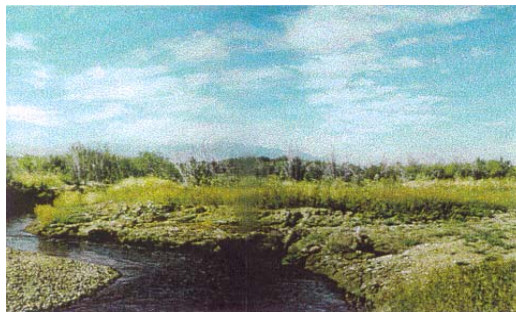




STREAM RESTORATION

As demonstrated in the following representative project descriptions, EMC² staff is experienced in the design and implementation of stream restorations. EMC² has worked on smaller streams and large rivers in response to environmental impacts from mining operations and industry.

Clark Fork River and Silver Bow Creek, Montana – EMC² staff has designed and implemented numerous stream restoration projects on the Clark Fork River and its tributaries between Butte and Missoula, Montana. The projects included in-situ liming/revegetation of floodplain mine wastes and stabilization of stream banks through tailing removal, installation of erosion fabric and willow sprigging. Ongoing monitoring of these projects since 1993 has shown a reduction in metals and sediment loading to the stream and establishment of a diverse, self-sustaining vegetation community.



Pre-Restoration



Post-Restoration

Hudson River PCB Superfund Site – EMC² staff provided general contracting services to cap 50 acres of PCB-impacted soils/sediments in four remnant deposits located along both banks of the Hudson River in upstate New York. A 460-foot-long temporary bridge was erected to access both sides of the river and minimize construction traffic through neighborhoods. Over 400,000 cubic yards of cover/waste materials were transported/regraded to promote drainage. Fifty acres of geosynthetic clay liner and a lateral sand drainage layer were placed over the four regraded remnant deposits to minimize infiltration. Over 4,000 linear feet of geotextile and riprap were placed for erosion control along the riverbanks of the remnant deposits. Over 2,000 linear feet of HDPE lined transfer channels were constructed to route storm water around and across the capped areas to the river. Three separate borrow areas were developed/reclaimed and over 200 acres were topsoiled and revegetated.

Pecos Mine, New Mexico – EMC² staff designed and provided construction oversight for the restoration of a tributary to the Pecos River, located in northern New Mexico, which was impacted by metals and sediment loading from historic lead/zinc mining operations. Restoration included temporarily diverting stream flow so that waste rock and metals-impacted soils could be removed from the floodplain. This was followed by reconstruction 1,000 feet of the stream channel, banks, and floodplain and revegetating the banks and floodplain with native species. Drop structures were installed to approximate natural step/pool conditions. Buried grade control structures were installed to provide long term channel stability, while maintaining a natural appearance.



Pre-Restoration



Post-Restoration

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