

Preface

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Preface

HEAVY OIL SPILLED FROM RUSSIAN TANKER “NAKHODKA” IN 1997:

Towards eco-responsibility, Earth Sense

The Russian tanker “*Nakhodka*”, loaded with C-typed heavy oil of 19,000 kl was divided into sections and submerged off Oki Island, Shimane Prefecture on January 2nd, 1997. After drifting for 4 days, the bow was wrecked off Anto, Mikuni Town, Fukui Prefecture, and threatened throughout the various seashores of Ishikawa Prefecture. A serious heavy oil spill situation in Fukui and Ishikawa Prefectures is introduced in this book. Our scientists who came from different professional fields conducted field surveys and laboratory experiments in order to examine the conditions of heavy oil polluted seashores. Various scientific results have been produced during/after the accident at each different field.

The accident was followed by various scientific studies, clarifying the coat of thick heavy oil itself in the field and in the laboratory, such as chemical property, physical phenomena, bio-mineralogy, bioremediation, and ecological impacts. Now six years passed after the disaster, our scientists are still in pursuit of aftermath of the wrecked Russian tanker “*Nakhodka*”. The scientific data provide one of the keys and clues to understand recovery way. The papers (31) in this book reported by biochemists, microbiologists, geologists, mineralogists, physiologists, medical doctors, pharmacologists and environmental scientists in Japan, are towards eco-responsibility for future generations. We are deeply indebted to authors who generously gave time to the task of writing contributions in this book.

In this book, not only scientific results, but also the effectiveness of its intensive clean up beach by huge volunteer works, as well as the evanescent quality of the oil, are introduced, including the actual situation of "bioremediation" methods. The other safe techniques can be performed at low cost and adverse affect on the environment. And certainly we must learn to use our natural resources with much greater care. However, for such environments we must integrate experts, knowledge, from all the sciences,

including medical, engineering, and also from the social sciences like sociology, and particularly from economics. We surely need to feel total sciences with “Earth Sense”. The fuel released on December 21st, 2002, off the coast of Spanish northwestern region of Galicia, by the tanker “*Prestige*” could have long-lasting effects. Spanish soldiers and volunteers worked to clean up oil stained beach on the coast of Lira, by using scoops, buckets, and hand-powered machines, which was the same as “*Nakhodka*” and “*Exxon Valdes*” oil spill accidents. We have one report that came from Spain in this book. We must learn, study, and understand better and wiser ways to keep blue beautiful sea. We must act locally for the 21st century!!

Have a good “Earth Sense”.

Kazue Tazaki

Kanazawa University, Japan

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