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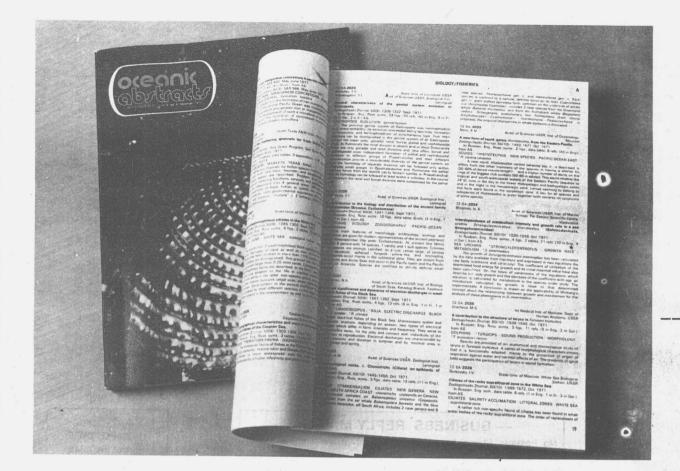
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water quality abstracts

a special compendium from Pollution Abstracts Inc., publishers of Pollution Abstracts and Oceanic Abstracts

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Foreword to

water quality abstracts

Water Quality Abstracts is designed for engineers, librarians, consultants, administrators, teachers, students, and others who must locate specific water quality information quickly and easily.

This reference contains summaries of up to 200 words that give the highlights of recent water quality literature. The abstracts are arranged by areas of interest. When possible, the abstracts give the methods and conclusions reported in the original material. Accompanying each abstract is complete bibliographic information, giving author affiliation, publication data, etc.

Primary sources covered in Water Quality Abstracts include scientific journals, technical journals, conference proceedings and papers, books, government reports, materials of only limited circulation, literature from countries other than the U.S. and important trade publications

literature from countries other than the U.S., and important trade publications.

The abstracts in this compendium originally were published in the 1970, 1971, and 1972 issues (Vol. 1-3) of Pollution Abstracts, the bimonthly key to worldwide literature on environmental research and pollution control. As published in Pollution Abstracts, the summaries appeared under broad chapter headings, such as Water Pollution. For Water Quality Abstracts, the summaries have been reorganized into six chapters and 40 subchapters.

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water quality abstracts

To use this reference, simply consult the table of contents for the chapters and subchapters relevant to your research. The abstracts in each subchapter are arranged by year of publication. Abstracts published in the same year are arranged alphabetically by author

Sample abstract

		•
AUTHOR ———	Graves, G. W. (both) Univ. of California, Graduate School Hatfield, G. B. of Business, Los Angeles Whinston, A. Purdue Univ., Krannert Graduate School, Lafayette, IN	— AUTHOR AFFILIATION
TITLE	Water pollution control using by-pass piping.	
PUBLICATION —————	[Name] Water Resources Research, Washington, D.C., [Volume Number] 5(1): [Page Numbers] 13-47, [Date] Jan. 1970. Abs., illus., refs., AA.	
KEY WORD	Contract: FWQA No. WP-01210-02. WATER QUALITY CONTROL : PIPES : ESTUARIES : MATHE- MATICAL MODELS: by-pass piping.	DESCRIPTOR
ABSTRACT	This paper presents a mathematical model of regional water quality management using by-pass piping. The model is developed within the framework of linear programming and a large-scale problem is solved using semi-realistic data from the Delaware Estuary. The technique of generation of elements is used in conjunction with the truncated tableau to provide efficient solutions. A possible method of taxation is indicated based on the values of the dual variables.	

Legend

*	—Asterisk before a biclogical keyterm indicates	AA	Indicates author's abstract.
	that the term is Taxonomic (genus or species).	AS	—Indicates author's summary.
(UM)	—Indicates that the document is an unpublished	SS	—Indicates summary prepared by staff personnel.
(*****)	manuscript.	TA	—Indicates translator's abstract.
Ref. order No.	—These may be obtained from the U.S. Department of Commerce Clearinghouse for	[n.d.]	—"n.d." in brackets indicates that no publication that date was given for document.
	Federal Scientific and Technical Information, Springfield, VA 22151.	[Title]	—Title in brackets indicates no original title was given.
	opinightid, W.E.E.G.	[Date?]	 Date and question mark in brackets indicate probable date of publication.

ABBREVIATIONS/PREFIXES/SYMBOLS

Angstrom ADP semanting current ADP semanting current ADP semanting current ADP semanting diphesphate ADP semanting diphesp	а	acre	gph	gallons per hour
AC alternating current on such constraints of the state o	Α	Angstrom	-	
amb ampere AMP adenosine monochosphate AMP AMP adenosine monochosphate AMP AMP adenosine triphosphate AMP AMP adenosine triphosphate AMP AMP adenosine triphosphate AMP AMP adenosine triphosphate AMP	AC	alternating current		
amper AMP adenosine monophosphate	ADP	adenosine diphosphate	GT	gross ton
AMP adenosine monophosphate Hb hemosphere AMU atmin atmosphere HF hgh frequency AMT atmosphere HF hgh frequency AMT AMT atmosphere HRAS hgh frequency BOC becillus Calmente-Guerin ht high-rate activated sludge waste treatment BOD biowout prevented-Guerin ht high-rate activated sludge waste treatment BOD biowout prevented-Guerin ht high-rate activated sludge waste treatment BOD biowout prevented-Guerin ht ht http://dx. BPD barrals peer day i.m. intrawmocular(IV) FC degrees Centigrade i.R. intravenously) ca. circa i.V. iintravenously) ca. circa i.V. kilo-pote, kilocycles per sec cBW chemical and biological warfare k.K. kilo-pote, kilocycles per sec cCBW chemical and biological warfare k.K. kilocycles kelvin cdh cubic tiper minute k.K. kilocycles per sec k.K.	a.m.	(with time)		hecto-(10²)
AMU atomic mass unit atmosphere ATP admospheric triamide high frequency admosphere ATP admosphere high frequency admosphere high frequency hi				hectare
atmosphere adenosine triphosphate hp horsepower hour advanced waste treatment hp horsepower hour advanced waste treatment hp horsepower hour hour hour hour hour hour hour hou				• • • • • • • • • • • • • • • • • • •
ATP adenosine triphosphare hp barral advanced waster treatment hr barral barral barral barral barral harral barral				
AWT				
boll barrel BGG bacillus Calmette-Guerin ht BGD biochemical oxygen demand BOP biochemical oxygen demand BPD barrols per day BPD barrols per day BPD barrols per day Ca. dispease Centigrade Ca. dispease Centigrade Ca. calorie Ca. cubic centimeter Ca. dispease Centigrade Calorie Ca. cubic centimeter Ca. cubic riper flow Ca. cubic ripe			•	·
BCG biochemical oxygen demand Hz Hertz (cycles/second) tolorential oxygen demand Hz				· · · · · · · · · · · · · · · · · · ·
BOD				
BPD				•
BPU				, ,
BTU British thermal unit in incaparitions and incaparitions and incaparitions and intraparitions and intrapa		· ·		
c centi- (10-3)		•		
Ca			i.p.	intraperitoneal(ly)
cal ciria caloria (caloria caloria combinator con cubic centimeter kc cubic off per day kcal kilocaloria kilocaloria ciria cubic fi per day kcal kilocaloria ciria cubic fi per hour kg kg kilocaren ciria cubic fi per sec kn knot ciria cubic fi per sec kn knot ciria cir	°C		IR	infrared
ce cubic entimeter coubic type and biological warfare cord cubic type and cubic entimeter coubic type and cubic	ca.		i.v.	intravenous(ly)
cd cubic centimeter	cal	calorie	k si	kilo-(103)
cff cubic ft per day check check couloic ft per hour kg cliogram comment couloic ft per hour kg cliogram couloic ft per minute check couloic ft per sec kn kn knot comment couloic ft per sec kn knot couloic ft per sec knot couloic ft	CBW	chemical and biological warfare	°K⁄	degree Kelvin
cfm cubic ft per hour color the per hour color ft per hour color ft per sec color ft per se		cubic centimeter	,	kilocycle, kilocycles per sec
cfs oubic ft per minute cfs oubic ft per sec kn. kn. chot cfs oubic ft per sec chot cfs oubi		, ,	/ kcal	kilocalorie
cfs cubic ft per sec				kilogram
Cilicum centimeter kw kilovolt kilovolt complete mixing activated sludge 1 litter CMAS complete mixing activated sludge 1 litter COD chemical oxygen demand / levorotatory levorota				Michaelis constant
CMAS complete mixing activated sludge I liter CDD chemical oxygen demand				
CMAS complete mixing activated sludge CDD chemical oxygen demand / levorotatory comb. n. ew combination (with taxa)		,		
COD chemical oxygen demand		,	kw	
CPM cycles per minure combination (with taxa)			!	
CPS cycles per minute cycles per minute cycles per minute sort between the cycles per second; combination precipitation- scrubber systems LF LNG liqueffed natural gas longitude development of developme	<u>-</u>			·
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cwt hundredweight 2. 4-D 2. 4-Diehlorophenoxylacstic acid d day, deca-(10*)*, deci-(10*)*, deci-				• •
cwt hundredweight	CFS			
d day, deca-(101); deci-(10-1) LOSS large object salvage system d day, deca-(101); deci-(10-1) LOS large object salvage system d dextrorotatory LOT load on top decible LTA low temperature ashing DDC direct current DDD 1,1-Dichloro-2,2-bis (p-chlorophenyl) ethane m molar DDE 1,1-Trichloro-2,2-bis (p-chlorophenyl) ethane m molar DDT 1,1-Trichloro-2,2-bis (p-chlorophenyl) ethane m molar DDA deoxyribonucleic acid M molar DO dissolved oxygen ma milliampere. DDP dicctyl phthalate mc megacycle, millicurie milligned ethane	CIAIT	·		
d day, deca-(101); deci-(10-1) LOS large object salvage system d dextorotatory LOT load on top db decible LPG liquefied petroleum gas DC direct current LTA low temperature ashing DDD 1,1-Dichloro-2,2-bis (p-chlorophenyl) ethane m molal DDT 1,1-I-richloro-2,2-bis (p-chlorophenyl) ethane m molal DNA deoxyribonucleic acid M mega DNA deoxyribonucleic acid M mega DV diostylex doxygen ma milltamper DV diostyl pthalate mc megacycle, millicurle dwt deadweight ton mc million elactron volt e e er mg millioral EDTA ethylenediamine tetraacetic acid MHD magnetohydrodynamics e.g. for example mi million EHP effective horsepower; electric horsepower min million emu electron spin resonance <td></td> <td></td> <td></td> <td></td>				
d dextorotatory db decible LPG liquefied petroleum gas low temperature ashing low temperatu			•	
db decible LPG liquefied petroleum gas DC direct current LTA low temperature ashing DDD 1,1-Dichloro-2,2-bis (p-chlorophenyl) ethene m meter, milli-(10-3) DDT 1,1,1-Trichloro-2,2-bis (p-chlorophenyl) ethane M mega DNA deoxyribonucleic acid M molar DO dissolved oxygen ma milliampere DOP dioctyl phthalate mc megacycle, millicurie dwt deadweight ton mey million electron volt e e erg mg million gallons per day EDTA ethylenediamine tetraacetic acid MHD magnetohydrodynamics e.g. for example mi million gallons per day EHP effective horsepower; electric horsepower min millium e.g. for example min millium EFP electron paramagnetic resonance MLD millimeter ESR electron spin resonance mm millimeter esv<				
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GLC gas-liquid chromatography (reduced)	-	-		
MDID.			NADPH	
gpa gallons per day NDIK nondispersive intrared analyzers /		• ,	MDID	· ·
	gpa	ganons per day	ипи	nondispersive infrared analyzers /

ABBREVIATIONS / PREFIXES / SYMBOLS

NEDTA	disodium salt of ethylenediamine tetraacetic acid	STP	standard temperature and pressure
nm	nautical mile	subg.	subgenus
NMR	nuclear magnetic resonance	subg. n.	new subgenus (taxa)
nom. n.	new name (taxa)	2,4,5-T	2,4,5-Trichlorophenoxyacetic acid
NTA	nitrilotriacetic acid	thp	thrust horsepower
nt wt	net weight	TLC	thin layer chromatography
0	ohm	tn	ton
oz	ounce	TNT	trinitrotoluene
p	pico-(10-12)	TOC	total organic carbon
PAB	pulsed adsorption bed process	TOD	total oxygen demand
PCB	polychlorinated biphenyl	TPD	tons per day
pCi	picocurie	TPH	tons per day
PCV	positive crankcase ventilation	TPY	tons per year
ρΗ	the negative log of the H ion concentration	TTS	temporary threshold shift
pK	the negative log of the dissociation constant	UHF	ultra high frequency
p.m.	(with time)	U.S.	United States of America
PMR	paramagnetic resonance	·USSR	Russia (Union of Soviet Socialist Republics)
ppb	parts per billion	UV	ultraviolet
ppm	parts per million	V	volt
ppt	parts per thousand	VHF	very high frequency
psf	pounds per square foot	VLCC	very large crude carrier
psi	pounds per square inch	vol	volume
R	roentgen	vs	versus
rms	root-mean square	VTOL	vertical take-off and landing
RNA	ribonucleic acid	W	watt, west
rpm	revolutions per minute	whp	water horsepower
rps	revolutions per second	wk	week
ŔU	rat unit	WQI	water quality index
R/V	research vessel (ships)	wt	weight
S	south	yd	yard
s c.	subčutaneous(Iy)	yr	year
SD	standard deviation	μ	micron,micro-(10 ⁻⁶)
sec	second	μa	microampere
shp	shaft horsepower	μg	microgram
SODA	disodium oxydiacetate	μV	microvolt
SOP	surface oil pickup	%	percent
sp.	species	0/00	per thousand
SPL	sound pressure level	/	per
sp. n.	new species (taxa)		
spp.	species (plural)		
ssp.	subspecies	months, na	imes of
ssp. n.	new subspecies (taxa)	Jan., Fel Nov., De	b., Aug., Sept., Oct., ec.
		chemical e	

ACRONYMS

AAAS	American Association for the Advancement	FPC	Federal Power Commission (U.S.).
	of Science.	FRP	Feather River Project.
ACE	U.S. Army Corps of Engineers.	FTC	Federal Trade Commission (U.S.).
ACS	American Chemical Society.	FWPCA	Federal Water Pollution Control Administration
ADAPTS	Air Delivered Antipollution Transfer System.	E1440.4	(U.S.) (Now FWQA).
AEC	Atomic Energy Commission (U.S.).	FWQA	Federal Water Quality Administration (Was FWPCA).
AERE	Atomic Energy Research Establishment (U.K.).	GARP	Global Atmospheric Research Programme.
AIAA	American Institute of Aeronautics and Astronautics.	GEMS	Global Environmental Monitoring System
AICE	American Institute of Chemical Engineers.	GEP	Gulf Environmental Measurements Program.
AMA	American Medical Association.	HEW	Health, Education and Welfare Department (U.S.).
AMRED	U.S. Army Medical Research and Development	HUD	Department of Housing and Urban
	Command.	1100	Development (U.S.).
AOAC	Association of Official Analytical Chemists.	IAEA	International Atomic Energy Agency.
AP	Associated Press.	IBP	International Biological Program.
APCA	Air Pollution Control Association (U.S.).	IEEE	Institute of Electric and Electronics Engineers.
APCO APHA	Air Pollution Control Office (U.S.). American Public Health Association.	IFP	Institut Francais du Petrole.
API	American Petroleum Institute.	IMCO	Inter-Governmental Maritime Consultive
APPA	American Public Power Association.		Organization.
APRAC	Air Pollution Research Advisory Committee (U.S.).	INTERPET	International Petroleum Company.
ARS	Agricultural Research Service (U.S.).	IRRPOS	Interdisciplinary Research Relevant to the Problems of Our Society (U.S.).
ASARCO	American Smelting and Refining Company.	ISA	Instrument Society (d.s.).
ASCE	American Society of Civil Engineers.	ISFR	International Society for Flouride Research.
ASME	American Society of Mechanical Engineers.	MIT	Massachusetts Institute of Technology.
ASTM	American Society for Testing and Materials.	MITI	Ministry of International Trade & Industry
AWRA	American Water Resources Association.		(Japanese).
AWWA BAAPCD	American Water Works Association. Bay Area Pollution Control District	NACE	National Association of Corrosion Engineers.
BAAPCD	(San Francisco, U.S.A.).	NAE	National Academy of Engineering (U.S.).
BCF	Bureau of Commercial Fisheries (Now National	NAEMB	National Academy of Engineering Marine
50.	Marine Fisheries Service) (U.S.).		Board (U.S.).
CARETS	Central Atlantic Regional Ecological Test Site	NAPCA	National Air Pollution Control Administration (U.S.).
	(U.S.).	NAS	National Academy of Sciences (U.S.).
CEA	Commissariat a l'Energie Atomique (France).	NASA	U.S. National Aeronautics and Space
CEQ	Council on Environmental Quality (U.S.).		Administration.
CERBOM	Centre d'Etudes et de Recherches de	NASCO	National Academy of Sciences Committee
СНАВА	Biologie et d'Oceanographie Medicale. National Research Council Committee on		on Oceanography (U.S.).
CHADA	Hearing, Bioacoustics and Biomechanics	NASN	National Air Sampling Network.
	(Great Britain).	NAVFAC	Naval Engineering Facilities Command (U.S.).
CMI	Comite Maritime International.	NCAR	National Center for Atmospheric Research (U.S.). National Council of the Paper Industry for
CNEN	Comitato Nazionale per l'Energia	NCASI	Air and Stream Improvement.
	Nucleare (Italy).	NCDC	National Communicable Disease Center (U.S.).
CNRS	Centre National de la Recherche	NCEL	Naval Civil Engineering Laboratory (U.S.).
CNC	Scientifique (France).	NEDN	Navy's Worldwide Environmental Data
CNS COMIRO	Canadian News Service. Mexican Engineering Committee on Ocean		Network (U.S.).
COMINO	Resources.	NEPA	National Environmental Policy Act.
CPEHS	Consumer Protection and Environmental Health	NERC	National Environmental Research
	Service (U.S.).	MICHUD	Council (U.K.).
CSIR	Council for Scientific and Industrial Research	NICHHD	National Institute of Child Health and Human Development (U.S.).
	(S. Africa).	NIH	National Institute of Health (U.S.).
CSIRO	Commonwealth Scientific and Industrial Research	NMFS	National Marine Fisheries Service (U.S.).
507	Organization (Australia),	NMRI	Naval Medical Research Institute (U.S.).
DOT	Department of Transportation (U.S.).	NOAA	National Oceanic and Atmospheric Administration
EAWAG	Federal Institute for Water Supply,	NOIC	National Oceanographic Instrumentation Center.
	Sewage Purification and Water Pollution Control-Switzerland.	NRCC	National Research Council of Canada.
ECA	Environmental Control Administration (U.S.).	NRDL	Naval Radiological Defense Laboratory (U.S.).
ECOM	U.S. Army Electronics Command.	NRL	Naval Research Laboratory (U.S.).
ECOR	International Engineering Committee on	NSF OAP	National Science Foundation. Office of Air Programs (EPA).
	Oceanic Resources.	OECD	Organisation for Economic Co-Operation
EPA	Environmental Protection Agency (U.S.)	OLOD	and Development.
EQC	Environmental Quality Council.	ONR	Office of Naval Research.
EROS	Earth Resource Observation Satellite.	ORSANCO	Ohio River Valley Water Sanitation
ERTS	Earth Resources Technology Satellite.		Commission.
ESSA FAA	U.S. Environmental Science Services Administration. Federal Aviation Administration (U.S.).	OST	Office of Science and Technology (U.S.).
FAO	Federal Aviation Administration (U.S.). Food and Agriculture Organization of the	OSW	Office of Saline Water (U.S.).
1.40	United Nations.	OWRC	Ontario Water Resources Commission (Canada).
FCC	Federal Communications Commission (U.S.).	OWRR	U.S. Dept. of the Interior, Office of Water
FCCI	Federal Clean Car Incentive Program (U.S.).	55510	Resources Research.
FCST	Federal Council for Science and Technology (U.S.).	PPRIC	Pulp and Paper Research Institute of Canada.
FDA	Food and Drug Administration (U.S.).	SAE	Society of Automotive Engineers.

ACRONYMS

	rmy Air Mobility Research and
	slopment Laboratory.
Coodifico and Exchange Commission (C.S.)	ir Force.
SFI Support Fisheries Institute. USASI U.S. of	f America Standards Institute.
SIO University of California at San Diego, Scripps USBM U.S. Bu	ureau of Mines.
	oast Guard.
	epartment of Agriculture.
SPEC Scientific Pollution and Environmental Control USDC U.S. De	ept. of Commerce.
Society (Canada). USDI U.S. De	epartment of Interior.
SUPSAL Supervisor of Salvage (U.S.). USGS U.S. Ge	eological Survey.
TNO Toegepost Natuurwetenschappelijk Onderzoek USN U.S. Na	avy
TOVALOP Tanker Owners Voluntary Agreement Concerning USPHS U.S. Pu	ublic Health Service.
	a Institute of Marine Sciences.
	Management Information System.
UKAFA United Kingdom Atomic Energy Agency WHO World F	Health Organization.
IIN United Nations WHOI Woods	Hole Oceanographic Institute.
VIVIO World IV	Meteorological Organization.
	Pollution Control Federation, hington, D.C.
	Quality Office (EPA).