

Oil Spills And Gas Leaks Environmental Response Prevention And Cost Recovery Environmental Response Prevention And Cost Recovery

The 5th Edition of Visualizing Environmental Science provides students with a valuable opportunity to identify and connect the central issues of environmental science through a visual approach. Beautifully illustrated, this fifth edition shows students what the discipline is all about—its main concepts and applications—while also instilling an appreciation and excitement about the richness of the subject. This edition is thoroughly refined and expanded; the visuals utilize insights from research on student learning and feedback from users.

This book provides more comprehensive materials and discussion on environmental impact of the offshore oil and gas industry than any other single source currently available. Specifically, multi-disciplinary perspectives are given, addressing worldwide advances in studies, control, and prevention of the industry's impact on the marine environment and its living resources. Unique to this text are the data on environmental aspects of Russian offshore oil and gas developments presented by the leading expert on the problem. The author considers the main impact factors of the offshore activity and outlines conditions providing the balance of interests for the oil industry and fisheries. Special attention is given to the ecotoxicological and biogeochemical characteristics of oil and gas hydrocarbons in the marine environment. Based on all presently available information, specific environmental requirements for discharges and seawater quality are substantiated. Final chapters summarize strategic principles of environmental protection and ecological monitoring in relation to the offshore oil and gas activity. Appendix includes Russian standards of Maximum Permissible Concentrations (MPC) and Approximate Safe Impact Limits (ASIL) for about 200 chemicals used in oil and gas production.

For more than 40 years, Computerworld has been the leading source of technology news and information for IT influencers worldwide. Computerworld's award-winning Web site (Computerworld.com), twice-monthly publication, focused conference series and custom research form the hub of the world's largest global IT media network.

Drilling for oil and gas in or under the Great Lakes has generated interest among Great Lakes stakeholders, states, and Congress. Some opposed to drilling are concerned about the potential environmental, economic, and public health consequences. They contend that drilling will raise the risks of oil spills, hazardous gas leaks, and pollution that may harm lakeside residents and the Great Lakes ecosystem. Proponents of oil and gas drilling contend that drilling will increase local and regional tax revenues and employment, increase domestic energy production, and not be an environmental problem because of new technologies that lower the risks of oil spills and other accidents. This report provides background information on historical and current drilling practices in the Great Lakes, and statistics on oil and natural gas production, where data are available. It describes state laws regarding drilling in the Great Lakes and analyzes the environmental, socioeconomic, and legal aspects of drilling in or under the Great Lakes. This report will be updated as events warrant.

This book details three main topics: the screening and characterization of hydrocarbons from air, soil and water; technologies in the biodegradation of hydrocarbons; and the bioconversion of hydrocarbons for biofuel/chemicals, as well as recent developments in the remediation of hydrocarbons and their environmental benefits. The first section focuses on screening methods, qualitative and quantitative analysis of hydrocarbons from soil, air and water environments, speciation of hydrocarbons, and natural bioremediation strategies in such environments. The second section examines technologies for removing hydrocarbon contaminants from various environments, especially advanced technologies for the removal of hydrocarbons and in-situ and ex-situ remediation strategies and problems, as well as concrete case studies. The last section, covering the bioconversion of hydrocarbons for biofuel/chemicals, highlights the biochemicals and bioproducts developed from hydrocarbons, with a particular focus on biochemical and chemical technologies used to produce biopolymers, biofuel precursors and commodity chemicals from hydrocarbons.

The safety of the U.S. undersea pipeline system is a major national interest and concern, whether the concern focuses on risk to human life or the potential for environmental pollution and damage. Focusing primarily on the Gulf of Mexico system, this book reviews historical examples of pipeline failure, assesses the potential for future pipeline failures and the means of mitigating them, and considers the efficacy of existing safety systems and inspection procedures. It also identifies alternatives for improvements in the regulatory framework and in lawmaking.

Environmental Sustainability in a Time of Change is the first book in a new Palgrave series on Environmental Sustainability. It takes a fresh look at the dynamic field of environmental sustainability by exploring the interconnections between climate change, water, energy, waste, land use, ecosystems, food, and transportation. It also provides an extensive summary on sustainability management, data analysis, mapping, and data sources. Brinkmann highlights how environmental sustainability challenges are distinctly different in the developed world, where sustainability is largely a choice, versus the developing world, where many struggle with basic existence due to war, migration, and water or food scarcity. He takes a broad systems and historic approach to contextualize environmental sustainability prior to the 1987 Brundtland Report and utilizes many contemporary examples throughout the text, analyzing numerous case studies from many areas of the world including China, Yemen, Malaysia, Egypt, and Florida. This book questions traditional approaches to sustainability that highlight the need for an equal balance of economic development, environmental protection, and social equality to achieve sustainability. This book focuses on a new line of thinking that places environmental sustainability as the key foundation in how to manage sustainability in a time of change. Our planet is quickly becoming environmentally unsustainable due to global consumption and unsustainable economic development and it is high time for a fresh approach. This book will be of great value to academics, practitioners, and students

interested in environmental sustainability from a myriad of fields including geology, geography, biology, ecology, economics, business, sociology, anthropology, and other areas that intersect the interdisciplinary field of sustainability. Identifies and assesses the factors which must be taken into account in contingency planning for oil or gas leaks and/or spills resulting from pipeline failures, rupture or other operational malfunction along the proposed pipeline route in the Mackenzie Valley and northern Yukon.

A guide to environmental and communication issues related to fracking and the best approach to protect communities Environmental Considerations Associated with Hydraulic Fracturing Operations offers a much-needed resource that explores the complex challenges of fracking by providing an understanding of the environmental and communication issues that are inherent with hydraulic fracturing. The book balances the current scientific knowledge with the uncertainty and risks associated with hydraulic fracking. In addition, the authors offer targeted approaches for helping to keep communities safe. The authors include an overview of the historical development of hydraulic fracturing and the technology currently employed. The book also explores the risk, prevention, and mitigation factors that are associated with fracturing. The authors also include legal cases, regulatory issues, and data on the cost of recovery. The volume presents audit checklists for gathering critical information and documentation to support the reliability of the current environmental conditions related to fracking operations and the impact fracking can have on a community. This vital resource: Contains the technical information and mitigation recommendations for safety and environmental issues related to hydraulic fracturing Offers an historical overview of conventional and unconventional oil and gas drilling Explains the geologic and technical issues associated with fracking of tight sand and shale formulations Presents numerous case studies from the United States EPA and other agencies Discusses issues of co-produced waste water and induced seismicity from the injection of wastewater Written for environmental scientists, geologists, engineers, regulators, city planners, attorneys, foresters, wildlife biologists, and others, Environmental Considerations Associated with Hydraulic Fracturing Operations offers a comprehensive resource to the complex environmental and communication issues related to fracking.

Risk analysis and prevention. Oil properties oil physical properties. Oil composition and properties. Oil analysis. oil behavior. Modeling. oil spill on land. Effects of oil. Natural dispersion. Cold region spills. Case studies.

Whether the result of an oil well blowout, vessel collision or grounding, leaking pipeline, or other incident at sea, each marine oil spill will present unique circumstances and challenges. The oil type and properties, location, time of year, duration of spill, water depth, environmental conditions, affected biomes, potential human community impact, and available resources may vary significantly. Also, each spill may be governed by policy guidelines, such as those set forth in the National Response Plan, Regional Response Plans, or Area Contingency Plans. To respond effectively to the specific conditions presented during an oil spill, spill responders have used a variety of response options—including mechanical recovery of oil using skimmers and booms, in situ burning of oil, monitored natural attenuation of oil, and dispersion of oil by chemical dispersants. Because each response method has advantages and disadvantages, it is important to understand specific scenarios where a net benefit may be achieved by using a particular tool or combination of tools. This report builds on two previous National Research Council reports on dispersant use to provide a current understanding of the state of science and to inform future marine oil spill response operations. The response to the 2010 Deepwater Horizon spill included an unprecedented use of dispersants via both surface application and subsea injection. The magnitude of the spill stimulated interest and funding for research on oil spill response, and dispersant use in particular. This study assesses the effects and efficacy of dispersants as an oil spill response tool and evaluates trade-offs associated with dispersant use.

This revised edition puts the most current information about gas-handling systems and facilities at your fingertips. The authors channeled their classroom and field experience into this volume, which features many new sections such as: * Heat recovery units * Kinetic inhibitors and anti-agglomerators * Trays and packing for distillation and absorption towers * Compressor valves * Foundation design considerations for reciprocating compressors * Pressure vessel issues and components * Nox reduction in engines and turbines * Safety management systems This book walks you through the equipment and processes used in gas-handling operations to help you design and manage a production facility. Production engineers will keep this volume on the desktop for the latest information on how to DESIGN, SPECIFY, and OPERATE gas-handling systems and facilities. The book allows engineers with little or background in production facility design to easily locate details about equipment, processes, and design parameters. With this volume, you will more completely comprehend the techniques of handling produced fluids from gas wells so your facility can be more efficient and productive. * Revised edition puts the most current information about gas-handling systems at your fingertips * Features brand new sections!

A comprehensive and detailed reference guide on the integrity and safety of oil and gas pipelines, both onshore and offshore Covers a wide variety of topics, including design, pipe manufacture, pipeline welding, human factors, residual stresses, mechanical damage, fracture and corrosion, protection, inspection and monitoring, pipeline cleaning, direct assessment, repair, risk management, and abandonment Links modern and vintage practices to help integrity engineers better understand their system and apply up-to-date technology to older infrastructure Includes case histories with examples of solutions to complex problems related to pipeline integrity Includes chapters on stress-based and strain-based design, the latter being a novel type of design that has only recently been investigated by designer firms and regulators Provides information to help those who are responsible to establish procedures for ensuring pipeline integrity and safety

Pipeline Leak Detection Handbook is a concise, detailed, and inclusive leak detection best practices text and reference book. It begins with the basics of leak detection technologies that include leak detection systems, and information on pipeline leaks, their causes, and subsequent consequences. The book moves on to further explore system infrastructures, performance, human factors, installation, and integrity management, and is a must-have resource to help oil and gas professionals gain a comprehensive understanding of the identification, selection, design, testing, and implantation of a leak detection system. Informs oil and gas pipeline professionals on the basics of leak detection technologies, the required field instrumentation, telecommunication infrastructures, human factors, and risk mitigation considerations Leads the reader through the complex process of understanding the pipeline's unique environment and how to develop a leak detection program

Industrial accidents occur all over the world at an alarming rate, and readers have no doubt heard of at least one in their lifetime. This topical book chronicles the frightening stories of several of the world's worst examples of chemical leaks and spills, detailing the environmental impact not only in the text, but also through graphic, full-color images, and through sidebars full of real statistics. Fact boxes chronicle the legal response in the direct wake of disasters like Bhopal, Amoco Cadiz, Exxon Valdez, Deepwater Horizon, and more. The book closes with a note about activism and how to help.

Oil Spills and Gas Leaks: Environmental Response, Prevention and Cost Recovery McGraw Hill Professional

The definitive guide to petroleum hydrocarbon fuel spill and leak causes, prevention, response, and cost recovery Oil Spills and Gas Leaks highlights the complex nature of petroleum hydrocarbon fuel extraction methods, the unintended consequences when disasters occur, spill behavior, and environmental impact mitigation. This practical resource discusses engineering techniques; long-term biological and environmental effects; dealing with insurance claims, litigation, and legislation in overlapping jurisdictions; and much more. Featuring global case studies and best practices, this timely volume provides an in-depth understanding of how oil spills and gas leaks occur and describes the most effective environmental assessment, remediation, and restoration options available to respond to these industrial accidents. Coverage includes: The role of petroleum hydrocarbon fuels in society Geology and geochemistry of oil and gas deposits Oil and gas well drilling and production issues Hydraulic fracturing for shale gas and oil Behavior of oil spills in various environments Behavior of gas leaks in various environments Assessment of spills and leaks Toxicity issues and exposure pathways Subsurface investigations Sampling strategies and remedial approaches Sampling methods on land and offshore Prevention, oversight, and mitigation Remediation of oil spills Case histories and cost recovery Oil spills and wildlife Oil spills and safety issues Conclusions and recommendations

Since the early 1970s, experts have recognized that petroleum pollutants were being discharged in marine waters worldwide, from oil spills, vessel operations, and land-based sources. Public attention to oil spills has forced improvements. Still, a considerable amount of oil is discharged yearly into sensitive coastal environments. Oil in the Sea provides the best available estimate of oil pollutant discharge into marine waters, including an evaluation of the methods for assessing petroleum load and a discussion about the concerns these loads represent. Featuring close-up looks at the Exxon Valdez spill and other notable events, the book identifies important research questions and makes recommendations for better analysis of—and more effective measures against—pollutant discharge. The book discusses: Input—where the discharges come from, including the role of two-stroke engines used on recreational craft. Behavior or fate—how oil is affected by processes such as evaporation as it moves through the marine environment. Effects—what we know about the effects of petroleum hydrocarbons on marine organisms and ecosystems. Providing a needed update on a problem of international importance, this book will be of interest to energy policy makers, industry officials and managers, engineers and researchers, and advocates for the marine environment.

Updated and better than ever, Design of Gas-Handling Systems and Facilities, 3rd Edition includes greatly expanded chapters on gas-liquid separation, gas sweetening, gas liquefaction, and gas dehydration —information necessary and critical to production and process engineers and designers. Natural gas is at the forefront of today's energy needs, and this book walks you through the equipment and processes used in gas-handling operations, including conditioning and processing, to help you effectively design and manage your gas production facility. Taking a logical approach from theory into practical application, Design of Gas-Handling Systems and Facilities, 3rd Edition contains many supporting equations as well as detailed tables and charts to facilitate process design. Based on real-world case studies and experience, this must-have training guide is a reference that no natural gas practitioner and engineer should be without. Packed with charts, tables, and diagrams Features the prerequisite ASME and API codes Updated chapters on gas-liquid separation, gas sweetening, gas liquefaction and gas dehydration

U.S. Arctic waters north of the Bering Strait and west of the Canadian border encompass a vast area that is usually ice covered for much of the year, but is increasingly experiencing longer periods and larger areas of open water due to climate change. Sparsely inhabited with a wide variety of ecosystems found nowhere else, this region is vulnerable to damage from human activities. As oil and gas, shipping, and tourism activities increase, the possibilities of an oil spill also increase. How can we best prepare to respond to such an event in this challenging environment? Responding to Oil Spills in the U.S. Arctic Marine Environment reviews the current state of the science regarding oil spill response and environmental assessment in the Arctic region north of the Bering Strait, with emphasis on the potential impacts in U.S. waters. This report describes the unique ecosystems and environment of the Arctic and makes recommendations to provide an effective response effort in these challenging conditions. According to Responding to Oil Spills in the U.S. Arctic Marine Environment, a full range of proven oil spill response technologies is needed in order to minimize the impacts on people and sensitive ecosystems. This report identifies key oil spill research priorities, critical data and monitoring needs, mitigation strategies, and important operational and logistical issues. The Arctic acts as an integrating, regulating, and mediating component of the physical, atmospheric and cryospheric systems that govern life on Earth. Not only does the Arctic serve as regulator of many of the Earth's large-scale systems and processes, but it is also an area where choices made have substantial impact on life and choices everywhere on planet Earth. This report's recommendations will assist environmentalists, industry, state and local policymakers, and anyone interested in the future of this special region to preserve and protect it from damaging oil spills.

This volume offers a review of oil inputs to the Mediterranean Sea from sources such as shipping, and offshore exploration and exploitation activities. It discusses international measures to prepare for, respond to, and prevent oil pollution incidents, as well as the international legal framework and agencies with a role in pollution prevention and responses. It includes chapters on modeling the fate of oil pollution, oil spill response, and oil spill beaching probability, and presents data from a range of sources, including historic data on shipping accidents and oil exploration and exploitation activities, satellite and remote sensing data, and numerical modelling data, to provide an overview of oil pollution over several years. Topics covered include modelling of oil slicks in the eastern and western Mediterranean basins, oil exploration and

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exploitation activities in the waters of the Levantine Basin (Eastern Mediterranean), and signatures to and ratification of the Barcelona Convention and its Protocols, for example. Together with the companion volume *Oil Pollution in the Mediterranean Sea: Part II - National Case Studies*, it addresses both national and international measures in the region, making it of relevance to the agencies and government bodies tasked with remediating or preventing oil pollution, as well as policymakers and practitioners in the fields of shipping, ports and terminals, oil extraction and marine management. It provides researchers with essential reference material on tools and techniques for monitoring oil pollution, and serves as a valuable resource for undergraduate and postgraduate students in the field of marine oil pollution. The generation of offshore energy is a rapidly growing sector, competing for space in an already busy seascape. This book brings together the ecological, economic, and social implications of the spatial conflict this growth entails. Covering all energy-generation types (wind, wave, tidal, oil, and gas), it explores the direct and indirect impacts the growth of offshore energy generation has on both the marine environment and the existing uses of marine space. Chapters explore main issues associated with offshore energy, such as the displacement of existing activities and the negative impacts it can have on marine species and ecosystems. Chapters also discuss how the growth of offshore energy generation presents new opportunities for collaboration and co-location with other sectors, for example, the co-location of wild-capture fisheries and wind farms. The book integrates these issues and opportunities, and demonstrates the importance of holistic marine spatial planning for optimising the location of offshore energy-generation sites. It highlights the importance of stakeholder engagement in these planning processes and the role of integrated governance, with illustrative case studies from the United States, United Kingdom, northern Europe, and the Mediterranean. It also discusses trade-off analysis and decision theory and provides a range of tools and best practices to inform future planning processes.

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