From:	Joey Pace
То:	Dhont, Jeffrey
Cc:	Karin Harker; John Peterson
Subject:	ADEQ Approved Proposal for Smokestack/Fencing portion of Humboldt Smelter Project
Date:	Sunday, November 21, 2021 12:31:11 PM
Attachments:	FY22 Tetra Tech Humboldt Smelter Proposal and Costs TO1.pdf
	Draft Humboldt Stack Fence Demo Layout.pdf

Hi Jeff: Attached please find the proposal that was routed for Purchase Order approval on Friday. I have also included a draft map I have been working on with my GIS Staff. This map (or some version of) would be included with the December 7 presentation. Please feel free to provide comments on the map, as we will be finalizing the presentation this week.

Thank you!

Joey Pace, PMP Project Manager/Hydrogeologist Ph: 602-771-4818



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November 17, 2021

Ms. Joey Pace Project Manager, Federal Projects Unit Waste Programs Division Arizona Department of Environmental Quality 1110 West Washington Street Phoenix, Arizona 85007

Via email:

Subject: Proposal for Humboldt Smelter Demolition and Fencing Options

Dear Ms. Pace:

Tetra Tech, Inc. (Tetra Tech) is submitting this proposal at the request of the Arizona Department of Environmental Quality (ADEQ) for the demolition of the Humboldt Smelter and to provide costs for various fencing options as provided by ADEQ.

This proposal presents a scope of work and budgetary cost estimate to perform the activities described herein.

PROJECT UNDERSTANDING

Tetra Tech performed a follow-up site visit on October 8, 2021 with a demolition contractor to further assess the Humboldt Smelter and view potential alignment routes to fence the property per the provided options. The Humboldt Smelter was a lead smelter for the Iron King Mine in Dewey, Arizona originally constructed in 1906. The building consists of a partially collapsed approximately 140' long converter flue on a concrete pedestal base and an approximately 160' tall smelter stack to the south.

From years of neglect and environmental exposure, smelter and converter flue have undergone severe deterioration. The concrete base has exposed steel reinforcing throughout. Some of the concrete columns have completely deteriorated, with only the steel reinforcing remaining. Large sections of brick have fallen away and left significant voids in the walls of the converter flue. Recently, in July of 2021, a significant portion of the middle of the converter flue collapsed during a monsoon. The smelter stack structure has significant cracks throughout. They appear as both vertical and horizontal cracks. A large portion of the stack has fallen away at the top on the west side. Due to the level of deterioration, total or partial collapse of the structure is eminent. Since the brick is unreinforced, it is very brittle which increases the chance for a larger collapse. The smelter tower is particularly susceptible to collapse due to its height and exposure to wind forces.

Since the structure is deemed collapse eminent, ADEQ has requested costs for demolition and potential fencing alignments provided by ADEQ.

SCOPE OF WORK

The proposed scope of work for this project is divided into three following primary tasks, and the sections below describe the specific activities to be performed under each task.

Task 1 – Demolition Work Plan and Coordination

Task 2 – Humboldt Smelter Demolition

Task 3 – Demolition Summary Report

Task 4 – Site Fencing Options

Task 1 – Demolition Work Plan and Coordination

This task consists of the following activities, which will be performed by Tetra Tech.

- Preparation of a Site Health & Safety Plan (HASP) to cover Tetra Tech's activities on the project and review of the subcontractors HASP for the project.
- Preparation of a Work Plan to cover the execution of the Smelter Demolition activities in conjunction with the subcontractor.
- Tetra Tech will also execute agreements with subcontractors and coordinate the project schedule.
- A 1-hour call will be conducted with ADEQ to review the demolition approach and safety measures being implemented.
- Tetra Tech will provide ADEQ support regarding cultural resources related to the area as needed.

Task 2 – Humboldt Smelter Demolition

This task consists of the following activities, which will be performed by Tetra Tech and its subcontractors, to demolish the smelter stack and converter flue.

- Mobilize equipment and personnel to the Site for the activities to be performed under this task, including Tetra Tech staff and our subcontractor, Environmental Response Inc. (ERI).
- Develop site access and clear vegetation from work areas and temporary access roads and routes, as necessary. A path approximately 100 feet long from the existing clean roadway, to the smelter, and Cat 5130 excavator working pad will be plated with 300 tons of Select A material to reduce potential for airborne exposure to constituents of concern. Import material will be left in place after construction activities are completed. Care will be taken to minimize impact to the Posi-Shell cover in the area surrounding the smelter.
- Utilize a Cat 5130 High Reach Excavator to manually demolish the smelter stack. The excavator would sit approximately 83 feet away from the stack within Zone 3 of the provided danger zones with a catch fence installed in front of the excavator for added safety from debris (See Attached Figures). The excavator cab sits approximately 15 feet above the ground and is equipped with intrusion bars. Bricks would be pushed away from the machinery as the stack is dismantled. A Cat 385 Excavator with a hydraulic driven water fan attached to a 4,000-gallon water truck will be utilized for dust control. The hydraulic water fan has a maximum flow of 200 gallons per minute and a throw distance of 300 feet. The flow would be adjusted based on the site conditions. The remaining attached converter flue will be demolished in place from top to bottom.

- Provide noise a vibration monitoring with full time oversight at 3 locations on-site utilizing a UM10156 Geophone and A weight sound monitor for a total of 5 days at 12 hours per day.
- All demolition debris will remain in-place and the concrete base will not be demolished.
- Full time security will be provided for the duration of the project due to safety concerns and project visibility.
- Tetra Tech will provide full time oversight during demolition and partial oversight during mobilization and demobilization of equipment.
- A time lapse video will be conducted during demolition of the smelter and provided to ADEQ at the end of the project.

Task 3 – Stack Demolition and Fencing Completion Report: Former Humboldt Smelter

This task consists of the following activities, which will be performed by Tetra Tech.

- Document the completed actions in a Stack Demolition and Fencing Completion Report, which includes a description of activities, photographs, and other data generated during demolition.
- A draft copy of the report will be provided to ADEQ for review and comment and the report will be completed by addressing agency comments and submitting a final report.

Task 4 – Site Fencing Options

This task consists of the following activities performed by a subcontractor with full time oversight provided by Tetra Tech. The fencing alignment will be surveyed in prior to installation.

Installation of 2700 linear feet of 6' high chain link fencing with 3 strands of barbed wire.

- Install 2 3/8" corner posts and 1 1/5" line posts on 13' centers.
- Install 6' high chain link fabric with a bottom wire and top rail.
- Install 3 strands of barbed wire on top.
- Fencing would be tied into existing fence ling northwest and east of the property.

Two sets of double 6' high, 8' wide chain link swing gates with 1' of barbed wire on steel posts to accommodate entry and exit of equipment would be installed along with the fencing at two separate locations near the centroid of the property.

Repair of up to 300 Linear Feet of existing 48" wire mesh fencing with 3 strand barbed wire.

- Provide and install 7"/8" x 8' wood posts on 50' centers and at corners. Corners will be braced per US Department of Agriculture standards. All posts will be installed utilizing a 12" auger and backfilled with existing soils.
- Provide 2" x 4" x 48" wire mesh.
- Install 7' high T-posts on 10' centers between the wood posts.

ASSUMPTIONS

Tetra Tech has developed this scope of work based on the following assumptions:

- Necessary access agreements, or authorizations, will be in place for the subject work and will be provided by the ADEQ.
- Physical Site access is assumed to be clear, and the schedule assumes no delays due to Site access restrictions or weather events.
- Demolition activities will require 1 week to mobilize, 3 days to perform demolition of the smelter and flue, and 1 week to demobilize.

- Field oversight provided by Tetra Tech is included in this estimate assumes check in 3 times during mobilization and demobilization respectively (6 hours per check in), full time oversight during demolition, with a full time Health and Safety officer during the 3 days of active demolition (12-hour days, 2 employees).
- This estimate does not include repair of Posi-Shell material disturbed due to demolition activities.
- Water source for dust control and associated demolition permits will be obtained by the subcontractor.
- Full time oversight will be performed during the installation of fencing, based on 5 weeks at 10 hours per day, 5 days per week. This assumes no overlap in oversight with demolition activities.
- A contingency line item has been added to the fencing options of up to 400 additional linear feet pf 6' chain link as cited in the proposal in the event ADEQ desires to install the northeast to southeast run.
- All deliverables provided by Tetra Tech to ADEQ will be in electronic format (i.e., PDF, MS Word, Excel, or other digital format), unless otherwise directed.

BUDGET REQUEST AND SCHEDULE

The total budget request for the tasks described above is **\$664,525**; and the task budget details are summarized in the attached price proposal. This work will be performed on a Time and Materials (T&M) basis under the existing **Arizona Superfund Response Action Contract (ASRAC) between Tetra Tech and ADEQ – No. CTR045160**. As per the terms and conditions of this contract, the work described herein will not exceed the authorized budget without prior authorization from ADEQ.

Tetra Tech is prepared to begin work immediately upon receipt of a signed Task Order for the project. We anticipate completing this assignment within 12 weeks of project award subject to contractor availability.

Tetra Tech will communicate regularly with ADEQ to provide status updates and will prepare monthly progress reports in accordance with established processes under the ASRAC contract.

Tetra Tech is pleased to have the opportunity to serve the ADEQ on this project. Our project team is ready to commence work upon approval from ADEQ.

Sincerely, Tetra Tech, Inc.

Jeula Denneth

Mekaela Bennett, EIT Project Manager

T Project Cost Summary

Humboldt Smelter Demolition

ADEQ

Attention: Joey Pace

17-Nov-21

Phases / Tasks		Project Total 651 hrs \$ 664,525.35		Task 1 - Demolition Workplan and Coordination		Task 2 - Humboldt Smelter Demolition		Task 2.1 Noise and Vibration Monitoring		Task 3 - Stack Demolition and Fencing Completion Report -		Task 4 - Site Fencing Options		Task 4.1 Fencing Alignment	
Tetra Tech Labor	Hrly Rate	Tot Est. Hrs To	otal Est. Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost
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Support Level III	\$80.00	10.0 \$	800.00	8.0	\$ 640.00	- \$	-	-	\$ -	2.0	\$ 160.00	-	\$-	- :	; –
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Subtotal Other Direct Costs		\$	7,957.00	L	\$-	\$	2,510.00	L	\$ 982.50		\$-	L	\$ 4,464.50	:	; -
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Project/TaskTotal		\$	664,525.35		\$ 15,070.00	\$	370,356.95		\$ 15,064.75		\$ 4,605.00		\$ 252,603.65	1	6,825.00
PROJECT Total		\$	664,525.35	L				L		. L		L		_	







Humboldt Smokestack



Legend:

Humboldt Smelter Smokestack
Current Fencing
Proposed Fencing
83' Excavator Work Zone
Proposed Noise Monitoring
Proposed Ground Monitoring
Proposed Gate Location
Work Zone Authorized Personnel Only
Converter Flue Structure
LaydownYard
*Note: All proposed locations are subject

*Note: All proposed locations are subject to field adjustment.

