BIG RIVER WATERSHED MASTER PLAN

Prepared for:
Jefferson County Council
  Attn: County Executive Ken Waller
St. Francois County Commission
  Attn: Presiding Commissioner David Cramp
Washington County Commission
  Attn: Presiding Commissioner Marvin Wright

Submitted by:
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INTRODUCTION

The segment of the Big River that is the subject of this discussion extends approximately 92 miles from Leadwood in St. Francois County to the confluence of the Big and Meramec Rivers, near Eureka, in Jefferson County. That stretch of river, including the riverbed, its banks and the surrounding floodplain, contains a significant amount of lead and leaded sediment – generally thought to be the residual of a 300+-year legacy of lead mining in the region.

That sediment has caused harm to the natural resources of the region. The sediment also has the potential to cause harm to the human population residing, working and recreating in the area. Further, the leaded materials currently contained within the confines of the Big River basin have the potential to migrate to other non-contaminated areas within or completely outside of the watershed – by both naturally occurring and man-made processes.

Several local, state and federal agencies have been actively engaged for more than twenty years in the process of remediation and/or management of the lead contamination found throughout the “Old Lead Belt.” That work has included (but is not limited to) efforts to stabilize the large tailings piles from former mining operations in St. Francois County; as well as clean-up of residential properties, school yards, playgrounds, etc. in all three counties where lead levels in the soil have exceeded applicable human health-based limits.

With several of these individual clean-up efforts underway, in several area counties (see EPA Fact Sheets in Appendix F), the agencies have now focused additional attention on the challenge of managing the lead contained in and moving through the watershed. It should be noted that stabilization of the tailings piles located along the river (and/or its tributaries) constituted the first and most critical of the management strategies affecting the sediment flow in the river. High and fast moving water events can and frequently do mobilize the sediment that is found within a stream, its banks or on the floodplain; moving it downstream, further dispersing it onto the floodplain and ultimately into the next watershed. For Big River, that would be the Meramec River Watershed.

Several agencies are now in the process of preparing documentation requisite to the cleanup and management of lead in the watershed as well as the restoration of the damaged natural resources. The Big River Watershed Master Plan process was conceived with the notion that this public engagement initiative might serve as a conduit for input to and participation in that agency planning process on a proactive – and ongoing - basis. Ideally, this Master Plan is intended to provide substantive concepts and specific strategies for consideration by the agencies in the development of their plans – those plans focused on the remediation and restoration alternatives that might be possible in the region.
To this point, the process has yielded considerable input from stakeholders and continued interaction between the stakeholders and agency staff. Watershed group meetings have been candid, generally spirited and predominantly collegial. Subject matter of the meetings has routinely included presentations from agency staff related to agency responsibilities, objectives and methodologies. Stakeholder input has covered a range of topics, including economics, socio-politics, public health, and recreational use of the watershed. It should be noted that agency staff was present for all but one Watershed Group meeting, providing responses in the immediate term or getting back to stakeholders at the ensuing meeting if an answer needed to be researched. Agency responses to inquiries are included in the meeting summaries in Appendix B.

The narrative that follows will describe the process in more detail and attempt to draw conclusions that prove useful to agency staff and local officials alike.

It was agreed by each of the Watershed Groups that given the importance of awareness within the three-county region relative to lead health issues, a message related to public health should be prominently featured in the Master Plan document. As such, for those not yet familiar with the health implications of lead contamination, the next section provides a brief, but clear discussion about lead poisoning and the local resources available to assist in the assessment and treatment thereof. This information has been excerpted from the St. Francois County Health Department “Lead Poisoning” website – which has been incorporated in its entirety in Appendix H.
LEAD HEALTH IN THE OLD LEAD BELT

From the St. Francois County Health Department “Lead Poisoning” website – see Appendix H

WHAT IS LEAD POISONING?
A disease caused by swallowing or inhaling lead – even small amounts of chipped lead paint or leaded dust (sediment).

WHAT ARE THE EFFECTS OF LEAD POISONING?
Lead is most harmful to young children (under 7 years). Since lead is easily absorbed by a child's growing body, lead can interfere with the developing organs and the brain.
Pregnant women who are exposed to lead are also at risk.
There is no safe level of lead in anyone at any age.

FREE LEAD SCREENING IS AVAILABLE IN EACH COUNTY

For information about health effects of lead and availability of lead screenings:

In JEFFERSON COUNTY, please contact the Jefferson County Health Department at http://www.jeffcohealth.org/component/finder/search?q=blood+lead+screening&Itemid=101, or call 636-797-3737.

In ST. FRANCOIS COUNTY, please contact the St. Francois County Health Department at http://www.sfchc.org/34.html, or call 573-431-1947, ext. 142.

In WASHINGTON COUNTY, please contact the Washington County Health Department at http://www.washingtoncountyhealthdepartment.org/id2.html, or call 573-438-2164.

Or contact the Missouri Department of Health and Senior Services at http://health.mo.gov/living/environment/lead/guidelines.php, or call 573-751-6102 or 866-628-9891.

Or contact the U.S. EPA at http://www2.epa.gov/lead or call (913) 551-7261.
EXECUTIVE SUMMARY

In December 2010, the Missouri Counties of Jefferson, St. Francois and Washington, using funds provided by U.S. EPA through a Cooperative Agreement, retained the services of URS Corporation to facilitate a Master Planning Process for the approximately 92 mile stretch of Big River Watershed that runs from Leadwood in St. Francois County to near Eureka in Jefferson County. This section of the Big River Watershed is, as indicated from studies conducted by state and federal agencies, significantly contaminated with heavy metals, the most prominent being lead. Those studies have indicated the existence of contaminants, in elevated levels, not only between the banks of the Big River, but throughout the floodplain from Leadwood to Eureka.

That sediment has already caused harm to the natural resources of the region and threatens to cause further harm to the natural resources of both the Big and Meramec River Watersheds. The sediment also has the potential to cause harm to the human population residing, working and recreating in the area. For decades, the U.S. Environmental Protection Agency (EPA), U.S. Fish & Wildlife Service (FWS), and the Missouri Department of Natural Resources (DNR) have asserted their statutory and regulatory responsibility to address the contamination, as well as the harm, and potential harm, associated with the lead contamination throughout the region.

Development of a Big River Watershed Master Plan was conceived of as a compliment to that agency process, with the notion that a public engagement initiative might serve as a conduit for stakeholder input to and participation in agency process on a proactive – and ongoing - basis. Ideally, this Master Plan is intended to provide substantive concepts and specific strategies for consideration by the agencies in the development of their plans for the Big River Watershed – those plans focused on the remediation and restoration alternatives that might be possible in the region.

The County Executive and Presiding Commissioners in all three counties anticipated the need for some degree of local coordination of the efforts of all these agencies, as well as a mechanism to provide for real time communication between local interests and agency officials – before and during both planning and implementation stages of this process. To that end, the counties worked with U.S. EPA to secure funding to jointly contract professional consulting services to assist in that locally coordinated effort (deemed to be a “pilot project” by virtue of the timing of the solicitation of inputs relative to the development of the formal plans by the agencies). Following a formal RFQ process, URS Corporation was selected to develop a Master Plan for the section of the Big River Watershed that runs through the three counties. Specifically, URS was tasked with three primary objectives.

- **TASK 1**, develop and/or identify; then support infrastructure in each county to formally and continually participate in and inform watershed management discussions with the agencies. This task would include provision for tri-county interaction and oversight as well.

- **TASK 2**, engage the agencies - and any interested elected officials - proactively and aggressively, to establish meaningful and sustainable lines of communication. Then, utilize those lines of
communication to assert a formal and routine local voice in the agency planning and implementation processes.

- **TASK 3**, develop a “Master Plan” that will both seek to clearly articulate the collective interests, needs and perspectives of the local/county stakeholders; and assimilate and articulate the inputs and intentions (if known) of the agencies.

Meetings were held in each county during the following months. Meeting notices, agendas, attachments and summaries are provided in *Appendix B*.

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**SCOPE IMPLEMENTATION:**

**TASK 1** – Watershed Groups were formed in each of the Counties. The Jefferson County Watershed Group was led by the Jefferson County University Extension Ag & Rural Development Specialist. The group met routinely from April 2011 to May 2012. The group averaged between 50 and 100 attendees who proved to be energetic, very engaged in the process, and generally very thoughtful in their contributions to the collective dialogue. While staff at the extension office has changed, it is expected that future Jefferson County Watershed Group meetings could still be facilitated by that office. The St. Francois County Watershed Group included a mix of members from an existing/former watershed group (established to address public comment requirements related to a separate DNR regulatory effort a few years earlier). That group averaged 15 to 20 individuals on a regular basis. The group was led by the contractor (Mike Alesandrini), a resident of St. Francois County and member of the former watershed group. This group also proved to be energetic, engaged and thoughtful in their contributions. Mr. Alesandrini, as private citizen – not contractor – (or others who have expressed interest in the continued existence of the group) have committed to continued leadership of that group. The Washington County Watershed Group was less well attended by private sector representatives. The County Health Department Director, along with the County Industrial Development Authority Director (who jointly led the effort) and the County’s Presiding Commissioner were the most routinely engaged in the county. Attendance notwithstanding, the meetings in Washington County did routinely contribute thoughtful and salient elements to our collective discussions. It is expected that the two local institutions leading the groups would continue to facilitate meetings in that county.
Details about Watershed Group meetings can be found in Appendix B, including Meeting Notices and Agendas; Meeting Summaries; and the List of Attendees.

**Task 2** – Agency staff was also routinely involved in the monthly watershed group meetings. Though sometimes contentious, the exchanges between stakeholders and agency staff were clearly informative and valued by the stakeholders. One meeting was convened without agency staff to see if their absence might impact discussion. It did – negatively. Stakeholders clearly preferred agency staff presence at the meetings. Agency staff received the same routine updates and meeting minutes as did the stakeholders. It was clear that relations between stakeholders and agency staff improved and strengthened over the course of the group meetings and that agency staff received unmeasured, real time input from stakeholders via these group meetings. The same would be expected of future watershed group meetings.

County officials (elected, administrative and agency) have been routine attendees at the Watershed Group meetings. Periodic and routine updates were also provided by the contractor to the County Council (work sessions) or at County Commission meetings (see Appendix E). As schedules allowed, regulatory agency staff would also attend county meetings to provide updates and answer questions about work being performed in each county (not necessarily limited to watershed discussions). As part of this outreach effort, relationships have clearly been established and/or enhanced between county officials/institutions and state/federal agencies. Further, it is also apparent that many county officials, who commenced the process with a limited understanding, or appreciation for the depth and breadth of EPA operations in the region, now have a much greater familiarity with those operations and the agency staff responsible for the activity. Similarly, the message was conveyed consistently from county officials that more routine communication from agency staff was desired – including more frequent appearances in front of County business meetings. As to “voice” of the local citizenry, that considerable input is referenced above and further detailed elsewhere in this report.

It should also be noted, in the context of collaboration, that if not a result of, as part of this outreach effort, cross agency and cross program (within agencies) collaboration has clearly been occurring relative to the collective administration of this watershed management exercise. A technical advisory committee (subgroup of the collective watershed groups), including some county officials, has met with representatives of state and federal agencies to address a variety of issues in a work session format (see Appendix C for details as to these meetings – agendas, attendees, meeting summaries, etc.). These discussions were casual and collegial and proved beneficial in the exercise of technical issues, questions, concerns, etc. It has also been noted by agency staff that several meetings and conference calls have been convened by (multiple) agency staff to address watershed-specific issues, strategies, etc. between and in anticipation of watershed group activities. Those discussions have been included in the activity of the Big River Task Force, which consists of seven state and federal agencies that have been meeting quarterly since 2011. Further, the Missouri Lead Strategy Group, a group of eight state and federal agencies that coordinate lead issues on a statewide basis, has been meeting since 2005.
The information flow represented by and/or resulting from the process described above is memorialized in the Appendices to this Master Plan. The ongoing dialogue; meeting minutes, notes, and presentations; periodic written updates for county meetings and press releases all provide feedback/input to the agencies consistent with the spirit of this process. The interactions have been fluid with stakeholders, municipal officials and agency staff.

**TASK 3 – Completion of this document ("Master Plan") is Task 3**

**MASTER PLAN - KEY RECOMMENDATIONS**

1. Reconstitute the Big River Watershed Groups (“BRWG’s”) in each county, with local citizenry facilitating discussion for the benefit of the ongoing agency planning efforts.

2. Maximize & sustain outreach and educational efforts as means to convey lead health messages into the broader community, and engage the citizenry in the BRWG initiative.

3. Improve local technical capacity informing decision-making process:
   - Develop a Technical Advisory Group (TAG) as part of and to better assess and inform BRWG deliberations; and provide support for ongoing discussions with agencies, citizens and academicians, alike.

4. Establish technical understanding of in-stream sediment mobility specific to Big River

5. Provide for local participation in remediation and restoration efforts
   - a. Impact agency decision-making process related to project proposals
   - b. Maximize the share of local contractors, labor, businesses and land-owners in the distribution of proceeds available to fund projects

6. Facilitate Pilot projects to encourage innovative solutions for commercial operations within the watershed whose operations may be materially disrupted by this remediation and restoration effort

7. Actively promote long term Stewardship
BACKGROUND

MASTER PLANNING PROCESS INITIATED
In December 2010, the Missouri Counties of Jefferson, St. Francois and Washington, using funds provided by U.S. EPA through a Cooperative Agreement, retained the services of URS Corporation to facilitate a Master Planning Process for the approximately 92 mile stretch of Big River Watershed that runs from Leadwood in St. Francois County to near Eureka in Jefferson County - where the Big and Meramec Rivers meet. This section of the Big River Watershed is, as indicated from studies conducted by state and federal agencies, significantly contaminated with heavy metals, the most prominent being lead. Those studies have indicated the existence of contaminants, in elevated levels, not only between the banks of the Big River, but throughout the floodplain from Leadwood to Eureka.

That sediment has already caused harm to the natural resources of the region and threatens to cause further harm to the natural resources of both the Big and Meramec River Watersheds. The sediment also has the potential to cause harm to the human population residing, working and recreating in the area. For decades, the U.S. Environmental Protection Agency (EPA), U.S. Fish & Wildlife Service (FWS), and the Missouri Department of Natural Resources (DNR) have asserted their statutory and regulatory responsibility to address the contamination, as well as the harm, and potential harm, associated with the lead contamination throughout the region. The process by which these agencies have and will continue to prosecute that responsibility in the Big River Watershed is discussed below.

Development of a Big River Watershed Master Plan was conceived of as a compliment to that agency process, with the notion that a public engagement initiative might serve as a conduit for stakeholder input to and participation in agency process on a proactive – and ongoing - basis. Ideally, this Master Plan is intended to provide substantive concepts and specific strategies for consideration by the agencies in the development of their plans for the Big River Watershed – those plans focused on the remediation and restoration alternatives that might be possible in the region. Following the background narrative provided below, detailed discussion of the Master Planning process and its outcomes will be provided.

LEGACY OF LEAD MINING
Much of this contamination has been attributed to a legacy of over 300 years of lead mining in the area. The mining activity in the “Old Lead Belt” has ranged from that of individuals; to modest commercial ventures; to large-scale, industrial mining operations. Much of the leaded material found throughout the area can be attributed to mine-related operations including: mining waste management (piles and impoundments); processing facilities (smelters and mills); and transportation conduits (rail lines and roadways). The residual and waste materials from these operations was commonly used for years as fill throughout the region for industrial, commercial, public and private uses. Finally, these residual and waste materials were also commonly left exposed (and unconstrained) to the elements (wind, rain, etc.) for much of the 300 year history referenced above. As such, leaded sediment from those mining operations has undoubtedly had the opportunity to migrate downwind and downstream from its place(s) of origin.
The EPA and DNR have been engaged in remediation activities related to lead (and other heavy metals) contamination in the Old Lead Belt area of Southeast Missouri since the early 1990s. While the agencies’ activities have not been limited to St. Francois, Jefferson and Washington Counties, the content of this Plan is focused on regulatory activities – past, present and future – in these three counties.

Of primary concern from a regulatory perspective are the impacts of lead contamination on public health and the environment. Ingestion/inhalation of lead particles by humans is hazardous, with particular concern for exposure to children in their most formative years (utero to 7 years of age). Numerous impacts on the environment have also been articulated in agency documentation, ranging from degradation of habitat to direct impact on wildlife in and out of the water.

U.S. EPA is actively involved in directing or overseeing remediation (clean-up) activities in each of the three counties. Individual clean-up activities (including clean-up of residential yards as well as schools and playgrounds) are grouped into what the U.S. EPA styles “operable units.” These operable units – generally defined by geographic location or common site characteristics (type/genesis of contamination) – are described in EPA literature contained on the U.S. EPA website or found in hard copy in local repositories (generally local libraries) – see Appendix F for Fact Sheets for numerous sites/units. Each of these discreet units has its own characterization, Record of Decision or “ROD,” and agency oversight. Not every EPA operable unit affects or is affected by the issues discussed in this Master Plan – which is specific to the Big River Watershed. Appreciation of this EPA approach (multiple operable units and multiple sites) is important in understanding the information that will be shared with the community on an ongoing basis (there is not a single EPA voice and not every message “from EPA” necessarily relates to the Big River Watershed – even if parts of the watershed are actually contained within the geographic boundary of other “operable units”).

While it is not absolutely clear what the source of the contamination might be for every area identified as contaminated in the Big River Watershed, it is apparent that a great deal of regulatory emphasis has been placed on the maintenance of the six former mining sites located within the watershed (in St. Francois County) for which large tailings piles or impoundments are still being managed. Again, there is extensive literature available delineating those sites and describing the activities that have been planned (or already completed) in the process of remediating and stabilizing those sites.

REGULATORY PRESENCE IN THE REGION
The “Big River Mine Tailings Superfund Site,” as designated by U.S. EPA under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), encompasses the lead mining sites in St. Francois County. There are seven of the former large scale sites located in St. Francois County, alone – six situated within the Big River Watershed and the seventh located in the St. Francis River Watershed. Each of those former lead mining operations produced large quantities of mine waste and is subject to specific federal clean-up requirements. In 1992, the Big River Mine Tailings Superfund Site was listed on the agency’s National Priority List (NPL).
The former large-scale mining operations included in this Superfund Site are:

- Desloge
- Leadwood
- Bonne Terre
- National
- Elvins/Rivermines
- Federal
- Doe Run (St. Francis River Watershed)

U.S. EPA-produced “Fact Sheets” describing each site are attached in Appendix F. Further detailed information about these sites and the regulatory activity associated with them can be found on a variety of state and federal agency websites, including EPA, FWS and DNR.

In addition to these St. Francois County Superfund Sites, several other sites are being addressed in Washington and Jefferson Counties as well. Those sites, for which Fact Sheets are also included in Appendix F, include:

- Washington County Lead District (with 4 distinct sites)
  - Furnace Creek
  - Old Mines
  - Potosi
  - Richwoods
- Washington County Palmer Site
- Washington County Pea Ridge Site
- Southwest Jefferson County Mining Site

As the Fact Sheets will indicate, and a plethora of other agency documentation (see agency websites or document repositories in each county) will attest, the EPA, FWS and DNR have been very active in the region (all three counties) for decades. Numerous formal decisions have been made already related to management of lead contamination in the region. And, discussions have been underway with various stakeholders and “potentially responsible parties” (PRPs) with interests in the Big River Watershed for years.

In late 2009, a PRP for one of the St. Francois County lead sites, the American Smelting and Refining Company (ASARCO), settled a bankruptcy case in federal court, from which the federal government and the state of Missouri became the beneficiary of over $100 million to be used for the remediation (clean up) and restoration of natural resources affected by that company’s former operations (not exclusive to the Parkland). Approximately $60 million of that total was designated to fund remediation and restoration activities in the vicinity of the Big River Watershed - it is estimated that this multi-agency, multi-jurisdictional operation will take decades to complete.
The agencies with control over these funds include the EPA; the FWS; the U.S. Forest Service (USFS); and the DNR. Other agencies with specific institutional interest in this effort include the U.S. Army Corps of Engineers (USACE); the Missouri Department of Conservation (MDC); and the Missouri Department of Health and Senior Services (DHSS), as well as a host of city and county health, environmental and economic development agencies. Several local, state and federal elected (and administrative) officials have also expressed a keen interest in both the process and the outcomes of this multi-agency effort.

The financial settlement will be used by the EPA and the State of Missouri under Superfund Program to address “release, or threatened release of a hazardous substances, pollutants or contaminants that could endanger human health and/or the environment.” The settlement will also be used for the “restoration of injured natural resources;” the oversight for which was to be vested with FWS and the State of Missouri (DNR) as trustees.

EPA and DNR are responsible for the development of a Record of Decision (“ROD”) for each operable unit and implementation of attendant remediation plans. The ROD for the St. Francois County portion of the Big River Mine Site (OU02) is currently, though tentatively, expected to be completed in 2016 (date subject to change based on a variety of variables). The FWS, USFS and DNR are responsible for development and implementation of a Natural Resources Restoration Plan. A draft of that plan was completed in August of 2013 and published in the Federal Register for public comment. The plan addresses the “restoration or replacement of injured natural resources; or acquisition of an equivalent resource.” More specifically, the Restoration Plan “describes the objectives and processes for programming existing restoration funds as well as future recoveries of restoration funds derived from the Natural Resource Damage Assessment and Restoration process.” The Restoration Plan would traditionally follow the development of a ROD by the EPA and state regulators that would discuss alternative remediation strategies. In this instance, because of the settlement, the draft restoration plan was completed in 2013, although the plan addresses restoration objectives for the entire Southeast Missouri Ozarks Region (not limited to the Big River Watershed).

Traditionally, such situations (multiple agencies and multiple planning efforts) might result in each agency independently developing plans to expend its allotment of funds from the total. While the agencies would most likely communicate with one another and share insights, there is no obligation for formal communication or coordination between agencies. Further, while each agency is subject to various public comment requirements, the information shared and comments received from the public tend to provide input or reaction to snapshots in time (public comment is generally solicited after agency plans are drafted); and may not practically render any ongoing conversation between local stakeholders and agency officials (and/or elected officials at local, state and federal levels).
NEED FOR A MASTER PLANNING PROCESS

Given the scenario described above, the executives and commissioners in all three counties anticipated the need for some degree of local coordination of the efforts of all these agencies, as well as a mechanism to provide for real time communication between local interests and agency officials – before and during both planning and implementation stages of this process. To that end, the counties worked with U.S. EPA to secure funding to jointly contract professional consulting services to assist in that locally coordinated effort (deemed to be a “pilot project” by virtue of the timing of the solicitation of inputs relative to the development of the formal plans by the agencies). Following a formal RFQ process, URS Corporation was selected to develop a Master Plan for the section of the Big River Watershed that runs through the three counties. Specifically, URS was tasked with three primary objectives – satisfaction of those objectives is discussed in the narrative following the bullets.

- **Task 1**, develop and/or identify; then support infrastructure in each county to formally and continually participate in and inform watershed management discussions with the agencies. This task would include provision for tri-county interaction and oversight as well.
- **Task 2**, engage the agencies - and any interested elected officials - proactively and aggressively, to establish meaningful and sustainable lines of communication. Then, utilize those lines of communication to assert a formal and routine local voice in the agency planning and implementation processes.
- **Task 3**, develop a “Master Plan.” This master planning document will both seek to clearly articulate the collective interests, needs and perspectives of the local/county stakeholders; and assimilate and articulate the inputs and intentions (if known) of the agencies.

The full scope of work (SOW) for that contracted activity is listed in *Appendix A*. The work product generated through the execution of this SOW is located in the following appendices:

- **Appendix B** Watershed Group Meetings
- **Appendix C** Technical Advisory Committee of Watershed Group
- **Appendix D** Press Releases Issued during Planning Period
- **Appendix E** Material Prepared for County Commission/Council Meetings and Work Sessions

**TASK 1** – Watershed Groups were formed in each of the Counties. The Jefferson County Watershed Group was led by the Jefferson County University Extension Ag & Rural Development Specialist. The group met routinely from April 2011 to May 2012. The group averaged between 50 and 100 attendees who proved to be energetic, very engaged in the process, and generally very thoughtful in their contributions to the collective dialogue. While staff at the extension office has changed, it is expected that future Jefferson County Watershed Group meetings could still be facilitated by that office. The St. Francois County Watershed Group included a mix of members from an existing/former watershed group (established to address public comment requirements related to a separate DNR regulatory effort a few years earlier). That group averaged 15 to 20 individuals on a regular basis. The group was led by the contractor (Mike Alesandrini), a resident of St. Francois County and member of the former watershed group. This group also proved to be energetic, engaged and thoughtful in their contributions. Mr.
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Collaboration between the three counties (county officials) is also expected to continue. The interaction between officials in person was not necessarily routine. But, there was, in fact, other than coordination of the EPA project administration, really limited need or opportunity for routine collaboration between county officials. Communication amongst the three was fine, as needed.

Details about Watershed Group meetings can be found in Appendix B, including a list of meeting dates, Meeting Notices and Agendas; Meeting Summaries; and the List of Attendees.

**TASK 2** – Agency staff was also routinely involved in the monthly watershed group meetings. Though sometimes contentious, the exchanges between stakeholders and agency staff were clearly informative and valued by the stakeholders. One meeting was convened without agency staff to see if their absence might impact discussion. It did – negatively. Stakeholders clearly preferred agency staff presence at the meetings. Agency staff received the same routine updates and meeting minutes as did the stakeholders. It was clear that relations between stakeholders and agency staff improved and strengthened over the course of the group meetings and that agency staff received unmeasured, real time input from stakeholders via these group meetings. The same would be expected of future watershed group meetings.

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**TASK 3** – Completion of this document (“Master Plan”) is Task 3.

**MASTER PLAN – “PILOT PROJECT”**

The scope of this project was, in fact, limited based on specific objectives of the pilot project. The geographic reach of this project is bounded by Leadwood on one end - the location of the first of the six large scale sites (moving from upstream to downstream – to the north) contained in the Big River Mine Tailings Superfund Site, and extends through the confluence of the Big and Meramec Rivers, near Eureka. Additionally, where most Watershed Plans would take into account all contaminants from any sources in the watershed, this project was and is solely focused on the lead contamination found in and about the watershed – again, per the constraints of the pilot project. And, the project was focused further onto the impacts from and management of lead contamination attributed to migration of lead from point sources within the watershed – generally associated with legacy mining operations (large and small). It should be noted for the purposes of this discussion that the river system itself, with leaded sediment found in significant quantities in stream as well as out of bank, is considered to be, unto itself, a point source. Finally, it should be noted that while most of the migration contemplated in this plan has/is expected to occur via communication through the movement of water during normal and high flow events, this exercise has also necessitated the consideration of migration of lead sediment via movement of watershed-related materials harvested or excavated and commercially distributed by residents of the watershed (sand/gravel, soil, sod, etc.).
During the course of this process, a draft Restoration Plan was crafted by FWS and DNR. That document, once finalized will provide a basis for soliciting projects from within the region aimed at restoration of injured natural resources.

EPA, in conjunction with DNR and the U.S. Forest Service, will be creating a ROD for this operable unit once a preferred alternative(s) is (are) selected. A formal remediation strategy (set of strategies) will then be considered based on the alternative(s) identified in the ROD.

“OUR MO WATERS” INITIATIVE
As part of a recently instituted watershed management approach to regulation of the waters of the state (of Missouri), the “Our MO Waters” initiative was rolled out by Missouri Department of Natural Resources during this project period. The Big River Watershed was selected as a pilot stream for application of this new approach (along with two other Missouri Rivers). Stakeholders from throughout the watershed (in its entirety – not just downstream of the tailings piles) were invited to participate in a 2013 summit that was held at Mineral Area College in Park Hills in October. The event featured discussions about the watershed that were more comprehensive in nature than the Watershed Group discussions in meetings held as part of the Master Planning process (by design). Lead was one of several issues addressed in the summit process. For more information about the summit or the results thereof, please go to http://www.dnr.mo.gov/omwi/documents/omw-bigriver-factsheet.pdf or see Appendix G.

URBAN WATERS FEDERAL PARTNERSHIP
Another initiative that may prove helpful in leveraging both resources and agency attention is the Urban Waters Federal Partnership. “The Meramec River and Big River Restoration Project” is one of eleven newly selected locations for the nation’s Urban Waters Federal Partnership. “This partnership will (is intended to) reconnect urban communities, particularly those that are overburdened or economically distressed, with their waterways by improving coordination among federal agencies and collaborating with community-led revitalization efforts to improve our nation’s water systems and promote their economic, environmental and social benefits.” (from EPA Federal Partnership Fact Sheet – see Appendix I)

BIG RIVER WATERSHED FACT SHEET
See Appendix G for Fact Sheet (provided by Our MO Waters/DNR).

LAND USE/PLANNING IN THE WATERSHED
Most of the land in and around the Big River in these counties is rural, agricultural and/or undeveloped. There are small pockets of commercial activity on the river or on the adjacent floodplain, including sand and gravel operations; topsoil operations, sod farming and recreational support services. There is residential property, both urban and rural (list of communities provided in Appendix G) that is located within the floodplain. But, most of the dense population bases are located well off the floodplain (and thus remain unaffected by natural migration of sediment in the river) – see attached map. There is very limited privately-owned recreational business use and a small number of surface water intake/outfalls (utilities).
Neither St. Francois nor Washington Counties are subject to planning and zoning. There was no indication from any of the Watershed Group or County Commission meetings (that I attended) that either county or any department or agency therewith was interested in policing lead now or in the future.

Jefferson County has planning and zoning: “Code Enforcement Division” – “The Division was formed in 1967 to provide and enforce a local building code. The Division regulates matters concerning the construction, alteration and occupancy of all structures in unincorporated Jefferson County.” Despite the existence of a planning and zoning function, no indication was given by anyone in any department or any agency (to my knowledge) that interest exists for a county-run lead oversight effort.

**JURISDICTIONAL DYNAMICS**

Currently or expected to be involved in (this) Watershed Group discussions:

- County Commissioners, Executives, and elected and administrative officials

- Municipal elected and administrative officials for Communities in the watershed affected directly by this Master Plan include:
  - Jefferson County: Byrnes Mill, Cedar Hill, De Soto, High Ridge, Hillsboro, Scottsdale
  - St. Francois County: Bismark, Bonne Terre, Desloge, Frankclay, Leadington, Leadwood, Park Hills, Terre du Lac, Worthen
  - Washington County: N/A

- Legislative and Congressional Delegates are also involved in this discussion:
  - U.S. Senators Blunt (R) and McCaskill (D)
  - Congressman Smith (R - 8th) and Luetkemeyer (R - 3rd)
  - MO Senators Romine (R- 3rd) and McKenna (D - 22nd)
  - MO Representatives (McCaherty – R - 97th; Frame – D - 111th; Wieland – R - 112th; McKenna – D - 114th; Gannon – R - 115th; Engler – R - 116th; Black – D- 117th; Harris – D - 118th; Fitzwater – R - 144th)

- Local, state and federal agencies (included, but not limited to) include:
  - EPA; FWS; USFS; U.S. Dept. of Agriculture (USDA); U.S. Economic Development Administration (EDA); U.S. Department of Housing & Urban Development; Health; Corps of Engineers; DOT
  - DNR; MDC; DHSS; DOT; Ag; DED, SWCD’s
  - County Health Departments, Road and Bridge Departments; law enforcement; etc.
  - Water/Waste Water Treatment/Utility Districts
    - Jefferson County Public Water/Sewer Districts
LOCAL PERSPECTIVES – INITIAL PERCEPTIONS FROM WATERSHED GROUP MEETINGS

The general tenor of local citizens regarding Big River Watershed Group Master Planning discussions differed initially between county watershed groups. Ultimately, however, the citizens across all three counties seemed to find considerable commonality of concerns, interests and objectives related to the development and implementation of plans to address lead contamination challenges in the watershed.

- In ST. FRANCOIS COUNTY, citizens have been working with state and federal regulators since the early 1990s on issues related to the numerous legacy lead mining sites located in several communities in county. Awareness of the potential implications of residual heavy metals contamination in the county has been the subject of public discourse throughout the county for more than two decades. The long term association with lead mining in most of these communities; the obvious physical presence of the tailings piles; the ongoing site management operations; the routine clean-up efforts ongoing in several communities; as well as the high profile experience with a segment of the local population that has had to deal with lead poisoning in a public fashion have placed the issue of lead contamination squarely in the public eye for decades. Local media has routinely reported on a host of issues related to lead, including coverage of countless EPA and DNR public meetings held throughout the county over the years. Further, a DNR-initiated Big River Watershed Group had been meeting in the County since 2009.

As a result of the long term exposure of the citizens to the issues, the key players and the ongoing involvement of regulators in the county’s day to day activities; the St. Francois County Big River Watershed Group participants were generally accepting of the attention being given to the Big River Watershed. The general response to the subject matter introduced at the Watershed Group meetings did not seem to be viewed as extraordinary or particularly troublesome. The recent developments associated with ASARCO did garner some added interest and intensity compared to previous watershed group meetings in the county.

Participation in the monthly/routine Big River Watershed Group meetings averaged between 15 and 20 people, with dozens who have attended meetings or provided inputs regarding watershed issues over the past three years. The majority of those attending represented local/regional institutional interests or those with commercial interest in the project implementation phase of the restoration/remediation processes. A few landowners also frequented the meetings. The primary concerns expressed throughout those meetings focused on economics, specifically related to participation of local companies and labor in project work, as well as impacts of any policy changes related to the watershed on existing commercial operations in and about the river. Property rights and personal involvement in any project work conducted on private property were also concerns routinely expressed by citizens.

- In WASHINGTON COUNTY, citizens seemed similarly, generally accepting of the Watershed Group activity. Not to the same degree as in St. Francois County, but, Washington County had been
recently engaged with state and federal regulators in fairly routine and public encounters addressing yard clean-ups in a number of locations throughout the county— including the County seat, the City of Potosi. Washington County too has a longstanding association with mining, both lead and barite. Further, the target of the Big River Watershed Master Planning initiative necessarily limited the number of citizens directly affected by this discussion. Very few property owners (2), other than the state park, are actually located on the Big River, downstream of the St. Francois County superfund sites (tailings piles).

As such, interest in the meetings tended to be light, with meetings primarily attended by elected and agency officials as well as institutional economic development interests/advocates from the region. Similar to St. Francois County, local concern (expressed at meetings) focused on economic impacts on the county as well as preservation of property rights.

- In JEFFERSON COUNTY, citizens expressed considerably more affect to the subject matter of the presentations and the discussions at the Watershed Group meetings. The initial meetings were attended by nearly 100 residents, many of whom owned property in the Big River Watershed. Many of those attending had not been directly engaged in previous agency outreach efforts aimed at yard clean-ups in the southwest part of the county. As such, for many, these Watershed Group meetings provided a first exposure to discussions regarding potential lead contamination on their properties and the potential for government agency activity associated therewith.

The legacy of lead mining was not as familiar to citizens of Jefferson County as to the citizens in St. Francois and Washington Counties. Similarly, the incidence of elevated blood lead levels in local child populations had not been as visible a public health issue as in the other counties. In short, there was (and still is, to some degree) considerable and widespread trepidation over the notion that a lead problem even exists in Jefferson County. In addition to concern over the existence of a problem, considerable and impassioned concern was expressed over the ability of (any) government agencies to effectively develop and implement solutions to any problem. Specific concerns were expressed over capacity and consistency of agency operations, as well as concern for property rights, property values and commercial interests in the watershed (much like that expressed in the other counties). The issue of land-owner participation in any project work conducted on individual properties was also stressed as a concern.

While the trepidation expressed above may have moderated somewhat since the inception of the watershed group meetings, there remains a pervasive and palpable apprehension regarding any agency efforts affecting the landowners in the watershed in Jefferson County. There remain several who would prefer no agency involvement in any activity in the watershed; and many more who would likely be very guarded and critical of suggested activities. That said, citizen/agency staff relations did seem to improve over the life of the Watershed Group meetings, with suggestions for collaborative efforts moving forward being generated from citizens in the group.
LOCAL PERSPECTIVES – KEY CONSIDERATIONS THAT SHOULD INFORM THE MASTER PLAN RECOMMENDATIONS

Health Based Considerations

• Public Health is Priority
Regardless of concerns, arguments and/or objections to certain elements of this planning process that might be discussed throughout this document, it should be noted that health and well-being of the citizenry, and particularly the children of each county, was routinely articulated as a key objective of the stakeholders to the Watershed Group meetings. To that end, all three groups agreed that a lead health-based message should be featured prominently in the Master Plan document (see Section 2 and Appendix H).

Another sentiment that was expressed, with some frequency, revolved around the notion that jobs created by construction projects or contracting opportunities (increased local income and attendant access to better health insurance), would contribute materially to the collective public health of the region. Accordingly, the more accommodation to and provision for local economic benefits in the planning and implementation of restoration and remediation projects, the better.

• Public Health – Understanding Human Health Risk Assessment
Concern has been expressed about the qualitative components of the agencies’ risk assessment methodologies as well as the agencies’ resultant public policy decisions. Stakeholders expressed interest in the evaluation process of the (particularly human) risk assessment models and the reliability of those models to reflect exposure pathway analyses specific to each region, county and property. To that end, stakeholders recommended that an invitation be extended to U.S. EPA Risk Assessors to visit the region in order to fully appreciate the diversity of uses, variety of potential lead exposure pathways (including lead paint common in older housing stock), as well as the proximity of Big River on a tract by tract basis.

EPA noted that their risk assessors have made numerous trips to the SEMO region and that each has a very good understanding of the watershed-specific nuances that could affect their assessments. And, it was further noted that one of their assessors is actually a Jefferson County native. Risk assessment has been discussed with agency staff at both Watershed Group and joint technical advisory committee meetings. While it is apparent that there is thoughtful and supportable deliberation that informs the EPA risk assessment process, a general discomfort about that process clearly persists with the stakeholders. To that end, it appears that this may be a subject matter for further and more in-depth discussion at future Watershed Group meetings such that the stakeholders might gain some more insight into how the risk assessment occurs and hopefully become more comfortable with the processes – and its outputs.

The thoughtful development of communications strategies and specific messages in the process of discussing/sharing health-based risk messages are considered to be critical to the long range
success of the public health component of this effort. Issuance of credible, understandable, specific and timely communications to the attention of those potentially affected by known or suspected lead contamination will impact the value of those messages significantly. **Care should be taken to create messaging that inspires appropriate action on the part of citizens to appropriately protect themselves - without causing either undue defensive posturing/response on the part of stakeholders or, perhaps worse, the relegation of such messaging into a general “noise” category that may not motivate the appropriate precautionary or responsive steps suggested in such communications.**

**Economic Considerations**

Concern for economic impacts of these restoration and remediation efforts has proven to be a priority in all three county Watershed Groups. Concerns have been expressed about property values; opportunity to participate in project work (as landowner, laborer or local contractor); ability to continue operations; and/or increased cost of commercial operations based in the excavation or harvesting of materials from the floodplain; as well as cost of management and stewardship of the watershed upon completion of agency project work in the watershed.

As these sentiments have been expressed in the Watershed Group meetings, agency staff has proven to be understanding, empathetic and amenable to solutions that address some of those economic concerns – in the context of an understanding that much of the agencies’ process(es) are prescribed and not particularly flexible. Specific agency responses will be included in the discussions below.

**Property values** can be significantly affected by market perception of, and/or reaction to a moniker of “contaminated.” Citizens attending the Watershed Groups in each county expressed concern regarding the potential for market backlash that could significantly decrease property values or even render properties unsalable. As an extension of the discussion above (Public Health), it is critically important that the problem sets be very well and thoughtfully identified and described – such that any reaction of the market be based on fact and not fear or misunderstanding. Similar to the discussion above, messaging on the part of the agencies will be critical to balance the appropriate communication of necessary and accurate information to citizens without causing undue or inappropriate reaction by the real estate market. **To that end, involvement of local stakeholders in the crafting, editing, and dissemination of messages could prove very beneficial in the overall communication process.**

In addition to agency responses sympathetic to the need for accurate, thoughtful messaging, it was also suggested by the agencies that research be commenced by the Watershed Groups into actual impacts of similar activity on land values in Southwest Missouri, particularly in Jasper County.

Also of concern related to property values are impacts of the remedial or restorative actions on property utility and/or aesthetics. The following were noted specifically:
Potential for diminished functional utility can result from changes to physical characteristics of a property (land management practices, bank stabilization, etc.), or even in-stream/channel management efforts that could affect the relationship between the property and the river. That loss of utility could potentially affect the desirability of the property to the existing landowner as well as from a potential purchaser. Key elements to the ensuing discussion – including agency responses – include the following:

- There should not be loss of value expected in such situations, as each remedy noted above should actually preserve and improve the integrity of the property.

- Potential for diminished aesthetics from substandard contractor performance was discussed; citing problems that had been “witnessed” on yard clean-ups managed by “government contractors” could affect market value of a property.

- Agency staff has consistently noted that substandard performance is not acceptable and does, in fact, occur very infrequently, if at all. It was further noted that any such concerns would be immediately investigated and any defective work product remedied.

- Potential for increased illegal access to properties potentially resulting from increased access to Big River for recreational use. This concern was raised in multiple counties, citing the preference (among landowners) to have less, not more public access areas and/or assurance that increased public access will be accompanied by increased capacity to maintain and police those areas. Numerous accounts were shared by meeting attendees of alleged trespassers that made their way to private property via public access areas. It was noted that this situation affects both the value of the property to current owners as well as to the market.

**Desired participation in agency/project expenditures** has been a key component in this Watershed Group initiative from the outset – at the direction of the county commissioners and executive with purview over this effort. The focus was on the creation of capacity in the agencies’ project management process to enable, if not outright favor the use of local contractors and labor force in the implementation of any project work that would result from the restoration and remediation plans. As conversation about local participation continued in the watershed group process, inclusion of local landowners, via a cost-share like approach to implementation of land management practices, was also incorporated into the groups’ objectives.

- Historically, **local contractors** have found limited success in pursuit of agency projects as prime contractors – finding themselves either unqualified or unable to compete on price. In fact, as is routinely pointed out by agency staff, the majority of subcontractors to the primes on those contracts are local (experience with EPA yard clean-up projects in multiple counties).
EPA has written into vendor contracts an incentive to hire local labor for construction projects (yard clean-ups). They said they began the practice at the Omaha Lead Superfund site in 2007 and locally at the Big River Mine Site in 2011. To date, that program seems to be effectively generating local labor participation in many of the jobs at a rate in excess of 50%, the amount required for contractors to receive a bonus for hiring local. Similar incentives are expected for future projects on the Big River.

Several landowners, particularly those with agricultural uses of their properties, have expressed interest in the potential for individual property owners to manage remediation/restoration efforts akin to the agricultural-based model of cost share programs. If such programs could be developed, same might address a variety of local concerns related to this effort, including control over access and construction on private property as well as the inclusion of local interests in the expenditure of project funds.

The bureaucratic challenges associated with such a program(s) have been discussed with agency officials. Similarly, the challenges have been addressed with a number of group stakeholders. Thus far, there seems to be interest in exploring opportunities related to restoration projects, particularly for those focused on land management practices, the nature and scope of which would be consistent with traditional cost share ag-related programs administered by other agencies. EPA has expressed less optimism about their ability to assimilate such an approach into their procurement and/or project management procedures.

Addressing potential loss of revenue and/or impact on commercial interests from whatever policies, practices or projects might be borne of this process was another of the initial concerns expressed by county officials in development of this Master Plan. This is one of the more sensitive and critical elements of this conversation from the local perspective. Again, recognizing that the agencies do not have a regulatory or statutory obligation to take into account the impacts of project plans on local businesses, this pilot community engagement process does seem well suited to assimilating those potential impacts into the planning process, if possible.

Prohibition or limitation on removal of materials currently excavated or harvested in the watershed and sold commercially, whether facilitated via a legislative or market-based mechanism, could prove to be very costly to the local economy. This effort has focused attention on the issue of potential lead contamination migrating out of the floodplain due to the commercial disposition of a heretofore-marketable resource; and the possible legal and fiscal liability associated with such actions. While there is currently no formal prohibition on the commercial disposition of such materials, current EPA regulations can hold accountable those who are responsible for the sale and transportation of that material, would that material prove to be the cause of an actionable level of lead in a destination site.
While the Big River Watershed Master Planning process has addressed this specific issue in discussion, no suggestion or recommendation is made relative to the development of a legislative or regulatory solution that prohibits the disposition of such resources, either local or statewide. As noted above, no entity in any of the three counties expressed an interest in creating any tool or asserting any responsibility to police lead at the local level. In addition to the potential impact of any legislative redress alluded to above, there are other potential business challenges associated with this issue.

- Potential loss of market share resulting from consumer fear about materials excavated or harvested from Big River Watershed. This challenge bespeaks the need for not only development of a policy decision about a path forward, but also a technically sound methodology (i.e. – sampling protocol, certification, etc.) that enables consumers to have confidence in the acceptability of any product sold from the watershed.

  – Such redress may or may not be applicable outside of the Big River Watershed. Whatever the fix, stakeholders have asked that the planning process consider the potential for immediate (and possibly unfounded disadvantage (to Big River-specific operations) compared to other providers – some which might be operating in watersheds similarly afflicted, but not subject to same regulatory scrutiny.

  – If removal of product from the floodplain is formally regulated, there would be an expectation of an increased cost of doing business in the watershed due to restriction, oversight or monitoring. If not formally regulated, such increased costs could result from market driven forces. In either event, Consideration of an accommodation for such increased costs would clearly prove beneficial to the affected businesses.

**Socio-political Considerations**

In addition to the public health and economic concerns expressed above, the watershed group process garnered a considerable number of ale carte inputs that are worthwhile to share in this report as they may individually or collectively inform the planning discussions at the agencies. These inputs are presented in an ad hoc format (versus thematically, as above):

- **Private Property and Land Rights** have already been mentioned above in the context of economics and public health. During the watershed group meeting process, the following points were made early and often in the context of socio-political considerations affecting the government approach to managing this situation. These sentiments were shared in each of the three counties and remained a common theme throughout the tenure of this process.

  – “Don’t want others/government making decisions about or taking actions on my private property”
  – “Would prefer to do my own work on my own land. I know it best.”
• “Too much government regulation already” was a general and recurrent theme throughout all three counties. While this master planning process would not opine on such a sentiment, it is noteworthy in that that sentiment persists to the date of this writing.

• “Mining in Old Lead Belt for over 300 years – Done ok thus far.” Again, this was a sentiment that was repeated early and often in all three counties. This sentiment is complimentary to discussions addressed above related to public health and the need to well-define a “problem,” the affected parties, the solution set and the rationale for that solution set.

• Increased education/outreach/awareness have dropped local elevated blood lead levels appreciably – why the need to expend $10s/$100s millions of dollars to address “problem” here that are “no worse than anywhere else.” There may be an opportunity, if not a need, to more precisely attribute reasons for successes in St. Francois County (in significant decrease in incidence of elevated blood lead levels measured in children) in order to best inform the new plans. While previous efforts to clean yards is espoused as the driving force behind the drop in elevated blood lead levels in the county, a formal evaluation might be performed to definitively determine the cause of the precipitous drop. The cost of the clean-ups yet to be done in all three counties (in and out of the floodplain) would seem to warrant a better understanding of the underpinnings of the success in St. Francois County.

  – When this subject has been raised with the agencies, there have been a few responses that are worth noting: First, “the local incidence of elevated blood lead levels in children in the region is still higher than the state average. There is still a problem that needs to be addressed.” Second, “the incidence of elevated blood lead levels began dropping precipitously immediately upon the execution of the initial yard clean-ups – EPA likely didn’t do an adequate job of sharing the success of that endeavor with the general public.”

• Inequitable allocation of available resources – At some point early on in the watershed group master planning process, a policy or guideline seemed to have been conveyed (or perceived to have been conveyed), regarding agency willingness to pay for yard clean-ups in areas outside the floodplain; but not for clean-up of yards/properties located in the floodplain.

  – EPA has noted that this is a misperception based on erroneous or incomplete communication somewhere along the way. The agency has stated that there would not be a policy that would create such a disparity in selecting sites to be remediated – except that concern for re-contamination would necessarily factor into any remedial plan.

• Inequitable application of regulatory process – Selection, sampling and analysis of materials (looking for lead) on properties located on the floodplain, if done at all, must be thoughtful, consistent, and supported by meaningful, recognized technical process and procedure.
This was an issue raised early in the watershed group discussions. The issue was included in the technical dialogue between agency staff and the volunteer technical advisory group from the watershed process. While the concerns over sampling protocols appear to have largely been addressed, the implementation of any protocols is still dependent upon the quality assurance and quality control (QA/QC) mechanisms in place at the agencies. The provision for and attention to QA/QC would be expected to be addressed in a meaningful fashion in any agency plans for the watershed such that consistent application of protocols can be measured and verified with confidence (from the perspective of the stakeholders).

In discussions with agency staff, it has been made clear that the sampling and analytical protocols referenced above are all specified in an EPA guidebook for sampling properties. That guidebook contains QA/QC procedures as well.

Like some of the earlier discussions, efforts to resolve this issue may benefit from a bit more transparency and some vetting through a technical advisory group discussion.

- Potential for inflexibility of policy derivation or interpretation based on traditional approaches to project management as well as reliance on dated analytical methodologies reflective of bureaucratic expediency. Based on discussion provided below regarding agency' willingness to fill data gaps and examine policy decisions from multiple programmatic, as well as stakeholder perspectives, this concern will likely serve as a cautionary reminder to the agencies.

- An increase in transient or recreational traffic on the river/tributaries without means to police and manage the potential impact on private property owners (ostensibly more trash, trespassing, potentially illegal activities) where much of the collective resident definition of watershed as “an asset” was described, in terms of privacy, serenity, cleanliness (generally described as waste and noise free), etc.

- In addition to some expression of need to limit access to watershed, many urged appropriate and commensurate provision of financial resources to support oversight and/or policing of the river and any public areas, if increased transient use is expected as an outcome of any project in the watershed.

Technical Considerations
This section of the narrative is based on inquiries and research conducted by Watershed Group members (retired local engineers, not URS technical staff). Based on the machinations of a small group of technically-minded volunteers, the following technical issues - reflective of the tenor of the three Watershed Groups as a whole - have been raised for the purpose of fostering discussion with agency staff, elected officials, academicians and interested parties to more fully understand the issues and their ramifications in light of the circumstances specific to the Old Lead Belt.
Many of these issues and/or concerns have already been allayed as a result of ongoing dialogue with the agencies regarding work already completed or work yet to be performed in support of the agencies’ planning process. Each item is memorialized below in order to keep accurate record of the stakeholder process.

- The group questioned the premise that “lead is lead” from a regulatory perspective; noting that speciation is worth the time, effort and added expense. The Watershed Group inquiries were aimed at the adequacy of current testing and analytical procedures to offer enough information about the type of lead to make well-informed decisions about potential health risks, program development and implementation strategies.

Following discussions with agency staff regarding these issues, the volunteer technical team developed a better understanding of the underlying analytical methodology, assumptions and quality assurance results that indicate the speciation (lead is lead) concern is likely not a substantive issue in the development of either remediation or restoration plans. That said, there is a lot of information yet to be gathered (see “information gap” discussion below) for which continued quality assurance will be required and agency/BRWG collaboration might prove beneficial.

- **Address information gap** (note intent of agencies to conduct further study)

Based on the information available to the Watershed Groups’ technical volunteers, independently researched on-line and at local information repositories, there were a number of significant gaps in information that would be needed to do the analytical work and support the subsequent policy and program development that will ideally inform the restoration and remediation plans. To address those concerns, the watershed technical advisory group met with staff from several agencies to address specific questions that are referenced below.

As a result of those meetings, many of the TAG’s concerns were, again, allayed. Background information was provided to address some of the gaps. Other information gaps were recognized and provided for in upcoming studies, surveys and sampling exercises. Also addressed was additional context related to the Sedimentation Study performed for the FWS in 2010. Based on that added insight, the value of that study in characterizing the watershed did become much more evident.

Given the illumination derived from both multi-agency visits to discuss technical issues with a local volunteer TAG, routine meetings should continue to be scheduled to discuss and/or provide updates on the following:

- **Lack of extensive sample data/watershed characterization:**
  - Limited sample size, insufficiency of sampling grid layout (likely based on limited physical access), lack of speciation, etc.
- **Lack of study replication** (trend analysis)
− Lack of area source (non-metallic) river data
− Lack of definitive assessment of impacts from upstream legacy barite mines on lead and general sediment load in Big River
− Question the adequacy of the current universe of information to support specific remediation or restoration strategies at this time.
− Assess appropriateness and sufficiency of currently employed risk assessment tools, methodologies and theories.
− Discuss viability/validity of currently employed site assessment protocols.
  · Are Sampling & Analysis Plans (SAPs) appropriately developed?
  · Are SAPs consistently and uniformly implemented?
  · Are quality assurance/quality control measures adequate?
− Discuss need for/value of modeling tool (for river flow and impacts on sedimentation/erosion/etc.) to assess potential infrastructure improvements that might be proposed for the watershed.

Discussion related to these topics has not focused on the technical content as much as the process by which issues, concerns and questions can be addressed in a real time, collegial and transparent fashion. Again, this situation suggests the need for a technical advisory group that can meet routinely with agency staff.

ESTABLISHING CONTEXT FOR A PLAN

This Master Planning initiative is being conducted as a pilot project intended to examine the impacts of public engagement and participation prior to, rather than following, the agencies’ creation of their respective plans. While this scenario does afford stakeholders the opportunity to inform the planning process proactively – which theoretically should enhance the work product, it also places the stakeholders at a disadvantage in that the situation necessarily lacks context that would ordinarily be provided by EPA’s consideration and selection of remedial alternative(s) in the development of the ROD. As the applicable ROD is not currently expected to be completed until 2016, the stakeholders must make some basic assumptions about possible remediation alternatives for the sake of developing context upon which to base the Master Plan recommendations.

It should be recognized that any assumptions made herein with regard to plans for the remediation of the Big River Watershed are provided as supposition only (by the author of this draft) – for the sole purpose of creating context for discussions about Master Plan recommendations. Neither EPA nor DNR have given any indication (“pre-decisional” or otherwise) as to their intended remediation alternatives to be selected for this watershed.

The assumptions are based on best professional judgment utilizing information garnered over the course of this Master Planning process; as well as inputs from other Watershed Group members and knowledge of the region, the agencies and the watershed. Also informing these assumptions are the draft Springfield Plateau Restoration Plan released in May 2012 and the Draft Southeast Missouri Ozarks Regional Restoration Plan and Environmental Assessment that was released in August 2013.
With the extraordinary level of lead sediment contained in the stream bed, stream banks and floodplain over the 92+ mile stretch of the river, it is very likely that a remediation strategy for the watershed will be driven by the concept of “Technical Impracticability.” In short, we expect that there isn’t enough money available now or in the foreseeable (and perhaps even distant) future to effect a complete removal of the lead from the watershed. A comprehensive removal effort would likely prove economically and ecologically infeasible. As such, the remediation strategies will likely focus on the removal of leaded materials only where necessary and/or practicable. And the remainder of the contamination might well be managed in place or addressed using a less traditional method (i.e. - phyto or in-situ remediation, blending, etc.), both in-stream and in the floodplain. Remediation strategies might include:

- Removal of material from “time critical” locations identified in the ongoing assessment of the watershed. These would be sites clearly identifiable as posing immediate human health risk – generally found in residential settings.

- Targeted, limited and strategic in-stream removal options that could be effected over the immediate, mid and long term. While this strategy may not prove feasible for the entirety of the river and all its tributaries, there may be areas between the tailings piles and St. Francois State Park, for instance, where removal would be feasible and ecologically beneficial. Other sites further downstream could also be identified as strategically beneficial to target for lead removal if deemed feasible.

- Targeted, limited and strategic floodplain sediment removal options.

- Yard clean-ups for residential parcels located in the floodplain (including parks, daycares, etc.) that would fall into a remedial target risk range.

- The sediment flow in the river might be proactively (mechanically) managed in order to expedite the strategies mentioned above.

“Source” management (in place) is a practical remedial option in this watershed. Implementation of erosion controls and other best land management practices, along with bank stabilization options, will likely factor significantly into both the remediation and the restoration plans for this watershed.

- **Containment and Restoration Strategies** might include:
  - Various land and stream management practices consistent with those already espoused as part of soil and water conservation efforts (ag programs).
  - Bank stabilization
  - Creation/improvement of riparian corridors
  - Strategic habitat replacement
  - Structural improvements to stream (wing dykes, dams, etc.)
— In-situ remediation strategies (banks and floodplains)
  • Reduce bio-availability of lead particles
— Limited and strategic natural attenuation

• **Mitigation options** might include:
  — Increase public utility of or access to the river
    • Improve existing/create new access/public areas, i.e. –
      Bone Hole (St. Francois County)
      Byrnes Mill Park (Jefferson County)
      Washington State Park (Washington County)
  — Purchase/secure (easements, etc.) habitat in or about stream or floodplain in vicinity of damaged resources
  — “Do Nothing” Option
    • Discuss viability and rationale for natural attenuation
    • Some citizens have asserted an observed recovery of damaged species
  — Concerted and funded long term outreach, education and awareness programs
    • Develop targeted messages
    • Utilize local vernacular and communications conduits
    • Local engagement
    • Coordination with local lead health assessment process
  — Develop Stewardship Programs for River/Tributaries/Floodplain
    • Identify specific needs for operations, maintenance, monitoring, etc.
    • Create institutional mechanism to be responsible
    • Create funding mechanism (escrow) to support long term effort

**STAKEHOLDER OPINIONS ABOUT THE WATERSHED**

For the vast majority of stakeholders surveyed in July 2011 – in breakout groups within the Watershed Group meeting, the watershed was described as an asset to the region and to most as individuals. In describing how the watershed it used, Stakeholders most commonly referenced the river in terms of activity that has/does/can occur on the water, on the banks or on the floodplain. Most of that activity was related to recreational or commercial uses. When asked to describe how or why the watershed was an asset, the responses referenced various attributes of the resource (i.e. – accessible, beautiful, not crowded, source of family fun, historic, etc.). When asked about stakeholder’s perceived needs relative to the watershed, many expressed a need for more information about lead and its impacts (note this was early in the Watershed Group meeting process). Several also addressed physical needs/improvements to existing features in the river (i.e. – repair mill dams, stabilize banks, remove readily accessible lead deposits).
The breakout sessions were time-consuming and limited the subject matter that could be covered in a meeting. But, the input tended to vary more and involve more stakeholders directly in conversations.

**REMEDIATION/RESTORATION OBJECTIVES** Stakeholder Inputs/Agency (paraphrased) Responses

When asked about specific objectives in a remediation and/or restoration process, Stakeholders offered the following:

1. **Healthy children/healthy families**
   - Remediate lead where exposure pathways threaten children
     Agency protocols are set up to do that.
   - Increase awareness of lead health issues in the Parkland
     Again, outreach and education are key elements to the agencies’ community engagement and project management processes that will be part of any agency planning going forward.

2. **Maintain quality of life conditions indicative of this regional community (don’t affect utility or stakeholder experience with the resource)**
   Mitigating negative effects of lead and restoring natural resources should be the surest means to maximize utility of the resource.

3. **Agencies should impact as few individuals and as few properties as possible**
   Laws, regulations and availability of resources will ultimately dictate the breadth of agency activities in the watershed.

4. **Let residents participate in policy process and decision-making**
   One of the primary objectives of the Master Planning process (pilot project) was the provision for stakeholder input and participation at the very ground floor of this Big River Watershed process. Provision for ongoing operation of those (or similar) groups is intended to provide for local participation during the remainder of agency planning and implementation processes.

5. **Let residents participate in commercial projects – keep $$ local, where possible**
   - **Local Land Owners**
     Collectively, agencies will entertain notion if possible. Skeptical that EPA will have much latitude to facilitate the kind of “cost-share” type programs that FWS and/or DNR might be more apt or able to procedurally accommodate.

   - **Local Contractors/Subcontractors/Haulers**
     As noted previously, local subs (and haulers) have fared well over the past several years. Procurement requirements may make it difficult for local contractors to compete for prime contracts.

   - **Local Labor**
     Again, as noted before, local labor has fared well with incentives offered to contractors and subs.
6. **Make every effort to sustain and enhance (and not impede) commercial activities in the watershed.**
   The agencies do not seek out opportunities to impede commerce; only to protect human health and the environment. The agencies look forward to working with local officials, residents and businesspersons to exercise creative solutions to these difficult challenges.

7. **Let landowners work with local agencies/familiar processes, if possible (SWCD/USDA-like) to effect activity on their properties.**
   The SEMO Ozarks Regional Restoration plan contemplates this approach to effect some of the restoration projects. Not all agencies may be able to accommodate, procedurally, such an approach.

8. **Agencies should be mindful of the potential financial impacts of semantics on:**
   a. Land Value
   b. Tourism
   c. Recreation
   While agency staff may understand the potential impacts of communications on market perception, commitment to consistently measure all messaging in that regard would be difficult.

9. **Agency decisions based on best (preferably not just “best available”) information, data, science, etc.**
   Creation of the draft Natural Resource Restoration Plan and the ROD are painstaking tasks. It is the goal of all of the agencies involved to amass and utilize the best information; which, due to resource limitations and time constraints does occasionally result in the “best available.”

10. **Whatever is to be done and however “it” is to be done, be mindful of need/opportunity to stimulate the economy of individual businesses, communities, counties and the region in the process.**
    Agencies, again, appreciate that perspective and would not inherently impede economic interests of any individual, industry or community.

Two themes were expressed commonly across all three counties. A majority of the stakeholders attending the Watershed Group meetings noted that they “don’t want...”

11. **Additional public access without corresponding increase in police support**
12. **Trail system through private property**
   The agencies respect the process undertaken as part of this Master Planning initiative. Stakeholder input is critical to the public policy process and all perspectives are valued. That said, the agencies would tend not to commit to any categorical limitations on any project.

**MASTER PLAN - KEY RECOMMENDATIONS**

**RECONSTITUTE THE BIG RIVER WATERSHED GROUPS (BRWGs) IN EACH COUNTY,** with local citizenry facilitating each. The groups should be encouraged to function (lead the planning effort in each
First, any funding coming from or through one of the fiduciaries could potentially undermine the credibility of the facilitator with the Watershed Group and/or the group’s constituents – that is not to suggest that ultimately, management of local watershed group activities could not submit a proposal for funding under the auspices of a Restoration or Mitigation project. It is expected that difficult and possibly contentious decisions still lay ahead for whoever will be facilitating the BRWGs; and the leadership required to advance this process might be best nurtured without a direct link to the agencies seeking the input.

Second, the existence of paid staff can negatively impact the level of ownership of others in the group that might, but for the underlying subsidy, assert a more aggressive or energetic involvement in the watershed group.

Third, BRWG leadership will, as is discussed below, need to manage a team of local contributors (or volunteers) in the near term. A team of volunteers may be more likely to contribute their time, energy and passion to another volunteer, similarly impassioned to serve the cause.

Once in place, each BRWG leader can begin meeting with the institutional leadership and agency officials that had participated in the Master Planning efforts in each county (different institutions in each county) to discuss a path forward in the engagement process with the agencies. From that leadership team (steering group), decisions about the creation of a new BRWG management team can be agreed upon. With that level of ownership and institutional collaboration, combined with the other assets contemplated for the BRWGs, discussed below, the BRWGs should be well equipped and staffed to facilitate and contribute to the ongoing planning effort in the Big River Watershed.

MAXIMIZE AND SUSTAIN OUTREACH AND EDUCATIONAL EFFORTS as means to convey lead health messages into the broader community, and engage the citizenry in the BRWG initiative.

Develop routine and strategic messaging for multiple receptors, using multiple conduits. Create a communications team that can be developed within the BRWG. That team could include one or more communications professionals from one of the BRWG’s institutional partners, including state and federal agency communications specialists with whom the groups will routinely collaborate and coordinate messages. The team can establish an outreach strategy that will incorporate messages from other institutions and agencies. That strategy should at a minimum include a media plan for sharing information (press releases) as well as facilitating outreach on behalf of the BRWG.

It should be noted that the outreach initiated by the Master Planning team; the “Our MO Waters” Big River Watershed Summit team; and the EPA (effort to contact individual homeowners), all in the same counties, yielded considerably disparate, though ultimately complimentary results. The lesson learned
relates to multiple constituencies in each county and the need to utilize a variety of communication conduits to reach them. Further, the messaging may vary from one constituent group to the next if the objective is to engage and/or motivate to action – obviously would not be changing underlying factual content in a message, but may consider targeted messaging or targeted media (print, social, radio, etc.). Recommended that this task be implemented in the immediate term, as capacity to communicate is critical to the success of this effort.

**IMPROVE TECHNICAL CAPACITY INFORMING DECISION-MAKING PROCESS**

Develop a Technical Advisory Group (TAG) to better assess and inform BRWG deliberations and provide support for ongoing discussions with agencies, citizens and academicians, alike.

Maximize technical capacity available to decision-makers (not limited to only what’s currently available). Each community possesses professional expertise as well as access to academicians. The BRWGs are strongly encouraged to identify and access as much technical capacity as is available in the context of a volunteer committee. The ability to garner and wield independent technical support is valuable to the integrity of the process. Note that the TAG with whom the author worked for the past few years in the Master Planning process proved very helpful and insightful. While much of the inquisitiveness and critique of technical arguments made in the course of the past few years has been allayed by follow-up with appropriate agency, industry or academic resources, the ultimate outcome is a process more transparent and introspective for that independent technical capacity.

It should also be noted that technical capacity need not be limited to the “hard sciences.” While engineering, biology and geology are clearly necessary in discussion with agency staff, the past few years have been replete with questions about real estate, law, health care, politics, finance, etc. that have factored prominently into the ongoing dialogue with elected and agency officials, stakeholders, media, etc. The key is to engage smart, thoughtful, locally vested members on a TAG.

**ESTABLISH TECHNICAL UNDERSTANDING OF IN-STREAM SEDIMENT MOBILITY SPECIFIC TO BIG RIVER**

During the machinations that led to the development of this Master Plan, and during discussions about potential projects in and around the Big River, it became very apparent that access to a tool that might assist in understanding, predicting and evaluating impacts of construction projects on the river’s flow, as well as on the mobilization of sediment might prove invaluable. To that end, one or more resources might be consulted that provides that kind of modeling services/support. The value of that type of technical support may warrant development of a project proposal for consideration once solicitations are issues in conjunction with the Restoration Plan – if not provided by the agencies as part of an implementation strategy.

The TAG that had been informing our master planning discussion for the past two-plus years suggested that the discussion related to assessment of project work in the watershed might be well informed by a model that could predict movement of sediment in the river – during normal, low and high flow conditions, for benefit of:
A. Development of a comprehensive, strategic management plan to inform specific remediation and restoration considerations, expected to include:
   1. Removal of contaminants from streams and floodplains
   2. Bank stabilization efforts
   3. Containment of contaminated sediment in place
   4. Managed flow (attenuation) of contaminated sediment

B. Prioritization of remediation and restoration projects

C. Evaluation of proposals (relative to impacts to sediment flow and erosion controls at project sites and those downstream)

D. Evaluation and assimilation of project outcomes, and adjustments to strategic management plan

   Note: Per U.S. EPA, USGS is currently working on a suspended sediment study. Discussions are also underway with Corps to develop a streambed sediment load study. These are likely consistent with the recommendation above – but may not reach the level of information contemplated in this recommendation.

PROVIDE FOR LOCAL PARTICIPATION IN REMEDIATION AND RESTORATION EFFORTS

As noted above, local interests should seek to develop the technical wherewithal, as well as the standing, to support and participate in the decision-making process that governs the region’s remediation and/or restoration efforts associated with the Big River Watershed.

With that level of technical support, there can be a stronger local voice in the discussions around project placement and watershed management. Ultimately, a stronger local voice should improve or enhance relations between the agencies and the local citizenry. As has been noted elsewhere, increasing local involvement in the decision-making process is considered to be a positive development, whether limited to informing the discussion, validating agency decisions to other stakeholders or being selected to participate on a Trustee Council (if possible?).

Further, it is recommended that, to the extent possible, requests for proposals for project work to be completed as part of this Big River process should be constructed in such a fashion as to reflect favorably upon local contractors, subcontractors, haulers, labor, landowners, etc. It should be noted, that as was discussed above, agency contracting incentives have proved successful in securing local subcontractors and labor for Big River and lead remediation projects.

As referenced above, it is also recommended that, where feasible and allowable, work that can be performed by landowners on their own property be structured accordingly. Many of the local landowners have experience in cost-share type programs that have encouraged best (land) management practices (focused on erosion controls and/or bank stabilization) – utilizing local
landowners to help design and perform work on their own land whenever and wherever possible. Further, since these landowners have relationships with local agencies already knowledgeable in such projects, it is further recommended that the local agency (USDA, SWCD) staff be used to administer programs wherever possible.

It is recognized and understood that not all agencies are able to consider this type of an arrangement or accommodation.

COMMERCIAL OPERATIONS – PILOT PROJECTS
Discussions were ongoing for much of the past three years related to the potential for local regulation of commercial excavating or harvesting operations in the river and/or on the floodplains in the Big River Watershed. As was indicated above, there has been no expression of interest from any segment of any of the three county governments to assume the responsibility for policing lead within the region. Regardless of the inclination of anyone in the counties to do so, resource constraints would make such a task very difficult and more than likely not particularly effective.

What is recommended instead is the development of a process, procedures and a culture that encourages commercial operators to investigate alternative uses for their property, their products or their ways of doing business. Innovation in this context could involve a new, more precise way to assess, extract or dispose of the product – or the contaminant (working with either private or public sector partners to consider technological improvements). It could involve development of new specifications for old applications of the product. Or, it could involve the creation of new markets for the same old product. In any event, it would be expected that this effort might be comprised of some trial and error along the way. It is recommended that the agencies work with the commercial operators to create an atmosphere conducive to experimentation and innovation, provided that commitment to and respect for regulatory requirements is likewise afforded by the operators.

Such properties might also be repurposed in agencies’ efforts to implement restoration or mitigation strategies.

A pilot project might also be designed to create a funding source or opportunity for the acquisition (or use) of upgraded equipment necessary to remove or mitigate leaded materials that might otherwise satisfy specifications for the product would it have been harvested without the lead.

Establishment of such pilot processes may warrant expertise beyond the pure technical. To that end, it is recommended that the BRWG leadership team assist in creating the right mix of expertise, ranging from financial to economic to political to marketing and so on. That team might be supported by members of the technical advisory group, RPC’s, IDAs, MO DED and elected/administrative officials at the local, county and state levels. Coordination and assimilation of resources as well as facilitation of disparate interests may play key roles in the evolution of this process.

STEWARDSHIP
It is expected that the process of remediating the watershed and restoring the natural resources will take decades. It is recommended that some provision be formally made for the long-term stewardship of the river – assuring adequate funding for some level of planning, implementation and evaluation of management strategies and practices for an extended period of time. A variety of local institutions might be situated for such a responsibility/opportunity, ranging from not-for-profit groups to local academic institutions.

PROJECT PRIORITIES
Project priorities will be set based on the ROD and the administration of the Restoration Plan. And it is as yet unclear as to how these project locations might fit into the agencies future plans, little time was spent developing project descriptions, but these destinations have already received considerable interest at the local, regional and/or state level.

• Create/enhance public amenities and/or infrastructure
  – Bone Hole (St. Francois County)
  – Washington State and St. Francois Parks
  – Byrnes Mill, Morse Mill, Rockford Beach Recreation Facilities
  – Elvins Stormwater Control Project (see Appendix I)
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Appendix C  Technical Advisory Committee of Watershed Group
- Agenda/Attendees/Summary of March 24, 2012 Agency Meeting
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- St. Francois County Health Department “Lead Poisoning” web page.
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Project Summary
Big River Watershed Master Planning Process
January 4, 2011

- URS Corporation has been retained, collectively, by three adjoining counties (Jefferson, St. Francois and Washington) through which a 92+ mile segment of Big River runs - commencing in or about Leadwood and extending to the confluence with the Meramec.

- URS was hired to develop a “master plan” (described below) related to the remediation and resource recovery efforts that are being contemplated, for that segment of the Big River Watershed, by multiple state and federal agencies recently encumbered with the management responsibility for a sizeable financial settlement from a PRP on a site in St. Francois county.

- Our effort is being styled a “master plan” for lack of a better descriptor.

  - The end product will likely not resemble what is traditionally viewed as a Master Plan.
  - It will more likely resemble a report, that will include and/or reference:
    - Formal plans of the agencies tasked specifically with the implementation of this regulatory initiative (U.S. EPA, U.S. Fish & Wildlife Service, MO DNR); with
      - Underlying/supporting documentation, information and data about the Watershed and the attendant plans;
      - A 9 element watershed plan – resources allowing*, and
    - Input from other agencies; elected officials & administrators; business, conservation and environmental interests; and local citizens.
      - Input will reflect thoughts about/interest in/plans for - in addition to remediation & resource recovery – initiatives related to public health, the economy, recreation and development of the region.
      - Input will be actively sought from U.S. Army Corps of Engineers, MO Dept. of Conservation, MO Dept. of Health and Senior Services, USDA, MO Dept. of Economic Development, University Extension, County Health Dept’s and other agencies, Coalition for the Environment, Sierra Club, area chambers, economic development authorities, etc.

  - It is expected that this plan will inform, rather than direct, those who will manage and assess regulatory processes.
  - It should, however, serve as a roadmap, information repository and process guide for public and private interests, alike, involved in these processes.

- This plan will promote:
  - Development and management of local institutional infrastructure able to address watershed issues on a long-term basis (Task 1);
  - Establishment of open and formalized lines of communication between local institutional leaders/facilitators and agency staff; as well as lines of communication between staff from different agencies and/or programs within the same agencies (Task 2);
  - Implementation of a planning and project management process that is routinely and consistently well informed by simultaneous activity of other agencies/programs and the interests of the local constituency (Task 3).

* URS is seeking as much data/info about BR Watershed as possible in order to assess 319 needs
Big River Master Plan - Proposed Scope of Work

The work generally described below will be detailed and commenced in accordance with terms and conditions specified in the contract executed between URS Corporation and the Missouri Counties of Jefferson, St. Francois and Washington. The general elements of each task summarized in the scope of work will be discussed with/reviewed by the Commission or Executive Board of each county on a routine basis (as scheduled by each county) prior to the provision of the attendant services by URS staff.

Part 1: Develop local infrastructure

- Create and/or assimilate (if vehicle already exists) Master Planning Process in each county
  - Identify/create appropriate structure (for example:)
    - Watershed Management Group
    - County administrative subcommittee
    - Industrial Development Authority Committee
    - Academic institutional hosted community group
  - Identify/provide for appropriate leadership
  - Develop mission, objectives, etc. in support of Master Planning process
  - Identify/provide for appropriate participation of public & private interests, alike
    - Outreach
    - Education
    - Media Strategy
  - Provide for meeting logistics
    - Meeting schedules/invitations/etc.
    - Process for informing and involving public officials and interest groups
    - Provision for inclusion of agency staff
- Support and/or convene routine meetings
  - Facilitate or attend/inform meetings
  - Assure communication flow (minutes, notices, collateral materials, etc.)
- Address/provide for tri-county oversight/management dynamic (institutionalize the “Collaborative”)
  - Develop mechanics/infrastructure to provide oversight of tri-county Collaborative
  - Develop process to assimilate individual county inputs into tri-county Collaborative
  - Coordinate agency/technical inputs into Collaborative meetings
  - Develop mechanism for decision-making, agency interactions, media releases, etc.
- Facilitate/provide for routine tri-county – agency interaction
- Other – to be determined
Part 2: Engage federal, state and local agencies; and elected officials, as necessary

- Establish appropriate contacts in each agency (possibly in multiple programs within each agency)
- Establish routine schedule for meetings/communications
- Establish process to assure local involvement/input in all agency discussions regarding Big River Management (contractor likely needs to be aggressive to assure maximum involvement)
  - Remediation
  - Natural Resource Recovery
  - General Big River Management issues (Superfund & non-superfund, alike)
- Facilitate interagency and inter-program communications, if not organically occurring (again, likely requiring aggressive effort on part of contractor to assure adequate communication between government agencies, officials, etc.)
  - May need to actively/strategically work to integrate agendas of different agencies/divisions
- Establish formal communication mechanisms/schedules between local planning groups and local/state/federal elected & administrative officials.
  - Assure real time flow of information between officials and planning groups
- Facilitate information sharing with/between agencies and other government officials & offices
- Other – to be determined

Part 3: Create “Big River Master Plan” (a document; and a process to keep it fluid)

- Enumerate & identify all agency, elected and administrative officials asserting an interest in the management of the Big River Watershed
- Compile government agency data, reports, plans, etc.
  - Distill and interpret as necessary for target audiences
- Integrate input from multi-county “watershed group” efforts (which should reflect input from elected officials)
- Recognize/incorporate other inputs (which may or may not be incorporated in bullet above)
  - Economic development plans, reports, etc.
    - Municipal/County
    - Industrial/Commercial
    - Agricultural
    - Recreational
  - Utility Infrastructure: i.e. - Water/Wastewater District plans, reports, etc.
  - Other: i.e. – Environmental or Conservation Advocacy interests
- Create “Master Plan” Document that addresses environmental, economic and public health considerations
  - Suggestions to address remediation and resource recovery objectives
    - Heavy metals issues
- Other environmental/public health issues (i.e. - nutrient loading & sedimentation)
  - Stream segmentation & characterization
  - Pursue Section 319 Funding to support those efforts.
- Promote improved/sustained public health
  - Active impacts on environmental challenges
  - Active interaction with community
  - Education for future residents/guests/tourists/etc.
- Address economic considerations
  - Job creation
    - Project construction
      - Bid preparation of local contractors
        - Qualifications
        - Teaming/partnering arrangements
      - Availability of and preference for local labor
    - Sustainable jobs in local economy – business development
  - Economic development
    - New/expanded business sectors (i.e. – tourism/recreation)
    - New Business – support small business efforts
- Investigate/address other potential opportunities to improve environment, public health or the economy in connection with this initiative (i.e. :)
  - MO Health & other Foundations
  - Other EPA/DNR/Agency (i.e. – DED or EDC) programs
  - Additional Counties (Madison, Iron, Reynolds, etc.)
- Institutionalize Formal Roles/Process for continued local ownership/engagement
  - Planning groups formed or contemplated as result of this initiative
  - Government Officials
  - General Public
  - Business Community
  - Environmental Advocates
  - Media
  - Etc.
- Other – to be determined
Appendices

Appendix A  URS Scope of Work

APPENDIX B  WATERSHED GROUP MEETINGS
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Appendix I  Miscellaneous
Big River Watershed (Master Planning) Group Meetings

Meetings were held in each county during the following months. Meeting notices, agendas, attachments and summaries are provided herein.

April 2011
May 2011
June 2011
July 2011
August 2011
November 2011
December 2011
March 2012
May 2012
October 2013
Big River Watershed
Master Planning Initiative
Meeting Invitation

Several State and Federal Agencies are in the process of developing plans to address lead contamination issues in the Big River Watershed. Tens of millions of dollars (proceeds from a lawsuit) will be spent on construction projects affecting the Big River in St. Francois, Washington and Jefferson Counties. Public input is being sought as part of this process. Local Watershed Groups begin meeting week of April 25th.

**Watershed Meetings**
**Time, Location and Contact Information:**

**Washington County:**
Monday, April 25th, 6:30 p.m.
Washington County Health Department (520 Purcell Drive – Potosi)
Frank Fick, Administrator, Washington County Health Department
(573) 438-2164 or fickf@lpha.mopublic.org

**Jefferson County:**
Tuesday, April 26th, 7:00 p.m.
Hillsboro Community Center, Jefferson County Fairgrounds (Hillsboro)
Dean Wilson, Ag & Rural Development Specialist, University of MO Extension
(636) 797-5391 or wilsondw@missouri.edu

**St. Francois County:**
Wednesday, April 27th, 7:00 p.m.
Mineral Area College North College Center, Room C (Park Hills)
Mike Alesandrini, Senior Consultant, URS Corporation
(314) 753-2416 or mike_alesandrini@urscorp.com

**Meeting Agendas:**
The inaugural meeting agenda in each county will include:

- Introductions of principals;
- Overview of the environmental, resource damages, public health and economic implications of lead contamination, as well as the potential work on/in the watershed;
- Explanation of the Master Planning Process with an overview of Outline that will serve as basis for ongoing group efforts and discussions;
- Discussion from agency representatives relative to their expectations from this process; and
- Discussion of next steps for each Watershed Group.
A more detailed technical review of the environmental, resource damages, public health and economic issues will be addressed at subsequent workgroup sessions.

Why attend?
Due to a bankruptcy settlement with a former owner/operator of one of the “superfund” sites located in St. Francois County (ASARCO), tens of millions of dollars have already been set aside for construction work to be performed in the Big River Watershed. In a virtually unprecedented move, the government agencies responsible for developing and implementing plans to spend those dollars have requested input from the local citizenry at the very earliest stages of their respective planning processes. The agencies are seeking input about specific concerns, issues, questions and desires - as much as a year earlier in the process than is the norm. As such, Watershed Groups have been established in each of the three counties, at the direction of each county’s Commission or Council, for the express purpose of providing a conduit for information between the agencies and local citizens - including elected officials at all levels.

The Watershed Groups will be collecting information and perspectives from local stakeholders in an effort to complete a “Master Plan” that will include not only agency-generated discussion about environmental and natural resource management issues, but also locally articulated interest in improved lead health in the region and coordinated efforts to maximize the positive impact of the anticipated construction projects on the local economies. To that end, the Watershed Groups are hoping to attract participants ranging from residents of the floodplain – utilizing the land for either residential or commercial (including agricultural) purposes; to recreational users; to residents who may not live on, but have commercial interest in the Big River floodplain; as well as elected officials from throughout the counties and advocacy/citizen organizations representing interests of, in and near the Big River Watershed.

Please note, if you are unable to make the meeting in your county, meeting notes and Master Planning Initiative Updates will be forwarded to all on this (continuously expanding) contact list. In addition, ongoing discussion about the initiative will likely be periodically reported in the local and regional news media.

For more information about this Master Planning Initiative or the County Watershed Groups/Meetings, please contact the individuals listed beneath each of the county-specific meeting notices above, or contact Mike Alesandrini, facilitator of this process on behalf of all three counties.
Big River Watershed Groups’ Meeting Summaries
April 2011
Jefferson, St. Francois and Washington Counties

Meeting Agenda:
The inaugural meeting agenda in each county will include:

- Introductions of principals;
- Overview of the environmental, resource damages, public health and economic implications of lead contamination, as well as the potential work on/in the watershed;
- Explanation of the Master Planning Process with an overview of Outline that will serve as basis for ongoing group efforts and discussions;
- Discussion from agency representatives relative to their expectations from this process; and
- Discussion of next steps for each Watershed Group.

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Executive Summary:

Initial meeting focused on introduction of subject matter and process. We deliberately didn't give the technical elements of the discussion allot of depth, beyond general comments from agency personnel – as basic context of the project really needed to be conveyed first. Watershed Groups were informed that more in-depth discussions would ensue in future meetings. In addition, we discussed the prospects of creating subcommittees or breakout groups that might be formed for folks who do have their "livelihoods" affected by decisions made regarding resources in the floodplain. That idea was presented in the initial meetings and not really discussed in detail. But, following a couple of the meetings, it was made clear in the parking lot that the local commercial interests were very supportive of developing those kinds of breakout groups. I'll work with Watershed Group leaders to address logistics of accommodating those interests as part of the Watershed Group process. I'll visit with each of you individually in the near term to get your perspective on that as well.

Washington County (April 25th) - In bad weather, we had limited turnout in Washington County for this first meeting. But, it was a good interaction between agency folks who attended.

In general, we were able to address some logistical matters with the agency folks. And, maybe most importantly, the notion was put on the table that the Watershed Group in Washington County can, and will, concern itself with matters on the Big River upstream, as well as down, from the superfund sites in St. Francois County. It was made clear that I (contractor) would not be able to charge the EPA Cooperative Agreement for any time spent on the issues upstream (southern part of the county), but the agencies seemed to all agree that inclusion of upstream issues in the Watershed Group deliberations was
a good idea. That is significant for environmental, economic and public health perspectives, as well, in this discussion. Mr. Fick was successful in getting Watershed Group information into the local paper twice. That is a great beginning of media relations locally. Want to keep that up to both inform and engage citizenry. The scheduling conflict that prevented the County Commissions from attending will be addressed relative to future meeting.

**Jefferson County** (April 26th) - We had somewhere at or near 90 folks attend. Excellent turnout. Very respectful, knowledgeable and engaged group. Lots of interests represented, including commercial operations on the river, interested contractors/labor folks, public health and environmental advocates/citizens, etc. Allot of questions from folks who had clearly done some homework. Seemed very interested in next meeting (May 24th). Also, post-meeting conversations made it clear that folks would like to have breakout discussions about commercial interests on the river. Agency staff seemed pleased about the level of participation (something agencies have not always been able to garner or sustain). Dean Wilson did a great job getting word out via newsletter and local paper. Councilmen did a good job getting word out as well. Had two councilman attend and participate. Other county department staff attended too. Congressman Carnahan's office was represented. Allot to be very pleased about for an inaugural meeting. Post Dispatch attended. Still like to work to get other local media players for future meetings and increased coverage.

**St. Francois County** (April 27th) - All three commissioners attended and participated. Had just over 20 folks participate (well up from previous watershed group meetings) - and most of those faces were new. Good representation from folks with a variety of interests. Daily Journal attended. Similar discussion to that of Jefferson County.

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**Next Meetings:**
Jefferson County: May 24th
**Washington County:** May 25th or 26th
St. Francois County May 25th or 26th

**Agenda:**

1. Detailed review of contamination situation at/from NPL sites in St. Francois County. (EPA)
2. County-specific discussion about lead in watershed. (EPA)
3. Cursory review of lead health issues for citizens with concern about immediate/critical issues. (County/State Health Dept.) **Specific directions should be provided for public (press release).**

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In following months, have detailed discussions about (no particular order):

- **Public/human health and lead**, addressing physiology (brief), and exposure pathways (actual pathways as well as known misconceptions). I'd like to see discussion about air transport, water transport, etc. Lead health in the home (tracking it in: lead paint, etc.). Short version of groundwater/drinking water lead issues. Short/concise discussion about what is ok and what isn't when recreating in the big river or its tribs.

- **Impacts of lead on ecosystems**, etc. (if not covered enough in discussion about damages) in and about the watershed. Let's talk before this one gets planned to see if it is necessary and what direction it goes.

- **Known/potential impacts of commercial operations** on Big River, broken down by group  
  - Sand/Gravel  
  - Top Soil  
  - Sod farming  
  - Traditional Farming  
  - Other???

- **Non-metals challenges on River (Water Programs)** - what might there be/what you might be looking for/known issues

- **Economic implications of changes to the river and or its regulation** (from industry folks, Economic Development team, etc.)

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Jefferson County Big River Watershed Group
May 24, 2011

Agenda:

1. Overview/Recap of May Meeting (Alesandrini)
2. Immediate or near term lead health issues. (County/State Health Dept’s.)
3. Review of contamination situation at tailings sites in St. Francois County. (EPA)
4. County-specific discussion about lead in watershed. (EPA)
5. Q&A – Group to begin compiling specific questions, concerns, perspectives, etc.

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At future meetings, we will address such items as (no particular order):

- Public/human health and lead, addressing physiology and exposure pathways (actual pathways as well as known misconceptions).

- Impacts of lead on ecosystems in and about the river.
  - Define “Natural Resources”
  - Define “Natural Resource Damages”
  - Discuss and describe potential “Natural Resource Damage Restoration”

- Impacts of/on commercial operations on Big River, including
  - Sand/Gravel
  - Top Soil
  - Sod farming
  - Traditional Farming
  - Other???

- Non-metals challenges on River (Water Program) - what might there be/what you might be looking for/known issues

- Economic implications of changes to the river and or its regulation (from industry folks, Economic Development team, etc.)

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Examples of issues already raised by stakeholders for inclusion/discussion in Master Plan:

- Jobs/contracts/training - County Council/Commissions clearly focused on these issues.
- No eminent domain!!!!!!
- Security & maintenance challenges associated with any additional recreational amenities or public lands.
• Public Health & Recreation on the Big River: Avoid unduly discouraging Big River as destination.
• Commercial operations (on watershed) viability with appropriate training, support and/or technology.

For more information, please contact Dean Wilson at wilsondw@missouri.edu (636-797-5391) or Mike Alesandrini at mike_alesandrini@urscorp.com (314-753-2416).

Presentations Materials, Meeting Minutes, Etc. will be available at the Jefferson County U. Extension site.

Big River Watershed Groups’ Meeting Summaries
May 2011
Jefferson, St. Francois and Washington Counties

To Access Watershed Group Meeting Materials for all three counties, please go to: www.extension.missouri.edu/jefferson - see link to the left titled “local programming.”
Our sincere thanks to the Jefferson County University Extension for providing this resource.
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Executive Summary: May meetings again proved fruitful relative to generation of meaningful subject matter for consideration in the Master Plan Development Process. While the Washington County Meeting was again affected (this time cancelled) by the severely inclement weather, both the Jefferson and St. Francois County meetings garnered a variety of perspectives, concerns and questions that will serve to materially inform the conversation going forward.

The May meetings in each county commenced with a short overview of the Master Planning Process and Plan Outline (for those not in attendance at the April meeting) – see April Meeting presentation for details.

The May meetings featured discussions in each county about lead contamination in the river, focusing on the source piles in St. Francois County. The primary takeaways from that discussion related to: i) the proliferation and extent of the contamination all the way downstream to the
mouth of the Meramec River; and ii) the timetable for completing the stabilization of the final source pile (in St. Francois County) – targeted for early 2013, only after which will extensive clean-up activity likely commence in the Big River. The EPA’s May meeting presentation can be seen at the link provided above.

In addition, the State and local health departments discussed health issues associated with lead in the River/floodplain. The primary takeaways from that discussion related to: i) lead health risks in the river/floodplain can be managed – differ for residents with frequent, prolonged and multiple exposures to lead versus transient exposures (tourists, sportsman, etc.); and ii) contaminated product (sand, gravel, top soil, etc.) being excavated/mined on the floodplain and placed elsewhere creates a potential health hazard for area residents living outside of the floodplain (note 16 child sensitive facilities – schools, playgrounds, daycares, etc. - located throughout St. Francois County are in process of clean-up at this time). The County Health Departments will provide blood lead testing free of charge. Contact the EPA to discuss soil testing (or you may also contact local University Extension Offices to discuss soil testing for a nominal fee). The MO Dept. of Health & Senior Services May Meeting presentation materials are available at the link provided above.

Agendas for all three County Watershed Group May Meetings are attached, as is the updated master contact list (excel spreadsheet) for the tri-county watershed initiative.

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County-specific May Meeting Notes:

**St. Francois County:** May 23, 2011 at Mineral Area College, North College Center, Room C
12 people attended (see master contact sheet for attendance detail)

- Mention was made that the Elvins’ pile is experiencing problems with “dissolved zinc” (not a human health issue) for which a new design solution is being contemplated. Looking at a passive bioreactor which promotes bacterial growth as a natural remedy.

- A question was asked about a specific and meaningful definition for the term “lead poisoning,” noting that the term generally references an “elevated blood lead level” but doesn’t specify amounts, impacts, etc. It was pointed out that the term lacks meaning to the general public, potentially either under or over sensitizing the public discourse related to the subject matter. This issue should factor into the master plan document introduction as well as other parts of the document.
Suggested that we obtain a user-friendly description of the blood testing protocol from the health department to share with the general public. Share tips for managing lead issues as well (i.e. – wash/clean regularly; maintain sound nutritional practices, etc.)

A question was asked about documented cases of lead poisoning attributable to fish consumption in the Big River. None of the agency staff recollected a documented case in the Big River. It was noted that a study conducted in the 1980’s made reference to lead and environmental issues, in general. Agency staff made reference to fish advisories in the river for certain species (see health department websites for links to advisories). As a result of this question, the following points were made in the meeting:

- Lead in fish is found primarily in the bones (versus fatty tissue)
- Catfish and crappie are not included in the Big River lead advisory
- Fish advisories are not limited to lead, please note mercury advisories, as well
- Advisories are based on assumptions related to indigenous populations, with lead exposures over and above mere consumption of fish. Advisories may or may not be equally applicable to residents and transients (i.e. - tourists/Sportsman, etc.)

- It was suggested that the IDA/Tourism folks from each county (perhaps working collectively) work with agency staff to develop more appropriate and meaningful information about fish advisories (and other transient lead health issues) for use in informing non-residents who might want to recreate on the Big River Watershed.

- May also want to clarify concerns/precautions for local residents recreating on the Big River & its tributaries.

EPA updated group on yard and other clean-ups ongoing in St. Francois County. EPA staff asked that residents inform them of any concern for lead contamination in public or publicly accessible areas like those that have recently been acted upon by EPA (parks, schools, etc.) You may contact Jason Gunter at 913/302-9144.

Next meeting in St. Francois County will be Thursday, June 30th at Mineral Area College, North College Center from 6 to 8 p.m. (note: meeting actually concluded with discussion of next meeting date of Thursday, June 23rd, but that date had to be changed to the 30th due to logistical issues).

Jefferson County: May 24th at the Civic Center in Hillsboro
Meeting commenced with fairly extensive conversation about the Master Planning Process as the majority of the attendees had not attended the April Meeting.

The lead health discussion included general as well as Big River specific lead hazards.

**Question** was asked: Will examples be provided of potential construction projects?
- **Answer:** Yes. Fish & Wildlife and DNR will be making presentation at the next Watershed Group Meeting in which such examples will likely be discussed.
- Also, please see agency links provided at end of this document.

**Question** was asked: Will group have to wait (for future meetings) to get lead health information?
- **Answer:** No. Lead health is the subject matter of the May meeting (question had been asked before we began the health-based presentation)

**Question** was asked: Can EPA begin addressing product (potentially lead contaminated) on commercial operations located on the floodplain? For example: help property owners figure out what is contaminated and what isn’t.??
- **Answer:** Short answer – probably yes. Longer answer – not every landowner wants EPA’s help, or even presence on their property. So, as a matter of policy, we’ll have to put this on the list of objectives for the county/counties to address in the Master Plan. In the immediate term, Preston Law of EPA agreed to take the matter under advisement and determine what, if anything, EPA (or other agency) staff might be able to get engaged with such landowners – at the invitation of those landowners. Also need to review and assess availability of financial resources for specific elements of such an endeavor (i.e. – education, outreach, communication, etc. versus boots on the ground work to assess soil).

**Question** was asked: One local citizen raised a concern about another citizen’s commercial operation – asking why it might be allowed to operate (sell product) in a floodplain “known” to be contaminated with lead?
- **Answer:** Great illustration of a topic that will need to be addressed specifically in the Master Plan – an issue that is hopefully addressed across all three counties in order to keep the treatment consistent for all on the watershed. For example, we will want to address, in the body of the Master Plan, the most appropriate, practical, legal means of addressing materials that are excavated/mined in the floodplain and (potentially) moved elsewhere. Need to establish standard protocols, specs, policies, procedures, etc.
In the interim, citizens raising such questions are directed to share their concerns with agency officials (Preston Law is the EPA project manager for Big River).

It is expected that this particular topic will figure prominently in the discussions of the break-out group(s), expected to be formed in the July Watershed Group Meeting, at least one of which will focus specifically on commercial operations.

- **Question** was asked: Will agencies consider allowing natural (attenuation) flow of the river to clean itself (“as it did in the 70’s”)?
  - Answer: River did not necessarily “clean itself” in the 70’s. It just moved more lead downstream.
  - Answer: Exact means of remediating the river is yet to be determined. Pilot projects have already commenced to assess value/viability of using natural flow to capture lead in existing or yet to be constructed basins.

- **Question** was asked: What is baseline for lead in or around floodplain?
  - Answer: May be addressed in June Meeting when Fish/Wildlife discusses natural resources.

- **Question** was asked: Has there been an update to the 1977 Point/Non-point Source Analysis?
  - Answer: Not sure we got an answer to the question on this. But, both Point and Non-point source issues will be addressed as part of this plan (we will discuss Section 319 Non-point source watershed protection program at a future meeting).

- **Question** was asked: Why isn’t money being spent on Mississippi River (it’s really dirty and has lots of problems) – why pick on Big River?
  - Answer: Funding for this project is Big River-specific (ASARCO Settlement).

- **Question** was asked: What can EPA tell us about yard clean-ups?
  - Answer: In general, yard clean-ups are being effected for properties with lead levels above 400 ppm, with about 12 inches of soil being removed and replaced. Yards with levels above 1,200 ppm are considered “time critical” and are given priority.

- **Question** was asked: How are workers doing the removal protected from the lead?
  - Answer: The lead levels in the yards are not considered a problem for adults. EPA requires “level D” (nominal) protection of workers.

- **Question** was asked: How much soil has been removed from yards to date?
Answer: Jason Gunter said that over 1 million cubic yards have been removed from St. Francois County yards so far.

- **Question** was asked: What has been the cost to residents for those removals?
  - Answer: $0

- **Question** was asked: Does EPA or Fish & Wildlife have any plans for any construction projects on Big River yet?
  - Answer: No.

- **Question** was asked: Is there a list of “certified testers” who can assess soil contamination?
  - Answer: Not sure that there is a list. EPA will look to see if there is a list anywhere.

- **Question** was asked: What are the “rules” relative to removal of product from the floodplain?
  - Answer: Really not clear, and oversight is not currently vested in any one place. That topic will be a primary concern/objective in the Master Planning Process.

Reference was made to the Fish & Wildlife Study that addressed presence of lead contamination throughout the Jefferson County Big River floodplain. That study, styled the “Big River Mining Sediment Assessment Project,” conducted by Missouri State University, is available on the University Extension website referenced above.

Discussion ensued about plans to begin, in the July Watershed Group meetings, to break the meetings into separate groups for discussion about specific topics (i.e. – commercial interests; public health interests; recreational interests; etc.). We hope that by breaking into smaller, more focused groups, topics/questions such as those raised above can be exercised in greater detail and more specific challenges/potential solutions can be considered and/or deliberated upon.

- Included in the agenda for the meeting was a Table of Contents for a hardcopy workbook (two 3-ring binders) that contains materials pulled from the websites of several agencies. Those reference materials were compiled and organized in order to help citizens more readily access information to help inform this ongoing dialogue. Copies of those workbooks are maintained at both the County Offices (Office of Administration/County Executive) and at the University Extension office.
• **Additional Questions not discussed publicly at the Watershed Group meeting:** In addition to the questions asked at the Watershed Group Meeting, one citizen provided a list of questions (many of which he was hoping would be answered in the course of the meeting) prior to the meeting that are recounted below for inclusion in the record of this Watershed Group process. These questions were not discussed, specifically, in the meeting, but answers will be either provided below or requested of agency staff for discussion at a future meeting.

  o What is the concentration of heavy metals that are present in the lower part of the Big River, compared to the EPA standards for safety?
    ▪ Answer: Above the standard - Please see MO State University Study referenced above.

  o What product from the Big River bottom land can be (not asking if it is) contaminated by the metals that we are talking about?
    ▪ Sand & gravel? Answer: Yes.
    ▪ Sod? Answer: Yes.
    ▪ Top Soil? Answer: Yes.
    ▪ Row Crops like corn and beans? Answer: No.
    ▪ Meat from animals raised on grass (or moving about) in the bottom land? Answer: Need to ask agencies on this one. **EPA**?

  o What mechanical process is used to rid the river of heavy metals?
    ▪ Answer: No remedial action has been determined yet.
    ▪ **Insight:** EPA, can you provide some examples of what could be done, or has historically been done in such instances?

  o What other methods of dealing with the contamination are available?
    ▪ **EPA:** can we have a discussion about possible remedies, mechanical, natural and otherwise? (see “insight” above).

  o Given the level of contamination, is it safe for small children to play on dirt in the river bottom right now?
    ▪ Answer: There are obviously significant concerns for small children. **Our health professionals should provide specific details in this matter.**

  o Given the level of contamination, is it safe to have livestock in the river bottom right now?
    ▪ Answer: **EPA? University Extension?**
Is it correct that the Watershed Group has no regulatory authority, but that it is reporting to the regulators?

- **Answer**: Each county’s individual effort to develop, collectively, a Master Plan for the Big River is being funded by Cooperative Agreements between each county, individually, and the U.S. EPA. The work products of this/these efforts are considered deliverables to the EPA by virtue of those Cooperative Agreements. That said, it should be noted that this “pilot process” is being managed such that the work products are generally viewed as fruits of a collaborative effort in which the agencies, including U.S. EPA, are viewed as active contributors.

Historically, this process would have involved agency efforts to develop plans upon which the citizenry would have had an opportunity to opine at some point well into the future – after the agencies had already become well vested in particular directions or perspectives. The nature of this pilot process is much more collaborative; focused on community input into the planning process and active dialogue with agency staff (and elected officials) from the outset.

What is the timeline for the clean-up process?

- **Answer**: Yet to be determined. Remediation plan is expected sometime in the next 12 to 24 months. Interim clean-up efforts are possible, but likely not extensive until the source piles are completely stabilized (2013 timeframe).

While remediation of heavy metal contamination is the mandate of this initiative, are discussions of possibilities of green space, river walks, public rights of way and public easements an overreach for this mandate?

- **Short answer**: no. The Fish and Wildlife Service presentation may shed some light on this subject at the June Watershed Group meeting. In addition, note that while the focus of this initiative is the clean-up and restoration associated with the lead contamination, this Master Plan is expected to provide a comprehensive (and fluid) set of perspectives related to management of the Big River Watershed. As such, discussion of the amenities described in the question above would be expected to be a part of the Master Planning dialogue.

If the contamination situation is as widespread as indicated, how can such amenities (described above) be considered if utilization of such amenities would necessarily increase the number of people exposed to the hazard?
One of the basic premises of this entire collaborative effort is the notion that local interests, concerns and objectives related to the Watershed might be incorporated into the remediation and restoration planning processes to be undertaken by the agencies. Accordingly, consideration of any such amenities – or any other watershed related issue - would necessarily be exercised in the context of the remediation and/or restoration plans, to the extent that local interests might be accommodated prudently, practically, feasibly and safely as part of the clean-up and other agency efforts mandated in the watershed.

Has there been any indication as to potential liability for contaminated product sold out of the river bottom?

Answer: No. While liability issues will undoubtedly be part of the watershed groups’ discussions related to commercial operations in the watershed, the group will/would not opine on any such issues.

Next Jefferson County Watershed Group Meeting is scheduled for June 28th from 7:00 to 9:00 p.m. at the Civic Center in Hillsboro (Jefferson County Fairgrounds).

Washington County: May Meeting, scheduled for 25th, was cancelled due to inclement weather (tornados).

June Meeting scheduled for Tuesday, 21st at Washington County Library in Potosi from 6:30 to 8:30 p.m.

Please note, in anticipation of the June Watershed Group Meetings, U.S Fish & Wildlife Services & MO DNR provided the following links, which are described below:

Some examples of successful restoration projects as featured on the Department of the Interior's restoration page: http://restoration.doi.gov/Content.aspx?ContentId=89

You are invited to look around that website, both under “restoration” and “assessment” to get an idea of how the process works and how it could possibly unfold in Southeast Missouri.

They also provided a few links to completed restoration plans that might illustrate a general idea of what the plan might resemble when it is completed.

Fox River, WI:

Upper Arkansas River, CO:  http://www.fws.gov/mountain-prairie/nrda/LeadvilleColo/CaliforniaGulch.htm

If you have any questions or comments, please feel free to contact Mike Alesandrini at 314-753-2416 or at mike_alesandrini@urscorp.com.

Contact information for all parties involved in the Master Planning Process can be found in the Master Contact list on the University Extension Website.
Big River Watershed Group Meeting Notice/Invitation  
Jefferson, St. Francois & Washington Counties  
June 2011

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You are invited to attend the June meeting of the Big River Watershed Group on the dates and 
at the locations shown below:

**Washington County:** Tuesday, June 21st. 6:30 to 8:30 p.m.  
Washington County Library in Potosi

**Jefferson County:** Tuesday, June 28th. 7 to 9 p.m.  
JeffCo Fair Grounds, Civic Center in Hillsboro

**St. Francois County:** Thursday, June 30th, 6 to 8 p.m.  
Mineral Area College, North College Center

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**Draft Agenda**

- Welcome/Introductions
- Overview of Master Planning Process
- Agency Presentation: Natural Resources/Damages/Restoration – Defined
- Agency Updates
- General Q & A
- Next Steps/Future Meetings – dates and logistics

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**Contact Information:**

**Washington County:** Frank Fick: 573-438-2164; fick@lpha.mopublic.org  
Krista Snyder: 573-438-6196; ksnnyder@washingtoncomo.com

**Jefferson County:** Dean Wilson: 636-797-5391; wiondow@missouri.edu

**St. Francois County:** Mike Alesandrini: 314-753-2416; mike_alesandrini@urscorp.com

**Meeting/Plan Materials:** On-line at www.extension.missouri.edu/jefferson *

* Our thanks to the Jefferson County University Extension Office for hosting/maintaining this site  
  for the benefit of all three counties.  Please note, site will not be fully populated until week of June  
  20th.

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Big River Watershed Groups’ Meeting Summaries
June 2011
Jefferson, St. Francois and Washington Counties

To Access Watershed Group Meeting Materials for all three counties, please go to:
www.extension.missouri.edu/jefferson - see link to the left titled “local programming.”
Our sincere thanks to the Jefferson County University Extension for providing this resource.

Executive Summary: June meetings again proved fruitful relative to generation of meaningful subject matter for consideration in the Master Plan development process. The June meetings contained the last of the presentations by Agency staff (from the three trustee agencies) before the meetings turn more specifically to collecting fine tuning local inputs – to commence in the July Meetings.

The June meetings in each county commenced with a short overview of the Master Planning Process and Plan Outline by Mike Alesandrini (for those not in attendance at previous meetings) – see April Meeting presentation for full plan outline.

The June meetings featured discussions in each county about the Natural Resource Damage Assessment process, presented by staff from U.S. Fish & Wildlife Service and MO DNR. As is illustrated in the power point presentation that is available on line at the address provided above, John Weber of F&W went into some detail about the process by which the agencies (F&W and MO DNR) collaborate to determine the damages to the natural resources in the watershed and how they intend to go about planning to address the negative impacts by means of restoration of previously existing habitat or development of mitigation strategies that might provide for new habitat in the vicinity of the affected (harmed) natural resources.

The presentation provides considerable discussion about a variety of studies that address impacts to all matter of “natural resources,” including migratory birds, crayfish, microorganisms, flora, fauna, etc. In addition to the numerous such studies - which can be found on the F&W webpage or in the workbooks provided for each of the County Commissions/Council – Mr. Weber spent considerable time referencing a report entitled “Big River Mining Sediment Assessment Project: Distribution, Geochemistry, and Storage of Mining Sediment in Channel and Floodplain Deposits of the Big River System in St. Francois, Washington, and Jefferson Counties, Missouri.” That report, found on the F&W Website, in the above-referenced workbook and on the University Extension Website (referenced at top of page), provides the basis for the 3-county master planning approach to managing the Big River
clean-up and restoration. It is the report that shows migration of lead particles the length of the Big River in actionable levels.

Based on the presentation, it appeared as though attendees at all three watershed group meetings were able to get a better handle on the type of issues that need to be addressed in the Restoration Plan that will be developed in order to remedy the harm determined to have been done to a wide variety of natural resources in the Watershed.

The July Meetings of the County Watershed Groups are scheduled as follows:

Jefferson County: Tuesday, July 26th @ 7 p.m. at Civic Center in Hillsboro

St. Francois County: Thursday, July 28th @ 6 p.m. at MAC, North College Center

Washington County: Tuesday, August 2nd @ 9 a.m. at the Washington County Court House

State and Federal Agency staff has not been invited to the July Meetings, as those meetings are scheduled to focus on discussions about local inputs into the Master Planning Process. Each meeting (provided there are enough attendees) will be broken into small working groups to best facilitate and accommodate candid discussions about local issues affecting/affected by the Restoration and Remediation Plans to be written by the agencies in the coming year or two. A separate meeting notice & invitation will be sent/posted as is customary in each of the watershed groups.

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County-specific May Meeting Notes:

Washington County: June 21, 2011 @ Washington County Library – 6:30 p.m.

The meeting commenced with review of Master Planning process. Discussion ensued about potential to add up-stream (southern part of county) Big River issues to Watershed Group Agenda. As that possibility had been discussed with and generally approved previously, watershed group leadership was directed to begin to look into that opportunity. In addition, Presiding Commissioner Wright asked a few general questions (not watershed specific) of the EPA staff in attendance (Greg Bach). Staff noted the questions and agreed to get back with Commissioner Wright in the near term. In response to another question about the lead clean-up. Greg also discussed the issue of “technical impracticability.” In addition question was raised about scheduling of clean-up versus remediation (a routinely asked question at the watershed
group meetings. It was explained that all known sources of ongoing lead contamination to the watershed would be stabilized before comprehensive remediation efforts would commence.

Because the May meeting in Washington County had been cancelled (inclement weather), both EPA and F&W made presentations at this meeting in June. See F&W PPT presentation in the June meeting materials on-line and EPA’s presentation in the May materials.

In response to a number of specific questions, Greg discussed issues associated with barite (upstream) that do not impact the other counties. Further, in response to a question, he discussed ongoing PRP searches underway at EPA. He noted that the adequacy of the 400 ppm threshold is currently being discussed inside EPA. He also discussed differences in the geology between the counties that result in different impacts to groundwater (not an issue in St. Francois County). He added that USGS is continuing work to define differences in geology between counties.

A question was asked about yard clean-ups in the county. Greg noted that 288 properties had been cleaned up thus far. Removed material (mostly above 1200 ppm) is being taken to Indian Creek Repository (Richwoods). Over 1,000 yards are expected to be cleaned up throughout the county located in three separate EPA “operable units.” EPA has been providing drinking water for anyone with impacted wells (about 30 wells in question). In an effort to avoid undue concern about disposition and treatment of contaminated materials coming from yards, EPA will be working with the Commission to assist in educating the public and proactively soliciting and answering questions from concerned citizens.

Commissioner Wright asked about a list of acceptable uses for mine waste/residuels. Greg provided a partial list, but also agreed to help find a more complete list for all to understand.

Mr. Weber (F&W) made his presentation as well. Several very good/relevant questions were raised in this meeting regarding relationship between remediation and restoration efforts, timelines and coordination. Those questions have illuminated a need for increased discussion between agencies about a few key philosophical as well as practical considerations (thank you watershed groups).

An example of the kind of questions that need to be addressed in this discussion is: If a determination of “injury,” in the context of the natural resource damage assessment process, is based upon post-remediation evaluation of a resource, how is injury formally addressed if full remediation is never completed (i.e. – if river is never completely rid of the lead/heavy metals)?

Commissioner Wright also asked about potential remediation solution sets (i.e. – sediment removal) and the potential impacts on the remaining ecosystem (could the cure be worse than
the disease?). Again, these are issues to be dealt with by the agencies in mapping out the remediation and restoration plans.

Mr. Weber noted that F&W plan to create a single restoration plan for “southeast Missouri,” that will include Iron, Reynolds and Crawford Counties, in addition to Washington, St. Francois and Jefferson. Question was raised about allocation of available funds between counties (versus one big project in any one county absorbing an inordinate amount of the total resources. Mr. Weber indicated that that would not occur and that agency staff would take pains to assure that resources are available throughout the affected area.

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Jefferson County: 28th at the Civic Center in Hillsboro
55+ in attendance (see master contact sheet for attendance detail)

- Began meeting with a brief overview of Master Planning process
- John Weber from F&W made presentation. Frances Klahr, MO DNR NRDA was also present to support the presentation. Please see website for copy of presentation.
- John went into some detail about the species impacted by the heavy metals contamination, including/giving examples of both fish and bird populations.
- One citizen discussed his observation that mussels may well be “coming back” near Cedar Hill. Mr. Weber took note of that observation.
- Mr. Weber stressed the importance of the crayfish population on the entire ecosystem and used that as an illustration of the negative impacts on individual species that may play a key role in the entire system.
- He discussed the widespread nature of the lead contamination both in and out of the stream itself, including gravel bars, floodplains, etc.
- Question was raised about the lead levels in the stream. Mr. Weber discussed the thresholds as 400 ppm for impacts on a human population and 128 ppm for impacts to aquatic life.
- Questions were asked about potential avenues to remove lead from river. Mr. Weber discussed pilot projects that have already been conducted. Removal from low-head dams/structures may be feasible. He said that gravel bar excavation as a means of removing lead does not look like a meaningful remediation strategy (not to infer that excavation of gravel bars on a commercial basis may not be allowed, under the proper conditions).
- Question was raised about natural resource restoration funding. Mr. Weber noted that there was about $33MM already allocated from the ASARCO settlement and that those funds are residing in an interest bearing account (interest to benefit project) until such time as restoration projects might begin (following remediation).
• Question was raised about a “public accounting” of the funds spent from that account. Mr. Weber explained that the entire process is public, but indicated that there might not be a mechanism in place to provide the level of real time visibility of project accounting as was likely inferred by the question.

• The follow-up question asked if there could be such a mechanism set up. Mr. Weber said that could be taken under advisement.
  - Mr. Alesandrini suggested that that issue could be addressed as part of the Master Plan.

• Question was raised about use of settlement funds to remediate properties on the river/floodplain that have been contaminated by upstream release of heavy metals – asked in the context of a comparison between “yard clean-ups” contaminated by materials from the source piles, versus downstream properties also contaminated by source piles.
  - Agreed to address in Master Plan
  - Will inquire as to the availability of a legal opinion from EPA that addresses disparity between the situations.

• Question: Can NRDA “restoration” be conducted on contaminated sites on the river. Mr. Weber responded affirmatively.

• Another legal question was raised for which the group would appreciate any opinion or insight from EPA counsel: If an upstream contaminated property (not an original source site) is not remediated; a downstream contaminated (commercial) property is remediated; and a flood event creates additional contamination in the downstream (recently cleaned) property; could the upstream property owner in any way culpable for any loss of revenue by virtue of any retardation of operation of the downstream commercial property?

• If a culpable property owner (not necessarily tied to previous question) runs out of funding, to what extent is affected property owner responsible for costs to clean his/her property?

• Question was asked about funds available for remediation. Suggestion was made that it is an amount approximate to the amount available for restoration.

• Question was asked about use of EPA-controlled remediation funds to clean private properties (outside range contemplated in separate “yard clean-up” initiatives. Preston Law noted that that question is still being reviewed by EPA. He further noted that EPA has been focusing initially on those residential yard clean-ups.

• Follow-up question (to questions above): without support from agencies, is only recourse civil action? Preston made mention of ongoing PRP searches to continue looking for resources from culpable parties. John Weber noted potential for restoration projects to tie to property remediations.
Councilman Bickowski requested that a workbook (discussed earlier in notes) with the hard copy of various collateral materials be made available to/at the offices of the County Council.

Question was raised regarding assessment of lead contamination in the Meramec River floodplain – in the context of question about equitable treatment of topsoil as a commodity in locations proximate to one another (if sale/use of top soil in the Big River floodplain might be limited in some fashion as a function of lead contamination – will there be assurance that competitors in the adjacent floodplain will be subject to the same scrutiny/potential restrictions? John Weber noted that the nominal studies performed in the Meramec have demonstrated some elevated lead levels, but nothing noted in a critical range – as of yet.

To be specifically addressed in the Master Plan

Statement was made, for the benefit of the agencies present, that “property lines in Jefferson County run to the center of the river.” Citizens wanted agency staff to be aware of that issue as deliberations continue (perhaps not same treatment in other counties).

Question raised about involvement in this effort by East-West Gateway Council of Governments. Mr. Alesandrini noted that David Wilson, from E/W Gateway’s Environmental Section, is a participant of this effort; he routinely receives materials via e-mail and is involved routinely in conversations with Watershed Group leaders.

It was noted that Jim Silver (U.S. EPA) is currently working with Park District staff to address potential lead issues in/near the floodplain. Schools too.

Question was raised about formal notices at parks if lead numbers are unhealthy. It was reported that tests at the parks have shown no issue with lead on park grounds.

Councilman Bickowski asked if Watershed Group leaders would make sure and forward materials addressed to the County to individual Councilpersons in order to assure timely dissemination of information to all involved elected/administrative officials. Alesandrini and Wilson both agreed.

A suggestion was made that Jim Silver (EPA) attend the next (July) Watershed Group meeting. Preston Law said he would check to see if Jim might be available. (Note: agency staff may be intentionally left out of July meeting in order to facilitate conversations in small groups – If so, Watershed Group leadership will work to create an opportunity for Mr. Silver to be available for questions at some point in the immediate term).

The final point raised in the meeting is of considerable significance and immediate concern for commercial operators in the floodplain. The question was asked about a path forward for operators selling product from the floodplain (top soil, etc.). Specifically asked if they need to use some sort of a disclaimer – or what? If there is any direction from EPA on this subject, those operators would like to receive that input as
soon as possible. Preston indicated that he would look into the question. Alesandrini suggested that business owners were, as usual, responsible for their own operations – and that while these issues will be addressed as part of the master planning process, does not appear to be anything definitive yet regarding this issue (hopeful outcome of master plan).

- Next Jefferson County Watershed Group Meeting is scheduled for July 26th from 7:00 to 9:00 p.m. at the Civic Center in Hillsboro (Jefferson County Fairgrounds).

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St. Francois County: June 30th at Mineral Area College, North Bldg
13 in attendance

- Alesandrini commenced meeting with introductions, followed by brief overview of Master Planning process. Presiding Commissioner Cramp inquired about potential to become more involved in outreach into community in an effort to encourage more citizens to attend the Watershed Group Meetings. He recommended that he and Mr. Alesandrini work on an increased outreach effort prior to the next meeting.
- John Weber presented NRDA Power Point (see website for presentation).
- References to impacted species are addressed in summaries of other meetings above with detail contained in studies found in workbook as well as on-line.
- Question was raised about use of control area in the respective studies. Mr. Weber noted upstream control areas from which considerable disparities were obvious.
- Question asked about agency awareness of difference in water flow now versus when mines were active. Agency responded that while higher flow was prevalent then, still appears that flood events have a much greater impact on sediment deposition downstream.
- Question was raised about control areas in St. Francois County. Agencies noted that Irondale and other areas served as local control zones for studies.
- Question was raised about agency comfort level with accuracy of background levels of lead in the area. Agency staff asserted that while it was difficult to determine with a great degree of confidence what background levels are/were around the mines, background levels are fairly readily determined elsewhere in the county.
- Concern was expressed about motivation of local citizens who grew up with lead all around – difficult to engage in discussion about something that has always been part of their lives.
- Question was raised about wisdom in commencing restoration while injury is still occurring. Agency responded that piles would be stabilized before major restoration projects might begin. Follow-up suggested that there is potential ongoing
contamination beyond the source piles – for example: various pipes still found emitting discolored water (fluids) into the river. Agency staff and SWCD staff will work together to try to identify those potential sources.

- Jason Gunter discussed timeframe for continued stabilization – suggesting National should be completed in 2012.
- Discussion ensued about potential restoration projects
  - i.e. – added pick-up/drop off points for floating
  - reforestation
  - Noted that any provision for additional greenspace as part of a restoration project would need to also provide for adequate police oversight.
- Suggested that Farm Bureau and MFA should be invited to the Watershed Group mtgs.
- Jason Gunter noted that the most recently let yard clean-up should be starting soon
- Sharon Wallace said that blood lead levels have been improving per health dept.
- Suggested that fish populations are down because of contamination.
- Suggested that concern locally is not so much about impact to river, but from impacts of contamination on utility of land.
- Noted Kayakswarm effort to map river.
- Reference made to dolomite factory.
- Discussion of erosion issues at confluence of Terre Blu Creek and Big River.

- Next meeting: July 28th, 6 to 8 pm. At MAC, North College Center

Please note, for your convenience, U.S Fish & Wildlife Services & MO DNR provided the following links, which are described below:


You are invited to look around that website, both under “restoration” and “assessment” to get an idea of how the process works and how it could possibly unfold in Southeast Missouri.

They also provided a few links to completed restoration plans that might illustrate a general idea of what the plan might resemble when it is completed.


Upper Arkansas River, CO: http://www.fws.gov/mountain-prairie/nrda/LeadvilleColo/CaliforniaGulch.htm

If you have any questions or comments, please feel free to contact Mike Alesandrini at 314-753-2416 or at mike_alesandrini@urscorp.com.

Contact information for all parties involved in the Master Planning Process can be found in the Master Contact list on the University Extension Website.
Jefferson County Big River Watershed Group Meeting
Hillsboro Community Center/Jefferson County Fairgrounds
7:00 p.m., July 26, 2011

• Welcome & Introductions
  Elected officials, please stand and be recognized

• Brief Overview of Master Planning Process/Progress to date

• Explanation of Break-out Group Discussions*

• Next Meeting, Tuesday, August 23rd, 7 p.m. at Hillsboro Community Center

• Meeting/Plan Materials: On-line at www.extension.missouri.edu/jefferson *
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*Group Discussion Questions

Watershed = For sake of this discussion, the Big River, its Tributaries & the floodplain around each.

1. From your perspective: What is the total of activity (commercial, residential, recreational or other) that occurs in the watershed? How is it currently used or abused?

2. In your opinion how have the activities identified above been impacted by lead/heavy metals? Other environmental challenges (i.e. – dumping, erosion, etc.)?

3. Do you currently consider the Big River Watershed to be an asset to your community/county/region? If so, why? If not, why? And, what would need to occur for it to become an asset (you may identify either specific projects or general outcomes/objectives)?

4. Do you feel that you have received enough information about the lead/heavy metal contamination in the Big River watershed or would you like to learn more?

*******************************************************************************

Your input is welcome and much appreciated. Please feel free to call or e-mail with any questions or to share comments. You can reach us at:

Jefferson County:  Dean Wilson:  636-797-5391; wilsandw@missouri.edu

St. Francois County:  Mike Alesandrini: 314-753-2416; mike_alesandrini@urscorp.com

Washington County:  Frank Fick:  573-438-2164; fick@lpha.mopublic.org
                   Krista Snyder:  573-438-6196; ksnyder@washingtoncomo.com
Questions for break-out discussions
(July 2011 Watershed Group Meetings)

1. Please mark ("X") all that apply to you (optional, but helpful in assessing inputs):
   ______ Own Property in the Big River Floodplain (Big River or its tributaries)
   ______ Reside in the Big River Floodplain (Big River or its tributaries)
   ______ Operate a commercial venture related to resources removed from the Big River Floodplain

2. What (activities) do you do in the watershed? (You = yourself and your family.)
   a. Currently; Historically; Prospectively (what would you like to do in the watershed?)
   b. Commercially, Residentially, Recreationally, Other?
      i.e. – swim, fish, work, etc.

3. What activities are you aware of that occur in the watershed?
   a. Currently; Historically; Prospectively
   b. Commercially; Residentially; Recreationally; other activities
      i.e. – floating, noodling, kayaking, etc.

4. Has your activity (type, frequency, duration, etc.) in the watershed been impacted by? If so, how?
   a. Lead/heavy metals
   b. Jurisdictional or personal waste water emissions
   c. Other contaminants
   d. Erosion
   e. Other
      i.e. – Don’t fish as much/any as I used to.

5. What concerns you about the watershed as it currently stands (status quo)?
   i.e. – Could be a public health concern for future users of the Big River.

6. What concerns you about the future of the watershed?
   a. Potential limits on use
      i. Excavation/harvest of resources (top soil, sand/gravel, sod, etc.)
      ii. Recreational use
      iii. Institution of boundaries/borders
   b. Potential expansion of use
      i. Increased human activity in River/Tributaries
      ii. Increased access (physical points of access to river and/or watershed)
      iii. Added “green space”
      iv. Connectivity of local area to areas up and downstream
      v. Other
   c. Potential for contamination to be left in place (long term removal/management strategy)
      i.e. – Make sure there are there adequate resources available to police any added public access areas
i.e. – If there is some consideration given to limits on our ability to excavate materials from our floodplain (due to lead), would folks in other watersheds be subject to the same restrictions?

i.e. – Would more people in the watershed (tourists) mean greater exposure to lead poisoning?

7. What non-lead issues should be addressed as part of a comprehensive Watershed Management Plan?
   i.e. – Failing septic systems up and down the Big River and its tribs.

8. How do you feel about potentially funding future projects from government programs, versus private funding from PRP’s (potentially responsible parties)?
   i.e. – No tax dollars should be spent on any project beyond that of the PRP’s

9. Can you state one or more objectives for the work to be done as part of this project (from your perspective)?
   i.e. – The River should not pose a blood lead threat to children who live and recreate in the area.
   There should be more public access (boat launch) areas to the River.

10. If when (plan-based construction projects are) complete, the watershed would be described as an “asset” to the community/county/region, what in your minds-eye will have occurred?
    i.e. – The project work will have resulted in new attractions/amenities that might appeal to tourists, sportsman, etc.

11. If you could suggest anything that could be done to the watershed, what might that be?
    i.e. – Add rapids to certain segments of the river that could both function to improve habitat and create kayak-friendly features on the river

12. Do questions remain about the credibility of the agencies’ data, process and/or authority in this effort?
    i.e. – Not convinced that lead in actionable quantities exists throughout the floodplain – we’ve been swimming here for years and haven’t been negatively affected.

13. Other comments (free association)
    i.e. – any thoughts you want to share!

   Name/E-mail (Optional): _________________________________
Big River Watershed Groups’ Meeting Summaries
July 2011
Jefferson, St. Francois and Washington Counties

To Access Watershed Group Meeting Materials for all three counties, please go to:
www.extension.missouri.edu/jefferson - see link to the left titled “Big River Watershed Info.”
Our sincere thanks to the Jefferson County University Extension for providing this resource.

Executive Summary:

The St. Francois and Washington County meetings this month were attended by several first time attendees (attendance was up in both). Accordingly, time was taken to recap materials previously presented by agency staff related to contamination, natural resource damages, public health impacts, etc. Further, the Master Planning process was discussed in each group in some detail. Each group ended with a considerable amount of general Q&A and comment. As such, the planned inquiry about specific issues/impacts/perspectives of citizens was delayed until the August meeting.

Those questions were addressed in the Jefferson County meeting in July (again, well attended – most return participants). The questions are provided below, along with answers from each of the three break-out groups. General Q&A both preceded and followed the break-out sessions. Comments were offered up regarding both policy and practice as a result of this exercise.

The Jefferson County Watershed Meeting in August will have as guest speaker, Dr. Robert Pavlawsky, principal investigator for the Sediment Study conducted by MO State University which has illustrated a high incidence of lead throughout the watershed from the St. Francois County tailings piles to the confluence with the Meramec near Eureka. Dr. Pavlowsky was invited to the August meetings based on requests by citizens to hear first-hand about the underlying science and process. Dr. Pavlowsky is unable to attend the meetings in the other two counties. As such, citizens from all three counties are welcome to attend the Jefferson County meeting on the 23rd.

The August meetings in both St. Francois and Washington Counties will address the questions asked/answered in the July meeting in Jefferson County meeting. As a result of this scheduling situation, all three groups will be back on the same agenda with the September meetings.

Watershed Group Process:
Based on the answers to these (and future) questions posed to the Watershed groups; along with ongoing Watershed Group discussion/comment; and inputs from throughout the region, issues of both policy and practice are beginning to take shape. Articulation of those issues will foster considerable discourse both within the respective counties and region, as well as between citizens, agency staff and public officials. The outputs of this exercise should form the basis for the key elements of the Master Plan. A matrix of questions, comments, answers and follow-up will be developed in the immediate term in order to help manage this flow of information and assure response to/for unanswered or disputed questions.

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County-specific May Meeting Notes:

Jefferson County: July 26, 2011, Civic Center in Hillsboro, 7 to 9 pm (approx.. 55 in attendance)

Dean Wilson of the Jefferson County University Extension Office commenced the meeting, made introductions and discussed the agenda. Mike Alesandrini then provided some very brief background about the Master Planning Process (only two attendees who had not attended previously – referred them to website for background materials). Dean Wilson then discussed the small group process that would govern the remainder of the meeting. Full group discussion both preceded and followed the small group sessions, with the following questions/comments raised:

- Do property boundaries extend to the middle of the river?
- Does the “middle” of the river change over time?
- If so, do property boundaries also change over time?
- How do you determine where a property boundary is?
- How do you replace washed out land (loss of property)?
- Who does the replacement?
- Who pays for that replacement?
- Is lead a real problem?
- What are the facts about lead toxicity (not just reading from some rule)?
- Are we doing all this for nothing?
- Have the agencies answered questions posed to them?
- Will agency folks be back for next (August) meeting? Want them here to answer questions.

The input provided in the small group sessions is provided below. This input is in response to the following four questions:

1. From your perspective: What is the total of activity (commercial, residential, recreational or other) that occurs in the watershed? How is it currently used or abused?

2. In your opinion how have the activities identified above been impacted by lead/heavy metals? Other environmental challenges (i.e. – dumping, erosion, etc.)?

3. Do you currently consider the Big River Watershed to be an asset to your community/county/region? If so, why? If not, why? And, what would need to occur for it to become an asset (you may identify either specific projects or general outcomes/objectives)?

4. Do you feel that you have received enough information about the lead/heavy metal contamination in the Big River watershed or would you like to learn more?
## Answers to Q #1 to #4 above, by Group

<table>
<thead>
<tr>
<th>Group #1/Q#1</th>
<th>Group #2/Q#1</th>
<th>Group #3/Q#1</th>
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<tbody>
<tr>
<td><strong>Agriculture/Farming</strong></td>
<td>ATV (not in stream)</td>
<td>Bait / Tackle</td>
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<tr>
<td>Irrigation – Farming</td>
<td>Camping at State Parks / Private Property L?</td>
<td>Sand &amp; Gravel</td>
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<tr>
<td>Top soil sales/Sod farms/</td>
<td>Canoe Rental - L?</td>
<td>Top soil</td>
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<tr>
<td><strong>Recreational</strong></td>
<td>Communities on rivers - L</td>
<td>Canoe rental</td>
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<tr>
<td>Boating/Fishing/Swimming</td>
<td>Excavation– top soil/sand/gravel - L?</td>
<td>Fishing – trophy bass</td>
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<td>Parks – state, county, city &amp; private</td>
<td>Drink/Site see (stationary &amp; floating)</td>
<td>Co. Parks</td>
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<tr>
<td><strong>Commercial</strong></td>
<td>Failing septs / pipes / municipals - L (seasonal)</td>
<td>Families recreation</td>
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<tr>
<td>Gravel Mining</td>
<td>Family Fun (owned property) - L?</td>
<td>Farming</td>
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<tr>
<td>Bait shop</td>
<td>Farming: Row, Grain, Livestock, Vegetables, Nursery - L?</td>
<td>Sod farming</td>
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<tr>
<td><strong>Used/Abused</strong></td>
<td>Firing ranges</td>
<td>Soccer</td>
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<td>Water District #2</td>
<td>Fishing – Shore/Boat/Canoe - L</td>
<td>Driving ranges</td>
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<tr>
<td>Discharge from sewage treatment plants</td>
<td>Floating – tubes / canoes/etc.</td>
<td>Irrigation</td>
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<td>Residential along river – land value?</td>
<td>Gigging</td>
<td>Cabin rental</td>
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<tr>
<td><strong>Group #1/Q#2</strong></td>
<td><strong>Group #2/Q#2</strong></td>
<td><strong>Group #3/Q#2</strong></td>
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<tr>
<td>Fishing</td>
<td>See answers to Question #1 above</td>
<td>Real estate values</td>
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<td><strong>Group #3/Q#2</strong></td>
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<td>Group #1/Q#3</td>
<td>Group #2/Q#3</td>
<td>Group #3/Q#3</td>
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<tr>
<td>Yes!!!!!!!!!!!</td>
<td>Unanimous – Yes!</td>
<td>Yes</td>
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<tr>
<td></td>
<td>Beautiful place</td>
<td>Livelihood, recreation, rich history</td>
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<td></td>
<td>Not crowded</td>
<td>Minimal government interference</td>
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<td></td>
<td>Not asphalted</td>
<td>Facts</td>
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<td></td>
<td>Recreational source</td>
<td>Clean up the river – not on 831 list</td>
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<td></td>
<td>Good agriculture / land</td>
<td>Remove high lead areas</td>
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<td></td>
<td>Family fun place</td>
<td>Make sure we are heard!</td>
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<td></td>
<td>Historic benefits</td>
<td>Secure banks – stream bank erosion</td>
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<td></td>
<td>Water source (see question #1)</td>
<td>Target high lead areas</td>
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<td></td>
<td>Economic stimulus</td>
<td>Fix mill dams – Cedar Hill, House Springs, Byrnes Mill</td>
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<td></td>
<td>Don’t let government overstep private property rights</td>
<td>Fix sewers – failing systems</td>
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<td>Property owners to have 1st access to $$ benefit</td>
<td>Make EPA Accountable</td>
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<td>How about a settlement for all landowners (cleanup and development of property)</td>
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<td></td>
<td>* Lead has a very nominal impact on residents</td>
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<tr>
<td></td>
<td>How real is problem in Jefferson County?</td>
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</tbody>
</table>
Group #1/Q#4

Need more information
Lead levels
Study @ various locations, i.e. Gravel bars, (Stream) bottom, banks, flood plains
Establish/re-establish riparian corridors
Do not disturb soil (Times Beach)
Bank stabilization

More extension testing & more information on levels that are hazardous

Lead makes some people smart
Can’t let $$ give Jefferson County a black eye
This situation is not about the money
Leave it alone

Group #2/Q#4

Yes

Health issues –
More info on lead toxicity

How many have become ill from lead poisoning?

Group #3/Q#4

Some key themes that emerged from the conversation amongst the groups as the answers were shared with the entire Watershed Group included the following:

- No added regulations, restrictions, requirements!!!
- Compensation should be afforded landowners/business owners who are directly impacted by lead.
- The attributes of the River that make it an “asset” (particularly for those who have invested to live/work on or next to the river) would be diminished by any appreciable addition of traffic on/to the river.
  - Privacy, undisturbed “family fun,” limited opportunity for unlawful/inappropriate behavior, etc.
  - Why invite/provide for more people to be exposed to lead that we know won’t be cleaned up in the near term?
- Lead would not be an issue (in Jefferson County) if not for this group calling attention to it (i.e. – no incidences of lead poisoning or ill-effects on any commodity associated with the river or the floodplain.
- Jobs & economic development may be regional political objectives, but not specific to or to the detriment of the landowners/business owners along the Big River.
- Is the current lead law applicable to the Big River situation? Does it necessarily and/or unintentionally limit the consideration of prudent public policy in this situation?

Next meeting on Tuesday, August 23rd from 7 to 9 p.m. at Civic Center in Hillsboro. Dr. Pavlowsky is guest speaker.
Washington County: August 2, 2011, Washington County Courthouse, 9 a.m. (7 attendees)

Mike Alesandrini commenced the meeting, which included three first time participants. All introduced themselves. Mr. Alesandrini and Frank Fick (County Health Dept. Director and co-leader of the County Watershed Group) provided a fairly involved summary of the information shared previously by agency staff in the prior watershed group meetings. In addition, Mr. Alesandrini provided an overview of the Master Planning process. Much of the meeting was consumed with Q&A and commentary related to the presentations. That exchange is summarized below:

- **What does Master Plan look like (is there a template)?**
  - It is premature to put together a master plan until we have more input from the citizens. That said, it is possible that we could have a template in place in the near term.

- **When will this plan begin to come together (been working on it since December and nothing to show for it)?**
  - Our current goal is the development of a draft plan near year end 2011.

- **Is ASARCO Settlement available on the website?**
  - Not currently, but we will see if we can get it added.

- **Will landowners affected by contamination going to be able to share in the settlement funds?**
  - Agencies have suggested that landowners will likely not be in line for direct compensation.

- **How much lead poisoning has been documented that is attributable to activity in the watershed?**
  - We discussed previously extraordinarily high blood lead levels recorded in St. Francois County, but noted that with education and outreach, the numbers have dropped to state averages. Further noted that there does not seem to be a pronounced problem with lead poisoning.

- **Hemp absorbs lead from the soil – could be part of a long term solution.**
- **Bamboo –erosion control – might also prove a valuable part of a long term solution.**
- **Need to look at soil amendments that can solidify and/or biodiversify floodplain soils.**
- **Make sure that any dollars that flow into region do not diminish people or property rights (no strings attached, please)!!!**
- **Anything the government touches/helps tends to turn unsavory (paraphrased).**
- **Are we sending notices of meetings to citizens who live on the river?**
  - Only two residents in county downstream of source piles. They are aware of meetings. Will look into possibility of engaging residents on river upstream.
- **Don’t push farmers off their ground.**
- **Have we considered constructing a reservoir to accumulate the lead – and provide a recreational amenity, if managed appropriately?**
  - No, not to our knowledge. But, suggestion will be passed along.

Next meeting will be on August 24th at 9 a.m. at the office of the County Commission in Potosi.
We will pick up questions listed in the Agenda for July. All are welcome to attend the August 23rd Jefferson County meeting in Hillsboro (7 to 9 pm) where Dr. Robert Pavlowsky will be guest speaking about his sediment study.

**St. Francois County:** July 28, 2011 at Mineral Area College (13 attendees – six first time)

For the benefit of the new attendees, Mr. Alesandrini provided summary power point presentation highlighting past presentations by EPA, Fish & Wildlife Services, DNR and the Health Departments. That presentation was followed by a discussion of the Master Planning process. Those presentations were followed by general Q&A and comments – as follows:

- Is cattle (livestock) watering affected by lead?
  - Problems associated with livestock watering have not been an issue, and are not expected.
- Council Bluffs has damaged mussel populations.
- Have there been cost benefit analyses performed relative to any work that might be contemplated for the watershed?
  - No. And, not sure that such an analysis would be warranted/allowed under the applicable laws.
- Question was raised about the type of lead that has been found in the tailing (galena vs. oxides)? Are the impacts/damages different for different forms of lead? Any chance that agency sampling methodology in fact affects the type and amount of lead detected? What kind of lead are we really talking about? Can heat in the testing create false positive readings?
  - Deferred until agency/technical folks could be engaged.
- How much lead was actually smelted in the area?
  - Deferred to agency discussions.
- We know about fish advisories. If crayfish are affected by lead, are there crayfish advisories?
  - Deferred to agency discussions.
- Question/comment submitted prior to the meeting for the benefit of the agencies: with remediation planned for Haney Park in Park Hills in the immediate term, are there plans to address contamination in Shaw Branch, upstream of the park (which has been known to flood) such that recontamination does not become an issue.
  - The agencies are aware of that concern. Shaw Branch is a priority so as to stem the potential for any recontamination.

Next meeting: August 25, from 6 to 8 p.m. To address questions listed on agenda from July meeting. All are welcome to attend the August 23rd Jefferson County meeting in Hillsboro (7 to 9 pm) where Dr. Robert Pavlowsky will be guest speaking about his sediment study.
Big River Watershed Group Meeting Notice/Invitation
Jefferson, St. Francois & Washington Counties
August 2011

The August meetings of the Big River Watershed Groups will be held on the dates and at the
locations shown below:

**Jefferson County:** Tuesday, Aug 23\(^{rd}\)  7 to 9 p.m. JeffCo Fair Grounds, Civic Center in Hillsboro

**Washington County:** Wednesday, Aug 24th.  9:00 a.m. Washington County Courthouse – Commission Chambers

**St. Francois County:** Thursday, Aug 25\(^{th}\), 6 to 8 p.m. Mineral Area College, North College Center

Draft Agenda

- Welcome/Introductions
- Brief Overview of Master Planning Process
- Jefferson County Meeting Only: Dr. Pavlowsky (MO State University)
  Discussion of Sediment Study that shows Lead as widespread throughout Floodplain
- St. Francois & Washington Counties: Discuss issues, concerns, objectives, etc. related to
  environmental remediation and natural resource restoration activities anticipated
  in/nearby the Big River Watershed (all are welcome to attend JeffCo meeting as well)
- Next Steps/Future Meetings – dates and logistics

Contact Information:

**Washington County:** Frank Fick: 573-438-2164; fick@fick@lpha.mopublic.org
Krista Snyder: 573-438-6196; ksnyder@washingtoncomo.com

**Jefferson County:** Dean Wilson: 636-797-5391; wilsondw@missouri.edu

**St. Francois County:** Mike Alesandrini: 314-753-2416; mike_alesandrini@urscorp.com

Meeting/Plan Materials: On-line at [www.extension.missouri.edu/jefferson](http://www.extension.missouri.edu/jefferson)

* Our thanks to the Jefferson County University Extension Office for hosting/maintaining this site
  for the benefit of all three counties. Please note, site will not be fully populated until week of June 20\(^{th}\).

July Meeting Summaries to follow and to be placed on website (referenced above)
Executive Summary:

The agendas varied a bit between counties in August. Dr. Pavlowsky, MO State University – principal in the “Big River Mining Sediment Assessment Project” was the guest speaker in Jefferson County. Watershed Group members from other counties were invited and attended as Dr. Pavlowsky was unable to address the other two meetings. The St. Francois and Washington County meetings were used to address questions about the Watershed that had been addressed by Jefferson County Watershed Group members at the July meeting. The result of activity in all three meetings was the generation of additional questions, concerns, inputs, etc. critical to the deliberative process that will inform the drafting of the Master Plan. The Jefferson County meeting was well attended again, with about 70 total attendees – including about ten newcomers from the local community. The St. Francois County Group also saw a good attendance again, with a few new faces as well. Shortly after the regularly scheduled SFC Watershed Group meeting in August, I addressed a “4th Friday” luncheon hosted by Mineral Area College. That event enabled me to share information about the Big River Watershed Master Plan with dozens in attendance, as well as those impacted through media with both radio and newspaper coverage (front page, lengthy article in the Daily Journal). The Washington County meeting was again sparsely attended, but the meeting proved worthwhile in the facilitation of discussions between agency officials as well as garnering of input from a very knowledgeable and conversational local citizen. Subsequent to the regularly scheduled meeting in Washington County, I was able to address a local civic organization to again share information about the Master Planning process.

County-specific May Meeting Notes:

Jefferson County: August 23, 2011, Civic Center in Hillsboro, 7 to 9 p.m. (approx. 70 in attendance)

Dr. Pavlowsky provided a detailed discussion of his sediment study with the group, followed by Q&A. His power point presentation is available on-line at the website listed above. A few key points he highlighted are presented below.

- Lead contamination at actionable levels can be found consistently throughout the floodplain from the tailings piles in St. Francois County to the confluence with the Meramec River near Eureka.
- While much of the lead contamination is believed to have originated in the mining operations, much of what ends up downstream is thought to have most recently been housed in upstream floodplain soil, that was eventually released as a result erosion.
  - In essence, the river’s floodplain has become a “source” of lead.
The implication is need to control erosion as means of mitigating the floodplain as an ongoing source of contamination to the downstream segments of the river.

Question to Dr. Pavlowsky: Do old barite and lead mines in Washington County still serve as a source of lead contamination in the Big River Watershed?
Answer: Unknown at this time.

Question: How many sample sites did you test in Jefferson County compared to St. Francois County?
Answer: Not as many as in SFC, as SFC had more public access sites.

One resident made clear that he/others cared little about what might impact the Big River upstream of mile marker 90 (which is where river enters Jefferson County). He was adamant and reiterated his perspective through the evening.

- Dr. Pavlowsky found more lead in stream/channel in St. Francois County and the particles tended to be larger. Downstream of mile marker 90, the particles were smaller and tended to be more concentrated in the floodplain.

Concern was expressed about continuing migration of lead downstream, “30 years after active mining operations ceased in SFC.”

- Dr. Pavlowsky showed pictures of a 10 foot cut into a bank and noted lead contamination at a depth of 3 feet.

Question was asked: Will river eventually clean itself?
Answer: Yes, but will take very long time. River continues to try to store lead (source). Contamination can be found in the floodplain in thickness ranging from ½ meter to 7 meters thick.

Question: How long would it take Morse Mill to clean up once source piles are stabilized?
Answer: Very long time.

Q: Is lead a heavy metal?/Does it move via freeze/thawing (means other than flooding)?
A: Yes, lead is a heavy metal. Yes, it can move without benefit of flood – but that would occur extraordinarily slowly.

Q: Report shows lead more than 3 feet deep in soil. Is it safe to just leave it alone?
A: His experience shows generally above 1000 ppm and would need to be examined on a case-by-case basis.

Q: Has Dr. Pavlowsky looked at any more recent sediment migration?
A: Migration is less impactful if lead is mixed with other clean sediment
A: Less impactful if it is eventually “stored” in floodplain.
A: Allot of contaminated floodplain in lower Big River.
A: Allot of uncontaminated floodplain in lower Big River.

- There is far more contamination stored in the floodplain than in the channel.
o Much more in JeffCo floodplain than in SFC floodplain
  ▪ Floodplains are wider in Jefferson County
  ▪ Banks are higher in SFC

Q: JeffCo Stream Team asked about GIS markers on map to track stabilization efforts?
A: No real answer to this question

- Dr. Pavlowsky suggested/hypothesized that high spots in river valley floor are likely not so contaminated and he suspects that lower lying areas would be more contaminated (not obvious from data collected).
- He noted that:
  o 70% of lead in Big River Watershed is in Jefferson County
    ▪ 95% of that is in the floodplain
  o 2X the lead in SFC in channel than in floodplain – but channel is what moves the lead downstream
- His samples measured/showed “metallic lead,” not galena.
- Pavlowsky did not study impacts/use of chat as ag lime in Jefferson County.
- Conclusion inferred: Erosion control may be best approach to manage lead in Jefferson County

- Sampling rationale in Jefferson County:
  o Replicating historical sites
  o Every public access point
  o Right of way under bridges

Q: Are there any characteristics of untested sites that might infer more or less chance of contamination?
A: Samples (reflecting lead contamination) are characteristic of an array of situations in the county.
A: Could more testing be done to broaden the sample size – yes.
A: But, Dr. Pavlowsky “doesn’t expect that would change the outcome much.”

Q: Did quantities of lead contamination vary as you moved away from the channel?
A: Yes, closer to channel – higher the concentration.
A: Not uncommon to find “shoots” where concentration increased.

Q: Rationale behind thresholds? (i.e. – 128 ppm aquatic/400 ppm human health)
A: “Consensus from toxicologists.”

Q: What is total lead mass in Big River Watershed?
A: Huge, particularly where stored in floodplain.

Q: How does 2007 and later data compare to that gathered in the 1970’s?
A: Studies very different – so, no meaningful comparison.

Q: Is river getting better or worse/healing or not healing?
A: Not good data to support one way or the other.
A: Improving in Leadwood as sources are being stabilized.
A: Dave Mosby of F&W indicated that mussel populations are getting worse in Jefferson County.
Q: Is lead only cause for that decline?
A: Early (mussel) studies didn’t test for lead. More recent studies indicate a correlation between lead and decline.

Q: Is it safe to swim near Morse Mill?
A: Dr. Pavlowsky indicated that he is in the water there allot and has no adverse effects.
A: Swimming probably ok. Lead levels are nominal in water. Should be mindful of fish advisories.

Q: Have there been any surveys or tests on citizens?
A: Per MO DHSS, “original studies near tailing piles in SFC indicated near 17% of children with elevated blood levels – similar near Joplin. Salem used as control – only about 3% with elevated blood lead levels. With education, incidence of elevated blood lead levels came way down.” “DHSS works with local health care providers to address lead issues.”

Q: Is there a feasible way to get lead out of the river? Mining?
Q: Can it be neutralized?
Q: Where would contaminated soil go?
A: Mining lead from river/floodplain would disturb ecosystems and increase erosion

Q: How many lead samples were taken in Jefferson County?
A: 25 cores – maybe a 100 total samples
A: Showed trends – but not conclusive (not sure what this answer means)
A: Used field instruments to collect and took to lab for analysis

Q: If living right at mile marker 90, which EPA clean-up would citizen be in?
A: EPA will get address and find out – to respond directly to citizen.

Q: How much of a factor was surface mining operations in Washington County (in contamination of river)?
A: Likely was a factor, but has not yet measured how much might be stored in Washington County.
A: Could be long term source control.

Q: There are a number of deep shafts in Jefferson County that have been filled. Could those be leaching?
A: Don’t know (Dr. Pavlowsky)

Q: How was his research funded?
A: Fish and Wildlife Service

Q: Are clean-up efforts underway in Jefferson County?
A: Preston Law indicated that Jefferson County was listed as Superfund in 2008. Risk assessments are still ongoing. Expect to have remediation plan in three years (2015 target date). Awaiting upstream source stabilization to begin clean-up downstream. Stabilization expected in 2013 timeframe.

Q: Has Dr. Pavlowsky seen anything where he thinks clean-up could commence immediately?
A: Dr. Pavlowsky cautioned against removing things that the river has deposited. Put it there for a reason. Could contribute to more erosion.
**Washington County:** August 24, 2011, Washington County Courthouse, 9 a.m. (11 attendees – 1 citizen)

Noted that Madison County Health Dept. is working on development of voluntary institutional controls for limiting/controlling lead contaminated materials that might be excavated/mined, etc.

Noted that Washington County may well have a bit of lead from old lead mines and newer barite operations.

Gene Gunn indicated that Dr. Pavlowsky has suggested that the lead in the river can be attributed 95% to Doe Run- controlled facilities and 5% to other sources.

Jeff Wenzel suggested that lead in Washington County is likely to be found more in yards than in rivers/streams.

Q: Toxicity found in County
A: Gene Gunn indicated that EPA would be doing more work in this area. Greg Bach suggested that lead has trended in the 30 to 70 percent range for bioavailability with an average of about 50% in 48 yards measured.

Citizen discussed her experience with lead. Said her son played in creek known to have lead – he’s fine. Her husband worked in mine – she was exposed. Said “she had lead health issues in 1957. Now deals with stenosis of the spine and allergies.”

She further noted that allot of local citizens don’t think lead is a problem. But, lots have also had lead removed from yards.

EPA can still use assistance gaining access to contaminated yards. Discussed prospect of developing a proactive media strategy to get necessary messages in local media to assist with such things as access as well as Watershed Group attendance. Renee Bumgart (DNR)/Debbie Kring (EPA) may be able to work together on this.

**St. Francois County:** August 25, 2011 at Mineral Area College (14 attendees – at least four regulars out of town, but communicating about specific issues on-line)

Alesandrini and Peacock (SFC Health Dept.) discussed Dr. Pavlowsky’s presentation and key points made in the JeffCo meeting.

Discussed possibility of sending invites to specific people to attend future SFC Watershed Group meetings.

Discussed agency timelines for developing their respective plans:
- F&W/DNR Natural Resource Restoration Plan – 2012/2013
- EPA/DNR Remediation Plan – 2015
- EPA/DNR interim remediation plans – as needed/appropriate
Discussed work being done by EPA in SFC in response to general questions from attendees:

- Time-critical yard clean-ups (risk driven)
- Upstream rivers/tributaries
- Preparing to do latest round of commercial sites (schools, etc.)
- No EPA measured (health) impacts of lead in Big River Watershed
- Discussed funding and agency components of clean-up/restoration (referred to website and past notes)

Q: Who makes decisions about ASARCO Fund use?
A: EPA’s Regional Project Manager (RPM) and other EPA officials – with decisions vetted through a robust multi-agency, multi-elected official review process, requiring concurrence from state of MO.

Q: Where does funding come from for Superfund projects?
A: PRP’s; Special EPA Accounts; CERCLA (“superfund”) Fund

EPA made note of public meeting couple weeks earlier at which they discussed intent to clean up as many as 4,000 more yards in SFC.

Noted ASARCO remediation funds can be used in St. Francois and Madison Counties only.

In discussing Master Planning process, Dr. Cramp noted that goal is to inform agencies planning process from the outset, rather than at the conclusion.

Q: Are people dying from lead?
A: No. But, goal is improved health and better cognitive development for kids.

Q: Are we shooting for the right stuff (technically)?
A: Advisory group will be working on technical, as well as other issues, to inquire further.

Q: Is it clear where the lead is coming from?
A: Not definitely.

Question to group from Alesandrini (input gathering exercise – similar to past efforts in Jefferson County):

Q: What activities are known to occur or to have occurred on Big River?

Answers include:

- Vibrant recreation
  - Floating (lots of potential if more access areas)
  - Hunting
  - Fishing (both legal and illegal)
  - Swimming – limited public access
  - Trapping
  - Camping (currently limited – lots of potential – need more sites)
- Farming
- Limited row crops
- Pasture
- Animal farming
- Allot of use of state parks (local use and tourism)
  - St. Joe
  - St. Francois
  - Washington (outside county – but not uncommon destination for SFC residents)
  - Various geological amenities/formations
- Limited residential
- Various commercial – some permitted, some not

Q: Has contamination impacted any of these activities?
- Tires, trash, old farm equipment, old cars in water impact use of river
- Lead likely not perceived as a problem in SFC
- Erosion is problem for those who use river allot
- Suggested that some diminution of use could be sign of times (Wii generation) and not contamination
- Cattle grazing can muddy water

Q: Is there uptake of lead into crops?
A: Generally found more in garden vegetables/root crops.

Q: Is all floodplain leaded?
A: Per EPA, no.

Q: What is considered watershed for purpose of this discussion?
A: Been using 100 year floodplain for ease of discussion.

Noted that its difficult problem to address in SFC because so many people grew up around lead and don’t feel as though they have been affected.

Q: What are some known negative impacts?
A: Mussel populations in/around Leadwood are down.

Q: Is lead a concern for drinking water?
A: Not in SFC. Lead tends not to be an issue in water.

Q: Why (so much attention to) the Big River and not the Black River?
A: Black River is not near as well tested.
A: EPA has jurisdiction over closed mines, not necessarily active mines.
A: Lead has not shown up as a problem in fish populations on the Black River.

Q: What has been the timeline for tracking lead?
A: Since 1987, EPA has been tracking lead in the Old Lead Belt.
Q: Is EPA testing areas for commercial folks?
A: Yes.

Q: Are some of the former mined spots also the spots where erosion is a problem?
A: Yes
A: Will be increasing as an EPA priority.

Q: Are bends hot spots?
A: Yes, where banks are low.

Q: Need to stabilize?
A: Yes, with rip wrap.

Citizen noted that water quality management is becoming more of a priority, statewide.
Big River Watershed Group Meeting Notice/Invitation
Jefferson, St. Francois & Washington Counties
Early November 2011

The November meetings of the Big River Watershed Groups will be held on the dates and at the locations shown below:

**Jefferson County:** Tues., Nov. 1st, 7 to 9 p.m. JeffCo Fair Grounds, Civic Center in Hillsboro

**Washington County:** Wed., Nov. 2nd, 4 to 6 p.m. Washington Co IDA (501 East High St. – Potosi)

**St. Francois County:** Thurs., Nov. 3rd, 6 to 8 p.m. Mineral Area College, North College Center

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### Jefferson and St. Francois Counties - Meeting Topic

- **Managing the migration of lead contamination from the Big River Watershed**
  - There are numerous locations in the Big River Watershed from which materials, potentially contaminated by lead, are excavated or harvested and transported outside of the watershed. (Note: This particular concern does not generally pertain to row crops, grains, etc.)
  - Regulators are in the process of alerting citizens that parties who knowingly move contaminated materials from the floodplain (or any other sources) may be culpable for costs of clean-up associated with that transported material. This issue potentially affects commercial operations (i.e. - sand/gravel, top soil, tree/sod farms, etc.) as well as haulers.
  - The Watershed Groups will discuss the status of current regulations; anticipated regulatory objectives; local concerns about those objectives; as well as possible means of addressing the underlying regulatory concerns.

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### Washington County – Meeting Topic

- **Strategically planning user-friendly amenities on the Watershed**
  - One potential outcome of this process is the creation of new or improved amenities (access areas, etc.) for the benefit of those who use the River. Group will discuss approaches to identifying objectives related to development of such amenities in Washington County.

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- Krista Snyder: 573-438-6196; ksnyder@washingtoncomo.com

**Jefferson County:**
- Dean Wilson: 636-797-5391; wilsondw@missouri.edu

**St. Francois County:**
- Mike Alesandrini: 314-753-2416; mike_alesandrini@urscorp.com

**Meeting/Plan Materials:** On-line at [www.extension.missouri.edu/jefferson](http://www.extension.missouri.edu/jefferson)

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**December Meeting Topic (all three counties): Erosion control measures and BMP’s**

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Big River Watershed Group Meeting Notice/Invitation
Jefferson & St. Francois Counties

December 2011

The December meetings of the Big River Watershed Groups will be held on the dates and at the locations shown below:

**Jefferson County:** Tues., **Dec. 6th**, 7 to 9 p.m. JeffCo Fair Grounds, Civic Center in Hillsboro

**Washington County:** No meeting is currently scheduled in December

**St. Francois County:** Thurs., **Dec. 8th**, 6 to 8 p.m. Mineral Area College, North College Center

**Jefferson and St. Francois Counties - Meeting Topic**

- Managing contamination locked in the banks and floodplains.
  - **Jefferson County:** How “Understanding natural stream processes can help planning about re-mobilization of mine tailings from streambanks and floodplains” Presented by Paul Blanchard, MO Dept. of Conservation
    (This will be a discussion of erosion control in the watershed. We also anticipate that the Natural Resource Service – NRCS will be present to answer questions about their buffer strips and other erosion control measures along the river.)
  - **St. Francois County:** Review of Jefferson County Dept. of Conservation Presentation (sans Blanchard)
    Discussion of local bank stabilization and erosion control (best) practices, voluntary measures and subsidy programs.
    Ken Gilliam, Soil & Water Conservation District

**Washington County – Watershed Group Efforts**

Local leadership is in process of effecting specific stakeholder outreach efforts discussed at the November Watershed Group meeting.

Contact Information:

**Washington County:**  Frank Fick: 573-438-2164; fick@fickf@lpha.mopublic.org
                      Krista Snyder: 573-438-6196; ksnyder@washingtoncomo.com

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**St. Francois County:**  Mike Alesandrini: 314-753-2416; mike_alesandrini@urscorp.com

**Meeting/Plan Materials:**  On-line at [www.extension.missouri.edu/jefferson](http://www.extension.missouri.edu/jefferson)
Meeting Summaries

The Jefferson County Big River Watershed Group met on Tuesday, December 6th in Hillsboro. There were 27 attendees at the meeting.

Meeting commenced with presentation “Understanding natural stream processes can help planning about re-mobilization of mine tailings from stream banks and floodplains” Presented by Paul Blanchard, MO Dept. of Conservation. He discussed need for velocity control in order to manage erosion and deposition. He discussed bank stabilization, mechanical controls (dykes, weirs, rip/toe wraps). He discussed riparian corridors (trees, shrubs, grasses, etc.); 50 feet on small streams and 100 feet on larger streams. Discussed importance of farming practices on erosion controls (bank, floodplain, etc.). Stressed need to be able to plan fixes to river in order that new problems don’t’ arise from solutions to old problems. Talked about ability to map entire system, with combination of natural and mechanical solutions. Noting, however, that vegetative solutions are almost always the best and first choice. Weirs are generally second choice and armored banks is last choice (increases velocity downstream). Current mill dams could be used as sediment traps.

Q: What is Representative Ben Harris’ interest in the meeting?
A: (Rep. Harris) “To see how residents feel about what it going on here.”

Q: How many sites have been tested in Jefferson County?
A: Not sure.

Questions about MDC:
A: Paul Blanchard is the Stream Coordinator
A: Attention to geology and hydrology, not fish
A: MDC has no regulatory authority in this matter
A: MDC is not a trustee
A: Will provide input to other agencies (MDNR) in support of forests and natural resources.

Q: How do you prevent trees from crumbling into stream and taking bank with it?
A: One tree can go fairly easily. Many trees together are more difficult to uproot. So, plant heavier.

Comment: Byrnes Mill Alderman expressed interest in putting in a boat ramp and using old cars for erosion control.

Q: Are dams a viable control mechanism?
A: Would turn from stream to impoundment.

Comment: “Locals are worried more about people than they are about fish.” “Need to keep proper focus.”

Comment: Should try to keep lead where it is (in place). River is pretty tame. Should work to tame it more.

Comment (MDC): Can never tame river, just manage it. Keep forces affecting river as close to normal as you can.

Q: What happens if you slow velocity?
A: Increase deposition (converse would increase erosion).

Q: Does lead break down over time?
A: No, but could combine over time to become less bioavailable.
A: Exposure to oxygen increases availability.
Q: Are certain types of trees more successful as riparian corridor than others?
A: Yes, depending on situation

Q: How do you sell farmers on riparian corridors?
A: Programs
A: Stop losing fence and bank to erosion.
A: Use subsidies and easements

Q: Where would we (stakeholders) start?
A: Determine what needs to be removed from stream bed. For hot spots, create plan that does not destabilize ecosystem. Seek to control energy of stream.

Q: Can you map a 92 mile stretch?
A: No current examples, but should be able to do so.

Comment: There are plenty of examples of individuals doing the same on their own farms (land management practices). A little common sense goes a long way. Don’t create problems with the solutions chosen. Gravel bars have increased in size since excavating has become so problematic. Should manage the river like you manage your own back yard.

Q: Does a buffer zone equal a “greenway?” That term has different connotations for different people.
A: May be able to mix uses that includes support for new habitat. Doesn’t necessarily mean bike/hiking trails.

Comment: Don’t want trails.

The St. Francois County Big River Watershed Group met on Thursday, December 8th in Park Hills (MAC). There were 14 attendees at the meeting.

Began meeting with presentation of the MDC power point that Paul Blanchard presented at the Jefferson County meeting on December 6th - “Understanding natural stream processes can help planning about re-mobilization of mine tailings from stream banks and floodplains.” That PPT was narrated by Mike Alesandrin, with assistance from other agency staff in attendance who had also attended the JeffCo meeting.

Comment: Used to be a weir just above the 7th St. bridge in Park Hills – it protected the treatment plant.

Q: What maintenance would be expected in the riparian corridors?
A: Keep farm animals off; keep at least 30 ft of buffer; keep mowed as prescribed; no spraying.

Q: Would corridors be public?
A: No.

Comment: Ken Gilliam of the Soil & Water Conservation District (SWCD) discussed us of the WQ10 program to manage cattle around stream (may be able to get to water, but won’t stay because rocky bottom would be too uncomfortable.

Comment: Another resident noted use of cost share with land owners to drill for well to construct watering system (to keep animals out of stream). He said the MO Conservationist routinely has articles about such programs administered by the SWCD. MDC has conservation programs, as does USDA.

Comment: Resident of Big River Estates says he’s losing bank and trees and would like assistance in arresting that bank erosion.
Comment: May want to contact Stream Team about planting trees on bank.

Several questions were asked about property owners’ ability to affect improvements/controls on their own stream banks. Wanted to hear back from MDC at some point.

Greg Bach discussed new river gauge at Hwy E. USGS effort (funded by EPA) to monitor metals in the river. Results should be on-line.

Comment: Kayakswarm had provided some preliminary findings from their recent trip down the Big River. They noted change in habitat along the river and noted change in crayfish populations. But nothing much more than observations. Asked about a trend – unsure.

Ken Gilliam provided an update on the SFC 319 project related to abatement of test holes throughout the county. The project enabled the district to support landowners’ efforts to fill and cover test holes that constituted dangerous situations for livestock and potential threat to area drinking water sources. He said they normally cut the pipe a few feet beneath ground level and fill with bentonite. Landowners pay to cover and revegetate. GPS readings are kept for each hole. Over 1,400 holes were filled with first grant. About 950 have been filled with this grant.

Comment: Kenny mentioned USDA programs that are also available to implement BMP’s for land management.
Big River Watershed Group Meeting Notice/Invitation
Jefferson, St. Francois & Washington Counties
March 2012

The March 2012 meetings of the Big River Watershed Groups will be held on the dates and at the locations shown below:

Jefferson County: Tuesday, March 27th. 7 to 9 p.m. JeffCo Fair Grounds, Civic Center, Hillsboro

Washington County: Wednesday, March 28th, 1 to 3 p.m., IDA Office, 501 E. High St., Potosi

St. Francois County: Thursday, March 29th, 6 to 8 p.m. Mineral Area College, North College Ctr.

Agenda

• Welcome/Introductions
• EPA Update of upcoming activity in the area (Preston Law)
• Request for access: Missouri State University (see back of page)
• Brief Overview of Master Planning Process & Progress to Date
• Review proposed* outline and draft language developed to date for Interim Master Plan
• Next Steps/Future Meetings

* “Proposed” denotes a starting point for the discussion within the watershed groups. The proposed language is based on inputs provided by watershed group members, citizens, elected officials, agency representatives etc. over the past year. A Master Plan will not be completed until the proposed outline, language and thought processes have been exhaustively vetted through the public participation (Watershed Group) process and then reviewed/approved by county elected leadership.

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Jefferson County: Dean Wilson: 636-797-5391; wilsondw@missouri.edu

St. Francois County: Mike Alesandrini: 314-753-2416; mike.alesandrini@urs.com

Meeting/Plan Materials: On-line at www.extension.missouri.edu/jefferson *

* Our thanks to the Jefferson County University Extension Office for hosting/maintaining this site for the benefit of all three counties. Please note, site will not be fully populated until week of June 20th.
Request for access to pull core samples in Big River Floodplain

March 13, 2012

Dr. Robert T. Pavlowsky
Professor
Missouri State University
Department of Geography, Geology, and Planning
Director, MS program in Geospatial Science
Director, Ozarks Environmental and Water Resources Institute

Mike:

I have a graduate student that is studying soil cores from the Big River floodplain for her MS thesis. We are looking for drive-in access with a four wheel drive coring rig to collect some 10-20 ft long cores. I remember at the Hillsboro meeting, several landowners offer me access to their land for sampling purposes. Is there any way that you can follow up in this for me and see if you can get permission for MSU/me to spend ½ day collecting 2 to 4 cores on their property? I’m looking for access to one or two properties in each of the locations described below.

I am primarily interested in these Big River segments:

1) Between Hwy E crossing just north of Bonne Terre to above Mill Creek.

2) Below Mineral Fork to Morse Mill.

Also, we are interested in access to lower segments within a few miles of the Big River on 3) Mill Creek and 4) Mineral Fork.

Any help you can offer on this would be greatly appreciated. We don’t need many sites, just one or two in each Big River segment and one each from the tributaries.

Thanks,
Bob

Robert T. Pavlowsky
Missouri State University
Professor
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Department of Geography, Geology, and Planning
Director, MS program in Geospatial Science
Director, Ozarks Environmental and Water Resources Institute
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Bobpavlowsky@missouristate.edu
Meeting Summary

The Jefferson County Big River Watershed Group met on Tuesday, March 27th in Hillsboro. There were 37 attendees at the meeting.

Meeting began with an update from EPA. Preston Law noted that a new contract for yard assessments through the summer was out for 256 properties, affecting homes located in the 100 year floodplain. He discussed the attached (above) access agreement for sampling to be done by a student from MO State University (Dr. Pavlowsky’s program). Also noted EPA Public Availability Session scheduled for April 5th in Byrnes Mill.

We then reviewed the Master Plan Interim Report Outline. The following comments, suggestions, revisions were made:

- Suggestion to question health testing and findings.
- Suggestion to publicize the effectiveness.
- Suggestion to define control measures (for leachate) at piles.
- Note need to remediate “hot spots.”
- List bank stabilization and erosion controls as specific objectives (where appropriate)
- Suggested that “Do Nothing” (natural attenuation) be given some consideration in the SE MO Draft Restoration Plan (at least for parts of the river).
- Reiterated that public perception of this effort remains a problem for the agencies.
- Concern remains for danger associated with increased truck traffic on public roadways as material is transported from yards to whatever facility is created to accept (new dump) that material.
- Reiterated concern over lack of information and well developed data necessary to make significant public policy decisions.
- Reiterated concern about standard operating procedures (definition/development of and oversight of implementation) for site investigation (sampling) and risk assessment.
- Requested some statement(s) related to quality control mechanisms – and public oversight/ownership of those QA/QC processes.
- Relative to projects:
  - Special attention to existing parks
  - Further investigate impacts of barite.
  - To extent possible, involve land-owners in land management projects (cost share, project development, etc.).

The Washington County Big River Watershed Group met on Wednesday, March 28th in Potosi. There were 10 attendees at the meeting.

Meeting began with a brief update of EPA activities. Preston Law discussed clean-up activities and the Pavlowsky access request for Big River and Mineral Fork.

We then reviewed the Master Plan Interim Report Outline. The following comments, suggestions, revisions were made:

- As part of stewardship efforts, agencies may consider providing access to local workers to 40 hour hazwopper training; OSHA Training; as well as lead abatement training and any requisite licensing.
- As part of outreach effort, develop a training course for anyone who works with or around lead (what not to take home)
Q: Would filtration damaes help?  
A: (MO DHSS) generally not soluble, so filtration likely won’t be that effective.

Q: Could satellite technology identify lead in ground or in-stream sufficiently to help identify hot spots?  
A: Don’t know.

The St. Francois County Big River Watershed Group met on Thursday, March 29th in Park Hills (MAC). There were 13 attendees at the meeting.

Meeting began with a brief update of EPA activities by Preston Law.

We then reviewed the Master Plan Interim Report Outline. The following comments, suggestions, revisions were made:

- Relative to EPA/stakeholder relations, Preston noted that incentives to hire 50% or more local labor has gone well.
- Noted that focus on people and natural resources are not necessarily mutually exclusive.
- Suggest a good tracking system for data, particularly for public parks – such system to include prompt for follow-up assessments.
- Add to economic considerations:
  - Fear regarding tourism (fish advisories)
  - Trickle down to private sector for any concern over public park problems with lead (fear, not reality of lead concerns)
- Remove any reference (inference) to a new dam.
- Add a tourism education component to outreach/education section

Tracy Haag of MDNR, St. Louis Regional office discussed efforts related to the “Our Missouri Waters” initiative.
The May 2012 meetings of the Big River Watershed Groups will be held on the dates and at the locations shown below:

**Jefferson County:** Tuesday, May 29th, 7 to 9 p.m. JeffCo Fair Grounds, Civic Center, Hillsboro

**Washington County:** Thursday, June 7th, 10 a.m. to Noon, IDA Office, 501 E. High St., Potosi

**St. Francois County:** Thursday, May 31st, 6 to 8 p.m. Mineral Area College, North College Ctr.

**Draft Agenda**

- Welcome/Introductions
- Brief Overview of Master Planning Process & Progress to Date
- Review first draft language* for Master Plan Interim Findings Report
- Next Steps/Future Meetings

* An outline for this text was shared and discussed at the March Watershed Group meetings. The first draft text is based on the groups’ input regarding the outline and the inputs provided by watershed group members, citizens, elected officials, agency representatives and other stakeholders over the past year and a half. A formal Master Plan Interim Findings Report will not be submitted to the agencies until the proposed language (and thought processes) have been exhaustively vetted through the public participation (Watershed Group) process and then reviewed/approved by county elected leadership.

**Contact Information:**

**Washington County:** Krista Snyder: 573-438-6196; ksnyder@washingtoncomo.com
Nicholas Hughey: 573-438-2164 ext. 232; hughen2lpha.mopublic.org

**Jefferson County:** Dean Wilson: 636-797-5391; wilsandw@missouri.edu

**St. Francois County:** Mike Alesandrini: 314-753-2416; mike.alesandrini@urs.com

**Meeting/Plan Materials:** On-line at [www.extension.missouri.edu/jefferson](http://www.extension.missouri.edu/jefferson)

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Meeting Summaries

All three meetings were convened on the dates, times and in the locations indicated above in the attached meeting notice. The agenda for the meeting involved wordsmithing a draft of the interim findings report to EPA. We ran through the amended outline (using inputs from the March meeting) for the benefit of anyone not in attendance at the March meetings and any language that had already been drafted prior to the meeting. Very little change was made (and nothing substantive) as a result of these May Meetings.
Big River Watershed Group Meeting Notice/Invitation  
Jefferson, St. Francois & Washington Counties  
October/November 2013

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The October/(early November) meetings of the Big River Watershed Master Planning Groups will be held on the dates and at the locations shown below:

St. Francois County:  Monday, Oct. 28th, 6 to 8 p.m.  Mineral Area College, North College Center

Jefferson County:  Tuesday, Oct. 29th. 7 to 9 p.m.  JeffCo Fair Grounds, Civic Center, Hillsboro

Washington County:  Monday, Nov. 4th, 6 p.m. to 8 p.m.,  Washington County Library (entrance in the back), 235 E. High St., Potosi

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Draft Agenda

- Welcome/Introductions
- Update on Master Planning process to date (haven’t met since 2012)
- Review & discuss recently rolled out draft Restoration Plan & Appendices
  Related documents can be viewed on-line at: http://dnr.mo.gov/env/hwp/sfund/nrda.htm
- Review key elements of Watershed Group Mater Plan draft

********************************************************************************

Contact Information:

Washington County:  Krista Snyder:  573-438-6196; ksnyder@washingtoncomo.com  
Nicholas Hughey:  573-438-2164 ext. 232; hughen2lpha.mopublic.org

Jefferson County:  Mike Alesandrini:  314-753-2416; mike.alesandrini@urs.com  
• Serving as contact for JeffCo Watershed group on interim basis only.

St. Francois County:  Mike Alesandrini: 314-753-2416; mike.alesandrini@urs.com

Reference Materials:  On-line at www.extension.missouri.edu/jefferson  *

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Summary: Draft SEMO Ozarks Regional Restoration Plan

(For Watershed Group Discussion Purposes only)

Section:

3.2 Alternative A: No Action – Do nothing/no change in current management of watershed

3.3 Alternative B: Primary Restoration – action taken to return resources to baseline condition

- “would only be considered in areas where the landowner is willing and the surrounding land uses indicated that the restoration will remain viable wildlife habitat”
- “Trustees may conduct primary restoration on existing public land or may use conservation easements”

3.3.1 Upland Resource Restoration Projects

- Ecological enhancements?
- Re-establishment of native upland vegetation. (Riparian Corridors?)
- Propagation /Restocking of T&E species

3.3.2 Wetland, Floodplain & Riparian Corridor Restoration Projects

- Ecological Enhancements?
- Removal or stabilization of contaminants from wetlands, floodplains & riparian corridor (land mngmt).
- Restoration of floodplain forests?
- “Disruption of (or not repairing) agricultural drain systems” (Improved land mngmt practices)
- Re-establishment of wetland, floodplain & riparian corridor plants & vegetation

3.3.3 Surface Water Quality & Aquatic Resource Restoration Projects

- Ecological enhancements?
- Stream Bank Stabilization
- Floodplain soil stabilization (land management practices)
- Restoration of floodplain forests
- Stream channel design/restoration
- Restoration of Mine Drainage Seeps/Waste adjacent to waterways?
- Establishment or protection of injured riparian corridors

3.3.4 Groundwater Quality & Resource Restoration Projects

- Treatment of contaminated GW (limited geographic impact: JeffCo)
- Ecological Enhancement?
- Closure of voids that allow contamination to enter GW directly (continuation of SFC test pipe project)
- Riparian restoration along losing streams
Section:

3.4 Alternative C: Compensatory Restoration – Replace or acquire natural resources & services equivalent to those injured, in lieu of or addition to direct restoration of those injured resources.

- “would only be considered in areas where the landowner is willing and the surrounding land uses indicated that the restoration will remain viable wildlife habitat”
- “Preservation of restored properties would be obtained through fee title purchase or environmental covenants.”
- “Trustees prefer conservation easements”

3.4.1 Upland Resource Restoration, Enhancement & Creation

- Differs from 3.3.1 due to location/proximity of projects away from area impacted by release
- Acquisition or protection of high quality glade, grassland, forest, or savannah in SEMO
- Propagation/restocking of T&E, game & non-game species
- Restoration/rehabilitation of degraded glade, grassland, forest, or savannah environments
- Other Projects to reestablish natural characteristics

3.4.2 Wetland, floodplain or Riparian Corridor Restoration, Reestablishment or Enhancement

- Differs from 3.3.2 due to location/proximity of projects away from area impacted by release
- Acquisition or protection through conservation easements of wetlands, floodplains or riparian corridor
- Restoration/rehabilitation of degraded wetlands, floodplains or riparian corridor
- Conversion of non-native wetlands, floodplains or riparian corridor into native species composition
- Propagation/restocking of T&E, game & non-game species
- Other Projects to reestablish natural characteristics

3.4.3 Surface Water Quality & Aquatic Resource Improvement Projects

- Differs from 3.3.3 due to location/proximity of projects away from area impacted by release
- Acquisition or protection through conservation easements or other contractual mechanisms of native riparian corridor /forested floodplain
- Restoration/rehabilitation of degraded riparian corridor
- Stabilization of eroding stream banks
- Natural stream channel design/restoration
- Propagation/restocking of T&E, game & non-game aquatic species
- Acquisition or protection through conservation easements or other contractual mechanisms of high quality seeps, springs & swamp environments

3.4.4 Groundwater Quality & Resource Improvement Projects

- Acquisition or protection through conservation easements of caves, karst areas, seeps & springs
- Establishment of drinking water protection zones
- Etc.
Section:
3.4.5 Public Education & Enjoyment Projects ("improve quality of life for communities impacted by resource injuries")

- Education programs could include programs to promote:
  - Hiking & Bird Watching
  - Trash/stream clean-ups
  - Importance of water quality to life in the project area
- Programs to promote protection & conservation of resources resulting in enhanced public access

3.5 Alternative D: Combination of Primary & Compensatory Restoration Alternatives

6.5 Compensatory Restoration Project Proposal Ranking Criteria – See Table 6
Meeting Summaries

The St. Francois County Big River Watershed Group met on Monday, October 28th in Park Hills (MAC). There were 14 attendees at the meeting.

- Meeting began with an update of process since last meeting.
- The key elements of the Restoration Plan were presented (see attached above). Full plan documents were provided for those who expressed desire to have a hard copy. Discussion around plan was generally limited to how much and how fast would projects be on the ground in St. Francois County. Response was limited other than to indicate that project solicitations may be seen as early as 2015 and that early stages of the process will likely not be high dollar projects (comparatively speaking).
- Then discussion ensued related to the draft Master Plan Outline. The following input was provided by the attendees:
  - Group agreed that a clear, concise statement was appropriate in the plan to convey strong sense of concern for lead health in the region.
  - Land uses that may not have been recognized as yet include:
    - Surface water intake & waste water treatment
    - Owners of property located immediately adjacent to bridges (frequently accessed, non-access areas)
  - Legislative & Congressional Districts within the watershed should include MO-97th (McCaherty)
  - Under “Stakeholder Objectives,”
    - “Don’t forget efforts to stimulate economic activity.”
    - Question was raised by facilitator about need/desire to specifically discuss enhancement of habitat. The issue did not receive further exercise.
  - Regarding “technical capacity” EPA (Jason G.) noted activity by Geologic Survey on suspended sediment survey. He further noted discussions ongoing with U.S. Army Corps of Engineers to study bed load.
  - Education might be provided relative to legal obligations around lead.
  - Projects should be favored that “sell the region.”
  - Add to the list of targeted (improvement) project priorities:
    - St. Francis State Park

The Jefferson County Big River Watershed Group met on Tuesday, October 29th in Hillsboro. There were 31 attendees at the meeting.

- Meeting began with an update of process since last meeting.
- The key elements of the Restoration Plan were presented (see attached above). Full plan documents were provided for those who expressed desire to have a hard copy. Interest was expressed as to how much and how fast projects would be on the ground in Jefferson County. Response was limited other than to indicate that project solicitations may be seen as early as 2015 and that early stages of the process will likely not be high dollar projects (comparatively speaking).
  - Other questions included:
    - Q: How is “baseline” determined? Is it pre-industrialized mining operations? Would it necessarily take into account other impacts? How pristine would it have been in the absence of the industrialized operations? (Rhetorical)
    - Q: Can Trustees lower their standards
    - A: FWS – That’s what this process essentially does.
Q: What was FWS seeking in the way of damages from ASARCO?
A: FWS – about $400MM

Q: Does it make sense to do a general plan first and then entertain proposals (instead of seeing what projects make sense from the proposals and crafting a plan around them)?
A: FWS – Geography will likely play a significant role in determining what RFP’s are released when.

Q: Will funding be allocated to specific geographic areas?
A: Yes – those areas are generally discussed in the plan (see page 12).

Q: Is there any reclamation being done at any of the piles (for materials with any commercial value)?
A: State wants piles capped now. Currently, reclamation is not financially feasible. Could be some day, though.

Q: How pristine are the mill ponds by the mill dams in Jefferson County?
A: Different scenarios are being considered by agencies now – will depend on assessment of long term impacts of lead coming out of the river.
A: FWS – Mills were pre-baseline.

Q: Where does property line land in/about the river (middle, bank, etc.)?
A: Not sure. May want to consider adding legal expertise to technical advisory group.

Then discussion ensued related to the draft Master Plan Outline. The following input was provided by the attendees:

- Lead Health message at front of document should not be limited to mine waste as source of lead contamination.
- Stakeholders & Partners should include:
  - Property owners who “live near piles or materials repositories, as well as in the vicinity of historic, small scale barite mines and even newer commercial mining operations.
  - Those who view parks/natural resources as key economic drivers in the region.
- Technical advisory group should assist in assessing or establishing baseline levels in the region.
- Project priorities should include implementation of best management practices.

The Washington County Big River Watershed Group met on Monday, November 4th in Potosi. There were 3 attendees at the meeting.

As the meeting was attended by the facilitator and two agency staff, after a sufficient time had elapsed as to make it clear that no one else was coming, the meeting was cancelled and no official work product was generated.
## Big River Watershed (Master Plan) Group - Contact List

**Updated December 13, 2013**

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<tr>
<th>Name - Last</th>
<th>Name - First</th>
<th>Title</th>
<th>Elected Official</th>
<th>Administrative Official</th>
<th>Media</th>
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**Bold letters connote primary contacts**
Big River Watershed (Master Plan) Group - Contact List  
Updated December 13, 2013

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Appendices

Appendix A     URS Scope of Work

Appendix B     Watershed Group Meetings
- List of Meeting Dates
- Meeting Notices/Agendas/Summaries
- List of Attendees

APPENDIX C     TECHNICAL ADVISORY COMMITTEE OF WATERSHED GROUP
- Agenda/Attendees/Summary of March 24, 2012 Agency Meeting
- Any Subsequent Such Meetings
- Technical Advisory Team (technical review)

Appendix D     Press Releases Issued during Planning Period

Appendix E     Material Prepared for County Commission/Council Meetings and Work Sessions

Appendix F     Fact Sheets from EPA for Big River and Related Operable Units

Appendix G     “Our MO Waters” Initiative

Appendix H     Health Department Information
- St. Francois County Health Department “Lead Poisoning” web page.
- DHSS Fact Sheet (Fishable/Swimmable)

Appendix I     Miscellaneous
Big River Watershed Master Plan Group:
Technical Advisory Committee Meeting(s) Dates:

Workgroup members who attended one or more advisory committee discussions (coffees)

- Bill Mount, Owner, Mount Vineyards, Geologist
- Frank Fick, Director, Washington County Health Dept., Environmental Scientist
  - Replaced by Nicholas Hughey (successor)
- Harold Gallaher, retired Mechanical Engineer
- Gary Bonacker, Jefferson County Soil & Water Conservation District Board
- Dean Wilson, Jefferson County University Extension – Ag & Rural Development Specialist
- Krista Snyder, Washington County IDA Director

Meeting Dates:
- September 28, 2011
- October 19, 2011
- November 31, 2011
- December 9, 2011
- January 17, 2012
- February 1, 2012
- March 24, 2012
- June 6, 2012
- June 17, 2013*
- October 24, 2013

* Met with professors from the UMSL Office of Research Administration to discuss potential for nanotechnology support in assessing and/or remediating lead in watershed.
Big River Watershed Groups
Advisory Committee
September 28, 2011

• Welcome/Introductions
  - Bill Mount, Owner, Mount Vineyards, Geologist
  - Frank Fick, Director, Washington County Health Dept., Environmental Scientist
  - Harold Gallaher, retired Mechanical Engineer
  - Gary Bonacker, Jefferson County Soil & Water Conservation District Board
  - Dean Wilson, Jefferson County University Extension – Ag & Rural Development Specialist
  - Krista Snyder, Washington County IDA Director

• Objectives of Advisory Committee
  - Casual interaction
  - Review Collective Inputs from Stakeholders/Watershed Groups
  - Categorize subject matter
    - Issues
    - Discussions
    - Objectives
    - Concerns
    - Q&A
    - Etc.
  - Critically assess, distill, assimilate inputs
    - Rationally expand/explore/challenge/muse about each subject
    - Articulate esoteric, nuance and detail - as appropriate
    - Prioritize & direct ongoing consideration/deliberation
      - Advisory Committee deliberation
      - Subject matter subcommittee consideration
      - Subject matter expert input (solicited)
      - Refer to agency/elected official for new, added or improved response
      - Other?
  - Consider appropriate near, intermediate and long term committee/subcommittee support for planning & implementation/oversight efforts.
  - Frame big picture elements of Master Plan
    - Economic, environmental, public health, etc.
    - Regulatory, political, technical, stakeholder, etc.
    - Prescriptive/aggressive (would require infrastructure); General/passive
    - Etc.

• Suggestions/Other?/Next Steps
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<tr>
<td>Mike McKee</td>
<td>MDC</td>
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Multi-agency/Multi-stakeholder Meeting
to address technical issues raised by stakeholders
Meeting summary – May 24, 2012

This summary is accompanied by the attached “Technical Issues” document that was used in the meeting for discussion purposes.

• “Lead is Lead” Need for speciation?
  o 2006 study showed high level of bioavailability in materials in both yards and piles.
  o Consumer Products Service Commission was using 600 ppm as starting point.
  o Yard sampling conducted up to drip zone (30 inches from house).
  o See EPA Handbook (Soil Sampling at Lead-Contaminated Residential Sites)
  o Pig studies have been done in SFC.
  o Galena oxidizes quickly and turns to carbonate
  o Lead was showing up in tissue as well as blood of pigs.
  o Tailings are very bioavailable. So is soil in yards.
  o Right now (5-24-14), neither trustees nor EPA are looking at 400ppm as default in floodplain.
  o Q: Do agencies have a sense of what default might be?
    o A: No
  o Comment: Doe Run is doing sampling with speciation to determine bioavailability.
  o Q: Is background being assessed both inside and out of floodplain?
  o Q: Can barite be used as a marker in Jefferson and Washington Counties?
    o A: FWS – Streams coming out of Washington County are actually low in lead content. Lead jumps up appreciably below the piles – but, barium is still low (below piles). That would indicated lead is coming from St. Francois County. Barium sulfides are highly soluble.
    o Comment: EPA – Greg Bach is working with USGS to try to better assess barium. Will generate barium and lead numbers as part of measure of 42 elements.
    o Comment: Bill M. – Understanding the genesis of barited lead could have implications related to allocation of resources from each PRP.
Comment: FWS – Likely hard to differentiate as materials close to surface would likely have been exploited (milled) over the years.

Comment: Bill M. – Mills were discreet. Lots of small operators carrying barite to the mills.

Q: Marvin – Is anybody looking at radionuclides in deep wells? Is there any correlation between radionuclides and lead?

A: none recorded.

Comment: Kelly Schumacher is EPA Health Based risk assessor. Vanessa…. Is eco risk assessor.

Comment: FWS – Risk to migratory birds in an increasing priority. The 400 ppm is likely an issue for the birds.

Comment: EPA will be doing time critical removals on homes in the floodplain and either follow-up annually regarding recharges.

Q: WC Health Dept. – What is EPA objective:

- Clean up goals limited by available dollars? or
- Goals specific to targeted amounts of lead reduction?

Q: How will EPA reconcile yard clean-ups, buffer zones and eco risks?

A: None recorded

Q: What drives remediation of piles?

A: Need to stop piles from sloughing sedimentation.

A: Elvins is next, followed by Leadwood and then the Shaw Branch floodplain.

A: EPA – this activity should stop leaching from the piles.

Comment: Doe Run is working on an in-stream remedial investigation (will move to Mineral Fork).

Loading: Dissolved metals has been a problem during high water. So, cover should help resolve.

Comment: Harold – there are three main contamination problems: the piles, settling basins located in stream. In soils downstream.

Comment: Doe Run is doing an erosion control index upstream. Pavlowsky is doing testing downstream.

Comments: The new studies should provide much better detail (required). EPA seeing downward trend of lead, but consistent levels of bioavailability – tracking at about a 30%.

Comment: MO DHSS – said EPA HQ is looking for greater than 30% threshold.
Q: WCHD – If EPA is lowering thresholds, how might that impact the BR project?
A: EPA (Don’t know yet, but local study has indicated that control measures are working.
Comment: MO DHSS is going to look hard at exposure levels.
EPA is learning more about ag level soils in the Doe Run study.
Q: Marvin asked for guidelines about construction through a leaded area (county specific?)?
A: Jasper County has a testing ordinance.
Comment: MO DHSS - A statewide fix may be more useful than local to assure consistency across counties. EPA helped fund the Jasper County effort.
Q: How is access being handled?
A: Started voluntarily. Ended up with some mandatory where recontamination was an issue.
Q: Is there a sampling protocol for floodplain?
A: Being developed. Engineering firm trying to create something that is statistically valid and financially feasible.
Q: How to prioritize $$ vs. needed work.
A: Each agency will have its own $$ and priorities. And there will be multiple PRP’s.
Comment: FWS likely not going to do allot new in the river.
Q: Does riparian corridor address issues with migrating birds or will that require separate fixes?
A: Uncertain. Song birds and herons are susceptible to challenges in floodplains.
Comment: Thinking about sediment traps in the river to arrest movement during high water. But, not sure excavation is planned.
Comment: SFC would like to see project to improve the Bonehole access area).
Comment: Issues raised with regard to sampling (see attached). Noted different protocols used by different agencies (EPA, HUD). Concern about QA/QC in sampling remains.
Q: Has phosphate binding be considered?
A: FWS has looked at it, but found problems ecologically (fish).
Comment: MDC will be working with FWS and EPA, as well as DNR.
Comment: Agencies will be meeting periodically with all other agencies involved in this process in order to coordinate and communicate better.

Comment: Stakeholders – hope to get MO DOT involved in discussions at some point.
Appendices

Appendix A  URS Scope of Work

Appendix B  Watershed Group Meetings
- List of Meeting Dates
- Meeting Notices/Agendas/Summaries
- List of Attendees

Appendix C  Technical Advisory Committee of Watershed Group
- Agenda/Attendees/Summary of March 24, 2012 Agency Meeting
- Any Subsequent Such Meetings
- Technical Advisory Team (technical review)

APPENDIX D  PRESS RELEASES ISSUED DURING PLANNING PERIOD

Appendix E  Material Prepared for County Commission/Council Meetings and Work Sessions

Appendix F  Fact Sheets from EPA for Big River and Related Operable Units

Appendix G  “Our MO Waters” Initiative

Appendix H  Health Department Information
- St. Francois County Health Department “Lead Poisoning” web page.
- DHSS Fact Sheet (Fishable/Swimmable)

Appendix I  Miscellaneous
For Immediate Release
December 7, 2010

The Missouri Counties of Jefferson, St. Francois and Washington have joined together to proactively engage state and federal regulatory agencies in discussions about lead and other contaminants affecting the Big River Watershed.

Contact Information:    County Name/Title, phone and/or e-mail, or
                        Mike Alesandrini: (314) 753-2416 or mike_alesandrini@urscorp.com

The Counties recently signed an agreement with URS Corporation to develop a “Master Plan” for the approximately 92 mile stretch of Big River (Watershed) that runs from Leadwood in St. Francois County to near Eureka in Jefferson County - where the Big and Meramec Rivers meet.

This section of the Big River Watershed is known (from previous studies conducted by U.S. EPA) to be significantly contaminated with heavy metals, the most prominent being lead. Studies conducted by the Fish & Wildlife Service (U.S. Department of the Interior) have demonstrated the existence of contaminants, in “actionable” levels, throughout the floodplain from Leadwood to Eureka.

Much of this contamination has been attributed to a legacy of over 300 years of lead mining in the area. There are six current and/or former lead operations in St. Francois County, alone, that have been tagged by U.S. EPA as National Priority Listed “NPL” or “superfund” sites. Each of those sites is subject to specific federal clean-up requirements and all have been the subject of considerable regulatory, public and private sector scrutiny over the past several years.

In late 2009, a PRP (potentially responsible party) for one of those St. Francois County lead sites, the American Smelting and Refining Company (ASARCO), settled a bankruptcy case in federal court, from which the state of Missouri became the beneficiary of nearly $100MM to be used for the remediation (clean up) and restoration of natural resources affected by that company’s former operations (not exclusive to the Parkland). Approximately $70MM of that total was designated to fund agency operations in the vicinity of the local superfund sites. It is estimated that this multi-agency, multi-jurisdictional operation will take decades to complete.

The agencies with direct control over these funds include the U.S. Environmental Protection Agency (EPA); the U.S. Department of the Interior – Fish & Wildlife Service (F&W); and the Missouri Department of Natural Resources (DNR). Other agencies with specific institutional interest in this effort include the U.S. Army Corps of Engineers; the Missouri Department of Conservation; and the Missouri Department of Health and Senior Services, as well as a host of city and county health, environmental and economic development agencies. Several local, state and federal elected (and administrative) officials have also expressed a keen interest in both the process and the outcomes of this effort.

Traditionally, such situations would result in each agency independently developing plans to expend its allotment of funds from the total. While the agencies would most likely have occasion to visit with one another and share insights, there is no obligation – nor even institutional predisposition – to make formal provision for fluid communication or coordination of agency efforts between agencies, or even between programs within the same agencies. Further, while each agency is subject to various public comment requirements, the information shared and comments received tend to provide input or
reaction to snapshots in time; and do not practically provide for ongoing conversation between local stakeholders and agency officials (and elected officials at local, state and federal levels).

Given the scenario described above, the executives and commissioners in all three counties anticipated the need for some degree of coordination of these agency efforts, as well as a mechanism to assure real time communication between local interests and agency officials – during both planning and implementation stages of this process.

To that end, the counties worked with U.S. EPA to secure funding to jointly contract professional consulting services to assist in that locally coordinated effort. Following a formal RFQ process, URS Corporation was selected to develop a Master Plan for the section of the Big River Watershed that runs through the three counties. Specifically, URS will be tasked with three primary objectives.

First, develop and/or identify; then support infrastructure in each county to formally and continually participate in and inform watershed management discussions with the agencies. This task would include provision for tri-county interaction and oversight as well. Second, engage the agencies - and any interested elected officials - proactively and aggressively, to establish meaningful and sustainable lines of communication. Then, utilize those lines of communication to assert a formal and routine local voice in the agency planning and implementation processes. Third, develop a “Master Plan.” This master planning document will both seek to assimilate and clearly articulate the intentions of the agencies; and clearly articulate the collective interests, needs and perspectives of the local/county stakeholders.

The leaders of each county have already asserted to agency officials – and intend to continue to assert in no uncertain terms – that employment of local contractors and laborers in the completion of yet to be defined projects is critical to each county’s sustained health and well-being. The Master Plan will necessarily address health and environmental issues. But, the Plan will also highlight and focus attention on opportunities to support the local economy as part of this process.

As the Counties have no standing to dictate how monies are spent, the Master Plan does not contemplate any degree of authority over any agency function. However, the Plan is expected to serve as a valuable tool to both inform agency deliberations and measure the relative consistency of planned/implemented agency efforts against the objectives of other agencies, other programs and the interests and perspectives of local stakeholders.

It should be noted that this Big River Watershed Master Planning Process, as currently situated, is separate and distinct from other EPA actions in the area, including several of the yard clean-ups throughout the three counties, the lead abatement efforts in Herculaneum, Furnace Creek in Washington County and the recently discussed school/childcare clean-ups in St. Francois County.

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FOR IMMEDIATE RELEASE:
Date: April 12, 2011

Tens of millions of dollars will be spent on construction projects in St. Francois, Washington and Jefferson Counties to address lead in Big River. Watershed Groups begin meeting week of April 25th.

Watershed Meetings
Time, Location and Contact Information:

**Washington County:**
Monday, April 25th, 6:30 p.m.
Washington County Health Department (520 Purcell Drive – Potosi)
Frank Fick, Administrator, Washington County Health Department
(573) 438-2164 or fickf@lpha.mopublic.org

**Jefferson County:**
Tuesday, April 26th, 7:00 p.m.
Hillsboro Community Center, Jefferson County Fairgrounds (Hillsboro)
Dean Wilson, Ag & Rural Development Specialist, University of MO Extension
(636) 797-5391 or wilsondw@missouri.edu

**St. Francois County:**
Wednesday, April 27th, 7:00 p.m.
Mineral Area College North College Center, Room C (Park Hills)
Mike Alesandrini, Senior Consultant, URS Corporation
(314) 753-2416 or mike_alesandrini@urscorp.com

Meeting Agendas:
The inaugural meeting agenda in each county will include:

- Introductions of principals;
- Overview of the environmental, resource damages, public health and economic implications of lead contamination, as well as the potential work on/in the watershed;
- Explanation of the Master Planning Process with an overview of Outline that will serve as basis for ongoing group efforts and discussions;
- Discussion from agency representatives relative to their expectations from this process; and
- Discussion of next steps for each watershed group.

More detailed technical review of the environmental, resource damages, public health and economic issues will be addressed at subsequent workgroup sessions.
**Why attend?**

Due to a bankruptcy settlement with a former owner/operator of one of the "superfund" sites located in St. Francois County (ASARCO), tens of millions of dollars have already been set aside for construction work to be performed in the Big River Watershed. In a virtually unprecedented move, the government agencies responsible for developing and implementing plans to spend those dollars have requested input from the local citizenry at the very earliest stages of their respective planning processes. The agencies are seeking input about specific concerns, issues, questions and desires as much as a year earlier in the process as is the norm. As such, Watershed Groups have been established in each of the three counties, at the direction of each county’s Commission or Council, for the express purpose of providing a conduit for information between the agencies, the citizens and elected officials at all levels.

The Watershed Groups will be collecting information from local stakeholders in an effort to complete a “Master Plan” that will include not only agency-generated discussion about environmental and natural resource management issues, but also locally articulated interest in improved lead health in the region and coordinated efforts to maximize the positive impact of the anticipated construction projects on the local economies. To that end, the Watershed Groups are hoping to attract participants ranging from residents of the floodplain – utilizing the land for either residential or commercial (including agricultural) purposes; to recreational users; to residents who may not live on, but have commercial interest in the Big River floodplain; as well as elected officials from throughout the counties and advocacy/citizen organizations representing interests of, in and near the Big River Watershed.

**Agency Process:**

The above-referenced construction work is, by definition, intended to address clean-up of the lead (and other heavy metals) contamination; and restoration of the natural resources negatively affected by that contamination. This work will likely not entail much, if any, construction of physical plant. Rather, the construction will likely be related to dig/haul/alteration of terrain and features of the watershed. Creation of berms, buffer zones, paths, trails, access areas and park-like amenities may also be involved. The collective body of work will be completed via a series of construction projects - yet to be determined - that will be developed in a fashion consistent with key remediation and restoration objectives - also yet to be determined.

The work will be planned and implemented by no less than the three government agencies that have been named trustees of the proceeds from the bankruptcy settlement, including the U.S. Environmental
Protection Agency, the U.S. Fish and Wildlife Service (Department of the Interior) and the Missouri Department of Natural Resources. The first step for those agencies in this process is the development of environmental remediation and natural resource restoration plans for the affected areas. Those plans will not enumerate specific construction projects to be completed, but will specify remediation and restoration objectives, as well as characterize a variety of projects that might prove consistent with those objectives. After those plans are complete, the agencies will solicit proposals, from which specific projects will be selected by the agencies, as trustees, for implementation.

Historically, each agency would commence this process by crafting its own respective plan, informed almost exclusively by internal voices and perspectives, not necessarily even consulting one another; then – after a year or so of fine tuning said plans – offer them in draft form to the general public for comment. At best, public comments would generally provide the basis for subtle adjustments to those plans – plans in which the agencies would already be very heavily invested (lots of time and effort already spent by agency staff). For some, such a scenario might appear to undervalue the input of the general public in the plan development part of the process.

In the situation at hand, the agencies have seen fit to engage the general public much earlier than the norm, thereby enabling local voices to actually inform the planning process from the outset. In addition, the agencies have established a communication vehicle to share information with one another throughout the planning process. In regulatory terms, this is an extraordinary opportunity for the local citizenry to become involved and materially impact the policy decisions that will directly affect them.

It should be noted that the agencies retain their autonomy and statutory responsibility for making the determinations alluded to above. They are under no obligation to assimilate or incorporate elements of the Master Plan into their final plans. However, the agencies are clearly participating in the Master Planning process in earnest (funded by U.S. EPA through each County’s respective Commission/Council) and Master Plan outcomes would be expected, at the very least, to inform the agencies’ deliberations.

Relative to an anticipated timeline, it is expected that the “planning” stage of this process will last twelve to eighteen months (+/-). Following completion of the remediation and resource restoration plans by the agencies; the process of soliciting project proposals would occur; followed by the selection and negotiation phases of the process. Implementation might therefore commence 24 to 36 months
hence (again, +/-). There are statutory requirements for construction to commence within a specified timeframe following approval of the agency plans.

**Genesis of these Watershed Groups:**
The three counties recently signed an agreement with URS Corporation to develop a "Master Plan" for the approximately 92 mile stretch of Big River Watershed that runs from Leadwood in St. Francois County to near Eureka in Jefferson County - where the Big and Meramec Rivers meet.

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In late 2009, a PRP (potentially responsible party) for one of those St. Francois County lead sites, the American Smelting and Refining Company (ASARCO), settled a bankruptcy case in federal court, from which the state of Missouri became the beneficiary of nearly $100MM to be used for the remediation (clean up) and restoration of natural resources affected by that company’s former operations (not exclusive to the Parkland). Approximately $70MM of that total was designated to fund agency operations in the vicinity of the local superfund sites. It is estimated that this multi-agency, multi-jurisdictional operation will take decades to complete.

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collective health and well-being. The Master Plan will necessarily address health and environmental issues. The Plan will also highlight and focus attention on opportunities to support the local economy as part of this process – addressing both construction related opportunities and potential impacts on commercial operations located on or adjacent to the floodplain.

As the Counties have no standing to dictate how monies are spent, the Master Plan does not contemplate any degree of authority over any agency function. However, the Plan is expected to serve as a valuable tool to both inform agency deliberations and measure the relative consistency of planned/implemented agency efforts against the objectives of other agencies, other programs and the interests and perspectives of local stakeholders.

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###

(2,172 words)

An electronic word file can be forwarded for your convenience. Please make request to mike_alesandrini@urscorp.com or call 314-753-2416.
Fax to: Daily Journal
   573-431-2908
Attn: Community Calendar
From: Mike Alesandrini
   URS Corporation
   Retained by St. Francois County Commission
Date: April 18, 2011
Re: St. Francois County Watershed Group Meeting
   Wednesday, April 27th 7p.m.
   Mineral Area College – North College Center, Room C
To discuss impending actions of the U.S. EPA, U.S. Fish & Wildlife Service and Missouri
Department of Natural Resources on the Big River Watershed (floodplain). General
public is welcome and encouraged to attend.

I was recently visiting with Ms. Renee Jean about an article I believe she is contemplating
regarding the above-referenced meeting. I inquired about the Community Calendar. She
suggested I submit this fax.

Different from past watershed group meetings in St. Francois County, this meeting is being held
in conjunction with an effort by the County Commission to engage the agencies mentioned
above prior to their respective development of plans to perform remediation and natural
resource restoration work on the Big River Watershed.

The meeting is open to the general public. Meeting may be of particular interest to those who
live, work or own property immediately adjacent to the Big River or one of its tributaries.

If you need any more information, please feel free to contact me at 314-753-2416 or e-mail at
mike_alesandrini@urscorp.com

Thank you.

Mike Alesandrini
June's Big River Watershed Meetings will illuminate fundamentals of agency approach to planning for and implementing “restoration” (construction) projects in a watershed.

- The June Big River Watershed Group Meeting will feature a presentation from the U.S. Fish & Wildlife Service (FWS) and the Missouri Dept. of Natural Resources (DNR).

- John Weber is a Biologist and Plan Writer at the FWS. He will be responsible for writing the “Restoration Plan” for the Big River. Frances Klahr is the Natural Resources Damage Coordinator in the Superfund Section of DNR. She will be working closely with and informing Mr. Weber as he crafts the Restoration Plan.

- The presentation will specifically address the “Natural Resources Damage Assessment” process that:
  - Was the essence of the legal settlement with the PRP (relative to the Big River); and
  - Will be the basis upon which much of the future construction work on the watershed will be planned and implemented.

- Included in the presentations will be definitions, descriptions and discussions about key terms and concepts:
  - “Natural Resources” – What (in a watershed) has been negatively impacted by the contamination?
  - "Natural Resource Damages" – What are the specific negative impacts?
  - “Natural Resource Damage Assessments” – What cost has been attributed to those impacts?
  - "Natural Resource Restoration Plan” – What can be done to remedy or mitigate those impacts?

- Some examples of successful restoration projects are featured on the Department of the Interior's (FWS) restoration page: [http://restoration.doi.gov/Content.aspx?ContentId=89](http://restoration.doi.gov/Content.aspx?ContentId=89)
  - Please view material found under both “restoration” and “assessment” to get an idea of how the process works and how it could possibly unfold in Southeast Missouri.

- To date, the Watershed Group process is proceeding as expected. Information is flowing from the agencies to the Citizens about the environmental, ecological and public health conditions in the watershed. There is also considerable flow of information from the citizenry to the agencies – upon which agency staff can/has already commenced deliberation and/or taken action. All input will serve to inform the planning process.
Examples include:

- Requests for support and information by individual citizens and/or groups of citizens with commercial operations on/near the watershed. U.S. EPA has taken this request under advisement. In addition, breakout group discussions will commence in July to address more specific issues and concerns, by sector (such as commercial operations, public health, tourism/recreation, etc.).

- Request by citizens for a more streamlined narrative about lead health issues in the watershed – document in process at DHSS.

- Realization that the general health advisories related to recreation on the Big River may overstate potential hazards for transient users (tourists/sportsman visiting the Parkland), suggesting a need for the development of tourist-specific information packages – County IDA’s/EDC’s will collaborate on composition.

For more Big River Watershed Group Information, on-line, please go to: [www.extension.missouri.edu/jefferson](http://www.extension.missouri.edu/jefferson)

###

(458 Words)

For more information, please contact Mike Alesandrini, URS Senior Consultant, at 314-753-2416 or at mike_alesandrini@urscorp.com.
News Publications in Jefferson County Missouri
3/30/11

Suburban Journals
14522 South Outer Forty Road
Town and Country, Mo. 63017
(636)-931-6636  Fax (636) 931-2638  Kevin Carbery
kcarbery@yourjournal.com
Request that information be in all Jefferson County Publications

Leader Publications Inc. Publisher / Editor Patrick Martin nvrweakly@aol.com
503 N. 2nd Street
Festus, Missouri 63028
(636) 937-7501 Fax (636) 931-2226
Amir Kurtovic – Reporter

Arnold – Imperial Rock Publisher
Arnold, Missouri 63010
(636) 296-3030 Fax (636) 296-5333
thenewsrock@aol.com

Current Publications Inc.
312 No. Central Avenue
Eureka, Missouri
(636) 938-9967 Fax (636) 271-0901 Carrie - Reporter
bigrivernews@currentnewsmagazine.com

The Countian
638 First Street  P.O. Box 498
Hillsboro, Mo. 63050
(636)-789-5853
editor@molawyersmedia.com
cathy.lenny@sbcglobal.net

High Ridge Patch News
Michael de los Reys - Editor
Dan.Barger@patch.com

KJFF Radio
1026 Scenic Drive
Festus, Mo. 6028
(636)-937-7642  Matt West
mattw@j98.com

Post-Dispatch  Jeffco Metro
3488 Jeffco Blvd. Suite 109
Arnold, Mo. 63010               (636) 500-4109
Appendices

Appendix A  URS Scope of Work

Appendix B  Watershed Group Meetings
  • List of Meeting Dates
  • Meeting Notices/Agendas/Summaries
  • List of Attendees

Appendix C  Technical Advisory Committee of Watershed Group
  • Agenda/Attendees/Summary of March 24, 2012 Agency Meeting
  • Any Subsequent Such Meetings
  • Technical Advisory Team (technical review)

Appendix D  Press Releases Issued during Planning Period

APPENDIX E  MATERIAL PREPARED FOR COUNTY COMMISSION/COUNCIL MEETINGS AND WORK SESSIONS

Appendix F  Fact Sheets from EPA for Big River and Related Operable Units

Appendix G  “Our MO Waters” Initiative

Appendix H  Health Department Information
  • St. Francois County Health Department “Lead Poisoning” web page.
  • DHSS Fact Sheet (Fishable/Swimmable)

Appendix I  Miscellaneous
This Workbook(s) has been provided to the Commissions/Council and Watershed Groups in each of the three counties as a means of supporting and commencing formal discussions about the Big River Watershed Master Plan. While it is being shared with each of you most recently updated with materials in April of 2011, the workbooks are intentionally left roomy for additional information to be added as appropriate.

The table of contents for the workbook includes the categories listed below. The Preface and any materials added to Section 9 will be workproduct of the Watershed Group Process. Sections 1 through 8 are comprised of materials generated by or for the agencies and are included in the workbook as this information may prove helpful in our local deliberations. Much more agency generated material is available on-line or in the local repositories.

Preface: Master Planning Process Defined

Section 1: ASARCO Settlement Discussions

Section 2: Technical Reports

Section 3: Threatened & Endangered Species: Studies, Advisories, Etc.

Section 4: Public Health Assessments

Section 5: NPL Site Descriptions

Section 6: NPL Status Reports, Updates, Articles, Etc.

Section 7: Glossary of Terms

Section 8: General Watershed Information

Section 9: Master Planning Process Generated Materials

A List of Master Planning Initiative participants is included in the Preface. A revised list will be provided periodically for your convenience.

I (Mike Alesandrini) can be reached at 314-753-2416 or at mike_alesandrini@urscorp.com.

Please do not hesitate to contact me if I can be of any assistance to you.
Section 1: ASARCO Settlement Discussions


Section 2: Technical Reports


10. **TMDL Review.** Big River, Flat River, Shaw Branch for Lead, Zinc, Suspended Sediment/Siltration *St. Francois County.* By USEPA. **October 2008.**

11. **Big River Mining Sediment Assessment Project – Big River System: St. Francois, Washington and Jefferson Counties.** Prepared for USFWS. **June 2010.** Impetus for Tri-county collaborative

### Section 3: Threatened & Endangered Species: Studies, Advisories, Etc.

1. Appendix A: **Threatened & Endangered Species in the Southeast Missouri Lead Mining District.**

2. Appendix B: **Migratory Birds** of Southeast Missouri Lead Mining District. **No date.**

3. 2008 Big River **Sediment Sampling and Mussel Survey.** By USFWS. **August 2008.**

4. **Lead Concentrations in Fish and River Sediments** in the Old Lead Belt of Missouri. Gale et al. Environmental Science & Technology, Vol. 36, No. 20, **2002.**

5. **Channel Instability and Sediment Contamination Risk** to Lower Big River Mussel Beds. Robert Pavlowsky. **October 2010.** (Statement of work for June 2010 report above)

6. **Toxicology Branch Study Plan.** USGS Columbia Environmental Research Center (CERC). **Sept. 2008.**

7. **Effects** of Mining-Derived Metals Contamination on **Native Floristic Quality.** CERC. **June 2008.**

8. **Effects** of Lead-Zinc Mining on **Fish Density** in Riffle Areas of the Big River. Workplan. **August 2008.**

9. **Injury to Birds** in the SEMO Lead Mining District. USGS Patuxent Wildlife Research Center. **No Date.**


11. **Collection and Preservation of Blood from Small Birds** for Laboratory Analysis. **June 2003.**

12. **Removal of Liver Tissue from Passerines** for Analysis of Metal Residues **June 2003.**

13. **2010 Viburnum Trend Water and Sediment Sampling** Hines Emerald **Dragonfly Survey.** Sept. 2010

14. **Effects** of Mining-Derived Metals Contamination on **Native Floristic Quality.** CERC. **2009.**


23. “List of the 133 Missouri Department of Conservation, Missouri State Park and U.S. Forest and National Park Service River and Stream Accesses at Which Members of the Missouri Smallmouth Alliance Have Posted a “Free the Fighter” Sign. No date.


Section 4: Public Health Assessments


4. *Missouri’s E. coli problems are not confined to the Lake of the Ozarks.* Nadia Pflaum.

**Section 5: NPL Site Descriptions**


2. **Washington County Lead District - Potosi.** March 2008


5. **Southwest Jefferson County Mining.** September 2009.


**Section 6: NPL Status Reports, Updates, Articles, Etc.**

1. **NPL Site Narrative for Big River Mine Tailings/St. Joe Minerals.** St. Francois County. October 1992


5. **EPA Initiates Remedial Investigation in SW Jefferson County.** EPA Fact Sheet: *July 2010.*


10. **Operable Units (OU’s)** at Big River Mine Tailings. **St. Francois County.** USEPA SIS: **March 2011.**

11. **Additional Site Documents** for Big River Mine Tailings. **St. Francois County.** USEPA SIS: **March 2011.**

12. **Other names (aliases)** for Big River Mine Tailings. **St. Francois County.** USEPA SIS: **March 2011.**

**Section 7: Glossary of Terms**

1. **Glossary** for the Superfund Site Progress Profile.

**Section 8: General Watershed Information**


2. **PowerPoint: Civil Works Project Development: Achieving Successful Partnerships in New Watersheds.** Regional Water Resources Advisory Committee. USACE. Author: Laurie Farmer. **May 21, 2010.**


4. **Lower Meramec River Watersheds:** Brush Creek Watershed, Fox Creek Watershed and Hamilton Creek Watershed. Prepared by The Trust for Public Land and The Open Space Council. **Spring 2009.**

1. March 16, 2011 Multi-agency meeting in Jefferson City
   a. Meeting Agenda
   b. Meeting Outputs (near & long term activity coordination)

2. Watershed Group Meetings
   a. Meeting Hosts
      i. Physical: MAC
      ii. Facilitator: TBD
   b. Invite Letter/E-mail
      i. Can provide for anyone to disseminate
      ii. Would appreciate any sort of contact lists/list-serves
         1. Business Community
         2. Political Leadership
         3. Citizens at-large
         4. Other (i.e. – MCE, ORLT, etc.)
   c. Press Release/Article

3. Watershed Group and County Commission Workbook
   a. Intro page
   b. Table of contents (dates listed)
   c. Updated Initiative Contact List (in book)

4. URS Scope of Work Review
   a. Formation/Support of Watershed Groups
   b. Facilitation of Communications
      i. Inter/intra-agency interaction (see meeting outputs in #1 above)
      ii. Agency/Community Engagement
         1. Attendance at Watershed Meetings
         2. Inclusion in Big River Watershed Interagency Workgroup e-share
   c. Creation of Master Plan
      i. See Outline
      ii. See Workbook
      iii. See Product on Interagency Workgroup e-share
Memo to: Washington County Commissioners  
From: Mike Alesandrini  
Date: May 10, 2011  
Re: Status Report on Big River Watershed Effort

Meeting Agenda:

1. Review April 28th Summary
2. Discuss Next Meeting Agenda
3. Discuss Content for Future Watershed Meetings
4. Discuss Outreach Efforts in Washington County

4-28-11

All (County Commissioners and Watershed Group Leaders),

The first Watershed Group meetings in each county are behind us now. In total, I was very pleased with how they turned out. I will get you each a detailed discussion of the county specific meetings and a review of what the meetings in total did to inform the Master Planning Process. In the interim, I wanted to pass on a couple quick notes for all so you have some immediate feedback. I will be providing copies of attendance lists for you as well.

Initial meeting focused on introduction of subject matter and process. We deliberately didn't give the technical (agency) elements of the discussion allot of depth, beyond general comments from agency personnel. We informed the Watershed Groups that more in-depth discussions would ensue in future meetings. In addition, we discussed the prospects of creating subcommittees or breakout groups that might be formed for folks who do have their "livelihoods" affected by decisions made regarding resources in the floodplain. That idea was presented in the initial meetings and not really discussed in detail. But, following a couple of the meetings, it was made clear in the parking lot that the local commercial interests were very supportive of developing those kinds of breakout groups. I'll work with Watershed Group leaders to address logistics of accommodating those interests as part of the Watershed Group process. I'll visit with each of you individually in the near term to get your perspective on that as well.

Washington County - In bad weather, we had limited turnout in Washington County on Monday night. But, it was a good interaction between agency folks who attended. Given the perceived limited impact of our actions on citizens at this point, plus weather issues, I can understand the turnout. In general, we were able to address some logistical matters with the agency folks. And, maybe most importantly, we put the notion on the table that the Watershed Group in Washington County can, and will, concern itself with matters on the Big River upstream, as well as down, from the superfund sites in St. Francois County. It was made clear that I would not be able to charge the EPA Cooperative Agreement for any time spent on the issues upstream (southern part of the county), but the agencies seemed to all agree (including EPA) that inclusion of upstream issues in the Watershed Group deliberations was a good idea. That is significant for environmental, economic and public health perspectives, as well, in this discussion. Frank got our information in the local paper twice. That is a great beginning of media relations locally. Want to keep that up to both inform and engage citizenry. Sorry we scheduled meeting on top of another County Commission meeting. We'll try to make sure that we shoot for days you might be available to join us (at your convenience) in the future.
Jefferson County - We had somewhere at or near 90 folks attend. Excellent turnout. Very respectful, knowledgeable and engaged group. Lots of interests represented, including commercial operations on the river, interested contractors/labor folks, public health and environmental advocates/citizens, etc. Allot of questions from folks who had clearly done some homework. Very encouraging. Seemed very interested in next meeting (May 24th). Also, post-meeting conversations made it clear that folks would like to have breakout discussions about commercial interests on the river. Agency folks were ecstatic about level of participation (something they have not always been able to garner or sustain). Dean did a great job getting word out via newsletter and local paper. Sounds like Councilmen did a good job getting word out as well. Had two councilman attend and participate (thank you very much). Other county department folks attended too. Congressman Carnahan's office was also represented. Allot to be very pleased about for an inaugural meeting. Post Dispatch attended. Still like to work on other local media players for future meetings and increased coverage.

St. Francois County - All three commissioners attended and participated - thank you very much. Had just over 20 folks participate (well up from previous watershed group meetings) - and most of those faces were new. Good representation from folks with a variety of interests. Daily Journal attended. Similar discussion to that of Jefferson County. Would like to add to # of attendees if possible. But, not a bad start. I think as we are able to articulate specific issues/concerns/opportunities via media and other outreach efforts, we might be able to engage others. In addition, we know from experience that we have the interest of several state and Congressional officials who have participated in the past. With our meeting on a Wednesday night in the final few weeks of the legislative session, we were not expecting those to attend who we might expect in the coming months.

General - Good start. I’ll get you all detailed notes. Want to discuss notion of group(s) to address commercial interests. Need to discuss logistics and appropriate means of setting up discussions (i.e. - all commercial interests together or do we separate sod from soil from sand/gravel from agricultural???). Also, may want to consider combining discussions across county lines. Not suggesting it, but it may have some strategic value for you collectively. We can discuss at future update meetings.

Note future attendance at each meeting expected from:
Steve Gunter
Business Representative
Operating Engineers Local 513
(573) 334-5680

Next Meetings:
Jefferson County: May 24th
Washington County: May 25th or 26th ???
St. Francois County May 25th or 26th

Agenda:

1. Detailed review of contamination situation at/from NPL sites in St. Francois County. (EPA)
2. County-specific discussion about lead in watershed. (EPA)
3. Cursory review of lead health issues for citizens with concern about immediate/critical issues. (County/State Health Dept.) **Specific directions should be provided for public (press release).**

************************************************************************************
In following months, I'd like to have detailed discussions about (no particular order):

- **Public/human health and lead**, addressing physiology (brief), and exposure pathways (actual pathways as well as known misconceptions). I'd like to see discussion about air transport, water transport, etc. Lead health in the home (tracking it in: lead paint, etc.). Short version of groundwater/drinking water lead issues. Short/concise discussion about what is ok and what isn't when recreating in the big river or its tribs.

- **Impacts of lead on ecosystems**, etc. (if not covered enough in discussion about damages) in and about the watershed. Let's talk before this one gets planned to see if it is necessary and what direction it goes.

- **Known/potential impacts of commercial operations** on Big River, broken down by group
  - Sand/Gravel
  - Top Soil
  - Sod farming
  - Traditional Farming
  - Other????

- **Non-metals challenges on River** (Water Programs) - what might there be/what you might be looking for/known issues

- **Economic implications of changes to the river and or its regulation** (from industry folks, Economic Development team, etc.)

Looks like there will end up being some separate (subcommittee) or breakout groups for those who have a commercial interest in the watershed (physically located on floodplain and exploiting resources). Not sure what that will look like yet or how it will be managed, but wanted to let you all know about it. I think we have a 3 to 4 month window of opportunity here in which to inform, inspire and engage our attendees. We need to pack these meetings with info and keep discussions moving toward a logical conclusion (development of an informed body of work/information to be shared back with agencies - my problem).

************************************************************************************

Before next Washington County Big River Watershed Group Meeting:
- **Article in paper**, if possible, from County Commission, Health Dept. or IDA outlining in much shorter fashion (than article run previously) why effort is relevant to citizenry.
  - Contractor/Labor Issues (EPA-wide)
  - Potential for added amenities in/adjacent to watershed (support/promote tourism)
  - Agency vision of commercial operations in floodplain of Big River
  - Public Health Education and Lead Health Screenings
  - Watershed/Natural Resource Management

- Seek other avenues to convey information about watershed effort and invitation to meetings (clubs, newsletters, schools, etc.)
County Watershed Groups met monthly from April through August

Advisory Group Meetings commenced in September
  o Beginning process of distilling inputs (from citizens and agency staff)

Next County Watershed Group Meetings:
  o Jefferson County – Tuesday, November 1st – 7 p.m. at Hillsboro Civic Center
  o St. Francois County – Thursday, November 3rd – 6 p.m. at MAC, NCC, Rm B
    ▪ JeffCo and SFC to discuss contamination migration issues
  o Washington County – Wednesday, November 2nd – County IDA Office – 4 p.m.
    ▪ WashCo to discuss recreational use planning

Last Watershed Group Meeting in 2011 – Erosion Controls Presentation from MDOC/USDA
  o Best Management Practices
  o Possible erosion control measures (what has been used in other streams)

To create first (working) draft Master Plan document in early 2012 reflecting the following:
  ▪ Based on our understanding of our situation, to date, we anticipate that management (versus removal) of contamination will likely factor significantly into near term remediation and restoration plans.
    o Control primary sources of contamination – Tailings Piles Stabilization
      ▪ Subject of numerous EPA Agreements with PRP’s
    o Control secondary source of contamination – Big River Watershed
      ▪ Remove lead where economically and ecologically feasible – in stream
        ▪ Agency studies/pilots to address feasibility
    ▪ Establish long term erosion control strategies – banks and floodplains
  ▪ Manage migration of lead contamination – both in & out of stream
    ▪ Not historical regulatory priority – Becoming priority now
      o EPA ROD – Estimate 4,000 yards to be excavated in SFC
      o EPA beginning process of contacting land owners & haulers informing of potential culpability for (future) transport of materials suspected or known to be contaminated with lead
    ▪ No clear-cut rules regarding removal of leaded materials
      o Sand/Gravel Permits (MDNR)
      o Stormwater Discharge Permits (MDNR)
      o Wetlands Protection (USACE & MDNR)
  ▪ Discussion topics
    o Affected materials (sand/gravel, top soil, sod/trees, etc.)
    o Affected Uses (fill, construction material, etc.)
- Remedies
  - Treatment options
  - Alternative end uses
  - Alternative property uses

- Challenges
  - Potential disruption to current operations
    - Testing, certifying, etc.
  - Permits (increased regulatory oversight anticipated)
  - Technical protocol/equipment (treatment)
  - Added expense
    - Increased cost of doing business
    - Increased price for material sold
    - Availability of capital?

- Based on our understanding of the situation, to date, we anticipate that construction of various “amenities” might be considered by the agencies as potential projects to be allowed under the remediation and/or restoration plans.
  - These amenities may include such projects as:
    - New/restored dams, pediments, riffles, etc.
    - New public access areas/user-friendly facilities
    - Green space/parks/buffers (conservation easements)
    - Etc.
  - As currently reflected in informal public comment, citizen appetite for increased access to and activity on the River varies between counties - Master Plan does not have to reflect a homogenous view of amenities from or within each county.

- Other general discussion points from review of inputs - reflecting need for further dialogue/inquiry or for possible inclusion in draft Master Plan, include:
  - Ongoing questions about technical and analytical approaches to characterizing lead issues in Big River Watershed/Old Lead Belt – for both ecological and human health
  - Ongoing questions about adequacy of current lead laws/rules/regulations/policy interpretations to address Old Lead Belt-specific circumstances
    - Further dialogue about region-specific approaches to addressing lead issues on the Big River Watershed/Old Lead Belt Region
      - More thoroughly define lead health threats, afflictions, safeguards, regulatory mandates, etc. (agency vs. regional needs)
      - Revisit ability of agencies to address property loss/impairment w/$$
        - Yard clean-ups vs. floodplain landowners/commercial ops
      - Dealing with resource that may never be declared “clean”
        - What are regulatory and practical implications?
  - Ongoing questions about legal issues affecting land-owners and commercial ops.
    - Requests for legal support – to generally inform, not represent stakeholders

- Some suggestions have already been put forth for specific locations of project work (ie. – Bone Hole)
- Have yet to incorporate non-metals discussion into discussion (Kayakswarm Findings & 319 studies)
Jefferson County Watershed Group met six times from April through November
  o Next County Watershed Group Meeting:
    ▪ Jefferson County – Tuesday, December 6th – 7 p.m. at Hillsboro Civic Center
    ▪ St. Francois County – Thursday, December 8th – 6 p.m. at MAC, NCC, Rm B
      • Erosion Controls Presentation from MDC/USDA
        o Best Management Practices
        o Potential erosion control measures (possible menu items)
  o Advisory Group Meetings commenced in September
    ▪ Beginning process of distilling inputs (from citizens and agency staff)

To create first working draft of Master Plan document in early 2012, reflecting the following:
  • Based on our understanding of our situation, to date, we anticipate that management (versus removal) of contamination will likely factor significantly into near term remediation and restoration (agency) plans, including:
    o Control primary sources of contamination – Tailings Piles Stabilization
      ▪ Subject of numerous EPA Agreements with PRP’s
    o Control secondary source of contamination – Big River Watershed
      ▪ Remove lead where economically and ecologically feasible – in stream
        • Agency studies/pilots to address feasibility
      ▪ Establish long term erosion control strategies – banks and floodplains
    o Manage migration of lead contamination – both in & out of stream
      ▪ Not historical regulatory priority – Becoming priority now
        o EPA ROD – Estimate 4,000 yards to be excavated in SFC
        o EPA beginning process of contacting land owners & haulers informing of potential culpability for transport of materials suspected or known to be contaminated with lead
    • No clear-cut rules regarding removal of leaded materials
      o Sand/Gravel Permits (MDNR)
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  • Discussion topics
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    o Remedies
      ▪ Treatment options
      ▪ Alternative end uses of materials
      ▪ Alternative property uses
    o Challenges
      ▪ Potential disruption to current operations
- Testing/certifying protocols?
  - Permits (increased regulatory oversight possible)
  - Technical protocol/equipment (treatment)
  - Added expense
    - Increased cost of doing business
    - Increased price for material sold
    - Availability of capital?

- Based on our understanding of the situation, to date, we anticipate that construction of various “amenities” might be considered by the agencies as potential remediation and/or restoration projects.
  - These amenities may include such projects as:
    - New/restored/enhanced dams, pediments, riffles, etc.
    - Public access or use enhancements
    - Green space/parks/buffers (i.e. - conservation easements)

- Other general discussion points from review of inputs - reflecting need for further dialogue/inquiry or for possible inclusion in draft Master Plan, include:
  - Questions about technical & analytical approaches to characterizing lead issues in Big River Watershed/Old Lead Belt – for both ecological and human health (i.e. – lead speciation)
  - Questions about adequacy of current lead laws/rules/regulations/policy interpretations to address Old Lead Belt-specific circumstances:
    - Further dialogue about region-specific approaches to addressing lead issues on the Big River Watershed/Old Lead Belt Region – particularly given such limited resources
      - Definitions and targets for lead health threats, afflictions, safeguards, regulatory mandates, etc. (agency vs. regional needs, priorities, etc.)
      - Revisit ability of agencies to address property loss/impairment w/$$
        - Yard clean-ups vs. floodplain landowners/commercial ops
      - Dealing with resource that may never be declared “clean”
        - What are regulatory and practical implications?
  - Questions about legal issues affecting land-owners and commercial operations.
    - Requests for legal support – to generally inform, not represent stakeholders

- Some suggestions already been put forth for possible locations of project work (i.e. – mill dams)

- Yet to incorporate non-metals discussion into conversation (Kayakswarm findings & 319 studies)

- Frequently/adamantly expressed perspectives in JeffCo WG meetings (include, but not limited to):
  - We don’t have a lead problem in Jefferson County
  - We don’t want/need more regulation in Jefferson County
  - We don’t see need or value in expanding public access to Big River in Jefferson County
  - We question the adequacy of the science supporting agency policies and regulations
  - Agency policies are unnecessarily threatening the (asset) value of the river, private property and business operations in the County
Appendices

Appendix A  URS Scope of Work

Appendix B  Watershed Group Meetings
- List of Meeting Dates
- Meeting Notices/Agendas/Summaries
- List of Attendees

Appendix C  Technical Advisory Committee of Watershed Group
- Agenda/Attendees/Summary of March 24, 2012 Agency Meeting
- Any Subsequent Such Meetings
- Technical Advisory Team (technical review)

Appendix D  Press Releases Issued during Planning Period

Appendix E  Material Prepared for County Commission/Council Meetings and Work Sessions

APPENDIX F  FACT SHEETS FROM EPA FOR BIG RIVER AND RELATED OPERABLE UNITS

Appendix G  “Our MO Waters” Initiative

Appendix H  Health Department Information
- St. Francois County Health Department “Lead Poisoning” web page.
- DHSS Fact Sheet (Fishable/Swimmable)

Appendix I  Miscellaneous
The Big River Mine Tailings/St. Joe Minerals Corp. site is located in a former mining region known as the "Old Lead Belt", which is 70 miles south of St. Louis. This site is composed of seven large areas of mine waste in this rural region, approximately 110 square miles in size. The areas included are the Bonne Terre Mine Tailings Site, the Leadwood Mine Tailings Site, the Elvins Mine Tailings Site, the Federal Mine Tailings Site, the Desloge Mine Tailings Site, the Doe Run Mine Tailings Site, and the National Mine Tailings Site. Also included are the surrounding residential and recreational areas. In 1977, heavy rains caused an estimated 50,000 cubic yards of tailings to slump into the Big River. The residual lead content in the tailings material is about one-half percent; other minerals such as cadmium and zinc are also present. The Missouri Department of Conservation has detected elevated lead levels in fish downstream of the mining area above World Health Organization Standards. The State of Missouri advises people fishing not to eat fish they catch from the Big River downstream of this area. The Big River is used for recreational purposes such as fishing and canoeing, as well as for commercial activities such as watering livestock. Approximately 23,000 people reside within 4 miles of the site. Dust created by wind erosion contaminates the surrounding area and is a potential hazard to residents. A 1997 human health exposure study by the Missouri Department of Health (MDOH) showed that 17% of the children under seven years old had blood-lead concentrations exceeding the health-based standard of 10 microgram per deciliter. Since EPA has implemented its response actions at residential properties, MDOH has reported that rate of blood-lead exceedances in young children have dropped to 2.6% in 2009.
Site Responsibility:
This site is being addressed through Federal and potentially responsible parties' actions.

THREATS AND CONTAMINANTS

Elevated levels of lead, cadmium, and zinc have been detected in the tailings pile. Surface water and various forms of biota in the Big River contain elevated concentrations of lead. Wind erosion and airborne dust have transported contaminants to the surrounding area and are a potential hazard to on-site workers, residents, and children. Fish in the Big River have shown elevated levels of lead. People on-site and in the areas surrounding the mine waste piles are at risk of being exposed to contaminants in the dust and soil.

CLEANUP APPROACH

Response Action Status
Initial Actions: In 1995, the parties potentially responsible for site contamination began a non-time critical removal action to regrade the mine wastes at the Desloge pile. The regrading improved the structural stability of the pile thereby preventing sloughing into the river. Other activities at the site include covering and revegetating to control wind and weather erosion and providing rock slope protection at the waterline to prevent undercutting by the river.

Entire site: The other five major mine waste areas have been documented to have contaminant releases and will be controlled through non-time critical removal actions (NTCRA). The first step in a non-time critical removal action is to prepare an engineering evaluation/cost analysis (EE/CA) followed by the NTCRA. Mine waste EE/CA schedules and NTCRA schedules are as follows:
### Site EE/CA Status Year

<table>
<thead>
<tr>
<th>Site</th>
<th>Status</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Big River (Desloge) Mine Tailings Pile</td>
<td>completed</td>
<td>1994</td>
</tr>
<tr>
<td>Federal Mine Tailings Pile (Dam)</td>
<td>completed for dam stabilization</td>
<td>1996</td>
</tr>
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</tr>
<tr>
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</tr>
<tr>
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</tr>
<tr>
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### Site NTCRA Status Year

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<td>2012</td>
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These actions and others will address the source releases from the mine waste areas. A focused remedial investigation and feasibility study (RI/FS) was started in January 1997 to evaluate the human health and ecological impacts on areas surrounding and between the mine wastes areas. The RI/FS and subsequent Record of Decision (ROD) will be completed by September 2011. This ROD will focus on residential areas. A Final Record of Decision will be required to remediate the residual lead contamination in off-pile non-residential areas. It will require many years to carry out all the remedies. Until long-term remedial action is taken, a combined effort of federal, state, and local governments and the potentially responsible parties will take actions to reduce child blood-lead levels. Actions to reduce child blood-lead levels include in-home cleaning, health education, and yard soil replacement. EPA will also evaluate the result of testing at day-care centers, public parks, and other common areas, and action will be taken to reduce the soil exposures, if needed. Prioritization of the actions takes into account actual threats and local concerns.
**Initial Actions:** A Time-Critical Removal Action was initiated by EPA to address lead-contamination at 6 area schools and 19 daycares, and one residential property. As of 5/10/2011, 17 out of 19 daycares were remediated, 5 out of 6 schools were remediated, and action was ongoing at the residential property.

**Initial Actions:** EPA has recently released a plan to remediate up to 300 residential properties and 5 schools. The plan went out for bid on April 26, 2011, and closed for bids on May 25, 2011. The Contractor has remediated 12 residential yards and 2 schools.

**Site Facts:**

<table>
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<td>2011</td>
<td>Doe Run Resources Corp. State of Missouri Department of Natural Resources</td>
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</table>

Non-Enforcement Action:
- EPA completed an Ecological Risk Assessment in 2006
- EPA completed a Human Health Risk Assessment in 2009

**ENVIRONMENTAL PROGRESS**

Stabilizing the Desloge tailings pile is completed and progress is being made to develop a permanent vegetative cover on the remaining uncovered areas. Construction of NTCRAs has been completed at the Bonne Terre, Elvins, and Leadwood Piles. Construction of a NTCRA is ongoing at the National Tailings Pile. The dam and beaches have been addressed by earlier actions and construction will begin on the final phase of work at the Federal Mine Tailings Pile in the summer of 2011. More than 550 residential yards, 17 daycares, and 7 schools have had lead contaminated soil replaced. A site-specific contract was initiated in July 2011 to address lead contamination at up to 300 residential properties and 5 additional schools. The Record of Decision for Operable Unit-1 (residential yards) was complete by September 2011 to address the remaining residential yards and child-high use areas in St. Francois County.

**COMMUNITY INVOLVEMENT**

Numerous meetings, ads, Fact Sheets, Press Releases and other communication venues have been used to interact with the citizens who reside near these mining areas in St. Francois County. Ongoing communication by EPA has been noted positively by community members and elected officials, and EPA continues to be actively involved with remedial activities at this site.
SITE REPOSITORY

Desloge Public Library, 209 N. Desloge Drive, Desloge, MO 50613
St. Francois County Health Department, 1025 West Main, Park Hills Mo 63601
Superfund Records Center 901 N. 5th St.
Mail Stop SUPR (913)551-7166

REGIONAL CONTACTS

SITE MANAGER: Jason Gunter
E-MAIL ADDRESS: gunter.jason@epa.gov
PHONE NUMBER: (913) 551-7358

COMMUNITY INVOLVEMENT COORDINATOR: Debbie Kring
PHONE NUMBER: (913) 551-7725
E-MAIL ADDRESS: kring.debbie@epa.gov

STATE CONTACT: Kathy Rangen
PHONE NUMBER: (573) 751-8393
E-MAIL ADDRESS: kathy.rangen@dnr.mo.gov

MISCELLANEOUS INFORMATION

STATE: MO
07CR
CONGRESSIONAL DISTRICT: 08
EPA ORGANIZATION: SFD-SUPR/SPEB

MODIFICATIONS

Created by: Karla Asberry/SUPRFUND/R7/US EPA/US
Created Date: 10/17/97 02:02 PM
Last Modified by: Debbie Kring/R7/USEPA/US
Last Modified Date: 04/24/2012 04:34 PM
Fact Sheet

April 2013

EPA to Hold Public Availability Meetings, Washington County Lead District - Potosi, Old Mines and Richwoods Sites, Washington County, Missouri

INTRODUCTION

EPA Region 7 and the Missouri Department of Natural Resources (MDNR) are hosting two public availability meetings on April 23 and April 24, 2013, from 6:30 p.m. to 8:00 p.m., to discuss the Washington County Lead District – Potosi, Old Mines and Richwoods Superfund Sites in Washington County, Missouri. Agency representatives will be on hand to answer questions one-on-one from community members. You are welcome to attend both meetings; however, the same information will be presented both nights.

BACKGROUND

Washington County is part of Missouri’s Old Lead Belt where lead mining has occurred for several hundred years. Mining activities have contributed to elevated levels of lead in soil and groundwater in the area. For the past several years, EPA has been conducting residential yard cleanups at properties with the highest levels of lead contamination.

You are Invited to Attend One of Two Public Availability Meetings:

Tuesday, April 23, 2013
6:30 p.m. to 8:00 p.m.
Trojan Intermediate School
Gym/Cafeteria
367 Intermediate Drive
Potosi, Missouri

Wednesday, April 24, 2013
6:30 p.m. to 8:00 p.m.
Richwoods R-VII Elementary School
10788 State Highway A
Richwoods, Missouri

SOIL AND WATER SAMPLING

EPA has resumed collection of soil and water samples from residential properties located within the Potosi, Old Mines and Richwoods sites. This office needs permission from the property owner to collect samples. EPA recently mailed access letters to over 3,500 addresses located within Washington County. We encourage property owners to return signed access agreements to EPA so that arrangements can be made to collect samples.
SITE BOUNDARIES

EPA is moving forward with cleanup work within the Potosi, Old Mines and Richwoods site areas. EPA has reviewed the boundaries that were originally delineated for each of these Washington County sites and is proposing a revision of the site boundaries that is more consistent with the sampling that has already been conducted in the county. The proposed new site boundaries will be shared with the community during the two public availability meetings.

HEALTH INFORMATION

Children are more sensitive to lead than adults and can develop lifelong learning disabilities or behavioral problems because of lead exposure. Health effects in children include:

- Slowed physical growth;
- Hearing problems;
- Nervous system damage;
- Learning difficulties;
- Behavior problems including hyperactivity (easily excitable or upset, unable to concentrate, short attention span); and
- Decreased intelligence (I.Q.) scores.

Lead exposure and its effects can be reduced by:

- Washing hands after playing outside and before meals;
- Vacuuming often and dusting with a damp cloth to help remove dust that might have lead in it; and
- Eating a diet high in calcium and iron and low in fat.

EPA encourages parents to have their children tested for lead exposure. You can contact your private physician or the Washington County Health Department for a blood test.

ADDITIONAL INFORMATION

Site documents are available for review during regular business hours at the following locations:

Washington County Public Library
235 East High Street
Potosi, MO 63664
573-438-4691

Richwoods Elementary School
10788 State Highway A
Richwoods, MO 63071
573-678-2257

Superfund Records Center
EPA Region 7
11201 Renner Boulevard
Lenexa, KS 66219
1-800-223-0425

If you have questions, please contact:
Dianna Whitaker  
Community Involvement Coordinator  
EPA Region 7  
11201 Renner Blvd.  
Lenexa, KS 66219  
913-551-7598, toll-free: 1-800-223-0425  
Email: whitaker.dianna@epa.gov

EPA Region 7 is committed to providing reasonable accommodations to individuals with disabilities. If you require a reasonable accommodation to participate in the public meeting, please notify the EPA Reasonable Accommodations Coordinator, Jonathan Cooper, at 1-800-223-0425 or by email at cooper.jonathan@epa.gov at least seven days prior to the meeting. Speech or hearing impaired individuals should email or call using the local relay service.
Fact Sheet

July 2012

EPA Announces the Public Comment Period and Public Meeting on the Proposed Plans for Operable Units 1, 2, and 3, Southwest Jefferson County Mining Superfund Site, Jefferson County, Missouri

INTRODUCTION

The U.S. Environmental Protection Agency (EPA) Region 7 has released Proposed Plans for the Southwest Jefferson County Mining Superfund Site Operable Units (OUs) 1, 2, and 3. The Proposed Plans describe the Agency’s preferred alternatives for addressing mine waste and contaminated soil which resulted from past mining and milling practices. In addition, the Proposed Plans include summaries of other alternatives evaluated for use at these OUs.

EPA will hold a 30-day public comment period and encourages the public to review the Proposed Plans and make comments. Following the comment period, EPA, in consultation with the Missouri Department of Natural Resources will select a final remedy for each OU.

PUBLIC COMMENT PERIOD

The 30-day public comment period for the Proposed Plans is July 5 – August 5, 2012.

The public may submit their comments to EPA before the close of the comment period by telephone, mail or email to Debbie Kring, EPA Office of Public Affairs, 901 N. 5th Street, Kansas City, Kansas 66101, 1-800-223-0425, or kring.debbie@epa.gov.

PUBLIC MEETING

EPA will also host a public meeting to present cleanup options and take public comments at the following time and location:

Tuesday, July 17, 2012
6:30 p.m. – 8:30 p.m.
Jefferson County Fairgrounds
10349 Highway 21
Hillsboro, Missouri 63050

REASONABLE ACCOMMODATIONS

http://www.epa.gov/region7/factsheets/2012/pub_comment_mtg_ou_123_sw_jeff_cnty_m... 4/27/2014
EPA Region 7 provides reasonable accommodations to individuals with disabilities. If you need a reasonable accommodation to participate in the meeting, please contact Jonathan Cooper, 1-800-223-0425, or at cooper.jonathan@epa.gov at least seven days before the meeting. Speech or hearing impaired individuals should email or call using the local relay service.

BACKGROUND

The Southwest Jefferson County Mining Superfund Site was listed on the National Priorities List on September 23, 2009. It encompasses the entire county, and is located approximately 30 miles southwest of St. Louis.

To date, EPA has sampled 2,070 residential properties for lead in soil. For the 351 properties that had lead measurements in the soil over 1,200 parts per million (ppm), EPA has performed immediate (also known as time-critical) removal actions.

In recognition of the multi-media contamination and potentially-responsible parties, EPA divided the Southwest Jefferson County Mining Superfund Site into the following six OUs:

OU-1: All residential properties in Jefferson County with soil lead concentrations equal to or greater than 400 ppm, that do not qualify under OU-2, OU-3, OU-6, or the Herculaneum Lead Smelter Site.

OU-2: Residential properties with soil lead concentrations equal to or greater than 400 ppm identified as having soil hauled to the property by Leubbers Trucking Company.

OU-3: Residential properties with soil lead concentrations equal to or greater than 400 ppm identified as having received soil sold by Stewart Farms.

OU-4: Unconsolidated Mine Waste in Jefferson County, including the Big River, the Big River floodplain, rail lines, and historic mine areas.

OU-5: Contaminated groundwater at all residential properties impacted by mining-related activities.

OU-6: Valle Mines Area in southern Jefferson County and northern St. Francois County. This OU has distinct site boundaries and ownership, unlike most other historic mining sites in the county.

PROPOSED PLANS' ALTERNATIVES

The following alternatives apply to OU-1, OU-2, and OU-3:

- Alternative No. 1: No Action
- Alternative No. 2: Soil Removal up to 12 inches, Placement of Sub-grade Barrier, and Institutional Controls
- Alternative No. 3: Soil Removal up to 24 inches, Placement of Sub-grade Barrier, and Institutional Controls

Each of these alternatives is described in detail in the Proposed Plans.

EVALUATION CRITERIA USED IN ANALYZING CLEANUP OPTIONS
Threshold Criteria:

- Overall protection of Human Health and the Environment
- Compliance with Applicable, Relevant and Appropriate Requirements (ARARs)

Balancing Criteria:

- Long-Term Effectiveness
- Short-Term Effectiveness
- Reduction of Toxicity, Mobility, or Volume Through Treatment
- Implementability
- Cost Effectiveness

Modifying Criteria:

- State Acceptance
- Community Acceptance

PREFERRED REMEDY

EPA’s Preferred Alternative for these Proposed Plans (which includes OU-1, OU-2, and OU-3) is:

Alternative 2: Excavation of soil until lead concentrations are below 400 ppm in the top 12 inches, or below 12 inches down to 24 inches below ground surface in garden areas; transportation of contaminated soil to a disposal facility; replacement of contaminated soil with clean backfill and vegetative cover; and limited institutional controls.

Details of this preferred alternative are fully explained in the Proposed Plans, and will be discussed at the Public Meeting.

ADMINISTRATIVE RECORD FILE

EPA has compiled the site Administrative Record file. The Administrative Record file is the official record for the site and contains site reports and descriptions of activities and other documents used to determine the appropriate actions to take at the site. The Administrative Record file will be available for review during normal business hours at the following locations:

De Soto Public Library
712 South Main Street
De Soto, Missouri

OR

U.S. EPA Region 7
Records Center
901 North 5th Street
Kansas City, Kansas
1-800-223-0425

ADDITIONAL INFORMATION
If you have questions about this fact sheet, want additional information about the site, or want to submit a comment, please contact:

**Debbie Kring**  
Community Involvement Coordinator  
U.S. EPA Region 7  
Office of Public Affairs  
901 North 5th Street  
Kansas City, KS 66101  
Phone: 913-551-7725  
Toll-free: 1-800-223-0425  
kring.debbie@epa.gov
Fact Sheet

June 2012

EPA Initiates Remedial Investigation/Feasibility Study, Washington County Lead District - Furnace Creek Superfund Site, Operable Units (OUs) 1 and 2, Washington County, Missouri

INTRODUCTION

On March 10, 2011, the U.S. Environmental Protection Agency (EPA) added the Furnace Creek Site to the National Priorities List (NPL). The NPL is a list of the nation’s hazardous waste sites with the highest priority for cleanup. These sites are eligible for extensive, long-term response action money, as authorized by Congress under the Superfund Program. Furnace Creek is one of six sites located in Washington County (See Figure 1 at bottom). The other sites are being addressed in separate investigations.

In May, EPA Region 7 staff and contractors gathered environmental samples (soil and groundwater) to support the Remedial Investigation/Feasibility Study (RI/FS) at this site.

BACKGROUND

Washington County is part of Missouri’s Old Lead Belt, where mining occurred for several hundred years. Mining activities in Washington County have contributed to elevated levels of lead in soil, groundwater, and surface water in the area. Some county residents have also unknowingly purchased lead-contaminated gravel for use in driveways, parking areas and playgrounds.

Elevated lead levels in the environment can pose a threat to public health, especially for children seven years old and younger, and pregnant women.

PREVIOUS SITE ACTIONS

EPA previously conducted a site inspection and removal action at this site (prior to it qualifying for long-term funding under the NPL). During this effort, EPA collected soil samples from more than 1,500 residential properties and water samples from 1,100 drinking water supply wells within the site boundaries. Reports for these actions can be found at the site repositories (listed below under "ADMINISTRATIVE RECORD").

Of the 1,500 soil samples taken, 450 had lead levels greater than the health-based standard. These properties were divided into two categories: 1) properties with lead levels greater than 1,200 parts per million (ppm), and 2) properties with lead levels less than 1,200 ppm but greater than 400 ppm. EPA’s initial response at this site focused on cleaning up the
properties with the highest levels of lead in them, due to a potentially greater health risk. EPA cleaned up more than 150 properties during this action. The cleanup consisted of excavating and removing contaminated soil and gravel from affected properties and replacing the excavated material with clean fill and hydro-seed.

Of the 1,100 drinking water supply wells tested, six were confirmed to have lead levels in the groundwater that exceeded the Agency’s maximum contaminant level for lead (in water) of 15 micrograms/liter (µg/l). EPA offered and provided an alternate source of drinking water to interested property owners.

**REMEDIAL INVESTIGATION (RI)**

EPA’s focus for the RI will be on the properties assessed in the previous action that had lead levels between 400 ppm and 1,200 ppm (identified as category no. 2 above). During the RI, EPA will gather samples to determine the nature and extent of contamination at each property; establish cleanup criteria; identify remedial action objectives; and evaluate the technical cost factors that support these objectives. As a part of this process, EPA will conduct a feasibility study. This study will evaluate different alternatives for cleaning up the site and provide recommendations for cleanup costs.

Prior to any site decisions, EPA will present the findings of this process to the community and solicit comments about the next steps toward site cleanup.

During this process, EPA will continue to address newly-identified properties with lead levels greater than 1,200 ppm. EPA will also continue to address contamination in private drinking water supply wells by providing an alternate source of drinking water where lead or cadmium has been identified above health-based levels of concern.

After completion of the RI/FS, EPA will submit a proposed plan to the public for review; present Agency findings in a public forum; and compile comments into a formal EPA document known as a Record of Decision (ROD). The ROD will identify the cleanup objectives that will be used to evaluate how the remaining properties will be addressed.

**TECHNICAL ASSISTANCE GRANT**

In an effort to help affected communities understand the technical information related to a Superfund site, EPA has established a Technical Assistance Grant Program. The program provides up to $50,000 for a qualified citizens’ group to hire an independent technical advisor. The advisor can assist citizens in their interpretation of technical data, site hazards, and the different scientific technologies used to support site actions.

**ADMINISTRATIVE RECORD**

During this phase of the Superfund process, EPA will be compiling the site administrative file. The Administrative Record file serves as the official record for the site and contains all site documents. This file is available for review during normal business hours at the following locations:

Washington County Public Library
235 East High Street
Potosi, Missouri 64664
EPA Region 7 Office
Records Center
901 North 5th Street
Kansas City, Kansas 66101

ADDITIONAL INFORMATION

If you have questions about this Fact Sheet or need additional information about the site, please contact:

Debbie Kring
Community Involvement Coordinator
Office of Public Affairs
U.S. EPA Region 7
901 North 5th Street
Kansas City, Kansas 66101
Phone: 913-551-7725
Toll-free: 1-800-223-0425
Email: kring.debbie@epa.gov

Steve Kemp
Remedial Project Manager
Superfund Division
U.S. EPA Region 7
901 North 5th Street
Kansas City, Kansas 66101
Phone: 913-551-7194
Toll-free: 1-800-223-0425
Email: kemp.steve@epa.gov
Figure 1
Furnace Creek and Neighboring Sites
Washington County, Missouri
Fact Sheet

March 2012

EPA Announces a Public Availability Session and New Sampling for the Southwest Jefferson County Mining Superfund Site, Jefferson County, Missouri

INTRODUCTION

On September 23, 2009, the U.S. Environmental Protection Agency (EPA) added the Southwest Jefferson County Mining Superfund Site to the National Priorities List (NPL). The NPL is a list of the nation’s hazardous waste sites with the highest priority for cleanup. These sites are eligible for extensive, long-term response action money authorized by Congress under the Superfund Program.

EPA has been working in the Southwest Jefferson County area since November 2007. This Fact Sheet serves as a community notification of EPA’s proposal to further evaluate the extent of contamination in the floodplain.

PUBLIC AVAILABILITY SESSION

EPA will host a Public Availability Session to update the community about upcoming site activities. The session will be held from 6:30 p.m. to 8:30 p.m. on Thursday, April 5, 2012 at the following location:

Byrnes Mill City Hall
127 Osage Executive Circle
Byrnes Mill, Missouri

NEW SAMPLING ACTIVITY

EPA has been conducting time critical removal activities (TCRA) at residential properties where soils exceeded 1,200 parts per million (ppm) and child-care facilities exceeding 400 ppm since November 2007. EPA has also been providing bottled water to residential properties that exceed the maximum contaminant level (MCL) of 15 parts per billion (ppb) in ground water wells, which is the standard for measuring drinking water. To date, EPA has conducted soil sampling at 2,004 residential properties, and ground water sampling at 654 private wells.

EPA representatives will be available to discuss past and upcoming site sampling activities at the availability session.
The current sampling effort allows EPA to continue screening properties in Jefferson County, but focuses along the Big River floodplain throughout the entire county. Evidence from previous studies indicates that the Big River is extensively contaminated within the 100-year floodplain. However, the studies have been river-wide and only provide estimations of contamination. To evaluate the extent of contamination in the floodplain area, EPA needs to perform property screening, which includes sampling for lead in residential soils and ground water in this area.

This screening focuses on residential properties within the 100-year floodplain. However, if you believe that you may have contaminated soils on a property outside of the floodplain, please contact EPA and a representative will schedule a screening of the property based on its scheduling priority.

BACKGROUND INFORMATION

The Missouri Department of Natural Resources has produced an inventory of sites where mining and smelting operations have occurred throughout Missouri in the past and present. Based on this inventory, EPA identified residential areas in Jefferson County where historical mining and smelting activities may have contributed to elevated levels of lead in soil and ground water. Using this database, EPA started collecting soil and water samples from residences in Jefferson County in 2006.

ADMINISTRATIVE RECORD

EPA has compiled the site Administrative Record file. The Administrative Record file is the official record for the site and contains site reports and descriptions of activities and other documents used to determine the appropriate actions to take at the site. The Administrative Record file is available for review during normal business hours at the following locations:

De Soto Public Library  
712 South Main Street  
De Soto, Missouri

OR

EPA Region 7  
Records Center  
901 North 5th Street  
Kansas City, Kansas

ADDITIONAL INFORMATION

If you have questions about this fact sheet or want additional information about the site, please contact:

Debbie Kring  
Community Involvement Coordinator  
U.S. EPA Region 7  
Office of Public Affairs  
901 North 5th Street  
Kansas City, KS 66101  
Phone: 913-551-7725 or
http://www.epa.gov/region07/factsheets/2012/epa_pub_avail_sw_jeff_cnty_mining_jeff_cnty_mo.htm

Last updated on Tuesday, October 16, 2012

Toll-free: 1-800-223-0425
kring.debbie@epa.gov

Preston Law
Remedial Project Manager
U.S. EPA Region 7
Superfund Division
901 North 5th Street
Kansas City, KS 66101
Phone: 913-551-7097
Toll-free: 1-800-223-0425
law.preston@epa.gov

SPECIAL ACCOMMODATIONS

EPA Region 7 is committed to providing reasonable accommodations to individuals with disabilities. If you require a reasonable accommodation to participate in one of the public meetings, please notify the EPA Reasonable Accommodations Coordinator, Jonathan Cooper at 1-800-223-0425 or by email at cooper.jonathan@epa.gov at least seven days prior to the meeting. Speech or hearing impaired individuals should email or call using the local relay service.
Fact Sheet

March 2012

EPA Lead Sampling Activities, Pea Ridge, Washington County, Missouri Superfund Site

INTRODUCTION

The U.S. Environmental Protection Agency (EPA) Region 7 has been sampling for lead in drinking water and soil at properties in the Pea Ridge, Washington County, Missouri area. EPA continues its outreach to residents who would like to have their property sampled for lead contamination in drinking water and soil. To date, EPA has sampled approximately 500 residential properties, and has informed the property owners of the results.

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT (CERCLA)

EPA has been conducting sampling activities in the Pea Ridge Area under the Superfund Comprehensive Environmental Response, Compensation, and Liability Act. This authority is carried out through the federal government’s Superfund Program to clean up the nation's uncontrolled hazardous waste sites. We’re committed to ensuring that remaining hazardous waste sites are cleaned up to protect the environment and the health of all Americans.

The Pea Ridge Area sampling is being provided to property owners free of charge and will allow EPA representatives to determine if property owners’ drinking water wells or soils contain lead contamination and need to be cleaned up or treated to remove these contaminants.

WHY DO YOU NEED TO BE CONCERNED ABOUT LEAD?

Lead is a toxic metal that was used for many years in paint and other products found in and around our homes. Lead can also be emitted into the air from industrial sources and leaded aviation gasoline. Lead can enter drinking water from plumbing materials.

Lead may cause a range of health effects, from behavioral problems and learning disabilities, to seizures and death. Children six years old and under are most at risk.

HISTORICAL BACKGROUND

Mining activities began in southeast Missouri in the early 1700s. By 1725, Old Mines and Mine Renault opened in Washington County. Lead mining in southeast Missouri has continued until the present day. The Pea Ridge Area Site consists of high concentrations of lead...
EPA Lead Sampling Activities, Pea Ridge, Washington County, Missouri Superfund Site,...

http://www.epa.gov/region07/factsheets/2012/epa_lead_sampling_pea_ridge_wash_co_mo.htm
Last updated on Tuesday, October 16, 2012

contamination from historical mining activities in the area and mining waste residues brought
to the Site and used as fill materials at residential properties.

PEA RIDGE AREA SITE

The Pea Ridge Area Site is located in the northwest corner of the Washington County Lead
District. The Site is bound generally by State Highway 8 south and Highway A north. The
western boundary is the Washington County Line and the eastern boundary is Highway T.

The Site primarily includes residential areas within and around the towns of Pea Ridge, Indian
Creek, Ebo, Hulsey, Anthonies Mill, Aptus, and smaller communities located to the northwest
of Potosi, Missouri. Residential properties are widely spread out throughout the Site area.

SAMPLING PROCESS

Cleanup and remediation of residential properties within Washington County have been
conducted at no cost to the property owner for several years under the current EPA
Environmental Response Program. Upon the completion of the EPA 2012 sampling and
assessment activities, there are no additional sampling events planned for this area under
the EPA program.

In order to determine if lead is in drinking water and soil, it is important that property owners
fill out the enclosed access agreement and return it to EPA at your earliest convenience.

If you would like to have your property sampled for lead in drinking water and soil,
please sign the enclosed Access Agreement and return it to EPA in the enclosed self
-addressed stamped envelope.

ADDITIONAL INFORMATION

If you have questions or need additional information, please contact:

Belinda Young
Community Involvement Coordinator
Office of Public Affairs
U.S. EPA Region 7
901 N. 5th Street
Kansas City, KS 66101
Phone: 913-551-7463 or
Toll-free: 800-223-0425
young.belinda@epa.gov
Fact Sheet

February 2012

EPA Announces a Public Availability Session to Share Information About Its Findings and Next Steps at Iron Mountain Lake Subsite, Big River Mine Tailings Superfund Site, St. Francois County, Missouri

INTRODUCTION

The U.S. Environmental Protection Agency (EPA) Region 7 received a request from the City of Iron Mountain Lake in July 2011, asking for EPA to assist the community by screening city-owned properties for lead contamination. Between October and November 2011, EPA staff (in coordination with the city and private homeowners) have conducted field work by collecting soil, gravel, and groundwater samples to identify and define the area and extent of any potential contamination within city limits. Iron Mountain Lake is a subsite of the Big River Mine Tailings Superfund Site, which EPA has worked in and around since 2000. Mine waste has historically been used in St. Francois County, Missouri as road base, as fill in commercial and residential properties, and on large land plots, such as school ball fields and park areas.

EPA will host a Public Availability Session on Thursday, March 8th at Iron Mountain Lake City Hall to: 1) introduce our staff and contractors to the community; 2) answer questions about residential soil sampling; and 3) provide information on the history of EPA’s involvement in St. Francois County.

If you cannot attend this Public Availability Session, EPA officials will be working in the community and can set up individual meetings with property owners upon request.

PUBLIC AVAILABILITY SESSION

EPA will hold an availability session to share information about its role in the Iron Mountain Lake community. Meeting information follows:

Thursday, March 8, 2012
6:30 p.m. - 8:30 p.m.
Iron Mountain Lake City Hall
591 North Lakeshore Drive
Bismarck, Missouri

EPA staff members will be available to discuss site activities and answer questions.

BACKGROUND
The subsite is located in the southwest corner of St. Francois County. It is located approximately 12 miles from Farmington and eight miles from Ironton, off of Missouri Route NN.

An iron mine existed before the community of Iron Mountain Lake was formed. The mine is located approximately one mile northwest of the community. In or about 1847, the company that operated the mine, the Iron Mountain Company, constructed a lake in a valley on their property. The water from the lake was used for operations at the iron mine.

The lake became a popular recreational and social gathering spot after its construction. In the early 1900s, the property was conveyed to a development company. Several entities managed and developed the site through the years. Today, a city exists around the lake. According to the 2010 Census, there are 367 residential homes in the Iron Mountain Lake community.

Iron Mountain Lake, as stated earlier, is a subsite of the Big River Mine Tailings Superfund Site in St. Francois County, Missouri, where EPA has been conducting response actions at residential properties, schools, child-care facilities, and park areas for more than a decade. These areas are part of Missouri’s Old Lead Belt, where mining and milling have occurred for more than a century. Over time, mining wastes containing elevated levels of lead were left behind, posing a threat to human health and the environment.

HEALTH INFORMATION

Young children are typically exposed to lead by playing in contaminated soils and then putting dirty fingers in their mouths, and by breathing contaminated dust. Lead can build up in children’s bodies and can cause lead poisoning. Although the effects of lead poisoning are a potential concern for humans of all ages, children younger than seven years old and pregnant women are especially at risk. It is important that children in this age range be tested every year, because lead-poisoned children may not look or act sick.

Blood-lead tests can be performed at the St. Francois County Health Center. For additional information, please call (573) 431-1947.

Lead exposure and its effects can be reduced by washing hands after playing outside and before meals, vacuuming often, wet dusting and mopping, and eating a diet high in calcium and iron.

AVAILABILITY OF DOCUMENTS

The administrative record and site-related documents for the Big River Mine Tailings Superfund Site are available for review at the following locations:

St. Francois County Health Center
1025 West Main
Park Hills, Missouri

EPA Region 7 Records Center
901 North 5th Street
Kansas City, Kansas

ADDITIONAL RESOURCES
If you have questions or need additional information, please contact:
http://www.epa.gov/region07/factsheets/2012/epa_pub_avail_iron_mtn_lake_big_river_st_francois_co_mo.htm
Last updated on Tuesday, October 16, 2012

Debbie Kring
Community Involvement Coordinator
U.S. EPA - Region 7
Office of Public Affairs
901 North 5th Street
Kansas City, KS 66101
(913) 551-7725
Toll-free: 1-800-223-0425
Email: kring.debbie@epa.gov

SPECIAL ACCOMMODATIONS

EPA Region 7 is committed to providing reasonable accommodations to individuals with disabilities. To request a reasonable accommodation, please contact Jonathan Cooper at 1-800-223-0425 or by email at cooper.jonathan@epa.gov at least a week in advance of the meeting. Speech or hearing impaired individuals should email or call using the local relay service.
Fact Sheet 1

October 2011

EPA Announces Availability of the Record of Decision, Big River Mine Tailings Superfund Site - Operable Unit 1, St. Francois County, Missouri

INTRODUCTION

The U.S. Environmental Protection Agency (EPA) Region 7 announces the availability of the Record of Decision (PDF) (133 pp, 8MB, About PDF) that presents the selected remedy for the Big River Mine Tailings Superfund Site (Site), Operable Unit (OU) 1. This OU consists of residential properties and high-child exposure areas exceeding screening levels of 400 parts per million (ppm) in St. Francois County. This action focuses on properties in the towns of Park Hills, Desloge, Bonne Terre, Leadwood, Leadington, and Doe Run, as well as rural residential properties surrounding these communities. (Note: The city of Park Hills was created when the former towns of Flat River, Esther, Rivermines, and Elvins were combined.) EPA took public comments on the Proposed Plan that supports this Site action from July 22nd to August 22nd (first 30-day period). After an additional 30 days for comment was requested by the public, EPA extended the comment period to September 22nd. A public meeting was held on August 4th.

SITE BACKGROUND

This Site is a part of Missouri’s Old Lead Belt, where mining and milling have occurred for more than a century. Over time, mining wastes containing elevated levels of lead were left behind, posing a threat to human health and the environment. EPA and Missouri state agencies have been addressing lead contaminated soils in St. Francois County for more than a decade, providing health education, soil assessments, and a variety of response actions.

DESCRIPTION OF SELECTED REMEDY

The selected remedy focuses on the remediation of lead contaminated mine ore processing waste in residential areas of the Site. For the purposes of this Record of Decision (ROD), the term residential properties includes properties that contain single- and multi-family dwellings, apartment complexes, vacant lots in residential areas, schools, daycare centers, playgrounds, parks, and green ways. This cleanup action is one part of EPA’s overall efforts to clean up environmental contamination resulting from historic lead mining operations at the Site. Cleanup activities of the original tailings piles (source areas) have already occurred and are nearly complete. EPA believes that the Selected Remedy is protective of human health and the environment.

The Selected Remedy includes: the excavation of residential soil until lead concentrations are below 400 parts per million (ppm) in the top 12 inches, or below 1,200 ppm below 12 inches down to 24 inches below ground surface (bgs); transportation of contaminated soil to on-site soil repositories; replacement of contaminated soil with clean backfill; and vegetative cover and institutional controls (ICs). Any properties with lead levels remaining above 1,200 ppm at 24 inches bgs would be subject to ICs. Further detail on the selected remedy can be found in the ROD document which resides in EPA’s Administrative Record (see under Additional Information below).
ADDITIONAL INFORMATION

The Record of Decision and other site-related documents are part of the Administrative Record, which is available for review during regular business hours at the following locations:

St. Francois County Health Center
1025 West Main Street
Park Hills, Missouri 63601
(573) 431-1947

OR

U.S. EPA - Region 7
Records Center
901 North 5th Street
Kansas City, Kansas 66101
1-800-223-0425

If you have questions or need additional information, please contact:

Debbie Kring
Community Involvement Coordinator
EPA Region 7
901 North 5th Street
Kansas City, Kansas 66101
Phone: (913) 551-7725
Toll-free: 1-800-223-0425
Email: kring.debbie@epa.gov
April 2011

EPA to Hold a Public Availability Session on the Establishment of a Supplemental Soil Repository in Bonne Terre, St. Francois County, Missouri

INTRODUCTION

The U.S. Environmental Protection Agency (EPA) Region 7 will hold a Public Availability Session on May 2, 2011 to share information and answer questions about its proposal to establish a supplemental soil repository in Bonne Terre, Missouri. This repository will be used to store contaminated soil from Lake Timberline properties.

The benefits of using the Bonne Terre Tailings Pile include: easier access to haul routes, minimal impacts to city roads, a reduction in transportation costs, an enhanced vegetative cover over the pile reduces lead released to the environment, and space.

AVAILABILITY SESSION

Monday, May 2, 2011
6:30 p.m. - 8:30 p.m.
North County High School Auditorium
7151 Raider Road
Bonne Terre, Missouri

EPA Region 7 is committed to providing reasonable accommodations to individuals with disabilities. If you require a reasonable accommodation to participate in the public meeting, please notify the
EPA Reasonable Accommodations Coordinator, Jonathan Cooper (1-800-223-0425),
or by e-mail @ cooper.jonathan@epa.gov at least seven (7) days prior to the meeting. Speech or hearing impaired individuals should e-mail or call using the local relay service.

BACKGROUND

The Big River Mine Tailings/St. Joe Minerals Corp. Superfund Site is a part of Missouri's Old Lead Belt, where mining and milling has occurred for more than a century. Over time, mining wastes containing elevated levels of lead were left behind, posing a threat to human health and the environment.
EPA and Missouri state agencies have been addressing lead contaminated soils in St. Francois County for more than a decade, providing health education, soil assessments, and a variety of response actions.

**HEALTH INFORMATION**

Lead is a toxic metal that is harmful if inhaled or swallowed. Children are more sensitive to lead than adults and can develop lifelong learning disabilities and behavioral problems from lead exposure. Pregnant women and nursing mothers should also avoid exposure to lead to protect their children. Lead poisoning can cause negative health effects in infants and young children including, but not limited to:

- slowed physical growth;
- hearing problems;
- nervous system damage;
- learning disabilities;
- hyperactivity and other behavioral problems; and
- decreased intelligence.

Lead exposure and its effects can be reduced by washing hands after playing outside and before meals, vacuuming often and dusting with a damp cloth, and eating a diet high in calcium and iron.

**ADDITIONAL INFORMATION**

The administrative record and site-related documents for the Big River Mine Tailings/St. Joe Minerals Corp. Superfund Site are available for review at the following locations:

- St. Francois County Health Department
  1025 West Main
  Park Hills, Missouri

- EPA Region 7 Records Center
  901 North 5th Street
  Kansas City, Kansas

**ADDITIONAL RESOURCES**

If you have questions or need additional information, please contact:

**Debbie Kring**
Community Involvement Coordinator
U.S. EPA – Region 7
Office of Public Affairs
901 North 5th Street
Kansas City, Kansas 66101
(913) 551-7725 or
Toll Free @ 1-800-223-0425
E-mail: kring.debbie@epa.gov

**Jason Gunter**
Project Manager
U.S. EPA – Region 7
Superfund Division
901 North 5th Street
Kansas City, Kansas  66101
(913) 551-7358 or
Toll Free @ 1-800-223-0425
E-mail: gunter.jason@epa.gov
Fact Sheet

February 2011

EPA to Hold a Public Availability Session on the Establishment of a Supplemental Soil Repository, St. Francois County, Missouri

INTRODUCTION

The U.S. Environmental Protection Agency (EPA) Region 7 will hold a Public Availability Session on February 28, 2011 to share information and answer questions about its proposal to establish a supplemental soil repository in Leadwood, Missouri. This repository will be used to store contaminated soil from properties throughout St. Francois County, Missouri.

The benefits of using the Leadwood Mine Tailings Site include: access to haul routes, minimal impacts to city roads, an enhanced vegetative cover over the pile, and space.

As you may be aware, EPA has recently undertaken response actions to remove and replace lead-contaminated soils at numerous schools and child-care facilities, as well as continuing its efforts at residential properties throughout St. Francois County.

Young children are typically exposed to lead by playing in contaminated soils and then putting dirty fingers in their mouths, and by breathing contaminated dust. Lead can build up in children's bodies and can cause lead poisoning. Although the effects of lead poisoning are a potential concern for humans of all ages, children younger than seven years old and pregnant women are especially at risk. It is important that children in this age range be tested every year, because lead-poisoned children may not look or act sick.

Blood-lead tests can be performed at the St. Francois County Health Center. For additional information, please contact Ms. Jane Howard, R.N. at (573) 431-7326, Ext. 142.

AVAILABILITY SESSION

Monday, February 28, 2011
6:30 p.m. - 8:30 p.m.
Mineral Area College
Field House (Cafeteria)
112 Dixie Cone Drive
Park Hills, Missouri
EPA Region 7 is committed to providing reasonable accommodations to individuals with disabilities. If you require a reasonable accommodation to participate in the public meeting, please notify the EPA Reasonable Accommodations Coordinator, Jonathan Cooper (1-800-223-0425), or by e-mail @ cooper.jonathan@epa.gov at least seven (7) days prior to the meeting. Speech or hearing impaired individuals should e-mail or call using the local relay service.

BACKGROUND

The Big River Mine Tailings/St. Joe Minerals Corp. Superfund Site is a part of Missouri's Old Lead Belt, where mining and milling has occurred for more than a century. Over time, mining wastes containing elevated levels of lead were left behind, posing a threat to human health and the environment.

EPA and Missouri state agencies have been addressing lead contaminated soils in St. Francois County for more than a decade, providing health education, soil assessments, and a variety of response actions.

HEALTH INFORMATION

Lead is a toxic metal that is harmful if inhaled or swallowed. Children are more sensitive to lead than adults and can develop lifelong learning disabilities and behavioral problems from lead exposure. Pregnant women and nursing mothers should also avoid exposure to lead to protect their children. Lead poisoning can cause negative health effects in infants and young children including, but not limited to:

- slowed physical growth;
- hearing problems;
- nervous system damage;
- learning disabilities;
- hyperactivity and other behavioral problems; and
- decreased intelligence.

Lead exposure and its effects can be reduced by washing hands after playing outside and before meals, vacuuming often and dusting with a damp cloth, and eating a diet high in calcium and iron.

ADDITIONAL INFORMATION

The administrative record and site-related documents for the Big River Mine Tailings/St. Joe Minerals Corp. Superfund Site are available for review at the following locations:

St. Francois County Health Department
1025 West Main
Park Hills, Missouri
EPA Region 7 Records Center
901 North 5th Street
Kansas City, Kansas

ADDITIONAL RESOURCES

If you have questions or need additional information, please contact:

Debbie Kring  
Community Involvement Coordinator  
U.S. EPA - Region 7  
Office of Public Affairs  
901 North 5th Street  
Kansas City, Kansas 66101  
(913) 551-7725 or  
Toll Free @ 1-800-223-0425  
E-mail: kring.debbie@epa.gov

Jason Gunter  
Project Manager  
U.S. EPA – Region 7  
Superfund Division  
901 North 5th Street  
Kansas City, Kansas 66101  
(913) 551-7358 or  
Toll Free @ 1-800-223-0425  
E-mail: gunter.jason@epa.gov
Fact Sheet

November 2010

EPA to Hold a Public Meeting on Removal of Lead-Contaminated Soils from Schools and Child Care Facilities in St. Francois County, Missouri

INTRODUCTION

The U.S. Environmental Protection Agency (EPA) Region 7 will hold a Public Meeting on November 29, 2010, to share information and answer questions about a project to remove lead-contaminated soils from the grounds of 11 schools and 16 child care facilities in St. Francois County, Missouri.

As a result of EPA's recent response actions to remove and replace lead-contaminated soils at Central Middle School in Park Hills, it was determined that additional testing should be conducted at schools and child care facilities in St. Francois County. Testing of soils was conducted at 28 facilities, which included 11 schools and 17 child care/Head Start centers. The testing confirmed elevated levels of lead in the soil at 27 of the 28 facilities. EPA, along with the St. Francois County Health Department and other state and federal agencies, will hold the public meeting to present the history of the Big River Mine Tailings/St. Joe Minerals Corp. Superfund Site, discuss upcoming response actions at the 27 facilities, and answer questions.

PUBLIC MEETING
Monday, November 29, 2010
6:30 p.m. - 8:30 p.m.
Mineral Area College
5270 Flat River Road
Park Hills, Missouri

EPA Region 7 is committed to providing reasonable accommodations to individuals with disabilities. If you require a reasonable accommodation to participate in the public meeting, please notify the EPA Reasonable Accommodations Coordinator, Jonathan Cooper (1-800-223-0425), or by e-mail @ cooper.jonathan@epa.gov at least seven (7) days prior to the meeting. Speech or hearing impaired individuals should e-mail or call using the local relay service.
At the meeting, the Missouri Department of Health and Senior Services (MDHSS) will also provide free blood lead screenings. Results of the screenings will be available the same night.

Young children are typically exposed to lead by playing in contaminated soils and then putting dirty fingers in their mouths, and by breathing contaminated dust. Lead can build up in children’s bodies and can cause lead poisoning.

Although the effects of lead poisoning are a potential concern for humans of all ages, children younger than seven years old and pregnant women are especially at risk. It is important that children in this age range be tested every year, because lead-poisoned children may not look or act sick. Free lead tests will be offered to persons regardless of age at the November 29 meeting. Tests at other times can be arranged through the local health department or through a physician.

BACKGROUND

The Big River Mine Tailings/St. Joe Minerals Corp. Superfund Site is a part of Missouri’s Old Lead Belt, where mining and milling has occurred for more than a century. Over time, mining wastes containing elevated levels of lead and zinc were left behind, posing a threat to human health and the environment.

EPA and Missouri state agencies have been addressing lead contaminated soils in St. Francois County for more than a decade, providing health education, soil assessments, and a variety of response actions.

ADDITIONAL HEALTH INFORMATION

Lead is a toxic metal that is harmful if inhaled or swallowed. Children are more sensitive to lead than adults and can develop lifelong learning disabilities and behavioral problems from lead exposure. Pregnant women and nursing mothers should also avoid exposure to lead to protect their children. Lead poisoning can cause negative health effects in infants and young children including, but not limited to:

- slowed physical growth;
- hearing problems;
- nervous system damage;
- learning disabilities;
- hyperactivity and other behavioral problems; and
- decreased intelligence.

Lead exposure and its effects can be reduced by washing hands after playing outside and before meals, vacuuming often and dusting with a damp cloth, and eating a diet high in calcium and iron.

ADDITIONAL INFORMATION

The administrative record and site-related documents for the Big River Mine Tailings/St. Joe Minerals Corp. Superfund Site are available for review at the following locations:

St. Francois County Health Department
1025 West Main
Park Hills, Missouri
ADDITIONAL RESOURCES

If you have questions or need additional information, please contact:

Debbie Kring
Community Involvement Coordinator
U.S. EPA - Region 7
Office of Public Affairs
901 North 5th Street
Kansas City, Kansas 66101
(913) 551-7725 or
Toll Free @ 1-800-223-0425
E-mail: kring.debbie@epa.gov

Heath Smith
On-Scene Coordinator
U.S. EPA – Region 7
Superfund Division
1051 Madison 212
Fredericktown, Missouri 63645
(573) 783-3351
E-mail: smith.heath@epa.gov
Region 7
You are here: EPA Home  About Region 7  Fact Sheets  Public Meeting for RCRA Administrative Orders Announced, The Doe Run Resources Corporation, St. Louis, Missouri, October 2010

Fact Sheet

October 2010

Public Meeting for RCRA Administrative Orders Announced, The Doe Run Resources Corporation, St. Louis, Missouri

INTRODUCTION

On September 1, 2010, The Doe Run Resources Corporation (Doe Run) signed an Administrative Order on Consent (AOC) and a modification to an existing Transportation AOC. The modification requires additional work practices related to the company’s handling and transportation of lead materials. The new AOC sets out specific procedures for continued yard cleanups. Both agreements are being issued under Section 7003 of the Resource Conservation and Recovery Act (RCRA).

EPA invites the public to comment on the modification of the Transportation Administrative Order on Consent and the new Administrative Order on Consent for soils. The 30-day public comment period opens on October 21 and runs through November 22, 2010.

BACKGROUND INFORMATION

Doe Run produces lead and other metals from the New Lead Belt or the Viburnum Trend in southeast Missouri. Production began in the mid-1960s and continues to this day. Ore from the mines is crushed, milled and processed to form lead and other metal concentrates. Lead concentrate commonly contains lead at levels greater than 70 percent (700,000 parts per million). This lead concentrate is trucked over public roadways to the Herculaneum smelter for processing or trucked to the Southeast Missouri Regional Port Authority near Cape Girardeau for shipment overseas.

Plan to Attend Public Meeting

You are invited to attend a public meeting to discuss the administrative orders between EPA and Doe Run. The meeting has been scheduled for Tuesday, November 9, 2010, beginning at 7 p.m. at the:

Senn-Thomas Middle School Gymnasium
200 Senn-Thomas Dr.
Herculaneum, Missouri

If you have questions about the meeting, please contact:

Beckie Himes
Community Involvement Coordinator
Office of Public Affairs
U.S. EPA Region 7
901 No. 5th Street
Kansas City, Kansas 66101
Phone: (913) 551-7253
Toll Free: (800) 223-0425

EPA Region 7 is committed to providing reasonable accommodation to individuals with disabilities. If you require a reasonable accommodation to participate in the meeting, please notify the EPA Reasonable Accommodations Coordinator, Jonathan Cooper, 800-223-0425 or at cooper.jonathan@epa.gov. Speech or hearing impaired individuals should e-mail or call using the local relay service.

TRANSPORTATION ISSUES

Since 2001, EPA, the Missouri Department of Natural Resources (MDNR) and Doe Run have entered into several agreements designed to address lead contamination associated with operations at Doe Run facilities located in southeast Missouri. As a result of these agreements, Doe Run has installed air controls, cleaned up residential properties, sampled soils, and conducted investigations.

Through oversight of Doe Run’s work, EPA and MDNR have collected samples from haul roads in Herculaneum and along other trucking routes which confirm high lead levels on road surfaces, road shoulders and adjacent residential yards. In response, EPA required Doe Run to develop and implement a Smelter Transportation and Materials Handling Plan to minimize the release of lead along haul routes. EPA approved Doe Run’s transportation plan in July 2003.

The plan set forth, among other practices, operation of an automated undercarriage truck wash for vehicles to use prior to leaving the smelter, operation of dry street sweepers within Herculaneum and a spill response policy.

Despite these practices, sampling evidence indicated that lead-bearing trucks continued to contaminate roads in southeast Missouri. An AOC was issued in May 2007, to address these ongoing transportation issues. This Transportation AOC required Doe Run to install vehicle wash stations, perform roadway and street washing, enclose materials during transit, wash and inspect trucks daily, collect samples from trucks and residential properties along haul routes and provide reports of these activities to EPA.

In August through October 2008, EPA inspected Doe Run’s implementation of the Transportation AOC and discovered significant violations of that Order. EPA finalized a report of these inspection activities in October 2009, and subsequently issued a modification to the Transportation AOC.

YARD CLEANUP ISSUES

EPA has continued to monitor soil lead levels in previously excavated residential yards within Herculaneum. Recent trend analysis of the soil data monitored by EPA, completed in July 2009, for 13 properties up to 0.75 miles from the Doe Run facility, demonstrated a
statistically significant upward trend in lead levels in residential surface soils for all of the properties analyzed.

In July 2009, EPA ordered Doe Run to sample all residential properties within 1 mile of the lead smelter. The results of this sampling, provided to EPA by Doe Run in October 2009, indicated that 129 properties, out of 372 sampled had lead soil concentrations in at least one sample greater than EPA's level of concern of 400 parts per million (ppm). One hundred four of these properties had already been cleaned up at least once by Doe Run. These data results confirm the upward trend in soil lead levels in residential yards in Herculaneum.

**LEAD HEALTH EFFECTS**

Lead concentrate that settles on roads along haul routes can be tracked beyond the roads into adjacent residential yards and homes. In addition, lead emissions from the Herculaneum smelter can settle in residential yards contaminating the yards and homes of residents. Exposure of young children to lead can cause adverse health effects including slowed physical growth; hearing problems; learning difficulties; behavior problems; and decreased intelligence.

**ADDITIONAL TRANSPORTATION WORK PRACTICES**

Doe Run has agreed to implement additional specific work practices through a modification to the existing Transportation AOC in an effort to further reduce lead releases to public roads from its transportation activities. These work practices include the following:

**Inspection/Washing Procedures** – Doe Run will implement improved truck inspection and washing procedures for all trucks hauling lead materials to and from their facilities. Revised standard operating procedures (SOPs) have been developed for inspection and washing of trucks. These new SOPs will be implemented on the Effective Date of the modification of the Transportation AOC.

**Independent Audits** – Doe Run will hire an independent contractor to audit the inspection and washing requirements of the AOC on an annual basis for each facility covered by the Transportation AOC.

**Handling and Transportation Study** – Doe Run will hire a contractor to perform a Concentrate Handling and Transportation System Engineering Study. This study will benchmark Doe Run’s current transportation operations, evaluate transportation operations at other similar facilities, and evaluate opportunities for improvement to its transportation operations.

**Sampling and Reports** – Doe Run will perform additional residential sampling and submit monthly reports so that EPA may monitor whether these measures are working.

**SOIL CLEANUP ACTIONS**

Doe Run will initially sample all residential properties within 1.5 miles of the Herculaneum lead smelter. In addition, all properties that have soil lead concentrations greater than 200 ppm will be sampled annually thereafter. After the lead smelter facility has ceased operation and the smelter facility is cleaned up, all residential properties within 1.5 miles of the facility will be sampled one last time. During any of these sampling activities if a property has soil lead concentrations greater than or equal to 400 ppm, the property will be cleaned up.

CONSENT DECREES

On October 8, 2010, the United States lodged a Consent Decree with Doe Run to resolve violations of RCRA; the Clean Air Act; Clean Water Act; Emergency Planning and Community Right-to-Know Act; Comprehensive Environmental Response, Compensation and Liability Act; and State law at several Doe Run facilities. Doe Run has agreed to perform many response actions and pay a civil penalty to resolve these violations. A separate notice and comment period on the Consent Decree is being conducted by the Department of Justice. The new Soils Order and the modification of the Transportation Order were included as part of this larger settlement. The modification of the Transportation Order is included as part of the Consent Decree.

ADMINISTRATIVE RECORD

EPA has established an Administrative Record which includes a copy of the modification of the transportation Administrative Order on Consent, the new Administrative Order on Consent for soils, and other relevant documents. The Administrative Record is available for review during normal business hours at the following locations:

Herculaneum City Hall  
1 Parkwood Court  
Herculaneum, Missouri

Viburnum City Hall  
#1 Missouri Avenue  
Viburnum, Missouri

Windsor Branch  
Jefferson County Library  
7479 Metropolitan Blvd.  
Barnhart, Missouri

U.S. EPA Region 7  
Records Center  
901 North 5th Street  
Kansas City, Kansas

Again, EPA invites the public to comment on the modification of the Transportation Administrative Order on Consent and the new Administrative Order on Consent for soils. The 30-day public comment period opens on October 21 and runs through November 22, 2010.

Written comments, postmarked no later than November 22, 2010, should be directed to Beckie Himes at the address shown below. EPA will consider all comments submitted during the public comment period and determine whether it is appropriate for EPA to sign and finalize the modification and the Administrative Order on Consent.

ADDITIONAL INFORMATION

If you have questions or need additional information, please contact:

James Aycock  
Environmental Scientist
Waste Enforcement and Materials Management Branch  
U.S. EPA Region 7  
901 North 5th Street  
Kansas City, Kansas 66101  
Phone: (913) 551-7887  
E-mail: aycock.jim@epa.gov

Beckie Himes  
Community Involvement Coordinator  
Office of Public Affairs  
U.S. EPA Region 7  
901 North 5th Street  
Kansas City, Kansas 66101  
Phone: (913) 551-7253 or  
Toll Free: (800) 223-0425  
E-mail: himes.beckie@epa.gov
Fact Sheet

August 2010

EPA to Conduct a Removal Action at the Central Middle School - Big River Mine Tailings Superfund Site, Park Hills, Missouri

INTRODUCTION

The U.S. Environmental Protection Agency (EPA) Region 7 will conduct a Removal Action at the Central Middle School in Park Hills beginning the first week in August. The action will consist of digging and removing soil at the school grounds, due to the presence of high lead content. The objective of this action is to eliminate or reduce the potential exposure of lead-contamination to the community.

EPA is taking this action now to minimize any disruption to the beginning of the new school year. Areas around the school with the highest levels of contamination will be addressed first and are targeted for completion by August 19th.

Over the course of the next three weeks, you may observe large trucks in the area, which will be used to haul contaminated soil to a disposal site. The trucks will be covered at all times, and should not pose any health issues or risk to the community.

BACKGROUND

In response to citizen concerns raised on June 17, 2010, EPA conducted an environmental investigation at the Site, which included sampling of all outdoor soils around Central Middle School. After reviewing the sampling results, EPA determined that it was necessary to conduct this removal action immediately. This action is being conducted as a part of the residential cleanups taking place at the Big River Mine Tailings Superfund Site.

HEALTH INFORMATION

Lead is a toxic metal that is harmful if inhaled or swallowed. Young children are more sensitive to lead than adults and can develop lifelong learning disabilities and behavioral problems from lead exposure. Pregnant women and nursing mothers should also avoid exposure to lead to protect their children. Lead poisoning can cause negative health effects in infants and young children including, but not limited to:

- slowed physical growth;
- hearing problems;
- nervous system damage;
- learning disabilities;
- hyperactivity and other behavioral problems; and
decreased intelligence.

Lead exposure and its effects can be reduced by the following actions:

- washing hands after playing outside and before meals;
- vacuuming often and dusting with a damp cloth;
- Eating a diet high in calcium and iron.

**ADDITIONAL INFORMATION**

If you have questions or need additional information, please contact:

**Debbie Kring**  
Community Involvement Coordinator  
U.S. EPA - Region 7  
Office of Public Affairs  
901 North 5th Street  
Kansas City, Kansas 66101  
(913) 551-7725 or  
Toll Free @ 1-800-223-0425  
E-mail: kring.debbie@epa.gov
Fact Sheet

July 2010

EPA Announces Public Meeting and Comment Period, Washington County Lead District - Richwoods Site, Operable Unit 1, Washington County, Missouri

INTRODUCTION

EPA Region 7 is releasing a Proposed Plan to address soil contamination at residential yards and high child impact areas within the Washington County Lead District – Richwoods Superfund Site, Operable Unit 1. EPA is asking for your comments on the Proposed Plan.

A 30-day public comment period will run from July 20, 2010 through August 20, 2010. A public meeting is scheduled for July 21, 2010, from 7:00 p.m. to 9:00 p.m. at the Richwoods R-VII Elementary School in Richwoods, Mo. EPA representatives will summarize site investigations at the meeting. Community members may comment at the meeting or submit comments by mail or electronically through August 20, 2010. Although EPA is recommending an action to address the contamination, a final decision will not be made until all public comments are reviewed. After all comments have been evaluated, EPA will make a decision, which will be published in a Record of Decision (ROD).

PUBLIC MEETING/COMMENT PERIOD

Plan to attend the EPA meeting to offer your comments on the Proposed Plan. The meeting is scheduled for:

Wednesday, July 21, 2010
7:00 p.m. to 9:00 p.m.
Richwoods R-VII Elementary School
Library
10788 State Highway A
Richwoods, Missouri

All written or verbal comments should be addressed to:

Dianna Whitaker
Office of Public Affairs
EPA Region 7
901 North 5th Street
Kansas City, KS 66101

BACKGROUND

Washington County is part of Missouri's Old Lead Belt, where lead mining has occurred for several hundred years. Mining activities in Washington County have contributed to elevated levels of lead in soil and groundwater in the area. Elevated lead levels in the environment can pose a threat to public health, especially for children six years old and younger, and pregnant women.

For the past several years, EPA has been conducting residential yard cleanups at properties with the highest levels of lead contamination under our removal program. EPA has also been providing an alternative drinking water source to residents whose private water wells were determined to have lead or cadmium contamination above EPA's drinking water standards.

Based on site-specific risk assessments (as summarized in the Proposed Plan), a cleanup level of 400 parts per million for lead in residential soil was determined to be protective of human health. Based on this cleanup number and previous soil sampling, there are expected to be approximately 98 residential properties that may require cleanup. A summary of all remedial alternatives is provided in the Proposed Plan, along with EPA's criteria to compare the alternatives.

PREFERRED ALTERNATIVE

The Preferred Alternative for the site is five-fold, and is defined as Alternative 2 in the Proposed Plan. The alternative includes excavation (digging up contaminated soil), disposal (placement of contaminated soil in an approved repository), vegetative cover (seeding on top of replaced soil in yards and public areas), health education (in-home assessments, public meetings and fact sheets) and institutional controls. Institutional controls are often used to reduce the risk of exposure to hazardous substances through an informational mechanism. The Preferred Alternative is a continuation of previous response actions where EPA excavated and disposed of residential soil that contained elevated lead levels and replaced it with clean soil.

ADDITIONAL INFORMATION

The Proposed Plan and other site-related documents are available for review during regular business hours at the following locations:

Richwoods Elementary School
10788 State Highway A
Richwoods, Missouri

EPA Region 7
901 N. 5th Street
Kansas City, Kansas

If you have questions, please contact:

Dianna Whitaker
EPA Region 7
901 North 5th Street
Kansas City, KS 66101
913-551-7598, Toll-free 1-800-223-0425
E-mail: whitaker.dianna@epa.gov

EPA Region 7 is committed to providing reasonable accommodations to individuals with disabilities. If you require a reasonable accommodation to participate in the public meeting, please notify the EPA Reasonable Accommodations Coordinator, Jonathan Cooper at (1-800-223-0425), or by e-mail at cooper.jonathan@epa.gov at least seven (7) days prior to the meeting. Speech or hearing impaired individuals should e-mail or call using the local relay service.
Fact Sheet

July 2010

EPA Initiates the Remedial Investigation/Feasibility Study, Southwest Jefferson County Mining Site, Jefferson County, Missouri

INTRODUCTION

On September 23, 2009, the U.S. Environmental Protection Agency added the Southwest Jefferson County Mining Site to the National Priorities List (NPL). The NPL is a list of the nation’s hazardous waste sites with the highest priority for cleanup. These sites are eligible for extensive, long-term response action money authorized by Congress under the Superfund program.

Next month, EPA Region 7 will begin the site-wide Remedial Investigation/Feasibility Study (RI/FS) for the Southwest Jefferson County Mining Site. EPA staff and contractors will be working in the county to gather the environmental samples needed for the remedial investigation.

SITE CONTAMINATION

Jefferson County is part of Missouri’s Old Lead Belt, where lead mining has occurred for several hundred years. Mining activities in Jefferson County have contributed to elevated levels of lead in soil, ground and surface water in the area. Some county residents have also unknowingly purchased lead-contaminated soil for property and landscaping improvements.

REMEDIAL INVESTIGATION

During the remedial investigation, EPA gathers data needed to determine the nature and extent of contamination at the site, establishes site cleanup criteria, identifies preliminary alternatives for remedial action, and supports technical cost analyses of alternatives. After the RI has commenced, EPA conducts the feasibility study, which considers different alternatives for cleaning up the site and recommends selection of a cost-effective alternative.

EPA will ultimately present the findings of the investigation to the community and ask for comments on EPA’s proposed actions before making decisions about site cleanup.

During the remedial investigation process, EPA will continue to address high levels of lead contamination at residences within the site by removing contaminated soil and replacing with clean soil. EPA will also continue to address contamination in private water wells by providing an alternative drinking water source to residents whose drinking water has been identified with lead or cadmium above levels of concern.
COMPLETED SITE ACTIVITIES

EPA has collected soil samples from 1,900 properties located within the site. To date, 331 properties have been identified with lead-contaminated soil above 1,200 parts per million (ppm). At this level, EPA prioritizes properties for cleanup as time-critical removals. EPA has completed time-critical removals at 260 properties. Once EPA has conducted the RI/FS, submitted a proposed plan to the public and developed the record of decision, EPA will determine the cleanup criteria for addressing properties with contamination below 1,200 ppm. These properties will be cleaned up during the remedial action phase.

EPA has collected water samples from 630 private water wells in the site. EPA is providing bottled water to 38 residents whose wells have been identified with lead or cadmium above drinking water standards.

TECHNICAL ASSISTANCE GRANT

EPA wants to help affected communities understand the technical information related to a site. EPA's Technical Assistance Grant Program provides up to $50,000 for a qualified citizens group to hire independent technical advisors. The advisors can help citizens interpret technical data, understand site hazards, and become more knowledgeable about the different technologies used to clean up sites.

ADMINISTRATIVE RECORD

EPA has compiled the site administrative record file. The administrative record file is the official record for the site and contains site reports and descriptions of activities and other documents used to determine the appropriate actions to take at the site. The administrative record file is available for review during normal business hours at the following locations:

De Soto Public Library
712 South Main Street
De Soto, Missouri

EPA Region 7
Records Center
901 North 5th Street
Kansas City, Kansas

ADDITIONAL INFORMATION

If you have questions about this fact sheet or want additional information about the site, please contact:

Dianna Whitaker
Community Involvement Coordinator
U.S. EPA Region 7
Office of Public Affairs
901 North 5th Street
Kansas City, KS 66101
Phone: 913-551-7598 or
Toll Free: 1-800-223-0425
whitaker.dianna@epa.gov
Preston Law
Remedial Project Manager
U.S. EPA Region 7
Superfund Division
901 North 5th Street
Kansas City, KS 66101
Phone: 913-551-7097
Toll-Free: 1-800-223-0425
law.preston@epa.gov
Fact Sheet

June 2010

EPA Announces Public Meeting, Washington County Lead District - Palmer Superfund Site, Washington County, Missouri

INTRODUCTION

EPA Region 7 is hosting a public meeting on Thursday, July 15, 2010, at Belgrade Elementary School, 18437 Delbridge Road in Belgrade, Mo. The purpose of the meeting is to provide the local community with information about the Washington County Lead District - Palmer Superfund Site. During the meeting, representatives from the EPA, the Missouri Department of Natural Resources, and federal, state and local health agencies will be available to answer questions from the public.

SITE BACKGROUND

Washington County is part of Missouri’s lead and barite mining district, where mining occurred for several hundred years. The county has hosted over 1,000 sites associated with lead and/or barite mining. Mining activities in Washington County have contributed to elevated levels of lead in soil and ground water in this area.

EPA has begun collecting soil and water samples from residential properties located near mining and mine-waste disposal areas within the Palmer Site. The soil and water samples will be analyzed for the presence of lead and other heavy metals.

HEALTH INFORMATION
Lead is a toxic metal that is harmful if inhaled or swallowed. Children are more sensitive to lead than adults and can develop lifelong learning disabilities and behavior problems from lead exposure. Pregnant women and nursing mothers should also avoid exposure to lead to protect their children.

Lead poisoning can cause these health effects in infants and young children:

- Slowed physical growth;
- Hearing problems;
- Nervous system damage;
- Learning difficulties;
- Behavior problems including hyperactivity; and
- Decreased intelligence.

Lead exposure and its effects can be reduced by:

- Washing hands after playing outside and before meals;
- Vacuuming often and dusting with a damp cloth to help remove dust that might have lead in it; and
- Eating a diet high in calcium and iron and low in fat.

**BLOOD LEAD TESTING**

The only way to know if your child has elevated blood lead levels is to have his or her blood tested. EPA encourages parents to have their children tested for lead exposure.

For information about free blood-lead testing, please contact your county health department:

Washington County Health Department
520 Purcell Road
Potosi, MO 63664
573-438-2164

The health department is open from 8:00 a.m. to 5:00 p.m. Monday through Thursday and from 10:00 a.m. to 5:00 p.m. on Fridays. Free blood-lead testing is available on Thursdays and Fridays.

**ADDITIONAL INFORMATION**

If you have questions or need additional information about EPA's sampling activities at the Washington County Lead District - Palmer Site, please contact:

**Dianna Whitaker**
Community Involvement Coordinator
Office of Public Affairs
EPA Region 7
901 North 5th Street
Kansas City, KS 66101
913-551-7598, Toll-free 1-800-223-0425
E-mail: whitaker.dianna@epa.gov

**Manual Schmaedick**
On-Scene Coordinator
Superfund Division


Region 7
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Fact Sheet

February 2010

EPA to Host a Public Availability Session to Provide Updated Site Information to the Community at Large, Leadwood Mine Tailings Superfund Site, Leadwood, Missouri

INTRODUCTION

The U.S. Environmental Protection Agency (EPA) Region 7 will hold a Public Availability Session to share updated information about the Leadwood Mine Tailings Superfund Site.

Since meeting with you in August of last year, we have undertaken the following actions which support EPA’s goals in protecting human health and the environment throughout the Leadwood community:

Continued with pile stabilization, focusing on the east seep and erosion area, as well as the north portion.
Remediation started at the West County Elementary Baseball Field on December 14th. The entire ball field will be excavated and backfilled with clean soil. Sod will be used for revegetation. Remediation of the western portion of the West County Elementary school yard will begin immediately after the ball field clean up work is completed. Class "B" biosolids will be applied to approximately 40 acres at the Leadwood Mine Tailings Site, north of Wortham Road and south of Eaton Dam. The next application will be applied in Spring 2010.

EPA will share the details of these actions at the Public Availability Session.

PUBLIC AVAILABILITY SESSION

Tuesday, March 2, 2010
6:30 p.m. - 8:30 p.m.
West County Middle School
1124 Main Street
Leadwood, Missouri

BACKGROUND

The property addressed above is a part of the Leadwood Mine Tailings Superfund Site, which is one of six major mine waste areas located in a region known as the Old Lead Belt. Historical mining activities were conducted in this region for the greater part of 70 years, leaving behind tailings and chat containing elevated levels of lead and zinc that pose a threat to human health and the environment.
HEALTH INFORMATION

Lead is a toxic metal that is harmful if inhaled or swallowed. Children are more sensitive to lead than adults and can develop lifelong learning disabilities and behavioral problems from lead exposure. Pregnant women and nursing mothers should also avoid exposure to lead to protect their children. Lead poisoning can cause negative health effects in infants and young children including, but not limited to:

- Slowed physical growth.
- Hearing problems.
- Nervous system damage.
- Learning disabilities.
- Hyperactivity and other behavioral problems
- Decreased intelligence.

Lead exposure and its effects can be reduced by the following actions:

- Washing hands after playing outside and before meals.
- Vacuuming often and dusting with a damp cloth.
- Eating a diet high in calcium and iron.

ADDITIONAL INFORMATION

The administrative record and site-related documents for the Leadwood Mine Tailings Superfund Site are available for review at the following locations:

St. Francois County Health Department
1025 West Main
Park Hills, Missouri

EPA Region 7 Records Center
901 North 5th Street
Kansas City, Kansas

ADDITIONAL RESOURCES

The following community involvement tools are available for your consideration:

- Community Advisory Group (CAG): Consists of community members forming a group to discuss and present concerns related to the Superfund decision-making process.

- Technical Assistance Grant (TAG): A grant in the amount of $50,000 (over a 3-year period) for a citizens' group to hire independent advisors.

- Technical Assistance Service for Communities (TASC): A program that provides educational and technical assistance to communities affected by hazardous waste sites.

If you have questions or need additional information, please contact:

Debbie Kring
Community Involvement Coordinator
U.S. EPA - Region 7
Office of Public Affairs
901 North 5th Street
EPA Region 7 is committed to providing reasonable accommodations to individuals with disabilities. If you require a reasonable accommodation to participate in the public meeting, please notify the EPA Reasonable Accommodations Coordinator, Jonathan Cooper (1-800-223-0425), or by e-mail @ cooper.jonathan@epa.gov at least seven (7) days prior to the meeting. Speech or hearing impaired individuals should e-mail or call using the local relay service.
Region 7
You are here: EPA Home  About Region 7  Fact Sheets  EPA Soil Sampling and Excavations at Raintree Plantation, Southwest Jefferson County Mining Superfund Site, Jefferson County, Missouri, January 2010

Fact Sheet

January 2010

EPA Soil Sampling and Excavations at Raintree Plantation, Southwest Jefferson County Mining Superfund Site, Jefferson County, Missouri

INTRODUCTION

In November 2009, EPA staff met with the Raintree Properties Owners Association. During the meeting, association board members requested that EPA provide residents with more information about the sampling and lead cleanup work the Agency is conducting at Raintree Plantation residences. This fact sheet summarizes EPA’s lead sampling and removal activities at Raintree and provides health guidelines to prevent exposure to lead contamination in soil prior to soil replacement.

BACKGROUND INFORMATION

The Missouri Department of Natural Resources has produced an inventory of sites where mining and smelting operations have occurred throughout Missouri in the past and present. Based on this inventory, EPA identified residential areas in Jefferson County where historical mining and smelting activities may have contributed to elevated levels of lead in soil and groundwater. Using this database, EPA started collecting soil and water samples from residences in Jefferson County in 2006.

The database did not identify any mining or smelting operations in or near Raintree Plantation. As a consequence, EPA did not include the Raintree residential area in its initial sampling plan.

However, after several Raintree residents requested that EPA screen their soil for lead contamination, EPA collected samples and identified some yards with high levels of lead contamination within Raintree Plantation. In discussions with these property owners, EPA determined that the source of lead contamination at these residences came from soil brought onto the properties for backfill or landscaping purposes.

SUPERFUND PROGRAM

EPA is conducting investigations and cleanup work at the Southwest Jefferson County Mining Site under the Superfund program. Congress established Superfund in 1980 in response to growing concerns over human health and environmental risks posed by hazardous waste sites. After a Superfund site is discovered, cleanup can fall under two programs: removal and remedial. Removal actions address immediate threats to human health and the environment
posed by contamination. Remedial actions address sites that require extensive and potentially long-term cleanup. Under the Superfund program, a site may qualify for placement on the National Priorities List (NPL). The NPL is intended primarily to guide EPA in determining which sites warrant further investigation and cleanup. On September 23, 2009, EPA placed the Southwest Jefferson County Mining Site on the NPL.

**COMPLETED SITE ACTIVITIES**

EPA has collected soil samples from 1,602 properties located within the site, of which 299 samples were collected from Raintree residences. To date, more than 300 properties have been identified with lead-contaminated soil above 1,200 parts per million (ppm) in Jefferson County, of which 48 are located within Raintree Plantation. At this soil lead level, EPA prioritizes properties for cleanup as time-critical removals. Thus far, EPA has completed 11 excavations at Raintree residences.

EPA has also identified 292 site properties with lead-contaminated soil in the range of 400 ppm to 1,199 ppm, of which 105 are located within Raintree Plantation. These properties will be addressed after the time-critical removals have been completed.

**HEALTH INFORMATION**

Lead is a toxic metal that is harmful if inhaled or swallowed. Children are more sensitive to lead than adults and can develop lifelong learning disabilities and behavior problems from lead exposure. Pregnant women and nursing mothers should also avoid exposure to lead because lead can pass from the mother to unborn children and to nursing children from breast milk. The only way to know if your child has elevated blood lead levels is to have his or her blood tested. EPA encourages parents to have their children tested for lead exposure. Lead poisoning can cause these health effects in infants and young children:

- Slowed physical growth.
- Hearing problems.
- Nervous system damage.
- Learning problems.
- Behavior problems including hyperactivity.
- Decreased intelligence.

**RECOMMENDED ACTIONS TO REDUCE LEAD EXPOSURE**

If EPA has informed you that your soil has elevated lead levels, you can adopt the following actions until EPA is able to excavate the contaminated soil and replace it with clean soil. These actions will reduce your children’s exposure to lead prior to EPA’s cleanup completion.

- Do not let your children play in areas that have elevated lead levels in soil.
- Wash your children’s hands after playing outside and before meals.
- Vacuum often and dust with a damp cloth to help remove dust that might have lead in it.
- Put washable doormats or rugs at all entries to your home and wash the mats every week.
- Wash children’s toys frequently with soap and water, especially when the toys have been taken outside.
- Eat a diet high in calcium and iron and low in fat. Eating this type of diet may lower the amount of ingested lead that children absorb into their bodies. Iron-rich foods include red meats, fish and chicken, iron-enriched cereals and dried fruits. Calcium-rich foods include milk, yogurt, cheese and leafy vegetables such as spinach, kale and collard greens.
GARDENING GUIDELINES

If you eat vegetables grown in soil that contains lead, lead can get into your body. To lower the amount of lead that gets into your body from eating vegetables grown in your garden, avoid planting root crops in soil that contains more than 1,000 ppm of lead and do not plant crops in soil that contains more than 1,500 ppm of lead. Always wash and peel all vegetables, fruit and root crops before eating. Consider using raised beds with clean soil for your garden.

ADDITIONAL LEAD INFORMATION

For more information, go to:

Agency for Toxic Substances and Disease Registry
Toxicological Profile for Lead:
www.atssr.cdc.gov/toxprofiles/phs13.html

ToxFAQs for Lead:
www.atssr.cdc.gov/tfacts13.html

U.S. Environmental Protection Agency

Lead in Paint, Dust and Soil:
http://www.epa.gov/opptintr/lead/

ADMINISTRATIVE RECORD

EPA has compiled the site administrative record. The administrative record contains investigative reports, descriptions of site activities and other documents used to determine the appropriate action to take at the site. You can review the administrative record during normal business hours at these locations:

De Soto Public Library
712 South Main Street
De Soto, Mo.

EPA Region 7
901 North 5th Street
Kansas City, Kan.

IF YOU WOULD LIKE YOUR PROPERTY TESTED OR HAVE QUESTIONS

Property owner permission forms to request soil sampling are available in the Raintree POA Office. The following EPA staff will be happy to answer your questions and/or add your property to our list for sampling:

Dianna Whitaker
Community Involvement Coordinator
EPA Region 7
901 North 5th Street
Kansas City, Kansas 66101
Jim Silver
On-Scene Coordinator
EPA Site Office
13291 State Road CC
De Soto, Missouri 63020
636-586-8406
E-mail: silver.jim@epa.gov
Fact Sheet

August 2009

EPA to Host Public Meeting, Leadwood Mine Tailings Superfund Site, Leadwood, Missouri

INTRODUCTION

The U.S. Environmental Protection Agency (EPA) Region 7 will hold a public meeting to share updated information about the Leadwood Mine Tailings Superfund Site. The meeting is scheduled from 6:30 p.m. to 8:30 p.m. on Thursday, August 13, 2009, in the cafeteria at the West County High School in Park Hills, Mo.

PUBLIC MEETING

Thursday, August 13, 2009
6:30 p.m. - 8:30 p.m.
West County High School
Cafeteria
768 Highway M
Park Hills, Missouri

Since meeting with you on June 25, 2009, EPA has undertaken the following actions:

Amended EPA’s 2006 Unilateral Administrative Order (UAO) with The Doe Run Resources Corporation to include immediate steps to improve environmental procedures and practices at the Leadwood Site.
Assigned additional EPA personnel to be on-site to increase Agency oversight of Doe Run environmental activities.
Placed the amended UAO at the local repository (St. Francois County Health Center, Park Hills, Mo.) for public viewing.

BACKGROUND

The Leadwood Mine Tailings Superfund Site is one of six major mine waste areas located in a region known as the Old Lead Belt. Historical mining activities were conducted in this region for the greater part of 70 years, leaving behind tailings and chat containing elevated levels of lead and zinc that pose a threat to human health and the environment.

HEALTH INFORMATION

Lead is a toxic metal that is harmful if inhaled or swallowed. Children are more sensitive to lead than adults and can develop lifelong learning disabilities and behavioral problems from
lead exposure. Pregnant women and nursing mothers should also avoid exposure to lead to protect their children. Lead poisoning can cause negative health effects in infants and young children including, but not limited to:

- Slowed physical growth
- Hearing problems
- Nervous system damage
- Learning disabilities
- Hyperactivity and other behavioral problems
- Decreased intelligence

Lead exposure and its effects can be reduced by the following actions:

- Washing hands after playing outside and before meals;
- Vacuuming often and dusting with a damp cloth;
- Eating a diet high in calcium and iron.

**ADMINISTRATIVE RECORD**

The administrative record is the official record for the site and contains site reports and other documents such as the amended Unilateral Order, used to determine the appropriate actions to take at the site. The administrative order for the Leadwood Mine Tailings Superfund Site is available for review at the following locations:

- St. Francois County Health Center
  1025 West Main Street
  Park Hills, Missouri

- EPA Region 7
  Records Center
  901 North 5th Street
  Kansas City, Kansas

**ADDITIONAL INFORMATION**

If you have questions or need additional information, please contact:

**Debbie Kring**  
Community Involvement Coordinator  
Office of Public Affairs  
U.S. EPA - Region 7  
901 North 5th Street  
Kansas City, KS 66101  
(913) 551-7725 or  
Toll Free @ 1-800-223-0425  
E-mail: kring.debbie@epa.gov

**EPA Region 7 is committed to providing reasonable accommodations to individuals with disabilities. If you require a reasonable accommodation to participate in the public meeting, please notify the EPA Reasonable Accommodations Coordinator, Sharon Nible at (1-800-223-0425), or by e-mail @ nible.sharon@epa.gov at least seven (7) days prior to the meeting. Speech or hearing impaired individuals should e-mail or call using the local relay service.**
Fact Sheet

June 2009

EPA to Hold Meeting with Raintree Plantation Residents, Southwest Jefferson County Mining Superfund Site, Jefferson County, Missouri

INTRODUCTION

EPA Region 7 staff will meet with Raintree Plantation residents at the Raintree Country Club, 5925 Plantation Drive in Hillsboro, Missouri at 7:00 p.m. on Tuesday, June 16, 2009. The purpose of the meeting is to update residents about ongoing site activities.

SITE BACKGROUND

Jefferson County is part of Missouri's Old Lead Belt, where lead mining occurred for several hundred years. The primary environmental concern at this site is lead contamination in residential soils and private water wells.

SUPERFUND PROGRAM

EPA is conducting investigations and cleanup work at the site under the Superfund program. Congress established Superfund in 1980 in response to growing concerns over human health and environmental risks posed by hazardous sites. After a Superfund site is discovered, cleanup can fall under two programs: removal and remedial. Removal actions address immediate threats to human health and the environment posed by contamination. Remedial actions address sites that require extensive and potentially long-term cleanup.

Raintree Plantation Residents

You are invited to attend a meeting to learn more about the Southwest Jefferson County Mining Site. The meeting is scheduled:

Tuesday, June 16, 2009
7 p.m. to 9 p.m.
Raintree Country Club
5925 Plantation Drive
Hillsboro, Missouri

Under the Superfund program, a site may qualify for placement on the National Priorities List (NPL). The NPL is intended primarily to guide EPA in determining which sites warrant further investigation and cleanup. On April 9, 2009, EPA proposed the Southwest Jefferson County
Mining Site for placement on the NPL. The public was given until June 9, 2009, to submit comments on the proposal. EPA will carefully review all comments received from the public. If EPA decides to place the site on the NPL, a fact sheet and press release will be distributed to inform the public about the decision.

**COMPLETED SITE ACTIVITIES**

EPA has collected samples from 1,353 properties located within the site. To date, 267 properties have been identified with lead-contaminated soil above 1,200 parts per million (ppm). At this level, EPA prioritizes properties for cleanup as time-critical removals. EPA has also identified 229 properties with lead-contaminated soil in the range of 400 ppm to 1,199 ppm. These properties will be addressed after the time-critical removals are completed. EPA has collected water samples from 598 private water wells in the site. To date, EPA has offered bottled water to 41 residents whose wells have been identified with lead or cadmium above levels of concern.

**HEALTH INFORMATION**

Lead is a toxic metal that is harmful if inhaled or swallowed. Children are more sensitive to lead than adults and can develop lifelong learning disabilities and behavior problems from lead exposure. Pregnant women and nursing mothers should also avoid exposure to lead to protect their children. The only way to know if your child has elevated blood lead levels is to have his or her blood tested. EPA encourages parents to have their children tested for lead exposure.

**TECHNICAL ASSISTANCE GRANT**

EPA wants to help affected communities understand the technical information related to a site. EPA's Technical Assistance Grant Program provides up to $50,000 for a qualified citizen's group to hire independent technical advisors. The advisors can help citizens interpret technical data and become more knowledgeable about the different technologies used to clean up sites.

**ADMINISTRATIVE RECORD**

EPA has compiled the site administrative record which can be reviewed during normal business hours at these locations:

De Soto Public Library
712 South Main Street
De Soto, Mo.

EPA Region 7
901 North 5th Street
Kansas City, Kan.

**ADDITIONAL INFORMATION**

If you have questions, please contact:

**Dianna Whitaker**
EPA Region 7
901 North 5th Street
Kansas City, Kansas 66101
913-551-7598, Toll-free 1-800-223-0425
E-mail: whitaker.dianna@epa.gov

Jim Silver
EPA Site Office
13291 State Road CC
De Soto, Missouri 63020
636-586-8406
E-mail: silver.jim@epa.gov

EPA Region 7 is committed to providing reasonable accommodations to individuals with disabilities. If you require a reasonable accommodation to participate in the meeting, please notify Sharon Nible at (1-800-223-0425), or at nible.sharon@epa.gov at least seven days prior to the meeting. Speech or hearing impaired individuals should e-mail or call using the local relay service.
Fact Sheet

June 2009

EPA Hosts Public Availability Session Regarding Establishment of Soil Repository, Leadwood Mine Tailings Superfund Site, Leadwood, Missouri

INTRODUCTION

The U.S. Environmental Protection Agency (EPA) Region 7 will host a Public Availability Session to share information about the establishment of a 53-acre soil repository on property owned by Doe Run Corporation in Leadwood, Mo. The repository will be used for the placement of lead-contaminated residential soils that come from Southwest Jefferson County, as agreed upon by EPA and Doe Run.

The accepted residential soils will be treated (in accordance with the Land Disposal Restriction requirements) to prevent leaching of contaminated materials. EPA will haul these soils to the Leadwood Repository using the north entrance off Highway 8 and will follow all local transport ordinances. Some of the benefits derived from the creation of this repository include:

Soils will have a lower lead concentration than the existing pile (which is currently comprised of mine tailings).
Soils will promote rapid and sustainable plant growth and will eliminate the need for wastewater sludge (which is currently used to increase the organic content in soil).
Soils will significantly reduce the dust problem in the 53-acre area.

After residential soil hauling is completed, the 53-acre area will be graded and covered with soil less than or equal to 660 parts per million of lead. This concentration level is consistent with the Missouri Risk-Based Corrective Action (MRBCA) guidance document Tier 1 target levels for non-residential land use.

AVAILABILITY SESSION

Thursday, June 25, 2009
6:30 p.m. - 8:00 p.m.
(Presentation starts promptly @ 6:30 p.m.)
Central High School
116 Rebel Drive
Park Hills, Missouri

BACKGROUND
The property addressed above is a part of the Leadwood Mine Tailings Superfund Site, which is one of six major mine waste areas located in a region known as the Old Lead Belt. Historical mining activities were conducted in this region for the greater part of 70 years, leaving behind tailings and chat containing elevated levels of lead and zinc that pose a threat to human health and the environment.

ADDITIONAL INFORMATION

The administrative record and site-related documents for the St. Francois County Superfund sites are available for review at the following locations:

St. Francois County Health Department
1025 West Main Street
Park Hills, Missouri

EPA Region 7 Records Center
901 North 5th Street
Kansas City, Kansas

Questions and comments can be submitted to:

Debbie Kring
Community Involvement Coordinator
U.S. EPA - Region 7
Office of Public Affairs
901 North 5th Street
Kansas City, Kansas 66101
(913) 551-7725 or
Toll Free @ 1-800-223-0425
E-mail: kring.debbie@epa.gov

OR

Jason Gunter
Project Manager
U.S. EPA - Region 7
Superfund Division
901 North 5th Street
Kansas City, Kansas 66101
(913) 551-7358
Toll Free @ 1-800-223-0425
E-mail: gunter.jason@epa.gov

EPA Region 7 is committed to providing reasonable accommodations to individuals with disabilities. If you require a reasonable accommodation to participate in the public meeting, please notify the EPA Reasonable Accommodations Coordinator, Sharon Nible at (1-800-223-0425), or by e-mail @ nible.sharon@epa.gov at least seven (7) days prior to the meeting. Speech or hearing impaired individuals should e-mail or call using the local relay service.
Fact Sheet

May 2009

EPA Announces Public Meeting, Washington County Lead District - Furnace Creek Superfund Site, Washington County, Missouri

INTRODUCTION

EPA Region 7 is hosting a public meeting on Thursday, May 28, 2009, at the Valley R-VI High School in Caledonia, Mo. During the meeting, representatives from the EPA, the Missouri Department of Natural Resources, and federal, state and local health agencies will provide the local community with information about the Washington County Lead District-Furnace Creek Superfund Site and will address questions from the public.

SITE BACKGROUND

Washington County is part of Missouri’s lead and barite mining district, where mining occurred for several hundred years. More than 1,000 sites associated with lead and/or barite mining have operated in Washington County. Mining activities in Washington County have contributed to elevated levels of lead in soil and ground water in this area.

Last spring, EPA began collecting soil and water samples from residential properties located near mining and mine-waste disposal areas within the Furnace Creek Site. The soil and water samples were analyzed for the presence of lead and other heavy metals.

PUBLIC MEETING INVITATION

You are invited to attend an EPA public meeting to learn more about the Washington County Lead District-Furnace Creek Site. The meeting is scheduled:

Thursday, May 28, 2009
7 p.m. to 9 p.m.
Valley R-VI High School
Cafeteria
1 Viking Drive
Caledonia, Mo.

SITE SAMPLING RESULTS

EPA has collected soil samples from 689 residences located within the site. To date, 50 properties have been identified with lead-contaminated soil above 1,200 parts per million.
EPA has also identified 191 residences with lead-contaminated soil in the range of 400 ppm to 1,199 ppm. EPA has collected water samples from 480 private water wells in the site. To date, EPA has identified four wells whose drinking water exceeded 15 parts per billion (ppb) for lead. EPA will provide an alternative form of water for drinking and cooking purposes for these residents.

SOIL REMOVAL PRIORITIES

Soil with lead concentrations at levels of 1,200 parts per million (ppm) or greater are deemed higher risk to residents. These properties will receive priority for excavation during the current removal action. Properties with lead at levels above 400 ppm where a child with elevated blood level resides are the highest priority for cleanup.

HEALTH INFORMATION

Lead is a toxic metal that is harmful if inhaled or swallowed. Children are more sensitive to lead than adults and can develop lifelong learning disabilities and behavior problems from lead exposure. Pregnant women and nursing mothers should also avoid exposure to lead to protect their children. Lead poisoning can cause these health effects in infants and young children:

- Slowed physical growth.
- Hearing problems.
- Nervous system damage.
- Learning difficulties.
- Behavior problems including hyperactivity.
- Decreased intelligence.

Lead exposure and its effects can be reduced by:

- Washing hands after playing outside and before meals.
- Vacuuming often and dusting with a damp cloth to help remove dust that might have lead in it.
- Eating a diet high in calcium and iron and low in fat.

BLOOD LEAD TESTING

The only way to know if your child has elevated blood lead levels is to have his or her blood tested. FREE blood lead testing will be available at the May 28th meeting. These will be finger-stick tests. You will know the results of the test the same evening.

ADDITIONAL INFORMATION

If you have questions, please contact:

Dianna Whitaker  
Community Involvement Coordinator  
EPA Region 7  
901 North 5th Street  
Kansas City, Kansas 66101  
913-551-7598, Toll-free 1-800-223-0425  
E-mail: whitaker.dianna@epa.gov
EPA Region 7 is committed to providing reasonable accommodations to individuals with disabilities. If you require a reasonable accommodation to participate in the meeting, please notify the EPA Reasonable Accommodations Coordinator, Sharon Nible, at (1-800-223-0425), or at nible.sharon@epa.gov at least seven days prior to the meeting. Speech or hearing impaired individuals should e-mail or call using the local relay service.
Fact Sheet

April 2009

EPA Proposes Site to National Priorities List, Southwest Jefferson County Mining Site, Jefferson County, Missouri

INTRODUCTION

The U.S. Environmental Protection Agency is proposing the Southwest Jefferson County Mining Site to the National Priorities List (NPL). The NPL is a published list of hazardous waste sites in the country that are eligible for extensive, long-term cleanup action under the Superfund program. EPA is asking for comments on the proposal.

BACKGROUND

Jefferson County is part of Missouri's Old Lead Belt, where lead mining has occurred for several hundred years. The primary environmental concern at this site is lead contamination in residential soils and private water wells.

Public Comments

EPA is requesting comments until June 9, 2009 on the proposal to add this site to the NPL. Comments submitted for the site should reference docket number EPA-HQ-SFUND-2009-0074 and may be submitted by one of the following methods:

E-mail: superfund.Docket@epa.gov

Mail: Mail comments (no facsimiles or tapes) to:

Docket Coordinator
U.S. Environmental Protection Agency
CERCLA Docket Office
Mail Code 5305T
1200 Pennsylvania Avenue, NW
Washington, DC 20460

SUPERFUND PROGRAM

EPA is conducting investigations and cleanup work at the site under the Superfund program. Congress established Superfund in 1980 in response to growing concerns over human health and environmental risks posed by hazardous sites. After a Superfund site is discovered, cleanup can fall under two programs: removal and remedial. Removal actions address
immediate threats to human health and the environment posed by contamination. Remedial actions address sites that require extensive and potentially long-term cleanup. Under the Superfund program, a site may qualify for placement on the NPL. The NPL is intended primarily to guide EPA in determining which sites warrant further investigation and cleanup. For a site to be included on the NPL, it has to score sufficiently on the Hazard Ranking System (HRS). The HRS evaluates exposure pathways and the potential risk to human health and the environment. Those sites that score high enough on the HRS are eligible for the NPL. A site that is listed on the NPL qualifies to be financed by Superfund’s Trust Fund. If a responsible party is not identified, a site cannot undergo a remedial cleanup unless it is listed on the NPL.

The Southwest Jefferson County Mining Site is being proposed to the NPL due to the potential risks associated with the levels of lead detected in soils, ground and surface water at the site. The state of Missouri supports this proposal.

**COMPLETED SITE ACTIVITIES**

Under the removal program, EPA has collected samples from 1,118 properties located in Jefferson County. To date, 230 properties have been identified with lead-contaminated soil above 1,200 parts per million (ppm). At this level, EPA prioritizes properties for cleanup as time-critical removals. EPA has also identified 159 properties with lead-contaminated soil in the range of 400 ppm to 1,199 ppm. These properties will be addressed after the time-critical removals are completed. EPA has collected water samples from 517 private water wells in this site. To date, EPA has offered bottled water to 41 residents whose wells have been identified with lead or cadmium above levels of concern.

**FUTURE SITE ACTIONS**

EPA will continue to sample properties and conduct time-critical removals as highly contaminated properties are identified. A remedial investigation and feasibility study will be performed to fully define the nature and extent of contamination, followed by an evaluation of alternatives to clean up the contamination. EPA will ultimately present this information to the community and ask for comments on EPA’s proposed actions before making decisions about site cleanup.

**TECHNICAL ASSISTANCE GRANT**

EPA wants to help affected communities understand the technical information related to a site. EPA’s Technical Assistance Grant Program provides up to $50,000 for a qualified citizens group to hire independent technical advisors. The advisors can help citizens interpret technical data, understand site hazards, and become more knowledgeable about the different technologies used to clean up sites.

**ADDITIONAL INFORMATION**

If you have questions about this proposal or want additional information about applying for a Technical Assistance Grant, please contact:

**Dianna Whitaker**  
U.S. EPA Region 7  
901 North 5th Street  
Kansas City, KS 66101

EPA Places Washington County Lead District-Furnace Creek on the Federal Cleanup Priorities List

Contact Information: Dave Bryan, (913) 551-7433, bryan.david@epa.gov

FOR IMMEDIATE RELEASE

(Kansas City, Kan., March 8, 2011) - The U.S. Environmental Protection Agency today announced its decision to place the Washington County Lead District-Furnace Creek site in Washington County, Missouri, on the federal Superfund National Priorities List (NPL).

The NPL is a list of the nation's hazardous waste sites with the highest priority for cleanup. This site is eligible for extensive, long-term response action money authorized by Congress under the Superfund program. The Furnace Creek site is located in a heavily mined region in eastern Missouri and primarily includes residential properties within and around the towns of Belgrade, Caledonia, Hopewell and Irondale, Missouri.

Mining activities in Washington County have contributed to elevated levels of lead in soil and ground water in this area.

Inclusion of the Furnace Creek Site on the NPL guarantees the public an opportunity to participate in cleanup decisions. Affected communities also become eligible for technical assistance grants from EPA to help understand technical documents and promote community involvement. EPA's Technical Assistance Grant Program provides up to $50,000 for a qualified citizens group to hire independent technical advisors. The advisors can help citizens interpret complex environmental data, understand site hazards, and critique various cleanup technologies. For additional information about the Technical Assistance Grant Program, contact Hattie Thomas at (913) 551-7762 or thomas.hattie@epa.gov.
Appendices

Appendix A  URS Scope of Work

Appendix B  Watershed Group Meetings
- List of Meeting Dates
- Meeting Notices/Agendas/Summaries
- List of Attendees

Appendix C  Technical Advisory Committee of Watershed Group
- Agenda/Attendees/Summary of March 24, 2012 Agency Meeting
- Any Subsequent Such Meetings
- Technical Advisory Team (technical review)

Appendix D  Press Releases Issued during Planning Period

Appendix E  Material Prepared for County Commission/Council Meetings and Work Sessions

Appendix F  Fact Sheets from EPA for Big River and Related Operable Units

APPENDIX G  “OUR MO WATERS” INITIATIVE

Appendix H  Health Department Information
- St. Francois County Health Department “Lead Poisoning” web page.
- DHSS Fact Sheet (Fishable/Swimmable)

Appendix I  Miscellaneous
The Big River Watershed is located in east-central Missouri and discharges into the Meramec River basin. The Big River has severe biological impairment due to nonpoint source pollution resulting from mining activities in the watershed.

The basin originates in Iron County and flows north through several counties to its confluence with the Meramec River. The watershed includes:

- 620,913 acres (955 square miles).
- Land use: 1 percent cropland, 18 percent grassland, 72 percent forest, 7 percent developed, less than 1 percent water] (Source USGS National Land Cover Database, 2006).
- Population: 98,252 (101.25 per square mile); Year 2010 Census data.

### Major streams in the watershed area of Big River

<table>
<thead>
<tr>
<th>Stream</th>
<th>(sq. Mi)</th>
<th>(acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mineral Fork</td>
<td>189</td>
<td>120,960</td>
</tr>
<tr>
<td>Cedar Creek</td>
<td>79</td>
<td>50,666</td>
</tr>
<tr>
<td>Terre Bleue Creek</td>
<td>67</td>
<td>42,755</td>
</tr>
<tr>
<td>Flat River</td>
<td>53</td>
<td>33,920</td>
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<tr>
<td>Mill Creek</td>
<td>52</td>
<td>33,080</td>
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<tr>
<td>Heads Creek</td>
<td>30</td>
<td>19,440</td>
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<tr>
<td>Dry Creek</td>
<td>30</td>
<td>18,930</td>
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<tr>
<td>Belew Creek</td>
<td>26</td>
<td>16,620</td>
</tr>
</tbody>
</table>

### Communities in the Big River Watershed
- St. Francois County: Leadwood, Desloge, Bonne Terre, Bismarck, Wortham, Frankclay, Park Hills, Leadington, Terre du Lac
- Washington County: Potosi, Caledonia, Irondale, Mineral Point
- Jefferson County: DeSoto, Hillsboro, Byrnes Mill, Cedar Hill, High Ridge, Scotsdale

### Public Lands in the Big River Watershed
- Bonne Terre City Lake
- Bootleg Access
- Brown's Ford Access
Public Lands in the Big River Watershed (continued)
- Burford Mountain Conservation Area
- Hickory Canyons Natural Area
- Hughes Mountain Natural Area
- Kingston Access
- Leadwood Access
- Mammoth Access
- Mark Twain National Forest - Potosi District
- Merrill Horse Access
- Mineral Area College (Quarry Pond)
- Mineral Area College Range
- Missouri Mines State Historic Site
- Pea Ridge Conservation Area
- Potosi (Roger Bilderback Lake)
- St. Francois State Park
- St. Joe State Park
- Valley View Glades Natural Area
- Washington State Park
- Young Conservation Area

Public Water Supplies
- 77 public drinking water systems in watershed, majority rely on groundwater.
- 4 have source water protection plans: Irondale, St. Francois Co. PWSD #2, Mirasol Subdivision and Raintree Plantation.
- Surface water supplies: Jefferson County Public Water Supply District #2

Water Quality Monitoring
- Approximately 90 water quality sample data sites in Big River watershed in DNR’s database.
- 2367 samples collected between November 1962 and September 2012.
- USGS has completed 449 individual water quality sampling events at 18 unique sites
- There are 106 stream teams that are from the watershed and/or have collected data from the watershed.

Nonpoint Source Pollution
Streams on the 2012 303(d) list of impaired streams include impairment for cadmium, zinc, lead, inorganic sediment, Biochemical Oxygen Demand, both volatile and non-volatile suspended solids, chlorophyll and total nitrogen. Impaired uses include Livestock and Wildlife Watering, Protection of Aquatic Life (Warm-Water Fishery), Human Health Protection (Fish Consumption).

Point Sources of Pollution
There are approximately 116 permitted point sources in the Big River Watershed. They include the following:
- 91 wastewater treatment facility discharges
- 18 Other land application sites
- 7 Other discharge (industrial, car wash, etc)
### 2012 303(d) Impaired Waters in Big River Watershed

<table>
<thead>
<tr>
<th>Stream</th>
<th>Pollutant</th>
<th>Impaired miles</th>
<th>Source</th>
<th>TMDL Scheduled*</th>
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<tr>
<td>Big River</td>
<td>Cadmium (S)</td>
<td>81.3</td>
<td>Old Lead Belt tailings</td>
<td>2014</td>
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<tr>
<td>Big River</td>
<td>Zinc (S)</td>
<td>81.3</td>
<td>Old Lead Belt tailings</td>
<td>2014</td>
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<tr>
<td>Coonville Creek</td>
<td>Lead</td>
<td>1.3</td>
<td>Source Unknown</td>
<td>2025</td>
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<tr>
<td>Eaton Br.</td>
<td>Cadmium (S)</td>
<td>1.2</td>
<td>Leadwood tailings pond</td>
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<tr>
<td>Eaton Br.</td>
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<td>1.2</td>
<td>Leadwood tailings pond</td>
<td>2014</td>
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<tr>
<td>Eaton Br.</td>
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<td>Leadwood tailings pond</td>
<td>2014</td>
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<tr>
<td>Eaton Br.</td>
<td>Zinc (S)</td>
<td>1.2</td>
<td>Leadwood tailings pond</td>
<td>2014</td>
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<tr>
<td>Eaton Br.</td>
<td>Zinc</td>
<td>1.2</td>
<td>Leadwood tailings pond</td>
<td>2014</td>
</tr>
<tr>
<td>Flat River Creek</td>
<td>Cadmium</td>
<td>10</td>
<td>Old Lead Belt tailings</td>
<td>2014</td>
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<tr>
<td>Koen Creek</td>
<td>Fishes Bioassessments</td>
<td>1</td>
<td>Source Unknown</td>
<td>2022</td>
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<tr>
<td>Salt Pine Creek</td>
<td>Aquatic Macroinvertebrate</td>
<td>1.2</td>
<td>Barite tailings pond</td>
<td>2022</td>
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<td>Bioassessments</td>
<td></td>
<td></td>
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<tr>
<td>Shaw Br.</td>
<td>Cadmium (S)</td>
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<td>Federal tailings pond</td>
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<tr>
<td>Tiff Creek</td>
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<tr>
<td>Trib. Old Mines Creek</td>
<td>Sedimentation/Siltation (S)</td>
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<td>Turkey Creek</td>
<td>Cadmium</td>
<td>2.4</td>
<td>Bonne Terre chat pile</td>
<td>2014</td>
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<tr>
<td>Turkey Creek</td>
<td>Lead</td>
<td>2.4</td>
<td>Bonne Terre chat pile</td>
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<td>Trib. To Flat River Creek</td>
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<td>0</td>
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<td>Terre Du Lac Lakes</td>
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<td>2016</td>
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<td>Terre Du Lac Lakes</td>
<td>Total Nitrogen</td>
<td>103</td>
<td>Terre du Lac subdivision</td>
<td>2016</td>
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*TMDL schedule is subject to change

### Approved Total Maximum Daily Loads

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<th>NPS contribution</th>
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<tr>
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<td>Lead</td>
<td>3/24/2010</td>
<td>Major</td>
</tr>
<tr>
<td>Big River</td>
<td>NV/SS</td>
<td>3/24/2010</td>
<td>Major</td>
</tr>
<tr>
<td>Shibboleth Br.</td>
<td>Inorganic Sediment</td>
<td>12/23/2010</td>
<td>Major</td>
</tr>
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<td>Shibboleth Br.</td>
<td>Lead, zinc, cadmium – dissolved and in sediment [these were not 303(d) listed]*</td>
<td>12/23/2010</td>
<td>Major</td>
</tr>
<tr>
<td>Pond Creek</td>
<td>Inorganic Sediment</td>
<td>12/23/2010</td>
<td>Major</td>
</tr>
<tr>
<td>Pond Creek</td>
<td>Lead, zinc, cadmium – dissolved and in sediment - [these were not 303(d) listed]*</td>
<td>12/23/2010</td>
<td>Major</td>
</tr>
<tr>
<td>Stream</td>
<td>Pollutant</td>
<td>Approval Date</td>
<td>NPS contribution</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------</td>
<td>---------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Flat River Creek</td>
<td>Lead</td>
<td>3/24/2010</td>
<td>Major</td>
</tr>
<tr>
<td>Flat River Creek</td>
<td>Zinc</td>
<td>3/24/2010</td>
<td>Major</td>
</tr>
<tr>
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<td>NVSS</td>
<td>3/24/2010</td>
<td>Major</td>
</tr>
<tr>
<td>Shaw Br.</td>
<td>Lead</td>
<td>3/24/2010</td>
<td>Minor</td>
</tr>
<tr>
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<td>3/24/2010</td>
<td>Minor</td>
</tr>
<tr>
<td>Turkey Creek</td>
<td>BOD</td>
<td>1/13/2005</td>
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<tr>
<td>Turkey Creek</td>
<td>VSS</td>
<td>1/13/2005</td>
<td>None</td>
</tr>
</tbody>
</table>

*These metals were addressed at the Shibboleth Br. and Pond Cr. TMDLs, despite these pollutants not being listed at the time. Available data suggested that these pollutants were impairing the streams.

Department Studies in the Watershed

  2001-2002 At the request of the Missouri Department of Natural Resources (MDNR) Water Pollution Control Program (WPCP), the Environmental Services Program (ESP) Water Quality Monitoring Section (WQMS) conducted a macroinvertebrate bioassessment and fine sediment study of the upper Big River in Washington County.

Recreational Use Attainability Analyses (2005-2008)

Recreational Use Attainability Analyses (2005-2008) (continued)

- Fountain Farm Branch 3657  
- Goose Creek 2153  
- Mill Creek 2124  
- Reid Creek 3410  
- Trib to Big River 2116  
- Trib to Shibboleth Creek 2121  
- Trib to Mill Creek 2126  
- Wallen Creek 2139  

USGS Gage Stations-Real Time Flow Data

- USGS Big River near Richwoods, MO 07018100  
  http://waterdata.usgs.gov/nwis/uv/?site_no=07018100&PARAmeter_cd=00065,00060,00062,72020
- USGS 07018500 Big River at Byrnesville, MO  
  http://waterdata.usgs.gov/nwis/uv/?site_no=07018500&PARAmeter_cd=00065,00060,00062,72020
- USGS 07017610 Big River below Bonne Terre, MO  
  http://waterdata.usgs.gov/nwis/uv/?site_no=07017610&PARAmeter_cd=00065,00060,00062,72020
- USGS 07017200 Big River at Irondale, MO  
  http://waterdata.usgs.gov/nwis/uv/?site_no=07017200&PARAmeter_cd=00065,00060,00062,72020

319 Projects in the Big River Watershed - previous 10 years

- Mini-Earth Day Symposium - 2004 to discuss stream and watershed management ($5000)
- Mini-Belews Creek Watershed Management Plan Development - The $5,000 in federal funds supported the Jefferson County Stormwater Program to identify the nine elements in a watershed management plan needed to protect water quality in the Belew Creek watershed. (2003-2008)
- St Louis Metro-Clean Water Education and Resources Project - ($22,497 2003-2009) This project evaluated and selected the best materials on clean water issues, for use in grade school, middle school and high school curriculum.
- Upper Big River Corridor Ground Water Protection and Well Decommissioning - ($411,812 2003 – 2010) This project focused primarily on groundwater and riparian corridor protection from livestock activity within St Francois, Washington and Iron counties. This area has a large number of mining exploration holes, which were drilled early in mining history and were not closed. These open pipes pose a significant risk to water quality since many of these are on agricultural lands and transport soil, nutrients and bacteria from animal waste to the groundwater aquifer, which supplies drinking
water to 40,000 residents. Some of the exploration pipes in low-lying areas flow water year round. Cattle use the watering holes created by the flowing pipes for drinking water. These areas become severely trampled and the runoff flows directly into the Big River and its tributaries. These open exploration pipes impact both surface and ground water in this watershed.

- **Upper Big River Corridor Water Quality Project (2007-2013 $880,000)** - The project would address sediment, fecal bacteria from livestock, and excessive nutrients from agriculture in St. Francois County. The project would put in four miles of stream protection that will create a buffer for livestock and reduce fecal coliform and nutrient runoff.

- **Upper Big River Water Quality Project Part 2 (2004-2012 $70,000)** - This project focuses primarily on groundwater and riparian corridor protection from livestock activity in St Francois, Washington and Iron counties. (see description above)

- **Jefferson Co Stormwater-Belews Creek Watershed Management Plan Implementation - (2009-2015 $180,200)** The Belews Creek Watershed project intends to improve the water quality in the watershed through the implementation of tasks identified in the accepted watershed management plan.

**For More Information**
For more information about Our Missouri Waters initiative and the Big River Watershed project, or to provide comments and suggestions about water resource issues in the Big River Watershed, contact the department’s St. Louis Regional watershed coordinator, Tracy Haag, or the department’s Southeast Regional watershed coordinator, Travis Abernathy.

Missouri Department of Natural Resources
St. Louis Regional Office
Tracy Haag, Big River Watershed Coordinator
7545 S. Lindbergh, Ste 210, St. Louis MO 63125
By email to: tracy.haag@dnr.mo.gov
By phone 314-416-2900

Missouri Department of Natural Resources
Southeast Regional Office
Travis Abernathy, Big River Watershed Coordinator
2155 N. Westwood Blvd.
Poplar Bluff, MO 63901
By email to: travis.abernathy@dnr.mo.gov
By phone 573-840-9750

Or on the Web at [dnr.mo.gov/omwi.htm](http://dnr.mo.gov/omwi.htm)
Also, check out the project Facebook page at Our Missouri Waters Big River Watershed Initiative.
Big River Watershed

- Big River drains almost 1,000 square miles in parts of six counties
- Flows 138 miles from northern Iron County to Meramec River near Eureka
Appendices

Appendix A  URS Scope of Work

Appendix B  Watershed Group Meetings
- List of Meeting Dates
- Meeting Notices/Agendas/Summaries
- List of Attendees

Appendix C  Technical Advisory Committee of Watershed Group
- Agenda/Attendees/Summary of March 24, 2012 Agency Meeting
- Any Subsequent Such Meetings
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Appendix D  Press Releases Issued during Planning Period

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Appendix F  Fact Sheets from EPA for Big River and Related Operable Units

Appendix G  “Our MO Waters” Initiative

APPENDIX H  HEALTH DEPARTMENT INFORMATION
- St. Francois County Health Department “Lead Poisoning” web page.
- DHSS Fact Sheet (Fishable/Swimmable)

Appendix I  Miscellaneous
What is Lead Poisoning?

A disease caused by swallowing or inhaling lead - even chipped lead paint or leaded dust.

Lead is most harmful to young children (under 6 years old). They put everything into their mouths and their bodies absorb lead faster than adults.

Pregnant women who are exposed to lead are also at risk because inhaled lead can cross the placenta and expose the developing baby.

What are the effects of Lead Poisoning?

Since lead is easily absorbed by a child’s growing body, lead affects developing organs and the brain.

Low levels of lead may:

* Damage the nervous system, including the brain
* Interfere with growth
* Harm hearing
* Make learning difficult
* Cause behavior problems
A child with lead poisoning may be:

- **Easily excited**
- **Uneable to concentrate**
- **High levels of lead or repeated exposure to lead**
- **Mental retardation**
- **Coma**
- **Convulsions**

**What are the signs of Lead Poisoning?**

- Stomachache and cramps
- Constipation
- Irritability
- Headache
- Fatigue
- Sleep disorder
- Frequent Vomiting
- Poor appetite

Since lead poisoning is a result of continued exposure with accumulation in the child’s body, signs and symptoms of it may mimic other problems.

**What can be done if a child has Lead Poisoning?**

Good and frequent hand washing is the best defense against lead poisoning in small children. Since lead must be ingested to cause poisoning, hands and fingers must be kept clean before the child puts them into the mouth. Wash hands before eating, nap-time, and at bedtime.

Severely poisoned children are treated with a medication which requires hospitalization. This may reduce the level of lead, but it may not completely eliminate it.

The most important thing is to prevent exposure or prevent poisoning from lead.

**Sources of Lead**

Nationwide, lead contaminated paint is the major source of lead poisoning. Chipped or peeling paint is easy for a young child to pick into the mouth. Lead paint had been found on:
Soil can be contaminated by chips and dust from outside insecticides, highway pollution, and from dust from mine

Water may be contaminated by lead water pipes, plumbing solder.

Food can be contaminated if:
- Grown near heavily traveled roads or other sources
- Stored or baked in poorly glazed pottery
- Prepared by someone with lead dust on their hands
- Packaged in cans with lead seams
- Stored in leaded crystal for long periods of time

Air can be contaminated from:
- Dust from renovations or remodels
- Drapery, window, and fishing weights
- Some folk medicines and folk cosmetics
- Auto mechanic work
- Bullet re-loading or target shooting

Preventing Exposure to Lead

Be alert for chipping and flaking paint - inside and

Watch what your child puts into their mouth - was
hands frequently

Clean window sills, floors, and other dusty surfaces:

Provide a well-balanced diet that is high in iron, pr:

Use safe (lead free) interior paints

Cover bare soil with grass or shrubs

**How to know if a child has Lead Poisoning**

The only sure way to know if a child has lead poisoning is Children should receive a blood test for lead poisoning tw years old.

**Lead Screening**

Lead testing for children from 6 month old is available at St. Francois County call 573-431-1947, ext. 142, to make ar your child tested and check on the cos'

**Are you or your child at risk for lead poisoning**

Answer the following questions?

Does your child . . .

. . . have siblings (brothers/sisters) or playmates t or did have lead poisoning?

. . . have cousins with whom they visit frequently ti or did have lead poisoning?

. . . live in or frequently visit a house or daycare bu

. . . reside in or visit a house built before 1978 witl or on-going renovations or remodeling within t

. . . eat or mouth non-food items - dirt, starch, cla
play in soil or reside in a lead smelting area?

play in soil containing tailings from mine excavation?

receive unusual medicines or folk remedies?

If the answer to any of the above questions is yes, a lead blood test should be done for your child. Contact St. Francois County Health Center to schedule an appointment for your child’s lead blood test. Call 573-722-6000.

Contact these organizations for additional information:

**CDC**
Department of Health and Human Services
Centers for Disease Control and Prevention

**DHSS**
Missouri Department of Health and Senior Services

**Lead Recalls**
Is Your Child At Risk?

Return to Medical Services
A Local Public Health Agency
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APPENDIX I  MISCELLANEOUS
Thursday, June 09, 2011
From DHSS to Unnamed Constituent

A top priority for the Department of Health and Senior Services (DHSS) is to provide trusted health information to help minimize or prevent people from coming into contact with harmful substances in their environment. Regarding the Big River at St. Francois State Park and based on available information, recreational use including swimming and other activities are not expected to harm people’s health, even for children under six years old. The reason for this is that lead levels in the water and sediment are below a level of public health concern for recreational use. When visiting this park, the amount of lead that could get into an adult’s or child’s body by these activities is below a level that would harm their health. While Department of Natural Resources (DNR) staff indicated to you on a previous email that the Big River is currently designated by that agency as "impaired" for “protection of aquatic life,” the river does meet their requirements for protection of whole body contact recreation. This is consistent with the data I have reviewed as well and reiterates the message that it is safe to swim in the river at St. Francois State Park.

When swimming, it is certainly possible to swallow some water. This would not expose you to a significant amount of contaminants. However, if you do swallow river water, it is possible that you would be exposed to an organism that could cause adverse health effects. This would be the same as any other body of water in Missouri or elsewhere. Therefore, we recommend minimizing the amount of water swallowed and monitoring children to avoid excessive water swallowing. Similarly, you should keep open sores or cuts out of the water to avoid infections.

Please keep in mind that lead is a naturally occurring element that has been mined extensively throughout the region. There are several mine and mill tailings piles located in the Big River watershed and recent environmental investigations have also brought to light the possibility of some lead contamination in the floodplain areas of the river. The preliminary data has not shown a public health risk for activities such as recreation, but DHSS routinely recommends actions to reduce exposures to lead from any source, natural or manmade. The most basic and important action you can take is to wash hands frequently, especially before eating, drinking, handling food or smoking. This will not only provide protection from lead contamination, but also from bacteria and other harmful organisms found in all natural water bodies. Because some lead is found in the river sediments, you may also consider simply rinsing off in the river any mud or sediment from shoes or clothes before getting in your car to return home. If clothes or shoes are particularly soiled, you should consider removing the shoes and clothing with mud on them before bringing them into your car or home.
DHSS maintains an annual Fish Consumption Advisory for sport caught fish in Missouri. The Big River in St. Francois and Jefferson counties is under an advisory that sunfish, carp and suckers should not be eaten due to lead contamination; other types of fish in the Big River are not affected by the advisory. All fish contain some small amount of chemical contaminants. In most instances and for most people, the health benefits of eating fish outweigh the potential health risks from contaminants. However, there are occasions when DHSS has determined that limited or even no consumption of fish is appropriate for some people. More information can be found here: http://health.mo.gov/living/environment/fishadvisory/index.php

DHSS is working closely with DNR and others at the local, state and federal level to ensure protective actions throughout the Big River watershed and all of the historical lead mining regions of Missouri. Addressing potential public health concerns from lead contamination is a priority for DHSS. If you have any further questions, please feel free to call me directly at 573-751-6102.

Sincerely,

Jonathan Garoutte

Jonathan D. Garoutte
Bureau of Environmental Epidemiology
Division of Community and Public Health
Department of Health and Senior Services
930 Wildwood Dr., P.O. Box 570
Jefferson City, MO 65102-0570
(573) 751-6102, Fax (573) 526-6946
NEW LIFE FOR THE MERAMEC RIVER AND BIG RIVER
THE URBAN WATERS FEDERAL PARTNERSHIP

ABOUT THE URBAN WATERS FEDERAL PARTNERSHIP
The Meramec River and Big River Restoration Project is one of eleven newly selected locations for the nation’s Urban Waters Federal Partnership. This partnership will reconnect urban communities, particularly those that are overburdened or economically distressed, with their waterways by improving coordination among federal agencies and collaborating with community-led revitalization efforts to improve our nation’s water systems and promote their economic, environmental and social benefits. Specifically, the Urban Waters Federal Partnership will:

• Break down federal program silos to promote more efficient and effective use of federal resources through better coordination and targeting of federal investments.
• Recognize and build on local efforts and leadership, by engaging and serving community partners.
• Work with local officials and effective community-based organizations to leverage area resources and stimulate local economies to create local jobs.
• Learn from early and visible victories to fuel long-term action.

Led by these federal agencies and coordinated by the White House Domestic Policy Council and White House Council on Environmental Quality, the Urban Waters Federal Partnership closely aligns with and advances the work of the White House’s place-based efforts, including the Partnership for Sustainable Communities, to revitalize communities, create jobs and improve the quality of life in cities and towns across the nation. The Urban Waters Federal Partnership also advances the work of the America’s Great Outdoors Initiative (http://americasgreatoutdoors.gov/).

For more information, visit www.urbanwaters.gov

ABOUT THE MERAMEC AND BIG RIVER PARTNERSHIP
The U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (USACE) are currently evaluating a joint feasibility report and project management plan to encompass the ecosystem restoration mission of the USACE and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) mission of the EPA. Further collaboration is occurring between Missouri Department of Natural Resources and U.S. Fish and Wildlife Service to act as cost share partners and stakeholders.

WHAT’S HAPPENING NOW
The following are some federal and/or local projects that the Partnership currently has efforts to improve water quality, make public access safe, and restore the watershed’s ecosystem:

Meramec and Big River Ecosystem Restoration Project – EPA and USACE are participating members of the Big River Task Force, a group of multiple governmental organizations from federal to local, set up to facilitate the cleanup, restoration, and remediation efforts on the Meramec and Big Rivers. This will be a unified step toward advancing the clean up, resulting in significant improvements in water quality within the Big River, Meramec River, and Mississippi River. The Partnership with assistance from the Urban Waters Federal Program will redefine their partnering capabilities for the good of the citizens they serve.

Overview and Status – Mining activities began in Southeast Missouri in the early 1700s, where historical records indicate that over 190 mining sites were once operating. The EPA Southwest Jefferson County Mining Superfund Site continues to focus their efforts on residential yard clean up and is additionally focusing on unconsolidated mine waste. USACE is currently working on completion of a reconnaissance study concerned with issues of fish passage, bed and bank stability, habitat loss, and

ABOUT THE COMMUNITY AND THE MERAMEC AND BIG RIVERS
Once a booming lead-producing region, the towns of the Meramec and Big River watersheds hold the leftovers of over 200 years of lead mining. Large stockpiles of sediment containing high levels of heavy metals and lead are exposed to storm water, bank instabilities, and other issues. This leads to the sediment directly entering the Meramec River and Big River, increasing the health risks associated with the rivers.
sedimentation.

Each agency has specialized expertise and a critical role to play in this effort. Mussel populations are becoming locally extinct as the mining sediment moves downstream. Fish in Big River show elevated concentrations of lead, and fish consumption advisories have been in place on the Big River since 1981. Monitoring has shown sediment lead concentration levels that are dangerous to human health.

**Big River Watershed Master Plan** – This plan is funded through a cooperative agreement involving Jefferson, St. Francois, and Washington counties. The purpose of the plan is to focus on river remediation and restoration in these three counties. Numerous meetings held in 2011 in each county focused on informing the public about past activities in the watershed and to present the current environmental conditions. Attending these meetings were members of the community representing different viewpoints, including sod farmers, beef cattle farmers, crop farmers, gravel miners, fisherman, and many others. This plan is ongoing, and the final product will be a watershed plan that focuses on the primary interests of the public with regard to watershed remediation and restoration.

**Public Education and Outreach** – The education of residents on the risk associated with the heavy metals within the Big and Meramec Rivers is a major undertaking within the project site. Of particular importance is the migration of these heavy metals into the food chain.

Mussels, fish, mammals, birds, and other aquatic organisms have all been documented with elevated lead and heavy metal levels. Fish consumption warnings have been in place for decades, but individuals are still seen fishing and presumably supplementing their diets along the contaminated reaches.

Obtaining local input and support for the cleanup efforts is another major goal of the program. Many groups serve this area; through the help of the existing federal, state, local partners as well as the addition of the Urban Waters Federal Partnership these messages will be disseminated through every community.

**WHAT’S NEXT**

**Additional partnerships** – Additional partnerships are promising as the Missouri Department of Natural Resources has identified the Big River as one of three priority waters within the state.

The Missouri Department of Natural Resources has created the initiative “Our Missouri Waters” and the Big River was chosen as one of the three priority watersheds. The partners and stakeholders invested in the watershed initiative include landowners, farmers, grain/sod/livestock producers, and citizens. A social media site was started and now individuals interested in the cleanup efforts promote a multitude of events including events for local food pantries, charity events, and other non-government organizations’ missions.

The Urban Waters Federal Partnership will help connect the project with additional partners that can help advance the goals of the cleanup effort. Additionally, the Federal Partnership can also assist by helping to create a unified voice that will resonate with the individuals and citizens of the area.

---

**THE URBAN WATERS FEDERAL PARTNERSHIP**


**For more information on the Meramec and Big River Ecosystem Restoration Project Urban Waters Federal Partnership, please contact the lead agency representative:**

Steve Kovac  
U.S. EPA  
(913) 551-7698  
Kovac.Steve@epa.gov
The Big River Watershed is located in east-central Missouri and discharges into the Meramec River basin. The Big River has severe biological impairment due to nonpoint source pollution resulting from mining activities in the watershed.

The basin originates in Iron County and flows north through several counties to its confluence with the Meramec River. The watershed includes:

- 620,913 acres (955 square miles).
- Land use: 1 percent cropland, 18 percent grassland, 72 percent forest, 7 percent developed, less than 1 percent water.
  (Source USGS National Land Cover Database, 2006).
- Population: 98,252 (101.25 per square mile); Year 2010 Census data.

### Major streams in the watershed area of Big River

<table>
<thead>
<tr>
<th>Stream</th>
<th>(sq. Mi)</th>
<th>(acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mineral Fork</td>
<td>189</td>
<td>120,960</td>
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<tr>
<td>Cedar Creek</td>
<td>79</td>
<td>50,666</td>
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<tr>
<td>Terre Bleue Creek</td>
<td>67</td>
<td>42,755</td>
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<tr>
<td>Flat River</td>
<td>53</td>
<td>33,920</td>
</tr>
<tr>
<td>Mill Creek</td>
<td>52</td>
<td>33,080</td>
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<tr>
<td>Heads Creek</td>
<td>30</td>
<td>19,440</td>
</tr>
<tr>
<td>Dry Creek</td>
<td>30</td>
<td>18,930</td>
</tr>
<tr>
<td>Belew Creek</td>
<td>26</td>
<td>16,620</td>
</tr>
</tbody>
</table>

### Communities in the Big River Watershed

- St. Francois County: Leadwood, Desloge, Bonne Terre, Bismarck, Wortham, Frankclay, Park Hills, Leadington, Terre du Lac
- Washington County: Potosi, Caledonia, Irondale, Mineral Point
- Jefferson County: DeSoto, Hillsboro, Byrnes Mill, Cedar Hill, High Ridge, Scotsdale

### Public Lands in the Big River Watershed

- Bonne Terre City Lake
- Bootleg Access
- Brown’s Ford Access
Public Lands in the Big River Watershed (continued)

- Burford Mountain Conservation Area
- Hickory Canyons Natural Area
- Hughes Mountain Natural Area
- Kingston Access
- Leadwood Access
- Mammoth Access
- Mark Twain National Forest - Potosi District
- Merrill Horse Access
- Mineral Area College (Quarry Pond)
- Mineral Area College Range
- Missouri Mines State Historic Site
- Pea Ridge Conservation Area
- Potosi (Roger Bilderback Lake)
- St. Francois State Park
- St. Joe State Park
- Valley View Glades Natural Area
- Washington State Park
- Young Conservation Area

Public Water Supplies

- 77 public drinking water systems in watershed, majority rely on groundwater.
- 4 have source water protection plans: Irondale, St. Francois Co. PWSD #2, Mirasol Subdivision and Raintree Plantation.
- Surface water supplies: Jefferson County Public Water Supply District #2

Water Quality Monitoring

- Approximately 90 water quality sample data sites in Big River watershed in DNR’s database.
- 2367 samples collected between November 1962 and September 2012.
- USGS has completed 449 individual water quality sampling events at 18 unique sites
- There are 106 stream teams that are from the watershed and/or have collected data from the watershed.

Nonpoint Source Pollution

Streams on the 2012 303(d) list of impaired streams include impairment for cadmium, zinc, lead, inorganic sediment, Biochemical Oxygen Demand, both volatile and non-volatile suspended solids, chlorophyll and total nitrogen. Impaired uses include Livestock and Wildlife Watering, Protection of Aquatic Life (Warm-Water Fishery), Human Health Protection (Fish Consumption).

Point Sources of Pollution

There are approximately 116 permitted point sources in the Big River Watershed. They include the following:

- 91 wastewater treatment facility discharges
- 18 Other land application sites.
- 7 Other discharge (industrial, car wash, etc)
### 2012 303(d) Impaired Waters in Big River Watershed

<table>
<thead>
<tr>
<th>Stream</th>
<th>Pollutant</th>
<th>Impaired miles</th>
<th>Source</th>
<th>TMDL Scheduled*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Big River</td>
<td>Cadmium (S)</td>
<td>81.3</td>
<td>Old Lead Belt tailings</td>
<td>2014</td>
</tr>
<tr>
<td>Big River</td>
<td>Zinc (S)</td>
<td>81.3</td>
<td>Old Lead Belt tailings</td>
<td>2014</td>
</tr>
<tr>
<td>Coonville Creek</td>
<td>Lead</td>
<td>1.3</td>
<td>Source Unknown</td>
<td>2025</td>
</tr>
<tr>
<td>Eaton Br.</td>
<td>Cadmium (S)</td>
<td>1.2</td>
<td>Leadwood tailings pond</td>
<td>2014</td>
</tr>
<tr>
<td>Eaton Br.</td>
<td>Zinc (S)</td>
<td>1.2</td>
<td>Leadwood tailings pond</td>
<td>2014</td>
</tr>
<tr>
<td>Eaton Br.</td>
<td>Lead (S)</td>
<td>1.2</td>
<td>Leadwood tailings pond</td>
<td>2014</td>
</tr>
<tr>
<td>Eaton Br.</td>
<td>Cadmium</td>
<td>1.2</td>
<td>Leadwood tailings pond</td>
<td>2014</td>
</tr>
<tr>
<td>Eaton Br.</td>
<td>Zinc</td>
<td>1.2</td>
<td>Leadwood tailings pond</td>
<td>2014</td>
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<tr>
<td>Flat River Creek</td>
<td>Cadmium</td>
<td>10</td>
<td>Old Lead Belt tailings</td>
<td>2014</td>
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<tr>
<td>Koen Creek</td>
<td>Fishes Bioassessments</td>
<td>1</td>
<td>Source Unknown</td>
<td>2022</td>
</tr>
<tr>
<td>Salt Pine Creek</td>
<td>Aquatic Macroinvertebrate</td>
<td>1.2</td>
<td>Barite tailings pond</td>
<td>2022</td>
</tr>
<tr>
<td>Shaw Br.</td>
<td>Cadmium (S)</td>
<td>1.2</td>
<td>Federal tailings pond</td>
<td>2014</td>
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<tr>
<td>Tiff Creek</td>
<td>Fishes Bioassessments</td>
<td>2.1</td>
<td>Source Unknown</td>
<td>2022</td>
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<tr>
<td>Trib. Old Mines Creek</td>
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<td>1.5</td>
<td>Barite tailings pond</td>
<td>2014</td>
</tr>
<tr>
<td>Turkey Creek</td>
<td>Cadmium</td>
<td>2.4</td>
<td>Bonne Terre chat pile</td>
<td>2014</td>
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<tr>
<td>Turkey Creek</td>
<td>Lead</td>
<td>2.4</td>
<td>Bonne Terre chat pile</td>
<td>2014</td>
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<tr>
<td>Turkey Creek</td>
<td>Zinc</td>
<td>2.4</td>
<td>Bonne Terre chat pile</td>
<td>2014</td>
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<tr>
<td>Trib. To Flat River Creek</td>
<td>Zinc</td>
<td>0</td>
<td>Mill tailings (Aban.)</td>
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<tr>
<td>Terre Du Lac Lakes</td>
<td>Chlorophyll-a</td>
<td>103</td>
<td>Terre du Lac subdivision</td>
<td>2016</td>
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<tr>
<td>Terre Du Lac Lakes</td>
<td>Total Nitrogen</td>
<td>103</td>
<td>Terre du Lac subdivision</td>
<td>2016</td>
</tr>
</tbody>
</table>

*TMDL schedule is subject to change

### Approved Total Maximum Daily Loads

<table>
<thead>
<tr>
<th>Stream</th>
<th>Pollutant</th>
<th>Approval Date</th>
<th>NPS contribution</th>
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</thead>
<tbody>
<tr>
<td>Mississippi River</td>
<td>PCB</td>
<td>11/3/2006</td>
<td>Minor</td>
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<tr>
<td>Big River</td>
<td>Lead</td>
<td>3/24/2010</td>
<td>Major</td>
</tr>
<tr>
<td>Big River</td>
<td>Lead</td>
<td>3/24/2010</td>
<td>Major</td>
</tr>
<tr>
<td>Big River</td>
<td>NVSS</td>
<td>3/24/2010</td>
<td>Major</td>
</tr>
<tr>
<td>Shibboleth Br.</td>
<td>Inorganic Sediment</td>
<td>12/23/2010</td>
<td>Major</td>
</tr>
<tr>
<td>Shibboleth Br.</td>
<td>Lead, zinc, cadmium – dissolved and in sediment [these were not 303(d) listed]*</td>
<td>12/23/2010</td>
<td>Major</td>
</tr>
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<td>Pond Creek</td>
<td>Inorganic Sediment</td>
<td>12/23/2010</td>
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</tr>
<tr>
<td>Pond Creek</td>
<td>Lead, zinc, cadmium – dissolved and in sediment - [these were not 303(d) listed]*</td>
<td>12/23/2010</td>
<td>Major</td>
</tr>
<tr>
<td>Stream</td>
<td>Pollutant</td>
<td>Approval Date</td>
<td>NPS contribution</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------</td>
<td>---------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Flat River Creek</td>
<td>Lead</td>
<td>3/24/2010</td>
<td>Major</td>
</tr>
<tr>
<td>Flat River Creek</td>
<td>Zinc</td>
<td>3/24/2010</td>
<td>Major</td>
</tr>
<tr>
<td>Flat River Creek</td>
<td>NVSS</td>
<td>3/24/2010</td>
<td>Major</td>
</tr>
<tr>
<td>Shaw Br.</td>
<td>Lead</td>
<td>3/24/2010</td>
<td>Minor</td>
</tr>
<tr>
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<td>NVSS</td>
<td>3/24/2010</td>
<td>Minor</td>
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<tr>
<td>Turkey Creek</td>
<td>BOD</td>
<td>1/13/2005</td>
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<tr>
<td>Turkey Creek</td>
<td>VSS</td>
<td>1/13/2005</td>
<td>None</td>
</tr>
</tbody>
</table>

*These metals were addressed in the Shibboleth Br. and Pond Cr. TMDLs, despite these pollutants not being listed at the time. Available data suggested that these pollutants were impairing the streams.

Department Studies in the Watershed

- 2001-2002 At the request of the Missouri Department of Natural Resources (MDNR) Water Pollution Control Program (WPCP), the Environmental Services Program (ESP) Water Quality Monitoring Section (WQMS) conducted a macroinvertebrate bioassessment and fine sediment study of the upper Big River in Washington County.

Recreational Use Attainability Analyses (2005-2008)

Recreational Use Attainability Analyses (2005-2008) (continued)

- Fountain Farm Branch 3657
- Goose Creek 2153
- Mill Creek 2124
- Reid Creek 3410
- Trib to Big River 2116
- Trib to Shibboleth Creek 2121
- Trib to Mill Creek 2126
- Wallen Creek 2139

USGS Gage Stations-Real Time Flow Data

- USGS Big River near Richwoods, MO 07018100
  [http://waterdata.usgs.gov/nwis/uv/?site_no=07018100&PARAmeter_cd=00065,00060,00062,72020](http://waterdata.usgs.gov/nwis/uv/?site_no=07018100&PARAmeter_cd=00065,00060,00062,72020)
- USGS 07018500 Big River at Byrnesville, MO
  [http://waterdata.usgs.gov/nwis/uv/?site_no=07018500&PARAmeter_cd=00065,00060,00062,72020](http://waterdata.usgs.gov/nwis/uv/?site_no=07018500&PARAmeter_cd=00065,00060,00062,72020)
- USGS 07017610 Big River below Bonne Terre, MO
  [http://waterdata.usgs.gov/nwis/uv/?site_no=07017610&PARAmeter_cd=00065,00060,00062,72020](http://waterdata.usgs.gov/nwis/uv/?site_no=07017610&PARAmeter_cd=00065,00060,00062,72020)
- USGS 07017200 Big River at Irondale, MO
  [http://waterdata.usgs.gov/nwis/uv/?site_no=07017200&PARAmeter_cd=00065,00060,00062,72020](http://waterdata.usgs.gov/nwis/uv/?site_no=07017200&PARAmeter_cd=00065,00060,00062,72020)

319 Projects in the Big River Watershed - previous 10 years

- Mini-Earth Day Symposium - 2004 to discuss stream and watershed management ($5000)
- Mini-Belews Creek Watershed Management Plan Development - The $5,000 in federal funds supported the Jefferson County Stormwater Program to identify the nine elements in a watershed management plan needed to protect water quality in the Belew Creek watershed. (2003-2008)
- St Louis Metro-Clean Water Education and Resources Project - ($22,497 2003-2009) This project evaluated and selected the best materials on clean water issues, for use in grade school, middle school and high school curriculum.
- Upper Big River Corridor Ground Water Protection and Well Decommissioning - ($411,812 2003 – 2010) This project focused primarily on groundwater and riparian corridor protection from livestock activity within St Francois, Washington and Iron counties. This area has a large number of mining exploration holes, which were drilled early in mining history and were not closed. These open pipes pose a significant risk to water quality since many of these are on agricultural lands and transport soil, nutrients and bacteria from animal waste to the groundwater aquifer, which supplies drinking
water to 40,000 residents. Some of the exploration pipes in low-lying areas flow water year round. Cattle use the watering holes created by the flowing pipes for drinking water. These areas become severely trampled and the runoff flows directly into the Big River and its tributaries. These open exploration pipes impact both surface and ground water in this watershed.

- **Upper Big River Corridor Water Quality Project (2007-2013 $880,000)** - The project would address sediment, fecal bacteria from livestock, and excessive nutrients from agriculture in St. Francois County. The project would put in four miles of stream protection that will create a buffer for livestock and reduce fecal coliform and nutrient runoff.

- **Upper Big River Water Quality Project Part 2 (2004-2012 $70,000)** - This project focuses primarily on groundwater and riparian corridor protection from livestock activity in St Francois, Washington and Iron counties. (see description above)

- **Jefferson Co Stormwater-Belews Creek Watershed Management Plan Implementation - (2009-2015 $180,200)** The Belews Creek Watershed project intends to improve the water quality in the watershed through the implementation of tasks identified in the accepted watershed management plan.

**For More Information**

For more information about Our Missouri Waters initiative and the Big River Watershed project, or to provide comments and suggestions about water resource issues in the Big River Watershed, contact the department’s St. Louis Regional watershed coordinator, Tracy Haag, or the department’s Southeast Regional watershed coordinator, Travis Abernathy.

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Or on the Web at dnr.mo.gov/omwi.htm
Also, check out the project Facebook page at Our Missouri Waters Big River Watershed Initiative.
Potential Project in Park Hills Area

1. Describe specifically the need or the problem.

The Elvins neighborhood has been inundated frequently by severe rain events requiring emergency services for precautionary and voluntary evacuations. Obsolete and insufficient WPA drainage structures have shown their age and design limits, failing during critical rain events, flooding streets, residences and properties along the Gumbo drainage ways in the Elvins neighborhood. The health of the residents in the targeted area is threatened by this need in the long term by intermittent and ongoing conditions related to the flood-prone streets and drains. The intermittent threats to safety include increased police, fire and ambulance response times during and after significant rain events in the neighborhood. In flood events exceeding the 10-year flood levels, some area residents may find no emergency response available until flood waters recede.

2. Describe the process used to identify the needs.

An engineering firm was selected by the city to assist in determining the storm water drain needs. A series of neighborhood meetings were also held, culminating in a public hearing to complete a needs assessment. City staff reviewed the engineer’s findings and collated the public comments from the needs assessment.

3. Describe the process used to establish the total project cost.

After receiving the public comments and the need assessment results, staff requested a project cost estimate from the engineers performing the preliminary storm water study.

4. Describe specifically the activities proposed to address the needs.

Replace the existing 110-foot elliptical CMP storm sewer pipe at the Nash Automotive site with a concrete box culvert. Replace approximately 360 feet of the existing stone wall ditch with a cast-in-place concrete ditch section similar to the portion between Camilla Street and Nash Automotive, and replace the existing 87-foot stone culvert under Camilla Street with a concrete box culvert. Replace the existing 65-foot stone culvert under Ethel Street with a box culvert, and replace the 70-foot existing elliptical CMP storm sewer pipe with a cast-in-place concrete ditch to the existing walled ditch.

5. How many persons and families will benefit from your project?

937 persons and 389 families will benefit from the project.

6. How does the activity fit into the community’s long range plan?

The proposed storm drain improvements meet the planning criteria for infrastructure set forth in the City of Park Hills 2009 Comprehensive Plan.
Potential Project in Park Hills Area

7. What other fund sources are available to meet the need described?

None

8. Will CDBG be used to match FEMA, NRCS or USACE funding?

To the extent practical, FEMA funds have already been used for the most basic repairs required after the flood event. CDBG funds will be used to construct improvements to mitigate or prevent similar future flood events.
Statement of Limitations

URS was retained to facilitate a public engagement and input process; and create a “Master Plan” to be shared with agency officials for their benefit in developing plans to effect remediation and restoration efforts in the Big River Watershed. In that process, URS worked with local, county, regional, state and federal officials to educate the citizenry in the affected counties as to the known and/or perceived condition of the natural resources in the watershed affected by lead contamination; and to consider the possible paths forward in addressing and/or redressing those conditions. URS solicited inputs from the citizenry; received inputs in a variety of forums and media; and recorded those inputs for inclusion in the Master Plan (see appendices herein).

URS summarized, accumulated and assimilated inputs from public and private sector participants alike. While URS has taken care to present full and accurate depictions of the inputs presented, URS did not conduct detail checks on the information provided.

The content of this Master Plan reflects both a stream of the inputs and discussion recorded during watershed group and committee meetings; and conclusions/recommendations having been arrived upon, and then approved during watershed group meetings.

Upon delivery of this Master Plan to the Clients (Counties of Jefferson, St. Francois and Washington) and their acceptance of the plan in its final form, URS shall have no obligation to update our findings, conclusions or recommendations due to new or additional inputs provided in the workgroups or committees subsequent to completion of this plan.