Paperbase Alerting Service Sample

Water and effluent treatment and pollution control

00001
PI: 20203876 JA: 0203
TI: New monitoring system for biological treatment in order to optimise water system closure
AU: Robertson L R; Cagnola G D
JN: Ind. Carta $IS=0019-7548
CI: vol. 39, no. 4, June 2001, pp 47-57 (C, K, S)
CT: BIOCIDE/ BIOLOGICAL CONTROL/ CLOSED WATER SYSTEM/ GUIDELINE/ MONITORING/ POLLUTION CONTROL/ WATER ANALYSIS/ WATER MANAGEMENT/ WATER POLLUTION/ WATER TREATMENT/
AB: Paper mills today no longer have the abundance and quality of fresh water they once enjoyed. World population growth and a general improvement in the standards of living has meant tough competition with third world countries in terms of water usage. It is for this reason that many paper mills operate a closed water system. Conservation of water is a key step in reducing water consumption and requires little capital investment. Alternatively, there is the option of reusing water for different uses, such as for dilution. The Integrated Pollution Prevention and Control (IPPC) Directive forsees closed water systems as becoming increasingly popular and more necessary for paper mills. The main problems facing these mills is how to reuse water in the most efficient way as this encompasses many different problems. These include the concentration of salts allowing for bacteria to grow, the fact that closed water systems have no one universal method, microbiological problems which arise from such systems, and also paper mills will require greater quantities of biocides and different products. Nalco Chemical Co has introduced a monitoring system for water wastage systems used in paper mills known as the Nalco Optical Fouling Monitor (OFM).
SO: B

00002
PI: 20203877 JA: 0203
TI: The evaluation of the significative environmental parameters
AU: Bortoluzzi A
JN: Ind. Carta $IS=0019-7548
CI: vol. 39, no. 4, June 2001, pp 60-63 (C, K, S)
CT: CERTIFICATION/ ENVIRONMENTAL MANAGEMENT/ ENVIRONMENTAL MONITORING/
AB: IIP is a quality certification system regarding environmental management and monitoring which was founded in 1956. In recent years, IIP has improved its certification methods in accordance with ISO 9000 and ISO 14001 standards. All types of organisation are now keen to undertake environmental management issues. By conforming to the IIP certification system, companies are required to formulate an environmental objective and outline their environmental priorities in a formulated action plan. In order to adhere to this type of certification system companies are required to produce two documents outlining their environmental management systems in place. The IIP procedure is a way of examining how an organisation conforms to current legislation and how its products or services impact the environment. (1 fig, 1 tab)
SO: B

00003
PI: 20203889 JA: 0203
TI: The project about environmental management of the IPE (Spanish Paper Institute)
AU: Anon
JN: Papel (Spain) $IS=
CI: no. 93, Sept.-Oct. 2001, p. 23 (C, K)
CT: CERTIFICATION/ ENVIRONMENTAL MANAGEMENT/ PROJECT/ RESEARCH/
CN: IPE
AB: A project on Environmental Management System (EMS) has been adopted by the Spanish paper industry with a view to standardising the process of environmental certification. Currently, only 10% of the Spanish production had been certified and the objective of the EMS project is to raise the percentage of certified products to 45% by 2001 and to 75% by 2003. One of the advantages of standardisation is that it allows companies to learn from each other's experiences. (1 fig) (Short article)
SO: B

00004
PI: 20203917 JA: 0203
TI: Recovery of drying effluent
AU: Brandao Landim A; Leite Neto J M; Simoes de Almeida R
JN: Papel $IS=
CI: vol. 62, no. 6, June 2001, pp 67-75 (C, K, S)
CT: EFFLUENT/ LOG/ WASHING/ WATER MANAGEMENT/ WATER RECLAMATION/ WOOD PREPARATION/
AB: As part of its environmental objective of minimising effluent discharge and its attempt to halt the damage to equipment caused by sand residues, a project was devised to reduce the water consumption in Cenibra's pulping plant. In parallel with the analysis of the water that circulates in the pulping process, the log washing procedure was also

reevaluated. Among the several possibilities considered and tested, one of the most promising involved the separation of the effluents into two categories, of low and high organic content, and the redirection of the former back into the Water Treatment Station. This step depends on having the water passing through a gravity filtering system coupled with a rotational showering system to clean the filtering system. (7 fig, 4 tab, 4 ref)
SO: B

00005
PI: 20203925 JA: 0203
TI: The EULA-Chile research centre about environmental science
AU: Anon
JN: Celul. Pap. (Chile) $IS=0716-2308
CI: vol. 16, no. 2, May 2000, pp 38-42 (C, K, P, S)
CT: ENVIRONMENTAL EFFECT/ ENVIRONMENTAL SCIENCE/ RESEARCH LABORATORY/
CN: EULA Chile
AB: EULA, the Europe-Latin America Centre for Environmental Training and Research, located at Universidad de Concepcion, Chile, celebrated its 10th anniversary in March 2000. The following disciplines or areas of research are undertaken by EULA: Aquatic Systems; Urban and Rural Planning; Management of Environmental Processes; Production and Infrastructure and Environmental Education and Citizen Participation. EULA has active links with centres of excellence in various countries throughout Latin America, as well as with Italy, Germany, Belgium, Spain, USA and Canada. The projects undertaken at EULA are directly applied to the assessment of the environment impact caused by the pulp and paper industry. An example of an ongoing project is the monitoring of the water quality in the river Bio Bio, impacted by two plants owned by Arauco y Constitucion.
SO: B

00006
PI: 20203929 JA: 0203
TI: Preparation of a Chilean standard about emission of TRS
AU: Navarrete P
JN: Celul. Pap. (Chile) $IS=0716-2308
CI: vol. 16, no. 1, Mar. 2000, pp 34-35 (C, K, P, S)
CT: AIR POLLUTION/ STANDARD/ TOTAL REDUCED SULPHUR/ TRS/
AB: In accordance to the deliberation of the Supreme Decree no 93 of 1993, in 1998 the Chilean norms for total reduced sulphur (TRS) gas emission was finally published. This norm applies specifically to the sulphur containing gases emitted by pulp plants. Plants that were in operation prior to 1975 will have 12y to comply with the new regulations, while all plants that began operating after 1975 have 4y to comply. Such dates also apply to the monitoring schedule although all plants are required to monitor their TRS emissions except during maintenance stops. (2 tab)
SO: B

00007

PI: 20203932 JA: 0203
TI: How to control filamentous bacteria ?
AU: Anon
JN: Papeterie $IS=
CI: no. 241, May 2001, pp 10-12 (C, K, P, S)
CT: ACTIVATED SLUDGE PROCESS/ BACTERIA/ CHEMICALS/ EFFLUENT TREATMENT/ FILAMENTOUS MICROBE/ MICROORGANISM CONTROL/ OXYGENATION/
AB: Filamentous bacteria impede water clarification, and thus purification, during the effluent treatment process. Three methods of activated sludge treatment are recommended: oxygenation, ecological analysis of biomasses, and foam stability testing. BCDMH-based Fennosan BR (94, 94G and 99) can replace chlorine gas and bleach with good results. Introducing gaseous oxygen via activated sludge into the oxygenating reservoirs of effluent treatment plants improves purification capacity and ability to deal with filamentous bacteria. Air Products' Oxy-Dep is an example of this system and offers other advantages including reduced odour and foaming. A spectrophotometer and phase contrast microscope facilitate water analysis.
SO: B

00008
PI: 20203976 JA: 0203
TI: Innovation in cleaning, filtration and water treatment processes
AU: Kluter E
CI: 54th ATIP Annual meeting "Water, energy, waste: issues of the paper industry", Grenoble, France, 9-11 Oct. 2001, session 9, 17pp <Paris, France: Association Technique de l'Industrie Papetiere, 2001, 461pp, 3 vols, FRF1000.00> (C)
CT: CONFERENCE/ EFFLUENT TREATMENT/ FILLER/ SEPARATION/ SLUDGE TREATMENT/ WATER TREATMENT/ WHITE WATER/
CN: ATIP
AB: Stora Enso's paper mill in Uetersen, Germany has two paper machines, together producing 240,000tpy. Up until 1991, sludge from the mill's fresh water plant and waste water plant were sent to a landfill, while waste water was treated and sent to a municipal biology. However, in 1992 the "Trenntechnik" system was developed by Stora Enso to treat the waste water sludge by separating fibre and pigment and to clean it in such a way that the accept could be used as a filler in paper production. Since 1998, the mill has had a closed sludge cycle and the amount to landfill has been zero. To reduce fresh water usage in the mill, and consequently the amount of waste water, a special pressure disc filter was installed on PM2, making it possible to use the water as feed for the high- and low-pressure showers. A Crossflow Rotational Ultrafilter was also installed on PM1, and this clean and sterile water fed to the high pressure showers. Both projects resulted in considerable reduction in water usage.
SO: B

00009
PI: 20203984 JA: 0203
TI: Removal of hydrocarbons from wastewater using treated bark
AU: Haussard M
JN: J. Air Waste Manage. Assoc.
CI: vol. 51, no. 9, Sept. 2001, pp 1351-1358 (K)

CT: BARK/ EFFLUENT TREATMENT/ HYDROCARBON/ REMOVAL/ SOFTWOOD/ WASTE WATER/
AB: The possibility of removing hydrocarbons and trace elements from synthetic and industrial effluents using treated bark as biosorbent was investigated. Pinus pinaster barks were treated either chemically (Tc) or biologically (Tb) to remove soluble organic compounds that could be released in the treated effluents. Raw, chemically, and biologically treated barks have been found to have almost the same oil removal efficiency. The sorption of spent oil on bark is a quasi-instantaneous reaction and the retention capacity of spent oil on treated bark increases as the temperature augments, implying that the retention mechanism is related to the capillary action. Fourier transform infrared spectroscopy indicated that spent oil is mainly composed of alkanes and did not reveal any chemical modification of the bark's structure. Comparison between spent oil and water surface tension with the wetting index of bark revealed that oil will preferentially wet the bark over water. Treatment of an industrial effluent containing 14.4g/litre of total hydrocarbons was carried out using Tc, showing it was possible to remove 97% of hydrocarbons and retain some trace elements. (10 fig, 2 tab, 32 ref)
SO: B

00010
PI: 20204020 JA: 0203
TI: Bonn climate summit deal fairly realistic
AU: Marttila R
JN: Pap. Puu $IS=0031-1243
CI: vol. 83, no. 7, 24 Oct. 2001, pp 508-511 (C, K, P, S)
CT: CARBON/ CLIMATE/ EMISSION/ ENVIRONMENTAL PROTECTION/ GREENHOUSE EFFECT/
AB: Targets to cut greenhouse gas emissions were set by environment ministers and high-ranking experts from 180 countries at Bonn in July 2001 with the exception of the USA. Agreement was reached on the Kyoto accord without the participation of the Americans. Carbon dioxide and greenhouse gas emissions are to be reduced by 5.2% by all industrialised countries by the year 2012. The Finns were pleased about the forest management approach which now also takes into account the way the forests are managed, not only how they are used. However, the fact that Canada and Japan were given concessions in relation to carbon sink accounting was to cause a lot of irritation with the Finns. Canada is estimated to have received a 10% benefit, whereas the benefit for Finland remained at the low 1%. The Finnish forest industry is ordered to pay over FIM600m each year as environment taxation, whereas its competitors Canada and the USA are not subject to carbon-dioxide based energy or environment taxation at all. The USA remains the biggest open question mark, what it will do or leave undone in the future.
SO: B

00011
PI: 20204060 JA: 0203
TI: Coagulation as a post-treatment process for wet oxidation of pulp and paper mill circulation waters
AU: Verenich S; Kallas J
JN: Chem. Eng. Technol. $IS=0930-7516

CI: vol. 24, no. 11, 2001, pp 1183-1188 (P)
CT: CLOSED WATER SYSTEM/ COAGULATION/ IRON SULPHATE/ OXIDATION/ POSTTREATMENT/ PROCESS WATER/ WATER TREATMENT/
AB: A study was undertaken to evaluate the performance of a coagulation process used as a posttreatment process for the wet oxidation (WO) of pulp and paper mill circulation waters to improve water quality (colour) and establish its viability as a secondary treatment process for water cycle closing. Experiments were conducted using a model of thermomechanical pulp (TMP) circulation water, prepared using TMP pulp obtained after a second refining from a pulp and paper industries. WO runs were conducted at a temperature of 453K and a partial oxygen pressure of 1MPa. Ferrous sulphate was used as the coagulant for the coagulation experiments and results showed that coagulation allowed 83% colour removal and 75% lignin reduction with a coagulant dose of 0.86 g/litre of ferric ions. The performance of the WO process was improved by the recirculation of the sludge to the WO system, where the dose needed to achieve the same results for the coagulation after the recirculation loop, with coagulation sludge recycled to the WO system, was reduced to 0.78 g/litre ferric ions. The level of the ferric ion concentration remaining after coagulation was such as to permit sludge free water reuse in paper mills currently in operation. (5 fig, 2 tab, 24 ref)
SO: B

00012
PI: 20204102 JA: 0203
TI: Evaluation of the pulp and paper mill effluents using Hepatic P450 enzymes as a biomarker
AU: Kishi K
CI: 2001 (68th) Pulp and paper research conference, Tokyo, Japan, 18-19 June 2001, pp 74-79, <Tokyo, Japan: Japan TAPPI, 2001, 180pp> (P)
CT: AQUATIC ENVIRONMENT/ CONFERENCE/ EFFLUENT/ ENVIRONMENTAL POLLUTION/ ENZYME/ FISH/
CN: Japan TAPPI
AB: While much has been done to improve the pulp and paper industry in Japan, the question of whether effluents have a deleterious effect on the health of aquatic organisms has yet to be determined. Several investigations have been undertaken, comprising bioassays combined with chemical analyses. Exposure to pulp and paper mill effluents has been shown to alter the physiological status of organisms, for example the induction of hepatic P450 enzymes including ethoxyresorufin-O-deethylase (EROD), 7-methoxyresorufin-O-demethylase (MROD), benzyloxyresorufin-O-debenzylase (BROD) and 7-pentoxyresorufin-O-dependentylase (PROD). Chick embryos and fish were used to examine the P450 activities, using the high performance liquid chromatography (HPLC) method with high sensitivity and the removal of the fluorescence background. EROD, MROD and PROD activities were induced in chick embryos by effluents from various mills. BROD was not detected. EROD and MROD inducers in pulp mill effluents were also detected in field studies. In fish collected adjacent to a sewage plant, high PROD activity was detected. (4 fig, 16 ref)
SO: B

00013
PI: 20204603 JA: 0203

TI: The effects of adding commercial microorganisms for bioaugmentation, in an activated sludge wastewater treatment plant of a major paper industry
AU: Lazzaretti E; Ferraz de Campos A; Nogueira J C B
JN: Papel $IS=
CI: vol. 62, no. 8, Aug. 2001, pp 85-88 (C, K, S)
CT: ACTIVATED SLUDGE PROCESS/ BIOLOGICAL TREATMENT/ BOD/ CASE STUDY/ COD/ EFFLUENT TREATMENT/ MICROORGANISM/
AB: A research project was carried out to evaluate the effectiveness of adding microorganisms to treat the effluent of a pulp and paper plant in the State of Parana, Brazil. Among the various parameters evaluated for the effects of the microorganisms, known as B-570, were chemical oxygen demand (COD) and biological oxygen demand (BOD). The microorganisms not only reduced significantly the amount of COD and BOD but also considerably improved various other aspects of the sludge. (4 fig, 1 tab, 7 ref)
SO: B

00014
PI: 20204625 JA: 0203
TI: Standards about pollution control in Chile
AU: Arevalo Higueras M
JN: Celul. Pap. (Chile) $IS=0716-2308
CI: vol. 15, no. 1, Mar. 1999, pp 15-17 (C, K, P, S)
CT: POLLUTION CONTROL/ STANDARD/
AB: The right to live in an environment that is free from contaminants is spelled out in Chile’s constitution and the mandate to ensure this right belongs to Conama, the official government organisation in charge of environmental protection. In 1994 Conama passed a law detailing the basic ground rules for environmental protection, called Lei 19,300. Since then it has passed three series of environmental regulations. The regulation regarding the environmental norms for pulp plants, and specifically for the use of total reduced sulphur pulping, are currently under study.
SO: B

00015
PI: 20204688 JA: 0203
TI: Assessment of reproductive effects in largemouth bass (Micropterus salmoides) exposed to bleached/unbleached kraft mill effluents
AU: Sepulveda M S
JN: Arch. Environ. Contam. Toxicol. $IS=
CI: vol. 41, no. 4, 2001, pp 475-482 (P)
CT: BIOLOGICAL EFFECT/ EFFLUENT/ FISH/ KRAFT PULPING/
CN: Georgia-Pacific
AB: The potential effects of different concentrations of bleached/unbleached kraft mill effluent (B/UKME) on several reproductive endpoints in adult largemouth bass were determined. Bass were exposed to different effluent concentrations for either 28 or 56 days, and at the end of each exposure period, fish were euthanised, gonads collected for histological evaluation and determination of gonadosomatic index (GSI) and plasma analysed for 17beta-estradiol, 11-ketotestosterone and vitellognin (VTG). Largemouth bass exposed to B/UKME responded with changes at the biochemical level that were usually translated into tissue/organ-level responses. Most of these responses occurred

after exposing fish to 40% B/UKME concentrations or greater, however, some were observed after exposures to 20% B/UKME. The chemical(s) responsible for these changes as well as their mode(s) of action remain unknown at this time. (2 fig, 4 tab, 37 ref)
SO: B

00016
PI: 20204693 JA: 0203
TI: The occurrence of cyanobacteria in pulp and paper waste-treatment systems
AU: Kirkwood A E; Nalewajko C; Fulthorpe R R
JN: Can. J. Microbiol. $IS=1480-3275
CI: vol. 47, no. 8, Aug. 2001, pp 761-766 (P)
CT: BACTERIA/ SECONDARY TREATMENT/ WASTE WATER/ WATER TREATMENT/
AB: To assess the diversity and abundance of cyanobacteria in pulp and paper secondary effluent, near surface grab samples were collected from the centre of six bleached kraft pulp and paper secondary treatment basins in Brazil, Canada, New Sealand and the USA. All of the waste treatment systems surveyed had measurable cyanobacterial populations, some of which exceeded heterotrophic bacterial biomass. No other viable photoautotrophic populations were detected. Oscillatoriales, including Phormidium, Geitlerinema and Pseudanabaena, were found to be the dominant taxa, regardless of the geographical location. Chroococcus was also an important genus in Brazil and New Zealand. How the presence of cyanobacteria in pulp and paper waste treatment systems affects the end points of waste treatment, particularly toxicity removal, is presently under investigation. (3 fig, 3 tab, 32 ref)
SO: B

00017
PI: 20204694 JA: 0203
TI: Remediation and toxicity removal from kraft E1 paper mill effluent by ozonization
AU: Freire R S; Kubota L T; Duran N
JN: Environ. Technol. $IS=
CI: vol. 22, no. 8, 2001, pp 897-904 (P)
CT: COMPARISON/ EFFLUENT TREATMENT/ KRAFT PULPING/ OXIDATION/ OZONISATION/ PHENOLIC COMPOUND/ TOC/ TOTAL ORGANIC CARBON/
AB: The reduction of total organic carbon (TOC), total phenols, colour and acute toxicity of the Kraft E1 paper effluent during treatment with four different ozonisation oxidation systems: ozone/pH3, ozone/pH11, ozone/pH11/hydrogen peroxide, ozone/pH11/UV was determined. The ozonisation in acid medium was found to be the least efficient, as this process favoured a direct reaction of molecular ozone, which is more selective and less powerful than the indirect reaction by radical species. The ozonisation in the presence of hydrogen peroxide was shown to promote a partial decoloration and total phenol reduction. Ozonisation in basic medium and ozonisation in the presence of ultraviolet radiation in basic medium gave the best results, however, from an economical viewpoint, the ozonisation in just basic medium was the most efficient process tested. None of the ozonisation processes studied promoted an efficient degree of mineralisation of the Kraft E1 effluent and all showed an effective reduction of acute toxicity to Escherichia coli. (6 fig, 3 tab, 37 ref)
SO: B

00018
PI: 20204698 JA: 0203
TI: Anaerobic treatment for carbon and sulphur removal in “zero discharge” paper mills: effects of process design on sulphur removal efficiencies
AU: van Lier J B; Lens P N L; Hulshoff Pol L W
JN: Water Sci. Technol. $IS=
CI: vol. 44, no. 4, 2001, pp 189-195 (P)
CT: ANAEROBIC DIGESTION/ CARBON DIOXIDE/ COD/ EFFLUENT FREE MILL/ HYDROGEN SULPHIDE/ METHANE/ REACTOR/ WATER TREATMENT/
AB: The performances of an upflow anaerobic sludge blanket (UASB) and an expandes granular sludge bed (EGSB) reactor were compared in the treatment of partly acidified synthetic paper mill waste water at loading rates of up to 50g chemical oxygen demand (COD)/litre/day. The upward liquid velocity was found to have a strong effect on the fermentation patterns. In the UASB reactor, acidification lead to an accumulation of reducing equivalents, which were partly disposed of by the production of n-butyrate and n-valerate from propionate. In the EGSB reactor, net acetate consumption was observed as well as high volumetric gas production rates, resulting in higher sulphur stripping efficiencies. Compared to the regular UASB reactors, a gas supplied UASB showed a more stable performance when the organic loading rates were increased. In addition, the hydrogen sulphide stripping efficiency was 3-4 times higher in the gas supplied UASB. (2 fig, 1 tab, 5 ref)
SO: B

00019
PI: 20205016 JA: 0203
TI: High amounts of effluents from the forest industry
AU: Anon
JN: Kemivarlden
CI: no. 11, 2000, p. 19 (K, S)
CT: BOD/ CHLORINATED COMPOUND/ COD/ EFFLUENT LOAD/ ENVIRONMENTAL EFFECT/ PHOSPHORUS COMPOUND/ SULPHUR EMISSION/
AB: The effluent levels of the Swedish forest industry have decreased in the 1990s, but are still high. The Swedish National Environmental Protection agency reports that the forest industry is responsible for 90% of the Swedish effluents of oxygen consuming compounds (COD). Effluent levels in 1999 were 280,000t COD and 72,000t biological oxygen demand (BOD7). BOD7 effluents have decreased by 38% since 1990, and COD effluents have decreased by 43%. The emission of chlorinated compounds has decreased by 90% since 1990, to 730t in 1999. The production of pulp and paper has increased by 11% and 16%, respectively, during the same period. Emissions of nitrogen and phosphorus also decreased during the 1990s, with 45% for nitrogen and 42% for phosphorus, to 3,300t and 370t, respectively, in 1999. Sulphur emissions into the air have been lowered by 38% since 1990, but the levels of nitric oxide effluents have remained constant. 5,300t of sulphur and 14,000t of nitric oxide were discharged in 1999. The report is based on the mills’ own information to the county administrative boards. (Short article)
SO: B