

OIL CONTAMINATION IN THE EASTERN MEDITERRANEAN SEA IN 2008

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Abstract

Oil pollution of the Eastern Mediterranean Sea was investigated at 5 stations from Syria in 2007 and 23 stations from Mediterranean Sea in August 2008. The oil level was determined using references Iraq crude oil and chrysene. The highest oil pollution in East Mediterranean Sea at Turkish Part, Syrian Part (2007), Lebanon Part, South of Cyprus for crude oil was found as 98,87 µg/L, 69,24 µg/L, 20,29 µg/L, 90,96 µg/L, respectively. A comparison of the present results Turkish coast part are more polluted than the examined area. **Keywords:** Oil pollution, surface water, Mediterranean Sea.

Keywords: Eastern Mediterranean, Pah, Surface Waters

Oil pollution in East Mediterranean Sea were investigated earlier [1-7]. Oil pollution level was investigated in Mersin- Iskenderun area, Eastern Part of Mediterranean Sea was examined before and after Iraq petroleum pump [6]. The reference oil used in these studies was crude oil [1,6,7] and chrysene [2-5]. In this study the samples were collected by R/V YUNUS-S during the August in 2008 (Figure 1). The seawater sample was taken in 2,8 L amber glass bottles containing 15 ml dichlormethane (DCM) for preservation. The samples were extracted with DCM and distilled. The residue was dissolved in hexane and analyzed by UVF (Shimadzu RF 5301) at 310/ 360 nm (ex/em). In this study we used references as Iraq crude oil and chrysene (Aldrich). Sampling stations are shown in Fig 1.

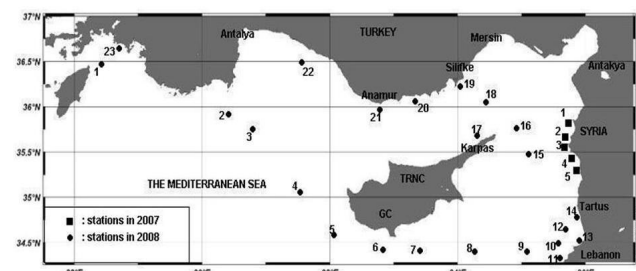


Fig. 1. Sampling stations in Mediterranean Sea

The equation of calibration curve for Iraq crude oil: $y = 427,50x + 2,38$ $r^2 = 0,99$, for chrysene: $y = 2134,05x - 3,55$ $r^2 = 0,99$.

The oil pollution level examined in sea water are shown in Figure 2. The oil pollution level in Eastern part of Mediterranean were found as 0,4 µg/L (crude oil references) [1], 488,28 µg/L in 1996, 204,6 µg/L in 1997 [6], 2596 µg/L in 1999 for Iraq crude oil equivalent and 455,42 µg/L for chrysene equivalent [7], 25,2 µg/L in 1982 (chrysene equivalent) [2], 1,25 µg/L in 1998 [5]. We found the highest oil pollution level in East Mediterranean Sea as Turkish Part 98,87 µg/L for crude oil and 20,05 µg/L for chrysene at station 21, at Syrian part 69,24 µg/L for crude oil, 14,04 µg/L for chrysene at station 5 (2007), at Lebanon part 20,29 µg/L for crude oil, 4,09 µg/L for chrysene at station 14 and at south of Cyprus part 90,96 µg/L for crude oil, 18,39 µg/L for chrysene at station 5.

When compared the results of Turkish coast part of East Mediterranean Sea the pollution level increased during the years. This paper presents the first oil level determination in area of East Mediterranean countries included Turkish, Syrian, Lebanon and Cyprus (two parts- North and South).

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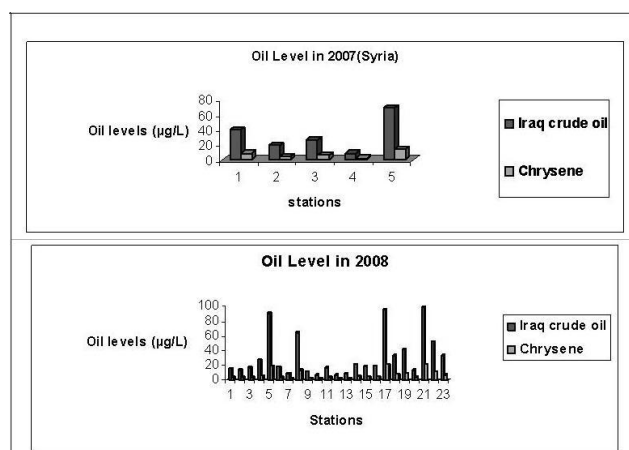


Fig. 2. The oil concentrations found in the samples (µg/L)

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