

Proposed Plan

Upper Tenmile Creek Mining Area Site

Lewis and Clark County, Montana



Introduction

This proposed plan presents a re-evaluation of the remedy selected for the Rimini community in the 2002 Record of Decision (ROD) for the Upper Tenmile Creek Mining Area Superfund Site and identifies a preferred alternative. The proposed plan does not re-evaluate the other 2002 remedy components, which address waste rock and tailings, acid mine drainage, groundwater, surface water, and stream sediments in the upper Tenmile Creek watershed. The portions of the 2002 ROD that address Rimini and are being re-evaluated in this action are summarized in Table 1.

Since the release of the 2002 ROD, costs of the Rimini portion of the remedy have

Table 1
2002 Record of Decision
for Rimini

- Excavate Contaminated Yard Soils
- Construct Community Wastewater System (Contingency)
- Construct Community Water System
- Excavate Rimini Road Wastes

increased substantially. Also, public comments received by EPA indicate that the community of Rimini is divided over whether to complete certain elements of the Rimini remedy set forth in the 2002 ROD.

As part of this re-evaluation, EPA Region 8 made a presentation to the EPA Remedy Review Board on June 5, 2007. The Agency has identified a new proposed alternative, which is described in Table 2 and is now EPA's preferred alternative.

This proposed plan discusses only the Rimini portion of the 2002 ROD remedy and

Table 2
Preferred Alternative

- Excavate Contaminated Yard Soils near Individual Septic Systems and Replace Systems, on a Case-by-Case Basis*
- Halt Construction of Community Wastewater System
- Construct Community Water System
- Excavate Rimini Road Waste

* In 2006 and 2007, EPA remediated most yards in Rimini. However, contaminated soils remain in place adjacent to septic systems in approximately 20 yards.

OPPORTUNITIES FOR PUBLIC INVOLVEMENT	Comment Deadline: November 3, 2007
Public Meeting for Comments: Rimini Community Center October 24, 2007, 6:30 pm Send Written Comments to: Mike Bishop, EPA Project Manager U.S. Environmental Protection Agency 10 West 15th Street, Suite 3200 Helena, MT 59626 Phone: (406) 457-5041 Fax: (406) 457-5056 E-mail: bishop.mike@epa.gov	The proposed plan and other project documents are available for review at the following locations: Administrative Record U.S. EPA 10 West 15th Street, Suite 3200 Helena, MT 59626 (406) 457-4050 Rimini Field Office 3400 Rimini Road (406) 495-9072

EPA's preferred alternative. The only difference between the 2002 ROD for Rimini and the preferred alternative involves the community wastewater system. Under the 2002 ROD, a community wastewater system would be constructed if needed (contingency). Under EPA's preferred alternative presented in this proposed plan, the community wastewater system would not be constructed. Instead, EPA would replace individual septic systems, on a case-by-case basis, during excavation of contaminated materials from yards.

Under both the 2002 ROD and the preferred alternative, a community water system would be completed and Rimini Road would be remediated.

EPA will select a final remedy after consulting with the Montana Department of Environmental Quality (MDEQ) and after reviewing and considering all of the information it receives during a 30-day period for public comments.

EPA is issuing this proposed plan under Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. Section 9601 *et seq.* (CERCLA or Superfund) and Section 300.430(f)(2) of the National Oil and Hazardous Substance Pollution Contingency Plan (NCP). The NCP sets out federal regulations that govern the Superfund program.

Background information EPA used to prepare this proposed plan is contained in the remedial investigation (RI), feasibility study (FS), RI/FS addendum, the 2002 record of decision (ROD) for the site. Those documents describe the nature and extent of contamination in surface water, groundwater, mine wastes, soils, and stream sediments at the site, provide a detailed analysis of the potential alternatives for cleaning up the contamination, and identify the site remedy selected by EPA and MDEQ in 2002. This information and other key site documents are available in the site administrative record at EPA's office in Helena and at the field office in Rimini.

Site Description and History

The Upper Tenmile Creek Mining Area Site (Figure 1-1) is located southwest of Helena,

Montana, and extends from U.S. Highway 12 south to the drainage divide. The site covers approximately 50 square miles.

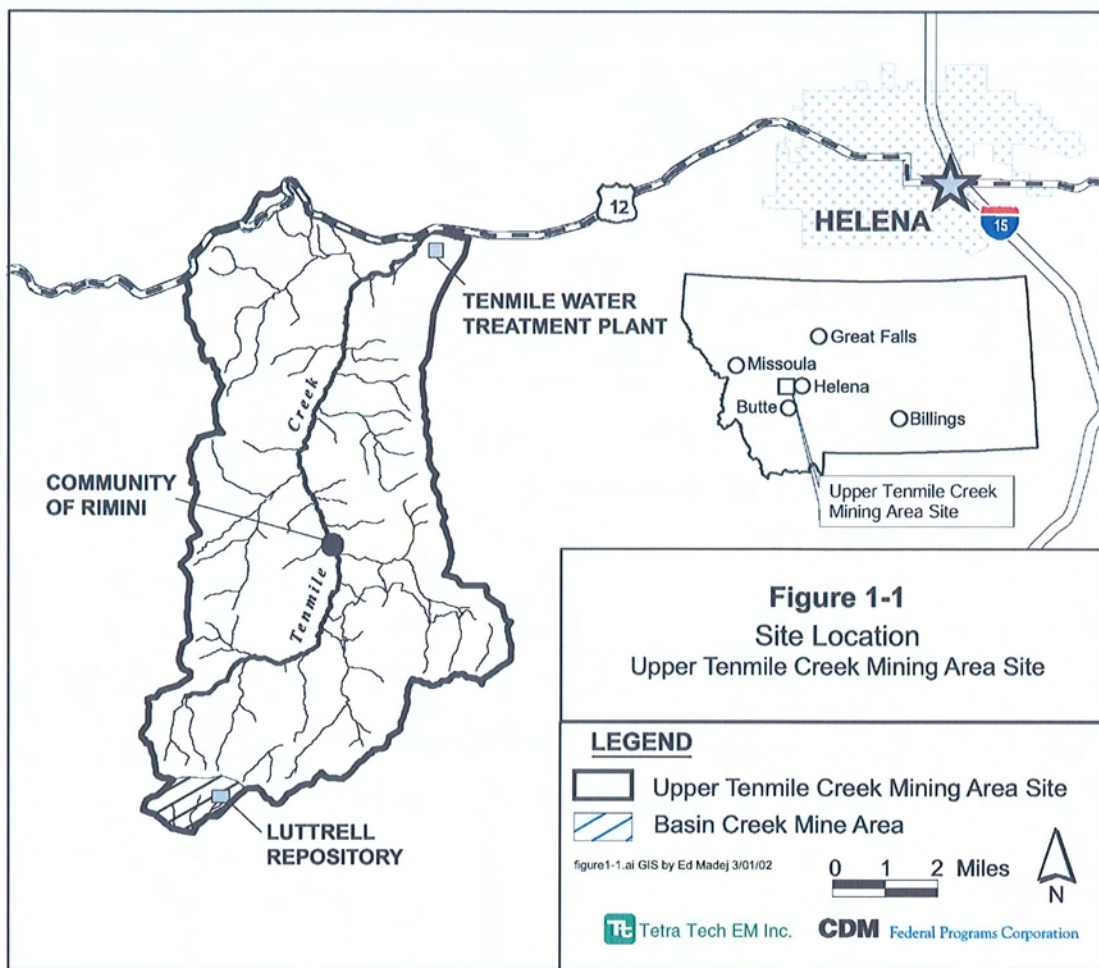
Most of the area's historic mining activity included hard-rock mining for gold, lead, zinc, and copper. Mining began in the 1870s and continued through the 1930s. Limited intermittent mining occurred during and after World War II. Active commercial mining in the district ended in 1953. Mining within the watershed has resulted in uncontrolled releases of metal contaminants to local streams from waste rock, tailings (waste material from processing of mineral ore), and contaminated mine discharge water. Residential yards in the community of Rimini also have been contaminated with waste materials. Some groundwater used for drinking in Rimini is contaminated with metals above health-based limits, specifically arsenic, cadmium, and lead. The primary contaminants of concern are arsenic, cadmium, and lead (human health), and copper and zinc (environmental).

Previous EPA Response Activities

EPA has removed approximately 115,000 cubic yards of mine wastes from the Red Mountain, Bunker Hill, Tenmile, Peerless Jenny/King, Susie, and Red Water mine sites. In addition, EPA constructed the Luttrell mine waste repository for mine wastes removed from the Upper Tenmile and adjacent watersheds. EPA also operates a leachate collection and treatment system at the repository.

In 2003 and 2004, EPA removed approximately 22,000 cubic yards of mine wastes and contaminated soils from residential properties and roads at the Landmark Subdivision about eight miles north of Rimini and approximately 22,000 cubic yards of mine wastes from the Lee Mountain mine in Rimini. This waste removal mitigated residents' possible exposure to contaminated soils. The wastes and contaminated soils were disposed in the Luttrell Repository.

In 2003, the Rimini Water and Sewer District (District) was created to own, operate, and maintain community water and/or wastewater systems. EPA began construction of the community wastewater system in October 2005, but halted



construction in May 2006 pending additional design and cost analyses.

In 2006, EPA removed approximately 30,000 cubic yards of mine wastes and contaminated soils from residential properties in the community of Rimini. Removed materials were placed in the Luttrell Repository. In 2007, EPA continued remediation of contaminated soils in Rimini residential yards.

Nature and Extent of Current Contamination in the Community of Rimini

Based on historic data and data collected during field investigations in 2000 and remedial design investigations in 2002 and 2003, and data collected during 2006 yard remediation, the following general conclusions can be drawn about the nature and extent of mining-related contamination in Rimini:

- Groundwater is contaminated in Rimini. Water in most Rimini wells contains arsenic in concentrations that exceed the human health standard (Safe

Drinking Water Act maximum contaminant level [MCL]).

- Many residential yards in Rimini had soil arsenic and lead concentrations that exceeded risk-based criteria for soils, indicating a potential health risk. Cleanup actions in 2006 and 2007 removed most contaminated soils from the yards, except for wastes lying over and under existing septic systems, which exceed cleanup levels for arsenic exposure.
- Contaminated soils were not removed from properties where the owners declined EPA's offer to remediate their yards.
- Rimini Road is contaminated with buried mine waste material. This contaminated material currently is not exposed, but may be exposed in the future as the clean road surface is worn away or damaged.

Summary of Human Health Risks

EPA conducted an assessment to determine the level of risk to human health caused by exposure to site-related contaminants.

EPA's human health risk assessment focused on health effects for residents and property owners (adults and children) and workers that could result from current and future contact with site contaminants. Arsenic is the primary contaminant of concern, and carcinogenic and non-cancer health effects may result from exposure to solid media, surface water, sediment, and groundwater. Incremental lifetime cancer risks for residents in Rimini range from an estimated 6×10^{-2} (6 in 100) to 4×10^{-3} (4 in 1,000), depending on the exposure assumptions used. Risks to workers were lower, but still exceeded EPA's acceptable risk range of 1×10^{-4} (1 in 10,000) to 1×10^{-6} (1 in 1,000,000).

In 2006, most residential yards in Rimini with contaminant concentrations higher than EPA's arsenic and lead action levels were remediated or partially remediated. A limited quantity of contaminated soil was left in place near structures and trees. Also, approximately 2,400 cubic yards of contaminated soil were left in place near existing septic systems.

Because some Rimini wells draw groundwater that exceeds federal maximum contaminant levels (MCLs) for drinking water, EPA offered and is providing small water treatment units or bottled water to Rimini residents, if requested, as an interim measure until the final remedy for Rimini water supply is implemented.

The Agency for Toxic Substances and Disease Registry (ATSDR) also conducted a public health assessment addressing potential risks to site residents. Based on concentrations of arsenic in waste materials in Rimini Road, ATSDR concluded that inhalation of arsenic in road dust could have the potential to cause a significant risk of cancer for Rimini residents. Subsequently, EPA collected road dust samples, during the 2003, 2004, and 2006 field seasons, that better represented potential dust exposure to residents downwind from cleanup operations and from road dust on weekends. Working in consultation with ATSDR, EPA

concluded that, provided the road wastes were cleaned up within a reasonable time frame, the potential risk was within EPA's acceptable risk range. In order to mitigate possible exposure to contaminated road dust, EPA has implemented interim road dust suppression measures, including application of water, magnesium chloride treatment, limiting construction vehicle speed to 10 miles per hour, and will place a temporary gravel cover on the road in October 2007.

Remedial Action Objectives for Rimini from 2002 ROD

Remedial action objectives (RAOs) are media-specific (e.g., soils, surface water, etc.) goals for protecting human health and the environment. Site RAOs include the following:

Soils:

- Prevent exposure of residents by direct contact, ingestion, or inhalation to contaminated wastes in yards and Rimini Road.

Surface water:

- Prevent individuals from drinking contaminated surface water.

Groundwater:

- Prevent individuals from drinking contaminated groundwater.

Evaluation of 2002 ROD (Table 1) and the Preferred Alternative (Table 2)

The following subsections summarize EPA's evaluation of options for Rimini water supply and Rimini wastewater systems. In the evaluation, EPA used the CERCLA evaluation criteria (refer to the box on Page 10). However, EPA focused its cost evaluation on capital costs of the alternatives, not full present worth, because the Rimini-area remedies will be constructed in one or two years and, under CERCLA, EPA cannot fund or conduct O&M activities.

Evaluation of Rimini Water Supply Options

Three options were evaluated for providing the community a drinking water supply:

(Option A) community water system, (Option B) individual point-of-use (POU) treatment systems, and (Option C) individual point-of-entry (POE) treatment systems. This evaluation is summarized in Table 3.

Groundwater will not be treated to clean up the aquifer. However, Lewis and Clark County and/or the State of Montana will be encouraged to implement institutional controls to prohibit use of contaminated groundwater for drinking water.

Option A **Construct community drinking water system using surface water.**

EPA's 2002 ROD identified groundwater as the preferred source for the Rimini community water system. From November 2002 through July 2007, EPA conducted an investigation of potential groundwater sources and has concluded that there is not a feasible groundwater source available. The investigation did not locate groundwater of adequate quality yielding sufficient flows to sustain the needs of a community water system. Therefore, only a surface water source is presented in this proposed plan.

Surface water would be used as the source for drinking water. It would be treated in a central treatment facility to meet drinking water standards. This would eliminate residents' exposure to contaminated water currently in use in Rimini. The surface water source has been identified as Tenmile Creek near Rimini. Qualified operators would manage the system to assure delivery of appropriate water quality.

Option B. **Provide point-of-use treatment systems for individual residences**

Small point-of-use (POU) treatment systems would be installed inside of individual residences and recreational houses/cabins to treat water from the existing individual well(s) located on the properties. The systems would be sized to treat **only** the water consumed for drinking and cooking. The system components installed in a particular residence or house would be determined during remedial design. System components would be included as necessary to treat the specific water used at the residence. They would likely include

reverse osmosis treatment units, but may be supplemented by other filtration components to handle certain water constituents present in the water from each particular source.

Option C **Provide point-of-entry treatment systems for individual residences.**

Small point-of-entry (POE) treatment systems would be installed at individual residences and recreational houses/cabins. These systems would have similar treatment components as the POU systems, but would be sized to treat **all** water used at the residence. Some of the systems would be large and would have to be housed in heated sheds or buildings attached to or near the residences.

Both POU and POE systems would treat the water to standards required for consumption and therefore would be protective of human health. If maintained reliably, the POU /POE systems would be effective in the long-term.

However, long-term technical effectiveness of POU/POE systems requires that individual homeowners conduct routine maintenance, such as regularly replacing filters and treatment media. Also, there is no effective mechanism to assess whether the POU/POE systems are effective and reliably maintained unless the property owners provide access to the state or political subdivision of the state, e.g., water and sewer district, responsible for implementing the systems.

At this site, potential problems or concerns with POU/POE remedies include:

- Maintenance difficulties prevent POU/POE options from providing adequate long-term protectiveness.
- Variable water types, treatment requirements, and system types present significant difficulties in design and maintenance.
- Assessment of long-term effectiveness depends on property owners providing access to the responsible organization. The responsible organization could be the State of Montana, Lewis and Clark County, or the Rimini Water and Sewer District.

Table 3 – Comparative Evaluation of Rimini Water Supply Options

EVALUATION CRITERIA	OPTION		
	Community Water System	POU System	POE System
Overall Protection of Human Health and the Environment	High – Provides a drinking water source throughout the residence that meets MCLs and other water quality parameters for drinking water.	Low – No protection for potential dermal exposure to arsenic where groundwater from wells has very high arsenic concentrations and is not treated by POU.	High – Treats water supply to entire residence, so addresses potential dermal exposure to arsenic in addition to drinking water.
Compliance with ARARs	High – Meets ARARs.	High – Meets ARARs.	High – Meets ARARs.
Long-Term Effectiveness and Permanence	High – Permanent source of potable water through treatment to each residence in Rimini. Water quality monitored to assure protectiveness.	Low – Maintenance difficulties prevent POU/POE options from providing adequate long-term protectiveness. Variable water types, treatment requirements, and system types present significant difficulties in maintenance. Assessment of long-term effectiveness depends on property owners providing access to the responsible organization.	Low – Maintenance difficulties prevent POU/POE options from providing adequate long-term protectiveness. Variable water source types, treatment requirements, and system types present significant difficulties in maintenance. Assessment of long-term effectiveness depends on property owners providing access to the responsible organization.
Reduction of Toxicity, Mobility, and Volume Through Treatment	Low – While prevents human exposure risks, provides no overall treatment of contaminants in soils or groundwater.	Low – While prevents human exposure risks, provides no overall treatment of contaminants in soils or groundwater.	Low – While prevents human exposure risks, provides no overall treatment of contaminants in soils or groundwater.
Short-Term Effectiveness	Low – Even with phased construction and dust suppression, this option will have impacts to the community during construction.	High – Ease of installation and lack of major construction activities have less impact on the community than the community water system.	High – Ease of installation and lack of major construction activities have less impact on the community than the community water system. However, some systems could require heated sheds or small buildings.
Implementability	High – Employs standard construction methods and equipment.	Low – Regulatory responsibilities are uncertain. Employs standard construction methods and equipment. Variable water source types, treatment requirements, and system types present significant difficulties in design.	Low – Regulatory responsibilities are uncertain. Employs standard construction methods and equipment. Variable water source types, treatment requirements, and system types present significant difficulties in design.
Capital Cost	Low – Much higher cost than POU/POE.	High – Significantly less costly than community water system.	High – Significantly less costly than community water system, but higher cost than POU systems.

At this site, the Agency has concluded that the long-term effectiveness and permanence of the community water system justify the trade-off of its significantly higher cost.

Evaluation of Rimini Wastewater System Options

Evaluation of the preferred alternative and 2002 ROD is summarized below and in Table 4.

Completion of 2002 ROD Wastewater System

Under the 2002 ROD, the Agency would complete construction of the community wastewater system in Rimini. Residential yards would be fully remediated.

The 2002 ROD included design and construction of a community wastewater system as a contingency if individual septic systems were damaged during residential yard remediation, provided that Rimini residents formed a local water and sewer district to assume ownership and operation of the community system. The community wastewater system would not include additional capacity beyond the needs of the identified properties.

EPA would also remove approximately 2,400 cubic yards of remaining contaminated soils overlying and possibly underneath septic systems in Rimini yards.

EPA constructed part of the wastewater system in October 2005 through May 2006. The septic tank, lift station and meter vaults, treatment recirculation tank, force main, access road, bridge, and control buildings, were installed prior to suspension of construction in May 2006.

Preferred Alternative – Halt Construction of Community Wastewater System, Replace Individual Septic Systems on Case-by-Case Basis

The preferred alternative would stop further construction of the community wastewater system. The U.S. Forest Service (USFS) has notified EPA that the public property

would have to be restored to USFS specifications, which would require removal of the recirculation tank, vaults, access road, bridge, and control buildings and reclamation of the disturbed area. The USFS may allow the 48,000-gallon septic tank to be left in place for storage of fire suppression water.

EPA would remove approximately 2,400 cubic yards of remaining contaminated soils overlying and possibly underneath septic systems in Rimini yards, if the Agency is provided access. EPA would replace septic systems, on a case-by-case basis, during excavation.

The preferred alternative would provide the same protectiveness to the residents, property owners, and workers, be easier to implement, and require substantially less capital cost to implement than the contingent remedy set out in the 2002 ROD.

Rimini Road Remediation

EPA's evaluation of possible approaches and choice of remedy for Rimini Road is discussed in the 2002 ROD. The 2002 ROD selected excavation of the waste materials with disposal at the Luttrell Repository, and that remedy is unchanged in this proposed plan.

Since Rimini Road must remain open during construction to allow residents to access their homes and maintain emergency vehicle access, the remediation would be sequenced to remove wastes from one side of the road at a time, leaving one driving lane open at all times. Temporary backfill would be placed over disturbed driveways at the end of each day to ensure access to homes.

Table 4 – Comparative Evaluation of Wastewater Options

EVALUATION CRITERIA	OPTION	
	2002 ROD with Contingency	Preferred Alternative
Overall Protection of Human Health and the Environment	High – Includes removal of contaminated material overlying and possibly underneath septic systems.	High – Includes removal of contaminated material overlying and possibly underneath septic systems.
Compliance with ARARs	High – Meets ARARs.	High – Meets ARARs.
Long-Term Effectiveness and Permanence	High – Includes removal of all contaminated material from yards. Excavation of waste is a permanent solution.	High – Includes removal of all contaminated material from yards. Excavation of waste is a permanent solution.
Reduction of Toxicity, Mobility, and Volume Through Treatment	Low – No reduction in toxicity, mobility, or volume through treatment.	Low – No reduction in toxicity, mobility, or volume through treatment.
Short-Term Effectiveness	Low – Even with phased construction and dust suppression, this option will have impacts to the community during construction, at both residential properties and on Rimini Road.	High – Fewer community impacts since no sewer mains along Rimini Road and no individual sewer connections on residential properties would be constructed.
Implementability	High – Employs standard construction methods and equipment.	High – Employs standard construction methods and equipment.
Capital Cost	Low – Substantially higher cost.	High – Much lower cost.

Overall Evaluation of the 2002 ROD and the Preferred Alternative

EPA evaluated the 2002 ROD and the preferred alternative against the NCP criteria listed in the box on this page.

- **2002 ROD** – Construct Community Water System, Complete Community Wastewater System (Contingency), Excavate Remaining Contaminated Soils in Rimini Yards, and Excavate Rimini Road Wastes.
- **Preferred Alternative** – Construct Community Water System, Halt Construction of Community Wastewater System, Excavate Contaminated Soils near Individual Septic Systems and Replace Systems, on a Case-by-Case Basis, and Excavate Rimini Road Wastes.

NCP Criteria for Evaluation

The alternatives presented in this proposed plan were evaluated against the first seven NCP evaluation criteria (see box). The first two evaluation criteria, overall protection of human health and the environment and compliance with applicable or relevant and appropriate requirements (ARARs) are threshold criteria that must be met by the selected remedy. Criteria 3 through 7 are balancing criteria to help identify the preferred alternative. The evaluation presented in this plan is based on the first seven criteria only. The remaining two criteria (state and community acceptance) are modifying criteria and will be evaluated after EPA receives public comment on the proposed plan.

Comparative Evaluation

A summary of the comparative analysis against each of the NCP criteria is presented below and in Table 5.

Overall Protection of Human Health and the Environment

The remedy selected in EPA's 2002 ROD and the preferred alternative provide a

NCP Evaluation Criteria	
1	Overall protection of human health and the environment addresses whether or not an alternative provides adequate protection and describes how risks posed through each pathway are eliminated, reduced, or controlled.
2	Compliance with applicable or relevant and appropriate requirements (ARARs) addresses whether an alternative will meet all federal and state environmental laws and/or provide grounds for a waiver.
3	Long-term effectiveness and permanence refers to the ability of an alternative to provide reliable protection of human health and the environment over time.
4	Reduction of toxicity, mobility, or volume through treatment refers to the preference for an alternative that reduces health hazards, the movement of contaminants, or the quantity of contaminants at the site through treatment.
5	Short-term effectiveness addresses the period of time needed to complete an alternative and any adverse effects to human health and the environment that may be caused during the construction and implementation of the remedy.
6	Implementability refers to the technical and administrative feasibility of an alternative, including the availability of materials and services needed to carry out the remedy and coordination of federal, state, and local governments to work together to clean up the site.
7	Cost evaluates the estimated capital and/or operation and maintenance (O&M) costs of an alternative in comparison to other, equally protective measures.
8	State acceptance indicates whether the state agrees with, opposes, or has no comment on the preferred alternative.
9	Community acceptance includes determining which components of an alternative interested persons in the community support, have reservations about, or oppose.

community drinking water supply system to eliminate residents' exposure to contaminated water currently in use as drinking water in Rimini. The 2002 ROD and preferred alternative provide for excavation and removal of contaminated yard material around existing septic systems. Based on previously completed excavations, EPA estimates that in 20 residential yards approximately 2,400 cubic yards of contaminated material currently remain in place around existing septic systems. Arsenic concentrations in this contaminated material range from 122 parts per million (ppm) to 1626 ppm. The average arsenic concentration is approximately 400 ppm.

These arsenic concentrations exceed the cleanup level of 120 ppm established in the 2002 ROD. By removing this contaminated material, EPA would mitigate any potential future risk of exposure to these contaminated materials. Also, removal of road wastes would eliminate risk of exposure to these materials and contribute to protection of human health and the environment.

In summary, the 2002 ROD and preferred alternative would provide equivalent levels of protection to human health and the environment and both are rated high against this criterion.

Compliance with ARARs

The following contaminant- and action-specific ARARs for the Rimini-area remedy components were identified by EPA and MDEQ in the 2002 ROD. These are the ARARs used by EPA for the evaluation of alternatives in this proposed plan:

- Safe Drinking Water Act, Drinking Water Regulations.
- Clean Water Act
- National Ambient Air Quality Standards
- Montana Groundwater Protection Rules
- Montana Water Quality Act
- Montana Ambient Air Quality Regulations
- Federal and Montana Resource Conservation and Recovery Act (RCRA) Requirements
- Montana Solid Waste Management Act Requirements
- Federal and Montana Mine Reclamation Act Requirements

Water System: The community water system would meet all MDEQ requirements for a public water supply (PWS) and therefore would comply with ARARs.

Soil Remediation with Community Wastewater System: Under the 2002 ROD, as a contingency, EPA would replace septic systems during yard remediation with a community wastewater system. EPA would remove all septic systems damaged during the removal of contaminated soils from

residential yards. The community wastewater system would meet all MDEQ requirements and therefore would comply with ARARs

Preferred Alternative, Soil Remediation with Septic System Replacement on Case-by-Case Basis: The preferred alternative would replace septic systems with onsite replacement systems during excavation, on a case-by-case basis. EPA believes this approach complies with ARARs.

The 2002 ROD and preferred alternative are both rated high against this criterion.

Long-term Effectiveness and Permanence

Water System: The 2002 ROD and preferred alternative include construction of a community water system, which would be a permanent and effective means of providing safe drinking water to the community of Rimini.

Soil Remediation with Community Wastewater System: Under the 2002 ROD, as a contingency, EPA would remove all septic systems damaged during the removal of contaminated soils from residential yards and build a community wastewater system. Excavation and removal of contaminated soils around the septic systems and contaminated road areas in Rimini to which residents might otherwise be exposed would be effective in the long term.

Preferred Alternative, Soil Remediation with Septic System Replacement on Case-by-Case Basis: Excavation and removal of remaining contaminated soils around septic systems and contaminated wastes in road areas in Rimini to which residents might otherwise be exposed; and would be effective in the long term. In addition, the replacement (on a case-by-case basis) of any damaged septic systems would also be effective in the long term.

Therefore, the 2002 ROD and the preferred alternative are rated high against this criterion.

Table 5 – Comparative Evaluation of Alternatives

EVALUATION CRITERIA	2002 ROD Community Water System Complete Community Wastewater System Excavate Remaining Contaminated Soils in Rimini Yards Excavate Rimini Road Wastes	Preferred Alternative Community Water System Halt Construction of Community Wastewater System Excavate Contaminated Soils near Individual Septic Systems and Replace Systems on a Case-by-Case Basis Excavate Rimini Road Wastes
Overall Protection of Human Health and the Environment	High – Provides a drinking water source that meets MCLs. Construction of community wastewater system would remove contaminated material overlying individual septic systems and mitigate risk of exposure. Removes potential risk of exposure to Rimini Road wastes.	High – Provides a drinking water source that meets MCLs. Excavation of contaminated material overlying septic systems would mitigate risk of exposure. Removes potential risk of exposure to Rimini Road wastes.
Compliance with ARARs	High – Meets ARARs.	High – Meets ARARs.
Long-Term Effectiveness and Permanence	High – Provides a permanent monitored source of safe drinking water. This option removes all accessible contaminated material from yards and roads. Excavation of waste is a permanent solution.	High – Provides a permanent monitored source of safe drinking water. This option removes all accessible contaminated material from yards and roads. Excavation of waste is a permanent solution.
Reduction of Toxicity, Mobility, and Volume Through Treatment	Low – No reduction in toxicity, mobility, or volume of contaminants in soils or groundwater through treatment.	Low – No reduction in toxicity, mobility, or volume of contaminants in soils or groundwater through treatment.
Short-Term Effectiveness	Low – The community would experience some inconvenience during construction of water and wastewater mains and service connections.	High – Fewer impacts to the community during construction.
Implementability	High – Employs standard construction methods and equipment.	High – Employs standard construction methods and equipment..
Cost	Low – Most costly.	High – Least costly.

Reduction of Toxicity, Mobility, or Volume through Treatment

Neither the 2002 ROD nor the preferred alternative reduces the toxicity, mobility, or volume of contaminants in soils or groundwater through treatment, and both are rated low against this criterion.

Short-term Effectiveness

Construction activities under the 2002 ROD would occur in phases to minimize inconvenience to the community. For example, EPA could keep one lane of Rimini Road open during construction by laying water main pipes along the other side of the road. Residents could travel in and out of Rimini with minor interruption of their routines. Temporary backfill would be placed over disturbed driveways at the end of each day to ensure access to homes. Dust suppression measures would limit potential exposure to airborne waste generated during construction.

Under the preferred alternative, construction activities would be phased to minimize inconvenience to the community of Rimini. However, because the preferred alternative does not include installation of a sewer main, it would be less disruptive than constructing a community wastewater system.

Under EPA's 2002 ROD and the preferred alternative, operating equipment and hauling materials over Rimini Road would be scheduled during times when the majority of residents are at work. Road materials would be excavated during installation of water and/or sewer mains to minimize inconvenience.

In summary, construction activities would be phased to minimize inconvenience to the residents of Rimini. Nevertheless, continuing construction of the community wastewater system would have a greater impact on the

community than replacement of existing individual septic systems. Therefore, the preferred alternative is rated high and the 2002 ROD is rated low for this criterion.

Implementability

Construction and excavation would employ standard construction methods and readily available equipment. Therefore, the preferred alternative and the 2002 ROD are equally implementable and rated high for this criterion.

Cost

The capital cost for completing the 2002 ROD elements pertaining to Rimini (i.e., construction of the community water system and community wastewater system [contingency] and remediation of the road in Rimini) is currently estimated to be \$10,400,000. The original 2002 cost estimate for this work was approximately \$1,900,000. The cost for completing the preferred alternative is estimated to be \$7,450,000 (Table 6). The estimated cost difference between completing the preferred alternative and completing the 2002 ROD is therefore approximately \$2,950,000.

The 2007 cost estimates to complete the work do not include EPA funds already spent in 2006/2007 to remediate residential yards in Rimini and in 2005/2006 to remediate Rimini Road north of town and partially construct the community wastewater system. EPA's approximate remedy costs for Rimini expended from October 2005 through June 2007 are noted in the footnote in Table 6.

The 2002 ROD is rated low and the preferred alternative is rated high for this criterion.

Table 6 – Estimated Capital Cost To Complete Preferred Alternative in Rimini ^{1,2}

Remedy Component	Original 2002 ROD	Preferred Alternative
Rimini Road Remediation	\$1,000,000	\$2,250,000
Community Water System	\$300,000	\$4,450,000
Community Wastewater System (Contingency)	\$600,000	--
Halt Construction of Community Wastewater System (Remove Components per USFS Requirements)	--	\$200,000
Remediate Remainder of Contaminated Yard Soils and Replace Septic Systems, on a Case-by-Case Basis	--	\$550,000
	\$1,900,000	\$7,450,000

¹ 2005/2006 cost incurred for Rimini community wastewater system and Rimini Road remediation (north of Rimini) is approximately \$1,500,000.

² 2006/2007 cost incurred for Rimini residential yard remediation (through July 2007) is approximately \$3,600,000.

Summary of Comparative Evaluation

EPA has selected the preferred alternative (Table 7) because it provides the same level of protection to public health and compliance with ARARs as the 2002 ROD, but has the following advantages:

- Completing the preferred alternative costs approximately \$2,950,000 (28%) less (\$7,450,000 vs. \$10,400,000).
- The preferred alternative is easier to implement and causes significantly less disruption to the community during construction.

Community Participation

Throughout EPA's Superfund response action at the Upper Tenmile Creek Mining Area Site, the Agency has provided information to the public through public meetings, the administrative record file for the site, fact sheets, and announcements published in local newspapers. EPA participates in monthly meetings of the Upper Tenmile Watershed Committee and routinely discusses the cleanup plans with area residents and property owners. In

**Table 7
Preferred Alternative for Rimini**

- Excavate Contaminated Yard Soils near Individual Septic Systems and Replace Systems, on a Case-by-Case Basis*
- Halt Construction of Community Wastewater System
- Construct Community Water System
- Excavate Rimini Road Waste

* In 2006 and 2007, EPA remediated most yards in Rimini. However, contaminated soils remain in place adjacent to septic systems in approximately 20 yards.

addition, during the field season, EPA distributes weekly "construction updates" and maintains a project office in Rimini where residents are welcome to stop by with questions. Periodic tours and briefings are offered to local officials.

EPA also provides funding to Rimini Community, Inc., to obtain independent technical assistance through a technical assistance grant (TAG). The grant was awarded in 2005.

Oral or written comments on this proposed plan may be submitted during the scheduled public meeting. Written comments may be mailed, faxed, or e-mailed to EPA at the addresses below. **Comments must be submitted by November 3, 2007.**

Mike Bishop
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Once the public comments are received, EPA, in consultation with MDEQ, will make a final remedy decision. EPA will then publish a ROD amendment that provides the rationale for its decision and which will include a responsiveness summary containing the Agency's responses to comments received during the public comment period.

Public Comment Meeting

Rimini Community Center
October 24, 2007
6:30 pm

Site Contact Information

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