

# GREG RICKABOUTH

CADD Manager

## EXPERIENCE SUMMARY

Mr. Rickabough is a Computer Animated Drafting and Design (CADD) Manager with over 20 years' experience in full cycle engineering plan development. The projects include industrial solar, transportation design and land development around the United States. He has experience in conceptual and contractual plan design and development working closely with the owner and design team for multiple solar projects. Mr. Rickabough has developed CADD plans to be used as templates for future solar projects. Mr. Rickabough has also mentored other CADD designers and engineers in multiple aspects of CADD related Civil Design.

Proficient in: AutoCAD Civil 3D, AutoTURN, Microstation, Geopak, Autodesk Construction Cloud, Microsoft Office Suite.

## RELEVANT EXPERIENCE

### Renewable Solar Energy

#### **CADD Project Manager; Dominion Energy; Finneywood Solar, Laurel Branch Solar, Quarter Horse Solar, Virginia**

A CADD Project Manager responsible for full conceptual plan setup consisting of creating existing site and existing grade files from survey data and data from VGIN, site layout, site grading, detailing, geotechnical plans, buffers, setbacks, array layouts, fencing, access road layout, project boundaries, limits of disturbance and overall site design. Also responsible for managing team members, project files and data storage across multiple offices.

#### **CADD Project Manager; Dominion Energy; Grasshopper Solar, Pecan-Gutenberg Solar, Virginia**

A CADD Project Manager responsible for full construction plan setup consisting of creating existing site and existing grade files from survey, site layout, site grading, Cut/Fill quantities, slope heat maps, limits of disturbance and overall site design. Also responsible for managing team members, project files and data storage across multiple offices.

### EDUCATION

ITT Technical Institute,  
Associate of Science,  
Computer Aided Drafting,  
Grand Rapids, Michigan, 2004

### AREA OF EXPERTISE

CADD Designer

### REGISTRATIONS/ AFFILIATIONS

N/A

### TRAINING/CERTIFICATIONS

N/A

### OFFICE

Canfield, OH

### YEARS OF EXPERIENCE

20

### YEARS WITH TETRA TECH

11

### **CADD Manager; Other Solar Projects**

A CADD Manager responsible for full conceptual plan setup consisting of creating existing site and existing grade files from survey data and data from online sources, site layout, site grading, detailing, geotechnical plans, buffers, setbacks, array layouts, fencing, access road layout, project boundaries, limits of disturbance and overall site design. Also responsible for managing team members, project files and data storage across multiple offices.

### **CADD Manager; AES; Keydet Solar, Augusta Solar, Windsor Solar, Virginia**

A CADD Manager responsible for full conceptual plan setup consisting of creating existing site and existing grade files from survey data and data from online sources, site layout, site grading, detailing, geotechnical plans, buffers, setbacks, array layouts, fencing, access road layout, project boundaries, limits of disturbance and overall site design. Also responsible for managing team members, project files and data storage across multiple offices.

### **CADD Manager; Engie North America; Whitehorn Solar, Virginia**

A CADD Manager responsible for revised stormwater control plan setup consisting of creating existing site and existing grade files from survey data and data from online sources, sheet layouts, and revised site design. Also responsible for managing team members, project files and data storage across multiple offices.

### **CADD Manager; RWE; Tundra Solar, Craig Solar, Canal Crossing Solar, Colorado**

A CADD Manager responsible for full conceptual plan setup consisting of creating existing site and existing grade files from survey data and data from online sources, site layout, site grading, detailing, geotechnical plans, buffers, setbacks, array layouts, fencing, access road layout, project boundaries, limits of disturbance and overall site design. Also responsible for managing team members, project files and data storage across multiple offices.

### **CADD Manager; Recurrent Energy; Lightwood Solar, Virginia**

A CADD Manager responsible for full conceptual plan setup consisting of creating existing site and existing grade files from survey data and data from online sources, site layout, buffers, setbacks, array layouts, fencing, access road layout, project boundaries, limits of disturbance and overall site design. Also responsible for managing team members, project files and data storage across multiple offices.

**CADD Manager; Torch Clean Energy; Jarratt Energy Facility, LLC, Virginia**

A CADD Manager responsible for full erosion and sediment control and stormwater management plan setup consisting of creating existing site and existing grade files from survey data and data from online sources, site layout, site grading, detailing, erosion and sediment controls, pond plan and profiles, geotechnical plans, buffers, setbacks, array layouts, fencing, access road layout, project boundaries, limits of disturbance and overall site design. Also responsible for managing team members, project files and data storage across multiple offices.

**CADD Manager; Desri; White Oak Energy Center, Maryland**

A CADD Manager responsible for conceptual plan figure consisting of creating existing site and existing grade files from survey data and data from online sources, site layout, buffers, setbacks, array layouts, project boundaries, limits of disturbance and overall site design. Also responsible for managing team members, project files and data storage across multiple offices.

**CADD Manager; Hexagon Energy; Woodridge Solar, Virginia**

A CADD Manager responsible for initial site plan setup consisting of creating existing site and existing grade files from survey data and data from online sources, site layout, site grading, detailing, buffers, setbacks, array layouts, fencing, access road layout, project boundaries, limits of disturbance and overall site design. Also responsible for managing team members, project files and data storage across multiple offices.

**CADD Manager; AES; Meade Solar, Kentucky**

A CADD Manager responsible for 30% conceptual plan setup consisting of creating existing site and existing grade files from survey data and data from online sources, site layout, site grading, detailing, buffers, setbacks, array layouts, fencing, access road layout, project boundaries, limits of disturbance erosion and sediment controls PCSM plan and overall site design. Also responsible for managing team members, project files and data storage across multiple offices.



EXPERIENCE SUMMARY

Justin Zeigler has been employed in the construction field for 10 years; over 8 as a CAD draftsman working on the design end of construction. and 2 as a field technician in inspecting construction materials for West Virginia Department of Highways. He has experience in all phases of civil design work including utility layout and Erosion & Sediment control BMP design, and stormwater drainage management. Additionally, He has a bachelor's degree from Fairmont State University, in Civil Engineering.

Proficient in AutoCAD, Civil3D, Microsoft Office Suite.

RELEVANT EXPERIENCE

Oil/Gas

**CAD Designer IV; National Fuel Z20 Modernization, 2023**

A CAD Designer for Erosion & Sediment Control for a Pipeline (approximately 11.5 miles) across Pennsylvania. Creating existing site files from survey data, designing, and locating all E&S controls, post construction plans and providing standard notes & details for the project. Generate a plan set for all stream and wetland crossings, general permits.

**CAD Designer IV; National Fuel Tioga Pathway Pipeline Project, Replacement for Z20, 2023-Present**

A CAD Designer for Erosion & Sediment Control for a Pipeline (approximately 23.5 miles total), (4.5 miles Replacement for Z20 Pipeline) across Pennsylvania. Creating existing site files from survey data, designing, and locating all E&S controls, post construction plans and providing standard notes & details for the project. Generate a plan set for all stream and wetland crossings, general permits.

**CAD Designer IV; Mountain Valley Pipeline LLC; Mountain Valley Pipeline Project, 2015 to PRESENT**

A CAD Designer for Erosion & Sediment Control for a Pipeline (approximately 107.3 miles) across West Virginia. Creating existing site and existing grade files from survey data, designing and locating all E&S controls, post construction plans and providing standard notes & details for the project.

EDUCATION

BS in Civil and Environmental Engineering Technology, 2015,  
Fairmont State University

AREA OF EXPERTISE

CAD Specialist, Engineering Technician, Civil Site Design, Erosion and Sediment

REGISTRATIONS/ AFFILIATIONS

N/A

TRAINING/CERTIFICATIONS

OSHA 10Hr

OFFICE

Canfield, OH

YEARS OF EXPERIENCE

10

YEARS WITH TETRA TECH

8

AWARDS

N/A

**CAD Designer IV; Mountain Valley Pipeline LLC; Mountain Valley Pipeline Project, 2015 to PRESENT**

A CAD Designer for Erosion & Sediment Control for a Pipeline (approximately 107.3 miles) across Virginia. Creating existing site and existing grade files from survey data, designing and locating all E&S controls, post construction plans and providing standard notes & details for the project.

**CAD Designer IV; Mountain Valley Pipeline LLC; Mountain Valley Pipeline Project Pipe Yards, Land Slide Mitigation 2015 to PRESENT**

A CAD Designer for Erosion & Sediment Control for 39 pipe yards across West Virginia. Creating existing site and existing grade files from survey data, designing and locating all E&S controls and providing standard notes & details for the project. Develop site plans for land slide mitigation.

**CAD Designer IV; Mountain Valley Pipeline LLC; Transco Interconnect Project, 2017 to PRESENT**

A CAD Designer for Transco Interconnect Pad. Responsible for all phases of the project including creating existing site and existing grade files from survey data from survey information, interconnect pad and access road layout, channel and basin grading, site grading, erosion and sedimentation control, construction detailing, pre and post construction stormwater exhibits, earthwork volumes and balancing for the project. Develop plans for all stream and wetland, bore and access road crossings.

**CAD Designer IV; DOMINION ENERGY TRANSMISSION; PIPE RELOCATION, 2019-Present**

A CAD Designer for Erosion & Sediment Control for a Pipeline reroute, generated general erosion and sediment controls for reroute, generated plan set including: cover sheet, general notes and details, and erosion and sediment control plans.

**CAD Designer IV; BERKSHIRE HATHAWAY ENERGY COMPANY; JP-229 DRIP REMOVAL, JP-255 DRIP REMOVAL, 257 LINE REPLACEMENT, 2021**

A CAD Designer for Erosion & Sediment Control for a Pipeline repair, and removal, generated general erosion and sediment controls for reroute, generated plan set including: cover sheet, general notes and details, and erosion and sediment control plans. Generate General Permitting plan set for storm water impacts.

**CAD Designer IV; Douglas Pipeline; Beech Hollow Renewable Natural Gas, Ohio**

Provide full conceptual plans and Land development plans by created existing site features from ALTA survey or background imagery basemapping, creating existing site grade, general site layout, proposed site erosion and sediment control, detailing, geotechnical plans, parcel and project boundaries map, including limit of disturbance and overall civil site design. Generate General permits including temporary and permanent impact calculations.

**Power / Energy / Solar****CAD Designer IV; Dominion Energy Transmission INC: Corsica CP Project, Clarion County Pennsylvania 2018**

Designed and provided Erosion and Sediment Controls for Corsica CP Project. Work included a complete set of site design plans for Erosion and Sediment, Site Restoration, and General Permitting for underground transmission line.

**CAD Designer IV; Dominion Energy Transmission INC: Forest CP Project, Clarion County Pennsylvania 2018**

Designed and provided Erosion and Sediment Controls for Forest CP Project. Work included a complete set of site design plans for Erosion and Sediment and General Permitting for underground transmission line.

**CAD Designer IV; Dominion Energy Transmission INC: McManigle CP Project, Jefferson County Pennsylvania 2018**

Designed and provided Erosion and Sediment Controls for McManigle CP Project. Work included a complete set of site design plans for Erosion and Sediment and General Permitting for underground transmission line.

**CAD Designer IV; Dominion Energy Transmission INC: Tambine CP Project, Elk County Pennsylvania 2018**

Designed and provided Erosion and Sediment Controls for Tambine CP Project. Work included a complete set of site design plans for Erosion and Sediment and General Permitting for underground transmission line.

**CAD Designer IV; Buckeye Water District; Wellsville Ohio; 2018;**

Developed river pipe and diffuser details for Buckeye Water District, plans included separate details for H-Pipe supports, diffuser section support, and Flexible joint restraint at PVC to HDPE transition.

**CAD Designer IV; Dominion Energy Transmission INC: Burgoon E&S General Permitting 2019**

Designed and provided Erosion and Sediment Controls for Burgoon Project. Work included a complete set of site design plans for Erosion and Sediment and General Permitting for underground transmission line.

**CAD Designer IV; Sunoco; Mariner East Energy Transfer- Phase II: E&S 2020-2021**

Designed and provided Erosion and Sediment Controls for multiple sites provided by Sunoco for line replacement, repair or removal. Plans include base-mapping site, generate LOD and workspace, acquire soil, and contour data, provide general details.

**CAD Designer IV; New York Solar; AES; Harman & Waild, Oak Health, Snover, Scalzo 2020-2021**

Designed and provided Erosion and Sediment Controls for multiple sites provided by AES solar fields. Plan sets include applying solar panel layout to play set, E&S, details, grading, and hydrology.

**CAD Designer IV; Union Solar; 2020**

Designed and provided Erosion and Sediment Controls solar sites provided by Union Solar. Plan sets include applying solar panel layout to play set, E&S, base-mapping, applied survey stream and wetland data.

**CAD Designer IV; Dominion Energy; Beldale Solar, Laurel Branch Solar, Pecan-Gutenberg Solar, Tall Pines Solar, Finneywood Solar, Walleye Solar, Virginia**

Provide full conceptual plans and Land development plans by created existing site features from ALTA survey or background imagery basemapping, creating existing site grade, general site layout, proposed site grading, detailing, buffers / setbacks, geotechnical plans, array layouts provided, fencing, access road layout, parcel and project boundaries including limit of disturbance and overall civil site design.

**CAD Designer IV; AES Energy; Keydet, Mt Nebo, Mt Zion, McCracken, Virginia**

Provide full conceptual plans and Land development plans by created existing site features from ALTA survey or background imagery basemapping, creating existing site grade, general site layout, proposed site grading, detailing, buffers / setbacks, geotechnical plans, array layouts provided, fencing, access road layout, parcel and project boundaries including limit of disturbance and overall civil site design.

**CAD Designer IV; CleanChoice Energy, Laura Major Virginia**

Provide full conceptual plans and Land development plans by created existing site features from ALTA survey or background imagery basemapping, creating existing site grade, general site layout, proposed site grading, detailing, buffers / setbacks, geotechnical plans, array layouts provided, fencing, access road layout, parcel and project boundaries including limit of disturbance and overall civil site design.

**CAD Designer IV; ENGIE Energy; Whitehorn, Virginia**

Provide full conceptual plans and Land development plans by created existing site features from ALTA survey or background imagery basemapping, creating existing site grade, general site layout, proposed site grading, detailing, buffers / setbacks, geotechnical plans, array layouts provided, fencing, access road layout, parcel and project boundaries including limit of disturbance and overall civil site design.

**CAD Designer IV; Hexagon Energy; Woodridge, Virginia**

Provide full conceptual plans and Land development plans by created existing site features from ALTA survey or background imagery basemapping, creating existing site grade, general site layout, proposed site grading, detailing, buffers / setbacks, geotechnical plans, array layouts provided, fencing, access road layout, parcel and project boundaries including limit of disturbance and overall civil site design.

**CAD Designer IV; Novis Energy; Deer Trail/Hanks Crossing, Virginia**

Provide full conceptual plans and Land development plans by created existing site features from ALTA survey or background imagery basemapping, creating existing site grade, general site layout, proposed site grading, detailing, buffers / setbacks, geotechnical plans, array layouts provided, fencing, access road layout, parcel and project boundaries including limit of disturbance and overall civil site design.

**CAD Designer IV; Palladium Energy; Simmer Solar, Virginia**

Provide full conceptual plans and Land development plans by created existing site features from ALTA survey or background imagery basemapping, creating existing site grade, general site layout, proposed site grading, detailing, buffers / setbacks, geotechnical plans, array layouts provided, fencing, access road layout, parcel and project boundaries including limit of disturbance and overall civil site design.

**CAD Designer IV; Torch Clean Energy; Jarratt Solar, Virginia**

Provide full conceptual plans and Land development plans by created existing site features from ALTA survey or background imagery basemapping, creating existing site grade, general site layout, proposed site grading, detailing, buffers / setbacks, geotechnical plans, array layouts provided, fencing, access road layout, parcel and project boundaries including limit of disturbance and overall civil site design.

**CAD Designer IV; Williams Solar; Station 605, Station 610, Virginia**

Provide full conceptual plans and Land development plans by created existing site features from ALTA survey or background imagery basemapping, creating existing site grade, general site layout, proposed site grading, detailing, buffers / setbacks, geotechnical plans, array layouts provided, fencing, access road layout, parcel and project boundaries including limit of disturbance and overall civil site design.

**CAD Designer IV; RWE Solar; Canal Crossing, Craig, Tundra, Colorado**

Provide full conceptual plans and Land development plans by created existing site features from ALTA survey or background imagery basemapping, creating existing site grade, general site layout, proposed site grading, detailing, buffers / setbacks, geotechnical plans, array layouts provided, fencing, access road layout, parcel and project boundaries including limit of disturbance and overall civil site design.

**CAD Designer IV; DESRI Solar; White Oak Energy, Maryland**

Provide full conceptual plans and Land development plans by created existing site features from ALTA survey or background imagery basemapping, creating existing site grade, general site layout, proposed site grading, detailing, buffers / setbacks, geotechnical plans, array layouts provided, fencing, access road layout, parcel and project boundaries including limit of disturbance and overall civil site design.

**CAD Designer IV; Recurrent Energy; Lightwood Solar, North Carolina**

Provide full conceptual plans and Land development plans by created existing site features from ALTA survey or background imagery basemapping, creating existing site grade, general site layout, proposed site grading, detailing, buffers / setbacks, geotechnical plans, array layouts provided, fencing, access road layout, parcel and project boundaries including limit of disturbance and overall civil site design.

**Land Development.****CAD Designer IV; Oak Meadow Energy; Cook County Illinois; 2018;**

Designed and provided plans for Oak Meadow Energy. Work included a complete set of site design plans.

**CAD Designer IV; Hannibal Power Station; U.S. Route 30 HDD BORE; 2018;**

Designed and provided plans for water boring locations and testing.

**CAD Designer IV; Markwest Liberty Midstream & Resources; Monroe County Ohio; 2018-2019;**  
Designed and provided plans for water boring locations and testing, plan and profile.

**CAD Designer IV; Siemens LEC Restoration Plans; 2019;**  
Generate contours for existing stockpile data and generate volumes for excess material.

**CAD Designer IV; Salam Eljer ; 2020;**  
Generate figures for existing well locations, boundary locations, stream sampling points of reference.  
Generate new contour data based from survey, apply existing well locations to plan set

**CAD Designer IV; Long Ridge Transloading Facility; 2019-2020;**  
Generate mapping and general information; including Limit of Disturbance, General Permit Impact, and pipeline layout, for proposed pipeline to transfer from the Hannibal Power Station. Develop Erosion & Sediment Control Plans.

**CAD Designer IV; ST Architects Canon Creamery Development; 2020;**  
Generate figures of existing site for proposed building, base-mapping, general site layout

**CAD Designer IV; PADEP Mon South Phase 2; 2020;**  
Develop site grading plan for slip project, grading included an even 2:1 slope design to edge of existing road, project new boring location onto existing geo profile

**CAD Designer IV; Equitrans Midstream ; 2019-2020;**  
Task – 1 Generate mapping and general information; for multiple sites; Bigfood, Conway, Medusa and Parker, information included general Existing grade, imagery, base-mapping, and boring layout. Task – 2 generate grading plan for existing impoundments, import as built data to determine cut/ fill volumes for closure of existing impoundments. Task – 3 add in proposed drains for clean water to discharge into stream

**CAD Designer IV; Acciona Shelby Solar; 2021**  
Develop general plan sets and site layout; data included: contour data, base-mapping, residential designations for Shelby Solar land development.

**CAD Designer IV; Mason Solar; 2021**  
Develop general plan sets and site layout; data included: contour data, base-mapping, residential designations for Mason Solar land development.

**CAD Designer IV; Richmond & BoonesboroughSolar; 2021**  
Develop general plan sets and site layout; data included: contour data, base-mapping, residential designations for Richmond & Boonesborough Solar land development.

**CAD Designer IV; Sunoco Mariner East 2; 2021**  
Develop site grading plan for pipeline slip repair, regrade area and develop new tractor trail access road for property owner

### Mine Reclamation.

**CAD Designer IV; WV Land Stewardship Corp; Buffalo Coal Reclamation, 2019-2021**

A CAD Designer for developing: Task 1 - base-mapping and general site layout, Task 2 – provide underdrain and proposed water lines with pump from pond to approximate location of water treatment facility, Task 3 – generate site grading plans for water treatment facility, proposed sludge ponds, design and provide Erosion and Sediment controls. Generate P&ID for electrical.



**CAD Designer IV; Glenn Springs; Bird Mine Reclamation, 2019-2021**

A CAD Designer for developing plan sets per engineer request, cross sections, proposed culverts, diversions. Bore plans. Update to drawing set, develop new plan set for newly developed treatment facility.

**Environmental Experience.****CAD Designer IV; MarkWest Liberty Midstream & Resources, LLC, 2021**

Performed groundwater samples via monitoring wells on a remediated industrial site to maintain records of levels of heavy metals and other pollutants for multiple compressor station sites.

**EMPLOYMENT HISTORY**

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CADD Designer IV, Tetra Tech, 2015-Present, Canfield, OH

Engineering Technician and Inspection, West Virginia Department of Highways, 2013-2015, Hancock, WV

Mr. Lemaster serves on as a Senior Project Manager on various civil and environmental projects. He is responsible for Client coordination, planning, preliminary evaluations, analysis and design, writing specifications, developing contract documents and cost estimates, preparation of construction drawings, construction administration, and construction engineering. Mr. Lemaster has worked on many solid waste, landfill, water, wastewater, and environmental projects.

His **water-related** projects include preparing regional water supply plans, transmission pipeline design, storage tanks, rehabilitation of existing storage tanks, pump station designs, and treatment plant designs.

His **wastewater-related** projects include rehabilitation evaluations of wastewater collection systems, capacity studies, wastewater treatment plant design, design of gravity sewer systems, pump station design, and wet weather storage facility design.

His **solid waste landfill** projects include design of sedimentation ponds, landfill liners and caps, leachate collection and storage facilities, gas removal and venting systems, modeling leachate production, and general site layout.

Other projects completed by Mr. Lemaster include designing earth retaining structures, groundwater removal and remediation systems, stormwater retention basins, evaluations of stormwater facilities, stormwater modeling, and environmental compliance.

## EXPERIENCE

### Drinking Water

**Kirby Water Main, Greater Cincinnati Water Works, City of Kirby, OH.** 2018 – 2019. Senior Engineer. Senior Engineer for new 6-inch, 8-inch, 10-inch and 12-inch ductile iron water main. Project included all field investigations and engineering to prepare a full set of construction documents for the replacement of 12,000+ feet of existing water main.

**Elkton Water Main Design, Greater Cincinnati Water Works, Elkton, OH.** 2018 – 2019. Senior Engineer. Senior Engineer for new 6-inch and 8-inch ductile iron water main. Project included all field investigations and engineering to prepare a full set of construction documents for the replacement of 10,600 feet of existing water main.

**KY 146 Water Line Relocation, Henry County Water District No. 2, KY.** 2018 – 2020. Project Manager and Senior Engineer. Project Manager and Senior Engineer for new 6-inch PVC water main to replace and relocate existing 3-inch water main for construction of highway-widening project. Project included all field investigations and engineering to prepare a full set of construction drawings and specifications for the installation of 12,500 feet of 6-inch PVC water main, 1,000 feet of 3-inch PVC water line, and 400 feet of boring with steel encasement. The project was conducted to replace the existing 3-inch water main for construction of a highway widening project. This project included coordination with Kentucky Transportation Cabinet and the local gas, electric, cable, and phone utilities.

**Morton Ridge Water Main Upgrade, Henry County Water District No. 2, KY.** 2013 – 2014. Project Manager and Senior Engineer. Design and construction administration of 20,000 feet of 20-inch ductile iron transmission main, including 200 feet of boring with steel encasement at highway crossings and 100 feet of steel encasement at high-pressure gas line crossings.

**US 42 Tank, Henry County Water District No. 2, KY.** 2017 – 2018. Project Manager and Senior Engineer. Design and construction administration for a 1.0 MG elevated composite storage tank. Design included valve vault, piping, controls, and all necessary appurtenances.

**Wellfield Improvements, Henry County Water District No. 2, KY.** 2017 – YEAR. Project Manager and Senior Engineer. Design and construction administration of wellfield raw water intake design included intake column, 1,500-gallon pump, elevated platform, valve vault, piping, controls, and all necessary appurtenances.

**Ohio County Water Treatment Plant, Ohio County Water District, KY.** 2007 – 2010. Project Manager and Senior Engineer. Design of a new 4.2 MGD water treatment plant. Project included two rapid mixer basins, six flocculators, two

### Education:

MS, Civil Engineering (Environmental), University of Kentucky, 1992

BS, Civil Engineering, University of Kentucky, 1990

AS, Prestonsburg Community College, 1988

### Registrations/Certifications:

#### Professional Engineer:

Kentucky, No. 19309, 1996  
Ohio, No. 77200, 2012

#### Land Surveyor-in-Training:

Kentucky, No. 1232

Troxler Nuclear Gauge Certification, No. 093841

Permit-Required Confined Space Entry Training

### Professional Affiliations:

National Society of Professional Engineers

Kentucky Society of Professional Engineers

### Office Location:

Lexington, KY

### Total Years of Experience:

(1990) 32

### Years with Tetra Tech:

(08/1992) 30

sedimentation basins with sludge removal systems, an ultrafiltration membrane system (four trains), two granular activated carbon towers, chemical feed equipment and five high-service vertical turbine pumps (three at 1,114 gpm and two at 750 gpm). Project also included 2,500 feet of 12-inch PVC finished water line to tie into the existing transmission system.

**Ohio County Raw Water Intake, Ohio County Water District, KY.** 2007 – 2010. Project Manager and Senior Engineer. Design of a raw water intake for a new 4.2 MGD water treatment plant. This project included modifications to an existing intake structure to allow for two new 2,920 GPM vertical turbine pumps and 1,000 feet of new 16-inch ductile iron pipe to tie into existing raw water piping.

**I-71 at Sulphur, Henry County Water District No. 2, KY.** 1998 – 1999. Project Manager and Project Engineer. Design of 18-inch and 24-inch transmission main. This project included about 4,600 feet of 18-inch and 600 feet of 24-inch ductile iron pipe. This project also required about 400 feet of boring and encasement completed at two locations, underneath I-71 and a railroad.

**Henry County Water District No. 2, KY.** 1992 – 2020. Project Manager and Senior Engineer. Design of several system expansion or replacement projects as follows: KY 193 – 23,000 feet of 6-inch PVC; Hardin Lane – 2,200 feet of 3-inch PVC; Pt. Pleasant – 1,000 feet of 3-inch PVC; KY 202 – 18,500 feet of 6-inch PVC; Monastery Extension – 7,500 feet of 3-inch PVC; Trackage Extension – 2,000 feet of 3-inch PVC; Salt Cr. Rd – 3,500 feet of 3-inch PVC; Ballardsville Road – 1,100 feet of 3-inch PVC; Raisor Lane – 2,500 feet of 3-inch PVC; Dwenger Extension – 1,250 feet of 3-inch PVC; KY 574 Relocation – 1,000 feet of 6-inch PVC; Byers Lane – 5,300 feet of 3-inch PVC; James Ridge Road – 6,750 feet of 3-inch PVC; Chandler Road – 900 feet of 3-inch PVC, Beasley Lane – 3,200 feet of 4-inch PVC, Long Branch – 1,200 feet of 3-inch.

**Henry County Hydraulic System Model, Henry County Water District No. 2, KY.** 2015 – 2020. Project Manager. Project Manager for maintenance and updating of the hydraulic model for the transmission and distribution system. This system serves all of Henry County and parts of four other counties with over 500 miles of distribution lines. The distribution lines range in size from 2- to 24-inches in diameter.

**Distribution Main Extensions, City of Jeffersonville, Montgomery County, KY.** 1995 – 1997. Project Engineer. Design of distribution main extensions. Various projects included design and drawing development for 3- and 4-inch PVC pipe extensions of distribution system.

**Morehead Above-Ground Water Storage Tanks Rehabilitation, Morehead Utility Plant Board, KY.** Project Engineer. Rehabilitation design of above-ground water storage tanks. Included tank inspections and design of mixing systems to improve tank turnover.

**Morehead Water Treatment Facilities Expansion, Morehead Utility Plant Board, KY.** 1998 – 2000. Project Engineer. Expansion of an existing water treatment plant to 8.0 MGD. Included new clearwell, ballasted flocculation and settling equipment, renovation and additions to the filter building, sludge concentration basins with sludge and wash water pumps, chemical feed equipment, and associated yard piping and valves.

**Morehead Water Raw Water Intake Facilities Upgrade, Morehead Utility Plant Board, KY.** 1998 – 2000. Project Engineer. Design of new raw water intake for the expansion of an existing water treatment plant to 8.0 MGD. Project included new wetwell structure, river intake screens, three 2,800 gpm submersible pumps, and associated valves. Project also included about 11,000 feet of 24-inch ductile iron pipe.

**Mt. Sterling Water Treatment Plant Expansion, Mt. Sterling Water and Sewer Commission, KY.** 2000 – 2004. Project Manager, Design Engineer, and Construction Administrator. Expansion of an existing water treatment plant to 4.5 MGD. Project included new raw water intake with submersible pumps, mechanical screens, settling basin with sludge removal system, stand-by power generator, and a new 5,200-square-foot chemical feed building to store and feed carbon, ferric chloride, polyaluminium chloride (PACL), caustic soda, sulfuric acid, hydrofluorosilic acid, potassium permanganate, MIOX disinfection solution and other necessary chemicals. Project included 24-inch, 18-inch, and 16-inch ductile iron yard piping.

**Osburn Road Booster Pump Station Emergency Generator, Mt. Sterling Water and Sewer Commission, KY.** 2001 – 2002. Project Manager, Design Engineer, and Construction Administrator. Design, bidding, and construction administration services for project that includes a 500 kW diesel generator. Project provided for a backup alternative power source in the event of an emergency.

**Old Owingsville Road Tank Painting, Mt. Sterling Water and Sewer Commission, KY. 2001 – YEAR.** Project Manager and Design Engineer. Rehabilitation design of above-ground water storage tank. Project included minor repairs, refurbishment, and painting of existing elevated water tank.

**Kentucky River Area Development District Water Supply Plans, Southeastern KY. 1992 – 1993.** Project Engineer. Prepared long-range regional water supply plans for eight counties in the service area. Project required the evaluation of all existing public water supply system, including distribution systems and plants. The project included the evaluation of current usage rates and losses; forecasting of anticipated commercial, industrial, and residential demands; and the development of options for future sources of water for all systems based on their anticipated demands for the planning period.

### Wastewater

**Route 8 Evaluation, Sanitation District 1 of Northern KY. 2022–Ongoing.** Senior Engineer. Developed/Compared alternatives to mitigate risks from landslide in Route 8 corridor and meet SD1's consent decree requirements. Evaluation included identifying sites for new surface storage and pump stations, routes for new force main, and existing assets that required up-sizing to avoid Route 8 corridor. Capital costs for recommended improvements: \$50M.

**Northern Boone County Business Case Evaluation, Sanitation District No 1, KY.** Senior Engineer. Eliminated capacity deficiencies at multiple SD1 lift stations by redirecting sanitary sewer flows, south to the Central Boone County Conveyance and Western Regional WRF. Eliminated multiple SSOs at lift stations and helps SD1 meet terms of the UWSP. Identified development potential and future flows within Northern Boone County study area. Updated District's InfoWorks ICM hydraulic model. Performed capacity analysis to identify bottlenecks and evaluated options to serve a large undeveloped portion of Boone County, including a combination of gravity conveyance and pump systems. Performed a complete life-cycle cost analysis for all alternatives to evaluate and select preferred option. Developed an implementation plan providing near-term infrastructure for areas with high development pressure and a longer-term plan for areas that will develop in the next 20 years. Expanded study area to identify cost-effective options for the region near the Creation Museum to support short-term development needs around undeveloped I-275 interchange.

**Central Boone County Conveyance, Sanitation District No. 1, KY. 2021 – Ongoing.** Senior Engineer, Lead Designer. Fast tracked route alignment and design of approximately 35,000 feet of 30-inch and 36-inch gravity sewer. The work includes surveying, geotechnical investigation, environmental investigations, permitting with state and federal agencies, preparation of easement exhibits, preparation of design drawings and specifications, bidding services, and construction administration.

**West Hickman Headworks and Wet Weather Storage Facility – Phase 1, Lexington-Fayette Urban County Government, KY.** February 2015 – 2020. Project Manager and Senior Engineer. Design of the wet weather storage facility and improvements to the headworks of the existing treatment plant. The project includes new screening facilities, new grit facilities, 70.0 MGD influent pump station, 80.0 MGD wet weather pump station, a 22.0 MG storage tank, recycle pump station, upgrades to the non-potable water system, stormwater management facility, a vehicle bridge, and all associated piping and electrical. The work involved hydrologic and hydraulic modeling, surveying, and geotechnical evaluations. The project required significant coordination of civil, structural, mechanical, electrical, instrumentation, and plumbing disciplines in the preparation of the design drawings and specifications. Full time resident project representatives and construction administration was provided during the construction phase of the project.

**West Hickman Wet Weather Storage Facility – Phase 2, Lexington-Fayette Urban County Government, KY. 2020 – Ongoing.** Project Manager and Senior Engineer. Design of the wet weather storage facility. The project includes an 18.0 MG storage tank and all associated piping and electrical. The work involved surveying, and geotechnical evaluations. The project required significant coordination of civil, structural, mechanical, electrical, and instrumentation disciplines in the preparation of the design drawings and specifications. Full time resident project representatives and construction administration was provided during the construction phase of the project.

**West Hickman Biological Phosphorus Removal (BPR) Improvements, Lexington-Fayette Urban County Government, KY.** March 2020 – 2022. Project Manager and Senior Engineer. Evaluation of existing process and development/analysis of alternatives for improvements in process effectiveness and efficiencies for a 70 MGD treatment facility then design of selected improvements. The construction project includes rehabilitation of existing BPR basins, installation of 32 submersible mixers, installation of new online nutrient process monitoring systems, installation of eight (8) associated sampling pumps, installation of four (4) sodium aluminate pumps, and all associated piping and electrical. The project required significant coordination of civil, structural, mechanical, electrical, and instrumentation disciplines in

the preparation of the design drawings and specifications. Bidding, construction administration, and resident project representative services were provided during the construction phase of the project.

**Wolf Run Wet Weather Storage Facility, Lexington-Fayette Urban County Government, KY.** February 2014 – 2016. Project Manager. Design and construction of this facility. The design of includes a 1.8 MG wet weather storage tank, 7.3 MGD wet weather pump station, and all associated structures piping. The work involved hydrologic and hydraulic modeling, surveying, and geotechnical evaluations. The project required coordination of civil, structural, mechanical, electrical, and instrumentation disciplines in the preparation of the design drawings and specifications. Full time resident project representatives and construction administration was provided during the construction phase of the project.

**Johnson County Sewer Extension and Force Main, Commonwealth of Kentucky Finance and Administration Cabinet, Van Lear, KY.** 2015 – 2020. Project Manager and Senior Engineer. Design, bidding, construction administration, and resident project representative services for project that included 2,100 feet of 12-inch, 6,300 feet of 10-inch, 13,000 feet of 8-inch gravity sewer lines, and 83 4-foot diameter manholes. This project also included a 176 GPM duplex pump station, 80 GPM package pump station, 800 feet of 6-inch force main, and 4,500 feet of 4-inch force main.

**City of Maysville/Mason County Fiscal Court Sewer Line, Mason County, KY.** 2018 – 2020. Project Manager and Senior Engineer. Design, bidding, construction administration, and resident project representative services for project that includes 5,800 feet of 8-inch, 3,200 feet of 6-inch gravity sewer lines, and 42 4-foot diameter manholes. This project also included a duplex pump station with 316 GPM/35 horsepower pumps, 100 GPM package pump station, 16,000 feet of 8-inch force main, 2,500 feet of 4-inch force main, 300 feet of boring and encasement, and 700 feet of open cut encasement. This project eliminated the use of tanker trucks to haul leachate from the landfill and extended municipal sewer services farther into the surrounding area.

**University of Kentucky, Animal Research Center (ARC) Swine Manure Handling Facility Improvements, Woodford County, KY.** 2008 – 2009. Project Manager and Senior Engineer. \$1.1 million design and construction administration services expansion. Work involved improving the existing hog waste disposal operation to accommodate additional wastewater to be trucked in from UK's Livestock Disease Diagnostic Center. This included improving the site and the existing receiving station, constructing a new 400,000-gallon storage tank, improving the existing storage tanks and field storage facility, replacing existing pumps, installing a new 600 gpm pump station, and improving the electrical and communication control systems. The new storage tank is constructed of poured-in-place, reinforced concrete with an aluminum geodesic cover. Also included were two submersible motor-operated mixers, 6-inch PVC supply line, 8-inch PVC odor drawoff pipe, and new valve pit with 600 gmp transfer pump to convey tank contents to the field storage facility.

**Wastewater Treatment Plant – Standby Generator, Berea Municipal Utilities, Berea, KY.** 2018 – 2019. Project Manager and Senior Engineer. Design, bidding, and construction administration services for project that included a 600 kW diesel generator. Project provided for a backup alternative power source in the event of an emergency.

**Terrill Branch Sewer Extension, Berea Municipal Utilities, Berea, KY.** 2013 – 2015. Project Manager and Senior Engineer. Preparation of the design and construction drawing and specifications, bidding, construction administration, and resident project representative services for project that included 2,500 feet of 15-inch, 1,500 feet of 12-inch, 3,000 feet of 8-inch gravity sewer lines, 31 4-foot diameter manholes, 230 feet of boring and encasement, and 800 feet of open cut encasement. This project eliminated an existing pump station and extended services farther into the surrounding area.

**Harrods Creek Phase 1 and 2 Sewer and Hunting Creek South and Timberlake Plant Demolitions, Louisville MSD, Louisville, KY.** 2013 – YEAR. Senior Engineer responsible for QA/QC activities. The project included 9,000 feet of 42-inch gravity sewer and 9,000 feet of 30-inch force main along the bank of Harrods Creek. Included demolition of two package wastewater treatment plants.

**Harrods Creek Interceptor and Force Main, Louisville and Jefferson County Metropolitan Sewer District, Louisville, KY.** 2010-2014. Senior Engineer. This project was part of several LJCMSD projects necessary to eliminate old package wastewater treatment plants and pump stations in the Prospect area to meet EPA Consent Decree requirements. The project included the design of an 8,800-foot force main and 8,600 feet of sanitary sewer pipe ranging from 24 to 42 inches in diameter.

**University of Kentucky, Western Kentucky 4-H Camp Pump Station and Force Main, Hopkins County, KY.** 2010 – 2011. Project Manager and Senior Engineer. Design and construction administration services project. The project included about 4,500 feet of 4-inch force main, 2,500 feet of 8-inch gravity sewer, and a pump station with dual 20 horsepower pumps installed to eliminate two existing package treatment plants and pump the wastewater to a municipal system.



**Sanitary Sewer Evaluation Study, Berea Municipal Utilities, KY.** 1999 – 2000. Project Engineer. Sanitary sewer inspections, investigation, and development of a systemwide rehabilitation program. This project included locating system features, manhole inspections, CCTV, and development of repair methods.

**Kentucky Horse Park, Scott County, KY.** 1995 – 1996. Project Engineer. Sanitary sewer evaluation survey (SSES) and development of rehabilitation program. This project included mapping and locating all existing system features, smoke testing, manhole inspections, and developing a systematic approach for evaluation of the facilities. As a result of the investigation, prepared construction drawings and specifications for sealing leaky pipe joints, sealing manhole leaks, and total replacement of necessary pipe segments.

**Blue Grass Army Depot Seer Treatment Plant Improvements, Richmond, KY.** 2009 – 2011. Project Manager and Design Engineer. Design build project that improved reliability and provided redundancy for a 200,000 GPD facility. The design included new mechanical screen, bypass bar screen, 35-foot clarifier, RAS pumping station, ultraviolet system for disinfection, and conversion of existing primary settling basin into an oxidation ditch including blowers and diffusers.

**Strodes Creek Wastewater Treatment Plant Hydraulic Study, Winchester Municipal Utilities, KY.** 2003 – YEAR. Project Engineer. Responsible for developing the hydraulic analysis to determine the limiting hydraulic capacity of the facility.

**Columbia Wastewater Treatment Plant, Adair County, KY.** 2000 – YEAR. Project Manager and Design Engineer. Sub to a local consultant for the expansion of an existing wastewater treatment plant. The design objectives of this project were to double the treatment capacity of the existing facility to 6.0 MGD peak capacity. The design included new mechanical screens, vortex grit removal system, submersible pumps and pump station, additional oxidation ditch, two new 50-foot diameter clarifiers, a 70-foot tertiary clarifier, and a cascade aerator. Tetra Tech was responsible for all design tasks and coordination with the Kentucky Division of Water (KDOW).

**Albany Wastewater Treatment Plant, Clinton County, KY.** 1999 – 2000. Project Manager and Design Engineer. Sub to a local consultant for the renovation of an existing wastewater treatment plant. The design objectives of this project were to renovate the existing facility to adequately meet the effluent limits established by the Kentucky Division of Water (KDOW). The design included new mechanical screens and bypass bar screen, vortex grit removal system, two 33-foot diameter clarifiers, sludge drying beds, and a polymer feed system. Tetra Tech was responsible for all design tasks and coordination with the KDOW.

**Berea Wastewater Treatment Plant Expansion, Berea Municipal Utilities, KY.** 2000 – 2005. Project Manager, Design Engineer, and Construction Administrator. Expansion of an existing wastewater treatment plant from 2.1 MGD avg./5.0 MGD peak capacity to a 4.3 MGD avg./13.0 MGD peak capacity. Project included two 130-foot-diameter clarifiers and return activated sludge/waste activated sludge (RAS/WAS) pump station, new influent screening facility, increased the 60-inch screw pumps to larger 66-inch-diameter screw pumps at the facility influent, conversion of the existing bubble diffuser and inter channel clarifiers to vertical turbine aeration basins, new belt filter presses, and conversion of the chlorine contact basins to a new ultraviolet system for disinfection. Added a new building for storage and feeding chemicals for phosphorus removal.

**US 25 North Sewer System Expansion, Berea Municipal Utilities, KY.** 2007 – 2008. Project Manager and Design Engineer. Design and construction of this sewer system expansion. The major components of this project included 7,890 feet of 8-, 10-, 12-, and 15-inch gravity sewer, about 9,010 feet of 10-inch force main, about 9,010 feet of 12-inch force main, a standby generator, and a pump station with dual 85 horsepower pumps that were installed in the expansion of the collection system.

**Morehead Wastewater Treatment Plant Expansion, Morehead Utility Plant Board, KY.** 2003 – 2005. Project Manager. Construction administration on the expansion of an existing treatment plant from 2.5 MGD avg./5.0 MGD peak capacity to 5.0 MGD avg./10.0 MGD peak capacity. This project included construction of two 105-foot-diameter clarifiers and return activated sludge/waste activated sludge (RAS/WAS) pump station, new influent screening facility with mechanical screens, new resized influent and effluent pumps, conversion of the existing primary clarifier to new RAS reaeration basins, conversion of the existing anaerobic digester system to a two-stage Autothermal Thermophilic Aerobic Digestion (ATAD) system, new ultraviolet system for disinfection, and construction of a new biosolids handling facility including new belt filter presses.

**Morehead Sewer Extension and Rehabilitation, Morehead Utility Plant Board, KY.** 2004 – 2005. Project Manager. Construction administration for the upgrade of an existing collection system that included 3,200 feet of 15-inch gravity

lines, 600 feet of 21-inch gravity lines, and 9,000 feet of 12-inch force main. This project also included the rehabilitation of 11 existing manholes and the addition of 16 new manholes.

**Graduate-Level Research, University of Kentucky, Lexington, KY.** 1991 – 1992. Graduate Student. Research on effectiveness of constructed wetlands for on-site, single-household wastewater treatment.

### Solid Waste

**Mason County Construction/Demolition Debris Landfill Permitting, Hardin County, KY.** 2013 – 2019. Project Manager and Senior Engineer. Design and permitting of a 13.3-acre construction/demolition debris landfill. Permitting consisted of the Kentucky Division of Waste Management's (KDWM's) three part permitting process, which included the Notice of Intent application, Administrative application, and Technical application. The permitting included comprehensive geotechnical exploration and hydrogeologic evaluations of the facility, design of the landfill leachate collection system, stormwater controls, and sediment pond.

**Mason County Residual Landfill Permitting, Mason County, KY.** 2007 – 2008. Project Engineer. Design and permitting of a 21.4-acre construction/demolition debris landfill that was transitioned to a residual landfill to accept flue gas desulfurization waste from a nearby power generation facility. Permitting consisted of the Kentucky Division of Waste Management's (KDWM's) three part permitting process, which included the Notice of Intent application, Administrative application, Technical application, and a Minor Modification permit application for the transition to a residual landfill. The permitting included comprehensive geotechnical exploration and hydrogeologic evaluations of the facility, design of the landfill leachate collection system, stormwater controls, and sediment pond.

**Mason County Residual Landfill – Phase 1, Mason County, KY.** 2008 – YEAR. Project Engineer. Developed construction drawings, project specifications, and bid documents for 3.8-acre residual landfill cell. Project included design with structural fill, 12-inch soil layer, 12-inch clay barrier layer, crushed stone leachate drainage layer, leachate collection and storage system, access roads, sediment ponds, and stormwater controls. Provided construction administration services throughout construction of the project. Developed Construction Progress Report (Final Certification Document) at the completion of construction for submission to the Kentucky Division of Waste Management's (KDWM) to obtain an operating permit.

**Mason County Residual Landfill – Phase 2, Mason County, KY.** 2009 – YEAR. Project Engineer. Developed construction drawings, project specifications, and bid documents for 4.6-acre residual landfill cell. Project included design with structural fill, 12-inch soil layer, 12-inch clay barrier layer, crushed stone leachate drainage layer, leachate collection system, access roads, and stormwater controls. Provided construction administration services throughout construction of the project. Developed Construction Progress Report (Final Certification Document) at the completion of construction for submission to the Kentucky Division of Waste Management's (KDWM) to obtain an operating permit

**Mason County Residual Landfill – Phase 3, Mason County, KY.** 2010 – YEAR. Project Engineer. Developed construction drawings, project specifications, and bid documents for 13-acre residual landfill cell. Project included design with structural fill, 12-inch soil layer, 12-inch clay barrier layer, crushed stone leachate drainage layer, leachate collection system, access roads, sediment ponds, and stormwater controls. Provided construction administration services throughout construction of the project. Developed Construction Progress Report (Final Certification Document) at the completion of construction for submission to the Kentucky Division of Waste Management's (KDWM) to obtain an operating permit

**Characterize 34 Southern Landfill Sites, Southern KY.** 2011 – 2013. Project Manager and Senior Engineer. Directed the field teams and oversaw preparation of final written reports. Project included detailed record reviews of existing data including hydrogeologic reports, inspection reports, design information waste composition, and administrative correspondence; site evaluations to document existing conditions and boundaries; opportunistic sampling of surface water, springs, leachate releases, and soil samples from stained areas; evaluation of found or known groundwater wells. Project deliverables included written reports for each site as well as the assignment of priority rankings of each landfill.

**Characterize 30 East Landfill Sites, Eastern KY.** 2005 – 2007. Senior Engineer. Served as leader of a field team as well as oversaw preparation of written reports. Project included detailed record reviews of existing data including hydrogeologic reports, inspection reports, design information waste composition, and administrative correspondence; site evaluations to document existing conditions and boundaries; opportunistic sampling of surface water, springs, leachate releases, and soil samples from stained areas; evaluation of found or known groundwater wells. Project resulted in the production of written reports for each site and the assignment of priority rankings of each landfill.

**Richmond Landfill Leachate Force Main, Commonwealth of Kentucky Finance and Administration Cabinet, Madison County, KY.** 2008 – 2011. Senior Engineer. Design and construction administration services project. The major components of this project included about 27,000 feet of 6-inch force main installed by directional drilling and open cut, a chemical feed building and potassium permanganate feed system, and a pump station with dual 50 horsepower pumps installed to eliminate the bulk truck hauling of leachate through local neighborhoods and pump the wastewater to a municipal treatment system.

**Haley Pike Landfill Closure, Fayette County, KY.** 2000 – 2004. Senior Engineer. Provided design, bidding, and construction administration services to close the landfill. This project was a multiphase closure of a 105-acre facility with a regulatory cap. The design included surveying, assessing physical conditions of existing facilities and drainage conveyance systems, hydrologic and hydraulic modeling of the stormwater system, preparing construction drawings and specifications, and providing construction administration and resident project representative services during construction.

**Haley Pike Landfill Pump Station Improvements, Lexington-Fayette Urban County Government, Lexington, KY.** 2006 – 2007. Senior Engineer. Design to replace an existing 25 gpm pump station with a 150 gpm pump station meeting owner requirements for a Class C pump station and about 1,200 feet of 6-inch HDPE force main to handle increased flows.

**Hardin County Contained Landfill Permitting, Hardin County, KY.** 1992 – 1995. Project Engineer. Design and permitting of a 65-acre contained landfill. Permitting consisted of the Kentucky Division of Waste Management's (KDWM's) three part permitting process, which included the Notice of Intent application, Administrative application, and Technical application. The permitting included comprehensive geotechnical exploration and hydrogeologic evaluations of the facility. The approved landfill provided 6,000,000 cubic yards of total air space for waste disposal.

**Hardin County Construction/Demolition Debris Landfill Permitting, Hardin County, KY.** 1992 – 1995. Project Engineer. Design and permitting of a 25-acre construction/demolition debris landfill. Permitting consisted of the Kentucky Division of Waste Management's (KDWM's) three part permitting process, which included the Notice of Intent application, Administrative application, and Technical application. The permitting included comprehensive geotechnical exploration and hydrogeologic evaluations of the facility. The approved landfill provided 3,000,000 cubic yards of total air space for waste disposal.

**Hardin County Contained Landfill – Phase 1A, Hardin County, KY.** 1996 – 1997. Project Engineer. Developed construction drawings, project specifications, and bid documents for 11 acre contained solid waste landfill cell. Project included design with structural fill, 18- to 24-inch clay barrier layer, 52,000 square yards of geosynthetic clay barrier, 52,000 square yards of 60 mil textured HDPE geomembrane, 52,000 square yards of geocomposite drainage layer for leachate collection, a 300,000 gallon double lined (60-mil HDPE geomembrane liner, geocomposite, 60-mil geomembrane liner) leachate storage lagoon, personnel/maintenance buildings, scale house, 200,000 lb. electronic scale, sediment pond, access roads, and stormwater controls. Provided construction administration services throughout construction of the project. Developed Construction Progress Report (Final Certification Document) at the completion of construction for submission to the Kentucky Division of Waste Management (KDWM) to obtain an operating permit.

**Hardin County Contained Landfill – Phase 1B, Hardin County, KY.** 1998 – 1999. Project Engineer. Developed construction drawings, project specifications, and bid documents for 8.2 acre contained solid waste landfill cell. Project included design with structural fill, 18- to 24-inch clay barrier layer, 45,400 square yards of geosynthetic clay barrier, 45,400 square yards of 60 mil textured HDPE geomembrane, 45,400 square yards of geocomposite drainage layer for leachate collection, access roads, and stormwater controls. Provided construction administration services throughout construction of the project. Developed Construction Progress Report (Final Certification Document) at the completion of construction for submission to the Kentucky Division of Waste Management (KDWM) to obtain an operating permit.

**Hardin County Contained Landfill – Phase 2A, Hardin County, KY.** 2000 – 2001. Project Engineer. Developed construction drawings, project specifications, and bid documents for 12.8 acre contained solid waste landfill cell. Project included design with structural fill, 18- to 24-inch clay barrier layer, 78,800 square yards of geosynthetic clay barrier, 78,800 square yards of 60 mil textured HDPE geomembrane, 78,800 square yards of geocomposite drainage layer for leachate collection, access roads, and stormwater controls. Provided construction administration services throughout construction of the project. Developed Construction Progress Report (Final Certification Document) at the completion of construction for submission to the Kentucky Division of Waste Management (KDWM) to obtain an operating permit.

**Hardin County Contained Landfill – Phase 2B, Hardin County, KY.** 2002 – 2003. Project Engineer. Developed construction drawings, project specifications, and bid documents for 7.6 acre contained solid waste landfill cell. Project included design with structural fill, 18- to 24-inch clay barrier layer, 45,300 square yards of geosynthetic clay barrier,



45,300 square yards of 60 mil textured HDPE geomembrane, 45,300 square yards of geocomposite drainage layer for leachate collection, access roads, and stormwater controls. Provided construction administration services throughout construction of the project. Developed Construction Progress Report (Final Certification Document) at the completion of construction for submission to the Kentucky Division of Waste Management (KDWM) to obtain an operating permit.

**Hardin County Contained Landfill – Phase 3A Hardin County, KY.** 2004 – 2005. Project Engineer. Developed construction drawings, project specifications, and bid documents for 17.4 acre contained solid waste landfill cell. Project included design with structural fill, 91,200 square yards of geosynthetic clay barrier, 91,200 square yards of 60 mil textured HDPE geomembrane, 182,300 square yards of geocomposite drainage layer for leachate collection and subgrade drainage under the liner, access roads, and stormwater controls. Provided construction administration services throughout construction of the project. Developed Construction Progress Report (Final Certification Document) at the completion of construction for submission to the Kentucky Division of Waste Management (KDWM) to obtain an operating permit.

**Hardin County Contained Landfill – Methane Gas Collection and Flaring System, Hardin County, KY.** 2006. Project Engineer. Developed construction drawings, project specifications, and bid documents for installation methane gas collection system and a pad mounted flair. The collection was eventually connected to a power generation facility that converted the gas to electricity. Project included design of gas collection wells and conveyance piping. Provided construction administration services throughout construction of the project.

**Hardin County Contained Landfill – Phase 3B Hardin County, KY.** 2016 – 2018. Project Manager and Senior Engineer. Developed construction drawings, project specifications, and bid documents for 17.4 acre contained solid waste landfill cell. Project included design with structural fill, 48,400 square yards of geosynthetic clay barrier, 48,400 square yards of 60 mil textured HDPE geomembrane, 96,800 square yards of geocomposite drainage layer for leachate collection and subgrade drainage under the liner, access roads, and stormwater controls. Provided construction administration services throughout construction of the project. Developed Construction Progress Report (Final Certification Document) at the completion of construction for submission to the Kentucky Division of Waste Management (KDWM) to obtain an operating permit.

**Hardin County Contained Landfill – Leachate Lagoon Addition, Hardin County, KY.** 2018. Project Manager and Senior Engineer. Prepared the Minor Modification Permit application for submittal to the Kentucky Division of Waste Management (KDWM) to add an additional leachate lagoon that increased the storage capacity on site by 1,200,000 gallons. Developed construction drawings, project specifications, and provided construction administration services for installation of the facility. Project consisted of a double lined (60-mil HDPE geomembrane liner, geocomposite, 60-mil geomembrane liner) leachate storage lagoon utilizing 9,000 square yards of 60 mil textured HDPE geomembrane and 4,500 square yards of geocomposite. Developed Construction Progress Report (Final Certification Document) at the completion of construction for submission to the Kentucky Division of Waste Management (KDWM) to obtain an operating permit.

**Johnson Fork Landfill, Kentucky Division of Waste Management, Boyd County, KY.** 1999 – 2000. Project Engineer. Site characterization and closure of an abandoned waste disposal site. Work elements included preparation of characterization of the facility and evaluation for hazardous waste. Development of closure plans, construction drawings, and specifications that included landfill cap design, leachate collection system, and stormwater management. Provided bidding assistance and construction administration.

**Municipal Landfill Closure, Floyd County Fiscal Court, KY.** 2001 – 2002. Project Engineer. Landfill closure project on a 9-acre facility. Work elements included development of construction drawings and specifications for a leachate collection system, site grading, and stormwater controls. Responsible for the preparation of groundwater assessment plan as part of the project evaluation. Provided construction quality assurance during construction phase.

**DDSI C/DD Landfill Design and Permitting, Fayette County, KY.** 1993 – 1995. Project Engineer. Design and permitting of a 23-acre construction/demolition debris landfill. Permitting consisted of the Kentucky Division of Waste Management's (KDWM's) three part permitting process, which included the Notice of Intent application, Administrative application, and Technical application. The permitting included comprehensive geotechnical exploration and hydrogeologic evaluations of the facility. The design included liner system, leachate collection system, leachate storage basin, pump system and force main, stormwater controls, sedimentation ponds, new maintenance building/office, scales, and access roads.

**DDSI C/DD Landfill – Phase 1, Fayette County, KY.** 1995 – 1996. Project Engineer. Developed construction drawings, project specifications, and bid documents for 3.5-acre construction/demolition debris landfill cell. Project included design with structural fill, 12-inch soil layer, 12-inch clay barrier layer, 12-inch crushed stone leachate drainage layer, leachate

collection system, leachate storage tanks, access roads, personnel/maintenance building, scale, sediment ponds, and stormwater controls. Provided construction administration services throughout construction of the project. Developed Construction Progress Report (Final Certification Document) at the completion of construction for submission to Kentucky Division of Waste Management (KDWM) to obtain an operating permit.

**DDSI C/DD Landfill – Phase 2, Fayette County, KY.** 1998. Project Engineer. Developed construction drawings, project specifications, and bid documents for 3-acre construction/demolition debris landfill cell. Project included design with structural fill, 12-inch soil layer, 12-inch clay barrier layer, 12-inch crushed stone leachate drainage layer, leachate collection system, and stormwater controls. Provided construction administration services throughout construction of the project. Developed Construction Progress Report (Final Certification Document) at the completion of construction for submission to Kentucky Division of Waste Management (KDWM) to obtain an operating permit.

**DDSI C/DD Landfill – Leachate Lagoon Addition, Fayette County, KY.** 2000. Project Engineer. Prepared the Minor Modification Permit application for submittal to Kentucky Division of Waste Management (KDWM) to replace the existing leachate storage tanks with a leachate lagoon. The leachate lagoon has a storage capacity of 2,750,000 gallons. Developed construction drawings, project specifications, and provided construction administration services for installation of the lagoon. Project consisted of a double lined (60-mil HDPE geomembrane liner, geocomposite, 60-mil geomembrane liner) leachate storage lagoon. Developed Construction Progress Report (Final Certification Document) at the completion of construction for submission to Kentucky Division of Waste Management (KDWM) to obtain an operating permit.

**DDSI C/DD Landfill – Phase 3, Fayette County, KY.** 2000. Project Engineer. Developed construction drawings, project specifications, and bid documents for 3-acre construction/demolition debris landfill cell. Project included design with structural fill, 12-inch soil layer, 12-inch clay barrier layer, 12-inch crushed stone leachate drainage layer, leachate collection system, and stormwater controls. Provided construction administration services throughout construction of the project. Developed Construction Progress Report (Final Certification Document) at the completion of construction for submission to Kentucky Division of Waste Management (KDWM) to obtain an operating permit.

**DDSI C/DD Landfill – Phase 4, Fayette County, KY.** 2003 – YEAR. Project Engineer. Developed construction drawings, project specifications, and bid documents for 3-acre construction/demolition debris landfill cell. Project included design with structural fill, 12-inch soil layer, 12-inch clay barrier layer, 12-inch crushed stone leachate drainage layer, leachate collection system, and stormwater controls. Provided construction administration services throughout construction of the project. Developed Construction Progress Report (Final Certification Document) at the completion of construction for submission to Kentucky Division of Waste Management (KDWM) to obtain an operating permit.

**DDSI C/DD Landfill – Phase 5, Fayette County, KY.** 2007 – YEAR. Project Engineer. Developed construction drawings, project specifications, and bid documents for 3-acre construction/demolition debris landfill cell. Project included design with structural fill, 12-inch soil layer, 12-inch clay barrier layer, 12-inch crushed stone leachate drainage layer, leachate collection system, and stormwater controls. Provided construction administration services throughout construction of the project. Developed Construction Progress Report (Final Certification Document) at the completion of construction for submission to Kentucky Division of Waste Management (KDWM) to obtain an operating permit.

**DDSI C/DD Landfill – Phase 6, Fayette County, KY.** 2011 – YEAR. Project Manager and Senior Engineer. Developed construction drawings, project specifications, and bid documents for 3.5 acre construction/demolition debris landfill cell. Project included design with structural fill, 12-inch soil layer, 12-inch clay barrier layer, 12-inch crushed stone leachate drainage layer, leachate collection system, access roads, sediment ponds, and stormwater controls. Provided construction administration services throughout construction of the project. Developed Construction Progress Report (Final Certification Document) at the completion of construction for submission to Kentucky Division of Waste Management (KDWM) to obtain an operating permit.

**Residual Landfill Permitting, Commonwealth Aluminum Inc., Hancock County, KY.** 1999 – 2000. Project Engineer. Design and permitting of a 56-acre residual landfill at an industrial facility. Permitting consisted of the Kentucky Division of Waste Management's (KDWM's) three part permitting process, which included the Notice of Intent application, Administrative application, and Technical application. The permitting included comprehensive geotechnical exploration and hydrogeologic evaluations of the facility.

**Residual Landfill Closure, Corning, Inc., Mercer County, KY.** 1999 – YEAR. Project Engineer. Industrial landfill closure. Project included design of a residual landfill cap system and stormwater controls.

**Montgomery County Contained Landfill, Rumpke, Inc., Montgomery County, KY.** 1995 – 1996. Project Engineer. Design and permitting of a 45-acre contained landfill. The permitting process was done in accordance with the Kentucky

Division of Waste Management's (KDWM's) three part permitting process, which included the Notice of Intent application, Administrative application, and Technical application. The permitting included comprehensive geotechnical exploration and hydrogeologic evaluations of the facility. The design includes liner system with clay barrier layer, 60-mil HDPE geomembrane, and geocomposite leachate drainage system; leachate collection system; stormwater controls; and sedimentation ponds.

**Montgomery County Contained Landfill, Rumpke, Inc., Montgomery County, KY.** 1996 – 1997. Project Engineer. Responsible for the developing construction drawings, project specifications, and bid documents for five new landfill cells. Provided bidding assistance and construction administration services.

**Clark County Landfill Closure, KY.** 1998 – 1999. Project Engineer. Closure design, and construction administration of a closed landfill. Project included design and installation of a final cap system, leachate collection system, and stormwater controls. Provided bidding assistance and construction administration services.

**Winchester Municipal Utilities Landfill Closure, KY.** 1998 – 1999. Project Engineer. Closure design and construction administration of a closed landfill. Project included design and installation of a final cap system, leachate collection system, methane gas venting system, pump station and force main to leachate holding tanks, stormwater controls, and sedimentation basin. Provided bidding assistance and construction administration services.

#### Other – Aviation

**Taxiway “D” Expansion, Blue Grass Airport, Lexington, KY.** 2008 – 2009. Project Manager and Senior Engineer. Design and construction services to provide additional ramp area for the anticipated five to ten times the number of itinerant aircraft parking requirements during the 2010 Alltech FEI World Equestrian Games. Project components included: coordination/relocation of existing airport tenants, demolition of four hangars, utilities relocation, demolition of 56,500 square yards (SY) of pavement, and construction of about 69,000 SY of taxiway and ramp pavement. Project budget was about \$10 million. Assisted in design and construction administration.

**Deerfoot North Cargo Apron Deicing Facility, Calgary International Airport, Canada.** 2011 – YEAR. Project Manager and Senior Engineer. Design of a deicing facility for commercial cargo airlines. Design included trench drains for collection of glycol and two 10,000-gallon tanks for storage. Excess water generated during storm events is conveyed to a storage lagoon through 8-inch and 10-inch PVC gravity lines.

**On-Call Environmental Services Contract, Blue Grass Airport, Lexington, KY.** 2002 – 2019. Project Manager (2011 – Ongoing) and Senior Engineer (2002 – 2011). Project tasks include management of aircraft deicing fluids, stormwater monitoring and reporting, updating Integrated Spill Plans, and permit management.

**On-Call Environmental Services Contract, Louisville Regional Airport Authority, Louisville, KY.** 2007 – 2012. Project Manager (2011 – 2012) and Senior Engineer (2007 – 2011). Project tasks include management of aircraft deicing fluids, stormwater monitoring and reporting, updating Integrated Spill Plans, and permit management.

**Standiford Field, Louisville International Airport, Louisville, KY.** 2008 – 2009. Senior Engineer. Responsible for developing construction specifications and drawings for installation of fuel containment and oil/water separator within the secured area. Project also included replacement of concrete pavement adjacent to the containment area, coordination with Louisville Metropolitan Sewer District for discharge, and stormwater management plans.

**Bowman Field, Louisville International Airport, Louisville, KY.** 2008 – 2009. Senior Engineer. Responsible for developing construction specifications and drawings for installation of fuel containment and oil/water separators at the maintenance building complex. Project also included replacement of adjacent asphalt pavement areas and stormwater management plans.

**Environmental Services, Blue Grass Airport, Lexington, KY.** 1993 – YEAR. Project Engineer. Responsible for developing groundwater pollution prevention plan and stormwater best management plan for the facility.

#### Other – Hazardous Waste

**Maxey Flats Disposal Site, The Walker Company, Fleming County, Hillsboro, KY.** 2014 – 2017. Project Manager and Senior Engineer. Provided quality control, surveying, and design assistance for the contractor, The Walker Company, which was selected to complete the Final Closure Period Cap Project. The site is a low-level radiation disposal facility that quit accepting waste in 1977. This project was the largest environmental cleanup project funded by the Commonwealth of Kentucky to date. Engineering assistance for the quality control included construction submittal preparation, surveying, field density testing, soil sample collection, and plan preparation. Prior to construction, various plans (combined as a 500

page report) were written and approved, including: construction management plan, remedial action work plan, transportation plan, reclamation plan, health and safety plan/contingency plan, radiation protection plan, construction quality control plan, haul road work plan and haul road design, existing liner protection plan, stormwater pollution prevention plan, archaeological and historic plan, and threatened / endangered species plan. All quality control and survey information were routed through the contractor and submitted to the engineer of record for approval. The haul road design was a critical element for the contractor to feasibly and cost effectively transfer the cover material from the borrow areas in the valley to the landfill disposal site. The main haul road designed was 3,000-feet long and 24-30-feet wide. This haul road had an average grade of 10-percent and one switchback, elevation change of 300-feet vertically.

**Site Investigation and Remediation, Wilkinson Boulevard Complex, Frankfort, KY.** 2010 – 2012. Project Manager and Senior Engineer. Project involved extensive investigation of a large government complex that had been in operation since the 1960s. The investigation included subsurface sampling, collection of groundwater samples using the Hydropunch® method, as well as conventional groundwater monitoring wells, conducting slug-tests to determine various hydraulic parameters, and advancing exploratory trenches in suspected waste disposal areas. Prepared drawings and specifications for bidding and construction. The site was remediated via excavation (with confirmatory soil sampling), as well as an in-situ method by injecting Regenox® into the subsurface to remediate groundwater heavily impacted by various chlorinated solvents. Provided construction administration and resident project representative services during construction.

**Natural Bridge State Park, Soil Remediation, Kentucky Finance and Administration Cabinet, Powell County, KY.** 2000 – 2001. Project Engineer. Developed construction documents and construction administration for this soil remediation project. Work included removal and disposal of soil contaminated with high BTEX and PAH levels. Crushed stone was used to replace material removed. Work conducted while maintaining operation of the facilities wastewater treatment plant.

#### **Other – Constructed Wetlands**

**Leachate Treatment Systems for Four Sites at Various Kentucky Locations, Commonwealth of Kentucky Finance and Administration Cabinet, KY.** 2005 – 2006. Project Manager and Senior Engineer. Provided design and construction oversight of leachate treatment systems at various sites in eastern and western Kentucky. Used large holding lagoons and equalization basins into designs for both passive and active treatment methods.

**Leitchfield Landfill Leachate Treatment System, Kentucky Division of Waste Management, Grayson County, KY.** 2005 – 2006. Senior Engineer. Provided design, bidding, and construction administration services to close this old landfill and develop an effective on-site treatment system for leachate. Work elements of this project included a double-lined equalization basin and two surface flow wetland cells operating in parallel (6,000 square yards of 60-mil HDPE liner and 3,000 square yards of double-sided geocomposite), a decanting facility, a pump station with dual 5 horsepower pumps, 1,200 feet of 2-inch force main, an irrigation line, and an emergency standby generator.

**Cynthiana Landfill Leachate Treatment System, Kentucky Division of Waste Management, Harrison County, KY.** 2006 – 2007. Senior Engineer. Provided design, bidding, and construction administration services to close this old landfill and develop an effective on-site treatment system for leachate. Work elements of this project included 4,000 feet of 8-inch leachate collection pipe, a double-lined equalization basin and two surface flow wetland cells operating in series (27,000 square yards of 60-mil HDPE liner and 13,500 square yards of double-sided geocomposite), a decanting facility, a pump station with dual 5 horsepower pumps, 2,100 feet of 4-inch force main, and an emergency standby generator.

**Harlan County Landfill Leachate Treatment System, Kentucky Division of Waste Management, Harlan County, KY.** 2006 – 2007. Senior Engineer. Provided design, bidding, and construction administration services to close this old landfill and develop an effective on-site treatment system for leachate. Work elements of this project included 400-feet of 8-inch perforated HDPE leachate collection pipe, a double-lined equalization basin and two subsurface flow wetland cells operating in parallel (4,000 square yards of 60-mil HDPE liner and 2,000 square yards of double-sided geocomposite), and a decanting/effluent facility.

**Raven Run Landfill, Kentucky Division of Waste Management, Lexington, KY.** 2006 – 2012. Project Manager and Senior Engineer. Provided design, bidding, and construction administration services to close this old landfill and develop an effective treatment system for leachate. This facility is located within a natural park maintained by local government. Used natural systems to accomplish leachate treatment. Design included consolidating waste into the smallest area possible, leachate collection system, phytoremediation techniques, and the use of bioswales.

**Billy Glover Dump Characterization and Closure, Kentucky Division of Waste Management, Jessamine County, KY.** 2002 – 2006. Project Manager and Senior Engineer. Completed a site characterization and closure of an old landfill. An extensive site characterization was completed of impact to surface water, groundwater, stream sediment, and site soil



for the Kentucky Division of Waste Management's (KDWM's) Superfund Branch. Remedial measures designed included consolidating waste into the smallest area possible to reduce the size of the engineered cap and using a constructed wetland to treat leachate gravity-flows to the treatment unit.

**Haley Pike Constructed Wetlands, Design of Haley Pike Landfill Closure, Fayette County, KY.** 2000 – 2004. Project Engineer. This innovative closure plan involved a 105-acre landfill, the largest landfill closure to-date in Kentucky. Key closure features included design of an equalization basin and man-made wetlands to treat large quantities of leachate during the post-closure life of the facility. This system replaced the practice of pumping leachate from 30 manholes and hauling it 20 miles to the client's treatment plant, resulting in significant savings over the post-closure life of the facility.

### Groundwater

**Hydrogeologic Investigation, Confidential Client, Pulaski County, KY.** 2015 – 2016. Project Manager and Senior Engineer. Oversaw the design and implementation of a large-scale spring/karst feature survey and subsequent dye-trace study at facility to gain understanding of the groundwater flow system beneath the coal combustion residuals unit and determine the most effective groundwater monitoring method to comply with the Federal CCR Rule.

**Hydrogeologic Investigation, Confidential Client, Mason County, KY.** 2015 – 2016. Project Manager and Senior Engineer. Oversaw the installation of eight piezometers around an ash pond to determine groundwater flow direction in the alluvial aquifer setting. Based on evaluation of the piezometers, installed eight permanent groundwater monitoring wells in accordance with Kentucky Division of Waste Management (KDWM) regulations. Completed well development based on the stabilization of various field parameters, and installed low-flow sampling pumps in each well after development completion.

**Hydrogeologic Investigation, Confidential Client, Mason County, KY.** 2015 – 2017. Project Manager and Senior Engineer. Oversaw the installation of five piezometers around an ash landfill to determine groundwater flow direction. Based on evaluation of the piezometers, installed two upgradient and three downgradient groundwater monitoring wells in accordance with Kentucky Division of Waste Management (KDWM) regulations. Completed well development based on the stabilization of various field parameters and installed low-flow sampling pumps in each well after development completion.

**Hydrogeologic Investigation, Confidential Client, Clark County, KY.** 2015 – 2017. Project Manager and Senior Engineer. Oversaw the installation of five piezometers around an ash landfill to determine groundwater flow direction. Based on evaluation of the piezometers, installed two upgradient and three downgradient groundwater monitoring wells in accordance with Kentucky Division of Waste Management (KDWM) regulations. Completed well development based on the stabilization of various field parameters, and installed low-flow sampling pumps in each well after development completion.

**Groundwater Protection Plans, Various Solid Waste Disposal Facilities, KY.** Project Engineer. Prepare groundwater protection plans at various solid waste disposal facilities.

**Groundwater Monitoring System, Confidential Client, KY.** 2015 – 2016. Senior Engineer overseeing the design, installation, and development of groundwater monitoring wells at various industrial facilities.

### Stormwater/Surface Water

**Campbell Lane, Barnard Drive, and Bob O Link Drive Stormwater Analyses Lexington-Gayette County Urban County Government, KY.** 2020 – 2021. Project Manager and Senior Engineer. Hydraulic analysis and design of improvements to reduce street flooding on Campbell Lane and Bob O Link Drive and to reduce backyard flooding on Barnard Drive. The work involved hydrologic and hydraulic modeling, surveying, public meetings with property owners, preparing easements, preparing construction drawings and specifications, and providing periodic inspections during construction.

**Idle Hour Park & Industry Road Culverts Analysis, Lexington-Fayette County Urban County Government, KY.** 2020 – YEAR. Project Manager and Senior Engineer. Design of improvements to provide access and aid in the removal of debris from the culvert and Idle Hour Park and replacement of the culvert at Industry Road to alleviate upstream flooding. The work involved hydrologic and hydraulic modeling, surveying, public meetings with property owners, preparing easements, preparing construction drawings and specifications, and providing periodic inspections during construction.

**Firethorn Extended Detention Basin Improvements, Lexington-Fayette County Urban County Government, KY.** 2019 – YEAR. Project Manager and Senior Engineer. Design of improvements to alleviate chronic standing water in an

extended detention basin in a residential area. The work involved hydrologic and hydraulic modeling, public meetings with property owners, and preparing construction drawings and specifications to remove the existing sand filter and replace them with rock filters.

**Walhampton Stormwater Improvements, Lexington Fayette County Urban County Government, KY.** 2012 – 2015. Project Manager and Senior Engineer. Design and construction administration of 900 feet of 36-inch storm sewer, 300 feet of 54-inch storm sewer, and a detention basin with a volume of approximately 80,000 cubic feet. The goal of the project was to reduce street and home flooding that had occurred since the early 1970s. Nine homes had a history of flooding, along with street flooding that temporarily made the streets impassable. The work involved hydrologic and hydraulic modeling of the stormwater system, surveying, assessing the physical condition of the storm sewers, identifying alternative solutions, attending public meetings, preparing design drawings and specifications and providing periodic inspections during construction.

**Stream Restoration, Confidential Client, KY.** 2010. Project Manager and Senior Engineer. Provide design/build, on-site engineering, and construction guidance services to restore 1,200 feet of stream. The natural stream had been eliminated during construction activities leaving a ditch to convey the water. The purpose of the project was to restore the stream back to a natural condition suitable for regional aquatic and wildlife inhabitants. The project required extensive coordination with the United States Army Corp of Engineers and Kentucky Division of Water to meet all necessary restoration requirements.

**Vaughn's Branch Flood Mitigation, Lexington-Fayette County Urban County Government, KY.** 2009 – 2010. Project Manager and Senior Engineer. Design and construction of a 7-acre detention basin upstream of Versailles Road, channel widening, and enlargement of four culverts. The completed project was intended to protect five structures against the 500-year flood, seven structures against the 100-year flood, and 15 structures against the 10-year flood. The work involved project coordination and public meetings; environmental design and permitting; flood mitigation design; and bidding and construction services. Unique design elements included the use of precast, full span culverts and bank stabilization using Filtrexx Soxx and Rosetta hardscape walls. Tetra Tech prepared the mitigation grant application, conducted conceptual design and stormwater modeling of the project, and prepared the Federal Emergency Management Agency (FEMA) Conditional Letter of Map Revision. Lexington-Fayette Urban County Government was awarded a stormwater award for the Vaughn's Branch project by the American Public Works Association's Kentucky Chapter. Prepared stormwater best management plans at various facilities.

**Stormwater Best Management Plans.** Project Engineer. Prepare stormwater best management plans at various facilities.

**Kentucky Pollutant Discharge Elimination System Permitting, Various Facilities, KY.** Project Engineer. Prepare Kentucky Pollutant Discharge Elimination System (KPDES) permits at various facilities.

**Stormwater Detention, Retention, and Infiltration Basins.** Project Engineer. Design of stormwater detention, retention, and infiltration basins at various facilities.

**Stormwater Collection Systems.** Project Engineer. Evaluation for stormwater collection systems at various facilities.

#### **Other – Environmental Consulting**

**Spill Prevention Control and Countermeasures (SPCC) Plans, Various Facilities, KY.** Responsible for preparing SPCC plans in accordance with Title 40 CFR Part 112 at various facilities. Examples listed below:

UPS Danville facility (1993)

UPS Hopkinsville facility (1993)

UPS Owensboro facility (1993)

UPS Prestonsburg facility (1993)

Blue Grass Airport (1995)

Blue Grass Airport (2017)

Hardin County Landfill facility (2018)

Cell Pak Springfield facility (2019)

UPS Lexington facility (2019)

UPS Bowling Green facility (2019)

UPS Louisville Freight facility (2019)

UPS Elsmere facility (2020)

UPS Pikeville facility (2020)

Eastern Kentucky University (2020)

#### **Other – General Civil and Site Development**

**Rental Car Facility, Blue Grass Airport, Lexington, KY.** 2015 – 2018. Project Manager and Senior Engineer. Project Manager and Senior Engineer for the civil and structural disciplines of the design and for providing the resident project representative during construction. Tetra Tech prepared the stormwater management plan and civil site plans for the facility. The facility includes 15 acres of asphalt stacking lanes for rental car storage/parking, three interior carwash bays and maintenance bays, fueling islands, and fuel storage facilities. The stormwater management included a 278,000 cubic feet extended detention basin. The work included hydrologic and hydraulic modeling of the stormwater system and obtaining permits and approvals from the local government agencies. Tetra Tech coordinated and completed the necessary design work for the relocation of all existing utilities including water, sewer, electric, cable and gas.

**Robinson Forest Camp Land Slide Stabilization, University of Kentucky, Breathitt County, KY.** 2011 – 2012. Project Manager and Senior Engineer. Responsible for the stabilization design and construction administration services required to stabilize a slide area that threatened public safety and buildings.

### EXPERIENCE SUMMARY

Doug Morris is a Deputy Project Manager with 32 years of overall experience and over 2 years experience managing multiple large-scale engineering designs. He specializes in solar/renewable energy including Civil (erosion and sediment, grading, H&H Analyses & Reports), PV design, structural, HV/Substation, BESS and Owner's Engineers services.

### CORPORATE PROJECT EXPERIENCE

#### Project Manager 2024-Present

##### NextEra Energy Renewables, Civil & Electrical for Solar Project, NY

Project Manager for completing the 30% civil and electrical/PV for a 180MWac in New York (Gateway fka Northside). Scope consists of providing the plansets required for the 94c permitting process, supporting Environmental and Permitting needs with their data needs. The site was previously denied under the old NYS Article 10 process. While still in regulatory review, numerous complex engineering challenges were resolved to make the site more amenable for regulatory approval.

#### Project Manager 2024-Present

##### Palladium, Civil & Electrical for 30% Solar Project, SC

Project Manager for completing the 30% civil and electrical/PV for a 28MWac in South Carolina (Bear Claw). Scope consists of providing the Civil & Electrical plansets requested and addressing Duke Energy requirements with PVSyst, eTAP and Reactive Power Studies.

#### Project Manager 2023-Present

##### Copia Power, Civil & Structural for Solar & BESS Project, AZ

Project Manager for Owner's Engineer support for Civil & Structural for a 350MWac and BESS in Arizona (Harquahala). New York (Gateway fka Northside). Scope consists of providing reviews of Civil & Structural Plans for the solar site, BESS, Substation and T-Line from 30% to IFC to As-Builts. Addressed multiple constructability, operations & maintenance and regulatory issues for site cost, construction and operational success.

#### Project Manager 2023-Present

##### RWE, Civil & PV/Electrical for Solar Projects, CO

Project Manager for completing the Special Use Permit (SUP)/1041 Civil and PV/Electrical plansets for three solar projects ranging in size from 85-350MWac in Colorado (Tundra, Craig, Canal Crossing). Scope consists of incorporating the environmental and regulatory constraints to develop the buildable areas, array layouts, inverters, stormwater/H&Hs and Gen-Tie Lines.

#### Deputy Project Manager 2022-Present

##### AES Clean Energy, Civil, Electrical & Structural Design for Multiple Solar Projects, KY, NY & VA

Project Manager for completing the 60% civil, electrical, and structural designs for six solar projects ranging in size from 60-125 MWac in Kentucky (McCracken, Meade), New York (Somerset) and Virginia (Augusta, Keydet,

### EDUCATION

MBA, International Business, George Washington University, 1996

BA, Economics, Foreign Affairs, University of Virginia, College of Arts and Sciences, 1992

### AREA OF EXPERTISE

Renewable Energy

Engineering Design – Utility Solar Farms

Project Management

Process Management

Financial Management

### REGISTRATIONS/ CERTIFICATIONS

Project Management Professional (2007)

Six Sigma Green Belt (2009)

### TRAINING

Focus 4 Site (Oct'22)

First Aid/CPR/AED (Feb'23)

### OFFICE

Glen Allen, VA

### YEARS OF EXPERIENCE

32

### YEARS WITHIN FIRM

2



Windsor). Scope consisted of incorporating the environmental and regulatory constraints to develop the 60% civil, electrical, structural and HV electrical designs for the client to procure proposals from Engineering, Procurement, Construction (EPC) contractors to construct the projects. This included optimizing the designs to maximize the MW output.

**Deputy Project Manager 2022–Present**

**AES Clean Energy, Hydrologic & Hydraulic Studies for Multiple Solar Projects, MS, SC & VA**

Project Manager for completing Hydrologic and Hydraulic Engineering (H&H) studies for 5 solar projects within MS (Lowndes), SC (Rocky Bluff) and VA (Cavalier, Sycamore Cross, Windsor). Scope consisted of performing H&H Engineering analyses of the existing conditions of the site. These studies included a two-dimensional flood routing model of on-site conditions, off-site runoff contribution from adjacent and upstream areas, and associated flow depths and velocities for the 10-, 100-, and 500-year design storms. Design level reports which provided conclusions and recommendations for site development and any applicable construction procedural recommendations.

**Deputy Project Manager, 2022–Present**

**Dominion Energy, Finneywood, Laurel Branch, Beldale, Walleye, Dulles, Grasshopper, Tall Pines, Pumpkinseed, Sweet Sue, and Otter Creek Solar Projects, Owner Engineers Services, VA, NC, SC**

Project Manager for the EPC Engineering Support Program relating to Solar facilities in Virginia, North Carolina, South Carolina. Project consists of performing third-party technical reviews of the EPC Contractor's civil, electrical, and structural engineering design packages and providing comments prior to submittal to the regulatory agency for approval for over 35 utility scale solar facilities. Prior to substantial completion, review of the Issued For Construction plan set and perform site inspections to verify the BMPs are installed and operating in accordance with the approved plans.

## PREVIOUS EXPERIENCE

**Vice President of Finance & Administration, December 2017–December 2018**

**First Call Environmental, Ashland, VA**

Managed all Financial, Project Management, Human Resources, IT & Vehicle Fleet functions in a \$15M annual revenue Environmental Cleanup company during a rapid growth phase and 30+% annual revenue growth; led a team of 8 individuals and an organization of 35+ with Process Management, Project Management, Information/Data Management, Personnel Management and Change Management techniques.

**Chief Operating Officer, August 2015–February 2017**

**IdeaWeavers LLC-Richmond, VA**

Handled all operations of a \$2M annual revenue business software development company. Managed four software developers and was primary POC for all new and existing clients; rolled out 15+ new systems and managed 20+ existing clients.

**Director, Global Corporate Services, Program Management and Process Management, February 2014–January 2015**

**CBRE, Inc., Richmond, VA**

Joined the Capital One account on the Facilities Management side; successfully led multiple programs and process improvements including the Reverse Transition, Notice Resolution and the Mettawa Changeover. Chosen for the Emerging Leaders Program, only ten individuals picked annually, after five months on the job.

**Director, Corporate Real Estate, Project Management, Process Management and Extended Operations, February 2002–January 2014**

**Capital One Financial, Richmond, VA**

Led multiple programs, process improvements and operations groups within the Corporate Real Estate (CRE) and Human Resource (HR) departments including Managed Print implementation, multiple large-scale acquisition integrations, Payroll change strategy, Real Estate lease administration, Contract/Third Party Management, Risk Management Office and Program Management Office

**Director of Client Services/Business Application Developer, November 1999–October 2001  
IdeaWeavers, Inc., Richmond, VA**

Co-developed the core product of a web-based company coordination system; designed and developed numerous aspects of the product using Java, XML and a variety of SOL databases. Maintained relationships with all customers through the entire lifecycle including installation, designing and building customizations, obtaining new requests and upgrading current versions; developed business verticals including the financial planning industry.

**Senior Business Analyst/Operations Analyst, November 1996–October 1999  
Capital One Financial, Richmond, VA**

Acted as an internal consultant; provided quantitative analysis, problem solving and project management skills to design and improve processes to support businesses and products; used a strategic approach to identify root causes and resolve issues; managed multiple projects and team members. Significant achievements including Customer Service Marketing (increased annual profit from \$3M to \$45M) and Fee Waiver Strategy (reduced fee waivers over \$8M annually).

**September 1992–August 1996  
Fleet and Industrial Supply Center Detachment, Washington, DC**

Conducted cradle to grave procurements of complex supplies and services for various Navy activities ranging in value from \$25K to \$100M; typical procurement cycle consisted of clarifying customer requirements, determining contract methodology, composing solicitations/RFPs, performing cost/price analysis, negotiating and resolving future issues; appointed warranted contracting officer for procurements up to \$500K as the youngest employee in a 100+ FTE organization; managed, reviewed and signed procurements for 6 FTE in division branch.

Hire Date: 4/25/2022

Ms. Pacholik is proficient in ArcGIS, AutoCAD Civil 3D, KYPipe, InfoSWMM, InfoWater, HydroCAD, PondPack, Microsoft Excel, Word, and PowerPoint. She provides engineering, technical, and clerical support for environmental compliance projects for private, commercial, industrial, and government clients. This work includes air, drinking water, wastewater, hazardous material, and solid waste permitting; Spill Prevention, Control & Countermeasure (SPCC), Groundwater Protection Plans (GPP), and Best Management Practices (BMP) Plans; data analysis and emissions evaluations for multiple facilities under a major national environmental contract; and project report technical quality control reviews. She is knowledgeable about the collection, preservation, and transporting of samples for analysis, as well as experienced in the operation and calibration of water and wastewater parameter monitoring devices and sequential samplers. In addition, Ms. Pacholik oversees the annual renewal and continual compliance of Tetra Tech's Kentucky Wastewater Laboratory Certification Program.

## EXPERIENCE

### Stormwater

**Pebble Creek Bank Stabilization, Lexington-Fayette Urban County Government, Lexington, KY.** 2022 – Present. Project Engineer. Analyzed failing stream bank in residential area and developed alternatives for bank stabilization. Assisted with hydraulic modeling to establish FEMA flood elevations using HEC-RAS software. Developed initial cost estimates and designed selected alternatives in AutoCAD Civil 3D. Creates construction drawings, easement exhibits, and project specifications. Assists during construction phase by reviewing shop drawings.

**Viley Road Stormwater Analysis, Lexington-Fayette Urban County Government, Lexington, KY.** 2022 – Present. Project Engineer. Assisted with hydraulic modeling of a residential area and developed alternatives to mitigate flooding issues. Designed preliminary exhibits for selected alternatives in AutoCAD Civil 3D. Developed initial cost estimates.

**Campbell Lane, Bob-O-Link Drive, and Barnard Drive Stormwater Improvements, Lexington-Fayette Urban County Government, Lexington, KY.** 2020 – Present. Project Engineer. Performed hydraulic modeling using Innowyze InfoSWMM to analyze and resolve flooding issues at three separate locations in Lexington, KY. Developed initial cost estimates and designed selected alternatives in AutoCAD Civil 3D. Created construction drawings, easement exhibits, and project specifications. Assists during construction phase by reviewing shop drawings.

**Industry Road Culvert, Lexington-Fayette Urban County Government, Lexington, KY.** 2020 – 2022. Project Engineer. Performed hydraulic modeling for redesign of failing railroad culvert using HydroCAD Stormwater Modeling software. Surveyed contributing stormwater piping system and mapped system in ArcGIS and AutoCAD Civil 3D. Developed initial cost estimates, grading/topological design, and creation of project specifications.

**KPDES Permit Compliance, Confidential Client, Maysville, KY.** 2020 – 2021. Project Engineer. Developed Standard Operating Procedures to ensure compliance with Kentucky Pollutant Discharge Elimination System (KPDES) monitoring program while dewatering Ash Pond.

**Firethorn Detention Basin Improvements, Lexington-Fayette Urban County Government, KY.** 2019 – 2020. Project Engineer and Construction Administrator. Performed hydraulic modeling for redesign of failing detention basin using Bentley PondPack software. Assisted with initial cost estimates, surveying, grading/topological design, and creation of project specifications. Assisted during construction phase by reviewing shop drawings and pay applications.

**Program Management, Lexington-Fayette Urban County Government, KY.** 2015 – Present. Project Engineer. Assists with updating Lexington's critical culverts GIS database for the Stormwater Quality Management Program as part of the consent decree. Assists with leading coordination meetings between various municipal divisions. Assists with analysis of various post-construction water quality controls, including hydrologic models and water quality sampling. Also created spreadsheet to aid LFUCG in meeting time-specific consent decree requirements. Assisted with submitting annual MS4 report to the US Environmental Protection Agency.

### Education:

MS, Civil Engineering,  
University of Kentucky, May  
2019

BS, Civil Engineering, University  
of Kentucky, 2017

BA, Arts and Sciences,  
University of Kentucky, 2008

### Registrations/Certifications:

Professional Engineer (PE), KY,  
No. 37317, 2021

Construction Documents  
Technology (CDT) Certification

Kentucky Erosion Prevention  
and Sediment Control (KEPSC)  
Certified Inspector

CPR and First Aid Training

### Office Location:

Lexington, KY

### Total Years of Experience:

(05/2015) 9

### Years with Tetra Tech:

(05/2015) 9

**KPDES Permit Compliance, Applegate Greenfiber, Springfield, KY.** 2015 – Present. Project Engineer. Assists facility with KPDES monitoring program including discharge monitoring reports and training for new employees. Assists facility with maintain certification through the Kentucky Wastewater Laboratory Certification Program.

#### Civil Site

**Cedar Creek Water Quality Treatment Center, Louisville Metropolitan Sewer District, KY.** 2023 – Present. Project Engineer. Assisted with grading/topological design, potable water design, sewer design, and development of specifications and cost estimates. Prepared permit application forms and submitted to Louisville Metropolitan Sewer District and Louisville Metropolitan Planning and Zoning. The project includes the construction of a 12,000 square foot administration building and two parking lots.

**Southwestern Sluice Gate Chamber RTC Enhancements, Louisville Metropolitan Sewer District, KY.** 2021 – Present. Project Engineer. Assisted with grading/topological design, potable water design, stormwater design, and development of specifications and cost estimates. The project includes the installation of a weir structure to enhance the functionality of the real-time control system at an existing sluice gate chamber.

**Rental Car Quick Turn Around (QTA) Facilities, Blue Grass Airport, Lexington, KY.** 2016 – 2017. Project Engineer. Assisted with grading/topological design, stormwater design, specification review, and initial cost estimates.

#### Airports

**Environmental Monitoring and Regulatory Compliance, Blue Grass Airport, Lexington, KY.** 2015 – 2019. Project Engineer. Assisted with environmental monitoring program. Duties included reporting and coordination of NPDES monitoring, STI001 inspections, Intergraded Spill Plan updates, and maintenance of flow meters. Submitted annual Tier II reports. In addition, she assisted in monitoring and maintaining analyzer equipment that controls and segregates glycol runoff from clean stormwater.

#### Air Permitting and Compliance

**Title V Air Permitting and Compliance, Sheridan KY, Versailles, KY.** 2022 – Present. Project Engineer. Completes semi-annual air monitoring reports, annual air compliance certification, and emissions inventory for submittal to state and federal regulatory agencies. Maintains air permitting records and submits air permit renewal documents. Assisted with developing stack test protocol and stack test reporting, as required by air permit.

**Air Permitting and Compliance, Minova USA, Georgetown, KY.** 2022 – Present. Project Engineer. Prepares permit modification application for submittal to state regulatory agencies.

**Air Permitting and Compliance, KY Finance Cabinet, Department of Corrections, Frankfort, KY.** 2021 – 2024. Project Engineer. Prepares permit application and emission source registration at four correctional facilities for submittal to state regulatory agencies.

**Air Permitting, Morehead State University, Morehead, KY.** 2021. Project Engineer. Prepared and submitted permit renewal application for educational institution.

**Air Permitting and Compliance, Eastern Kentucky University, Richmond, KY.** 2019 – Present. Project Engineer. Completes semi-annual air monitoring reports, annual air compliance certification, and emissions inventory for submittal to state and federal regulatory agencies. Maintains air permitting records and submits air permit renewal documents.

**Title V Air Permitting and Compliance, Polyair Packaging, Bardstown, KY.** 2017 – Present. Project Engineer. Completes semi-annual air monitoring reports, annual air compliance certification, and emissions inventory for submittal to state and federal regulatory agencies. Maintains air permitting records and submits air permit renewal documents. Prepares and submits annual Tier II reports. Assists facility with maintaining risk management plan, including compliance audits, process hazard analyses, and offsite consequence analyses.

**Title V Air Permitting and Compliance, Hardin County Landfill, Elizabethtown, KY.** 2015 – 2019. Project Engineer. Completed Title V semi-annual air monitoring reports for submittal, and annual air compliance certification and emissions inventory. Performed greenhouse gas generation calculations and submitted annual greenhouse gas report using EPA's electronic Greenhouse Gas Reporting Tool (e-GGRT). Maintained air permitting records and submittal of air permit renewal documents.

**Title V Air Permitting and Compliance, Novelis Aluminum, Berea, KY.** 2016 –2019. Project Engineer. Assisted with developing stack testing protocol and stack test reporting, as required by air permit. Assisted plant staff with Title V air permit reporting.

**Title V Air Permitting, The Okonite Company, Richmond, KY.** 2019. Project Engineer. Assisted with preparing and submitting permit renewal application for cable manufacturing company.

**Title V Air Permitting, Walle Corporation, Winchester, KY.** 2016 – 2017. Project Engineer. Assisted with preparing Title V construction and renewal permits for label and packaging company.

**Combustion Sources Registration, Education Realty Trust, Memphis, TN.** 2017 – Present. Project Engineer. Assisted with preparing and submitting air permit registrations for 13 student dormitories located on the University of Kentucky campus.

### Wastewater

**Lakeview Equalization Tank and Wet Weather Pump Station Facility, Sanitation District No. 1 of Northern Kentucky, Ft. Wright, KY.** 2023 – Present. Project Engineer. Designed sanitary pumping station and equalization storage tank. Performed engineering design calculations and prepared CAD drawings. Prepared specifications and cost estimates. Submitted permit applications and coordinated with local utility owners. The project includes a 38.3 MGD pump station and 10.5 MG wet weather equalization tank.

**Sneads Branch Pump Station Elimination, Louisville Metropolitan Sewer District, Louisville, KY.** 2022. Project Engineer. Designed sanitary relief sewer to dewater existing combined sewer system. Assisted with permit compliance and development of specifications and cost estimate.

**West Hickman Wet Weather Storage Facility, Lexington-Fayette Urban County Government, Lexington, KY.** 2015 – 2020. Project Engineer and Construction Administrator. Assisted in construction permitting process, specification review, and preparing submittals to LFUCG and KIA. Assisted in analyzing proposed stormwater management options for the development site including detention facilities and erosion control measures. The development includes two 22 MG storage tanks and a new headworks facility.

**Wolf Run Wet Weather Storage Facility, Lexington-Fayette Urban County Government, Lexington, KY.** 2014 – 2016. Project Engineer and Construction Administrator. Assisted in specification and plan review as well as preparing submittals to LFUCG. Reviewed field reports and verified contractor and subcontractor compliance with project's U.S. Department of Housing and Urban Development wage determination. The development includes one 8 MG storage tank and a new pump station.

### Drinking Water

**Rip Rap Well Field Improvements, City of Dayton Department of Water, Dayton, OH.** January 2023 – Present. Project Engineer. Designed four (4) 3,150 gpm drinking water wells and associated piping in AutoCAD Civil 3D. Created construction specifications for site civil work.

**Beasley Lane Line Extension, Henry County Water District No. 2, Sulfur, KY.** 2022. Project Engineer. Designed 1,500 LF drinking water line extension in AutoCAD Civil 3D. Used KYPipe to determine minimum/maximum pressures and flushing velocity. Submitted Drinking Water Distribution Construction Application to Kentucky Division of Water for approval.

**Zen Forest Line Extension, Henry County Water District No. 2, Turner's Station, KY.** 2021. Project Engineer. Designed 3,000 LF drinking water line extension in AutoCAD Civil 3D. Used KYPipe to determine minimum/maximum pressures and flushing velocity. Submitted Drinking Water Distribution Construction Application to Kentucky Division of Water for approval.

**Distribution System Design and Hydraulic Model Analysis, Henry County Water District No. 2, Campbellsburg, KY.** 2019 – Present. Hydraulic Engineer. Analyzes the hydraulic performance of the District's water distribution system under current and future demands using KYPipe modelling software. Develops model scenarios to analyze proposed infrastructure alternatives and recommended pipe diameters, connection points, and pumping improvements. Designs new water lines, relocations, and extensions.

**Estates of L'Esprit Subdivision, Prism Engineering Group LLC, La Grange, KY. 2021.** Hydraulic Engineer. Performed hydraulic analysis on proposed drinking water line in new subdivision using KYPipe. Submitted Drinking Water Distribution Construction Application to Kentucky Division of Water for approval.

**KY HWY 146 Water Line Relocation, Kentucky Transportation Cabinet/Henry County Water District No. 2, Smithfield, KY. 2019 – Present.** Project Engineer. Assisted with design for relocation of 12,500 LF of drinking water lines in AutoCAD Civil 3D. Performed hydraulic analysis using KYPipe to determine minimum/maximum system pressures and submitted Drinking Water Distribution Construction Application to Kentucky Division of Water for approval. Assisted with developing and updating cost estimates. Assists during construction phase by reviewing questions and shop drawings.

**Midtown Booster Station Review, City of Ann Arbor, Ann Arbor, MI. 2020 – 2022** Hydraulic Engineer. Completed review of a proposed booster station for using Innovyze InfoWater, including evaluation of system pressures and fire flows, operating point, pump overlap and cycling, and the impact on the existing system.

#### **Coal Combustion Residual (CCR) Units:**

**CCR Disposal Study, Confidential Client, Maysville, KY. 2020 – 2022.** Project Engineer. Designed and tested optimal ratios for FGD brine/CCR mixtures for landfill disposal. Designed on-site lysimeter installation. Reviewed laboratory analytical results and compiled industry research for comprehensive report.

**Groundwater Monitoring Well Design and Installation, Confidential Client, Winchester, KY. 2016.** Project Engineer. Assisted with the development of groundwater monitoring wells.

#### **Solid Waste**

**Environmental Monitoring and Regulatory Compliance, Hardin County Landfill, Elizabethtown, KY. 2015 – 2019.** Project Engineer. Produced quarterly surface water and groundwater reports for submittal to regulatory agencies. Conducted quarterly groundwater, surface water, leachate, and methane monitoring. Conducted statistical analysis of groundwater sampling results. Completed Title V semi-annual air monitoring reports for submittal, and annual air compliance certification and emissions inventory. Maintained air permitting records and submittal of air permit renewal documents.

**Maxey Flats Final Closure Cap, Maxey Flats Disposal Site, Fleming County, Hillsboro, KY. 2015.** Construction Administrator. Managed all construction submittals.

#### **Hazardous Waste**

**Hazardous Waste Regulatory Compliance, Applegate Greenfiber, Springfield, KY. 2015 – Present.** Project Engineer. Prepares and submits annual Tier II reports and annual Toxic Release Inventory (TRI) reports.

**Flammable Liquid Storage Compliance, Minova USA, Georgetown, KY. 2022 – Present.** Project Engineer. Reviews proposed tank specifications for installation of aboveground storage tank intended to store flammable liquid. Prepares and submits required permit applications to the Kentucky Division of Fire Protection and the Kentucky Division for Air Quality.

#### **Spill Prevention Control and Countermeasure Plans**

**Update SPCC and GPP, Eastern Kentucky University, Richmond, KY. 2019 – 2020.** Project Engineer. Assisted with updating SPCC and GPP, including inspecting and cataloging new assets.

**Update SPCC and GPP, Berea College, Berea, KY. 2018.** Project Engineer. Assisted with updating SPCC and GPP.

**Update SPCC, GPP, and SWPPP, Firestone, Williamsburg, KY. 2018.** Project Engineer. Reviewed site assessment and assisted with updating SPCC, SWPPP, and GPP for facility.

**Update SPCC, Confidential Client, Florence, KY. 2019.** Project Engineer. Reviewed site assessment and assisted with updating SPCC.

**Update SPCC and GPP, Confidential Client, Bowling Green, KY. 2019.** Project Engineer. Reviewed site assessment and assisted with updating SPCC and GPP.

**Update SPCC, Confidential Client, Louisville, KY. 2019.** Project Engineer. Reviewed site assessment and assisted with updating SPCC.



**Update SPCC, Confidential Client, Lexington, KY.** 2020. Project Engineer. Reviewed site assessment and assisted with updating SPCC.

#### Emergency Response Action Plans

**ERAP Development, Confidential Client, Maysville, KY.** 2020. Project Engineer. Assisted in the development of an emergency response action plan to haul coal pond ash. Created haul route map using ArcGIS.

#### Risk Management Plans

**EPA Risk Management Plan Rule Compliance, Lexington-Fayette Urban County Government, KY.** 2019 – Present. Project Engineer. Maintains risk management plans for wastewater treatment plants, including compliance audits, process hazard analyses, and offsite consequence analyses. Provides staff training for risk management plans.

#### Previous Employment

**Individual Experience, Kentucky Water Resources Research Institute, University of Kentucky.** May 2017-Dec 2018. Undergraduate and Graduate Research Assistant. Prepared Watershed Sustainability Report for Jim Beam Distillery in Boston, Kentucky. Helped organize stakeholder event at Clermont Distillery in Clermont, Kentucky; assisted with comprehensive water balance model for Maker's Mark Distillery in Loretto, Kentucky; and conducted water quality sampling in and around two Jim Beam Distilleries. Conducted research on a pilot scale membrane filter system for groundwater treatment at a contaminated site in Louisville, Kentucky.

### EXPERIENCE SUMMARY

Jacob Salomonsky has 2 years of experience as a water resource engineer for utility-scale solar farms from the conceptual level to IFP. As a water resources engineer, Jacob’s responsibilities include procuring and working with Civil 3D drawings to perform hydrologic analysis on multiple utility scale solar farms as well as inspecting solar farms for E&S, engineering, and SWPPP reasons. Also, Jacob has many miscellaneous skills and proficiencies such as Excel, PowerBI, Task-by-planner, and Microsoft Project.

### CORPORATE PROJECT EXPERIENCE

**Water Resources Engineer, January 2023–August 2023**  
**Torch Clean Energy, Jarratt Solar Project, VA**

Jarratt is a 70 MW DC solar farm. Procured PVcase layout, road layout, inverter blocking, and MV lines. Assisted in drainage area delineation, basin grading, and other hydrologic and hydraulic tasks necessary for the stormwater report.

**Water Resources Engineer, January 2023–August 2023**  
**Hexagon Energy, Woodridge Solar Project, VA**

Hexagon is a 180 MW DC solar farm. Procured PVcase layout and road layout. Assisted in drainage area delineation and basin grading.

**Water Resources Engineer, June 2021–February 2022**  
**Engie North America, Whitehorn Solar Project, VA**

Performed engineering and SWPPP site inspection and procured inspection reports.

**Water Resources Engineer, June 2021–November 2022**  
**Dominion, Finneywood & Quarterhorse Solar Projects, VA**

Delineated POAs and drainage areas in Civil 3D.

**Water Resources Engineer, November 2021–4January 2022**  
**Pivot Energy, VA 1-7, VA**

Drainage area delineations and 10% solar site concept plans.

**Water Resources Engineer, December 2021–November 2022**  
**Dominion, Laurel Branch Solar Project, VA**

Drainage area delineations, sediment pond footprints, and editing multiple aspects of a conceptual solar site.

**Water Resources Engineer, December 2021–November 2022**  
**Dominion, Finneywood Solar Project, VA**

Drainage area delineations, sediment pond footprints, and editing multiple aspects of a conceptual solar site.

**Water Resources Engineer, January–March 2022**  
**AES, Windsor Solar Project, VA**

Drainage area delineation and sediment pond grading.

**Water Resources Engineer, March–Augusta 2022**  
**AES, Augusta Solar Project, VA**

Drainage area delineation and sediment pond grading.

#### EDUCATION

BS, Civil and Environmental Engineering, Virginia Military Institute, 2021

#### AREA OF EXPERTISE

Water Resources Engineering for Utility Scale Solar Farms

#### REGISTRATIONS/ CERTIFICATIONS

Engineer-in-Training, VA

#### TRAINING

DEQ E&S Inspector course

#### OFFICE

Glen Allen, VA

#### YEARS OF EXPERIENCE

2

#### YEARS WITHIN FIRM

2



**Water Resources Engineer, March 2022–December 2022**  
**AES, Keydet Solar Project, VA**

Drainage area delineations, sediment pond footprints, and extensive editing of other items necessary of a 60% solar site conceptual plan such as roads, inverter locations, and laydown areas. Also performed sediment pond grading and landcover calculations.

**Water Resources Engineer, March 2022–November 2022**  
**Dominion, Beldale Solar Project, VA**

Drainage area delineations, sediment pond footprints, solar panel layout using PVcase, and procurement of other items necessary of a 30% solar site conceptual plan such as roads, inverter locations, and laydown areas.

**Water Resources Engineer, September 2022–December 2022**  
**Dominion, Walleye Solar Project, VA**

Walleye is a 3000-acre site. Performed Drainage area delineations, sediment pond footprints, solar panel layout using PVcase, and procurement of other items necessary of a 30% solar site conceptual plan such as roads, inverter locations, and laydown areas.

**Water Resources Engineer, June–August 2021**  
**Dominion, Fort Powhatan Solar Project, VA**

Checking as-built sedimentation basin details with the plans, HydroCAD modeling for risers, performed healthy start inspection and procured healthy start report.

**Water Resources Engineer, June–July 2021**  
**Algonquin, Altavista Solar Project, VA**

Engineering site inspection and procured inspection report.

**Water Resources Engineer, June–July 2021**  
**AES, Skipjack Solar Project, VA**

Edit and update SPCC plan and SPCC site investigation, performed buoyancy calculations for concrete riser structures.

**Water Resources Engineer, June–December 2021**  
**Dominion, Pecan & Gutenberg Solar Projects, NC**

Hydrologic study and drainage area delineation.

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**PREVIOUS EXPERIENCE**

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**Estimating/Project Engineer Intern, Summer 2019, Summer/Winter 2020**  
**W.M. Jordan**

Prepared and performed Takeoffs for multiple projects. Managed bid sheets for multiple projects. Performed constructability reviews for multiple projects. Participated in hard bid of multi-million-dollar building. Procured multiple scope sheets for a hard bid. Integrated pertinent RFIs into construction documents.

**Assistant Project Engineer Intern, Summer 2018**  
**KBS Construction**

Managed and maintained subcontractor bids for multiple projects. Assessed RFIs. Proofread bids to check for accuracy and rationality.

**Architect Draftsman Intern, Summer 2017**  
**SWA Architects**

Transferred 2D drawings into 3D programs. Created 3D models of buildings for clientele. Designed and assessed rooftops for a building.