Not investigated
GE99	Sheep dip 3	Other	PSSR		Not investigated
GE100	Sand pit 5	Mineral Extraction	PSSR	Site walkover noted some recent earth / rubble fill at this location. Signs of wetness in topographic lows.	Not investigated



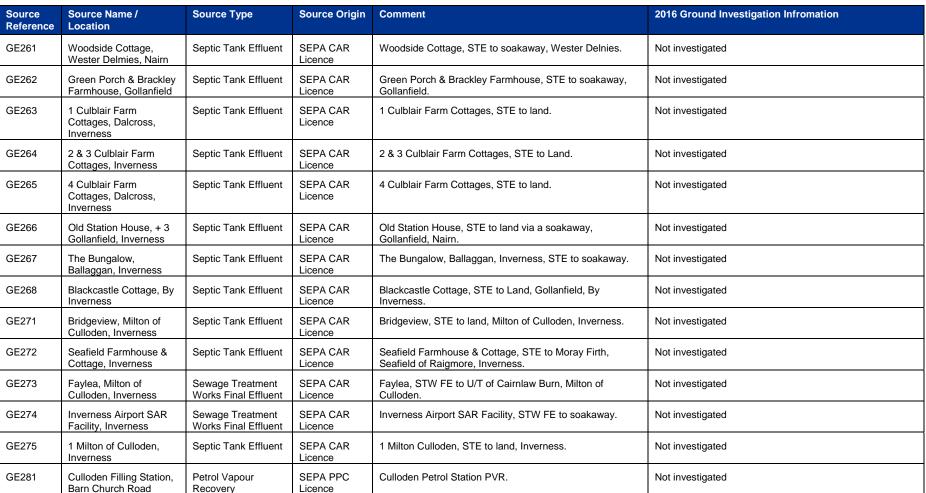
Source Reference	Source Name / Location	Source Type	Source Origin	Comment	2016 Ground Investigation Infromation
GE101	Quarry (disused)	Mineral Extraction	PSSR	No significant excavations / depths of quarrying noted during site walkover. Vegetated mounds of earth, including trees, observed. Potential for mounds to be composed of fill material.	Not directly investigated, however, two GI locations are in proximity with one location encountering made ground to a depth of 0.8mbgl.
					One soil sample was sent for laboratory analysis and did not exceed GAC for residential, public space and commercial/industrial scenarios. Asbestos was not indentified.
GE130	Easter Glackton Quarry	Mineral Extraction	PSSR	Sand and Gravel.	Not investigated
GE201	Morayhill Quarry	Mineral Extraction	PSSR		Not investigated
GE202	Proclean Highland	Carpet, curtain and Upholstery Cleaners	PSSR	Information obtained from Contemporary Trade Directory Entry detailed within Envirocheck	Not investigated
GE203	Dismantled Railway	Railway Land	PSSR		Not investigated
GE204	Sheep Wash	Other	PSSR		Not investigated
GE205	Cemetery	Burial Ground	PSSR		Not investigated
GE206	old sand pit	Mineral Extraction	PSSR		Not investigated
GE207	Inverness/Culloden Sewerage Network	Combined Sewer Overflow	SEPA CAR Licence	Thornhill Cottage/Cullernie Rd PS, CSO to u/n w/c.	Not investigated
GE208	Inverness/Culloden Sewerage Network	Emergency Overflow	SEPA CAR Licence	Thornhill Cottage/Cullernie Rd PS, EO to u/n w/c.	Not investigated
GE209	Nairn Sewerage Network	Combined Sewer Overflow	SEPA CAR Licence	Mill of Boath CSO, CSO to Auldearn Burn, Auldearn.	Not investigated
GE210	Nairn Sewerage Network	Combined Sewer Overflow	SEPA CAR Licence	Waterloo Cottages CSO, CSO to Auldearn Burn, Nairn.	Not investigated
GE211	Milton of Gollanfield, Gollanfield, Inverness	Discharge to Land	SEPA CAR Licence	Milton of Gollanfield, SDD (2) to Land, Gollanfield, Inverness.	Not investigated
GE212	Milton of Gollanfield, Gollanfield, Inverness	Discharge to Land	SEPA CAR Licence	Milton of Gollanfield, SDD (1) to Land, Gollanfield, Inverness.	Not investigated
GE213	Penick Farm, Auldearn, Nairn, Moray	Discharge to Land	SEPA CAR Licence	Penick Farm, SDD (3) to Land, Nairn.	Not investigated











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Source Name / Source Type Source Origin Source Comment 2016 Ground Investigation Infromation Reference Location GE282 Blackpark Farm, Nairn Waste Management SEPA WML Blackpark Farm, Nairn, IV12 5HY. Not investigated Licence Licence GE283 Blackpark Farm, Nairn Waste Management SEPA WML Blackpark Farm, Nairn, IV12 5HY. Not investigated Licence Licence GE284 Blackcastle Farm. Waste Management SEPA WML Blackcastle Farm, Gollanfield, Inverness, IV2 7QP. Not investigated Gollanfield Licence Licence GE285 Blackcastle Farm, Waste Management SEPA WML Blackcastle Farm, Gollanfield, Inverness, IV2 7QP. Not investigated Gollanfield Licence Licence GE286 Stratton Farm, Inverness Waste Management SEPA WML Stratton Farm, Inverness, IV2 7NS. Not investigated Licence Licence GE287 SEPA WML Drumine Farm, Gollanfield, Inverness, IV2 7QT. Drumine Farm, Waste Management Not investigated Gollanfield, Inverness Licence Licence GE288 Mr Stewart Innes & Mr Septic Tank Landowner Septic tank and oil tank located near the houses. New Not investigated Steven Innes Consultation house in corner of field. GE290 James and Jean Downie Septic Tank Next to building just north of A96. Drains to soakaway. Landowner Not investigated Consultation GE292 Mr James Clarke and Septic Tank Landowner Just NE of buildings at Wester Hardmuir Farm. Not investigated Mrs Svlvia Clarke Consultation Mr George Michie and GE294 Septic Tank Landowner To the side of building at Hardmuir Croft, oil tank on the Not investigated Mrs Diane Michie Consultation opposite side of the building (not too clear which side is which). GE295 Mr & Mrs Pullan Septic Tank Landowner Septic tank is in their garden and drains to soakaway. Not investigated Consultation GE297 John and Deirdre Septic Tank Landowner Notes say that there is a septic tank located near houses Not investigated Consultation and a soakaway in Gordon's Wood. Not marked on map Mackintosh however. GE299 Mr David Phillip Septic Tank Septic tanks feed into burn. Northern tank for cottages has Landowner Not investigated Consultation a soakaway. (Only one septic tank is marked on the map). GE300 Elaine & Steven Bailey Septic Tank Landowner Septic tank near house. Not investigated Consultation



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Source Name / Source Type Source Origin 2016 Ground Investigation Infromation Source Comment Reference Location GE301 Mr Henry Sleigh Septic Tank Landowner Notes say "Septic Tanks", unclear where they are as not Not investigated Consultation marked on map. Assume they would be close to buildings. GE302 Malcolm Davidson Septic Tank Landowner Soakaway from septic tank drains into Auldearn Burn. Not investigated Consultation GE305 Estate of Charles Septic Tank Landowner Septic tanks located beside buildings. Not investigated Hynman Allenby Consultation Landowner GE306 Estate of Charles Septic Tank Septic tanks located beside buildings. Not investigated Hynman Allenby Consultation GE307 Margaret Nicolson & Septic Tank Landowner Septic tank for all properties, steading and house. Not investigated Gordon Nicolson Consultation GE309 Septic Tank **Cawdor Maintenance** Landowner Only one septic tank location explicitly marked. Also a Not investigated Consultation septic tank at Blackcastle cottage. Septic tank at Trust drumdivan. Also sceptic tanks at old Smithy and Mardon House as well as at Quarry. GE310 Euan Forbes and Septic Tank Landowner Septic tank at Broadley. Not investigated Hamish Forbes Consultation GE312 Mr and Mrs Nield Septic Tank Landowner Septic tank located within their land, known to be affected Not investigated Consultation by flooding and high water table. GE313 Jim and Pat Ellistone Septic Tank Landowner Septic tank is located in their neighbour's yard. Not investigated Consultation GE314 Thomas and Maureen Septic Tank Landowner Septic tank on the boundary - serves all properties and is Not investigated Consultation emptied as required. Wilson GE315 Mr Andrew MacDonald New septic tank and soakaway put in recently, next to Septic Tank Landowner Not investigated Consultation house. GE316 Christina Temple Septic Tank Septic tank - emptied once in 20 years Landowner Not investigated Consultation GE317 Mr & Mrs MacKintosh Septic Tank One behind and one in front of house (emptied 3 times in Landowner Not investigated Consultation 30 years). GE318 Mr John Baird & Mrs Septic Tank Landowner Septic tank in garden. Not investigated Joanna Baird Consultation



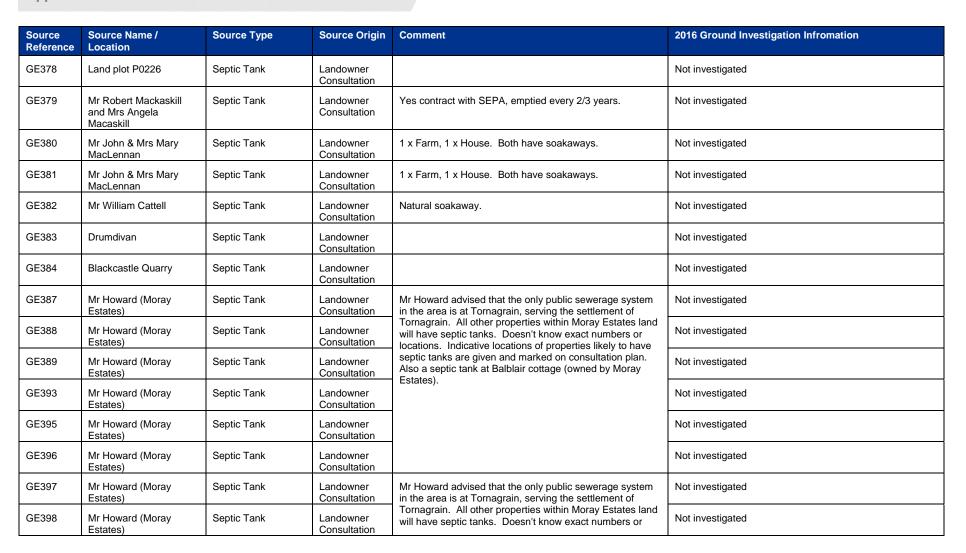
Source Name / Source Type Source Origin 2016 Ground Investigation Infromation Source Comment Reference Location GE319 Stewart MacKinnon Septic Tank Landowner Landowner comment: "Septic tank rear west - soakaway at Not investigated Consultation bottom of slope". GE320 Septic Tank Mr & Mrs McMonagle Landowner Septic tank on other side of road from house, near new Not investigated Consultation bridge road. Soak away attached. GE321 Septic Tank Landowner Septic tank under trees in garden. John and Jane Smith Not investigated Consultation GE322 Mr & Mrs Maclean Septic Tank Landowner Septic tank in field next to house. Not investigated Consultation GE328 Mr William Rose Septic Tank Landowner Landowner comment: "At house on west x 4". Not investigated Consultation GE329 Mr William Wright & Ms Septic Tank Landowner Meeting was also attended by Ms Etta Rengaa, the tenant Not investigated from 1 Home Farm Cottages, Allison Walker from Burnside Fiona MacIntyre Consultation Cottage, Margaret Scott from the Gollanfield Steading and Stuart McColm from Little Gollanfield. Meeting notes state that all attendees have septic tanks near their houses. GE331 Una Lee & Ivor Davis Septic Tank Septic tank on land, soakaway on Moray Estates land to Landowner Not investigated Consultation north. No map in notes. GE332 Mr David William Septic Tank Landowner Back of house, emptied every few years, old stone septic Not investigated Macbean Consultation tank. Soakaway though to be on the other side of the railway -GE333 Violet and Alistair Septic Tank Landowner Not investigated Wardaugh Consultation on the embankment of the rail. GE334 Mr Robert Cameron and Septic Tank Shared between two properties, emptied infrequently. Landowner Not investigated Mrs Elizabeth Cameron Consultation GE335 Ms Flora Taylor Septic Tank Not investigated Landowner Consultation GE337 Mr Patrick Bradley and Septic Tank Landowner Septic tanks discharge into the burn, 3 in total (cottages, Not investigated Mrs Jane Bradley Consultation farmhouse and doran house). GE338 Mr Patrick Bradley and Septic Tank Landowner Septic tanks discharge into the burn, 3 in total (cottages, Not investigated farmhouse and doran house). Mrs Jane Bradley Consultation GE343 Mrs Jennifer Fraser Septic Tank Septic tank is located next to her property and soakaway is Not investigated Landowner in neighbouring field, it hasn't been emptied since the Consultation house was built 10 years ago.

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Source Source Name / Source Type Source Origin 2016 Ground Investigation Infromation Comment Reference Location GE344 Colin Kinnaird Septic Tank Landowner Septic tank is located on their property, emptied on Not investigated Consultation contract once every 3 years. GE345 Donald & Margaret Septic Tank Septic tank is located on their property, emptied on Not investigated Landowner Kinnaird Consultation contract once every 3 years. GE352 John and Linda Septic Tank Landowner Has a septic tank on his property. Stated that all the Not investigated properties in this area have septic tanks. Gallagher Consultation Landowner GE357 Mr Patrick Bradley and Septic Tank Septic tanks discharge into the burn, 3 in total (cottages, Not investigated Mrs Jane Bradley Consultation farmhouse and doran house). GE358 Mr Patrick Bradley and Septic Tank Landowner Septic tanks discharge into the burn, 3 in total (cottages, Not investigated Mrs Jane Bradley Consultation farmhouse and doran house). GE359 Mr Patrick Bradley and Septic Tank Landowner Septic tanks discharge into the burn, 3 in total (cottages, Not investigated Mrs Jane Bradley Consultation farmhouse and doran house). GE361 Culloden Foods Ltd Industrial Highland Not investigated Council GE364 Culloden Service Station Industrial Highland Not investigated Inverness Council GE365 Gravel pit Mineral Extraction Highland Not investigated Council GE366 Gravel pit Mineral Extraction Highland Not investigated Council GE369 Forestry Commission. Other Highland Not investigated Council Smithton Dump at Scretan Bridge, GE370 Other Highland Not investigated Inverness Council GE373 Sand pit Mineral Extraction Highland Not investigated Council GE374 Gravel pit Mineral Extraction Highland Not investigated Council Smithv PSSR GE376 Industrial Not investigated GE377 PSSR Old gravel pit Mineral Extraction Not investigated









Source Reference	Source Name / Location	Source Type	Source Origin	Comment	2016 Ground Investigation Infromation
GE399	Mr Howard (Moray Estates)	Septic Tank	Landowner Consultation	locations. Indicative locations of properties likely to have septic tanks are given and marked on consultation plan. Also a septic tank at Balblair cottage (owned by Moray Estates).	Not investigated
GE400	Mr Alexander Shaw	Septic Tank	Landowner Consultation		Not investigated
GE413	Mr Alexander Shaw	Septic Tank	Landowner Consultation		Not investigated
GE414	Mr Alexander Shaw	Septic Tank	Landowner Consultation		Not investigated
GE417	2016 Ground Investigation Location	Made Ground	Ground Investigation		Made ground was encountered to a maximum depth of 2mbgl. At this depth a pea gravel was observed indicating the presence of underground services and therefore the exacavation was abandoned. No direct potential contaminative source identified during the desk study but location is in proximity to the Smithon Junction (GE10) where made ground was expected.
					Anaytical testing of soil samples was not undertaken for this location.
GE418	2016 Ground Investigation Location	Made Ground	Ground Investigation		Made ground was encountered to a total proven depth of 3.6mbgl. No direct potential contaminative source identified during the desk study but location is in proximity to the Smithon Junction (GE10) where made ground was expected.
					No exceedances of residential, public space and commercial/industrial GACs were noted within the two soils samples selected for laboratory analysis. Asbestos was not indentified.
GE424	Gas Distribution Station	Fuel Oil Pipeline	OS Maps		Not investigated
GE425	Nairn Camping and Caravanning Club Site	Septic Tank	Landowner Consultation		Not investigated
GE426	Upper Cullernie Cottages	Septic Tanks	Landowner Consultation		Not investigated