

Exhibit 1
Kuipers & Associates Resumes

JAMES R. KUIPERS, P.E.
P.O. Box 641, Butte, MT Ex. 6
Phone Ex. 6
E-mail jkuipers@kuipersassoc.com

SUMMARY OF EXPERIENCE

Over 30 years experience in mining and environmental process engineering design, operations management, regulatory compliance, waste remediation, reclamation and closure, and financial assurance. Over 15 years experience providing technical assistance to public interest groups and tribal, local, state and federal governments on technical aspects of mining and environmental issues.

EDUCATION

Montana College of Mineral Science and Technology, B.S. Mineral Process Engineering, 1983.

PROFESSIONAL REGISTRATION

Professional Engineer (PE Mining/Minerals): Colorado (No. 30262), Montana (No. 7809 & Corp. No. 197)

PROFESSIONAL EXPERIENCE

1996 to Present **Kuipers & Associates/J. Kuipers Engineering, Butte, MT.**

- *ABN AMRO Bank, Netherlands:* Consulting Engineer, confidential mine evaluation.
- *Amigos Bravos, Taos, NM:* Consulting Engineer, Molycorp Questa Mine, technical review committee and working group member in reclamation and closure/closeout permitting and bonding process.
- *Anaconda Deer Lodge County, MT:* Consulting Engineer/Project Manager, Anaconda Superfund Site, provide technical services related to institutional controls, property conveyance and redevelopment, property and facility operation and maintenance, review of regulatory documents, renewable energy development, air and water monitoring and other tasks related to county involvement in Superfund activities.
- *Bannock Technologies, Pocatello, ID:* Consulting Engineer, Shoshone Bannock Tribe mining oversight project studies.
- *Blackfoot Legacy, Lincoln, MT:* Consulting Engineer, McDonald Project, review of project feasibility and environmental issues.
- *Border Ecology Project, Santa Fe, NM:* Consulting Engineer, Cananea Project (Mexico), consulting engineer mine reclamation and closure planning.
- *Cabinet Resource Group, Noxon, MT:* Consulting Engineer, Rock Creek Project, review of proposed tailing impoundment.
- *Clark Fork River Technical Advisory Committee, Missoula, MT:* Technical Advisor, Clark Fork River and Milltown Reservoir Operable Units, Upper Clark Fork Basin Superfund Sites.

JAMES R. KUIPERS, PE (Page 1)

- *Center for Science in Public Participation, Bozeman, MT:* See separate description below.
- *Citizens' Technical Environmental Committee, Butte, MT:* Technical Advisor, Butte-Silver Bow Site Operable Units, Upper Clark Fork Basin Superfund Sites.
- *Cottonwood Resource Council, Big Timber, MT:* Consulting Engineer, Lodestar Mine and Mill, review of operating and MPDES permits, financial assurance and operations data.
- *Earthjustice, Bozeman, MT:* Consulting Engineer, Montanore and Rock Creek Projects permitting process.
- *Earthworks, Washington, D.C.:* Project Manager and co-author, Water Quality Predictions and NEPA/EIS Studies.
- *Environmental Defender Law Center, Bozeman, MT:* Expert Witness and Consulting Engineer, Boliden Promel, Chile arsenic waste disposal.
- *Gila Resources Information Project, Silver City, NM:* Consulting Engineer, Phelps Dodge Chino, Cobre and Tyrone Mines, reclamation and closure/closeout permitting and bonding process.
- *Great Basin Mine Watch, Reno, NV:* Expert Witness and Consulting Engineer, various NV projects, permitting and reclamation and closure/closeout permitting and bonding process.
- *ICF International, Stafford, VA:* Consulting Engineer, 108(b) rulemaking technical support contract including financial assurance cost estimation model evaluations.
- *Johnson County, KS:* Consulting Engineer, Sunflower Limestone Mine reclamation plan and financial assurance.
- *Little Salmon Carmacks First Nation, Yukon Territory, Canada:* Expert Witness and Consulting Engineer, Carmacks Copper Project.
- *Montana Attorney Generals Office, Helena, MT:* Consulting Engineer, assist in defense of I-137 Open Pit Cyanide Mine Ban appeals.
- *Montana Department of Environmental Quality, Helena, MT:* General Contractor, Pony Mill Site Reclamation.
- *Montana Environmental Information Center, Helena, MT and National Wildlife Federation, Missoula, MT:* Expert Witness and Consulting Engineer, Golden Sunlight Mine, EIS Review and assist appeal of State operating permit.
- *Montana Environmental Information Center, Helena, MT:* Expert Witness, Bull Mountain Coal Mine appeal.
- *Montana Trout Unlimited, Missoula, MT:* Consulting Engineer, Trout Unlimited's Four Mines Campaign, review and provide technical assistance on McDonald, Crandon, New World and Rock Creek Mines.
- *Natural Resources Defense Council; New York State:* Consulting Engineer, review of Oil & Gas Draft EIS.

JAMES R. KUIPERS, PE (Page 2)

- *New Mexico Environmental Law Center, Santa Fe, NM:* Consulting Engineer, Oglebay Norton Mica Mine reclamation and financial assurance; New Mexico Environment Department Copper Rules Stakeholder Process.
- *Northern Plains Resource Council, Cottonwood Resource Council, Stillwater Protective Association, Billings, MT:* Consulting Engineer, Stillwater Mining Company Nye and East Boulder Mines, facilitate and perform technical aspects of Good Neighbor Agreement.
- *Northern Plains Resource Council, Billings, MT; Wyoming Outdoor Council, Sheridan, WY:* Consulting Engineer, Montana Statewide and Wyoming Powder River Basin Coal Bed Methane EIS.
- *Northern Plains Resource Council, Billings, MT:* Project Manager and co-author, Coal Bed Methane Produced Water Studies.
- *Northern Alaska Environmental Council, Fairbanks, AK:* Consulting Engineer, Pogo Mine NPDES permit negotiations.
- *Picuris Pueblo, Penasco, NM:* US Hill Mica Mine Reclamation Plan and financial assurance cost estimate and site reclamation project management.
- *Powder River Basin Resource Council, Sheridan, WY/Steven Adami, Buffalo, WY:* Expert Witness, Kennedy Oil IMADA POD appeals.
- *Rock Creek Alliance, Missoula, MT:* Expert Witness and Consulting Engineer, Rock Creek and Montanore Mines permitting.
- *Selkirk First Nation, Yukon Territory, Canada:* Expert Witness and Consulting Engineer, Minto Mine Project reclamation and closure and financial assurance.
- *Sheep Mountain Alliance, Telluride, CO:* Expert Witness and Consulting Engineer, Silver Bell Tailings remediation.
- *Shoshone-Paiute Tribes of the Duck Valley Reservation, NV:* Consulting Engineer, Rio Tinto Mine Reclamation and Closure.
- *Sierra Club and Mineral Policy Center:* Expert Witness, Cripple Creek and Victor Mining Company Clean Water Act case.
- *SKEO, Charlottesville, VA:* Consulting Engineer, 108(b) rulemaking technical support contract and EPA Region NEPA review and financial assurance support.
- *Southern Environmental Law Center, Charleston, SC:* Consulting Engineer, Haile Gold Mine permitting.
- *Systems Research and Applications Corporation, Fairfax, VA:* Consulting Engineer, mine cleanup and financial assurance guidelines subcontract to EPA.
- *Montana Trout Unlimited, Missoula, MT:* Consulting Engineer, I-147 initiative campaign.

JAMES R. KUIPERS, PE (Page 3)

- *Tohono O'odham Nation, San Xavier District, AZ:* Consulting Engineer, Mission Mine reclamation plan and financial assurance.
- *Trust for Public Lands, San Francisco, CA:* Consulting Engineer, Viceroy Castle Mountain Mine, evaluated pit backfill and reclamation alternatives for settlement agreement trust fund determination.
- *Walz and Associates, Albuquerque, NM:* Expert Witness and Consulting Engineer, assist in defense of New Mexico Environment Department and Mining and Minerals Division permitting and takings case (Manning v. NM).
- *Western Organization of Resource Councils, Billings, MT:* Oil and gas reclamation and financial assurance guide.
- *Western Resource Advocates, Salt Lake City, UT:* Expert Witness and Consulting Engineer, Red Leaf Resources oil shale project permitting.

1997 to 2005

Center for Science in Public Participation, Bozeman, MT.

- *Canadian Earthcare Society, Vancouver, BC:* Consulting Engineer, Brenda Mine, assist appeal of reclamation and closure permit.
- *CEE Bankwatch, Budapest, Hungary:* Consulting Engineer, Rosario Montana Mine (Romania), economic feasibility study of mine proposal.
- *Friends of the Similkameen, Hedley, BC:* Consulting Engineer, Candorado Mine, assist appeal of reclamation and closure permit.
- *Fort Belknap Tribal Council and Environment Department, Fort Belknap, MT:* Consulting Engineer, Zortman and Landusky Mines, Alternative Reclamation and Closure Plan, multiple accounts analysis working group member and technical advisor during supplemental environmental impact statement.
- *Guardians of the Rural Environment, Yarnell, AZ:* Consulting Engineer, Yarnell Project, EIS review and assist appeal of State operating permit.
- *Mineral Policy Center, Washington, D.C.:* Technical Advisor on general mining issues and Author of MPC Issue Paper.
- *National Wildlife Federation, Boulder, CO:* Consulting Engineer authoring report on Hardrock Mining Reclamation and Closure Bonding Practices in the Western United States.
- *Sakoagan Chippewa Tribes, Mole Lake Reservation, Wisconsin.* Consulting Engineer, Crandon Project, permitting process review.

1993 - 1995

Denver Mineral Engineers, Inc., Littleton, CO.

- Manager, Process Engineering Department.
- Manager, Mining and Environmental Wastewater Treatment Program

- *Arrowhead Industrial Water Co., San Jose, CA:* Project Manager, evaluation of reverse osmosis for mine wastewater treatment.
- *Barrick Goldstrike, USA, Elko, NV:* Project Engineer, engineering design, construction and installation of 1.5 M oz/year stainless steel electrowinning system.
- *Battle Mountain Gold, Co., Battle Mountain, NV:* Project Manager, evaluation, pilot testing, and preliminary feasibility study of wastewater treatment options for groundwater remediation of Fortitude Mine tailings area.
- *Commerce Group Corporation, Milwaukee, WI:* Project Manager, San Sebastian Gold Project, El Salvador.
- *Independence Mining Corp, Jerritt Canyon, NV:* Project Manager, technical evaluation and feasibility study of column flotation for beneficiation of refractory ores.
- *Kennecott Utah Copper, Bingham Canyon, UT:* Project Manager, design and construct stainless steel solvent extraction mixer settlers for prototype SX/EW plant.
- *Israeli Chemical Corp., Beersheeba, Israel:* Project Manager, evaluation of bromine as an alternative to cyanide gold leaching and prototype design.
- *Marston and Marston, St Louis, MO:* Project Manager, Kommunar Gold Mill Modernization Project, Kommunar, Siberia, Russia (CIS) and Suzak Polymetal Leach Circuit Evaluation and Feasibility Study, Kazakhstan (CIS).
- *Nevada Goldfields Mining Co., Denver, CO:* Project Manager, Nixon Fork Mine Preliminary Engineering Design and Feasibility Study, Concentrate Marketing Study, and environmental permitting studies.
- *Southern Pacific Railroad, Denver, CO:* Project Manager, design, construction and installation of dissolved air flotation wastewater treatment system.

1991 - 1992

Western States Minerals Corp.

- Project Manager, Northumberland Gold Mine, Round Mountain, NV.
- Corporate Senior Metallurgist, Wheat Ridge, CO. Engineering design and feasibility evaluations.

1986 - 1991

Western Gold Exploration and Mining Co. (WESTGOLD)/Minorco

- Corporate Senior Metallurgist / Project Manager, WESTGOLD, Golden, CO. Acquisitions and engineering design and feasibility evaluations, corporate acquisitions and business development group.
- Project Manager, Shamrock Resources (WESTGOLD Subs.), Reno, NV. Evaluation, engineering design and feasibility study, and prototype plant operation of refractory gold ore bioleaching technology program.
- Project Manager, Balmerton Mine, Ontario: Refractory gold ore bioleaching project and feasibility evaluation.

JAMES R. KUIPERS, PE (Page 5)

- Project Engineer, Johannesburg South Africa: Evaluation of Anglo American Corp. Pumpcell Technology.
- Mill Superintendent, Austin Gold Venture (WESTGOLD), Austin, NV.
- Shift Foreman, Inspiration Consolidated Copper Co, Globe, AZ.

1984 - 1985 **Canyonlands 21st Century Corporation**

- Director of Metallurgy, Blanding, UT. Project Manager, Jarbidge, NV.

1983 - 1984 **Cumberland Mining Corporation**

- Mill Superintendent / Head Metallurgist, Basin and Virginia City, MT.

1974 – 1980 **Huckaba Construction**

- Summer employment as Underground and Surface Miner, Millwright, Mill Operator, Fire Assayer, Whitehall and Cooke City, MT. Family owned small mining operation.

PRESENTATIONS and PUBLICATIONS

- *Financial Assurance Regulations and Cost Estimation at US Hardrock Mines*, U.S. Chile Mining Financial Assurance Seminar, US Office of Surface Mining and Environmental Protection agency and Chilean Ministry of Mining, Santiago, Chile, May 2012.
- *Mining Reclamation and Closure Regulations and Best Practices*, 2012 International Conference on Mining in Mindanao, Ateneo de Davao University, Davao City, Philippines, January 26-27, 2012.
- *Beyond the Global Acid Rock Drainage Guide*, Lake Superior Binational Program, Mining in the Lake Superior Basin Webinar Series, Environmental Impacts of Mining in the Lake Superior Basin, October 27, 2009
- *Characterizing, Predicting, and Modeling Water at Mine Sites*, California Environmental Protection Agency, California Water Board Training Academy, May 18 - 21, 2009
- *Mitigating Mining Impacts: Principles and Practices*, Lake Superior Binational Program, Mining in the Lake Superior Basin Webinar Series, Environmental Impacts of Mining in the Lake Superior Basin, March 24, 2009
- *Long-term Requirements & Financial Assurance at Superfund & Other Mine Sites*, Mine Design, Operations and Closure Conference, Fairmont Hot Springs, MT, April 2008.
- *The Effects of Coalbed Methane Production on Surface and Ground Water Resources*, Committee on Earth Resources, Board on Earth Sciences and Resources, National Research Council, Meeting on the Status of Data and Management Regarding the Effects of Coalbed Methane Production on Surface and Ground Water Resources, Denver, Colorado, April 2008.

- *Reclamation Planning and Financial Assurance Practice in the United States*, Kamchatka Mining Conference, Kamchatka Oblast People's Council of Deputies, the Committee on Ecology and Resource Management of Kamchatsky Krai, the Rosprirodnadzor Division of Kamchatka Oblast and Koryaksky Autonomous Okrug, the Division for Minerals Management for Kamchatka Krai, and the Kamchatka Oblast Council of the All-Russia Society for Nature Protection, Petropavlovsk-Kamchatsky, Russia, October 2007.
- *The Good Neighbour Agreement: A Proactive Approach to Water Management through Community Enforcement of Site-Specific Standards*, w Sarah Zuzulock, Greener Management International, Issue 53, Spring 2006, Greenleaf Publishing. 2007.
- *Sustainable Development at the Anaconda Superfund Site*, Mine Design, Operations and Closure Conference, Fairmont Hot Springs, MT, April 2007.
- *Comparison of Predicted and Actual Water Quality at Hardrock Mines: The reliability of predictions in Environmental Impact Statements* with A. Maest, K. MacHardy, G. Lawson. *Predicting Water Quality at Hardrock Mines: Methods and Models, Uncertainties, and State-of-the-Art* with A. Maest, Final Report Release December 2006.
- *Reclamation and Bonding in Copper Mining*, U.S. EPA Hardrock 2006: Sustainable Modern Mining Applications, Tucson, Arizona , November 2006.
- *Sustainable Development at the Anaconda Superfund Site*: U.S. EPA Hardrock 2006: Sustainable Modern Mining Applications, Tucson, Arizona , November 2006.
- *U.S. Perspective on Financial Assurance for Mine Cleanup*, presented at International Bar Association Conference, Chicago, Illinois, September 2006.
- *Comparison of Predicted and Actual Water Quality at Hardrock Mines: The reliability of predictions in Environmental Impact Statements* with A. Maest, K. MacHardy, G. Lawson, presented at Mine Design, Operations and Closure Conference, Fairmont Hot Springs, MT, April 2006.
- *Predicted Versus Actual Water Quality at Hardrock Mine Sites: Effect of Inherent Geochemical and Hydrological Characteristics* with A. Maest, K. MacHardy, and G. Lawson at International Congress on Acid Rock Drainage (ICARD), March 2006, St. Louis, MS.
- *Oil, Gas and Coal Bed Methane Reclamation and Financial Assurance Guide*, with Kimberley MacHardy and Victoria Lynne, November 2005; 12th International Petroleum Environmental Conference, Houston, TX.
- *Approaches to Abandoned Mine Site Assessment and Remedy Selection in the U.S.*, NOAMI Workshop on Assessing Liabilities and Funding Options, November 2, 2005 Ottawa, Canada
- *Filling the Gaps: How to Improve Oil and Gas Reclamation and Reduce Taxpayer Liability*, Kuipers & Associates for Western Organization of Resource Councils, August 2005.
- *The Environmental Legacy of Mining in New Mexico*, Mining in New Mexico: The Environment, Water, Economics and Sustainable Development, New Mexico Bureau of Geology and Mineral Resources, Decision-Makers Field Conference 2005, L. Greer Price et al Editors.

JAMES R. KUIPERS, PE (Page 7)

- *Financial Assurance and Bonding*, 2005 Decision-Makers Field Conference, Mining in New Mexico: The Environment, Water, Economics and Sustainable Development, New Mexico Bureau of Geology and Mineral Resources, May 2005.
- *Evaluation of the NEPA Process for Estimating Water Quality Impacts at Hardrock Mine Sites* with A. Maest, K. MacHardy, G. Lawson, for Earthworks, presented at Society of Mining Engineers Annual Conference, Salt Lake City, UT, March 2005 and Mine Design, Operations and Closure Conference, Polson, MT, April 2005.
- *Evaluation of Methods and Models Used to Predict Water Quality at Hardrock Mine Sites: Sources of uncertainty and recommendations for improvement* with A. Maest, C. Travers and D. Atkins, for Earthworks, presented at Society of Mining Engineers Annual Conference, Salt Lake City, UT, March 2005 and Mine Design, Operations and Closure Conference, Polson, MT, April 2005.
- *Coal Bed Methane-Produced Water: Management Options for Sustainable Development*, co-authored with K. MacHardy, W. Merschat and T. Myers, presented at Coal Bed Natural Gas Research, Monitoring and Applications Conference, Laramie, WY, August 2004; 11th International Petroleum Environmental Conference, Albuquerque, NM, October 2004; Northern Plains Resource Council Annual Meeting, November 2004.
- *Technology-Based Effluent Limitations for Coal Bed Methane-Produced Wastewater Discharges in the Powder River Basin of Montana and Wyoming*, Northern Plains Resource Council, Billings, MT, November 2004.
- *Financial Assurance Guidelines for Hardrock Mine Cleanup*, Mine Design, Operations and Closure Conference, Polson, MT, April 2004.
- *Introduction to Mine Water Treatment*, Mine Discharge Water Treatment Short Course, Mine Design, Operations and Closure Conference, Polson, MT, April 2004.
- *Coal Bed Methane: A Design and Process Overview of Production and Produced Water*, presented as short course at Joint Engineers Conference, Helena, MT, November 2003.
- *The Good Neighbor Agreement between Stillwater Mining Company and Northern Plains Resource Councils: An Example of Industry and Citizen Cooperation*, presented as a short course at Joint Engineers Conference, Helena, MT, November 2003.
- *Reclamation and Financial Assurance for Mines on or Impacting Tribal Land*, presented at U.S. EPA Workshop on Mining Impacted Native American Lands, Reno, NV, September 2003.
- *Reclamation and Financial Assurance from a Public Interest Perspective*, presented at U.S. Forest Service National Geofest, Park City, UT, September 2003.
- *U.S. State and Federal Policies on Financial Assurance Forms for Hardrock Mines*, presented at New Mexico Financial Assurance Forum, Santa Fe, NM, May 2003.
- *Public Interest Perspective on Land Application Disposal*, presented at Mine Design, Operations and Closure Conference, Polson, MT, April 2003.

JAMES R. KUIPERS, PE (Page 8)

- *Putting a Price on Pollution: Financial Assurance for Mine Reclamation and Closure*, Mineral Policy Center, Washington, D.C., March 2003.
- Testimony to the Subcommittee on Energy and Mineral Resources, Committee on Resources, U.S. House of Representatives, Hearing on "Availability of Bonds to Meet Federal Requirements for Mining, Oil and Gas Projects." Washington, D.C., July 23, 2002.
- *Mine Closure and Financial Assurance: Can the Mining Industry Afford It's Legacy?*, presented at Global Mining Initiative Conference, Toronto, Canada, May 2002.
- *The Role of the Center for Science in Public Participation in Mining Environmental Issues, with Perspective for Regulators and Industry*, presented at Canadian Institute of Mining and Metallurgical Engineers Conference, Vancouver, Canada, May 2002 and U.S. EPA Hardrock Mining Conference, Denver, Colorado, May 2002.
- *The Good Neighbor Agreement between Stillwater Mining Company and the Northern Plains Resource Councils: The Formation and Implementation of a New Approach to Addressing Environmental and Community Relations Issues*, presented at U.S. EPA Hardrock Mining Conference, Denver, Colorado, May 2002.
- *Underground Hard-Rock Mining: Subsidence and Hydrologic Environmental Impacts*, Center for Science in Public Participation, Bozeman, MT, February 2002. Co-authored with S. Blodgett.
- *Review of the Multiple Accounts Analysis Alternatives Evaluation Process Completed for the Reclamation of the Zortman and Landusky Mine Sites*; presented at National Association of Abandoned Mine Lands Annual Conference, Athens, Ohio, August 2001. Co-authored with S.C. Shaw, A.M. Robertson, W.C. Maehl and S. Haight.
- *Full Reclamation and Closure Plan, Phelps Dodge Tyrone Mine, Grant County, NM*; Gila Resources Information Project, Silver City, NM, July 2001. Co-authored with S. Blodgett.
- *Reclamation Bonding for Hardrock Metal Mines Workshop*; presented by CSP2 at Juneau and Fairbanks, AK, July 2001.
- *Full Reclamation and Closure Plan, Phelps Dodge Chino Mine, Grant County, NM*; Gila Resources Information Project, Silver City, NM, June 2001. Co-authored with S. Blodgett.
- *Reclamation Bonding in Montana*; Montana Environmental Information Center, Helena, MT, November 2000. Co-authored with S. Levit.
- *Full Reclamation and Closure Plan, Molycorp Questa Mine, NM*; Amigos Bravos, Taos, NM, May 2000.
- *Hardrock Mining Reclamation and Bonding Practices in the Western United States*: National Wildlife Federation, Boulder, CO, February 2000.
- *An Economic Evaluation of the McDonald Gold Project*; Blackfoot Legacy, Lincoln, MT, February 2000..
- *Restoring the Upper Clark Fork: Guidelines for Action*; Trout Unlimited, Missoula, MT, April 1999. Co-authored with D. Workman, B. Farling and P. Callahan.

JAMES R. KUIPERS, PE (Page 9)

- *Alternative Final Reclamation and Closure Plan, Zortman and Landusky Mines, MT:* Indian Law Resource Center, Helena, MT, January 1999.
- *Reclamation Bonding Regulations of Precious Metal Heap Leach Facilities in the Western United States:* Presented at the workshop on Closure, Remediation and Management of Precious Metals Heap Leach Facilities, University of Nevada, Reno, Jan 15, 1999.
- *Wastewater Treatment Methods for Base and Precious Metal Mines:* Public Education for Water Quality Project, Northern Plains Resource Council, Billings, MT, 1996.
- *Bacterial Leaching Pilot Study – Oxidation of a Refractory Gold Bearing High Arsenic Sulphide Concentrate:* Randol Gold Forum, Squaw Valley, 1990. Co-authored with J. Chapman, B. Marchant, R. Lawrence, R. Knopp.
- *Novel Aspects of Gold Recovery Using Column Flotation at Austin Gold Venture:* Gold and Silver Recovery Innovations, Phase IV Workshop, Randol International Ltd, Sacramento, CA, 1989.

JAMES R. KUIPERS, PE (Page 10)

SARAH ZUZULOCK, MS, PE

Ex. 6

Bozeman, MT Ex. 6

Phone Ex. 6

E-mail szuzulock@kuipersassoc.com

SUMMARY OF EXPERIENCE

Over twelve years experience providing technical assistance to public interest groups, county and tribal government and federal agencies in mining and environmental management issues including monitoring plan design and implementation, wastewater treatment and management, water quality monitoring and reporting, mine operation and closure activities, reclamation and financial assurance review and calculation.

EDUCATION

Montana Tech of The University of Montana, Butte, Montana. M.S. Environmental Engineering, 2001.

Saint Mary's College, Notre Dame, Indiana. B.S. Biological Sciences, 1998.

PROFESSIONAL REGISTRATION

Montana State Board of Professional Engineers and Professional Land Surveyors, Professional Engineer (17368 PE), October 27, 2006

PROFESSIONAL EXPERIENCE

2004 to Present **Kuipers & Associates, Wisdom, MT**

- *Anaconda Deer Lodge County, MT*: Consulting Engineer, Anaconda Superfund Site, provide technical services related to institutional controls, property conveyance and redevelopment, operation and maintenance plans and cost estimates, review of regulatory documents, and other tasks related to county involvement in Superfund activities.
- *CLAIM GV Board, Grass Valley, CA*: Consulting Engineer, Preliminary review of Idaho Maryland Project environmental documents and plan of operations for mine development in the City of Grass Valley.
- *Clark Fork River Technical Advisory Committee, Missoula, MT*: Technical Advisor, Clark Fork River and Milltown Reservoir Operable Units, Upper Clark Fork Basin Superfund Sites.
- *Cottonwood Resource Council, Big Timber, MT*: Technical Advisor, Lodestar Mine review; Oil and Gas, development of recommended BMPs for oil and gas development and a development scenarios report.
- *Environmental Management Services, Fairfax, VA*: Consulting Engineer, NEPA reviewer

SARAH ZUZULOCK, MS, PE (Page 1)

assistance subcontract to EPA.

- *ICF International, Stafford, VA*: Consulting Engineer, 108(b) rulemaking technical support contract including financial assurance cost estimation model evaluations.
- *Northern Plains Resource Council, Cottonwood Resource Council, Stillwater Protective Association, Billings, MT*: Consulting engineer/project manager, Stillwater Mining Company Stillwater and East Boulder Mines, facilitate and perform technical aspects of Good Neighbor Agreement including data analysis and reporting, review of agency decisions including operating permit revisions, closure plans and financial assurance review.
- *Picuris Pueblo, Penasco, NM*: US Hill Mica Mine Reclamation Plan and financial assurance cost estimate and project management.
- *Selkirk First Nation, Yukon Territory, Canada*: Consulting engineer, Minto Mine project reclamation and closure financial assurance.
- *Shoshone-Paiute Tribes of the Duck Valley Reservation, NV*: Consulting Engineer, Rio Tinto Mine Reclamation and Closure. Completed environmental monitoring to evaluate for mine related impacts.
- *SKEO, Charlottesville, VA*: Consulting engineer, 108(b) rulemaking technical support and NEPA review and financial assurance support.
- *Southern Environmental Law Center, Charleston, SC*: Consulting engineer, Haile Gold Mine permitting.
- *Systems Research and Applications Corporation, Fairfax, VA*: Technical researcher, mine cleanup and financial assurance guidelines, subcontract to federal agency.
- *Stillwater County Attorney's Office, Columbus, MT*: Technical Consultant, septic permitting issue and review of county septic regulations.
- *Systems Research and Applications Corporation, Fairfax, VA*: Consulting Engineer, mine cleanup and financial assurance guidelines subcontract to EPA.
- *Tohono O'odham Nation, San Xavier District, AZ*: Consulting Engineer, Develop Mission Mine reclamation plan and financial assurance alternatives.

2001 to 2003

Center for Science in Public Participation, Bozeman, MT.

- *Northern Plains Resource Council, Cottonwood Resource Council, Stillwater Protective Association, Billings, MT*: Technical Advisor, Stillwater Mining Company Nye and East Boulder Mines, facilitate and perform technical aspects of Good Neighbor Agreement.

SARAH ZUZULOCK, MS, PE (Page 2)

- *Cottonwood Resource Council, Big Timber, MT*: Technical Advisor, Lodestar Mine, mine cleanup and management of acid generating waste rock.
- *Northern Alaska Environmental Council, Fairbanks, AK* . Conducted a review and evaluation of financial assurances held for closure for hardrock mines in the state of Alaska.

1998 to 2001

Montana Tech Mine Waste Technology Program, Butte, MT.

- Assisted in biological characterization of the Berkeley Pit and other acid mine drainage environments.
- Examined bioremediative potential of algal populations indigenous to the Berkeley Pit.

PRESENTATIONS and PUBLICATIONS

- *The Good Neighbor Agreement – A Partnership between a mining company and three communities*. Engaging Communities Conference, Iliamna, Alaska, November 2010.
- *Stillwater Mining Company, Part 2 – RealTime with George Cole*. Yellowstone Public Radio program discussing the Good Neighbor Agreement, July 26, 2010.
<http://www.ypradio.org/programs/local/realtime.html>
- *Stillwater Mining Company – RealTime with George Cole*. Yellowstone Public Radio program discussing the Good Neighbor Agreement, June 28, 2010.
<http://www.ypradio.org/programs/local/realtime.html>
- *The Good Neighbor Agreement – A Social Contract to Mine*. Securing the Future and 8th International Conference on Acid Rock Drainage, Skellefteå, Sweden, June 2009.
- *The Good Neighbor Agreement – The Model for Industry and Citizen Cooperation*. Sweet Grass County Commission, Big Timber, Montana, May, 26, 2009.
- *The Good Neighbor Agreement – The Model for Industry and Citizen Cooperation*. Stillwater County Commission, Columbus, Montana, March, 23, 2009.
- *Predicted Versus Actual Water Quality at Hardrock Mine Sites, Failure Modes and Root Causes of Water Quality Impacts*. Alaska Chapter, American Fisheries Society, Expanding Perspectives of Fisheries, Anchorage, AK, October 2008.
- *The Good Neighbor Agreement – The Model for Industry and Citizen Cooperation*. National Summit for Mining Communities, Butte, MT, September 2008.
- *The Good Neighbour Agreement: A Proactive Approach to Water Management through Community Enforcement of Site-Specific Standards*, w Jim Kuipers, Greener Management International, Issue 53, Spring 2006, Greenleaf Publishing. 2007.

SARAH ZUZULOCK, MS, PE (Page 3)

- *Mine Discharge Water Treatment Cost Estimation*, Mine Discharge Water Treatment Short Course, Mine Design, Operations and Closure Conference, Polson, MT, April 2004.
- *Financial Assurance for Hardrock Mine Cleanup*, Western Mining Action Network Conference, Vancouver, Canada, October 2003.
- *The Tiered Trigger Level Water Quality Protection Framework Utilized by the Stillwater Mining Company and the Northern Plains Resource Councils' Good Neighbor Agreement*, EPA Hardrock Mining 2002 Conference, Westminster, CO, May 2002.
- *Good Neighbor Agreement Environmental Monitoring Program*, Western Mining Action Network Conference, Albuquerque, NM, October 2001.
- *Bioremediative Potential of Chromulina freiburgensis in Culture from the Berkeley Pit*, 55th Meeting of the Phycological Society of America, Estes Park, CO, June 2001.
- *Studies of the Berkeley Pit at Montana Tech*, 31st International Geological Congress, Rio de Janeiro, Brazil, August 2000.
- *Chromulina freiburgensis Dofl. In the Berkeley Pit Lake Water System*, Northwest Algal Symposium, Yachats, OR, May 1999.

SARAH ZUZULOCK, MS, PE (Page 4)