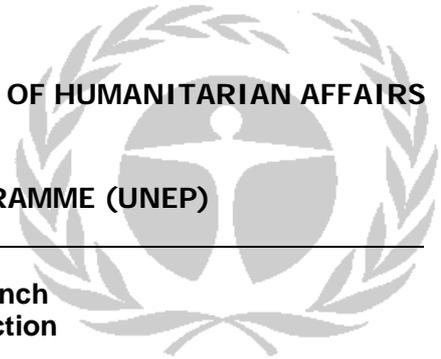




**UNITED NATIONS OFFICE FOR THE COORDINATION OF HUMANITARIAN AFFAIRS  
(OCHA)**

**UNITED NATIONS ENVIRONMENT PROGRAMME (UNEP)**



**OCHA Emergency Services Branch  
Environmental Emergencies Section  
(joint UNEP/OCHA)**

**Environmental Update No. 02  
- Lebanon Crisis -  
4 August 2006**

### **Key issues**

Environmental Update No. 2 contains information on:

- **Response to the oil spill**
- **Information on UNDP-Lebanon/Ministry of Environment/Joint Environment Unit next steps**
- **A preliminary list of potential sites that may pose risks to local populations**
- **Background information**

### **Response to the Oil Spill**

An estimated 10,000 – 15,000 tons of medium/heavy fuel oil has contaminated 150 km north of the source of pollution, a power plant at Jiyeh, south of Beirut. The spill occurred on 13 July (approx 12,000 tons) and 15 July 2006 (3,000 tons). In the United Nations, the Regional Marine Pollution Emergency Response Center for the Mediterranean Sea (REMPEC) along with the International Maritime Organization (IMO), have the lead on the oil spill response. The European Commission is also actively involved in relevant activities.

Following a request for assistance from the Lebanese Ministry of Environment, REMPEC requested member states to provide assistance to the Government of Lebanon, once the situation permits clean-up operations. REMPEC and the European Commission have received a range of positive responses. However, it has not been possible to initiate clean-up while hostilities continue. Therefore, these organizations have focused on what can be done from outside the country, including:

#### *Modelling of the oil slick*

Following REMPEC's 28 July 2006 request to the Cyprus Government, the Cyprus Oceanography Center carried out an operational oil spill modeling application in the NE Levantine Basin using the MEDSLIK-Mediterranean oil spill model, and shared the results with the Lebanese Environment Ministry.

#### *Providing technical support to the Lebanese Ministry of Environment*

REMPEC and the European Commission have both provided technical support and advice directly to the Ministry of Environment.

### *Satellite images*

The Lebanese Government and several international institutions expressed the need for satellite images to be able to assess the full extent of the damage caused by the recent oil spill. As a consequence, the International Charter on Space and Major Disasters was activated on 29 of July by the European Commission to obtain such images free of charge for the benefit of the affected population and response / clean-up activities.

The Joint Environment Unit has been circulating these images to interested parties and will begin posting them on its website shortly. Some of these image can be downloaded at [http://www.zki.dlr.de/applications/2006/lebanon/lebanon\\_2006\\_en.html](http://www.zki.dlr.de/applications/2006/lebanon/lebanon_2006_en.html). These have been shared with the Lebanese Environment Ministry.

### *Development of a strategy for cleanup*

In order to mitigate the effect of oil spills it is imperative to design an effective response strategy, tailored to the incident in question. Indeed, incorrect response measures could cause more harm than good (e.g. incorrect use of dispersant and excessive removal of sediment). REMPEC, in collaboration with the Ministry of Environment and a group of experts under REMPEC's supervision that includes REMPEC's Mediterranean Assistance Unit (MAU), the Centre de Documentation, Recherche et d'Expérimentation sur les pollutions accidentelles des eaux (CEDRE), the Central Institute for Marine Research" (ICRAM), the International Tanker Oil Federation (ITOPF), the Oceanographic Centre of Cyprus, and Mediterranean Oil Industry Group (MOIG), are currently collecting technical information to finalize the strategy and determine the equipment required to carry it out.

Ultimately, however, oil spill experts will need to visit the site to confirm the analysis and determine specific steps, which is very difficult under present security conditions. The national assessment team, noted below, will hopefully provide additional information to support the strategy development and the identification of clean-up measures.

The question of financing the assistance is key, as the incident falls outside international liability and compensation mechanisms.

### **Update on UNDP-Lebanon/Ministry of Environment and Joint Environment Unit next steps**

UNDP Lebanon is playing an active role in supporting the Ministry of Environment's efforts to address acute environmental issues, and are in regular contact with Ministry officials. A key contact person in UNDP-Lebanon is Mr. Edgard Chehab who can be reached at [Edgard.Chehab@undp.org](mailto:Edgard.Chehab@undp.org).

Together with the Ministry of Environment, UNDP has finalized Terms of Reference for a national assessment mission that will include, but is not limited to, the oil spill. This team will draw on a team of 10 national experts. UNDP is funding the mission, which is scheduled to start August 8. The Joint Environment Unit is deploying environmental experts who will provide a vital link between this national assessment team, the Ministry of Environment, UNDP, UNEP, OCHA and the Joint Environment Unit's network of donors and international experts to ensure that identified problems are addressed effectively. The Joint Environment Unit experts will also support the Ministry of Environment to mobilize assistance as required.

### **Preliminary list of potential sites that may pose risks to local populations**

The list below represents a preliminary list of facilities reported as damaged or destroyed, and which have the potential to create risks to local populations, relief workers, and the environment. These risks could arise from, for example, hazardous emissions to the air, pollution of surface and groundwater and soil.

The list compiles information gathered by various UN agencies including OCHA, UNEP and WHO from public sources, in particular the media. It has not been confirmed by national sources and therefore must be considered as indicative only. It has been shared with the Lebanese Ministry of Environment for verification.

The list preliminary is presented here to seek input and comments to help complete the inventory, which will support assessment and mitigation measures. Inputs from field staff based on their local knowledge would be particularly helpful. Contact information appears at the bottom of this note.

## **1 Large storage or combustible-processing facilities**

### **Refinery and storage**

- *Jihey thermal powerplant and fuel storage*

Location: Jihey, 28km south of Beirut

Hazardous material: Heavy fuel oil. Linked to oil spill, noted above.

- *Zahrani Thermal Powerplant and fuel storage*

Location: 9km south of Saida

Potential hazardous materials: Heavy fuel oil.

- *Zahrani Refinery*

- Location: 9km south of Saida

Potential hazardous materials: Gasoline, naphta, hydrofluoric acid, propane, butane, ethylene, propylene, mercaptan, liquefied natural gas and other combustibles

- *Beirut International Airport fuel storage depots*

Location: Beirut

Potential hazardous materials: Kerosene and other combustibles

- *Army Base- possible fuel storage tanks.*

Location: Rayak

Potential hazardous materials: Kerosene and other combustibles.

### **Intermediary storage**

No reports found

### **Service stations**

- Twenty two fuel stations reported as damaged<sup>i</sup>

Location: country-wide

Potential hazardous materials: gasoline, diesel, propane

## **2 Transport of petroleum or gasoline**

### **Gas distribution centre**

No reports found

## **Pipelines**

No reports found

### **3 Large cooling facilities**

Food industry (slaughterhouses, dairy products, fat, fish and meat, breweries, refrigerated warehouses, etc.)

- *Liban Lait – milk and by-products*

Location: Hosh Steed, Baalbeck, Baalbeck Hermel  
Potential hazardous materials: Ammonia

#### Food facilities

No reports found

### **5 Specific basic products**

- *Maliban Glass*

Location: Taanayel, Zahle, Beqaa  
Potential hazardous materials: Hydrofluoric Acid

- *Snow Wood Industry*

Location: Chouwaifat, Aley, Mount Lebanon  
Potential hazardous materials: Formaldehyde, impregnation agents

### **6 Metallurgic and electronic industry**

No reports found

### **7 Specific chemical products**

- *Sai El-Deen plastics facility*

Location: Tyr, Tyr South  
Potential hazardous materials: Ethylene, Propylene, Vinyl chloride, acrylonitrile, chlorine, toxic combustion products

Pesticides

No reports found

Chemical products: non-specific raw materials

No reports found

### **10 Explosives**

No reports found. Damaged army sites may contain explosives.

## **11 Public areas and services**

- Drinking water filtration plants  
Location: various sites possible.  
Potential hazardous materials: chlorine
- Sewage treatment plant  
Location: Various sites possible.  
Potential hazardous materials: Chlorine, hydrogen peroxide
- Hospitals  
Location: various sites possible.  
Potential hazardous materials: Oxygen, gas and various solvents, x-ray machines

## **12 Pipelines except those used for fixed installations**

No reports found

## **13 Laundries**

No reports found

14 Centres for transferring, processing and eliminating hazardous materials

No reports found

## **15 PVC industries**

No reports found

## **16 Storage sites for hazardous waste**

No reports found

17 Storage of PCB's, tires, various scraps (plastic)

- Collapse of waste collection services might lead to uncontrolled burning of waste (including plastics)

## **18 Other issues**

- Damaged transformers (power stations/electricity grid)  
Location: various sites possible  
Potential hazardous materials: polychlorinated biphenyls
- Debris from collapsed buildings (industrial and residential)  
Location: country-wide  
Potential hazardous materials: asbestos
- Risk of UXO and pollution from ammunition used  
Location: all targeted sites could potentially cause risk.
- Health care waste from hospitals and field clinics

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<sup>i</sup> [www.albaladonline.com](http://www.albaladonline.com) quoting government report (until 24 july)