



# West Virginia Purchasing Division

2019 Washington Street, East  
Charleston, WV 25305  
Telephone: 304-558-2306  
General Fax: 304-558-6026  
Bid Fax: 304-558-3970

The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at ***wvOASIS.gov***. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at ***WVPurchasing.gov*** with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.

## Header

List View

**General Information** | Contact | Default Values | Discount | DocumentInformation

Procurement Folder: 114103

SO Doc Code: CEOI

Procurement Type: Central Contract - Fixed Amt

SO Dept: 0313

Vendor ID: 000000204789 

SO Doc ID: DEP1600000002

Legal Name: THRASHER GROUP INC

Published Date: 10/20/15

Alias/DBA:

Close Date: 11/3/15

Total Bid: \$0.00

Close Time: 13:30

Response Date: 11/03/2015 

Status: Closed

Response Time: 10:28

Solicitation Description: Addendum 03 EOI Bickmore Refuse #2

Total of Header Attachments: 0

Total of All Attachments: 0



Purchasing Division  
 2019 Washington Street East  
 Post Office Box 50130  
 Charleston, WV 25305-0130

**State of West Virginia  
 Solicitation Response**

**Proc Folder :** 114103  
**Solicitation Description :** Addendum 03 EOI Bickmore Refuse #2  
**Proc Type :** Central Contract - Fixed Amt

Date issued	Solicitation Closes	Solicitation No	Version
	2015-11-03 13:30:00	SR 0313 ESR11031500000001950	1

VENDOR
000000204789 THRASHER GROUP INC

**FOR INFORMATION CONTACT THE BUYER**  
 Beth Collins  
 (304) 558-2157  
 beth.a.collins@wv.gov

Signature X FEIN # DATE

All offers subject to all terms and conditions contained in this solicitation

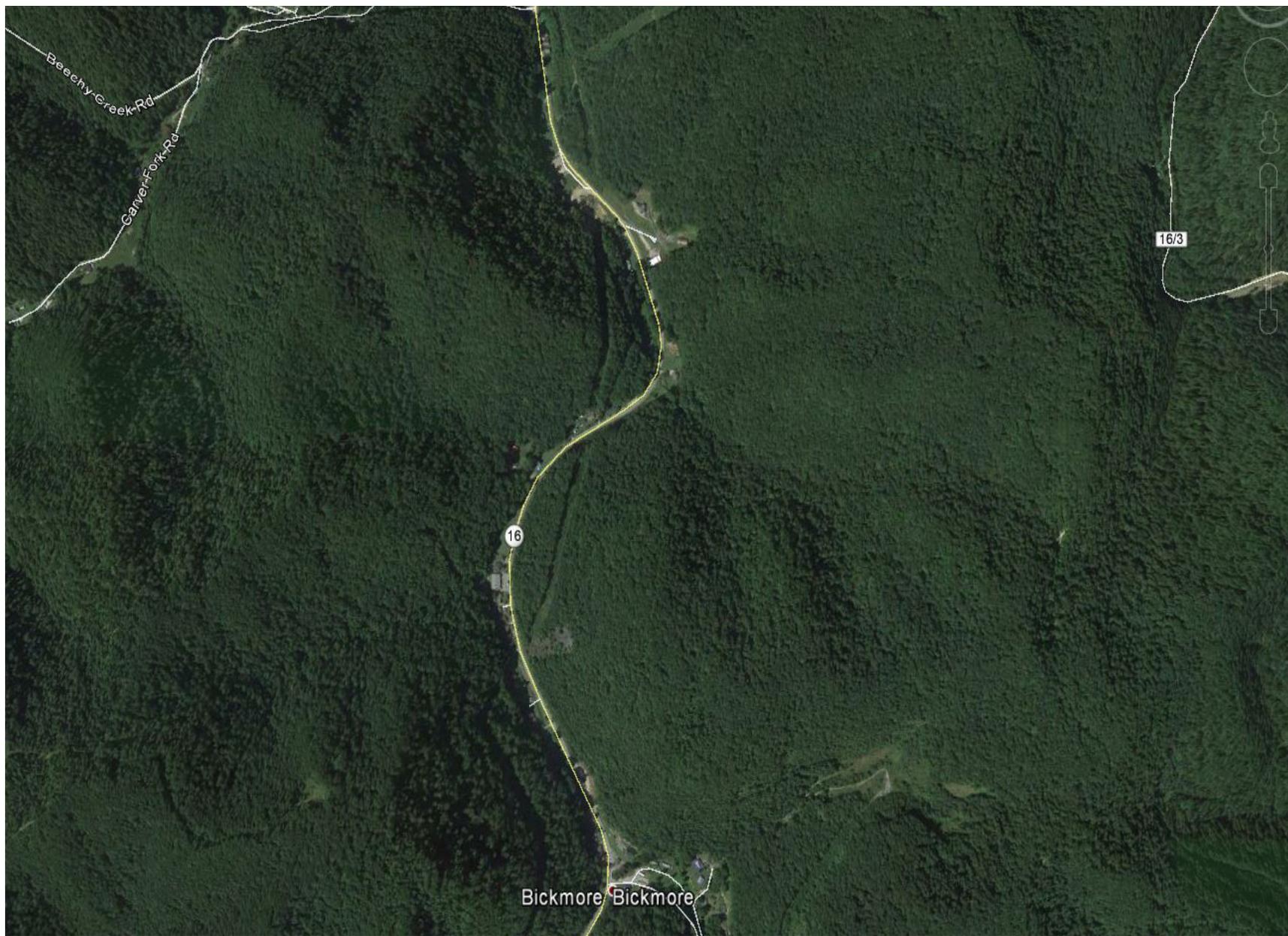
Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	EOI Engineering Design Services				\$0.00

Comm Code	Manufacturer	Specification	Model #
81100000			

**Extended Description :** \*Dates of service are estimated for bidding purposes only.

EXPRESSION OF INTEREST  
for  
BICKMORE REFUSE #2

DEP 16396  
November 3, 2015



**THRASHER**

600 WHITE OAKS BLVD.  
BRIDGEPORT, WV 26330  
[www.thrashereng.com](http://www.thrashereng.com)

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Purchasing Divison  
 2019 Washington Street East  
 Post Office Box 50130  
 Charleston, WV 25305-0130

State of West Virginia  
 Centralized Expression of Interest  
 02 – Architect/Engr

Proc Folder: 114103

Doc Description: EOI Bickmore Refuse #2 DEP16396

Proc Type: Central Contract - Fixed Amt

Date Issued	Solicitation Closes	Solicitation No	Version
2015-08-11	2015-09-23 13:30:00	CEOI 0313 DEP1600000002	1

**BID RECEIVING LOCATION**

BID CLERK  
 DEPARTMENT OF ADMINISTRATION  
 PURCHASING DIVISION  
 2019 WASHINGTON ST E  
 CHARLESTON WV 25305  
 US

**VENDOR**

Vendor Name, Address and Telephone Number:  
 The Thrasher Group, Inc.  
 600 White Oaks Blvd  
 Bridgeport, WV 26330

**FOR INFORMATION CONTACT THE BUYER**

Beth Collins  
 (304) 558-2157  
 beth.a.collins@wv.gov

Signature X *Chad Belle*

FEIN # 55-0633596-6

DATE 9/23/2015

All offers subject to all terms and conditions contained in this solicitation

November 3, 2015

Department of Administration, Purchasing Division  
2019 Washington Street East  
Charleston, WV 25305-0130

RE: DEP 16396, Bickmore Refuse #2

Dear Members of the Selection Committee:

The Thrasher Group, Inc. appreciates the opportunity to present our qualifications for the Bickmore abandoned mine land reclamation project. Thrasher is no stranger to DEP AML projects and we ask that you select our team to provide timely, cost effective reclamation plans. Our team has a thorough understanding of your project expectations and our experience in reclamation projects assures project success.

As the Principal-In-Charge, I have assembled a team of professionals who will deliver based on the following competencies:

- ***detailed review of the existing conditions of the project area and survey capabilities to assess mapping, control and other field data as well as obtain any additional information that may be required for design,***
- ***ability to provide recommendations and options for improvements,***
- ***development and itemized cost estimates for concepts and final design,***
- ***development of construction plans and technical specifications that are clear and concise,***
- ***ability to provide environmental services including, but not limited to, wetland and stream delineation,***
- ***preparation of project permitting***
- ***construction administration.***

Thrasher has built a business reputation that stands on integrity, experience, efficiency and judgement. In taking this approach, we have assembled an experienced group of professionals to meet the various needs of this project. We look forward to partnering with the WVDEP again to develop a successful reclamation project.

Sincerely,



CHADWICK D. BILLER, PE  
Partner, Principal-in-Charge

# SELECTION CRITERIA

## A. WV Professional Engineers: Thrasher employs 29 registered PE's

- H. Wood "Woody" Thrasher, PE
- Chad Biller, PE
- Mike Nestor, PE
- Daniel Ferrell, PE
- Ken Moran, PE
- Clay Riley, PE
- Matt Fluharty, PE
- Tom Urquhart, PE, BCEE
- Chad Riley, PE
- Jeff Gola, PE
- Doug Forni, PE
- Rob Milne, PE
- Richard Hovatter, PE
- Brad Messenger, PE
- Garrett Grubb, PE
- Nicole Jones, PE
- Anthony Brown, PE
- Thomas Adams, PE
- Steve Buchanan, PE
- David Smith, PE
- Jenelle Armstrong, PE
- Anthony Brown, PE
- Bob Bragg, PE
- Jonathan Carpenter, PE
- Jeffrey Ekstrom, PE
- Theodore W. Hamb, PE
- Steven P. Hamit, PE
- Wayne D. Morgan, PE
- Robert Gary Shields, PE

## B. Our reclamation engineering design experience as it relates to the specific project:

- Chad Biller, PE, Principal-in-Charge. Chad has more than 19 years of civil engineering experience with specific emphasis in mine reclamation, site development, highways, roads, bridges, and airports. Mr. Biller has managed the design and construction administration for a number of large grading and drainage projects in West Virginia. These projects have included design for mine reclamation, industrial and business parks, highways, and airports. Mr. Biller is also familiar with reclamation of mine portals, using either wet or dry seals.
- April Rohrbaugh, Staff Engineer has completed the design of four AML projects, under the direction of Chad Biller.
- Richard "RJ" Hovatter, PE has extensive experience in grouting projects for the WVDEP.

## C. Available AML Design Team:

**Civil PE's:** Chad Biller, Richard Hovatter, Mike Nestor, Dan Ferrell, Ken Moran, Clay Riley, Matt Fluharty, Tom Urquhart, Chad Riley, Robert Milne, Jeff Gola and Doug Forni

**CAD:** John Pitman, Patricia Escoriaza, Michael Oldaker, Jessica Wells, Alex Sutton, Devon Shrewsbury, Wade McKinney

# BACKGROUND

Thrasher is a privately owned engineering firm that specializes in multidisciplinary engineering services. Established in 1983, Thrasher is built on stable leadership, financial strength and reputation. Our dedication to creative design solutions, well-managed projects and customer service has made Thrasher West Virginia's largest privately owned engineering firm and an industry leader in the Mid-Atlantic region.

Since our formation, the company has grown to a firm of more than 350 employees. Our diverse staff has the resources to handle many projects, both large and small, simultaneously. Our client base is diverse and includes municipalities, state and federal government agencies, secondary and higher education, public and private entities, etc.

## Principals:

H. Wood "Woody" Thrasher, PE  
 Kenneth P. Moran, PE, PS  
 Chad M. Riley, PE  
 Daniel E. Ferrell, PE  
 Wm. Randy Watson, PE  
 Clay P. Riley, PE  
 Jonathan Carpenter, PE  
 Chadwick D. Biller, PE  
 Craig Baker, Associate AIA  
 Robert R. Milne, PE  
 Ron Stanley, CPA  
 Jenelle Armstrong, PE  
 Matt Fluharty, PE

## Our Locations:

Bridgeport, West Virginia  
 Charleston, West Virginia  
 Beckley, West Virginia  
 Oakland, Maryland  
 Canton, Ohio  
 Fredericksburg, Virginia  
 Cannonsburg, Pennsylvania

## Multi-Disciplinary Services:

Civil Engineering  
 Utility Services  
 Land and Site Development  
 Roadways  
 Bridges  
 Streetscapes  
 Airports  
 Storm Water Systems  
 Environmental Services  
 Architecture  
 Land Planning  
 Landscape Architecture  
 Construction Monitoring  
 Materials Testing  
 Pipeline Inspection  
 GIS Mapping

# BICKMORE REFUSE #2

Thrasher has taken steps to adequately respond to the WVDEP's expression of interest by visiting the job site. Our assessment of the site reveals this project will at a minimum require the following steps:

## **Step 1. Adequate Mapping**

Review any provided mapping, complete field survey to verify mapping and obtain any additional information required for design.

## **Step 2. Project Development and Design**

Assess project site and reclamation needs. Provide recommendations and options for improvements including engineering cost estimates. Develop comprehensive plans and technical specifications for successful project bidding and construction.

## **Step 3. Environmental and Permitting**

Provide environmental assessment as needed or required for the implementation of site improvements. Prepare permit applications or application packages to receive project approval based on federal, state and local requirements, including stormwater general permits (NPDES), U.S. Army Corps. of Engineers permits, and WVDOH encroachment permits.

## **Step 4. Bidding**

Provide construction plans and specifications for project bidding. Assist in the bidding procedure, including: Pre-Bid Conference and responses for requests for information.

## **Step 4. Construction Administration**

Assist the WVDEP with requests for information, engineering during construction, and/or progress meetings as required or requested.



*Drainage Channel Erosion*

# BICKMORE REFUSE #2



*Multiple Open Portal*



*Refuse on Stream Bank*



*Steep Exposed Refuse Site*

# OUR APPROACH TO AML

Thrasher has, or is in the process of, completing ten Abandoned Mine Lands (AML) projects for the West Virginia Department of Environmental Protection (WVDEP). While the scope of the projects varies, Thrasher has the experience and resources to apply the following design aspects:

**Reclaim Refuse Piles:** refuse piles were incorporated into the backfill of re-graded highwalls. These areas are then covered with soil and re-seeded.

**Highwall Re-Grading:** miles of highwalls have been backfilled and re-graded utilizing plans developed by Thrasher. Balancing the amount of cut and fill and keeping the amount of disturbance to a minimum is a challenge on any AML project. Thrasher has successfully met these challenges on other projects.

**Sealing of Portals:** Thrasher has developed plans for dozens of wet and modified mine seals for AML projects, including bat gate mine seals.

**Sink Hole Repair:** shallow mine voids cause sink holes that divert natural streams underground. Thrasher evaluates each site and develops a plan to backfill the voids, thereby reestablishing the original property.

**Landslide Repair:** three different landslide repair projects have been completed by Thrasher. Each repair required extensive geo-technical design for soldier pile and concrete lagging and concrete segmental gravity block walls, and slip material removal for slope stabilization. These projects were in close proximity to residential areas that required special care during construction.

**Drainage Design:** all of the AML projects completed by Thrasher have required design of drainage structures. These have included vegetated, grouted, riprap channels, as well as culverts and storm sewers. Drainage calculations were completed to properly size all conveyances.

**Permitting:** the permitting process can delay projects if they are not submitted correctly or in a timely manner. Thrasher takes pride in our ability to quickly obtain permits for our clients. We are able to utilize our excellent relationship with the WVDEP for NPDES permits as well as our relationship with the West Virginia Division of Highways for entrance and drainage permits. We are also experienced in obtaining Army Core of Engineers permits from both the Pittsburgh and Huntington District Offices for stream bank restoration, wetland mitigation and construction, linear transportation and utility line projects, and temporary construction access and dewatering.

# ADDITIONAL RELATED SERVICES

## SITE DEVELOPMENT

Projects ranging from sites for residential housing to business and industrial parks to multi-purpose “live, work and play” communities are included in our range of site development projects.

Services Include:

- ***Planning and Conceptual Design***
- ***Grading Plans***
- ***Utility Layout and Mapping***

## STORM WATER, SEDIMENT AND EROSION

Our experience includes development of Sediment and Erosion Control measures on all types of construction sites as required by the WV Division of Environmental Protection, design of drainage facilities including piping, intake structures, etc. for site stabilization and flood control.

Capabilities Include:

- ***Hydrology Studies / Hydrographic Mapping***
- ***Storm Water Collection Systems***
- ***Detention Ponds***
- ***Injection Wells***
- ***Underground Storage***
- ***Combined Sewer Overload (CSO) separation***

## SURVEY

In addition to a full service professional engineering staff, we maintains a surveying department which includes licensed professional land surveyors, full-time survey crews, CADD technicians, and office support staff.

## ENVIRONMENTAL REPORTING SERVICES

Thrasher provides full environmental assessment and clearance services. We have more than 30 years of experience conducting environmental and natural resource compliance consultation with both state and federal agencies.

Experience includes:

- ***Permitting Related Activities (401 and 404)***
- ***NEPA document preparation***
- ***Wetland Delineation and Mitigation***
- ***Rare, threatened and endangered species Section 7 Informal Consultation***
- ***Rare, threatened and endangered species Section 10 Habitat Conservation Plans***
- ***Water Use and Water Quality***
- ***Air and Noise Impacts, Assessments, and Controls***
- ***Soils and Geological Resources***
- ***Cultural Resources***
- ***Hazardous Materials***
- ***Sediment and Erosion Control***
- ***Consent Orders***
- ***Compliance Schedules***
- ***Site investigations***
- ***SPCC Plans, Contingency Plans, Ground Water***
- ***Protection Plans and Storm Water Pollution***
- ***Prevention Plans***
- ***Waste Treatment and Site Remediation***
- ***Waste Disposal***
- ***Channel Restoration***
- ***Stream Bank Stabilization***
- ***Enforcement Actions***

# ADDITIONAL RELATED SERVICES

## CONSTRUCTION MANAGEMENT AND INSPECTION

Thrasher knows how projects should be built. We provide the knowledge and experience necessary to manage the construction of your project. Our project managers and inspectors are experienced in all types of construction activities. Many of our construction managers and inspectors have years of experience, and are certified by the West Virginia Department of Transportation, Division of Highways for roadwork and materials testing.

## MATERIALS TESTING

Thrasher's Materials Testing Department is capable of performing a wide range of field and laboratory tests. Our laboratory at our Bridgeport, WV office is one of only three nationally certified facilities in the State of West Virginia. Additionally, our engineers and technicians who perform tests both in the field and in the lab are certified by the State of WV.

## EQUIPMENT AND SOFTWARE

Thrasher provides one of the largest networks of computer aided design (CAD) equipment, software and trained personnel in the State of West Virginia. Civil 3D, Carlson and Microstation V8 software is utilized at 70 CAD stations within the Group. Additionally, equipment includes 10 large format (size E) plotters and 5 large format plotter / scanners.

CAD plans are prepared by both dedicated CAD employees and by staff engineers and engineering technicians in each of the firm's offices. This equipment allows our design department to perform accurate work quickly and efficiently.



*April Rohrbaugh, Project Manager reviews project designs and answers questions with a group of contractors on a recent site visit to Roger Camp Hill.*



# PROJECT TEAM



## **Chad Biller, PE** **Principal-In-Charge**

### **Education:**

- BS, Civil Engineering, West Virginia University

### **Registrations:**

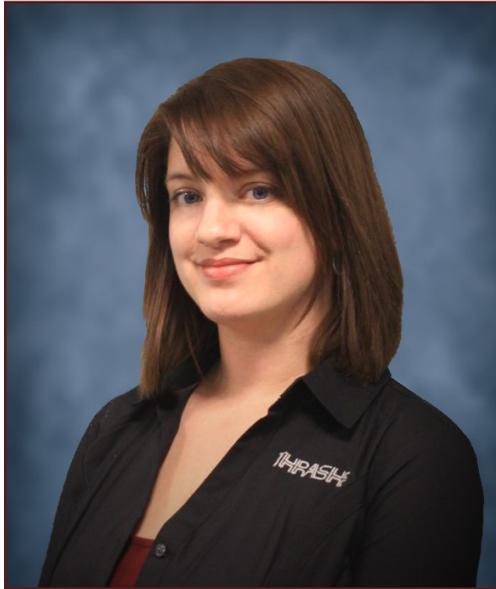
- Registered Professional Engineer (PE) - State of West Virginia
- Registered Professional Engineer (PE) - State of Pennsylvania
- Registered Professional Engineer (PE) - State of Ohio
- American Society of Civil Engineers
- American Society of Highway Engineers
- Society of American Military Engineers
- National Society of Professional Engineers

**Landgraph Refuse Pile:** This project located in Landgraft, WV involved a  $\pm 3$  acres exposed refuse site, 500 linear feet of dangerous highwall and streambank restoration of an unnamed tributary of Elkhorn Creek. The scope of work for this project included regrading the refuse site from the unnamed tributary's stream bank and to reclaim the highwall. Then an adjoining borrow sites were used to obtain sufficient suitable material to entomb the refuse for revegetation. The project site covered a total area of 4.3 acres and reclamation included  $\pm 16,000$  cubic yards of earthwork.

**Stowe Landslide:** This project located in Stowe WV, in Logan County, involved a 2 acre landslide caused an abandoned portal blowout. The slide mass was situated directly above a private residence at the base of a steep mountainside. Trees in the mobilized material had already caused damage to the residence's accessory structures and fence. Based on the subsurface investigation and the slide's proximity to the residence it was determined that the safest and most efficient way to mitigate the slide and prevent future damage to the residence was to remove slide material and excavate/regrade around the landside to a stable configuration while safely conveying surface and subsurface drainage around and through the site via deep underdrains and riprap/grouted riprap channels. The slide material upon removal was transported to a nearby waste site, spread, dried and compacted. The project site covered a total area of 2.9 acres and reclamation included  $\pm 6,000$  cubic yards of earthwork.

**Owl Creek Highwall #2:** This Morgantown, WV project involved 3 main sites which includes dangerous highwalls with heights between 20 and 70 feet, AMD water impoundments on highwall benches, exposed refuse on Booths Creek stream bank, open and collapsed portals, and existing non-functioning wet mine seal. The scope of work included regrading the highwall bench and adjoining spoil piles to reclaim the highwalls, installing new or replacing the existing wet/modified mine seals for the portals producing AMD and installing bate gates in the open portals. As well as, installing underdrains or seep collectors to eliminate ponding areas and constructing conveyances to safely transport stormwater and mine water in and around the site. Any Army Core of Engineers permit was applied for stream bank restoration/repair of Booths creek and a temporary construction access across the stream. The project site covered a total area of 24.5 acres and reclamation included  $\pm 113,000$  cubic yards of earthwork.

# PROJECT TEAM



## April Rohrbaugh Project Manager

### Education:

- BS, Civil Engineering Technology, West Virginia University

### Project Manager on the following:

- Squires Creek: Reclaim Refuse Piles; Highwall Re-grading
- Overfield (Lafferty): Landslide Repair
- Laurel Run: Highwall Reclamation, Mine Portals, and Passive AMD Treatment
- Clarksburg Lyons Landslide: Retaining Wall
- Pleasant Valley: Highwall
- Roger Camp Hill: Access Road; Drainage and Culverts
- Owl Creek Highwall #2: Highwall Reclamation and portal seals
- Landgraft Refuse Pile: Reclaim Refuse Piles
- Lamberts Run Site 7: Aerobic Wetland Passive AMD Treatment System
- Swamp Run #1: Limestone Flushing Bed Passive AMD Treatment System

**Pleasant Valley:** This project site located in Pleasant Valley, WV consisted of three main sections of highwall that totaled approximately 4,800 feet in length and averaged 20 to 50 feet in height. There were six collapsed portals which required wet/modified mine seals and four open portals which required bat gate mine seals. The project site covered a total area of 13.6 acres and reclamation included 39,300 cubic yards of earthwork. This was also a pilot project for a reforestation seeding mixture which is anticipated to have evidence of early tree growth within 5 to 10 years and total re-forestation within 15 to 20 years.

**Overfield (Lafferty):** This project site located in Overfield, WV consisted of a clogged stream and portal which were causing a landslide above a private residence. In addition to the slip, there was 2 acres of exposed refuse adjoining Elk Creek. The scope of work included installing a wet mine seal and regrading the clogged stream to safely convey both stormwater and mine water emanating from the portal around the slip area to an offsite existing drainway. Then a 10 foot gravity retaining wall was constructed above the residence to mitigate the landslide. Materials excavated from the clogged stream and wall construction were then used to entomb/cap the exposed refuse pile and revegetated. The project site covered a total area of 5 acres and  $\pm$  4,000 cy of earthwork.

**Lambert's Run Site #7:** This project located in Clarksburg, WV involved 3 wet-seal portals that drain into a 0.7 acre impoundment. The three portals discharge approximately 500 to 3,000 gallons per minute of iron laden water into the main stem of Lambert Run. This project is another in a series of projects aimed at removing Lambert Run (WV MW-16) from the state's 303(d) list of impaired watersheds. This is a project which will combat acid mine drainage emanating from three portals in the central region of the Lambert Run watershed. Thrasher's plan for the project included, constructing aeration channels and approximately 4 acres of aerobic wetlands to provide passive treatment of AMD. The proposed treatments have been designed to remove approximately 80% of the acid load.

# PROJECT TEAM



## Richard Hovatter, PE

### Project Engineer

#### Education:

- BS, Civil Engineering Technology, Fairmont State University

#### Registrations:

- Registered Professional Engineer (PE) - State of West Virginia
- Registered Professional Engineer (PE) - State of Pennsylvania
- Level I Rosgen Natural Stream Construction
- Level II Rosgen Natural Stream Construction
- HEC—RAS Operator Training Short Course
- Annual Oil & Gas Training Pennsylvania
- MSHA Training

**ODOT Route 2, Gypsum Mine Stabilization:** Mr. Hovatter served as Project Engineer and was responsible for developing a grout stabilization plan for approximately two miles of Route 2 in Sandusky, Ohio. The plan was to stabilize all four lanes of highway where it crossed over an abandoned gypsum mine. The mined gypsum seam was approximately twelve to fifteen feet thick and was completely mined out. As part of the plan, Mr. Hovatter was responsible for acquiring an underground injection permit through the Ohio Department of Natural Resources.

**WV DEP Shinns Run Portals:** Mr. Hovatter served as Project Engineer and was responsible for the design, drawings along with the construction documents on an AML project outside of Shinnston on Shinns Run Road. The project consisted of a total seven open mine portals that needed to be sealed. Three of the portals were required to have bat gates installed and the others were to be piped for drainage. During the subsurface investigation it was determined that the section of Shinns Run that passed over three of the portals was constructed over significant mine voids. This resulted in a grout stabilization design to be added to the project scope.

**Charleroi Drainage Project:** Mr. Hovatter served as Project Engineer and was responsible for the site design and all construction documents at the Charleroi Liquid Propane load out facility. The site was constructed so that the scales set at the low point of the site and all the site drainage settled under the scales.

**JK Alfred Property:** Mr. Hovatter served as Project Engineer and was responsible for analyzing the existing drainage system and determining if it was adequate to pass the design storm runoff from the site. He was also responsible for obtaining a modification to the existing NPDES permit.

**Grafton National Cemetery:** Taylor County, WV. Mr. Hovatter served as Project Engineer for this design build project to re-mediate the discharge of the storm collection system at the cemetery. The discharge was released out on to an unstabilized slope and had caused significant erosion below the pipe. Mr. Hovatter designed a concrete sump along with a grouted riprap channel to collect the discharge and convey it downslope to a stable for discharge.

# PROJECT TEAM



## Michael Nestor, PE Project Engineer

### Education:

- BS, Civil Engineering Technology, Fairmont State University

### Registrations:

- Registered Professional Engineer (PE) - State of West Virginia
- Current President of American Society of Highway Engineers, North Central West Virginia Chapter
- American Society of Civil Engineers

**Anglins Run and Roaring Creek:** Mr. Nestor served as Project Engineer for the design of wet mine seal for abandoned mine portals and downstream conveyance of water associated with abandoned mines. Mr. Nestor worked closely with the DEP to identify sinkholes associated with abandoned mines and developed a site grading plan to restore collapsed areas and re-route drainage around problem areas.

**Stream Modeling:** Various Counties, WV. Mr. Nestor has performed several stream evaluations utilizing HEC-RAS stream modeling software for projects located in Monongalia, Harrison and Hampshire counties.

**Town of Oak Hill Storm Water Project:** Fayette County, WV. Mr. Nestor served as Project Manager for the design of storm sewer upgrades for the Town of Oak Hill. The project included the addition of a 2'x6' box culvert under Trump Avenue, construction drawings and specifications.

**Hawks Nest Sub-Division:** Garrett County, MD. Mr. Nestor served as Project Engineer for the development of a storm water management plan for a residential subdivision using low impact development methods. The scope of the project included site grading, storm water management, erosion and sediment control plans.

**Fairmont State University Storm Water Management Plan:** Marion County, WV. Mr. Nestor served as Project Engineer for the development of a storm water management program for the FSU campus, which is classified as an MS4 entity. The scope of this project included meeting all MS4 requirements in addition to preparing and submitting all necessary permit applications to the WV DEP.

**City of Clarksburg Storm Water Management Plan:** Harrison County, WV. Mr. Nestor served as Project Engineer for the development of a storm water management program for the entire city. Mr. Nestor assisted the city in getting all permitting required and the application to the WV DEP.

# ROGER CAMP HILL



## **ROGER CAMP HILL**

This project located in Thomas, WV involved dewatering a 169,000 gallon AMD water impoundment which had a pH of 2.6. There were also multiple seeps to be mitigated with a pH of 3.3  $\text{Fe} > 10 \text{ mg/l}$  and an estimated flow of 15 gpm. In addition to the AMD seeps and impoundment, there were three open refuse sites with roughly a combined area of 3 acres. Thrasher's plan for this project included, treating the impoundment's water as it was released and, where appropriate, excavating the refuse piles and backfilling the dewatered impoundment. Then all exposed refuse was entombed and conveyances were constructed to safely carry stormwater in and around the reclamation sites.

# SQUIRES CREEK



## SQUIRES CREEK

This job site included two refuse piles covering about two to three acres in total. There were remains of one mine building, unvegetated coal refuse, deep mine portals and acid mine drainage. Nearly all of this land was unvegetated with signs of severe erosion, the toe of the eastern pile extended down to the creek. Both piles had very steep outslopes and several well used 4-wheeler (ATV) trails extended up and down the face, thereby posing public safety hazards.

There were also six open and collapsed deep mine portals. Of these portals, one was open enough to easily allow entrance by either a child or adult. This opening was 4 to 5 feet high by 20 feet in width. Inside the portal were mine props that were clearly visible and the mine appeared to extend for a considerable distance into the hill. The remaining five portals, all located along a 200 LF mine face-up or highwall, approximately 10 to 15 ft. in height, were collapsed with only one discharging about 2 to 3 gpm of acid mine drainage (AMD).

# ANGLINS RUN & ROARING CREEK



## **ANGLINS RUN**

The project area included a total of eight collapsed mine portals with at least five of them having discharges ranging from 1 to 10 gpm. Total flows were estimated to be between 25 and 30 gpm. Thrasher's scope and plans for this project included construction of an access road into the site, excavation and wet seal of at least eight deep mine portals and the re-grade and fill of subsidence sinkholes. To carry water safely off site, drainage control channels, conveyance pipe and under drain were constructed. All areas disturbed by construction were soil covered, conditioned and re-vegetated.

## **ROARING CREEK**

This project involved the elimination of subsidence depressions, the closure of open portals and the treatment of AMD. The Roaring Creek Watershed was heavily deep mined and surfaced mined prior to 1977. The project area consisted of 3 open and 3 closed portals discharging acid mine drainage. The AMD seeped along the unnamed tributary and an area of subsidence, which drained surface water into the mine workings. AMD flow from the deep mine portals ranged from 10 gpm to 100 gpm with PH ranging from 3.1 to 5.0. The seeps along the UNT showed an average PH of 3.3. Thrasher's design plans called for the construction and rehabilitation of access roads to the site, and installation of wet seals at the portal locations. The plans also included re-grading the subsidence area to prevent surface water from entering the mine workings, and installing an emergency spillway on the existing pond which was designed to handle the additional flow.

# LAUREL RUN #1



## LAUREL RUN #1

This project site consisted of seven sections of highwall that totaled approximately 5,700 feet in length and averaged 20 feet in height. There were three collapsed portals adjacent to one another discharging approximately 25 gpm. One open portal entrance measured 2 foot by 3 foot and had no known discharge associated with it. Approximately 230 feet of abandoned railroad tracks remained on the project site and they did not connect to any existing tracks. The project site covered a total area of six acres and suffered from a lack of vegetation and toeing into Laurel Run.

## PROJECT HIGHLIGHTS:

- 31.5 Acres
- 160,000 Cubic Yards Balanced Earthwork
- 6 Mine Seals

# CLARKSBURG LYONS LANDSLIDE



## LYONS LANDSLIDE

The project site is located in Clarksburg, WV off of Route 19. There was a two acre slide mass composed of strip mine spoil and natural slip prone material located above and behind a the Lyons residence. The scope of work consisted of constructing a soldier pile and concrete lagging retaining wall with appurtenances to stabilize the slope above the existing residence and pond. Additionally, underdrains and channels were installed to carry water safely through or around the slip area.

## PROJECT HIGHLIGHTS:

- 23 ft. Retaining Wall
- Retaining Wall Consists of Soldier Pile and Concrete Lagging
- 1,600 LF of Underdrains

**CERTIFICATION AND SIGNATURE PAGE**

By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; understand the requirements, terms and conditions, and other information contained herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

The Thrasher Group, Inc.

\_\_\_\_\_  
(Company)

*Chad Biller*

Chad Biller, PE, Principal-in-Charge

\_\_\_\_\_  
(Authorized Signature) (Representative Name, Title)

304-624-4108, 304-624-7831, September 23, 2015

\_\_\_\_\_  
(Phone Number) (Fax Number) (Date)

**WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION**  
**AML CONSULTANT QUALIFICATION QUESTIONNAIRE** Attachment "B"

PROJECT NAME <b>BICKMORE REFUSE #2 DEP 16396</b>		DATE (DAY, MONTH, YEAR) <b>SEPTEMBER 23, 2015</b>		FEIN <b>55-0633596-6</b>	
1. FIRM NAME <b>THE THRASHER GROUP, INC.</b>		2. HOME OFFICE BUSINESS ADDRESS <b>600 WHITE OAKS BOULEVARD, BRIDGEPORT, WV 26330</b>		3. FORMER FIRM NAME <b>THE THRASHER GROUP, INC.</b>	
4. HOME OFFICE TELEPHONE <b>304-624-4108</b>	5. ESTABLISHED (YEAR) <b>1983</b>	6. TYPE OWNERSHIP Individual Corporation <b>X</b> Partnership Joint-Venture		6a. WV REGISTERED DBE (Disadvantaged Business Enterprise) YES NO <b>X</b>	
7. PRIMARY AML DESIGN OFFICE: ADDRESS/ TELEPHONE/ PERSON IN CHARGE/ NO. AML DESIGN PERSONNEL EACH OFFICE <b>600 WHITE OAKS BOULEVARD, BRIDGEPORT, WV 26330 / 304-624-4108 / CHAD D. BILLER, P.E., PARTNER / 12</b> <b>300 ASSOCIATION DRIVE, CHARLESTON, WV / 304-343-7601 / JONATHAN CARPENTER, MANAGING PARTNER / 2</b> <b>3000 THAYER PLACE, OAKLAND, MD/301-334-3866 / CHAD RILEY, PE / 1</b> <b>380 AIRPORT CIRCLE, BEAVER, WV 25813 /304-860-1924 / ROBERT CRADDOCK/2</b> <b>4150 BELDEN VILLAGE STREET, SUITE 101, CANTON, OHIO 44718 / 330-491-8170/ STEVE HAMIT, P.E./2</b> <b>236 CAMBRIDGE STREET, FREDERICKSBURG, VA 22405 / 540-372-3499/DOUGLAS RICHMOND, L.S./9</b> <b>1428 MAIN STREET, PRINCETON, WV 24740 /304-431-7800/ WAYNE MORGAN, PE /39</b>					
8. NAMES OF PRINCIPAL OFFICERS OR MEMBERS OF FIRM <b>H. WOOD THRASHER, P.E. – PRESIDENT</b> <b>KENNETH P. MORAN, P.E. – VICE PRESIDENT</b> <b>RONALD STANLEY, CPA – CHIEF FINANCIAL OFFICER</b>			8a. NAME, TITLE, & TELEPHONE NUMBER – OTHER PRINCIPALS <b>WM. RANDY WATSON-PARTNER (304) 624-4108</b> <b>CHAD M. RILEY, P.E.– PARTNER (304) 624-4108</b> <b>CHADWICK BILLER, P.E.– PARTNER (304) 624-4108</b> <b>CLAY P. RILEY, P.E. – PARTNER (304) 624-4108</b> <b>DAN FERRELL, P.E.- PARTNER(304) 624-4108</b> <b>CRAIG BAKER, ASSOCIATE AIA – PARTNER (304) 624-4108</b> <b>ROBERT MILNE, P.E. – PARTNER (304) 624-4108</b> <b>JONATHAN CARPENTER, P.E.-PARTNER (304) 343-7601</b> <b>MATTHEW FLUHARTY, P.E. – PARTNER (304) 624-4108</b> <b>JENELLE ARMSTRONG, P.E. – PARTNER (304)326-7601</b>		
9. PERSONNEL BY DISCIPLINE					
<b>36 ADMINISTRATIVE</b>	— ECOLOGISTS	<b>2 LANDSCAPE ARCHITECTS</b>	— STRUCTURAL ENGINEERS		
<b>9 ARCHITECTS</b>	— ECONOMISTS	— MECHANICAL ENGINEERS	<b>60 SURVEYORS</b>		
— BIOLOGIST	— ELECTRICAL ENGINEERS	— MINING ENGINEERS	— TRAFFIC ENGINEERS		
<b>26 CADD OPERATORS</b>	<b>7 ENVIRONMENTALISTS</b>	<b>4 PHOTOGRAMMETRISTS</b>	<b>2 GIS SPECIALIST</b>		
— CHEMICAL ENGINEERS	— ESTIMATORS	— PLANNERS: URBAN/REGIONAL	— PIPELINE INSPECTOR		
<b>41 CIVIL ENGINEERS</b>	— GEOLOGISTS	— SANITARY ENGINEERS	<b>33 MATERIALS TESTING TECH.</b>		
<b>26 CONSTRUCTION INSPECTORS</b>	— HISTORIANS	— SOILS ENGINEERS	<b>283 TOTAL PERSONNEL</b>		
DESIGNERS	— HYDROLOGISTS	SPECIFICATION WRITERS			
— DRAFTSMEN					
TOTAL NUMBER OF WV REGISTERED PROFESSIONAL ENGINEERS IN PRIMARY OFFICE: <u>29</u>					
*RPEs other than Civil and Mining must provide supporting documentation that qualifies them to supervise and perform this type of work.					
10. HAS THIS JOINT-VENTURE WORKED TOGETHER BEFORE? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO NOT APPLICABLE					

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

<b>NAME AND ADDRESS:</b> <b>NOVEL GEO-ENVIRONMENTAL</b> <b>650 MACCORKLE AVENUE WEST</b> <b>ST. ALBANS, WV 25177</b>	<b>SPECIALTY:</b> <b>GEO-TECHNICAL SERVICES</b>	WORKED WITH BEFORE  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE  <input type="checkbox"/> Yes <input type="checkbox"/> No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE  <input type="checkbox"/> Yes <input type="checkbox"/> No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE  <input type="checkbox"/> Yes <input type="checkbox"/> No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE  <input type="checkbox"/> Yes <input type="checkbox"/> No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE  <input type="checkbox"/> Yes <input type="checkbox"/> No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE  <input type="checkbox"/> Yes <input type="checkbox"/> No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE  <input type="checkbox"/> Yes <input type="checkbox"/> No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE  <input type="checkbox"/> Yes <input type="checkbox"/> No

12. A. Is your firm experienced in Abandoned Mine Lands Remediation/Mine Reclamation Engineering?  
**X YES** Description and Number of Project: THRASHER PERFORMS ENGINEERING DESIGN SERVICES TO THE WV DEP FOR DRAINAGE, PORTAL SEALS, HIGHWALL AND OTHER REMEDIATION PROJECTS, AS WELL AS FOR WATER LINE AND WATER TREATMENT PLANT PROJECTS RELATED TO AML. NUMEROUS PROJECTS INVOLVING LAND REMEDIATION, STORM WATER DRAINAGE, SLIP REPAIR, MASS GRADING IN RELATION TO SITE DEVELOPMENT AND HIGHWAY PROJECTS ARE ENGINEERED BY THE FIRM ON A REGULAR BASIS.

B. Is your firm experienced in Soil Analysis?  
**X YES** Description and Number of Projects: THRASHER MAINTAINS AN AASHTO CERTIFIED MATERIALS TESTING AND ANALYSIS LAB AT BOTH THE CLARKSBURG AND BECKLEY OFFICES. SOIL ANALYSIS EXPERIENCE IS SPECIFICALLY IN GRADATIONS AND CLASSIFICATION.

C. Is your firm experienced in hydrology and hydraulics?  
**X YES** Description and Number of Projects: THROUGHOUT THE STATE THRASHER HAS DONE THE PLANNING AND DESIGN OF BRIDGES FOR THE WEST VIRGINIA DEPARTMENT OF HIGHWAYS AND THE DESIGN OF MULTIPLE PRIVATE AND MUNICIPAL DEVELOPMENT PROJECTS LOCATED WITHIN FLOODPLAINS. THUS THRASHER HAS EXTENSIVE EXPERIENCE IN HYDROLOGY. WE ALSO HAVE A VAST AMOUNT OF EXPERIENCE IN HYDRAULIC MODELING FOR WATER AND WASTEWATER PROJECTS THROUGHOUT WEST VIRGINIA.

D. Does your firm produce its own Aerial Photography and Develop Contour Mapping?  
**YES** Description and Number of Projects: THRASHER ACQUIRES AERIAL IMAGERY USING IN HOUSE RESOURCES ON SMALLER AREA PROJECTS. WE OWN AND OPERATE THREE UAS (UNMANNED AERIAL SYSTEMS) FOR A VARIETY OF IMAGERY MISSIONS FOR PROJECTS UP TO APPROXIMATELY 500 ACRES. FOR LARGE MAPPING PROJECTS, WE USE A COMMERCIAL FLYING SERVICE. THRASHER HAS THREE FAA CERTIFIED PILOTS.  
THRASHER HAS EXPERTISE AND SOFTWARE IN HOUSE AND ROUTINELY PERFORMS AERO TRIANGULATION, PLANIMETRIC COMPILATION, SURFACE MODELING, CONTOUR MAPPING AND DIGITALLY RECTIFIED IMAGERY.

THRASHER HAS MAPPED OVER 25 PROJECTS DURING THE LAST YEAR.

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: THRASHER HAS DESIGNED MORE WATER LINE SYSTEMS THAN ANY OTHER WEST VIRGINIA FIRM. PROJECTS INCLUDE NEW SYSTEMS, EXTENSIONS AND REPLACEMENTS OF WATER LINE DISTRIBUTION SYSTEMS, MANY OF WHICH HAVE BEEN AFFECTED BY ABANDONED MINE LANDS. DESIGN OF THE PROJECTS INCLUDES LINES, BOOSTER STATIONS, WATER TREATMENT PLANTS, AND STORAGE FACILITIES. THRASHER'S ANALYSIS AND DESIGN ALSO INCLUDES IMPROVEMENTS AND ALTERNATIVES FOR WATER SOURCES DEEMED GROUND WATER UNDER THE DIRECT EFFECT OF SURFACE WATER.

F. Is your firm experienced in Acid Mine Drainage Evaluation and Abatement Design?  
**YES** Description and Number of Projects THRASHER HAS BEEN AWARDED AND HAS SUCCESSFULLY COMPLETED NUMEROUS RECLAMATION PROJECTS FOR WVDEP RELATED SPECIFICALLY TO ACID MINE DRAINAGE AND ABATEMENT, AS WELL AS, MULTIPLE PASSIVE TREATMENT SYSTEMS DESIGNED FOR WATERSHED PROTECTION GROUPS. THE CHARLESTON WV BRANCH OF OUR COMPANY DESIGNED AN AWARD WINNING WATER TREATMENT PLANT FOR MARTINKA MINES IN MARION COUNTY, WEST VIRGINIA TO TREAT MINE DRAINAGE.

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:
<b>BILLER, CHADWICK D. P.E.</b>	<b>7</b>	<b>20</b>	<b>20</b>

Brief Explanation of Responsibilities: *Mr. Biller has experience in all aspects of engineering with specific emphasis on site development, highways, roads, bridges, and airports. Mr. Biller joined The Thrasher Group, Inc. in 1999 and is a partner of The Thrasher Group. For The Thrasher Group, Mr. Biller is responsible for WV DEP AML project and public and private site development projects, specializing in airports, highways, roads and bridges. As Project Manager for all of the firm's WVDOT/DOH projects, he has extensive knowledge of state and federal building standards.*

EDUCATION (Degree, Year, Specialization):  
 **B.S., Civil Engineering, 1992 – West Virginia University**

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

- American Society of Civil Engineers**
- Society of American Military Engineers**
- National Society of Professional Engineers**

REGISTRATION (Type, Year, State)

- Registered Professional Engineer(PE), State of West Virginia #13620**
- Registered Professional Engineer (PE), State of Pennsylvania #PE056012E**
- Registered Professional Engineer (PE), State of Ohio #64594**

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:
<b>NESTOR, MICHAEL – PROJECT ENGINEER</b>	<b>3</b>	<b>10</b>	<b>10</b>

Brief Explanation of Responsibilities *Mr. Nestor joined The Thrasher Group, Inc. in 2005 and serves as Project Manager and Engineer. Mr. Nestor has a wide range of experience in residential and commercial site development projects, utilizing all aspects of infrastructure design including street and lot layout, street profiles, extensions of public sewer and water systems, storm water drainage, storm water management, erosion and sediment control plans, and NPDES permitting. In addition, Mr. Nestor oversees all general operations within The Berkeley Associates, directing administrative staff, CAD technicians, and staff engineers to ensure successful completion of projects covering site development, surveying, material testing, and environmental services.*

EDUCATION (Degree, Year, Specialization)  
**B.S. Civil Engineering Technology – Fairmont State University, 2003**

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

- American Society of Civil Engineers**
- Eastern Panhandle Home Builders Association**

REGISTRATION (Type, Year, State)

- Professional Engineer (P.E.), 2009, State of West Virginia**

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES <b>RESPONSIBLE FOR AML PROJECT DESIGN</b> (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:
<b>ROHRBAUGH, APRIL</b>	<b>5</b>	<b>9</b>	<b>-</b>
Brief Explanation of Responsibilities <i>Mrs. Rohrbaugh joined The Thrasher Group, Inc. in January of 2006 and serves as Project Engineer in the site development department of Thrasher, with a concentration on AML reclamation and sediment/erosion control project. Mrs. Rohrbaugh has experience in all aspects of site engineering, taking projects from survey to concept to construction. Her responsibilities with AML projects include: Design of wet and modified mine seals, grading associated with reclaiming, storm water management, and erosion and sediment control. Mrs. Rohrbaugh's other responsibilities include: design surveying consisting of both field traversing and survey locations and aerial mapping. Conceptual planning for residential, commercial, and recreational developments. Site/Land Development engineering: geometric layout of sites, subdivisions, and roads, grading, drainage, storm water management, erosion and sediment control, and various regulatory permitting requirements.</i>			
EDUCATION (Degree, Year, Specialization) <b>B.S. Civil Engineering – West Virginia University, 2005, Civil Engineering</b>			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS		REGISTRATION (Type, Year, State)	

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES <b>RESPONSIBLE FOR AML PROJECT DESIGN</b> (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:
<b>HOVATTER, RICHARD (RJ) – PROJECT MANAGER</b>	<b>12</b>	<b>12</b>	<b>12</b>
Brief Explanation of Responsibilities: <i>Richard Hovatter Jr. joined The Thrasher Group, Inc. in 2011 and serves as Project Manager from TTG's Clarksburg Office. As a graduate of Fairmont State University and previous experience Mr. Hovatter has extensive knowledge of abandoned mine land and emergency situations such as landslides and mine subsidence of abandoned mine land. Mr. Hovatter is responsible for the designs, scheduling, collection and reporting of mine surface, sediment erosion control plans and waterline feasibility studies.</i>			
EDUCATION (Degree, Year, Specialization) <input type="checkbox"/> <b>Bachelor of Science, 2002, Civil Engineering Technology – Fairmont State University</b>			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS		REGISTRATION (Type, Year, State) <input type="checkbox"/> <b>Professional Engineer (P.E.), 2009, State of West Virginia</b> <input type="checkbox"/> <b>Professional Engineer (P.E.), 2010, State of Pennsylvania</b>	

14. PROVIDE A LIST OF SOFTWARE AND EQUIPMENT AVAILABLE IN THE PRIMARY OFFICE WHICH WILL BE USED TO COMPLETE AML DESIGN SERVICES

THE THRASHER GROUP, INC. WILL DESIGN WORK FOR AML UTILIZING ONE OF THE LARGEST NETWORKS OF COMPUTER AIDED DESIGN (CAD) EQUIPMENT, SOFTWARE AND TRAINED PERSONNEL IN THE STATE OF WEST VIRGINIA.

CONNECTED THROUGH A VIRTUAL PRIVATE NETWORK, OUR CAD STAFF HAS THE ABILITY TO SHARE NECESSARY PLANS AMONG OUR LOCATIONS. THIS WILL ALLOW WORK DESIGNED FOR AML TO BE PREPARED AND UPDATED AT THE OFFICE LOCATION THAT BEST MEETS THE NEEDS OF THE SCOPE OF SERVICES.

CIVIL 3D, CARLSON AND MICROSTATION V8 SOFTWARE IS UTILIZED AT 70 CAD STATIONS THROUGHOUT OUR LOCATIONS. ADDITIONALLY, EQUIPMENT INCLUDES 10 LARGE FORMAT (SIZE E) PLOTTERS AND 5 LARGE FORMAT PLOTTER / SCANNERS. CAD PLANS ARE PREPARED BY BOTH DEDICATED CAD EMPLOYEES AND BY STAFF ENGINEERS AND ENGINEERING TECHNICIANS IN EACH OF THE FIRM'S OFFICES.

THE THRASHER GROUP, INC. ALSO UTILIZES TOP-OF-THE LINE SURVEY EQUIPMENT. OUR SURVEY WORK IS ACCOMPLISHED WITH GLOBAL POSITIONING SYSTEMS (GPS) AND ELECTRONIC DISTANCE MEASURING (EDM) SURVEY STATIONS WITH DATA GATHERING CAPABILITIES. THE SURVEY CREWS AND OFFICE SUPPORT STAFF GENERATE MAPPING DELIVERABLES IN VIRTUALLY ANY DIGITAL FORMAT REFERENCED TO SPECIFIED PROJECTION SYSTEMS.

ADDITIONAL SURVEY SERVICES INCLUDE: HIGH ACCURACY MONUMENTATION, ASTRONOMIC OBSERVATIONS / ORIENTATION, NGS BLUE BOOKING, HYDROGRAPHIC, TERRESTRIAL SCANNING, 3D AS-BUILTS, 3D MONITORING, SUB-SURFACE UTILITY LOCATION / DESIGNATION. THE FIELD CREWS ARE ALL EQUIPPED WITH LATE MODEL FOUR WHEEL DRIVE VEHICLES STOCKED WITH THE MOST MODERN EQUIPMENT AVAILABLE TO PERFORM PROFESSIONAL LAND SURVEYING SERVICES.

111 TRIMBLE GNSS UNITS  
68 TRIMBLE ROBOTS  
2 PRECISE DIGITAL FIRST ORDER LEVELS WITH INVAR RODS  
39 LEICA, NIKON OR TOPCON TOTAL STATIONS ALL MANAGED BY  
TRIMBLE TSC3 FIELD COMPUTERS  
2 REMOTE CONTROLLED/UNMANNED MAPPING AERIAL PLATFORM  
HYDROGRAPHIC SURVEY VESSEL  
7 3D SUB-SURFACE UTILITY LOCATORS

CIVIL 3D  
CARLSON AND MICROSTATION V8 SOFTWARE  
70 CAD STATIONS  
10 LARGE FORMAT (SIZE E) PLOTTERS AND  
5 LARGE FORMAT PLOTTER / SCANNERS.

15. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS THE DESIGNATED ENGINEER OF RECORD: **WVDOH PROJECTS**  
*THE THRASHER GROUP IS CURRENTLY THE DESIGNATED "ENGINEER OF RECORD" ON MORE THAN 200 ON-GOING PROJECTS. THESE PROJECTS RANGE FROM SIMPLE BOUNDARY SURVEYS WHICH ARE COMPLETED WITHIN A FEW DAYS' TIME TO COMPLETE MUNICIPAL PROJECTS WHICH ARE COMPLETED OVER AN EXTENDED AMOUNT OF TIME. A PARTIAL LISTING OF CURRENT PROJECTS FOLLOWS WHICH DEMONSTRATES THE RANGE OF SERVICES PROVIDED BY THE THRASHER GROUP.*

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	NATURE OF YOUR FIRM'S RESPONSIBILITY	ESTIMATED CONSTRUCTION COST	PERCENT COMPLETE
MINERAL WELLS ROUTE 2 WOOD COUNTY	WVDOH / DOH BLDG. 5, ROOM A-109 1900 KANAWHA BLVD., EAST CHARLESTON, WV 25305	CIVIL ENGINEERING DESIGN, SURVEY, CONSTRUCTION DOCUMENTS	\$11,600,000.00	DESIGN STUDY 100% ENGINEERING DESIGN – 90%
NOTRE DAME ARCH BRIDGE HARRISON COUNTY	WVDOH / DOH BLDG. 5, ROOM A-109 1900 KANAWHA BLVD., EAST CHARLESTON, WV 25305	CIVIL ENGINEERING DESIGN, SURVEY, CONSTRUCTION DOCUMENTS	\$1,900,000.00	5%
VIRGINIA STREET DRAINAGE FAYETTE COUNTY	WVDOH / DOH BLDG. 5, ROOM A-109 1900 KANAWHA BLVD., EAST CHARLESTON, WV 25305	CIVIL ENGINEERING DESIGN, SURVEY, CONSTRUCTION DOCUMENTS	\$125,000.00	0%
TOTAL NUMBER OF PROJECTS: 3		TOTAL ESTIMATED CONSTRUCTION COSTS: 5 PROJECTS = \$13,600,000.00		

**15. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS THE DESIGNATED ENGINEER OF RECORD: WATER AND WASTEWATER PROJECTS**  
*THE THRASHER GROUP IS CURRENTLY THE DESIGNATED "ENGINEER OF RECORD" ON MORE THAN 200 ON-GOING PROJECTS. THESE PROJECTS RANGE FROM SIMPLE BOUNDARY SURVEYS WHICH ARE COMPLETED WITHIN A FEW DAYS' TIME TO COMPLETE MUNICIPAL PROJECTS WHICH ARE COMPLETED OVER AN EXTENDED AMOUNT OF TIME. A PARTIAL LISTING OF CURRENT PROJECTS FOLLOWS WHICH DEMONSTRATES THE RANGE OF SERVICES PROVIDED BY THE THRASHER GROUP.*

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	NATURE OF YOUR FIRM'S RESPONSIBILITY	ESTIMATED CONSTRUCTION COST	PERCENT COMPLETE
CITY OF CLARKSBURG WASTEWATER TREATMENT PLANT UPGRADES FOR LTCP	CITY OF CLARKSBURG 222 WEST MAIN STREET CLARKSBURG, WV 26301	FEASIBILITY STUDY, DESIGN, FUNDING AND PERMIT APPLICATIONS, CONTRACT DOCUMENTS, FIELD SERVICES OF SURVEY AND INSPECTION	\$9,000,000.00	90%
CITY OF ROMNEY WASTEWATER TREATMENT PLANT, ROMNEY, WV	CITY OF ROMNEY 340 E MAIN STREET ROMNEY, WV 26757	FEASIBILITY STUDY, DESIGN, FUNDING AND PERMIT APPLICATIONS, CONTRACT DOCUMENTS, FIELD SERVICES OF SURVEY AND INSPECTION	\$10,000,000.00	90%
FOUNTAIN PUBLIC SERVICE DISTRICT WATER SYSTEM PROJECT MINERAL COUNTY, WV	FOUNTAIN PUBLIC SERVICE DISTRICT PO BOX 146 / ROUTE 46 EAST KEYSER, WV 26726	FEASIBILITY STUDY, DESIGN, FUNDING AND PERMIT APPLICATIONS, CONTRACT DOCUMENTS, FIELD SERVICES OF SURVEY AND INSPECTION	\$10,500,000.00	90%
CITY OF SALEM, WEST VIRGINIA WATER LINE REPLACEMENT	SALEM, CITY OF P.O. BOX 352 229 W. MAIN SALEM, WV 26426	FEASIBILITY STUDY, DESIGN, FUNDING AND PERMIT APPLICATIONS, CONTRACT DOCUMENTS, FIELD SERVICES OF SURVEY AND INSPECTION	\$1,500,000.00	80%
CHESTNUT RIDGE PSD BARBOUR/PRESTON EXTENSION BARBOUR COUNTY, WV	CHESTNUT RIDGE PSD 209 S MAIN STREET P.O. BOX 386 PHILIPPI, WV 26416	FEASIBILITY STUDY, DESIGN, FUNDING AND PERMIT APPLICATIONS, CONTRACT DOCUMENTS, FIELD SERVICES OF SURVEY AND INSPECTION.	\$2,348,000.00	75%
CITY OF RIPLEY, WV WASTEWATER TREATMENT PLANT & SYSTEM IMPROVEMENTS JACKSON COUNTY, WV	CITY OF RIPLEY, WV 203 SOUTH CHURCH STREET RIPLEY, WV 25271	FEASIBILITY STUDY, DESIGN, FUNDING AND PERMIT APPLICATIONS, CONTRACT DOCUMENTS, FIELD SERVICES OF SURVEY AND INSPECTION	\$11,000,000.00	70%
TOWN OF HARMAN WATER SYSTEM IMPROVEMENTS RANDOLPH COUNTY	TOWN OF HARMAN PO BOX 125 HARMAN, WV 26270	FEASIBILITY STUDY, DESIGN, FUNDING AND PERMIT APPLICATIONS, CONTRACT DOCUMENTS, FIELD SERVICES OF SURVEY AND INSPECTION	\$5,900,000.00	60%
TOTAL NUMBER OF PROJECTS: 200+ COMPANY-WIDE			TOTAL ESTIMATED CONSTRUCTION COSTS: \$90,850,000.00 SHOWN TOTAL PROJECTS APPROXIMATELY \$750,000,000.00	

15. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS THE DESIGNATED ENGINEER OF RECORD: **WATER AND WASTEWATER PROJECTS (CONTINUED)**  
 THE THRASHER GROUP IS CURRENTLY THE DESIGNATED "ENGINEER OF RECORD" ON MORE THAN 200 ON-GOING PROJECTS. THESE PROJECTS RANGE FROM SIMPLE BOUNDARY SURVEYS WHICH ARE COMPLETED WITHIN A FEW DAYS' TIME TO COMPLETE MUNICIPAL PROJECTS WHICH ARE COMPLETED OVER AN EXTENDED AMOUNT OF TIME. A PARTIAL LISTING OF CURRENT PROJECTS FOLLOWS WHICH DEMONSTRATES THE RANGE OF SERVICES PROVIDED BY THE THRASHER GROUP.

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	NATURE OF YOUR FIRM'S RESPONSIBILITY	ESTIMATED CONSTRUCTION COST	PERCENT COMPLETE
HAMRICK PSD WATERSYSTEM UPGRADE/LOCATION ROAD EXTENSION TUCKER COUNTY, WV	HAMRICK PSD PO BOX 228 HENDRICKS, WV 26271	FEASIBILITY STUDY, DESIGN, FUNDING AND PERMIT APPLICATIONS, CONTRACT DOCUMENTS, FIELD SERVICES OF SURVEY AND INSPECTION	\$5,900,000.00	60%
MALDEN PUBLIC SERVICE DISTRICT WASTEWATER TREATMENT PLANT AND FORCE MAIN UPGROUND KANAWHA COUNTY, WV	MALDEN PUBLIC SERVICE DISTRICT P.O. BOX 350 TAD, WV 25201-0350	FEASIBILITY STUDY, DESIGN, FUNDING AND PERMIT APPLICATIONS, CONTRACT DOCUMENTS, FIELD SERVICES OF SURVEY AND INSPECTION	\$16,000,000.00	60%
TOWN OF CAPON BRIDGE WATERLINE AND PUMP STATION REPLACEMENT	TOWN OF CAPON BRIDGE PO BOX 183 FRANK, WV 24920	FEASIBILITY STUDY, DESIGN, FUNDING AND PERMIT APPLICATIONS, CONTRACT DOCUMENTS, FIELD SERVICES OF SURVEY AND INSPECTION	\$1,925,000.00	50%
BURNSVILLE WATER LINE EXTENSION BRAXTON COUNTY	TOWN OF BURNSVILLE 237 KANAWHA BLVD. BURNSVILLE, WV 26335	FEASIBILITY STUDY, DESIGN, FUNDING AND PERMIT APPLICATIONS, CONTRACT DOCUMENTS, FIELD SERVICES OF SURVEY AND INSPECTION.	\$4,500,000.00	30%
LINCOLN COUNTY PSD WATER LINE EXTENSION PROJECTS	LINCOLN PSD P.O. BOX 38 240 LITTLE COAL RIVER RD. ALUM CREEK, WV 25003	FEASIBILITY STUDY, DESIGN, FUNDING AND PERMIT APPLICATIONS, CONTRACT DOCUMENTS, FIELD SERVICES OF SURVEY AND INSPECTION	\$6,920,000.00	25%
PRESTON COUNTY SEWER PUBLIC SERVICE DISTRICT WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM	PRESTON COUNTY SEWER PUBLIC SERVICE DISTRICT PO BOX 89 BRUCETON MILLS, WV 26525	FEASIBILITY STUDY, DESIGN, FUNDING AND PERMIT APPLICATIONS, CONTRACT DOCUMENTS, FIELD SERVICES OF SURVEY AND INSPECTION	\$2,500,000.00	15%
CRAIGSVILLE PSD TIOGA WATER LINE EXTENSION NICHOLAS COUNTY, WV	CRAIGSVILLE PSD 18740 WEBSTER RD RD CRAIGSVILLE, WV 26205	FEASIBILITY STUDY, DESIGN, FUNDING AND PERMIT APPLICATIONS, CONTRACT DOCUMENTS, FIELD SERVICES OF SURVEY AND INSPECTION.	\$2,850,000.00	0%
TOTAL NUMBER OF PROJECTS: 200+ COMPANY-WIDE			TOTAL ESTIMATED CONSTRUCTION COSTS: \$90,850,000.00 SHOWN TOTAL PROJECTS APPROXIMATELY \$750,000,000.00	

15. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS THE DESIGNATED ENGINEER OF RECORD: **SANITARY SEWER PROJECTS**  
*THE THRASHER GROUP IS CURRENTLY THE DESIGNATED "ENGINEER OF RECORD" ON MORE THAN 200 ON-GOING PROJECTS. THESE PROJECTS RANGE FROM SIMPLE BOUNDARY SURVEYS WHICH ARE COMPLETED WITHIN A FEW DAYS' TIME TO COMPLETE MUNICIPAL PROJECTS WHICH ARE COMPLETED OVER AN EXTENDED AMOUNT OF TIME. A PARTIAL LISTING OF CURRENT PROJECTS FOLLOWS WHICH DEMONSTRATES THE RANGE OF SERVICES PROVIDED BY THE THRASHER GROUP.*

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	NATURE OF YOUR FIRM'S RESPONSIBILITY	ESTIMATED CONSTRUCTION COST	PERCENT COMPLETE
GREATER HARRISON COUNTY PSD PHASE II-RT. 73 HARRISON COUNTY, WV	GREATER HARRISON COUNTY PSD P.O. BOX 190 WEST MILFORD, WV 26451	FEASIBILITY STUDY, DESIGN, FUNDING AND PERMIT APPLICATIONS, CONTRACT DOCUMENTS, FIELD SERVICES OF SURVEY AND INSPECTION	\$22,265,600.00	80%
DECKERS CREEK SANITARY SEWER EXTENSION MONOGALIA COUNTY, WV	236 BROOKHAVEN RD. MORGANTOWN, WV 26508	FEASIBILITY STUDY, DESIGN, FUNDING AND PERMIT APPLICATIONS, CONTRACT DOCUMENTS, FIELD SERVICES OF SURVEY AND INSPECTION	\$1,900,000.00	70%
TENNERTON PSD PHASE III SANITARY SEWER EXTENSION UPSHUR COUNTY, WV	TENNERTON PSD 188 FAYETTE ST. BUCKHANNON, WV 26201	FEASIBILITY STUDY, DESIGN, FUNDING AND PERMIT APPLICATIONS, CONTRACT DOCUMENTS, FIELD SERVICES OF SURVEY AND INSPECTION	\$2,800,000.00	10%
MANNINGTON SEWAGE TREATMENT PLANT MARION COUNTY, WV	MANNINGTON PSD 307 E MAIN ST, MANNINGTON, WV 26582	FEASIBILITY STUDY, DESIGN, FUNDING AND PERMIT APPLICATIONS, CONTRACT DOCUMENTS, FIELD SERVICES OF SURVEY AND INSPECTION	\$2,300,000.00	0%
PINE GROVE SANITARY SEWER REPLACEMENT WETZEL COUNTY, WV	TOWN OF PINE GROVE NORTH FORK ROAD PINE GROVE, WV 26419	FEASIBILITY STUDY, DESIGN, FUNDING AND PERMIT APPLICATIONS, CONTRACT DOCUMENTS, FIELD SERVICES OF SURVEY AND INSPECTION	\$1,200,000.00	0%
TOTAL NUMBER OF PROJECTS: 5 SHOWN 200+ COMPANY-WIDE			TOTAL ESTIMATED CONSTRUCTION COSTS: \$30,465,000.00 SHOWN TOTAL PROJECTS APPROXIMATELY \$750,000,000.00	



17. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOU WERE THE DESIGNATED ENGINEER OF RECORD:

**AML RELATED PROJECTS FOR THE WVDEP AND WATERSHED PROTECTION GROUPS**

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST	YEAR	CONSTRUCTED (YES OR NO)
ANGLINS RUN PORTALS AML RECLAMATION BARBOUR COUNTY, WV	WV DEP, OFFICE OF AML&R 601 57 <sup>TH</sup> STREET, SE CHARLESTON, WV 25304	\$321,000.00	2010	YES
ROARING CREEK SUBSIDENCE AML RECLAMATION RANDOLPH COUNTY, WV	WV DEP, OFFICE OF AML&R 601 57 <sup>TH</sup> STREET, SE CHARLESTON, WV 25304	\$353,000.00	2010	YES
SQUIRES CREEK PORTALS REFUSE AML RECLAMATION	WV DEP, OFFICE OF AML&R 601 57 <sup>TH</sup> STREET, SE CHARLESTON, WV 25304	\$260,000.00	2011	YES
OVERFIELD (LAFFERTY) CS&P AML RECLAMATION	WV DEP, OFFICE OF AML&R 601 57 <sup>TH</sup> STREET, SE CHARLESTON, WV 25304	\$492,000.00	2011	YES
LAUREL RUN #1 REFUSE / HIGHWALL AML RECLAMATION MONONGALIA COUNTY, WV	WV DEP, OFFICE OF AML&R 601 57 <sup>TH</sup> STREET, SE CHARLESTON, WV 25304	\$1,558,000.00	2012	YES
CLARKSBURG (LYONS) LANDSLIDE AML RECLAMATION HARRISON COUNTY, WV	WV DEP, OFFICE OF AML&R 601 57 <sup>TH</sup> STREET, SE CHARLESTON, WV 25304	\$1,492,000.00	2012	YES
PLEASANT VALLEY AML RECLAMATION MARION COUNTY, WV	WV DEP, OFFICE OF AML&R 601 57 <sup>TH</sup> STREET, SE CHARLESTON, WV 25304	\$764,000.00	2013	YES
ROGER CAMP HILL AML RECLAMATION TUCKER COUNTY, WV	WV DEP, OFFICE OF AML&R 601 57 <sup>TH</sup> STREET, SE CHARLESTON, WV 25304	\$210,000.00	2013	YES
OWL CREEK HIGHWALL #2 AML RECLAMATION MONONGALIA COUNTY, WV	WV DEP, OFFICE OF AML&R 601 57 <sup>TH</sup> STREET, SE CHARLESTON, WV 25304	\$1,590,000.00	2014	NO
LANDGRAFF REFUSE PILE AML RECLAMATION MCDOWELL COUNTY, WV	WV DEP, OFFICE OF AML&R 601 57 <sup>TH</sup> STREET, SE CHARLESTON, WV 25304	\$324,000.00	2014	NO
CANYON REFUSE AND DUMP AML RECLAMATION MONONGALIA COUNTY, WV	WV DEP, OFFICE OF AML&R 601 57 <sup>TH</sup> STREET, SE CHARLESTON, WV 25304	\$1,004,000.00	2014	NO
STOWE (PRINCE) LANDSLIDE EMERGENCY AML LOGAN COUNTY, WV	WV DEP, OFFICE OF AML&R 601 57 <sup>TH</sup> STREET, SE CHARLESTON, WV 25304	\$220,000.00	2015	YES
LAMBERTON RUN SITE 7 PASSIVE AMD TREATMENT SYSTEM HARRISON COUNTY, WV	GUARDIANS OF THE WEST FORK 830 BENONI AVE. FAIRMONT, WV 2554	\$340,000.00	2015	YES
SWAMP RUN #1 PASSIVE AMD TREATMENT SYSTEM UPSHUR COUNTY, WV	BUCKHANNON RIVER WATERSHED ASSOCIATION 112 FAYETTE STREET, BUCKHANNON, WV 26201	\$440,000.00	2015	NO

17. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOUR FIRM WAS THE DESIGNATED ENGINEER OF RECORD: **NON AML PROJECTS**  
 THE THRASHER GROUP IS CURRENTLY THE DESIGNATED "ENGINEER OF RECORD" ON MORE THAN 200 ON-GOING PROJECTS. THESE PROJECTS RANGE FROM SIMPLE BOUNDARY SURVEYS WHICH ARE COMPLETED WITHIN A FEW DAYS' TIME TO COMPLETE MUNICIPAL PROJECTS WHICH ARE COMPLETED OVER AN EXTENDED AMOUNT OF TIME. A PARTIAL LISTING OF CURRENT PROJECTS FOLLOWS WHICH DEMONSTRATES THE RANGE OF SERVICES PROVIDED BY THE THRASHER GROUP.

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST	YEAR	CONSTRUCTED (YES OR NO)
HEPZIBAH PSD SANITARY SEWER EXTENSION HARRISON COUNTY, WV	ENLARGED HEPZIBAH DRAWER H HEPZIBAH, WV 26369	\$3,400,000.00	2010	YES
WHITE OAKS BUSINESS PARK SITE DEVELOPMENT AND UTILITIES HARRISON COUNTY, WV	HIGH TECH CORRIDOR DEVELOPMENT, LLC MR. JACK KEELEY PO BOX 1532 CLARKSBURG, WV 26302	\$12,100,000.00	2010	YES
TOWN OF ROWLESBURG WATER TREATMENT PLANT/ EXT. PRESTON COUNTY, WV	TOWN OF ROWLESBURG PO BOX 458 42 POPLAR STREET ROWLESBURG, WV 26425	\$4,500,000.00	2010	YES
HEPZIBAH PSD SANITARY SEWER EXTENSION HARRISON COUNTY, WV	ENLARGED HEPZIBAH DRAWER H HEPZIBAH, WV 26369	\$3,400,000.00	2010	YES
SUN VALLEY WATER AND SEWER SYSTEM IMPROVEMENTS REYNOLDSVILLE, WV	SUN VALLEY PSD PO BOX 95 REYNOLDSVILLE, WV 26422	\$12,500,000.00	2010	YES
HARDY COUNTY WATER SYSTEM IMPROVEMENTS HARDY COUNTY, WV	HARDY COUNTY PSD 223 N. MAIN STREET MOOREFIELD, WV 26836	\$8,000,000.00	2010	YES
NCWV AIRPORT FIRE PROTECTION SYSTEM UPGRADE RANDOLPH COUNTY, WV	NCWV AIRPORT 2000 AVIATION WAY, BRIDGEPORT, WV 26330	\$2,00,000.00	2011	YES
McHENRY BUSINESS PARK SITE DEVELOPMENT AND UTILITIES GARRETT COUNTY, MD	GARRETT COUNTY EDA 203 SOUTH 4TH STREET COURTHOUSE ROOM 208 OAKLAND, MD 21550	\$3,500,000.00	2011	YES
SOUTHWESTERN PSD WATER LINE EXTENSION / REPLACEMENT	SOUTHWESTERN WATER PUBLIC SERVICE DISTRICT P. O. BOX 98 FLEMINGTON, WV 26347	\$10,430,000.00	2012.	YES

17. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOUR FIRM WAS THE DESIGNATED ENGINEER OF RECORD: **NON AML PROJECTS**  
(continued)

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST	YEAR	CONSTRUCTED (YES OR NO)
NCWV AIRPORT RUNWAY SAFETY IMPROVEMENTS POCAHONTAS COUNTY, WV	NCWV AIRPORT 2000 AVIATION WAY, BRIDGEPORT, WV 26330	\$8,200,000.00	2012	YES
CITY OF SALEM WATER LINE REPLACEMENT AND DAM IMPROVEMENTS HARRISON COUNTY, WV	CITY OF SALEM 229 WEST MAIN STREET SALEM, WV 26426	\$981,595.00	2013	YES
COUNTY LINE BRIDGE MARSHALL COUNTY, WV	WVDOT / DOH BLDG. 5, ROOM A-109 1900 KANAWHA BLVD., EAST CHARLESTON, WV 25305	\$1,800,000.00	2013	YES
WVDOH DISTRICT 7 HEADQUARTERS LEWIS COUNTY, WV	WVDOT / DOH BLDG. 5, ROOM A-109 1900 KANAWHA BLVD., EAST CHARLESTON, WV 25305	\$2,300,000.00	2013	YES
I-64 WEIGH STATION PUTNAM COUNTY, WV	WVDOT / DOH BLDG. 5, ROOM A-109 1900 KANAWHA BLVD., EAST CHARLESTON, WV 25305	\$800,000.00	2013	YES
LEWIS COUNTY ECONOMIC DEVELOPMENT AUTHORITY BLOODY RUN WATER LINE EXTENSION	LEWIS COUNTY EDA 16 GARTON PLAZA WESTON, WV 26452	\$167,165.00	2013	YES
WVU – POTOMAC STATE COLLEGE STAYMAN SOCCER FIELD MONONGALIA COUNTY, WV	West Virginia University PO Box 6205 Morgantown, WV 26506	\$1,000,000.00	2014	YES
DODDRIDGE COUNTY PARK ACCESS ROAD AND BRIDGE DODDRIDGE COUNTY, WV	DODDRIDGE COUNTY PARKS AND REC. PO BOX 426, WEST UNION, WV 26456	\$480,000.00	2015	YES

18. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOU WERE ASSOCIATED WITH 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
MC DOWELL COUNTY FEDERAL PRISON WELCH, WV SITE DEVELOPMENT	US DEPARTMENT OF JUSTICE FEDERAL BUREAU OF PRISONS 500 FIRST STREET NW WASHINGTON, DC 20534	\$25,000,000.00	2010	YES	BELL JUSTICE FACILITIES
CITY OF BECKLEY INTERMODAL GATEWAY	CITY OF BECKLEY 409 S. KANAWHA STREET BECKLEY, WV 25801	\$250,000.00	2012	YES	PARSONS BRINCKERHOFF

19. USE THIS SPACE TO PROVIDE ANY ADDITIONAL INFORMATION OR DESCRIPTION OF RESOURCES SUPPORTING YOUR FIRM'S QUALIFICATIONS TO PERFORM WORK FOR THE WV ABANDONED MINE LANDS PROGRAM

SEE ATTACHMENT – STATEMENT OF QUALIFICATIONS

20. THE FOREGOING IS A STATEMENT OF FACTS.

SIGNATURE: Chad Biller TITLE: PARTNER / PRINCIPAL-IN-CHARGE

DATE: 9/23/2015

PRINTED NAME: CHADWICK D. BILLER, P.E.

**WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
AML CONSULTANT CONFIDENTIAL QUALIFICATION QUESTIONNAIRE**

Attachment "B"

PROJECT NAME: Bickmore Refuse #2	DATE: September 23, 2015	FEIN: 52-2365940
1. FIRM NAME: Novel Geo-Environmental, LLC	2. HOME OFFICE BUSINESS ADDRESS: 171 Montour Road Moon Township, PA 15108	3. FORMER FIRM NAME:  NA
4. HOME OFFICE TELEPHONE:  (412) 722-1970	5. ESTABLISHED:  2002	6. TYPE OWNERSHIP  Limited Liability Corporation
6a. WV REGISTERED DBE:  YES		
7. PRIMARY AML DESIGN OFFICE: ADDRESS/ TELEPHONE/ PERSON IN CHARGE/ NO. AML DESIGN PERSONNEL EACH OFFICE: 650 MacCorkle Ave, SW St. Albans, WV 25177 304-201-5180 Office Manager: John E. Nottingham, P.E. No. AML Design Personnel in St. Albans, WV: 5 No. AML Design Personnel in Moon Township, PA : 5		
8. NAMES OF PRINCIPAL OFFICERS OR MEMBERS OF FIRM: Amy L. Veltri - President John E. Nottingham - Vice President	8a. NAME, TITLE, & TELEPHONE NUMBER - OTHER PRINCIPALS	
9. PERSONNEL BY DISCIPLINE ( <b>Bold Lettering Indicates Minimum Design Team Members</b> )		
<b>3 ADMINISTRATIVE</b> — ARCHITECTS — BIOLOGIST <b>1 CADD OPERATORS</b> — CHEMICAL ENGINEERS <b>2 CIVIL ENGINEERS</b> — DESIGNERS — DRAFTSMEN	— ECOLOGISTS — ECONOMISTS — ELECTRICAL ENGINEERS <b>2 ENVIRONMENTALISTS</b> — ESTIMATORS <b>1 GEOLOGISTS</b> — HISTORIANS — HYDROLOGISTS	— LANDSCAPE ARCHITECTS — MECHANICAL ENGINEERS — MINING ENGINEERS — PHOTOGRAMMETRISTS — PLANNERS: URBAN/REGIONAL — SANITARY ENGINEERS <b>5 SOILS ENGINEERS</b> — SPECIFICATION WRITERS  <b>29 TOTAL PERSONNEL</b>
TOTAL NUMBER OF WV REGISTERED PROFESSIONAL ENGINEERS IN PRIMARY OFFICE: <u>3</u> *RPEs other than Civil and Mining must provide supporting documentation that qualifies them to supervise and perform this type of work.		
10. HAS THIS JOINT-VENTURE WORKED TOGETHER BEFORE?      YES		



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

NO: Note that Novel Geo-Environmental (NGE) has not performed any AML design work to date, but our WV Office Manager (John E. Nottingham) and project geologist (Chuck Montgomery) have extensive AML experience with their former firm. Additionally, NGE has held contracts with WVDEP-AML for geotechnical drilling for the northern and southern districts of WV and has completed numerous drilling projects under these contracts.

B. Is your firm experienced in Soil Analysis?

YES: NGE specializes in Geotechnical Engineering including foundation investigations, subsurface investigations, cut slope design, fill embankment analysis and design, slope stability analysis, landslide analysis and corrective design, mine subsidence investigations, geologic studies, groundwater seepage analysis, foundation design, retaining wall design, pavement design, subsurface drilling and monitoring well installation. NGE has preformed a total of several hundred geotechnical engineering related projects since the company was formed in 2002.

C. Is your firm experienced in hydrology and hydraulics?

NO: While our firm has not performed any hydrology/hydraulics projects to date, our personnel have experience with former employers.

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

NO

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.)

NO

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

NO

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:
Nottingham, John, E. Principal Engineer, Vice President	19	11	0

Brief Explanation of Responsibilities

Mr. Nottingham was responsible for supervising field and design work for numerous AML related landslide abatement projects for the WVDEP while under the employment of Triad Engineering, Inc. In addition to landslide abatement projects, Mr. Nottingham was involved in subsidence determination investigations and subsidence abatement projects. Mr. Nottingham worked extensively on "emergency" projects which required quick field investigations and corrective designs. Additionally, Mr. Nottingham was responsible for supervising field activities for our firm as part of the WVDE/AML Geotechnical Drilling contracts for the Northern and Southern Districts of West Virginia

EDUCATION (Degree, Year, Specialization)

Bachelor of Science in Civil Engineering, 1987, WVU, Specialization - Civil and Geotechnical Engineering  
Masters of Science in Civil Engineering, 1995, WVU, Specialization - Geotechnical Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

American Society of Civil Engineering (ASCE)  
West Virginia Chapter of AIA

REGISTRATION (Type, Year, State)

Professional Engineering, 1994, WV  
Professional Engineering, 2007, VA  
Professional Surveyor, 1996, WV

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:
Montgomery, Charles, E. Project Manager	17	11	0

Brief Explanation of Responsibilities

Mr. Montgomery was responsible for coordinating field activities for AML landslide abatement projects for the WVDEP while employed with Triad Engineering, Inc. Mr. Montgomery has also participated in all project phases for other AML work involving subsidence determinations/abatement and impounded mine pools while at Triad Engineering as well as for our firm under the WVDEP/AML Geotechnical Drilling Contracts for the Northern and Southern Districts of West Virginia.

EDUCATION (Degree, Year, Specialization)

Bachelor of Science, Geology, 1991, Marshall University

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

Association of Engineering Geologists  
Geological Society of America

REGISTRATION (Type, Year, State)

Professional Geologist, 1999, Kentucky

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:
Nottingham, Larry C. Senior Engineer	22	12	0

Brief Explanation of Responsibilities

Dr. Nottingham planned and supervised several AML investigation and reclamation projects for WVDEP while employed by Triad Engineering. Projects included burning refuse pile investigations, unstable refuse pile investigations and remedial designs, landslide investigations and remedial designs, subsidence investigations, and underground mine fire investigations.

EDUCATION (Degree, Year, Specialization)

Bachelor of Science in Civil Engineering, 1965, Civil Engineering, West Virginia Institute of Technology  
 Master of Science in Civil Engineering, 1966, Geotechnical Engineering, University of Pittsburgh  
 Doctor of Philosophy, 1975, Geotechnical Engineering, University of Florida

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
Member, American Society of Civil Engineers Member, National Society of Professional Engineers	Professional Engineer, 1969, WV Professional Engineer, 1985, KY Professional Engineer, 1985, OH Professional Engineer, 2006, PA

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:
Christopher Dunlap Engineering Technician	0	0	0

Brief Explanation of Responsibilities

Mr. Dunlap has served as an engineering technician/field inspector on numerous government and commercial construction projects. His duties on these projects have included quality assurance/quality control (QA/QC), construction oversight and testing, coordination of field activities, liaison between general contractor and engineer, and project reporting.

EDUCATION (Degree, Year, Specialization): A.S., Mechanical Engineering Technology, WVUIT; American Concrete Institute (ACI) Certified; WVDOH Certification for Fill Compaction Technician; WVDOH Certification for Concrete Technician; WVDOH Certification for Asphalt Inspector.

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

14. PROVIDE A LIST OF SOFTWARE AND EQUIPMENT AVAILABLE IN THE PRIMARY OFFICE WHICH WILL BE USED TO COMPLETE AML DESIGN SERVICES

Three track-mounted rotary drill rigs. Drills are equipped with hollow stem augers, split-spoon soil sampling equipment, and rock coring tools.

Portable dynamic cone penetrometer.

Electric concrete coring drill.

Two equipment hauling trailers.

Software includes: Word processing, PCSTABL - Slope Stability Analysis, LPILE Plus 4.0 - Pile Foundation Analysis, PYWALL 2.0 - Retaining Wall Analysis, ReSSA 2.0 - Reinforced Soil Slope Analysis, ReSlope 3.0 - Reinforced Soil Slope Design

Soil Laboratory Equipment: Soil Oven, Scales, Sieves, Liquid and Plastic Limits Machine

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

TOTAL NUMBER OF PROJECTS: 0

TOTAL ESTIMATED CONSTRUCTION COSTS: 0

16. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS SERVING AS A SUB-CONSULTANT TO OTHERS

PROJECT NAME, TYPE AND LOCATION	NATURE OF FIRMS RESPONSIBILITY	NAME AND ADDRESS OF OWNER	ESTIMATED COMPLETION DATE	ESTIMATED CONSTRUCTION COST	
				ENTIRE PROJECT	YOUR FIRMS RESPONSIBILITY
Raleigh County Airport Taxiway Geotechnical Investigation Raleigh County, WV	Perform subsurface investigation, provide pavement design recommendations.	Thrasher Bridgeport, WV	Unknown	Unknown	Fee \$ 6,000
Borovich Well Pad Geotechnical Investigation	Perform subsurface investigation, provide slope design recommendations	XTO Energy Warrendale, PA	Unknown	Unknown	Fee \$ 12,000
Terra Alta Tower Site Geotechnical Investigation Terra Alta, WV	Perform subsurface investigation, provide foundation design recommendations.	Mead & Hunt Charleston, WV	Unknown	Unknown	Fee \$5,000
Marlowe Overpass Bridge, Geotechnical Investigation Marlowe, WV	Perform subsurface investigation, provide foundation design recommendations.	West Virginia Dept. of Highways, Charleston, WV	Unknown	Unknown	Fee \$20,000
Shop and Save Store, Geotechnical Investigation, Bridgeport, WV	Determine Site Subsurface Conditions, Provide Foundation Design Recommendations	Thrasher Bridgeport, WV	Unknown	Unknown	Fee \$ 8,500.00
Thomas Cell Tower Site, Foundation Investigation Thomas, WV	Perform subsurface investigation, provide foundation design recommendations.	U.S. Cellular	Unknown	Unknown	Fee \$3,000
Patel Residence Foundation Investigation Charleston, WV	Perform subsurface investigation, provide foundation design recommendations.	Thakor Patel Charleston, WV	Unknkown	Unknown	Fee \$2,000

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)
Spencer Retaining Wall Spencer, WV	City of Spencer Spencer, WV	\$30,000.00	2014	No
Pennsboro Retaining Wall Pennsboro, West Virginia	Mead & Hunt 400 Tracy Way Suite 200 Charleston, WV 25311	\$75,000.00	2010	Yes
Huntington 5th Street Tower Retaining Wall Huntington, WV	Mead & Hunt 400 Tracy Way Suite 200 Charleston, WV 25311	\$125,000.00	2010	Yes
Flatwoods Retaining Wall Flatwoods, WV	Go-Mart, Inc.	\$1,300,000.00	2010	Yes
Bane Lane Landslide Marshall County, WV	Thrasher Charleston, WV	\$ 250,000.00	2012	Unknown

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
Lilly Bridge Geotechnical Investigation Hinton, WV	WV Department of Highways Charleston, WV	Unknown	2012	In Process	Modjeski & Masters, Inc.
McDowell County WWTP Geotechnical Investigation McDowell County, WV	McDowell County PSD	Unknown	2011	Unknown	E.L. Robinson Engineering Co.
Elk Valley Christian School Addition Geotechnical Investigation Elkview, WV	Elk Valley Christian School	Unknown	2012	Unknown	E.L. Robinson Engineering Co.
NV35HS Well Pad Geotechnical Investigation Greene County, PA	CNX Gas	Unknown	2013	Unknown	Dieffenbauch & Hritz
NV62 Well Site Geotechnical Investigation Greene County, PA	CNX Gas	Unknown	2014	Unknown	Dieffenbauch & Hritz
Annmoore Bridges Geotechnical Investigation Harrison County, WV	WVDOH	Unknown	2014	Unknown	Stantec

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.

20. The foregoing is a statement of facts.

Signature: John E. Nottingham Title: Vice President  
 Printed Name: John E. Nottingham

Date: September 11, 2015

## AML and RELATED PROJECT EXPERIENCE MATRIX

PROJECT	Exp. Basis C-Corp P-Personal *	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 /mitigation replacement	Construction inspection / management	Water treatment	Equipment /structure removal	Stream restoration	Geotechnical/stability	Chadwick D. Biller	April E. Rohrbuagh	Michael Nestor	R.J. Hovatter
Anglins Run Portals	C/P	Att. B.17			x	x					x						M		P		
Roaring Creek	C/P	Att. B.17	x	x		x			x		x						M		P		
Shinns Run Portals	P			x		x			x											M/P	
Squire's Creek Portals	C/P	Att. B.17	x		x	x					x			x			M	P			
Overfield (Laferty) CS&P	C/P	Att. B.17	x		x	x					x					x	M	P			
Laurel Run	C/P	Att. B.17	x		x	x					x						M	P			
Clarksburg Lyons Landslide	C/P	Att. B.17	x			x					x					x	M	P			
Pleasant Valley	C/P	Att. B.17	x		x	x					x									M/P	
Roger Camp Hill	C/P	Att. B.17	x			x					x									M/P	
Owl Creek Highwall	C/P	Att. B.17	x		x	x					x					x				M/P	
Landgraff Refuse	C/P	Att. B.17	x			x					x									M/P	
Canyon Refuse & Dump	C/P	Att. B.17	x		x	x					x					x				M/P	
Stowe (Prince) Landslide	C/P	Att. B.17				x					x									M/P	
Lamberton Run Site 7	C/P	Att. B.17	x			x					x	x	x	x						P	
Swamp Run #1	C/P	Att. B.17	x			x					x	x		x		x				M/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.

**Attachment "C"**

**ADDENDUM ACKNOWLEDGEMENT FORM**  
**SOLICITATION NO.: 1600000003**

**Instructions:** Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

**Acknowledgment:** I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

**Addendum Numbers Received:**

(Check the box next to each addendum received)

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6  |
| <input checked="" type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7  |
| <input checked="" type="checkbox"/> Addendum No. 3 | <input type="checkbox"/> Addendum No. 8  |
| <input type="checkbox"/> Addendum No. 4            | <input type="checkbox"/> Addendum No. 9  |
| <input type="checkbox"/> Addendum No. 5            | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further 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.

The Thrasher Group Inc.

Company

Chad Bellec

Authorized Signature

11-3-2015

Date

NOTE: This addendum acknowledgment should be submitted with the bid to expedite document processing.

Revised 6/8/2012