

The OUTREACH

Montana's Source for Brownfields Information

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Focus on Petroleum Brownfields

The DEQ Brownfields Program is helping fund investigations at two petroleum brownfields sites in separate corners of the state. In Shelby, cleanup is going forward on a closed petroleum refinery, and Powder River County is addressing an abandoned gas station in the town of Broadus. While both properties are different in their former use and present regulatory challenges, they also show good redevelopment potential.

The closed Shelby refinery is on the DEQ's State Superfund List. Both the LUST/Brownfields Section and the Site Response Section at DEQ are providing regulatory oversight for the site. The Park Super Service in Broadus is a closed gas station originally referred to the DEQ's Enforcement Division.

Assessment and cleanup activities at both sites have been spurred on by local community members who have a vision for redevelopment in their communities. Shelby

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The former petroleum refinery in Shelby, Montana, circa 1979. All the structures in this photograph have since been removed.

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Betsy Hovda stands in front of the former Park Super Service gas station in Broadus.

Mayor Larry Bonderud and Community Development Director, Lorette Carter were instrumental in obtaining site assessment funds through DEQ's Brownfields Program. Shelby also received cleanup funds from the EPA Competitive Brownfields Grants program. Powder River County Commissioner Nancy Espy and County Clerk and Recorder Karen Amende have driven the progress on the Park Super Service project.

Betsy Hovda, DEQ's Petroleum Brownfields Coordinator, asked Lorette Carter and Karen Amende if they would share some of their experiences they had working on these projects.

Do you think redevelopment of the site would be possible without the brownfields assessment and/or cleanup funds?

Loretta: I don't believe remediation, nor redevelopment of the site, would be possible without the Brownfields assessment and subsequent cleanup funding. Over \$150,000 in private funding was already expended on the site with little progress toward garnering a "no further action" response.

Karen: No. Our county levies the maximum number of mills every year just for normal operations.

How did this site come to the attention of your local government?

Loretta: The City of Shelby has been anxious about the site for many years. The city has been concerned with the motorcycle, bike, and ATV riders on the property and the threat to health and safety. At the same time, the property is of great commercial value. The site is adjacent to the Burlington Northern Santa Fe Railway and near the city's industrial park. The site has great economic development potential and a tremendous need for clean up. These factors guided the city in seeking funding for assessment and remediation of the site.

Karen: The site had been abandoned by its owner, taxes were delinquent from 1991, and the building which is located on the only highway coming into Broadus from the east is deteriorating, is an eyesore, and a potential hazard.

Who has possession of the property and how did you obtain the property?

Loretta: The City of Shelby acquired the property through payment of back taxes.

Karen: Powder River County. With the availability of brownfields funds for help with cleanup, the county decided to proceed with tax deed procedures. Process was completed and tax deed issued on 9-26-07.

Do you expect to retain possession of the property indefinitely?

Loretta: The goal of the City of Shelby is the investment of the private sector in the site with the construction of a concrete batch plant on the site. The city is willing to retain ownership of the property if environmental regulations dictate specific land-use controls, but hopes to return the property to the private sector.

Karen: The location of the property is ideal for a business of some kind and there has been interest expressed in the property. Because of this interest and the benefit to

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taxpayers for the property to be back on the tax rolls, the county would prefer not to retain possession indefinitely. However, if this is a requirement of the brownfields program, we intend to follow regulations as required.

What do you anticipate to be the future use of the site?

Loretta: The City of Shelby anticipates redeveloping the property for industrial park development. A private entity, HiLine Redi-Mix has made a commitment to the property in hopes of relocating and expanding their business. HiLine Redi-Mix would like to relocate their concrete, sand and gravel business, which presently borders a residential neighborhood and is limited in expansion potential. This relocation would rectify the threat to human health, as the aggregate materials used in the production of concrete create tremendous amounts of dust within the area surrounding the plant. At the same time, large equipment and trucks transporting materials create a safety concern within this residential neighborhood. It will promote economic development while at the same time address a threat to health and safety of the residents of Shelby.

Karen: The future use of the site will be determined after the site is released and public meetings are held. We feel it is important for the community to have input into any future use of the property.

Describe how site redevelopment will benefit your community.

Loretta: The entire community will benefit from the cleanup and redevelopment of the Shelby Refinery site. First and foremost, the threat to human and environmental threat will be addressed and remediated in the cleanup of the petroleum waste. With remediation complete, tremendous potential lies in the redevelopment of the site. Private investment in the property will provide invaluable employment opportunities for citizens; encourage population growth in the employment potential; increase taxable values; and generate revenue throughout the community in construction and operation costs. Tremendous potential lies in moving HiLine Redi-Mix to this industrial park area. Relocating the cement plant will rectify the concern of human health in the release of dust

particles from the plant as well as vehicular safety with the tremendous amount of trucks and equipment traveling to and from the plant.

Karen: Any redevelopment will, as mentioned before, increase the tax base. Cleaning up the site will enhance the community and perhaps provide a location for a new business.

What advice would you give a community that is interested in redeveloping a potential petroleum brownfields site?

Loretta: I believe first and foremost, in gathering the knowledge and resources necessary to make sound decisions in the process. Montana Department of Environmental Quality staff and U.S. EPA Region 8 staff are invaluable in guiding and directing a community in applying for and administering a brownfields grant site. With that, support from your government officials and community is critical to the process. Ultimately, success of an application for funding is a viable plan for redevelopment.

Karen: Work closely with your brownfields case worker, gather information needed, keep the public informed and be patient, but persistent.

If you had the process to do over, what would you do differently; or what were your "lessons learned?"

Loretta: The process was a huge lesson which having gone through it is invaluable. Thankfully, city leadership has directed the application and subsequent cleanup and so government support has made the process so much easier. Much has also been learned from state agencies and engineering firms interested in the project. Critical to the success of a project such as this is knowledgeable people to seek direction and input.

Karen: We possibly could have investigated other cleanup options. We thought that our only help would have to come from the Petroleum Release Fund with the \$17,500 upfront cost, for which we had no funds. ■

2007 RBCA Revisions

Montana Tier 1 Risk-Based Corrective Action Guidance for Petroleum Releases (RBCA) is a document published by the Montana Department of Environmental Quality, Remediation Division (DEQ-REM). Risk-based screening levels (RBSLs) listed in RBCA are used to evaluate whether concentrations of listed contaminants pose an unacceptable risk to public health or the environment given conservative assumptions about the contaminated media and exposure scenarios. DEQ-REM has recently revised RBSLs based upon new information concerning contaminant chemicals and exposure scenarios. The updated RBSLs are posted on DEQ's website: <http://deq.mt.gov/rem/hwc/rbca/LinksTOC.asp>.

The 2007 revisions to RBCA incorporate updates to the RBSLs published in the October 2003 edition of RBCA. The proposed revisions to RBCA fall into six categories: (1) updates to the application of volatilization factors. DEQ is now utilizing the same approach as EPA Region 9 for its preliminary remediation goals (PRGs). Volatilization factors are applied to those chemicals having a Henry's Law constant greater than 10^{-5} (atm³/mol) and a molecular weight less than 200 g/mole; (2) updates to the calculation of dermal factors related to soil exposure; (3) updates of toxicity factors for some of the petroleum fractions as well as toluene; (4) minor corrections and changes to the direct contact spreadsheets based upon current guidance and policy; (5) updates related to DEQ-7 including recalculation of RBSLs based on the risk of soil contaminants leaching to groundwater; and (6) addition of RBSLs for lead scavengers ethylene dibromide (EDB) and 1,2 dichloroethane (1,2 DCA). Lead scavengers were added to leaded gasoline to help volatilize tetraethyl lead to prevent it from fouling internal combustion engines. EDB and 1,2 DCA may still be found in leaded aviation gasoline. EDB and 1,2 DCA are carcinogens and are persistent in the environment.

These revisions to RBCA identify unacceptable risks to human health and the environment from petroleum releases. Because current information suggests that higher RBSLs for some compounds are still protective of human health and the environment, many of the revised RBSLs are less conservative than levels adopted in the October 2003 RBCA, and will result in resolution of some petroleum releases where further expenditure or resources would result in little increased protection for public health, safety, or the environment.

This amendment is necessary to incorporate the updated levels so that owners and operators of petroleum storage tanks and the department can properly evaluate the potential risk a release poses to public health or the environment without conducting a complete site-specific risk assessment. Additionally, RBCA is updated regularly as new information becomes available. Once the updated version of RBCA goes into effect, the prior versions are not available to the public. It is necessary to adopt the latest version of RBCA to avoid confusion over the applicable screening levels that trigger release reporting.

Substantial changes were also incorporated into the text. The definitions section and the main text now includes information for the lead scavengers EDB and 1,2 DCA.

The soil screening concentration for determining if a sample needs to be fractionated has changed from 50 parts per million (ppm) to 200 ppm. This increase is reflective of the change in the RBSLs where the lowest RBSL for the diesel range compounds currently is 200 ppm for the C9-C18 aliphatic fraction.

Table A – "Testing Procedures for Soils" has been expanded to include RCRA Metals and Oxygenates & Lead Scavengers. In the 2003 version of RBCA, MTBE, benzene, toluene, ethylbenzene, xylenes, and naphthalene (MBTEXN) analysis was required if the extractable petroleum hydrocarbons (EPH) screen concentration exceeded 50 ppm. In the 2007 version, volatile petroleum hydrocarbon (VPH) analysis is required for a majority of the petroleum products regardless of the EPH screen concentration.

Table B – "Testing Procedures for Groundwater" has been expanded to include Oxygenates & Lead Scavengers. The EPH screening concentration has been increased from 300 parts per billion (ppb) to 500 ppb as a result of increases in the groundwater RBSLs. The RBSL for the C11-C22 aromatic fraction was 300 ppb in 2003 and the most conservative RBSL in the 2007 RBCA is 500 ppb for the C9-C18 aliphatic fraction.

A section on EPH Screen versus total extractable hydrocarbons (TEH) in groundwater has been included. A section describing the VPH/EPH sampling protocol has been also added. This section also includes Table C which contains information on

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appropriate analytical and preservation methods for a variety of parameters. Sections describing Soil Sample Collection and Preservation, Laboratory Data Reporting for Soil Samples and Aqueous Sample Preservation have been added.

A section on Vapor Intrusion has been added. To evaluate vapor intrusion pathways, the EPA recommends using the guidance developed by the Interstate Technology & Regulatory Council (ITRC).

Table 1 – “Tier 1 Surface Soil”, Table 2 – “Tier 1 Subsurface Soil”, and Table 3 – “Tier 1 Groundwater RBSLs and Standards” have been updated and incorporate the revisions previously mentioned.

The 30-Day UST Release Report in Appendix A has been updated to be compliant with the 2005 Energy Act.

The Master Table (Appendix C) has been updated to reflect revisions in the direct contact risk equation calculations and also includes leaching and direct contact values for 1,2 DCA and EDB.

Appendix D – Vadose Zone Modeling Technical Support Document has been modified to incorporate 1,2 DCA and EDB leaching modeling.

Appendix E – Direct Contact Technical Support Document has been revised to reflect updates to applying volatilization factors, updates on calculation of dermal factors, updates on toxicity values, minor corrections and changes to the direct contact spreadsheets based upon current guidance and policy; updates related to DEQ-7, and addition of RBSLs for EDB and 1,2 DCA.

Appendix F – Updates to text include revised EPH screen concentrations for soil and groundwater.

Copies of Tier 1 RBCA may be obtained by contacting the Remediation Division, Department of Environmental Quality, P.O. Box 200901, Helena, Montana 59620-0901, (406) 841-5000; or at <http://deq.mt.gov/rem/hwc/rbca/LinksTOC.asp>. ■

Congratulations to Big Sky Economic Development Authority

EPA has selected Big Sky Economic Development Authority for two brownfields assessment grants totaling \$400,000. Hazardous substances grant funds will be used to conduct at least twelve Phase I and up to five Phase II environmental site assessments, targeted toward the East Billings Urban Renewal District, at no cost to the property owner. Petroleum grant funds will be used to perform the same tasks at sites with potential petroleum contamination. Grant

funds also will be used to support community outreach activities. Sites will be assessed **ONLY** with property owner permission and cooperation. Big Sky EDA will follow federal procurement guidelines in contracting with a professional firm to carry out the assessment project. ■

Relationship–Building and Conflict Resolution with Dr. Dudley Weeks



SAVE the DATE



September 22-23, 2008

DEQ's Waste and Underground Tank Management Bureau is hosting a two-day class on "*Conflict Resolution.*" Dudley Weeks will be teaching his Conflict Resolution Partnerships course September 22 and 23, 2008 in Helena.

Dr. Weeks is a renowned conflict resolution facilitator and trainer who has worked with all sectors of society in more than 100 countries. He has dealt with hostage crises, civil wars, ethnic conflicts, community development needs, and citizen-government cooperation. His training focuses on practical skills essential to effective conflict resolution, leadership, and cooperative planning.

Dr. Weeks is an engaging teacher who brings a wealth of knowledge and experience to his classes. The class is highly interactive and includes scenarios taken from real-life conflicts. During this two day program, participants learn the Partnership LifeSkills™ and the Conflict Partnership Process developed by Dr. Weeks. These methods work on the principle that a successful and lasting resolution to a conflict must include building a relationship between all involved.

Conflict Resolution Partnerships provides a way of utilizing differences and conflict to:

- Resolve immediate conflicts effectively;
- Develop outcomes which are mutually beneficial to all parties involved;
- Improve the overall relationship, and sustain that improvement; and
- Learn practical skills to be used effectively in any future conflicts.

Dr. Weeks holds a doctorate in Political Science and has received numerous international awards, including The United Nations of Youth Peacebuilders Award and two nominations for the Nobel Peace Prize. His books include *The Eight Essential Steps to Conflict Resolution*; *Conflict Partnership*; *The Unsteady State: Environmental Problems, Growth and Culture*; and *Humatriotism*. He has also published several books of poetry and was the subject of a BBC documentary in 1998.

Registration forms will be sent out in June 2008. If you would like more information or would like to be included on the mailing list, please contact Becky Holmes (DEQ's Hazardous Waste Section) at 406-444-2876 or rholmes@mt.gov.

More information on Dr. Weeks is available on his website at: <http://www.dudleyweeks.com>. ■

MONTANA BROWNFIELDS WORKSHOP



**September 4, 2008
8:30 a.m. – 5:00 p.m.**

**City Council Chambers
140 West Pine Street
Missoula, Montana**

Hosted by:
**The City of Missoula and
The National Association of
Local Government Environmental Professionals**

For more information contact:
**Kisha Schlegel
kschlegel@co.missoula.mt.us**

Brownfields Grant Makes Meth Conference Possible

The Montana Department of Environmental Quality invited the public to attend a free conference titled, Methamphetamine—Hazards to Your Health and Home, held in Helena, Montana on March 3-4, 2008.

The conference was made possible through a Brownfields grant. About 100 attendees listened to nationally known speakers talk on methamphetamine and the dangers that meth environments and meth labs present to human health and property. Keynote speakers, Dr. Kathryn Wells, M.D., Medical Director of the Denver Family Crisis Center; and Dr. Sandra Wells, Ph.D., a postdoctoral fellow at the University of Montana's Center for Environmental Health Sciences discussed human health related exposures of meth and its affect on our families and children. Ken Poteet, an agent with the Montana Department of Justice, described a meth lab bust, and Kara Richardson with the Montana Department of Health and Human Services described the repercussions of children living in meth labs. Larry Stone, a



meth lab cleanup contractor certified in Oregon and Washington, detailed the cleanup of a meth lab contaminated property. A roundtable discussion highlighting EPA's proposed Best Management Practices for meth cleanup and a discussion of possible brownfields funding of meth lab properties ended the conference. ■

DEQ Performs Free Phase I Environment Assessments

The Montana Department of Environmental Quality (DEQ) State Brownfields Program has completed three Phase I Environmental Assessments (EAs) with All Appropriate Inquiry (AAI) in the last calendar year. As a part of its 128(a) grant, DEQ requests funding to conduct a limited number of Phase I EAs at no cost to eligible applicants. DEQ contracts the Phase I work to one of its contractors.

DEQ conducted two Phase I EAs for the City of Lewistown, one at a former laundry facility and the other at a former nurse's school. The Phase I EA at the laundry facility will help the City of Lewistown proceed with purchase of the property for eventual inclusion into a park that will serve as an attractive "Gateway to Lewistown." Currently, the property is the site of run-down and dilapidated buildings. At the former nurses' school, the Phase I EA enabled the City of Lewistown to secure funding to refurbish and remodel the building into low income apartments.

The third Phase I EA, which was requested by Flathead County, addressed the former "Kalispell Feed and Grain" property south of Kalispell. The property had numerous potential environmental

concerns including pesticides in the soil, sand-blasting residue, and unresolved underground storage tank issues. Since the Phase I EA, DEQ and Flathead County have resolved the underground storage tank problem. Also, DEQ assisted Flathead County with a successful application for Phase II Site Assessment work under EPA's Targeted Brown fields Assessment Program. The work being done at the Kalispell Feed and Grain property will ensure that environmental problems at the property are appropriately addressed to protect human health and the environment. Flathead County plans to sell the portions of the property once the environmental issues are resolved, while retaining part of the property as park or riparian area and for possible inclusion in Kalispell's trail system.

Currently, DEQ is working on Phase I EAs at sites in Deerlodge, Malta, and Helena.

If you are interested in applying to DEQ for a Phase I EA, contact Laura Alvey at 406-841-5062 or lalvey@mt.gov. For more information about eligibility and for an application, please visit this website: <http://deq.mt.gov/Brownfields/TargetedBA.asp>. ■

Brownfields Contacts



General Brownfields Information

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Hazardous Substance Brownfields

Laura Alvey (406) 841-5062
Site Response Section

Petroleum Brownfields

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LUST/Brownfields Section

Jeff Kuhn (406) 841-5055
LUST/Brownfields Section

Meth-contaminated Properties

Deb Grimm (406) 444-5286
Methamphetamine Cleanup Program

Hazardous Waste Generators

Becky Holmes (406) 444-2876
Hazardous Waste Section

Subscribe to a DEQ Brownfields e-mail at:

<http://deq.mt.gov/ListServe/BrownfieldsStep1.asp>

Join DEQ's Listserve if you want to receive periodic e-mails regarding brownfields in Montana. This list serve is available for anyone to post messages, but be careful if you reply to a message on the list because your message will automatically go to EVERYONE ON THE LIST!

Please contact Christal Anderson if you want to be added to or taken off the mailing list for hard copies of *The Outreach* at:

CAnderson3@mt.gov or call 406-841-5056

