

STATE OF CALIFORNIA
Spring Finance Letter - Cover Sheet
 DF-46 (REV 08/15)

Fiscal Year 2016-17	Business Unit 3960	Department Toxic Substances Control	Priority No. 6
Budget Request Name 3960-009-SFL-BR-2016-GB		Program 3960 CLEANUP 9900100 ADMINISTRATION 9900200 DISTRIBUTED ADMINISTRATION	Subprogram

Budget Request Description
 Argonaut Mine Tailings Site Dam Repair/Retrofit

Budget Request Summary

The Department of Toxic Substances Control requests a one-time augmentation of \$14.325 million from the General Fund to design and construct a remedial action to retrofit the Eastwood Multiple Arch Dam at the Argonaut Mine Tailings Site in Jackson, California. This action is intended to prevent the release of hazardous mine tailings from the site into the City of Jackson and Jackson Creek.

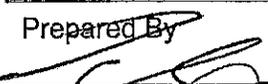
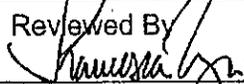
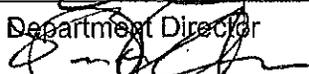
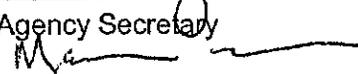
Requires Legislation <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Code Section(s) to be Added/Amended/Repealed
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Does this BCP contain information technology (IT) components? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If yes, departmental Chief Information Officer must sign.</i>	Department CIO	Date
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For IT requests, specify the date a Special Project Report (SPR) or Feasibility Study Report (FSR) was approved by the Department of Technology, or previously by the Department of Finance.

FSR SPR Project No. Date:

If proposal affects another department, does other department concur with proposal? Yes No
 Attach comments of affected department, signed and dated by the department director or designee.

Prepared By 	Date 2.5.16 2-5-16	Reviewed By 	Date 2-5-16
Department Director 	Date 2-5-16	Agency Secretary 	Date 2-8-16

Department of Finance Use Only

Additional Review: Capital Outlay ITCU FSCU OSAE CALSTARS Dept. of Technology

BCP Type: Policy Workload Budget per Government Code 13308.05

PPBA	Original Signed By: Ellen Moratti	Date submitted to the Legislature APR 04
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A. Budget Request Summary

The Department of Toxic Substances Control (DTSC) requests a one-time augmentation of \$14.325 million in Fiscal Year (FY) 2016-17 from the General Fund to complete the design and construct a response action to address the repair and retrofit of the Eastwood Multiple Arch Dam (Dam) at the Argonaut Mine Site in Jackson, California. The Dam currently sits at the base of a ravine above downtown Jackson and retains approximately 165,000 cubic yards of mine tailings. The United States Environmental Protection Agency (U.S. EPA) and United States Army Corps of Engineers (USACE) have conducted studies which conclude the Dam is unstable, and if it fails during periods of sustained rainfall, it could release a flow of mine tailings into downtown Jackson at depths of up to 15 feet. The preliminary cost estimate to repair/retrofit the Dam is \$14.0 million. An additional \$325,000 is required to complete the 100 percent design and ensure the Interim Storm Water Diversion System is operated until construction is completed.

B. Background/History

Federal laws enacted in the 1890s required mine operators to construct debris or tailings dams to protect the rivers, lakes, and farmland downstream from destruction by mining wastes. The Dam is the last of a three-dam series at the Argonaut Mine Tailings Site, located in a ravine situated just above downtown Jackson, California. It is a concrete dam constructed in 1916 for the purpose of retaining waste mine tailings from the Argonaut gold mine and releasing the waste water into Jackson Creek. The Dam was operated until about 1942 and is located on private property currently owned by a widow on a fixed income.

The Argonaut Mine Tailings Site three-dam system contains an estimated one million cubic yards of mining wastes including hazardous levels of metals, primarily arsenic. The Eastwood Dam retains an estimated 165,000 cubic yards of those tailings. The ravine behind the Dam is nearly full of waste mine tailings, consisting of a fine-grained sand and slime mixture containing hazardous concentrations of arsenic that does not consolidate. When the ravine fills with water, the tailings become saturated, and water eventually flows over the top of the dam.

Until recently, the Dam had not had regular inspections or maintenance in decades. In the early 1930s, the definition of a "regulated" dam was changed in statute, effectively removing all state and federal jurisdiction over this dam. It is considered a "non-jurisdictional" dam. Since the dam is unregulated by the State, regulatory authority resides with the County of Amador, which does not have the expertise or resources to regulate the dam. DTSC, under the Health and Safety Code, has authority to prevent the release of hazardous substances from the site, and therefore, is asserting this authority to take interim and long-term measures to prevent the release of arsenic-contaminated mine tailings into the City of Jackson and the Jackson Creek watershed, including public water supplies and Lake Amador.

In June 2015, under U.S. EPA contract, USACE finalized an Eastwood Multiple Arch Dam, Failure Study that assessed the stability of the dam and the impact of a failure. The study concluded the dam is structurally unstable, has a significant chance of failure with sustained rainfall, and that failure could cover portions of downtown Jackson and State Route 49 with up to 15 feet of arsenic-contaminated mine tailings. The failure

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would impair the Jackson Creek watershed and Lake Amador. The study also found that failure could cause damages and cleanup costs to exceed \$120 million and result in loss of life.

On July 14, 2015, the Region 9 US EPA Administrator, presented the Dam Failure Study findings and requested the State's support to fund the design and retrofit of the Dam. At that time, the US EPA had exhausted its budget conducting a site assessment and emergency response to remove contaminated mine tailings from the yards of neighboring residences and a junior high school.

CalEPA sought the assistance of the Boards, Departments, and Office (BDOs) with potential jurisdiction including the State Water Resources Control Board (SWRCB) and DTSC, as well as the Office of Emergency Services (OES), the Department of Water Resources (DWR), and the California Natural Resources Agency (Resources Agency). Because the change in the law defining a regulated mine, the Resources Agency and DWR do not have jurisdiction over the Dam. The Dam is considered "non-Jurisdictional" under the law. Except for DTSC, no other agency has the authority and capacity to manage these response actions.

Based on the conclusion of the Dam Failure Study and at the request of the US EPA, DTSC has taken the lead in designing and constructing the retrofit/repair of the Dam. In September 2015, DTSC requested \$1.5 million for two tasks related to the dam: 1) \$1 million to construct interim measures to reduce the risk of dam failure by diverting water around the dam; 2) \$500,000 to pay the USACE to initiate the design of a dam retrofit project to stabilize the dam. DTSC and the US EPA have concluded the property owner does not have the resources to conduct the repairs.

In November 2015, using the \$1 million construction funding, DTSC successfully completed the construction of the storm water interim measures and continues to work with local, state, and federal partners to monitor conditions at the dam.

To design the retrofit of the Dam, DTSC requested cost estimates from the USACE and AECOM, an international engineering firm that performs contracting work on dams and water projects throughout the state for DWR. AECOM's estimate was approximately 50 percent of the USACE cost estimate. In January 2016, DTSC utilized the \$500,000 available funding to contract with AECOM to perform as much work as possible with these funds. This work has already begun.

In January 2016, USACE completed a preliminary alternatives assessment and cost estimate for two options with a cost estimate just under the original \$14.0 million estimate. An updated cost estimate will be prepared when a preferred option is selected, at 50 percent design, and the final cost estimate will be prepared as part of the 95 percent design.

C. State Level Considerations

Health and Safety Code (H&SC) section 25355.5(b)(3) provides DTSC the authority spend money from the state account, upon appropriation from the Legislature for removal or remedial actions, if the Director determines that removal or remedial action at a site is necessary because there may be an imminent and substantial endangerment to the public health or welfare or to the environment. The waste mine tailings behind the Dam contain hazardous levels of toxic metals, primarily arsenic. DTSC issued an Imminent and Substantial Endangerment Determination for the Dam structure, providing

DTSC with the authority under the Health and Safety Code, to prevent the release of hazardous substances from the site. DTSC is asserting this authority to take interim and long-term removal and remedial measures to prevent the release of arsenic contaminated mine tailings into the City of Jackson and the Jackson Creek watershed including public water supplies and Lake Amador.

D. Justification

DTSC is requesting the following funding:

\$ 250,000 to complete the Design of the Retrofit

\$ 75,000 to extend the Operation of the Interim Stormwater Diversion System an additional year

\$14,000,000 to fund Construction and Construction Support of the Final Design.

\$14,325,000 Total Funding Request

The cost to design the retrofit of the dam is estimated at \$750,000. DTSC was funded \$500,000 in 2015 to initiate the design. An additional \$250,000 is required to complete the design of the retrofit.

The current contract to construct and operate the temporary Interim Stormwater Diversion System provides for 2 years of operation and maintenance. Increases in construction costs reduced the operations budget. DTSC is requesting \$75,000 to extend the operations and maintenance of the interim system an additional year.

The USACE, under contract with the US EPA has prepared a Phase II Technical Report evaluating two retrofit alternatives. The preliminary cost estimate was similar for both alternatives and was estimated at \$13 million. DTSC's original preliminary cost estimate was \$14 million. This cost estimate will be updated by AECOM again at the 50% design and at 95% design.

E. Outcomes and Accountability

DTSC would undertake the following actions to ensure proper outcomes and accountability:

Outcomes

- Provide relief to the City of Jackson from the potential for catastrophic failure of the dam and potential inundation of the City's downtown business district, State Highway 49, and Jackson Creek with arsenic containing mining wastes.
- Prevent potential for property damage, economic loss, and cleanup costs exceeding \$120.0 million resulting from a catastrophic failure.
- Prevent the potential for loss of life resulting from a catastrophic failure.
- Contain mine tailings on the owner's property.
- Ensure a permanent remedy for containing the mine tailings consistent with the likely long-term remedy for the entire site.

Accountability

DTSC will utilize the State's Cleanup Process in Chapter 6.8 of the Health and Safety Code to ensure compliance with the US EPA's National Contingency Plan. All decisions will be public and subject to public review and comment.

DTSC will comply with the California Environmental Quality Act (CEQA) during the selection of the remedy for the failing dam.

DTSC coordinates all activities with a multi-agency workgroup established to implement the Interim Stormwater Diversion System removal action, develop an Emergency Action Plan, monitor the site conditions, and design and construct the repair/retrofit of the Dam. Besides DTSC, the workgroup includes US EPA and their contractors, USACE, OES, NOAA, DWR, City of Jackson, and Jackson Valley Irrigation District.

Progress toward completion will be tracked in DTSC's EnviroStor database and will provide instant public access to uploaded documents.

E. Analysis of All Feasible Alternatives

DTSC considered the following alternatives:

Alternative 1: Approve this request for a one-time Dam design and retrofit augmentation

Pro:

- Results in pro-active solution to a potentially catastrophic man-made disaster with potential losses in excess of \$120.0 million, and potential for loss of life.
- Protects the City of Jackson, State Highways, and the Jackson Creek watershed in the shortest possible timeframe.
- Keeps the Dam Retrofit remedy on schedule for completion by 2018.
- DTSC currently has the jurisdictional authority and the contracting mechanisms to conduct the remedy in an effective and efficient manner.

Con:

- Requires State expenditure of state funds with no likelihood of Cost Recovery from the property owner.

Alternative 2: Maintain the Status Quo/Do Nothing/Operate Interim Remedy until the Retrofit is constructed by US EPA.

Pro:

- Returns the responsibility of the removal or remedial action to the US EPA.
- Does not require expenditures of state funds.
- Limits or relieves DTSC of responsibility to take a remedial action.

Con:

- Delays implementation of a permanent solution until the US EPA can list the site on the National Priority List, prioritize the project for federal funding, and finally fund and construct the project.
- Risk of catastrophic failure continues to threaten the City of Jackson, Highway 49, and the Jackson Creek Watershed until a permanent solution is constructed.
- DTSC would be required to continue funding the operations and maintenance of the Interim Stormwater Diversion System until the US EPA could fund and construct the Retrofit, which could take several years.
- DTSC would be required to redirect \$325,000 from other priority Orphan cleanup projects to complete the Design since DTSC has agreed to complete the Design and has only contracted up to the 50 percent design stage.
- Opens the Department to criticism after receiving widespread praise for our proactive stance in getting the Interim Stormwater Diversion System in place.
- Project would be required to compete for Site Remediation Account funding along with fund-lead NPL sites and other state orphan sites. Since the estimated cost exceeds the total appropriation, it would not be funded by DTSC at all.

F. Implementation Plan

January 2016 – August 2016

- Contract in place with AECOM to review the USACE technical reports, develop Basis of Design Report and 50% design documents.
- Contract with DWR for engineering technical support/oversight.
- Operate Interim Stormwater Diversion System.
 - Regular system inspections
 - Storm forecast monitoring for system operation
 - Structural inspections of Dam

August 2016 – December 2016

- Prepare Remedy Selection document for public review.
- Conduct CEQA Initial Study.
- Contractor to prepare 95 percent Design.
- Operate Interim Stormwater Diversion System.
 - Regular system inspections
 - Storm forecast monitoring for system operation
 - Structural inspections of Dam

January 2017 – May 2017

- Complete 100 percent Design.
- Develop bid package for construction.
- Screen and select construction contractor.
- Award construction contract.
- Operate Interim Stormwater Diversion System.
 - Regular system inspections
 - Storm forecast monitoring for system operation
 - Structural inspections of Dam

June 2017 – June 2018

- Construct Dam retrofit.
- Operate Interim Stormwater Diversion System.
 - Regular system inspections
 - Storm forecast monitoring for system operation
 - Structural Inspections of Dam

July 2018

- Operations and Maintenance of Dam.
- Remove Interim Stormwater Diversion System.

G. Supplemental Information

Attached is the US EPA's June 9, 2015 Executive Summary for the Dam Failure Study, a letter from the US EPA requesting DTSC take interim actions and pursue design and construction of a retrofit of the Dam, and a letter of support from the Jackson City Manager.

H. Recommendation

DTSC recommends Alternative 1: Approve a one-time augmentation of \$14,325 million from the General Fund to design and construct a remedial action to retrofit the Eastwood Multiple Arch Dam (DAM) at the Argonaut Mine Tailings Site in Jackson, California.

Amend Item 3960-001-0001 to add the following provision:

7. Of the amount appropriated in this item, \$14,325,000 is available to retrofit the Argonaut Mine Dam located in Jackson, California. The Director of Finance may increase or decrease this item of appropriation based on the final cost estimate and upon determination of the final award of contract. Within 30 days of making any adjustment, the Department of Finance shall report the adjustment in writing to the Joint Legislative Budget Committee.

ATTACHMENTS:

US EPA Dam Failure Study Executive Summary

October 2, 2015 Letter from US EPA

October 5, 2015 Letter from the City of Jackson



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne St.
San Francisco, CA 94105

EXECUTIVE SUMMARY

EASTWOOD MULTIPLE ARCH DAM

DAM FAILURE STUDY

June 9, 2015

The Eastwood Multiple Arch Dam (EMAD) is part of the Argonaut Mine Site ("Site") in Jackson, California. As part of the preliminary assessment of the Site, the U.S. Environmental Protection Agency (EPA) has obtained assistance from the U.S. Army Corps of Engineers (USACE) and EPA's Office of Research & Development (ORD) to assess the stability of the dam and the impact of a possible failure. USACE structural engineers have determined the dam is structurally weak and unstable. Modeling efforts by ORD indicated that, in the event of complete dam failure, a release of the saturated tailings in the slimes impoundment behind the dam could cover portions of downtown Jackson, State Route (SR) 49 and Jackson Creek in up to 15 feet of mud that contains high levels of arsenic. EPA has consulted with multiple State, local and federal agencies regarding this threat and while California State and local agencies may have authorities to take action, all have issues surrounding available resources. Because of the threat of a release of hazardous substances, EPA could choose to take removal or remedial action; however, EPA Region 9 does not currently have adequate funds authorized for this purpose. While continuing to work with EPA Headquarters to identify funding, Region 9 recognizes the need to work collaboratively with State and local partners as well as elected officials in exploring a cost-sharing approach to fund the dam retrofit design and construction. Based on previous retrofit projects for similar slender buttress dams, the cost estimate for the EMAD retrofit would range from \$6 million to \$8 million.

Background

The EMAD was built in 1916. It is 46 feet in height, 420 feet in length and has 13 inverted arches. The impoundment has been filled with arsenic-contaminated mine tailings as a result of sediment runoff from mine tailings piles located on 59.5 acres of private land within the limits of the City of Jackson. The dam is located near the corner of Sutter Street and Argonaut Drive. Jackson Junior High School is in close proximity to the dam and SR 49 in downtown Jackson is approximately 400 yards downstream from the dam. The total volume of tailings in the impoundment behind the dam is approximately 165,000 cubic yards or 247,500 tons. The estimated volume of freestanding water impounded behind the dam when it overtops is 2.8 acre-feet or nearly 1.0 million gallons. The estimated volume of water in the pore space of the impounded tailings under saturated conditions is 54.72 acre-feet or 17.8 million gallons. The tailing slimes behind the dam are currently saturated to 40 feet below ground surface. The City of Jackson has been designated by Amador County as the agency having primary jurisdiction for dam safety.

In February 2013, EPA and the California Department of Toxic Substances Control conducted a joint inspection of the dam. The dam was in a deteriorated condition. Leakage was observed in numerous cracks on the walls of the arches. Concrete reinforcement steel cable was exposed and corroded, and broken concrete pieces from the cross support beam had fallen to the ground. The State of California Division of Safety of Dams determined that it does not have jurisdiction over EMAD, because the area behind the dam is filled with sediment and had less than 15 acre-feet of water storage capacity.

The City of Jackson was not aware of the hazard posed by the EMAD and the dam was not listed in its local Hazard Mitigation Plan (HMP). Since the City of Jackson and County of Amador are small jurisdictions that lack sufficient financial resources to perform the hazard assessment, EPA commissioned the USACE in May 2013 to perform the hazard assessment and a dam stability evaluation. This dam stability evaluation has been completed. USACE has determined that the dam is unstable. USACE identified conditions that could cause the dam to collapse, including earthquakes, pressure from the water and tailings behind the dam, or a combination of both. Preliminary calculations indicate that such a dam failure could impact downstream human and environmental resources and, most importantly, result in the loss of life. Therefore, further hazard impact studies were recommended by USACE.

EPA engaged its Superfund Technical Assessment and Response Team (START) contractor to assist in further assessments. In August 2014, EPA, START and USACE conducted a geotechnical investigation to collect data and evaluate the potential for material flow downstream in case of dam failure. This involved evaluating the current condition of materials (tailings and water) behind the concrete arch dam. The data collection event acquired data that clarified the potential for liquefaction of soils, soil stability, slide potential, and downstream mud and water flow, if the concrete arch dam fails. The results of the geotechnical investigation indicated the tailings behind the dam were liquefiable and could travel a great distance if the dam failed. Additionally, the USACE was concerned about the middle earthen tailings dam and the impoundment which contains an estimated 345,000 cubic yards of tailings that are also liquefiable. The concern is that if the lower concrete tailings dam were to fail and a large mass of tailings were released up to the base of the middle tailings dam, it could cause that earthen dam to become unstable and fail. This could more than triple the total volume of tailings released downstream during a wet season scenario.

In order to define the extent of the mudflow as a result of a potential failure of the EMAD as well as the financial impacts to the local community if such a failure occurred, EPA Region 9 requested that ORD perform the modeling and technical analysis needed to quantify the damage probabilities and likely costs in the event of dam failure and any subsequent downstream flooding and mudflows in Jackson. The ORD's contractors, RTI and CDM Smith, performed the preliminary mudflow modeling in March 2015. The preliminary modeling results indicated that if the dam failed there could be significant damage to the City's infrastructure, economy and the California highway system in the City of Jackson, specifically SR 49. The depth of mud could be as great as 15 feet on SR 49 at the True Value Hardware Store near the intersection of Sutter Street and SR 49. Modeling demonstrated that emergency services, such as the Jackson Fire Department, could be inundated, further interfering with response efforts. Further, the mud behind the dam is contaminated with high levels of arsenic and could meet the criteria for

classification as a hazardous waste. Specifically, analysis of a tailings sample failed California's Soluble Threshold Limit Concentration (STLC) for arsenic.

Summary

The final Dam Failure Study is comprised of three (3) reports including the USACE Phase I Dam Stability Evaluation, USACE Geotechnical Investigation, and the EPA ORD Flow Modeling & Damage Estimates Analysis. The Dam Failure Study used the FLO-2D model to simulate dam failure and create downstream mudflow inundation maps for three scenarios, followed by the use of the Federal Emergency Management Agency HAZUS model to estimate potential losses within each inundation map. The three scenarios represent dry, average and wet season conditions of dam failure.

The results of the USACE Phase I Dam Stability Evaluation indicated the EMAD is structurally unstable. The results of the USACE Geotechnical Investigation indicated the sediment in the impoundment is liquefiable and could flow a great distance if the dam failed. The results of the EPA ORD Flow Modeling & Damage Estimates Analysis indicated there could be extensive damage to property, infrastructure, highway system, local economy and emergency services in the event of dam failure in all three modeling scenarios. In a wet season scenario, it was estimated the damages and losses could be as high as \$100 million.

Recommendations

EPA believes there is a significant, potential risk to the citizens of Jackson. As a result, EPA and the USACE believe there is a need to proceed promptly with the design and implementation of a dam retrofit that would prevent an unimpeded flow of contaminated mud. The estimated costs for a dam retrofit range from \$6 million to \$8 million, including the cost of design work. EPA has funded the USACE to begin a dam retrofit alternative design study, which will provide several retrofit design options and cost estimates. The final dam retrofit alternative design study report is due in November 2015. According to USACE, if the retrofit project was elevated by the stakeholders to a high priority and the necessary funding was in place by August 2015, the final design could be completed in February 2016, and the construction could begin in August 2016 and complete in June 2017.

In the interim, EPA has funded the USACE to develop and implement a dam safety monitoring and inspection plan. Survey markers will be set up on the dam to monitor movement within 1/100 foot. USACE structural engineers will conduct periodic inspections of the dam and will inspect the dam during significant rainfall events as tasked by EPA. However, this monitoring and inspection effort is not an early warning system of imminent failure of the dam and, as a result, is unlikely to avert loss of life or property damage in the event of dam failure. EPA is aware that it will be difficult for local responders to warn, evacuate and shelter people if the dam suddenly fails, due to its close proximity to downtown Jackson. The mudflow could hamper emergency and medical services.

EPA Region 9 recommends collaboration between State, local and federal agencies and elected officials in exploring a cost-sharing approach to fund the dam retrofit design and construction.

Attachments:

- (1) Argonaut Dam Stability & Retrofit Alternative Investigation, Jackson, CA – Phase I Technical Report, U.S. Army Corps of Engineers, January 6, 2015
- (2) Argonaut Mine Tailings Storage Site, Earth Tailings Dam and Concrete Multi-Arch Dam (Argonaut Dam), Jackson, CA, Geotechnical Report, U.S. Army Corps of Engineers, February 2015
- (3) Flow Modeling & Damage Estimates for Argonaut Mine Dam Failure Study, prepared by RTI and CDM Smith for EPA's Office of Research & Development, June 2015



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne St.
San Francisco, CA 94105

October 2, 2015

Barbara A. Lee, Director
California Department of Toxic Substance Control
1001 "T" Street
Sacramento, CA 95814-2828

Re: Argonaut Mine Site – Eastwood Multiple Arch Dam – Confirming US EPA's Support
For Urgent Interim Actions by California Department of Toxic Substance Control

Dear Ms. Lee:

As we have discussed, the U.S. Environmental Protection Agency (USEPA), along with the State of California and local agencies, share a common concern regarding environmental conditions at the Argonaut Mine Site (Site) in the City of Jackson, Amador County, California, including the threat posed by the instability of the Eastwood Multiple Arch Dam (EMAD). The purpose of this letter is to confirm that USEPA has requested that the Department of Toxic Substance Control (DTSC) take interim actions, on an urgent basis, to reduce the risks to the downstream community and to simultaneously pursue design and construction of a retrofit to restore the structural stability of the dam.

As is documented in USEPA's Executive Summary dated June 9, 2015 (attached), the EMAD is part of the Argonaut Mine Site. The EMAD was built in 1916 and is 46 feet in height, 420 feet in length and has 13 inverted arches. The impoundment behind the dam has been filled with arsenic-contaminated mine tailings as a result of sediment runoff from mine tailings piles located on 59.5 acres of private land within the limits of the City of Jackson. In addition to its preliminary assessment of the Site, USEPA has performed removal actions at the Site to contain immediate contaminant exposures to residents. In connection with our preliminary assessment of the Site, USEPA has assessed the stability of the EMAD.

Letter to Barbara A. Lee, Director, DTSC
Argonaut EMAD Interim Actions & Urgency
Page 2

Specifically, USEPA has obtained assistance from the U.S. Army Corps of Engineers (USACE) and USEPA's Office of Research & Development (ORD) to assess the stability of the dam and the impact of a possible EMAD failure. USACE structural engineers have determined the dam is structurally weak and unstable. Modeling efforts by ORD indicated that, in the event of complete dam failure, a release of the saturated tailings behind the dam could cover portions of downtown Jackson, State Route (SR) 49 and Jackson Creek in up to 15 feet of mud, containing high levels of arsenic.

At USEPA's request, DTSC has agreed to immediately seek appropriate funding, obtain necessary access, and begin work on interim actions to reduce the risk of dam failure, prior to completion of an appropriate retrofit that will restore the dam's structural integrity. As you know, a key element of the interim actions is to promptly improve storm water management, to avoid any additional pressure on the dam that could result from the precipitation expected this fall. USEPA intends to work in partnership with DTSC and other California agencies on the urgent interim and long-term response actions needed to address the threat posed by the Site and the EMAD.

Attached please find copies of the studies that support the urgent need for your assistance.

If you have any questions or require further assistance, please contact Dan Shane, On-Scene Coordinator, at (415) 972-3037.

Sincerely,



Enrique Manzanilla, Director
Superfund Division

Attachments:

1. Executive Summary, Eastwood Multiple Arch Dam Failure Study, June 9, 2015.
2. Argonaut Dam Stability & Retrofit Alternative Investigation, Jackson, CA – Phase I Technical Report, U.S. Army Corps of Engineers, January 6, 2015, http://www.epaosc.org/sites/8780/files/FINAL_AD_STAB_EVAL_AND_RETRO_0603_15_QC_USACE.pdf
3. Argonaut Mine Tailings Storage Site, Earth Tailings Dam and Concrete Multi-Arch Dam (Argonaut Dam), Jackson, CA, Geotechnical Report, U.S. Army Corps of Engineers,

February 2015

[http://www.epaossc.org/sites/8780/files/FINAL%20GEOTECHNICAL%20REPORT_FE
B2015_USACE.pdf](http://www.epaossc.org/sites/8780/files/FINAL%20GEOTECHNICAL%20REPORT_FE%20B2015_USACE.pdf)

4. Flow Modeling & Damage Estimates for Argonaut Mine Dam Failure Study, prepared by RTI and CDM Smith for EPA's Office of Research & Development, June 2015
<http://www.epaossc.org/sites/8780/files/Flow%20Modeling%20and%20Damage%20Estimates%20for%20the%20Argonaut%20Mine%20Dam%20Failure%20Study.pdf>



"Preserving Our Past, Enriching Our Present, Building Our Future"

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E-mail: info@ci.jackson.ca.us • Web site: <http://ci.jackson.ca.us>

October 5, 2015

Barbara A. Lee, Director
California Department of Toxic Substances Control
1001 "I" Street
Sacramento, CA 95814-2828

Re: Argonaut Mine Site – Eastwood Multiple Arch Dam – Confirming City of Jackson's
Support for Urgent Interim Actions by California Dept. of Toxic Substances Control

Dear Ms. Lee,

The purpose of this letter is to include the City of Jackson as a supporter of DTSC's interim measures proposed at the former Argonaut Mine property within the City of Jackson. The Eastwood Multiple Arch Dam is a 99 year old structure that is in danger of collapse, which would cause significant health and safety issues within the City of Jackson. It is important that these issues be addressed as soon as possible, particularly with an El Nifio weather pattern that could create additional stress on this structure.

The City understands it is critical for DTSC to have immediate access to the property to implement the interim measures necessary to help protect the dam from failing and the significant damage that could occur below the dam should it fail (see the Army Corps of Engineers Report, dated January 6, 2015, http://www.epaosc.org/sites/8780/files/FINAL_AD_STAB_EVAL_AND_RETRO_060315_QC_USACE.pdf). The U.S. Environmental Protection Agency has invested significant money over the past two years improving the safety in our community by accessing this property, and the continued government agency access is key to the protection measures proposed.

Please let me know if you need any additional information.

Sincerely,

Michael Daly
City Manager

BCP Fiscal Detail Sheet

BCP Title: Argonaut Mine Tailings Site Dam Repair/Retrofit

DP Name: 3960-009-BCP-DP-2016-A1

Budget Request Summary

FY16

CY	BY	BY+1	BY+2	BY+3	BY+4
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Operating Expenses and Equipment	0	14,325	0	0	0
5340 - Consulting and Professional Services - External	0	14,325	0	0	0
Total Operating Expenses and Equipment	\$0	\$14,325	\$0	\$0	\$0
Total Budget Request	\$0	\$14,325	\$0	\$0	\$0

Fund Summary

Fund Source - State Operations	0	14,325	0	0	0
0001 - General Fund	0	14,325	0	0	0
Total State Operations Expenditures	\$0	\$14,325	\$0	\$0	\$0
Total All Funds	\$0	\$14,325	\$0	\$0	\$0

Program Summary

Program Funding	0	14,325	0	0	0
3620011 - Other Site Mitigation Activities	0	14,325	0	0	0
Total All Programs	\$0	\$14,325	\$0	\$0	\$0