

# Annual Summary Report 2016

CleanSeaNet Satellite-Based Oil Spill Detection in Icelandic Area of Interest

Other Pollution or Potential Pollution Related Information

## Contents

Introduction.....	1
CleanSeaNet .....	1
Structure in Iceland .....	2
<b>Organizations with Access to the CSN-Service .....</b>	<b>2</b>
Clean Sea Net Statistical Information 2016.....	3
<b>Key Figures 2016 .....</b>	<b>3</b>
<b>Overview of Possible Oil Spills 2016 .....</b>	<b>3</b>
Aerial Surveillance .....	8
Other Notifications than CSN Related to Pollution or Potential Pollution.....	8

## Introduction

As agreed by the Environment Agency and the Icelandic Coast Guard the latter shall annually, by June 1st collect, and disseminate to the Environment Agency statistical pollution control information. The intention of this report is inter alia to serve this purpose. The Environment Agency will subsequently present the information at the annual Copenhagen Agreement meeting. This report summarizes notifications and observations as relates to pollution at sea, more specifically within the Icelandic Exclusive Economic Zone. Air and sea surface surveillance assets of the Icelandic Coast Guard report any pollution observed at sea to the Coast Guard operations centre. In addition, the Coast Guard operations centre receives pollution notifications through satellite services like the EMSA CleanSeaNet service, directly from the polluter, or from other third party. The Icelandic Coast Guard subsequently informs the Environment Agency.

## CleanSeaNet

CleanSeaNet (CSN) is a European satellite-based oil spill and vessel detection service. It assists participating States with following activities:

- identifying and tracing oil pollution on the sea surface
- monitoring accidental pollution during emergencies
- contributing to the identification of polluters

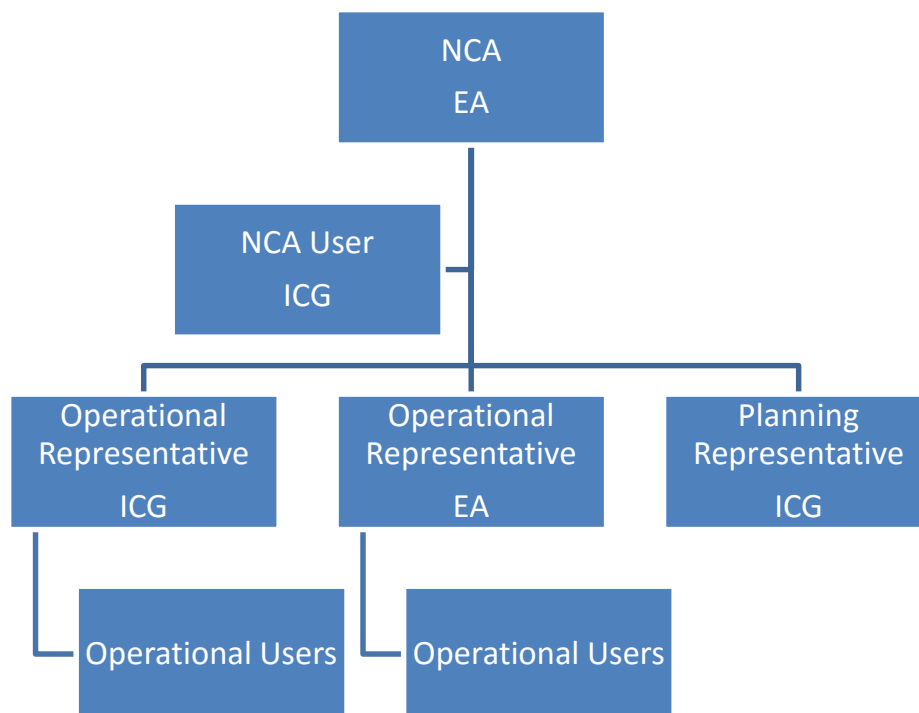
Iceland is a participating state through its membership of The European Free Trade Association (EFTA). The European Maritime Safety Agency (EMSA) is the operator of the CleanSeaNet Service and Iceland is contracting to the service through an agreement called „Conditions of use for receiving the EMSA Satellite Based Oil Spill and Vessel Detection Service CleanSeaNet“ (the conditions of use).

Iceland was set up for the service at the launching of the second generation of CleanSeaNet and successfully received the first Earth Object Scene (EOS) on March 6<sup>th</sup> 2011.

## Structure in Iceland

The Environment Agency of Iceland is the National Competent Authority (NCA) of CleanSeaNet in Iceland. The NCA has the overall responsibility and by agreement,<sup>1</sup> the Icelandic Coast Guard carries out the daily operation of the system. A task of the Icelandic Coast Guard is to carry out surveillance of the sea around Iceland as well as to receive and disseminate notifications and information on any acute pollution of the sea.

All users shall comply with the conditions of use. The structure of users in the system is shown below; EA being the Environment Agency of Iceland; ICG being the Icelandic Coast Guard. The Icelandic Coast Guard NCA User administrates the web-based system and oversees the allocation of EOS carried out by EMSA.



## Organizations with Access to the CSN-Service

Organizations with access to the CSN-service in Iceland comprise the Environment Agency of Iceland, the Icelandic Coast Guard and the Institute of Earth Sciences of the University of Iceland. The system has 31 users as per June 2017.

<sup>1</sup> Samningur Umhverfisstofnunar og Landhelgisgæslu Íslands um samvinnu við eftirlit með mengun sjávar innan íslenskrar mengunarlögsögu.

## Clean Sea Net Statistical Information 2016

### Key Figures 2016

Earth Object Scenes (EOS) within area of interest: **300** (similar to last year).

Number of EOS delivered: **245**

Number of EOS not delivered (catalogued, anomaly, cancelled, and pending): **55**

Possible oil spills (OS) inside EEZ:

- 22 possible OS in 17 separate cases (feedback has been submitted for all possible OS)
  - 1 case assessed as linked to mineral oil (hydraulic oil)
  - 7 cases assessed as linked to natural phenomena
  - 8 cases assessed as linked to fishing activity
    - 7 linked to fishing vessels
    - 1 linked to a land source fish processing activity
  - 1 case (case # 20) could not be categorized

### Overview of Possible Oil Spills 2016

The blue area in figure 1 is an area defined by a so-called baseline (CSN definition). This area is very similar to the Icelandic Exclusive Economic Zone. The Icelandic area of interest of which Iceland receives satellite imagery, analyses and notifications for detection of possible oil-spills is considerably larger of size but is not included in this report, which is intended for public use.

Red notification symbolizes possible oil spills of high likelihood (class A) and green symbolizes low likelihood (class B) as per Icelandic configuration.

Total detections of possible oil-spills (OS) inside of the Icelandic EEZ numbered to 22 in 17 separate cases (4 red and 14 green) of which one was assessed to originate from mineral oil (hydraulic oil) from a mishap (ref. possible oil spill # 5).

There were no cases in 2016 where the receiving organisations disagreed to the CSN service analysis of possible oil spills, i.e. cases where oil spills or possible oil spills should have been detected by the service provider (false negatives).

The numbers in figure 1 refer to the list of feedback.

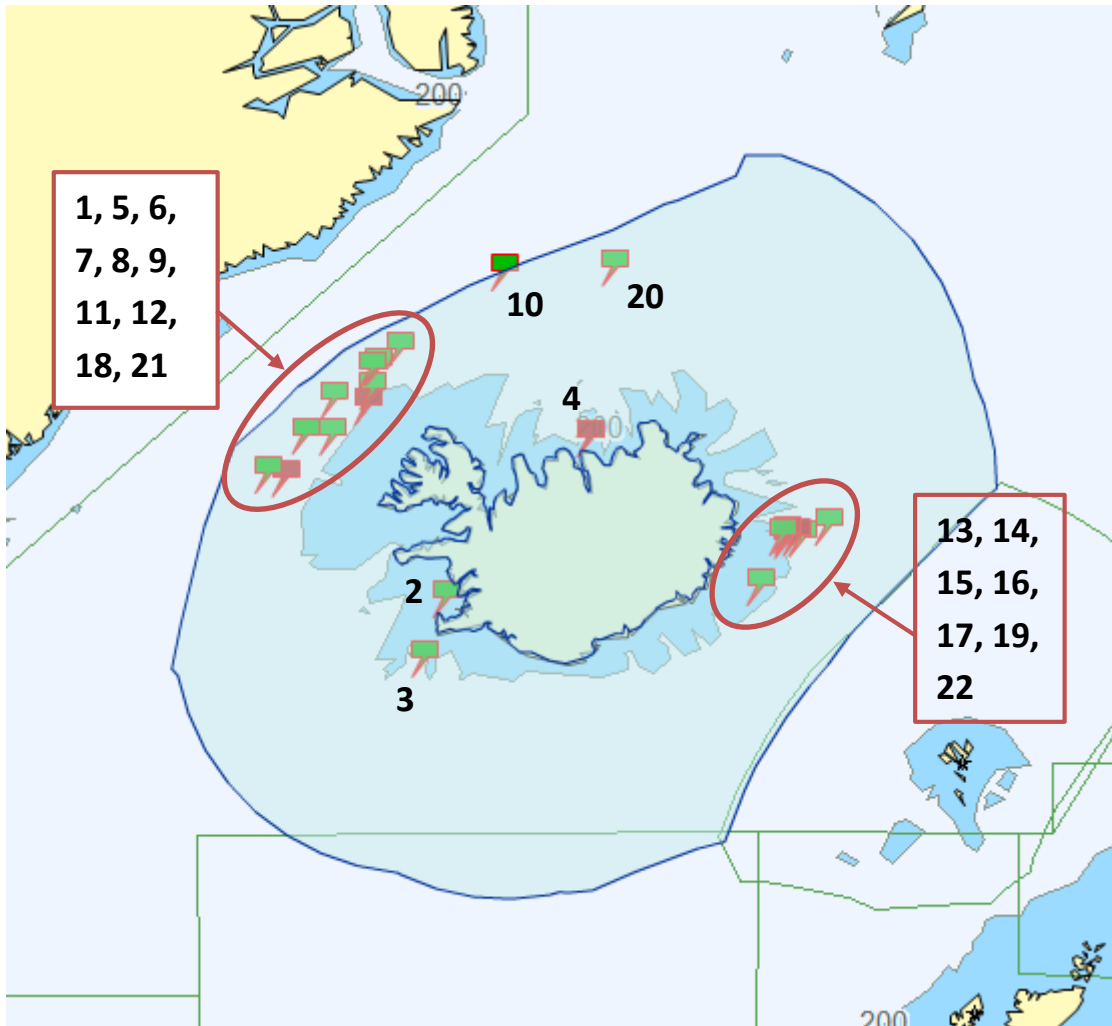
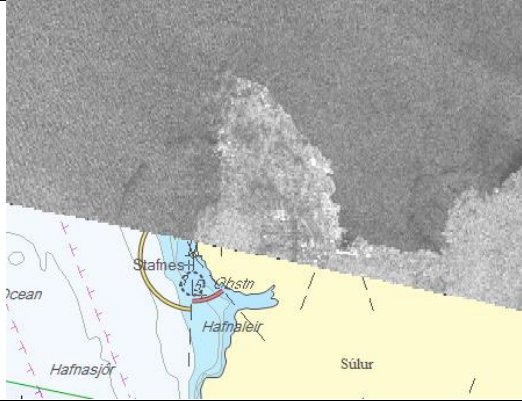

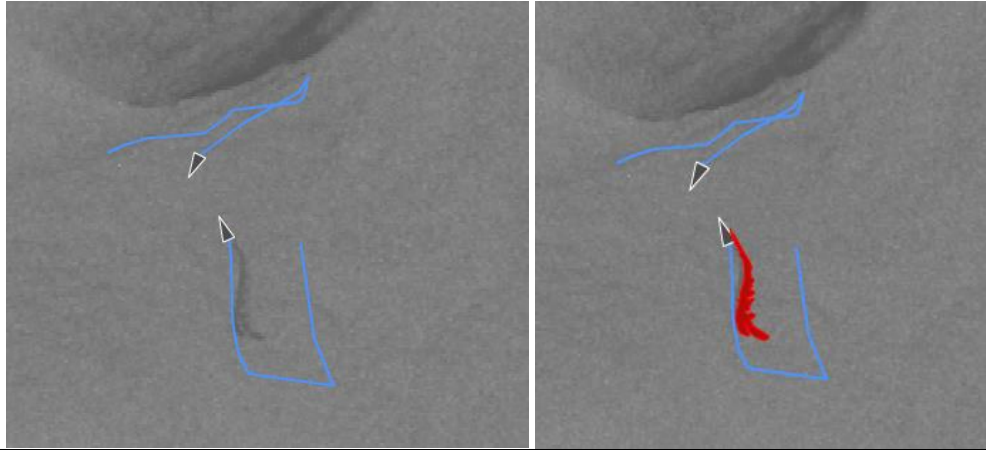
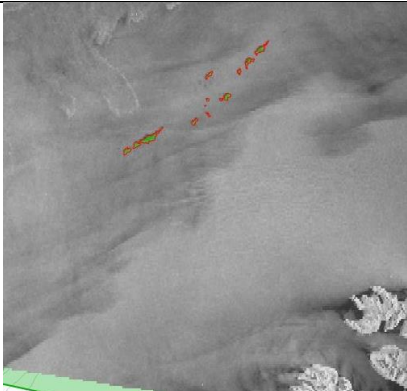



Figure 1

Feedback 2016

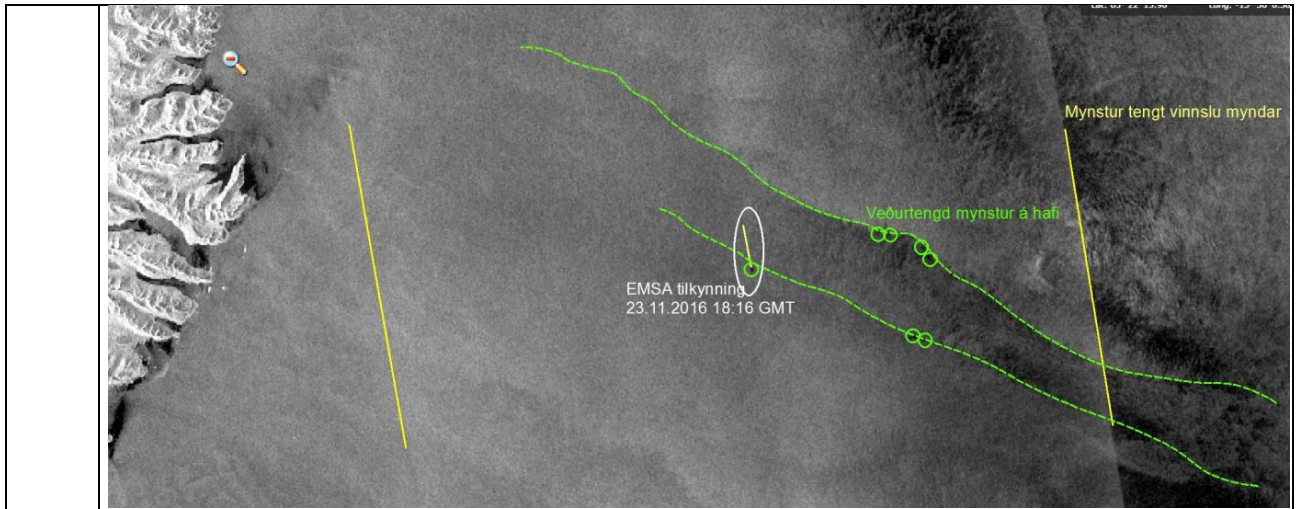
Ref	Oil Spill Identifier	Class	Pos (lon/lat)	Acquisition Start Time
1	OS_1602120278_1	B	028° 02' 11.53" W / 065° 42' 24.57" N	2016-03-20 08:23:31
	This class B detection is assessed not to originate from mineral oil. The assessment of the Institute of Earth Sciences points to the assumption that the detection relates to a cold surface water area. In the coast guard monitoring system, two vessel were detected in the area. Both vessels XXX were contacted. The vessels had not become aware of any pollution in the area. The observation was not checked in-situ.			
2	OS_1603040415_1	B	022° 47' 51.96" W / 064° 01' 28.05" N	2016-04-07 07:58:26
	Two vessels were contacted in the area but nothing was observed. The phenomenon is known in this location (Sandgerdi) and has been identified as caused by waste water from fish-processing.			

				
3	OS_1603290014_1	B	023° 27' 08.37" W / 063° 11' 34.09" N	2016-05-09 19:05:48
<p>Icelandic Coast Guard Operations Centre contacted a fishing vessel conducting research in the area. On board an expert from the Marine Research Institute explained that a lot of milk white coloured algae was present in the sea probably causing the EMSA observation.</p>				
4	OS_1603290124_1	A	018° 25' 48.75" W / 066° 05' 05.13" N	2016-05-13 18:33:16
<p>The CSN detection most likely derives from a natural phenomenon. The possible source of an unknown vessel indicated in the notification is actually the rock of Hrolfsker as can be identified in the sea chart.</p>				
5	OS_1606100011_1	A	027° 46' 40.31" W / 065° 34' 48.58" N	2016-06-10 08:32:01
<p>At 08:49, Icelandic Coast Guard received an Oil Spill Warning through CSN of a possible on-going oil spill from a specified possible source.          The Icelandic Coast Guard Maritime Surveillance Aircraft (MSA) TFSIF was tasked to investigate. At 11:50, the MSA investigated in-situ but nothing was observed.          TFSIF contacted the identified fishing vessel, which reported a minor mishap caused by a failure of the hydraulic system, which resulted in loss of hydraulic oil on the deck and into the sea.          The leak was fixed and vessel and deck cleaned.</p>				
				
6	OS_1606180007_1	B	024° 26' 46.17" W / 067° 06' 32.40" N	2016-06-18 07:57:51

	Less than 4 hours after the satellite image was taken or at 11:42, an Icelandic Coast Guard helicopter was on site but due to bad visibility (200m) and low ceiling (30m), nothing could be observed. The nearest vessel in the area (same vessel as identified in the oil spill warning) was contacted and confronted with the warning issued by EMSA. The assessment from the Institute of Earth Sciences argues to the likelihood of the observation originating from melting sea ice.			
7-10	OS_1606190012_2	B	024° 58' 40.60" W / 066° 57' 50.34" N	2016-06-19 19:01:32
	The observations from EMSA are in the same area as from the day before. No vessels can by the Icelandic Coast Guard be connected to the observations. The Institute of Earth Sciences assesses the most likely cause of observed areas to be melting sea ice and algae.			
	OS_1606190012_4	B	020° 53' 54.19" W / 068° 12' 08.10" N	2016-06-19 19:01:32
	The observations from EMSA are in the same area as from the day before. No vessels can by the Icelandic Coast Guard be connected to the observations. The Institute of Earth Sciences assesses the most likely cause of observed areas to be melting sea ice and algae.			
	OS_1606190012_1	B	026° 16' 00.69" W / 066° 34' 23.95" N	2016-06-19 19:01:32
	The observations from EMSA are in the same area as from the day before. No vessels can by the Icelandic Coast Guard be connected to the observations. The Institute of Earth Sciences assesses the most likely cause of observed areas to be melting sea ice and algae.			
	OS_1606190012_3	B	024° 15' 02.44" W / 067° 09' 59.44" N	2016-06-19 19:01:32
	The observations from EMSA are in the same area as from the day before. No vessels can by the Icelandic Coast Guard be connected to the observations. The Institute of Earth Sciences assesses the most likely cause of observed areas to be melting sea ice and algae.			
11	OS_1606240012_1	B	026° 45' 32.64" W / 066° 26' 01.93" N	2016-06-24 08:23:28
	No possible sources can be identified in vicinity. Closest ships are 23 nm closer to land. The possible oil spill is in the same area as recent EMSA observations from June 18th and 19th. On the 20th, a Danish surveillance aircraft inspected the area without observing any oil. The assessment of today's observation is in line with those last observation assessments estimating the cause relating to melting sea ice. The Institute of Earth Sciences refers to radar imagery (SENTINEL-1 21.6.2016 18:59) showing ice floes of approximate 800 meters of size in same area. Unfortunately, optical imagery has not been useful recent days due to cloud cover.			
12	OS_1607130009_1	B	025° 05' 23.66" W / 066° 40' 26.99" N	2016-07-13 19:01:31
	The possible oil spill was connected to a factory trawler XXX. When contacted, the vessel crew had not observed any oil in the water. The vessel was processing fish and the assessment is that the EMSA class B detection is connected to fish-oil and entrails from the process.			
13	OS_1608170000_1	B	012° 30' 49.98" W / 064° 50' 21.59" N	2016-08-17 07:15:57
	The most likely source was a specific pelagic fishing vessel, which was contacted. The vessel was pumping the catch of mackerel and herring on board causing a fish-oil slick on the surface.			
14	OS_1608290000_1	B	013° 12' 13.76" W / 064° 10' 31.01" N	2016-08-29 07:15:57
	29.8.2016 07:41 UTC an oil spill warning due to an on-going or very recent possible spill was received from EMSA.			

	<p>A possible source was detected by EMSA.                  When the Icelandic Coast Guard contacted the pelagic fishing vessel, the captain had not been aware of any pollution but informed of shoals of mackerel all around. The EMSA class B detection is assessed to stem from fish oil from mackerel shoals.                  Coast guard assets did not investigate the possible oil-spill on-site.</p>			
15-17	OS_1609200006_3	A	012° 21' 55.10" W / 064° 48' 06.41" N	2016-09-20 07:16:41
	<p>The most likely reason considered for the detection is fish oil from herring and mackerel fishing.</p>			
	OS_1609200006_2	A	012° 04' 02.25" W / 064° 49' 39.67" N	2016-09-20 07:16:41
	<p>The most likely reason considered for the detection is fish oil from herring and mackerel fishing.</p>			
	OS_1609200006_1	A	012° 21' 33.85" W / 064° 51' 55.73" N	2016-09-20 07:16:41
	<p>The most likely reason considered for the detection is fish oil from herring and mackerel fishing.</p>			
18	OS_1609280010_1	B	026° 18' 24.62" W / 066° 06' 58.10" N	2016-09-28 08:23:25
	<p>The class B incident position was checked in-situ the next day at 12:30 UTC by ICG MSA. No pollution detected.                  One specific trawler fishing for cod, haddock, red fish, and saithe was the most likely source and was very likely taking the trawl at the time the image was taken.</p>			
19	OS_1610090000_1	B	011° 56' 09.64" W / 064° 49' 36.28" N	2016-10-09 07:23:50
	<p>An oil spill (OS) warning was received prior to the notification. The Class B possible OS in pos: 64°50,430N-011°52,761W was not checked in-situ. The detection was expected to derive from fishing activity. In CSN, a pelagic fishing vessel was aligned with the OS. The vessel was contacted and the information obtained that they had been taking 140 tons of herring on board and now the freezing process was on-going. It was finally assessed that fishing activity was the most likely cause for the detection.</p>			
20	OS_1610110008_1	B	017° 39' 00.26" W / 068° 08' 00.90" N	2016-10-11 18:36:52
	<p>No vessels could be tracked to the detection and no obvious explanation could be found for the detection. The detection is not considered likely to origin from any recent maritime activity.</p>			
21	OS_1610220011_1	A	025° 14' 48.64" W / 066° 29' 18.53" N	2016-10-22 08:23:24
	<p>Fishing activity is considered the most likely cause for the detection.</p>			
22	OS_1611230006_1	B	011° 06' 55.25" W / 064° 57' 17.40" N	2016-11-23 18:16:52
	<p>The EMSA class B detection is assessed not to derive from mineral oil.                  No vessels were in vicinity of the detection.                  The Institute of Earth Sciences finds likely that the detected possible oil spill stems from a mix of the weather conditions and the processing of the image.</p>			





## Aerial Surveillance

Icelandic Coast Guard maritime surveillance aircraft (MSA) and helicopters perform aerial surveillance inside of the Icelandic Exclusive Economic Zone. The MSA is of type “Dash 8, Q-300” and surveillance means include SLAR, search radar, EO/IR, FLAR and AIS receiver.

In 2016, the MSA performed 188 hours of surveillance inside of the Icelandic EEZ.

In 2016, the helicopters performed 77 hours of surveillance inside of the Icelandic EEZ.

Surveillance is not only dedicated pollution patrols but as well other law enforcement tasks and ice patrols.

## Other Notifications than CSN Related to Pollution or Potential Pollution

Date	Event
5.1.2016	Fishing boat grounded at Drangsnæs.
25.2.2016	Fishing boat grounded off Hafnarfjörður. No pollution observed.
20.4.2016	Fishing boat grounded at port of Saudarkroki. No pollution observed.
21.4.2016	Fishing boat grounded at Karsnæs. No pollution observed.
11.5.2016	Fishing boat taking on water off Straumnes.
8.6.2016	Thin sheen observed at port of Reykjavík and Hvalfjörður. Environment Agency and port investigated the incident.
27.6.2016	Fishing vessel grounded at Thorskaftjörður. No pollution observed.
11.8.2016	Fishing boat grounded at Hofsgrunn. No pollution observed.
9.10.2016	Fishing vessel grounded in port of Siglufjörður. No pollution observed.