



West Virginia Purchasing Division

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

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

Header

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

Procurement Folder: 205124	SO Doc Code: CRFQ
Procurement Type: Central Purchase Order	SO Dept: 0603
Vendor ID: 000000160928	SO Doc ID: ADJ1600000021
Legal Name: CIVIL & ENVIRONMENTAL CONSULTANTS INC	Published Date: 4/26/16
Alias/DBA:	Close Date: 5/4/16
Total Bid: \$73,073.87	Close Time: 13:30
Response Date: 05/03/2016	Status: Closed
Response Time: 16:24	Solicitation Description: ADDENDUM 2 INVASIVE SPECIES SURVEY- CAMP
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 : 205124

Solicitation Description : ADDENDUM 2 INVASIVE SPECIES SURVEY- CAMP DAWSON

Proc Type : Central Purchase Order

Date issued	Solicitation Closes	Solicitation No	Version
	2016-05-04 13:30:00	SR 0603 ESR05031600000005330	1

VENDOR

000000160928
 CIVIL & ENVIRONMENTAL CONSULTANTS INC

FOR INFORMATION CONTACT THE BUYER

Crystal Rink
 (304) 558-2402
 crystal.g.rink@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	Invasive Species Survey-Camp Dawson				\$73,073.87

Comm Code	Manufacturer	Specification	Model #
77111507			

Extended Description : Invasive Species Survey Inventory and Assessment, and Update of the Plant Community Mapping Data per the attached specifications.

Proposal for Invasive Species Survey — Camp Dawson



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



May 4, 2016

**Invasive Species Survey Inventory and Assessment,
and Update of the Plant Community Mapping Data**



May 4, 2016

Ms. Crystal Rink
West Virginia Dept. of Administration, Purchasing Division
Post Office Box 50130
Charleston, WV 25305-0130

RE: Expression of Interest for Invasive Species Inventory & Assessment, Update of Plant Community Mapping Data on Camp Dawson Army Training Site Kingwood WV

Ms. Rink:

Civil & Environmental Consultants, Inc., (CEC) is a full service environmental consulting and engineering firm with an extensive Ecology Practice. We are capable of supplying labor, technical support, equipment, materials, and any supplies required to complete all requirements and conditions set forth in the request for quotation. Working as a team with our in-house GIS department, the staff of the Ecological Practice is capable of meeting your project requirements and supporting your needs in an efficient and cost-effective manner.

Our staff botanists are approved by the United States Fish and Wildlife Service (USFWS) to survey for Federally listed threatened and endangered (T&E) plant species known to occur in West Virginia, including running buffalo clover (*Trifolium stoloniferum*). We are also well qualified to conduct surveys for state and regional forest sensitive species in West Virginia and several other states.

The botanists and supporting staff ecologists are very familiar with local invasive species and thoroughly experienced in using GPS technology to document locations of species and communities of interest.

Our GIS group is expert in use of aerial photography, LIDAR, infrared, and other technologies used to create state of the art mapping files and geospatial data products and can customize data output to meet your specifications for graphic entities and attributes.

At CEC safety is of paramount importance. All employees are required to complete an array of internal and external safety trainings. Project-specific safety plans are created for all projects with field components. Personal Protection Equipment requirements are based upon project activities and client requirements.

CEC staff and managers develop and maintain excellent working relationships with federal, state, and local agencies such as the USFWS, West Virginia Department of Natural Resources, Department of Environmental Protection, national and state forests and local municipalities.

Several CEC offices are located in the region including Bridgeport, West Virginia, Pittsburgh, Pennsylvania, and Columbus and Cincinnati, Ohio. We employ a wide variety of ecological professionals including four (4) USFWS-approved running buffalo clover surveyors (botanists). Additional project staff work closely with more senior members of field teams and are capable of identifying a broad spectrum of T&E species as well as invasive plant species.

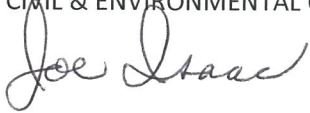
Closing

CEC is in its 26th year of providing quality consulting services to our clients. We are proud of our highly trained staff and state of the art equipment that will allow us to complete your project on time and within budget.

Thank you for this opportunity to provide you with our qualifications and the potential to assist with your survey and mapping needs. If you have any questions or need additional information, please feel free to call our office (412-429-2324). We look forward to hearing from you.

Respectfully submitted,

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.



Joe Isaac
Project Manager/Botanist



Timothy Nuttle, Ph.D.
Principal/Certified Senior Ecologist, Certified Wildlife Biologist

Enclosures

Invasive Species Survey – Camp Dawson CRFQ 0603 ADJ1600000021

West Virginia Department of Administration, Purchasing Division



PROPOSAL

CEC | PITTSBURGH
333 BALDWIN ROAD
PITTSBURGH, PA 15205
P. 412.429.2324
www.cecinc.com

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1.0 Solicitation



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

State of West Virginia
 Request for Quotation

Proc Folder: 205124

Doc Description: INVASIVE SPECIES SURVEY- CAMP DAWSON

Proc Type: Central Purchase Order

Date Issued	Solicitation Closes	Solicitation No	Version
2016-04-01	2016-04-28 13:30:00	CRFQ 0603 ADJ1600000021	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:

Civil & Environmental Consultants, Inc.
 333 Baldwin Road
 Pittsburgh, PA 15205
 412-429-2324

FOR INFORMATION CONTACT THE BUYER

Crystal Rink
 (304) 558-2402
 crystal.g.rink@wv.gov

Signature X

FEIN # 25-1599565

DATE May 2, 2016

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

ADDITIONAL INFORMATION:

THE STATE OF WEST VIRGINIA PURCHASING DIVISION FOR THE AGENCY, THE WEST VIRGINIA ARMY NATIONAL GUARD'S CAMP DAWSON ARMY TRAINING SITE'S ENVIRONMENTAL OFFICE, IS SOLICITING BIDS TO ESTABLISH A CONTRACT FOR THE ONE-TIME PURCHASE FOR ALL PROFESSIONAL, TECHNICAL, PERSONNEL, LABOR, FACILITIES, EQUIPMENT, MATERIALS, TRANSPORTATION, AND SUPPLIES NEEDED FOR AN INVASIVE SPECIES INVENTORY AND ASSESSMENT AND UPDATE OF THE PLANT COMMUNITY MAPPING AT CAMP DAWSON PER THE ATTACHED.

INVOICE TO		SHIP TO	
DIVISION ENGINEERING & FACILITIES ADJUTANT GENERALS OFFICE 1707 COONSKIN DR		FACILITY MAINTENANCE MANAGER CAMP DAWSON ARMY TRAINING SITE 240 ARMY RD	
CHARLESTON	WV25311	KINGWOOD	WV 26537-1077
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Invasive Species Survey-Camp Dawson				

Comm Code	Manufacturer	Specification	Model #
77111507			

Extended Description :

Invasive Species Survey Inventory and Assessment, and Update of the Plant Community Mapping Data per the attached specifications.

SCHEDULE OF EVENTS

Line	Event	Event Date
1	VENDOR QUESTION DEADLINE	2016-04-15

ADJ160000021	Document Phase Draft	Document Description INVASIVE SPECIES SURVEY- CAMP DAWSON	Page 3 of 3
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ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

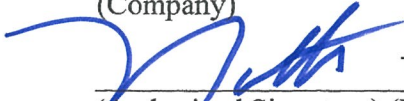
2.0 Certification and Signature Page

CERTIFICATION AND SIGNATURE PAGE

By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated 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)



Timothy Nuttle, Ph.D., CWB, Principal

(Authorized Signature) (Representative Name, Title)

412-275-2996 | 412-429-2114 | May 2, 2016

(Phone Number) (Fax Number) (Date)

3.0 Addendum Acknowledgement Forms



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

State of West Virginia
 Request for Quotation

—

Proc Folder: 205124

Doc Description: ADDENDUM 1 INVASIVE SPECIES SURVEY- CAMP DAWSON

Proc Type: Central Purchase Order

Date Issued	Solicitation Closes	Solicitation No	Version
2016-04-04	2016-04-28 13:30:00	CRFQ 0603 ADJ1600000021	2

BID RECEIVING LOCATION

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

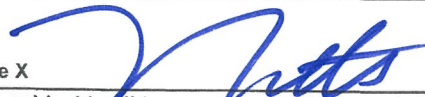
VENDOR

Vendor Name, Address and Telephone Number:

Civil & Environmental Consultants, Inc. 333
 Baldwin Road
 Pittsburgh, PA 15205
 412-429-2324

FOR INFORMATION CONTACT THE BUYER

Crystal Rink
 (304) 558-2402
 crystal.g.rink@wv.gov

Signature X  FEIN # 25-1599565 DATE May 2, 2016

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

ADJ1600000021	Document Phase Draft	Document Description ADDENDUM 1 INVASIVE SPECIES SURVEY- CAMP DAWSON	Page 3 of 3
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ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

SOLICITATION NUMBER: CRFQ ADJ1600000021

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:

1. To add drawings that were not attached to the original solicitation documents

No other changes at this time

Bid opening remains April 28, 2016 at 1:30 PM EST

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

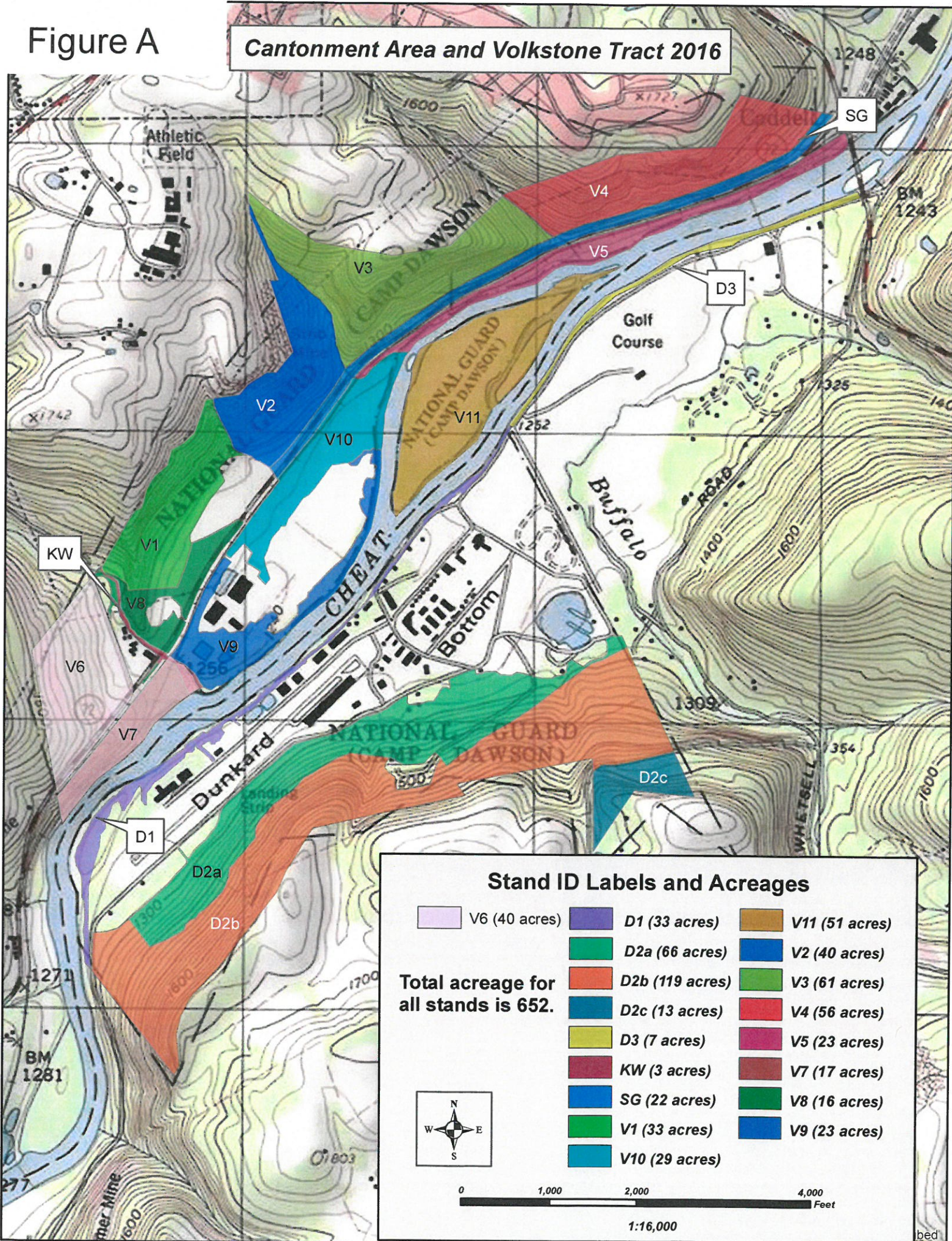
Terms and Conditions:

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.

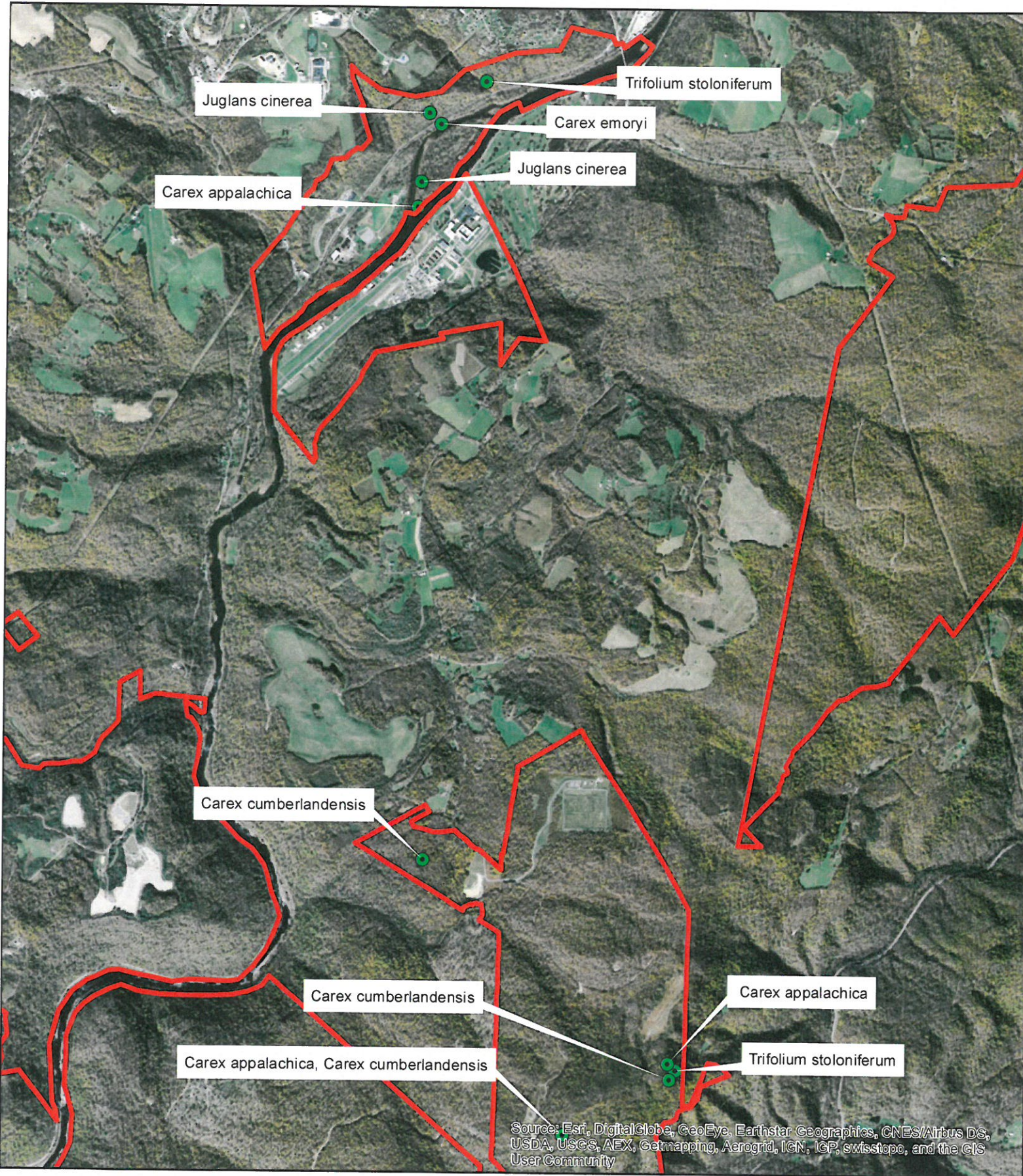
ATTACHMENT A

Figure A

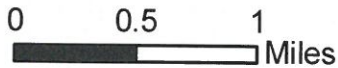
Cantonment Area and Volkstone Tract 2016



Camp Dawson Species of Special Concern (Figure B)

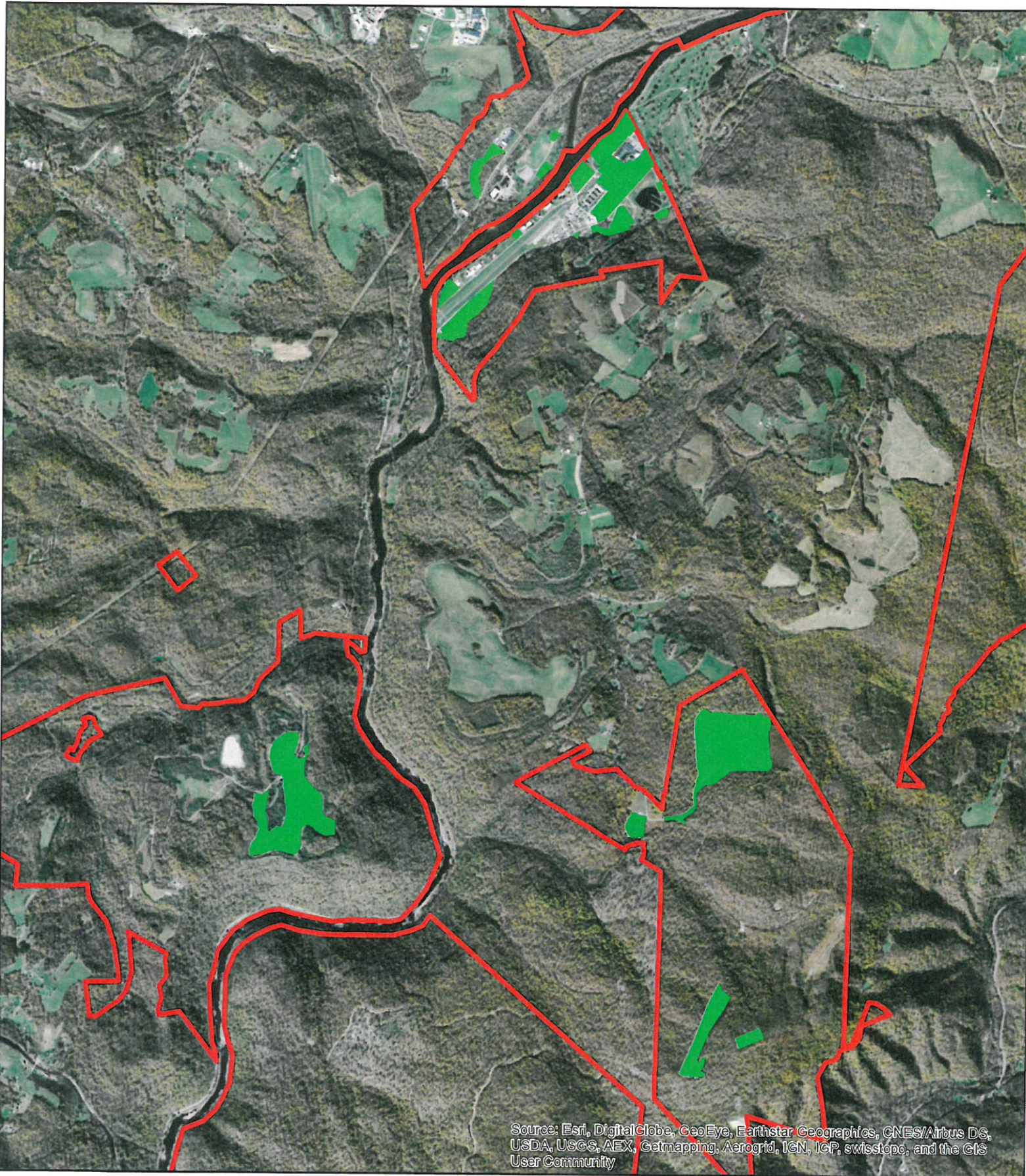



● Species of Special Concern
▭ Training Areas



1:50,000

Camp Dawson Developed Areas (Figure C)



 Developed Areas (275.8 Acres)
 Training Areas

0 0.5 1
Miles

1:50,000

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: ADJ1600000021

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

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

Addendum Numbers Received:

(Check the box next to each addendum received)

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

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Civil & Environmental Consultants, Inc.

Company


Authorized Signature

May 2, 2016

Date

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



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

State of West Virginia
 Request for Quotation

Proc Folder: 205124

Doc Description: ADDENDUM 2 INVASIVE SPECIES SURVEY- CAMP DAWSON

Proc Type: Central Purchase Order

Date Issued	Solicitation Closes	Solicitation No	Version
2016-04-26	2016-05-04 13:30:00	CRFQ 0603 ADJ1600000021	3

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:

Civil & Environmental Consultants, Inc.
 333 Baldwin Road
 Pittsburgh, PA 15205
 412-429-2324

FOR INFORMATION CONTACT THE BUYER

Crystal Rink
 (304) 558-2402
 crystal.g.rink@wv.gov

Signature X

FEIN # 25-1599565

DATE May 2, 2016

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ADDITIONAL INFORMATION:

THE STATE OF WEST VIRGINIA PURCHASING DIVISION FOR THE AGENCY, THE WEST VIRGINIA ARMY NATIONAL GUARD'S CAMP DAWSON ARMY TRAINING SITE'S ENVIRONMENTAL OFFICE, IS SOLICITING BIDS TO ESTABLISH A CONTRACT FOR THE ONE-TIME PURCHASE FOR ALL PROFESSIONAL, TECHNICAL, PERSONNEL, LABOR, FACILITIES, EQUIPMENT, MATERIALS, TRANSPORTATION, AND SUPPLIES NEEDED FOR AN INVASIVE SPECIES INVENTORY AND ASSESSMENT AND UPDATE OF THE PLANT COMMUNITY MAPPING AT CAMP DAWSON PER THE ATTACHED.

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Extended Description :

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SCHEDULE OF EVENTS

<u>Line</u>	<u>Event</u>	<u>Event Date</u>
1	VENDOR QUESTION DEADLINE	2016-04-15

ADJ160000021	Document Phase Final	Document Description ADDENDUM 2 INVASIVE SPECIES SURVEY- CAMP DAWSON	Page 3 of 3
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ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

4.0 Bid Form

EXHIBIT A
CRFQ # ADJ1600000021

ALL LABOR, MATERIALS, EQUIPMENT, AND SUPPLIES NECESSARY TO CONDUCT AN INVASIVE SPECIES INVENTORY AND ASSESSMENT AND TO UPDATE PLANT COMMUNITY MAPPING DATA, ON CAMP DAWSON ARMY TRAINING SITE AT KINGWOOD, WV

BID FORM

The undersigned, hereafter called the Bidder, being familiar with and understanding the bidding documents; and being familiar with the required qualifications and the mandatory requirements of the Project with regards to the deliverables and associated timelines, hereby proposes to furnish labor, material, equipment, supplies, and transportation to perform the work as described in the bidding documents

BIDDERS COMPANY NAME: Civil & Environmental Consultants, Inc. 333

VENDOR ADDRESS: Baldwin Road

Pittsburgh, PA 15205

TELEPHONE: 412-275-2996

FAX NUMBER: 412-429-2114

E-MAIL ADDRESS: tnuttle@cecinc.com

CONTRACT TOTAL BID:

Seventy-three thousand seventy-three dollars and eighty-seven cents

(\$ 73,073.87) *** (Contract bid to be written in words and numbers.)

The contract will be awarded to the Bidder with the lowest contract total bid meeting all of the specifications. Bidder understands that to the extent allowed by the West Virginia Code, the OWNER reserves the right to waive any informality or irregularity in any bid, or bids, and to reject any and all bids in whole or in part; to reject a bid not accompanied by the required bid security or by other data required by the bidding documents; to reject any conditions of the bid by the Bidder that is any way inconsistent with the requirements, terms, and conditions of the bidding documents; or to reject a bid that is in any way incomplete or irregular.

Failure to use this bid form may result in bid disqualification.

SIGNATURE:  DATE: May 2, 2016

NAME: Timothy Nuttle, Ph.D., CWB
(Please Print)

TITLE: Principal

5.0 Vendor Preference Certificate

State of West Virginia

VENDOR PREFERENCE CERTIFICATE

Certification and application* is hereby made for Preference in accordance with West Virginia Code, §5A-3-37. (Does not apply to construction contracts). West Virginia Code, §5A-3-37, provides an opportunity for qualifying vendors to request (at the time of bid) preference for their residency status. Such preference is an evaluation method only and will be applied only to the cost bid in accordance with the West Virginia Code. This certificate for application is to be used to request such preference. The Purchasing Division will make the determination of the Vendor Preference, if applicable.

- 1. Application is made for 2.5% vendor preference for the reason checked: Bidder is an individual resident vendor and has resided continuously in West Virginia for four (4) years immediately preceding the date of this certification; or, Bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or 80% of the ownership interest of Bidder is held by another individual, partnership, association or corporation resident vendor who has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or, Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; or,
2. Application is made for 2.5% vendor preference for the reason checked: Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,
3. Application is made for 2.5% vendor preference for the reason checked: Bidder is a nonresident vendor employing a minimum of one hundred state residents or is a nonresident vendor with an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia employing a minimum of one hundred state residents who certifies that, during the life of the contract, on average at least 75% of the employees or Bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,
4. Application is made for 5% vendor preference for the reason checked: Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; or,
5. Application is made for 3.5% vendor preference who is a veteran for the reason checked: Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; or,
6. Application is made for 3.5% vendor preference who is a veteran for the reason checked: Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.
7. Application is made for preference as a non-resident small, women- and minority-owned business, in accordance with West Virginia Code §5A-3-59 and West Virginia Code of State Rules. Bidder has been or expects to be approved prior to contract award by the Purchasing Division as a certified small, women- and minority-owned business.

Bidder understands if the Secretary of Revenue determines that a Bidder receiving preference has failed to continue to meet the requirements for such preference, the Secretary may order the Director of Purchasing to: (a) reject the bid; or (b) assess a penalty against such Bidder in an amount not to exceed 5% of the bid amount and that such penalty will be paid to the contracting agency or deducted from any unpaid balance on the contract or purchase order.

By submission of this certificate, Bidder agrees to disclose any reasonably requested information to the Purchasing Division and authorizes the Department of Revenue to disclose to the Director of Purchasing appropriate information verifying that Bidder has paid the required business taxes, provided that such information does not contain the amounts of taxes paid nor any other information deemed by the Tax Commissioner to be confidential.

Under penalty of law for false swearing (West Virginia Code, §61-5-3), Bidder hereby certifies that this certificate is true and accurate in all respects; and that if a contract is issued to Bidder and if anything contained within this certificate changes during the term of the contract, Bidder will notify the Purchasing Division in writing immediately.

Bidder: Timothy Nuttle, Ph.D., CWB

Signed: [Signature]

Date: May 2, 2016

Title: Principal

6.0 Purchasing Affidavit

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.

Authorized Signature:  Date: May 2, 2016

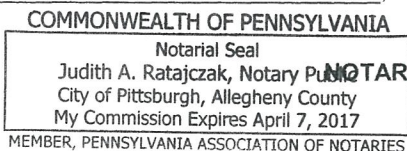
State of Pennsylvania

County of Allegheny, to-wit:

Taken, subscribed, and sworn to before me this 2nd day of May, 2016.

My Commission expires _____, 20__.

AFFIX SEAL HERE





7.0 Resumes of Key Personnel

Joseph A. Isaac

Project Manager III

A Botanist with CEC, Mr. Isaac coordinates and conducts field surveys for threatened and endangered plant species in response to environmental review conducted by the U. S. Fish and Wildlife Service, Pennsylvania Natural Diversity Inventory, and regulatory agencies in other states. He conducts habitat inventories and evaluations for proposed project sites including electrical transmission routes, natural gas pipelines, landfills, coal mines, and industrial sites and prepares reports for federal and state agencies documenting survey results, and when necessary, advises avoidance measures or mitigation activities and develops mitigation and monitoring plans for species of special concern found within project areas. Mr. Isaac has performed plant surveys for both federally and state listed threatened and endangered species ranging from sedges to orchids to trees and vines.

Prior to his employment with CEC, Mr. Isaac served as a Field Botanist for a natural history museum, and a subcontractor for Conservation organizations, and as limited service faculty at a state university in Ohio. As a botanical consultant, Mr. Isaac conducted threatened and endangered plant surveys, mapped rare plant population boundaries, completed environmental assessments of sensitive rare plant habitat and populations, and has helped to locate populations of state and federally listed noxious and invasive plant species. He serves on the Vascular Plant Technical Committee of the Pennsylvania Biological Survey.

PROJECT EXPERIENCE

Power | Linear Transmission

Trans-Allegheny Interstate Line Botanical Surveys, TrAILCo, Grant, Hampshire, Hardy, Tucker, and Upshur Counties, WV Washington and Greene Counties, PA

Project Manager-Botanical Survey. Conducted botanical surveys for both federal and state T&E plant species for the Trans-Allegheny Interstate Line (TrAIL) project which includes the development of a new 500 kilovolt (kV) transmission line, three new 138 kV transmission lines, two new substation facilities, and expansion of two existing substation facilities. The main portion of the TrAIL project, a new 500 kV line, extends from southwest Pennsylvania for 47 miles, through West Virginia for 121 miles, and into northern Virginia for 28 miles to the Appalachian Trail.

Natural Gas | Pipelines & Well Pads

Tygart Valley Pipeline Botanical Surveys, CNX Gas LLC, WV

Project Manager-Botanical Survey. Planned and conducted botanical surveys for federal Endangered Virginia spirea along an approximate 36 mile natural gas pipeline.

WB EXPress Pipeline, Natural Resource Group, WV

Project Manager, Lead Botanist. Conducted federal T&E surveys for five plant species along an approximate 25 mile pipeline, pipeline replacement segments, and associated access roads. Also conducted field surveys for Regional Forest

EDUCATION

*B.S., Biological Science,
Youngstown State University*

*M.S., Biological Science,
Youngstown State University*

CERTIFICATIONS

First Aid / CPR

*10 Hour OSHA Construction
Safety & Health*

Advanced Openwater Diver

SafeLand

*Basic Wetland Delineation
Training*

PROFESSIONAL AFFILIATIONS

*Pennsylvania Botanical
Symposium Committee*

*Pennsylvania Vascular Plant
Technical Committee*

Sensitive Species along pipeline segments within the Monongahela National Forest.

Rare Plant Surveys, CNX Gas Company LLC, Fayette, Greene, Washington, and Westmoreland Counties , PA

Project Manager-Ecological Survey. Rare plant, wetland, and habitat surveys conducted at well sites, pipelines, compressor stations, and plant sites.

Vista Loop Pipeline Proposed Gathering Lines, Access Midstream Partners, Sullivan, Tioga, and Wyoming Counties , PA

Project Manager-Botanical Survey. Conducted surveys for Pennsylvania T&E plant species.

River Valley Proposed 3D Seismic Testing Investigation Rare Plant Survey, River Valley Energy Services, Inc., PA

Project Manager-Botanical Survey. Conducted surveys for Pennsylvania T&E plant species along proposed receiver lines for seismic testing activities.

Poor Shot Pipeline, Chief Oil and Gas, PA

Project Manager-Botanical Survey. Conducted botanical surveys for four state T&E plant species for a 16 mile natural gas pipeline.

Tioga Area Expansion Pipeline, Dominion Transmission, Inc., PA

Project Manager-Botanical Survey. Conducted a survey for the federally threatened Northeastern Bulrush (*Scirpus ancistrocheatus*).

Susquehanna West Pipeline, Tetra Tech, Hermitage Tioga, PA

Project Manager, Lead Botanist. Managed botanical surveys federal and state Endangered, Threatened, and Rare plant species surveys and invasive plant species surveys for an approximate 8.1 mile natural gas pipeline.

NV 16 Rare Plant Relocation, CNX Gas Company LLC, Washington County , PA

Project Manager. Prepared and executed a rare plant mitigation plan prior to development of Marcellus gas wells. CEC coordinated the mitigation planning with the PA DCNR for removal and relocation of over 3,500 herbaceous plants. The mitigation effort accelerated and coordinated with CNX to accommodate the construction schedule.

Mining | Coal

Crabapple Belt Line Project, Consol Pennsylvania Coal Company, Greene and Washington Counties , PA

Project Manager-Botanical Survey. Rare plant survey for eight plant species of special concern.

Bailey Mine 10H -18H and 7I -16I Longwall Mine Panels, Rare Plant Survey, Consol Pennsylvania Coal Company, PA

Project Manager-Botanical Survey. Conducted rare plant surveys of lands overlying longwall mine panels for state listed plant species of special concern.

Archer Run Surface Facility, Consol Pennsylvania Coal Company, PA

Field Botanist. Conducted surveys for Pennsylvania endangered Prairie Cone Flower and threatened Harbinger of Spring.

Solid Waste | Landfill

Tewar Landfill, Rush Township Centre County, PA

Conducted a survey for the federally threatened Northeastern Bulrush (*Scirpus ancistrocheatus*) at the proposed Tewar Landfill.

Academic/Non-profit Organization

County Plant Species Inventories, Carnegie Museum of Natural History, PA

Project Manager-Botanical Survey. Conducted floristic inventories for rare plant and noxious alien species.

Biotic Integrity Matrix for the Upper Penns Creek Watershed, Pennsylvania Native Plant Society, PA

Lead Botanist-Botanical Survey. Conducted plant inventories of streamside sites to collect data for vascular plant component of biotic matrix.

Plant Characterization Abstracts, PA

Constructed plant characterization abstracts for over 100 species of rare, threatened, and endangered species for conservation organizations.

TRAINING

OSHA-OSHA 10-Hour Construction Training

Timothy J. Nuttle, Ph.D., CWB, CSE

Principal

Dr. Nuttle has over 20 years of experience in ecological monitoring, research, and management throughout the United States and Europe. He is a systems ecologist with expertise in restoration ecology, wildlife ecology, forest ecology, wetlands ecology, data analysis, and ecological modeling. Dr. Nuttle specializes in understanding and managing the function of complex, species rich, ecological systems and how these respond to anthropogenic environmental changes. He is also experienced in coordinating large, multi-partner projects.

EXPERIENCE

Factors affecting the distribution of trees in real and simulated hardwood bottomland restoration sites in the Mississippi Alluvial Valley, US Fish & Wildlife Service, Yazoo National Wildlife Refuge, USDA Forest Service Southern Hardwoods Laboratory *

Research grant. PI: James Haefner (PhD advisor), Co-PI: Tim Nuttle (grant fully authored and negotiated by Nuttle).

Effects of white-tailed deer, fire and canopy gaps on forest dynamics, USDA Forest Service, Northeast Research Station

Research grant. \$12,000. PI: Walter P. Carson, Co-PIs: Mary Beth Adams and Tim Nuttle.

Climate change impacts assessment and phenological monitoring for Lepidoptera in Pennsylvania, Pennsylvania Wild Resources Conservation Fund *

Research grant. \$18,325. 18 months. PIs: T. Nuttle and E. Yerger.

Investigating mechanisms of trophic ricochet in canopy food chains resulting from long-term legacies of historic deer browsing, National Science Foundation *

Research grant. \$197,000. This multi-year project studied the long-term effects of human-induced changes in white-tailed deer density on the structure and function of forest vegetation, caterpillar communities, and the bird communities that rely on them. In partnership with USDA Forest Service, the project contributed to the education and training of several masters and undergraduate research students, three publications in international journals, and multiple conference presentations.

Natural Variability of Streams and Wetlands in Southwestern Pennsylvania, CONSOL Energy

This research projects seeks to understand the degree to which streams and wetlands change through time. The project assesses stream and wetland boundaries and biological status both within the course of a year and across years. By understanding natural variability in these resources, we can better distinguish between changes caused by human activities from the background variability.

Habitat and Water Quality Effects on Stream Macroinvertebrate Communities Near Mine Discharge Points, CONSOL Energy

Making use of data from 163 monitoring stations, we evaluated the relative importance of stream habitat versus water quality in determining macroinvertebrate-based stream metrics.

EDUCATION

B.S., Wildlife Ecology & Management, Michigan State University

M.S., Wildlife Ecology, Mississippi State University

Ph.D., Ecology, Utah State University

CERTIFICATIONS

Certified Wildlife Biologist (CWB)

Certified Senior Ecologist (CSE)

AWARDS

2009 Special Recognition for Outstanding Research, Indiana University of Pennsylvania (University-wide—selected as top among the six college Outstanding Researchers).

2009 Outstanding Researcher for the College of Natural Sciences and Mathematics. Indiana University of Pennsylvania Research Institute.

2009 Academic Excellence and Innovation Award, Indiana University of Pennsylvania, \$8,000.

2002 German Research Council (Deutsche Forschungsgemeinschaft, DFG) Postdoctoral Fellowship. 45,000 € (ca. US\$56,000).

2001 Fellowship, Utah State University Ecology Center. \$12,000.

1998 Willard F. Eccles Foundation Fellowship, Utah State University College of Science, \$48,000.

PROFESSIONAL AFFILIATIONS

Ecological Society of America

The Wildlife Society

Stream Restoration Approaches for Longwall Mining Impacts: Effectiveness for Restoring Fish and Macroinvertebrate Communities, CONSOL Energy

Making use of our long-term monitoring data on streams over CONSOL's coal mines in Pennsylvania, we evaluated success of stream restoration techniques in restoring biological status of streams following mining impacts.

** Work performed prior to joining CEC*

SELECTED PUBLICATIONS

- Trevelline, B. K., S. Latta, L. Marshall, T. Nuttle, and B. Porter. 2016 (in press). Molecular analysis of nestling diet in a long-distance neotropical migrant, the Louisiana waterthrush (*Parquesia motacilla*). *The Auk*.
- Frantz, M. W., K. R. Aldinger, P. B. Wood, J. Duchamp, T. Nuttle, A. Vitz, J. L. Larkin. 2015. Space and habitat use of breeding Golden-winged Warblers in the central Appalachian Mountains. *Studies in Avian Biology*.
- Nuttle, T., T. E. Ristau, and A. A. Royo. 2014. Long-term biological legacies of herbivore density in a landscape-scale experiment: forest understoreys reflect past deer density treatments for at least 20 years. *Journal of Ecology* 102:221-228.
- Wheatall, L., T. Nuttle, and E. H. Yerger. 2013. Indirect effects of pandemic deer overabundance inferred from caterpillar-host relationships. *Conservation Biology* 27:1107-1116.
- Nuttle, T., A. A. Royo, M. B. Adams, and W. P. Carson. 2013. Historic disturbance regimes promote tree diversity only under low browsing regimes in eastern deciduous forest. *Ecological Monographs* 83:3-17.
- Anderson, JT, T Nuttle, JS Saldas Rojas, TH Pendergast, and AS Flecker. 2011. Extremely long-distance seed dispersal by an overfished Amazonian frugivore. *Proceedings of the Royal Society of London B*. doi:10.1098/rspb.2011.0155.
- Nuttle, T., E. H. Yerger, S. H. Stoleson, and T. E. Ristau. 2011. Legacy of top-down herbivore pressure ricochets back up multiple trophic levels in forest canopies over 30 years. *Ecosphere* 2(1):art4. doi:10.1890/ES10-00108.1
- Kansou, K., T. Nuttle, K. Farnsworth, and B. Bredeweg. 2011. Qualitative model of the long-term carbon cycle: the rise of the vascular plant during the Paleozoic period and its dramatic effect on our atmosphere. N. Agell and L. Rosello, eds. 25th International Workshop on Qualitative Reasoning, Barcelona, Spain, 16-18 July 2011.
- Nuttle, T., and J.W. Haefner. 2005. Seed dispersal in heterogeneous environments: bridging the gap between mechanistic dispersal and forest dynamics models. *American Naturalist* 165:336-349.

David J. Quatchak

Project Manager I

Mr. Quatchak manages and provides botanical survey, ecological, and horticultural services to CEC clients in the natural gas, coal, and real estate markets. He coordinates and conducts field surveys for plant species of special concern in response to requests by the Pennsylvania Department of Conservation and Natural Resources (PADCNR), West Virginia Department of Natural Resources (WVDNR), and the U.S. Fish and Wildlife Service (USFWS). Mr. Quatchak also develops planting plans for, monitors, and determines vegetative cover at restoration and mitigation sites. His experience includes managing and conducting wetland delineation surveys and preparing associated Section 404/PA Department of Environmental Protection Chapter 105 Joint Permit Applications. He has researched, analyzed, and presented biological data reviews. Since 2012, Mr. Quatchak has identified 20 state- or federally listed plant species populations and successfully relocated populations of three species.

PROJECT EXPERIENCE

WB XPress, Natural Resources Group, LLC, Pendleton and Randolph Counties, WV

Botanist and Team Leader. CEC botanists and ecologists and a subcontractor surveyed 11.3 miles of a proposed 300-foot wide right-of-way and associated access roads through the Monongahela National Forest and 14.3 miles of private property. Target species for the survey included four USFWS federally endangered species; *Arabis serotina*, *Isotria medeoloides*, *Scirpus ancistrochaetus*, *Spiraea virginiana*, and *Trifolium stoloniferum*; and 61 Regional Forester's Sensitive Species. Though no federally listed species were identified during the survey, Mr. Quatchak's team located several *Juglans cinerea* trees.

Small Project Botanical Surveys, Various Clients, Western PA

Project Manager and Botanist. Provide ongoing management and botanical surveying for more than 10 waterlines and natural gas gathering lines, each less than five miles in length. Complete project management includes planning, visiting reference plant populations, conducting, and reporting of survey results to PADCNR. Frequently located state-listed species include *Antennaria solitaria*, *Passiflora lutea*, *Senna marilandica*, *Smilax uvealium*, and *Stachys nuttallii*.

Allegheny County Airport Authority South Pipeline Botanical Survey, CNX Gas Company, LLC., Allegheny and Washington Counties, PA

Botanist and Team Leader. CEC botanists and ecologists and a subcontractor completed a botanical survey of 387-acres to be developed as well pads, centralized impoundments, pipeline, and access roads on the Pittsburgh International Airport property and an offsite transmission line. A single specimen of *Magnolia tripetala* was the only Pennsylvania species of special concern identified on the highly impacted sites.

EDUCATION

B.S., Horticulture, The Pennsylvania State University

CERTIFICATIONS

10-Hour OSHA Construction Safety & Health

Pennsylvania Wild Plant Management Permit

SafeLand

USFWS-Approved Plant Surveyor, West Virginia

Susquehanna West Pipeline Botanical Survey, Tennessee Gas Pipeline Company, LLC, Tioga County, PA

Botanist. CEC provided botanical surveys for 10 USFWS-, PADCNr-, and Pennsylvania Bureau of Forestry-requested plant species along a proposed 400-foot wide, 8.1-mile pipeline right-of-way. Identification and delineation of Herbaceous Vernal Ponds, Hemlock Palustrine Forests, and Leatherleaf-Bog Rosemary Peatlands were also required. During the survey, populations of *Scirpus ancistrochaetus*, *Carex oligosperma*, *Dryopteris clintoniana*, *Geranium bicknellii*, and *Carex disperma* were located and two Herbaceous Vernal Ponds and one Hemlock Palustrine Forest were observed and delineated.

Tygarts Valley Pipeline Project Botanical Survey, CNX Gas Company, Barbour and Upshur Counties, WV

Botanist. CEC managed and completed a botanical survey for *Spiraea virginiana* along the proposed 36-mile Tygarts Valley Pipeline and associated access roads project right-of-way. With the concurrence of the USFWS West Virginia Field Office and WVDNR, CEC surveyed 215 previously delineated stream crossings and wetlands. Few of the sites provided suitable habitat, and no *Spiraea virginiana* plants were located during the surveys completed during 2012 and 2013.

Mariner West Potter to Houston Pipeline Botanical Survey, MarkWest Liberty Midstream & Resources, LLC, Allegheny, Beaver, and Washington Counties, PA

Botanist and Team Leader. CEC used multiple teams to survey the 40-mile Mariner West Pipeline for 17 PADCNr target plant species. Four targeted species, *Dicentra eximia*, *Penstemon laevigatus*, and *Trillium flexipes*, and one additional state-listed species, *Carex shortiana*, were located during the surveys. PADCNr accepted CEC's mitigation and relocation plans for the affected populations.

Crabapple Overland Belt Stream Restoration and Mitigation Wetland Monitoring, CONSOL Energy Inc., Greene County, PA

Project Manager and Botanist. CEC is monitoring three restored stream segments and a constructed wetland to determine compliance with Pennsylvania Department of Environmental Protection and U.S. Army Corps of Engineers performance requirements. Monitoring activities include stream stability assessment, measurement of woody plant survival and growth, assessment of herbaceous vegetative cover, and cross section and longitudinal stream bed surveys throughout a five-year monitoring period.

TRAINING

Sedges & Rushes, Identification and Ecology; Eagle Hill Institute/Dr. Anton A. Reznicek, Steuben, ME; June 15–20, 2014.

Botanical Workshop for *Isotria medeoloides*, *Spiraea virginiana*, *Trifolium stoloniferum*; West Virginia DNR/US Fish and Wildlife Service, WV; May 21–22, 2015.

Mark S. Maguire, GISP

Project Manager III

Mr. Maguire is a certified Geographic Information Systems Professional (GISP) with over 13 years professional experience providing GIS and data management services to clients across many disciplines. As a GIS and Technology lead and Project Manager at CEC, Mr. Maguire oversees GIS analysts and software developers that routinely develop relational databases and GIS-based web applications. He has utilized GIS and related technology to analyze, develop, and maintain geographic data for environmental impact assessment, alternatives analyses, and routing studies for projects related to energy, waste management, mining, and ecological preservation. He has particular experience in environmental compliance applications with focus on data automation and custom reporting. Mr. Maguire has provided expert testimony in support of his GIS work for an environmental litigation case..

PROJECT EXPERIENCE

Energy

Proposed Pipeline Development, Confidential Client, Preston County, WV

GIS Manager / Analyst. Mr. Maguire provided geospatial support for permitting efforts associated with pipeline development in northern West Virginia. He provided cadastral data support, impact analyses, and mapping products to support environmental reports for state and federal agencies. He also provided GIS services and field data management for the archaeological investigation associated with this pipeline.

Environmental Permitting for Infrastructure Development, MarkWest Liberty Midstream and Resources, LLC, Washington County, PA; Wetzel/Doddridge Counties, WV

GIS Manager / Analyst. Mr. Maguire is providing GIS development services to support natural gas pipeline route assessment and impact analyses. He is responsible for processing field derived GPS data, analyzing wetland & stream impacts, and developing a comprehensive GIS database. These products are inputs into regulatory filings, including Erosion and Sediment Control Plans and Wetland Delineation Reports. He works closely with field ecologists on wetland mitigation and stream restoration plans for several MarkWest sites.

Various Pipeline Projects, Williams Pipeline / Laurel Mountain Midstream, LLC,, PA

GIS Manager / Analyst. Mr. Maguire is providing GIS data management, site selection, and environmental permitting services for several midstream pipeline projects and gas support facilities. Mr. Maguire worked with the client to develop state-specific GIS geodatabase "seed files" based on individual permitting requirements to adhere with corporate GIS standards.

Proposed H-400/H-402 Gathering Lines, EQT Gathering, LLC, Armstrong, Indiana, Clarion, and Venango Counties, PA

GIS / Data Manager. Mr. Maguire oversaw all aspects of GIS data development, field data coordination, and map production for this 40-mile pipeline permitting project. This involved working closely with field environmental staff, survey teams, and engineering staff to manage pipeline re-routes, property access

EDUCATION

B.A., Environmental Science & Management, Boston University

M.A., Geography, Boston University

CERTIFICATIONS

GIS Professional

AWARDS

2001 EPA Science to Achieve Results (STAR) Fellowship

PROFESSIONAL AFFILIATIONS

Pennsylvania Association of Environmental Professionals

Urban and Regional Information Systems Association

updates, foreign utility/"one call" mapping, and environmental permitting deliverables. CEC's GIS team established a project-specific geodatabase where field data was automatically loaded and processed, which provided real-time data access and deliverables consistent with client standards.

Environmental Management**Proposed Power Plant, Massachusetts Municipal Wholesale Electric Company, Ludlow, ME**

Environmental / Lead GIS Analyst. Mr. Maguire participated in a rare species survey for this proposed power plant project. GIS was employed to inventory wetland resources in the project vicinity and identify potential salamander habitat. Species movement was tracked and recorded via GPS on two separate evenings. Minnow traps were placed along the perimeter of the vernal pool breeding site to characterize movement in the wetland. Mr. Maguire summarized the field inventory in a series of GIS maps submitted to Massachusetts Natural Heritage.

Information Systems / IT**GIS-Based Stormwater Management Application, Corsa Coal, Friedens , PA**

Project Manager / Database Developer. CEC is hosting a web-based stormwater database for several mining sites in Somerset County, PA. The system manages water quality data for thousands of stormwater outfalls and stream monitoring locations at client sites. This information is visible through an interactive GIS interface, as well as through interactive graphing tools and automated reporting. As analytical data is entered into the system, values are checked against permit conditions and site managers are immediately notified via email of any violations. This custom application provides a comprehensive management tool for environmental and infrastructure assets.

PUBLICATIONS

Maguire, Mark S, "Visual Analysis of a Quarry Expansion Project in New York." ESRI Map Book, Volume 21. Redlands, CA: ESRI Press, 2006, 32.

Maguire, Mark. and Matthias Ruth. "Horseshoe Crabs and Shorebirds." Dynamic Modeling for Marine Conservation. M. Ruth and J. Lindholm (eds.). New York: Springer-Verlag, 2002, 214-230.

PRESENTATIONS

Maguire, Mark S., "Portal Platforms for Data Centralization, Integration, and Collaboration," presented at Society of American Military Engineers (SAME) Meeting, Charleston, SC, 2010.

Maguire, Mark S., Langley, Chris. "Pittsburgh Regional Parks Natural Areas Study - GIS for Ecological Assessment & Prioritization," presented at Northwest Pennsylvania GIS Conference, Clarion, PA, 2011.

Christopher B. Langley

Project Manager I

Mr. Langley has several years of experience in a variety of GIS/GPS disciplines. Mr. Langley has experience with geodatabase creation and design, spatial analysis, database management, and map creation. Additionally, he also has experience creating websites through ArcGIS server and has become proficient at the creation of custom tools utilizing Python, a scripting language. In regards to GPS, Mr. Langley has experience working with recreational, mapping, and survey-grade GPS units including the post-processing of GPS data and the creation of custom data dictionaries. In his time with CEC, Mr. Langley has worked on a wide variety of projects ranging from conducting GIS-based transmission and gas line siting for major oil and gas companies to providing cultural resource and vegetative analysis for a local parks conservancy. Other projects he was worked on involved creating and attributing digital parcel data, analyzing and procuring aerial imagery, and conducting property and deed research.

PROJECT EXPERIENCE

Mining | Coal

GIS Surface Parcel Mapping, Consol Energy, Various Locations

Mr. Langley was a GIS consultant for parcel mapping project for a national coal client. He aided in ESRI ArcSDE and ArcIMS deployment associated with the development of a web-based application for regional land agents. The project entailed mapping of 500,000 acres of property across 15 states and Canada. Responsibilities included scope of services development, scheduling, technical approach and oversight and quality control. Deliverables included ArcSDE feature classes, Cad files, a relational database using SQL Server, and web application. Web application was developed using Geocortex Internet Mapping Framework (IMF).

Public Sector | Municipal & Federal

Pittsburgh Natural Areas Study, Pittsburgh Parks Conservancy, City of Pittsburgh , PA

Mr. Langley built a custom GIS to perform an ecological and cultural evaluation of Pittsburgh's four large urban parks. A master geodatabase was designed around a "project rubric" which established a scoring system for ecological and cultural features within the parks. Field data and land cover mapping utilizing this rubric scoring system were integrated into the GIS. Spatial analysis of this data was then performed to create final "priority" layers and maps pertaining to park improvement recommendations.

John H. Chaffee Coastal Barrier Resources System Remapping, U.S. Fish and Wildlife Service

This project was a congressionally mandated pilot project to digitally re-map the existing John H. Chaffee Coastal Barrier Resources System (CBRS), a market-based approach to conservation managed by the U.S. Fish and Wildlife Service that discourages development on designated coastal barriers by restricting certain federal expenditures. To carry out this project, Mr. Langley utilized

EDUCATION

B.S., Geography, University of Maryland University College

ArcGIS software to digitally map current and proposed coastal barrier resource areas. Additionally, he coordinated the acquisition of digital property and environmental data from state, local, and federal agencies, analyzed aerial imagery to determinate the locations of physical and cultural features; and performed property-boundary research using local property records such as deeds and conservation easements.

Power | Linear Transmission**Transmission Line Siting Projects, Allegheny Power**

Mr. Langley conducted GIS-based siting constraint studies for several proposed transmission line corridors. Specifically, Mr. Langley created a GIS incorporating the locations of "constraint features" such as schools, residences, archaeological features and their respective distances from the proposed centerline. Using this data and a "project rubric" scoring metric system, GIS analysis was performed to determine a preferred corridor alignment.

Natural Gas | Pipelines**Commonwealth Connector Pipeline Project, EQT, Western Pennsylvania**

This project was for a 48 mile gathering line in Western Pennsylvania. For this project, Mr. Langley created a custom GPS data dictionary to better organize field data capture and assisted on the creation of a custom tool for import/export of GPS data into the master project geodatabase. He also assisted in the creation of a series of report figures utilizing the data driven pages function within ArcMap.

Natural Gas Transmission Mapping, EQT, Pennsylvania

Mr. Langley provided site location and aerial mapping for as-built and proposed natural gas wells and pipelines. He also processed GPS data and maintained a GIS database of well and pipeline locations.

Manufacturing | Primary/Secondary Metals**ArcelorMittal Weirton Utility Mapping, Weirton , WV**

Mr. Langley mapped the location of various utility pipelines located throughout a former steel mill. Mapped utilities included oxygen pipelines, steam pipelines, natural gas pipelines, transmission lines, and storm sewers. Utility locations were determined by a combination of GPS field work, digitization/georeferencing of existing mapping, and consultation with plant personnel. Mr. Langley performed all GIS mapping and GPS field work for this project.

FEMA Flood Mapping and Amendments

Mr. Langley analyzed and interpreted floodplain maps to determine whether structures such as homes and bridges were subject to federal flood regulations. Mr. Langley used ArcGIS as well as internal FEMA software in order to amend FEMA flood maps and create Letters of Map Change (LOMC) documenting map amendments.

Cynthia L. Cyprych

Project Manager I

Ms. Cyprych has eleven years of experience in the field of Geographic Information Systems (GIS), in addition to a background in Environmental Science, and provides GIS support for the firm's many practice areas. This work includes creating and maintaining project databases, supporting field efforts and processing data, performing spatial analysis, supporting report/permit application submission efforts, and preparing figures and other client deliverables. Ms. Cyprych has helped develop data management and cartographic standards and map templates, as well as trained junior staff members in technical aspects of GIS.

Ms. Cyprych is also experienced in GPS data collection and helps maintain the company's Trimble GeoXT/XH handhelds. She performs daily downloads/uploads, creates custom data dictionaries, and has developed operating procedures for the units as well as downloading and post-processing instructions for Trimble's GPS Pathfinder Office software. She trains new staff on correct GPS data collection methods and also provides technical support for field crews on a regular basis.

Ms. Cyprych also assists our ecological services practice managing projects, mainly for the mining industry. This includes writing proposals, managing staff and budgets, maintaining the project schedule, attending meetings, and providing deliverables.

PROJECT EXPERIENCE

Susquehanna West Pipeline Plant Survey, Tetra Tech, Inc., PA

CEC scientists conducted a botanical survey to determine the presence or absence of PA DCNR target species and other species of special concern within a proposed 8.1 mile pipeline project in Tioga and Bradford Counties, PA. GIS was utilized to construct an array of grid cells covering the project area and to provide mapping for the field effort. A GIS database was built to maintain and analyze the species data collected for nearly 1,000 data points. Using additional information collected for each point with the GPS data dictionary, a CEC programmer automated populating report species data sheets to save time and money.

North Summit Storage Pool Invasive Species Survey, Dominion Resource Services, Inc., Wharton Township Fayette, PA

The Pennsylvania Department of Conservation and Natural Resources (DCNR) requires post-construction invasive plant species monitoring for projects with substantial surface disturbances. CEC conducted post-construction invasive species surveys at the UW-209 and UW 210 well sites located within Dominion's North Summit Storage Pool in Fayette County, Pennsylvania. Utilizing GIS, 100'x100' grid cell arrays were generated to cover the limits of disturbance for each well. The field surveys were then conducted by walking transects across the cells. A GPS trail was created to track the route of the surveys and to document the routes taken by the botanists. An electronic shapefile of the GPS trails was included in the final report as well as figures documenting the invasive species and their extents. This information also aided in the development and

EDUCATION

*B.A., Environmental Studies,
University of Pittsburgh*

*Certificate, Geographical
Information Systems, University
of Pittsburgh*

implementation of invasive species control measures.

Mining | Coal

Bailey Mine Expansion, Consol Energy, Inc., PA

CEC performed biological data collection and permitting services (Modules 8 and 15 for a Coal Mining Activity Permit (CMAP)) for an expansion of the Bailey Mine. CEC utilized a SQL database containing landowner contact records in conjunction with digital parcel data to assist in field planning by showcasing property access and any conditions. This method allowed for easy access to the database information by field personnel, whereas it would otherwise be limited only to the GIS staff. CEC developed a GIS database to house base mapping provided by the client originally provided in Microstation format as well as the biological data collected, which included wetlands, biomonitoring stations, stream classifications, and stream habitat mapping. The product of this effort was data, figures, and tables in support of the Modules 8 and 15 preparation. The data was also used to produce reports and figures for landowners requiring a report of findings as a condition of granting access to their land. Using geoprocessing tools, analysts are able to isolate features by parcel and use this information to generate a custom report for each landowner.

PA Longwall Mines Biological Monitoring, Consol Energy, Inc., PA

Since 2002, Civil & Environmental Consultants, Inc. (CEC) has served as CONSOL Energy, Inc.'s primary ecological consultant for the stream and wetland biological monitoring program for its Pennsylvania Longwall Operations. CEC monitors tens of miles of streams and hundreds of wetlands overlying CONSOL's four major underground coal mines in southwestern Pennsylvania that utilize full extraction coal mining methods, primarily longwall mining. In October 2005, the Pennsylvania Department of Environmental Protection significantly revised and implemented Technical Guidance Document No. 563-2000-655, entitled "Surface Water Protection – Underground Bituminous Coal Mining Operations", which greatly expanded the pre-mining biological and hydrological data required for full extraction coal mining permits and post-mining compliance monitoring. CONSOL now also uses the stream and wetland monitoring data for Coal Mining Activity Permit (CMAP) applications for longwall mine expansions and renewals and for compliance support to address impact assessments. CEC's GIS team utilize SDE technology to store volumes of spatial data collected over 10 years, as well as employ ArcGIS technology to serve present-day and historic monitoring data via an interactive web-based platform for client use. CEC is currently expanding the online resource to dynamically create reporting forms and provide advanced query functionality for data mining and analysis.

Kyle K. Filicky

Staff Scientist

Mr. Filicky has a Bachelor of Science degree in Environmental Science from Westminster College. He has 2 years of experience with CEC. Mr. Filicky has completed stream and wetland delineations, performed rare, threatened, and endangered plant surveys. Along with an established a fundamental knowledge of plant identification, fish sampling techniques, common fish identification, and sample analysis techniques.

PROJECT EXPERIENCE

West Virginia Rare Plant Work

Federally Rare, Threatened, Sensitive, and Protective plant species in West Virginia. Looked for Monongahela National Forest Sensitive species in Randolph and Pendleton counties.

Pennsylvania Rare Plant Surveys

Assisted with Rare, Threatened, and Endangered Plant surveys in Southwest, PA

Benthic Macroinvertebrate Sampling

Benthic Macroinvertebrate Sampling-- Responsibilities included sampling various streams for benthic macroinvertebrates, sorting samples, and basic benthic macroinvertebrate identification.

Southeast Ohio Survey Work

Landslide Monument Installation - Led field crews in Athens, Morgan, Guernsey, Muskingum, Scioto, Vinton, and Tuscarawas Counties.

Bat Surveys

Rare, Threatened, and Endangered Bat surveys in Pennsylvania, West Virginia, Michigan and Ohio. Assisted with mist netting, roost tree emergence studies, and telemetry location of the Indiana Bat.

West Virginia Mussel Surveys

West Virginia Rare, Threatened, and Endangered Mussel surveys. Assisted with locating and identifying mussels. Also found suitable habitat areas for mussel relocation.

Wetland Delineations for Ohio

Wetland Delineations, CONSOL and Chesapeake, in Western, OH--Assisted field crews and performed stream and wetland delineations along various proposed gas wells/pipeline routes and completion of ORAM, HHEI, and QHEI forms.

Pennsylvania Wetland Delineations

Wetland Delineations, Various Clients, Alleghany, Washington, Greene, Indiana, and Mercer counties, PA--Assisted field crews and performed stream and wetland delineations along various proposed gas wells and pipeline routes

TRAINING

OSHA-Confined Space

EDUCATION

*B.S., Environmental Science,
Westminster College*

CERTIFICATIONS

First Aid / CPR

*36-Hour Wetland Plant
Identification*

*National Association of State
Boating Law Administrators*

Wild Plant Management Permit

SafeLand

*40-Hour Wetland Delineation
Course*

PROFESSIONAL AFFILIATIONS

*Pennsylvania Association of
Environmental Professionals*

Society of Wetland Scientists

Jennifer L. Hein

Staff Scientist

Jennifer Hein has approximately 6 years of experience in the biological and environmental sciences. Jennifer is a Staff Scientist supporting ecological projects throughout Pennsylvania, Ohio, and West Virginia. Currently at CEC, she assists in a variety of field duties including macro-invertebrate sampling, stream bio-monitoring and assessments, wetland and stream restoration monitoring, vegetation monitoring, habitat mapping, and wetland delineations.

PROJECT EXPERIENCE

Rare Plant Survey, WB XPress, Natural Resources Group, LLC, WV

Served as assistant ecologist. Project involved survey for USFWS federally endangered species and 61 Regional Forester's Sensitive Species.

Wetzel Tract Mitigation Bank, Ecosystem Investment Partners (EIP), WV

Served as field team leader for conducting stream and wetland valuation metric (SWVM) assessments for mitigation banking credits. Assisted in data analysis, credit projections, and reporting.

Pennsylvania Longwall Mining Biological Monitoring, CONSOL Energy, PA

Served as assistant ecologist to perform Appendix B stream sampling, wetland delineations, benthic sample analysis, and data report preparation.

Owens Run Biological Monitoring, CONSOL Energy, PA

Served as assistant ecologist for emergent insect sampling and stream biomonitoring.

Bailey Mine Cole Refuse Disposal Areas No. 5 & 6, CONSOL Energy, PA

Served as field team leader and assistant ecologist for vegetation monitoring, wetland monitoring, and benthic macro-invertebrate sampling.

Former Employer, Charleston, SC *

Served as lead biologist on American Eel life history study which assessed fish age, reproductive stage, sex, and health condition.

Former Employer, Charleston, SC *

Served as assistant biologist on sturgeon telemetry study. Primary study objectives were to track migration patterns, determine spawning locations, and critical habitat of Atlantic and shortnose sturgeon via multi-state telemetry study in Georgia, South Carolina, and North Carolina

* Work performed prior to joining CEC

PUBLICATIONS

J. L. Hein, I. de Buron, W. A. Roumillat, W. C. Post, A. P. Hazel, and S. A. Arnott.

"Infection of newly recruited American eels (*Anguilla rostrata*) by the invasive swimbladder parasite *Anguillicoloides crassus* in a U.S. Atlantic tidal creek." ICES Journal of Marine Science, 2015.

EDUCATION

M.S., Environmental Studies,
College of Charleston

B.S., Biology, The Pennsylvania
State University

CERTIFICATIONS

Adult First Aid with CPR/AED

MSHA 24-hour

40-Hour Wetland Delineation
Course

Hein, J., Arnott, S., Roumillat, W., Allen, D., de Buron, I. (2014) Invasive swimbladder parasite, *Anguillicoloides crassus*: status of infection 15 years after discovery in wild populations of American eel, *Anguilla rostrata*. Dis Aquat Org. 107: 199-209.

PRESENTATIONS

Hein, J. Arnott, S., Roumillat, W., de Buron, I. *Anguillicoloides crassus*, an invasive parasite in the American eel: survey and health effect on fish in selected estuaries in South Carolina. South Carolina Chapter of the American Fisheries Society. Feb. 15, 2012.

Hein, J., Arnott, S., Roumillat, W., de Buron, I. *Anguillicoloides crassus*, an invasive parasite in the American eel: survey and health effect on fish in selected estuaries in South Carolina. Southeastern Estuarine Research Society. April 12, 2012.

Hein, J. Arnott, S., Roumillat, W., de Buron, I. Comparative impact of the invasive parasitic species, *Anguillicoloides crassus*, on the American eel populations of South Carolina estuaries. Southeastern Society of Parasitologists. March 22, 2012.

Hein, J., Arnott, S., Post, W., Roumillat, W., de Buron, I. Initial Infection of young of year American eel by the invasive swimbladder parasite, *Anguillicoloides crassus*. Southern Division of the American Fisheries Society. Jan. 23, 2014.

Hein, J. Arnott, S., Roumillat, W., Post, W., de Buron, I. Early Infection of Newly Recruited American Eel by the Invasive Swimbladder Parasite, *Anguillicoloides crassus*, in a South Carolina Estuary. ICES International Eel Symposium. Quebec City, Canada. August 17-21, 2014.

Noah J. Hetrick

Project Scientist

Mr. Hetrick has three years of professional experience in Geographic Information Systems (GIS) and environmental science practices. As a GIS Specialist with CEC, Mr. Hetrick is responsible for database management, spatial analysis, computer cartography, GPS data preparation and processing, data quality assurance, map/data scripting, and web development. He also has project field experience with threatened and endangered species surveys, wetland delineations, land surveying, and regulatory compliance inspections.

PROJECT EXPERIENCE

WB XPress Pipeline | Natural Resources Group, LLC

Responsible for managing spatial data and cartographic deliverables in support of a rare plant survey of over 1,500 acres along proposed pipeline and access roads.

North Summit Invasive Plant Survey | Dominion Resource Services, Inc.

Responsible for managing invasive plant species survey data and preparing report figures.

Susquehanna West Pipeline | Tetra Tech, Inc.

Responsible for managing GPS data in support of rare and invasive plant surveys.

Various Projects | Appalachia Midstream Services, LLC

Responsible for managing project data in support of permitting and route development efforts for various pipeline projects. Responsibilities included producing permit map figures, preparing and processing GPS data, preparing field maps, producing client data products, and spatial analysis for environmental impact assessments. In addition to GIS support, he also assisted wetland delineation and surveying crews in the field as needed.

West Virginia AST Compliance | Cabot Oil & Gas Corporation

Responsible for developing a spatial analysis capable of producing a health and safety database and mapping products for more than 750 Above-ground Storage Tank (AST) sites. In addition to his GIS duties, he also performed on-site AST inspections for regulatory compliance, and reviewed data forms for quality assurance.

PRESENTATIONS

Hetrick, N. J. "An Automated Approach to Health and Safety Planning Using GIS." Northwest Pennsylvania GIS Conference, Clarion University of PA, Clarion, PA, 2014.

EDUCATION

*B.S., Environmental Sciences,
Clarion University of
Pennsylvania*

CERTIFICATIONS

First Aid / CPR

SafeLand

*40-Hour Wetland Delineation
Course*

PROFESSIONAL AFFILIATIONS

Trout Unlimited