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Professional Profile

Dr. Haddad has focused on the strategic evaluation and tactical resolution of environmental problems, specifically Natural Resource Damage claims, for nearly 30 years; initially as an internal consultant for Unocal's Corporate Environmental Remediation and Technology group, later as an external consultant for industry in the private sector and for nearly a decade as the head of NOAA's Assessment & Restoration Division (ARD) as one of three leads for NOAA's Damage Assessment, Remediation, Restoration Program (DARRP), and for the past several years as a Principal Scientist and Vice President of the Environmental and Ecological Sciences Group at Exponent.

The skills brought by Dr. Haddad to these various efforts included expertise in geochemistry, biology/ecology, environmental forensics and chemometrics, as well as the ability to strategically assess, manage, and resolve complex environmental challenges. During his career, Dr. Haddad has been involved in and helped resolve complex CERCLA environmental assessments for mining sites and complex waste sites, has successfully led Natural Resource Damage Assessments (NRDAs), and has provided litigation support in the roles of both expert and consulting witness.

During his NOAA tenure, Dr. Haddad led the damage assessment program for NOAA on the Deepwater Horizon Oil Spill; the largest accidental marine oil spill in history and the largest NRDA in US history. In this leadership role, Dr. Haddad interacted extensively within the NOAA science community (NMFS, OAR, IOOS), the broader federal (USCG, DOI, USDA, EPA, and NRC/National Academy of Science), academia, and state (TX, LA, MS, AL, and FL) governmental science communities. He worked closely with senior leadership from across the government on various aspects of the case; including the White House (CEQ and OSTP), Congress, and DOJ where cross-cutting issues of national significance were addressed. During DWH, Dr. Haddad, managed a budget of over $120M per year, oversaw the supervision of over 300 FTEs, and briefed Senior Members of the Administration, Congress, state and local leaders. As part of the US Government's senior strategic group for this NRDA, Dr. Haddad was directly involved with developing and implementing the strategy that ultimately resulted in the settlement of the NRDA case between the Trustees and BP.

Prior to joining NOAA, Dr. Haddad participated in litigation and regulatory cases involving the assessment of natural resource injury, fate and transport of petroleum, metals, and PCBs with a focus on source evaluation, liability assessment, and allocation. In the private sector, Dr. Haddad’s work has supported many corporations, including Unocal, Tesoro, Chevron, BP, Shell, Sherwin Williams, Teck, Ltd. Waste Management, as well as confidential clients. More recently, Dr. Haddad has provided Technical expertise in several international mediations.

Based on his work in both the private sector and for NOAA, Dr. Haddad has developed a strong national and international reputation. In 2015, Dr. Haddad was honored as the employee of the year for NOAA's National Ocean Service. And during his career, he has provided support and recommendations to the

European Union and to foreign governments, including the Republic of South Korea, Thailand, and The Peoples Republic of China, on various aspects of damage assessment and environmental assessment.

Academic Credentials & Professional Honors

Ph.D., Chemical Oceanography, University of North Carolina, Chapel Hill, 1989

B.S., Geology, University of California, Los Angeles (UCLA), 1979

NASA-Ames Research Center, National Research Council Fellow, 1988-1989

Carnegie Institute, Stanford University, Post-doctoral Fellow, 1988-1989

Woods Hole Oceanographic Institution, Guest Investigator, 1986

Licenses and Certifications

40-Hour Hazardous Waste Operation and Emergency Response Certification (HAZWOPER)

First Aid and CPR Training

Incident Command Training

Academic Appointments

Adjunct Faculty, Biology/Physics -Calif. Polytechnic State Univ., San Luis Obispo, 2001-2007

Woods Hole Oceanographic Institution, Guest Investigator, 2004

Prior Experience

Chief, Assessment & Restoration Division, Office of Response & Restoration, NOAA, 2007-2016

NOAA Trustee Management Team, Damage, Assessment, Remediation, & Restoration Program, 2007-2016

Deepwater Horizon Natural Resource Damage Assessment Trustee Council, 2010-2016

NOAA Science Lead - DWH Oil Spill Incident, 2010-2011

Applied Geochemical Strategies, Inc., President & Principal Scientist, 2002-2007

ZymaX Forensics, Subcontracting Principal Consultant, 2002-2005

ARCADIS JSA, Vice President and Principal Scientist, 1999-2002

ENTRIX, Inc., Manager West Coast Ecological and Human Health Risk, 1997-1999

ENTRIX, Inc., Associate, 1998-1999

ENTRIX, Inc., Senior Consultant (Geochemistry), 1995-1998

UNOCAL Environmental Technology, Research Associate, 1994-1995

UNOCAL Environmental Technology, Senior Geochemist, 1992-1994

UNOCAL Exploration Research, Senior Research Geochemist, 1990-1992

UNOCAL Exploration Research, Research Geochemist, 1988-1990

Global Geochemistry Corp., Marine Geochemist and Division Manager, 1979-1981

Professional Affiliations

American Association for the Advancement of Science

Society of Environmental Toxicology and Chemistry

Publications

Dr. Haddad has published in peer-reviewed technical publications and scientific journals, and has authored over 300 technical reports and confidential documents for a variety of projects. He has given numerous talks, seminars, and symposium presentations. Selected papers and presentation are listed below.

Kytomaa, H.K., Boehm, P., Osteraas, J., Haddad, B., Hacker, J., Gilman, L., Jampole, E., Murphy, P. and S. Souri (2019). An integrated method for quantifying and managing extreme weather risks and liabilities for industrial infrastructure and operations. Proc. Safety Prog.; e12087. https://doi.org/10/1002/prs.12087

Kytomaa, H.K., Boehm, P., Osteraas, J., Haddad, B., Hacker, J., Gilman, L., Jampole, E., Murphy, P. and S. Souri (2019). Combining data analytics with meteorological, hydrological, hydrodynamic and fragility modeling to quantify flooding outcomes. Prepared for publication and presentation at Amer. Inst. Chem. Engineers.

Kytomaa, H.K., Boehm, P., Osteraas, J., Haddad, B., Hacker, J., Gilman, L., Jampole, E., Murphy, P. and S. Souri (2019). A non-stationary approach to conducting site-specific integrative risk management assessments at industrial facilities at risk from Extreme weather events. Prepared for publication and presentation at Amer. Inst. Chem. Engineers.

Haddad, R., Brighton, W.D., Durda, J.L., Levy, L.J., O'Connor, C.R. Alternative Dispute Resolution in NRDA: A Viable Pathway to Timelier NRD Settlements? The 11th Annual Santa Fe Advanced Conferences on Litigating Natural Resource Damages, Santa Fe, N.M., August 10, 2018 (Presentation).

Haddad R. Climate Change: Complex Issue, Complex Science. Chicago Bar Association Environmental Law Committee Seminar, Chicago, IL, March 21, 2018 (Presentation).

Haddad R, Domanski A, McNair D, Tomasi T. Science and Economics: A New, Integrated Approach to NRDA. Law Seminars International - Sixth Annual Advanced Conference on Natural Resource Damages, Washington, D.C., March 2, 2018. (Panel Presentation).

Haddad R, DiPinto LM, Gala W, Reynolds, KD, Jenkins, K, Debating the Leaps in Science from the Deepwater Horizon Case. Law Seminars International - 11th Annual Santa Fe Advanced Conference on Litigating Natural Resource Damages, Santa Fe, N.M., July 19, 2017. (Panel Presentation).

Haddad RI, Israel BD. Natural Resource Damage Assessments: Is Cooperation a Good Thing? International Oil Spill Proceedings, Vol. 2017, No. 1, pp. 3091-3111. doi.org/10.7901/2169-3358-2017.1.3091.

Benton L, Cook L, Haddad B, Boehm P. Lessons learned: the case for data optimization between response and NRDA. In: Proceedings of the 2017 International Oil Spill Conference, Vol 2017, No 1.

Winter J, Haddad R. Ecological Impacts of dilbit spills: Consideration for Natural Resource Damage Assessment. 37th AMOP Technical Seminar on Environmental Contamination and Response, 2014. (Presentation, Abstract, and peer reviewed paper).

Haddad R, Reddy CM, Nelson RK, Xu L. Sources of polar organic matter in petroleum contaminated groundwater: New insights into biogeochemical processes and fate and transport implications. 234th ACS National Meeting, Boston, MA, August 20, 2007. (Presentation with abstract).

Eley D, Beadle S, Sample B, Haddad R. Comparison of PCB Aroclor and total congener analytical results in environmental soil and sediment samples. Abst., Battelle Symposium, 2000.

Haddad RI. The Guadalupe Oil Field. A case study on the costs and benefits of risk management. Invited Paper, 5th Annual Bodemdag Mtg., Netherlands, 2000.

Haddad RI. Petroleum geochemistry for toxicologists. Abst., SETAC National Meeting, Nashville, TN, 2000.

MacMurphy J, Haddad RI. Comparison of GC/FID vs. GC/MS methods for quantifying TPH concentrations in environmental media. Abst., SETAC National Meeting, Nashville, TN, 2000.

Haddad RI, Barber TJ. Allocation of environmental liability associated with polycyclic aromatic hydrocarbons in sediment: A case study. Gas Technology Institute, National Meeting Symposium Volume, 2000.

Haddad RI, Jenkins, K. Risk assessment vs. risk management for contaminated sediment sites. Invited Paper, 5th Annual Bodemdag Mtg., Netherlands, 2000.

Haddad RI, Holder JL, DeMartino L, Nedoff J. The effects of subsurface environmental weathering processes on petroleum toxicity. Abst., SETAC National Meeting, San Francisco, CA, 1998.

Lundegard PD, Haddad RI, Brearly, M. Methane associated with a large gasoline spill: Forensic determination of origin and source. Environ. Geosciences 1998; 5:69-78.

Haddad RI, MacMurphy, J. TPH measurements: The advantage of using GC/MS. National Ground Water Association, 1997.

Haddad RI, Dunn, C. Non-traditional analysis of existing 8260/8270 GC/MS data. Abst., National Ground Water Association, Houston, TX, 1997.

Haddad RI, Sweeney RE, Ririe GT. Use of soil gas CO2 concentrations as a preliminary screening tool for groundwater hydrocarbon contamination. Abst. NGWA Annual National Meeting, Houston, TX, 1994.

Haddad RI, Newell SY, Martens CS, Fallon RD. Lignin diagenesis in the saltmarsh grass, Spartina alterniflora: Implications for lignin phenolic and isotopic geochemical studies. Geochim. Cosmochim. Acta 1992; 56:3751-3764.

Haddad RI, Farrington JW, Martens CS. Quantifying early diagenesis of fatty acids in a rapidly accumulating coastal marine sediment. Advances in Organic Geochemistry 1991. Org. Geochem 1992; 19:205-216.

Martens CS, Haddad RI, Chanton JP. Organic matter accumulation, remineralization and burial in an anoxic, coastal sediment. In: Organic Matter: Productivity, Accumulation and Preservation in Recent and Ancient Sediments. Whalen JK, Farrington JW (eds), Columbia Univ. Press, New York, pp. 82-98, 1992.

Haddad RI, Rohrback BG, Kaplan IR. Hydrofluoric acid induced alteration of sedimentary humic acids. In:

Facets of Modern Biogeochemistry. Ittekkot V, Kempe S., Michaelis W, Spitzy A (eds), Springer-Verlag, pp. 416-425, 1991.

Bauer JE, Haddad RI, DesMarais DJ. Dissolved organic carbon in pore waters of a hypersaline microbial mat δ13C estimates and relationship to other carbon pools. Mar. Chem. 1991; 33:335.

Rasmussen K, Haddad RI, Neumann AC. Stable-isotopic record of organic carbon from and evolving carbonate banktop, Bight of Abaco, Bahamas. Geology 1990; 18:790-794.

Haddad RI, Martens CS. Biogeochemical cycling in an organic-rich, coastal, marine basin: Sources and fluxes of vascular-plant-derived organic material. Geochim. Cosmochim. Acta 1987; 51:2991-3001.

Shaw TJ, Haddad RI, Cohen, Y. Diurnal variations in the Fe+2 concentration and the inorganic carbon isotopic signal in pore-waters from a microbial mat. EOX Trans., AFU Program of Abstracts 1984; 65:021C-14.

Haddad RI, Shaw TJ. Microanalyses of the inorganic stable carbon isotopes and dissolved iron and phosphate from pore-waters of hypersaline sediments. In. The Global Sulfur Cycle (D. Sagan, Ed.). NASA Techn. Memoran 1984; 87570:158-182.

Cohen Y, Burmudes D, Fisher U, Haddad R, Profert L, Scheulderman T, Shaw, T. (1984) Chapter IV: Cyanobacterial mats: Microanalysis of community metabolism. In:

The Global Sulfur Cycle (D. Sagan, Ed.). NASA Techn. Memoran 1984; 87570:158-182.

Haddad RI, Kaplan IR, Carlisle D. Geochemical studies of cores from the San Juan basin research site. Grants Uranium Region, New Mexico. U.S. Dept. of Energy Publ., GJBX-1981; 312(81), 151p.

Sweeney RE, Haddad RI Tracing the cispersal of the IXTOC-I oil using C,H,S, and N stable isotope ratios. In: Preliminary Results from the September, 1979. Researcher/Pierce IXTOC-I Cruise (D.K. Atwood, Ed.), NOAA Publ., pp. 89-115, 1980.

Project Experience

UUnocal Guadalupe Oil Field - Restoration-based cooperative NRDA conducted with OSPR, SWQCB, USFWS, and NOAA. Technical lead and NRDA management.

Unocal Avila Beach Front Street Release (1997) - NRDA negotiation with OSPR. Technical support. Los Angeles Metrolink Oil Spill (1999) - NRDA response and negotiation with OSPR. Technical lead and NRDA management.

SS Mohican Oil Spill (1996) - NRDA response and restoration-based NRDA conducted with OSPR, CSP, NPS (Gulf of the Farallones National Marine Sanctuary), NOAA, and USFWS. Technical lead and NRDA management.

M/V Kure/Humboldt Bay Oil Spill (1997) - NRDA response and restoration-based NRDA conducted with OSPR, California State Lands Commission, and USFWS. Initial Technical lead and NRDA management.

Chevron Pipeline/Pearl Harbor (1996) - NRDA response and restoration-based settlement. Technical support.

Tesoro Barbers Point Harbor Oil Spill (1998) - NRDA response and restoration-based settlement. Technical support.

Grand Calumet CERCLA Site - NRDA negotiations with USFWS and Indiana DEM. Technical support.
Fox River CERCLA Site - Technical support for restoration-based negotiations with Federal and State Trustees.

New Almaden Mine CERCLA Site - Cooperative, restoration-based NRDA negotiation with USFWS and OSPR. Technical lead and NRDA management.

Molycorp Questa Mine CERCLA Site - Cooperative restoration-based NRDA negotiation with New Mexico ONRT, USFWS, USDA-FS. Technical lead and NRDA management.

BP Deepwater Horizon Oil Spill - OPA Case - Restoration-based NRDA negotiation with BP, DOI, USDA, EPA, TX, LA, MS, AL, and FL. Lead for NOAA's Damage Assessment.

Eilat-Ashkelon Pipeline Company (Israel) Be'er Ora Pipeline Release – Provided Technical Expert Report for Court-appointed mediation between multiple Class Action Claims, Civil Action Claims, and Government Claims.

Peer Reviews

Journal of Environmental Toxicology & Chemistry (Past Editorial Board member and Scientific Reviewer)

Marine Pollution Bulletin