



# Proposed Plan for Modifications to the Remedy Anaconda Regional Water, Waste and Soils Anaconda Smelter Superfund Site



## Introduction

This plan proposes changes to the Anaconda Regional Water, Waste and Soils Operable Unit of the Anaconda Smelter Superfund site. The original remedy was selected in a 1998 Record of Decision (ROD).

In 2001, EPA revised the Safe Drinking Water Act Maximum Contaminant Level (MCL) for arsenic from 50 micrograms per liter ( $\mu\text{g/L}$ ) to 10  $\mu\text{g/L}$ . The State of Montana also lowered its human health numeric water quality standard for surface and ground water from 20 and 18  $\mu\text{g/L}$ , respectively, to 10  $\mu\text{g/L}$ . Surface and ground water contamination shown in the 1998 ROD was based on the 18  $\mu\text{g/L}$ . The impacts of lowering the arsenic standard are:

1. It significantly increased the spatial extent of ground water considered to be contaminated.
2. It prompted EPA to re-evaluate whether waters of the state in several areas would be able to meet the new arsenic water quality standard. The results of the evaluation are the primary focus of the proposed plan for modifications to the cleanup.

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

Background information EPA used to prepare the proposed plan is contained in the 1998 ROD for the site. That document describes the nature and extent of contamination in surface water, ground water, and soils at the site, provides a detailed analysis of the potential alternatives for cleaning up the contamination, and identifies the site remedy selected by EPA with DEQ's concurrence in 1998. This information and other key site documents are available in the site record at EPA's office in Helena and at the Community Center in Anaconda.

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.

## Have Questions?

Please contact any of these individuals for additional information.

- **EPA**  
**Charlie Coleman**, Remedial Project Manager—406-457-5038  
**Wendy Thomi**, Community Involvement Coordinator 406-457-5037
- **Montana DEQ: John Brown**, Project Officer, 841-5036

Please join us to learn more about proposed modifications to the cleanup plan in Anaconda.

December 3rd 7:00 p.m.—8:30 p.m.  
Metcalf Senior Center in Anaconda

**Toll Free Numbers**  
DEQ Helena 1-800-246-8198  
EPA Helena 1-866-457-2690

To be added to or deleted from EPA's  
Direct Mail List  
Call toll free 1-866-457-2690 X 5034

**Public Meeting**  
For clarification and comment  
on EPA's Proposed Plan.

Thursday, December 3, 2009  
7:00 pm — 8:30 pm  
Metcalf Senior Center  
115 E. Pennsylvania Ave.  
Anaconda, Montana

## Site Description and History

The Anaconda Smelter NPL Site is located in the Deer Lodge Valley in southwestern Montana, in and around the city of Anaconda. Milling and smelting activities conducted in the Anaconda area for nearly 100 years resulted in the contamination of soils, surface water, and ground water in the surrounding area, primarily through airborne emissions and disposal practices from smelting operations. The primary contaminants are arsenic, cadmium, copper, lead, and zinc.

In 1884, the Anaconda Mining Company and its predecessors began large copper concentrating and smelting operations at the area currently known as the Old Works. The Old Works was located on the north side of Warm Springs Creek, east of Anaconda, and operated until about 1901. In 1902, ore processing and smelting operations began at the Washoe Reduction Works (also called the Anaconda Smelter, the Washoe Smelter, the New Works, and the Anaconda Reduction Works) on Smelter Hill, south of Warm Springs Creek across from the Old Works which was owned and operated by AMC and its successors. In 1977, Atlantic Richfield Company (formerly known as ARCO) purchased AMC and assumed its liabilities. Operations at the Anaconda Smelter ceased in 1980, and the smelter facilities were dismantled soon thereafter. **The only substantial feature remaining from the smelter facility is the large, 585-foot brick smelter stack on Smelter Hill.**



For more history please read EPA's Site Overview Fact Sheet from January 2009.

## Overview of Cleanup Activities

The Anaconda Smelter Site was added to EPA's national priorities list (NPL) in 1983, under Superfund authority. Atlantic Richfield (AR) was identified as the primary Potentially Responsible Party. Since then, AR has been actively involved in investigation and cleanup.

The first clean-up action (Mill Creek OU) involved relocating residents from Mill Creek and other soil stabilization and removal efforts. The second clean-up action (Flue Dust OU) addressed flue dust through removal, treatment, and containment. At the same time, AR removed the Arbiter and beryllium wastes and contaminated residential yard materials from portions of Anaconda. The third clean-up action addressed waste sources within the Old Works/East Anaconda Development Area (OW/EADA) OU. The fourth clean-up action (Community Soils OU) removes remaining contaminated residential, commercial and industrial soils in Anaconda.

ARWW&S is the fifth and final OU at the site and the subject of this proposal. It covers 300 square miles in the southern Deer Lodge Valley and surrounding foothills area. Large volumes of wastes, slag, tailings, debris, and contaminated soil, ground water, and surface water are spread over agricultural, pasture, rangeland, forests, and riparian and wetland areas. Copper and other metal ore milling, smelting, and refining operations from 1884 to 1980 are the source. Waste disposal occurred over an estimated 6,000 acres; 13,000 acres of upland terrestrial soils were contaminated by smelter emissions; 4,800 acres of alluvial ground water contain elevated concentrations of arsenic, cadmium, and copper; and 28,600 acres of bedrock ground water that exceed the Montana standard for arsenic.

## Evaluation of Proposed Changes

Nine criteria are used to evaluate the proposed changes to the original 1998 ROD. This section profiles the fundamental changes (TI waivers) against the nine criteria and how they compare to the original remedy.

### 1. Overall Protection of Human Health and the Environment

Actions due to the proposed change to lower the arsenic ground and surface water performance standard will increase the overall protectiveness of the actions at the site. Human health protectiveness at the site, including areas where the arsenic standard is waived, will be achieved through the implementation of the Domestic Well Monitoring and Replacement Program.

### 2. Compliance with ARARs

The proposal to invoke a TI waiver for portions of aquifers and related surface waters at the site will result in waiving an ARAR. The proposed action will continue to meet all other ARARs.

### 3. Long-Term Effectiveness and Permanence

The proposal to implement a Domestic Well Monitoring and Replacement Program would be effective in reducing exposure to contaminants. Its permanence and reliability will be linked to the adequacy of the long-term funding and administration of the program.

### 4. Reduction of Toxicity, Mobility, or Volume of Contaminant through Treatment

The proposal to invoke TI waivers at the site will not result in any additional reduction of toxicity, mobility or volume of contaminant through treatment. However, the proposed Ground Water/Surface Water Management System at the toe of the Opportunity Ponds, to prevent further migration of the plume, will utilize passive treatment to remove arsenic from ground water.

### 5. Short-Term Effectiveness

The proposal to implement the Domestic Well Monitoring and Replacement Program will be implemented immediately.

### 6. Implementability

Proposed changes affecting actions are readily available and generally proven. The Domestic Well Monitoring and Replacement Program should have few administrative difficulties.

### 7. Cost

Proposed changes related to the TI waivers will not have a significant impact to the overall ARWW&S OU remedy cost. However, increasing the ground water area of concern will result in a significant cost increase to the Domestic Well Monitoring and Replacement Program. Additional actions related to waste removal and containment also increase the cost of the remedy.

### 8. State Acceptance

The State of Montana will make its determination after review and considering the information received during the public comment.

### 9. Community Acceptance

Community acceptance of the proposed changes will be evaluated after public comment.

## SUMMARY

Based on the information available at this time, EPA believes that the ARWW&S OU remedy, with the proposed changes, will continue to be protective of human health and the environment, comply with ARARs (in consideration of waivers) and would be cost effective. All other components of the ARWW&S OU ROD will remain in affect.

Once public comments are received, EPA in consultation with DEQ, will make a final decision. EPA will publish a ROD amendment providing the rationale for its decision. It will include a responsiveness summary-EPA's responses to comments received during the public comment period.

## Remedial Action Objectives

This proposed action will reduce the remedial action goal/performance standard for the cleanup of arsenic in ground and surface water within the site to 10ug/L. This action also proposes to waive this new standard in certain ground and surface waters at the site.

Although EPA has proposed expanding the Bedrock TI Zone and Waste Management Areas as well as creating new TI Zones in the North and South Opportunity Alluvial Ground Water Areas, the primary objective of returning usable ground water to its beneficial uses wherever practicable remains in effect.

EPA expects that all domestic water sources will meet the applicable drinking water standards for the site Contaminants of Concern (COC) through the proposed Domestic Well Monitoring and Replacement Program.

EPA will continue to prevent further migration of plumes within the WMAs and TI Zones by minimizing the transport of COCs to the bedrock and alluvial aquifers. For the Opportunity Ponds WMA, EPA expects the designed Groundwater/Surface Water Management System will prevent migration of the plume beyond the toe of the ponds. Ground water within the expanded Old Works WMA would not be restored.

Although EPA has proposed waiving the arsenic drinking water standard in certain surface waters, the primary objective of returning them to their beneficial use remains in effect. By continuing to reduce COC loading, EPA expects these surface waters to meet the applicable aquatic water quality standards for the site COCs.

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

## Types of Changes

Two types of changes are proposed.

**Fundamental Changes** involve a change in scope or cost to the remedy, requiring a nine criteria analysis to comply with the law.

**Significant Changes** involve a change to a component of a remedy that does not fundamentally alter the cleanup approach.

**Modifications to  
1998 Record of Decision**

**Fundamental Changes**

- Expanded Bedrock Aquifer Ground Water Technical Impracticability Zones (TI Zones)
- New Alluvial Aquifer Ground Water TI Zones (North and South Opportunity)
- Water quality standard for arsenic waived for surface water impacted by ground water TI Zones

**Other Significant Changes**

- Changes to the Waste Management Area boundaries
- Changes to the Soils Area of Concern
- Designated "High Arsenic Areas" at Dutchman wetlands and Smelter Hill.
- New Domestic Well Area of Concern

The nature and extent of these changes to the remedy for contaminated regional ground water, surface water and soils is described in the next few pages.

## Arrowhead Foundation

The Arrowhead Foundation was formed in 1994 to receive a \$50,000 Technical Assistance Grant from EPA to facilitate community involvement in the Superfund process. Fifteen years later, the TAG group continues to reach out to people who may want to be more involved in the Superfund cleanup and reuse of properties.

The Arrowhead Foundation now has an online directory of Superfund documents available for public review. And the library continues to grow. Simply go to:

[www.library.anacondasuperfund.com](http://www.library.anacondasuperfund.com)

Search by Site (Smelter Hill, Old Works, Residential soils), Remedial Design Units (RDUs) or simply by a document name.

The joint-Deer Lodge County/Arrowhead Foundation Superfund Document Repository is at 118 East Seventh Street in Anaconda.

**To get more involved or become a member of the TAG group call Mark Sweeney at 560-0171 or Jim Davison at 563-5538.**

## OPPORTUNITIES FOR PUBLIC COMMENT

### Record Verbal Comments At Public Meeting

**Metcalf Memorial Senior Center  
115 E. Pennsylvania Ave.  
Anaconda, MT  
December 3, 2009  
7:00-8:30 pm**

### Send Written Comments by December 31, 2009 to:

**Charlie Coleman, Project Manager**  
Mail: U.S. Environmental Protection Agency  
10 West 15<sup>th</sup> Street, Suite 3200  
Helena, MT 59626  
Phone: (406) 457-5038  
Fax: (406) 457-5056  
E-mail: [coleman.charles@epa.gov](mailto:coleman.charles@epa.gov)

## Ground Water Areas of Concern

Since the 1998 ROD, the water quality standard for arsenic has changed from 18 to 10 µg/L. Several investigations were conducted during remedial design to better delineate the ground water arsenic plumes that exceed 10 µg/L. The lowering of the water quality standard from 18 to 10 µg/L has significantly increased the size of the area that is contaminated as shown on **Figure 1**. Additionally, EPA conducted analyses to determine if the ground water could be cleaned up to the new standard. Based on these analyses, EPA has proposed waiving the water quality standard for arsenic in the following areas as discussed below.

### Bedrock Aquifer TI Zone

Three separate fractured bedrock TI Zones were identified in the 1998 ROD. These areas shown on Figure 1 were located in Stucky Ridge, Smelter Hill, and the Mount Haggin Wildlife Management Area. Based on the lowering of the water quality standard for arsenic as discussed in the *Bedrock Aquifer TI Evaluation Report*, EPA proposes that these areas be consolidated and expanded north to Modesty Creek, and to the south beyond the Continental Divide to the California Creek drainage (tributary to Deep Creek).

### South Opportunity Alluvial Aquifer

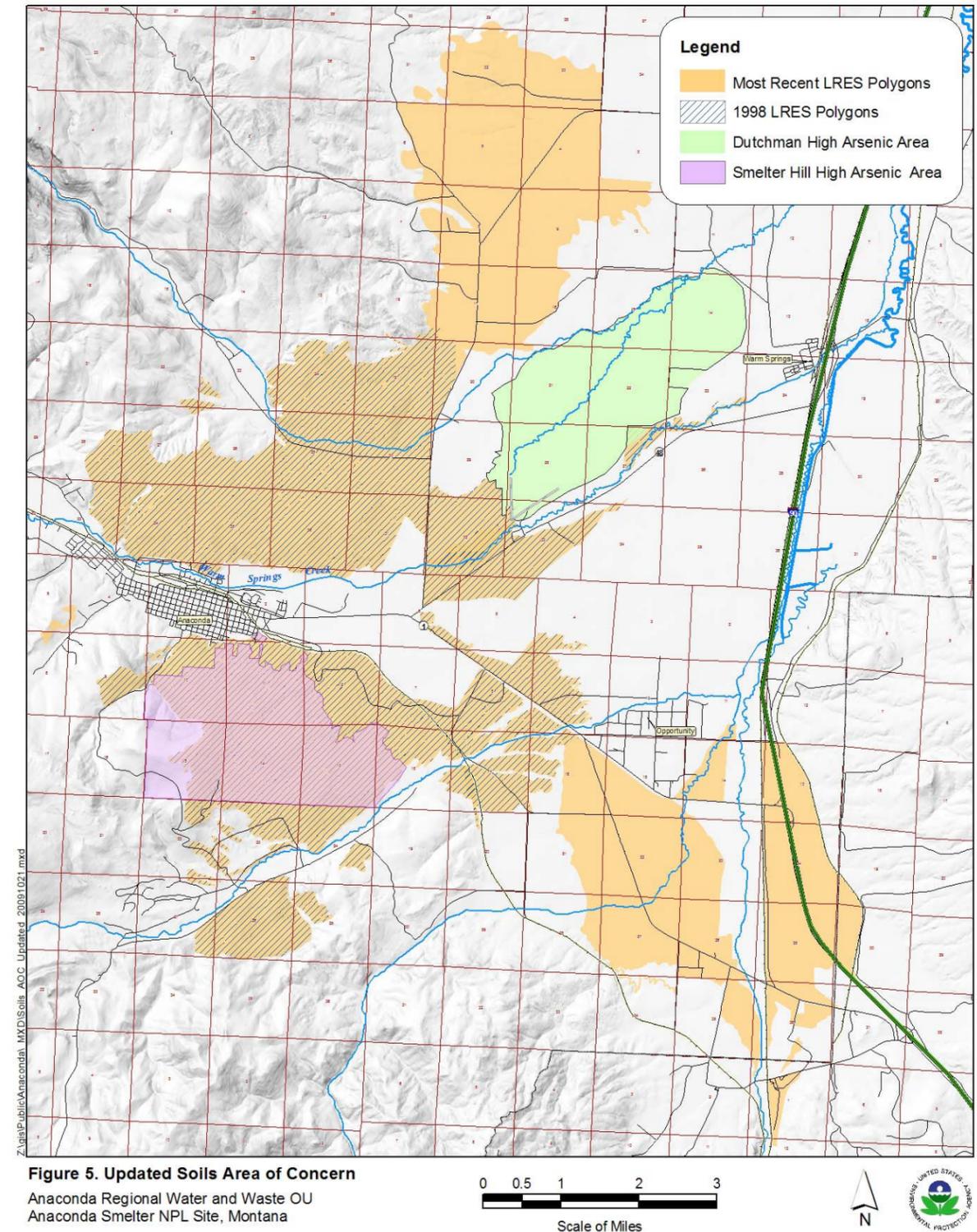
The 1998 ROD identified a portion of the alluvial aquifer south of Opportunity as an Area of Concern—see **Figure 1**. The selected remedy for this area specified source control measures and monitored natural attenuation. Natural attenuation refers to the decrease of contamination through natural processes (biological, chemical and physical) with the expectation that ground water will meet water quality standards for arsenic within a reasonable period of time.

Based on the *South Opportunity TI Evaluation Report*, EPA has concluded that ground water in the upper few feet of the aquifer will remain above the new water quality standard for arsenic for many years, and that potential options to remediate this water below standards are either impractical or would result in significant damage to the environment (such as the removal of soils in wetland areas). EPA proposes the creation of the South Opportunity Alluvial TI Zone as shown on **Figure 1** which would include surface water, particularly in lower Willow Creek and the Opportunity tile drains, which receive ground water discharge from this area.

### North Opportunity Alluvial Aquifer

The North Opportunity Alluvial Ground Water/Surface Water TI Zone is similar to South Opportunity, where the suspected primary source of arsenic loading is interaction of shallow ground water with a widespread area of soils contaminated with arsenic that was the result of fallout from nearly one hundred years of smelter emissions. Unlike South Opportunity, this ground water/surface water arsenic contaminant plume was not identified in the 1998 ROD. It was first detected in 2000 during remedial design sampling.

Based on the *North Opportunity TI Evaluation Report*, EPA has concluded that ground water in the upper few feet of the aquifer will remain above the new water quality standard for arsenic for many years, and that potential options to remediate this water below standards are either impractical or would result in significant damage to the environment (such as the removal of soils in wetland areas). EPA proposes the creation of the North Opportunity Alluvial TI Zone, located north of Warm Springs Creek, as shown in **Figure 1**. This TI zone would also include the adjacent surface water of Lost Creek which receives ground water discharge from this area.



### Soil Areas of Concern

Since the 1998 ROD, data collection and Land Reclamation Evaluation System (LRES) evaluations have resulted in a final delineation of LRES polygons during remedial design. Many of these areas were not included in the 1998 ROD for two reasons: aerial photography used to identify poorly-vegetated areas was unavailable for these areas and very limited soil sampling had occurred in these areas. Additionally, mapping completed by the National Resources Conservation Service identified areas with moderate to severe impact classes from smelter-affected lands for soils beyond the original area of concern.

These additional studies resulted in an increase in the size of the soils area of concern (Figure 5), including the West Galen area and areas next to the floodplain of Silver Bow Creek.

### Vegetation Performance Standards

Vegetation performance criteria for reclaimed uplands (non-steep slope and steep slope areas) and WMAs were developed for the site during remedial design. These standards-approved by EPA- are provided in the Final Vegetation Management Plan, of March 2008.

### High Arsenic Areas

Figure 5 also shows areas proposed by EPA as designated High Arsenic Areas. These include Smelter Hill and Dutchman Creek areas.

The Smelter Hill High Arsenic Area is located in steep upland areas owned by Atlantic Richfield and Anaconda-Deer Lodge County. Even though arsenic exceeds the 1,000 mg/kg arsenic cleanup standard for recreational/open space/agricultural land use, it is impractical to reduce arsenic concentrations using conventional reclamation equipment. The Dutchman Creek High Arsenic Area is a well vegetated wetlands area. EPA determined that

removal of this contaminated soil would cause excessive environmental harm to the unique plant life in this large wetland complex. The following remedial requirements apply to High Arsenic Areas:

- Vehicular access by the public will be prohibited. Vehicular traffic will be limited to authorized monitoring and maintenance personnel. Fences, gates, signs, and other constructed controls will be used to maintain vehicle restrictions.
- Property will be owned and managed by Atlantic Richfield or the government.

### Summary of Human Health Risks

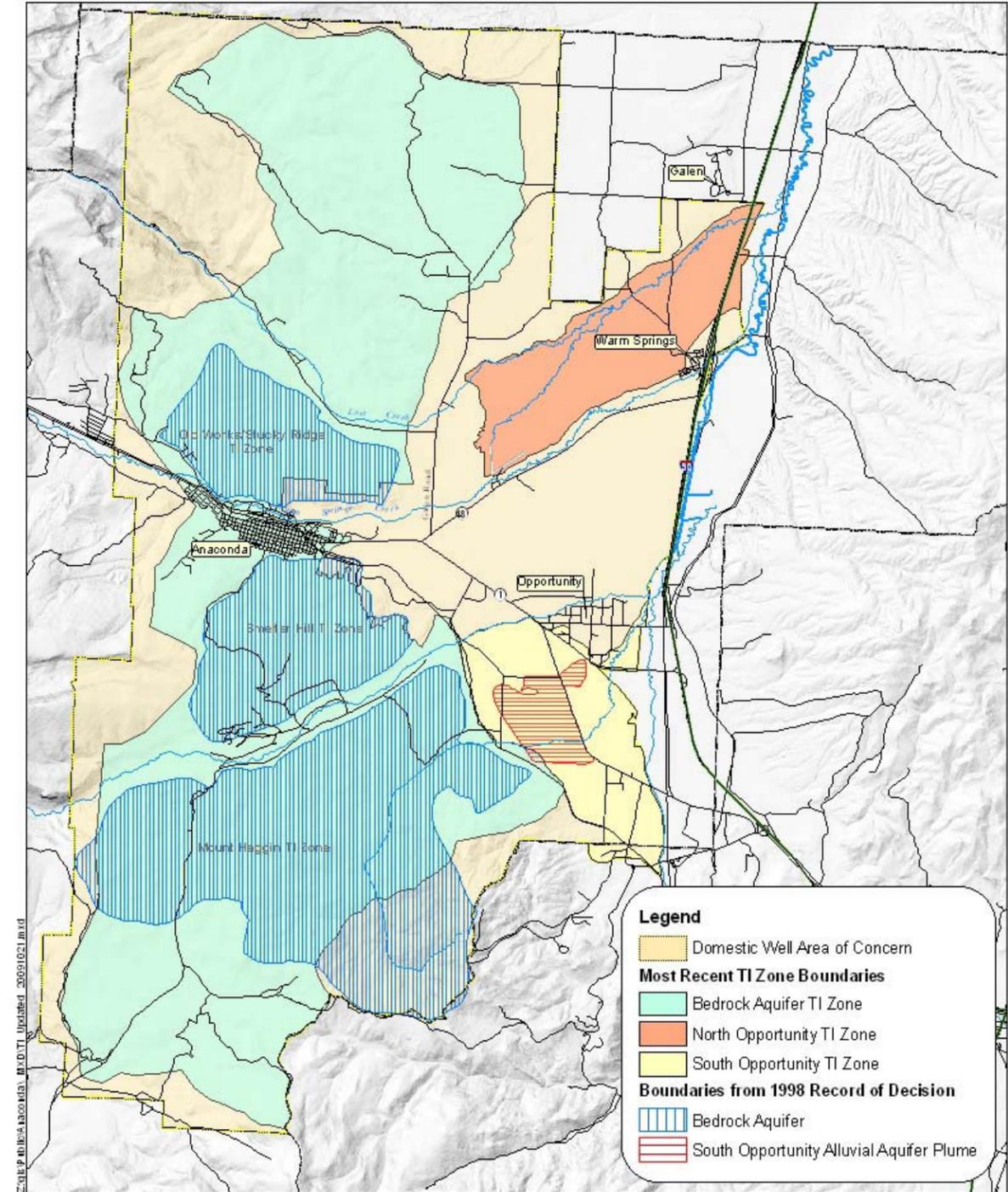
The primary Contaminants of Concern (COC) at the site include arsenic, lead, cadmium, copper and zinc and remain unchanged. Based on the RODs for the Community Soils OU (1996) and the ARWW&S OU, the current human health risk-based cleanup levels for arsenic in soils based on land use are:

- residential areas - 250 mg/kg
- commercial/industrial areas - 500 mg/kg
- recreational/agricultural/open space land 1,000 mg/kg
- certain steep slope areas in Smelter Hill 2,500 mg/kg

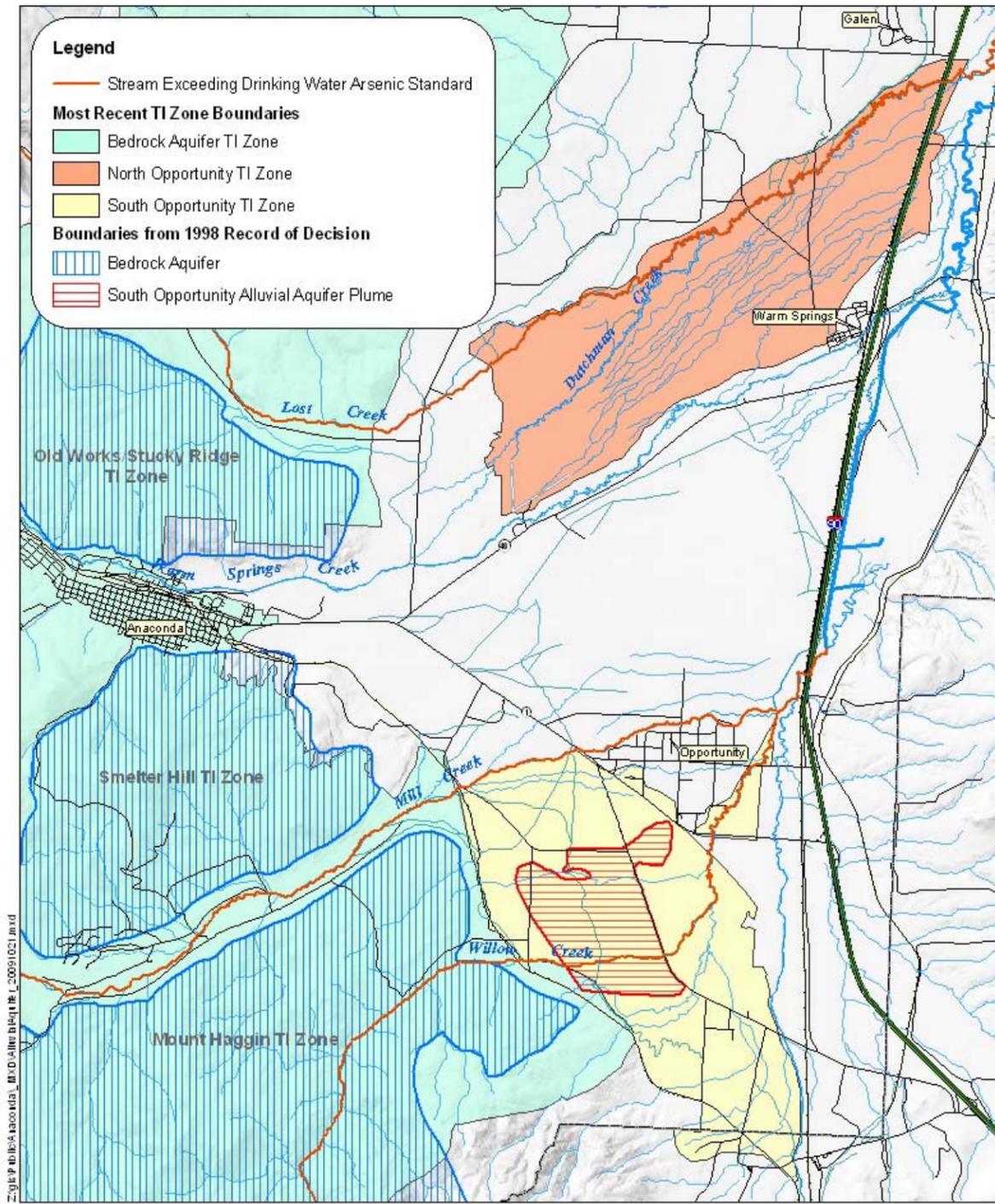
**EPA is currently conducting a risk assessment for lead in residential soils and dusts. EPA expects to release a Proposed Plan for the Community Soils OU in spring 2010.**

EPA produced an addendum to the 1996 human health risk assessment for the Dutchman High Arsenic Area, concluding that the 2,500 mg/kg cleanup level could be applied to the Dutchman area provided that institutional controls (land use restrictions and property ownership) were applied.

Aquatic standards for area streams remain in effect.

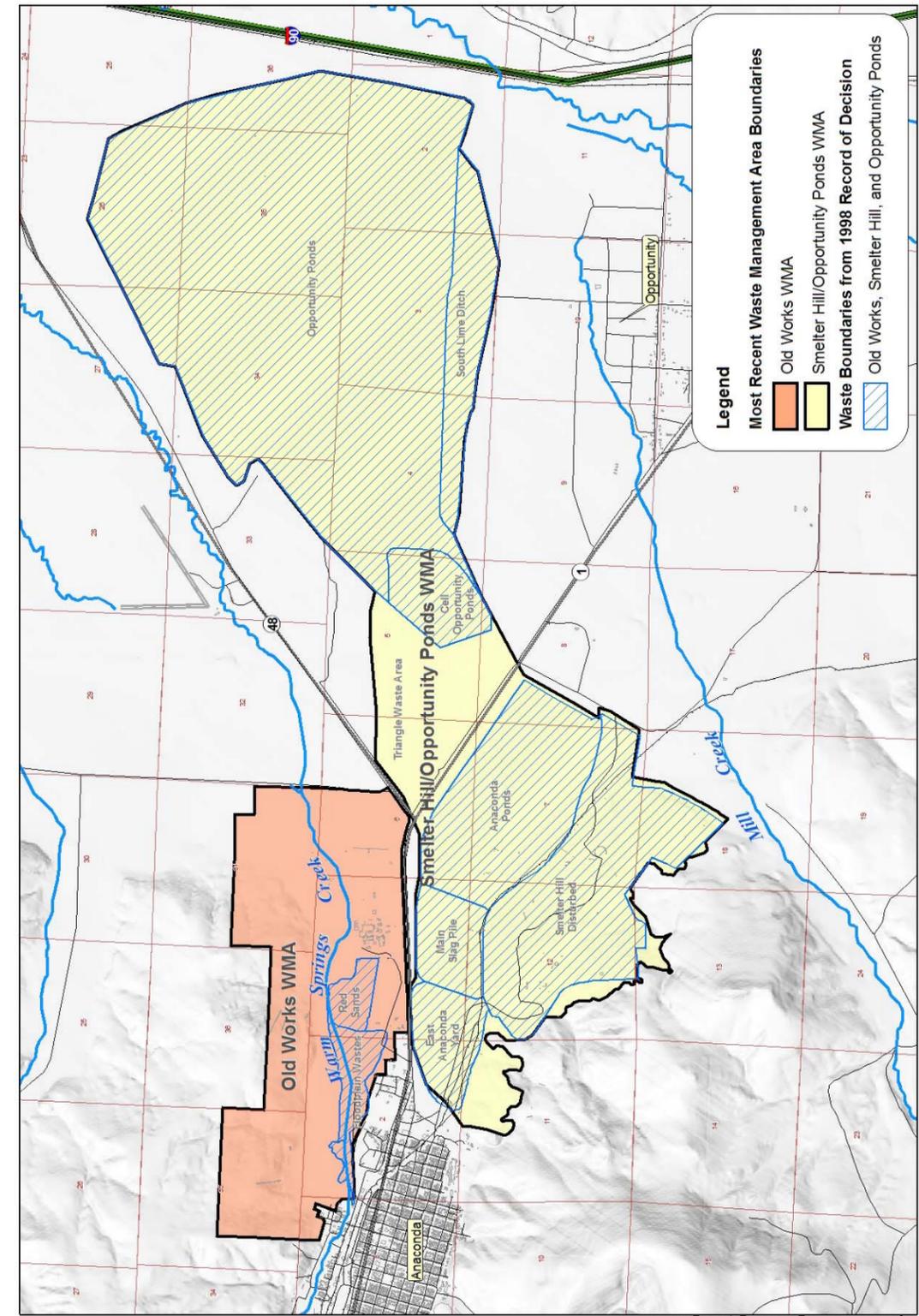


**Figure 1. Updated Ground Water T1 Zones**  
Anaconda Regional Water and Waste OU  
Anaconda Smelter NPL Site, Montana



**Figure 2. Surface Water TI Zones**

Anaconda Regional Water and Waste OU  
 Anaconda Smelter NPL Site, Montana



**Figure 4. Updated Waste Management Area Boundaries**

Anaconda Regional Water and Waste OU  
 Anaconda Smelter NPL Site, Montana



## Waste Management Areas

The 1998 ROD identified three Waste Management Areas (WMAs) at the Opportunity Ponds, Smelter Hill, and the Old Works. The original boundaries to each of these WMAs have been modified, as shown in **Figure 4**. The primary reason to increase the size of the WMAs is because of the lowering of the water quality standard for arsenic and other evaluations as discussed below.

### Opportunity Ponds (also known as the Atlantic Richfield Land Management Area)

Analysis of ground water samples collected in 2002 indicated that arsenic concentrations exceed the 10 ug/L standard beneath the Triangle Waste Area. Based on this new information, EPA has proposed expanding the Opportunity Ponds WMA to include the Triangle Waste Area. Since the plume from the Smelter Hill WMA extends beneath the Opportunity Ponds WMA, EPA proposes combining the two WMAs.

### Smelter Hill

The Smelter Hill WMA boundary has been modified to refine the approximate boundaries of the Handling, Processing and Storage and Disturbed Areas, to adjust the north and east WMA boundaries to Highway 1 and the Mill Creek Road to simplify the boundary most readily accessible to the public; and to incorporate the West Stack Slag pile.

The 1998 ROD originally excluded the West Stack Slag Pile because sampling results there indicated that ground water may be clean beneath the wastes; however, additional studies and the lowering of the water quality standard for arsenic to 10 µg/L, ground water in the bedrock aquifer is now considered to be contaminated with arsenic.

### Old Works

EPA proposes modifying the Old Works WMA boundary from that shown in the 1998 ROD (Figure 4) to incorporate historic smelter features, the Arbiter plant and other miscellaneous waste into the WMA. This proposed expansion would include portions of the Bedrock Aquifer TI Zone and an area where ground water investigations indicate the presence of copper/cadmium contamination.

### Ground Water Points of Compliance

Proposed revisions to the WMA boundaries will require new ground water point of compliance monitoring wells. Monitoring wells at the toe of the Anaconda Ponds would not be needed if the Smelter Hill and Opportunity Ponds WMAs are combined. Existing wells would be utilized where appropriate. However, several new wells will be required because of the proposed boundary revisions and to address community concerns.

### It's Easy to Get More Information

Information is available to the public through public meetings, fact sheets, newspaper inserts and other means. EPA meets regularly with representatives of the Anaconda – Deer Lodge County local government, and routinely discusses cleanup plans with area residents and property owners. The site's administrative record is housed in EPA's Helena office at **10 West 15th St. on the 3rd floor** and contains all documents which have been used in making cleanup decisions at the site.

Documents which are directly related to this ROD Amendment are:

- 1) *South Opportunity TI Evaluation Report*; 2) *North Opportunity TI Evaluation Report*; 3) *Spring-Fed TI Evaluation Report*; and 4) *Bedrock Aquifer TI Evaluation Report*

### Proposed Waiver of Water Quality Standard for Arsenic

Based on the TI Evaluation Reports, EPA proposes to invoke a TI waiver for the arsenic standard of 10 ug/L for the following areas:

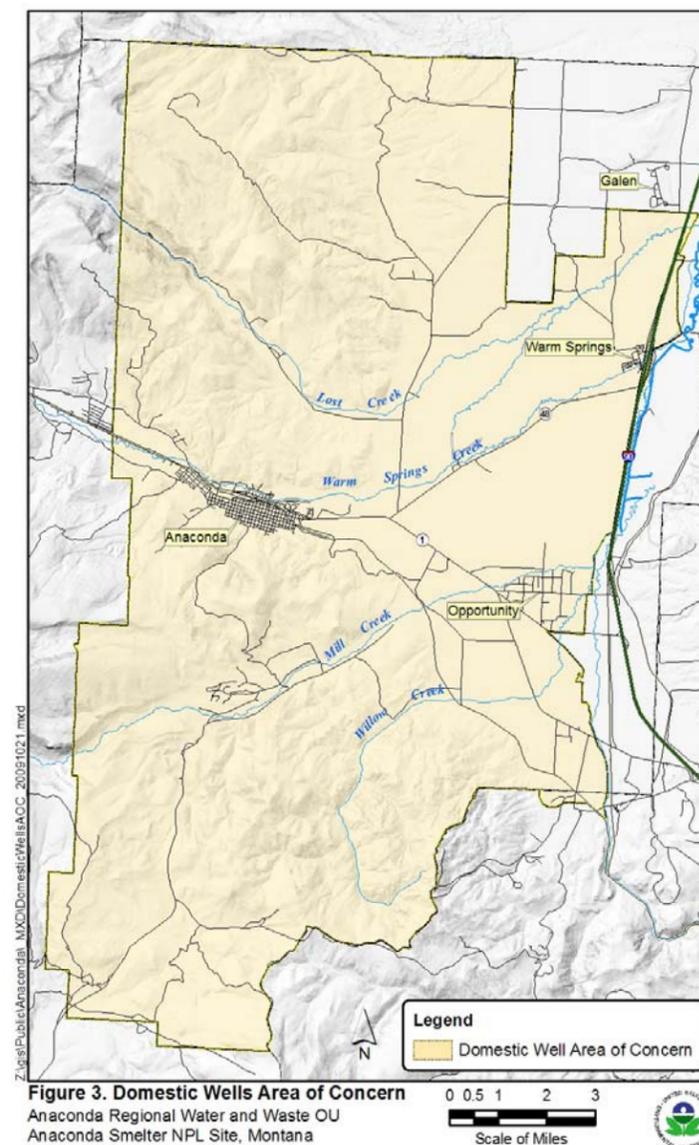
- Expanded Bedrock Aquifer Areas
- Surface Waters of Mill, Willow and Lost Creeks
- North Opportunity Alluvial Aquifer
- South Opportunity Alluvial Aquifer

### Spring-Fed Surface Water

The ground water from the Bedrock Aquifer discharges into surface water in the form of springs and seeps in many locations. Some of these have impacted surface water tributaries to Mill, Willow and Lost Creeks such that the water quality standard for arsenic of 10 mg/L is exceeded. The affected stream reaches exceeding the arsenic standard are shown in **Figure 2**. Based on the *Spring-Fed TI Evaluation Report*, EPA has determined that the surface water is technically impractical to cleanup and proposes waiving the water quality standard for arsenic in these streams.

### Domestic Well Area of Concern

Although EPA is proposing to waive the water quality standard for arsenic over a large area of the Anaconda Smelter Site, most domestic wells within the TI Zones have not been impacted. However, a few have, and EPA is requiring a domestic well monitoring and replacement program to ensure that all users of ground water within the area of concern shown on **Figure 3** will not drink water exceeding the arsenic standard. This plan provides for testing of existing and new domestic wells, and well replacement or an alternative water supply in the event that tests show arsenic concentrations in drinking water above the standard.



EPA also plans to utilize other institutional controls, identified in the original ROD, to control ground water use. This includes the development of a Controlled Ground Water Area to inform drillers and landowners of potential contamination and to provide guidelines for well development. Additionally, Atlantic Richfield has placed covenants restricting the use of ground water at most of the WMAs.

ROD CHANGE	Comparison of 1998 Decision to 2009	
	1998 ROD	2009 ROD Amendment
<b>Arsenic Performance Standard</b>	The ROD identified the State's WQB-7 Standard of 18 µg/L as the arsenic performance standard for ground water and surface water.	Since the ROD was issued in 1998, the Federal Drinking Water and State of Montana DEQ-7 water quality standard has been lowered to 10 µg/L. EPA proposes changing the performance standard to 10 µg/L.
<b>Bedrock Aquifer Technical Impracticability Zones</b>	The ROD identified three bedrock aquifer TI Zones: Stucky Ridge, Smelter Hill, and Mount Haggin TI Zones	EPA proposes that the three bedrock TI Zones be consolidated and expanded and that the arsenic standard of 10 µg/L be waived in this area. Expansion of the plumes is based primarily on the lowering of the arsenic performance standard.
<b>Alluvial Aquifer Technical Impracticability Zones</b>	The ROD identified the remedy for the South Opportunity shallow arsenic contaminant plume as source control/monitored natural attenuation. The North Opportunity shallow arsenic contaminant plume was unknown in 1998.	EPA has determined the South Opportunity and North Opportunity surface water/ground water areas of concern to be technical impracticable to remediate within a reasonable period of time. EPA proposes the creation of two new TI Zones and that the arsenic standard of 10 µg/L be waived in these areas.
<b>Domestic Well Area of Concern</b>	The ROD identified several types of ground water use controls and community protective measures that may be used to minimize the risk of public consumption of contaminated drinking water.	A Domestic Well Monitoring and Replacement Plan is proposed to provide for periodic testing of domestic wells and, if necessary, replacement of impacted drinking water within an established domestic well area of concern.
<b>Revisions to the Waste Management Area Boundaries</b>	Three WMAs were established at Old Works, Smelter Hill, and Opportunity Ponds. Separate "Wastes left In Place" areas were also established at the Old Works (historical and Arbiter areas), Opportunity Ponds (Triangle Wastes). West Stack Slag was required to be removed and consolidated into the Smelter Hill WMA.	EPA proposes that the Triangle Waste Area be included into the Opportunity Ponds WMA. Also, EPA proposes that the West Stack Slag be allowed to remain in place, and the Smelter Hill WMA boundary be expanded to include that area. EPA proposes that the Old Works "Wastes Left In Place" be incorporated into an expanded Old Works WMA.
<b>Ground Water Points of Compliance</b>	The ROD established ground water points of compliance (POCs) at monitoring wells located at or near the established WMA boundaries.	Proposed revisions to the WMA boundaries require new POCs. If Smelter Hill and Opportunity Ponds WMAs are merged, it would negate the need for POCs at the toe of the Anaconda Ponds. A ground water/surface water management system being constructed at the toe of the Opportunity Ponds to passively treat ground water requires new POCs beyond the system. New POCs are also proposed for the expanded Old Works WMA.
<b>Railroad Beds and Ties</b>	The ROD required that waste and railroad ties associated with the abandoned line on Smelter Hill be removed and consolidated into a WMA. The ROD expected that other abandoned railroad waste would be identified in the future and also be removed and consolidated into a WMA.	Since the ROD, the West Valley railroad line has been abandoned. Similar to the Smelter Hill line, it has been determined that the waste and railroad ties associated with the West Valley line will be removed and consolidated into a WMA. Additionally, wastes associated with the remnants of abandoned railroads and/or spurs south of Highway 1 and within or adjacent to Anaconda are required to be removed and consolidated into a WMA.
<b>Yellow Ditch</b>	The ROD required implementation of an engineered soil cover over the Yellow Ditch.	EPA proposes that wastes within the Yellow Ditch will be removed and consolidated into a WMA.
<b>Revisions to the Soils Area of Concern Boundaries</b>	The ROD selected the Land Reclamation Evaluation System as the tool to determine the remedies for contaminated soil areas.	Since the ROD, LRES investigations have identified additional areas to the north (West Galen), east (Silver Bow Creek fluvial tailings), and west (West Anaconda). Soils in these areas will require cleanup.
<b>High Arsenic Area</b>	Although the ROD identified high arsenic soils (areas where the arsenic concentrations exceed 1,000 mg/kg), no remedies were proposed for well-vegetated areas that exceeded cleanup levels.	The Dutchman Creek and Smelter Hill High Arsenic Areas have been proposed at the site. The High Arsenic Area designation will require government or Atlantic Richfield land ownership, land use restrictions, and maintenance of the vegetative cover.