

Staff Scientist

FIELDS OF EXPERTISE

Water Chemistry, Wastewater and Groundwater Characterization, NPDES & SRBC permitting

HIGHLIGHTS OF EXPERIENCE

Ms. Hummel has experience in environmental geology, geochemistry, wastewater characterization, NPDES permitting and project management. Her primary areas of expertise include landfill leachate and groundwater characterization, NPDES discharge reporting and data management. Below is a sampling of Ms. Hummel's key project experience.

- Environmental data management and geochemical characterization of waters for landfills.
- NPDES & SRBC permitting and compliance reporting
- Laboratory data qualification and assurance
- Groundwater and leachate sampling and evaluation for active landfill compliance
- Reporting for active and closed landfill sites in Pennsylvania, Delaware and New Jersey
- Database management, GIS and Mapping
- Macroinvertebrate studies/Stream Health assessments
- Interpretation and mapping of hydrogeologic and geologic systems
- Software Proficiencies:
 - EnviroInsite Geochemical Modeling
 - pHREEQC
 - USGS MODFLOW & Waterloo Hydrogeologic Visual MODFLOW
 - AQTESOLV
 - ArcGIS and Manifold GIS
 - EQUIS, Rockworks and LogPlot

EDUCATION

M.S., Earth Science – Geochemistry, Syracuse University, Syracuse, NY, May 2014

Graduate Work towards M.S Geochemistry, Montana Tech, Butte, MT 2011

B.S., Geology, Kutztown University, Kutztown, PA, May 2011

RESEARCH/TEACHING EXPERIENCE

Lu, Z., HUMMEL, S.T., Lautz, L.K., Hoke, G.D., Zhou, X., Leone, J., and Siegel, D.I., 2015, "Iodine as a sensitive tracer for detecting influence of organic-rich shale in shallow groundwater". *Applied Geochemistry*, Vol. 60, pp. 29–36.

The Use of Iodine to Characterize Formation waters in Oil/Gas Fields; Thesis

HUMMEL, Sunshyne T., Lautz Laura K., Hoke, Gregory D., Lu, Zunli, Leone, James, Zhou, Xiaoli, and Siegel, Donald I., (2013), Iodine as a Sensitive Tracer for Detecting Influence of Organic-Rich Shale in Shallow Groundwater, Geological Society of America Abstracts with Programs, v.45, no.7., Abstract 22840

ROSS, Sunshyne T., Mangan, Jennifer M., (2009), Effects of Climate Change on Regional Crop Production in Eastern Pennsylvania, EOS Trans. AGU, 90(52), Fall Meet. Suppl., Abstract B23A-0350

Graduate Teaching Assistant, Research Assistant and Field Technician, Syracuse University, Project S.W.I.F.T and Earth Science Department

Graduate Teaching Assistant: Chemistry Department, Montana Tech

GIS and Map Database Management, Pennsylvania Department of Environmental Protection, Bureau of Deep Mine Safety, Intern, Pottsville, PA