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Screening for Appropriate Assessment

Tellus G9 soil sampling survey,
Wicklow, Wexford, Carlow,
Kilkenny, Waterford and
Tipperary

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Foreword

This screening assessment to determine the need for an appropriate assessment has been made in respect of the Tellus soil sampling survey in line with the requirements of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.

The soil sampling is to take place in counties Wicklow, Wexford, Carlow, Kilkenny, Waterford and Tipperary (Block G9). Soil sampling involves the removal of approximately 1 kg of soil from a single site within a grid square 2 km x 2km. Exact sample site location, within each grid square, are determined by samplers based on site suitability and sampling protocols.

Verdict

The survey area encompasses numerous SAC and SPA's, however, in most cases sample locations can be chosen for the shallow soil samples that lie outside each SAC & SPA. In large extensive areas, soil samples will be taken at selected location which poses minimal risk to the sites and follow ecological guidance.

The collection of shallow soil samples is deemed not to pose a risk to any of the SAC's and SPA listed within the survey area.

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1 Introduction

Tellus is a national programme to gather geochemical and geophysical data across the island of Ireland. The survey examines the chemical and physical properties of our soils, rocks and waters to inform the management of Ireland’s environment and natural resources. The project is managed by the Geological Survey, Ireland and is funded by the Department of Environment, Climate and Communications (DECC). For more information on the Tellus Project please visit www.gsi.ie/tellus

2 Survey Area

The survey area for the G9 soil sampling block, lies across south east Ireland and consists of counties Wexford, Carlow, Kilkenny, Waterford and Tipperary. The survey includes coastal areas, bog covered mountains and rolling pasture. The main cities in the area are Kilkenny and Waterford, with also large towns such as Wexford. The area is crossed by the M8 motorway in the west, the M9 through the centre and the M11 along the east coast. The survey area is shown in Figure 1.

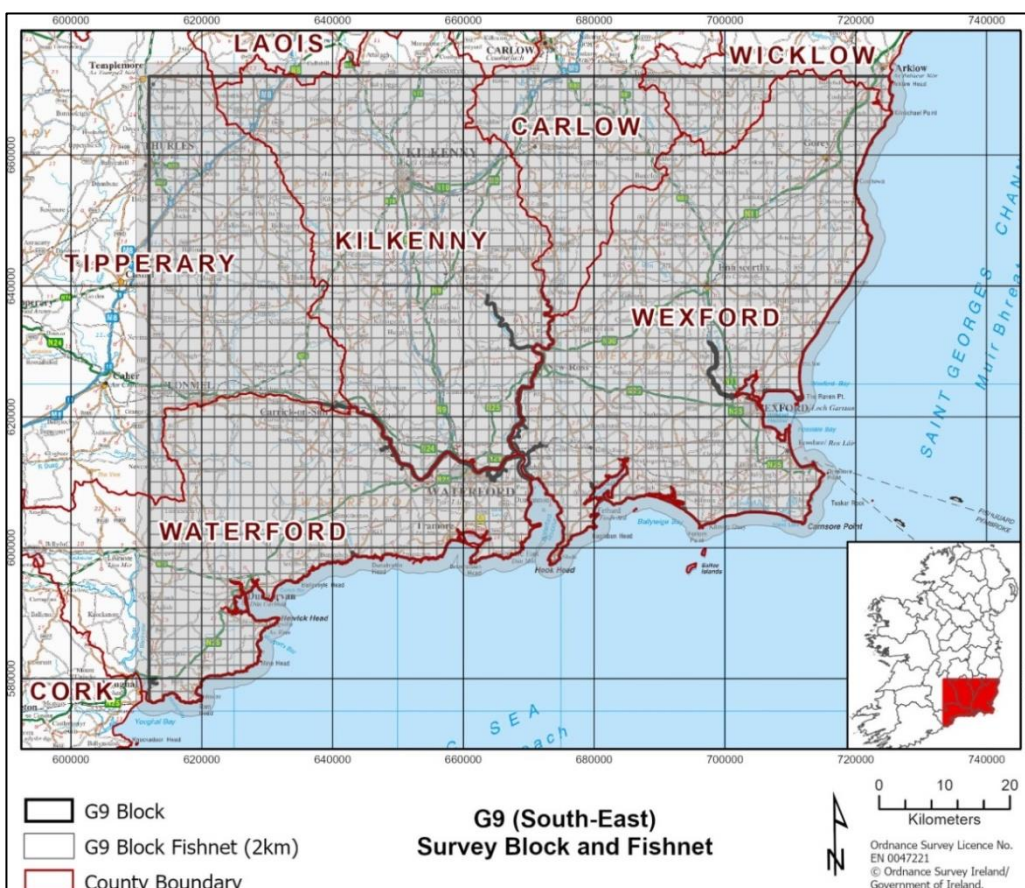


Figure 1: G9 Survey location map

3 Project Description

Tellus is a national airborne geophysical and ground geochemical survey managed by the Geological Survey Ireland and funded by the Department of Environment, Climate and Communications.

The geochemical programme collects soil samples at a density of one sample per 4 km². These samples are then analysed for a number of different chemical elements allowing geochemical variations to be mapped. All data collected and resultant maps are made freely available to the public. The data supports work in the geological, agricultural, mineral and environmental sectors.

Soil sampling in the G9 Block (Wexford, Carlow, Kilkenny, Waterford and Tipperary) involves the collection of soil samples from 2000 sites. Each site is located within a 2km x 2km grid square. Samplers choose the best site within each grid square, with the exact location determined by the samplers based on a number of conditions and following consent from the landowner.

3.1 Survey Activity

The soil sampling survey involves teams of two samplers collecting soil samples from each of the predefined survey grids. Two sample depths are collected: a surface soil sample (labelled **A**) at 5-20 cm and a deeper soil sample (labelled **S**) at 25-50 cm. Sites are ideally located at least 100 m from roads, buildings, railways, electricity pylons etc. on open non-forested, undisturbed ground whenever possible. Sites are chosen by the samplers, deciding on the best available site and following permission from the landowner.

Samples are collected using an auger. The auger makes a hole approximately 5cm in diameter. Each sample is made of a composite of material from auger flights taken from 5 holes distributed within an area (where possible) of approximately 20 m x 20 m.



Figure 2: Samplers taking a soil sample

4 SACs & SPAs

There are a number of Special Areas of Conservation (SAC) and Special Protection Areas (SPA) within the survey area with a 2 km buffer applied. A 2-kilometre buffer was applied to ensure any impacted Natural 2000 sites would be included in the screening process. These are mostly focussed along the coast in counties Wexford and Waterford, and mountainous areas. There are also a number of SACs and SPAs along the major rivers on the area and peat bogs. Table 1 & 2 below list all the SAC's & SPA's in the area and are also shown in Figure 3.

Table 1: List of SAC's within G9 survey block

SITECODE	SITE_NAME
404	Hugginstown Fen SAC
407	The Loughans SAC
665	Helvick Head SAC
668	Nier Valley Woodlands SAC
671	Tramore Dunes and Backstrand SAC

696	Ballyteige Burrow SAC
697	Bannow Bay SAC
700	Cahore Polders and Dunes SAC
704	Lady's Island Lake SAC
707	Saltee Islands SAC
708	Screen Hills SAC
709	Tacumshin Lake SAC
710	Raven Point Nature Reserve SAC
764	Hook Head SAC
770	Blackstairs Mountains SAC
781	Slaney River Valley SAC
831	Cullahill Mountain SAC
849	Spahill And Clomantagh Hill SAC
1741	Kilmuckridge-Tinnaberna Sandhills SAC
1742	Kilpatrick Sandhills SAC
1858	Galmoy Fen SAC
1952	Comeragh Mountains SAC
2123	Ardmore Head SAC
2137	Lower River Suir SAC
2161	Long Bank SAC
2162	River Barrow And River Nore SAC
2170	Blackwater River (Cork/Waterford) SAC
2252	Thomastown Quarry SAC
2269	Carnsore Point SAC
2324	Glendine Wood SAC

Table 2: List of SPA within G9 survey block

SITECODE	SITE_NAME
4009	Lady's Island Lake SPA
4019	The Raven SPA
4020	Ballyteigue Burrow SPA
4027	Tramore Back Strand SPA
4028	Blackwater Estuary SPA
4033	Bannow Bay SPA
4076	Wexford Harbour and Slobs SPA
4092	Tacumshin Lake SPA
4118	Keeragh Islands SPA
4143	Cahore Marshes SPA
4192	Helvick Head to Ballyquin SPA
4193	Mid-Waterford Coast SPA
4233	River Nore SPA
4032	Dungarvan Harbour SPA

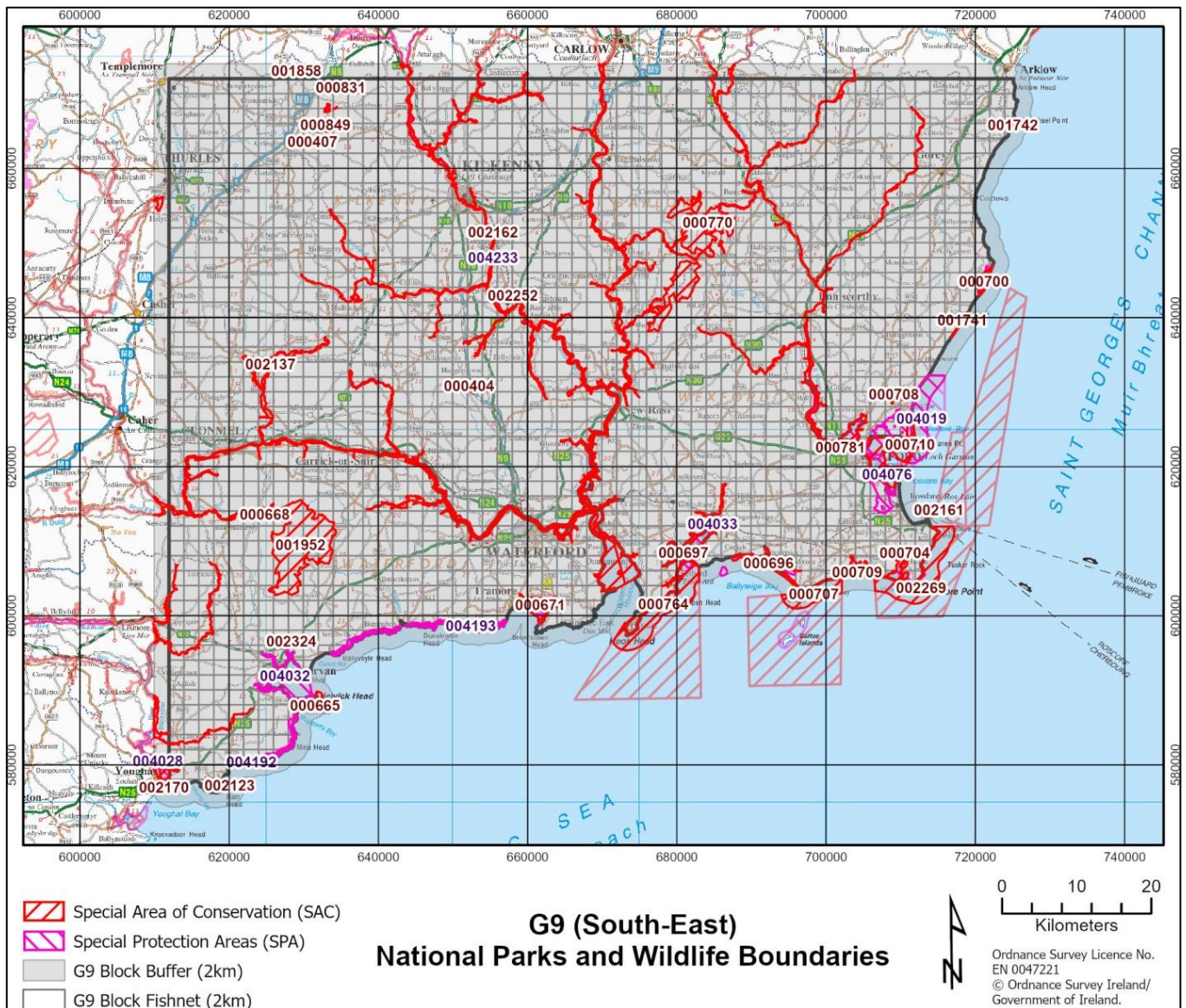


Figure 3: Map of G9 Survey block and corresponding SPA and SAC locations

5 Assessment of Likely Impact

Based a review of activities and guidance outlined in Appendix 1 taken from ‘Assessment of effects – Geochemical surveying (Shallow soils) taken from ‘Expert Environmental Guidance on Exploration Methodologies; Part Two Geochemical Survey’ produced by SLR for the Department of Communications, Climate Action and Environment, (the previous department name for DECC) two potential hazards arising from geochemical soil sampling were identified, these being:

- damage and/or disturbance of habitats; and
- noise and visual disturbance.

Section 7 of this document highlights the screening process for all qualifying interests of the SAC's and SPA within and 2km from the survey area. Where SLR in the Expert Environmental Guidance on Exploration Methodologies; Part Two Geochemical Survey' have designated "Likely Significant Effects Uncertain" on any qualifying interest further information on why the qualifying interest was screened is provided.

The sampling activities will not result in any significant change to the site(s) or negatively impact the site in terms of habitat loss, fragmentation, disruption, disturbance or change key hydrogeological, ecological or hydrochemical characteristics of conservation value. It is not thought that soil sampling across the area will have any cumulative impacts as a whole.

6 Mitigation

All samplers will be issued a basemap that show the location of SPA and SAC. Sites should be selected by samplers to avoid these areas where possible. In locations where an entire 4km grid square is covered by SPA or SAC a suitable site should be selected for sampling. Samplers should minimise any impact from driving by approaching the site on foot. Priority should be made for open grass fields with landowner permission. Samples should be taken away from hedgerows or woodland (minimum 20m) or from rivers and streams (minimum 50-100m).

7 Screening of Relevant Natura 2000 Sites

Although the survey areas intersect many of the SAC and SPA sites samplers have the ability to choose the best site within each 2kmx2km grid square, and therefore can select a site outside of designated areas. Therefore although there may be overlap with designated sites these can in fact be avoided. Samplers are also instructed to avoid waterways and coastal, intertidal areas. The following tables show the qualifying interest for each SAC and SPA.

Table 3 showing the qualifying interest for each SAC within the survey area along with potential hazards arising from sampling.

Site Code	Natura 200 Site Name	Qualifying Interest	Interaction with Survey area	Potential impacts	Screened In or Out
404	Hugginstown Fen SAC	Akaline Fens 7230	Overlap but avoidable	Disturbance from Samplers	Out
407	The Loughans SAC	Tourloughs (3180)	Overlap but avoidable	Disturbance from Samplers	Out
665	Helvick Head SAC	Vegetated sea cliffs of the Atlantic and Baltic Coast (1230)	Overlap but avoidable	Disturbance from Samplers	Out
		European Dry Heaths (4030)	Overlap but avoidable	Disturbance from Samplers	Out
668	Nier Valley Woodlands SAC	Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0]	Overlap but avoidable	Disturbance from Samplers	Out
671	Tramore Dunes and Backstrand SAC	Mudflats and sandflats not covered by seawater at low tide [1140]	Overlap but avoidable	Disturbance from Samplers	Out
		Annual vegetation of drift lines [1210]	Overlap but avoidable	Disturbance from Samplers	Out
		Perennial vegetation of stony banks [1220]	Overlap but avoidable	Disturbance from Samplers	Out
		Salicornia and other annuals colonising mud and sand [1310]	Overlap but avoidable	Disturbance from Samplers	Out
		Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330]	Overlap but avoidable	Disturbance from Samplers	Out
		Mediterranean salt meadows (Juncetalia maritimi) [1410]	Overlap but avoidable	Disturbance from Samplers	Out
		Embryonic shifting dunes [2110]	Overlap but avoidable	Disturbance from Samplers	Out
		Shifting dunes along the shoreline with Ammophila arenaria (white dunes) [2120]	Overlap but avoidable	Disturbance from Samplers	Out
		Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	Overlap but avoidable	Disturbance from Samplers	Out
696	Ballyteige Burrow SAC	Estuaries [1130]	Overlap but avoidable	Disturbance from Samplers	Out
		Mudflats and sandflats not covered by seawater at low tide [1140]	Overlap but avoidable	Disturbance from Samplers	Out
		Coastal lagoons [1150]	Overlap but avoidable	Disturbance from Samplers	Out
		Annual vegetation of drift lines [1210]	Overlap but avoidable	Disturbance from Samplers	Out
		Perennial vegetation of stony banks [1220]	Overlap but avoidable	Disturbance from Samplers	Out
		Salicornia and other annuals colonising mud and sand [1310]	Overlap but avoidable	Disturbance from Samplers	Out
		Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330]	Overlap but avoidable	Disturbance from Samplers	Out
		Mediterranean salt meadows (Juncetalia maritimi) [1410]	Overlap but avoidable	Disturbance from Samplers	Out
		Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi) [1420]	Overlap but avoidable	Disturbance from Samplers	Out
		Embryonic shifting dunes [2110]	Overlap but avoidable	Disturbance from Samplers	Out

		Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120]	Overlap but avoidable	Disturbance from Samplers	Out
		Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	Overlap but avoidable	Disturbance from Samplers	Out
		Atlantic decalcified fixed dunes (<i>Calluno-Ulicetea</i>) [2150]	Overlap but avoidable	Disturbance from Samplers	Out
		Humid dune slacks [2190]	Overlap but avoidable	Disturbance from Samplers	Out
697	Bannow Bay SAC	Estuaries [1130]	Overlap but avoidable	Disturbance from Samplers	Out
		Mudflats and sandflats not covered by seawater at low tide [1140]	Overlap but avoidable	Disturbance from Samplers	Out
		Annual vegetation of drift lines [1210]	Overlap but avoidable	Disturbance from Samplers	Out
		Perennial vegetation of stony banks [1220]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Salicornia</i> and other annuals colonising mud and sand [1310]	Overlap but avoidable	Disturbance from Samplers	Out
		Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330]	Overlap but avoidable	Disturbance from Samplers	Out
		Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]	Overlap but avoidable	Disturbance from Samplers	Out
		Mediterranean and thermo-Atlantic halophilous scrubs (<i>Sarcocornetea fruticosi</i>) [1420]	Overlap but avoidable	Disturbance from Samplers	Out
		Embryonic shifting dunes [2110]	Overlap but avoidable	Disturbance from Samplers	Out
		Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120]	Overlap but avoidable	Disturbance from Samplers	Out
		Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	Overlap but avoidable	Disturbance from Samplers	Out
700	Cahore Polders and Dunes SAC	Annual vegetation of drift lines [1210]	Overlap but avoidable	Disturbance from Samplers	Out
		Embryonic shifting dunes [2110]	Overlap but avoidable	Disturbance from Samplers	Out
		Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120]	Overlap but avoidable	Disturbance from Samplers	Out
		Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	Overlap but avoidable	Disturbance from Samplers	Out
		Humid dune slacks [2190]	Overlap but avoidable	Disturbance from Samplers	Out
704	Lady's Island Lake SAC	Coastal lagoons [1150]	Overlap but avoidable	Disturbance from Samplers	Out
		Reefs [1170]	Overlap but avoidable	Disturbance from Samplers	Out
		Perennial vegetation of stony banks [1220]	Overlap but avoidable	Disturbance from Samplers	Out
			Overlap but avoidable	Disturbance from Samplers	Out
708	Screen Hills SAC	Oligotrophic waters containing very few minerals of sandy plains (<i>Littorelletalia uniflorae</i>) [3110]	Overlap but avoidable	Disturbance from Samplers	Out

		European dry heaths [4030]	Overlap but avoidable	Disturbance from Samplers	Out
709	Tacumshin Lake SAC	Coastal lagoons [1150]	No Overlap	None	Out
		Annual vegetation of drift lines [1210]	No Overlap	None	Out
		Perennial vegetation of stony banks [1220]	No Overlap	None	Out
		Embryonic shifting dunes [2110]	No Overlap	None	Out
710	Raven Point Nature Reserve SAC	Mudflats and sandflats not covered by seawater at low tide [1140]	Overlap but avoidable	None	Out
		Annual vegetation of drift lines [1210]	Overlap but avoidable	None	Out
		Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330]	Overlap but avoidable	None	Out
		Embryonic shifting dunes [2110]	Overlap but avoidable	None	Out
		Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120]	Overlap but avoidable	None	Out
		Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	Overlap but avoidable	None	Out
		Dunes with <i>Salix repens</i> ssp. <i>argentea</i> (<i>Salicion arenariae</i>) [2170]	Overlap but avoidable	None	Out
		Humid dune slacks [2190]	Overlap but avoidable	None	Out
764	Hook Head SAC	Large shallow inlets and bays [1160]	No Overlap	None	Out
		Reefs [1170]	No Overlap	None	Out
		Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]	No Overlap	None	Out
770	Blackstairs Mountains SAC	Northern Atlantic wet heaths with <i>Erica tetralix</i> [4010]	Overlap	Disturbance from Samplers	In
		European dry heaths [4030]	Overlap	Disturbance from Samplers	In
781	Slaney River Valley SAC	Estuaries [1130]	Overlap but avoidable	Disturbance from Samplers	Out
		Mudflats and sandflats not covered by seawater at low tide [1140]	Overlap but avoidable	Disturbance from Samplers	Out
		Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330]	Overlap but avoidable	Disturbance from Samplers	Out
		Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]	Overlap but avoidable	Disturbance from Samplers	Out
		Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation [3260]	Overlap but avoidable	Disturbance from Samplers	Out
		Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91A0]	Overlap but avoidable	Disturbance from Samplers	Out

		Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, <i>Alnion incanae</i> , <i>Salicion albae</i>) [91E0]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Margaritifera margaritifera</i> (Freshwater Pearl Mussel) [1029]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Petromyzon marinus</i> (Sea Lamprey) [1095]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Lampetra planeri</i> (Brook Lamprey) [1096]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Lampetra fluviatilis</i> (River Lamprey) [1099]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Alosa fallax fallax</i> (Twaite Shad) [1103]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Salmo salar</i> (Salmon) [1106]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Lutra lutra</i> (Otter) [1355]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Phoca vitulina</i> (Harbour Seal) [1365]	Overlap but avoidable	Disturbance from Samplers	Out
831	Cullahill Mountain SAC	Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (* important orchid sites) [6210]	Overlap but avoidable	Disturbance from Samplers	Out
849	Spahill And Clomantagh Hill SAC	Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (* important orchid sites) [6210]	Overlap but avoidable	Disturbance from Samplers	Out
1741	Kilmuckridge-Tinnaberna Sandhills SAC	Embryonic shifting dunes [2110]	Overlap but avoidable	Disturbance from Samplers	Out
		Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120]	Overlap but avoidable	Disturbance from Samplers	Out
		Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	Overlap but avoidable	Disturbance from Samplers	Out
1742	Kilpatrick Sandhills SAC	Annual vegetation of drift lines [1210]	Overlap but avoidable	Disturbance from Samplers	Out
		Embryonic shifting dunes [2110]	Overlap but avoidable	Disturbance from Samplers	Out
		Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120]	Overlap but avoidable	Disturbance from Samplers	Out
		Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	Overlap but avoidable	Disturbance from Samplers	Out
		Atlantic decalcified fixed dunes (<i>Calluno-Ulicetea</i>) [2150]	Overlap but avoidable	Disturbance from Samplers	Out
1858	Galmoy Fen SAC	Alkaline fens [7230]	Overlap but avoidable	Disturbance from Samplers	Out
1952	Comeragh Mountains SAC	Oligotrophic waters containing very few minerals of sandy plains (<i>Littorelletalia uniflorae</i>) [3110]	Overlap	Disturbance from Samplers	In
		Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation [3260]	Overlap	Disturbance from Samplers	In

		Northern Atlantic wet heaths with <i>Erica tetralix</i> [4010]	Overlap	Disturbance from Samplers	In
		European dry heaths [4030]	Overlap	Disturbance from Samplers	In
		Alpine and Boreal heaths [4060]	Overlap	Disturbance from Samplers	In
		Blanket bogs (* if active bog) [7130]	Overlap	Disturbance from Samplers	In
		Siliceous scree of the montane to snow levels (<i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladani</i>) [8110]	Overlap	Disturbance from Samplers	In
		Calcareous rocky slopes with chasmophytic vegetation [8210]	Overlap	Disturbance from Samplers	In
		Siliceous rocky slopes with chasmophytic vegetation [8220]	Overlap	Disturbance from Samplers	In
		<i>Hamatocaulis vernicosus</i> (Slender Green Feather-moss) [6216]	Overlap	Disturbance from Samplers	In
2123	Ardmore Head SAC	Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]	Overlap but avoidable	Disturbance from Samplers	Out
		European dry heaths [4030]	Overlap but avoidable	Disturbance from Samplers	Out
2137	Lower River Suir SAC	Atlantic salt meadows (<i>Glaucopuccinellietalia maritima</i>) [1330]	Overlap but avoidable	Disturbance from Samplers	Out
		Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]	Overlap but avoidable	Disturbance from Samplers	Out
		Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation [3260]	Overlap but avoidable	Disturbance from Samplers	Out
		Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430]	Overlap but avoidable	Disturbance from Samplers	Out
		Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91A0]	Overlap but avoidable	Disturbance from Samplers	Out
		Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, <i>Salicion albae</i>) [91E0]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Taxus baccata</i> woods of the British Isles [91J0]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Margaritifera margaritifera</i> (Freshwater Pearl Mussel) [1029]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Austropotamobius pallipes</i> (White-clawed Crayfish) [1092]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Petromyzon marinus</i> (Sea Lamprey) [1095]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Lampetra planeri</i> (Brook Lamprey) [1096]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Lampetra fluviatilis</i> (River Lamprey) [1099]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Alosa fallax fallax</i> (Twait Shad) [1103]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Salmo salar</i> (Salmon) [1106]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Lutra lutra</i> (Otter) [1355]	Overlap but avoidable	Disturbance from Samplers	Out

2161	Long Bank SAC	Sandbanks which are slightly covered by sea water all the time [1110]	Overlap but avoidable	Disturbance from Samplers	Out
2162	River Barrow And River Nore SAC	Estuaries [1130]	Overlap but avoidable	Disturbance from Samplers	Out
		Mudflats and sandflats not covered by seawater at low tide [1140]	Overlap but avoidable	Disturbance from Samplers	Out
		Reefs [1170]	Overlap but avoidable	Disturbance from Samplers	Out
		Salicornia and other annuals colonising mud and sand [1310]	Overlap but avoidable	Disturbance from Samplers	Out
		Atlantic salt meadows (<i>Glaucopuccinellietalia maritima</i>) [1330]	Overlap but avoidable	Disturbance from Samplers	Out
		Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]	Overlap but avoidable	Disturbance from Samplers	Out
		Water courses of plain to montane levels with the <i>Ranunculus fluitans</i> and <i>Callitriche-Batrachion</i> vegetation [3260]	Overlap but avoidable	Disturbance from Samplers	Out
		European dry heaths [4030]	Overlap but avoidable	Disturbance from Samplers	Out
		Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430]	Overlap but avoidable	Disturbance from Samplers	Out
		Petrifying springs with tufa formation (<i>Cratoneurion</i>) [7220]	Overlap but avoidable	Disturbance from Samplers	Out
		Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91A0]	Overlap but avoidable	Disturbance from Samplers	Out
		Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>) [91E0]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Vertigo moulinsiana</i> (<i>Desmoulin's Whorl Snail</i>) [1016]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Margaritifera margaritifera</i> (<i>Freshwater Pearl Mussel</i>) [1029]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Austropotamobius pallipes</i> (<i>White-clawed Crayfish</i>) [1092]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Petromyzon marinus</i> (<i>Sea Lamprey</i>) [1095]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Lampetra planeri</i> (<i>Brook Lamprey</i>) [1096]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Lampetra fluviatilis</i> (<i>River Lamprey</i>) [1099]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Alosa fallax fallax</i> (<i>Twaite Shad</i>) [1103]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Salmo salar</i> (<i>Salmon</i>) [1106]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Lutra lutra</i> (<i>Otter</i>) [1355]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Trichomanes speciosum</i> (<i>Killarney Fern</i>) [1421]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Margaritifera durrovensis</i> (<i>Nore Pearl Mussel</i>) [1990]	Overlap but avoidable	Disturbance from Samplers	Out
2170	Blackwater River (Cork/Waterford) SAC	Estuaries [1130]	Overlap but avoidable	Disturbance from Samplers	Out

		Mudflats and sandflats not covered by seawater at low tide [1140]	Overlap but avoidable	Disturbance from Samplers	Out
		Perennial vegetation of stony banks [1220]	Overlap but avoidable	Disturbance from Samplers	Out
		Salicornia and other annuals colonising mud and sand [1310]	Overlap but avoidable	Disturbance from Samplers	Out
		Atlantic salt meadows (<i>Glaucopuccinellietalia maritima</i>) [1330]	Overlap but avoidable	Disturbance from Samplers	Out
		Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]	Overlap but avoidable	Disturbance from Samplers	Out
		Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation [3260]	Overlap but avoidable	Disturbance from Samplers	Out
		Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91A0]	Overlap but avoidable	Disturbance from Samplers	Out
		Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, <i>Salicion albae</i>) [91E0]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Margaritifera margaritifera</i> (Freshwater Pearl Mussel) [1029]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Austropotamobius pallipes</i> (White-clawed Crayfish) [1092]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Petromyzon marinus</i> (Sea Lamprey) [1095]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Lampetra planeri</i> (Brook Lamprey) [1096]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Lampetra fluviatilis</i> (River Lamprey) [1099]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Alosa fallax fallax</i> (Twait Shad) [1103]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Salmo salar</i> (Salmon) [1106]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Lutra lutra</i> (Otter) [1355]	Overlap but avoidable	Disturbance from Samplers	Out
		<i>Trichomanes speciosum</i> (Killarney Fern) [1421]	Overlap but avoidable	Disturbance from Samplers	Out
2252	Thomastown Quarry SAC	Petrifying springs with tufa formation (<i>Cratoneurion</i>) [7220]	Overlap but avoidable	Disturbance from Samplers	Out
2269	Carnsore Point SAC	Mudflats and sandflats not covered by seawater at low tide [1140]	Overlap but avoidable	Disturbance from Samplers	Out
		Reefs [1170]	Overlap but avoidable	Disturbance from Samplers	Out
2324	Glendine Wood SAC	<i>Trichomanes speciosum</i> (Killarney Fern) [1421]	Overlap but avoidable	Disturbance from Samplers	Out

Table 4 showing the qualifying interest for each SPA within the survey area along with potential hazards arising from sampling.

Site Code	Natura 2000 Site Name	Qualifying Interest	Interaction with Survey area	Potential impacts	Screened In or Out
4009	Lady's Island Lake SPA	Gadwall (<i>Anas strepera</i>) [A051]	Overlap but avoidable	Disturbance from Samplers	Out

		Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179]	Overlap but avoidable	Disturbance from Samplers	Out
		Sandwich Tern (<i>Sterna sandvicensis</i>) [A191]	Overlap but avoidable	Disturbance from Samplers	Out
		Roseate Tern (<i>Sterna dougallii</i>) [A192]	Overlap but avoidable	Disturbance from Samplers	Out
		Common Tern (<i>Sterna hirundo</i>) [A193]	Overlap but avoidable	Disturbance from Samplers	Out
		Arctic Tern (<i>Sterna paradisaea</i>) [A194]	Overlap but avoidable	Disturbance from Samplers	Out
		Wetland and Waterbirds [A999]	Overlap but avoidable	Disturbance from Samplers	Out
4019	The Raven SPA	Red-throated Diver (<i>Gavia stellata</i>) [A001]	No Overlap	None	Out
		Cormorant (<i>Phalacrocorax carbo</i>) [A017]	No Overlap	None	Out
		Common Scoter (<i>Melanitta nigra</i>) [A065]	No Overlap	None	Out
		Grey Plover (<i>Pluvialis squatarola</i>) [A141]	No Overlap	None	Out
		Sanderling (<i>Calidris alba</i>) [A144]	No Overlap	None	Out
		Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>) [A395]	No Overlap	None	Out
		Wetland and Waterbirds [A999]	No Overlap	None	Out
4020	Ballyteigue Burrow SPA	Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046]	No Overlap	None	Out
		Shelduck (<i>Tadorna tadorna</i>) [A048]	No Overlap	None	Out
		Golden Plover (<i>Pluvialis apricaria</i>) [A140]	No Overlap	None	Out
		Grey Plover (<i>Pluvialis squatarola</i>) [A141]	No Overlap	None	Out
		Lapwing (<i>Vanellus vanellus</i>) [A142]	No Overlap	None	Out
		Black-tailed Godwit (<i>Limosa limosa</i>) [A156]	No Overlap	None	Out
		Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]	No Overlap	None	Out
		Wetland and Waterbirds [A999]	No Overlap	None	Out
4027	Tramore Back Strand SPA	Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046]	No overlap	None	Out
		Golden Plover (<i>Pluvialis apricaria</i>) [A140]	No overlap	None	Out
		Grey Plover (<i>Pluvialis squatarola</i>) [A141]	No overlap	None	Out
		Lapwing (<i>Vanellus vanellus</i>) [A142]	No overlap	None	Out
		Dunlin (<i>Calidris alpina</i>) [A149]	No overlap	None	Out
		Black-tailed Godwit (<i>Limosa limosa</i>) [A156]	No overlap	None	Out
		Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]	No overlap	None	Out
		Curlew (<i>Numenius arquata</i>) [A160]	No overlap	None	Out
		Wetland and Waterbirds [A999]	No overlap	None	Out
4028	Blackwater Estuary SPA	Wigeon (<i>Anas penelope</i>) [A050]	No overlap	None	Out
		Golden Plover (<i>Pluvialis apricaria</i>) [A140]	No overlap	None	Out
		Lapwing (<i>Vanellus vanellus</i>) [A142]	No overlap	None	Out
		Dunlin (<i>Calidris alpina</i>) [A149]	No overlap	None	Out
		Black-tailed Godwit (<i>Limosa limosa</i>) [A156]	No overlap	None	Out
		Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]	No overlap	None	Out

		Curlew (<i>Numenius arquata</i>) [A160]	No overlap	None	Out
		Redshank (<i>Tringa totanus</i>) [A162]	No overlap	None	Out
		Wetland and Waterbirds [A999]	No overlap	None	Out
4033	Bannow Bay SPA	Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046]	Overlap but avoidable	Disturbance from Samplers	Out
		Shelduck (<i>Tadorna tadorna</i>) [A048]	Overlap but avoidable	Disturbance from Samplers	Out
		Pintail (<i>Anas acuta</i>) [A054]	Overlap but avoidable	Disturbance from Samplers	Out
		Oystercatcher (<i>Haematopus ostralegus</i>) [A130]	Overlap but avoidable	Disturbance from Samplers	Out
		Golden Plover (<i>Pluvialis apricaria</i>) [A140]	Overlap but avoidable	Disturbance from Samplers	Out
		Grey Plover (<i>Pluvialis squatarola</i>) [A141]	Overlap but avoidable	Disturbance from Samplers	Out
		Lapwing (<i>Vanellus vanellus</i>) [A142]	Overlap but avoidable	Disturbance from Samplers	Out
		Knot (<i>Calidris canutus</i>) [A143]	Overlap but avoidable	Disturbance from Samplers	Out
		Dunlin (<i>Calidris alpina</i>) [A149]	Overlap but avoidable	Disturbance from Samplers	Out
		Black-tailed Godwit (<i>Limosa limosa</i>) [A156]	Overlap but avoidable	Disturbance from Samplers	Out
		Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]	Overlap but avoidable	Disturbance from Samplers	Out
		Curlew (<i>Numenius arquata</i>) [A160]	Overlap but avoidable	Disturbance from Samplers	Out
		Redshank (<i>Tringa totanus</i>) [A162]	Overlap but avoidable	Disturbance from Samplers	Out
		Wetland and Waterbirds [A999]	Overlap but avoidable	Disturbance from Samplers	Out
4076	Wexford Harbour and Slob SPA	Little Grebe (<i>Tachybaptus ruficollis</i>) [A004]	Overlap but avoidable	Disturbance from Samplers	In
		Great Crested Grebe (<i>Podiceps cristatus</i>) [A005]	Overlap but avoidable	Disturbance from Samplers	In
		Cormorant (<i>Phalacrocorax carbo</i>) [A017]	Overlap but avoidable	Disturbance from Samplers	In
		Grey Heron (<i>Ardea cinerea</i>) [A028]	Overlap but avoidable	Disturbance from Samplers	In
		Bewick's Swan (<i>Cygnus columbianus bewickii</i>) [A037]	Overlap but avoidable	Disturbance from Samplers	In
		Whooper Swan (<i>Cygnus cygnus</i>) [A038]	Overlap but avoidable	Disturbance from Samplers	In
		Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046]	Overlap but avoidable	Disturbance from Samplers	In
		Shelduck (<i>Tadorna tadorna</i>) [A048]	Overlap but avoidable	Disturbance from Samplers	In
		Wigeon (<i>Anas penelope</i>) [A050]	Overlap but avoidable	Disturbance from Samplers	In
		Teal (<i>Anas crecca</i>) [A052]	Overlap but avoidable	Disturbance from Samplers	In
		Mallard (<i>Anas platyrhynchos</i>) [A053]	Overlap but avoidable	Disturbance from Samplers	In
		Pintail (<i>Anas acuta</i>) [A054]	Overlap but avoidable	Disturbance from Samplers	In

		Scaup (<i>Aythya marila</i>) [A062]	Overlap but avoidable	Disturbance from Samplers	In
		Goldeneye (<i>Bucephala clangula</i>) [A067]	Overlap but avoidable	Disturbance from Samplers	In
		Red-breasted Merganser (<i>Mergus serrator</i>) [A069]	Overlap but avoidable	Disturbance from Samplers	In
		Hen Harrier (<i>Circus cyaneus</i>) [A082]	Overlap but avoidable	Disturbance from Samplers	In
		Coot (<i>Fulica atra</i>) [A125]	Overlap but avoidable	Disturbance from Samplers	In
		Oystercatcher (<i>Haematopus ostralegus</i>) [A130]	Overlap but avoidable	Disturbance from Samplers	In
		Golden Plover (<i>Pluvialis apricaria</i>) [A140]	Overlap but avoidable	Disturbance from Samplers	In
		Grey Plover (<i>Pluvialis squatarola</i>) [A141]	Overlap but avoidable	Disturbance from Samplers	In
		Lapwing (<i>Vanellus vanellus</i>) [A142]	Overlap but avoidable	Disturbance from Samplers	In
		Knot (<i>Calidris canutus</i>) [A143]	Overlap but avoidable	Disturbance from Samplers	In
		Sanderling (<i>Calidris alba</i>) [A144]	Overlap but avoidable	Disturbance from Samplers	In
		Dunlin (<i>Calidris alpina</i>) [A149]	Overlap but avoidable	Disturbance from Samplers	In
		Black-tailed Godwit (<i>Limosa limosa</i>) [A156]	Overlap but avoidable	Disturbance from Samplers	In
		Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]	Overlap but avoidable	Disturbance from Samplers	In
		Curlew (<i>Numenius arquata</i>) [A160]	Overlap but avoidable	Disturbance from Samplers	In
		Redshank (<i>Tringa totanus</i>) [A162]	Overlap but avoidable	Disturbance from Samplers	In
		Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179]	Overlap but avoidable	Disturbance from Samplers	In
		Lesser Black-backed Gull (<i>Larus fuscus</i>) [A183]	Overlap but avoidable	Disturbance from Samplers	In
		Little Tern (<i>Sterna albifrons</i>) [A195]	Overlap but avoidable	Disturbance from Samplers	In
		Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>) [A395]	Overlap but avoidable	Disturbance from Samplers	In
		Wetland and Waterbirds [A999]	Overlap but avoidable	Disturbance from Samplers	In
4092	Tacumshin Lake SPA	Little Grebe (<i>Tachybaptus ruficollis</i>) [A004]	No overlap	None	Out
		Bewick's Swan (<i>Cygnus columbianus bewickii</i>) [A037]	No overlap	None	Out
		Whooper Swan (<i>Cygnus cygnus</i>) [A038]	No overlap	None	Out
		Wigeon (<i>Anas penelope</i>) [A050]	No overlap	None	Out
		Gadwall (<i>Anas strepera</i>) [A051]	No overlap	None	Out
		Teal (<i>Anas crecca</i>) [A052]	No overlap	None	Out
		Pintail (<i>Anas acuta</i>) [A054]	No overlap	None	Out
		Shoveler (<i>Anas clypeata</i>) [A056]	No overlap	None	Out
		Tufted Duck (<i>Aythya fuligula</i>) [A061]	No overlap	None	Out
		Coot (<i>Fulica atra</i>) [A125]	No overlap	None	Out

		Golden Plover (<i>Pluvialis apricaria</i>) [A140]	No overlap	None	Out
		Grey Plover (<i>Pluvialis squatarola</i>) [A141]	No overlap	None	Out
		Lapwing (<i>Vanellus vanellus</i>) [A142]	No overlap	None	Out
		Black-tailed Godwit (<i>Limosa limosa</i>) [A156]	No overlap	None	Out
		Wetland and Waterbirds [A999]	No overlap	None	Out
4118	Keeragh Islands SPA	Cormorant (<i>Phalacrocorax carbo</i>) [A017]	No overlap	None	Out
4143	Cahore Marshes SPA	Wigeon (<i>Anas penelope</i>) [A050]	Overlap but avoidable	Disturbance from Samplers	Out
		Golden Plover (<i>Pluvialis apricaria</i>) [A140]	Overlap but avoidable	Disturbance from Samplers	Out
		Lapwing (<i>Vanellus vanellus</i>) [A142]	Overlap but avoidable	Disturbance from Samplers	Out
		Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>) [A395]	Overlap but avoidable	Disturbance from Samplers	Out
		Wetland and Waterbirds [A999]	Overlap but avoidable	Disturbance from Samplers	Out
4192	Helvick Head to Ballyquin SPA	Cormorant (<i>Phalacrocorax carbo</i>) [A017]	Overlap but avoidable	Disturbance from Samplers	Out
		Peregrine (<i>Falco peregrinus</i>) [A103]	Overlap but avoidable	Disturbance from Samplers	Out
		Herring Gull (<i>Larus argentatus</i>) [A184]	Overlap but avoidable	Disturbance from Samplers	Out
		Kittiwake (<i>Rissa tridactyla</i>) [A188]	Overlap but avoidable	Disturbance from Samplers	Out
		Chough (<i>Pyrhocorax pyrrhocorax</i>) [A346]	Overlap but avoidable	Disturbance from Samplers	Out
4193	Mid-Waterford Coast SPA	Cormorant (<i>Phalacrocorax carbo</i>) [A017]	Overlap but avoidable	Disturbance from Samplers	Out
		Peregrine (<i>Falco peregrinus</i>) [A103]	Overlap but avoidable	Disturbance from Samplers	Out
		Herring Gull (<i>Larus argentatus</i>) [A184]	Overlap but avoidable	Disturbance from Samplers	Out
		Chough (<i>Pyrhocorax pyrrhocorax</i>) [A346]	Overlap but avoidable	Disturbance from Samplers	Out
4233	River Nore SPA	Kingfisher (<i>Alcedo atthis</i>) [A229]	Overlap but avoidable	Disturbance from Samplers	Out
4032	Dungarvan Harbour SPA	Great Crested Grebe (<i>Podiceps cristatus</i>) [A005]	Overlap but avoidable	Disturbance from Samplers	Out
		Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046]	Overlap but avoidable	Disturbance from Samplers	Out
		Shelduck (<i>Tadorna tadorna</i>) [A048]	Overlap but avoidable	Disturbance from Samplers	Out
		Red-breasted Merganser (<i>Mergus serrator</i>) [A069]	Overlap but avoidable	Disturbance from Samplers	Out
		Oystercatcher (<i>Haematopus ostralegus</i>) [A130]	Overlap but avoidable	Disturbance from Samplers	Out
		Golden Plover (<i>Pluvialis apricaria</i>) [A140]	Overlap but avoidable	Disturbance from Samplers	Out
		Grey Plover (<i>Pluvialis squatarola</i>) [A141]	Overlap but avoidable	Disturbance from Samplers	Out
		Lapwing (<i>Vanellus vanellus</i>) [A142]	Overlap but avoidable	Disturbance from Samplers	Out

		Knot (<i>Calidris canutus</i>) [A143]	Overlap but avoidable	Disturbance from Samplers	Out
		Dunlin (<i>Calidris alpina</i>) [A149]	Overlap but avoidable	Disturbance from Samplers	Out
		Black-tailed Godwit (<i>Limosa limosa</i>) [A156]	Overlap but avoidable	Disturbance from Samplers	Out
		Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]	Overlap but avoidable	Disturbance from Samplers	Out
		Curlew (<i>Numenius arquata</i>) [A160]	Overlap but avoidable	Disturbance from Samplers	Out
		Redshank (<i>Tringa totanus</i>) [A162]	Overlap but avoidable	Disturbance from Samplers	Out
		Turnstone (<i>Arenaria interpres</i>) [A169]	Overlap but avoidable	Disturbance from Samplers	Out
		Wetland and Waterbirds [A999]	Overlap but avoidable	Disturbance from Samplers	Out

Screening conclusions

Following the initial screening of all potentially impacted Natura 2000 sites by the proposed survey operations, the three sites have been screened-in for potential overlap with the survey area. In most cases sample locations can be chosen for the soil samples that lie outside each SAC & SPA. In larger extensive areas, such as the Blackstairs Mountains and Comeragh Mountains, soil samples will be taken at selected locations which pose minimal risk to the sites. The collection of shallow soil samples is not thought to pose any significant risk to any of the SAC's and SPA listed within the survey area. Appendix 1 provides a detailed examination of the impact of soil sampling for geochemical surveying.

The following sites have been screened in for Natura 2000 assessment.

Natura 2000 sites screened in for Appropriate Assessment:

- Blackstairs Mountains SAC (000770)
- Comeragh Mountains SAC (001952)
- Wexford Harbour & Slobbs SPA (4076)

8 Natura Impact Statement

From the screening report a number of Natura 2000 sites have been screen in. In most cases soil samples can be taken from locations where no impact is likely. However, in some areas there may be potential impacts. These sites are further reviewed in tables 5 and 6 below for SAC and SPA sites and their qualifying interests respectively. The potential impact, along with mitigation measures and verdict is given. Reference is also made to Appendix 1: The assessment of effects of geochemical soil sampling.

Table 5: Screened in SAC sites, impacts, mitigation measures and verdict

Natura 2000 Site	Qualifying Interest	Potential Impact	Mitigation Measures	Comment / verdict
Blackstairs Mountains SAC (000770)	Northern Atlantic wet heaths with <i>Erica tetralix</i> [4010]	Disturbance from samplers walking and digging holes?	Samplers to choose a site with the least impact to the site. Get landowner permission; keep to paths or edge of fields when accessing area. Follow sampling procedure. No removal of vegetation. See Appendix 1	Minimal impact, the activity is not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations Significant effects not likely.
	European dry heaths [4030]	Disturbance from samplers walking and digging holes?	Samplers to choose a site with the least impact to the site. Get landowner permission; keep to paths or edge of fields when accessing area. Follow sampling procedure. No removal of vegetation. See Appendix 1	Minimal impact, the activity is not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations Significant effects not likely
Comeragh Mountains SAC (001952)	Oligotrophic waters containing very few minerals of sandy plains (<i>Littorelletalia uniflorae</i>) [3110]	Disturbance from samplers walking and digging holes?	Samplers to choose a site with the least impact to the site. Get landowner permission; keep to paths or edge of fields when accessing area. Follow sampling procedure. No removal of vegetation. See Appendix 1	Minimal impact, the activity is not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations Significant effects not likely
	Water courses of plain to montane levels with the <i>Ranunculus fluitans</i> and <i>Callitriche-Batrachion</i> vegetation [3260]	Disturbance from samplers walking and digging holes?	Samplers to choose a site with the least impact to the site. Get landowner permission; keep to paths or edge of fields when accessing area. Follow sampling procedure. No removal of vegetation. See Appendix 1	Minimal impact, the activity is not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations Significant effects not likely

Northern Atlantic wet heaths with <i>Erica tetralix</i> [4010]	Disturbance from samplers walking and digging holes?	Samplers to choose a site with the least impact to the site. Get landowner permission; keep to paths or edge of fields when accessing area. Follow sampling procedure. No removal of vegetation. See Appendix 1	Minimal impact, the activity is not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations Significant effects not likely
European dry heaths [4030]	Disturbance from samplers walking and digging holes?	Samplers to choose a site with the least impact to the site. Get landowner permission; keep to paths or edge of fields when accessing area. Follow sampling procedure. No removal of vegetation. See Appendix 1	Minimal impact, the activity is not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations Significant effects not likely
Alpine and Boreal heaths [4060]	Disturbance from samplers walking and digging holes?	Samplers to choose a site with the least impact to the site. Get landowner permission; keep to paths or edge of fields when accessing area. Follow sampling procedure. No removal of vegetation. See Appendix 1	Minimal impact, the activity is not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations Significant effects not likely
Blanket bogs (* if active bog) [7130]	Disturbance from samplers walking and digging holes?	Samplers to choose a site with the least impact to the site. Get landowner permission; keep to paths or edge of fields when accessing area. Follow sampling procedure. No removal of vegetation. See Appendix 1	Minimal impact, the activity is not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations Significant effects not likely
Siliceous scree of the montane to snow levels (<i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladani</i>) [8110]	Disturbance from samplers walking and digging holes?	Samplers to choose a site with the least impact to the site. Get landowner permission; keep to paths or edge of fields when accessing area. Follow sampling procedure. No removal of vegetation. See Appendix 1	Minimal impact, the activity is not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations Significant effects not likely
Calcareous rocky slopes with chasmophytic vegetation [8210]	Disturbance from samplers walking and digging holes?	Samplers to choose a site with the least impact to the site. Get landowner permission; keep to paths or edge of fields when accessing area. Follow sampling procedure. No removal of vegetation. See Appendix 1	Minimal impact, the activity is not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations Significant effects not likely
Siliceous rocky slopes with chasmophytic vegetation [8220]	Disturbance from samplers walking and digging holes?	Samplers to choose a site with the least impact to the site. Get landowner permission; keep to paths or edge of fields when accessing area. Follow sampling procedure. No removal of vegetation. See Appendix 1	Minimal impact, the activity is not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations Significant effects not likely
<i>Hamatocaulis vernicosus</i> (Slender Green Feather-moss) [6216]	Disturbance from samplers walking and digging holes?	Samplers to choose a site with the least impact to the site. Get landowner permission; keep to paths or edge of fields when accessing area. Follow sampling procedure. No removal of vegetation. See Appendix 1	Minimal impact, the activity is not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations Significant effects not likely

Table 6: Screened in SPA sites, impact, mitigation measures and verdict

Natura 2000 Site	Qualifying Interest	Potential Impact	Mitigation Measures	Comment / verdict
Wexford Harbour and Slob SPA (4076)	Little Grebe (<i>Tachybaptus ruficollis</i>) [A004]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB L _{Amax} and 55dB L _{Aeq} , 1hr AQTAG09 thresholds. Therefore significant effects not likely.
	Great Crested Grebe (<i>Podiceps cristatus</i>) [A005]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB L _{Amax} and 55dB L _{Aeq} , 1hr AQTAG09 thresholds. Therefore significant effects not likely.
	Cormorant (<i>Phalacrocorax carbo</i>) [A017]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB L _{Amax} and 55dB L _{Aeq} , 1hr AQTAG09 thresholds. Therefore significant effects not likely.
	Grey Heron (<i>Ardea cinerea</i>) [A028]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB L _{Amax} and 55dB L _{Aeq} , 1hr AQTAG09 thresholds. Therefore significant effects not likely.
	Bewick's Swan (<i>Cygnus columbianus bewickii</i>) [A037]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB L _{Amax} and 55dB L _{Aeq} , 1hr AQTAG09 thresholds. Therefore significant effects not likely.

Whooper Swan (<i>Cygnus cygnus</i>) [A038]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB L _{Amax} and 55dB L _{Aeq} , 1hr AQTAG09 thresholds. Therefore significant effects not likely.
Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB L _{Amax} and 55dB L _{Aeq} , 1hr AQTAG09 thresholds. Therefore significant effects not likely.
Shelduck (<i>Tadorna tadorna</i>) [A048]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB L _{Amax} and 55dB L _{Aeq} , 1hr AQTAG09 thresholds. Therefore significant effects not likely.
Wigeon (<i>Anas penelope</i>) [A050]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB L _{Amax} and 55dB L _{Aeq} , 1hr AQTAG09 thresholds. Therefore significant effects not likely.
Teal (<i>Anas crecca</i>) [A052]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB L _{Amax} and 55dB L _{Aeq} , 1hr AQTAG09 thresholds. Therefore significant effects not likely.
Mallard (<i>Anas platyrhynchos</i>) [A053]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB L _{Amax} and 55dB L _{Aeq} , 1hr AQTAG09 thresholds. Therefore significant effects not likely.

Pintail (<i>Anas acuta</i>) [A054]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB L _{Amax} and 55dB L _{Aeq} , 1hr AQTAG09 thresholds. Therefore significant effects not likely.
Scaup (<i>Aythya marila</i>) [A062]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB L _{Amax} and 55dB L _{Aeq} , 1hr AQTAG09 thresholds. Therefore significant effects not likely.
Goldeneye (<i>Bucephala clangula</i>) [A067]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB L _{Amax} and 55dB L _{Aeq} , 1hr AQTAG09 thresholds. Therefore significant effects not likely.
Red-breasted Merganser (<i>Mergus serrator</i>) [A069]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB L _{Amax} and 55dB L _{Aeq} , 1hr AQTAG09 thresholds. Therefore significant effects not likely.
Hen Harrier (<i>Circus cyaneus</i>) [A082]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB L _{Amax} and 55dB L _{Aeq} , 1hr AQTAG09 thresholds. Therefore significant effects not likely.
Coot (<i>Fulica atra</i>) [A125]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB L _{Amax} and 55dB L _{Aeq} , 1hr AQTAG09 thresholds. Therefore significant effects not likely.

Oystercatcher (<i>Haematopus ostralegus</i>) [A130]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB L _{Amax} and 55dB L _{Aeq} , 1hr AQTAG09 thresholds. Therefore significant effects not likely.
Golden Plover (<i>Pluvialis apricaria</i>) [A140]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB L _{Amax} and 55dB L _{Aeq} , 1hr AQTAG09 thresholds. Therefore significant effects not likely.
Grey Plover (<i>Pluvialis squatarola</i>) [A141]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB L _{Amax} and 55dB L _{Aeq} , 1hr AQTAG09 thresholds. Therefore significant effects not likely.
Lapwing (<i>Vanellus vanellus</i>) [A142]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB L _{Amax} and 55dB L _{Aeq} , 1hr AQTAG09 thresholds. Therefore significant effects not likely.
Knot (<i>Calidris canutus</i>) [A143]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB L _{Amax} and 55dB L _{Aeq} , 1hr AQTAG09 thresholds. Therefore significant effects not likely.
Sanderling (<i>Calidris alba</i>) [A144]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB L _{Amax} and 55dB L _{Aeq} , 1hr AQTAG09 thresholds. Therefore significant effects not likely.

Dunlin (<i>Calidris alpina</i>) [A149]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB L _{Amax} and 55dB L _{Aeq} , 1hr AQTAG09 thresholds. Therefore significant effects not likely.
Black-tailed Godwit (<i>Limosa limosa</i>) [A156]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB L _{Amax} and 55dB L _{Aeq} , 1hr AQTAG09 thresholds. Therefore significant effects not likely.
Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB L _{Amax} and 55dB L _{Aeq} , 1hr AQTAG09 thresholds. Therefore significant effects not likely.
Curlew (<i>Numenius arquata</i>) [A160]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB L _{Amax} and 55dB L _{Aeq} , 1hr AQTAG09 thresholds. Therefore significant effects not likely.
Redshank (<i>Tringa totanus</i>) [A162]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB L _{Amax} and 55dB L _{Aeq} , 1hr AQTAG09 thresholds. Therefore significant effects not likely.
Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB L _{Amax} and 55dB L _{Aeq} , 1hr AQTAG09 thresholds. Therefore significant effects not likely.

Lesser Black-backed Gull (Larus fuscus) [A183]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB LAmax and 55dB LAeq,1hr AQTAG09 thresholds. Therefore significant effects not likely.
Little Tern (Sterna albifrons) [A195]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB LAmax and 55dB LAeq,1hr AQTAG09 thresholds. Therefore significant effects not likely.
Greenland White-fronted Goose (Anser albifrons flavirostris) [A395]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB LAmax and 55dB LAeq,1hr AQTAG09 thresholds. Therefore significant effects not likely.
Wetland and Waterbirds [A999]	Disturbance from samplers walking and digging holes?	Avoid known breeding sites, avoid forestry, cliff faces rivers, intertidal zones, marshes and waterways. Maintain minimum noise disturbance, no vehicles access. Samplers to follow ecological guidance, If samplers are unsure on suitability of a site they should seek ecological advice. See Appendix 1.	Minimal impact, the activity is not significantly intrusive. The activity not likely to exceed noise levels of 80dB LAmax and 55dB LAeq,1hr AQTAG09 thresholds. Therefore significant effects not likely.

Note

- i) Samples are to use the supplied digital data capture devices to identify grid squares or sample locations that overlap with designated areas.
- ii) Samplers should follow ecological guidance where applicable.
- iii) In areas where samplers are unsure as to the specifics of a site, independent ecological advice should be sort.
- iv) If a sample site is shown to overlap with areas known to contain protected flora that appropriate ecological advice is sort.

9 Conclusion

This Appropriate Assessment is considered to incorporate all of the relevant requirements of the EC DG Environment guidance document, “Assessment of plans and projects significantly affecting Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC”.

The Tellus soil sampling programme takes one small soil sample (1 kg) from an area of 2 x 2 Km i.e. 400 Ha. The survey area encompasses numerous SAC and SPA's, however, in most cases sample locations can be chosen for soil samples that lie outside each SAC & SPA. In large extensive areas, soil samples will be taken at selected locations which pose minimal risk to the sites. Samplers will follow the GSI sampling protocols and mitigation measures provided to further minimise any disturbance or likely impact.

In areas that directly overlapping with designated sites, ecological advice will be sought to inform how sample collection can have minimum impact. In extreme cases samples will be delayed until suitable times or avoided entirely.

The collection of shallow soil samples is deemed not to pose a significant risk to any of the SAC's and SPA listed within the survey area.

Appendix 1

ASSESSMENT OF EFFECTS: GEOCHEMICAL SURVEYING (SHALLOW SOILS)

Taken from Expert Environmental Guidance on Exploration Methodologies; Part Two Geochemical Survey' produced by SLR for the Department of Communications, Climate Action and Environment

The following provides an assessment of likely significant effects of shallow soil geochemical sampling on a Special Area of Conservation (SAC; and a Special Protection Area (SPA; Section 6.4), respectively, during Geochemical Surveying (Shallow Soils).

A1 Potential Hazards – Geochemical Surveying (Shallow Soils)

This section identifies the potential hazards (i.e. the pathways) through which Geochemical Surveying (Shallow Soils) activities may have the potential risk exposure of likely significant effects on Natura 2000 sites. This essentially is a preliminary assessment of risk and probability (see Chapter 4 above).

Table 5 provides a preliminary risk assessment of Geochemical Surveying (Shallow Soil) activities (without the application of standard operating procedures designed to avoid or reduce significant effects).

Table A1: Preliminary Risk Assessment - Geochemical Surveying (Shallow Soils)

Potential Hazard	SAC		SPA	
	Annex I Habitats	Annex II Species	Qualifying Birds	Wetlands
Direct Loss of Habitat	Not likely	Not likely	Not likely	Not Likely
Damage and/or Disturbance of Habitats causing a change in the Vegetation Community or where there would be an Effect on the Population Status of an Individual or Group of Species	Unlikely	Extremely Unlikely to Unlikely depending upon species	Unlikely	Extremely unlikely
Habitat Fragmentation	Not likely	Not likely	Not likely	Not Likely
Disturbance (Noise and Visual Disturbance) Low Levels from one or two persons, High from Mechanised Sampling.	Not applicable	Unlikely	Unlikely	Not applicable
Disturbance (Lighting)	Not likely	Not likely	Not likely	Not Likely
Changes in Air Quality (Deposition of Dust)	Not likely	Not likely	Not likely	Not Likely
Changes in Air Quality (Emissions to Air)	Not likely	Not likely	Not likely	Not Likely
Alteration to Hydrological Regime	Not likely	Not likely	Not likely	Not Likely
Alteration to Hydrogeological Regime	Not likely	Not likely	Not likely	Not Likely
Changes in Surface Water Quality	Not likely	Not Likely	Not Likely	Not Likely
Increase in Sedimentation	Extremely unlikely	Extremely unlikely	Extremely unlikely	Extremely unlikely
Changes in Groundwater Quality	Not likely	Not likely	Not likely	Not Likely
Introduction and spread of Non-Native Species	Extremely unlikely	Extremely unlikely	Extremely unlikely	Extremely unlikely

Based on the risk assessment in Table 5, the potential hazards required for any further consideration as part of the screening matrix include:

- **damage and/or disturbance of habitats; and**
- **noise and visual disturbance.**

A1.1 Damage and/or Disturbance of Habitats

Geochemical Surveying (Shallow Soils) is not likely to result in any direct loss of habitat but may result in the damage and disturbance of habitats during the walkover of a site and removal of samples. In most cases the effects are likely to be temporary and reversible in nature except for the most sensitive of habitats.

The damage and disturbance of sensitive habitats can result in a change in the physical attributes of the habitat and its associated vegetation communities. Stresses induced by changes in physical attributes, e.g. trampling, which can increase soil compaction and create gaps which may allow stress tolerant species to dominate. Such occurrences can result in changes to the structure and species composition within a particular area. For some habitats any changes in key indicator plant species can alter the classification given to any particular vegetation community.

Any damage and disturbance to habitats can have a direct impact on individual populations of qualifying species, or on other individual and/or groups of species that any qualifying species is dependent upon, i.e. food source, or indirectly by increasing levels of stress placed upon populations of some species.

The damage and disturbance of habitats outside the defined boundary of a Natura 2000 site may also have an impact on habitats that can be considered to contribute to the habitat resource of any qualifying habitats. Damage to those external habitats can also affect widely-ranging species that may lose part of breeding/foraging range and therefore individuals' fitness may be affected. These effects can ultimately result in increased mortality or productivity reduction.

Where a qualifying species may be wide ranging it is important to consider the site of any proposed exploration activity and its connectivity with a Natura 2000 site. This is especially important in relation to the potential dispersal and foraging distances that some species of birds may travel outside the boundary of a SPA. Where relevant, guidance published by Scottish Natural Heritage (SNH) ⁶ should be used to determine the core ranges for many species.

A1.2 Noise and Visual Disturbance

Increases in human disturbance can have a range of impacts depending upon the sensitivity of the ecological receptor, the nature and duration of the disturbance and its timing. Human disturbance particularly includes noise and visual disturbance from human activity from Geochemical Surveying (Shallow Soils).

The response of individual species to increased levels of human disturbance will depend upon a number of factors. The factors include:

- sensitivity;
- reproductive status;
- previous exposure to human disturbance;
- behaviour during the event;
- species tolerance to disturbance;
- location in relation to the source;
- availability of alternative nearby habitat; and
- environmental factors (e.g. topography, vegetation and atmospheric conditions which can influence noise levels).

⁶ Scottish Natural Heritage (2013). *Assessing Connectivity with Special Protection Areas (SPAs)*. Scottish Natural Heritage.

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The level of disturbance will also be dependent upon the existing ambient noise levels and maximum noise levels.

It is generally accepted that for noise and visual disturbance, certain species or groups of species can be impacted upon up to a distance of 300m from source for high level and discontinuous disturbance. These distances are reduced for low level and/or continuous disturbance levels. However, where specific guidance indicates otherwise, the potential zone of an activity can increase, depending upon the susceptibility of a particular species to disturbance. High levels of noise and visual disturbance have the potential to significantly increase the distance where species may alter their behaviour.

Where noise levels are below 80dB L_{Amax} and 55dB L_{Aeq} , 1hr measured at a nest site for birds or other feature used by wildlife it is considered unlikely that it will have an adverse impact on any such species, in accordance with guidance produced by Air Quality Technical Advisory Group (AQTAG09)⁷.

Geochemical Surveying (Shallow Soils) will generally produce low levels of noise and visual disturbance and will typically be below the AQTAG threshold levels.

A2 Potential Zone of Influence

Based on the nature of the exploration activity and on the potential hazards it is considered that the distance for which any Geochemical Surveying (Shallow Soils) should be evaluated in terms of Natura 2000 sites is up to a maximum radius of 1km based on the full extent of the licensable exploration activity.

A3 Special Areas of Conservation

The potential for likely significant effects of Geochemical Surveying (Shallow Soils) on a SAC or candidate SAC (cSAC) are considered separately under *Annex 1 Habitats* and *Annex II Species* below. Please refer to Table 1 in Chapter 4.0 for colour codes. Table 6 below provides an overview as to whether activities associated with Geochemical Surveying (Shallow Soils) are likely to have significant effects on individual Annex I habitats for which a SAC or cSAC may be designated as being of European importance.

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Where it is identified that there is a probable risk and the possibility or uncertainty of likely significant effects then further information is likely to be required by the EMD in making its determination. The level of information and details of standard operating procedures to be followed will have to be appropriate for any activities and in relation to the individual qualifying Annex I habitat concerned. The information and standard operating procedures will also have to be appropriate for the Natura 2000 site which may be impacted upon.

Where no likely significant effects have been identified but there is a risk of an adverse effect on sensitive features the EMD may require further information. The information required will be on a site by site basis, to be submitted by the applicant in order to completely satisfy EMD that the activities will have no likely significant effects on certain qualifying Annex I habitats.

⁷ Ormerod, L., Goodlad, N. and Horton, K. (2005). *AQTAG09 – Guidance on the Effects of Industrial Noise on Wildlife*. Air

Geophysical Surveying of Likely Significant Effects of Geochemical Sampling (Shallow Soils) on Annex I Habitats

EU Code	Habitat	Geochemical Sampling (Shallow Soils)	Damage and/or Disturbance of Habitats	Noise and Visual Disturbance	Areas of influence and items to note
FRESHWATER					
3110	Oligotrophic waters containing very few minerals of sandy plains: <i>Littorelletalia uniflorae</i>	Access & Egress	Potential exposure to hazard where activity may occur around the margins of lakes where some, but not all, vegetation zones are present.		
		Operation	Activity not considered significantly intrusive where there would be any changes in the structure and composition or extent of any vegetation community over normal natural variations in the marginal zone. Significant effects not likely.		
		Abstraction & Return			
3130	Oligotrophic to mesotrophic standing waters with vegetation of the <i>Littorelletea uniflorae</i> and/or of the <i>Isoëto-Nanojuncetea</i>	Access & Egress	Potential exposure to hazard where activity may occur around the margins of lakes and interface between water and land supporting vegetation communities associated with this habitat-type.		
		Operation	Activity but not significantly intrusive where there would be any changes in the structure and composition or extent of any vegetation community present in the interface area between water and land over normal natural variations. Significant effects not likely.		
		Abstraction & Return			
3140	Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara</i> spp.	Access & Egress	Potential exposure to hazard where activity may occur around the margins of lakes where some, but not all, vegetation zones are present.		
		Operation	Activity not significantly intrusive where there would be any changes in the <i>Chara</i> community structure and composition or extent of any vegetation community over normal natural variations in the marginal zone. Significant effects not likely.		
		Abstraction & Return			

Geochemical Surveying

EU Code	Habitat	Geochemical Sampling (Shallow Soils)	Damage and/or Disturbance of Habitats	Noise and Visual Disturbance	Areas of influence and items to note
3150	Natural eutrophic lakes with <i>Magnopotamion</i> or <i>Hydrocharition</i> -type vegetation	Access & Egress	Potential exposure to hazard where activity may occur around the margins of lakes where some, but not all, vegetation zones are present.		
		Operation	Activity not considered significantly intrusive where there would be any changes in the structure and composition or extent of any vegetation community over normal natural variations in the marginal zone. Significant effects not likely.		
		Abstraction & Return			
3160	Natural dystrophic lakes and ponds	Access & Egress	Potential exposure to hazard where activity may occur on the edge of fringing habitat typically associated with floating carpets of vegetation.		Proposer of activity may be required to provide further information on standard operating procedures to be implemented to avoid and/or minimise disturbance and damage of this habitat-type to satisfy no LSE.
		Operation	Activity with potential to be intrusive but unlikely to change the structure and composition or extent of any vegetation community over normal natural variations and which would be anticipated to recover relatively quickly from any disturbance. Significant effects not likely.		
		Abstraction & Return			
3180	Turloughs	Access & Egress	Potential exposure to hazard but activity not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations. Significant effects not likely.		
		Operation			
		Abstraction & Return			
3260	Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation	Access & Egress			

Geochemical Surveying

EU Code	Habitat	Geochemical Sampling (Shallow Soils)	Damage and/or Disturbance of Habitats	Noise and Visual Disturbance	Areas of influence and items to note
		Operation			
		Abstraction & Return			
3270	Rivers with muddy banks with <i>Chenopodium rubri</i> p.p. and <i>Bidention</i> p.p. vegetation	Access & Egress			
		Operation			
		Abstraction & Return			
GRASSLAND AND MARSH					
6130	Calaminarian grasslands of the <i>Violetalia calaminariae</i>	Access & Egress	Potential exposure to hazard but activity not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations. Significant effects not likely.		
		Operation			
		Abstraction & Return			
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>)	Access & Egress	Potential exposure to hazard but activity not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations. Significant effects not likely.		
		Operation			

Geochemical Surveying

EU Code	Habitat	Geochemical Sampling (Shallow Soils)	Damage and/or Disturbance of Habitats	Noise and Visual Disturbance	Areas of influence and items to note
		Abstraction & Return			
6230	Species-rich <i>Nardus</i> grassland, on siliceous substrates in mountain areas (and submountain areas in continental Europe)	Access & Egress	Potential exposure to hazard but activity not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations. Significant effects not likely.		
		Operation			
		Abstraction & Return			
6410	<i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>)	Access & Egress	Potential exposure to hazard but activity not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations. Significant effects not likely.		
		Operation			
		Abstraction & Return			
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	Access & Egress	Potential exposure to hazard but activity not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations. Significant effects not likely.		
		Operation			
		Abstraction & Return			

Geochemical Surveying

EU Code	Habitat	Geochemical Sampling (Shallow Soils)	Damage and/or Disturbance of Habitats	Noise and Visual Disturbance	Areas of influence and items to note
6510	Lowland hay meadows (<i>Alopecurus pratensis</i> , <i>Sanguisorba officinalis</i>)	Access & Egress	Potential exposure to hazard but activity not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations. Significant effects not likely.		
		Operation			
		Abstraction & Return			
HEATH					
4010	Northern Atlantic wet heaths with <i>Erica tetralix</i>	Access & Egress	Potential exposure to hazard but activity not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations. Significant effects not likely.		Proposer of activity may be required to provide further information on standard operating procedures to be implemented to avoid and/or minimise disturbance and damage of this habitat-type to satisfy no LSE.
		Operation			
		Abstraction & Return			
4030	European dry heaths	Access & Egress	Potential exposure to hazard but activity not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations. Significant effects not likely.		
		Operation			
		Abstraction & Return			
4060	Alpine and Boreal heaths	Access & Egress	Potential exposure to hazard but activity not significantly intrusive to change the structure and composition or extent of		

Geochemical Surveying

EU Code	Habitat	Geochemical Sampling (Shallow Soils)	Damage and/or Disturbance of Habitats	Noise and Visual Disturbance	Areas of influence and items to note
		Operation	any associated vegetation community over normal natural variations. Significant effects not likely.		
		Abstraction & Return			
PEATLANDS					
7110	Active raised bogs	Access & Egress			
		Operation			
		Abstraction & Return			
7120	Degraded raised bogs still capable of natural regeneration	Access & Egress			
		Operation			
		Abstraction & Return			
7130	Blanket bogs	Access & Egress			
		Operation			

Geochemical Surveying

EU Code	Habitat	Geochemical Sampling (Shallow Soils)	Damage and/or Disturbance of Habitats	Noise and Visual Disturbance	Areas of influence and items to note
		Abstraction & Return			
7140	Transition mires and quaking bogs	Access & Egress			
		Operation			
		Abstraction & Return			
7150	Depressions on peat substrates of the <i>Rhynchosporion</i>	Access & Egress			
		Operation			
		Abstraction & Return			
7210	Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i>	Access & Egress	Potential exposure to hazard but activity not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations. Significant effects not likely.		
		Operation			
		Abstraction & Return			

Geochemical Surveying

EU Code	Habitat	Geochemical Sampling (Shallow Soils)	Damage and/or Disturbance of Habitats	Noise and Visual Disturbance	Areas of influence and items to note
7220	Petrifying springs with tufa formation (<i>Cratoneurion</i>)	Access & Egress	Activity with potential to be intrusive on a habitat highly sensitive to disturbance and which may be susceptible to footfall. Habitat likely to recover relatively quickly providing other physical attributes not altered through the proposed activities. Significant effects uncertain.		Proposer of activity should provide further information on standard operating procedures to be implemented to avoid and/or minimise disturbance and damage of this habitat-type in order for EMD to be satisfied of no LSE. These habitats typically cover small areas where it should be possible to avoid these point or linear formations.
		Operation			
		Abstraction & Return			
7230	Alkaline fens	Access & Egress	Potential exposure to hazard but activity not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations. Significant effects not likely.		
		Operation			
		Abstraction & Return			
WOODLAND AND SCRUB					
91A0	Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles	Access & Egress	Potential exposure to hazard but activity not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations. Significant effects not likely.		
		Operation			
		Abstraction & Return			
91E0	Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>)	Access & Egress	Potential exposure to hazard but activity not significantly intrusive to change the structure and composition or extent of		

Geochemical Surveying

EU Code	Habitat	Geochemical Sampling (Shallow Soils)	Damage and/or Disturbance of Habitats	Noise and Visual Disturbance	Areas of influence and items to note
		Operation	any associated vegetation community over normal natural variations. Significant effects not likely.		
		Abstraction & Return			
91D0	Bog woodland	Access & Egress	Potential exposure to hazard but activity not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations. Significant effects not likely.		
		Operation			
		Abstraction & Return			
91J0	<i>Taxus baccata</i> woods of the British Isles	Access & Egress	Potential exposure to hazard but activity not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations. Significant effects not likely.		
		Operation			
		Abstraction & Return			
5130	<i>Juniperus communis</i> formations on heaths or calcareous grasslands	Access & Egress	Potential exposure to hazard but activity not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations. Significant effects not likely.		
		Operation			

Geochemical Surveying

EU Code	Habitat	Geochemical Sampling (Shallow Soils)	Damage and/or Disturbance of Habitats	Noise and Visual Disturbance	Areas of influence and items to note
		Abstraction & Return			
EXPOSED ROCK/DISTURBED GROUND					
8110	Siliceous scree of the montane to snow levels (<i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladani</i>)	Access & Egress			
		Operation			
		Abstraction & Return			
8120	Calcareous and calcshist screes of the montane to alpine levels (<i>Thlaspietea rotundifolii</i>)	Access & Egress			
		Operation			
		Abstraction & Return			
8210	Calcareous rocky slopes with chasmophytic vegetation	Access & Egress			
		Operation			
		Abstraction & Return			

Geochemical Surveying

EU Code	Habitat	Geochemical Sampling (Shallow Soils)	Damage and/or Disturbance of Habitats	Noise and Visual Disturbance	Areas of influence and items to note
8220	Siliceous rocky slopes with chasmophytic vegetation	Access & Egress			
		Operation			
		Abstraction & Return			
8240	Limestone pavements	Access & Egress			
		Operation			
		Abstraction & Return			
8310	Caves not open to the public	Access & Egress	Potential exposure to hazard and which may susceptible to disturbance especially where sensitive species of moss or algae may be present on the rock / cave soils. Habitat likely to recover relatively quickly providing other physical attributes not altered through the proposed activities. Significant effects uncertain.		Proposer of activity should provide further information on standard operating procedures to be implemented to avoid and/or minimise disturbance and damage of this habitat-type in order for EMD to be satisfied of no LSE.
		Operation			
		Abstraction & Return			It should be possible to avoid, as far as practically possible, areas where mosses and algal carpets are present.
MARINE, COASTAL AND HALOPHYTIC HABITATS					
1110	Sandbanks which are slightly covered by sea water all the time	Access & Egress			

Geochemical Surveying

EU Code	Habitat	Geochemical Sampling (Shallow Soils)	Damage and/or Disturbance of Habitats	Noise and Visual Disturbance	Areas of influence and items to note
		Operation			
		Abstraction & Return			
1130	Estuaries	Access & Egress			
		Operation			
		Abstraction & Return			
1140	Mudflats and sandflats not covered by seawater at low tide	Access & Egress			
		Operation			
		Abstraction & Return			
1150	Coastal lagoons	Access & Egress			
		Operation			

Geochemical Surveying

EU Code	Habitat	Geochemical Sampling (Shallow Soils)	Damage and/or Disturbance of Habitats	Noise and Visual Disturbance	Areas of influence and items to note
		Abstraction & Return			
1160	Large shallow inlets and bays	Access & Egress			
		Operation			
		Abstraction & Return			
1170	Reefs	Access & Egress			
		Operation			
		Abstraction & Return			
1210	Annual vegetation of drift lines	Access & Egress			
		Operation			
		Abstraction & Return			

Geochemical Surveying

EU Code	Habitat	Geochemical Sampling (Shallow Soils)	Damage and/or Disturbance of Habitats	Noise and Visual Disturbance	Areas of influence and items to note
1220	Perennial vegetation of stony banks	Access & Egress			
		Operation			
		Abstraction & Return			
1230	Vegetated sea cliffs of the Atlantic and Baltic coasts	Access & Egress	Potential exposure to hazard but activity not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations. Significant effects not likely.		
		Operation			
		Abstraction & Return			
1310	<i>Salicornia</i> and other annuals colonising mud and sand	Access & Egress			
		Operation			
		Abstraction & Return			
1320	<i>Spartina</i> swards (<i>Spartinion maritimae</i>)	Access & Egress			

Geochemical Surveying

EU Code	Habitat	Geochemical Sampling (Shallow Soils)	Damage and/or Disturbance of Habitats	Noise and Visual Disturbance	Areas of influence and items to note
		Operation			
		Abstraction & Return			
1330	Atlantic salt meadows (<i>Glaucopuccinellietalia maritimae</i>)	Access & Egress			
		Operation			
		Abstraction & Return			
1410	Mediterranean salt meadows (<i>Juncetalia maritimi</i>)	Access & Egress			
		Operation			
		Abstraction & Return			
1420	Mediterranean and thermo-Atlantic halophilous scrubs (<i>Sarcocornetea fruticosi</i>)	Access & Egress	Potential exposure to hazard but activity not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations. Significant effects not likely.		
		Operation			

Geochemical Surveying

EU Code	Habitat	Geochemical Sampling (Shallow Soils)	Damage and/or Disturbance of Habitats	Noise and Visual Disturbance	Areas of influence and items to note
		Abstraction & Return			
8330	Submerged or partially submerged sea caves	Access & Egress			
		Operation			
		Abstraction & Return			
COASTAL SAND DUNES					
2110	Embryonic shifting dunes	Access & Egress	Potential exposure to hazard but activity not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations. Significant effects not likely.		
		Operation			
		Abstraction & Return			
2120	Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ("white dunes")	Access & Egress	Potential exposure to hazard but activity not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations. Significant effects not likely.		
		Operation			
		Abstraction & Return			

Geochemical Surveying

EU Code	Habitat	Geochemical Sampling (Shallow Soils)	Damage and/or Disturbance of Habitats	Noise and Visual Disturbance	Areas of influence and items to note
2130	Fixed dunes with herbaceous vegetation ("grey dunes")	Access & Egress	Potential exposure to hazard but activity not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations. Significant effects not likely.		
		Operation			
		Abstraction & Return			
2140	Decalcified fixed dunes with <i>Empetrum nigrum</i>	Access & Egress	Potential exposure to hazard but activity not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations. Significant effects not likely.		
		Operation			
		Abstraction & Return			
2150	Atlantic decalcified fixed dunes (<i>Calluno-Ulicetea</i>)	Access & Egress	Potential exposure to hazard but activity not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations. Significant effects not likely.		
		Operation			
		Abstraction & Return			
2160	Dunes with <i>Hippophae rhamnoides</i>	Access & Egress	Potential exposure to hazard but activity not significantly intrusive to change the structure and composition or extent of		

Geochemical Surveying

EU Code	Habitat	Geochemical Sampling (Shallow Soils)	Damage and/or Disturbance of Habitats	Noise and Visual Disturbance	Areas of influence and items to note
		Operation	any associated vegetation community over normal natural variations. Significant effects not likely.		
		Abstraction & Return			
2170	Dunes with <i>Salix repens</i> ssp. <i>argentea</i> (<i>Salicion arenariae</i>)	Access & Egress	Potential exposure to hazard but activity not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations. Significant effects not likely.		
		Operation			
		Abstraction & Return			
2190	Humid dune slacks	Access & Egress	Potential exposure to hazard but activity not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations. Significant effects not likely.		
		Operation			
		Abstraction & Return			
21A0	Machairs	Access & Egress	Potential exposure to hazard but activity not significantly intrusive to change the structure and composition or extent of any associated vegetation community over normal natural variations. Significant effects not likely.		
		Operation			

Geochemical Surveying

EU Code	Habitat	Geochemical Sampling (Shallow Soils)	Damage and/or Disturbance of Habitats	Noise and Visual Disturbance	Areas of influence and items to note
		Abstraction & Return			