STATE OF NEW MEXICO
BEFORE THE WATER QUALITY CONTROL COMMISSION

In the Matter of:	)	
PROPOSED AMENDMENT TO 20.6.2 NMAC (Copper Rule)	)	**No. WQCC 12-01(R)**

EXHIBIT MUNK – 1

Education

Ph.D. Soils and Biogeochemistry, University of California-Davis, 1993

M.S. Soil Science and Biometeorology, Utah State University, 1989

B.S. Soil and Water Science, University of Arizona, 1980

Certifications/ Registrations

MSHA (Surface) Certified Health and Safety Training

OSHA Certified HAZWOPER Training

Lewis Munk is a professional soil scientist with 35 years of experience. He has expertise in mine land reclamation, ecology, forensic chemistry, risk assessment, soil chemical and mineralogical characterization, acid forming materials, soil erosion, geomorphology, and soil and vegetation surveys, salt-affected soils, and riparian restoration. Dr. Munk specializes in mine permitting, reclamation design, closure planning, and reclamation monitoring. He has assisted the environmental sections of mining companies in permit development and closure planning and has provided review of reclamation plans for government and tribal entities. Dr. Munk has acted as a technical liaison between mining companies and several state and federal regulatory agencies. His mining experience includes work with coal, copper, gold, silver, silica, phosphate, uranium, and aggregate mines in the western United States.

EMPLOYMENT HISTORY

Golder Associates – Albuquerque, NM
Senior Consultant (2004 to Present)
Project manager and technical lead for the development, implementation, and monitoring of large scale reclamation and cover designs.

Tetra Tech EM Inc. – Albuquerque, NM
Senior Reclamation Scientist (2000 to 2004)
Responsible for the development and review of reclamation plans for tailing and waste rock facilities at several large open pit copper mines.

Daniel B. Stephens and Associates, Inc. – Albuquerque, NM
Program Manager for Mining Services (1997 to 2000)
Responsible for management and technical oversight of mine environmental projects dealing with geochemistry, saturated and unsaturated flow, reclamation planning, baseline studies, and development of closure plans.

Consulting Soil Scientist – Albuquerque, NM
Senior Soil Scientist (1993 to 1997)
Responsible for development of mine permits, soil suitability assessments, reclamation plans, and regulatory coordination.

USDA-Soil Conservation Service – Davis, CA
Soil Scientist (1993 to 1993)
Principal investigator on a slope stability study related to rapid drawdown of a large flood control reservoir for the Army Corps of Engineers.

James P. Walsh and Associates, Inc. – Boulder, CO
Senior Soil Scientist (1987 to 1993)
Responsible for the implementation of studies for mine development projects and hazardous waste site investigation.

USDA-FS and USDI-BIA – AZ, NM, and UT
Soil Scientist (1978-1987)
Field and laboratory soil scientist responsible for soil and vegetation surveys and erosion *assessments. Laboratory operations and water rights litigation support.*

RELEVANT EXPERIENCE

Freeport-McMoRan. Mine Reclamation and Permitting, New Mexico Since 1997, Dr Munk has been project manager and technical lead for reclamation planning and permitting for open pit copper mines in New Mexico. Directed baseline investigations for soils and vegetation at five properties. Developed cover designs, revegetation specifications, and reclamation plans for mill tailings, waste rock, and leach ore stockpiles. Responsible for quality assurance for cover construction on over 5,000 acres of reclamation. Developed and implemented reclamation monitoring programs for erosion, vegetation, and wildlife. Dr. Munk has been involved in this project from initial scoping and baseline studies, closure plan development, regulatory hearings, permit approval, through the implementation of the reclamation and monitoring.

Freeport-McMoRan. AZ Conducted soil surveys and borrow investigations for copper tailing and stockpile reclamation. Provided cover design recommendations. Evaluated reclamation success and erosion conditions at large, medium, and small mines in multiple locations.

Rio Tinto. AZ Conducted reclamation assessment of historical reclamation. Provided oversight on materials characterization and reclamation suitability assessment.

Chevron Mining Company. NM and TX Project manager and technical lead for soil suitability assessments for coal mine reclamation. Conducted baseline soil surveys at the McKinley and Ancho Mines. Developed alternative spoil suitability standards for mine reclamation associated with sodicity, selenium, and acid-forming materials. Evaluated vegetation-acid soil relationships. Performed erosion evaluations and developed mitigation plans. Assessed vegetation monitoring plans and vegetation success criteria. Performed soil suitability assessments at the Farco Mines-Texas.

Pueblo of Laguna, NM Project manager and technical lead for the evaluation of heavy metal and radionuclides in the reclaimed mine environment at the Jackpile uranium mine. Designed and implemented a reclamation success monitoring program focused on revegetation.

Consol. Burnham, NM Project manager and technical lead for the development of selenium and sodium hazards in coal mine spoils in northwestern New Mexico. Technical liaison with the Navajo Nation and Office of Surface Mining.

Consol. Hidden Valley, UT Project manager and technical lead for the assessment of materials suitability and erosion. Development steep slope alternative cover design in collaboration with the DOGM.

Idaho DEQ, ID Technical lead for a biogeochemical assessment of the ecological risks of selenium in reclaimed phosphate mining environments.

Newmont Mining Company, NV Baseline assessment of surface water runoff and the relationship to geomorphic conditions in the northeastern Nevada.

Decker Coal Mining Company, MT Project manager and technical lead on the investigation of spoil sodicity and the development of alternative materials standards at the Decker Coal Mine. Responsible for technical coordination with the Montana DEQ, which ultimately resulted in approval of the revised standards.

Kennecott. Magma, UT Provided a reclamation assessment and cover design recommendations for a copper mill tailing facility.

Expert Witness Dr. Munk has provided expert opinions for mine closure, soil cover designs, unsaturated flow, soil erosion, water quality-soil suitability, agricultural development, hydrocarbon and inorganic chemical contamination projects, and water quality baseline assessments. He has provided expert witness services for mining companies, USDA-FS, US-DOJ, tribal entities, and the State of New Mexico.