



10/12/2021

To: Lake County  
Bill Ponko, Contracting Officer  
315 West Main Street, Suite 441  
Tavares, FL 32778

Subject: Statement of Interest  
RFP No.: **22-903**  
**AS NEEDED GEOLOGIC & HYDROGEOLOGIC SERVICES**

Submitted By: **ANDREYEV ENGINEERING, INC.**

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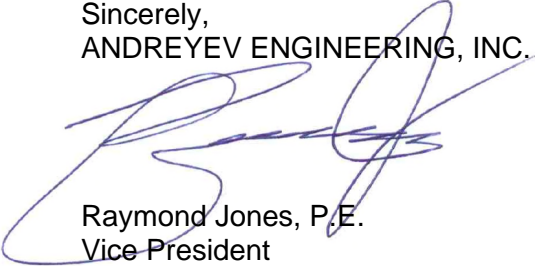
Dear Mr. Ponko:

Andreyev Engineering, Inc. (AEI) is pleased to submit our qualifications for consideration by Lake County to provide Geologic and Hydrogeologic Services. AEI expresses great interest in providing these types of services to meet the needs of Lake County and are very enthusiastic to render our professional expertise with an extremely high level of service.

As you will see from the qualification materials presented, AEI is uniquely qualified to provide the services outlined in Exhibit A under this RFP and can provide all of these services in-house. AEI has a long history and a wealth of experience in Lake County and has provided these same scope of services to Lake County in the past. Presented herein is a summary of our qualifications, qualifications of the team, and the requested documentation outlined in the Request for Proposal No. 22-903.

AEI is committed to providing timely responses and cost-effective solutions on every assignment that we are engaged on during the course of the contract. To this end, AEI will apply the necessary resources and support to Lake County in order to fulfill the needs of each project. We look forward to working with Lake County under this contract and sincerely appreciate your consideration.

Sincerely,  
ANDREYEV ENGINEERING, INC.



Raymond Jones, P.E.  
Vice President  
407-330-7763



## **BUSINESS/FIRM HISTORY AND INFORMATION**

Andreyev Engineering, Inc. (AEI) was founded in 1993, by Nicolas E. Andreyev, P.E. and is a professional consulting engineering firm offering a wide range of Geotechnical, Hydrogeological, Environmental and Materials Testing services. Our capability in this highly specialized field of practice results from extensive hands-on local experience. With offices in Sanford, St. Petersburg, Clermont and The Villages, we specialize in providing practical solutions to complex technical issues involving soil and groundwater. AEI has more than 25 years of proven experience in providing these types of services.

The firm's president and founder, Mr. Nicolas E. Andreyev, P.E., is a recognized expert in the specialized field of engineering hydrogeology. Mr. Andreyev has authorized many publications in this field and has also developed computer software that is utilized by many in the civil engineering industry. AEI currently has a total staff of thirty (35) professional and technical personnel. Collectively, AEI has eleven registered professionals (eight professional engineers and three professional geologists) who have over 150 years of combined professional engineering and geological experience throughout Florida. Hundreds of successfully completed projects throughout Florida, Southeast USA and overseas attest to our skills and abilities and we have provided these unique services to a wide range of clients.

With respect to insurance and certification, AEI maintains a professional liability insurance policy with coverage for two million dollars, coverage for workers compensation and a four million dollar umbrella policy.

AEI is currently under contract with several local government entities providing geotechnical, hydrogeologic, environmental and construction materials testing/inspection services. Further, AEI is prequalified by the Florida Department of Transportation (FDOT) in Work Groups 9.1, 9.2, 9.3, 9.4, and 10.3. Our professional staff has provided services for numerous governmental and private projects throughout the State of Florida.

AEI has a full-service soils and materials laboratory and in-house drilling capability, with equipment suitable for any project terrain.

AEI was founded on the basic principal of providing superior services for each project, with an emphasis on quality, schedule and budget. We have established a proven track record of providing cost effective solutions to difficult projects. We can effectively complete small projects (\$500 to \$5,000), as well as large regional projects (\$100,000 to \$1,000,000). We have the personnel, the capability and the necessary experience.

## **SPECIALIZED SERVICE CAPABILITIES**

### **GEOTECHNICAL ENGINEERING**

- ◆ Geotechnical Drilling
- ◆ Groundwater Level Determination
- ◆ Studies for Land Development
- ◆ Laboratory Analysis (moisture content, grain size, permeability, consolidation, etc.)
- ◆ Muck Surveys
- ◆ Sinkhole Investigations
- ◆ Bearing Capacity Determination
- ◆ Foundation Design

### **ENVIRONMENTAL CONSULTING**

- ◆ Contamination Assessments
- ◆ Building Condition Surveys
- ◆ Phase I & Phase II Environmental Site Assessments
- ◆ Remedial Action Plans
- ◆ Groundwater Sampling & Testing
- ◆ RCRA Part B Permitting
- ◆ Asbestos Sampling & Testing

### **MATERIALS TESTING & INSPECTION SERVICES**

- ◆ Density Testing/Compaction
- ◆ Proctor Density Testing
- ◆ Gradation
- ◆ LBR/CBR
- ◆ Concrete Testing
- ◆ Soil Cement Testing
- ◆ Asphalt Mixtures

### **GROUNDWATER SERVICES**

- ◆ Installation of Wells & Testing
- ◆ Aquifer Characterization
- ◆ Groundwater Flow Modeling
- ◆ Water Supply Assessment & Design
- ◆ Dewatering System Modeling & Design
- ◆ Groundwater Monitoring Plans

### **WATER RESOURCES**

- ◆ Watershed Planning
- ◆ Water Quality Modeling
- ◆ Assimilative Capacity Assessments
- ◆ Stream/Lake Monitoring
- ◆ Sampling Programs

### **WASTEWATER SERVICES**

- ◆ Aquifer Characterization & Testing
- ◆ Effluent Disposal Modeling & Design
- ◆ Water Reuse System Design & Permitting
- ◆ Industrial Wastewater Disposal Design & Permitting

### **TRANSPORTATION SERVICES**

- ◆ Roadway Soil Surveys
- ◆ Bridge Foundation Geotechnical Engineering
- ◆ Pile Driving Inspection
- ◆ Drilled Shaft Installation Inspection

### **STORMWATER SERVICES**

- ◆ Soil Borings & Permeability Tests
- ◆ Infiltration/Recovery Modeling
- ◆ Underground Storage & Recovery
- ◆ Environmental Resource Permits

List no more than five projects which best illustrates qualifications relevant to the Solicitation. References must be less than five years old. LIST no more than two LAKE COUNTY GOVERNMENT PROJECTS (past, current, prime, and subcontractor) FIRST.

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ANDREYEV ENGINEERING, INC.

PROJECT NAME: Semi-Annual Groundwater Monitoring of Four Lake County Landfills PO #20130518

Agency: Lake County SWA Solid Waste Division

Address: 13130 County Landfill Rd, PO Box 7800

City, State, Zip code: Tavares, FL 32778

Contact Person: David Salinas

Title: Operations Compliance Coordinator

Email: [Click or tap here to enter text.](#)

Telephone: 352-343-9839

Project Cost: 45,000+/-

Contract Start and End Dates: July 2016

SCOPE of Project (list tasks, outlines or descriptions of items): Semi-Annual Groundwater Monitoring of Four Lake County Landfills, Preparation of Semi-Annual Reports in Accordance with FDEP Permit Requirements.

PROJECT NAME: Former City of Winter Garden Utility Plant

Agency: City of Winter Garden Engineering

Address: 300 West Plant Street

City, State, Zip code: Winter Garden, FL 34787

Contact Person: Arthur Miller

Title: City Enigneer

Email: [amiller@cwgn.com](mailto:amiller@cwgn.com)

Telephone: 407-656-4111

Project Cost: 150,000.00

Contract Start and End Dates: December 2017

SCOPE of Project (list tasks, outlines or descriptions of items): Project started with a Phase II ESA at the site of the City's historic utility plant on Boyd Street. Results of the Phase II indicated that elevated concentrations of polyaromatic hydrocarbons existed in both the soil and groundwater at this site, likely associated with former fuel storage tanks and combustion of heavy fuels. In June of 2018 AEI prepared a Site Assessment Report (SAR) for the former utility plant property which identified plumes of both petroleum impacted soil and groundwater. Following the submittal of the SAR AEI completed Initial Remedial Action which consisted of excavation of approximately 807 tons of impacted soil. This site ultimately received a Site Rehabilitation Completion Order from the FDEP.

PROJECT NAME: Scotty's Auto

Agency: Florida Department of Environmental Protection

Address: 2600 Blair Stone Road

City, State, Zip code: Tallahassee, FL 32399

Contact Person: Tim Foster

Title: Contract Manager

Email: tim.foster@dep.state.fl.us

Telephone: 850-245-8874

Project Cost: \$195,000.00

Contract Start and End Dates: On-Going

SCOPE of Project (list tasks, outlines or descriptions of items): AEI was assigned the assessment and cleanup of this former gas station facility by the FDEP in 2014 through the pre-approval program. AEI completed groundwater and soil sampling to delineate the extent of petroleum in the groundwater and soils over this site. AEI submitted a Site Assessment Report (SAR) to the FDEP followed by a Remedial Action Plan (RAP) which identified Air Sparging (AS) and Vapor Extraction (VE) as the most appropriate remedial strategy. AEI constructed and implemented the AS/VE technology which was successful in reducing the petroleum contaminants to levels below the FDEPs Groundwater Cleanup Target Levels (GCTLs). AEI is currently monitoring groundwater as part of a Post Active Remediation Monitoring program.

PROJECT NAME: Fehrman Heating and AC, Umatilla

Agency: Florida Department of Environmental Protection

Address: 2600 Blair Stone Road

City, State, Zip code: Tallahassee, FL 32399

Contact Person: Tim Foster

Title: Contract manager

Email: tim.foster@dep.state.fl.us

Telephone: 850-245-8874

Project Cost: \$275,000.00

Contract Start and End Dates: On-Going

SCOPE of Project (list tasks, outlines or descriptions of items): AEI was assigned the assessment of the former petroleum storage tank system at this facility by the FDEP in 2018 through the pre-approval program. AEI completed groundwater and soil sampling to delineate the extent of petroleum in the groundwater and soils over this site and prepared a Template Site Assessment Report in August of 2019. AEI is currently conducting supplemental site assessment activities in preparation of remedial system design.

PROJECT NAME: Northwest Lake County, Northeast Sumter County and SouthEast Marion County

Agency: The Villages of Lake-Sumter, Inc.

Address: 1020 Lake Sumter Landing

City, State, Zip code: The Villages, FL 32162

Contact Person: Trey Arnett

Title: President

Email: [Click or tap here to enter text.](#)

Telephone: 352-753-6219

Project Cost: \$2,400,000.00

Contract Start and End Dates: On-Going

SCOPE of Project (list tasks, outlines or descriptions of items): AEI has completed an extensive study of the geology and hydrogeology of The Villages area. This report included aquifer characterization and the generation of geologic profiles across the service territory, generated from well construction logs and reports. AEI designed and executed aquifer performance tests to determine aquifer characteristics. To date, 14 aquifer performance tests have been completed under AEI supervision on production wells, including two full scale APTs of the upper and lower Floridan aquifer.



## **CONTRACT MANAGER**

Andreyev Engineering, Inc., (AEI) will be coordinating our services for this contract from our corporate headquarters located in Sanford, Florida. Our local branch office located in Clermont, Florida will also provide the necessary support to meet all the technical and scheduling requirements for this contract.

Mr. Raymond W. Jones, P.E. will serve as the Contract Manager under this contract and thus will be the main point of contact for all service requests. During his 24 years with AEI, Mr. Jones ran the Tavares branch office of AEI for 10 years until it was closed in 2007, and has since continued to support the Lake County community and the local consulting firms since that time. The contact information for Mr. Jones is provided below.

**Mr. Raymond Jones, P.E.**

Andreyev Engineering, Inc.

Contract Manager

4055 St. Johns Parkway

Sanford, Florida 32771

Tel.: (407) 330-7763

Email: [rjones@andreyevengineering.com](mailto:rjones@andreyevengineering.com)

## **AEI TEAM SUPPORTING PROFESSIONALS**

In addition to Mr. Jones, the AEI team will also be supported by the following key professionals:

AEI - Mr. Nicolas Andreyev, P.E.

AEI - Dr. Shawkat Ali, P.E. PhD

AEI - Rob Cornelius, P.E.

AEI - Mr. Jeff Eller, P.E.

AEI - Ms. Vivian Bielski, P.G.

AEI - Mr. Shawn Carswell, P.G.

Resumes for each of the above individuals have been provided in this RFP for your further review and evaluation of our qualifications and experience.



## CURRICULUM VITAE



**RAYMOND JONES, P.E., VICE PRESIDENT**  
Senior Geotechnical Engineer

**BUSINESS RESIDENCE:** 4055 St. Johns Parkway Sanford, Florida

**EDUCATION:** Bachelor of Science, Civil Engineering  
Florida State University, 1996

**REGISTRATIONS:** Professional Engineer, Florida Registration #58079

**SOCIETIES:** American Society of Civil Engineers-Member

**YEARS OF EXPERIENCE:** 24

### SUMMARY OF CAPABILITIES

Shallow Foundation Engineering	Hydrogeological Studies
Deep Foundation Engineering	Groundwater Modeling
Soil Mechanics	Consumptive Use Permitting
Roadway and Bridge Studies	Quality Control-Quality Assurance Program Implementation
Sinkhole Investigations	Pavement Design
Slope Stability Analysis	Well Construction

Mr. Jones is currently a Vice President of Andreyev Engineering Inc., where his duties include overall office, project, and staff management, client development, client relations and all aspects of project engineering. Mr. Jones has successfully managed numerous geotechnical and hydrogeologic studies throughout the state of Florida in the areas of groundwater analysis, water supply planning and design, consumptive use permitting, materials testing and geotechnical engineering.

Typical hydrogeologic projects include water balance analyses for spring flows, wetland water levels, lake and river levels, groundwater flow modeling of regional water supply systems, lake-wetland interaction systems, stormwater capture and reuse, horizontal wells, and numerous other surface water and groundwater interaction systems.

Typical geotechnical projects include a wide variety of residential, commercial, industrial, roadway, landfill and mining projects in both the public and private sectors. Ray has worked on low to high rise structures involving a variety of foundation types, wastewater and water treatment plants, large tower and tank structures, bridges, large-scale developments, pipelines, multi-lane roads using various pavement section materials, landfills, and lined and un-lined ponds.



Typical sinkhole projects include evaluation of residential, commercial, and municipal sinkhole claims in accordance with State requirements, using conventional and geophysical tools including GPR, ERI, and Seismic methods to evaluate subsurface conditions, evaluation of structural collapses associated with sinkhole activity and providing recommendations for repairs of structures affected by sinkhole activity.


Engineering work includes field tech supervision, coordination, analysis, and report preparation of over 500 geotechnical and hydrogeologic projects. The following is a list of typical projects completed by Mr. Jones:

- **South Lake Trail Phase 3, Clermont:** Geotechnical Investigations for planning, design and permitting of the 7-mile Phase 3 section of the trail including bridge design studies for modification of the C.R. 561 Minneola Bridge and a long pedestrian trail bridge thru a wetland area of the proposed trail alignment.
- **North Hancock Road Extension, Clermont (FDOT Lap), 2014 -** Geotechnical Investigations for planning, design and permitting of the proposed Lake County roadway. Project geotechnical design assistance provided for approximately 7,200 feet of new roadway, stormwater management systems, traffic signal structures, and retaining wall design and milling and resurfacing.
- **Okeechobee Utility Authority, Expansion of Effluent Disposal System:** OUA retained AEI to provide hydrogeologic services to expand the disposal capacity of the Cemetery Road WWTF where Mr. Jones has been the engineer of record. After performing extensive Geotechnical and Hydrogeologic Investigations and Groundwater Modeling of the site it was determined that disposal of the required capacity (4 MGD) would not be possible via the surficial aquifer. AEI was then tasked with performing a feasibility study for use deep well injection for disposal of treated effluent. Following the successful completion of the feasibility study, AEI was authorized to begin design and permitting of the Injection Well System. Permitting of the project thru SFWMD and FDEP UIC was completed for a Class V Group 9 exploratory well, consisting of a 24-inch diameter well to 3200 feet, and an associated dual zone monitoring well with monitoring intervals of 1650 and 1900 feet below grade. AEI provided full-time QA/QC construction oversight and FDEP TAC reporting of the project. AEI also permitted the test well for operational testing and later obtained an operations permit from FDEP for the operation of the injection well system.
- **City of Cocoa, Jerry Sellers WRF Aquifer Storage and Recovery Well:** Preparation of well construction specifications for the Cocoa Reclaimed Water ASR Exploratory Well that was drilled in cooperation with the SJRWMD. Managed well construction oversight, cycle testing of the exploratory ASR well and preparation of summary reports to FDEP.
- **Volusia County, Florida:** Provided hydrogeologic groundwater modeling services in support of AEI's CUP application preparation for the county. Constructed hydrogeologic cross sections for groundwater model calibration, collected all available groundwater monitoring well data from SJRWMD and USGS, and modeled specific impacts to Surficial, Lower and Upper Floridan Aquifer groundwater associated with well pumping scenarios for county WTP wells.
- **City of Eustis, Consumptive Use Permit Renewal –** This project included consultation with City Staff to act on the City's behalf to coordinate, prepare, and provide all necessary


information required by SJRWMD for permitting of the future water supply needs of the City, evaluation of historic usage, preparation of water demand projections and evaluation of impacts associated with projected groundwater withdrawal from the City Wellfields.

- **Cities of Deland and Edgewater, Florida:** Hydrogeologic and geologic services provided included regional groundwater modeling services in support of CUP application preparation.
- **The Cities of Sanford and Lake Mary, Florida:** Provided hydrogeologic groundwater modeling services in support of the preparation of CUP applications by these two cities. Constructed four (4) hydrogeologic cross sections for groundwater model calibration, collected all available groundwater monitoring well data, and modeled specific impacts to Surficial, Lower and Upper Floridan aquifer groundwater associated with well pumping scenarios for both cities.
- **City of Leesburg, Highland Lakes and Royal Highlands WTP Facilities:** Provided hydrogeologic and geologic services that included technical well specification preparation, well construction oversight, and geophysical logging for two (2) Lower Floridan Aquifer supply wells. Services planned in 2004 will include supply well pumping performance testing.
- **City of Leesburg, Sleepy Hollow Recreation Complex:** Provided hydrogeologic and geologic services for three (3) city irrigation wells that included CUP permit application preparation, associated well construction specification preparation, well construction oversight, geophysical well logging and specific capacity testing, and well abandonment services.
- **City of Eustis, Consumptive Use Permit Renewal** – This project includes on-going consultation with City Staff to act on the City’s behalf to coordinate, prepare, and provide all necessary information required by SJRWMD for permitting of the future water supply needs of the City, evaluation of historic usage, preparation of water demand projections and evaluation of impacts associated with projected groundwater withdrawal from the City Wellfields.
- **Spruce Creek South WWTF, Sumter County, FL:** This project consisted of a hydrogeologic study to evaluate the rapid infiltration basins (RIBs) of the domestic wastewater treatment facility (WWTF) conducting a load test to determine the infiltration and treatment capacity of the RIBs for expansion of the WWTF.
- **Wekiva Spring Shed Assessment for City of Eustis ORC** - This assessment was conducted to analyze the impacts of development in Eustis area to support the City’s Comprehensive Plan Amendment and respond to DCA comments. Site-specific hydrogeologic investigations, investigation and evaluation of surface water flow systems, detailed particle tracking modeling using the SJRWMD’s East Central Florida (ECF) regional groundwater model and the USGS MODPATH model were conducted to calculate the location of spring flow recharge areas and the time of travel from the point of recharge (surficial aquifer) to the point of discharge (springs). The model results were used to address aquifer recharge issues.
- **Groundwater Sampling for Marion County Utilities** - Conducted continuing groundwater monitoring activities required by FDEP permits for waste-water treatment facilities within Marion County, recently purchased from Florida Water Services.

- **Bellechase Subdivision, C.R. 475 in Ocala** - Geotechnical and Hydrogeologic Investigations for design of alternative stormwater retention systems due to thick layers of clay, and design of roadway under-drains to intercept groundwater seepage.
- **Codding Class 3 Landfill, C.R. 46, Lake County** - This project included a geotechnical investigation and a hydrogeologic study at an existing borrow pit to characterize the shallow aquifer and the Floridan aquifer for evaluation, design, and permitting of a Class 3 landfill. A series of SPT borings were drilled into the limestone (70 to 230 feet deep) to investigate foundation support for the landfill, identify confining layers and define the depth of rock. Over 15 piezometers were installed to measure groundwater levels and potentiometric levels for groundwater contour mapping. Designed a liner system and a monitoring plan for permitting of the landfill.
- **City of Tavares, Woodley Road Wastewater Treatment Plant & RIBs** - This project included geotechnical investigations for storage tanks and wastewater treatment plant structures to evaluate foundation support and estimate settlements. In addition, a hydrogeologic investigation and groundwater flow modeling was completed for expansion of rapid infiltration basins (RIBs) to estimate the effluent disposal capacity and to develop a groundwater monitoring plan.
- **S.W. 17<sup>th</sup> Street Former Landfill for City of Ocala Engineering Dept** - A hydrogeologic investigation was conducted to delineate the horizontal and vertical extent of buried debris and define groundwater conditions within the former landfill and provide recommendations for future land use.



Ron DeSantis, Governor



**STATE OF FLORIDA**

**BOARD OF PROFESSIONAL ENGINEERS**

THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE  
PROVISIONS OF CHAPTER 471, FLORIDA STATUTES


**JONES, RAYMOND WILLIAM**

7210 LAKE DRIVE  
SANFORD FL 32771-9284

**LICENSE NUMBER: PE58079**

**EXPIRATION DATE: FEBRUARY 28, 2023**

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**NICOLAS E. ANDREYEV, P.E.**

President

**BUSINESS RESIDENCE:** 4055 St Johns Parkway  
Sanford, Florida 32771

**EDUCATION:** Master's of Science in Environmental Engineering  
University of Central Florida, 1985.  
Bachelor of Science, Civil Engineering (Geotechnical)  
University of Maryland; Maryland 1980

**REGISTRATIONS:** Professional Engineer, Florida Registration #35459

**YEARS OF EXPERIENCE:** 39

**SUMMARY OF CAPABILITIES:**

Sinkhole Investigations	Geotechnical Engineering
Hydrogeologic Assessment	Landfill Design and Permitting
Regional Water Supply Planning	Numerical Model Development
Effluent Disposal Irrigation Systems	Regional Water Balance Analyses
Regional Water and Groundwater Modeling	Wetland Impact Modeling
Pavement Design	

Mr. Andreyev has a long experience in the planning, investigation and assessment of groundwater systems, modeling of groundwater flow and contaminant transport and characterization of both large and small hydrogeologic systems in Florida and internationally. Typical hydrogeologic projects include effluent disposal design and modeling, specific impact and cumulative impact assessments for regional water supplies, water balance analyses, spring flow modeling, wetland water level modeling, lake and rivers effects modeling, lake-wetland interaction assessment and numerous other surface water and groundwater interaction systems assessment and modeling.

In the last 3 years he has been the company's quality assurance and quality control manager and director of all sinkhole investigations. Mr. Andreyev has extensive experience with sinkhole assessments throughout Florida. He has successfully completed over 1,000 projects associated with characterization of soil and groundwater conditions of shallow and deep aquifers, foundation analysis, sinkhole assessment and stabilization, modeling of surface and groundwater flow and assessment of effluent disposal systems and water/groundwater quality.

Working in Central Florida since 1980, Mr. Andreyev has conducted projects of varying complexity and uniqueness, including research and development of the methodology to design stormwater retention ponds (MODRET model), which has been adapted by the water management districts throughout Florida, other states and overseas.

**Sinkhole Investigations in Florida**

Mr. Andreyev has managed and completed numerous sinkhole claim assignments in Central and South Florida. Responsible for inspecting structures and properties for damages and surface features, conducting floor elevation surveys, coordinating geophysical studies, reviewing published data, planning and carrying out subsurface exploration programs, interviewing homeowners, data evaluation/analysis, and report preparation. Prepared recommendations for numerous land and foundation stabilization properties with confirmed sinkhole activity. Coordinated numerous monitoring stabilization processes conducted by the contractor.

**The Villages of Sumter, Sumter County, Florida**

This project includes a planned development area of about 11,000 acres and a population of 70,000. The water supply planning and permitting included regional characterization of aquifer system, site specific aquifer performance testing, regional modeling of aquifer recharge and pumping impacts, development of a new methodology for regional impact assessment, and regional water balance analysis. The new methods have been accepted by the water management districts as "best water management" approach for large developments.

**West Volusia Water Suppliers, Volusia County, Florida:**

This project consisted of development of a transient regional groundwater model for the western Volusia County. The model was developed for the municipal water suppliers in the region, including Volusia County, City of DeLand, City of Deltona and Orange City. The combined potable water supply needs for these suppliers is about 30 MGD. The project included converting the existing SJRWMD's steady state regional model to a transient model and recalibrating the model to 9 years of observed data. The model incorporated all known withdrawals (municipal, commercial, agricultural, private, other), all known effluent disposal systems, all known irrigation areas, all stormwater recharge, all surface runoff and direct discharges, all known spring flow data, known stormwater capture and reuse, lake level data, wetland level data and aquifer monitoring well data. The final model was then used to assess future impacts on local area lakes, wetlands, spring flows and other legal water users.

**City of Winter Garden, Orange County, Florida:**

This project consisted reuse master plan development, interlocal agreements with City of Ocoee and City of Apopka to reuse reclaimed water, detailed evaluation of existing rapid infiltration basins (RIBs) for wet weather effluent disposal, regional modeling of wellfields, wetland impact analysis and development of long term monitoring plan for the shallow and deep aquifer and for potentially affected wetlands.

**City of Ormond Beach, Florida:**

This project consisted of initially developing and implementing a regional saltwater intrusion groundwater monitoring plan for the various city wellfields. The purpose of the monitoring plan was to evaluate the trends of saltwater intrusion into the city wellfield system and to provide an early warning system for potential contamination of aquifer. Subsequently, an innovative and new model was developed for the wellfields to predict future changes of water quality and water levels in the region. The model was developed using new techniques of self-calibration based on available data and continued correction of the model's predictive tools using additional data as it is collected and entered into the model. The model is a planning tool for the city to assess the water supply needs and the corresponding potential adverse impacts on the regional groundwater quality and wetlands.

**PUBLICATIONS:**

Barfield, S. E.; Andreyev, N.E.; "Sand Slurry Injection: An Alternative Remediation for Special Projects", ASCE, Proceedings of the 11<sup>th</sup> Annual Karst Conference, September 20-24, 2008, Tallahassee, Florida.

Andreyev, N.E.; "Retention Ponds Infiltration Analyses in Central Florida", Master's Thesis, University of Central Florida, May, 1985.

Andreyev, N.E.; Wiseman, L.P.; "Stormwater Retention Pond Infiltration Analyses in Unconfirmed Aquifers", Permitting Guidelines for Southwest Florida Water Management District, 1989.

Andreyev, N.E.; "MODRET - Groundwater Flow Computer Model", Permitting Guidelines for Southwest Florida Water Management District, March, 1989.

Sear, T.R.; Andreyev N.E.; "Cranes Roost Lake Level Management Project", ASCE, Proceedings of the 17th Annual National Conference, April 17-21, 1990, Forth Worth, Texas.

Andreyev, N.E.; "2DSALT - Saltwater Intrusion Computer Model For One Layer Aquifer System (Pre and Post-Processors)", August, 1991.

Andreyev, N.E.; Rowney, A.C.; Pugh, F.; "3DSALT - Three Dimensional Saltwater Intrusion Computer Model (A Modular Addition To The U.S.G.S. MODFLOW Model)", August, 1991.

Andreyev, N.E.; Segnini, L.; "Guía Nacional - Estaciones Experimentales para el Reuso de las Aguas Servidas Tratadas, Plantas de Tratamiento de Cabimas y Ciudad Ojeda", March, 1994.

Andreyev, N.E.; "FDModel - Computer Model to Design Filter Drains & Underdrains for Stormwater Retention Ponds", May, 1995.



Ron DeSantis, Governor

Halsey Beshears, Secretary



**STATE OF FLORIDA  
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION**

**BOARD OF PROFESSIONAL ENGINEERS**

THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE  
PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

**ANDREYEV, NICOLAS E.**

100 SOUTH INTERLACHEN AVENUE, #402  
WINTER PARK FL 32789

**LICENSE NUMBER: PE35459**

**EXPIRATION DATE: FEBRUARY 28, 2021**

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## **CURRICULUM VITAE**

**Shawkat Ali, Ph. D., P.E.**  
Geotechnical Engineer

**BUSINESS RESIDENCE:** 4055 St. John's Parkway  
Sanford, Florida 34711

**EDUCATION:** Ph. D. (Civil Engineering)  
University of Illinois at Urbana-Champaign; 1992

Master of Engineering (Soil Engineering),  
Asian Institute of Technology (AIT), Bangkok: 1975

B. Sc. Engineering (Civil),  
Bangladesh University of Engineering & Technology, Dhaka; 1970

**REGISTRATION:** Professional Engineer, Florida License No. 52568

**SOCIETIES:** American Society of Civil Engineers-Member  
American Society for Testing and Materials-Member

**YEARS OF EXPERIENCE:** 37

### **SUMMARY OF CAPABILITIES:**

Sinkhole Investigations  
Geotechnical Site Characterization  
Laboratory Testing of Soil, Rock, Aggregate and Geosynthetic Liners  
Shallow and Deep Foundation Design  
Soil and Rock Mechanics  
Geotechnical Instrumentation  
Soil and Rock Slope Stability Analyses  
Hydrogeologic Evaluation and Groundwater Monitoring

Dr. Ali has 30 years of experience providing geotechnical engineering, materials testing and consulting services. These services include planning/ coordinating subsurface exploration and laboratory testing programs, geotechnical instrumentation, geotechnical engineering analyses and providing recommendations relating to the design and construction of roadways, structures and earthwork projects. In addition to his experience in geotechnical engineering projects in New Jersey and Florida he has overseas experience in Singapore and Saudi Arabia. As Senior Project Engineer for AEI's Sanford office, Dr. Ali is responsible for providing senior geotechnical engineering

and materials testing services, hydrogeologic evaluation and infiltration analyses of aquifers, groundwater monitoring of landfill sites, mentoring staff professionals and business development.

Dr. Ali has extensive experience in the analyses and evaluation of field and laboratory test data, performing in-situ soil testing, shallow and deep foundation studies, and groundwater hydrology. He has evaluated bearing capacity and settlement of various types of shallow and deep foundation systems. He has worked extensively on stability evaluation of gypsum stacks including field and laboratory testing of gypsum, seepage and slope stability analyses. He has provided consultation services in connection with large scale soft ground improvement projects including soil improvement using preloading, sand drains and dynamic compaction. He has installed extensive series of geotechnical instruments (piezometers, inclinometers and settlement gauges) for municipal landfills, gypsum stacks and soil improvement projects.

Dr. Ali has provided geotechnical engineering services in connection with the identification and remediation of sinkhole related damages to many residential structures. He has provided geotechnical engineering consulting services for various government entities including U.S. Army Corps of Engineers, Orange County Public Works, Orange County Public Schools, Osceola County Public Schools and the Florida Department of Transportation. He worked on various projects of Port Canaveral Port Authority and managed the geotechnical study of Southeast Landfill in Hillsborough County.

The following is a description of some of the projects for which Dr. Ali has provided geotechnical engineering services for:

#### **Sinkhole Investigations in Florida:**

Carried out geotechnical engineering studies on numerous sinkhole claim projects to determine whether or not sinkhole activity were the cause of the damages. The work involved the inspection of the structures and properties for damages, conducting floor elevation surveys, coordinating ground penetrating radar (GPR) surveys, reviewing published information, planning and supervising subsurface explorations, evaluation of the results of the investigations and preparation of report. Prepared recommendations for foundation stabilization and remediation for properties with confirmed sinkhole activity. Supervised the monitoring of foundation stabilization and remediation activities by the contractors.

#### **Geotechnical Projects:**

Tunnels for Super Conducting Super Collider, Waxahachie, TX- The project involved the construction of 25-mile long tunnel for the super collider experiments for subatomic particles. Carried out extensive testing program for evaluation of the strength and swelling characteristics of Taylor Marl and Eagle Ford Shale for the tunnel construction.

Tihama Roadway Project, Saudi Arabia - The project involved construction of roads connecting the coastal cities of Red Sea with towns located on top of 7000 feet high Tihama mountains. Performed laboratory tests and rock mass classification.



Analyzed the stability of rock slopes, designed rockbolts for slope stabilization and designed tunnel linings.

Desalination Project, Jeddah, Saudi Arabia - Performed geotechnical investigation for site characterization using extensive field exploration and laboratory testing. Supervised improvement of loose coastal soils using dynamic compaction and designed shallow and deep foundations for the various structures.

Prai Power Station, Malaysia - Project involved the construction of power house structures over 100 feet thick deposit of soft marine clay. Performed site investigation and designed prestressed concrete precast pile foundation for the heavy structural loads. Interpreted pile load test results.

Changi International Airport, Singapore - Project involved the reclamation of 5 square miles area from the sea for the construction of the new airport, by placing 30 feet of hydraulic fill over 100 feet thick deposit of marine clay. Performed extensive in situ and laboratory testing of the soft clay. Designed soil improvement programs using surcharge loading, sand drains and geodrains. Installed pneumatic and vibrating wire piezometers, inclinometers and settlement probes and monitored the progress of the soil improvement over a period of 3 years.

Pan Island Expressway, Singapore - Planned and supervised the site investigation for the bridges and flyovers for the 20- mile long expressway. Designed steel H pile and steel pipe pile foundation for the structures. Analyzed the settlement and stability of road embankment over very soft clay deposits. Tested aggregate materials and designed pavement cross sections for the expressway.

#### **Landfill Projects:**

Seminole Electric Palatka Generating Station – Performed geotechnical site characterization including analyses of strength and consolidation test results for the fly ash landfill expansion project. Performed settlement analyses at individual boring locations and plotted settlement contours for the entire landfill expansion site. Analyzed stability of the proposed fly ash landfill slopes to be built over underlying soft clay layers.

ACMS Landfill, Sumter County – Interpreted the results of the extensive series of SPT borings and CPTU borings. Performed settlement and slope stability analyses of the landfill slopes built over very soft limesilt layers.

CR 33 Class 3 Landfill and CR 466A C&D Landfill, Lake County – Performed geotechnical and hydrogeological analyses for the sites for permit renewals. Preparing quarterly, semi-annual and biennial ground water monitoring reports for the landfill sites as required under FDEP permit conditions.

Southeast Landfill, Hillsborough County -- The project involved the evaluation of the performance of 15 to 20 feet thick very soft phosphatic clay as bottom liner for the

municipal solid waste landfill. The strength and compressibility of the very soft clay was tested by vane shear and piezocone tests in the field and triaxial and consolidation tests in the laboratory. Determined pore pressure dissipation under the refuse load at different depths in the clay using piezoprobe measurements over a period of 4 years and recommended the schedule of refuse lift placement.

Gypsum Stacks, Bartow -- Performed laboratory testing for strength, permeability and secondary compression (creep) characteristics of phosphogypsum from various 100 to 200 feet high stacks. Analyzed the stability of the stacks using Slope/W and UTEXAS4 computer programs. Supervised extensive series of permeability testing of clay liners including geosynthetic clay liners for the bottom of the stacks and conformance and destructive testing of synthetic liners for top covers.

Fresh Kills Landfill, Staten Island, NY - Prepared site characterization report for the 2500-acre landfill built over 20 to 30 feet thick soft marine clay using field and laboratory tests. Analyzed the stability of the slopes and installed extensive series of piezometers, inclinometers and settlement gauges to monitor the stability of the landfill as it was being filled to a height of 350 feet.

#### **Hydrogeological Projects:**

Okeechobee Utilities Deep Injection Well – Performed hydrogeological evaluation and analyses of the site for FDEP permitting of the deep injection well for secondary treated waste water at a depth of 3500 feet.

Cocoa Aquifer Recharge Project – Performed hydrogeological evaluation including analyses of pumping test results for the FDEP permitting of aquifer storage and recharge wells for Cocoa water supply authority.

#### **Publications:**

Mesri, G. and Ali, S. (1999) "Undrained shear strength of a glacial clay overconsolidated by desiccation", *Geotechnique*, Vol. 49, No. 2, 181-198.

Mesri, G., Feng, T. W., S. Ali and Hayat, T. M. (1994) "Permeability characteristics of soft clays" *Proc. 13th International Conf. on Soil Mechanics and Foundation Engineering*, New Delhi, Vol. 1, 187-192.

Mesri, G. and Ali, S. (1988) Discussion of "Hydraulic fracturing in embankment dams" by J. L. Sherard, *Journal of Geotechnical Engineering*, ASCE, Vol. 114, No.6, 742-746.

Ali, S., Kazi, A. and Alquhtani, M. B. (1985) "Geotechnical aspects of a recent lagoonal Sabkha deposit in Jeddah", *8th Southeast Asian Geotechnical Conference*, Kuala Lumpur, Vol. 1, 1-8.

#### **Client References:**

Cypress Property and Casualty Insurance Company

Citizens Property Insurance Corporation



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**Robert B. Cornelius, P.E.**  
**Andreyev Engineering, Inc.**  
Geotechnical Engineer

**BUSINESS RESIDENCE:** 1170 W. Minneola Avenue  
Clermont, Florida 34711

**EDUCATION:** Bachelor of Science, Civil Engineering  
University of Central Florida, Orlando, Florida; 2004

**REGISTRATIONS:** Professional Engineer, Florida Registration #69864

**YEARS OF EXPERIENCE:** 17

**SUMMARY OF CAPABILITIES:**

Sinkhole Investigations  
Deep Foundation Engineering  
Soil Mechanics  
Shallow Foundation Engineering

Quality Control-Quality Assurance  
Engineered Materials Testing and Inspection  
Geotechnical Instrumentation

Mr. Cornelius has more than 17 years of experience providing environmental engineering, geotechnical engineering, materials testing and consulting services. These services include planning/ coordinating subsurface exploration and laboratory testing programs, geotechnical engineering analyses and providing recommendations relating to the design and construction of roadways, structures and earthwork projects.



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## CURRICULUM VITAE

**Jeffery E. Eller, P.E.**  
Senior Geotechnical Engineer

**BUSINESS RESIDENCE:** 3740 54th Avenue North  
St. Petersburg, Florida 33714

**EDUCATION:** Bachelor of Science, Environmental Engineering  
University of Florida, Gainesville, Florida; 1996

**REGISTRATIONS:** Professional Engineer, Florida Registration #57434

**SOCIETIES:** American Society of Civil Engineers-Member

**YEARS OF EXPERIENCE:** 23

### SUMMARY OF CAPABILITIES:

Geotechnical and Hydrogeologic Studies  
Phase I/Phase II Environmental Assessments  
Groundwater/Environmental Monitoring Plans  
Consumptive Use Permitting  
Drainage and Infiltration Studies  
Well Installation and Permitting

Building Inspections for Asbestos Containing Materials  
Geotechnical Investigations for Building Foundations, Roadways and Pipeline  
Quality Control Inspections and Testing of Construction Materials on All Types of Construction Projects

Mr. Eller has over 21 years of experience and has successfully managed numerous geotechnical and environmental projects throughout the state of Florida. Currently his duties include overall manager and engineer of AEI's St. Petersburg, Florida office.

### **Andreyev Engineering, Tampa Branch Manager (1998 to Present)**

Responsibilities include: Direction and management of the St. Petersburg branch office for AEI, including: coordination of all projects and execution of engineering work for environmental, geotechnical and construction materials testing projects. Mr. Eller is also responsible for all client interaction and execution of projects, marketing and development.

### **Mevers and Associates, Project Manager (1996 to 1998)**

Engineer work included field tech supervision, coordination and report preparation of over 120 geotechnical projects and 170 environmental projects.

The following is a description of projects for which Mr. Eller has provided engineering services for:

### **Sinkhole Investigations in Florida**

Served as project manager on numerous sinkhole claim assignments in Central, North and South Florida. Responsible for inspecting structures and properties for damages and surface features, conducting floor elevation surveys, coordinating geophysical studies, reviewing published data, planning and carrying out subsurface exploration programs, interviewing homeowners, data evaluation/analysis, and report preparation. Prepared recommendations for land and foundation stabilization for properties with confirmed sinkhole activity. Responsible for monitoring stabilization processes conducted by the contractor.

### **The Villages of Marion, Lake and Sumter Counties**

Development and execution of environmental monitoring plans for water use permits and development orders, continuous simulation modeling of lakes and groundwater elements throughout the project area, water balance modeling of proposed lined stormwater ponds and withdrawal wells for irrigation, coordination and reporting of various geotechnical, hydrogeologic and karst investigations throughout The Villages development. Performed for The Villages of Lake Sumter.

### **Wetlands at Districts 9 and 10, Villages of Sumter, Lady Lake**

Completed computer simulations in order to determine hydrologic responses of numerous wetland areas in the post development condition. Project also consisted of the creation of a roughly 450 acre mitigation area at the site of a former dairy farm and sod farm. In order to assist in the design a 10 year simulation was run to establish expected high and low groundwater levels. Performed for The Villages of Lake Sumter.

### **Sunrise Development, Hernando County, Florida**

Performed a site specific karst investigation over the 1,400 acre property for inclusion in the DRI application. Investigations included exploratory borings, preparation of a photolineament studies and groundwater monitoring plan and development of recommendations for suitability and development. Performed for Professional Land Development.

### **Proposed Goodwill Development, Spring Hill, Hernando County, Florida**

Performed a Geotechnical and Sinkhole Investigation for the commercial retail development. Investigation included exploratory borings, ground penetrating radar and preparation of engineering recommendations. Performed for the Sembler Company.

### **Sunset Sand Mine Landfill, Pasco County**

Completed a hydrogeologic study for the proposed landfill as well as developing a groundwater monitoring plan in accordance with FDEP rules. Performed for S2LII.

### **Land O'Lakes Wastewater Treatment Plant and Pasco Interconnect Reuse Pipeline, Pasco County**

Completed geotechnical investigations on both the treatment plant and the pipeline corridor which included foundation design of storage tanks, treatment basins and pipe bedding recommendations. Prepared for King Engineering.

### **Cannon Ranch, Pasco County**

Completed various geotechnical and hydrogeological investigations related to the design of the proposed active adult community. Prepared for Del Webb Corporation.

### **Publix, Shoppes at Englewood**

This project included preparation of a Phase I environmental assessment and also a full geotechnical study. Prepared for Monroe's Prestige Group

### **Ocala Springs Development, Marion County, Florida**

Performed site specific Karst Investigations for the DRI submittals which included 9,000 acres. Investigations included exploratory borings, preparation of a Photolineament Studies and development of recommendations for suitability and development. Performed for DECCA.

### **Client References:**

St. Johns Insurance  
Citizens Property Insurance Corporation





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## **CURRICULUM VITAE**

### **Vivian J. Bielski, P.G.**

Senior Geologist

**BUSINESS RESIDENCE:** 3740 54th Avenue North  
St. Petersburg, Florida 33714

**EDUCATION:** Bachelor of Science, Environmental Science  
Ohio University; 1981  
Master of Science, Geological Science  
Ohio University, 1985

**REGISTRATIONS:** Professional Geologist, Florida Registration #PG1912

**YEARS OF EXPERIENCE:** 33

#### **SUMMARY OF CAPABILITIES:**

Ms. Bielski has over 30 years of experience and has successfully managed numerous geotechnical and environmental projects throughout the State of Florida. Currently her duties include overall development of Water Use Permits and Consumptive Use Permits, tracking of those permits, design of well testing and well refurbishment projects, and design of aquifer performance and water quality testing programs at AEI's St. Petersburg, Florida office.

The following is a description of projects for which Mrs. Bielski has provided engineering services for:

#### **The Villages of Marion, Lake and Sumter Counties**

Development of water use permits, groundwater withdrawal simulation modeling review and water level data analyses, coordination on various geotechnical and hydrogeologic investigations and water supply investigations throughout The Villages development.

#### **Marion County Utilities Consumptive Use Permitting and Water Use Permitting**

Development and finalizing the permit applications with the St. Johns River Water Management District staff and the Southwest Florida Water Management District staff.

#### **Cemex Mining Company Water Use Permit application review and coordination**

Coordinated with this company and other consultants to finalize the permit applications with the Southwest Florida Water Management District staff, completing geotechnical investigations of water handling procedures, water level analyses, and water use impact analyses.

### **Dixie Lime and Stone Company Mine Water Use Permit application review and coordination**

Coordinated with this company and other consultants to finalize the permit applications with the Southwest Florida Water Management District staff, completing geotechnical investigations of water handling procedures and water level analyses.

### **City of Groveland Consumptive Use Permit application**

Finalizing the permit applications with the St. Johns River Water Management District staff.

### **Stone Creek development Water Use Permit applications**

Development of applications for the golf course irrigation and common area landscape irrigation water use. Development of a groundwater flow model for the golf course for prediction of potential impacts.

### **Aqua Utilities, Ocala Springs Consumptive Use Permit and Water Use Permit applications**

Finalizing the permit applications with the St. Johns River Water Management District staff and the Southwest Florida Water Management District staff. Coordination on the Aquifer Performance Testing and development of a report of the results of the testing. Developed a design for a replacement well based upon water quality testing results.

### **Hampton Hills A Florida General Partnership Impact Analysis Report**

Developed a groundwater flow model for prediction of potential impacts as a result of the withdrawals to be submitted in support of the application for modification of the Water Use Permit.

### **Center Hill LLC and Shady Brook LLC Water Use Permit modification applications**

Development of the applications to modify the two existing Water Use Permits. Development of a groundwater flow model for prediction of potential impacts as a result of the withdrawals.

### **Ocala Springs Consumptive Use Permit coordination**

Development and finalizing the permit applications with the Southwest Florida Water Management District staff.

### **Dupont de Nemours Consumptive Use Permits coordination**

Development and finalizing the permit application with the St. Johns River Water Management District staff.



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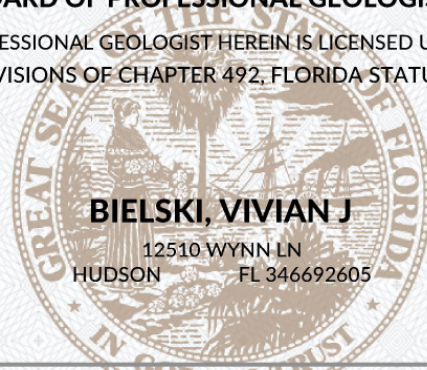
Julie I. Brown, Secretary



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## **CURRICULUM VITAE**

### **Shawn E. Carswell, P.G.**

Geologist/Engineering Technician

**BUSINESS RESIDENCE:** 4055 St. John's Parkway  
Sanford, Florida 34711

**EDUCATION:** Bachelors of Science in Geology  
University of South Florida, 2010

**REGISTRATIONS:** Professional Geologist, Florida Registration #PG2963  
10 hour OSHA certified  
40 hour OSHA HAZWOPER certified

**YEARS OF EXPERIENCE:** 9

#### **SUMMARY OF CAPABILITIES:**

Soil and Groundwater Sampling  
Geotechnical Field Investigation Activities  
Drilling Monitoring for Sinkhole Investigations  
Grout Monitoring for Sinkhole Remediation

Mr. Carswell has been trained in providing drilling and grout monitoring services in Pasco, Hernando, and Hillsborough Counties. For drill monitoring, his duties include monitoring all drilling activities conducted by the drilling company, completing well classification logs for each boring, and insuring that the site is left in good condition upon completion of drilling activities. For grouting activities, his activities include daily monitoring all of the grouting activities conducted by the grouting contractor, including recording applicable readings of grouting pressure and grout quantities.



Ron DeSantis, Governor

Halsey Beshears, Secretary



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