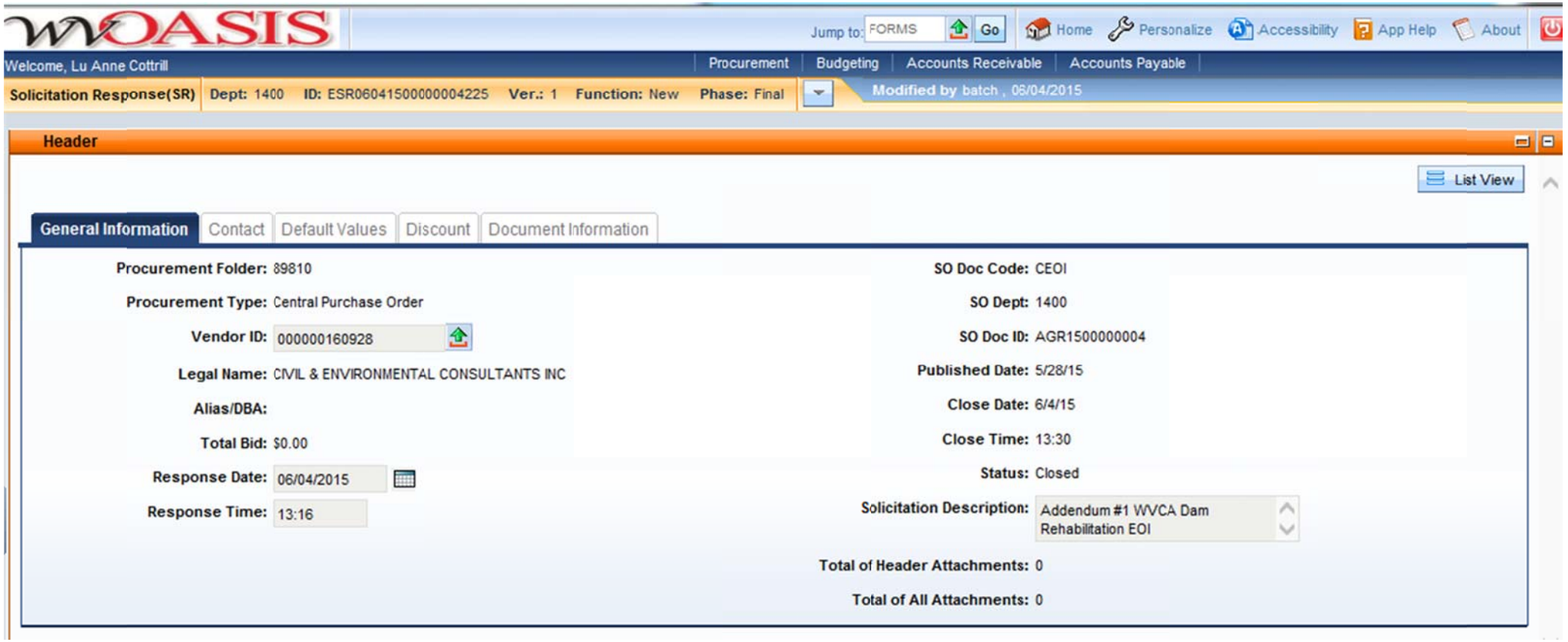
The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at ***wvOASIS.gov***. As part of the State of West Virginia's procurement process, and to maintain the transparency 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.


wvOASIS
Jump to: FORMS Go
Home
Personalize
Accessibility
App Help
About
Welcome, Lu Anne Cottrill
Procurement
Budgeting
Accounts Receivable
Accounts Payable
Solicitation Response(SR) Dept: 1400 ID: ESR06041500000004225 Ver.: 1 Function: New Phase: Final
Modified by batch , 06/04/2015
Header
List View
General Information
Contact
Default Values
Discount
Document Information
Procurement Folder: 89810
Procurement Type: Central Purchase Order
Vendor ID: 000000160928
Legal Name: CIVIL & ENVIRONMENTAL CONSULTANTS INC
Alias/DBA:
Total Bid: $0.00
Response Date: 06/04/2015
Response Time: 13:16
SO Doc Code: CEOI
SO Dept: 1400
SO Doc ID: AGR1500000004
Published Date: 5/28/15
Close Date: 6/4/15
Close Time: 13:30
Status: Closed
Solicitation Description: Addendum #1 WVCA Dam Rehabilitation EOI
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 : 89810

Solicitation Description : Addendum #1 WVCA Dam Rehabilitation EOI

Proc Type : Central Purchase Order

Date issued	Solicitation Closes	Solicitation No	Version
	2015-06-04 13:30:00	SR 1400 ESR06041500000004225	1

VENDOR

000000160928

CIVIL & ENVIRONMENTAL CONSULTANTS INC

FOR INFORMATION CONTACT THE BUYER

Laura E Hooper

(304) 558-0468
laura.e.hooper@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	Dam engineering				$0.00

Comm Code	Manufacturer	Specification	Model #
81101507			

Extended Description : Dam engineering

RFQ No. CEDI 1400 AGRI3000000004

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

MANDATE: Under W. Va. Code §5A-3-10a, 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: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. 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.

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.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"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.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (*W. Va. Code* §61-5-3) that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: Civil & Environmental Consultants, Inc. Dennis E. Miller

Authorized Signature: _____ _____

State of WVa

County of Harrison, to-wit:

Taken, subscribed, and sworn to before me this 4th day of June, 2025

My Commission expires April 27, 2022

AFFIX SEAL HERE

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
RICKEY D LAMBERT
Rt 2 Box 138
Bridgeport WV 26330
My commission expires April 27, 2022

NOTARY PUBLIC _____

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

State of West Virginia
Centralized Expression of Interest
—

Proc Folder: 89810
Doc Description: WVCA Dam Rehabilitation EOI
Proc Type: Central Purchase Order

Date issued	Solicitation Closes	Solicitation No	Version
2015-05-04	2015-06-04 13:30:00	CEOI 1400 AGR1500000004	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:

FOR INFORMATION CONTACT THE BUYER

Laura E Hooper
(304) 558-0468
laura.e.hooper@wv.gov

Signature X [signature] **FEIN #** 25-1599565 **DATE** 6-4-2015

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

INVOICE TO	SHIP TO
FISCAL SERVICES MANAGER 304-558-2204 WEST VIRGINIA CONSERVATION AGENCY 1900 KANAWHA BLVD E CHARLESTON WV 25305 US	ADMINISTRATIVE SERVICES 304-558-2204 WEST VIRGINIA CONSERVATION AGENCY WEST VIRGINIA CONSERVATION AGENCY 255 GUS R DOUGLASS LN CHARLESTON WV 25305-0193 US

Line	Comm Ln Desc	Qty	Unit Issue
1	Dam engineering		

Comm Code	Manufacturer	Specification	Model #
81101507			

Extended Description :

Dam engineering

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

CERTIFICATIONAND 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.

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

(Company)

(Authorized Signature) (Representative Name, Title)

304-933-3119 304-933-3327 6-4-2015

(Phone Number) (Fax Number) (Date)

SOLICITATION NUMBER: AGR1500000004
Addendum Number: 1

The purpose of this addendum is to modify the solicitation identified as ("Solicitation") to reflect the change(s) identified and described below.

Applicable Addendum Category:

[ ] Modify bid opening date and time

[ ] Modify specifications of product or service being sought

[✓] Attachment of vendor questions and responses

[ ] Attachment of pre-bid sign-in sheet

[ ] Correction of error

[ ] Other

Description of Modification to Solicitation:

To distribute the vendor questions and responses.

No further changes.

Additional Documentation: Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

Terms and Conditions:

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.

2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

ATTACHMENT A

ADDENDUM # 1
CEOI AGR1500000004
Vendor Questions and
Answers

1. Q: Are there any fact sheets or reports that describe the condition of, and the deficiencies with, the Brush Creek Site 9 Dam, Brush Creek Site 15 Dam, and Potomac-New Creek-Whites Run Site 17 Dam?

   A: See 2011 Assessment Report for Brush Creek 9, Brush Creek 15 and New Creek 17. Assessment for New Creek 1 included as well. Link to Assessment Reports:

   http://www.wvca.us/procurement/agr15.cfm

2. Q: When do you expect construction to begin on Upper Decker's Creek Site 1 and how long do you anticipate construction lasting?

   A: Construction for Upper Decker's Creek Site 1 is expected to begin in 2017 and will last 2 construction seasons.

3. Q: Can you provide a typical NEPA document from one of your previous dam rehabilitation projects, or another type of project, as an example of the NEPA product you are looking for?

   A: Link to typical NEPA document:

   http://www.nrcs.usda.gov/wps/portal/nrcs/detail/wv/programs/planning/wpfp/?cid=nrcs144p 2_074154

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: AGR1500000004

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)

[✓] Addendum No. 1	[ ] Addendum No. 6
[ ] Addendum No. 2	[ ] Addendum No. 7
[ ] Addendum No. 3	[ ] Addendum No. 8
[ ] Addendum No. 4	[ ] Addendum No. 9
[ ] Addendum No. 5	[ ] 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.

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
Company

Authorized Signature

6-4-2015
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.
Revised 6/8/2012

STATEMENT OF QUALIFICATIONS

PART I – CONTRACT SPECIFIC QUALIFICATIONS

A. CONTRACT INFORMATION

1. PROJECT TITLE AND LOCATION (City and County)
WVCA Dam Rehabilitation (Various Locations throughout WV)

2. ANNOUNCEMENT DATE	3. PROJECT NUMBER
May 4, 2015	CEOI 1400 AGR1500000004

B. FIRM POINT OF CONTACT

4. PROJECT REPRESENTATIVE NAME AND TITLE	5. PRESIDENT / CEO
Greg Linder, P.E., Project Manager	Kenneth R. Miller, PE

6. NAME OF FIRM (LEGAL NAME ON FILE WITH THE OHIO SECRETARY OF STATE)
Civil & Environmental Consultants, Inc.

Civil & Environmental Consultants, Inc.

7. TELEPHONE NUMBER	8. FAX NUMBER	9. E-MAIL ADDRESS
304-933-3119	304-933-3327	glinder@cecinc.com
10. COUNTY	**11. FTID NUMBER**	**12. WEB ADDRESS**
Harrison	25-1599565	www.cecinc.com

C. PROPOSED TEAM

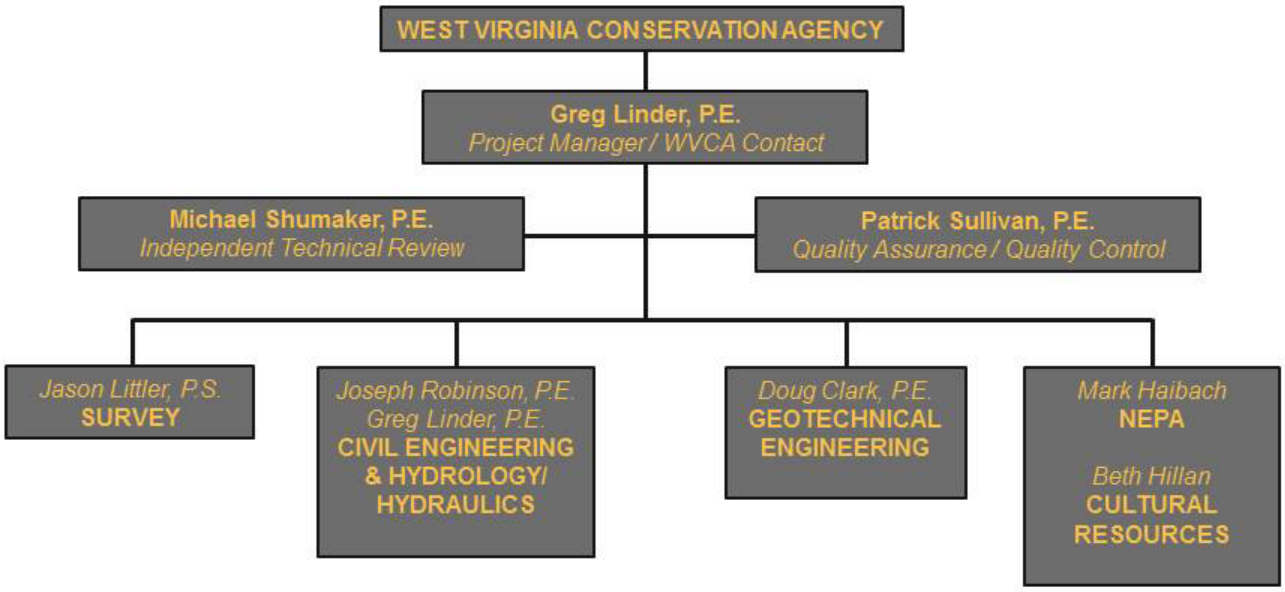
(Complete this section for the lead firm or joint venture partners, and all key consultants.)

	(Check) Lead Firm	JV Partner	Consultant	13. FIRM NAME	14. ADDRESS	15. ROLE IN THIS CONTRACT
a.	☒	☐	☐	Civil & Environmental Consultants, Inc.	99 Cambridge Place Bridgeport, WV 26330 ☒ Check if branch office Miles from project site	Prime – Project Management, Civil Engineering, Hydrology/Hydraulics Geotechnical Engineering, NEPA
b.	☐	☐	☐		☐ Check if branch office	
c.	☐	☐	☐		☐ Check if branch office	
d.	☐	☐	☐		☐ Check if branch office	
e.	☐	☐	☐		☐ Check if branch office	

D. ORGANIZATIONAL CHART OF PROPOSED TEAM

☒ *(Attached)*

INSERT ORGANIZATIONAL CHART BELOW OR ATTACH.



E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person. Limit one page per person)

16. NAME	17. ROLE IN THIS CONTRACT	18. YEARS EXPERIENCE	
Greg Linder, PE	Project Manager	a. TOTAL 17	b. WITH CURRENT FIRM 3
19. FIRM NAME AND LOCATION (City and State)	**20. EDUCATION (Degree and Specialization)**	**21. CURRENT OH PROF REGISTRATIONS (List Discipline)**	
Civil & Environmental Consultants, Inc. Bridgeport, WV	B.S., Civil Engineering, West Virginia University; B.S., Biology, Fairmont State College	Professional Engineer – WV [redacted] PA [redacted]	

22. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)

23. RELEVANT PROJECTS *(Up to a maximum of 5 samples)*

a.

(1) Title, Client & Location (City, State)	(2) Building Type, Size & Project Cost / Performance	(3) Type of Construction, Delivery Model & Services	(4) Date Completed Design	(4) Date Completed Construction	(5) Example Project Key No.
Salem Fork Dam Riser Rehabilitation West Fork Conservation District Salem, WV	$50,000	Prime Consultant Structural Inspection and Engineering	2013	Summer 2015	

(6) Role (Benefit / Value to Client) ☒ Check if project performed with current firm

Project Manager and Structural Engineer for this task-order based contract with the West Fork Conservation District. The purpose of the contract was to perform structural inspection, engineering, and develop construction drawings for the Salem Fork Dam riser repairs.

b.

(1) Title, Client & Location (City, State)	(2) Building Type, Size & Project Cost / Performance	(3) Type of Construction, Delivery Model & Services	(4) Date Completed Design	(4) Date Completed Construction	(5) Example Project Key No.
Ewart Avenue Detention Facility Southern Conservation District Beckley, WV	$1,100,000	Prime Consultant Engineering	2012 2013		

(6) Role (Benefit / Value to Client) ☐ Check if project performed with current firm

Project Manager for this task-order based contract with the Southern Conservation District. The purpose of the contract is to perform civil, geotechnical, hydrologic and hydraulic (H&H) engineering, and permitting services in support of the flood control project.

c.

(1) Title, Client & Location (City, State)	(2) Building Type, Size & Project Cost / Performance	(3) Type of Construction, Delivery Model & Services	(4) Date Completed Design	(4) Date Completed Construction	(5) Example Project Key No.
Laurel Lake Sediment Removal Project Guyan Conservation District Lenore, WV	$800,000	Prime Consultant Engineering	2005 2006		

(6) Role (Benefit / Value to Client) ☐ Check if project performed with current firm

Project Manager for thiscontract with the Guyan Conservation District. The purpose of the contract is to perform civil, geotechnical, and permitting services in support of the sediment removal project.

d.

(1) Title, Client & Location (City, State)	(2) Building Type, Size & Project Cost / Performance	(3) Type of Construction, Delivery Model & Services	(4) Date Completed Design	(4) Date Completed Construction	(5) Example Project Key No.
Fisher Landslide Remediation Project Western Conservation District Ripley, WV	$300,000	Prime Consultant Engineering	2004 2005		

(6) Role (Benefit / Value to Client) ☐ Check if project performed with current firm

Project Manager for this contract with the Western Conservation District. The purpose of the contract is to perform civil, geotechnical, and structural engineering services in support of the landslide remediation project.

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person. Limit one page per person)

16. NAME	17. ROLE IN THIS CONTRACT	18. YEARS EXPERIENCE	
Matthew D. Gramza, PE, CFM	Senior Project Manager	a. TOTAL 18	b. WITH CURRENT FIRM 10
19. FIRM NAME AND LOCATION (City and State)	**20. EDUCATION (Degree and Specialization)**	**21. CURRENT OH PROF REGISTRATIONS (List Discipline)**	
Civil & Environmental Consultants, Inc. Cincinnati, Ohio	B.S., Civil Engineering, University of Cincinnati	Professional Engineer – OH [redacted] Certified Floodplain Manager [redacted]	

22. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)

Certified Floodplain Manager (CFM) – Association of State Floodplain Managers (ASFPM), Professional Engineer – KY, MN
President, Cincinnati Section – American Society of Civil Engineers (ASCE), Ohio Dam Safety Organization (ODSO), Water Management of Association (WMAO), Ohio Floodplain Management Association (OFMA), NCEES Record Holder

23. RELEVANT PROJECTS *(Up to a maximum of 5 samples)*

a.

(1) Title, Client & Location (City, State)	(2) Building Type, Size & Project Cost / Performance	(3) Type of Construction, Delivery Model & Services	(4) Date Completed Design	Constr uction	(5) Example Project Key No.
Statewide Dam Safety Services ODNR Prime Statewide, Ohio	Class I Dams $1,200,000 (engineering)	General Contracting Consultant Engineering	2014-2016 On-schedule	On-going	1

(6) Role (Benefit / Value to Client) ☒ Check if project performed with current firm

Project Manager and Senior Hydraulic Engineer for this task-order based contract with ODNR Dam Safety. The purpose of the contract is to perform civil, geotechnical, hydrologic and hydraulic (H&H) engineering in support of dam safety compliance and improvements for state owned dams. The initial scope in progress includes EAPs and OMIs in the new FEMA/ODNR format for 20 Class I dams. Services include, site investigation, H&H analysis based on the new statewide probable maximum precipitation data, dam breach analysis, flood routing and inundation mapping including population at risk analysis. Dam drainage areas range from 1 to 50 sq. mi. H&H Models include, HEC-HMS, HEC-RAS, HMR-52, HEC-GeoHMS, and HEC-GeoRAS.

b.

(1) Title, Client & Location (City, State)	(2) Building Type, Size & Project Cost / Performance	(3) Type of Construction, Delivery Model & Services	(4) Date Completed Design	Constr uction	(5) Example Project Key No.
Mitchell Landfill Ohio Power Company (AEP) Cresap, WV	Residual Waste Landfill Estimated Construction Cost: $100,000,000	General Contracting Prime Consultant Engineering	2011-2013 On-g	oing	7

(6) Role (Benefit / Value to Client) ☒ Check if project performed with current firm

Hydraulic Engineer for significant off-site stream mitigation requirement to support a new 100-acre Class F Industrial Landfill Facility. Mr. Gramza was the Lead Hydraulic Engineer and project manager for Permit Application to the West Virginia Department of Environmental Protection (WVDEP) and the U.S. Army Corps of Engineers (USACE) for an Individual Clean Water Act (CWA) Section 401/404. He coordinated, managed, and performed hydrologic and hydraulic (H&H) engineering, stream assessments, sediment sampling, stream aerial and field topographic surveys, natural channel design, and stream restoration design on two watersheds encompassing over 10 square miles and 2 miles of streams. H&H Models included, HEC-HMS, HEC-RAS, and HEC-GeoRAS.

c.

(1) Title, Client & Location (City, State)	(2) Building Type, Size & Project Cost / Performance	(3) Type of Construction, Delivery Model & Services	(4) Date Completed Design	Constr uction	(5) Example Project Key No.
Dam Safety Management Program DP&L Ohio Power Stations	Gene Estimated Construction Cost: $350,000	ral Contracting Prime Consultant Engineering	2009 On-g	oing	5

(6) Role (Benefit / Value to Client) ☒ Check if project performed with current firm

Project Manager and Technical Lead for condition assessment of all Dayton Power and Light operated coal fired power station ash impoundments. The program included on-site assessment and reporting including remediation recommendations and budgetary cost estimating for 10 large upground reservoir ash impoundments at three Ohio power stations. Inspections performed in accordance with ODNR Dam Safety Inspection procedures. The program was set up in three phases, impoundment assessment, supplemental investigation and rehabilitation planning, and rehabilitation implementation.

d.

(1) Title, Client & Location (City, State)	(2) Building Type, Size & Project Cost / Performance	(3) Type of Construction, Delivery Model & Services	(4) Date Completed Design	Constr uction	(5) Example Project Key No.
Channel Dam EAP & OM&I DP&L Miamisburg, OH	N/A Engineering Fee: $12,500	Prime Consultant Engineering	2009 N/A		6

(6) Role (Benefit / Value to Client) ☒ Check if project performed with current firm

Project Manager and Technical Lead for Emergency Action Plan and Operation, Maintenance, and Inspection Manual for the DP&L O.H. Hutchings Power Station Channel Dam (ODNR #9442-004) on the Great Miami River. CEC developed the plans utilizing the ODNR required report format for typical high-head dams and customized it for the low-head channel dam. An innovative approach was taken to perform the H&H analysis of the structure including GIS integrated breach modeling and inundation mapping of the Great Miami River. Mr. Gramza coordinated the significant owner and operator input from DP&L and was the primary interface with ODNR Dam Safety Program Personnel.

e.

(1) Title, Client & Location (City, State)	(2) Building Type, Size & Project Cost / Performance	(3) Type of Construction, Delivery Model & Services	(4) Date Completed Design	Constr uction	(5) Example Project Key No.
Dam and Spillway Rehabilitation Royal Oak Country Club Cincinnati, OH	Gene Estimated Construction Cost: $500,000	ral Contracting Prime Consultant Engineering	2006-2007 ongoing		3

(6) Role (Benefit / Value to Client) ☒ Check if project performed with current firm

Project Manager and Technical Lead for Civil Engineering and ODNR permitting compliance of two existing class I earth dams (ODNR #'s 9042-013, 014) at the Royal Oak Country Club. The project goals of improving the overall dam safety and permitting compliance status were achieved by completing the following: design of new emergency spillways, geotechnical investigation and stability analysis, upstream and downstream slope improvements, primary spillway improvements, critical flood studies including unsteady flow dam breach analysis to determine appropriate design flood, hydrologic and hydraulic engineering analysis, detailed flood inundation mapping, EAP's, and OM&I's.

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person. Limit one page per person)

16. NAME	17. ROLE IN THIS CONTRACT	18. YEARS EXPERIENCE	
Michael L. Schumaker, P.E.	Independent Technical Reviewer	a. TOTAL: 22	b. WITH CURRENT FIRM: 6.5
19. FIRM NAME AND LOCATION (City and State)	**20. EDUCATION (Degree and Specialization)**	**21. CURRENT OH PROF REGISTRATIONS (List Discipline)**	
Civil & Environmental Consultants, Inc. Pittsburgh, PA	MS, Civil Engineering - University of Pittsburgh BS, Civil Engineering - University of Pittsburgh		

22. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)

Presented "Innovations in Basin and Weir Wall Design" at the 2009 ASDSO Northeast Regional Conference, American Society of Civil Engineers (ASCE), Chi Epsilon Civil Engineering Honor Society, Professional Engineer – PA, WV, IN, IL, WI, MI, KY, OK, IA, NY

23. RELEVANT PROJECTS *(Up to a maximum of 5 samples)*

a.

(1) Title, Client & Location (City, State)	(2) Building Type, Size & Project Cost / Performance	(3) Type of Construction, Delivery Model & Services	(4) Date Completed: Design	(4) Date Completed: Construction	(5) Example Project Key No.
Seepage Evaluation and Remedial Design ODNR Wellsville, Ohio	Estimated Fee $30,000		2011		

(6) Role (Benefit / Value to Client) ☐ Check if project performed with current firm

Geotechnical Project Manager responsible for managing a subsurface investigation program as part of an emergency evaluation of a high-hazard earthen dam. Seepage was observed entering the approximate 7-foot square twin concrete primary outlet conduits at two locations. The ODNR, was concerned that the seepage may have resulted in soil piping and dam instability. Mr. Schumaker designed and implemented an investigation program that included test borings and horizontal probes behind the conduit walls, installation of piezometers, and inspection of the conduits. The investigation revealed variable fill compaction in the clay core, and the presence of rock in the fill. The investigation revealed that soil piping was not occurring. A preliminary design consisting of a horizontal drain system installed from inside the conduit and concrete repairs was developed, eliminating the need for costly grout curtains or other similar ground improvements.

b.

(1) Title, Client & Location (City, State)	(2) Building Type, Size & Project Cost / Performance	(3) Type of Construction, Delivery Model & Services	(4) Date Completed: Design	(4) Date Completed: Construction	(5) Example Project Key No.
Mallets Creek Detention Basin Ann Arbor, Michigan	Estimated Fee $100,000		2007	2007	

(6) Role (Benefit / Value to Client) ☐ Check if project performed with current firm

As Geotechnical Project Manager he provided consultation and oversight of earth work activities during earthen dam construction and detention basin improvements. He field verified the suitability of the embankment keyway subgrade, evaluated the suitability of proposed fill materials, observed fill placement and compaction, reviewed geotechnical laboratory testing results, and reviewed the results of field density testing for compliance with project requirements. In addition to providing consultation relative to earthwork activities, he provided consultation relative to dewatering during earthwork and various aspects of civil construction related to rip-rap and piping installation.

c.

(1) Title, Client & Location (City, State)	(2) Building Type, Size & Project Cost / Performance	(3) Type of Construction, Delivery Model & Services	(4) Date Completed: Design	(4) Date Completed: Construction	(5) Example Project Key No.
Weir Wall Design Moon Township, Pennsylvania	Estimated Fee $500,000		2008	2011	

(6) Role (Benefit / Value to Client) ☐ Check if project performed with current firm

Project Manager responsible for geotechnical engineering and the design of two weir walls used to create storage for deicing fluid impacted water which will be treated and discharged downstream. This included the design and implementation of the drilling and laboratory testing programs. Coordinated hydrology and hydraulic engineering, structural engineering, and civil engineering related to the weir wall design as well as permitting agency review. Also responsible for preparation of construction documents and consultation to address geotechnical issues encountered during construction.

d.

(1) Title, Client & Location (City, State)	(2) Building Type, Size & Project Cost / Performance	(3) Type of Construction, Delivery Model & Services	(4) Date Completed: Design	(4) Date Completed: Construction	(5) Example Project Key No.
Upground Reservoir Blanchester, Ohio	Estimated fee $250,000		2002	2003	

(6) Role (Benefit / Value to Client) ☒ Check if project performed with current firm

As Geotechnical Project Manager, Mr. Schumaker evaluated geologic conditions based on geotechnical test drilling and laboratory results and managed geotechnical aspects of design for water storage reservoir located in an urban area. He designed seepage control measures, evaluated slope stability and foundation settlement, and review construction plans and specifications for compliance with geotechnical components of the design. Design plans and the results of engineering analyses were subsequently reviewed and approved by the ODNR.

e.

(1) Title, Client & Location (City, State)	(2) Building Type, Size & Project Cost / Performance	(3) Type of Construction, Delivery Model & Services	(4) Date Completed: Design	(4) Date Completed: Construction	(5) Example Project Key No.
Detention Pond Design and Construction Bethel Park, Pennsylvania	Estimated Fee $50,000		2003	2003	

(6) Role (Benefit / Value to Client) ☒ Check if project performed with current firm

Geotechnical Project Manager responsible for geotechnical design and consultation during construction, and managed field quality control activities of inspection personnel monitoring during the construction of two earthen embankment dams constructed to create flood control storage ponds. Construction was complicated by the presence of soft foundation soils, and plastic clay which was difficult to properly compact. He provided recommendations to address soft soil conditions and to facilitate proper fill compaction. The project was completed on schedule and resulted in a significant reduction in flooding to the local community.

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person. Limit one page per person)

16. NAME	17. ROLE IN THIS CONTRACT	18. YEARS EXPERIENCE	
Patrick J. Sullivan, Jr., P.E.	Quality Manager	a. TOTAL 30	b. WITH CURRENT FIRM 2.5
19. FIRM NAME AND LOCATION (City and State)	20. EDUCATION (Degree and Specialization)	21. CURRENT OH PROF REGISTRATIONS (List Discipline)	
Civil & Environmental Consultants, Inc. Pittsburgh, PA	BS, Civil Engineering – University of Pittsburgh	Professional Engineer – OH [redacted]	

22. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)

American Society of Highway Engineers, American Society of Civil Engineers, American Council of Engineering Companies, Society of American Military Engineers. Publication "Birdland Park Levee Systems Improvement Project", 2010 SAME Technical Conference, Professional Engineer – PA, WV, KS, IA, WA

23. RELEVANT PROJECTS *(Up to a maximum of 5 samples)*

a.

(1) Title, Client & Location (City, State)	(2) Building Type, Size & Project Cost / Performance	(3) Type of Construction, Delivery Model & Services	(4) Date Completed Design	(4) Date Completed Construction	(5) Example Project Key No.
Statewide Dam Safety Services ODNR Division of Engineering	Dam Safety Construction Cost $TBD A-E fee: $500k	New Construction Full A-E Services	2014		1

(6) Role (Benefit / Value to Client) ☒ Check if project performed with current firm

QC Manager for this task-order based contract to perform civil, geotechnical, hydrologic and hydraulic engineering in support of dam safety upgrades for dams owned by the State of Ohio on an as-needed basis. Current services include site assessments with field inspection, seepage, and structural condition, EAPs and OMI Manuals in the new FEMA/ODNR format for 17 Class I dams. Services include, analysis on the existing conditions of the dam and spillway, hydraulics of the existing dams and spillway based on the new statewide probable maximum precipitation data, dam breach analysis, flood routing and inundation mapping including population at risk analysis. Engineering Fee: $500,000

b.

(1) Title, Client & Location (City, State)	(2) Building Type, Size & Project Cost / Performance	(3) Type of Construction, Delivery Model & Services	(4) Date Completed Design	(4) Date Completed Construction	(5) Example Project Key No.
Birdland Park Levee System Improvements U. S. Army Corp of Engineers Rock Island, IL	Flood Protection-15.0 acres Construction Cost $9.5M A-E fee: $950k	New Construction Design-Bid-Build Full A-E Services	2010 2012		

(6) Role (Benefit / Value to Client) ☐ Check if project performed with current firm

Project Manager for design of levee on Des Moines River to provide 500-year level of protection to the city of Des Moines. Design included a 15 feet wide levee crest over 6,700 LF, excavation plans to generate 50,000 cy of fill from an adjacent park, a 1300 feet long recreational trail through the park and modification of two pump stations. A study identified an existing city road should be maintained across the levee and Mr. Sullivan supervised the design in accordance with city and AASHTO standards. Design included relocation of parking lots for city park and commercial area, integration of the earthen levee into a gate structure and design of two gatewell systems to address interior drainage behind levee.

c.

(1) Title, Client & Location (City, State)	(2) Building Type, Size & Project Cost / Performance	(3) Type of Construction, Delivery Model & Services	(4) Date Completed Design	(4) Date Completed Construction	(5) Example Project Key No.
Washington Dam No. 4 CONSOL Energy, Inc. Canonsburg, PA	Flood Protection-4.7 acres Construction Cost $4.5M A-E fee: $350k	Modification Design-Bid-Build Full A-E Services	2011	2015	8

(6) Role (Benefit / Value to Client) ☒ Check if project performed with current firm

Project Manager for the design of a labyrinth weir to replace an ogee weir that does not meet current dam regulations for stormflow. He oversaw the subsurface investigation, geotechnical report and design for dam No. 4, which included removing the existing spillway, chute and stilling basin and design of the new labyrinth foundation slab and walls, abutment and tie-in walls, a subsurface cutoff wall, topping slab, a wider spillway chute, riprap protection and excavation, grading and fill placement around the completed structure. A cost savings of $100k and $50k was incurred by using the demolished concrete as riprap upstream of the labyrinth and using local cohesive soil as cutoff below labyrinth instead of low strengh concrete, respectively. He supervised development of a Design Report for the labyrinth weir containing design criteria, hydraulic/hydrologic data, geotechnical data, and evolution of the design from preliminary to final. He prepared response letter to submit to PADEP to address comments.

d.

(1) Title, Client & Location (City, State)	(2) Building Type, Size & Project Cost / Performance	(3) Type of Construction, Delivery Model & Services	(4) Date Completed Design	(4) Date Completed Construction	(5) Example Project Key No.
Emsworth Main Channel Dam Rehabilitation U. S. Army Corp of Engineers Emsworth, PA	Flood Protection-2 acres Construction Cost $45M A-E fee: $1.25M	Modification Design-Bid-Build Full A-E Services	2009 2015		

(6) Role (Benefit / Value to Client) ☐ Check if project performed with current firm

Project Manager for Dam rehab on the Ohio River. The existing concrete stilling basin provided inadequate energy dissipation, thus severe corrosion of gate truss members at 8 gates were identified and mechanical/electrical operating systems were not reliable. He developed alternatives for the erosion protection system which included grout-bag scour protection, from the apron to the top of rock, apron stabilization and stabilization of a concrete abutment wall using king piles/sheet piles. He supervised esplanade slab design, pier repairs & modifications for new hydraulic lift gates, site laydown/staging areas, machinery building shells lowered over new machinery and secured to new steel floor framing and incorporated gate plans/specifications prepared by USACE. Coordinated the efforts of 6 subcontractors and 4 offices to produce design submittal.

e.

(1) Title, Client & Location (City, State)	(2) Building Type, Size & Project Cost / Performance	(3) Type of Construction, Delivery Model & Services	(4) Date Completed Design	(4) Date Completed Construction	(5) Example Project Key No.
Lake Milton Reclamation ODNR Jackson County, OH	Flood Protection-5 acres Construction Cost $1.5M A-E fee: $250k	Modification Design-Bid-Build Full A-E Services	2004	2006	2

(6) Role (Benefit / Value to Client) ☐ Check if project performed with current firm

Project Manager tasked to reclaim a 155 acre Abandoned Mined Land (AML) site and rehabilitate a Class III embankment. ODNR Division of Water identified stability, seepage, inadequate flood control issues. He performed a site reconnaissance and managed a subsurface investigation and prepared conceptual layouts for the embankment that reduced the height of the embankment to meet an OAC dam classification with less risk requirements and to increase embankment stability. He designed principal/emergency spillways, a slurry wall to reduce seepage through loose uncompacted embankment areas and construction drawings and technical specifications using ODNR formatting

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one Section E for each key person. Limit one page per person)

16. NAME	17. ROLE IN THIS CONTRACT	18. YEARS EXPERIENCE	
Douglas M. Clark, PE	Geotechnical Engineer	a. TOTAL 23	b. WITH CURRENT FIRM 14
19. FIRM NAME AND LOCATION (City and State) Civil & Environmental Consultants, Inc. – Pittsburgh, PA	20. EDUCATION (Degree and Specialization) BS, Civil Engineering – West Virginia University BS, Geology – West Virginia University	21. CURRENT OH PROF REGISTRATIONS (List Discipline)	

22. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)

American Society of Civil Engineers (ASCE), Chi Epsilon Engineering Honor Society, Professional Engineer – PA

23. RELEVANT PROJECTS *(Up to a maximum of 5 samples)*

	(1) Title, Client & Location (City, State)	(2) Building Type, Size & Project Cost / Performance	(3) Type of Construction, Delivery Model & Services	(4) Date Completed Design Constr	(4) Date Completed uction	(5) Example Project Key No.
a.	**Arkwright Slurry Impoundment Closure** Monongalia County, West Virginia	Estimate Fee $80,000	2004		2005	

(6) Role (Benefit / Value to Client) ☒ Check if project performed with current firm

Geotechnical Project Manager responsible for the performance of a geotechnical investigation, analysis, and preparation of a closure plan for an inactive fine coa l refuse (FCR) slurry impoundm ent near Mo rgantown, West Virginia. Developed the site grading, earth work, a nd d rainage designs, and prepared enginee ring drawings and specifications for s ubmission to b oth MSHA and t he WVDEP. Prepared construction plans and bid documents for the impoundment closure and mass earthwork.

	(1) Title, Client & Location (City, State)	(2) Building Type, Size & Project Cost / Performance	(3) Type of Construction, Delivery Model & Services	(4) Date Completed Design Constr	(4) Date Completed uction	(5) Example Project Key No.
b.	**Hollywood AMD Abatement Project** Clearfield County, Pennsylvania	Estimated Construction Cost: $15,000,000 Estimated Fee: $980,800	2007		2009	

(6) Role (Benefit / Value to Client) ☒ Check if project performed with current firm

Project Manager for design development and engineering for construction of a system to collect, convey and treat over 20 individual deep mine discharges at a 10 MGD centralized AMD treatment plant. The project included sampling programs for the individual discharges and affected streams for water quality and flow. AMD treatment alternatives were developed, and a preliminary site analysis for the plant was performed. CEC prepared final design plans, specifications, and estimates for the construction of a gravity sewer and pumping system to convey AMD discharge water to the plant, and prepared site layout and pond designs for the treatment plant.

	(1) Title, Client & Location (City, State)	(2) Building Type, Size & Project Cost / Performance	(3) Type of Construction, Delivery Model & Services	(4) Date Completed Design Constr	(4) Date Completed uction	(5) Example Project Key No.
c.	**Harvey Run II Impoundment** Monongalia County, WV	Estimated Fee $200,000		2008	2010	

(6) Role (Benefit / Value to Client) ☒ Check if project performed with current firm

Project Manager for the expansion of the Harvey Run 2 Slurry Impoundment, a 70 ft high earth embankment. Performed geotechnical investigation and designed downstream embankment staging to raise crest elevation 63 feet in two stages. Designed extension of internal drains and performed stability analysis of existing and proposed (2.5H:1V) embankment geometry. and construction of a new principal pipe spillway and 40 feet wide emergency spillway channel.

	(1) Title, Client & Location (City, State)	(2) Building Type, Size & Project Cost / Performance	(3) Type of Construction, Delivery Model & Services	(4) Date Completed Design Constr	(4) Date Completed uction	(5) Example Project Key No.
d.	**R.E Burger West Ash Pond Declassification** Belmont County, OH	Estimated Construction Cost $300,000	2012		2013	9

(6) Role (Benefit / Value to Client) ☐ Check if project performed with current firm

Project Manager responsible for engineering evaluation and construction to declassify a 20 acre ash pond located at FirstEnergy's R.E. Burger Station. CEC performed a subsurface investigation and stability analysis, and recommended the reconfiguration and the removal of trees and vegetation on a portion of the embankment. Because of changes in site operations, FirstEnergy ultimately chose to decommission and declassify the pond by reducing the embankment height to less than 6 feet, and modifying the outlet structure. CEC prepared construction drawings and specifications for the decommissioning, provided construction oversight, and prepared the final certification report.

	(1) Title, Client & Location (City, State)	(2) Building Type, Size & Project Cost / Performance	(3) Type of Construction, Delivery Model & Services	(4) Date Completed Design Constr	(4) Date Completed uction	(5) Example Project Key No.
e.	**Little Blue Run Cove M Slurry Wall** Beaver County, PA	Estimated Construction Cost $900,000	2012		2013	

(6) Role (Benefit / Value to Client) ☐ Check if project performed with current firm

Project Manager responsible for engineering, design and construction management of a groundwater management system for FirstEnergy's Little Blue Run disposal area. The system included a 700 ft long soil-bentonite slurry wall, and 1,400 ft groundwater collection trench and pumping system. The system was constructed at the crest of a saddle adjacent to the disposal area to mitigate the seepage of water from the Little Blue Run impoundment.

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the Contracting Authority, or a maximum of 10 projects, if not specified. Complete one Section F for each project. Limit one page in length.)

24. EXAMPLE PROJECT KEY NUMBER (1 – 10): 1

25. TITLE AND LOCATION *(City and State)*

Statewide Dam Safety Services

Statewide, Ohio

26. YEAR COMPLETED

DESIGN (if applicable)	CONSTRUCTION (if applicable)

27. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT PHONE NUMBER	d. POINT OF CONTACT E-MAIL ADDRESS
ODNR, Division of Engineering	Jeremy Wenner	614.265.6719	Jeremy.Wenner@dnr.state.oh.us

28. DESCRIPTION OF PROJECT (Include project info, services, benefit/value, results, relevance, references, photographs/diagrams, awards/certifications, team members)

CEC is under contract to perform civil, geotechnical, hydrologic and hydraulic engineering in support of dam safety upgrades for dams owned by the state of Ohio on an as-needed basis.

Contracted services include site assessments with topographical surveys; field inspection; geotechnical investigations of the dam and appurtenances to evaluate stability, seepage, and structural condition; Emergency Action Plans (EAPs); and Operations Maintenance and Inspection Manuals (OMIs). The initial task order scope in progress includes EAPs and OMIs in the new FEMA/ODNR format for 17 Class I dams. Services include analysis on the existing conditions of the dam and spillway, hydraulics of the existing dams and spillway based on the new statewide probable maximum precipitation data, dam breach analysis, flood routing and inundation mapping including population at risk analysis.

Project Relevance:

- Dam Assessments
- Civil Engineering
- H&H Engineering
- Emergency Action Plans
- Operation Maintenance and Inspection Manuals

CEC's senior leadership and integrated technical services team is providing high quality project delivery with an extension of client staff type consulting services.

Services Provided:

- *Dam Assessments*
- *Geotechnical Analysis*
- *Civil Engineering*
- *H&H Engineering*
- *Emergency Action Plans*
- *Operation Maintenance and Inspection Manuals*

Team Members Involved:

- *Matt Gramza, P.E, CFM*
- *Pat Sullivan, P.E.*
- *Tony Amicon, P.E.*
- *John Imbus, P.E.*
- *Max Bailey, P.E.*
- *Monica Rakovan, PhD, CPG*

29. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE / RELATIONSHIP
a.	Civil & Environmental Consultants, Inc.	Cincinnati, OH	Prime Consultant
b.	Civil & Environmental Consultants, Inc.	Pittsburgh, PA	Support Office
c.	Environmental Solutions AQ	Oxford, OH	Consultant

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the Contracting Authority, or a maximum of 10 projects, if not specified. Complete one Section F for each project. Limit one page in length.)

24. EXAMPLE PROJECT KEY NUMBER (1 – 10): 2

25. TITLE AND LOCATION *(City and State)*

Lake Milton Reclamation Project
Jackson County, OH

26. YEAR COMPLETED	
DESIGN (if applicable)	CONSTRUCTION (if applicable)
2004	2006

27. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT NUMBER	d. POINT OF CONTACT E-MAIL ADDRESS
Ohio Department of Natural Resources	Nancy Seger, PE	614.265.7079	nancy.seger@dnr.state.oh.us

28. DESCRIPTION OF PROJECT (Include project info, services, benefit/value, results, relevance, references, photographs/diagrams, awards/certifications, team members)

Project Relevance:

- Hydrologic and Hydraulic Analyses
- Geotechnical Embankment Stability
- Seepage Analysis
- DEP Dam Criteria
- OAC Dam Criteria
- Site Investigation, Rehabilitation and Costs
- Dam Design and Construction Admin.
- State Interaction
- Aggressive Schedule

While employed at Bergmann Associates, Mr. Sullivan, in a position as project manager was tasked to reclaim a 155 acre Abandoned Mined Land (AML) site and rehabilitate a Class III embankment. ODNR Division of Water identified stability, seepage, inadequate flood control issues and areas of coarse refuse within the embankment impounding Lake Milton and issued an order to correct these problems and maintain the lake for recreational purposes and future state park consideration.

Mr. Sullivan performed a site reconnaissance and managed a subsurface investigation. Soil design parameters were established based upon laboratory testing of collected soil samples and conceptual layouts for the embankment were performed that reduced the height of the embankment to meet an Ohio Administrative Code dam classification with less risk requirements and to increase embankment stability. The STABL6 computer software was utilized to obtain factors of safety meeting regulatory requirements against instability.

In accordance with OAC, principal and emergency spillways for the embankment were designed. The principal spillway was required to pass the ¼ PMF, but needed to possess the flexibility to provide constant flow to allow for operation of the AMD treatment appurtenances located downstream. A vertical riser spillway with a skimmer system that provided approximately 400 gallons per minute to AMD treatment facilities 500 feet downstream was designed. An existing emergency spillway located 500 feet from the embankment was modified by excavation to lower the control section to handle stormflow exceeding the ¼ PMF. A drawing is below.

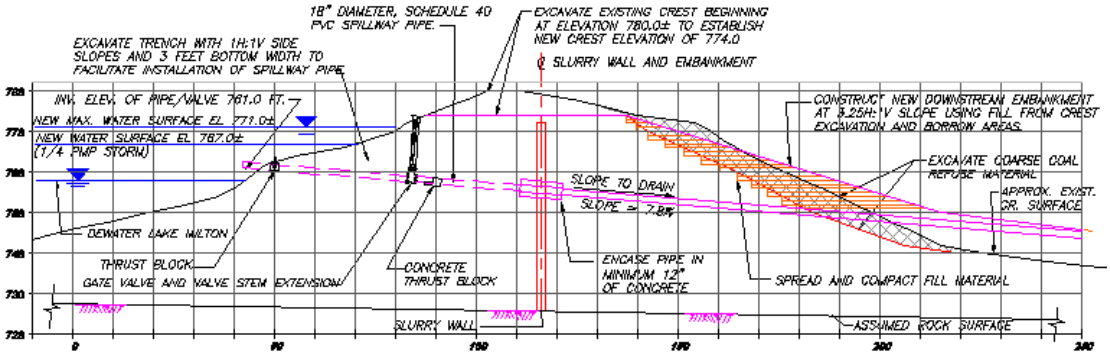
To reduce seepage through loose, uncompacted areas of the 30 feet high and 200 feet long embankment, Mr. Sullivan designed a slurry wall to extend to the top of bedrock and worked with a subcontracted engineering firm to develop passive treatment systems designed to mitigate AMD. He prepared construction drawings and technical specifications using ODNR formatting for use in bidding and prepared a final engineer's estimate for ODNR use in funding. Construction was completed in 2006.

Services Provided:

- *Project Management*
- *Civil and Geotechnical Engineering*

Team Members Involved:

- *Pat Sullivan, P.E.*



29. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

a.	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE / RELATIONSHIP
	Bergmann Associates, Inc.	Pittsburgh, PA	Prime Consultant

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the Contracting Authority, or a maximum of 10 projects, if not specified. Complete one Section F for each project. Limit one page in length.)

24. EXAMPLE PROJECT KEY NUMBER (1 – 10): 3

25. TITLE AND LOCATION *(City and State)*

Royal Oak Country Club Dam and Spillway Rehabilitation
Cincinnati, OH

26. YEAR COMPLETED

DESIGN (if applicable)	CONSTRUCTION (if applicable)
2009	

27. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT PHONE NUMBER	d. POINT OF CONTACT E-MAIL ADDRESS
Royal Oak Country Club	Daniel Gates	513.752.6500	dgates@royaloakcountryclub.com

28. DESCRIPTION OF PROJECT (Include project info, services, benefit/value, results, relevance, references, photographs/diagrams, awards/certifications, team members)

Hydraulic engineering and ODNR permitting compliance of two existing class I earth dams (ODNR #'s 9042-013, 014) at the Royal Oak Country Club. The overall dam safety and permitting compliance were improved by completing the: design of new emergency spillways since none existed, geotechnical investigation and stability analysis, upstream and downstream slope improvements, primary spillway improvements, critical flood studies including unsteady flow dam breach analysis to determine appropriate design flood, hydrologic and hydraulic engineering analysis, detailed flood inundation mapping, EAP's, and OM&I's. The un-steady flow model was fully geo-referenced and completed in HEC-GeoRAS and HEC RAS.

Project Relevance:

- Hydrologic and Hydraulic Analyses
- Geotechnical Embankment Stability
- Seepage Analysis
- DEP Dam Criteria
- OAC Dam Criteria
- Site Investigation, Rehabilitation and Costs
- Dam Design and Construction Admin.
- EAP and OM&I Manual
- State Interaction
- Aggressive Schedule

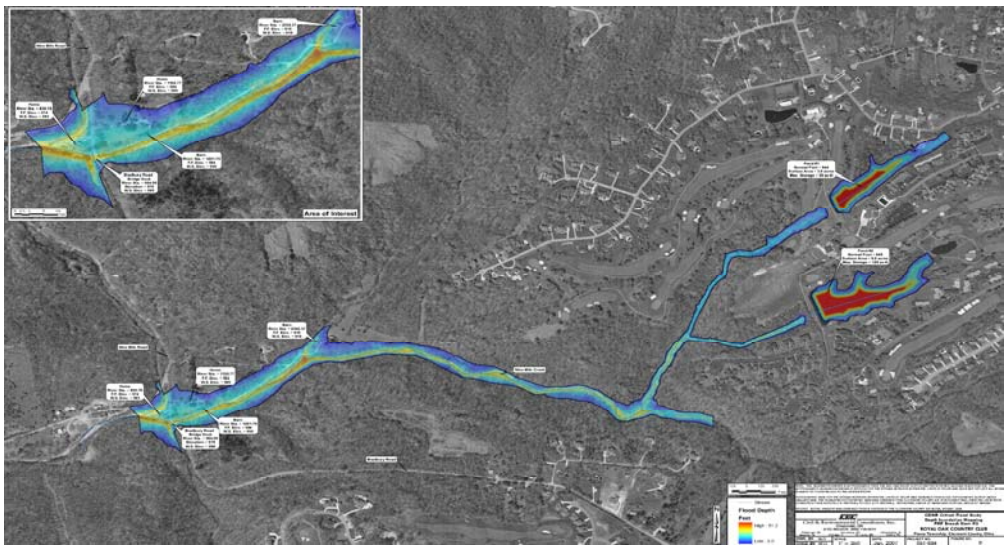
As part of overall dam evaluation and planning project, site reconnaissance and geotechnical investigation was conducted to evaluate in-situ construction of existing dams. Project included advancement of several soil borings at each dam, including Standard Penetration Test and undisturbed soil sampling. Several borings were converted to monitoring wells to allow for longer term observation of groundwater levels within each dam. Laboratory testing program completed to evaluate dam construction materials. Prepared comprehensive report detailing dam construction, including analysis of short-term and long-term slope stability, and included recommendations for general maintenance and modifications to increase slope stability.

Services Provided:

- *Hydraulic Engineering*
- *ODNR Permitting*
- *Surveying Services*
- *Geotechnical Engineering*

Team Members Involved:

- *Matt Gramza, P.E, CFM*
- *John Imbus, P.E.*
- *Jim Zentmeyer, P.E.*



29. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE / RELATIONSHIP
a.	Civil & Environmental Consultants, Inc.	Cincinnati, OH	Prime Consultant

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the Contracting Authority, or a maximum of 10 projects, if not specified. Complete one Section F for each project. Limit one page in length.)

24. EXAMPLE PROJECT KEY NUMBER (1 – 10): 4

25. TITLE AND LOCATION *(City and State)*

CONSOL Energy 14-North Impoundment Dam Safety Program
Allegheny County, PA

26. YEAR COMPLETED

DESIGN (if applicable)	CONSTRUCTION (if applicable)
2006	

27. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT PHONE NUMBER	d. POINT OF CONTACT E-MAIL ADDRESS
CONSOL Energy, Inc.	Bob Komosinski	412.854.6586	bobkomosinski@consolenergy.com

28. DESCRIPTION OF PROJECT (Include project info, services, benefit/value, results, relevance, references, photographs/diagrams, awards/certifications, team members)

CEC provided Dam Inspection, Emergency Spillway Assessment, Hydraulic Engineering, and Pennsylvania Department of Environmental Protection Permitting Compliance services to the CONSOL Energy Company for a large existing class I earth dam. The impoundment was used for mine drainage storage and settling. The program included records research, operator personnel interviews, on-site inspection, existing conditions assessment, and final assessment reporting. CEC provided a dam discharge/storage analysis to determine the structure's ability to safely manage the design flood in accordance with the PA Code, Title 25, Chapter 105, Dam Safety and Waterway Management. Dam Breach Analysis was completed and included in the preparation of the emergency action plan in accordance with PA DEP, "Guidelines for Developing an EAP for Hazard Potential Category I and 2 Dams."

Project Relevance:

- Hydrologic and Hydraulic Analyses
- DEP Dam Criteria
- Site Investigation, Rehabilitation and Costs
- EAP and OM&I Manual
- Aggressive Schedule

Project goals of improving the overall dam safety and permitting compliance status were achieved by completing:

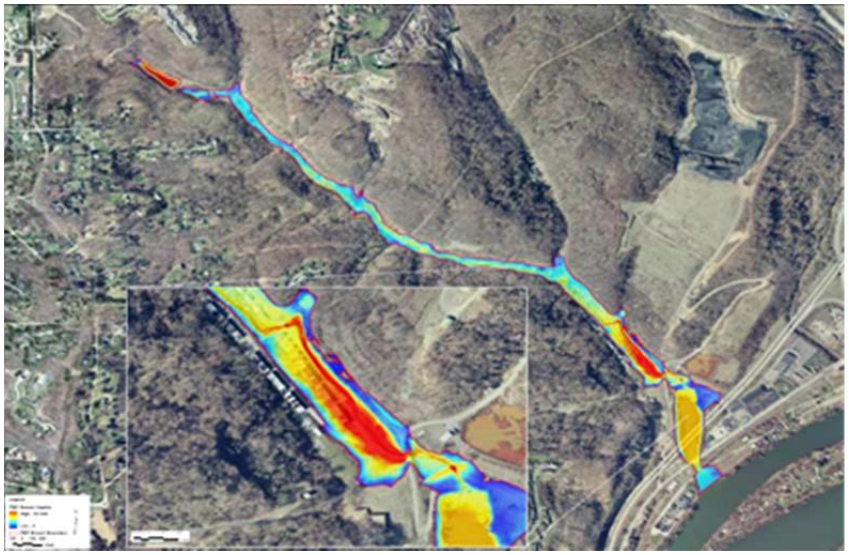
- Emergency Spillway Capacity Analysis
- Hydrologic & Unsteady Flow Hydraulic Analysis
- Dam Breach Modeling
- Detailed Flood Inundation Mapping
- Emergency Action Plan
- Operation Maintenance and Inspection Manual

Services Provided:

- *Hydrologic & Hydraulic Analysis*
- *Dam Breach Modeling*
- *Inundation Mapping*
- *Dam Inspection*
- *Dam Rehabilitation Assessment*
- EAP's & OM&I's

Team Members Involved:

- *Matt Gramza, P.E, CFM*
- *John Imbus, P.E.*
- *Tony Amicon, P.E.*



29. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE / RELATIONSHIP
a.	Civil & Environmental Consultants, Inc.	Cincinnati, OH	Prime Consultant
a.	Civil & Environmental Consultants, Inc.	Pittsburgh, PA	Support Office

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the Contracting Authority, or a maximum of 10 projects, if not specified. Complete one Section F for each project. Limit one page in length.)

24. EXAMPLE PROJECT KEY NUMBER (1 – 10): 5

25. TITLE AND LOCATION *(City and State)*

Dayton Power and Light Dam Safety Management Program

Ohio Power Stations

26. YEAR COMPLETED	
DESIGN (if applicable)	CONSTRUCTION (if applicable)
2009	

27. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT PHONE NUMBER	d. POINT OF CONTACT E-MAIL ADDRESS
Dayton Power and Light	Craig Spangler	513.549.2641	craig.spangler@dplinc.com

28. DESCRIPTION OF PROJECT (Include project info, services, benefit/value, results, relevance, references, photographs/diagrams, awards/certifications, team members)

CEC provided Dam Inspection, Dam Rehabilitation Assessment and Reporting services to the Dayton Power and Light Company (DP&L) for all Dayton Power and Light operated coal fired power station ash impoundments. The program included records research, operator personnel interviews, on-site inspection, existing conditions assessment, and final assessment reporting including remediation recommendations and budgetary cost estimating for ten (10) large upground reservoir ash impoundments at three Ohio Power Stations. The project included a total impoundment length of approximately seven (7) miles. Inspections were all performed in accordance with ODNR Dam Safety Inspection procedures. The program was set up in three phases: impoundment assessment, supplemental investigation and remediation planning, and remediation implementation.

Project Relevance:

- Hydrologic and Hydraulic Analyses
- Geotechnical Embankment Stability
- Seepage Analysis
- OAC Dam Criteria
- Site Investigation, Rehabilitation and Costs
- Aggressive Schedule

Services Provided:

- *Dam Inspection*
- *Dam Rehabilitation Assessment*

Team Members Involved:

- *Matt Gramza, P.E, CFM*
- *John Imbus, P.E.*
- *Tony Amicon, P.E.*
- *Max Bailey, P.E.*

29. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

a.	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE / RELATIONSHIP
	Civil & Environmental Consultants, Inc.	Cincinnati, OH	Prime Consultant

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the Contracting Authority, or a maximum of 10 projects, if not specified. Complete one Section F for each project. Limit one page in length.)

24. EXAMPLE PROJECT KEY NUMBER (1 – 10): 6

25. TITLE AND LOCATION *(City and State)*

Dayton Power and Light Channel Dam EAP & OM&I
Miamisburg, OH

26. YEAR COMPLETED

DESIGN (if applicable)	CONSTRUCTION (if applicable)
2009	

27. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT PHONE NUMBER	d. POINT OF CONTACT E-MAIL ADDRESS
Dayton Power and Light	Kris Singleton	937.865.6215	kris.singleton@dplinc.com

28. DESCRIPTION OF PROJECT (Include project info, services, benefit/value, results, relevance, references, photographs/diagrams, awards/certifications, team members)

Project Relevance:

- Hydrologic and Hydraulic Analyses
- OAC Dam Criteria
- Site Investigation, Rehabilitation and Costs
- EAP and OM&I Manual
- Aggressive Schedule

CEC provided Hydraulic Engineering and ODNR permitting compliance services to the Dayton Power and Light Company (DP&L) for a large Channel Dam at the O.H. Hutchings Power Station on the Great Miami River. The services included the creation of an Emergency Action Plan (EAP), and Operation, Maintenance, and Inspection Manual (OM&I). CEC developed the plans utilizing the ODNR required report format for typical high-head dams and customized it for the low-head channel dam. An innovative approach was taken to perform the Hydrologic and Hydraulic analysis of the structure including GIS integrated breach modeling and inundation mapping of the Great Miami River. The project team utilized historic USGS stream flow gage data to provide real time peak and average daily flow and stage information to the input of the analysis. CEC worked closely with the owner/operator to obtain and incorporate plant safety operations input to achieve plans that not only exceeded ODNR compliance, but would be appropriate and reliable for use during an emergency. Plant operational personnel input was also customized for use in the OM&I, in order to create a fully operable plan. This typically raises the success rate of plan implementation and long-term performance. CEC was also the primary interface with the ODNR Division of Soil and Water Resources, Dam Safety Engineering Program personnel.

Services Provided:

- *Hydrologic and Hydraulic Engineering*
- *ODNR Permitting*
- *Emergency and Operational Plans*

Team Members Involved:

- *Matt Gramza, P.E, CFM*
- *John Imbus, P.E.*
- *Max Bailey, P.E.*

29. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

a.	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE / RELATIONSHIP
	Civil & Environmental Consultants, Inc.	Cincinnati, OH	Prime Consultant

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the Contracting Authority, or a maximum of 10 projects, if not specified. Complete one Section F for each project. Limit one page in length.)

24. EXAMPLE PROJECT KEY NUMBER (1 – 10): 7

25. TITLE AND LOCATION *(City and State)*

Ohio Power Company (AEP) – Mitchell Landfill
Cresap, West Virginia

26. YEAR COMPLETED	
DESIGN (if applicable)	CONSTRUCTION (if applicable)
2011-Present	2012-Present

27. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT NUMBER	d. POINT OF CONTACT E-MAIL ADDRESS
American Electric Power	Tom Cooper	614.716.2039	tpcooper@aep.com

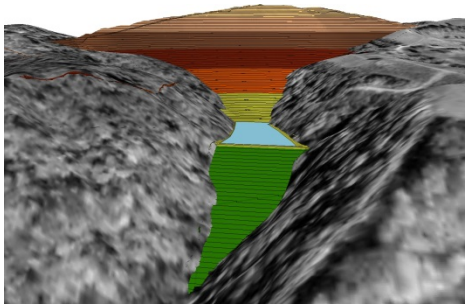
28. DESCRIPTION OF PROJECT (Include project info, services, benefit/value, results, relevance, references, photographs/diagrams, awards/certifications, team members)

Ohio Power Company (AEP) Mitchell Landfill – Cresap, WV - CEC prepared a Class F Industrial Landfill Facility Solid Waste Permit Application to the West Virginia Department of Environmental Protection (WVDEP) and an Individual Clean Water Act (CWA) Section 401/404 Permit Application to the WVDEP and the U.S. Army Corps of Engineers (USACE) for a new landfill that will accept fly ash produced at Ohio Power Company's Mitchell Power Plant. The landfill facility is approximately 100-acres in size and contains a 58-acre waste footprint with a composite liner that has the capacity to store 10 million cubic yards of coal combustion by-products (CCB), providing 24 years of CCB disposal life for the Mitchell Power Plant. The landfill site, located in Marshall County, West Virginia, is a deeply incised, steeply sloped valley situated above an abandoned underground coal mine and adjacent to a large impoundment for CCB and coal mine refuse.

Project Relevance:

- Hydrologic and Hydraulic Analyses
- Geotechnical Embankment Stability
- Seepage Analysis
- DEP Dam Criteria
- Site Investigation, Rehabilitation and Costs
- Dam Design and Construction Admin.
- Aggressive Schedule

CEC staff performed various investigations to support engineering design and permitting for the landfill, which included: hydrogeologic and geotechnical subsurface investigations, cultural resource studies, stream and wetland delineations, endangered species evaluations, groundwater sampling, site survey, and laboratory testing programs. The design included preparation of several conceptual options; evaluating the airspace, anticipated life, lined area, and soil balance prior to completing a permit application. CEC prepared engineering design drawings and accompanying Solid Waste Permit Application narratives, including a Hydrogeologic Subsurface Report, Mine Subsidence Report, Operating Record, Groundwater Monitoring Plan, Groundwater Protection Plan, Erosion and Sediment Control Plan, Estimated Construction Costs, and Construction Quality Assurance Plan. With respect to the CWA 401/404 permitting, CEC conducted jurisdictional waters delineations, stream quality assessment surveys, stream mitigation plan preparation, Endangered Species Act compliance services (including Indiana bat mist net surveys and habitat assessment surveys), and agency coordination activities. As required by WVDEP and USACE, CEC utilized the West Virginia Stream and Wetland Valuation Metric protocol for determining stream and wetland impact debits associated with construction of the landfill. This protocol was also utilized to determine stream mitigation credits for activities identified in the prepared mitigation plan.

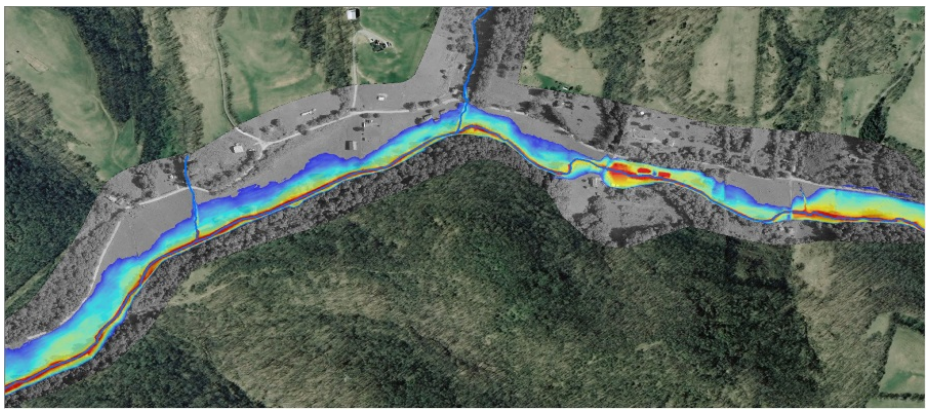


Services Provided:

- *Hydraulic Engineering*
- *DEP Permitting*
- *Geotechnical Engineering*
- *Civil Engineering*

Team Members Involved:

- *Matt Gramza, P.E, CFM*
- *Tony Amicon, P.E.*
- *John Imbus, P.E.*
- *Todd Ford, P.E.*
- *Max Bailey, P.E.*



29. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE / RELATIONSHIP
a.	Civil & Environmental Consultants, Inc.	Cincinnati, OH	Prime Consultant
b.	Civil & Environmental Consultants, Inc.	Columbus, OH	Support office
c.	Civil & Environmental Consultants, Inc.	Pittsburgh, PA	Support office

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the Contracting Authority, or a maximum of 10 projects, if not specified. Complete one Section F for each project. Limit one page in length.)

24. EXAMPLE PROJECT KEY NUMBER (1 – 10): 8

25. TITLE AND LOCATION *(City and State)*

Dam No. 3 Labyrinth/Weir Replacement Project
Washington County, PA

26. YEAR COMPLETED

DESIGN (if applicable)	CONSTRUCTION (if applicable)
2011	2015

27. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT PHONE NUMBER	d. POINT OF CONTACT E-MAIL ADDRESS
CONSOL ENERGY, INC Washington Co., PA	Rich Perin, PE, PLS	724-485-4029	rich.perin@consolenergy.comus

28. DESCRIPTION OF PROJECT (Include project info, services, benefit/value, results, relevance, references, photographs/diagrams, awards/certifications, team members)

Project Relevance:

- H & H Analyses
- Geotechnical Investigation
- Structural Design
- Seepage & Stability Analysis
- Piezometer Installation
- Public Meeting
- Division of Dam Agency Interaction
- Procure Permit from PADEP
- Bid Procurement
- Dam Construction Admin.
- Spillway Pipe Abandonment

In 2011, CONSOL Energy, Inc. (CONSOL) acquired Dam No. 3 in Washington County, PA to utilize the water for future mining and gas needs. The earthen dam is 48 feet high and was constructed in the mid 1890's, In the mid 1920's, the earthen dam was raised 13 feet and a 50 feet wide concrete ogee weir and a 25 feet wide concrete spillway chute and stilling basin were constructed to address discharge of stormwater.

The dam is inspected annually, in accordance with PADEP regulations and maintains a B-1 classification. Current Pennsylvania B-1 dam hazard classification require the spillway system to handle the discharge associated with a Probable Maximum Flood (PMF). With purchase of the dam, CONSOL will need to upgrade the existing spillway to meet the PMF rainfall event. CEC was retained by CONSOL to prepare a design of a labyrinth weir, chute and stilling basin to meet PADEP guidelines for PMF discharge (11,000cfs) and to replace an inadequately sized and deteriorated spillway structure.

CEC conducted a subsurface investigation consisting of the collection of soil and rock samples to fill data gaps within existing geotechnical data and to locate the Washington coal seam, which outcrops within the reservoir and beneath the spillway chute. A site reconnaissance was also conducted, which included an underground utility survey to locate an abandoned spillway pipe and intake chamber through the embankment. Following the investigation and preparation of the geotechnical report, CEC supervised the design to remove the existing spillway, chute and stilling basin and design the new spillway, which included the labyrinth foundation slab and walls, abutment and tie-in walls, a subsurface cutoff wall, topping slab, a wider spillway chute, riprap protection and excavation, grading and fill placement around the completed concrete structure.

Design calculations were performed and 57 civil, geotechnical and structural plans, sections and detail drawings were prepared along with technical specifications; an engineer's cost estimate and a construction schedule. CEC prepared a Design Report for PADEP that included design criteria, basis for design, hydraulic and hydrologic data, geotechnical data, and evolution of the design from preliminary to final. The Design Report was needed to obtain a 'Letter of Amendment' approval from PADEP, which allows changes to be made to a dam if an existing permit for a dam is in good standing, and the top of dam and normal pool elevation are not being modified.

Comments received from the initial submission of the design to PADEP resulted in the following design modifications:

- Perform supplemental geotechnical investigation to collect soil samples for consolidated drained and undrained triaxial shear strength testing and perform additional stability analysis
- Install Vibrating Wire Piezometers to collect potential water elevations and re-evaluate stability
- Replace pervious sub-base material beneath the labyrinth foundation with cohesive fill
- Over-excavate 12 feet to bottom of coal seam undr labyrinth and backfill with cohesive fill
- Perform structural calculations to verify that cutoff wall/foundation slab connection cannot fail due to settlement of cohesive fill
- Extend concrete cutoff wall vertically to top of competent rock and horizontally into Embankment
- Evaluate location of concrete joints and waterstops
- Perform settlement calculation to replace lean concrete backfill proposed by PADEP with cohesive structural fill.
- CEC also supervised the development of a General NPDES Permit (PAG-02), an E&S Plan, a PCSM Plan and a Water Drawdown Application. The permit was received November 2014.

Services Provided:

- *Project Management*
- *Civil and Geotechnical Engineering*

Team Members Involved:

- *Pat Sullivan, PE*

29. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

a.	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE / RELATIONSHIP
	Civil & Environmental Consultants, Inc.	Pittsburgh, PA	Prime Consultant

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the Contracting Authority, or a maximum of 10 projects, if not specified. Complete one Section F for each project. Limit one page in length.)

24. EXAMPLE PROJECT KEY NUMBER (1 – 10): 9

25. TITLE AND LOCATION *(City and State)*

West Ash Pond Declassification
FirstEnergy R.E. Burger Generating Station
Belmont County, Ohio

26. YEAR COMPLETED

DESIGN (if applicable)	CONSTRUCTION (if applicable)
2012	2013

27. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT PHONE NUMBER	d. POINT OF CONTACT E-MAIL ADDRESS
FirstEnergy Generation Corporation	Ralph Borsani	724-830-5909	

28. DESCRIPTION OF PROJECT (Include project info, services, benefit/value, results, relevance, references, photographs/diagrams, awards/certifications, team members)

CEC was retained by FirstEnergy Generation Corporation (FirstEnergy) to complete engineering evaluations, design drawings, and construction management services related to their west ash pond at the R.E. Burger Generating Station in Dilles Bottom, Ohio. The west ash pond was an approximately 30 foot high, 20 acre, Class II dam and that contained stormwater runoff and coal combustion ash sluiced from the generating station. CEC's engineering evaluation was performed in response to a request from the Ohio Department of Natural Resources (ODNR) outlining a series of actions that needed to be implemented for the pond.

CEC performed a subsurface investigation and stability analysis of the south and west embankments of the pond, and recommended a measures to improve embankment stability and conformance to ODNR requirements. This included reconfiguration and the removal of trees and vegetation on a portion of the embankment. Because of changes in site operations, FirstEnergy ultimately chose to decommission and declassify the pond by reducing the embankment height to less than 6 feet, and modifying the outlet structure. CEC prepared construction drawings and specifications for the decommissioning, provided construction oversight, and prepared the final certification report, which was submitted to ODNR for review and approval. ODNR reclassified the pond from Class II to exempt in September 2013, significantly reducing FirstEnergy's future liabilities with the facility.

Services Provided:

- *Project Management*
- *Civil and Geotechnical Engineering*

Team Members Involved:

- *Douglas Clark, PE*

29. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

a.	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE / RELATIONSHIP
	Civil & Environmental Consultants, Inc.	Pittsburgh, PA	Prime Consultant

F. RELEVANT PROJECT EXPERIENCE MATRIX

		Major Scope of Work requirements as identified in the project advertisement.									
		Scope: Hydrologic and Hydraulic Analyses	Scope: Geotechnical Analyses pertaining to Embankment Stability	Scope: Structural Analyses Pertaining to Integrity of Concrete Structures	Scope: Inspections of Lake Drain Structures and Gates	Scope: Seepage Analyses	Scope: Ohio Dam Safety Laws & Rules and Working with Regulatory Agencies with Authority Over Dam and Water Resources Related Pfo	Scope: Design and Construction Administration of Dam-Related Projects	Scope: Applying for and Obtaining Regulatory Permits for Dam-Related Projects	Scope: Working for State and/or Other Governmental Agencies	Scope: Dealing with the Public and Facilitating Public Meetings
Example Project Name (Place "X" under Project Scope)											
1	Statewide Dam Safety Services	X	X			X	X			X	X
2	Lake Milton Reclamation Project	X	X X			X	X	X	X	X	
3	Royal Oak Country Club Dam and Spillway Rehabilitation	X	X X			X	X			X	
4	CONSOL Energy 14-North Impoundment Dam Safety Program	X					X		X	X	
5	Dayton Power and Light Dam Safety Management Program	X	X				X				
6	Dayton Power and Light Channel Dam EAP & OM & I	X					X				
7	Ohio Power Company Mitchell Landfill	X	X			X	X	X		X	
8	Dam No. 3 Labyrinth/ Weir Replacement Project	X	X X	X		X	X	X X		X	X
9	R.E. Burger West Ash Pond Declassification	X	X			X	X				
10	Piqua Wastewater Treatment Facility		X							X	X

G. KEY PERSONNEL PARTICIPATION IN EXAMPLE PROJECTS

30. NAMES OF KEY PERSONNEL (From Section E, Block 16)	31. ROLE IN THIS CONTRACT (From Section E, Block 17)	32. EXAMPLE PROJECTS LISTED IN SECTION F (Fill in "Example Projects Key" section below before completing table. Place "X" under project key number for participation in same or similar role.)									
		1	2	3	4 5 6			7 8 9			10
Civil & Environmental Consultants, Inc.											
Matthew Gramza, P.E., CFM	Civil Engineer	X		X	X X	X		X			
Patrick Sullivan, Jr., P.E.	Quality Control	X	X						X		
Greg Linder, P.E.	Project Manager										
Michael Schumaker, P.E.	Independent Technical Review										
Douglas Clark, P.E.	Geotechnical Engineer									X	

33. EXAMPLE PROJECTS KEY

NO.	TITLE OF EXAMPLE PROJECT (FROM SECTION F)	NO.	TITLE OF EXAMPLE PROJECT (FROM SECTION F)
1	Statewide Dam Safety Services	6	Dayton Power and Light Channel Dam EAP & OM & I
2	Lake Milton Reclamation Project	7	Ohio Power Company Mitchell Landfill
3	Royal Oak Country Club Dam and Spillway Rehabilitation	8	Dam No. 3 Labyrinth/ Weir Replacement Project
4	CONSOL Energy 14-North Impoundment Dam Safety Program	9	R.E. Burger West Ash Pond Declassification
5	Dayton Power and Light Dam Safety Management Program	10	Piqua Wastewater Treatment Facility

34a. PROVIDE ANY ADDITIONAL INFORMATION REQUESTED BY THE CONTRACTING AUTHORITY. ATTACH ADDITIONAL SHEETS AS NEEDED.

Introduction

Over the last 15 years, the state of Ohio has witnessed the overtopping, failure or emergency dewatering at 19 earthen or concrete dams (Ohio Enhanced Hazard Mitigation Plan). Several of the more recent dam incidents include the following:

Ivex Dam Failure

- On August 13, 1994, the IVEX Dam on the Chagrin River catastrophically fails as a result of a large hydrologic event coupled with an inadequate spillway design, an absence of an emergency spillway and piping from seepage.
- On February 28, 2011, the Gates Mills Dam, a low-head dam on the Chagrin River overtops and fails as a result of heavy rains and melting snow.
- In 2006, the Briar Hill Lake Dam near Solon overtops; a new dam and spillway are constructed.
- In 2003, the emergency spillway at the Rustic Hills Lake Dam in Medina Ohio fails.
- In 2004, the Williams Lake Dam in Jefferson County overtopped twice within a year.

The locations change, but the issue remains the same. Earthen, concrete or masonry dams, whether recently constructed or decades old, are capable of failure during or after a rainfall or flood event or for no apparent reason. Failure could be from overtopping, a breach at a location where water is designed to pass, such as the principal or emergency spillway, or seepage as a result of inadequate subsurface conditions.

Gates Mill Dam Breach

On May 14, 2013, Sherrod Brown, a United States Senator from Ohio publicly commented on the need for legislation that includes critical resources for dam inspections and maintenance to make Ohio's dams safer. "Our states aging water infrastructure includes nearly 1,000 dams in need of repair" Brown said.

To address the frequency of failures, Ohio has passed new laws that will make Ohio's dams safer and protect communities located downstream of these facilities. In August of 2013, the Chief of the Division of Soil and Water Resources for the Ohio Department of Natural Resources (ODNR) approved the statewide probable maximum precipitation study (PMP Study) for the state of Ohio for determining PMP values under the Ohio Administrative Code (OAC) rule 1501:21-13-02. Over the last 12 months, Civil and Environmental Consultants (CEC), under a contract with ODNR (DNR No. 130022) has been preparing Hydrologic and Hydraulic technical reports for several class I and Class II dams in the state of Ohio. This month, CEC will deliver 17 of these reports so that ODNR can meet its self-imposed deadline of June 30, 2015 for completing the initial phases of its ongoing dam safety initiative.

CEC is a 25-year old firm of approximately 700 employees consisting of 120 professional and registered engineers, architects, landscape architects, planners, scientists, archeologists, and surveyors that can provide the services identified in this Expression of Interest. As indicated previously, we are currently providing engineering services to ODNR as part of a three year contract totaling $1.1M, which is scheduled to expire at the end of 2016. From our 19 offices, including our offices in Cincinnati, Columbus and Toledo and our headquarters in Pittsburgh, PA, we provide comprehensive multi-disciplinary services to numerous clients across the country.

A key component of our experience and qualifications is our civil, geotechnical and water resource experience with dam facilities, as further explained below and as highlighted in our featured resumes (Section E) and representative projects (Section F) in this submittal

Civil & Environmental Consultants, Inc. provides consulting services in five broad areas: water resources, civil and site development engineering, environmental science and engineering, ecological studies, and waste management. CEC will manage this contract from Bridgeport, but staff from both Columbus and Pittsburgh will play key roles in the performance of the scope of work items indicated and the task orders assigned by the WVCA.

Value Engineering and Constructability Reviews

In today's economy, it is imperative to evaluate and minimize construction costs while maintaining quality and meeting the objectives of the project. Evaluation of cost can be directly affected by constructability: how easy or difficult is construction, is the construction approach effective, are there phasing issues associated with construction, what type of equipment is needed, is specialty construction required, how accessible is the site, how available are materials and what level of effort is required for construction quality. The CEC Team possesses the experience needed to answer these questions. The CEC Team has been successful in applying the methodology of value engineering adopted by the USACE and utilizes one or all of five phases: Information, Speculation, Analysis, Development, and Presentation. It is during the speculation phase that the CEC Team excels. In this phase, brainstorming sessions are conducted to generate ideas for alternative construction or to develop ideas for streamlining construction. Most of the designs performed by the CEC Team incorporate a time period where construction and constructability is reviewed and considered; we recognize that construction utilizes a majority of the project costs. Many senior professionals on the CEC Team 'cut their teeth' in the field functioning as construction inspectors or project observers, which allows them to draw from this experience to apply construction approaches to design. The value engineering process can be provided as a separate deliverable to ODNR or simply acknowledged in the projects files as being performed.

Senior Leadership

The CEC Team will advocate the use of senior leadership in working with the WVCA. Having senior level staff working on all of our projects results in early identification of potential issues and allows for value engineering to be continuously incorporated into a project. Although senior leadership rarely equates to traditional cost savings, it often results in budget and schedule control that minimizes the risk for costly design overruns and mistakes. Additionally, senior leadership allows for good communication and maximizes the potential for a positive project experience. It also allows members of the CEC Team to periodically assess office and project performance on the WVCA contract through an internal peer review program.

CEC enjoys a competitive reputation advantage for providing thorough and sound advisory council and regulatory knowledge to our clients for complex municipal and federal regulatory issues.

Attention to Quality

For each project, our Project Managers develop a quality control plan (QC Plan), which identifies the project team, the design criteria and standards of practice: the calculation, document and drawing methodologies, process and procedures: and the project schedule and milestones for completion of the work. This QC Plan also identifies primary and support personnel: the quality control and independent technical review teams: and the comment-response process. The policies and procedures specified in the QC Plan will be followed by all personnel and ensure that the investigative, analysis and design work performed by the CEC Team meets NRCS standards.

In conjunction with the QC Plan, the CEC Team performs their work under a Quality Control and Quality Assurance Policy (QC/QA Policy). This QC/QA Policy was developed to ensure the engineering, design, plans and quantities developed by our various offices and disciplines are supported by comprehensive studies and sound engineering judgment, in compliance with established policies, guidelines and standards, and contain appropriate design flexibility and cost saving measures. This QC/QA Policy is consistently reviewed and updated by a multi-office team of experienced professionals to ensure "Best Quality Control Practices" are uniformly applied. In support of this QC/QA Policy, the CEC Team is committed to the application of established design policies, guidelines, and processes developed and published by review and resource agencies. From a quality standpoint, technical personnel review the technical quality, accuracy and completeness of all designs, analyses, drawings, estimates, and report text. Peer-level personnel are responsible for the performance of an independent check of all calculations and project deliverables prior to each project milestone submission.

As part of the QC/QA Policy, design checks will be performed for the appropriate element throughout the design process and will be completed prior to submitting reports, plans, estimates, and schedules. A qualified reviewer will check feasibility, concepts, estimates, calculations, assumptions and schedule implications. Checks will verify accuracy and adequacy of the information presented and compliance with established guidance documents. Checklists will be used as applicable.

An Independent Technical Review (ITR) team will provide an independent review and certification of all documents submitted. The ITR team will consist of personnel with experience in disciplines applicable to the work at hand. The ITR team and the design team will respond to, and back check all technical review comments.

The QC/QA Policy also documents procedures for work procedure and equipment use, employee and project safety, project management and records and communications. The goal and objective of the QC/QA Policy is to provide a consistent delivery of quality services to ODNR driven by our people and focused on you.

Technical Knowhow

The CEC Team possesses the depth and breadth of knowledge associated with dams that will be more than capable of providing the WVCA with the expertise needed to address your dam problems. It should be noted that this experience was obtained from our

involvement in both large and small dams, with large and small budgets. When a difficult problem associated with a dam/embankment issue arises, CEC is the firm in the tri-state area that is contacted. That contact can occur before the issue transpires or after an incident has occurred. The CEC team, in addition to possessing the experience identified in your scope items, has had the opportunity to participate in some unique dam problems. These include the following:

1. Design, permitting and construction administration for a labyrinth weir spillway in Washington, Pennsylvania to replace a 80 year old ogee weir. A stability analyses on the embankment was requested by the PADEP Division of Dams, and required a significant level of technical effort to develop. Readings of potential head obtained from piezometers over an 8 week period using a Slope Indicator datalogger were used to determine the location of the phreatic surface in the analyses. Defining a potentiometric surface as the imaginary line where a given reservoir of fluid will "equalize out to" if allowed to flow, and noting that water flows from high elevation, or potential, to low elevation, the piezometer data indicates that water is moving in a downward direction in the embankment soils. Therefore a lower phreatic surface was justified for use in the analyses. Additional discussion on the stability analyses is provided later in this section. A seepage analysis was also performed to determine the geometric properties for a concrete cutoff wall extended to rock on the upstream side of the labyrinth. With concerns from PADEP over seepage being driven beneath the cutoff wall, CEC utilized cohesive fill beneath the labyrinth to essentially create a 100 feet wide cutoff wall, while also providing bearing for the labyrinth foundation slab.

Lake Adams Outlet Structure

2. Assessment, permitting, design and operation of a groundwater management system for the Little Blue Run Project in Beaver County, Pennsylvania, a 965-acre impoundment above a 400 foot high earth and rock dam containing slurried scrubber sludges and coal combustion residue. It is scheduled for closure beginning in 2017. As a part of the hydrogeologic studies at the site, 51 groundwater monitoring wells, 36 surface water monitoring points, 148 spring/seep locations, and 33 domestic wells are being monitored. A nine-layer (five aquifers, four aquatards), groundwater flow model covering approximately five square miles was developed to predict the impact various closure scenarios would have on groundwater levels and seep discharges in and around the impoundment. Dewatering of the scrubber sludges and influence on local aquifers and springs were modeled to 250 years after closure. Construction of a slurry wall, installed in conjunction with a groundwater pumping system, was performed to limit possible future migration of groundwater through a narrow topographic saddle on the edge of the impoundment. Additional discussion on the slurry wall is provided later in this section.

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3. Performance of a system-wide assessment to evaluate the condition of liquid management units (LMUs), such as ponds, lagoons, impoundments, and basins used for storing and processing ash slurry and stormwater runoff from ash and coal storage areas at power generating facilities. The client recognized the potential liability associated with these facilities and the potential damage to both human health and the environment that could result from a failure. Over 100 LMUs at 25 separate plants in Pennsylvania, Ohio, California, Florida, Mississippi, Illinois, Texas, Nevada, and New Jersey were evaluated. Site drawings and data for the facilities were collected and reviewed. A risk evaluation rating form was used that considered both the physical condition of the LMU and the potential risk that could result from a leak or breach to arrive at an overall risk rating for each LMU, followed by the preparation of a report for each generating facility presenting the findings, associated risk rating and recommendations for follow-up investigations or maintenance for the units.

By utilizing theses core competencies the CEC Team will be prepared to accept the task orders assigned by the WVCA as below.

❶ Experience in Hydrologic and Hydraulic Analyses.

To repair and/or rehabilitate an earthen or concrete dam, a current design or analysis, consisting of hydrologic, hydraulic, and flood routing calculations is required. The CEC Team has a thorough understanding of the capabilities of USACE developed surface water modeling software preferred by ODNR and are trained to develop watershed wide models in an efficient manner, using GIS integration and/or the best available data sets. This approach provides proper model calibration, sensitivity analysis and in-depth technical review. It also allows the CEC Team to minimize the time needed to setup the model and maximize the time to modify parameters, problem solve and add value to the results.

The CEC Team is comprised of qualified, skilled, and experienced floodplain management professionals able to problem solve through a combination of dam safety and floodplain regulation knowledge and sound engineering judgment. Our staff professionals include Hydrologists, Hydraulic Engineers, GIS Specialists, and Certified Floodplain Managers (CFM) capable of completing the following project tasks:

- Hydrologic Studies
- Hydraulic Modeling
- Dam and Improvements Design
- Dam Safety Engineering
- Dam Regulatory Permitting
- Dam Critical Flood Studies

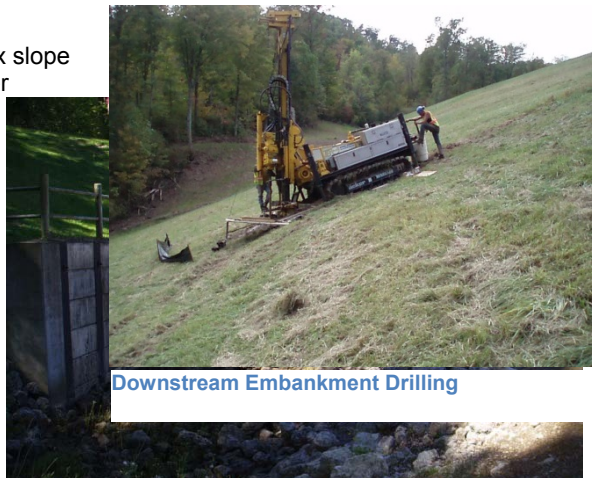
- Dam Emergency Action Plans
- Dam Operation, Maintenance and Inspection Manuals
- Stream Condition Assessments
- Stream Restoration / Relocation Design
- Floodplain Regulatory Permitting
- Bridge and Culvert Hydraulic Design
- Reservoir Design and Improvements
- Flood Inundation Mapping
- Floodway Encroachment Studies
- Floodway Delineation and Mapping
- FEMA Map Revisions

❷ Experience in performing geotechnical analyses pertaining to embankment stability.

Each existing earthen dam or abutment is unique with respect to the soils and/or rock that support the embankment, the soils and/or rock that comprise the embankment, the location of the water surface upstream, downstream and within the embankment and the structures extending through or located on the embankment. The CEC Team considers it critical that a subsurface investigation and geotechnical laboratory testing program be developed and implemented to characterize these site subsurface conditions and provide the basis for geotechnical engineering analyses and evaluation.

The CEC Team offers a complete range of geotechnical investigation, analysis, design, and field testing services to evaluate the stability of earthen dam embankments or the stability of ancillary earthen or concrete structures. Our engineering staff consisting of both engineers and geologists is highly experienced in performing geotechnical investigations, is knowledgeable of the current trends in geotechnical engineering and can provide prudent and economic guidance and recommendations. The CEC Team is also experienced in various drilling and core sampling methods, including such investigative techniques as cone penetrometer testing, borehole photography and geophysical testing. This experience brings value to your project through the active participation of staff in the design and construction process.

The CEC Team has extensive experience in, and can perform highly complex slope stability analyses for all types of projects. Slope stability often involves proper subsurface characterization and the proper application and interpretation of computer stability models. CEC has the capabilities and knowledge to evaluate critical slope stability cases, including temporary construction conditions and seismic loading events.



Downstream Embankment Drilling

Scioto Trail/Caldwell Lake Dam Outlet Structure

To perform an accurate stability analysis, the CEC Team uses the following components in the implementation of a geotechnical investigation program at an existing site:

1) A review of existing project design and construction documents (i.e., construction plans, geotechnical reports, instrumentation data, construction records, inspection records, and documented repair details);

2) A review of our in-house collection of soils and geologic references to evaluate subsurface conditions at the site.

3) A site reconnaissance and review performed by a geotechnical engineer to identify geologic and surficial features that could impact the project and to identify locations where test borings can provide needed information.

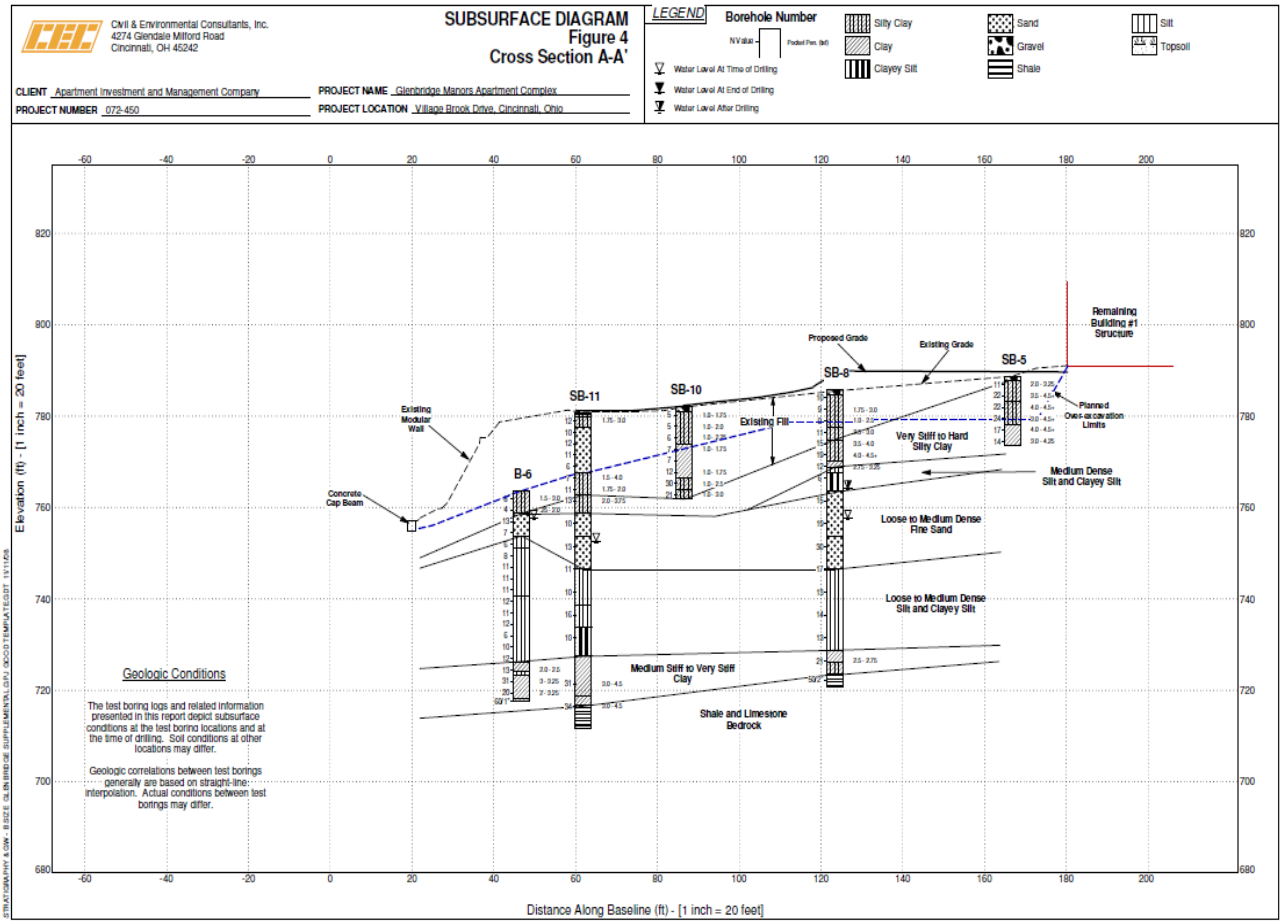
4) The development of subsurface exploration programs identifying the test boring locations, depth and auger size; the sampling methods (Standard Penetration Test, Shelby Tube, rock coring); site instrumentation needs (i.e., inclinometer, standpipes, piezometer, and monitoring well); in-situ testing (Vane Shear, Plate Load, Packer Testing, etc.) and abandonment (backfill with cuttings or grouting). CEC typically recommends that embankment borings be backfilled with grout, to prevent seepage pathways from occurring and to eliminate the potential for artesian effects from occurring. Most state and federal agencies recommend the use of grout in lieu of soil cuttings.

   The CEC Team develops the scope of any subsurface investigation to specifically address the client and design team needs. We regularly perform investigations of varying detail, from preliminary, due-diligence property assessments, to detailed drilling and testing programs for the design of complex structures.

5) Implementation of the geotechnical investigation program using one of our regular and pre-qualified drilling company sub-contractors to perform the drilling and sampling in accordance with the prepared subsurface exploration program and applicable ASTM standards or other widely accepted methods. A geotechnical engineer or field geologist is assigned to the project and accompanies the drill rig(s) to coordinate and manage the drilling and sampling efforts, collect soil/rock samples, prepare field logs, perform the work in accordance with quality standards and communicate daily with a senior geotechnical engineer to modify the investigation program, if needed.

6) The development of a laboratory testing program. Soil and rock samples collected by disturbed, undisturbed or bag sample methods during the subsurface investigation will be reviewed by a senior geotechnical engineer, who will prepare the testing form identifying the samples to be tested and the geotechnical test or tests to be performed.

Typical earthen embankment tests include the following: moisture content, specific gravity, unit weight, grain size, Atterberg Limits, drained and undrained shear strength (CU triaxial shear, cyclic triaxial shear, and direct shear), Proctor density/moisture, permeability, and consolidation tests. The laboratory testing is performed in accordance with applicable ASTM specifications.



Typical Geologic Profile developed from Subsurface Investigation Data

Data collected from the subsurface geotechnical and laboratory testing programs, in combination with previously published site information, provides the senior geotechnical engineer with appropriate information to develop generalized subsurface profile(s) of the earthen embankment. These profiles will be used in the preparation of the geotechnical report and in the preparation of construction documents, if needed. In general, the subsurface profiles include: 1) the soil strata within the earthen embankment and foundation soils; 2) groundwater levels; and, 3) geotechnical properties and design parameters assigned to the various soil and rock strata based on the results of the field and laboratory data.

The CEC Team will use the SLIDE computer software program, developed by Rocscience. This program provides a general solution of slope stability using two-dimensional limit equilibrium methods. The program calculates a factor of safety, which indicates whether or not the proposed embankment will fail under the worst service conditions for which it was designed. Failure of a slope is defined as the downward or outward movement of a slope and occurs when driving forces acting on the slope exceed the resisting forces. Movement may be caused by several conditions: a gradual disintegration of the structure of the soil, an increase in pore water pressure, or a modification of the slope. The analysis utilizes the results of the laboratory testing to establish soil parameters and soil geometry needed for the generation of input and the development of tabular and graphical output.

The factor of safety calculated by SLIDE is compared against acceptable factors of safety published in applicable code standards. An example of one project that required a significant number of stability analyses iterations was the CONSOL Dam 3 Labyrinth Replacement Project, which is also included in the Project Descriptions. The reservoir water behind the dam is to be used for oil and natural gas operations and will be drawn down periodically. The water will also be drawn down to allow for demolition of the existing weir spillway and construction of a labyrinth spillway. The drawdown will be to an elevation that will allow for a 100 year storm event to be stored in the reservoir area without impacting demolition of the existing weir and construction of the taller, deeper seated labyrinth. The PADEP required an analysis of stability for several reservoir water level/phreatic elevation conditions, including Normal Reservoir Elevation/Normal Embankment Phreatic Surface, Reservoir at Flood Elevation/ Normal Embankment Phreatic Surface, Normal Reservoir Elevation/ Elevated Embankment Phreatic Surface, Drawdown Elevation/ Normal Embankment Phreatic Surface and Drawdown Elevation/ Elevated Embankment Phreatic Surface. The embankment was comprised of two soil materials, one from the original construction and one from an embankment raise 30 years later. No underdrains are present in the embankment. No groundwater was observed in test borings, but wire line piezometers installed in a boring identified potential phreatic surfaces, which resulted in conflicting discussions for establishing the steady state phreatic surface within the embankment. Upon agreement of parameters and conditions, the SLIDE model results performed for each of the above conditions indicated acceptable factors of safety for all conditions, confirming a stable existing embankment.

❸ Experience in performing structural analyses pertaining to integrity of concrete structures.

The CEC Team will provide structural and civil engineering for concrete components of dams, as well as concrete water conveyance structures such as weirs, chutes and stilling basins, risers, and concrete rehabilitation services.

❹ Experience in performing inspections of lake drain structures and gates.

Principal spillways located within dams are typically constructed using pipe systems, manholes, gatewells and valves require periodic inspections to ensure operability in accordance with current regulations. Considering the age of the dams and their associated components, it is quite possible that many of these structures may have not been operated in years. The CEC Team has the experience with inspection of these structures, having supervised subsurface boring investigations, dive investigations, camera surveys and confined space and repelling activities for vaults, manholes, intake structures and discharge pipes. CEC also possess the knowledge to rehabilitate these structure with technologies such as sliplining, pipe and valve splicing, upstream valve replacement, and wall thimbles or abandon and replace structures using technologies such as horizontal directional drilling and grouting.

One example of such a project is the Highlandtown Lake Dam Rehabilitation Project In Columbiana County, Ohio. At this Class I dam constructed in 1966, the concrete in the principal spillway outlet conduits has deteriorated and seepage was entering the sides of the conduits. During previous employment, Mr. Mike Schumaker, P.E., a principal at CEC, managed a geotechnical investigation at the site, evaluated seepage conditions, developed preliminary alternatives and an opinion of costs and prepared a preliminary design report and recommendations for rehabilitation. The report was submitted to ODNR for review in 2011.

Geotechnical Investigation at Principal Spillway Structure

Pressure Gage Reading

❺ Experience in performing seepage analyses.

As previously discussed in Scope of Work Item No. 2 above, an existing earthen dam or abutment is unique with respect to the soils and/or rock that support the embankment, the soils and/or rock that comprise the embankment and the location of the water surface upstream, downstream and within the embankment. Each of these items, specifically the location of the water surface and the interface of the embankment material and the foundation soils impact the seepage through the structure. Seepage through an embankment (through-seepage) or beneath the embankment through the foundation material (underseepage) cannot be prevented; however it can be controlled and minimized through the use of cutoff structures and underdrains. The CEC Team possesses the

knowledge and experience to evaluate and analyze seepage concerns at new or existing structures.

CEC utilizes the SEEP/W software program for analyzing steady-state groundwater seepage, excess pore-water pressure dissipation problems, flow into underdrains and seepage into excavations, for dams and other civil and geotechnical engineering structures. .

In lieu of software applications, CEC is also very comfortable with the graphical analysis of Laplace's equation using flow nets. USACE EMs discuss the procedures for generating flow net models and establish factors of safety for specific parameters. Either of these approaches can calculate seepage quantities and factors of safety against piping, heave and uplift.

One project that illustrates CEC's experience in the calculation of seepage is the Lake Beluthahatchee project. This combination earthen and concrete dam and spillway was seriously damaged due to flooding associated with several hurricanes that crossed northern Florida in August and September of 2004. During previous employment, Mr. Pat Sullivan, P.E., a principal at CEC, performed a seepage analysis using flow net graphical techniques. The analysis identified the need for a sheet pile wall beneath the dam, to meet USACE EM factors of safety for exit gradient. Erosion protection in the form of precast articulated concrete revetment was designed for the stilling basin downstream of the dam. The project also provides an example of dam design, application for a Nationwide Permit (NWP3) under Section 404 of the Clean Water Act (CWA) and interaction with dam agencies.

Completed dam in 2007

Damaged dam in 2005

❻ Experience with Dam Safety Laws and Rules and working with regulatory agencies with authority over dam and water resources related projects.

The CEC Team understands dam safety regulations are agency specific, but each has an underlying goal to improve public safety surrounding aging dam infrastructure. We have successfully completed dam safety projects in for many years and appreciate the professional and knowledgeable WVDEP Dam Safety Engineering Staff and their dedication to public safety. The CEC Team coordinates project and permitting plan kick off meetings on new projects to discuss key scope items and intended approaches to obtain an optimized path from the start. We understand the mission to promote dam safety by partnering with dam owners, operators, engineers, and regulators.

The CEC Team is regularly engaged in dam safety engineering activities including:

- Dam Inspection & Current Hazard Classification
- Dam Spillway Capacity Analysis and Discharge/Storage Improvements Recommendations
- Dam Critical Flood Studies
- Dam Breach Analysis
- Dam Rehabilitation Design and Cost Estimating
- Geotechnical Investigations of Dam Stability and Seepage
- Emergency Action Plans
- Operation Maintenance and Inspection Manuals

Flood Inundation Mapping

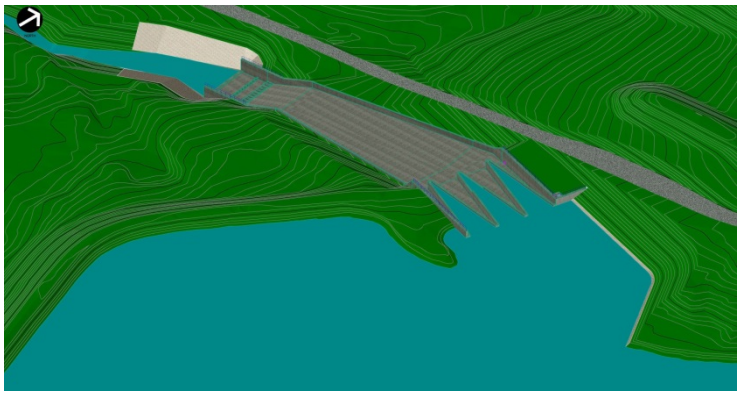
Flood Inundation Mapping

The CEC Team has worked over the last 2 years with professionals from the Division of Dam Safety at the Pennsylvania Department of Environmental Protection (PADEP) to modify a spillway at two earthen dams in Western Pennsylvania. Current Pennsylvania dam hazard classifications require the spillway system to handle the discharge associated with a Probable Maximum Flood (PMF). This upgrade is similar to the recent approval of the PMP Study under OAC rule 1501:21-13-02. This rainfall event will require an upgrade to the existing spillways to meet greater hydrologic and hydraulic needs. The structural and hydraulic design of a labyrinth and ancillary structures was performed. Principal design components included the structural design of the concrete labyrinth wall, abutments, topping slab and foundation, the concrete cut-off wall beneath the foundation and selected metalwork for abutment walls. Structural and hydraulic design of the spillway chute and stilling basin and the erosion protection upstream of the labyrinth and downstream of the stilling basin and civil design of the Site are also included. CEC prepared a design for each dam and worked with Mr. Roger Adams, the Director of Dam Safety and Mr. Doug Caylor, Chief of the Western Section of the Division of Dam Safety at PADEP to address three rounds of agency comments to obtain approval of the design in the form of a "Letter of Amendment." This form of approval allows for modification of a dam if the embankment crest elevation and the reservoir pool elevation are not altered. The type of project and the duration from project initiation to approval is another example of the ability for professionals from CEC to work with agencies with jurisdiction over dam safety.

7 Experience with design and construction administration of dam-related projects.

Existing dam rehabilitation design and construction is more challenging than new dam design for a number of reasons.

- Many of thedams built between the 1940's and the 1960's have limited information about the design or the geotechnical investigation performed to support the design. This requires time and effort to collect new geotechnical information to supplement existing information.
- There is a continuing discussion over which approach is more cost effective; rehabilitating an existing structure or demolishing the existing feature and constructing a new structure.
- Structures built half a century ago do not meet the current regulatory requirements for safety.
- Siting of structures built half a century ago was not considered as important as it is today.
- Recent site development tends to migrate toward water features, which limit the available acreage necessary for improvements including increased dam height, modification and extension of spillways and stilling basins, construction of emergency spillways absent from original design.



Labyrinth Design Illustration at Dam No. 3

The CEC Team has provided solutions for the above mentioned problems using innovative engineering approaches, value engineering and past experience from senior leaders. Our civil, structural, environmental and ecological professionals are well versed in the rehabilitation and permitting of difficult sites.

Two examples of a project performed by CEC and requiring innovative construction administration is the R.E. Burger Ash Pond Project in Belmont County, Ohio and the Little Blue Run Slurry Wall project in Beaver County, Pennsylvania.

At the R.E. Burger site, CEC provided decommissioning services for 30 foot high, 20 acre, Class II dam containing stormwater runoff and coal combustion ash. CEC prepared construction drawings and specifications for the decommissioning, provided construction oversight, and prepared the final certification report, which was submitted to ODNR for review and approval. ODNR reclassified the pond from Class II to exempt in September 2013.

At the Little Blue Run Project, CEC designed and provided general contractor and construction management services for a 700 feet long and 40 feet deep slurry wall and a 1,400 feet long collection trench and groundwater pumping system through a narrow topographic saddle on the edge of the 800 acre disposal impoundment owned and operated by First Energy Generation, LLC.

CEC performed the subsurface investigation, design, permitting, bidding, and construction for the project and also provided field oversight and quality assurance for work performed by Beaver Excavating Company, and Geosolutions, Inc.

As discussed above, the CEC Team is experienced in construction administration for dam rehabilitation and all types of water resources infrastructure projects. Our construction services engineers have the experience necessary to perform construction administration and provide quality control responsibilities for both small capital and multi-million dollar public projects. Clear communication, maintaining the owner's vision and value driven project delivery are keys to the success of these types of construction projects. In addition, rehabilitation projects in the natural environment may result in changed or unforeseen conditions, which in turn may result the need to alter construction methods and approach. CEC is sensitive to the "changed condition" terminology and with experience, have learned to both anticipate and properly react to changing natural conditions to keep project delivery on time and on budget.

Drainage Channel at R.E. Burger Site

Slurry wall Construction at Little Blue Run Site

❽ Experience in applying for and obtaining regulatory permits for dam-related projects.

As previously discussed, CEC is quite familiar with Dam Safety Laws and Rules and works with a variety of regulatory agencies with authority over dam and water resources related projects. In most cases, the end result associated with this involvement is the receipt of a permit for construction or modification of a dam or ancillary structure. CEC has been very successful in obtaining permits from state and federal agencies for dam-related projects. This success is due in part to a partnering approach that CEC utilizes when dealing with regulatory agencies. This approach consists of the following items:

- Early meeting or contact with agency personnel to discuss the project and to obtain feedback on the viability or feasibility of construction.
- Early meetings or contact with agency personnel to identify the variety of departments within the agency that may be reviewing the application.
- Research on the agency website to identify exactly what is needed for the permit application. Agencies may not need the entire drawing and specification package, just portions that are directly related to the permit process.
- Personal meeting with agency personnel to put a name to a face and to put a face to a project.
- Hand delivering of a project submission and requesting time with agency professionals reviewing the application to talk through the submission.
- Meetings with agency personnel to discuss comments prepared by the agency and to identify exactly what the intent of the comment may be.
- Meetings with agency personnel to provide preliminary responses or answers to comments prepared by the agency, to obtain preliminary concurrence on the response prior to official submission.
- Clear identification of where changes were made to documents. Italics, underlining and bold font are used for document narrative changes, clouding or summary page of changes made for drawings.
- Requesting clarification from the agency in addressing difficult comments.

CEC has used some or all of these approaches to receive permits from state and federal dam and water resource agencies in nearby Pennsylvania, New York, and West Virginia, but also from agencies in or representing states including Florida, Iowa, Ohio,

Washington and Tennessee. .

CEC has the experience necessary to obtain permits from USACE and is familiar with approximately 15 of the 51 Nationwide Permits (NWP1 through NWP 51) in their Nationwide Permit program. CEC is also familiar with the Section 404 permit process (activities that result in the discharge of dredged or fill material into waters of the U.S. including wetlands) and the 401 permit process (to verify the proposed activity would not result in the violation of the water quality standards of the state), having prepared applications for several clients to obtain approvals. CEC has working relationships with the USACE Districts in Pittsburgh and in Huntington.

❾ Experience working for state and/or other governmental agencies.

The CEC Team is regularly involved with public sector clients whether under contract or helping a private sector client meet their regulatory responsibilities. As discussed in some of the sections above, CEC is quite familiar with Dam Safety Laws and Rules, has worked with a variety of regulatory agencies with authority over dam and water resources related projects and has a successful history in applying for and obtaining regulatory permits for dam-related projects.

Over the last year, CEC has partnered with ODNR to complete tasks to meet an aggressive schedule.

Personnel have been assigned based on their strengths and professional history. Each team member has serviced large and small government contracts and understands the teamwork required and effective management necessary to successfully complete this work. We are confident any project undertaken by the CEC Team will be serviced professionally and meet WVCA's expectations. Our management and quality plan procedures bring together formalized processes for the following fundamentals:

- Develop initial and continual lines of communication between team members and WVCA.
- Review project design objectives and purpose.
- Provide a comprehensive review of all existing documents, including previous reports, studies, schedules, surveys, design memorandums, and other related documents.
- Establish project design criteria to meet those goals, including applicable codes and design standards.
- Independent review by qualified personnel for potential for innovation, sustainable design, recycled and renewable materials, constructability, and cost effectiveness.
- Define and verify all computer programs used to perform analysis and design work.
- Check by qualified staff all analyses, designs, plans, specifications, estimates, reports, and other deliverables.
- Establish procedures for monitoring and conforming to design schedules.
- Cost control protocol.
- Implement a system of scheduled team meetings or project phone calls.
- Encourage a system of feedback and response to ensure all project goals are realized.

❿ Experience dealing with the public and facilitating public meetings.

Many of CEC's projects require submission of a permit application and subsequent approval from local and state agencies; in some cases, to acquire that approval, it is necessary for CEC to conduct or attend meetings with the public and present our designs. As part of CEC's full service capabilities to our clients, we attend planning meetings, zoning meetings, council and commissioner's meetings at the local level and applicant and public hearing meetings at the state or federal level. Applicant meetings are conducted by CEC as part of our services to our landfill clients. Planning and zoning meetings are attended by CEC as part of our services to our site development clients.

CEC recently attended a township meeting with one of our water resource clients, who made a presentation to the public for construction of a new spillway at an existing dam. Typically, low profile projects generate little public interest, and if the project meets the requirements of the local agency, will receive approval with little or no fanfare. During that meeting; however, CEC identified several 'hot buttons' that raise the public's interest when designing and constructing components of a dam. They include the following:

- **Reservoir Pool Elevation.** Residents with homes adjacent to reservoirs created by dams are very observant of the changing elevation of the water surface. At this project, some of the water in the reservoir was being pumped to a location where water was needed, using a drawdown permit from the governing agency. Depending on the bathymetry of the reservoir and the extent to which the resident is upstream from the dam, a water level drop of only a few feet can move the water's edge 10 to 20 times that vertical drop. An appropriate and acceptable response to the public in understandable terms was necessary.
- **Discoloration of Water.** In conjunction with a drawdown, sediment is disturbed, resulting in a browning of the water and a change from the typical clear state. An appropriate and acceptable response to the public was necessary.
- **Debris at the Bottom of the Lake.** A drawdown of only a few feet results in the exposure of a variety of items. Prepare to invest time in collecting those items once exposed.

- **Erosion of Lake Bed at Outfalls**. A culvert or drainage ditch that normally discharges stormwater runoff directly to the water surface of a reservoir may create an erosion gully through soft lake bed soils if the water surface is some distance away as a result of the drawn down water elevation. Prepare a design to protect those outfalls if the drawdown period is long-term.

Summary

CEC is excited for the possibility of continuing our relationship with the WVCA to participate in their dam safety initiative. With this new component of work comes an opportunity to provide new perspectives, fresh ideas and viable alternatives to meet your dam safety engineering challenges. Our approach to projects is based on our:

- ability to work as partners with our clients
- tenacity in pursuing viable, cost-effective solution
- responsive to schedule
- commitment to open and honest communication
- strong sense of authorship
- commitment to developing long-term client relationships

In addition, we offer the key disciplines for dam, levee, and flood control facility design in-house. We monitor and balance every aspect of a project with a keen eye toward:

- enhanced function
- reduced costs
- increased service life
- better constructability
- shortened design schedules

Our primary goals are very much in concert with those of the WVCA which, first and foremost are formulated to achieve a balance between cost, function, and constructability. Through effective senior leadership, clear communication, integrated services, and responsiveness and engineering ingenuity, we provide the level of professional service and personal relationships that will ensure you achieve your goals. We look forward to serving your needs.

The CEC Team thanks you for your consideration.

STATEMENT OF QUALIFICATIONS

1. PROJECT NUMBER *(If any)*
CEOI 1400 AGR1500000004

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work. Limit one page per office.)

2a. FIRM (OR BRANCH OFFICE) NAME (LEGAL NAME ON FILE WITH THE OHIO SECRETARY OF STATE)	3. YR ESTABLISHED	4. FTID NUMBER
Civil & Environmental Consultants, Inc.	1989	25-1599565

2b. STREET	5. OWNERSHIP
99 Cambridge Place	a. TYPE: Corporation

2c. CITY	2d. STATE	2e. ZIP CODE	2f. COUNTY	b.
Bridgeport	WV	26330	Harrison	

6a. POINT OF CONTACT NAME AND TITLE	6b. PRESIDENT / CEO	7. NAME OF FIRM (If Block 2a is a branch office.)
Dennis Miller, PS – Vice President	Kenneth R. Miller, PE	n/a

6c. TELEPHONE NUMBER	6d. E-MAIL ADDRESS
304-933-3119	dmiller@cecinc.com

8. FORMER FIRM NAME(S) (If any)

n/a

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. No. of Employees (1) Licensed	c. No. of Employees (2) Non-Licensed
02	Administrative	0	2
05	Archaeologist	0	0
06	Architect	0	0
07	Biologist	0	2
08	CADD Technician	0	1
12	Civil Engineer	2	10
14	Computer Programmer	0	0
15	Construction Inspector	0	4
19	Ecologist	0	3
23	Environmental Engineer	0	0
24	Environmental Scientist	0	3
26	Forensic Engineer	0	0
27	Foundation/Geotechnical Engineer	0	1
29	Geographic Information Specialist	0	2
30	Geologist	2	0
38	Land Surveyor	4	7
39	Landscape Architect	0	0
52	Sanitary Engineer (Solid Waste)	0	0
55	Soils Engineer	0	0
62	Water Resources Engineer	1	1
T	otal	9	36

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number (see below)
A04	Air Pollution Control	6
A10	Asbestos Abatement	2
C08	Codes; Standards; Ordinances	4
C15	Construction Management	5
D04	Design-Build	4
E01	Ecological & Archeological Investigations	8
E09	Environmental Impact Studies: Assessments	6
E13	Environmental Testing and Analysis	5
G04	GIS: Development, Analysis and Data Collection	3
M06	Mining & Mineralogy	2
P06	Planning (Site, Installation, and Project)	9
S05	Soils & Geologic Studies; Foundations	5
S07	Solid Wastes; Incineration; Landfill	9
S10	Surveying, Platting; Mapping; Flood Plain Studies	6
S13	Storm Water Handling & Facilities	4
W02	Water Resources; Hydrology; Ground Water	8

11. TOTAL REVENUES FOR LAST 2 YEARS
(Insert revenue index number shown at right) *For OFCC administration, include contracts administered by OFCC, SAO, and OSFC

a. Work for this Contracting Authority*	1
b. Other State Work *(see instructions)*	5
c. Total State Work	5

REVENUE INDEX NUMBER

1. Less than $50,000
2. $50,000 to less than $100,000
3. $100,000 to less than $200,000
4. $200,000 to less than $500,000
5. $500,000 to less than $1,000,000
6. $1,000,000 to less than $2,000,000
7. $2,000,000 to less than $5,000,000
8. $5,000,000 to less than $10,000,000
9. $10,000,000 to less than $20,000,000
10. $20,000,000 to less than $50,000,000

12. AUTHORIZED REPRESENTATIVE
The foregoing is a statement of facts.

a. SIGNATURE 

b. DATE: June 4, 2015

c. NAME AND TITLE
Dennis Miller, PE – Vice President

Provide a separate Part II form for each firm or branch office participating on the proposed project team.