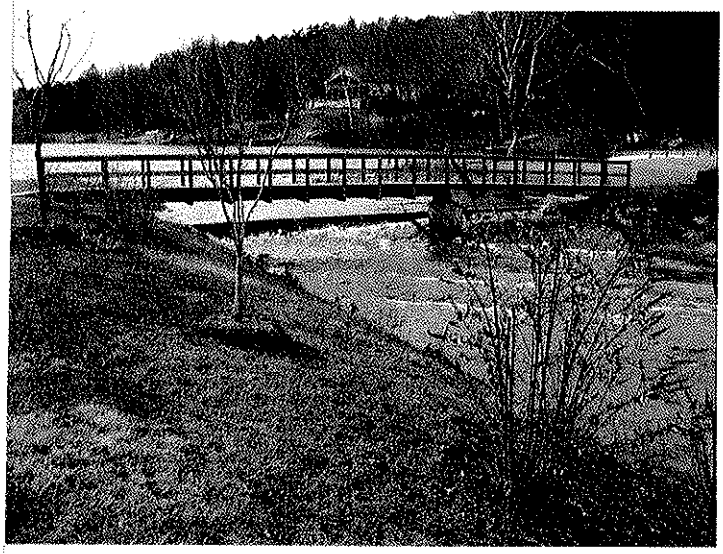
West Virginia Division of Natural Resources
Parks and Recreation Section

Due Date: August 24, 2010 1:30pm

Engineering Services for Cacapon Upper and Lower Dams

Cacapon State Park, WV

RFQ Number: DNRB11007



Prepared For:

Mr. Frank Whittaker, Senior Buyer
Department of Administration
Purchasing Division
Building 15
2019 Washington Street, East
Charleston, WV 25305-1030

Prepared By:

Triad Engineering Inc.
200 Aviation Drive,
Winchester, VA 22602
Ph: 540.667.9300
Fx: 540.667.2260

ORIGINAL

TRIAD ENGINEERING, INC.

August 23, 2010

Mr. Frank Whittaker, Senior Buyer
Department of Administration
Purchasing Division
Building 15
2019 Washington Street, East
Charleston, WV 25305

RE: Engineering Services – Cacapon Upper and Lower Dams
RFQ Number: DNRB11007

Dear Mr. Whittaker:

Triad Engineering, Inc. (TRIAD) is pleased to submit this Expression of Interest (EOI) and statement of qualifications for professional engineering services required to bring Cacapon Upper and Lower Dams, at Cacapon State Park, into compliance with West Virginia Dam Safety regulations. TRIAD has provided similar engineering and design services for numerous other dams and impoundments in West Virginia, Virginia, Pennsylvania and Maryland.

Bound herein is comprehensive information regarding our approach to this project and qualifications of the firm. To facilitate more efficient review of this information, this proposal is presented in several tabbed subsections as follows:

1. UNDERSTANDING THE DNR'S REQUIREMENTS
2. APPROACH AND WORK PLAN
3. MANAGEMENT PLAN AND ANTICIPATED SCHEDULE
4. PROJECT TEAM QUALIFICATIONS AND EXPERIENCE
5. LOCAL EXPERIENCE WITH SIMILAR PROJECTS
6. OVERALL DAM EXPERIENCE
7. GENERAL FIRM CAPABILITIES
8. REFERENCES

We appreciate the opportunity to submit this proposal and look forward to a favorable review of our qualifications. If you have any questions or require any additional information, please do not hesitate to contact us.

Sincerely,

TRIAD ENGINEERING, INC.

Randy L. Moulton, P.E.
President and CEO

State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Request for Quotation

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ADDRESS CORRESPONDENCE TO ATTENTION OF
FRANK WHITTAKER
304-558-2316

RECEIVED JUL 26 2010

VENDOR
*709045842 304-755-0721
TRIAD ENGINEERING INC
4980 TEAYS VALLEY RD

SCOTT DEPOT WV 25560

SHIP TO
DIVISION OF NATURAL RESOURCES
PARKS & RECREATION SECTION

324 4TH AVENUE
SOUTH CHARLESTON, WV
25303-1228 304-558-3397

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B	FREIGHT TERMS
07/23/2010				

BIDDING DATE: 08/24/2010 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
	1	LS		906-00-00-001		

AE SERVICES

EXPRESSION OF INTEREST
(EOI)

THE WEST VIRGINIA STATE PURCHASING DIVISION FOR THE AGENCY, THE WEST VIRGINIA DIVISION OF NATURAL RESOURCES IS SOLICITING EXPRESSIONS OF INTEREST FOR ENGINEERING SERVICES TO PREPARE CONSTRUCTION DOCUMENTS AND SPECIFICATIONS TO BRING CACAPON UPPER AND LOWER DAMS, AT CACAPON STATE PARK, INTO COMPLIANCE WITH DAM SAFETY REGULATIONS PER THE ATTACHED.

TECHNICAL QUESTIONS CONCERNING THIS PROJECT MUST BE SUBMITTED IN WRITING TO FRANK WHITTAKER IN THE WV STATE PURCHASING DIVISION VIA MAIL AT THE ADDRESS SHOWN IN THE BODY OF THIS EOI, VIA FAX AT 304-558-4115, OR VIA EMAIL AT FRANK.M.WHITTAKER@WV.GOV. DEADLINE FOR ALL TECHNICAL QUESTIONS IS 08/03/2010 AT THE CLOSE OF BUSINESS. ALL TECHNICAL QUESTIONS RECEIVED WILL BE ANSWERED BY ADDENDUM AFTER THE DEADLINE HAS LAPSED.

QUESTIONS CONCERNING THE ACTUAL PROCESS BY WHICH A FIRM MAY SUBMIT AN EXPRESSION OF INTEREST TO THE STATE OF WEST VIRGINIA ARE NOT CONSIDERED TO BE TECHNICAL QUESTIONS AND MAY BE SUBMITTED AT ANY TIME PRIOR TO THE BID OPENING AND IN ANY FORMAT.

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

	TELEPHONE	DATE
esident & CEO	540-667-9300	August 23, 2010
FEIN 550592364		ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER	PAGE
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304-558-2316

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*709045842 304-755-0721
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EXHIBIT 10

REQUISITION NO.: .....

ADDENDUM ACKNOWLEDGEMENT

I HEREBY ACKNOWLEDGE RECEIPT OF THE FOLLOWING CHECKED ADDENDUM(S) AND HAVE MADE THE NECESSARY REVISIONS TO MY PROPOSAL, PLANS AND/OR SPECIFICATION, ETC.

ADDENDUM NO.'S:

NO. 1 ..XX....

NO. 2 .....

NO. 3 .....

NO. 4 .....

NO. 5 .....

I UNDERSTAND THAT FAILURE TO CONFIRM THE RECEIPT OF THE ADDENDUM(S) MAY BE CAUSE FOR REJECTION OF PROPOASLS.

VENDOR MUST CLEARLY UNDERSTAND THAT ANY VERBAL REPRESENTATION MADE OR ASSUMED TO BE MADE DURING ANY ORAL DISCUSSION HELD BETWEEN VENDOR'S REPRESENTATIVES AND ANY STATE PERSONNEL IS NOT BINDING. ONLY THE INFORMATION ISSUED IN WRITING AND ADDED TO THE SPECIFICATIONS BY AN OFFICIAL ADDENDUM IS BINDING.

.....
SIGNATURE

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

	TELEPHONE	DATE
sident & CEO	540-667-9300	August 23, 2010
FEIN 550592364	ADDRESS CHANGES TO BE NOTED ABOVE	

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State of West Virginia
Department of Administration
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Request for Quotation

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Triad Engineering, Inc.
COMPANY

August 23, 2010
DATE

NOTE: THIS ADDENDUM ACKNOWLEDGEMENT SHOULD BE SUBMITTED WITH THE PROPOSAL.

REV. 09/21/2009

BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THE STATE MAY DEEM THE CONTRACT NULL AND VOID, AND TERMINATE SUCH CONTRACT WITHOUT FURTHER ORDER.

NOTICE

A SIGNED EOI MUST BE SUBMITTED TO:

DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
BUILDING 15
2019 WASHINGTON STREET, EAST
CHARLESTON, WV 25305-0130

THE EOI SHOULD CONTAIN THIS INFORMATION ON THE FACE OF THE ENVELOPE OR THE EOI MAY NOT BE CONSIDERED:

SEALED EOI

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

esident & CEO

TELEPHONE 540-667-9300

DATE August 23, 2010

FEIN 550592364

ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER	PAGE
DNRB11007	4

ADDRESS CORRESPONDENCE TO ATTENTION OF:
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304-558-2316

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*709045842 304-755-0721
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07/23/2010				

BID OPENING DATE: 08/24/2010 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
	BUYER:			44		
	EOI. NO.:			DNRB11007		
	BID OPENING DATE:			08/24/2010		
	EOI OPENING TIME:			1:30 PM		
	PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR PROPOSAL: 540-667-9300					
	CONTACT PERSON (PLEASE PRINT CLEARLY): Randy L. Moulton, P.E.					
	****** THIS IS THE END OF RFQ DNRB11007 ****** TOTAL:					

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

	TELEPHONE	DATE
	540-667-9300	August 23, 2010
esident & CEO	FEIN 550592364	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Request for Quotation

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DNRB11007	1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
FRANK WHITTAKER
304-558-2316

VENDOR
RFQ COPY
TYPE NAME/ADDRESS HERE

SHIP TO
DIVISION OF NATURAL RESOURCES
PARKS & RECREATION SECTION

324 4TH AVENUE
SOUTH CHARLESTON, WV
25303-1228 304-558-3397

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
08/10/2010				

OPENING DATE: 08/24/2010 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
	********** ADDENDUM NO. 1 **********					
	THIS ADDENDUM IS ISSUED TO PROVIDE THE ATTACHED TECHNICAL QUESTION,AGENCY RESPONSE AMD INSPECTION REPORTS.					
	THE BID OPENING DATE AND TIME HAVE NOT CHANGED.					
	********** END ADDENDUM NO. 1 **********					
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	AE ERVICES					
	****** THIS IS THE END OF RFQ DNRB11007 ****** TOTAL:					

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE

TELEPHONE 540-667-9300

DATE August 23, 2010

esident & CEO

FEIN 550592364

ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

RFQ No. DNRB11007

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

West Virginia Code §5A-3-10a states: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

DEFINITIONS:
"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

EXCEPTION: The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

Under penalty of law for false swearing (***West Virginia Code*** §61-5-3), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

WITNESS THE FOLLOWING SIGNATURE

Vendor's Name: Triad Engineering, Inc.

Authorized Signature: _____ Date: 8/23/10

State of Virginia

County of Frederick, to-wit:

Taken, subscribed, and sworn to before me this 23rd day of August, 2010.

My Commission expires 7-31, 2012.

AFFIX SEAL HERE

JAMIE A. STEMPLE
NOTARY PUBLIC
Commonwealth of Virginia
Reg. #344293
My Commission Expires July 31, 2012

NOTARY PUBLIC _____

1. UNDERSTANDING THE DNR'S REQUIREMENTS

We contacted the West Virginia Department of Environmental Protection (WVDEP) Dam Safety Division to determine what information was available for these dams. Although the WVDEP database indicates that there are some very old plans which have been catalogued, none of these has been sealed by a Professional Engineer. Consequently, it is doubtful that there is significant detailed design information available for use in this study. However, we learned that both dams were inspected in October, 2009 by a representative of Dam Safety.

We obtained copies of the inspection reports which were prepared by Conrad Baston, P.E., of the Dam Safety office in Fairmont. Based on comments contained in those inspection reports, we understand that the following issues must be addressed:

Upper Dam (I.D. # 06502)

- The dam does not have a "Certificate of Approval" as required to be in compliance with the Dam Safety Act and applicable regulations. This will require preparation and submission of pertinent application forms with supporting engineering evaluations and calculations.

- The dam has tentatively been considered a "Class 1" (High Hazard) structure until proven otherwise by appropriate hydrologic and hydraulic analyses. A dam break analysis is required, as well as downstream inundation mapping, to assess potential damages to property and highways and evaluate possible loss of human life.

- The Monitoring and Emergency Action Plan (EAP) for the dam was approved in 2005. However, the EAP is to be reviewed, updated as required and re-submitted to Dam Safety for review and approval.

- The principal spillway is exhibiting evidence of deterioration and/or separation of the pipe joints. This is to be assessed for consideration of possible remedial repairs.

- The emergency spillway discharge configuration is questionable, since flow would be directed toward the dam. Some re-alignment of the exit channel will be necessary to protect the downstream toe of the dam.

- There are signs of minor wave erosion on the upstream slope of the dam. This will need to be corrected as part of any modifications which are required.

- The downstream slope of the dam shows some signs of seepage in the groin areas and possibly higher up on the slope above the toe of the embankment. Monitoring of seepage through the dam should be considered to assess the effect on stability.

Lower Dam (I.D. # 06503)

- The dam does not have a "Certificate of Approval" as required to be in compliance with the Dam Safety Act and applicable regulations. This will require preparation and submission of pertinent application forms with supporting engineering evaluations and calculations.

- The dam has tentatively been considered a "Class 1" (High Hazard) structure until proven otherwise by appropriate hydrologic and hydraulic analyses. A dam break analysis is required, as well as downstream inundation mapping, to assess potential damages to property and highways and evaluate possible loss of human life. These evaluations will need to consider the discharges resulting from the Upper Dam.

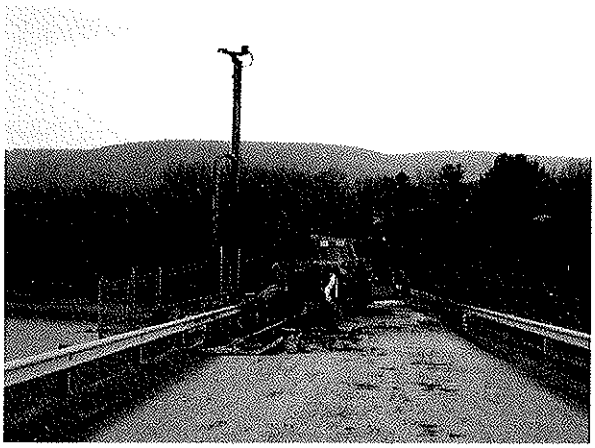
- The Monitoring and Emergency Action Plan (EAP) for the dam was approved in 2005. However, the EAP is to be reviewed, updated as required and re-submitted to Dam Safety for review and approval.

- The principal/emergency spillway is a masonry and natural bedrock open channel, and it is exhibiting some signs of minor deterioration. Some of the stones are missing and some of the mortar joints are in need of repair.

- Observations of the reservoir drain suggest that either the valve is leaking or the box culvert is leaking. This condition should be evaluated for possible repairs.

- The upstream and downstream slopes, as well as the crest, are somewhat non-uniform and contain numerous dips and small bare areas. Most of these dips have resulted from old tree stumps which rotted after the trees were removed. Some minor wave erosion was observed on the upstream slope.

Our approach to addressing these issues and developing the necessary deliverables is outlined in the next section of this EOI.



2. APPROACH AND WORK PLAN

Based on our past experience with other similar projects, we believe that a substantial amount of information concerning the existing dams is required to complete the evaluations and prepare supporting documents for permitting. Accordingly, we propose to divide the work on this project into two (2) general phases.

Phase 1 will include field surveying, a subsurface investigation consisting of test borings, laboratory testing of recovered soil samples and engineering analyses sufficient to document the condition of both structures and the associated outlet works. During Phase 1, we will also conduct hydrologic, hydraulic and dam break analyses to establish the hazard classification for each dam and determine the required design storm as well as any reductions which may be possible based on the incremental damage evaluations. Depending upon the results of the analyses, we will evaluate alternatives for modifications which would be required to bring the dams into compliance. Results of all of these evaluations will be used to support the application for a Certificate of Approval.

Phase 2 will include design of any modifications selected to bring the dams into compliance with respect to seepage, stability and flood routing. This phase would also include preparation of construction drawings and technical specifications. Finally, we will prepare an updated EAP and any permit applications which are necessary to secure approval for construction of any modifications. A more detailed work plan is discussed herein.

Phase 1

Surveying and Mapping

In order to design appropriate modifications to the dams and/or spillway structures and perform flood routing downstream, we believe that detailed mapping is required. We propose that the area of the dams, the spillways, the abutments and some limited areas downstream be mapped using aerial photography and photogrammetric techniques. The aerial mapping will be subcontracted, and control surveying will be performed by TRIAD using GPS surveying equipment. Final mapping will be prepared at a scale of 1"=100'. The aerial photography for this project can not be obtained until Fall, typically late November, when the foliage is gone and it does not obscure the view. Although this topographic mapping could be developed by ground survey methods, it is felt that aerial mapping in this instance is much more comprehensive and economical.

Considerable field surveying will also be necessary to perform hydraulic calculations for dam break analyses. We will develop cross sections downstream of the dam and assess spot elevations at critical locations within the floodplain. We plan to obtain cross sections at regular intervals a considerable distance downstream in order to satisfy flood routing requirements. All field surveying will be performed by TRIAD field crews with locations and elevations tied to GPS points. The principal spillway pipe at the upper dam will also be carefully examined during this field survey phase to determine the extent of deterioration.

Subsurface Exploration

A portion of the assessment work deals with structural stability of the dams under a variety of conditions. To assess the stability of the dams under these various conditions, data regarding the types and strengths of materials in the embankments are required. Therefore, we propose to drill conventional soil test borings at each dam. Upon completion of the borings in the upper dam, conventional observation wells will be installed to facilitate measurement of the phreatic surface (zone of saturation) which may be present through the dam. Since the lower dam contains a concrete core wall, we do not believe that observation wells are necessary.

We propose to accomplish the soil borings with a track- or ATV-mounted rotary auger drill rig and perform Standard Penetration Testing and sampling at 5-foot sample intervals. Continuous sampling may be performed in a limited zone within one of the borings at each dam. Undisturbed sampling is planned to obtain soil samples which are suitable for laboratory shear strength testing. Observation wells which will be installed upon completion of the test borings will consist of a 2" diameter flush joint PVC screen with sand pack, a bentonite seal, solid riser with cement-bentonite grout to the surface and a locking cap. A geotechnical engineer from our office will field log all borings and supervise the drilling program and installation of the monitoring wells. We will contact Miss Utility to properly mark any utilities prior to our mobilization. Our surveying crews will determine locations and elevations of the borings.

Laboratory Testing

Laboratory testing will be performed on representative samples obtained during the field exploration. Routine physical properties testing will include moisture content, grain size analysis and Atterberg Limits. Engineering properties tests will include triaxial shear strength testing to determine shear strength parameters for stability analyses.

Stability Analyses

Several stability analyses will be performed for each dam using the data obtained from the field survey work, the field explorations and laboratory testing programs. The following conditions will be analyzed for stability:

- Downstream slopes, steady state seepage, normal pool level and maximum pool level (current top of dam), static and seismic conditions
- Upstream slopes, rapid drawdown conditions, static and seismic conditions
- Downstream slopes with possible modifications as required to address safety concerns, steady state seepage, normal pool level and maximum pool level (i.e. revised design), static and seismic conditions.

Hydrologic and Hydraulic Analyses

Based on the issues which are to be addressed and the concerns which have been expressed by the State, numerous hydrologic and hydraulic (H&H) analyses will be required to assess the relative safety of the structures and downstream areas during storm events. The following H&H evaluations are planned, as a minimum:

- Probable Maximum Precipitation (PMP) (prescribed for an assumed Class 1 structure) to evaluate the approximate depth of overtopping of the current dams.
- Generation of various storms to develop a maximum water level equal to the current top of dam elevation.
- Evaluation of dam breach characteristics for overtopping condition based on soil parameters.
- Routing the discharges from various storms through the downstream areas without overtopping or a dam breach to evaluate potential damage within the floodplain.
- "Sunny day" breach analyses of the dams with routing of the discharges through the downstream areas to evaluate potential damage within the floodplain.
- Evaluation of alternatives for modification of the dams and/or outlet works for safe passage of the applicable design storm.

Formal Report

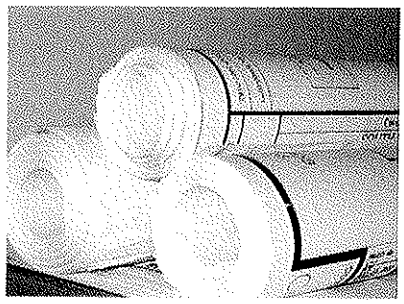
Upon completion of all field work and analyses, we will prepare separate detailed reports which will include the following:

- A discussion of the site geology and subsurface conditions encountered in the borings.
- Detailed logs with a Boring Location Plan and appropriate cross-sections and/or profiles.
- Results of laboratory testing of materials.
- Results of all stability analyses with conclusions regarding the conditions of the structures with respect to present stability safety standards.
- Results of all H&H analyses.
- Conclusions and recommendations regarding alternatives to bring the dams into compliance with present safety standards and address other issues which were listed in the most recent inspection reports.

Phase 2

Construction Drawings and Technical Specifications

TRIAD will prepare a complete package of construction drawings and technical specifications which will be sufficient for the West Virginia State Purchasing Department to secure competitive bids for any modification work. We anticipate that the construction drawing package will include the following:



- Cover Sheet
- Plan of Existing Conditions
- Site Plans with Planned Modifications
- Profile Along Centerline(s) and Typical Section with Notes
- Plan(s) and Profile(s) of Outlet Structures
- Cross-Sections
- Erosion and Sediment Control Measures
- Construction Details

Technical specifications will address materials and methods which must be followed for the construction. Technical specifications for any modifications are required as part of the documentation which must be submitted to the Dam Safety Division.

Emergency Action Plans (EAPs)

The current EAPs were approved in 2005, and they must be updated. We will update the EAPs to be consistent with the format which is approved by Dam Safety. As part of the new EAP documents, copies of the inundation (flood) mapping developed during Phase 1 of the project are to be incorporated into the plan. Development of the EAPs will be coordinated with the Office of Emergency Services for Morgan County.

State Agency Permit Applications

We will prepare applications for all permits which are required for modification and operation of the dams in accordance with current regulations. The formal report, construction drawings and technical specifications will be submitted in support of the applications. We anticipate that the agencies will include, at a minimum, the WVDEP Division of Water and Waste Management and the WVDNR Public Land Corporation. ***It is emphasized that U.S. Army Corps of Engineers permits may be necessary, since work may be done in the stream channels which are considered Waters of the U.S. However, the extent of permitting can not be determined until modification designs are at least partially complete and the areas to be disturbed can be estimated reliably.***

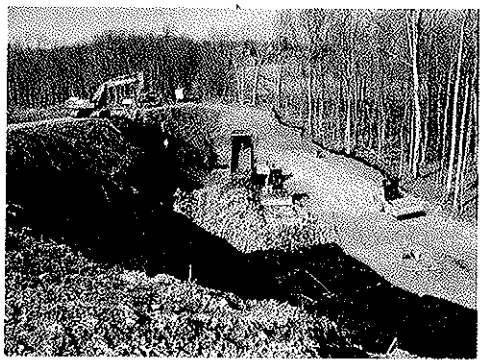
3. MANAGEMENT PLAN AND ANTICIPATED SCHEDULE

All engineering projects are managed and supervised by a Registered Professional Engineer who is responsible for developing and/or reviewing the technical and fee proposal, selecting team members to perform the various tasks associated with the project and reviewing all phases of the work. The Project Manager for this contract will be responsible for internal coordination and management of TRIAD personnel, scheduling and external coordination and communications with your representatives and our aerial mapping sub-consultant. Specific key personnel and their qualifications are presented in the next section of this EOI.

Our work load at the time of authorization will have some influence on the starting date for the investigation. We are normally able to initiate field work within 5 to 10 working days after written authorization is received. Since aerial photography can not be obtained until at least late November, the detailed topographic mapping can not be completed until the latter part of December. However, GPS control points can be established and detailed ground surveying, including cross sections, can be performed prior to the flight. Furthermore, the test borings can be performed prior to mapping. We believe that the following completion times for various activities are reasonable:

Work Element	Anticipated Completion Time
Field Surveying	2 to 3 weeks
Subsurface Investigation	4 to 5 days
Laboratory Testing	2 to 3 weeks
Engineering Analyses	3 to 4 weeks
Formal Report Preparation	2 to 3 weeks
Construction Drawings and Technical Specifications	4 to 6 weeks
Emergency Action Plan	3 to 4 weeks
Preparation of Permit Applications	2 to 3 days

We believe that the aerial topographic mapping should be completed prior to starting the engineering analyses portion of the project. It is noted that several of these activities will be conducted concurrently. Overall, we estimate that all work can be completed and the permit applications can be submitted within 4 to 5 months after receipt of formal authorization and notice to proceed. If we are awarded this project, we would be pleased to prepare a detailed project schedule with various milestone dates, anticipated progress meeting dates, etc. for your review.



4. PROJECT TEAM QUALIFICATIONS AND EXPERIENCE

GENERAL

TRIAD is fully staffed and equipped to perform all of the work on this project using in-house resources with the exception of aerial photography and mapping. Our Winchester, Virginia office currently has approximately 30 employees who are trained and educated in a variety of engineering and construction disciplines. We maintain a very stringent training and review program for all employees. Personnel include geologists, staff engineers and/or senior engineers, depending upon the nature and extent of the project.

For the services of this contract, we currently have four (4) licensed professional engineers with specific experience in geotechnical engineering and more specifically, dam engineering services. Other staff engineers have dam engineering experience, and other support staff is available to assist in preparation of the plans and specifications which may be necessary if modifications to the dams are required.

KEY PROJECT PERSONNEL AND RESUMES

We plan to assign the following key personnel to this project:

Randy Moulton, P.E., Project Manager – Mr. Moulton will be responsible for coordinating and over-seeing all field work, investigations, analyses and any modification recommendations. He has served in this capacity for many projects throughout his 30+ years with TRIAD.

Kevin Stemple, P.E., Senior Engineer – Mr. Stemple will serve as senior engineer and will support Mr. Moulton with all services associated with the investigations.

Michael Delaney, P.E., Project Engineer – Mr. Delaney will develop all hydrology and hydraulics calculations, including HEC-RMS flood routings and inundation mapping computations.

Dave Spriggs, P.S., Project Surveyor – Mr. Spriggs will oversee all field surveying and mapping which may be required for the project, including establishment of horizontal and vertical control for aerial mapping, if required.

Specific resumes for the key project personnel are contained at the end of this section.

RANDY L. MOULTON, P.E.
President and CEO

EDUCATION:

B.S. - Civil Engineering - 1976 - West Virginia University
M.S. - Civil Engineering (Geotechnical) - 1980 - West Virginia University

REGISTRATION:

Licensed Professional Engineer - Virginia, West Virginia, Maryland, Pennsylvania, and North Carolina

EMPLOYMENT HISTORY:

President and CEO	Triad Engineering, Inc., 2005 to Present
Senior Vice President/ Principal Engineer	Triad Engineering, Inc., Winchester, VA 1988 to 2005
Senior Engineer/ Project Engineer	Triad Engineering, Inc., Morgantown, WV 1978 to 1988
Teaching Fellow	West Virginia University, Morgantown, WV Civil Engineering Department, August to May, 1976 to 1977, 1977 to 1978
Staff Engineer/ Technician	Triad Engineering, Inc., Morgantown, WV May to August, 1975, 1976 and 1977
Drilling Inspector	Michael Baker, Jr., Inc., Beaver, PA Soils and Foundation Division, May to August, 1974

PERTINENT EXPERIENCE:

Mr. Moulton has over thirty (30) years of experience in geotechnical and materials engineering disciplines. This has included planning subsurface exploration and laboratory testing programs, groundwater and seepage evaluations, landslide evaluations and remedial design, dam and impoundment design, analysis and design of earthwork, foundation and retaining systems, stability evaluations and preparation of geotechnical reports.

PROJECT EXPERIENCE:

***Duncan Run Estates Dam**, Berkeley County, WV*
Principal Engineer for evaluation and remedial design of a previously non-regulated earth dam located on private property. The West Virginia DEP issued an order to bring the structure into compliance with current dam safety regulations and apply for a Certificate of Operation. The principal spillway of the dam had collapsed at some time in the past, the outlet works were incapable of passing the design storm and there was substantial seepage along the downstream toe of the embankment. TRIAD conducted a comprehensive exploration, laboratory testing program, stability evaluations, and hydrologic and hydraulic analyses as part of a design-development report in support of an application to modify the structure. Complete construction drawings and technical specifications were also developed. The final design included a new principal spillway structure with a pond drain pipe, a new grouted rip-rap lined emergency spillway channel and a downstream embankment addition with an internal drainage blanket to control seepage.

***Lake Forest Estates Dam**, Jefferson County, WV*
Project Manager for evaluation of an existing non-regulated earth embankment located on private property being developed as a residential subdivision. The West Virginia DEP issued an order to evaluate the structure and bring it into compliance with current safety standards. The approximate 30-foot high dam was about 350 feet long, with no principal spillway or pond drain mechanism. TRIAD conducted all field explorations, laboratory testing, engineering evaluations and preparation of a design-development report. Construction drawings and technical specifications were also prepared, and TRIAD filed applications for all of the necessary permits. Upgrades included a new principal/emergency spillway cut into rock and a downstream berm with a flatter slope and internal drainage blanket to enhance stability.

***Lakewood Dam,** Mineral County, WV*
Prime designer for a 72-foot high earth dam with a normal 60-foot water depth, creating a 43-acre reservoir for a lakefront residential community south of Cumberland, Maryland. Comprehensive services included surveying and aerial mapping, subsurface exploration, laboratory testing, hydrologic and hydraulic analyses, seepage analyses, stability evaluations and preparation of construction drawings and contract documents. Special considerations included a dam break analysis with routing of the flood wave downstream to evaluate impact on an existing railroad embankment. An innovative pond drain device, consisting of high strength HDPE pipe with a hydraulically actuated valve, eliminated the need for a typical reinforced concrete riser and reinforced concrete pressure pipe. A principal spillway weir and concrete lined channel were nested in an open emergency spillway channel excavated into hard bedrock. This combination resulted in appreciable construction cost savings for the Owners. TRIAD also provided construction monitoring, materials testing and contract administration during construction of the project.

KEVIN D. STEMPLE, P.E.
Senior Engineer
Geotechnical Department Manager

EDUCATION:

B.S. - Civil Engineering - 1995 - West Virginia University

REGISTRATION:

Licensed Professional Engineer - Virginia, West Virginia, Maryland, Pennsylvania and North Carolina

EMPLOYMENT HISTORY:

Senior Engineer/ Project Engineer Harrisonburg and Winchester, VA	Triad Engineering, Inc., 1996 to Present

PERTINENT EXPERIENCE:

Mr. Stemple has over fourteen (14) years of broad experience in construction monitoring and testing, laboratory soil testing, geotechnical field explorations and geotechnical evaluation projects including slope stability and foundation analyses. In addition to the management of the geotechnical department, Mr. Stemple's current responsibilities also include assistance in management of the QA/QC department, review of project specifications, preparation of proposals and client relations.

PROJECT EXPERIENCE:

***Apple Mountain Lake Dam Modifications**, Warren Co., VA*
As Senior Engineer was responsible for development of dam modifications for 2 dams in the series. The modifications include new principal and emergency spillways and design of lake siphons. Modification also included abandonment and plugging of old principal spillways in place.

***Whippoorwill Dam,** Washington, VA*
Senior Engineer for dam modification that included removal of the failed CMP principal spillway and replacement with a new RCP spillway. Modifications also included installation of a PVC siphon, replacement of failed dam embankment and re-grading of the plunge pool area. Prepared and review all analyses and grading plans. TRIAD also conducted QC testing during the modifications.

Lake Ferndale Dam Modification, *Hampshire County, WV*
Project Engineer for dam modification that included a new principal spillway, siphon, abandonment of old CMP spillway and re-grading of the emergency spillway and dam crest. Responsible for overseeing all modifications including compaction testing of new fill, material review, field modifications to design and verification of proper construction sequencing.

***Berkeley Gateway Subdivision**, Berkeley County, WV*
As Senior Engineer, was responsible for development and direction of detailed geotechnical investigation which included geophysical studies and air-track probes. The development which included both residential and commercial was situated in Karst Terrain with several sink holes. Specific site design and sink hole remediation recommendations where required for the project.

***Crooked Run Shopping Center**, Warren County, VA*
As Senior Engineer, was responsible for development and management of the geotechnical exploration which included numerous borings and limited geophysical testing. The project included a Target store and several small retail and restaurant structures. The project was located in Karst terrain, and portions of the site required nearly 30 feet of fill.

***Wal-Mart Supercenters,** Dumfries & Manassas, VA*
As Project Engineer, was responsible for implementing and supervising all aspects of field and laboratory testing for the projects. Both projects included critical cut and fill slopes constructed in cretaceous clay which, under Prince William County, VA guidelines, required detailed slope stability analysis and evaluation. As a result of slope stability analyses, significant retaining structures were required for the Dumfries site to attain adequately stable slopes per County requirements.

***Grandview Water Tank,** Harrisonburg, VA*
As Senior Engineer, was responsible for development and supervision of detailed geotechnical investigation for a 6,000,000 gallon water tank situated in Karst terrain. Subsurface conditions within the tank area consisted of very deep soft soils and numerous solutioning features which required compaction grouting for soil improvements.

MICHAEL J. DELANEY, P.E.
Project Engineer

EDUCATION:

B.S. - Civil Engineering - 2001 - West Virginia University Institute of Technology

REGISTRATIONS AND LICENSES:

Licensed Professional Engineer - West Virginia and Virginia
HEC-RAS Modeling - ASCE

EMPLOYMENT HISTORY:

Project Engineer	Triad Engineering, Inc. 2009 - Present
Engineer	Bowman Consulting 2005 - 2009
Project Engineer	Cives Steel 2004 - 2005

PERTINENT EXPERIENCE:

Mr. Delaney has over 8 years of experience in Civil Engineering Design. He has provided design calculations and reports relating to grading, storm water management, storm water conveyance, potable water distribution analysis and design, sanitary sewer design, on-lot sanitary treatment, facultative lagoon design, erosion and sediment control, horizontal and vertical road alignment, and retaining wall design and analyses. Mr. Delaney is also familiar with the permitting processes including Highway Entrance Permits, Natural Pollutants Discharge Elimination System (NPDES) permits, Groundwater Protection Plans (GPP's) and Storm Water Pollution Prevention Plans (SWPPP).

DAVID F. SPRIGGS, L.S., P.S.
Surveying Services Manager

REGISTRATIONS AND LICENSES:

Professional Surveyor - West Virginia
Land Surveyor - Virginia

EMPLOYMENT HISTORY:

Surveying Services Manager	Triad Engineering, Inc. 1996 - Present
Field Crew Coordinator/Survey Computer	PHR&A, Winchester, VA 1990 - 1996
Field Crew Chief/Survey Computer	PHR&A, Fairfax, VA 1978 - 1990

PERTINENT EXPERIENCE:

Mr. Spriggs has over 30 years of experience in land surveying on numerous types of projects. He is currently the Surveying Services Manager for the Winchester, Virginia office of TRIAD. In this capacity, Mr. Spriggs' responsibilities include complete management of the land surveying division, including client contact and relations, field crew management, office computations and drafting, field surveying, deed research, and preparation of plats.

PROJECT EXPERIENCE:

WVDOH - Corridor "H", *Baker to Wardensville, WV*
Surveying for the boundary location of all affected properties for right-of-way acquisition, verification of existing aerial mapping with cross-sections at 100-meter intervals, stake-out of structure and roadway borings, cross sections of stream channels and stake-out of final centerline alignment.

WVDOH - Route 9, *Jefferson County, WV*
Surveyor for quality assurance surveying under construction inspection contract for a section of Route 9.

City of Winchester Water Line Replacement*, Winchester/Frederick County, VA*
As a Licensed Surveyor, managed all aspects pertaining to the surveying for the replacement and realignment of Winchester, Virginia's 17-mile water main. Project included establishing horizontal and vertical control, deed research on 300 abutting properties, preparing composite property maps, supplementing aerial topography, and preparation of all easement plats.

***Stafford County Public Schools**, Stafford County, VA*
As Licensed Surveyor, managed all aspects related to the acquisition of property for future school sites. Project included deed research, horizontal and vertical control, boundary line determination, metes and bounds description composition and plat preparation on a 15-acre tract of property.

***Central Coca-Cola Bottling Co. Inc.**, Frederick County, VA*
As Licensed Surveyor, managed all aspects related to the acquisition of property for a future business park and bottling plant. Project included deed research, horizontal and vertical control, boundary line determination, metes and bounds description composition and plat preparation on an 80-acre tract of property. Additional responsibilities included accurate location of all improvements associated with the subdivision design for a future business park.

***General Excavating, Inc., VA State Route 3 Extension**, Culpeper County, VA*
As Licensed Surveyor, managed all aspects related to construction of three miles of new highway. The project included plan review, office computations for slope staking, road bed and storm water management measures construction and setting new right of way monumentation.

***Mr. Bruce Feltner**, Frederick County, VA*
As Licensed Surveyor, managed all aspects related to the establishment of a rural subdivision of land. Project included deed research, horizontal control, boundary line determination, metes and bounds description composition and subdivision plat preparation in accordance with Frederick County specifications on a 132-acre tract of property.

***Caldwell-Santmeyer, Loudoun County Public Schools**, Loudoun County, VA*
As Licensed Surveyor, managed all aspects related to the construction of three new elementary schools. Projects included plan review and analysis, office computations for all infrastructure and building construction, and final record drawing preparation.

***M.A. Bongiovanni, Inc., Purcellville Wastewater Treatment Plant**, Loudoun Co., VA*
As Licensed Surveyor, managed all aspects related to the recondition and new construction of a municipal waste water treatment plant. Project included plan review and comparison to existing facilities, office computations of all new, and adjustments to existing facilities, for accurate layout and construction.

***Oakcrest Builders, Windstone Town Houses**, Frederick County, VA*
As Licensed Surveyor, managed all aspects related to the acquisition of property and design of 199 new town houses on a 30-acre tact of land. Project included deed research, horizontal and vertical control, boundary line determination, metes and bounds description composition and plat preparation on a 30 acre tract of property. Additional responsibilities included the preparation of subdivision plats in accordance with local zoning and subdivision specifications and the office management and layout computations for construction.

5. LOCAL EXPERIENCE WITH SIMILAR PROJECTS

TRIAD has been engaged in providing services for both design and construction phases for dam projects since the founding of the firm. The Winchester office of TRIAD, in particular, is regularly retained by numerous clients involved in planning, design, modification and construction of dam projects in our general region, including West Virginia, Virginia, Maryland and Pennsylvania. Our commitment to quality, timeliness and economics is evident by significant amounts of repeat business from numerous Winchester office clients. In conjunction with recently updated dam safety regulations in both West Virginia and Virginia, TRIAD has completed numerous reports for dams with varying hazard classifications. To date, we have received complete acceptance of the first submittals of all our assessment reports that have been reviewed by dam safety personnel. Brief descriptions of several representative dam projects, including the client contacts, are presented on the following pages.

Lake Forest Estates Dams
Jefferson County, West Virginia

The Lake Forest Estates dams include primary and secondary earth fill dams located in adjacent valleys. The dams are connected by an open channel originally thought to be the principal spillway for the primary dam. In 2005, the Owner was notified by the WVDEP Dam Control Division that the dams were under the State's jurisdiction, and they were ordered to complete an engineering study and safety assessment. Problems which were initially identified included excessively steep slopes, uncontrolled embankment seepage, large trees on the embankments, blocked spillway channels, and a non-functional riser in the secondary dam.

A complete field exploration, including soil test borings within the existing embankments and test pits in an adjacent borrow area, was conducted for the rehabilitation. Laboratory testing included routine classification testing of soils as well as shear strength testing for the existing fill soils and potential borrow materials.

Initial stability evaluations indicated that the dams did not meet present safety standards. Furthermore, hydrologic and hydraulic analyses proved that the dams would not comply with State standards for the design storms. Rehabilitation design included flattening of the upstream and downstream slopes, a blanket drain and filter system to control seepage and enhance stability of the primary dam, a new overflow weir and discharge channel for the primary dam, a new principal spillway riser and outlet for the secondary dam, and a new emergency spillway channel for the secondary dam. Design plans, specifications, reports and an Emergency Action Plan were submitted and approved by WVDEP. Construction was accomplished during the 2006-2007 construction season with full-time monitoring and testing by TRIAD. Final inspection and approval by WVDEP were achieved in August, 2007.

Client: American Acreage, LLC
Mark Lorson
800-524-3064

Lake Ferndale Dam Modification
Hampshire County, West Virginia

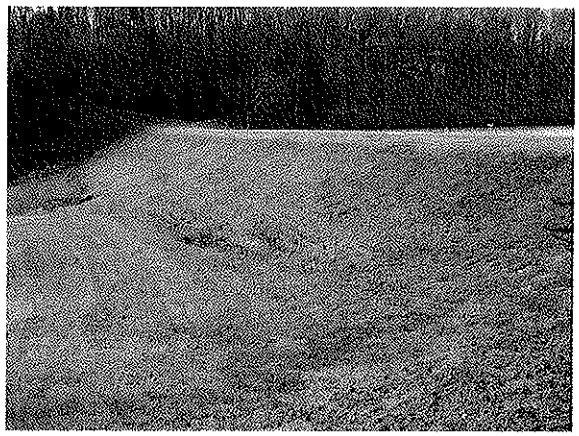
The engineering evaluation portion consisted of various storm flood routings through both existing and proposed outlet works. The evaluation also included hazard classification assessment, downstream inundation mapping, and slope stability analyses. The design portion included a new principal spillway system, syphon and re-grading of the emergency spillway and dam crest. Surveying, test borings and laboratory testing was included as part of the initial investigation. Technical specifications and plans along with required West Virginia state forms were completed for approval and construction purposes. TRIAD performed all construction monitoring and testing services for the project and currently performs all the required safety inspections on the dam.

Client: Lake Ferndale Landowners Association
Mr. Bob Sheesley
410-750-9925

Lake St. Clair
Frederick County, Virginia

TRIAD was initially retained many years ago to evaluate this dam for safety to bring it into compliance with state requirements. Based on the flood routings at that time, the primary/emergency spillway channel was modified to reduce the potential for overtopping during the spillway design flood. More recently, after regulations were updated, Triad was engaged to conduct updated flood routings, downstream inundation mapping and incremental damage analysis to confirm the hazard classification. Results of these studies have been used to support a request for a Letter of Map Amendment (LOMA) from FEMA.

Client: Lake St. Clair, Inc.
Mr. Tupper Dorsey
540-533-9277



Apple Mountain Lake Dam Modifications
Warren County, Virginia

TRIAD was responsible for the development of dam modifications for two old dams in series that were built in the 1960's. The modification design included new principal and emergency spillways, abandonment of the existing spillway, re-grading and lining of the emergency spillways. TRIAD was also responsible for design of the lake siphons. The evaluation phase involved various flood routings through existing and proposed outlet works. Modifications also included abandonment and plugging of old principal spillways in place. TRIAD performed survey layout for the project and inspection services during construction.

Client: Apple Mountain Lake POA
Ms. Tammie Mirkay
540-636-0784

U.S. Silica Dam "C" Tailings Impoundment
Berkeley Springs, WV

Project included engineering evaluation assessment to abandon current tailings impoundment facility in accordance with WVDEP Dam Safety division guidelines. Engineering services include a field investigation, slope stability analyses, well installation and monitoring, design report, permitting, preparation of construction drawings and technical specifications and management of construction testing for the abandonment process. Surveying services included development of the topographic mapping of the entire impoundment utilizing GPS technology. A large diversion channel was also designed and constructed along one side of the facility to reduce saturated tailings capacity below 15 ac-ft. The impoundment has been successfully abandoned and is now not considered a dam in accordance with State criteria.

Client: U.S. Silica Company
Mr. Bob Mang
304-258-2500

Whippoorwill Dam
Washington, Virginia

After the remnants of a hurricane that came through Washington, Virginia in 2003, a piping failure in this Class III dam developed around its old corrugated metal pipe (CMP) principal spillway. The piping failure led immediately to rapid lowering of the water level within the 10-acre lake. TRIAD was contacted immediately to observe the conditions, provide recommendations and develop short and long-term corrective action plans. The pool level was to be kept at a very low level by cutting down the riser pipe significantly until the dam could be repaired.

TRIAD immediately initiated an engineering evaluation and design modification for the dam. The work included development of design plans, technical specifications, and a bid document. The design details included first installation of a new PVC siphon that would serve as a temporary device to control the pool water level and a permanent lake drain device after construction. The design illustrated the removal of the old CMP principal spillway and replacement with a new reinforced concrete pipe (RCP) spillway system. The embankment was to be completely breached and the old pipe removed. The new design also included grading details of the new embankment and plunge pool area. TRIAD continued providing quality control monitoring and testing services and surveying during the construction phase of the project. Upon completion of the modifications, TRIAD developed an as-built survey and submitted required State forms to verify compliance with the approved plans and specifications.

Client: Whippoorwill, LLC
Mr. Gary Younkin
540-364-1238

Oliver Dam Modification
Loudoun County, Virginia

An engineering evaluation assessment was performed for this 45-foot high dam built in the 1960's. The engineering evaluation portion consisted of various storm flood routings, a design modification report, re-evaluation of hazardous classification and development of the inundation mapping downstream. In addition, design of the slip-lining for the corrugated metal pipe principal spillway and re-design of the emergency spillway was provided. TRIAD was responsible for the filing of state forms and QC monitoring during construction.

Client: Arcadia Development Company
540-751-0321

Silver Lake Dam
Frederick County, Virginia

TRIAD provided engineering services for a new privately owned 30-foot high earth dam which was replacing an older unsafe structure. Comprehensive services included surveying and aerial mapping, subsurface exploration, laboratory testing, hydrologic and hydraulic analyses, seepage analyses, stability evaluations and preparation of construction drawings and contract documents. Special considerations included an extensive wetlands delineation, dam break analysis with routing of the flood through downstream dams in series and impact analysis. Dam hazard classification and inundation mapping downstream, as well as preparation of emergency action plan, was completed. The principal spillway was comprised of a concrete pipe with anti-seep collars while the emergency spillway included a weir, box culvert, and grouted rip-rap lined exit channel. A box culvert was required to facilitate construction of a private access road across the top of the dam.

TRIAD was responsible for preparation of permitting documents through the Virginia Dam Safety division. TRIAD also provided construction monitoring, materials testing and contract administration during construction of the project. TRIAD continues to perform required safety inspections of the dam, and has recently completed the required assessment report in accordance with the new 2008 regulations.

Client: Silver Lake Properties, Inc.
Mr. James Wilkins, Jr.
540-662-7215

New Unimin Cove Ridge Tailings Impoundment
Gore, Virginia

This project included engineering evaluation and assessment, field investigation, slope stability analyses, design report, permitting, preparation of construction drawings and technical specifications and management of construction testing for a new 60-foot high earth dam with storage capacity of 870 ac-ft, which would impound tailings resulting from sand mining and processing. The bulk of the tailings storage was made available by constructing the dam across on old access road cut into a quarry which was no longer mined, thereby saving other valuable surface land. The estimated life of the facility was 25 years. The dam was constructed partially using quarry spoil which was removed during prior mining operations. The top of the dam embankment carries the primary haul road into and out of the current active quarry area.

Client: Unimin Corporation
Mr. Mike Pace, P.E.
507-931-6541

6. OVERALL DAM EXPERIENCE

Since the inception of the firm in 1975, TRIAD has been involved in numerous dam projects in varying capacities ranging from design of new facilities to safety evaluations and rehabilitation of old structures. We have extensive experience in preparing and securing dam permits with agencies in several different states. Below is a list of dams for which TRIAD has provided varying types of services in several states.

West Virginia Dam Projects:

Deegan Dam – Bridgeport, Harrison County, WV
Mt. Storm Lake Dam – Mt. Storm, Grant County, WV
Mountain Top PSD Dam – Mt. Storm, Grant County, WV
Bailey Dam – Mingo County, WV
Hinkle Dam – Bridgeport, Harrison County, WV
Longview Power Plant – Monongalia County, WV
Markwood Cedar Lake Dam – Mineral County, WV
Alpine Lake Dam – Terra Alta, Preston County, WV
Cobun Creek Dam – Morgantown, Monongalia County, WV
Willow Island Locks and Dam – Willow Island, Pleasants County, WV
Silver Creek Dam – Snowshoe, Pocahontas County, WV
Shavers Dam – Snowshoe, Pocahontas County, WV
Duncan Run Estates Dam – Berkeley County, WV
Lake Forest Estates Dam – Jefferson County, WV
Lake Ferndale Dam – Hampshire County, WV
U.S. Silica Dam – Berkeley Springs, Berkeley County, WV
Bruceton Mills Dam – Bruceton Mills, Preston County, WV
Loveridge Dam – Marion County, WV
Triad has worked on numerous dams for Consolidation Coal Company in Marion County, WV
Castleman Run Dam – Brooke County, WV
Bee Run Dam – Clay & Roane Counties, WV
Boley Dam – Babcock State Park, Fayette County, WV
Wilson Big Hollow Dam – Hampshire County, WV
Warden Dam – Hardy County, WV
Union Carbide Holtz Impoundment – Kanawha County, WV
Union Carbide Ward Pond – Kanawha County, WV
McClintock Dam – Mason County, WV
Burches Run Dam – Marshall County, WV
Anawalt Dam – McDowell County, WV
Pinnacle Rock Lake Dam – Mercer County, WV
Lemley Dam – Monongalia County, WV
Hurricane Water Supply Dam – Hurricane, Putnam County, WV
Mary Beth Dam – Putnam County, WV
Glade Springs Dam – Raleigh County, WV
Little Beaver Dam – Raleigh County, WV
PPG Earthen Dam – Wetzel County, WV
Shannondale Dam – Jefferson County, WV
Sleepy Hollow Dam – Berkeley County, WV
Coolfont (Lake Siri) Dam – Morgan County, WV
City of Thomas Reservoir – Thomas, Tucker County, WV
Lakewood Dam – Mineral County, WV

Blacksville No. 1 Fine Refuse Impoundment – Monongalia County, WV
Blacksville No. 2 Fine Refuse Impoundment – Monongalia County, WV
Tibbs Run – Monongalia County, WV
Neeley Hollow AMD – Mannington, Marion County, WV
Lowe AMD – Mannington, Marion County, WV
Snowshoe Resort Snowmaking Dam – Marlinton, Pocahontas County, WV

Virginia Dam Projects:

Apple Mountain Lake Dams – Warren County, VA
Blue Mountain Deer Lake Dam – Warren County, VA
Cove Dams – Frederick County, VA
Coventry Dam – Stafford County, VA
Deep Run Farm – Culpeper County, VA
Hideaway Hills Dam – Fauquier County, VA
JMU (Newman) Dam – Rockingham County, VA
Lake Front Royal – Warren County, VA
Lake Isaac Dam – Frederick County, VA
Lake of the Clouds, Shenandoah Farms – Warren County, VA
Lake Serene – Frederick County, VA
Lake St. Clair – Frederick County, VA
Lawrence Dams – Loudoun County, VA
Loch Linden Dam – Warren County, VA
Long Pond – Clarke County, VA
McGhee Dam – Loudoun County, VA
Oliver Dam – Loudoun County, VA
Peaceful Valley Dam – Frederick County, VA
Sheppard Lake Dam – Frederick County, VA
Silver Lake – Frederick County, VA
Spring Lake, Shenandoah Farms – Warren County, VA
Sullivan Dam – Warren County, VA
Whippoorwill Dam, Washington County, VA
Zuckerman (Meadow Lake) Dam – Frederick County, VA

Pennsylvania Dam Projects:

Capitol Camps Dam – Waynesboro, PA
Whitetail Pond Dam – Mercersburg, PA
Burchianti Dam – Smithfield, PA
Pittsburgh Airport Dam – Pittsburgh, PA
Bailey Freshwater Impoundment – Greene County, PA
Blacksville #2 Impoundments – Greene County, PA
Colvin Dam – Greene County, PA
Hughes Hollow Slurry Impoundment – Greene County, PA

Maryland Dam Projects:

Smithburg Lagoon and Edgemont Reservoir – Washington County, MD

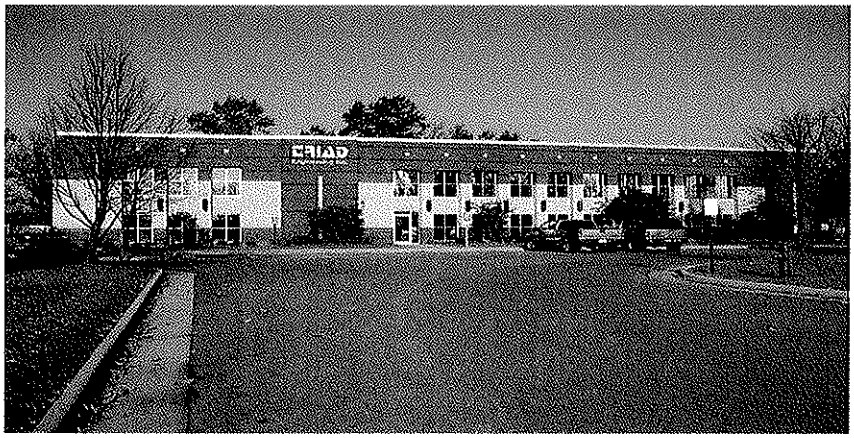
7. GENERAL FIRM CAPABILITIES

Triad Engineering, Inc. (TRIAD) is a full-service engineering consulting firm specializing in the areas of geotechnical engineering, environmental services, construction inspection and testing, drilling, laboratory testing, civil design, land surveying, and other earth-science related disciplines.

TRIAD was formed in 1975 and has steadily grown to become one of the largest engineering firms in the mid-Atlantic region. TRIAD is 100% employee-owned. At TRIAD, we pride ourselves on our ability to perform top-quality work for our clients, which is both on schedule and within budget. Our company is small enough to be responsive to the needs of our clients, and large enough to remain at the forefront of the engineering practice.

The firm has provided services on thousands of projects of varying size and complexity since beginning operations. Projects have included subsurface explorations, design engineering, construction monitoring, inspection and testing, environmental assessments, and preparation of contract documents. Our clients and projects include many of the companies, agencies, and facilities in our geographic area of operation. TRIAD currently maintains offices in Pennsylvania, Virginia, West Virginia and Maryland.

The principal place of business that will provide the services for this contract will be our Winchester, VA office. The Winchester office currently has a staff of about 30 who are capable of providing all of the dam engineering and analysis services required for this project. Our overall capabilities are outlined in the following pages.



GEOTECHNICAL ENGINEERING SERVICES

Geotechnical engineering consulting has been our mainstay since TRIAD was formed in 1975. Our experienced geotechnical department comprised of engineers and geologists can provide a wide variety of geotechnical services including the following:

- Site Suitability Studies and Surveys
- Geologic Literature Studies
- Planning, Supervision, and Inspection of Subsurface Investigations
- 2-D Electrical Resistivity Testing for Karst Terrain Evaluations
- Sinkhole Investigations
- Foundation Recommendations
- Settlement Analyses and Monitoring
- Bearing Capacity Determination
- Lateral Earth Pressure Estimates
- Development of Plans and Technical Specifications
- Slope Stability Analyses
- Hydrologic Investigation and Analyses
- Hydraulic Analyses of Pipes, Channels, Ditches, etc.
- Groundwater Seepage Analysis
- In-situ Permeability Testing and Evaluation (Pumping Tests)
- Dam Inspection and Design
- Subsidence Studies and Abatement
- Landslide Analyses and Abatement
- Subgrade and Slope Reinforcement
- Evaluation and Design of Retaining Structures
- Pavement Evaluation and Design
- Forensic Consulting Services
- Ground Penetrating Radar (GPR)

SURVEYING, CIVIL DESIGN, AND LANDSCAPE ARCHITECTURE SERVICES

Our civil engineering design projects include various types and sizes ranging from half-acre site plans to 100+ acre industrial facilities and other types of development. Our engineers are experienced in evaluation, analysis and design of stormwater management systems, pump and lift stations, storm and sanitary sewer systems, water distribution systems and residential, commercial and industrial site developments. We provide site planning, re-zoning and landscape architecture design services as part of the civil engineering division. All designs are completed in-house with construction plans and details developed on CAD systems.

Our surveying division provides a full range of surveying services from boundary and topographic surveys to construction layout services. Survey personnel are using state of the art field equipment, including a GPS system, data collectors and in-house software for data reduction and planimetric and topographic map preparation.

DRILLING SERVICES

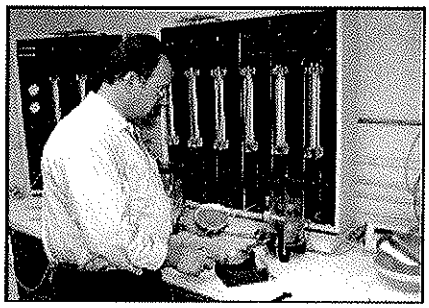
TRIAD currently owns and operates seven (7) truck and all-terrain drill rigs. These rigs provide support primarily for in-house geotechnical and environmental division work. However, we routinely provide contract drilling services for many clients including other engineering companies, industrial/commercial, federal, state and municipal entities. Typical services provided by TRIAD include:

- Auger Borings
- Test Borings with Standard Penetration Testing & Sampling
- Undisturbed Shelby Tube Sampling
- Rock Coring
- Rotary Percussion (DHH) Drilling
- Borehole Pressure Testing and Grouting
- Piezometer and Slope Inclinometer Installation
- Slope Inclinometer Installation
- Monitoring Well Installation and Development
- Sludge Pond and Hazardous Waste Sampling

LAB TESTING SERVICES

Our Winchester office is equipped to perform a full range of soil testing services for both physical properties and engineering properties. Additional laboratory capabilities include testing of concrete cylinders and beams, mortar, masonry prisms, grout, and aggregates. All tests are conducted by experienced engineers or technicians in conformance with appropriate ASTM, AASHTO and/or Corps of Engineers Standards. TRIAD is currently inspected and approved by independent agencies including CCRL for concrete testing and AMRL for soil and rock testing. We are also accredited by WACEL for both soils and concrete testing. We are fully equipped in house to perform the testing anticipated for the geotechnical and inspection services of this contract without the need for subcontracting. Typical laboratory testing services include:

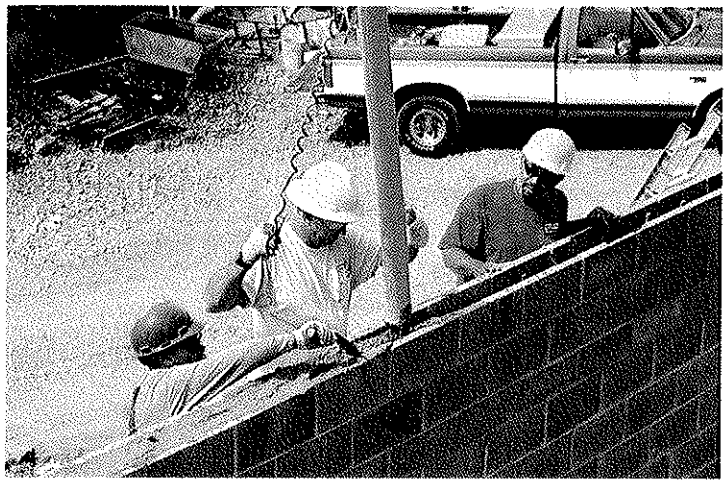
- Visual Classification of Soil/Rock Samples
- Laboratory Classification (Atterberg Limits, Moisture Content, and Grain Size Distribution)
- Standard and Modified Proctor Compaction
- Permeability (Flexible and Rigid Wall)
- Maximum and Minimum Relative Density (Granular Soils)
- California Bearing Ratio (CBR)
- Soil pH
- Soil Resistivity
- Soil Unconfined Compression
- Rock Core Unconfined Compression
- Swell Pressure Testing
- Consolidation
- Organic Matter Content
- Natural Density and Moisture
- Triaxial Shear
- Specific Gravity
- Los Angeles Abrasion
- Sodium Sulfate Soundness
- Asphalt Testing, Including Absorption & Density, Extraction, Gradation, and Marshall Stability and Flow
- Concrete Cylinder Compression
- Concrete Beam Testing
- Mortar or Grout Cube Compression Testing



QA/QC TESTING AND CONSTRUCTION MONITORING SERVICES

Our QA/QC division provides construction monitoring and testing services for virtually all phases of construction including soil, concrete, aggregate, asphalt, steel, welding, paint, roofing, and limited water testing. All equipment is serviced and calibrated at regular time intervals to maintain critical standards. Inspection and testing services performed on a routine basis by our technicians include:

- Field Compaction Testing of Soil, Aggregate, and Asphalt
- Soil and Aggregate Sampling for Laboratory Testing
- Field Compaction Testing using DOH Methods
- Inspection of Pile Foundations Including Driven Piling, Caissons, and Auger Cast Piles
- Footing Inspection and Bearing Capacity Evaluation
- Field Concrete Testing and Sampling Including Coring, Windsor Probe, and Rebound Hammer Testing
- Batch Plant Inspection
- Structural Steel Inspection Including Bolt Torque
- Visual Weld Inspection, and Dye Penetrant Testing
- Paint Thickness, Including Wet and Dry Film Thickness
- Roof Installation and Fire Proofing Inspection
- Bleacher Inspections



ENVIRONMENTAL EVALUATION SERVICES

OUR Winchester environmental division can address the environmental issues associated with the ever-increasing environmental laws and regulations such as CERCLA (Superfund), RCRA, SARA, TSCA, CAA, AHERA, CWA, SDWA, legislation for underground and above-ground storage tanks, and wetlands. TRIAD currently provides environmental services as listed below:

PHASE I ENVIRONMENTAL SITE ASSESSMENTS AND TRANSACTION SCREENS

All ESAs and Transaction Screens are conducted in accordance with ASTM Standard Practice E 1527 and E 1528, respectively.

PHASE II ENVIRONMENTAL SITE ASSESSMENTS

The Phase II ESA contains all the elements of the Phase I ESA, but also may include:

- Detailed pesticide, PCB, Petroleum and Related Chemical Sampling
- Analytical Testing
- Soil Gas Surveys for Volatile Organic Compounds
- Asbestos Inspections and Sampling
- Groundwater Monitoring, Sampling, and Testing
- Required Exploration and Technical Report Services

WETLAND DELINEATION STUDIES

- Preliminary Wetland Identification Studies
- Off-site Wetland Determinations
- Routine On-site Determinations
- Intermediate and Comprehensive On-site Determinations
- Surveying Upland - Wetland Delineation Boundaries

UNDERGROUND STORAGE TANKS (USTs)

- UST Basin Closure
- Site Characterization Assessments
- Corrective Action Plans
- Soil Vapor Studies
- Soil Sampling and Testing
- Remediation of Petroleum Contaminated Groundwater and Soils
- Installing Groundwater and Vapor Monitoring Wells

LAND APPLICATION FEASIBILITY STUDIES

- Evaluation of Site Soils, Geology, and Hydrogeology
- In Situ Permeability Testing and Groundwater Modeling

GROUNDWATER CONTAMINATION STUDIES

- Groundwater Modeling
- U.S.G.S. MODFLOW
- Fate and Transport Evaluations
- Contaminant Transport Models

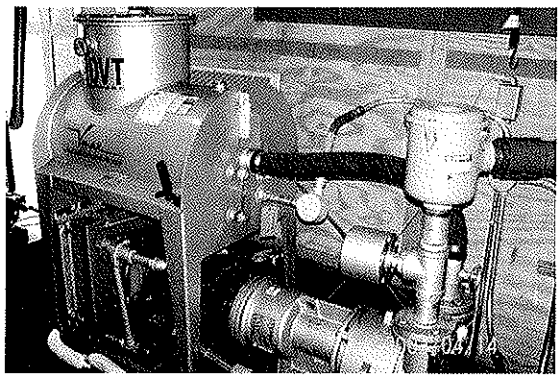
PERMITTING

- Wastewater Discharge
- Virginia Pollution Abatement (VPA)
- WVPDES Permits
- VPDES Permits
- Air Emissions
- UIC

SPILL PREVENTION CONTROL AND COUNTERMEASURE (SPCC) PLANS

- SPCC Plans
- ODC Plans
- Above Ground Storage Tank Containment Designs
- Early Leak Detection Plans and Monitoring for ASTs

Software we currently maintain and use includes MODFLOW, MULTIMEDIA, AQTESLOV, MWCAP, RESSQC, and HVORSLEV.



8. REFERENCES

In addition to the references listed with each project example, the following client references can be contacted to obtain information regarding our past performance on dam design and permitting, landfill closure design and permitting, geotechnical investigations, environmental assessments and construction monitoring and testing services.

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