

Montana Natural Resource Damage Program Summary

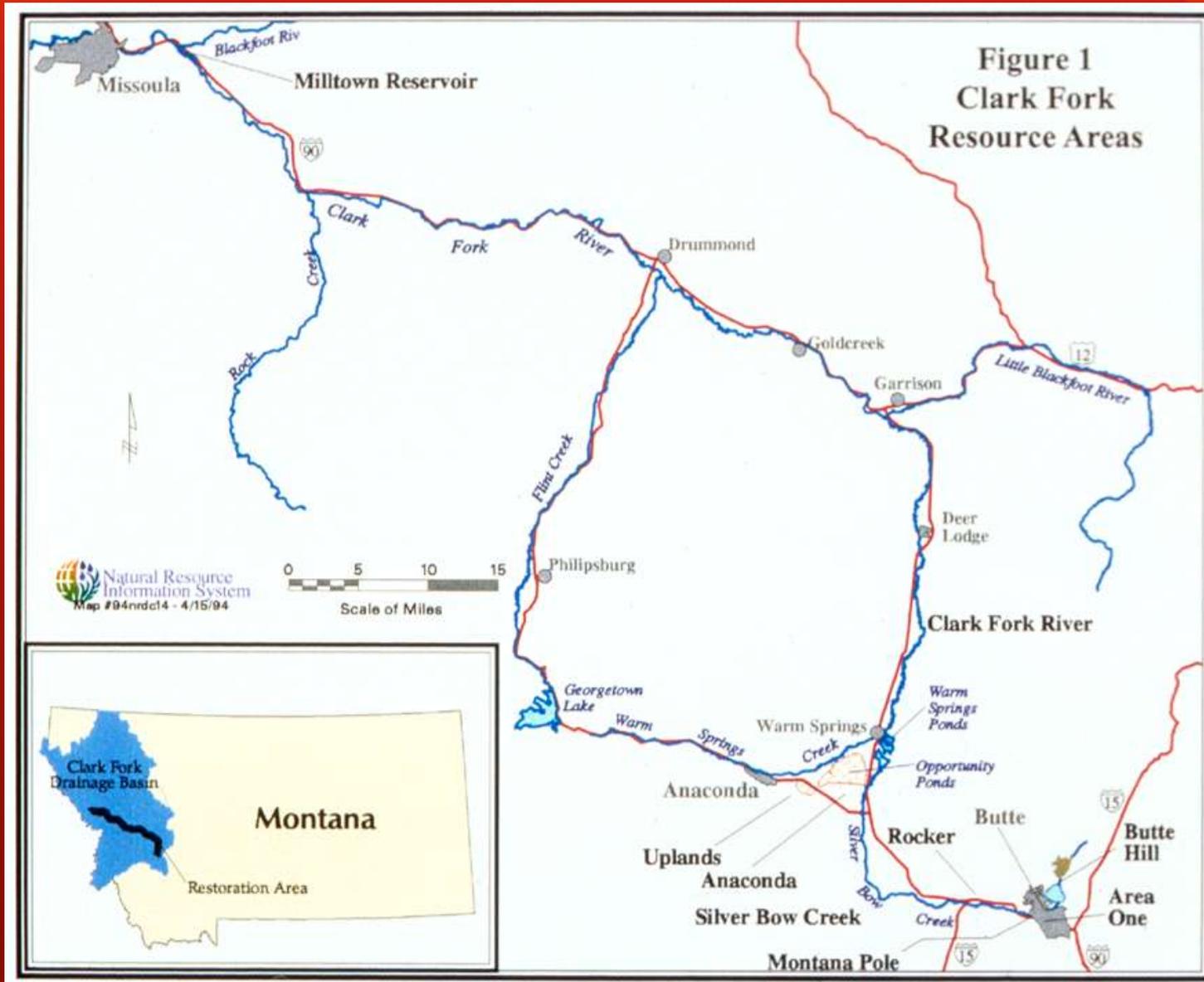
Prepared for
Butte-Silver Bow
Council of Commissioners
By Padraig Cunneen
October 15, 2014



Injuries to Natural Resources in Upper Clark Fork River Basin

- Groundwater Injury - Butte and Anaconda Area and Milltown (Near Missoula)
- Aquatic Injury – Silver Bow Creek and Clark Fork River
 - injury to water quality, fish, insects, and stream sediments
- Terrestrial Injury – Uplands, Silver Bow Creek, Clark Fork River, Opportunity Ponds
 - injury to soils, vegetation, and wildlife

Upper Clark Fork River Basin



Montana v. ARCO

Consent Decree 1999

Montana Received \$230 Million

- \$15 M for Assessment and Litigation costs
- \$127 M for damages
- \$2 M in real property along Silver Bow Creek
- Plus \$86 M for Silver Bow Creek Remedy
 - Total: \$230 Million
- Settled 6 of 9 natural resource claims
- Settled all compensable claims
- Did not settle restoration claims for 3 sites

10 Grant Cycles 2000 - 2010

- **73 Large Grants approved for \$120 Million**
 - Anaconda-Deer Lodge = 17 for \$23.7 M
 - Granite = 9 for \$1.2 M
 - Missoula = 10 for \$7.5 M
 - Powell = 14 for \$20.8 M
 - Butte-Silver Bow = 23 for \$66.3 M

Grant Projects in Silver Bow County

- 2001–10: Butte Water Lines = \$17.4 M
- 2001–10: Silver Bow Creek Greenway = \$23.6 M
- 2002–05: German Gulch Watershed = \$926 K
- 2003: Basin Creek Dam = \$503 K
- 2003–05: Duhamel Acquisition = \$1.67 M
- 2004: High Service Tank = \$1.19 M
- 2004–05: Big Butte Acquisition = \$688 K
- 2007–10: Big Hole Transmission Line = \$8.72 M
- 2007: Thompson Park = \$988 K
- 2008: Big Hole Dam = \$3.71 M
- 2008–10: Children's Fishing Pond = \$1.23 M
- 2010: Big Hole Pump Station = \$3.50 M

2012 UCFRB Restoration Plan

- **Groundwater = \$40 M**
 - Anaconda-Deer Lodge = \$10 M
 - Butte-Silver Bow = \$30 M
- **Aquatics = \$40 M**
 - Flow = \$20 M
 - Tributary Restoration = \$20 M
 - Blacktail Creek = \$957 K
 - Browns Gulch = \$773 K
 - German Gulch = \$429 K
 - Silver Bow Creek = \$250 K
- **Terrestrial = \$18 M**
- **Recreation = \$6.5 M**

Butte Groundwater Restoration Plans

- **2012 Master Plan for \$6 M:**

- Complete Big Hole Transmission Line

- **2013 Master Plan for \$24.1 M:**

- Basin Creek Water Treatment Plant = \$20 M
- Telemetry and Controls = \$467 K
- CO₂ Feed at Big Hole WTP = \$182 K
- VFD and Soft Starts at Big Hole WTP = \$275 K
- Basin Creek-Colorado Hill Pump Station = \$1.59 M
- Water Meters = \$1.59 M
- 6 Other Components if funds available = \$8.3 M

Montana v. ARCO

2008 Consent Decree

Montana Received \$72.5 Million in Oct. 2008

- \$4.5 M for Assessment and Litigation costs
- \$68.0 M for Natural Resource Damages
 - \$26.7 M for Clark Fork River
 - 13.3 M for Smelter Hill Uplands
 - **\$28.0 M for Butte Area One**
- Plus \$96.5 M for Clark Fork River Remedy
- **Total: \$169 Million**

Butte Area One

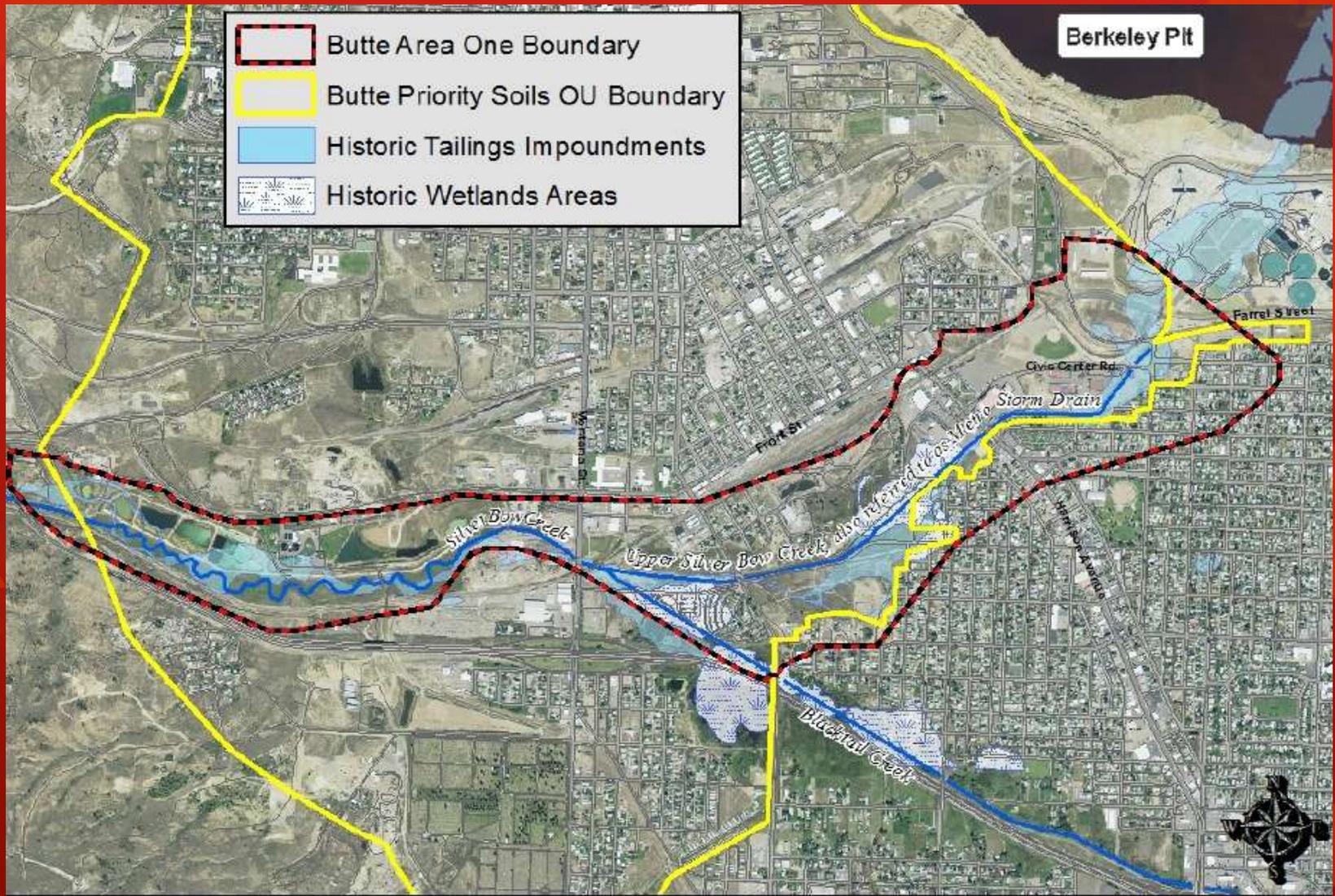


Figure 2. Butte Area One

0 0.25 0.5 1 Miles

BNRC

1903 USGS – “Weed” Map



Butte Area One in 1955



MDT aerial photo

BNRC Actions

- **Butte Area One Injury Investigations**
- **Developed BAO Process Plan**
 - **9 Legal Criteria – Superfund Law**
 - **8 Policy Criteria – BNRC Derived**
- **Developed BAO Restoration Plan with Public Participation:**
 - **50+ BNRC Public Meetings**
 - **Public Workshops and Media Blitz for Idea Solicitation**
 - **Received 100 completed suggestion forms**
- **BAO Restoration Plan Approved by Governor 1-3-13**

Butte Area One

BNRC Recommendation Summary

Project Category	Category Allocation Total (\$)
Upper SBC Corridor Restoration	10,000,000
Mine Cap Improvements/Reveg	6,000,000
Stream Restoration	4,000,000
Water System Improvements	10,000,000
Storm Water	0
Recreation	1,000,000
Small/Miscellaneous Projects	1,000,000
Total	32,000,000

Potential Removal Sites

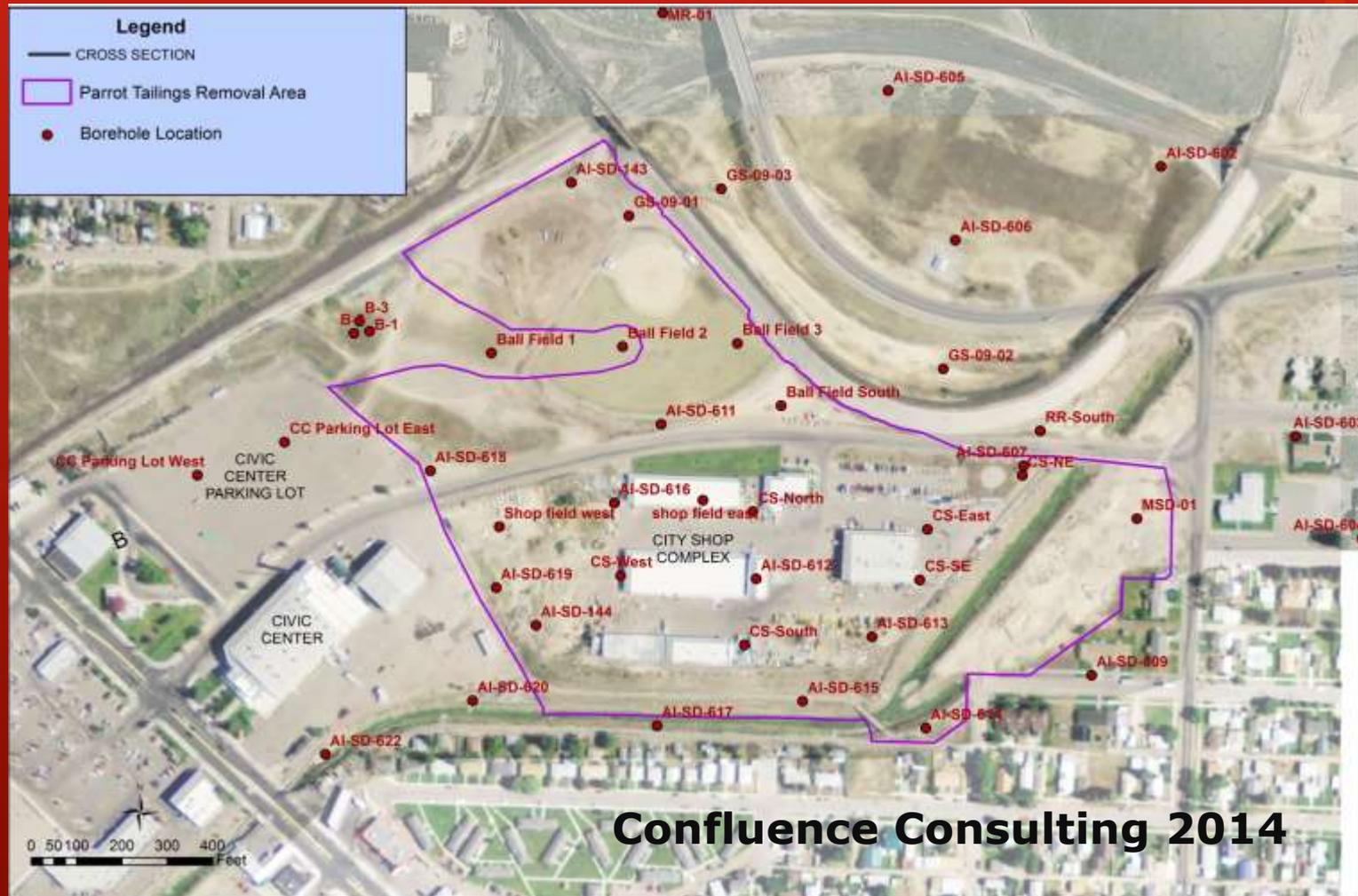


Parrot Smelter -- CIRCA 1906



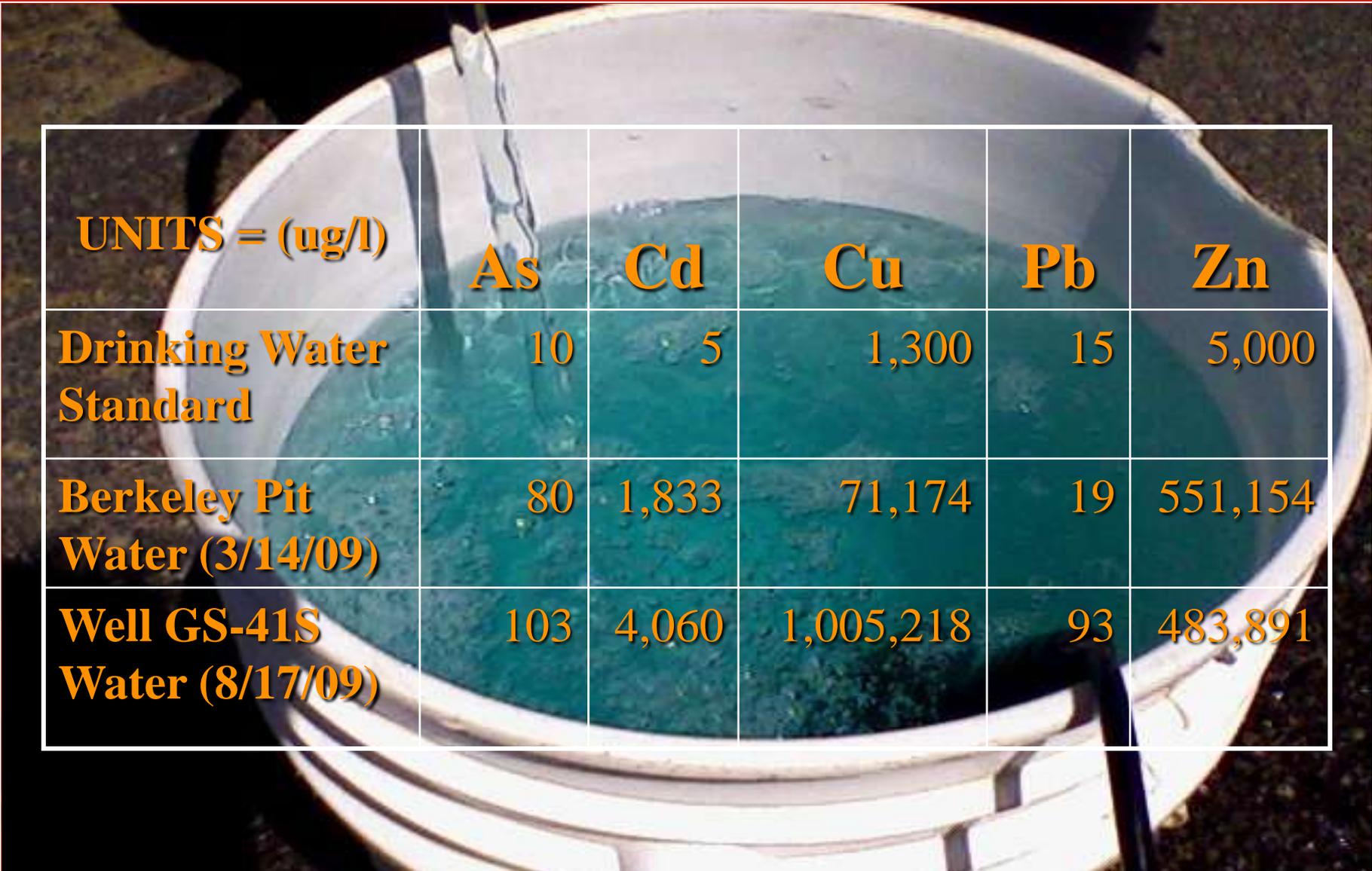
From Magone v. Anaconda Copper Co.

Parrot Sample Locations



Water Comparison

Drinking Water---Berkeley Pit---Parrot Tailings



UNITS = (ug/l)	As	Cd	Cu	Pb	Zn
Drinking Water Standard	10	5	1,300	15	5,000
Berkeley Pit Water (3/14/09)	80	1,833	71,174	19	551,154
Well GS-41S Water (8/17/09)	103	4,060	1,005,218	93	483,891

Diggings East and Northside Tailings



April 13, 2014
Photo by Walter Hinick
The Montana Standard

Diggings East/Northside Sample Locations

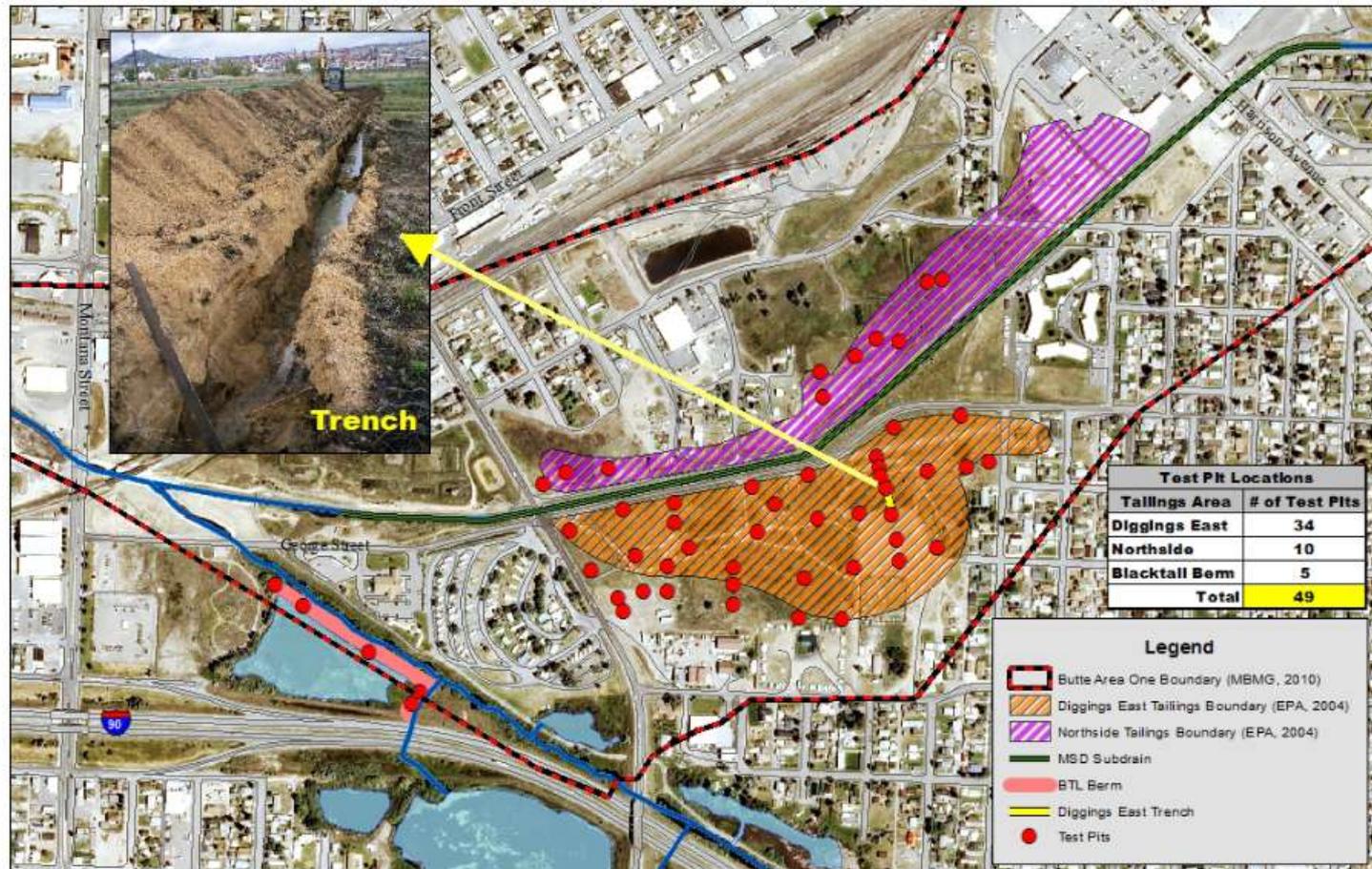
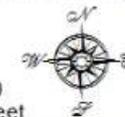


Figure 1. Diggings' East Tailings Delineation / Trenches and Test Pit Location

MBMG
Montana Bureau of Mines and Geology

Project: Diggings East Test Pit Locations
Aerial Imagery: 2011 NAIP, Silver Bow County
Projection: NAD 83 Montana State Plane Feet

0 250 500 1,000 1,500 2,000
Feet



Blacktail Berm – Sample Locations



Potential Excavation Areas

- Parrot Tailings – 33 acres
- Northside Tailings – 5.5 acres
- Diggings East – 24 acres
- Blacktail Berm – 1.2 acres

- **Total potential excavation area = 65 acres**

Estimated Removal Quantities/Cost

- Parrot Overburden = 675,000 cubic yards
- Parrot Tailings/Soil = 270,000 cubic yards
- Northside Tailings/Soil = 32,000 cubic yards
- Diggings East Landfill Material = 182,000 cubic yards
- Diggings East Tailings/Soil = 163,000 cubic yards
- Blacktail Berm = 35,000 cubic yards

- **Total off-site removals = 700,000 – 800,000 cy**
- **Or 26 to 30 “Finlens”**
- **Total Estimated Cost = \$30 M**

Metals Left-in-Place

- Mass of Copper = 15.3 Million pounds
- Mass of Zinc = 24.5 Million pounds
- How long will it take to clean it up if left?

MSD sub-drain collects contaminated alluvial groundwater and BTL treats @ 20 pounds of Copper per day

So: $15,300,000 / 20 = 765,000$ days = ?

- over **2,000 years = 40 generations**
- or perhaps just **1 PERPETUITY!**

per·pe·tu·i·ty

- (noun) the state of continuing forever or for a very long time
- A **perpetuity** is an annuity that has no end, or a stream of cash payments that continues forever. There are few actual perpetuities in existence (the UK government has issued them in the past; these are known and still trade as consols).

(from Merriam-Webster Online)

Upcoming BNRC Meetings

- Butte Area One Conceptual Restoration Plan on Thursday Oct. 23 at 6:00 PM at the LaQuinta Conference Room
- Small Projects Workshop on Tuesday Oct. 28 at 6:00 PM at the BSB Archives

Any Questions??

