2022

Valentia Island Energy Ltd

VI Energy

OTHER MARINE USERS REPORT

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1. INTRODUCTION

1.1. RATIONALE

Aqualicense has been commissioned by Valentia Island Energy Ltd ("the Applicant") to prepare this Report in support of a Foreshore Licence Application to the Marine Planning and Foreshore Section of the Department of Housing, Local Government and Heritage. This licence, if granted, will allow the Valentia Island Energy Ltd to carry out necessary site investigation surveys which will enable the project to confirm the most suitable site and design for offshore wind energy production off the coast of Valentia Island in county Kerry. In advance of these surveys, Valentia Island Energy Ltd has identified indicative potential development areas which are visualised in *Figure 1* and are further described in *Section 3 (Foreshore Licence Area).* These potential development areas are subject to change based on survey results, stakeholder engagement, technology design and other reporting. This document should be read in conjunction with the Schedule of Works and Programme and Methods of Works documents, the Appropriate Assessment Reports (NIS/SISAA/Article 12) and Foreshore Investigatory Licence Application Form.

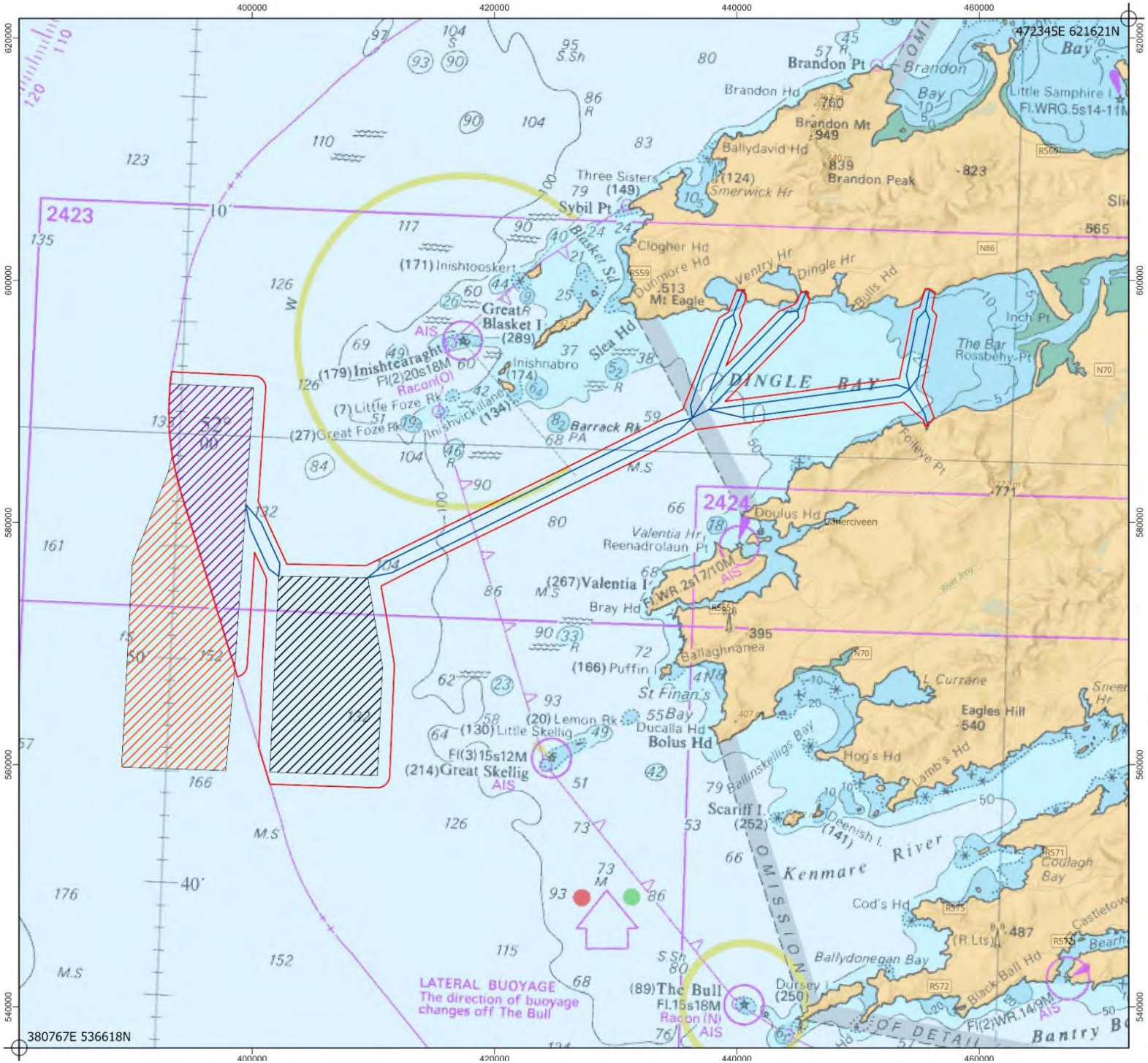
This report presents information that is additional to specific information provided in the Foreshore Licence Application Form and the environmental and other relevant information contained in the Appropriate Assessment Reports. The supplementary information presented herein provides details on the locations and activities of the following marine activities and infrastructure:

- Fisheries
- Aquaculture Sites
- Marine Traffic
- Shipwrecks
- Relevant Marine Infrastructure

1.2. VALENTIA ISLAND ENERGY OFFSHORE ARRAY

The overall project is for an offshore windfarm project off the southwest coast of Ireland, more specifically Valentia Island in county Kerry. This offshore renewable energy site will take a phased approach to development (see section 2) which uses floating turbine technology, with the possibility of incorporating hydrogen production at the array sites. The overall project will consist of c. 154 turbines, with c. 92 of these located within the 12 nm boundary. The remaining c. 62 turbines will be located outside this 12 nm limit, and subject to a separate licence application. The combined total output for the complete project is predicted to be c. 1.5GW. The nearshore arrays occupy an area of c. 234 km ^{2} or 23,447 ha. A visualisation of the overall project is provided below in *Figure 1.*

This project is currently in the planning stages and is, therefore, subject to change. The application for a Foreshore Investigatory Licence is not an application for development. If granted, this licence will allow the project team to further refine the site choice and to carry out surveys considered necessary to accurately assess the viability of the project across a spectrum of technical, environmental, social and economic factors.



Project:

Valentia Island Energy

Title:

Overall Project

Legend

- Foreshore Licence Area
- Nearshore Array A
- Nearshore Array B
- Offshore Array
- Cable Routes

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Figure 1: Overall Project

2. THE PROJECT

The project will take a phased approach to development, consisting of two (2) phases, within the 12 nm limit and beyond the 12 nm limit, subject to the granting of this licence and future relevant permissions.

Phase 1 – This phase consists of two (2) separate arrays occupying an area of c. 96 km² (Array A) and 138 km² (Array B) respectively. The sites will hold c. 92 turbines, with c. 56 located in Array A, and the remaining c. 36 in Array B. Both arrays will utilise floating turbine technology and are estimated to generate c. 920 MW.

Phase 2 – This phase of the project is located outside the 12 nm limit in an area occupying c. 161 km². This site will also use floating turbine technology with c. 62 turbines estimated to generate c. 620 MW.

3. FORESHORE LICENCE AREA

The Foreshore Licence Area, outlined in Red, reflects the area being applied for under the Foreshore Licence Application. The area measures c. 474 km², or 47,407.80 ha, and is the area within which all surveys will be conducted, *Figure 2.* The coordinates of the boundaries of the Foreshore Licence Area are provide in *Table 5* of Section 7. This area, described as the Foreshore Licence Area, is the area within which the Applicant seeks to conduct investigations appropriate to developing a wind farm project. The Foreshore Licence Area is larger than the proposed development area as it incorporates both potential development sites as well as potential cable route options. It must be understood that no structural development of any nature will take place at this stage of the Project.

The Foreshore Licence Area was identified following a sequence of assessments and consultations that included, but are not limited to, the following:

1. the team's consultation with offshore wind energy production experts,
2. an independent assessment of a number of potential areas for ORE development off the Irish coast, and
3. constraint mapping and site selection assessment focused on the marine space proximate to the coastline.
4. Detailed consideration of survey requirements.

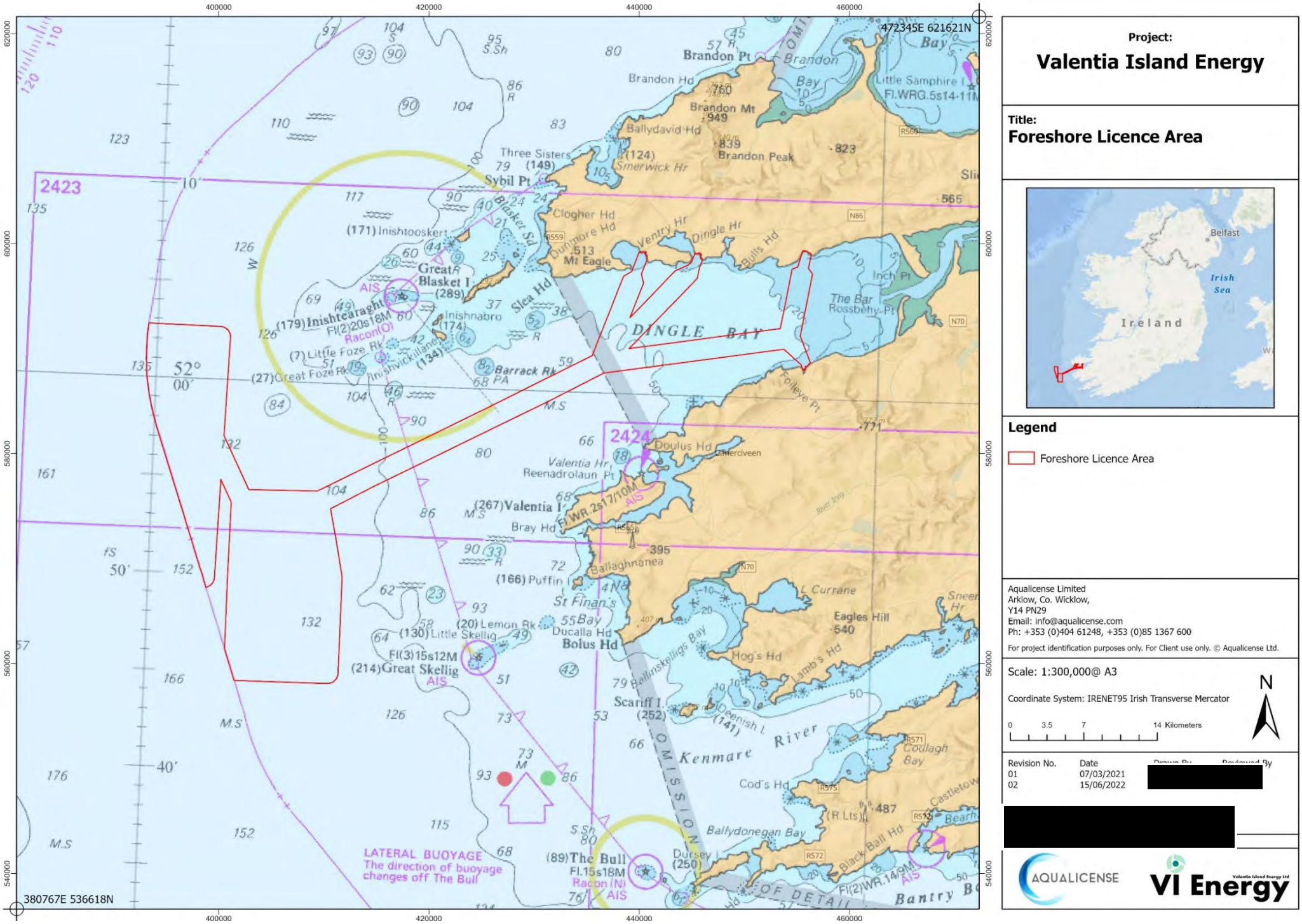


Figure 2: Foreshore Licence Area

4. Fisheries & Aquaculture

Data available from the Irish Marine Atlas (2022) indicates the fishing activity taking place within, and adjacent to, the Foreshore Licence Area. Valentia Island Energy Ltd plan to engage a Fisheries Liaison Officer (FLO) who will carry out stakeholder engagement with Fisheries operators so that any potential impacts foreseen by the operators can be mitigated.

4.1. Inshore Fisheries

Each inshore fishery activity in, and within 15 km, of the Foreshore Licence Area is presented in *Table 1* and illustrated in *Figure 3* to *Figure 5*.

Table 1: Inshore Fishing Activity

Inshore Fishery Activity within 15km of the Foreshore Licence Area		
Species Name	**Fishing Type**	**Season**
Periwinkle	Handpicked	Year-round
Cockle	Hydraulic Dredge	Year-round
Scallop	Scallop Dredge	Year-round
Pollack	Troll Lines	Year-round
Mackerel	Troll Lines	Year-round
Brown Crab	Creel Pots	July-November
Lobster	Creel Pots	Year-round
Shrimp	Shrimp Pots	August-February
Crayfish	Tangle Net	Year-round

4.2. Offshore Fisheries

Offshore fishery activity was also recorded within the Foreshore Licence Area and within a 15 km buffer from the site. This information is presented in *Table 2.*

Table 2: Offshore Fishery Activity

Offshore Fishing Activity within 15km of Foreshore Licence Area
Fishing Type
Bottom Otter Trawls
Dredging
Gill Nets
Long Lines
Pelagic Trawls
Seines
Pots

4.3. Spawning & Nursery Grounds

Spawning and nursery grounds for a variety of fish species are identified, using data reflected in the Irish Marine Atlas (2022), as being present within, or adjacent to, the Foreshore Licence Area. A list of identified species are presented below in *Table 3* and illustrated in *Figure 6* to *Figure 18*.

Table 3: Spawning and Nursery Grounds

SPAWNING AND NURSERY GROUNDS WITHIN THE FORESHORE LICENCE AREA		
Species Name	SPAWNING GROUND	NURSERY GROUND
Megrim	Yes	Yes
Mackerel	Yes	Yes
Whiting	Yes	Yes
White Belly Angler Monk	No	Yes
Black Belly Angler Monk	No	Yes
Herring	Yes	Yes
Hake	Yes	Yes
Haddock	No	Yes
Cod	No	Yes
Blue Whiting	No	Yes
Horse Mackerel	Yes	Yes

4.4. AQUACULTURE

There are eighteen (18) aquaculture sites located within the 15 km buffer of the Foreshore Licence Area. The majority of these sites focus on shellfish cultivation with some finfish and seaweed aquaculture activities also present in the area. These aquaculture sites are presented in *Table 4* below and visualised in *Figure 19*.

Table 4: Aquaculture Sites

AQUACULTURE & FISHERIES SPECIES WITHIN 15KM OF PROPOSED FORESHORE LICENCE AREA		
SITE LOCATION	SPECIES NAME	TOTAL DISTANCE FROM PROPOSED FORESHORE LICENCE AREA (KM)
Ventry Harbour	Seaweed	0.15
Ventry Harbour	Oysters	0.15
Lispole	Rainbow Trout	3.98
Rossbeigh	Oysters	9.01
Castlemaine Harbour	Clams	10.14
Castlemaine Harbour	Mussels	10.63
Brandon Bay	Oysters	12.22
Brandon Bay	Oysters	12.81
Castlemaine Harbour	Oysters	14.30
Castlemaine Harbour	Oysters	14.40
Castlemaine Harbour	Oysters	14.46
Castlemaine Harbour	Mussels	14.57
Castlemaine Harbour	Mussels	14.58
Castlemaine Harbour	Oysters	14.60
Castlemaine Harbour	Mussels	14.63
Castlemaine Harbour	Oysters	14.73
Castlemaine Harbour	Oysters	14.94
Castlemaine Harbour	Oysters	14.95

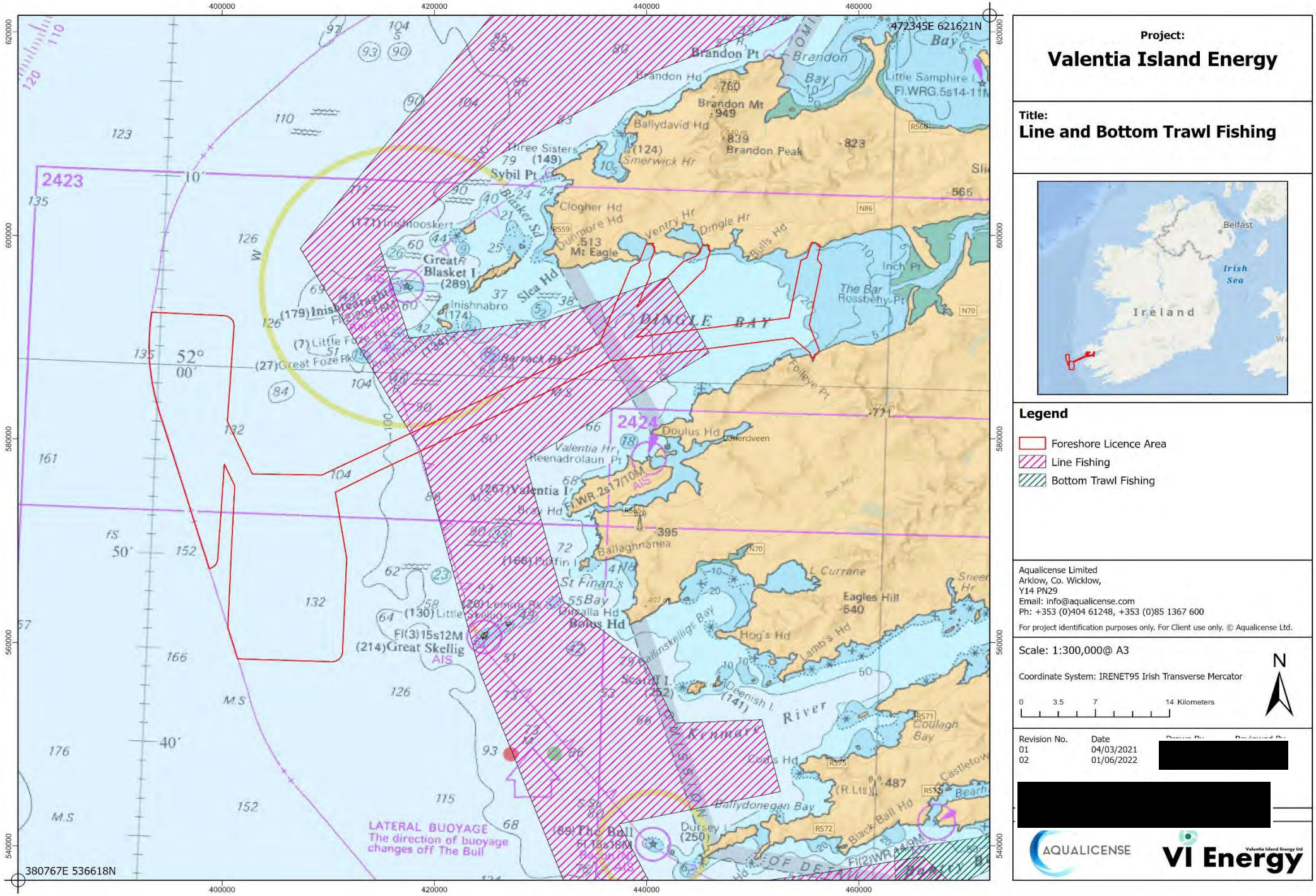


Figure 3: Line and Bottom Trawl Fishing Activity

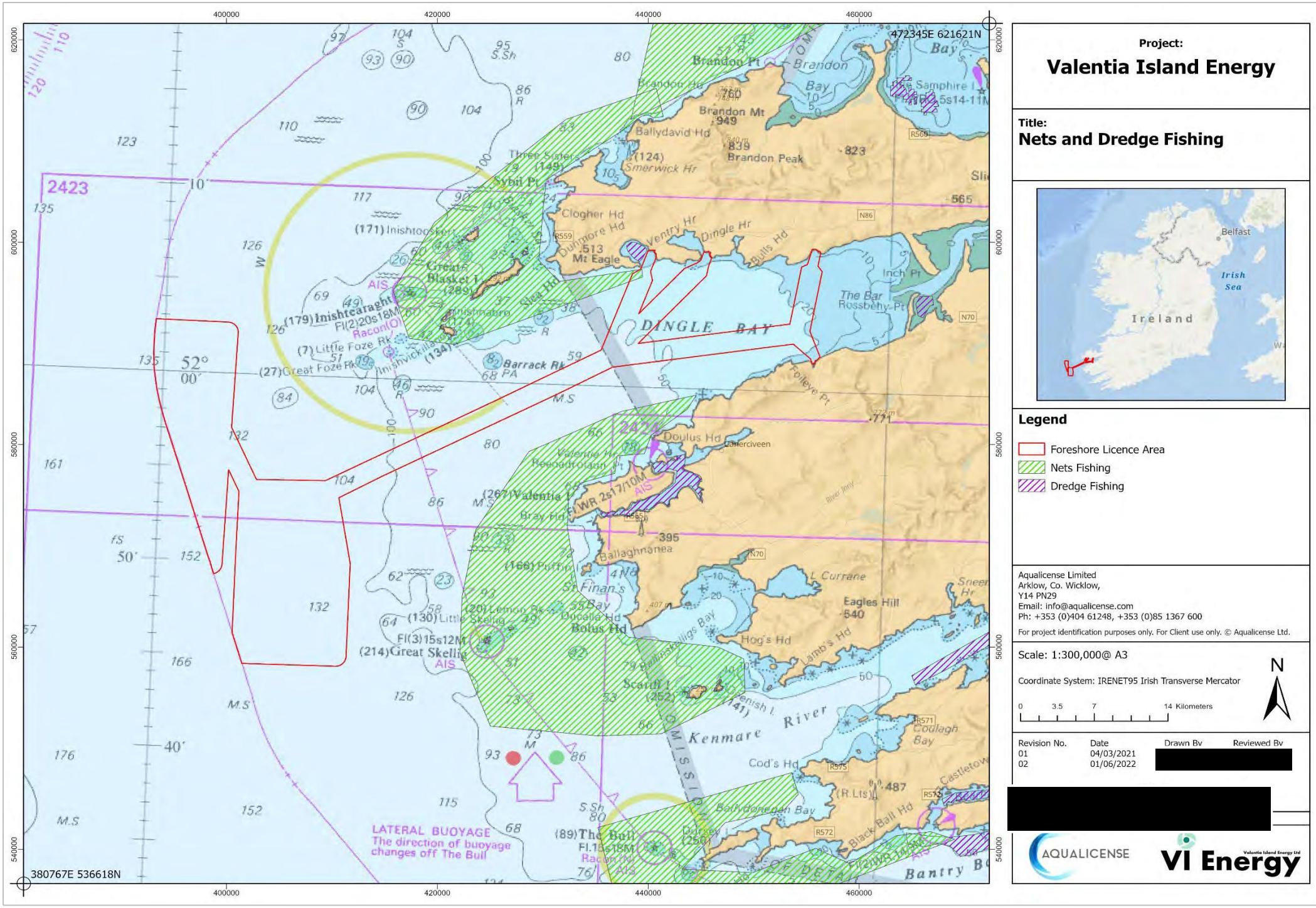


Figure 4: Net and Dredge Fishing Activity

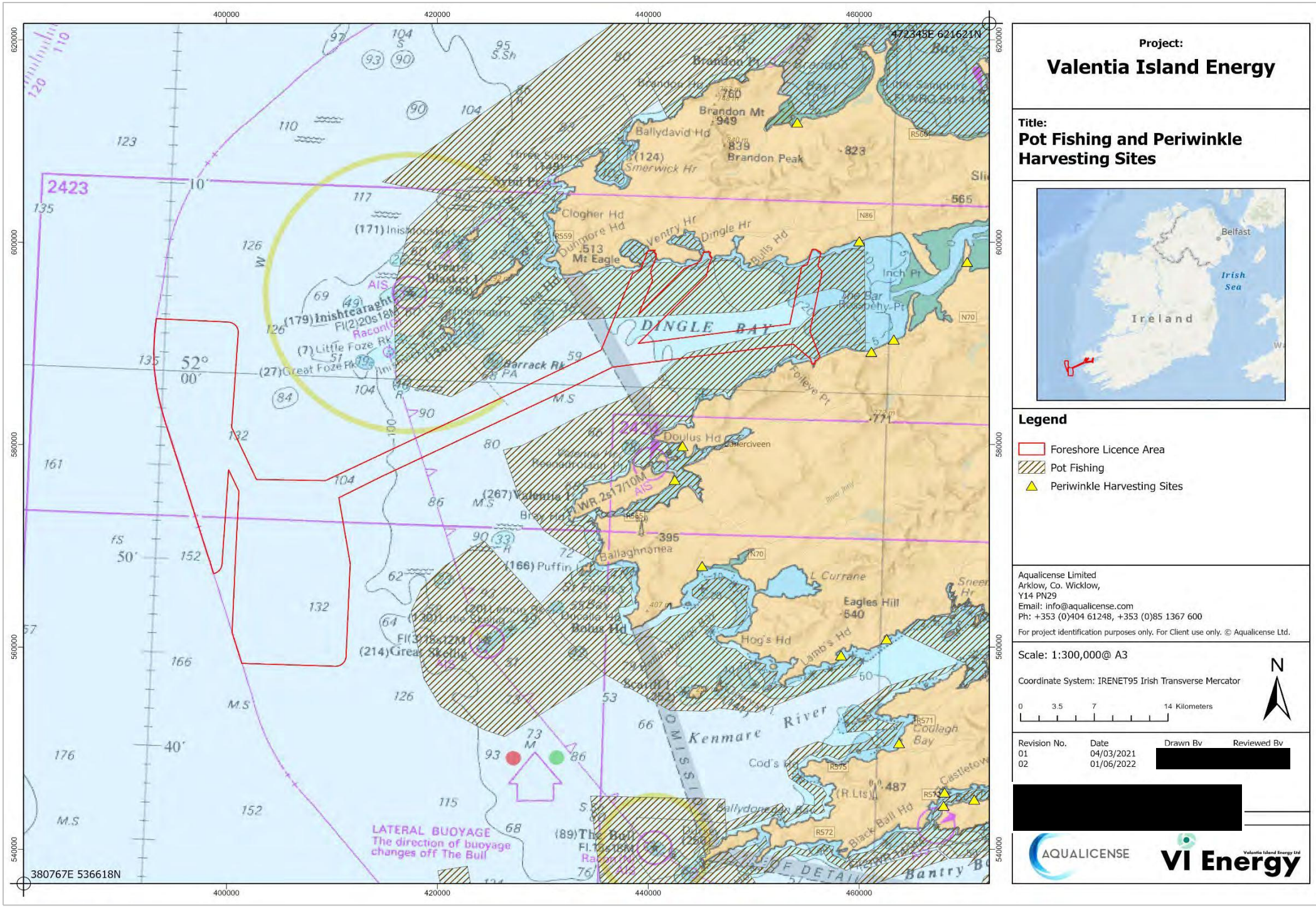


Figure 5: Pot Fishing and Periwinkle Harvesting Activity.

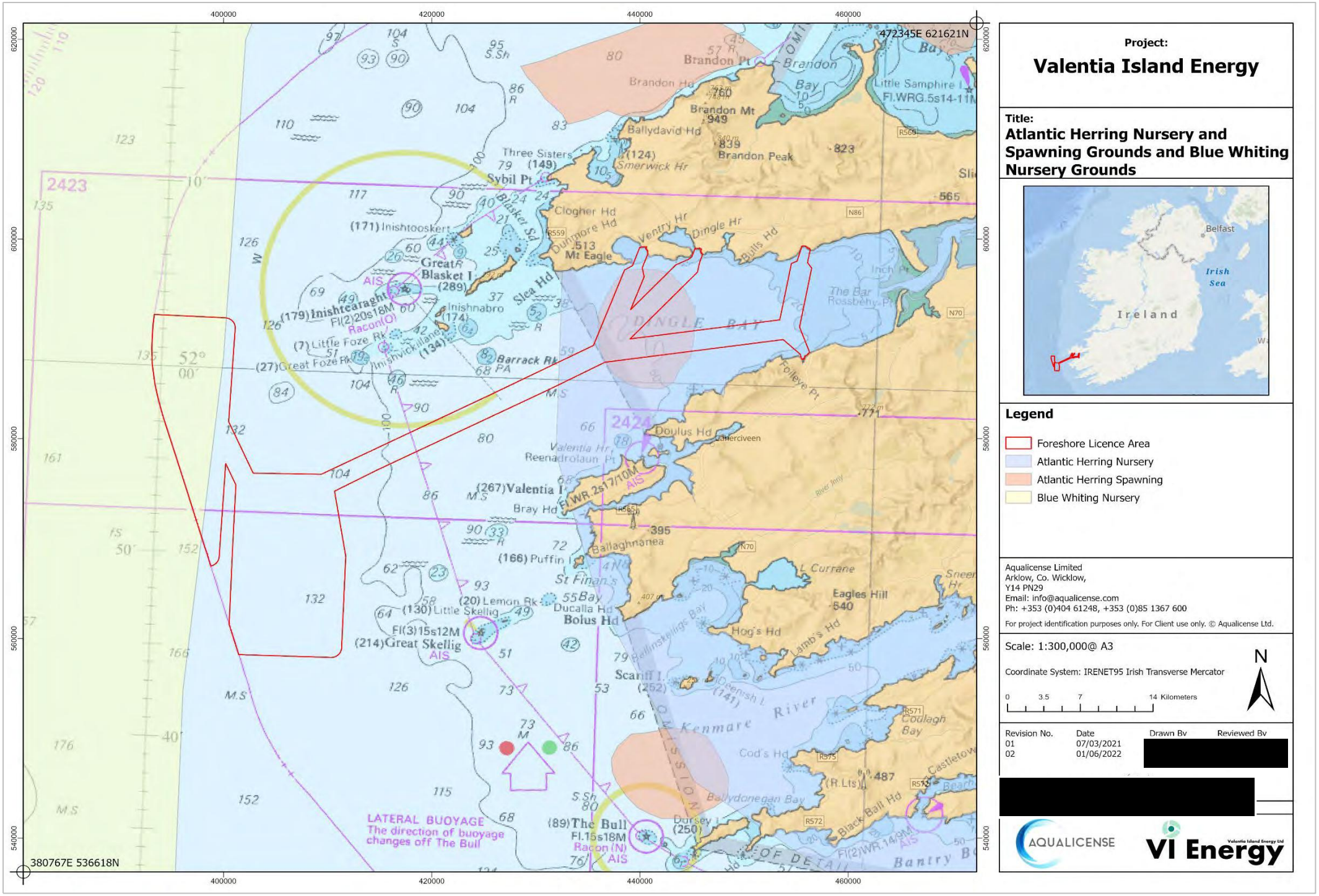


Figure 6: Atlantic Herring Nursery and Spawning Grounds and Blue Whiting Nursery Grounds.

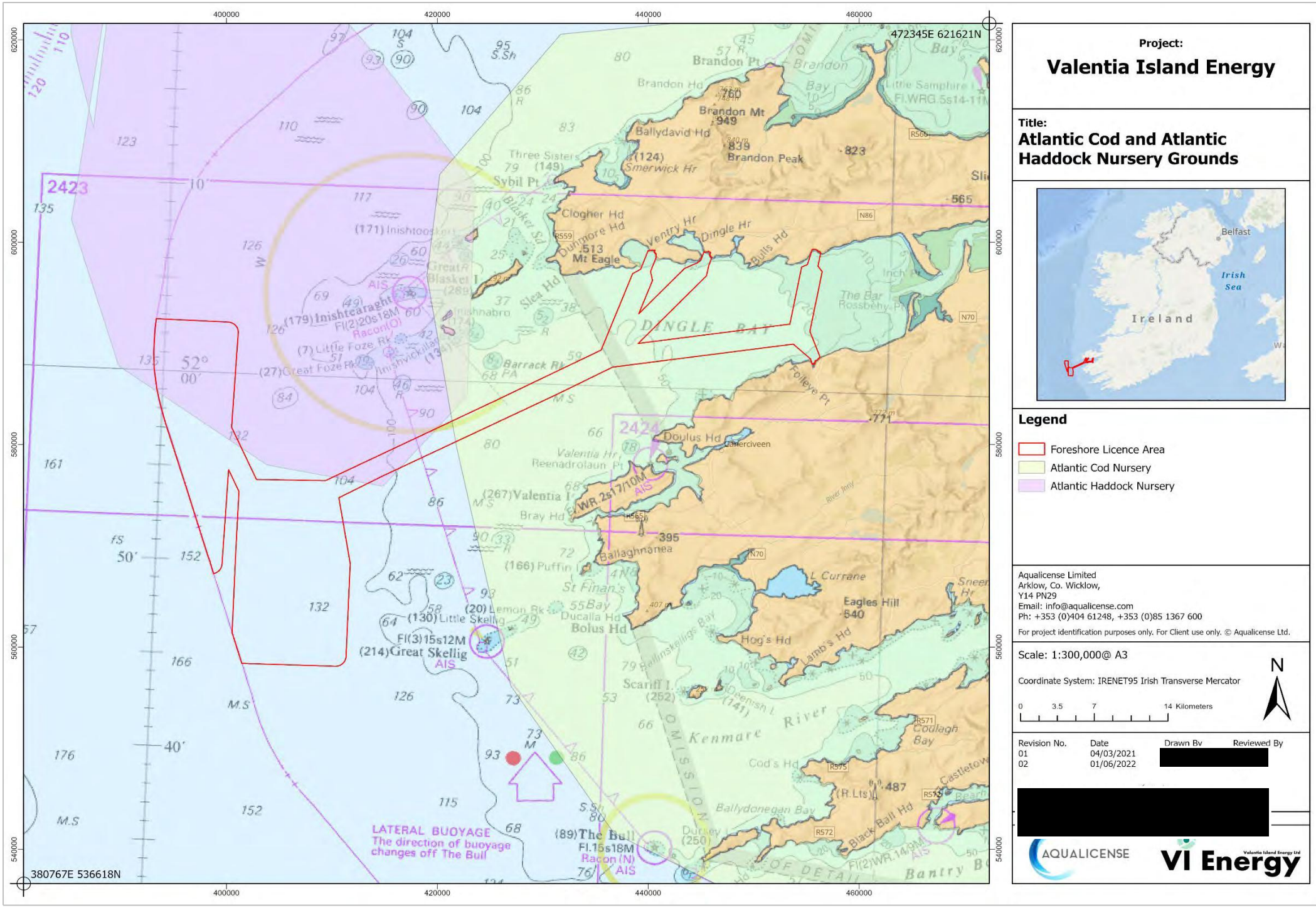
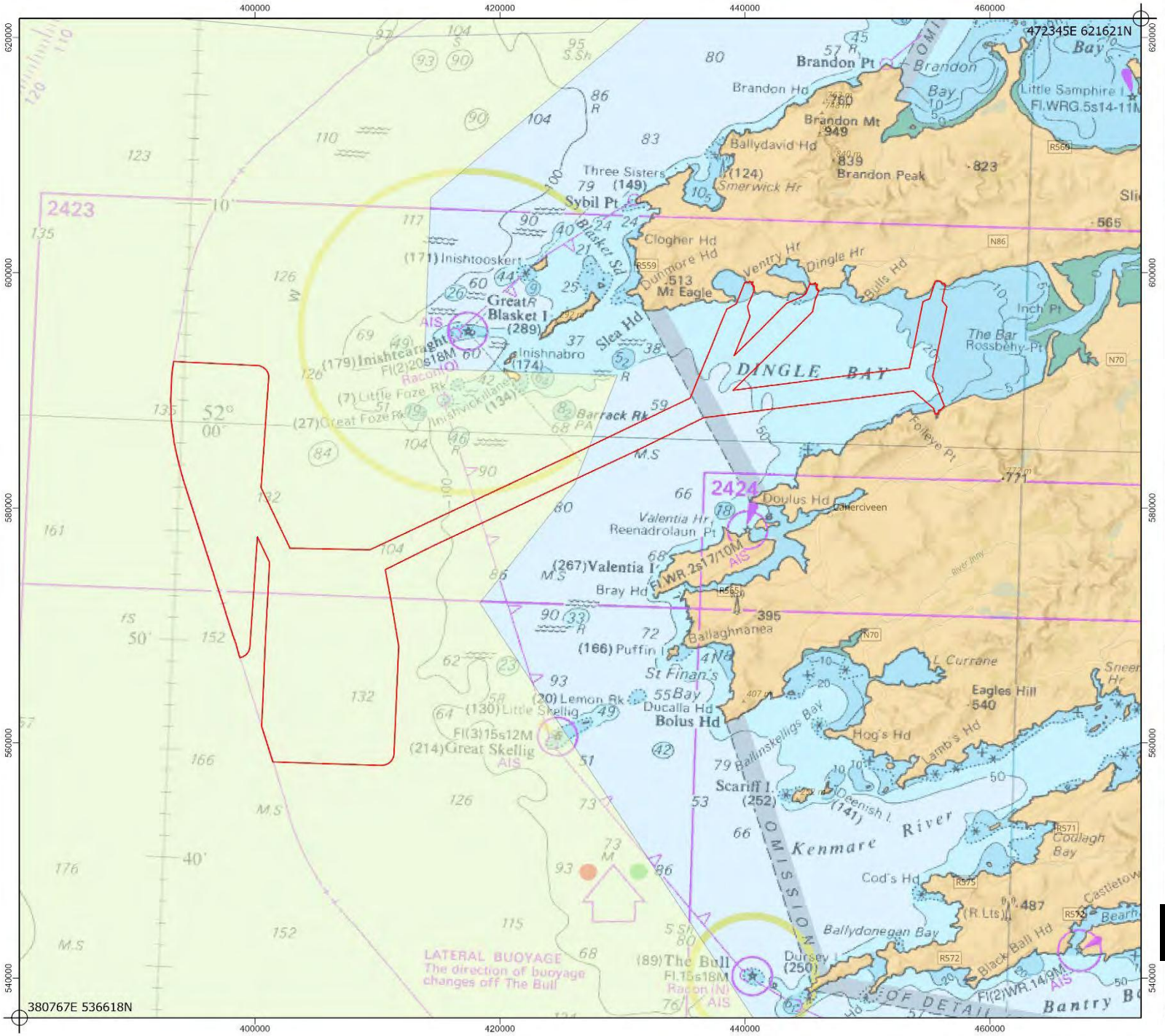


Figure 7: Atlantic Cod and Haddock Nursery Grounds



Project:

Valentia Island Energy

Title:

Atlantic Hake Nursery Grounds

Legend

- Foreshore Licence Area
- Atlantic Hake Nursery

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Figure 8: Atlantic Hake Nursery Grounds

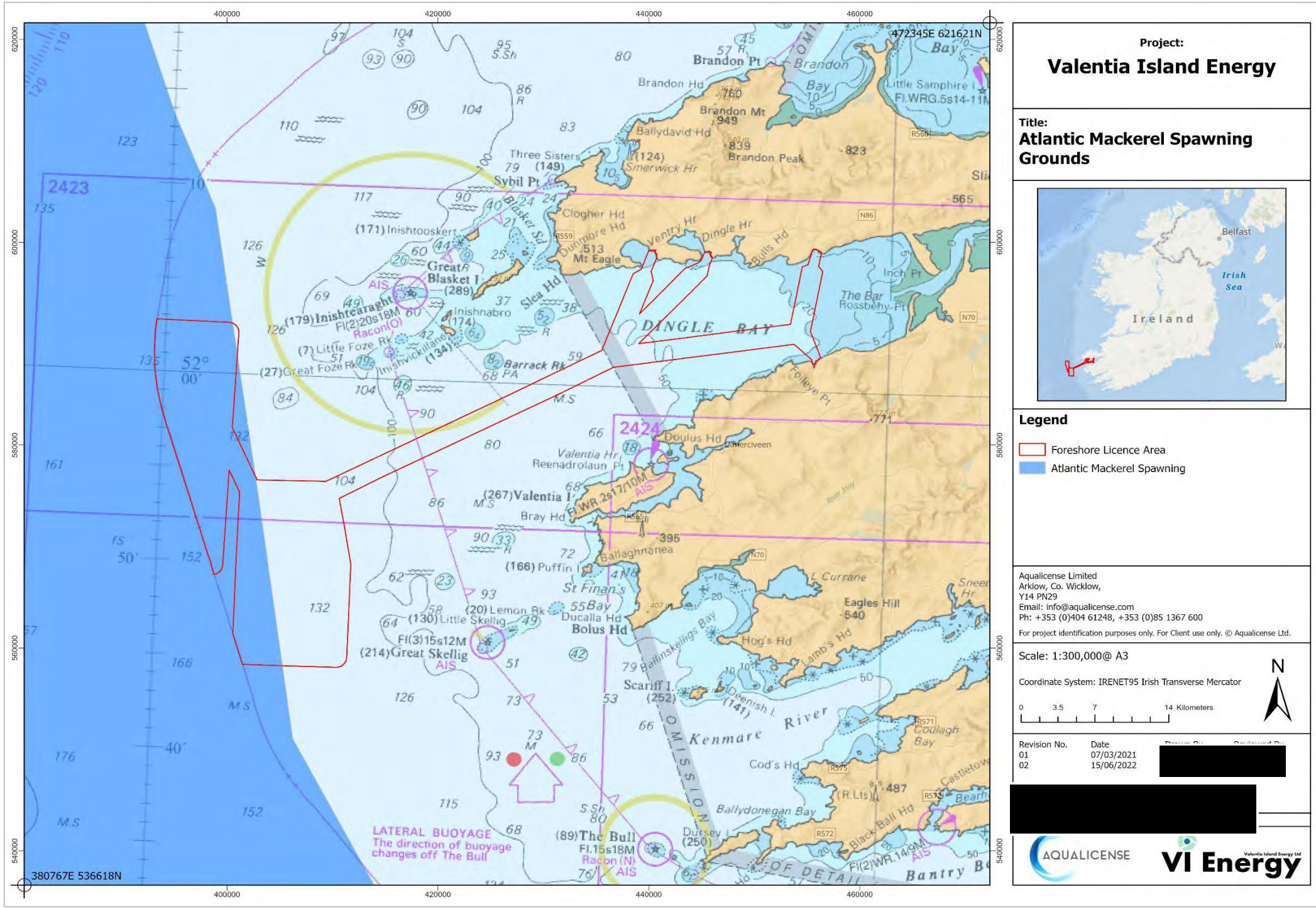


Figure 9: Atlantic Mackerel Spawning Grounds.

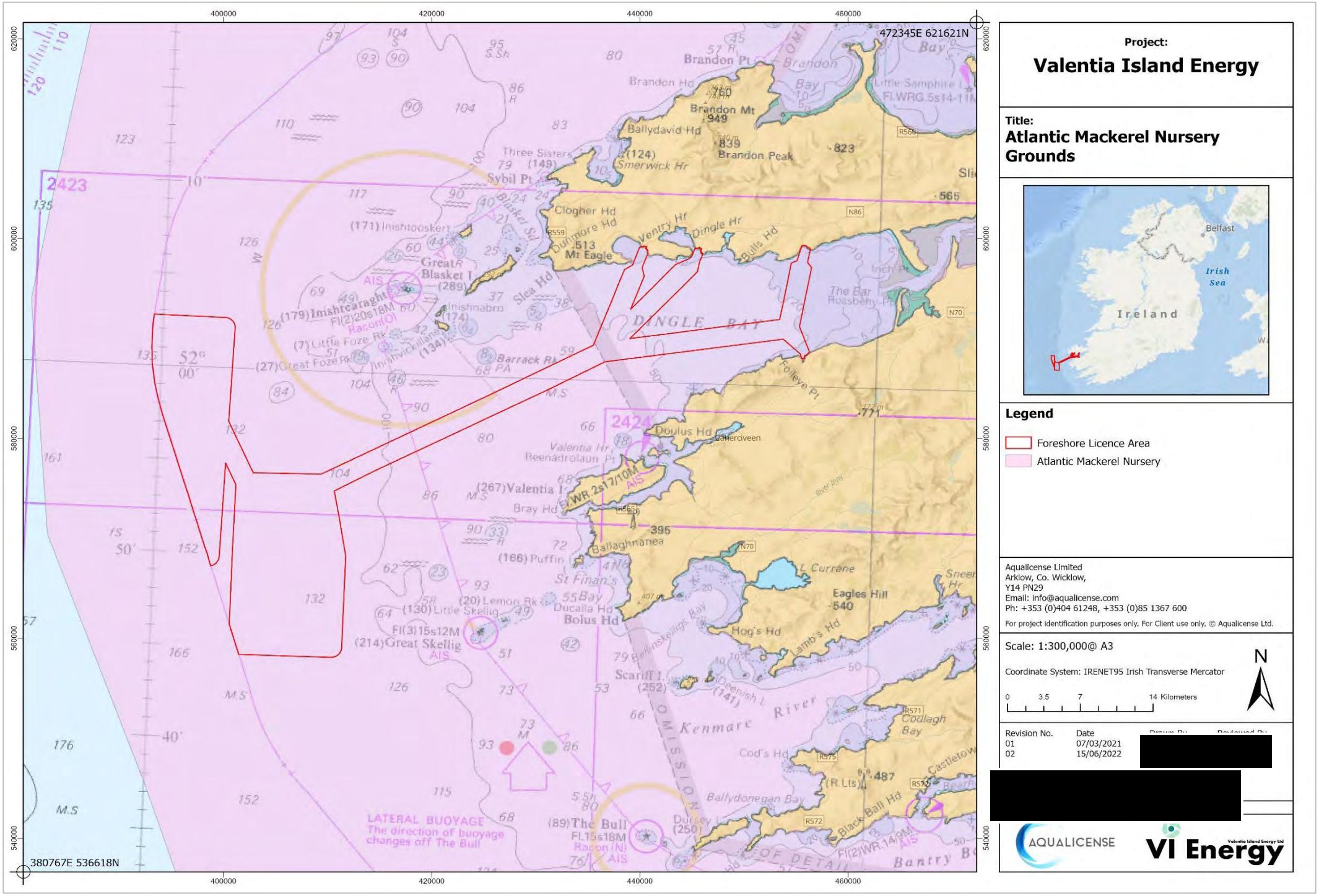


Figure 10: Atlantic Mackerel Nursey Grounds

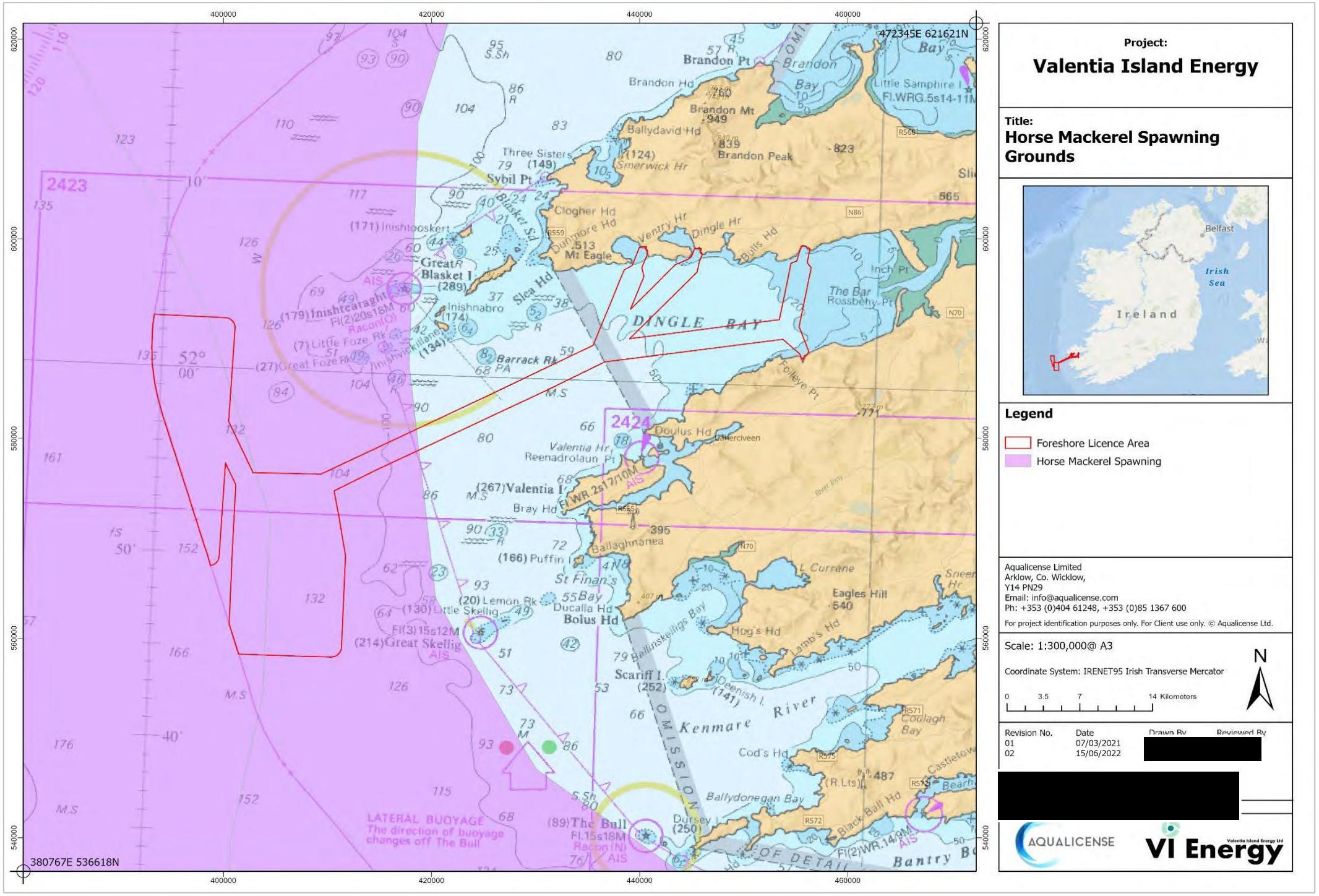


Figure 11: Horse Mackerel Spawning Grounds

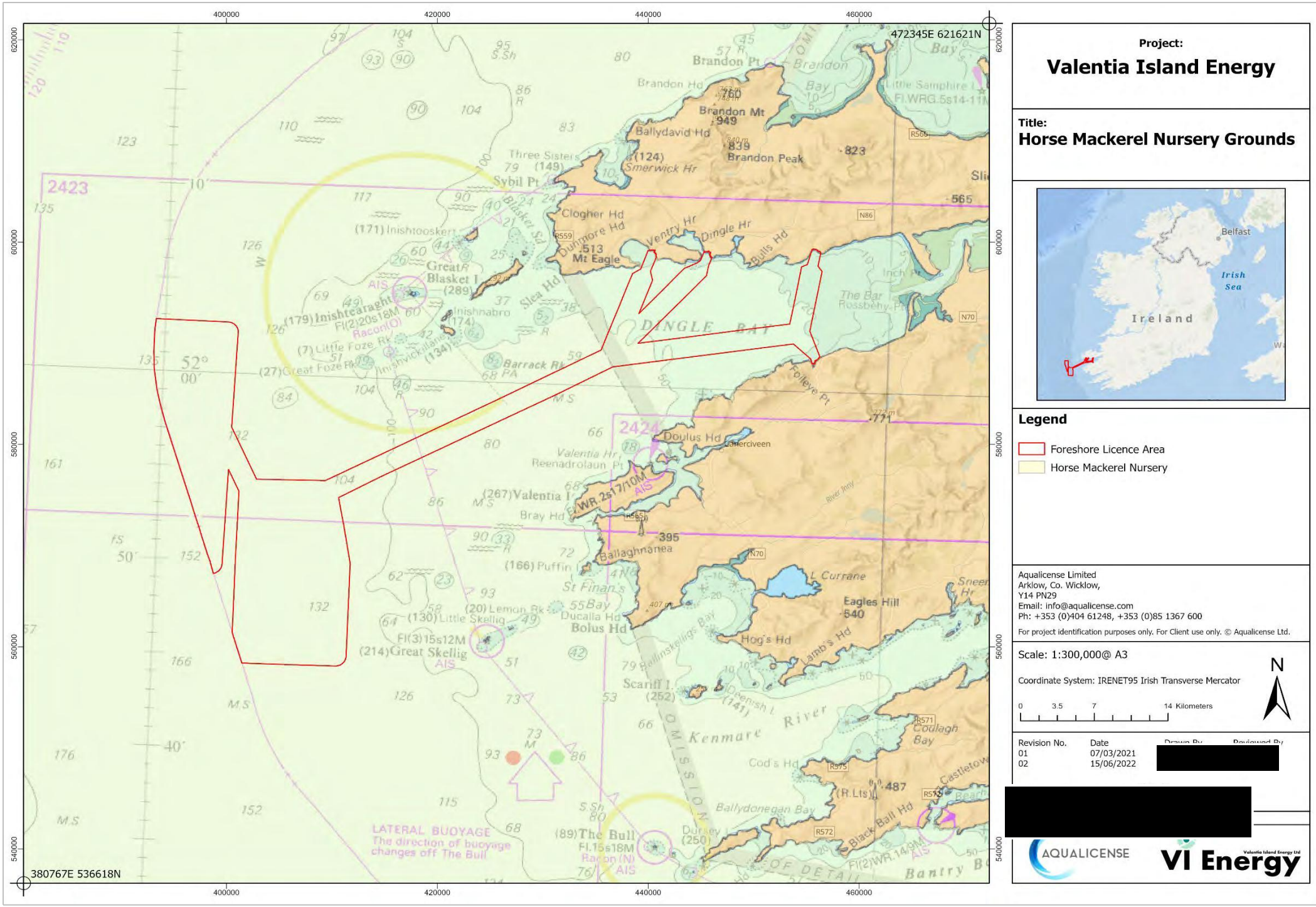


Figure 12: Horse Mackerel Nursery Grounds.

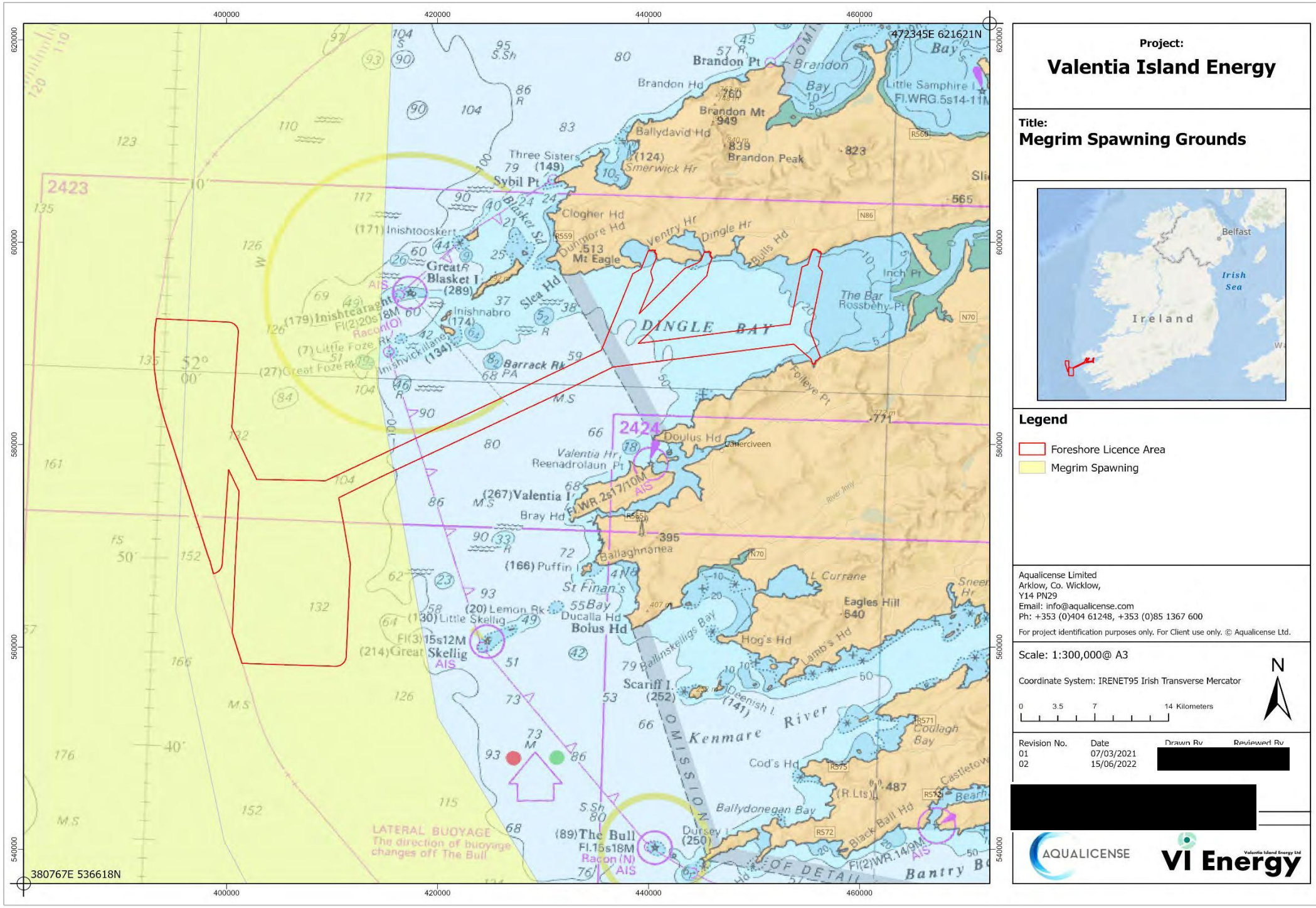


Figure 13: Megrim Spawning Grounds.

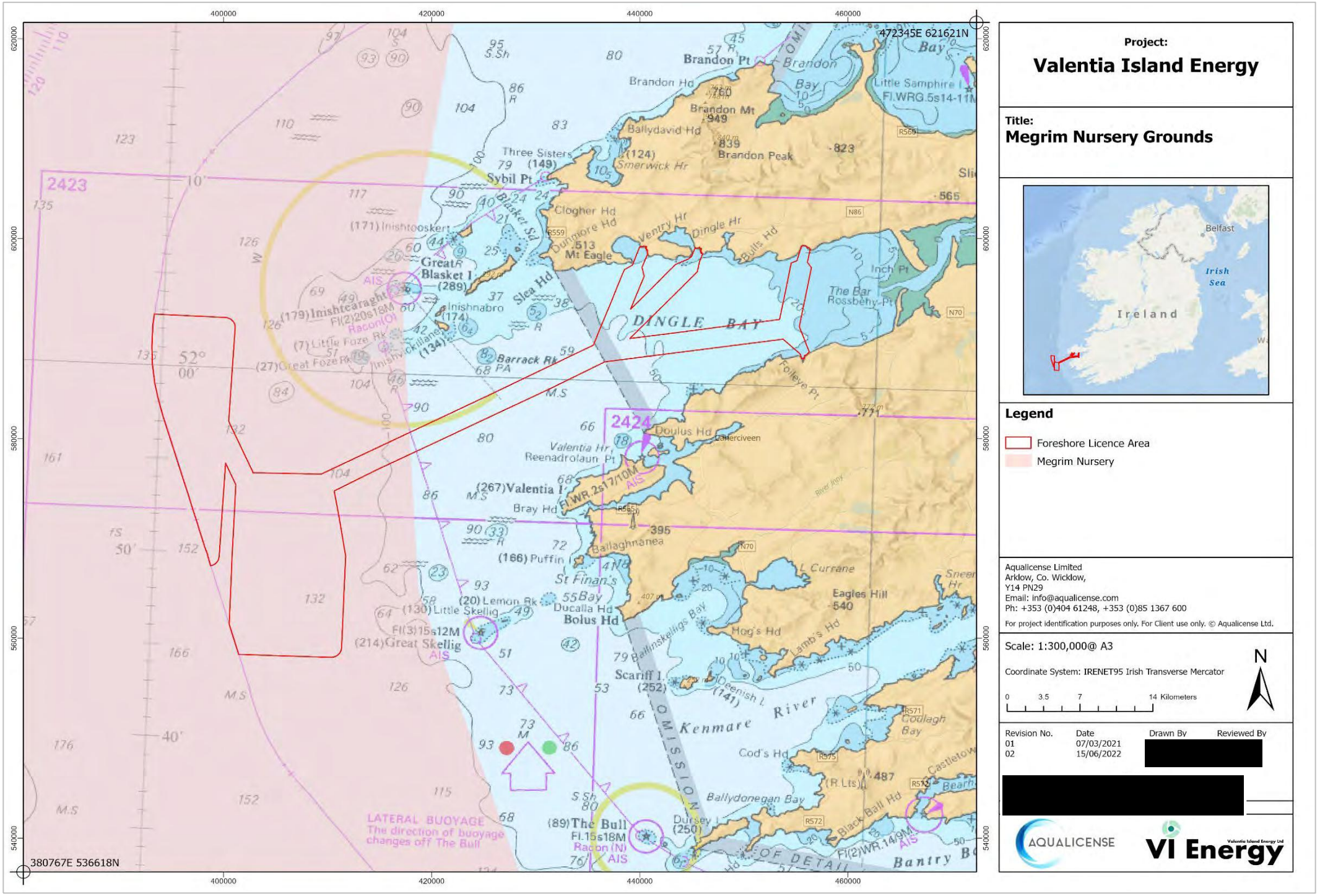


Figure 14: Megrim Nursery Grounds

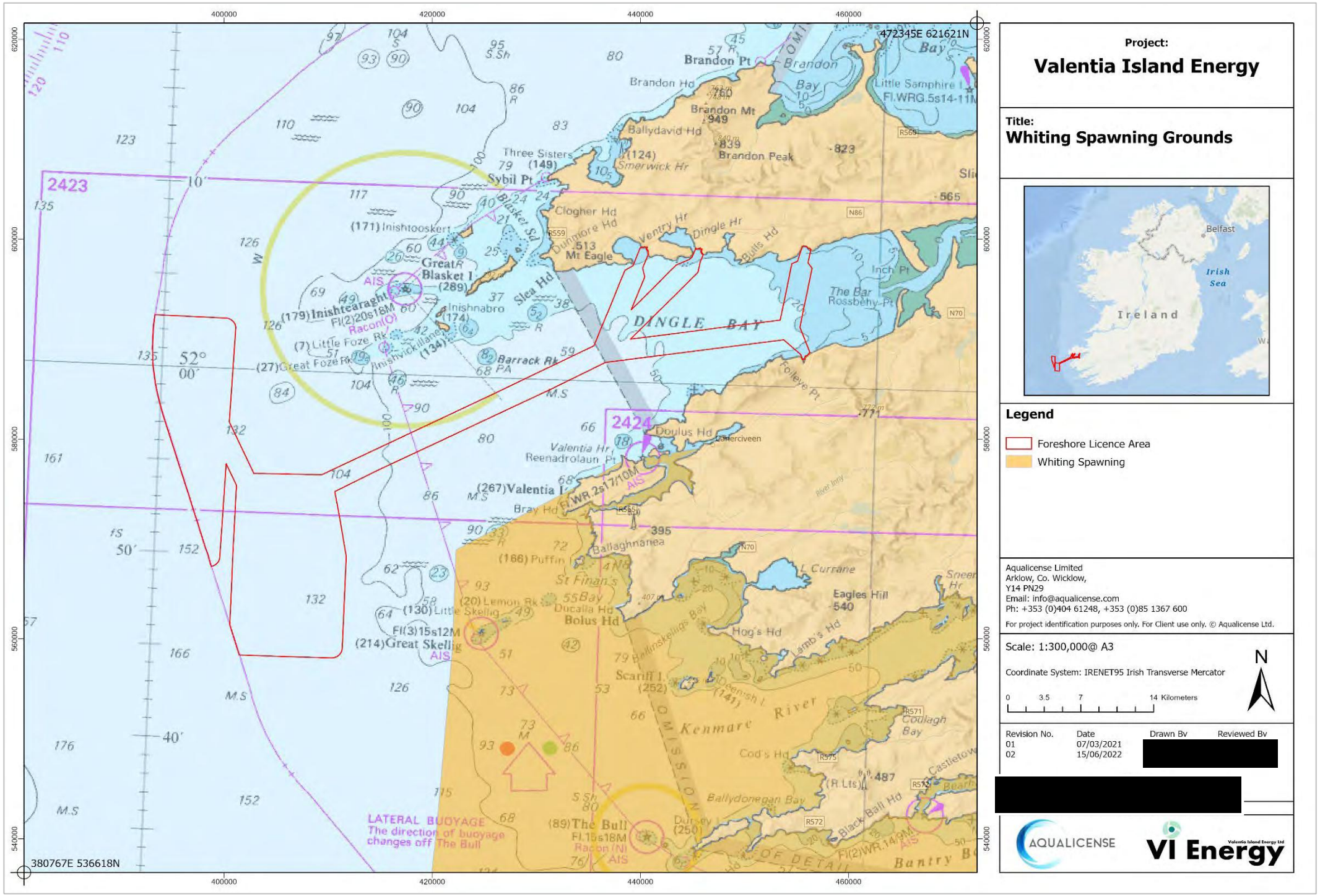


Figure 15: Whiting Spawning Grounds

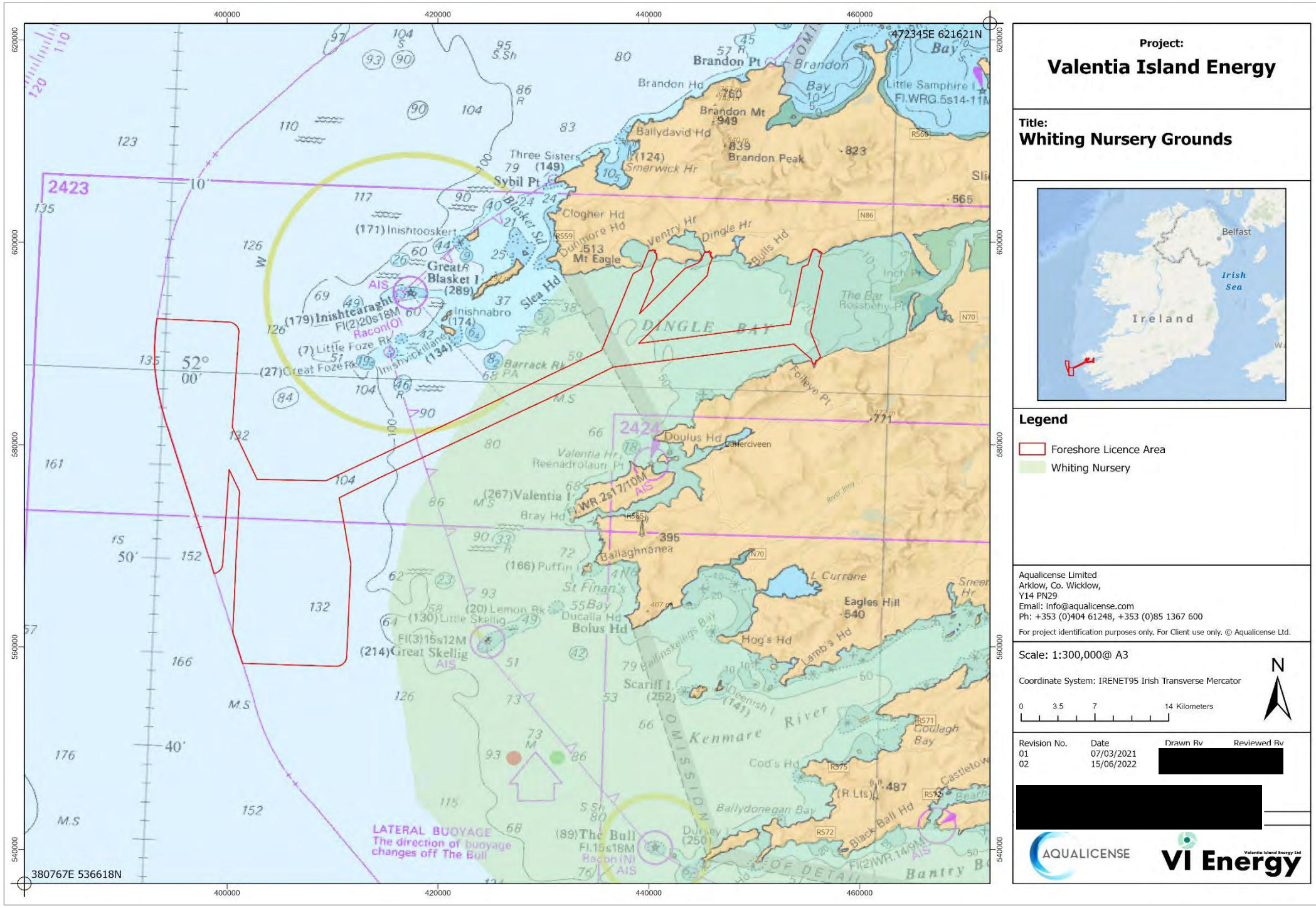


Figure 16: Whiting Nursery Grounds

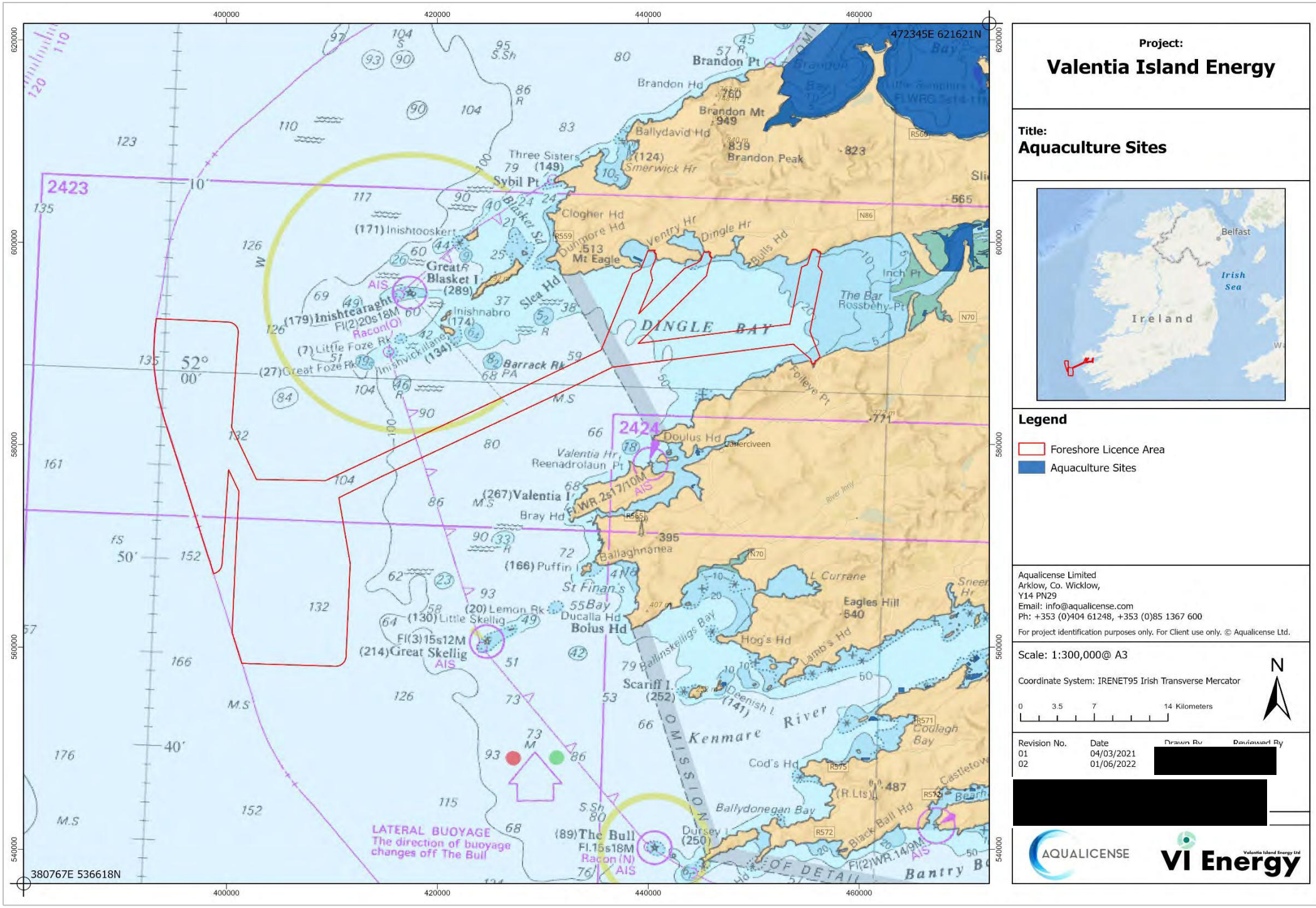


Figure 17: Aquaculture Sites

5. Bathing Locations

There is one (1) bathing location within the Foreshore Licence Area, Kells Beach. There are four (4) bathing locations in close proximity to the Foreshore Licence Area in Dingle Bay. These are Ventry Beach, White Strand, Inch Beach, and Rossbeigh Beach, which are located c. 2.09 km, c. 7.95 km, c. 8.3 km, and c. 8.73 km from the Foreshore Licence Area respectively. All survey planning and works will acknowledge these bathing areas and the users of them to safely plan the required survey routes. These bathing locations are visualized in *Figure 20*.

6. Marine Traffic

A vessel density map is a data product that shows the distribution of ships (i.e., of maritime traffic), based on the instantaneous number of vessels per unit area, such as a square kilometre, a square degree, etc. A further breakdown of the methodology utilised to derive vessel density can be found on the European Marine Observation and Data Network (EMODnet).

Data reflecting marine traffic over the Foreshore Licence Area during the full year of 2020 is visualised *Figure 21*. Low density traffic is reflected by the respective colour visualised in the legend while high density is reflected in a graduating reduction of colour to white which indicates one vessel.

The highest density of marine traffic identified is fishing vessels, *Figure 21j*. While this vessel type does pass through the Foreshore Licence Area, it is at a relatively low density, with the Fishing Pressure map showing low pressure activity in the Foreshore Licence Area (*Figure 21i*). The areas of highest pressure are located where the fishing vessels are returning to harbour at Dingle. The next highest density vessel type is pleasure craft, closely followed by passenger vessels (*Figure 21e* and *Figure 21a*) along the coast. Near the indicative locations for the offshore arrays, there is high density traffic of both cargo and tanker vessels, *Figure 21*c and *Figure 21b*. This project is cognisant of the vessels passing through the Foreshore Licence Area and will mitigate against any potential hazards through consultation with the Irish Coast Guard and the Department of Transport, Tourism and Sport in addition to direct consultation with fishermen, the local Harbour Masters, and all other identified sea users.

While there are also some tugs and special crafts, container, LNG, and LPG traffic traversing within or near the Foreshore Licence Area, this traffic is generally of relatively low density. In addition, the highest density of passenger marine traffic is concentrated close to the coast. Larger vessels have a low density within the area as they briefly transect the area along their routes. The planning of the survey routes to be conducted by Valentia Island Energy Ltd will account for the presence of these vessel routes to ensure there is no disruption to the other marine users within and adjacent to the Foreshore Licence Area.

Data reflected in Figure 21*a-j* is representative of Vessel Monitoring Systems (VMS) data plots which only provide information for vessels over 15 m in length. This source of data does not, therefore, allow for a good characterisation of fishing traffic in areas where activity is primarily undertaken by small vessels (i.e., under 15 m). All images apart from *Figure 21j* have data collected from vessel AIS and located within 0.15 km² areas to give a representation of the vessel density and activity of these activities over a year. For fishing activity, the same method is applied but to an area of 0.31 km².

It should be noted in this context that Irish law does not require vessels under 12m to have a tracking system on board. In order to gather more information on the level of fishing traffic in the investigation area by small vessels, substantial consultation will be carried out with local fishermen and fisheries officers to help inform this project.

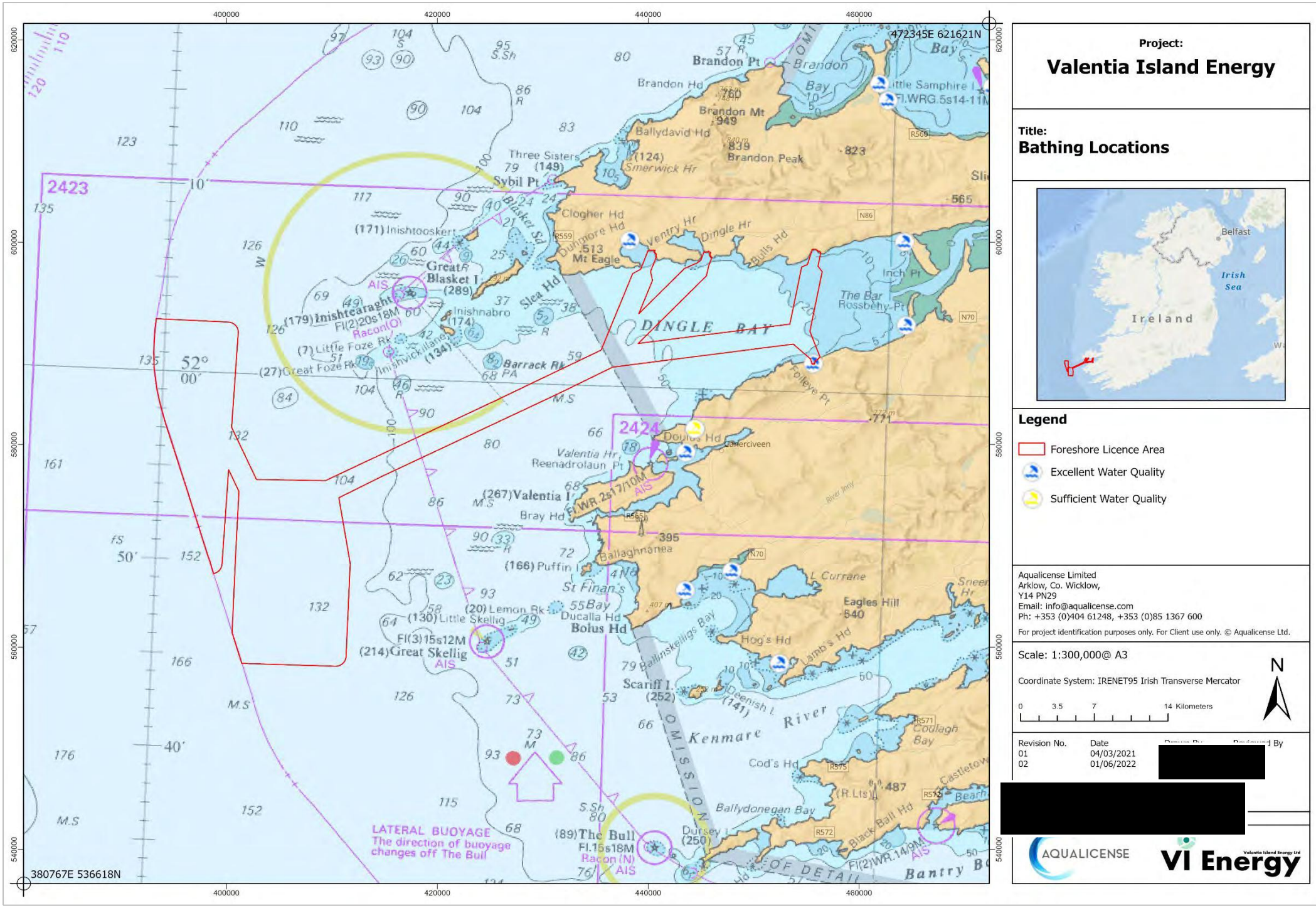


Figure 18: Bathing Locations.

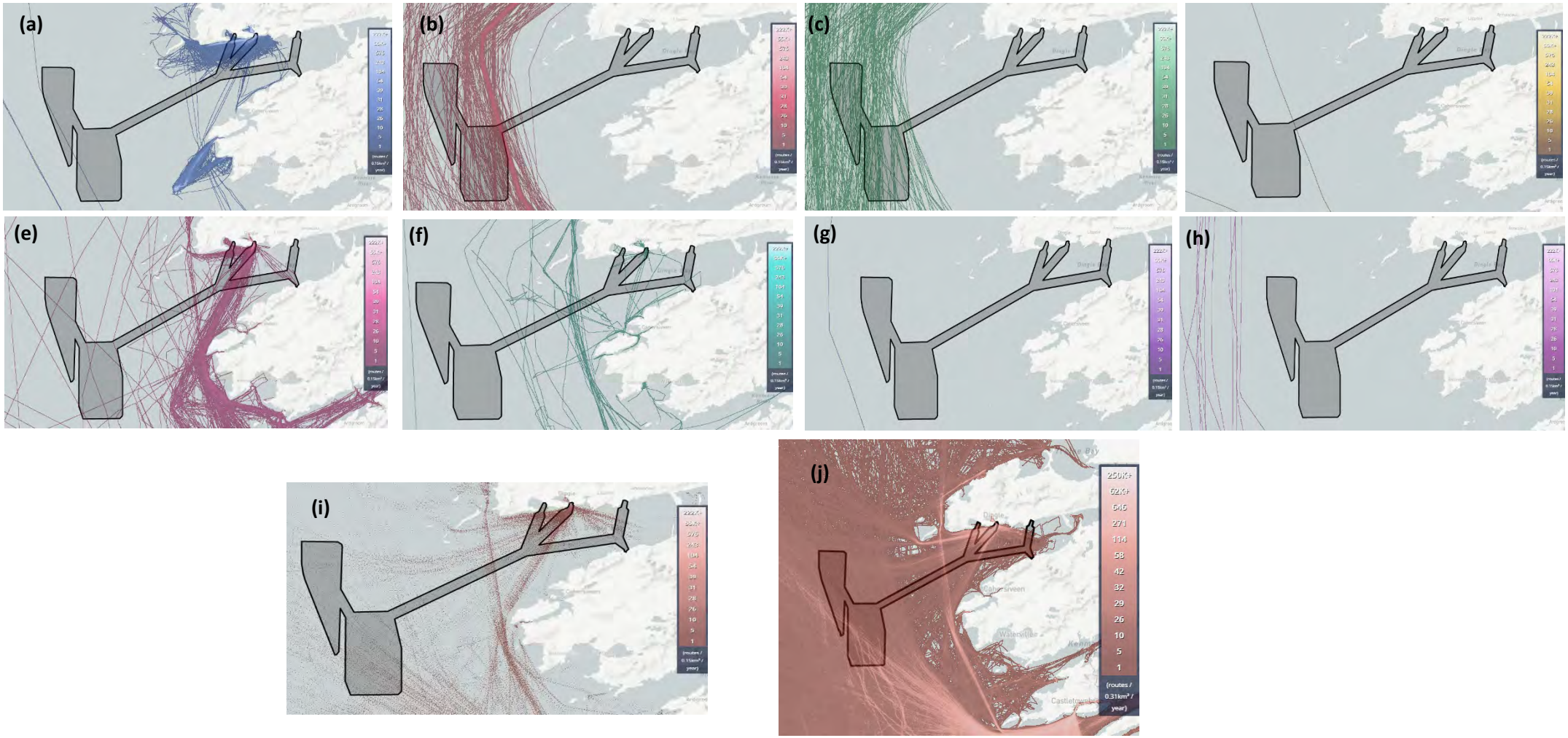


Figure 19: Marine Traffic for Passenger Vessels (a), Tanker (b), Cargo (c), Container(d), Pleasure (e), Tugs and Special Craft (f), LNG (g), LNG (h), Fishing Pressure (i), and Fishing Vessels (j)

7. Relevant Marine Infrastructure

7.1. Shipwrecks

There is one (1) shipwreck that has been surveyed by INFOMAR (the joint Marine Institute and GSI seabed survey programme) and identified as being within the Foreshore Licence Application Area, the Calchas cargo vessel. There is one (1) shipwreck within a 3 km buffer of the Foreshore Licence Area identified by INFOMAR. Survey routes will be planned, if the Foreshore Licence Application is successful, while accounting for these shipwrecks and will ensure that neither are damaged or disturbed during the process.

In addition, the National Monuments Database identifies five (5) shipwrecks inside of the Foreshore Licence Area. The national Monuments Database has identified four (4) additional shipwrecks that that reside within the 3 km buffer of the Foreshore Licence Area. These are shown in *Figure 22*. Similar to the action that will be taken for shipwrecks identified by INFOMAR, survey routes will be designed to ensure none of these wrecks are damaged or disturbed.

7.2. Existing Infrastructure

The desktop study of the area and constraints assessment shows that there is no significant existing infrastructure, such as submarine cables or weather buoys, located within, or in the 15 km buffer area, of the Foreshore Licensing Area.

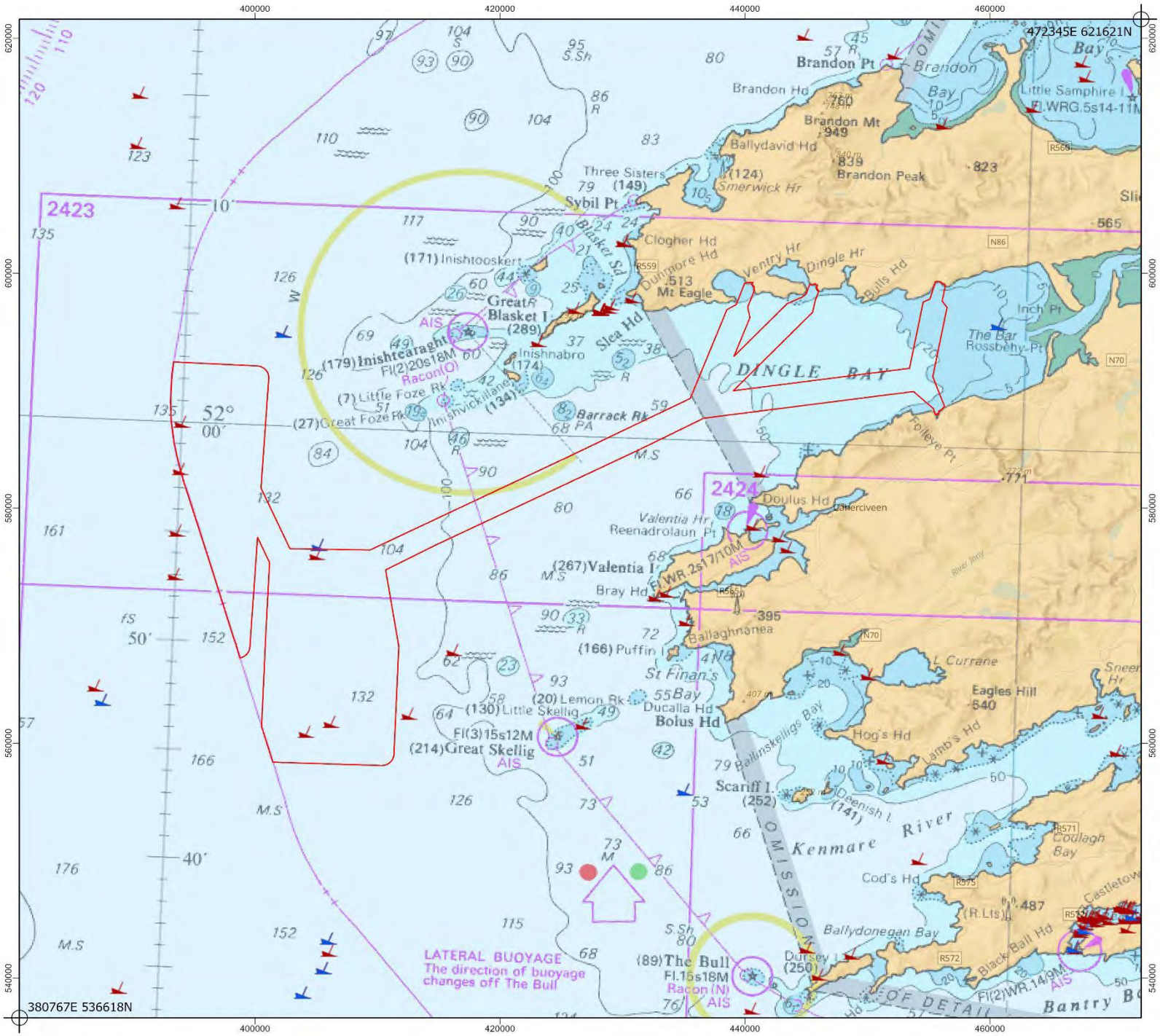
7.3. Proposed Infrastructure

There is one (1) proposed development proximate to the proposed Foreshore Licence Area that has been submitted to the Department (see *Figure 23)*:

1. Mainstream Tralee Windfarm, Foreshore Application reference number FS007375.

Mainstream Tralee Windfarm is located c. 33 km from the proposed Foreshore Licence Area, occupying a total area of c. 2,201 km² or c. 220,120 ha. This Foreshore License Application was submitted on the 3rd of June 2021. and is currently at the application applied phase of the approval process.

The proposed infrastructure area will not be interacted with during the planned surveys that are to be carried out, however, their presence in proximity to the area is documented here. The location of the proposed development in relation to the Foreshore Licence Area is illustrated in *Figure 23*.



Project:

Valentia Island Energy

Title:

Shipwrecks

Legend

- Foreshore Licence Area
- INFOMAR Wrecks
- NMS Wrecks

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Coordinate System: IRENET95 Irish Transverse Mercator

0 3.5 7 14 Kilometers

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02	01/06/2022		

[redacted]

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Figure 20: Shipwrecks

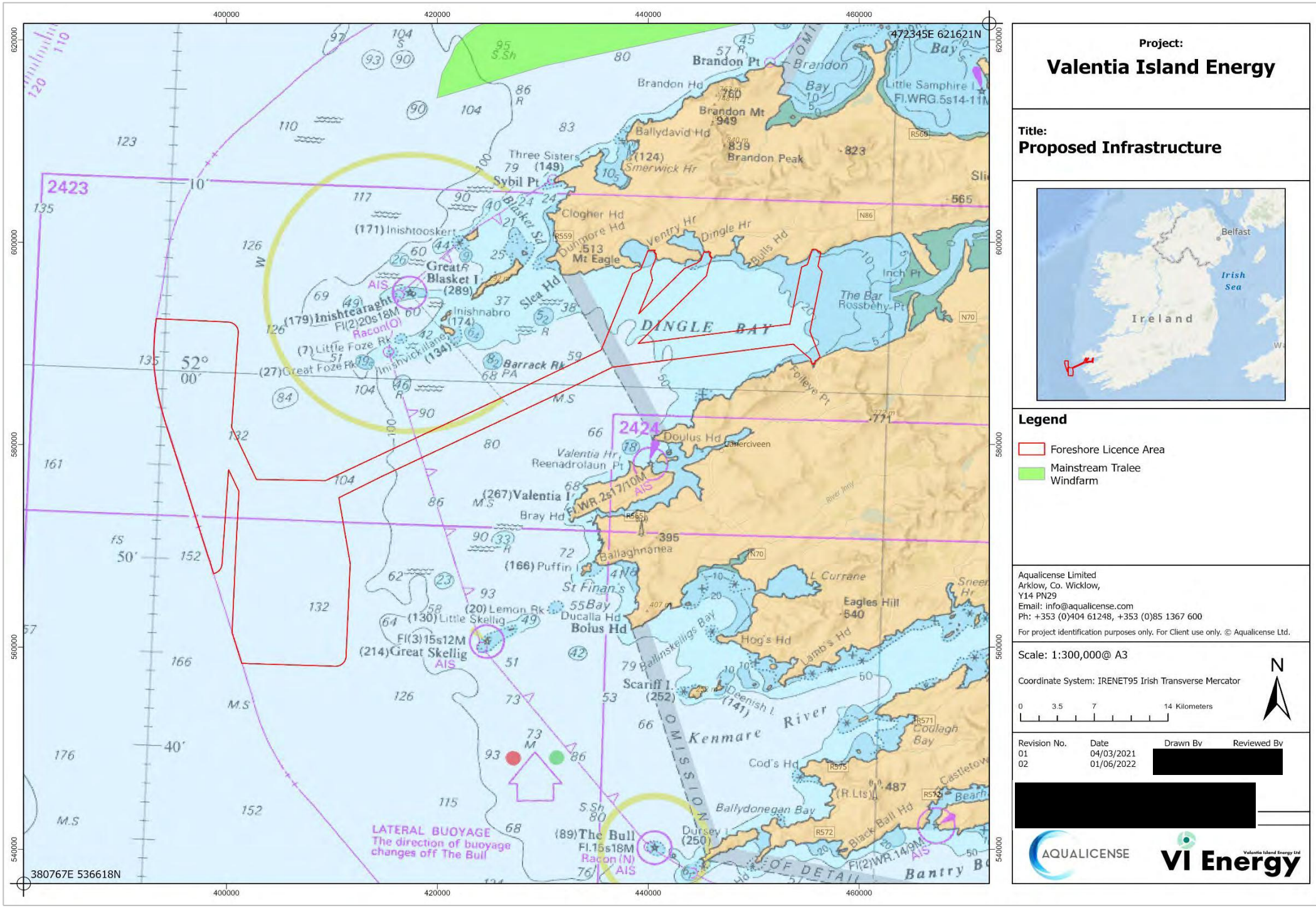

Figure 21: Proposed Infrastructure.

8. Full Coordinates List

Table 5: Foreshore Licence Area Coordinates

Object ID	ITM X	ITM Y	WGS84 X	WGS84 Y
1	402845.6205	576559.9826	-10.86552571	51.90625133
2	402830.2094	576560.2668	-10.86574956	51.90624843
3	402845.6233	576559.9765	-10.86552567	51.90625128
4	402845.6205	576559.9826	-10.86552571	51.90625133
5	409378.2036	576439.4958	-10.77063371	51.90744173
6	409386.4489	576439.3465	-10.77051393	51.90744321
7	435536.7139	589346.9793	-10.39699446	52.03169921
8	438521.7335	596895.3811	-10.35709744	52.10037018
9	439292.2426	597340.4329	-10.34607039	52.10459155
10	439983.678	599167.32	-10.33684384	52.12119976
11	440736.386	598424.106	-10.3255137	52.11474191
12	440221.084	597113.0821	-10.33241644	52.10281856
13	440409.0998	596228.7207	-10.3292603	52.09493
14	439104.9004	592930.2685	-10.34672319	52.06492812
15	443446.7206	597411.1691	-10.28550722	52.10641765
16	444679.0106	597972.7737	-10.26778846	52.11180908
17	445287.924	599053.286	-10.25939627	52.12168463
18	446022.417	598453.825	-10.24840772	52.1165053
19	445524.3873	596680.9844	-10.2548702	52.10044308
20	439048.9737	589997.904	-10.34615759	52.03857528
21	453434.2556	591907.7616	-10.13744987	52.05971819
22	454551.096	597551.5458	-10.12358048	52.11070866
23	455097.0617	597788.6096	-10.11571602	52.11298137
24	455539.962	599217.293	-10.10986015	52.12593062
25	456367.0254	598974.9051	-10.09768727	52.12396874
26	456096.7808	597634.9481	-10.10106495	52.11186199
27	456500.813	597100.7777	-10.09494515	52.10716858
28	455332.0781	591195.0274	-10.10949158	52.05381439
29	456294.8958	588656.0008	-10.09439555	52.03125696
30	455654.187	587964.3181	-10.10343496	52.02487736
31	455644.999	588045.287	-10.10360289	52.0256023
32	455638.121	587961.159	-10.10366757	52.0248448
33	455523.1041	587994.3028	-10.10535638	52.0251126
34	455428.617	588352.412	-10.1068835	52.02830484
35	455428.746	588406.613	-10.10690451	52.02879175
36	455389.884	588475.296	-10.10749946	52.0293986
37	453756.8265	589932.9049	-10.13190436	52.0420639
38	436631.005	587660.314	-10.38025577	52.01687422
39	410646.2605	574746.2638	-10.75129635	51.89267081
40	411741.6645	568239.4921	-10.7318559	51.83461766
41	411340.8915	559034.6582	-10.73266086	51.75183188
42	410311.0466	558101.5189	-10.74705071	51.74310563
43	401420.8557	558388.2643	-10.87578993	51.74260216

Object ID	ITM X	ITM Y	WGS84 X	WGS84 Y
44	400454.0182	559427.4676	-10.89036823	51.75158882
45	400454.1636	559430.9952	-10.89036815	51.75162054
46	401185.9089	575378.0702	-10.88893442	51.89505103
47	400209.2472	577518.2433	-10.90434643	51.91391557
48	400093.3434	575798.6644	-10.90503204	51.89843638
49	399579.5525	568175.9324	-10.90806815	51.82981824
50	398497.8255	567246.3725	-10.92320116	51.82108419
51	398494.2848	567246.7086	-10.92325265	51.82108593
52	398581.5003	568243.1849	-10.92256855	51.83006327
53	398453.126	568422.013	-10.92453271	51.83162243
54	393404.1128	585513.182	-11.00792951	51.98320262
55	393221.2261	592457.7306	-11.01477902	52.04547252
56	400162.9928	592110.9634	-10.91351131	52.04490389
57	401119.7625	591027.764	-10.89895184	52.03552343
58	400492.2541	581717.0044	-10.90267126	51.95171153
59	402845.6205	576559.9826	-10.86552571	51.90625133

Table 6: Array A Coordinates

Object ID	ITM X	ITM Y	WGS84 X	WGS84 Y
1	401453.547	559388.034	-10.87588754	51.75158971
2	402197.078	575571.7141	-10.87437233	51.8971491
3	409536.805	575436.1956	-10.76777728	51.89848768
4	410754.8443	568076.0883	-10.74606884	51.83281719
5	410342.8531	559101.2747	-10.74713554	51.75209323

Table 7: Array B Coordinates

Object ID	ITM X	ITM Y	WGS84 X	WGS84 Y
1	400122.8843	591111.4368	-10.91351131	52.0359164
2	398581.5003	568243.1849	-10.92256855	51.83006327
3	398453.126	568422.013	-10.92453271	51.83162243
4	393143.2256	587559.0866	-11.01295572	52.00147079
5	393170.6874	591458.6631	-11.01491077	52.03648559

Table 8: Future Array Coordinates

Object ID	ITM X	ITM Y	WGS84 X	WGS84 Y
1	389218.4919	559808.4289	-11.0531	51.75089667
2	390103.561	576655.9633	-11.05050775	51.9024613
3	393039.1814	584083.8148	-11.01237335	51.97023605
4	393404.1128	585513.182	-11.00792951	51.98320262
5	398453.126	568422.013	-10.92453271	51.83162243
6	398581.5003	568243.1849	-10.92256855	51.83006327
7	397817.1265	559509.8708	-10.92855731	51.75138373

9. DATA SOURCES

Ireland Marine Atlas (Data from the [Fisheries, Inshore, Line fishing] theme accessed through Ireland's Marine Atlas at http://atlas.marine.ie/, [03/05/2021])

Ireland Marine Atlas (Data from the [Fisheries, Inshore, Net Fishing Type, Net Fishing Species] theme accessed through Ireland's Marine Atlas at http://atlas.marine.ie/, [03/05/2021])

Ireland Marine Atlas (Data from the [Fisheries, Inshore, Pot Fishing] theme accessed through Ireland's Marine Atlas at http://atlas.marine.ie/, [03/05/2021])

Ireland Marine Atlas (Data from the [Fisheries, Inshore, Bottom Trawl Fishing] theme accessed through Ireland's Marine Atlas at http://atlas.marine.ie/, [03/05/2021])

Ireland Marine Atlas (2020) (Data from the [Fish Spawning and Nursery Grounds, Atlantic Herring] theme accessed through Ireland's Marine Atlas at http://atlas.marine.ie/, [03/05/2021])

Ireland Marine Atlas (2020) (Data from the [Fish Spawning and Nursery Grounds, Atlantic Mackerel] theme accessed through Ireland's Marine Atlas at http://atlas.marine.ie/, [03/05/2021])

Ireland Marine Atlas (2020) (Data from the [Fish Spawning and Nursery Grounds, Megrim] theme accessed through Ireland's Marine Atlas at http://atlas.marine.ie/, [03/05/2021])

Ireland Marine Atlas (2020) (Data from the [Fish Spawning and Nursery Grounds, Atlantic Cod Nursery Grounds, Atlantic Haddock Spawning Grounds, Horse Mackerel Nursery Grounds, Whiting Spawning Grounds] theme accessed through Ireland's Marine Atlas at http://atlas.marine.ie/, [03/05/2021])

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Appendix 1. A3 MAPS

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Figure 2: Foreshore Licence Area
Figure 3: Line and Bottom Trawl Fishing Activity
Figure 4: Net and Dredge Fishing Activity
Figure 5: Pot Fishing and Periwinkle Harvesting Activity.
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Figure 7: Atlantic Cod and Haddock Nursery Grounds
Figure 9: Atlantic Hake Nursery Grounds
Figure 10: Atlantic Mackerel Spawning Grounds.
Figure 11: Atlantic Mackerel Nursey Grounds
Figure 12: Horse Mackerel Spawning Grounds
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Figure 15: Megrim Spawning Grounds.
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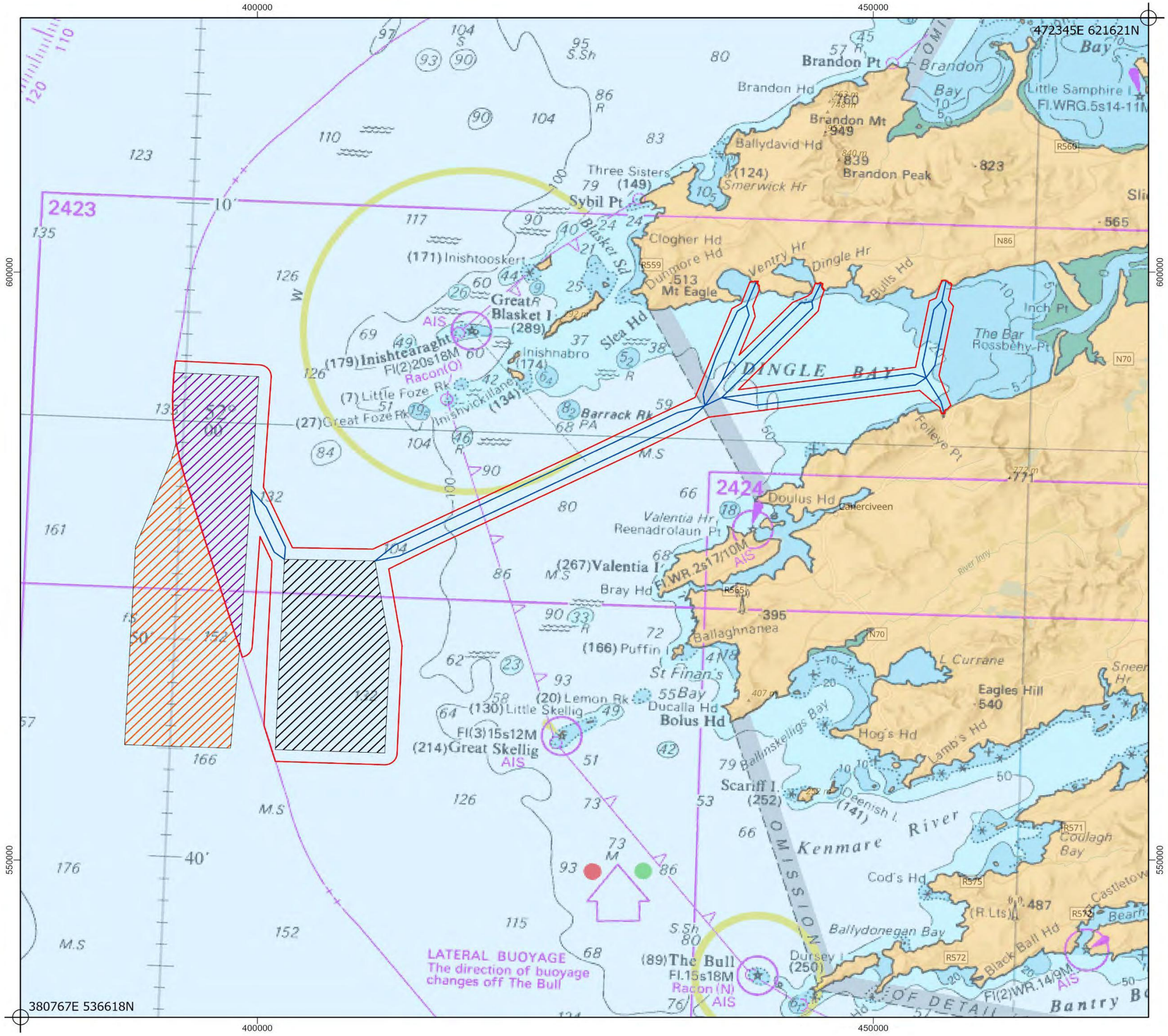
Figure 23: Proposed Infrastructure.



Project:

Valentia Island Energy Ltd

Title:

Overall Project

Legend

- Foreshore Licence Area
- Nearshore Array A
- Nearshore Array B
- Offshore Array
- Cable Routes

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Revision No.	Date	Drawn By	Reviewed By
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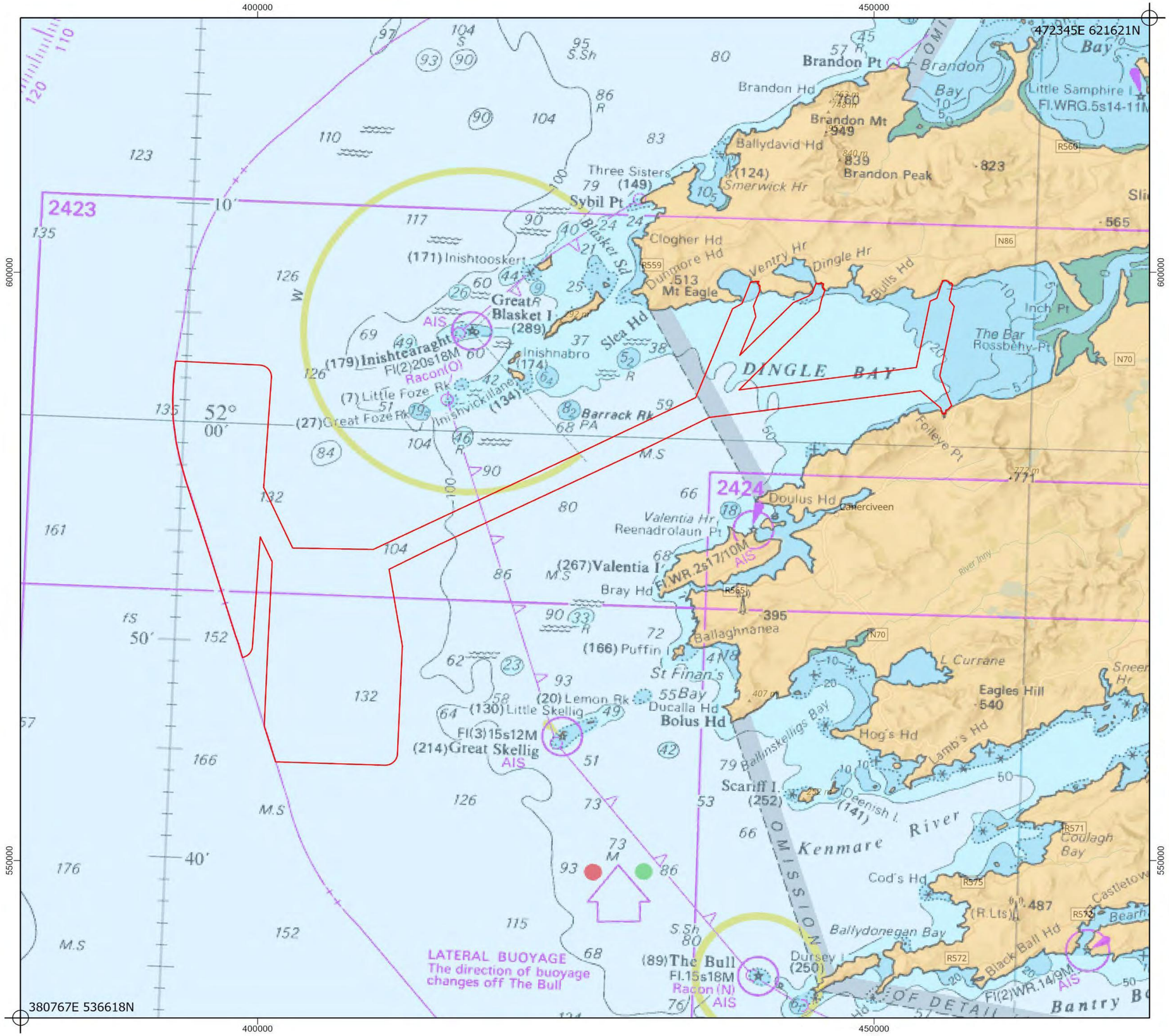
Map 1: Overall Project.



Project:

Valentia Island Energy Ltd

Title:

Foreshore Licence Area

Legend

Foreshore Licence Area

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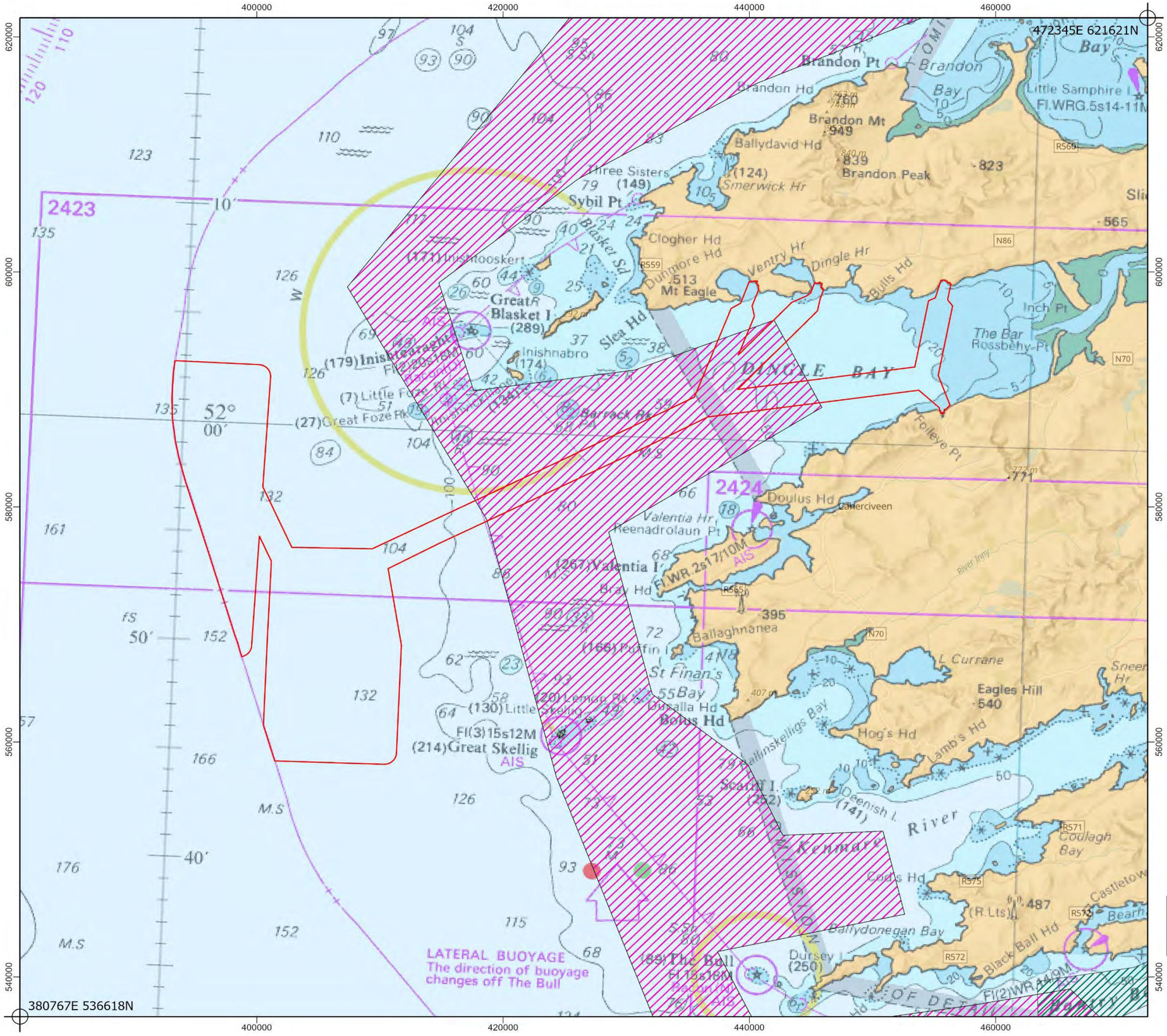
Map 4: Foreshore Licence Area.



Project:

Valentia Island Energy

Title:

Line and Bottom Trawl Fishing

Legend

- Foreshore Licence Area
- Line Fishing
- Bottom Trawl Fishing

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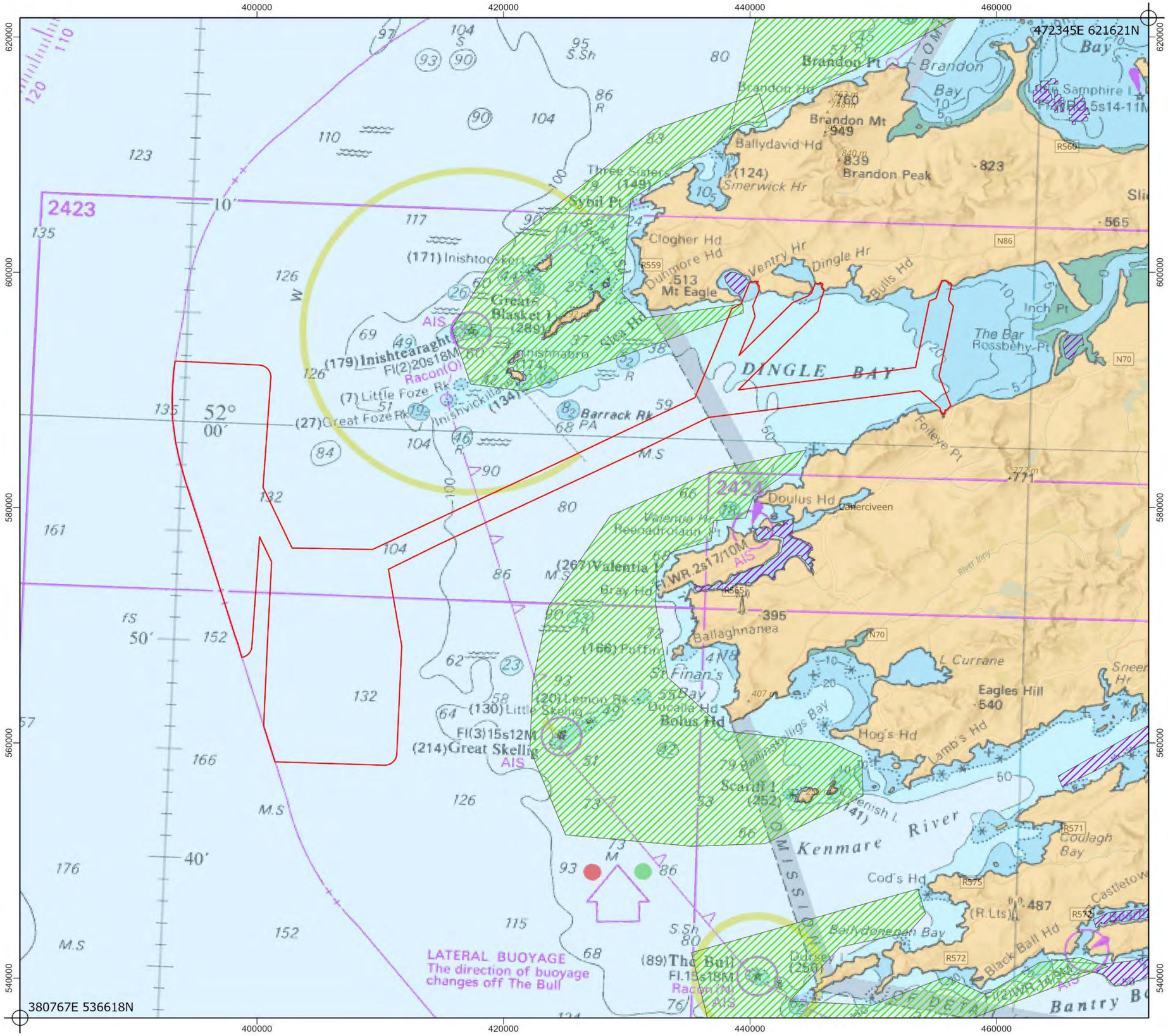
Map 7: Line and Bottom Trawl Fishing Activity.



Project:

Valentia Island Energy

Title:

Nets and Dredge Fishing

Legend

- Foreshore Licence Area
- Nets Fishing
- Dredge Fishing

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02	01/06/2022		

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Map 10: Net and Dredge Fishing Activity.