Large quantities of chemical munitions were dumped in the Baltic Sea after the World War II. In most cases the warfare was thrown overboard, either loose (bombs, shells, containers). Uncertainty still exists about the location of all dumping areas, the content and condition of the munitions or how they behave under the Baltic Sea conditions. In 2011 the project “Chemical Munitions Search and Assessment” (CHEMSEA) has been started. The CHEMSEA project seeks to close knowledge gaps on this topic by mapping and characterising these dumping sites, to develop guidelines in order to reduce potential threats to the environment and fishermen and to prepare a region-wide contingency plan to deal with cases of leakage. In the frame of the CHEMSEA project scientific cruises were organized by project partners to the chemical munitions dumpsite in Bornholm Basin, Gotland Deep and Gånsack Deep. Poster presents the results of the sampling cruise to the part of the chemical munitions dumpsite in the Gotland Basin which lies within Lithuanian economic zone.

**Methods**

The sediment samples were collected during cruise of the scientific research vessel R/V Vizija in April 2013. Sampling stations at the dumpsite were chosen near i class objects according to sonar data obtained from scanning the seafloor by Swedish Maritime Administration (SMA). Sampling stations were also planned according to the results of previous research of the dumpsite in 2003 (Garnaga et al., 2006). Hydrological, hydrochemical and biological parameters were investigated. Sediment samples for arsenic and macrozoobenthos analysis were collected using a large Van Veen grab sampler (75 kg, with a sampling area of 0.1 m²) (Fig. 2). Sediment from the top 3.5 cm was sub-sampled and frozen immediately onboard (about -20°C). Conductivity (salinity), temperature, dissolved oxygen concentration in the water column were measured using CTD (Sea Sun Technologies). Water current speed and direction were measured using ADCP (RD Instruments). Every sediment sample was checked using portable ChemPro100 detector for the presence of chemical warfare agents (CWAs) and other hazardous substances (Fig. 3).

**Results – Hydrology**

In all stations (except 65 and 66) thermocline started at depth of 50 meters where temperature raised about +2°C. Surface temperature was 2.8-12.5°C, bottom temperature was 4.4-5.1°C. The largest difference between surface and bottom temperature was measured at station ChG1 - 2.3°C. At the CWA dumpsite surface salinity was 7.2-7.3 PSU, and bottom salinity was 9.4-11.4 PSU. The largest difference between surface and bottom salinity was measured at station ChG1 - 4.2 PSU. Halocline at depth of 50 meters and from the surface salinity increased from 2.1 PSU to 4.2 PSU. Dissolved oxygen saturation in near-bottom water layer in all stations varied from 1.1 to 4.4 mg/l. Highest oxygen saturation in near-bottom layer was measured at stations 65 and 66 (5.5-10.8 mg/l). The lowest oxygen saturation in near-bottom layer was at station ChG1 - 1.1 mg/l. At CHEMSEA stations (1,2,3,6) and ChG (2,5) stations in near-bottom layer oxygen saturation was less than 2.6 mg/l (Fig. 4).

In the surface water layer at 1-10 meters depth, measured average current speed was 4.6 cm/s. In the near-bottom layer current speed varied from 9 to 25 cm/s (Fig. 5). Maximum current speed was measured at CHEMSEA station - 75 cm/s. Current directions in all water layers were different. For example, at station ChG2 in water column current direction varied from 13 to 62 degrees (Fig. 6) and in station CHEMSEA current direction varied from 13 to 113 degrees. Almost at all stations currents were directed to north.

**Results – Arsenic (As)**

Arsenic concentration in sediments as an indicator of contamination by chemical warfare agents was assessed. As in sediments was determined in the Laboratory of Geoenvironmental Research, Nature Research Center, by ICP MS. Arsenic concentrations in the sediments ranged from <1.9 to 15.9 mg/kg. As and iron (As/Fe) relationships has been used to assess the extent of arsenic pollution. An approach is based on calculating the residuals about the regression line. The residual is the difference between measured concentration and that calculated from the regression equation (Whalley et al., 1999; Garnaga et al., 2006). As a function to Fe is shown in Fig. 9. As residuals are plotted for the various stations (Fig. 10). Large positive residuals may be regarded with higher than expected As concentration. There are slightly higher concentrations in three samples from the chemical munitions dumpsite, notably at station ChG2. Chem Pro100 detector detected Blister substances in the same sample (Table 1).