

Contact Information
Jimmie Oxley
Chemistry Department
University of Rhode Island
Kingston, RI 02881
joxley@chm.uri.edu

Environmental Aspects of Explosives, 2 days- 3 instructors

OVERALL OBJECTIVES:

This course will consist of two days of lectures and small group exercises. This course is intended to familiarize each student with energetic materials, their manner of deposition at military training ranges, and their fate in the environment and the appropriate protocols for experimental studies.

LEARNING OBJECTIVES:

The student will learn what energetic chemicals are used by DoD as explosives and propellants and the important physical and chemical properties of energetic compounds. He will learn the major modes of deposition of energetic substances at training ranges, both at the firing points and impact areas, how the residues are distributed, their physical and chemical nature, and what has been done in terms of characterizing contamination at various types DoD training ranges. The student will learn the fate of the residue deposition from live fire training, including dissolution, biochemical transformation and degradation, and transport off range. He will understand how to collect representative samples in areas of extreme distributional heterogeneity, and how to process and analyze samples to maintain representativeness. He will become familiar with the various field and laboratory methods for energetic chemicals in environmental samples including EPA SW846 methods that utilize HPLC and GC instrumentation. He will become familiar with references, documentation, and resources in the field.

IMMEDIATE BENEFITS:

Class notes/lectures will provide students with an understanding of manner in which contamination occurs, the physical characteristics of residues and the fate and transport of explosives in the environment and an awareness of literature in the field. Students will be familiarized with methodologies environmental testing.

INSTRUCTORS:

Instructors for this course will be Drs. Tom Jenkins, Judy Pennington, Jimmie Oxley. Dr. Jenkins retired from the U.S. Army Cold Regions Research and Engineering Laboratory after 38 years in 2008, and has over 100 publications dealing with analytical and environmental aspects

of energetic compounds. Dr. Oxley has worked 20 years in the field of energetic materials. She has over 80 publications in the field. She has a PhD in chemistry from the University of British Columbia and is Professor of Chemistry at University of Rhode Island.