
F. Charles Newton III

Areas of Specialization

Aquatic Toxicology
Benthic Invertebrate Taxonomy
Database
Management/Programming
Contaminated Sediment
Management
Study Design & Statistical Analyses
NPDES permitting/studies
Quality Assurance/Quality Control

Employment History

2008-present

Owner, STP Consulting, Fallbrook,
CA

2009-present – Sr. Scientist,
Maxon Consulting, San
Diego CA

2012-2013 – Sr. Scientist, InterAct
PMTI, Ventura CA

*2001-2008: Senior Research
Scientist*, Battelle, Carlsbad,
CA

1997-2001: Manager, Arthur D.
Little, Encinitas, CA

1994-1997: Director, MEC
Analytical Systems,
Carlsbad, CA

1991-1994: Director, Columbia
Aquatic Sciences, Carlsbad,
CA

1983-1991: Regional Manager,
Kinnetic Laboratories,
Carlsbad, CA

1978-1983: Scientist, Lockheed
Center for Marine Research,
Carlsbad, CA

Education

M.S. Biology (Marine Ecology), San
Diego State University, 1983

B.S. Biology (Zoology), California
State University, Los Angeles, 1975

EXPERIENCE SUMMARY

Mr. Newton (Skip) is a senior scientist, database manager, statistician, and a Silver Alliance Partner with the SAS Institute, a world leader in database and analytical software. He has directed and been responsible for data management of many large, multi-disciplinary, marine environmental monitoring programs, including dredged material studies, sediment baseline studies in support of international EIA's (similar to NEPA), oil spill tracking and response data, and global tracking of hazardous/non-hazardous waste. In addition, Mr. Newton has over 35 years of experience in the fields of marine biology, toxicology, and environmental laboratory testing services, including extensive experience in experimental design and statistical analysis. He has been the principal database manager and analyst for dozens of aquatic environmental programs along the U.S. Pacific and Atlantic coasts, Hawaii, Gulf of Mexico, Argentina, Azerbaijan, Chile, Libya, Kazakhstan, Madagascar, Angola, and Nigeria.

With respect to toxicology, he has designed and/or constructed four fixed aquatic bioassay laboratories, four mobile testing systems, and managed a state of the art TOSCA/FIFRA Good Laboratory Practices testing facility certified for toxicity testing in California and the State of Washington. Skip cofounded and later managed Columbia Aquatic Sciences (CAS) and was laboratory director for MEC Analytical Services after CAS was purchased. During the Valdez oil-spill Skip designed and supported construction of a large-scale aquatic testing facility on the Alyeska pipeline terminal specifically for evaluating impacts of dissolved north slope crude oil on larval fish and invertebrates.

Mr. Newton actively leads national and international marine programs, including coastal and deep ocean investigations using state-of-the-art ROV, sediment surface and coring devices, and navigation and profiling technologies. He has served as the scientific lead and field quality assurance/quality control principal for numerous politically sensitive marine international programs and authored/co-authored over 60 publications, presentations, and technical papers.

Example Projects

EIR, Environmental Assessment, Sediment Monitoring

Field/Logistics/QA/QC Manager supporting EIA Mobil Producing Nigeria. Provided assistance and oversight for ten terrestrial/nearshore/offshore environmental surveys in the Niger Delta. Sampling locations included onshore native areas, mangroves, creeks, rivers, and shallow nearshore. The focus of the oversight was to ensure that sampling activities, sample handling/storage, custody transfer, and record keeping conformed to international standards, as well as to Nigerian Department of Petroleum Resources (DPR) guidelines specified in Environmental Guidelines and Standards for the Petroleum Industry in Nigeria. Sampling conducted encompassed activities necessary to satisfy the scope of the baseline environmental study as well as appropriate QA/QC samples, including trip blanks and replicate samples. Project role was initially one of oversight for Nigerian scientists; however, this oversight role evolved to include steps necessary to ensure that proper procedures were followed. Considerable effort was devoted to training and technology transfer.

International Environmental Baseline and Post Drilling Studies for Chevron and ExxonMobil (Africa). Database manager, statistician, and GIS/graphic analyst for eight major deep water sediment investigations in Angola, Liberia and Madagascar. Data management included the integration of disparate and non-standard laboratory and data reports provided by international and US laboratories. Imported data ranged from scanned optically converted records, text based word processing files, and poorly constructed spreadsheets, to 10,000+ record digital data streams produced by oceanographic profiling devices. Hundreds of complex chemical and benthic species names were standardized and incorporated into in-house chemical/biological database. Hydrocarbon fingerprinting was undertaken to identify petrogenic and pyrogenic contaminants. Trace metal contaminants were compared to uncontaminated oceanic crustal values. Detailed, standardized, highly readable databases were created and provided to clients and appropriate international regulatory bodies.

Environmental Baseline Studies - North Africa. Field survey/logistics manager, data manager/analyst, and reporting for EBS surveys of seven lease blocks in deepwater offshore Libya. EBS reports presented background, approach, and results of two major sampling programs. Sampling stations were located approximately 70 to 100 kilometers (km) offshore, in water depths ranging from 214 to over 2000 m. Water quality, chemistry, and physical structure, and sediment chemistry, biology and grain size were evaluated to document baseline conditions prior to planned petroleum exploration and development.

Cardno ENTRIX NRDA team responding to the Deepwater Horizon accident and oil spill in the Gulf of Mexico on behalf of BP Exploration & Production Inc. (BP). Provided support to the technical working group, and participated in the design or implementation of the following cooperative NRDA studies: SPI.

Scientific leader for offshore portion TGS EBS/EIA. Support to larger Transportadora de Gas del Sur (TGS) Preliminary Environmental Study, Environmental Protection Plan and Environmental Monitoring Plan for the Parallel Loop to the General San Martín Gas Pipeline, Strait of Magellan, Argentina. Responsibilities included project design review and evaluation; evaluation of alternatives, description of natural environment, offshore sampling, design structure of EIR document. Work was conducted in accordance with the generally accepted international standards of practice and patterned after typical World Bank EIA requirements.

Manager physical oceanographic aspects (field, laboratory and data analysis) of a 3-year multi-disciplinary EIA for ExxonMobil in the south Caspian Sea. Responsibilities include study design, leading 2 field expeditions, data interpretation, reporting, and supporting presentations to the scientific and regulatory community. Data consist of biological, physical measures in sediment; and physical oceanographic and meteorological data. A unique part of the program was the location and retrieval of an oceanographic array (valued at over \$50,000) presumed lost for over six months. As a result, valuable current speed and directional information was recovered and important programmatic objectives were met.

Scientific lead/survey leader and data analyst for an EBS Chevron Overseas Petroleum Azerbaijan Limited (COPAL, Absheron Prospect) EIA in the south Caspian Sea. Responsibilities included field management, logistics, statistical analyses of sediment chemical (hydrocarbons and metals), physical, and biological data. The study focused on potential impacts from discharged cuttings and adhered drill muds from a former well site located at a water depth of 520 m. The study scope was responsive to requirements governing Environmental Standards and Practices of the Production Sharing Agreement (PSA) between international oil companies and the State Oil Company of the Azerbaijan Republic (SOCAR). Innovative techniques and processes in sediment acquisition and processing were implemented and reduced costly ship time by over 50 percent.

Field survey manager-oceanographic data analyst on two oceanographic and meteorological field surveys in the north Caspian Sea, Kazakhstan, for OKIOK (Offshore Kazakhstan International Operating Company). Responsibilities included deployment and retrieval of instruments, data interpretation, and report writing. Physical oceanographic and meteorological data were collected at several widely spaced locations over a one-year period, including under ice monitoring. Information gathered was used as inputs into hydrological models to predict water circulation and wave energies, and to determine major forcing functions. Data consisted of current speed and direction, water height, directional wave energies, water quality, wind speed and direction, barometric pressure, air temperature, and humidity. Study results were used to aid OKIOK in oil spill modeling and engineering design of man-made shallow water drilling berms and for the collection of drilling discharges.

MMS CAMP-3 Phase II. Investigation examined the effects of oil exploration, with focus on the discharge of drilling muds and cuttings, on mid-depth, high-relief rocky reefs in and around the Ellwood oil field. This multidisciplinary program employed a remotely operated vehicle (ROV), precision underwater navigation, coupled laser range finding and 70mm still photography to track changes in hard bottom benthic biota over time. During the course of the program, deep-water sampling quadrates were occupied and photographed on a seasonal basis generating thousands of 70mm transparencies. Benthic biological data was collected from photographic slides and evaluated utilizing by a random point contact technique. Over 50,000 contacts were evaluated. Designed, developed and implemented a voice entry data system that could be used while the slides were being reviewed. This system significantly reduced the effort required to process data, decreased entry errors, and lowered the overall cost of the program.

Lead scientific contractor US Navy SPAWAR ERA/RI. Examining the effects of the disposal of obsolete Navy ships on deepwater (>800m) benthic communities offshore southern California. The major objectives of the program were to determine whether potentially toxic materials from sunken ships were being released and whether releases pose an adverse risk to the environment. The experimental

design included precision sediment sampling (± 2 m), benthic infaunal community analysis; radiological age dating of sediments; acute and chronic toxicity testing; sediment and tissue chemical analysis for PCB congeners, PAHs and selected metals; near bottom current profiling; fish trapping; water sampling; and photo documentation. Responsible for all aspects of physical oceanographic monitoring; specially designed ROV operated mini-boxcore, sample collection, toxicity testing, data analysis, and authoring major ERA chapters. Project required distributing data to the U.S. Navy in a consolidated electronic format.

Rapid response project manager initial of Exxon Valdez oil spill. Database management design and development during first two weeks of the oil spill, designed sample/data tracking structure and initiated Exxon data management program. Managed Valdez sediment particle size analysis program, Alyeska pipeline terminal toxicity laboratory design and construction program, and San Diego Valdez emergency ship sampling program. Conducted statistical analyses of data gathered during first year of monitoring (PRODAS, RBASE and SAS). Designed/developed/implemented specialized water sampler (Valskon) that permitted taking uncontaminated hydrocarbon water samples below an oil slick; a method of analyzing particle size in sediments heavily contaminated with crude oil; flow-through aquatic bioassay testing facility. Supported field surveys in intertidal, near subtidal, and deep waters (water and sediments).

Principle data analyst, Hunters Point Shipyard parcel F feasibility study data gaps investigation, San Francisco, CA. Project involved the re-analysis for RI/FS chemical sediment and tissue data, incorporation of data obtained from locations near Hunters Point by other programs, inclusion of newly collected data, and summarization and presentation of all data.

Field Supervisor for sediment toxicity sampling, SPI support, and benthic community survey of the Historic Area Remediation Site (HARS), Port of New York. The main objective of this ongoing program is to ensure that the placement of the “remediation quality” dredged material does not result in significant adverse environmental impacts, but does provide sufficient modification (i.e., remediation) of currently unacceptable sediment chemistry and toxicity characteristics. The monitoring includes high-resolution bathymetry, sediment profile imaging (SPI), side-scan sonar, sediment coring, sediment chemistry and toxicity testing, tissue chemistry testing, benthic community analysis, and fish/shellfish surveys. The program also includes monitoring the degree to which sediments might be resuspended and transported in and around the HARS, by collecting data on waves, currents and suspended particulate material and relies heavily on SPI surveys.

SPI field support, principal data analyst, toxicology manager for 2011 Sawmill Cove/Silver Bay recovery program, Sitka AK. The overall objectives of the program were to complete and validate established recovery performance measures. Primary goals were to: 1) document observable succession of benthic species (living both on and in the sediments) that result in balanced, stable communities as assessed by measures of abundance and diversity at various locations over time through the use of SPI technology; and 2) Conduct a bioaccumulation survey to evaluate the potential change in dioxin concentrations that occur over time.

Principal Water Quality Specialist and SPI support for Seafood Waste Pile Benthic Impact Assessment: Akutan and Ketchikan, AK. This study characterized the spatial extent of permitted fish waste piles created by Trident Seafoods Corporation and associated benthic community impacts present on the apron of the fish waste pile in receiving waters of Akutan and Ketchikan, Alaska. Comparisons were also made to benthic communities resident on seafloor beyond the influence of the fish waste piles.

Sediment profile imaging (SPI), plan-view underwater camera (PUC) imaging, and extensive water quality profiling were performed. Water quality profiles for dissolved oxygen (DO), turbidity, salinity, temperature and depth were collected concurrently at a subset of the SPI/PUC locations representative of each of the two project areas with continuous, discontinuous and ambient (no waste) fish waste. Additionally, intensive water sampling of surface and bottom water quality parameters was performed to establish compliance with State water quality criteria and existing NPDES permit limits.

Principle data analyst, Technical Memorandum for Construction Debris Pile Study at Seaplane Lagoon, Alameda Point, California. The main objective of this soil sampling and analysis program was to define contamination within a historic Navy construction debris pile, which was impinging on the intertidal marine environment. It was also necessary to determine if concentrations of inorganic and/or organic chemicals in the associated soil posed an unacceptable risk to humans or the environment based on comparisons to relevant screening levels and background concentrations. Primary responsibilities included description of the spatial and vertical extent of contamination within the construction debris pile; analysis of contaminants of potential concern; assess if collected information was sufficient to determine if elevated chemical concentrations in subsurface soils posed unacceptable human health or the environmental.

Principle data analyst, Bremerton Naval Complex Remedial Action Optimization and Site 6 Cleanup Tiger Team, Bremerton, Washington. Provided data analysis, database management, and experimental design expertise to a “tiger team,” as an experimental design evaluator. The team was assembled because highly variable PCB sediment concentrations were discovered during post dredge monitoring, indicating long term failure of the cleanup remedy. In response to these observations, an evaluation of historic site information was conducted to determine the potential causes and recommended tactics to address data variability and potential statistical anomalies, as well as optimization strategies to improve the monitoring approach and/or accommodate data variability within the context of cleanup goals. Primary responsibilities included reanalysis of data products, field collection methods, experimental design, and providing critical commentary at joint tiger team briefings.

Principal data analyst, Joint U.S. EPA NRMRL/NERL Project for Evaluation of Environmental Dredging for Remediating Contaminated Sediments in the Ashtabula River Phases 2 and 3. Managed and analyzed hundreds of thousands of water current and turbidity records before, during, and after dredging operations. The focus of the study was to measure sediment residuals and the impact of dredge operations and sediment removal on the river ecosystem. Major analytical challenges included the integration of real-time dynamic river flow, turbidity measurements obtained by a unique multi depth water sampler, and discrete PCB/turbidity samples, collected from over 100 cross river transects.

Principal data analyst, Technology Evaluation Report: Demonstration of the AquaBlok® Sediment Capping Technology. Reanalyzed, validated, and critically reviewed all physical and analytical project elements. The all over project was designed to evaluate the effectiveness of the AquaBlok® sediment capping technology in the Anacostia River in Washington, DC, under U.S. EPA Superfund Innovative Technology Evaluation (SITE) Program. Sediments in the Anacostia River are contaminated with PAHs, PCBs, heavy metals, and other chemicals, and impact commercial, industrial, and recreational uses. A SITE demonstration study area was established to evaluate the efficacy of capping contaminated sediments in an active river environment.

Database Manager for Global Waste/Wastewater Management & EMIS Implementation project for Chevron. Responsible for design, re-organization, and software implementation project. Responsibilities

included scope development of business and software requirements for the implementation of ESS Environmental Management and Information Systems software to manage waste and water at over 5000 marketing, terminal, and remediation sites in over 130 countries. Also responsible data standardization and conversion of over 1MM records of manifested waste data from a desktop system to the web-based ESS ver 7.3 system.

Other Experience

STP Consulting (2008 – Present)

Owner/Senior Scientist

Maxon Consulting, Inc. (2009 – Present)

Senior Scientist

Battelle Memorial Institute (2001-2008)

Senior Research Scientist

Arthur D. Little, Inc. (1997-2001)

Senior Manager, (1999-2001)

Manager, (1997-1999)

MEC Analytical Systems, Inc. (1994-1997)

Director of Toxicology and Chemistry Group, Principal Scientist, 1995-1997

Columbia Aquatic Sciences/Emcon Marine Sciences, Inc. (1991-1994)

Director of Laboratory Services, Principal Scientist. Designed and constructed 6000 ft² aquatic toxicity laboratory conducting freshwater and marine bioassays, including bioaccumulation and TIE/TRE investigations, supporting a technical laboratory staff of eleven. Laboratory was sold to MEC Analytical Systems, Inc. in October 1994.

Kinnetic Laboratories, Inc., Carlsbad (1983-1991)

Regional Manager, 1990 - 1991

Program Manager, 1984 - 1991

Data Base Manager, 1983 - 1991

Lockheed Ocean Science Laboratories (1978 - 1983)

Senior Scientist, 1981 - 1983

Scientist, 1980 - 1981

Associate Scientist, 1978 - 1980

Designed and supervised building of California state certified aquatic testing laboratory in Carlsbad, CA for Columbia Analytical Systems.

State of California Department of Forestry: Field work in the determination of the effect of fire on native California coastal grasslands.

San Diego State University: Research, development, and construction of a multi-channel, telemetric, tidal inundation recorder.

California Department of Fish and Game: Field identification and enumeration of intertidal algae and mollusks, Cabrillo National Monument.

NOAA, Sea Grant, San Diego State Foundation: Field identification, collection, and enumeration of vascular estuarine plants.

Publications

- R.D. Tait, C.L. Maxon, T.D. Parr, F. C. Newton III. 2016. Benthos response following petroleum exploration in the southern Caspian Sea: Relating effects of nonaqueous drilling fluid, water depth, and dissolved oxygen. *Mar Pollut Bull.* 2016 Sep 15;110(1):520-7.
- Parr, T.D., R.D Tait, C.L. Maxon, F.C. Newton III, J.L. Hardin. 2006. A descriptive account of benthic macrofauna and sediments from an area of petroleum exploration in the south Caspian Sea. *Estuarine, Coastal and Shelf Science.* 71 (2007)
- P.D. Boehm, C.L. Maxon, F.C. Newton, J.S. Brown and Y. Galperin. 2005. Aspects of Polycyclic Aromatic Hydrocarbons in Offshore Sediments in the Azeri Sector of the Caspian Sea. In Armsworthy, S.L., P.J. Cranford and K. Lee (Eds.). *Offshore Oil and Gas Environmental Effects Monitoring: Approaches and Technologies.* Battelle Press, Columbus, OH, 2005, 631 pp.
- Tait, R.D., Maxon, C.L., Parr, T.D., Newton III, F.C. and Hardin. J.L. 2004. Impact assessment and benthic recruitment following exploration drilling in the south Caspian Sea. Presented at the 2004 7th International Conference on Health, Safety, and Environment in Oil and Gas Exploration and Production. Calgary, Alberta, Canada, 29-31 March 2004. SPE 86709, 24 pp.
- Barber, T. R., Fuchsman, P. C., Chappie, D. J., Sferra, J. C., Newton, F. C. and P. J. Sheehan. 1997. Toxicity of Hexachlorobenzene to *Hyalella azteca* and *Chironomus tentans* in Spiked Sediment Bioassays. *Environ. Toxicol. Chem.* 9, 221-231.
- J. W. Anderson, S. S. Rossi, R. H. Tukey, Tien Vu, Newton, F. C., and L. C. Quattrochi "Standard Guide E 1853 -96 for Measuring the Presence of Planar Organic Compounds which Induce CYP1A, Reporter Gene Test Systems," pp. 1392-1397 In: Volume 11.05, Biological Effects and Environmental Fate; Biotechnology; Pesticides, 1997 Annual Book of ASTM Standards, Section 11 Water and Environmental Technology, American Society for Testing and Materials, West Conshohocken, PA, August 1997.
- Anderson, J. W., F. C. Newton, J. W. Hardin, R. H. Tukey and K. E. Richter, 1996. Chemistry and Toxicity of Sediments from San Diego Bay, Including a Biomarker (P450 RGS) Response, *Environmental Toxicology and Risk Assessment: Biomarkers and Risk Assessment (5th. Volume), ASTM STP 1306,* David A. Bengtson and Diane S. Henshel, Eds., American Society for Testing and Materials, 1996.
- Laughlin, R. B., Thain, J., Davidson, B. M., Valkirs, A. O., and F. C. Newton, 1996. Experimental Studies of Chronic Toxicity of Tributyltin Compounds. In: *Organotin Environmental Fate and Effects.* M. A. Champ and P. F. Seligman, eds., Chapman and Hall publishers. 664 pp.
- Newton III, F.C. and A.B. Thum, 1985. Hormestic effects on the growth and survival of eggs and embryos of the California Grunion (*Leuresthes tenuis*) exposed to trace levels of Tributyltin. NAVOCEANSYSCEN Technical Report #1040. 15 pp.
- Newton, F.C., 1983. Effects of ration level and cyclic temperature on the growth of the California grunion (*Leuresthes tenuis*). Masters Thesis, San Diego State University; San Diego, California. 224 pp.
- Thum, A.B., Newton III, F.C. and R. Robinson, 1982. Biological assay of hazardous chemicals Phase II.

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- Independent Research & Development, Department of Defense Project 80011604, Lockheed Missiles & Space Co.; Sunnyvale, California. 34 pp.
- Thum, A.B., Newton III, F.C. and R. Robinson, 1982. Biological assay of hazardous chemicals Phase I. Independent Research & Development, Department of Defense Project 80011604, Lockheed Missiles & Space Co.; Sunnyvale, California. 22 pp.
- Newton, F.C. and A.B. Thum, 1982. Remote ac device to facilitate computer aided experimentation. *Amer. Lab.*, 14(2):39-47.
- Thum, A.B. and F.C. Newton III, 1981. Ocean sediment study. Independent Research & Development, Department of Defense Project 80011604, Lockheed Aircraft Service Co.; Ontario, California. 82 pp.
- Thum, A.B. and F.C. Newton III, 1981. Acute, chronic and behavioral responses of larval California grunion to soluble cadmium. Independent Research & Development, Department of Defense Project 80011604, Lockheed Aircraft Service Co.; Ontario, California. 16 pp.
- Thum, A.B. and F.C. Newton III, 1981. Changes in RNA:DNA with growth of larval California grunion exposed to cadmium. Independent Research & Development, Department of Defense Project 80011604, Lockheed Aircraft Service Co.; Ontario, California. 6 pp.
- Eldridge, J., Newton III, F.C. and A.B. Thum, 1981. Laboratory spawning and early life history stages of the speckled sanddab, *Citharichthys stigmaeus*. Independent Research & Development, Department of Defense Project 80011604, Lockheed Aircraft Service Co.; Ontario, California. 5 pp.
- Newton III, F.C. and A.B. Thum, 1981. Effects of ration level on growth of juvenile fish exposed to both constant and cyclic temperature regimes. Independent Research & Development, Department of Defense Project 80011604, Lockheed Aircraft Service Co.; Ontario, California.
- Newton III, F.C. and A.B. Thum, 1981. A flexible computer program for monitoring, control and recording of temperature in 10 independent flow through water baths. Independent Research & Development, Department of Defense Project 80011604, Lockheed Aircraft Service Co.; Ontario, California. 11 pp.
- Newton III, F.C. and A.B. Thum, 1981. A research seawater system to support multifactorial experimentation. Independent Research & Development, Department of Defense Project 80011604, Lockheed Aircraft Service Co.; Ontario, California. 82 pp.
- Newton III, F.C. and J.W. Graham, 1981. Evaluation of the effectiveness of chlorine enhancers. San Diego Gas & Electric Company: San Diego, California. 16 pp.
- Cohen, R.H., Newton III, F.C., Thum, A.B. and K.F. Ehrlich, 1980. Bioassay: A computerized approach. In: *Proceedings of Oceans '80*. IEEE Council on Ocean Engineering, 489-503.
- Ehrlich, K.F., Srna, R.F., Thum, A.B. and F.C. Newton III, 1980. Marine fouling prevention program. Independent Research & Development, Department of Defense Project 80011604, Lockheed Aircraft Service Co.; Ontario, California. 73 pp.
- Thum, A.B., Ehrlich, K.F., Newton III, F.C. and R.F. Srna, 1979. Ocean sediment study. Independent Research & Development, Department of Defense Project 80011604, Lockheed Aircraft Service Co.; Ontario, California. 73 pp.

Presentations

Presentation 2008 American Society of Limnology and Oceanography

Measuring Bioavailable hydrocarbons in the nearshore Beaufort Sea: comparison of caged mussels (*mytilus trossulus*) and semipermeable membrane devices (SPMDS) Hardin, J. L., Neff, J. M., Durell, G. S., and F.C. Newton III

Presentation 2006 National SETAC

Using Elutriation to Facilitate Processing Benthic Macrofauna – On Being a Mudmaster. – F.C. Newton III and J.L. Hardin

Presentations 2005 National SETAC

Assessing impact and recovery of infauna in an area of oil and gas exploration in the south Caspian Sea. - C.L. Maxon, R.D. Tait, T.D. Parr, and F.C. Newton III

Effects of hypoxia and anoxia on benthic infauna of the deep Caspian Sea - R.D. Tait, C.L. Maxon, T.D. Parr, J.D Germano and F.C. Newton III.

Presentation International Conference on Remediation of Contaminated Sediments, September 30-October 3, 2003, Venice, Italy.

Aspects of Polycyclic Aromatic Hydrocarbons in Offshore Sediments in the Azeri Sector of the Caspian Sea. P.D. Boehm, C.L. Maxon, F.C. Newton, J.S. Brown and Y. Galperin.

Presentations 2002 SETAC Europe, Vienna, Austria

A Hydrodynamic Investigation in the Caspian, Looking for Back and Forth and Finding Up and Down. Frederick Charles Newton III, Battelle Memorial Institute., San Diego, Ken Erich Richter, SPAWAR System Center, San Diego, and Russell D. Tait, ExxonMobil Production Company, Houston.

Modeling release and dispersal of PCBs from deep water, Naval ship-sinking exercises (SINKEX). Dr. Kenneth E. Richter, SPAWAR, Systems Center, San Diego, CA; Frederick C Newton III, Battelle Memorial Institute, Carlsbad, CA

Presentations 2002 National SETAC:

Phosphatized Nodules and the Infauna Community on the Slopes of Tanner Basin and in the Vicinity of a Sunken Navy Vessel. Diener, DR, MEC Analytical Systems, Inc., Carlsbad, CA; Newton, FC, Hardin, JL, Battelle Memorial Institute, Carlsbad, CA; Wild, B, Gauthier, R, SPAWAR, Systems Center, San Diego.

Application of OTM Toxicity Test Procedures for the Assessment of Deep Water Sediments- The Bleeding Edge. Moore, D.W., Word, J.Q., Diener, D., MEC Analytical Systems, Inc., Carlsbad, CA; Newton, F., Battelle, Carlsbad, CA; Gauthier, R. and Wild, W., U.S. Navy SPAWAR, San Diego, CA

Use of deep submergence technology to locate, characterize, and obtain samples in the Deep Ocean. Wild, W, Gauthier, R, SPAWAR Systems Center, San Diego, CA; Newton, FC, Battelle Memorial Institute, Carlsbad, CA; Diener, D, MEC Analytical Inc Carlsbad, CA.

Finding the Footprint: Sunken Ships, Deep Ocean Sediments and Multivariate Analysis. Newton, FC, Hardin, JL, Battelle Memorial Institute, Carlsbad, CA; Wild, B, Gauthier, R, Johnston, R, SPAWAR, Systems Center, San Diego, CA; Carpenter, AL, Caloxy, Vista, CA; Diener, D, MEC Analytical Systems, Inc., Carlsbad, CA

Paper Presented at 2001 SETAC:

Optimizing Study Design and Quantifying Sediment Impacts in a Deep-Sea Environment. Cynda Maxon, F. Charles Newton, Battelle Memorial Institute, Carlsbad, CA; Russell D. Tait, Exxon Azerbaijan Operating Company, L.L.C., Houston, TX.

In Situ Bioaccumulation of Sediment Contaminants by Caged Clams and Top Smelt. Ken Erich Richter, SPAWAR System Center, San Diego; Frederick Newton, Battelle Memorial Institute; John Hardin,

Battelle Memorial Institute.

Presentations 2002 Europe SETAC:

Comparison of PCB analysis by GC Electron Capture Detection and GC-MS Selective Ion Monitoring Analytical Methods. Robert K Johnston, Space and Naval Warfare Systems Center, San Diego, CA, Ronald Gauthier, Space and Naval Warfare Systems Center, San Diego, CA, Frederick Newton, Arthur D. Little, Inc., San Diego, Henry Camp, Arthur D. Little, Inc., Alan Roberts, URS Grenier, Denver, CO and William Wild, Space and Naval Warfare Systems Center, San Diego.

Papers Presented at 1997 SETAC (November 1997):

Developmental Effects of No. 2 Fuel Oil on *Leuresthes tenuis* and Comparison to the P-450 RGS Biomarker. E. McCoy, A. de Peyster, Graduate School of Public Health, San Diego State University, F. C. Newton III, MEC Analytical Systems, Inc., J. Anderson and J. Jones, Columbia Analytical Services.

Is the Survival Endpoint for the 48 Hour Bivalve Development Test a Sensitive Indicator of Toxicity? K. Robinson, F. C. Newton, MEC Analytical Systems, Inc., Carlsbad, CA.

Use of Tissue Culture Plates from the 48 Hour Static Bivalve Development Test With Embryos from the Blue Mussel, *Mytilus edulis*. A. Monji and F. C. Newton, MEC Analytical Systems, Inc., Carlsbad, CA.

Spatial Extent of Sediment Toxicity at Islais Creek, San Francisco Bay. P.R. Krause, and F.C. Newton, MEC Analytical Systems, Inc. Tiburon, CA

Use of statistics to measure laboratory and field variability in sediment bioassays. C. Maxon, ADL, F.C. Newton, MEC Analytical Systems, Carlsbad, CA, and L. Lundgren, City and County of San Francisco, CA

Adaptation of a Compartmentalized Microcosm for the Measurement of Fate and Effects of Drilling Fluids. J. Hardin and F. C Newton, MEC Analytical Systems, Carlsbad, CA

Risk Associated with the Deep-Water Disposal of Navy Vessels. William J. Wild, NCCOSC, F. Charles Newton, MEC, Ron Gauthier and Ken Richter, NCCOSC, Cynda Maxon, ADL.

Can Randomization Introduce Error in Excess of that Which it is Intended to Control? F. Charles Newton, MEC Analytical Systems, Inc.

Other Presentations

Invited speaker, 1996. A Marine TIE that Became a Research Project. Annual Meeting Southern California Academy of Sciences. May 3-4, 1996. (Session Co-chair)

Presentation: Anderson, J. W., F. C. Newton, J. W. Hardin, R. H. Tukey and K. E. Richter, 1995. Response of a Biomarker, P450 RGS, to Sediment Extracts which Provide an Estimate of Ecological Risk. Fifth Symposium on Environmental Toxicology and Risk Assessment: Biomarkers and Risk Assessment, Denver, CO April 3-6, 1995.

Presentation, 1995. A Marine TIE: When Phase I Becomes a Research Project. Society of Environmental Toxicology and Chemistry, Second SETAC World Congress, Vancouver, British Columbia, Canada. November 5-9, 1995.

Invited speaker, 1989. Marine Benthic Infaunal Sampling Methods and Techniques, Southern California Society of Marine Taxonomists, 13 November, 1989.

Newton III, F.C., 1986. Ocean monitoring under requirements of 301(h) waiver. Paper presented to California Water Pollution Control Association, 13-14 November 1986, San Diego, California.

Newton III, F.C., et al., 1985. Hormestic effects on the growth and survival of eggs and embryos of the

California Grunion (*Leuresthes tenuis*) exposed to trace levels of tributyltin. Paper presented at sixth annual meeting of the Society of Environmental Toxicology and Chemistry, 10-13 November 1985, St. Louis, MO.

Invited speaker, 1983. Applications of computer aided experimentation to biological assay. Paper presented at LABCON West 83, 10 12 May 1983, San Jose, California.

Thum, A.B., Robinson, R.D., Newton III, F.C. and R.F. Srna, 1983. Utilization of an auto-mated, closed cycle table top aquaculture system for international mussel watch and scope for growth studies. Paper presented at the Biological Effects Workshop Sponsored by U.S. Department of Energy, 22 23 March 1983, Ensenada, Baja California, Mexico.

Thum, A.B., Newton III, F.C. and R.D. Robinson, 1983. The effects of cadmium on the growth and survival of larval California grunion (*Leuresthes tenuis*) and a new, short term measure for stress. Paper presented at the Biological Effects Workshop sponsored by U.S. Department of Energy, 22 23 March 1983, Ensenada, Baja California, Mexico.

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Designed and Constructed Laboratory and Field Equipment

Design and direct construction of a mobile flow through aquatic bioassay laboratory for side-stream monitoring of power plant effluent.

Design, construction and deployment of in-situ test chambers for the examination of acute toxicity on larval California Topsmelt and local mysid shrimp.

Design and direct construction of 4,000 ft² aquatic bioassay complex (fresh and seawater)

Design, construction and operation of 500 ft² flowing seawater bioassay capable of providing 10,000 gallon per day flow-thru capacity for "spec" seawater.

Design, construction and operation of 3,000 ft² inland bioassay laboratory. Laboratory capable of marine, freshwater and estuarine testing. Design specifications to GLP.

Flow-through, aquatic, bioassay testing facility in Port Valdez, Alaska. (co-design)

Water sampling device (Valkon) that could be fabricated in "remote areas" for the purpose of capturing seawater for extremely low level hydrocarbon analysis. (co-design)

Low cost bioassay temperature controller.

Real-time voice marine taxonomic data entry system.

Benthic infaunal sorting tray.

High volume, water column sampling system.

Two-hundred square foot environmentally controlled microcosm laboratory.

Four-hundred square foot mobile, flow-through bioassay laboratory.

Computerized direct data entry system for point contact field and/or photographic benthic hard substrate quadrats.

Hand-held data acquisition system for the computation and recording of low flow rates in remote site, aquatic toxicology laboratories.

Diver usable, underwater data recording device (bar-code reader) with direct/indirect coupling to a large- scale, mainframe computer system.

Digital electronic counter for the accurate distribution of small (0.5-mm), live, food items for larval fish growth studies.

Ten-channel automated dosing system for large-scale, flow-through bioassays.

Non-disruptive food removal device for larval and juvenile fish feeding studies.

Six-thousand square foot, inland, computer-controlled, sea water research laboratory.

Machine-computer interface allowing wireless control of 256 independent events.

Electronic digital flowmeter for a 3-inch plankton pumping system.

Neuston sampler for a 6-inch stationary plankton pumping system.

Elutriation device ("Mud-Master") for the rapid field processing of large infaunal benthic grab samples.

Multi-channel telemetric, tidal inundation recorder for long-term monitoring of estuarine flooding periods.

Ten-channel activity polygraph for the determination of extra retinal light perception in English house sparrows.