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Header @ 1

List View

General Information | Contact | Default Values | Discount | Document Information | Clarification Request

Procurement Folder: 1014786

SO Doc Code: CE01

Procurement Type: Central Purchase Order

SO Dept: 0313

Vendor ID: 000000232671

SO Doc ID: DEP2200000009

Legal Name: TETRA TECH INC

Published Date: 4/13/22

Alias/DBA:

Close Date: 4/14/22

Total Bid: \$0.00

Close Time: 13:30

Response Date: 04/13/2022

Status: Closed

Response Time: 8:27

Solicitation Description: AML- Blue Knob Complex/EOI

Responded By User ID: katie.pugh

Total of Header Attachments: 1

First Name: Katie

Total of All Attachments: 1

Last Name: Pugh

Email: katie.pugh@tetratech.com

Phone: 740-298-9062



Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	EOI Engineering Design Services				0.00

Comm Code	Manufacturer	Specification	Model #
81100000			

**Commodity Line Comments:** EOI

**Extended Description:**

EOI Engineering Design Services



April 13, 2022

Mr. Joseph E. Hager III  
Department of Administration, Purchasing Division  
2019 Washington Street East  
Charleston, WV 25305-0130

**Re: EOI- Blue Knob Complex CEOI 0313 DEP2200000009**

Dear Mr. Hager,

Please find enclosed Tetra Tech's Expression of Interest (EOI) for the Blue Knob Complex CEOI 0313 DEP2200000009

Tetra Tech has completed numerous similar mine reclamation and remediation projects in the past for numerous clients which include, but not limited to, landslide analyses design/remediations, design of portal seals, reclamation of coal refuse sites, highwall elimination, drainage design, mitigation of AMD drainage, and design or drainage facilities associated with the mining industry. Individual personnel to be assigned to these projects have as much as forty (40) to forty-five (45) years' experience in the mining industry addressing these items.

If you should have any questions or concerns please contact me at [eric.cavazza@tetrattech.com](mailto:eric.cavazza@tetrattech.com) or via phone at (412) 522-9764.

Sincerely,

  
Eric Cavazza, P.E., M.S.  
Project Manager

EEC  
Enclosures

**WVDEP-AMLR**  
**EOI – Blue Knob Complex**

**Location:** Clay County, West Virginia

**Project Goals and Objectives:**

Tetra Tech has extensive experience in the remediation and resolution of Civil/Mining Engineering projects. The initial approach prior to addressing the *Project Goals and Objectives* is as follows:

Upon receipt of the formal notice to proceed, Tetra Tech would attend an on-site project kick-off meeting at the site with WVDEP personnel to discuss the project issues and work plan to reach a consensus on the technical approach for the site. The kick-off meeting would also provide the opportunity for WVDEP personnel to express to Tetra Tech their concerns, objectives, and initial thoughts on the project for discussion. Upon completion of the on-site project kick-off meeting a *Document of Understanding* will be prepared by Tetra Tech for the Project Area for review and input by WVDEP to create a work plan and goal-oriented document for the project.

Base mapping will be required for the project. It is Tetra Tech’s assumption the mapping will be provided for the project, in which case, some additional checks, spot locations, and potential additional feature items may be required to be located for design purposes. If the base mapping is to be developed by Tetra Tech, a sub-contract surveying company will be utilized for these services.

Based on the initial and available information, a preliminary conceptual plan will be prepared for review by WVDEP personnel. The preliminary conceptual plan will identify the general layout of the site, specific issues identified, proposed water routing, areas of additional concern and in the case of land stability issues, soil bore hole locations associated with the proposed geotechnical investigation. A geotechnical sampling plan will be developed for the site in order to address issues identified by the WVDEP/Tetra Tech team members. The soil sampling will be conducted, and appropriate testing will be performed by Tetra Tech’s in-house soils laboratory.

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The requested responses to the project goals and objectives as stipulated within the EOI are listed below:

**Goal/Objective 2.1: Develop constructions plans and technical specifications for all aspects to reclaim mine portals, drainage control, slope stabilization, coal refuse reclamation, stream restoration, and erosions and sediment control.**

*Reclaim mine portals and coal refuse reclamation:* Detailed grading plans will be provided showing existing contours, proposed final grading contours, location of Erosion and Sedimentation Control devices such as silt fence, super silt fence, sumps, swales, erosion control blankets, compost filter socks and other erosion control devices. In addition, a proposed seeding and revegetation plan will be included on the plans and within the specifications.

Detailed design plans and specification will be prepared for other conditions encountered on the project site. Other conditions may include the following:

- Exposed mine spoil and refuse on the site. – Reclamation measures such as, but not limited to re-soiling and revegetation of the area, excavating and relocating the spoil/refuse to another location on the site to be buried, re-soiled and revegetated. The spoil/refuse should be properly compacted prior to re-soiling and revegetation.
- A plan and specifications to mitigate AMD drainage, including possible horizontal borings would be prepared. The plan would consider the quantity, flow rate and chemical properties of the AMD drainage. Alternative solutions would be considered within the final design.
- Design of multiple portal seals and regrades. Tetra Tech has extensive experience in the development and design of the mine portal seals. Designs have included drilling from a location above and at an angle from the proposed seal and injecting designed grout to form the seal blockage and also has utilized polyurethane as a portal seal. This technique of designing and developing the portal seal has proven to be more effective and safer than excavating at the portal entry location then constructing the concrete or concrete block portal seal. Mine portals will be sealed in accordance with WV DEP approved methods. If endangered species are present, such as various bat species, appropriate bat gates or other structures will be incorporated into the project design.
- Design of temporary and permanent access or accesses for construction and future maintenance. Temporary and permanent access will be designed utilizing AutoCad software. Plan view, designed profile, and roadway cross sections shown at an

appropriate interval will be prepared and will be included within the final drawing package. Typical sections will be shown to indicate design features such as roadway cross slopes, pavement composition (gravel, asphalt, or concrete) and thickness, side slopes of embankments/cut slopes and proposed ditching. The roadway will be design in accordance with WVDEP mining and reclamation standards or other standards as determined by WVDEP. Final design of the roadway will attempt to design the roadway to a balanced cut/fill situation, if possible. Cut and fill quantities will be listed on the plans.

*Drainage Control:* Drainage areas within the project area will be determined. If possible, diversion ditches will be located in the upstream area in order to control and divert the drainage around the project area. Acid mine drainage (AMD) water will be identified on the plans and designed to be routed separately from the “clean” surface drainage, all drainage ditches, swales, underdrains and culverts will be sized and designed in accordance with standard engineering practices. Size, slope, and lining of the proposed ditches and culverts will be specified on the plans and be based on required storm events. Design of drainage conveyances, including drainage channels, underdrains and /or other controls to safely convey water off -site will be designed in accordance with standard engineering practices and will fully consider the safety of the existing public dwellings and structures near the project areas. Hydrologic and hydraulic analyses will be performed for the site and existing structures. HydroCAD Stormwater Modeling program will be utilized in analyzing and sizing drainage structures for the project.

*Slope Stabilization:* In order to develop the construction plans and technical specification for slope stabilization, the development of the geotechnical investigation plan would be completed. The geotechnical plan would consist of the drilling and sampling of soils in the vicinity of the landslide. Tetra Tech will provide a geotechnical engineer on site during the drilling operations. The number, locations, and depths of borings would be dependent on the extent and size of the landslide. In addition to the sampling of soils, the geotechnical boring plan would attempt to identify existing slip planes, the extent and locations of any perched aquifers as well as elevation of phreatic surfaces at the completion of the drilling and 24 hours thereafter. Soil testing would be completed by Tetra Tech’s in-house soil laboratory located in Morgantown, West Virginia. Potential soil tests and number of tests to be conducted would be determined following the geotechnical drilling and sampling operations but could possibly include the following tests:

### **Potential Soil Tests**

- Visual Description
- Grain Size Analyses
- Hydrometer Test
- Moisture Content
- Direct Shear
- Standard Proctor
- Atterberg Limits

Plan and cross section views will be developed to provide the design of the stabilization and remediation of the landslide area. Plan and cross section views will provide the location and design parameters of the final slope configuration and will show the location and details of proposed subsurface drainage underdrains, final slopes, proposed keyways, and typical detail slope saw-cut excavation as part of the reconstructed/stabilized slope. Stability analyses will be completed utilizing the Slide 2 program to assist in determining the stable configuration of the final slope configuration with a minimum standard safety margin of 1.5. Specifications will be developed indicating compaction requirements such as degree of compaction, optimum moisture, plus or minus variance on moisture, lift thickness and other quality control parameters for compaction during construction.

*Stream Restoration: Streams that have been physically damaged or disrupted due to abandoned mine impacts that are identified for restoration in the project scope of work will be restored in accordance with WV DEP and USACE specifications and requirements. Streams impaired due to abandoned mine drainage impacts that are identified for restoration in the project scope of work will be evaluated for the cause of the impairment and for potential AMD treatment options. If AMD treatment is specified in the scope of work, recommendations will be presented to WV DEP for concurrence before final design and permitting is undertaken.*

*Erosion and Sediment Control:* The Erosion and Sediment Control Plans (E&SCP) will include:

- Narrative and description of Best Management Practices (BMPs)
- Construction Sequence
- Narrative and description of post-construction stormwater management
- E&SCP with detail drawings
  - A general vicinity location map
  - Erosion and Sediment Control plan sheets
  - Post Construction Stormwater Management plan sheets
  - E&SCP details will be per the WVDEP's E&S standards manual.

Construction drawings and specifications will be developed based on the design concept approved by WVDEP and in conformance with the WVDEP Guidelines for Preparation of Design Plans & Specifications. Drawings will be 24" x 36" format and produced from base mapping files in AutoCAD 2019 format. Final drawings and specifications will be provided for use for review by

WVDEP and for use by the selected contractor. Plans and specifications will be prepared

Detailed specifications will be prepared in a manner compatible with the WVDEP contracting documents and consistent with base specifications available from the WVDEP website. Complete technical specifications in Microsoft Word will be provided with the final submission.

**Goal/Objective 2.2: Obtain all required permits.**

**Response:** Tetra Tech will prepare and submit to obtain the required permits as determined at the Pre-Design Meeting. Required permit applications will be prepared for submittal for the project. All required plans, specifications and required additional data will be included within the application. Required permits may include the following:

- 401/404 Stream and Wetland Permits
- Construction Stormwater General Permit
- WVDOH Occupancy Permit (Driveway Permit)
- Bat Survey/Clearance of Buffer Zones.
- NPDES Modification
- Any other local, state, or federal permit identified as being required for the project

**WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**AML CONSULTANT QUALIFICATION QUESTIONNAIRE**

**Attachment "A"**

PROJECT NAME EOI Belle (Sneed) Drainage		DATE (DAY, MONTH, YEAR) 19, October, 2021		FEIN 95-4148514																																					
1. FIRM NAME Tetra Tech, Inc		2. HOME OFFICE BUSINESS ADDRESS 947 Canyon Rd, Morgantown, WV 26508		3. FORMER FIRM NAME																																					
4. HOME OFFICE TELEPHONE 304-212-3600	5. ESTABLISHED (YEAR) 1966	6. TYPE OWNERSHIP Corporation		6a. WV REGISTERED DBE (Disadvantaged Business Enterprise) <p align="center">NO</p>																																					
7. PRIMARY AML DESIGN OFFICE: ADDRESS/ TELEPHONE/ PERSON IN CHARGE/ NO. AML DESIGN PERSONNEL EACH OFFICE Pittsburgh, 661 Andersen Dr, Pittsburgh, PA 15220/412-921-7090/Mark Speranza, PE/ 116 People																																									
8. NAMES OF PRINCIPAL OFFICERS OR MEMBERS OF FIRM Mr. Mark Perry, PE - Unit President			8a. NAME, TITLE, & TELEPHONE NUMBER - OTHER PRINCIPALS Mr. Eric Cavazza, PE - Project Manger - 412-522-9764																																						
9. PERSONNEL BY DISCIPLINE																																									
<table style="width:100%; border:none;"> <tr> <td style="width:25%;">— ADMINISTRATIVE 2012</td> <td style="width:25%;">— ECOLOGISTS 152</td> <td style="width:25%;">— LANDSCAPE ARCHITECTS 19</td> <td style="width:25%;">— STRUCTURAL ENGINEERS 98</td> </tr> <tr> <td>— ARCHITECTS 130</td> <td>— ECONOMISTS <u>138</u></td> <td>— MECHANICAL ENGINEERS 70</td> <td>— <b>SURVEYORS 60</b></td> </tr> <tr> <td>— <b>BIOLOGIST 300</b></td> <td>— ELECTRICAL ENGINEERS <u>60</u></td> <td>— <b>MINING ENGINEERS 70</b></td> <td>— TRAFFIC ENGINEERS</td> </tr> <tr> <td>— <b>CADD OPERATORS 170</b></td> <td>— ENVIRONMENTALISTS <u>746</u></td> <td>— PHOTOGRAMMETRISTS <u>12</u></td> <td>— OTHER 13,714</td> </tr> <tr> <td>— CHEMICAL ENGINEERS 304</td> <td>— ESTIMATORS 271</td> <td>— PLANNERS:</td> <td></td> </tr> <tr> <td>— <b>CIVIL ENGINEERS 588</b></td> <td>— <b>GEOLOGISTS 367</b></td> <td>URBAN/REGIONAL96</td> <td></td> </tr> <tr> <td>— CONSTRUCTION INSPECTORS61</td> <td>— HISTORIANS 3</td> <td>— SANITARY ENGINEERS70</td> <td></td> </tr> <tr> <td>— DESIGNERS</td> <td>— HYDROLOGISTS <u>115</u></td> <td>— SOILS ENGINEERS 34</td> <td>— TOTAL PERSONNELL 20,000</td> </tr> <tr> <td>— DRAFTSMEN 200</td> <td></td> <td>— SPECIFICATION WRITERS <u>140</u></td> <td>Personnel Company Wide</td> </tr> </table> <p><b>TOTAL NUMBER OF WV REGISTERED PROFESSIONAL ENGINEERS IN PRIMARY OFFICE: <u>7</u></b></p> <p><b>*RPEs other than Civil and Mining must provide supporting documentation that qualifies them to supervise and perform this type of work.</b></p>						— ADMINISTRATIVE 2012	— ECOLOGISTS 152	— LANDSCAPE ARCHITECTS 19	— STRUCTURAL ENGINEERS 98	— ARCHITECTS 130	— ECONOMISTS <u>138</u>	— MECHANICAL ENGINEERS 70	— <b>SURVEYORS 60</b>	— <b>BIOLOGIST 300</b>	— ELECTRICAL ENGINEERS <u>60</u>	— <b>MINING ENGINEERS 70</b>	— TRAFFIC ENGINEERS	— <b>CADD OPERATORS 170</b>	— ENVIRONMENTALISTS <u>746</u>	— PHOTOGRAMMETRISTS <u>12</u>	— OTHER 13,714	— CHEMICAL ENGINEERS 304	— ESTIMATORS 271	— PLANNERS:		— <b>CIVIL ENGINEERS 588</b>	— <b>GEOLOGISTS 367</b>	URBAN/REGIONAL96		— CONSTRUCTION INSPECTORS61	— HISTORIANS 3	— SANITARY ENGINEERS70		— DESIGNERS	— HYDROLOGISTS <u>115</u>	— SOILS ENGINEERS 34	— TOTAL PERSONNELL 20,000	— DRAFTSMEN 200		— SPECIFICATION WRITERS <u>140</u>	Personnel Company Wide
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10. HAS THIS JOINT-VENTURE WORKED TOGETHER BEFORE? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO																																									

11. OUTSIDE KEY CONSULTANTS/SUB-CONSULTANTS ANTICIPATED TO BE USED. Attach "AML Consultant Qualification Questionnaire".

NAME AND ADDRESS: Dieffenbach & Hritz LLC 1095 Chaplin Road Suite 200 Morgantown, WV 26501	SPECIALTY: Surveying Services	WORKED WITH BEFORE  ___X___ Yes  _____ No
NAME AND ADDRESS: Core Drilling, LLC 620 Lincoln Avenue Bentleyville, PA 15314	SPECIALTY: Geotechnical Drilling	WORKED WITH BEFORE  ___X___ Yes  _____ No
NAME AND ADDRESS: Geotechnics 544 Braddock Avenue East Pittsburgh, PA 15112	SPECIALTY: Soil Testing	WORKED WITH BEFORE  ___X___ Yes  _____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE  _____ Yes  _____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE  _____ Yes  _____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE  _____ Yes  _____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE  _____ Yes  _____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE  _____ Yes  _____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE  _____ Yes  _____ No

12. A. Is your firm's personnel experienced in Abandoned Mine Lands Remediation/Mine Reclamation Engineering?

YES Description and Number of Projects: Tetra Tech has extensive experience with AML/Mine Reclamation Engineering. Tetra Tech is currently working on several AML projects in several states. Tetra Tech has also worked on AML related projects within the state of West Virginia. In the last 5 years Tetra Tech has performed 20+ of these types of projects.

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B. Is your firm experienced in Soil Analysis?

YES Description and Number of Projects: Tetra Tech has a whole team dedicated to Geotechnical investigations including soil analysis. In the last 5 year this team has performed 20+ projects specifically associated with Soil Analysis.

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C. Is your firm experienced in hydrology and hydraulics?

YES Description and Number of Projects: Tetra Tech has performed several project looking at hydrology and hydraulics, specifically Tetra Tech specializes in mine pool analysis and AMD treatment systems. In the last 5 years Tetra Tech has performed 20+ projects looking at hydrology and hydraulics.

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D. Does your firm produce its own Aerial Photography and Develop Contour Mapping?

YES Description and Number of Projects: Tetra Tech does produce its own Aerial Photography with the use of drone technology and we use that photography to develop contour mapping. We use this service across all disciplines and industries with hundreds of flights and maps developed on a yearly basis.

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E. Is your firm experienced in domestic waterline design? (Include any experience your firm has in evaluation of aquifer degradation as a result of mining.)

YES Description and Number of Projects: Tetra Tech's large size and extensive resources provides for skilled individuals in various disciplines, Tetra Tech does have experience in domestic waterline design in conjunction with other projects. Tetra Tech also has on staff PhD hydrologist Eric Perry who retired from Office of Surface Mining where his responsibility was hydraulic monitoring of mine pools and effects of mining on aquifers.

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F. Is your firm experienced in Acid Mine Drainage Evaluation and Abatement Design?

YES Description and Number of Projects: Tetra Tech has a whole team dedicated to Acid Mine Drainage projects, we are currently working on 5 projects specifically looking at AMD treatment with 10+ projects completed in the last 5 years.

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES **RESPONSIBLE FOR AML PROJECT DESIGN** (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.) Gray, Thomas A. PE	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE: 46	YEARS OF AML RELATED DESIGN EXPERIENCE:46	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:

Brief Explanation of Responsibilities

Mr. Gray has more than 40 years of professional experience. He is a technical expert in mining engineering, mine reclamation, coal ash disposal and utilization, watershed and ecosystem restoration, mine subsidence, acid mine drainage remediation, mine stabilization via grouting and abandoned mine fire mitigation. Mr. Gray specializes in active and abandoned mining projects and with infrastructure projects that have mining related concerns. His project management responsibility has included construction, engineering, regulatory compliance, and research and development. He has been responsible for the successful completion of many unique projects.

EDUCATION (Degree, Year, Specialization)  
BS, 1973 Mining Engineering/MS 1977 MBA

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS  
SME

REGISTRATION (Type, Year, State)  
PE in WV (1988), PA (1978), OH (2009), MD (1989), VA (1980)

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES **RESPONSIBLE FOR AML PROJECT DESIGN** (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.) Cavazza, Eric E. P.E.	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE: 37	YEARS OF AML RELATED DESIGN EXPERIENCE:37	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:

Brief Explanation of Responsibilities

Mr. Eric Cavazza has over thirty-seven (37) years of extensive experience administering state and federal environmental programs including extensive experience managing the development, design and construction of environmental restoration projects to eliminate hazards and restore environmental degradation associated with abandoned mine lands.

EDUCATION (Degree, Year, Specialization)  
BS, 1983 Mining Engineer/ MS, 1995 Environmental Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS  
SME

REGISTRATION (Type, Year, State)  
PE in PA (1989)

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES **RESPONSIBLE FOR AML PROJECT DESIGN** (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Kearns, Michael PE,MS. -Project Manager	25	25	40

**Brief Explanation of Responsibilities**  
 Mr. Kearns has 40 years of professional engineering experience including diverse experience in the mining industry, utility pipelines, abandoned mine land reclamation. Additionally, he has designed and permitted numerous mine surface facilities, oil and gas well pad sites, potable water distribution systems, stormwater conveyance systems, sanitary sewerage systems, site development for industrial and commercial facilities, slope remediation analyses and has developed E&S control plans for hundreds of facilities.

**EDUCATION (Degree, Year, Specialization)**  
 BS Civil Engineering 1977, MS Civil Engineering 1982

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
ASCE(Life Member), NSPE	PE - WV (1981), OH (1991), PA (1992), MD (2021)

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES **RESPONSIBLE FOR AML PROJECT DESIGN** (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC

**Brief Explanation of Responsibilities**

**EDUCATION (Degree, Year, Specialization)**

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES **RESPONSIBLE FOR AML PROJECT DESIGN** (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Hynes, Greg,	25	25	33

**Brief Explanation of Responsibilities**  
 Mr. Hynes has 33 years of professional engineering experience including utility pipelines and abandoned mine land reclamation. Additionally, he has designed and permitted numerous mine surface facilities, oil and gas well pad sites, potable water distribution systems, stormwater conveyance systems, sanitary sewerage systems, and developed E&S control plans.

**EDUCATION (Degree, Year, Specialization)**  
 BS Civil Engineering 1987, MS Civil Engineering 1997

<b>MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS</b>	<b>REGISTRATION (Type, Year, State)</b> PE - WV (1997), OH (1997), PA (1993)
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13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES **RESPONSIBLE FOR AML PROJECT DESIGN** (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Matthew Ridgway	7	7	3

**Brief Explanation of Responsibilities**  
 Mr. Ridgway is a Civil Engineer with more than 6 years of engineering experience, including managing the design and construction of complex construction projects. His professional focus has been on geotechnical engineering and his expertise includes preliminary site investigation, design, and construction oversight.

**EDUCATION (Degree, Year, Specialization)**  
 BS Civil engineering & BS Mining Engineering 2013

<b>MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS</b> ASCE, SME, ASHE	<b>REGISTRATION (Type, Year, State)</b> PE - WV (2019), PA (2019), VA (2019), MD (2019), CO (2019), WY (2019)
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14. PROVIDE A LIST OF SOFTWARE AND EQUIPMENT AVAILABLE IN THE PRIMARY OFFICE WHICH WILL BE USED TO COMPLETE AML DESIGN SERVICES

Microsoft Office Professional and Microsoft Project

Bentley Pond Pack (Haestad methods)

Adobe Photoshop

Adobe Acrobat

AutoCAD Map 3D

AutoDesk Civil 3D

ESRI ArcGIS

ESRI ArcView

Bentley Flow Master (Haested Methods)

Bentley HEC-Pack

STBL5M

Groundwater Vistas

GMS

Autodesk Storm and Sanitary Analysis

Hydro CAD

SLIDE II STABILITY ANALYSIS PROGRAM

15. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS THE DESIGNATED ENGINEER OF RECORD

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	NATURE OF YOUR FIRM'S RESPONSIBILITY	ESTIMATED CONSTRUCTION COST	PERCENT COMPLETE
Pell Run Doser Upgrade Project, Preston County WV	WVDEP AML 101 Cambridge Place Bridgeport, WV 26330	Prime Contractor	\$750,000	5%
Wingfield Pines Inflow Reconstruction Project, Upper St. Clair Township, Allegheny County PA	Allegheny Land Trust 416 Thorn Street Sewickley, PA 15143	Prime Contractor	\$1 Million	100%
Gladden AMD Treatment Plant, South Fayette Township, Allegheny County PA	South Fayette Conservation Group 515 Millers Run Road Morgan, PA 15064	Prime Contractor	\$13.5 Million	95%
WVDEP OSR Royal Coal Bond Forfeiture Fayette County WV	WVDEP OSR 1159 Nick Rahall Greenway Fayetteville, WV 25840	Prime Contractor	\$250,000	95%
Glenn Springs Holdings Bird Mine Treatment, Tire Hill Pennsylvania	Glenn Springs Holdings 5 Greenway Plaza, Suite 10 Houston, TX 77046	Prime Contractor	Confidential	Ongoing
Quakake Treatment Plant Carbon County Pennsylvania	PADEP BAMR 2 Public Square 5 <sup>th</sup> Floor Wilkes-Barre, Pennsylvania 18701	Prime Contractor	\$1.2 Million	60%
Blacklick Creek Treatment Facility	PADEP BAMR 400 Market Street Harrisburg, PA 17106	Prime Contractor	\$160,000	75%
TOTAL NUMBER OF PROJECTS: Tetra Tech is currently conducting thousands or projects nationwide for the purpose of the EOA only a sample is provided			TOTAL ESTIMATED CONSTRUCTION COSTS: \$+15 Million	



17. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOUR FIRM WAS THE DESIGNATED ENGINEER OF RECORD				
PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST	YEAR	CONSTRUCTED (YES OR NO)
WV Land Stewardship Larosa Fuels Marion County WV	WV Land Stewardship Corporation 709 Beechurst Ave Morgantown, WV 26505	\$136,000	2018	Yes
Dolph Underground Mine Fire, Lackawanna County, PA	PADEP BAMR 400 Market Street Harrisburg, PA 17106	\$15 Million	2018	Yes
Scenic Rail Road Subsidence Evaluation Garrett County Maryland	Maryland Department of the Environment 160 S Water Street Frostburg, MD 21532	\$114,000	2017	Yes
Kempton Sludge Disposal Line Garrett County MD	Maryland Department of the Environment 160 S Water Street Frostburg, MD 21532	\$385,000	2019	Yes
Frush Enterprises Bond Forfeiture Harrison County WV	WVDEP OSR 1159 Nick Rahall Greenway Fayetteville, WV 25840	\$152,000	2017	Yes
Buffalo Coal Mt. Storm, WV	WV Land Stewardship Corporation 709 Beechurst Ave Morgantown, WV 26505	\$269,170	2018	Yes
Rasuch Creek Treatment Plant Upgrades Schuylkill County PA	PADEP BAMR 2 Public Square 5 <sup>th</sup> Floor Wilkes-Barre, Pennsylvania 18701	\$200,000	2018	Yes
Tetra Tech had conducted thousands of projects nationwide for the purpose of the EOA only a sample is provided				

18. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOUR FIRM HAS BEEN A SUB-CONSULTANT TO OTHER FIRMS (INDICATE PHASE OF WORK FOR WHICH YOUR FIRM WAS RESPONSIBLE)

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST OF YOUR FIRM'S PORTION	YEAR	CONSTRUCTED (YES OR NO)	FIRM ASSOCIATED WITH

19. Use this space to provide any additional information or description of resources supporting your firm's qualifications to perform work for the West Virginia Abandoned Mine Lands Program.  
 Tetra Tech has extensive knowledge and vast resources to allow for a comprehensive approach to any problem. Tetra Tech works extensively with Abandoned Mine Lands and is well versed on solutions to any problem. Tetra tech has a strong presence in West Virginia in Fairmont and Charleston, with offices in Pittsburgh, PA and St. Clairsville, OH regularly performing work in the state. The Tetra Tech Pittsburgh office has worked with WVDEP on several Special Reclamation projects throughout the state.

20. The foregoing is a statement of facts.

Signature:  Title: Project Manager Date: 04-11-2022

Printed Name: Eric E. Cavazza

**AML and RELATED PROJECT EXPERIENCE MATRIX**

PROJECT	Exp. Basis C=Corp. P=Personnel *	Additional Info Provided in Section (s) **	PROJECT EXPERIENCE REQUIREMENTS															PRIMARY STAFF PARTICIPATION/CAPACITY *** M=Management P=Professional					
			Abandoned Surface Mine Reclamation	Abandoned Deep Mine Reclamation	Portal/Shaft Closure	Hydrologic/Hydraulic Design/Eval.	Remining Evaluation	Mine/Refuse Fire Abatement	Subsidence Investigation Mitigation	Hazardous Waste Disposal	Project Specifications	Water Quality Evaluation/Nitigation/Replacement	Construction Inspection/Management	Water Treatment	Equipment/Structure Removal	Stream Restoration	Geotechnical/Stability	Tom Gray, PE	Eric Cavazza, PE	Michael Kearns PE	Matthew Ridgeway	Other Project Team Personnel	Other Tetra Tech Personnel
PADEP Gladden Acid Mine Drainage Treatment Plant	C&P	Yes		X		X					X	X	X	X		x		M	M	P		P	M
Wingfield Pines Inflow Reconstruction	C&P	Yes				X					X	X	X	X				M		P		P	M
WVDEP OSR Royal Coal Bond Forfeiture	C&P	Yes	x								x						X	M		P		P	M
WVDEP Pell Run Doser	C&P	Yes									X			X				M		P		P	M
MDE Scenic Rail Road Subsidence Evaluation	C&P	Yes									X							X	M			P	M
PADEP Black Lick Creek	C&P	Yes												X				M		M		P	M
PADEP Dolph Mine Fire	C&P	Yes							X									M				P	P
PADEP Rausch Creek	C&P	Yes												X	X			M				P	P
WVDEP OSR Frush Enterprises Bond Forfeiture	C&P	Yes	X															X	M			P	P
WVLSL Larosa Fuels	C&P	Yes	X											X				M				P	P
Glenn Springs Holdins Bird Mine Treatment	C&P	NO									X	X	X	X				M	M			P	P
Quakake Treatment Plant	C&P	NO										X		X				M	M			P	P
WVLSL Buffalo Coal	C&P	No	X															M				P	P

\* List whether project experience is corporate or personnel based or both.

\*\* Use this area to provide specific sections or pages if needed for reference.

\*\*\* List Primary Design personnel and their functional capacity for the projects listed.