Montana Tech of The University of Montana
Technical Assistance to Brownfields
First Quarter Report FY 2004

Submitted By:

Mine Waste Technology Programs (MWTP)

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OBJECTIVE

The Technical Assistance to Brownfields for Communities (TAB) Program at Montana Tech will address Brownfields sites throughout EPA Region 8. The objective of Montana Tech’s TAB Program will be to provide technical assistance to meet the needs and desires of the community or group seeking assistance.

APPROACH, RESULTS, AND BENEFITS

Activities to provide technical assistance can take many forms, including leadership training, risk assessment, training concerning Brownfields processes and site assessment, and technical information concerning clean-up alternatives (Table 2).

Table 2. Description of Potential Activities within the Rocky Mountain Regional TAB Program

<table>
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<th>Activities that have been tailored to specific community needs included the following:</th>
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<td>Leadership Training</td>
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<td>Leadership training for community leaders focuses on the technical side of clean-up activities, interaction with government agencies, environmental regulations, clean-up technologies, and risk assessment</td>
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<td>Risk Assessment</td>
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<tr>
<td>Risk assessment training is provided for local government planners, developers, and community members to help build knowledge of basic mechanisms and protocols of risk assessment. Topics include site inventory, characterization, end use, and environmental quality requirements as part of the measurement of risk.</td>
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<td>Brownfields Processes</td>
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<tr>
<td>Training covering the technical aspects of the Brownfield redevelopment process is provided to a variety of stakeholders. Specific subject matter is tailored to local requirements and interests.</td>
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<td>Site Assessment</td>
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<tr>
<td>Training on the assessment of hazardous waste sites helps community leaders and local government environmental professionals develop a better understanding of site assessment principles. Sessions focus on integration of assessment with land use decisions and provide information about the acceptable tools for data collection.</td>
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<tr>
<td>Clean-up Alternatives</td>
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<tr>
<td>Local government officials, developers, and environmental/planning professionals are provided with the technical information needed and taught how to make decisions on the use of appropriate technology for sustainable land use.</td>
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Source: After EPA HSRC Solicitation
The TAB Program differs from the Technical Outreach Services for Communities Program (TOSC), yet should incorporate similar principles of involving stakeholders, meeting stakeholder needs, building trust, creating teams of individuals with a wide range of expertise, and continuous improvement. Our approach, therefore, includes the following:

- Assembling an interdisciplinary group of faculty and staff to work on TAB projects. The group of faculty and staff will vary with project needs.
- Identifying appropriate faculty and TAB staff with a wide variety of options available to the stakeholders.
- Developing an initial agreement with the specific person or group requesting assistance identifying community needs and potential outcomes.
- **Evaluation** of TAB projects will be ongoing. The initial agreement will identify mechanisms for formal evaluations.

Montana Tech, a member of The Rocky Mountain Regional Hazardous Substance Research Center (RMRHSRC), will assist Region 8 Brownfields in many ways, such as through the development of print-based materials (creation of handbooks or compilation and review of literature); face-to-face meetings, conferences, seminars, and workshops; or through use of technologies, such as the Internet including development of Web sites, Internet-based instruction, Internet conferencing, or electronic newsletters. Each of these methods will be used, as appropriate, to help communities better understand technical issues and support redevelopment of Brownfields.

Benefits of this program are many. The program will provide assistance to a variety of stakeholders. Montana Tech will involve faculty and staff from the Rocky Mountain Regional HSRC depending on community needs and faculty expertise. The effectiveness of outreach programs will be improved by incorporating a variety of face-to-face and technology-based methods to work with stakeholders. Our ultimate goal is to assist in the redevelopment of Brownfields properties by providing information and support to communities.

**CONFERENCE**

**Attended**

**Presented**
2003 Green Brownfields II Dresden, Germany
- **Kevin Mellott** – Brownfields Job Training Grant on the Crow Nation
ACTIVE TAB SITES:

Site #1) Crow Nation, Montana - Kevin Mellott

Background
A former carpet mill (Bighorn Carpet Mill) located on the Crow Tribal Reservation has been designated a Brownfield site by the EPA. The Crow Nation has received a brownfields pilot grant to perform an environmental site assessment and plan for cleanup. This work will allow the Nation to develop plans for converting the property into a productive community-based facility.

Concerns
Water Quality Issues
Coal Bed Methane Issues
Coal Mining Issues
Public Health Issues
UST Issues
Ground Water Issues
Non-Point Pollution Issues
Environmental Justice Issues

Activities/Status
The TAB Program has provided education the Crow community on the possible health hazards associated with the chemicals that may have been used at the Big Horn Carpet Mill. The TAB Program (Kevin Mellott) and the Crow Tribal Brownfields Coordinator (Patricia Dust) attended Brownfields 2003 in Portland, Oregon Oct 26-29. The networking opportunities as well as learning from other programs will be beneficial to the Crow Tribal Brownfields Program. The TAB program will continue to assist the Crow Tribal Government by reviewing the document, and assisting with public outreach.

Accomplishments
The TAB Program has providing a constant link between the EPA and the Crow Tribal Government during the political changes. The TAB Program has also provided outreach on the status of the Big Horn Carpet Mill to the Crow community. In November of 2003 the TAB Program participated with the Crow Brownfields Program in providing the Crow Community with an update of the various Brownfields projects. Information concerning the Big Horn Carpet Mills Phase I and II Assessment, the Crow Brownfields Job Training Program as well as the Crow Brownfields Programs award of State and Tribal Response Program was announced. The meeting was open to the public and the 107 Committee (Council to the Chairman) attended.

Site History
The Tab program has been active on the Crow Indian Reservation since November of 2000. During that time the Crow Tribe has requested assistance with understanding and following of guidelines associated with their Brownfields Assessment Grant associated with the former Big Horn Carpet Mill. The TAB Program has participated in numerous
public outreach meeting as well as planning meetings with the Crow Tribal Government. A Brownfields Job Training Grant was awarded to the Crow Tribe and its partners Little Big Horn College and Montana Tech in March of 2002.

**Future**
This work will result in creating a baseline to environmental and industrial assessment and in developing a more effective working relationship with federal agencies for the Crow Government.

**Work Effort**
FY 2003 Quarter #1 – Level of effort High
FY 2003 Quarter #2 – Level of effort High
FY 2003 Quarter #3 – Level of effort High
FY 2003 Quarter #4 – Level of effort High
FY 2004 Quarter #1 – Level of effort High
FY 2004 Quarter #2 – Level of effort High - expected
Site #2) Fort Belknap Reservation, Montana – Kevin Mellott

Background
The Gross Ventre and Assiniboine Tribes, referred to as the Fort Belknap Indian Community (FBIC), reside on the Fort Belknap Indian Reservation. In 1888, the reservation was established by an Act of Congress. The site for the Fort Belknap Agency as the government headquarters was informally established in 1889. The reservation is located in remote north central Montana, and is included in portions of Blaine and Phillips counties and about 40 miles from the Canadian border. The boundaries of the reservation are the Milk River to the north, the Little Rocky Mountains to the south and survey lines to the east and west.

On July 19, 2001, the U.S. EPA awarded the FBIC a Brownfields Assessment Demonstration Pilot Grant. There are currently two sites that have been designated by the U.S. Environmental Protection Agency and the Fort Belknap Community Council (FBCC) as Brownfields Assessment Pilot Sites; the Old Agency Landfill and the Snake Butte rock quarry, both of which are located wholly on tribally owned lands. The Old Agency Landfill, located 1 mile east of the Agency was in operation for approximately 60 years. During this time, the landfill reportedly accepted residential, industrial and agricultural wastes and allegedly received unspecified amounts of pesticides and PCBs. Residents, federal agencies and health facilities utilized the landfill for years since the agency was formed in the early 1900’s. It was closed in 1970. The Snake Butte rock quarry, located approximately 10 miles south of the Agency was utilized by the U.S. Army Corp of Engineers in the 1930’s for obtaining rip-rap during the construction of the Fort Peck Dam. Upon completion of the dam, the butte was left without any form of clean up. There remains evidence of blasting, railroad construction and other debris that have damaged the area.

Concerns
Mining Issues
Landfills
Ground Water
Environmental Justice
Chemical Contamination
Pollution Prevention
Cultural Sites

Activities/Status
The TAB Program has provided Brownfields Workshops to the Fort Belknap community and has worked with the Fort Belknap Environmental Protection Program in evaluating RFPs associated with the Brownfields Assessment Grant. The TAB Program attended both the Brownfields 2003 Conference in Portland, Oregon and well as Brownfields Job Training Conference in Alexandria, Maryland with FBIC Environmental Program representative. The TAB Program will continue to assist in public outreach and education to the Fort Belknap Community.
Accomplishments
The Brownfields Assessment Grant for the two sites is near completion, right on schedule. FBIC Brownfields Job Training has started with 2 courses Industrial Hygiene and Lead Abatement. This program will provide environmental education to the Fort Belknap Reservation. The TAB Program has worked closely with Sherry Bishop, Fort Belknap’s Brownfields Coordinator assisting with reports and questions concerning Brownfields Programs.

Site History
The TAB program began working with the Fort Belknap Indian Community (FBIC) in the Fall of 2002, though Montana Tech and the Mine Waste Technology Programs has had a long working relationship with the FBIC. In 2002 FBIC had requested assistance with their Brownfields Assessment Grant, concerning the Snake Butte Rock Quarry and a Former Landfill located near the Milk River. The TAB program has assisted FBIC with public outreach planning as well as review of the RFP process and technical review of the Phase I and Phase II assessment reports. The FBIC was Award a Brownfields Job Training Grant in June of 2003 and has requested assistance in providing education associated with the Grant.

Future
The award of a Brownfields Job Training Grant will provide the FBIC with a viable work force to continue to cleanup both Brownfields sites as well any other environmental issues located on the Fort Belknap Indian Reservation. The TAB program will continue to assist the FBIC in providing education to the community, as well as provide assistance with the Brownfields Job Training Grant.

Work Effort
FY 2003 Quarter #1 – Level of effort High
FY 2003 Quarter #2 – Level of effort High
FY 2003 Quarter #3 – Level of effort High
FY 2003 Quarter #4 – Level of effort High
FY 2004 Quarter #1 – Level of effort High
FY 2004 Quarter #2 – Level of effort High- expected
Site #4) Bear Paw Development Hill County, Montana – Mark Peterson

**Background**
Hill County is located in north central Montana covering an area of approximately 2,896 square miles with a total population of 16,673 (or a population density of approximately 5.8 persons per square mile). The largest community within Hill County is Havre with a population of 9,621 (based on the 2000 Census), and the primary industry in the county is agriculture. Hill County also includes a portion of the Rocky Boy’s Indian Reservation and is the regional trade center for the Fort Belknap Indian Reservation. According to the 2000 Census, 2,884 American Indians live in Hill County.

The Burlington Northern-Santa Fe Railway maintenance shop is located in Havre along with a diesel refueling stop for all trains traveling Montana’s northern line. A total of approximately 35 trains per day travel through Havre and utilize the diesel refueling station. A variety of light manufacturing plants are also located in the community as well as former gas stations, paint shops, dry cleaners, and various agricultural related businesses.

**Concerns**
- Railroad Refueling and Maintenance Areas (BNSF)
- Abandon USTs
- Former Industrial Properties
- Former Auto Body Repair and Paint Shops
- Non-Point Source Pollution
- Groundwater Contamination

**Activities/Status**
Since this project is in the early stages, the TAB Program’s primary goal will be to help identify potential development opportunities and to provide information and support to Hill County and the Havre community. The TAB Program will offer various meetings and workshops to help the community better understand the technical issues surrounding the Brownfields program.

Hill County’s Brownfields Grant Proposal was denied by EPA for funding this last year and Hill County chose not to submit a grant proposal this year so they can clearly define their future goals and objectives concerning Brownfields properties. In doing so, they have requested from the TAB program, training sessions for Brownfields and groundwater to help them better understand the Brownfields program as well as help them address and educate the community on some of the local environmental issues that currently impact them. In addition, we have been working with Kansas State University to develop an “Institutional Control” map of contaminated areas for city planning. A draft map was completed and is in review for final editing. This map will serve as a tool for Havre and as an example case study for Kansas State University to develop an institutional control project.
Accomplishments
At the request of Hill County, TAB personnel completed a sit visit and presentation of the TAB capabilities in March 2003 and Hill County submitted the application for funding to EPA in March 2003. Hill County was not awarded funding; however, Hill County was intending to resubmit the application this year but they chose not to do so so they could clearly define their future goals and objectives concerning Brownfields properties and increase their chance of future funding. In doing so, they have requested from the TAB program, training sessions for a variety of topics such as Brownfields development, introductory hydrogeology, and groundwater contamination. In cooperation with Kansas State University, TAB personnel developed an “Institutional Control” map of contaminated areas for potential future city planning and Brownfields development. A draft map was completed and reviewed with final editing being performed at Kansas State University. This map will serve as a tool for Havre and provides an example case study for Kansas State University to develop an institutional control project.

Site History
The TAB program has been engaged with the Bear Paw Development (BPD) in Hill County since the spring of 2003. The TAB Program has attended public meetings in April, 2003 concerning Brownfields issues and the development of a Brownfields program within Hill County. Although the initial Brownfields Assessment Grant effort by the BPD was not funded by EPA, they plan on resubmitting in the 2004. The Institutional Control Map of contaminated areas will provide BPD with a tool to help strengthen future BPD grant applications as well as provide an excellent planning tool for the community.

Future
TAB will meet the needs of the community by creating and providing educational materials, workshops, and/or presentations, as necessary. Overall, the public will develop an enhanced understanding of a variety of issues such as groundwater contamination from petroleum contaminated sites and Brownfields development so that private investors will more likely consider developing local real estate. The “Institutional Control Map” of contaminated areas may be used as a planning tool for Havre.

Work Effort
FY 2003 Quarter #1 – Level of effort Low to Moderate
FY 2003 Quarter #2 – Level of effort Low to Moderate
FY 2003 Quarter #3 – Level of effort Low to Moderate
FY 2003 Quarter #4 – Level of effort Low to Moderate
FY 2004 Quarter #1 - Level of effort Low to Moderate
FY 2004 Quarter #2 – Level of effort Low to Moderate- expected
INACTIVE TAB SITES

Site #3) Spirit Lake Reservation, Fort Totten, North Dakota - Karl Burgher & Kevin Mellott

Background
The Spirit Lake Sioux belong to the Sisseton-Wahpeton Sioux Band. The tribe’s ancestral grounds lie in what is now Minnesota. An 1862 gold discovery in Minnesota enticed gold seekers and settlers through Minnesota Sioux Country, resulting in the Minnesota Uprising that same year. Following this conflict, many of the Sisseton-Wahpeton Band migrated southwest to what is now the Fort Totten, North Dakota, area. The reservation was established in 1867 by a treaty between the United States Government and the Sisseton-Wahpeton Sioux Bands. The Candeska Cikana Community College just recently received a Brownfields Training Grant and has requested TAB Assistance.

Concerns
Ground and Surface Water Contamination
Brownfields Issues
Hazardous Waste
Cultural Issues

Activities/Status
Fort Totten and the Candeska Cikana Community College located on the Spirit Lake Reservation have contacted the TAB Program requesting assistance with their Brownfields Job Training Grant. In particular, they needed help locating educational contractors. The TAB program has provided assistance in locating and contacting contractor to provide their Job Training. This was completed and assistance was terminated. This site will be closed.

Accomplishments
The TAB Program has provided Fort Totten and the Candeska Cikana Community College with the contact information to local educational contractors as requested.

Site History
The TAB Program has had a long standing relationship with Fort Totten and the Candeska Cikana Community College. This relationship began during the original HSRC program when Kansas State University was the lead University for EPA Region 7 & 8. During the transition period between HSRC 1 and HSRC 2 the TAB program has been monitoring and maintaining communication with this community. Recently the TAB program had assisted this community with issues concerning their Brownfields Job Training Grant. This site is currently closed but future requests for TAB Assistance will be evaluated at the time of the request.

Future
Future involvement with the TAB Program will be evaluated upon need for assistance as well as budgetary issues.
Work Effort
FY 2003 Quarter #1 – Level of effort Low
FY 2003 Quarter #2 – Level of effort Low
FY 2003 Quarter #3 – Level of effort Low
FY 2003 Quarter #4 – Site Closed
FY 2004 Quarter #1 – Site Closed
FY 2004 Quarter #2 – Site Closed
Site #5) Gold Hill Mesa Tailings Site – Colorado Springs, CO - Karl Burgher

**Background**
This 200-acre site formerly contained a gold ore processing plant. The ore was shipped to the site from mines located in the Cripple Creek mining area. The site, located within the city limits of Colorado Springs, has been abandoned for several years.

Recently, the site has been proposed for high density residential use. An environmental assessment was performed under the State of Colorado’s Voluntary Cleanup Program. The results of that assessment identified the presence of several heavy metals in the soils and concluded that the site was appropriate for residential use if soil was stabilized and a cap placed over the site. Site grading is under way.

**Concerns**
Community members living nearby are concerned about three principal issues:

- Does the proposed capping provide sufficient protection for the prospective residents?
- Are adequate measures being taken to suppress dust during the site grading?
- Will there be contaminated runoff from the site into the nearby stream system?

**Activities/Status**
TAB met with community members to ascertain concerns and to develop an understanding of the site. Community members took TAB representatives on a tour of the site and provided preliminary documentation regarding site activities. This site is temporarily closed.

**Accomplishments**
TAB has created an awareness of the regulatory process used in assessing this site and has facilitated access to current environmental records, thus permitting community members to decide on an appropriate course of action. TAB has directed the community to the appropriate history and environmental documentation.

**Site History**
TAB activity began in the winter of 2002 and ended in summer of 2003. Though this site had a relatively short life as a TAB Project the lines of communication that where formed by TAB’s involvement between the community, EPA, and the State of Colorado was substantial. As this project continues to develop the TAB program will remain idle, unless the community requests for more appropriated TAB assistance.

**Future**
This site will be closed by the TAB Program, but EPA and the State of Colorado will continue working with this community. TAB will remain open to community requests.
**Work Effort**
FY 2003 Quarter #1 – Level of effort Low
FY 2003 Quarter #2 – Level of effort Low
FY 2003 Quarter #3 – Level of effort Low
FY 2003 Quarter #4 - Site Closed
FY 2004 Quarter #1 – Site Closed
FY 2004 Quarter #2 – Site Closed
MONTANA TECH TAB FACULTY & STAFF

Karl E. Burgher Ph.D., P.E.

Education:
• Ph.D. Mining Engineering, University of Missouri-Rolla, August 1985
• B.S. Economics, University of Missouri-Rolla, May 1984, Cum Laude
• M.S. Mining Engineering, Michigan Technological University, August 1982
• B.S. Mining Engineering, Michigan Technological University, August 1980

Experience:
• Full Professor, Mining Engineering, August 1995 to present
• Project Manager, Mine Waste Technology Programs, December 1994 to present
• Director, The NewMedia Group, July 1998 to Present
• A Director, Continuing Education, Montana Tech, August 1997 to Present

Additional Experience:
• Past Vice Chair: Haskell Environmental Research Studies Center Board, Haskell Indian Nations University, Lawrence, KS
• Project Manager: Technical Outreach to Communities Program, Kansas State
• Member: Society of Mining Engineers, AIME, Society of Explosive Engineers
• Past President: Montana Section of AIME, 1990-93, Society of Mining Engineers
• Secretary/Treasurer: Rocky Mountain Chapter of the Society of Explosive Engineers

Kevin L. Mellott

Education:
• B.S. Engineering Science, Montana Tech of the University of Montana, December 1999
• Secondary Education Degree, UM Western Montana completion date May 2004

Experience:
• Associate Project Manager of TOSC/TAB, January 2002 to present
• Assistant Project Manager of TOSC/TAB, January 1998

Additional Experience:
• 1-Day Short Course Omaha, NE, Local Development Group, Greenway Planning, March 15, 2000
• 1-Day Short Course Kansas City, KS Corp of Engineer, Greenway Planning, March 16, 2000
• 1-Day Short Course Crow Indian Reservation, MT, Chemicals of Concern associated with the Big Horn Carpet Mill
• 1- Day Short Course Ft. Belknap Reservation, MT, Brownfields Workshop.
• 3-Day Short Course, Greenway Planning
• 3-Day Short Course, Golf Course Planning
• 15 Module Introduction to Eco-Tourism Planning
TOSC/TAB ASSOCIATES

Mark E. Peterson, EIT

Education:
• M.S. Environmental Engineering, Montana Tech of The University of Montana, May 1999.

Experience:
• Assistant Project Manager, Mine Waste Technology Program (MWTP), December 2002 to present
• Environmental Engineer Specialist, Montana Department of Environmental Quality (MDEQ), September 2000 to December 2002
• Senior Project Engineer, Environmental Science and Engineering, Inc. (ESE), 1998 to 2000
• Project Engineer, Environmental Science and Engineering, Inc. (ESE), 1993 to 1998
• Senior Staff Environmental Engineer, Environmental Science and Engineering, Inc. (ESE), 1991 to 1993
• Staff Environmental Engineer, Environmental Science and Engineering, Inc. (ESE), 1990 to 1991
• Environmental Specialist, Performance Technologies, Inc. (PTI), 1989 to 1990

Additional Experience:
• California Environmental Protection Agency Air Resources Board (CARB) and Montana Department of Environmental Quality, National Air Compliance Training Delivery Project Uniform Air Quality Training Program 200 Series, June 17 to 20, 2002.
• 40-hr and 8-hr Annual Refresher, Occupational Safety and Health Administration (OSHA) 1910.120 Hazardous Waste Operations & Emergency Response Courses, June 1989 through February 2001.
Jennifer M. Wenstrom

Education:
• B.A. International Affairs from the University of Colorado at Denver completed May 2003

Experience:
• 3-day short course, Vail, CO – Mine Waste and Tailings, October 13-15, 2003
• 3-day short course, Portland, OR – Brownfields 2003, October 27-29, 2003

Additional Experience:
• Volunteer Caring Association for Native Americans
• Volunteer Share and Care
• Volunteer Habitat for Humanity

Willis D. Weight, Ph.D., P.E

Education:
• Ph.D. Geology, University of Wyoming.
• B.S. Engineering Geology Brigham Young University.

Experience:
• Head, Hydrogeology Program at Montana Tech of the University of Montana.
• Head, Department of Geological Engineering.
• Instructor, University of Wyoming, Laramie, Intro. to Geology, (260 students); Physical Geology, (37 students)
• Mine Geologist, Kiewit Mining & Engineering Co., Sheridan, Wyoming,. Mine geologist for Big Horn Coal Co. Performed consulting mine development work, including two months overseas in the Peoples Republic of China.
• Hydrogeologist, Peter Kiewit Sons', Omaha, NE. Responsible for field and permit work for geology and hydrology of Cumberland Coal Co. and Rosebud Coal Sales Co., WY,
• Hydrologic Field Assistant, U.S. Geological Survey, WRD, Idaho Falls, ID. under Jack Barraclough. Performed data collection from water wells, analysis of data on the migration of radio nuclides from buried nuclear waste at the Idaho National Engineering Laboratory. Assisted in pumping tests performed on a 10,360 foot deep geothermal test well INEL 1

Additional Experience:
• Registered Professional Engineer No. 10545 P.E. in State of Montana (By exam, Oct. 1992)
• Registered Professional Engineer No. 8176 P.E. in the State of Idaho (Feb, 1996).
• Engineer in Training (Passed EIT exam, April, 1991).
• C.P.R. certified and passed Red Cross First Aid Course.
• 40 hour Health and Safety Training Certification for hazardous waste activities.
• Monitoring Well Constructor's License for the State of Montana (MWC-215), since 1990.

Sally M. Bardsley

Education:
• Master of Science in Industrial Hygiene (May, 1994; high honors), Montana Tech of The University of Montana
• Bachelor of Science in Occupational Safety and Health/Applied Health Option (December, 1991; high honors), Montana Tech of The University of Montana

Experience:
• Assistant Professor/Laboratory Director, SH/IH Department Montana Tech
• Laboratory Director/Adjunct Instructor. SH/IH Department Montana Tech
• Director of Wellness Montana Tech

Additional Experience:
• Plum Creek Manufacturing, L.P. Columbia Falls, MT
• Butte Family YMCA. Butte, MT
• Independent Consulting