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Kansas City District

Big Eddy Archeological Site Stockton Lake Project Cedar County, Missouri

- Background Information
 - 3 acre site located on Sac River approximately 4 miles downstream of Stockton Power Plant
 - Almost one-third of the site has been lost to erosion
 - Generally accepted that power plant releases have contributed to the erosion
 - Site has received congressional interest from Congressman Blunt and Senator Bond
 - The Corps, Missouri State Preservation Office, and Advisory Council on Historic Preservation signed MOA outlining site mitigation procedures
 - Eligible for National Register of Historic Places



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Importance of Big Eddy Site

- Site contains a series of archeological layers, dating from about 500 to 12,000 years ago
- Archeological data includes stone tools, food remains, and evidence of tool making, hunting, and cooking
- Big Eddy is one of the most important prehistoric sites ever discovered in Missouri and potentially one of the most important sites ever discovered in mid-continent North America
- Site provides opportunity to investigate and answer questions regarding human technology and adaptational changes at the end of the last Ice Age



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Status of Work

- Field work at the site was completed in August 2005 and no further Corps sponsored excavations are planned for the project
- In 2006, Missouri State University is conducting analysis of the materials recovered from the site in 2005
- Reporting is scheduled for completion in September 2007
- Funding for the completion of the analysis and reporting is \$90K for FY06 and \$90K for FY07



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Monolith Leakage Repair Update

Harry S. Truman Project

Warsaw, Missouri

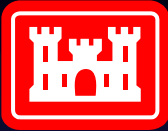
- Background Information
 - Monolith joint (MJ) leakage has been an ongoing problem since the late 1980's with the first waterstop failure occurring on upstream MJ 5/6
 - MJ 5/6 was repaired in 1998 by drilling a 6" diameter hole from the top of the roadway over the powerhouse and lining it with a rubber "sock" serving as the new water stop
 - A/E firm was hired in 2002 to investigate monolith leakage and provide recommended repair methods for upstream MJ's 6/7, 8/9, and 9/10.
 - A/E's investigation report indicated that the leakage rate from the MJ's would continue to increase and eventually exceed the gallery sump pumps' rated capacity resulting in powerhouse flooding
 - MJ 6/7 leakage was estimated at 100 gpm and MJ's 8/9 and 9/10 leakage were estimated at 300 gpm



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Monolith Joint 6/7 Repair

- MJ 6/7 repair was performed in August/September 2004 utilizing a 6" hole lined with high strength felt "sock" impregnated with reactive resin
- 6" dia. hole was drilled on MJ 6/7 from the top of the roadway to approx. 7 feet below the concrete structure (approx. 185 ft depth)
- Sock was filled with filler grout which provides fluid pressure, forcing the sock against the monoliths
- Initial performance of repair was excellent (leakage rate less than 1 gpm), however, the leakage the rate increased significantly (95 gpm) in Dec. 2004
- Contractor returned in Mar. 2005 and corrected the problem and the leakage rate was reduced to less than 1 gpm

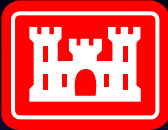


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Monolith Joints

8/9 and 9/10 Repairs

- Chemical grout injection into the MJ's was chosen as the most viable repair alternative due to configuration of MJ's
- Contract was awarded that included diving and chemical grout injection performed on the upstream face of the powerhouse and spillway
- Repair work was performed in February/March 2005 when the water temperature was colder so the chemical grout would fully penetrate into the MJ's and intercept the leakage points
- The repairs were successful, reducing MJ 8/9 leakage from 250 gpm to 20 gpm and MJ 9/10 leakage from 50 gpm to less than 5 gpm



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Monolith Joint Repair Performance

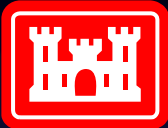
Monolith Joint	Maximum Leakage Rate Before Repairs (GPM)	Maximum Leakage Rate After Repairs (GPM)
<i>6/7</i>	100	1.25
<i>8/9</i>	250	52
<i>9/10</i>	50	<5



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Future MJ Investigations/Work

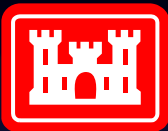
- Product Delivery Team (PDT) was established in FY05 to evaluate leakage from other MJ's (11/12 upstream and 5/6 downstream joints)
- PDT is responsible for investigating leakage from other MJ's and developing methods to control and/or mitigate the leakage
- No funding was provided for the PDT in FY06, however, funding has been requested in the FY07 and FY08 COE budgets



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Monolith Joint 8/9 and 9/10 Repair

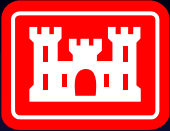




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Monolith Joint 8/9 and 9/10 Repair





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Questions?