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Draft Environmental Impact Statement on the Proposed Guidelines for the Landfill Disposal of Solid Waste - 1979

Control and Treatment of Landfill Leachate for Sanitary Waste Disposal - Aziz, Hamidi Abdul 2015-12-02

Municipal solid waste (MSW) disposal is an ever-increasing problem in many parts of the world, especially in developing countries. To date, landfilling is still the preferred option for the disposal and management of MSW due to its low-cost operation. While this solution is advantageous from a cost perspective, it introduces a high level of potential pollutants which can be detrimental to the local environment. Control and Treatment of Landfill Leachate for Sanitary Waste Disposal presents research-based insights and solutions for the proper management and treatment of landfill leachate. Highlighting relevant topics on emerging technologies and treatment innovations for minimizing the environmental hazards of waste disposal, this innovative publication contributes to filling in many of the gaps that exist in the current literature available on leachate treatment. Waste authorities, solid waste management companies, landfill operators, legislators, environmentalists, graduate students, and researchers will find this publication beneficial to their professional and academic interests in the area of waste treatment and management.

Sanitary Landfill Leachate - Syed R. Qasim 2017-07-12

FROM THE PREFACE Sanitary landfills are the most widely utilized method of solid waste disposal around the world. With increased use and public awareness of this method of disposal, there is much concern with respect to the pollution potential of the landfill leachate. Depending on the composition and extent of decomposition of the refuse and hydrological factors, the leachate may become highly contaminated. As leachate migrates away from a landfill, it may cause serious pollution to the groundwater aquifer as well as adjacent surface waters. There is growing concern about surface and groundwater pollution from leachate. Better understanding and prediction of leachate generation, containment, and treatment are needed. This book contains a literature review of various methodologies that have been developed for prediction, generation, characterization, containment, control, and treatment of leachate from sanitary landfills. The contents of this book are divided into nine chapters. Each chapter contains theory and definition of the important design parameters, literature review, example calculations, and references. Chapter 1 is devoted to basic facts of solid waste problems current status and future trends towards waste reduction and recycling. Chapter 2 provides a general overview of municipal solid waste generation, collection, transport, resource recovery and reuse, and disposal options. The

current status of sanitary landfill design and operation, problems associated with the landfilling, and future trends are presented in Chapter 3. Methods of enhanced stabilization, recycling landfill space, methane recovery, and above grade landfilling, and closure and post closure care of completed landfills are also discussed in detail. Chapter 4 provides a general overview of Subtitle D regulations and its impact upon sanitary landfilling practices. Chapter 5 is devoted entirely to moisture routing and leachate generation mechanisms. Examples of calculation pr

Municipal Landfill Leachate Management -

Maryam Pazoki 2020-08-18

This book is divided into seven chapters, which address various leachate landfill management issues such as the quality, quantity and management of municipal landfill leachate, together with new methods. There are many methods available for the treatment and management of municipal landfill leachate. The waste management methods presented here can be applied in most third-world countries, due to the lack of waste separation and high organic content of waste. The book provides descriptions and a hierarchy of waste management, reviews the history of solid waste disposal, and covers a range of topics, including: leachate and gas generation in landfills; natural attenuation landfills; landfill site selection; leachate and stormwater management, collection and treatment; landfill gas management; landfill cover requirements; leachate collection; types of natural treatment systems; and design procedure and considerations. In closing, it provides an overview of the current solid waste management status in Iran.

Strategies of Sustainable Solid Waste

Management - Hosam M. Saleh 2021-04-21

The world is currently experiencing increased environmental contamination with solid waste, which is one of the greatest environmental threats today. Although solid waste is harmful, proper management and profitable recycling can make it beneficial to the environment. In this regard, estimation of the true quantities of solid wastes generated annually in developed and developing countries is important for evaluating suitable strategies for economic and sustainable procedures of waste management. This book

presents an interesting review of the economics of solid waste management in various developing and developed countries. It examines several economic applications of solid waste, such as innovative methods to generate bioelectricity from organic waste using microbial fuel cells and using solid waste as an alternative fuel in cement kilns.

Landfill Waste Pollution and Control - K

Westlake 2014-01-29

This book addresses a pollution hazard prevalent in most cities and large towns world-wide by providing an understanding of the scientific and technical control of the landfill method of domestic and non-domestic waste disposal, considered within the framework of integrated waste management. Landfill disposal is practised world-wide, and is cheap and convenient but, if poorly managed, poses a serious threat to the environment. This pollution threat is a source of concern to regulating authorities and environmental pressure groups. This comprehensive text reflects the authority of the author's considerable experience in assessment and remediation of landfill sites, which he has taught in post-graduate courses on hazardous waste management, and in running international programmes on waste and contaminated land-related subjects for industry. Dr. Westlake's expertise also reflects his work in association with the Environmental Safety Centre at the Harwell Laboratory. Featuring the microbial degradation of waste within landfills, with an understanding of hazards associated with the production, migration and control of landfill gas and leachate, the book also points to the benefits to be obtained from gas production. There is important discussion on the monitoring of potentially dangerous dormant sites, and much helpful advice on trouble shooting. The text is set in the context of regulatory controls and assesses their impact, while at the same time looking at the way forward for waste disposal by landfill. There is coverage of legislative requirements and constraints including those from the European Union reflecting official attitudes. There is growing international consensus that EU regulations can be interpreted and applied as a benchmark in relation to legal practices and attitudes in all countries throughout the world Addresses a

pollution hazard prevalent in most cities and large towns world-wide Provides an understanding of the scientific and technical control of the landfill method of domestic and non-domestic waste disposal, considered within the framework of integrated waste management Provides an important discussion on the monitoring of potentially dangerous dormant sites

Hazardous Industrial Waste Treatment -

Lawrence K. Wang 2006-10-02

Increasing demand on industrial capacity has, as an unintended consequence, produced an accompanying increase in harmful and hazardous wastes. Derived from the second edition of the popular Handbook of Industrial and Hazardous Wastes Treatment, Hazardous Industrial Waste Treatment outlines the fundamentals and latest developments in hazardous waste

Contaminants of Emerging Concerns and Reigning Removal Technologies - Manish Kumar 2022-06-30

With an increased demand for wastewater reuse, groundwater recharge with treated wastewater has been practiced across the globe. As a result, groundwater quality deteriorates by emerging micropollutants from various anthropogenic origins, including untreated wastewater, seepage of landfill leachate, and runoff from agricultural lands. The fate of such emerging and geogenic contaminants in subsurface systems, especially in the groundwater, depends on several factors. Physicochemical properties of contaminants such as octanol-water partition coefficient, dissociation constant, water solubility, susceptibility to biodegradation under anaerobic conditions, and environmental persistence under diverse geological and pH conditions play a critical role during subsurface mass flow. Thus, advanced wastewater treatment techniques, followed by implementing stricter guidelines, are some of the measures that can safeguard water resources. This book, in general, gives an understanding of the fate and mitigation strategies for emerging and geogenic contaminants in the groundwater. The first and second sections provide a detailed insight into various removal techniques and mitigation approaches. Possible treatment strategies, including bioremediation and natural

attenuation, are also covered in those sections. Environmental assessment, groundwater vulnerability, health effects, and regulations pertaining to various contaminants are systematically presented in the third section.

Adsorptive Biological Treatment Of Landfill

Leachate - Yunus Pamukoglu 2013-01

Early biological treatment studies with the raw leachate did not yield high COD and nitrogen removals. In order to improve biological treatability, the landfill leachate was subjected to pretreatment by chemical coagulation-flocculation followed by air stripping of ammonia. The pretreated leachate was subjected to aerobic biological treatment in an aeration tank by fed-batch operation. In order to improve the extent of COD and ammonium nitrogen removals, pretreated leachate was subjected to adsorbent supplemented biological treatment in an aeration tank operated in fed-batch mode by using powdered zeolite (PZ) and powdered activated carbon (PAC) as adsorbents. Chemical oxidation was used to further reduce COD content of landfill leachate after PAC added biological treatment. Three oxidizing agents (H₂O₂, Fenton's reagent, NaOCl) were used in different concentrations for chemical oxidation.

Handbook of Industrial and Hazardous Wastes Treatment - Lawrence K. Wang

2004-06-29

Presenting effective, practicable strategies modeled from ultramodern technologies and framed by the critical insights of 78 field experts, this vastly expanded Second Edition offers 32 chapters of industry- and waste-specific analyses and treatment methods for industrial and hazardous waste materials-from explosive wastes to landfill leachate to w

Anaerobic Digestion Processes - Nigel Horan 2018-04-18

This book presents new application processes in the context of anaerobic digestion (AD), such as phosphorus recovery, microbial fuel cells (MFCs), and seaweed digestion. In addition, it introduces a new technique for the modeling and optimization of AD processes. Chapters 1 and 2 review AD as a technique for converting a range of organic wastes into biogas, while Chapter 3 discusses the recovery of phosphorus from anaerobically digested liquor. Chapters 4 and 5 focus on new techniques for modeling and

optimizing AD. Chapters 6 and 7 then describe the state of the art in AD effluent treatment. The book's final three chapters focus on more recent developments, including microbial fuel cells (MFCs) (Chapter 8), seaweed production (Chapter 9), and enzyme technologies (Chapter 10).

Sanitary Landfill Leachate - Syed R. Qasim
1994-08-12

FROM THE PREFACE Sanitary landfills are the most widely utilized method of solid waste disposal around the world. With increased use and public awareness of this method of disposal, there is much concern with respect to the pollution potential of the landfill leachate. Depending on the composition and extent of decomposition of the refuse and hydrological factors, the leachate may become highly contaminated. As leachate migrates away from a landfill, it may cause serious pollution to the groundwater aquifer as well as adjacent surface waters. There is growing concern about surface and groundwater pollution from leachate. Better understanding and prediction of leachate generation, containment, and treatment are needed. This book contains a literature review of various methodologies that have been developed for prediction, generation, characterization, containment, control, and treatment of leachate from sanitary landfills. The contents of this book are divided into nine chapters. Each chapter contains theory and definition of the important design parameters, literature review, example calculations, and references. Chapter 1 is devoted to basic facts of solid waste problems current status and future trends towards waste reduction and recycling. Chapter 2 provides a general overview of municipal solid waste generation, collection, transport, resource recovery and reuse, and disposal options. The current status of sanitary landfill design and operation, problems associated with the landfilling, and future trends are presented in Chapter 3. Methods of enhanced stabilization, recycling landfill space, methane recovery, and above grade landfilling, and closure and post closure care of completed landfills are also discussed in detail. Chapter 4 provides a general overview of Subtitle D regulations and its impact upon sanitary landfilling practices. Chapter 5 is devoted entirely to moisture routing and

leachate generation mechanisms. Examples of calculation procedure for determining the leachate quantity produced at a landfill are presented. Chapter 6 is devoted to chemical characterization of leachate that changes over the life of the fill. Both theoretical and experimental results are provided to estimate the leachate quality. Chapter 7 provides leachate attenuation processes and mechanisms. Chapter 8 is devoted to leachate collection systems. Natural soil sealants, admixed materials and synthetic membranes, their effectiveness, and methods of installation and economics are fully discussed. Chapter 9 provides a detailed review of leachate treatment methodology. Kinetic coefficients and treatment plant design considerations are summarized for the sole purpose of assisting consultants to design leachate treatment facilities. Leachate treatment case histories and numerous process trains are presented for treating leachate from young landfill. The book also describes how the process train can be changed effectively as leachate quality changes with time.

Pollution Control Technology for Leachate from Municipal Solid Waste - Zhao Youcal
2018-08-03

Pollution Control Technology for Leachate from Municipal Solid Waste explores the physical, chemical and biological factors that produce leachate and technological solutions for its control. The book introduces the integrated and pre-treatment leachate treatment processes that are necessary to deal with the variations of pollutants in leachate. Real world case-studies are provided to illustrate these treatment processes, along with leachate treatment engineering process design and the construction of municipal solid waste incinerator power plants. This book will be of particular interest to Civil, Chemical and Environmental Engineers, but will also be ideal for Environmental Scientists. Provides quantity and quality prediction models, along with properties of effluent concentrated leachate liquid Includes physical and chemical treatment processes for leachate, including ammonia nitrogen removal using struvite precipitation, crystal variation and microstructure of the struvite, etc. Covers leachate treatment engineering processes for design and construction of treatment plants

Waste Water Treatment Technologies - Volume II - Saravanamuthu Vigneswaran
2009-09-25

Water and Wastewater Treatment Technologies theme is a component of Encyclopedia of Water Sciences, Engineering and Technology Resources in the global Encyclopedia of Life Support Systems (EOLSS), which is an integrated compendium of twenty one Encyclopedias. The Theme on Water and Wastewater Treatment Technologies deals, in three volumes, and covers several topics, with several issues of great relevance to our world such as: Urban Wastewater Treatment; Characteristics of Effluent Organic Matter in Wastewater; Filtration Technologies in wastewater treatment; Air Stripping in Industrial Wastewater Treatment; Dissolved air flotation in industrial wastewater treatment; Membrane Technology for Organic Removal in Wastewater; Adsorption and Biological Filtration in Wastewater Treatment; Physico-chemical processes for Organic removal from wastewater effluent; Deep Bed Filtration: Modelling Theory And Practice ; Specific options in biological wastewater treatment for reclamation and reuse ; Biological Phosphorus Removal Processes For Wastewater Treatment ; Sequencing Batch Reactors: Principles, Design/Operation And Case Studies ; Wastewater stabilization ponds (WSP)for wastewater treatment; Treatment of industrial wastewater by membrane bioreactors; Stormwater treatment technologies; Sludge Treatment Technologies ; Wastewater Treatment Technology For Tanning Industry; Palm Oil And Palm Waste Potential In Indonesia ; Recirculating Aquaculture Systems - A Review ; Upflow anaerobic sludge blanket (UASB)reactor in wastewater treatment; Applied Technologies In Municipal Solid Waste Landfill Leachate Treatment; Water Mining: Planning and Implementation Issues for a successful project; Assessment methodologies for water reuse scheme and technology; Nanotechnology for Wastewater Treatment. These three volumes are aimed at the following five major target audiences: University and College students Educators, Professional practitioners, Research personnel and Policy analysts, Managers, and Decision makers and NGOs.

Management of Pollutant Emission from

Landfills and Sludge - Malgorzata Pawlowska
2014-04-21

This book gives an overview of recent findings on the mitigation of gas emission from landfills and sludge processing. Special attention is given to methane and the migration of POPs, heavy metal ions, ammonia and nitrate from landfills to the water-soil system and to the atmosphere. Strategies for mitigating the impact of pollution on ecosystems a

Waste Management: Concepts, Methodologies, Tools, and Applications - Management Association, Information Resources
2019-12-06

As the world's population continues to grow and economic conditions continue to improve, more solid and liquid waste is being generated by society. Improper disposal methods can not only lead to harmful environmental impacts but can also negatively affect human health. To prevent further harm to the world's ecosystems, there is a dire need for sustainable waste management practices that will safeguard the environment for future generations. Waste Management: Concepts, Methodologies, Tools, and Applications is a vital reference source that examines the management of different types of wastes and provides relevant theoretical frameworks about new waste management technologies for the control of air, water, and soil pollution. Highlighting a range of topics such as contaminant removal, landfill treatment, and recycling, this multi-volume book is ideally designed for environmental engineers, waste authorities, solid waste management companies, landfill operators, legislators, environmentalists, policymakers, government officials, academicians, researchers, and students.

Advanced Technologies, Systems, and Applications II - Mirsad Hadžikadić 2018-01-30

This book presents innovative and interdisciplinary applications of advanced technologies. It includes the scientific outcomes of the 9th DAYS OF BHAAAS (Bosnian-Herzegovinian American Academy of Arts and Sciences) held in Banja Vrućica, Teslić, Bosnia and Herzegovina on May 25-28, 2017. This unique book offers a comprehensive, multidisciplinary and interdisciplinary overview of the latest developments in a broad section of technologies and methodologies, viewed through

the prism of applications in computing, networking, information technology, robotics, complex systems, communications, energy, mechanical engineering, economics and medicine, to name just a few.

Practical Techniques for Groundwater & Soil Remediation - Evan K. Nyer 2019-08-13

Practical Techniques for Groundwater and Soil Remediation is a compilation of articles by the author that were printed in the National Ground Water Association (NGWA) magazine Groundwater Monitoring Review. The book provides valuable data, emphasizes the practical aspects of remediation, presents results from actual remediation programs, and helps readers prepare remediation strategies. The book also includes detailed technical data on treatment equipment performance and the costs associated with their design and operation. A unique feature of the book is that it also contains data from treatment systems that did not work.

Practical Techniques for Groundwater and Soil Remediation is a "must have" source of invaluable data and tips that will be useful for all groundwater and soil remediation professionals.

Bioenergy - Zhenhong Yuan 2017-12-18

The second part of Bioenergy: Principles and Technologies continues the discussion of biomass energy technologies covering fuel ethanol production, pyrolysis, biomass-based hydrogen production and fuel synthesis, biodiesel, municipal solid water treatment and microbial fuel cells. With a combination of theories, experiments and case studies, it is an essential reference for bioenergy researchers, industrial chemists and chemical engineers.

Wastewater Engineering: Advanced Wastewater Treatment Systems - Hamidi Abdul Aziz 2014-04-01

As the global population grows and many developing countries modernize, the importance of water supply and wastewater treatment becomes a much greater factor in the welfare of nations. Clearly, in today's world the competition for water resources coupled with the unfortunate commingling of wastewater discharges with freshwater supplies creates additional pressure on treatment systems. Recently, researchers focus on wastewater treatment by difference methods with minimal cost and maximum efficiency. This volume of the

Wastewater Engineering: Advanced Wastewater Treatment Systems is a selection of topics related to physical-chemical and biological processes with an emphasis on their industrial applications. It gives an overview of various aspects in wastewater treatments methods including topics such as biological, bioremediation, electrochemical, membrane and physical-chemical applications. Experts in the area of environmental sciences from diverse institutions worldwide have contributed to this book, which should prove to be useful to students, teachers, and researchers in the disciplines of wastewater engineering, chemical engineering, environmental engineering, and biotechnology. We gratefully acknowledge the cooperation and support of all the contributing authors.

Phytoremediation - Abid A. Ansari 2017-03-29

This text details the plant-assisted remediation method, "phytoremediation", which involves the interaction of plant roots and associated rhizospheric microorganisms for the remediation of soil contaminated with high levels of metals, pesticides, solvents, radionuclides, explosives, crude oil, organic compounds and various other contaminants. Many chapters highlight and compare the efficiency and economic advantages of phytoremediation to currently practiced soil and water treatment practices. Volume 5 of Phytoremediation: Management of Environmental Contaminants provides the capstone of the series. Taken together, the five volumes provide a broad-based global synopsis of the current applications of phytoremediation using plants and the microbial communities associated with their roots to decontaminate terrestrial and aquatic ecosystems.

Sustainable Heavy Metal Remediation - Eldon R. Rene 2017-07-24

This book covers the principles, underlying mechanisms, thermodynamic functions, kinetics and modeling aspects of sustainable technologies, particularly from the standpoint of applying physical, chemical and biological processes for the treatment of wastewater polluted with heavy metals. Particular emphasis has been given to technologies that are based on adsorption, electro-coagulation, bio-precipitation, bio-solubilization, phytoremediation and microbial electrolysis.

Metal contamination in the environment is one of the persisting global issues. The adverse health effects of heavy metals on human beings and its impact on the environment has been well-documented. Several physico-chemical and biological technologies have been successfully implemented to prevent and control the discharge of industrial heavy metal emissions. On the contrary, metal resource depletion has also accelerated dramatically during the 20th century due to rapid advances in industrial engineering and medical sciences, which requires large amount of raw materials. To meet the global metal demand, in recent years, novel research lines have started to focus on the recovery of metals from metal contaminated waste streams. In order to conflate both metal removal and recovery, new technologies have been successfully tested, both at the lab and pilot-scale. The target audience of this book primarily comprises of research experts, practicing engineers in the field of environmental/chemical technology and graduate students.

Proceedings of the 48th Industrial Waste Conference Purdue University, May 1993 -

Ronald F. Wukasch 1993-12-28

Known and used throughout the world, the Purdue Industrial Waste Conference Proceedings books are the most highly regarded in the waste treatment field. New research, case histories, and operating data cover every conceivable facet of today's big problems in environmental control, treatment, regulation, and compliance. This volume representing the proceedings from the 48th conference provides unparalleled information and data for your current waste problems.

Report of Progress - MERL. - Municipal Environmental Research Laboratory 1978

Sewage and Landfill Leachate - Marco Ragazzi 2016-06-22

This title includes a number of Open Access chapters. This new book provides a multiperspective look at research into many elements of remediating environmental hazards connected to sewage and landfill leachate. Sewage and landfill leachate treatments include various processes that are used to manage and dispose of the liquid portions of solid waste.

Untreated leachate and sewage are hazards to the environment if they enter the water system. The goal of treatment is to reduce the contaminating load to the point that leachate and sewage liquids may be safely released into groundwater, streams, lakes, and the ocean. Around the world, however, huge volumes of contaminated water from sewage and landfill leachate is still pumped directly into water systems, especially in the world's developing nations. Aside from the damage to marine environments and fisheries that this causes, it also jeopardizes the world's vulnerable water resources. This compendium volume explores effective sewage management, which is essential for nutrient recycling and for maintaining ecosystem integrity. It looks at a range of technologies that are available for the treatment of sewage and landfill leachate. The editor, himself a respected and experienced researcher in this field, includes chapters that cover biological treatments, reverse osmosis, and chemical-physical processes. This volume offers important research that will help us both assess our existing treatment facilities, as well as build better, more effective ones for the future.

Constructed Wetlands for the Treatment of Landfill Leachates - George Mulamoottil 2018-12-19

Constructed wetlands are proving to be the best natural treatment system for landfill leachates. Most of the contaminants in landfill leachates are degraded in treatment wetlands. Potential for long-term sustainability and significant cost savings are attractive features of this eco-technology. Documentation of the experience in this use of constructed wetlands has been limited. *Constructed Wetlands for the Treatment of Landfill Leachates* is the first compilation of the results of research from North America and Europe. Originally presented at an international symposium, this collection of papers offers the most recent research findings from the leading researchers in this new and innovative natural treatment system. Specific issues addressed in the text include: leachate characteristics, and the potential for treatability by constructed wetlands wetland treatment, processes and transformation use of constructed wetlands in cold climatic conditions assessment of the tolerance of wetland plants to the toxicity of

leachates role of plants in the treatments of leachates integrated wetland systems performance of different wetland treatment systems cost comparisons of wetland technology vs. traditional treatment technologies The potential for environmental contamination due to leachates from landfills is increasing, and there is an urgent need to find ways and means to treat leachates in a sustainable way

Constructed Wetlands for the Treatment of Landfill Leachates will provide an invaluable source of information on the subject for scientists, engineers, practitioners, policy makers, and regulatory officials.

Proceedings of the 41st Industrial Waste Conference May 1986, Purdue University - John M. Bell 2018-05-04

This 41st Edition presents case histories with operating data-and new research-on most topics of this major subject in today's world. This valuable Purdue Book will prove invaluable to all involved with waste treatment, providing information and data to help solve current problems. These proceedings of the May 1986 Purdue Conference include applications, research, methods and techniques, case histories, and operating data. The 91 papers include two special sections: 21 papers discuss toxic and hazardous wastes and 24 papers cover physical-biological systems. The book is further divided into papers on the following topics: (1) Pretreatment Programs and Systems; (2) Dairy Wastes; (3) Oilfield and Gas Pipeline Wastes; (4) Dye Wastes; (5) Coal, Coke and Power Plant Wastes; (6) Landfill Leachate; (7) Laws, Regulations, and Training; (8) Physical/Biological Systems; (9) Pulp and Paper Mill Wastes; (10) Plating Wastes; (11) Food Wastes; (12) Metal Wastes; and (13) Toxic and Hazardous Wastes.

Circular Economy in Municipal Solid Waste Landfilling: Biomining & Leachate Treatment - Pankaj Pathak 2022-09-13

This book will serve as a ready reckoner of contemporary information regarding municipal solid waste landfill biomining, treatment of landfill leachate and heavy metals in a single platform. The academicians, researchers, and students at master's and doctoral levels will be able to understand the current trends in municipal solid waste landfill operations, which

will help in augmenting their research.

Construction of new landfills requires huge monetary investments, which can be avoided if old landfills were bio-mined for resources and the space can be re-used as new landfills. Landfill leachate is a hazardous waste which needs proper treatment that could generate value-added products such as clean energy and biofertilizers. In this book, each chapter would provide the background, methodology, and relevant calculations for sustaining landfill operations. Also, the case studies based on best practices in municipal solid waste landfilling are discussed in this book.

Microbiology of Landfill Sites - Eric Senior 2020-01-29

This book was originally published in 1990 and was the first text to consider the definitive fundamental science of landfill biotechnology. Since then, major research initiatives, particularly in the U.K. and South Africa, have resulted in considerable advancement in our knowledge of landfill microbiology. The Second Edition details this progress. Text considers the latest findings in landfill leachate treatment, co-disposal and fundamental microbiology. It brings together the expertise of the immediate complementary, but often disparate disciplines of soil science, environmental engineering, applied mathematics, and land reclamation and focuses on the common goal of the scientific design and management of landfill sites. The book also includes effective laboratory models and selected approaches.

Report of Progress - Municipal Environmental Research Laboratory 1979

Sanitary Landfilling: Process, Technology and Environmental Impact - Thomas Christensen 2012-12-02

Sanitary Landfilling: Process, Technology, and Environmental Impact is a collection of essays that discusses the role of landfilling in solid waste management. The book presents the approach in the principles of landfilling and the basic biochemical processes in landfills. The text describes the landfill hydrology and leachate production. It discusses the design and construction of liner systems and the surface capping with natural liner materials. The section that follows describes the soil and refuse

stability in sanitary landfills. The book will provide valuable insights for engineers, environmentalists, students, and researchers in the field of solid waste management.

Biodegradation and Bioremediation of Polluted Systems - Rolando Chamy 2015-12-17

This book contains a collection of research works focused on the biodegradation of different types of pollutants, both in water and solids. The book is divided in three major sections: A) Biodegradation of organic pollutants in solids and wastewater, B) Biodegradation of complex pollutants, and C) Novel technologies in biodegradation and bioremediation.

Innovative and Integrated Technologies for the Treatment of Industrial Wastewater - Antonio Lopez 2011-12-15

Innovative and Integrated Technologies for the Treatment of Industrial Wastewater deals with advanced technological solutions for the treatment of industrial wastewater such as aerobic granular biomass based systems, advanced oxidation processes integrated with biological treatments, membrane contactors and membrane chemical reactors. Wastewater from pharmaceutical, chemical and food industries as well as landfill leachates are specifically considered as representative of major problems encountered when treating industrial streams. The economic and environmental sustainability of the above solutions are also reported in the book and compared with the alternatives currently available in the market by life cycle assessment (LCA) and life cycle costing (LCC) methodologies. The implementation of the considered solutions at large scale could support and enhance the competitiveness of different industrial sectors, including the water technology sector, in the global market.

Innovative and Integrated Technologies for the Treatment of Industrial Wastewater also makes a contribution towards defining: new concepts, processes and technologies in wastewater treatment with potential benefits for the stable quality of effluents, energy and operational costs saving, and the protection of the environment new sets of advanced standards for wastewater treatment new methodologies for the definition of wastewater treatment needs and framework conditions new information supporting development and implementation of water

legislation.

Solid Waste Landfilling - Raffaello Cossu 2018-11-29

Solid Waste Landfilling: Concepts, Processes, Technology provides information on technologies that promote stabilization and minimize environmental impacts in landfills. As the main challenges in waste management are the reduction and proper treatment of waste and the appropriate use of waste streams, the book satisfies the needs of a modern landfill, covering waste pre-treatment, in situ treatment, long-term behavior, closure, aftercare, environmental impact and sustainability. It is written for practitioners who need specific information on landfill construction and operation, but is also ideal for those concerned about the possible return of these sites to landscapes and their subsequent uses for future generations. Includes input by international contributors from a vast number of disciplines Provides worldwide approaches and technologies Showcases the interdisciplinary nature of the topic Focuses on sustainability, covering the lifecycle of landfills under the concept of minimizing environmental impact Presents knowledge of the legal framework and economic aspects of landfilling

Membrane Bioreactors for Wastewater Treatment - Thomas Stephenson 2000-05-31

The book covers the subject of membrane bioreactors (MBR) for wastewater treatment, dealing with municipal as well as industrial wastewaters. The book details the 3 types of MBR available and discusses the science behind the technology, their design features, operation, applications, advantages, limitations, performance, current research activities and cost. As the demand for wastewater treatment, recycling and re-use technologies increases, it is envisaged that the membrane separation bioreactor will corner the market. Contents Membrane Fundamentals Biological Fundamentals Biomass Separation Membrane Bioreactors Membrane Aeration and Extractive Bioreactors Commercial Membrane Bioreactor Systems Membrane Bioreactor Applications Case Studies

Treatment of Landfill Leachate Using Rotatory Biological Contractor - Shabnam Hussain 2012
Concern for environmental protection has increased from a global viewpoint due to the

exponential population and civilization growth; accompanied by the rapid generation of municipal and industrial solid waste which creates the most instringent paradox around the world. Sanitary landfills are considered as most indispensable solid waste management strategy for sustainable disposal but such implementation is handicapped by the inherent drawback of landfill leachates. The leachate being extremely toxic in nature are threat for the surrounding soil, groundwater and surface water. Aerobic treatment in the form of attached growth biomass systems is considered effective in removal of organic matter from the leachate. The biological oxidation and biosynthesis of organic matter present in leachate is done by the microorganisms used in the treatment process. The process is effective as compared to the other conventional anaerobic treatment of leachate as along with the organic matter harmful ammonical nitrogen can also be conventionally removed. Among all the technologies available for leachate treatment RBC(Rotatory Biological Contractor) is the most cost effective and efficient.

Selected Water Resources Abstracts - 1991

Handbook of Research on Resource Management for Pollution and Waste Treatment - Affam, Augustine Chioma
2019-10-25

It is necessary to understand the extent of pollution in the environment in terms of the air, water, and soil in order for both humans and animals to live healthier lives. Poor waste treatment or pollution monitoring can lead to massive environmental issues, such as diminishing valuable resources, and cause a significant negative impact on society. Solutions, such as reuse of waste and sustainable waste management, must be explored to prevent these adverse effects. The Handbook of Research on Resource Management for Pollution and Waste Treatment is a collection of innovative research that examines waste and pollution treatment

methods that can be adopted at local and international levels and examines appropriate resource management strategies for environmentally related issues. Featuring coverage on a wide range of topics such as soil washing, bioremediation, and runoff handling, this book is ideally designed for environmentalists, engineers, waste management professionals, natural resource regulators, environmental policymakers, scientists, academicians, researchers, and students seeking current research on viable resource management methods for the regeneration of their immediate environment.

Handbook of Environment and Waste Management - Yung-Tse Hung 2012

This is a compilation of topics that are at the forefront of many technical advances and practices in air and water control. These include air pollution control, water pollution control, water treatment, wastewater treatment, industrial waste treatment and small scale wastewater treatment.

Landfill Research Focus - Ernest C. Lehmann 2007

A landfill is a site for the disposal of waste materials by burial. Historically, landfills have been the most common methods of organised waste disposal and remain so in many places around the world. Landfills may include internal waste disposal sites as well as sites used by many producers. Many landfills are also used for other waste management purposes, such as the temporary storage, consolidation and transfer, or processing of waste material (sorting, treatment, or recycling). A landfill also may refer to ground that has been filled in with soil and rocks instead of waste materials, so that it can be used for a specific purpose, such as for building houses. Unless they are stabilised, these areas may experience severe shaking or liquefaction of the ground in a large earthquake. This book presents new research in a field which is demanding and beginning to receive society's attention.