Clark Fork River Operable Unit of the Milltown Reservoir Clark Fork River Superfund Site

For more information:

Joel Chavez, DEQ
Project Officer
jchavez@mt.gov
(406) 841-5031

Brian Bartkowiak, DEQ
Clark Fork River
Operations Manager
bbartkowiak@mt.gov
(406) 841-5043

Mary Ann Dunwell, DEQ
Public Information
mdunwell@mt.gov
(406) 841-5016

Tom Mostad, NRDP
Restoration Manager
tmostad2@mt.gov
(406) 444-0227

Kris Edwards, EPA
Remedial Project Manager
edwards.kristine@epa.gov
(406) 457-5021

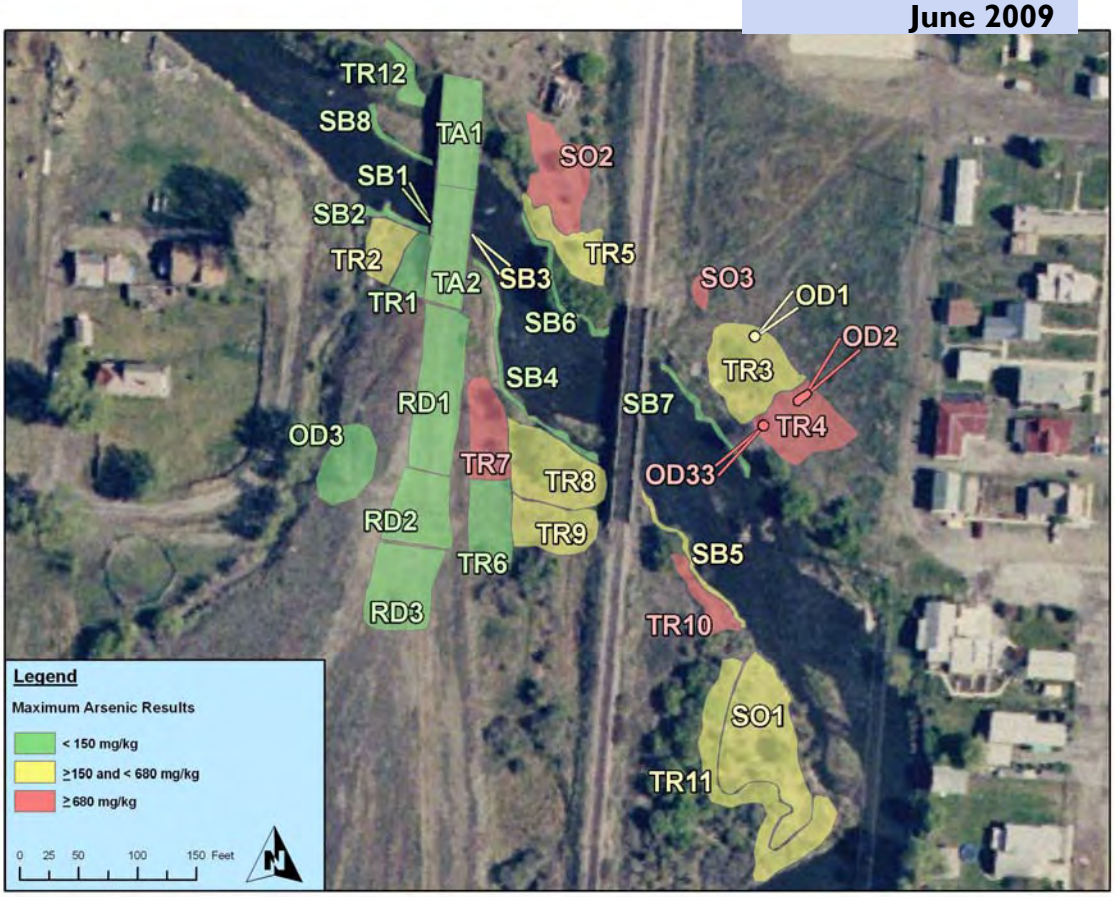
Darryl Barton, CFRTAC
darrylbbarton@yahoo.com
(406) 846-1929

Websites:
www.deq.mt.gov
www.doj.mt.gov
www.epa.gov
www.cfrtac.org

Montana DEQ Remediation Division
1100 N. Last Chance Gulch
P.O. Box 200901
Helena, MT 59620-0901

Trestle Area Soil Sampling Results

June 2009



Sample Location	Arsenic Results (mg/kg)				
	A Depth (0-2-in.)	B Depth (2-6 in.)	C Depth (6-12 in.)	D Depth (12-18 in.)	E Depth (18-24 in.)
OD1	679	327	175	77	
OD2	299	502	1020	661	
OD3 [a]	42	22	ND	5	ND
OD33 [a]	248	284	308	1000	1180
OD4	20	47	43	19	
OD5	148	453	167	10	
RD1	20	ND	ND	15	
RD2	21	9	ND	28	
RD3	26	13	7	21	
SB1 [b]	53	51	20	14	
SB2	108	111	111	102	
SB3 [b]	30	149	247	82	
SB4	53	72	85	78	
SB5	237	280	396	187	
SB6	55	41	63	55	
SB7	108	101	111	132	
SB8	54	42	48	43	

Sample Location	Arsenic Results (mg/kg)				
	A Depth (0-2-in.)	B Depth (2-6 in.)	C Depth (6-12 in.)	D Depth (12-18 in.)	E Depth (18-24 in.)
SO1	620	373	322	469	
SO2	Mine Waste Throughout, No Samples Collected				
SO3 [a]				941	12
TA1 [c]	18	17			
TA2 [c]	19	29			
TR1	34	46	125	68	
TR2	120	300	311	190	
TR3	246	193	460	358	
TR4	215	259	467	736	
TR5	239	259	350	643	
TR6	42	70	47	29	
TR7	272	849	1210	140	
TR8	356	324	198	218	
TR9	202	265	53	145	
TR10	280	344	398	1100	
TR11	141	187	185	281	
TR12	140	77	81	83	

[a] Different sampling levels than those shown in the table are:
OD3 - E (36 in.)
OD33 - A (0-3 in.), B (3-9 in.), C (9-10 in.), D (10-20 in.), E (20-24 in.)
SO3 - no samples taken from 0 - 18in.; D (18-26 in.), E (26-32 in.)

[b] SB1 & SB3 - sample locations under trestle

[c] TA1 & TA2 - Soil on top of trestle only 6 inches deep

ND - Not Detected
mg/kg - milligrams per kilogram

Map prepared by TerraGraphics Environmental Engineering, Inc. for Montana DEQ, June 1, 2009

TerraGraphics Environmental Engineering, Inc.

Trestle Area Soil Sampling Results

Soil Sampling at Deer Lodge Trestle, October 2008

During the week of October 20, 2008, the Montana Department of Environmental Quality (DEQ) conducted soil sampling and survey work in the Trestle Area of Deer Lodge, Montana. Objectives of the Trestle Area sampling consisted of: i) identifying areas of arsenic contamination above human health action levels on and around the trestle, ii) identifying slickens areas and estimating removal volumes for those areas identified for removal by a 2007 EPA study (Riparian Evaluation System, or RipES study), iii) characterizing and evaluating the stream banks within the Trestle Area for remedial action, iv) evaluating the structural stability of the trestle relative to adjacent removals, and v) collecting necessary data to determine and support a remedial design if a human health response action is required. The data will be interpreted to assess risk to human health within the context of expected land use and used to develop any proposed response action.

Eight soil samples (6%) collected from six different sample locations contained arsenic concentrations greater than the human health recreational exposure limit of 680 mg/kg (parts per million). An additional 47 soil samples (37%) contained arsenic concentrations ranging from 150 mg/kg to 679 mg/kg. The majority (57%) of the soil samples collected as part of the Trestle Area sampling effort contained arsenic concentrations below the human health residential exposure limit of 150 mg/kg. (Residential is noted due to adjacent homes).

Soil Sampling Pit Showing Visible Contamination at Depth

Excluding the trestle and road areas, grouping samples in relation to the inactive trestle and operational railroad showed that concentrations tended to be higher east of the inactive trestle than they were to the west. Arsenic concentrations for soil on the inactive trestle and on the road leading to the trestle were considerably lower than the concentrations reported for other sample locations. The highest arsenic concentrations were observed in the 6-12 inch interval of a trail area located between the inactive trestle and the operational railroad (TR7) and in the 20-24 inch interval of another discrete area east of the operational railroad (OD33).

Cross-Section River Surveying, October 2008

Two slickens areas were identified by the 2007 EPA study on the north bank of the Trestle Area. Based on square footage information obtained from the study data and depth information obtained from the October 2008 sampling, the total removal volume for both areas is estimated to be approximately 600 cubic yards.

Structural integrity of the two trestles was visually assessed and found to be adequate for current uses. Any remedial activities that occur at this site should be designed such that scour at the bridge pilings is not increased. Geomorphic (river) conditions in the project area were surveyed and recorded. Five areas of stream bank erosion were found, four of which are active, and one of which is severe. Topographic (surface features) survey information was collected throughout the Trestle Area, and cross-sections of the river were surveyed.

Although soil is relatively inert, site conditions and soil composition naturally change over time. Historically, mining and milling wastes contaminated with heavy metals were routinely disposed of in tributaries of the Clark Fork River and were subsequently distributed across the Clark Fork drainage by flood and high water events. Weather, as well as foot or vehicular traffic, can also transport contaminants. As identified in the Clark Fork River Record of Decision, metals have been dispersed over a large area and deposited throughout the Clark Fork River system. The Trestle Area is an underdeveloped area on the CFR and is surrounded by residential areas directly west, east, and north.

Find out more online at www.deq.mt.gov

Montana Department of Environmental Quality

Natural Resource Damage Program

United States Environmental Protection Agency

CFRTAC Clark Fork River Technical Assistance Committee