# Spanish Maritime Safety Agency

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# Spanish Maritime Administration





# Spanish Maritime Safety Agency

- Set up in 1992 and working since 1993
- State agency attached to the Ministry of Transport and Public Works
- It operates under the Maritime Authority





# Spanish Maritime Safety Agency

- The Spanish Maritime Safety Agency has roles in search and rescue (SAR) and marine environmental protection.
- Resources have greatly increased due to the Investment Plans adopted by the Spanish Government (2006-2009, 2010-2018)
- Today, the Spanish Maritime Safety Agency is well equipped to provide the SAR and marine environmental protection services.
- Future challenges: maritime emergency preparedness and strategies to combat maritime accidents.







- Provide maritime SEARCH and RESCUE services.
- MARITIME POLLUTION preparedness and response.
- Maritime TRAFFIC CONTROL
- Provide services involving TOWING AND AUXILIARY VESSELS









Area for SAR responsability 1,5 millions of km<sup>2</sup> (3 times Spain)



# ×.

## **2011 Activities**

5.576 Interventions(15/day)
13.292 People Assisted (36/day)
3.885 Vessels Affected (10/day)
257 Immigration Interventions y 4.201 People Rescued
3.682 Flight Hours, leading to 178 Environmental Interventions.
More than 150.000 Vessels Monitored by the MRCCs.





- Located in Madrid
- Provide necessary support to the MRCCs and the strategic bases.
- Establishment & development of agreements & protocols in order to improve co-ordination.







# **21 Maritime Rescue Coordination Centres** with officers on duty 24 hours a day













## **11 Helicopters:**

2 Sikorsky S-61N, 9 Augusta –Westland AW139

## **6 Fixed-wing aircraft :**

3 EADS-CASA CN 235/300, 3 CESSNA 337G.







### In total 73 maritime units

10 Rescue Vessels
4 Multipurpose vessels for rescue and pollution control
4 Patrol boats
55 Fast action and high speed boats





# 0il recovery capacity

2 Multipurpose vessels : 1750 m<sup>3</sup>each 2 Multipurpose vessels : 287 m<sup>3</sup> each 1 Rescue and Pollution Vessel: 198 m<sup>3</sup>









### 6 Rescue & Oil Spill Equipment Bases

- Located and equipped to enable a quick response in case of emergency.
- Store, maintain and repair the rescue and pollution fighting equipment.







# Underwater Operation Bases

#### **6 Underwater operation bases**

- Store, maintain and repair underwater equipment for rescue and salvage operations: Remote Operated Vehicles (ROVs), Diving bell...
- Permanent team of 5 specialized divers (24 hour/365 day).









MRCCs, Equipment Bases, Maritime Units and Helicopters have the necessary equipment to collect samples.







## Jovellanos Training Centre

Located in Asturias

- Navigation simulators
- Training pool with wave generator
- Survival at sea
- Fire Fighting Camp
- · E-learning









## Fight against pollution at sea

Aerial surveillance and satellite control





**environment** Some ships made dicharges of oil and / or oily water to sea from their tanks









# Reinforce preventive actions to reduce operational discharges.

- To strenghten the system of air patrols following the analysis of the areas high risk in terms of pollution incidents.
- Promote punitive action against those responsible for pollution not only in the administrative field but also in criminal law.
- Innovation and research to incorporate technological advances to identify offending vessels, obtaining maximum functionality of the sensors that compose the equipment of the aircraft.







SASEMAR have knowledge of discharges to the marine environment in two ways:

- Aerial surveillance.

Air patrol program Visual observation Remote sensing records

- Satellite report from EMSA. CleanSeaNet.











## 3 Aircraft CASA CN-235

BASES: Valencia, Las Palmas de Gran Canaria and Santiago de Compostela



## 3 Aircraft CESSNA 337G

BASES: Gerona, Almería, Coruña.







## Aircraft equipment



# 4 sensors for detection, classification and quantification of slicks on the surface of sea:

- SLAR, Side Looking Airborne Radar: for detection of long range, about 10 nautical miles both sides of aircraft, allows calculate the area of slick.
- **IR/UV, Infra red / ultraviolet:** Detection in short range (in the vertical plane) allows identify the spots where the pollution is thicker
- MRW, Microwave: To calculate volum of slicks.
- LFS, Laser Fluorsensor: Allows clasify the oil slick and determine thickness of thin films (0.1 to 20 micras)

## And also:

- Camera high performance, gyroestabilized located outside of the aircraft that allows recordings of night and day images.
- High resolution photographic camera.
- AIS, Automatic Identification System of vessels.
- Radar for search.













#### **CleanSeaNet:**

Tool that is periodically supplied with slick images captured by the satellite Monitoring programme implemented by **EMSA** (European Maritime Safety Agency ).

The aircraft verify the images provides by the satellite CleanSeaNet.





# Vessel identification responsible

## • By visual observation



## Sensors and rest of equipments



• AIS information and drift models

Drift models allow to know where • the oil slicks come from and go

AIS system allows to know trajectories of vessels in the vicinity of the spot.

Both kind of data, drift model and AIS are crossed, allows to deduce the the vessel position at the time of the pollution event.





## Illegal discharges. Evidences



## **Aerial Observation**



## Satellite images





### Sensors



**AIS-Backtracking Analysis** 







## Identification of the substance

 By visual observation Applying Appearance Code Bonn Agreement



• Analysis of samples

• Sensors and rest of equipments





# Sanctioning procedure

• Once identified the ship pollutant it is possible to determine if it is an operational illegal discharge according to MARPOL International Convention.

•Depending on the infraction, a disciplinary procedure will be opened by means of administrative or criminal ways.







# Illegal discharges. Operational procedure

Ensures information flow and coordination among national agencies





## Main Maritime Traffic Rutes by the Mediterranean Sea



Illegal slicks exist, mainly in the high density rutes and approaches to the most important ports.



# Surveillance in the Mediterranean Sea



### Surveillance areas based on higher density routes of maritime traffic





# Illegal discharges. Operational Procedure

Ensures the gathering of the necessary evidences to prove the identity of the polluter and that the dicharge is illegal, and therefore, a maritime oil pollution offence.





## Vessel identification

Substance identification





## Prosecution of maritime oil pollution offences

Since the adoption of the Directive 2009/123/EC of the European Parliament and of the Council of 21 October 2009 on ship-source pollution and on the introduction of penalties for infringements, Spain has strengthened the court proceedings for the prosecution of maritime oil pollution offences.

Close cooperation between the Maritime Authority and the Ministry of Attorney .

In January 2011 an exchange meeting took place. The operational procedure was presented and a surveillance exercise was performed.







## Prosecution of maritime oil pollution offences

The Ministry of Attorney has established on march of 2010 the criteria that determines which maritime oil pollution offences will follow administrative or court proceedings, taking into account the distance to the coast and the oiled area.







## **POLLUTION DETECTION FINAL REPORT**

2 type of final reports

- Notification of a presumed illicit discharge from a vessel detected red-handed during aerial surveillance
- 2 Notification of a presumed illicit discharge from a suspected vessel (not detected red-handed)











Informe detección (Report Nº): M1\_1208221\_VC101

Nº Carpeta SIGO (Emergency Nº): 3363/12

CCS (MRCC): VALENCIA

Notification of a presumed illicit discharge from a vessel detected red-handed during aerial surveillance POLLUTION DETECTION FINAL REPORT

> Aircraft: SASEMAR 101 Date: 22/08/2012







#### Notification report of a discharge from a vessel caught red handed



FORMULARIO SOBRE PRESUNTA CONTAMINACIÓN (Pollution Detection Notification Form)

IN FRAGANTI (Vessel detected Red Handed)

#### 1 BUQUE INFRACTOR (Ship involved)

11	NOMBRE (Name)	VE	AAONL XXI				
4.2	WDICATIVO DE LLAMADA (Cal Sign)		PHMS9				
13	Me DMI (IMC Nomber)	9061071					
1.4	MARSI (MARSI Mumber)	249192000					
15	BANDERA (Flig)	MLT .					
1.5	PUERTO DE REGISTRO (Hume Port)		~				
1.7	TIPO DE BUQUE (Type of Shpi	TANQUE					
1.8	COLOR DEL CASCO (Hull oxfour)						
1.9	COLOR DE LA CHIMENEA (Funner colourt -	-					
	and the second	Tallon (Latrada)	Longitud (Longitude)				
1.12	POSICION (Position)	30° 01,4 N	DOM!" 10,6 W				
1.11	DISTANCIA REFERENCIADA A COSTA (Instance to coast)	24/1* / 18,1 MILLAS	DESDE EL FARÓ DEL C				
1,12	PUERTO ORIGEN (Port of Department)	HUELVA					
1.13	PUERTO DESTINO (Fort of Destination)	CEUTA					
1.14	ETA (Samales Inte of Anival)	25/08/2	012 02:00 LT				
1 15	RUMBD Y VELOCIDAD DEL BUQUE (Hooding and speed)	540 <sup>4</sup> 11 NUD					

#### 2 DETECCIÓN (Pollution Detection)

La detección se realiza en la fecha y hora desuritas a continuación (The pollution is detected in the following date and time):

2.1 FECHA DE OBSERVACIÓN (Date of Observation) 22/06/2012

2.2 HORA DE OBSERVACIÓN (Time of Observation) 19:58 UTC

Esta contaminación fue detectada en la siguiente posición (The pollution is detected in the following position):

	POSICIÓN	Latitud (Latitude)	Longitud (Longitude)			
	(Position)	36° 04,1 N	006* 22,8 W	Marcar I	o que proced	
2.4	In fragenti: Desce	rga continua y conectada a la popa del b	uque (Red-handed: Discharge conc	worked to the weike of the vessel)	SI (SI)	
2.5	El buque detiene	la descarga cuando se le informa del her	cho (The ship slops discharge when	informed)		

#### 3 CARACTERISTICAS DE LA MANCHA (Description of the Pollution)

Sensores (Sensor	naj:					ĸ	]				
DIMENSIONES (	Dimensions)	COREATURA	AREA CONTAMINADA	r	COBL!!	TURA HE	INCOMENT	BUROS		VOL MIN ***	VOL MAX ***
ANCHO (WILIN)	LARGC (Length)	COVER) %	POLLUTED AREA (hm <sup>2</sup> )	1	2	з	4	5	OTHOS (07MPAN)	m <sup>3</sup>	~
387 m	11975 m	33	1.54		_						
						<u> </u>					
					-		-		-		
	DIMENSIONES ( ANCHO (Wildh) 387 m	DIMENSIONES (Climensions) ANCHO (Midth) 387 m 11075 m	DIMENSIONES (Dimensional) Origentation (ANCHO (MIRIN) LARICO COOMIN ANCHO (MIRIN) (CongRit) % 387 m 11975 m 333	DIMENSIONES (Dimensional Operations Operations Operations) Operations (DATE ALL PROF OPERATION O	DIMENSIONES (Dimensional) ORENTIALA AREA OCONTRAMBULOS (CAMERA INSTANTIAL OCONTRAMBULOS (CAMERA INS	DIMENSIONES (Dimensional NANCHO (Wistry) ANCHO (Wistry) 387 m         COSENTUN (UNICA (Langet) 1 1 1075 m         AREA (UNICA 1 1075 m         COSENTUN (UNICA 1 1 108 154         COSEN (Dist APPE 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	DIMENSIONES (Dimensional Unita ANCHO (MIRIT)         DOMENSION (MIRIT) (ARCHO (MIRIT)         DOMENSION (MIRIT) (ARCHO (MIRIT)         DOMENSION (MIRIT) (ARCHO (MIRIT)         DOMENSION (MIRIT) (MIRIT)         DOMENSION (MIRIT) (MIRIT)         DOMENSION (MIRIT)         DOMENSION<	DIMENSIONES (Dimensional) CORRENTIANA AREA UNICA CONTRAMINAL ANCHO (MIRTI) (CONTRAMINALA CONTRAMINALA ANCHO (MIRTI) (CONTRAMINALA ARCA (bm <sup>2</sup> ) 1 2 3 4 387 m 11875 m 33 1.54	DIMENSIONES (Dimensional LARRED ANDHO (Wildtr)         COREXTUNA (UNICA Exception 5         AREA (DOMENSIONES AREA (DOMENSIONES)         CODELECTURAL HORDOCAMBURDO (DEL APPEARANCE COVERADE) <sup>11</sup> ANDHO (Wildtr)         (LARRED)         5         AREA (LARRED)         1         2         3         4         5           387 m         11975 m         33         1.54	DIMENSIONES (Dimensional Otras ANCHO (MIMP)         COMENSION (MIMP) (Length)         COMENSION (MIMP) (MIMP) (Length)         COMENSION (MIMP) (MIMP) (Length)         COMENSION (MIMP) (MIMP) (MIMP) (Length)         COMENSION (MIMP) (MIMP	DIMENSIONES (Dimensional)         Observature (untra)         AREA Contramensional (untra)         Observature (untra)         Observatur

\*\*\* Solo se completa en observaciones diurnas cuendo exista seguridad sobre la composición de la mancha por hidrocarburo de orgen mineral

#### 4 COMUNICACIONES CON EL BARCO (Contact with the vessel)

Se procede a comunicar con el barco a las (The ship is contacted by the aircraft at) 20:32 UTC via VHF canal (UTC means VHF Channel)

06

A nuestra petición el oficial de guardía del bucue reporta los siguientes datos (The Officer On Duty reports the following information):









#### Notification report of a discharge from a vessel caught red handed

4.2	INDICATIVO DE LLAMADA (Call sign)	SHW22
43	N* MO (MO number)	9081071
4.4	ULTIMO PUERTO ORIGEN (Last port of call)	HUELVA
4.5	PUERTO DESTINO (Port of destination)	CEUTA
4,6	ETA (Estimated time of annual)	23/06 - 02:00 LT
4.7	ULTIMA CARGA (Last cargo)	FUEL OIL IMO CLASS 3
4.8	TIPO DE CARGA ACTUAL (Actual cargo (ypa)	FUEL OIL IMO CLASS 3
4.9	Le informo de que se está obsurvando una mancha sospechosa de incumpli: MARPOL en la popa del buque (/ inform you that you have à suspected oil trace astern of you, in your wake)	x
4.10	¿Coincide con señal AIS? (Matches the AIS signal?)	x

4.11

El barco declara no haber realizado ninguna doscarga.

#### DECLARACIÓN OFICIAL DE LA TRIPULACIÓN DE LA AERONAVE (Flight Crew Declaration) 5

Como Comandante al mando de la aeroneve doy fe de que los hechos que constan referenciados en esta documento se han producido lal y col en lugar y fecha indicados, habiéndose recogido los datos que se acompañan con la finalidad de aportar las pruebas necesarias a la Autoridad competente para que sirvan de soporte en las diligencias que pueden iniciarse contra el buque presuntamente infractor (As Commander of the aircraft, I hereby leasify the facts described above as well as the evidences collected to support the Marttime Authority in omostum!

5 DECLARACIÓN OFICIAL DE LA TRIPULACIÓN DE LA AERONAVE (Filight Crew Declaration)

Como Comendante al mando de la seronave doy le de que los hechos que constan referenciados en este documento se han producido tal y como se describon, en tugar y techa initicados, habémdose recogido los datos que se acompañan con la finalidad de aportar los pruebes necesanis a la Autoridad Maritima completente para que sirvan de segorte en las dilepencies que pueden inicianse contra el buque presuntamento intrinactor. (As Commander of the aircreft, i helpty testity the facta described above as well as the evidences collucted to support the Maritime Authority in the enforcement

procedured

6.1	Lugar (Place)	VALENCIA			
5.2	Fecha (Date)	Bag06/2012			
5.3	AERONAVE (Aircraft)	SASEMAR 101			
5.4	MATRICULA (Aircraft reg)	EC-KEK			
			NOMBRE (Name)	D.N.I. (Identity number)	FIRMA (Signature)
5.5	COMANDANTE (Commander)		JOSE FERRA	43002280-P	tothe
5.6	OPERADOR CONSOLA (Syst	em Operator)	GUILLERMO ARROBA	5362923-J	( Kaid Y-

Los arriba firmentes declaran ser oficiales a cargo de la seronave. En fe de la venecidad de los hechos que en este comunicado oficial se discriben, firmen y hacen entrega al Jele del CCE de (We, the above signed, declare to be officiers of the aircraft. We contirm by signature the information included in this official report and submit it to the Head of the MRCIC d).

#### 6 TOMA DE MUESTRAS -A completar por el Jefe de CCS- (Sampling)

Completar ablo en el caso de que se haya toma de	muestras de la mancha observad	<ol> <li>(Fill only if samples are taken)</li> </ol>
		1
6.1 Nº de referencia (Deference aumheri		Deticity of its income (Reserve)

					anne fan i fan i fan i
6.2	Facha de la toma de muestras (Data)	1		Latitud (Latitude)	Longitud (Longitudi)
6.3	Hora de la toma de muestras (Time)	UTC	8.4		

#### DECLARACION DEL JEFE DE CCS y ENVÍO A LA DIRECCIÓN GENERAL DE LA MARINA MERCANTE 7 (Head of MRCC Declaration and submission to the Maritime Authority)

WTEN (9. PADIAC SA VEL Complete del CCS de la EPIC Blocksda de Salvarnente y Beguridad Maritima, dectero conformidad con los documentos, estractos, vestacios de vuelo que se referencian en este escrito y que se envien a (se Mead of the MPRCC of the Spanish Maritene Saledy Agency / hereby confirm the facts, information and documents included end mentioned in this report end submet it to the Maritene Maritene Saledy

Dirección General de la Marina Mercante

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## **Standard Pollution Observation LOG**

#### STANDARD POLLUTION OBSERVATION / DETECTION LOG D BONN AGREEMENT POLLUTION DETECTED D HELCOM REPORTING AUTHORITY AIRCRAFT REG MISSION No CAPTAIN CO PILOT OPERATOR. OBSERVER DAY DATE MONTH YEAR JUAN SM-EDUARDO SASEMAR 101 JOSE FERRA JORGE JUAN PENAJGUILLERMO 01 12 EC-KEK 22 D8 101201208221 TORRES ARROBA FLIGHT TYPE ROUTE / AREA TIME OVER THE SEA TIME OVER THE SEA TOTAL DAY TIME OVER THE SEA NIGHT MEDIO AMBIENTE MA7 01hrs 00mns 03nrs 00mins 04hrs 00mins

Ho	AREA	TIME	POS	POSITION		DIMENSIONS		AREA OILED	OIL APPEARANCE COVERAGE					E	MINIMUM	MAXIMUM	COMBAT
C	CODE	UTC	1.20	LONGITUDE 'EAST WEST'	LENGTH Km	WADTH Km	%	km <sup>2</sup>	AREA (PERCENTAGE - %) km²						m <sup>1</sup>	m <sup>3</sup>	YN
	1.1.1		And the second s	Carl Marcal			-	1	2	3	4	6	Oth	1			
Mt		19,56:00	N 36°04.2'	W 006°22.6'	12	0.4	33	1.5	Û	D	0	0	Ű	100	D.	Q.	
11.1	1	1	1	1.2				1		· · ·		1		1	1		

Na	POLL	1.		DETE	CTION			PHOTO V/N	OTO VIDEO V/N V/N	IDEO FLIR VAN VAN			WEATHER	REMARKS			
1	TYPE	SLAR	IR.	uv	VIS	MW	LF				WIN	0	CLOUD	VIS	SEA	Wx	
M1	OIL	x	х	1		X	х	N	N	N	293°	15/0	FT	1		h n	
	1			J		1		-					FT				

No	REMARKS		OIL APPEARENCE TA	ABLE	
		No	OIL APPEARANCE DESCRIPTION	MINIMUM VOLUME m <sup>2</sup> / km <sup>2</sup>	MAXIMUM VOLUME m³ / km²
M1	Contaminación en la estela del buque VEMACIL XXI	9	SHEEN	0.04	0.30
12		2	RAINBOW	0.30	5,00
		3	METALLIC	5.00	50.0
		4	DISCONTINUOUS TRUE COLOUR	50.0	200
1		5	TRUE COLOUR	200	>200





## **Slick position**

The slick position is bearing 248° from TRAFALGAR CAPE at 17,83 Nautical Miles, as shown in the following image.







## **Remote sensing records**

SLAR image showing:

A. SENSOR SLAR

the length and direction/area of the slick

the central point of the slick

the dimensions/shape of the plotted polygon.







## **Remote sensing records**

SLAR image showing:

the length and direction/area of the slick

the central point of the slick

the dimensions/shape of the plotted polygon.







#### **B. SENSOR IR/MRW/LSF**

The LFS sensor classifies the slick as pollution







### Study Oilmap-AIS.







- 1 The operators from the aircraft Sasemar 101 confirm a discharge connected to the wake of the vessel VENAOIL XXI INO N= 3001071, the surrounding area being clean.
- <sup>2</sup> The vessel is identified by the aircraft Sasemar 101 by its AIS signal and the identity is confirmed by the further interrogation of the operators.
- 3 The discharge has been detected by the following sensors SLAR, IR, LSFL, that classifies as "Pollution" (see pages nums. 9 and 10)
- 4 The polluted area according to the SLAR sensor is of 1.54 km2. The slick position is bearing 248° from TRAFALGAR CAPE at 17,83 Nautical Miles.
- 5 The operators confirm that the discharge stops after the vessel was contacted by radio. The vessel denies the discharge when being interrogated by the operators.







Informe detección (Report Nº): M1\_1208221\_VC101

Nº Carpeta SIGO (Emergency Nº): 3363/12

CCS (MRCC): VALENCIA

## Notification of a presumed illicit discharge from a suspected vessel (not detected red-handed) POLLUTION DETECTION FINAL REPORT

### EMSA CleanSeaNet alert report Date: 16/09/2012







## Notification of a presumed illicit discharge from a suspected vessel (not detected red-handed)

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- 1. STANDARD POLLUTION OBSERVATION LOG
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- 3. SATELLITES IMAGES
- 4. PHOTOGRAPHS AND FLIR IMAGES
- 5. REMOTE SENSING RECORDS
  - D.SENSOR IR/LSFL/SLAR
- 6. BACKTRACKING ANALYSIS
- 7. CONCLUSIONS







### **1. Standard Pollution Observation LOG**

#### I HELCOM STANDARD POLLUTION OBSERVATION / DETECTION LOG D POLLUTION DETECTED D BONN AGREEMENT

REPORTING AUTHOR	ITY AIRCRAFT REG	MISSION No	CAPTAIN	CO PILOT	OPERAT	)R	OBSERVER	DATE	MONTH	YEAR
	EC-KEN	SM-101201209161	PEPE ALMAS	PEDRO ALHAS	PABLO BENJUMEDA ALBERTO VALLS		EDUARDO TORRES	16	09	12
FLIGHT TYPE	ROUTE / AREA		11	TIME ON	ER THE SEA	TIME	OVER THE SEA	1	OTAL	

1.1.1.1		 DAY		NIGH	T	TIME OVER	THE SEA
		me	mins	nrs	mins	ive	mins

No	CODE	TIME	POSITION		DIMENSIONS		AREA	OILED		OIL A	PPEARA	NCE CO	VERAG	E	MINIMUM	MAXIMUM	COMBAT
		UTC	LONGITUDE 'EAST WEST'	LENGTH Km	WIDTH		- COVER	AREA km²	-	(PERCENTAGE - %)					WOLUME m <sup>2</sup>	WOLUME m <sup>3</sup>	YM
									1	2	3	4	5	Oth			
T.	1.00	00:16:35	N 37944.7"	E 000/10.7"	3.8	14.5	51	20.7	100	0	ø	D	U	0	80	6.2	
2	1.1	10:39:46	N 36°27.3	W001927 4	2	04.	62	0.5	(00)	0	0	0	0	0.	0	0,8	
3		12:19:00	N 40°8.4°	W/000*45.5	112	4.0	5	2.30									-
		P 11				-				1		1				1	

No	POLL	DETECTION						PHOTO	VIDEO	DEO FLIR		WEATHER	REMARKS			
	TYPE	SLAR	R	UV	VIS	MW	IF	Y.M	VAN	YA	WIND	CLOUD	VIS	SEA	Wx	
1	LNK	×		1			1	¥-	Y.	V	-	FT				
1	C/L	8	-	×			×	<u>y</u>	Y-	Y.	9	FT				
	CIL.	x		1			1.00	11	16	N	1	FT				
	-										-	FT				

No	REMARKS		OIL APPEARENCE TABLE						
		Ro	OIL APPEARANCE DESCRIPTION	MINIMUM VOLUME m <sup>3</sup> /km <sup>2</sup>	MAXIMUM VOLUME m <sup>3</sup> /km <sup>2</sup>				
1	Mt :	1	SHEEN	0.04	0.30				
.1	e.	2	RAINBOW	0.30	5.00				
		3	METALLIC	5.00	50.0				
		4	<b>DISCONTINUOUS TRUE COLOUR</b>	50.0	200				
-		5	TRUE COLOUR	200	>200				





### 2. Slick position

The slick position is bearing 81° from Gata cape at 38,3 Nautical Miles, as shown in the following image.







### 2. Slick position

The slick position is bearing 81° from Gata cape at 38,3 Nautical Miles, as shown in the following image.







## 3. Satellite images

Satellite image showing the slick reported by CLEANSEANET.



#### RSAT-2 - 2012-09-16 06:13:46

	Clea	nSeaNet Alert Report			SPA	Ac	quisition	2012-09-16 06:12:59 UTC		
E	MSA scene	ID 23944	RADARS	AT-2 - SAF	R 23944 5				List of Spills	GIB Viewer
		SAR Wind at Center		and the second	Length	Width		Alert	Number of	Oilspill
Centre	Position	SAR Wind	at Center	Area	Length	Width	Class	Alert	Number of	Oilspill
Centre	Position Longitude	SAR Wind Direction (Fram)	at Center Speed (m/s)	(km <sup>a</sup> )	Length (km)	Width (km)	Class (A/B)	Alert Level	Number of slicks	Oilspill Warning Issued





## 4. Photographs and FLIR images

Photograph of the slick.







#### 5. SLAR

SLAR image which shows the length and direction of the slick, its central position and dimensions of the plotted polygon.

Sensor: SLAR (Grid: off, Geopos: on, Geotarget: off, Zoom: 1) LUT Range: 0 - 65535 Mission: SM-101201209161 2012-09-16 08:47:50.0 ACFT EC-KEK Op: PABLO BENJUMEDA Op2: ALBERTO VALLS Time: 09:20:42 Lat: N 37\*44.1' Lon: E 000°22.5' Gs 154knAlt --- Hdg 336' W/V 0\*/0kn



Time: 09:14:08 Lat: N 37°41.2' Lon: E 000°01.6" Gs 195knAlt 3061ft: Hdg 91° W/Y 95°/3kn







## 6. Remote sensing records

### D. SENSOR IR/LSF/SLAR







## 7. Backtracking analysis Oilmap-AIS.

The backtracking analysis of the slick using AIS data identifies the vessel, as the suspected vessel of the pollution and concludes the discharge started at 22:16 UTC and finished at 22:36 UTC.







### 8. Final Report Conclusions

- It was received at MRCC Valencia, CleanSeaNet Alert Report, nº 23944, acquisition time, may, 16<sup>th</sup>, 2012 at 06:12 hours UTC, where it is detected a possible oil slick named E4.
- 2. The operators from the aircraft A/S SASEMAR 101 confirm the detection of a slick on September, 16<sup>th</sup>, 2012 at 09:10 hours UTC.
- 3. According to the Bonn Agreement Oil Appearance Code, the pollution is classified as "SHEEN" by the trained operators. The photographs taken during the flight support this conclusion. Laser sensor classified the pollution as "Water/Biogenic"
- 4. The suspected vessel, is identified through the backtracking-AIS analysis.
- 5. The polluted area according to the satellite image is of 0,51 km<sup>2</sup>. The slick position is bearing 81° from Palos Cape at 38.3 NM.



HAD STOLED IN CALLS IN STRUCTURE





The prevention and response strategy to operational discharges at sea aims to have a deterrent effect on oil polluters, of difficult quantification.

Aerial surveillance results in 2011:

More than 1.500 Vessels monitored per month.

5 Vessels caught red-handed:

5 Followed-up by administrative proceedings

1 Followed-up by court proceedings

Imposition of fines up to 1.200.000€.

Aerial surveillance results in 2012, up to now:

2 Vessels caught red-handed. Followed-up by administrative proceedings Imposition of fines up to: 1,15 M€









