

CYPRUS OIL POLLUTION RESPONSE EXERCISE

“NIRIIS 2012”

**LIMASSOL
25-26 SEPT. 2012**



ΕΘΝΙΚΗ ΑΣΚΗΣΗ ΑΝΤΙΜΕΤΩΠΙΣΗΣ ΘΑΛΑΣΣΙΑΣ ΡΥΠΑΝΣΗΣ

«ΝΗΡΗΙΣ 2012»

**ΛΕΜΕΣΟΣ
25-26 ΣΕΠΤ. 2012**

**Dr. Efstratios Georgoudis
DMS, Limassol, Cyprus**



REPUBLIC OF CYPRUS

DEPARTMENT OF MERCHANT SHIPPING



“NIRIIS 2012”

ORGANIZING AUTHORITY

Ministry of Communications and Works

Department of Merchant Shipping

www.shipping.gov.cy

**With participation of
EUROPEAN MARITIME SAFETY AGENCY
(EMSA)**



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ΕΤΟΣ 1980

ΙΣΤΟΡΙΚΟ ΣΗΜΕΙΟ ΑΝΑΦΟΡΑΣ
ΓΙΑ ΤΗΝ ΑΝΤΙΜΕΤΩΠΙΣΗ
ΠΕΤΡΕΛΑΙΚΗΣ ΡΥΠΑΝΣΗΣ
ΣΤΗΝ ΚΥΠΡΟ
ΜΕΤΑ ΤΟ ΝΑΥΑΓΙΟ ΤΟΥ
ΠΛΟΙΟΥ “ΖΕΝΟΒΙΑ”
ΑΝΟΙΚΤΑ ΤΗΣ ΛΑΡΝΑΚΑΣ

YEAR 1980

**HISTORICAL BENCHMARK FOR
OIL SPILL RESPONSE IN
CYPRUS
AFTER THE CAPSIZE AND
SINKING OF “ZENOBIA”
OFF LARNACA’ S COAST**



“NIRIIS 2012”

ΣΤΟΧΟΙ

Η εκτίμηση της ικανότητας της Κυπριακής Δημοκρατίας να ενεργοποιήσει εθνικά μέσα και εξοπλισμό στην αντιμετώπιση σοβαρού περιστατικού στη θάλασσα και η εξέταση των διαδικασιών επικοινωνίας και αντιμετώπισης έκτακτων περιστατικών.

OBJECTIVES

to examine the capability of the Republic of Cyprus to mobilize antipollution resources and equipment in response to a major oil spill at sea and to test the communication and emergency response procedures.

ΠΙΘΑΝΟΙ ΚΙΝΔΥΝΟΙ ΡΥΠΑΝΣΗΣ ΘΑΛΑΣΣΑΣ

POSSIBLE OIL SPILL RISKS AT SEA

- ΜΕΤΑΦΟΡΑ ΚΑΙ ΕΚΦΟΡΤΩΣΕΙΣ ΒΑΡΕΩΝ ΚΛΑΣΜΑΤΩΝ ΠΕΤΡΕΛΑΙΟΥ - **LOADING/UNLOADING OF HEAVY GRADES OF OIL**
- ΜΕΤΕΚΦΟΡΤΩΣΕΙΣ ΑΠΟ ΠΛΟΙΟ ΣΕ ΠΛΟΙΟ (ΠΕΤΡΕΛΑΙΟΦΟΡΑ) - **SHIP TO SHIP (STS) TRANSFERS ON TANKERS**
- ΠΥΚΝΗ ΘΑΛΑΣΣΙΑ ΚΥΚΛΟΦΟΡΙΑ - **SHIP TRAFFIC DENSITY**
- ΕΚΜΕΤΑΛΛΕΥΣΗ ΥΔΡΟΓΟΝΑΝΘΡΑΚΩΝ - **OIL EXPLOITATION ACTIVITIES**
- ΚΙΝΔΥΝΟΙ ΑΠΟ ΠΕΤΡΕΛΑΙΑΓΩΓΟΥΣ ΣΕ ΓΕΙΤΟΝΙΚΕΣ ΧΩΡΕΣ - **DANGERS FROM OIL TRANSFER PIPES IN NEIGHBOURING COUNTRIES**
- ΠΑΡΑΝΟΜΕΣ ΔΡΑΣΤΗΡΙΟΤΗΤΕΣ - **ILLEGAL DISCHARGES AT SEA**



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- Το ερώτημα που τίθεται δεν είναι ΑΝ θα συμβεί σοβαρό περιστατικό θαλάσσιας ρύπανσης από πετρέλαιο αλλά ΠΟΤΕ θα συμβεί
- There is NO question whether a serious oil pollution accident will occur but only WHEN



- ΣΥΝΕΠΩΣ, ΘΑ ΠΡΕΠΕΙ ΝΑ ΕΙΜΑΣΤΕ ΠΑΝΤΟΤΕ ΚΑΤΑΛΛΗΛΑ ΠΡΟΕΤΟΙΜΑΣΜΕΝΟΙ
- CONSEQUENTLY, WE NEED TO BE WELL PREPARED

Συνέπειες από τη ρύπανση της θάλασσας με πετρέλαιο Consequences from oil pollution at sea

- η τοξικότητα του πετρελαίου προκαλεί βλάβες στον άνθρωπο, στην θαλάσσια ζωή και περιβάλλον που χρειάζονται πολλά χρόνια για να επανορθωθούν
- toxicity of oil has severe consequences on humans, the marine life and environment and takes many years to recover
- Μακροχρόνιες επιπτώσεις στην ποιότητα ζωής του ανθρώπου, στην οικονομία και στον τουρισμό
- Long-term adverse consequences on the quality of human life, on the country's economy and tourism

Ο ΒΑΣΙΚΟΣ ΣΧΕΔΙΑΣΜΟΣ στην αντιμετώπιση θαλάσσιας ρύπανσης είναι η άμεση και αποτελεσματική ανταπόκριση και περισυλλογή του πετρελαίου ΣΤΗΝ ΘΑΛΑΣΣΑ προτού ξεβραστεί στις ακτές

ΕΝΤΟΠΙΣΕ ΤΟ ΠΕΤΡΕΛΑΙΟ – ΠΕΡΙΟΡΙΣΕ ΤΗ ΔΙΑΡΡΟΗ- ΠΕΡΙΣΥΝΕΛΕΞΕ ΚΑΙ ΑΝΑΚΤΗΣΕ



The PRINCIPAL TASK in oil spill fighting is the immediate and effective response AT SEA, well before the oil drifts to the coast.

DETECT OIL – LIMIT OIL DISCHARGE AT SOURCE – CONTAIN AND RECOVER

“NIRIIS 2011” (on 6th Oct. 2011)
1st exercise of this kind ever held in Cyprus
Positive overall verdict



06.10.2011

“NIRIIS 2012”

- 2^η ΕΘΝΙΚΗ ΑΣΚΗΣΗ ΜΕ ΑΠΟΚΛΕΙΣΤΙΚΟ ΑΝΤΙΚΕΙΜΕΝΟ ΤΗΝ ΑΝΤΙΜΕΤΩΠΙΣΗ ΡΥΠΑΝΣΗΣ
- ΚΙΝΗΤΟΠΟΙΗΣΗ ΕΘΝΙΚΟΥ ΕΞΟΠΛΙΣΜΟΥ
- ΚΙΝΗΤΟΠΟΙΗΣΗ ΒΟΗΘΕΙΑΣ ΑΠΟ Ε.Ε./EMSA
- 2ND NATIONAL EXERCISE DEDICATED ON OIL SPILL RESPONSE
- MOBILISATION OF NATIONAL EQUIPMENT
- REQUEST AND MOBILIZATION OF EU ASSISTANCE AND EMSA OIL SPILL RESPONSE VESSELS

ΜΕΣΑ ΚΑΙ ΕΞΟΠΛΙΣΜΟΣ ΑΝΤΙΜΕΤΩΠΙΣΗΣ OIL SPILL RESPONSE EQUIPMENT

ΠΛΩΤΑ ΦΡΑΓΜΑΤΑ - Για τον περιορισμό και τον εγκλωβισμό του πετρελαίου, που διευκολύνει την ανάκτηση του

SEA BOOMS – for limiting and containment of oil at sea, making thus recovery of oil easier



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ΜΕΣΑ ΚΑΙ ΕΞΟΠΛΙΣΜΟΣ ΑΝΤΙΜΕΤΩΠΙΣΗΣ OIL SPILL RESPONSE EQUIPMENT

Απορροφητικά υλικά
Sorbent material



ΜΕΣΑ ΚΑΙ ΕΞΟΠΛΙΣΜΟΣ ΑΝΤΙΜΕΤΩΠΙΣΗΣ OIL SPILL RESPONSE EQUIPMENT

Τηλεκατευθυνόμενο σύστημα ελαιοσυλλέκτη με αντλία

Remote controlled oil skimmer and pump





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ΜΕΣΑ ΚΑΙ ΕΞΟΠΛΙΣΜΟΣ ΑΝΤΙΜΕΤΩΠΙΣΗΣ OIL SPILL RESPONSE EQUIPMENT

Σταθεροί βραχίονες με ενσωματωμένο ελαιοσυλλέκτη
Rigid sweeping arms with integrated brush oil skimmer



Εφεδρικός στόλος αντιρρυπαντικών πλοίων EMSA –

**Ενίσχυση εθνικών δυνατοτήτων Κρατών Μελών ΕΕ
Εξοπλισμένα με αντιρρυπαντικό εξοπλισμό τελευταίας τεχνολογίας
Δυνατότητα αποθήκευσης μεγάλης ποσότητας ανακτηθέντος πετρελαίου**

EMSA fleet of oil spill response ships -

Top-up EU Member State national capabilities

Equipped with state of the art oil spill response equipment

Large storage capability of oil recovered



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As of 1 January 2012

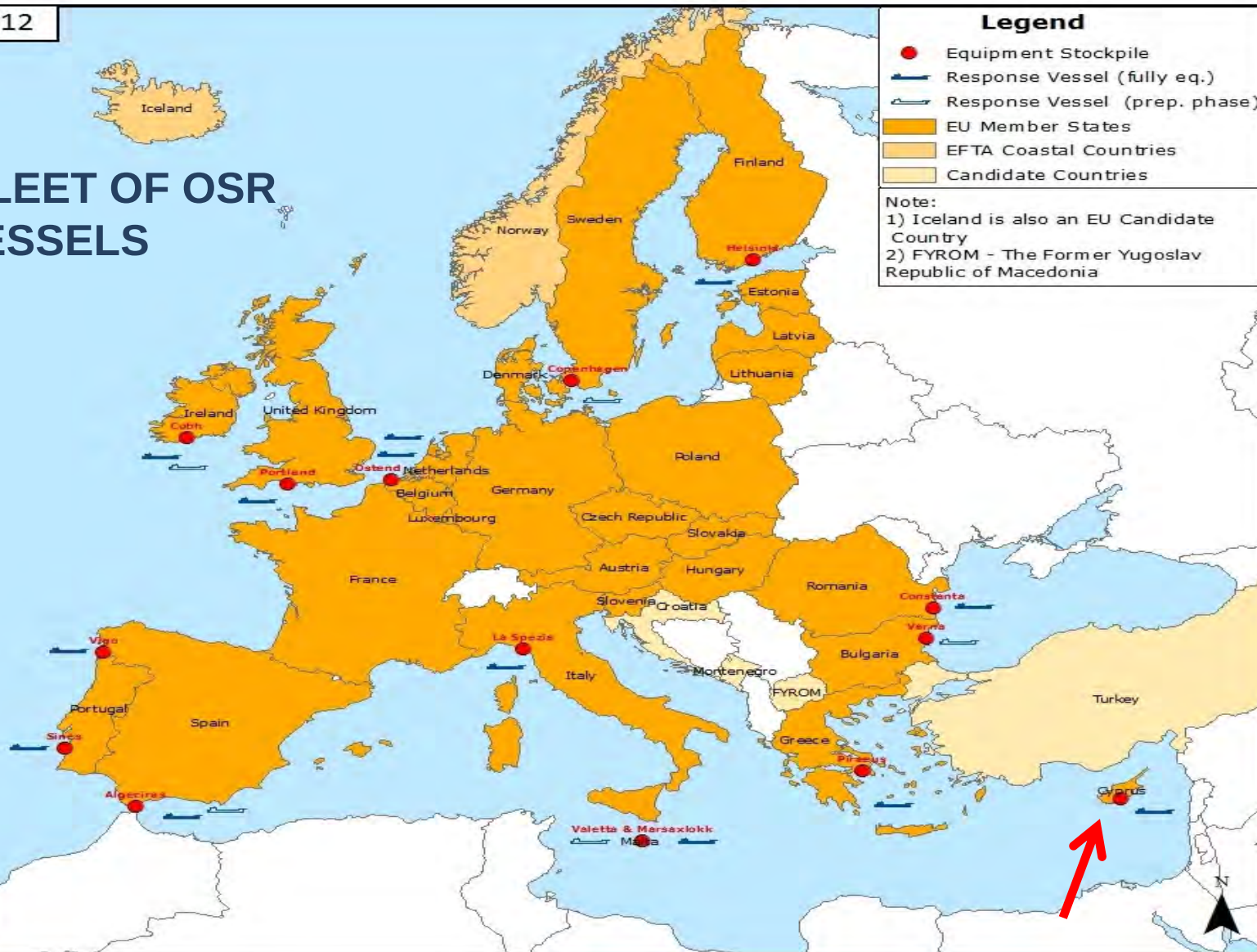
EMSA FLEET OF OSR VESSELS

Legend

- Equipment Stockpile
- Response Vessel (fully eq.)
- Response Vessel (prep. phase)
- EU Member States
- EFTA Coastal Countries
- Candidate Countries

Note:

- 1) Iceland is also an EU Candidate Country
- 2) FYROM - The Former Yugoslav Republic of Macedonia





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EXERCISES WITH EMSA OSR VESSELS IN 2011

Legend

- Exercises 2011
- EU Member States
- EFTA Countries
- Candidate Countries



“NIRIIS 2012” GENERAL PROGRAMME

Date	Local Time (UTC+3)	Description
Monday, 24/9/2012		NOTIFICATION AND PRESS CONFER.
	0800-1200	NOTIFICATION EXERCISE
	1330-1430	PRESS CONFERENCE
Tuesday, 25/9/2012		PHASE I (At-sea exercise)
	1000-1200	OIL SPILL RESPONSE AND RECOVERY EXERCISE AT SEA
	1200-1300	BREAK
	1300-1600	OIL DISCHARGE EXERCISE AT VASILIKO PORT/ECO FUEL
Wednesday, 26/9/2012		PHASE II (Vassilikos EAC Power Station)
	0900-1100	SHORELINE PROTECTION AND CLEAN-UP EXERCISE

EXERCISE SCENARIO

Oil spill incident with instantaneous release of ~2000 tons of heavy fuel oil type close to the SW edge of Limassol Bay.

The incident was caused after a collision between an oil tanker and a bulk carrier on the 24/09/2012 at 07:00 local time/04:00 GMT at geographical position:

Lat 34° 25.41 N, Long 32° 58.92 E.



Input Data in the oil spill model

- Location of the oil spill incident within 30 nautical miles radius from southwest of Cyprus
- Currents: speed $\rightarrow$ 0.10 m/s, direction $\rightarrow$ 23°
- Wind: speed $\rightarrow$ 5.0 m/s, direction $\rightarrow$ 206°

MEDSLIK - Input Interface for Oil Spill Simulation

File Water Currents Wind Wave Forecast SST / Ice Slick Correction Response Multiple Spills Help

Input Data for the Oil Spill

No Adjustment has been made of the Predicted Position of the Spill

Date of Spill Year 2012 Month 9 Day 24

Time of Spill Hour 4 Min 0 **Length of Simulation (hrs) from Time of Spill** 38

Duration of Spill (in hours) 0 **Units for Oil Volume:** tons **Restart** ☐

Spill Rate (tons per hour): ☐ **Total Volume of Spill (tons):** ☒ 2000.

Location of Spill

Latitude (N)
34 degrees 25.41 minutes

Longitude (E)
32 degrees 58.92 minutes

Click for Under-Water Spill

Enter Sea Surface Temperature
23.0

Type of Oil:
Generic Oil Type

Generic Oil: API No. 17.0

Depth Interval for Output (m)
0. 10.

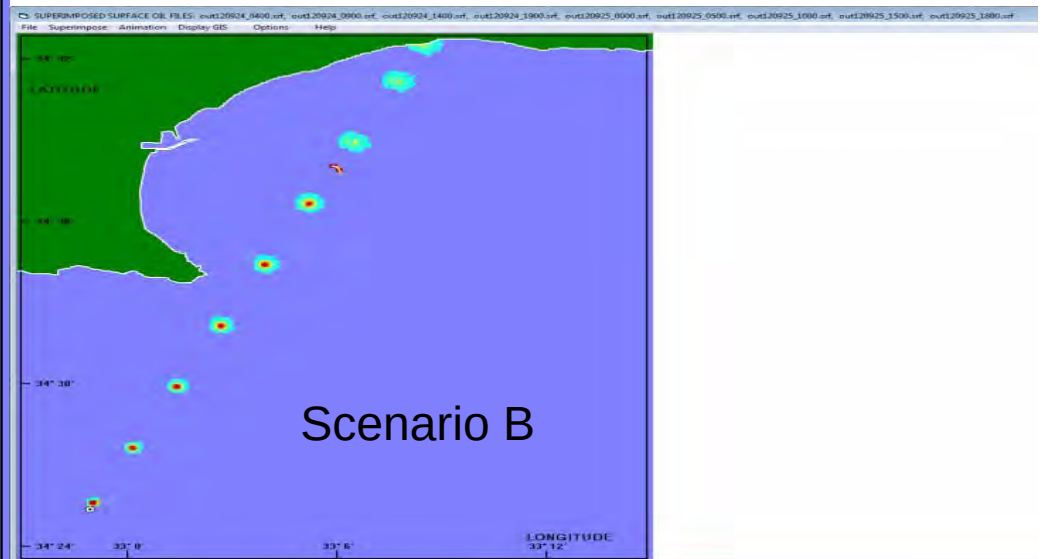
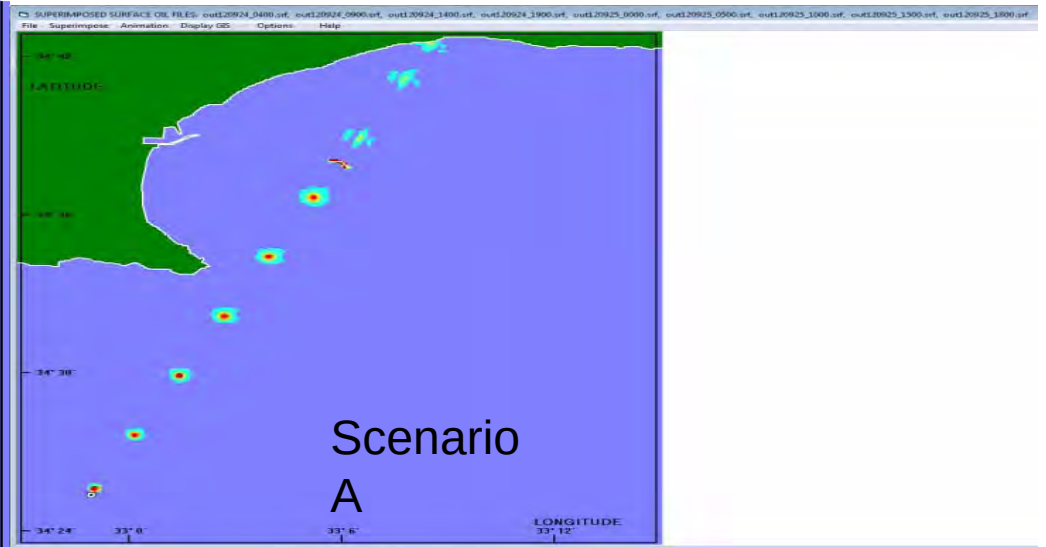
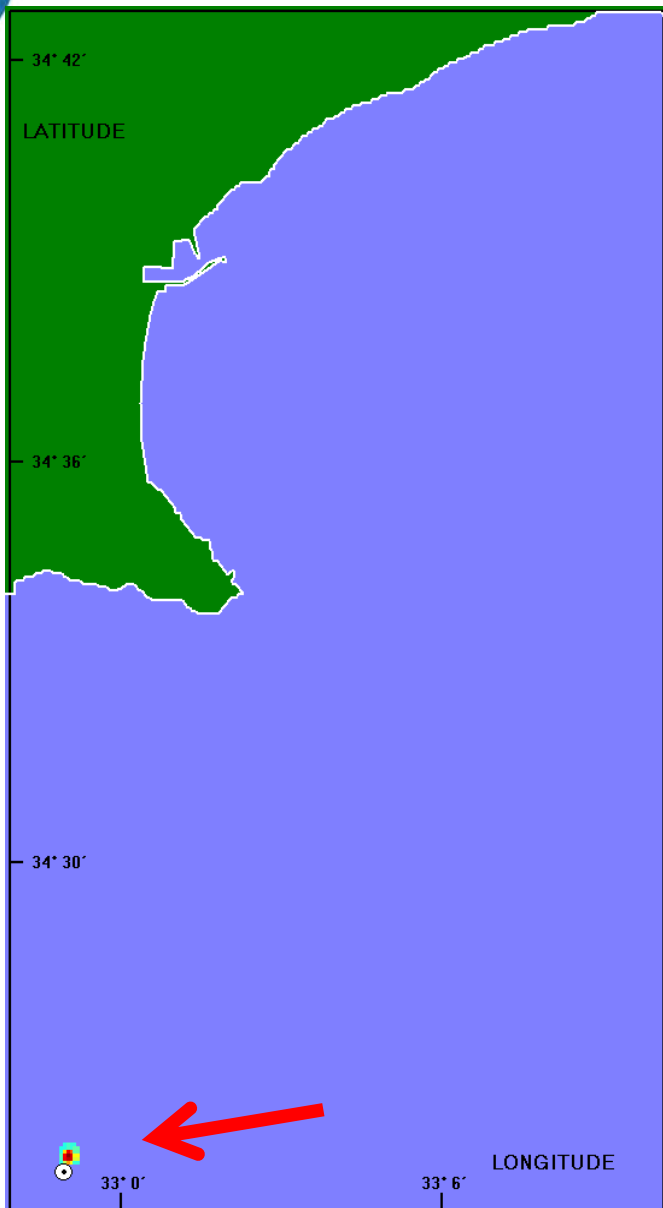
Time Interval for Output (h)
1

Output Filename Prefix out

Pixel Size for Output (m) 100.0

Map: A map showing the coastline of Cyprus (green) and the surrounding sea (blue). The map displays Latitude (34° 24' to 34° 42' N) and Longitude (32° 54' to 33° 24' E). A small circle indicates the spill location at approximately 34° 28' N, 33° 0' E.

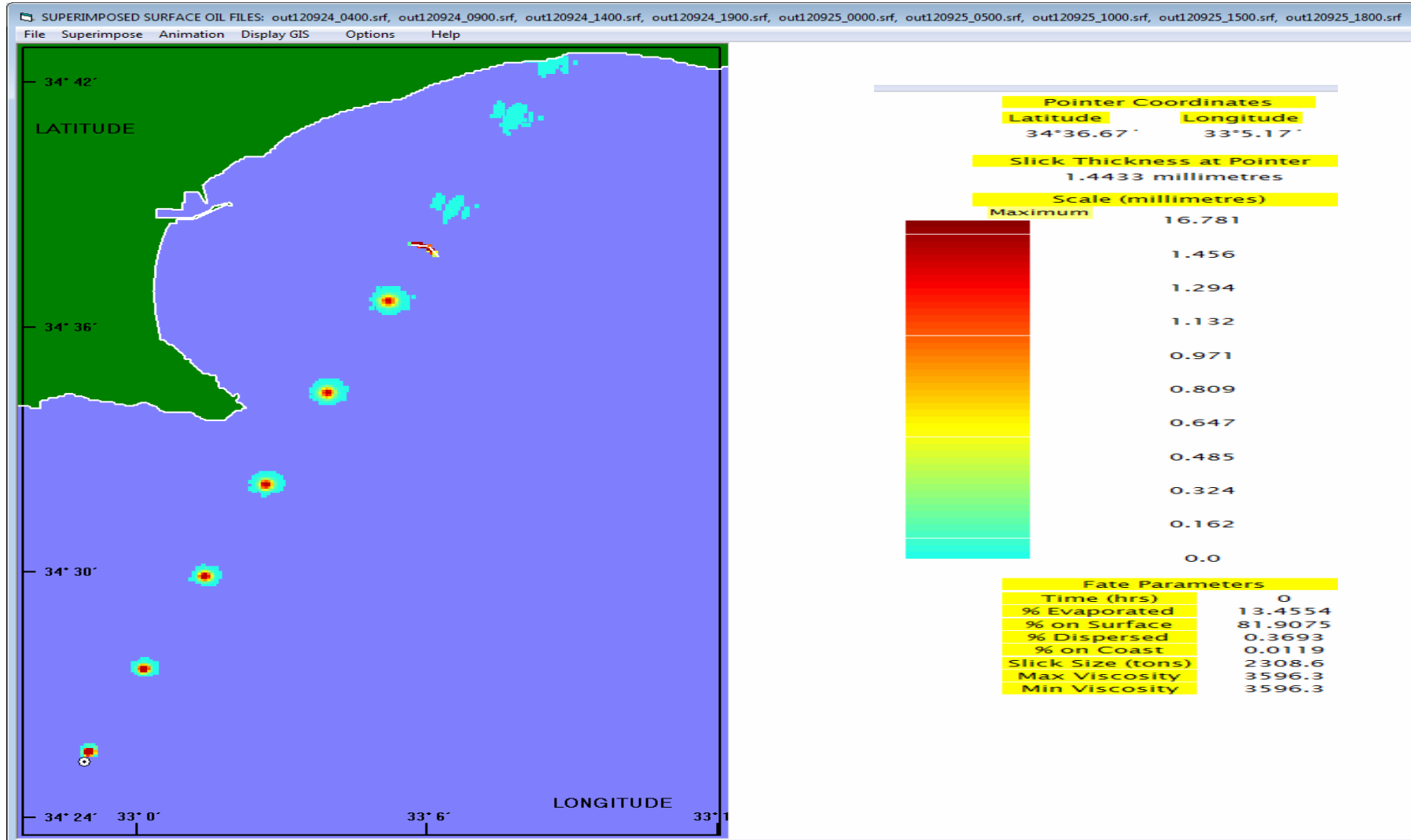
Scenario A (boom 500m) vs. Scenario B (boom 250 m)



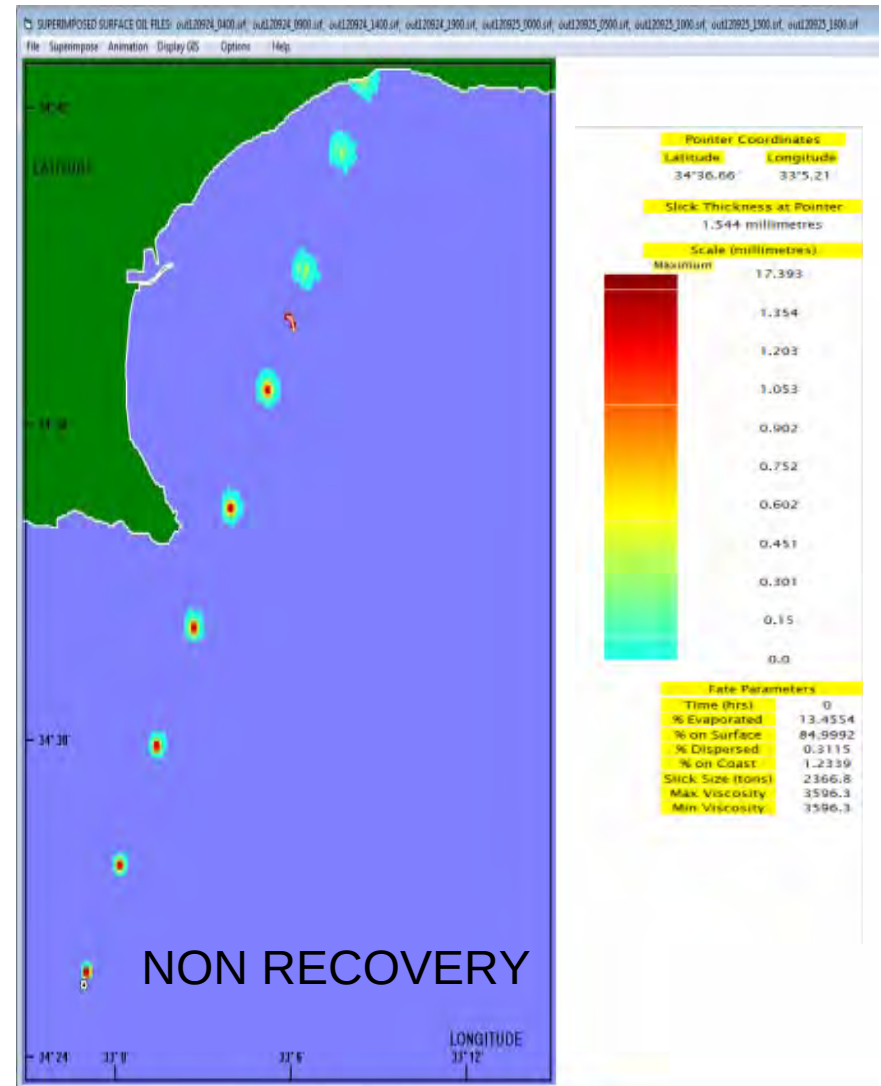
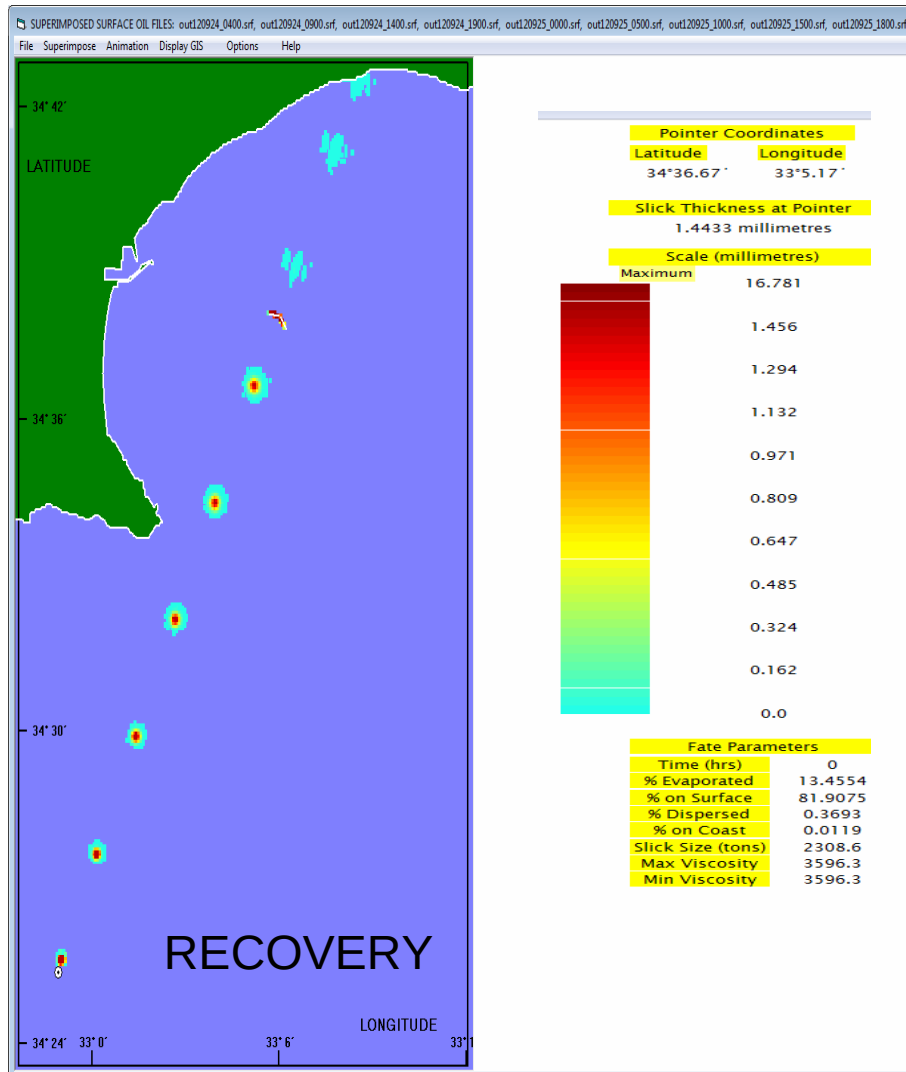
Location of ship accident and initial release of oil at sea

Scenario: Ship collision and oil drift calculation

**MEDSLIK oil spill dispersion with oil recovery application (boom length 500m).
Higher Recovery rates**



Recovery vs. Non-Recovery



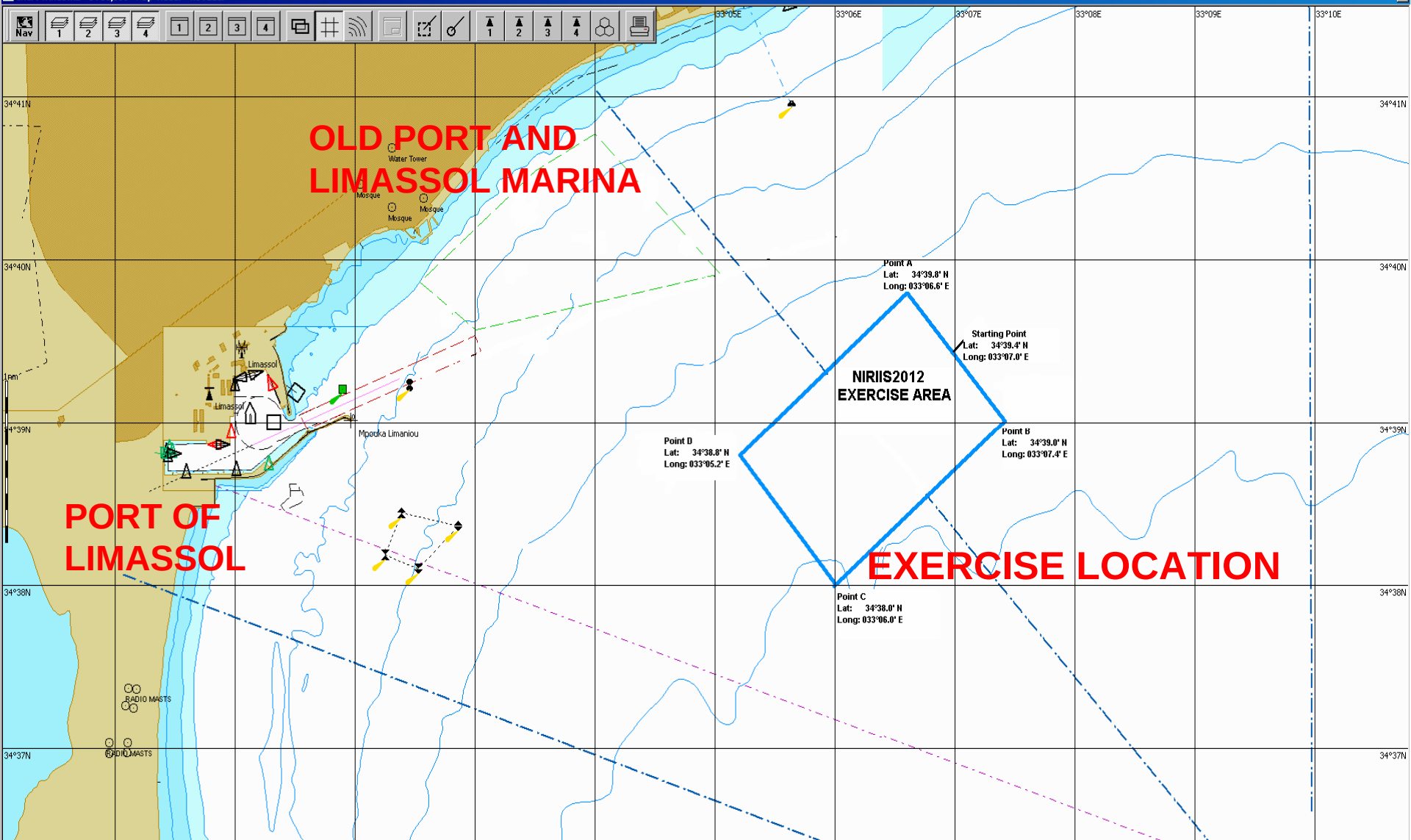


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Chart Window2 - 1:30,000 - NUp Radar - no radar





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PARTICIPANT	EQUIPMENT
DEPARTMENT OF MERCHANT SHIPPING	
EMSA	M/T “ALEXANDRIA”, M/T “AKTEA OSRV”
Cyprus Ports Authority	PORT TUG “ASPELIA”/“PRINIAS”
BRASAL: Marine Services Ltd	SERVICE TUG “LAMBOUSA II”
Department of Merchant Shipping (DMS) - Vessel Traffic Monitoring and Information System - VTMISS	
Cyprus Ports Authority Vessel Traffic Services -VTS	
Department of Fisheries and Marine Research	M/P VESSEL “AMFITRITI”, INFL. HIGH SPEED VESSEL
Port and Marine Police	PATROL VESSEL
Police Air Operations Unit	HELICOPTER BELL 412
FDFU (Forestry Department- Flight Unit)	AIR TRACTOR 802
JOINT RESCUE COORDINATION CENTER	-----
CYPRUS OCEANOGRAPHY CENTER (UC)	CYCOFOS/MEDSLIK 3D Oil spill prediction system



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EXERCISE GENERAL ARRANGEMENT

D: 34° 38.8' N
033° 05.2' E

COURSE 230°



H/C

MIN. FLIGHT ALT 1000 FT AGL

WIND
WEST TO EAST



TUG 1

TUG 2

OIL RECOVERY

DISTANCE BETWEEN SHIP TO SHIP NOT LESS
THAN 100 METERS

ALEXANDRIA

AKTEA OSRV

HORIZONTAL DISTANCE BETWEEN SHIP AND
AIRPLANE NOT LESS THAN 150 METERS

A: 34° 39.8' N
033° 06.6' E

POLICE

SEA
PATROL

DFMR (I)

DISPERSANT SPRAY

DFMR (II)



"FORREST-1"

FLIGHT ALT 15-500 FT AGL
SPEED 150 MPH
COURSE 230°

DISPERSANT SPRAY AREA
LENGTH: 1 KM
WIDTH: 0.5 KM
KEEP AREA FREE FROM SHIPS/BOATS

N



C: 34° 38.0' N
033° 06.0' E

B: 34° 39.0' N
033° 07.4' E



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**“NIRIIS 2012” – 2ND PART
ON WEDNESDAY 26 SEPT. 2012
AT VASILIKO POWER PLANT
SHORELINE PROTECTION AND CLEAN-UP EXERCISE**





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WHY WE DO ALL THAT?



“NIRIIS 2012”

ΕΥΧΑΡΙΣΤΟΥΜΕ ΓΙΑ ΤΗΝ ΠΡΟΣΟΧΗ ΣΑΣ

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