

May 1, 2020

Ms. Missy Daniels, AICP, Growth Management Director
Alachua County Department of Growth Management
10 SW 2nd Avenue
Gainesville, Florida 32601

Re: Owner's Request to Initiate Special Area Study

Dear Missy:

On behalf of our client, Kanapaha Timber, Land & Cattle Company, LLLP ("Kanapaha Ranch"), and pursuant to Article 16 (Special Area Plans) of the Alachua County Comprehensive Plan and Unified Land Development Code (ULDC), this letter requests approval of the enclosed proposed scope of work for a Special Area Study (SAS) and Plan (SAP) of the ~4,000 acres owned by our client in western Alachua County, Florida.

We completed a pre-application conference with staff (§402.99 ULDC) and have met with all but one of the County Commissioners, none of whom voiced opposition to conducting the SAS on this property. Accordingly, please find attached for the County's consideration under §402.100(b) Specific Elements, ULDC, the consultants' proposed scope of work for the SAS.

Consultants' Scope of Work – SAS – Kanapaha Ranch

Mark Culbreth, P.G., Principal Hydrogeologist of Environmental Consulting & Technology (ECT), and an expert in karst geology, proposes the following scope of work for the assessment of significant geological resources that may be present on the property:

ECT SCOPE OF WORK: (§402.100(b) Specific Elements 1, 3, 4, 8)

Fracture Trace/Lineament Analysis

ECT will download aerial photographs from University of Florida and Florida Department of Transportation repositories and conduct fracture trace and lineament analyses to identify such features that may be present on the property and evaluate the potential association of these features with documented sinkholes caves, or other geologic features.

Site Visit

An ECT geologist will visit the site and document the geologic features known to exist on the property. Geographic coordinates will be acquired of each geologic feature using a Global Positioning System (GPS) receiver. These features will be plotted on the aerial photograph to evaluate their proximity to mapped fracture traces and lineaments.

Geologic Feature Watershed Analysis

ECT will collect available LiDAR data and develop a Digital Elevation Model (DEM) of the areas around mapped fracture traces, lineaments, and other geologic features. A topographic analysis of the land surface will be conducted to identify the watershed associated with the identified geologic features.

A copy of Mr. Culbreth's c.v. is attached to this letter.

ERC SCOPE OF WORK: (§402.100(b) Specific Elements 1, 3, 4, 8)

Peter M. Wallace, MS, principal of Ecosystem Research Corporation (ERC), whose specialty is plant and animal habitat mapping and assessment of disturbance in natural systems, proposes to assess the following resources that may be present on the Kanapaha Ranch property:

- Potentially significant plant and general habitat, identifying native and successional plant communities, and general areas of large regulated trees;
- The occurrence and general location of threatened and endangered plant and animal habitat, using GPS coordinates to locate any gopher tortoise burrows encountered (and excluding aquatic cave fauna or subterranean reptiles or amphibians);
- The presence of surface waters and wetlands, generally delineating with GPS but not flagging the boundaries;
- Depressional areas for the presence of listed plant species, but not aquatic fauna that may occur in wet caves or open wet depressions; and
- The distribution of communities in relation to mapped soil types for identification of possible xeric habitat boundaries. Data will be further refined using the 2001 LiDAR topography, USGS closed depression database, and the TINs coverage provided with the LiDAR topography.

A copy of Mr. Wallace's c.v. is attached to this letter.

CHW SCOPE OF WORK: (§402.100(b) Specific Elements 1, 2, 5, 6, 7, 8)

Gerry Dedenbach, AICP, CHW Vice President, and Kevin W. Hewett, PLS, CHW Vice President propose the following scope of work for the Kanapaha Ranch SAS:

Planning Services

- Analysis of all properties within and immediately abutting the mapped Hickory Sink Strategic Ecosystem, including basic information about acreage, current uses, and owners for each parcel;
- Description of relevant infrastructure, including transportation facilities;
- Description of the planning process, pursuant to Article 3 of Chapter 402.100, ULDC, to be used to develop the Special Area Plan, including means of public participation and an outline of the SAP; and

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- Analysis of the planning issues to be addressed through the SAP planning process as they relate to the county comprehensive planning goals.

Surveying Services

- Document the field work conducted by ECT and ERC to consolidate the field data for exact land quantifications of ecological areas; and
- Produce presentation-quality digital survey zonal maps for applications, public hearings and participation; and
- Produce final quantitative maps documenting the SAS and updated county overlay mapping.

Copies of Mr. Dedenbach's and Mr. Hewett's c.v. are attached to this letter.

We look forward to your prompt response and scheduling of this item for public hearing at the County Commission, possibly on the Consent Agenda. If you need further information, please contact me directly.

Regards,



Gerry Dedenbach, AICP
Vice President,

Enclosures: (4) Consultants' curriculum vitae

cc: Patrice Boyes, Esq.

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MARK A. CULBRETH, P.G.
Vice President/Senior Principal Scientist

Education

M.S., Geology—University of South Florida, 1988
B.S., Geology—University of South Florida, 1983

Registrations

Professional Geologist, Florida, No. 1217

Mr. Culbreth has more than 32 years' experience as a hydrogeologist and project manager. He has bachelor's and master's degrees in geology. Mr. Culbreth specializes in the application of sound scientific principles and regulatory requirements in solving unique challenges faced by his clients. He specializes in hydrogeology, the fate and transport of contaminants in the subsurface, analysis of risk-based corrective actions, and brownfields redevelopment.

Contract Manager; Three Florida Department of Environmental Protection (FDEP) Petroleum Restoration Program Contracts—Duties include making sure scope offers are distributed to the appropriate task assignment managers and that they respond to requests for information from FDEP in a timely manner. Work with staff to develop procedures for reviewing scope offers to screen whether the work scope offered is correct and evaluate whether the work can be done profitably before accepting the scope offer. Supported staff evaluating bid opportunities and a go/no go decision process for evaluating bid opportunities. Reviews contract amendments and distributes amendments as well as updates from FDEP to staff. Also serves as one of the technical reviewers for reports and other deliverables prior to submittal to FDEP.

Project Manager; Site Assessment and Remediation, Photoengraving, Inc.—Conducted site assessment related to a chlorinated solvent release at a printing plant in Tampa, Florida. Prepared site assessment report and FDEP approved it. Prepared a pilot test plan consisting of a bench-scale treatability test and field-scale pilot test. Submitted the pilot test report to FDEP with a recommendation to assess the attenuation potential of the aquifer and the stability of the chlorinated solvent plume. In addition to the assessment and remediation activities, this site was also designated a brownfield site, and tax credits are being received to off-set the cost of the assessment and remedial actions.

Project Director; Resource Conservation and Recovery Act (RCRA) Permitting and Remedial Action, DRH7425 Land Trust—DRH7425, formerly known as the General Components site in Largo, Florida, is a RCRA hazardous waste site. Following a long period of inactivity, ECT was retained to conduct groundwater monitoring to evaluate the stability of the chlorinated solvent and metals contaminant plumes. Prepared RCRA Part B permit application. The property changed ownership twice, and ECT prepared permit transfer packages for each change of ownership. ECT prepared a remedial action plan (RAP) to replace active remediation with natural attenuation monitoring. Currently conducting natural attenuation monitoring evaluation.

AREAS OF SPECIALIZATION

Geologic & Hydrogeologic Investigations,
Contamination Assessments, Brownfields
Program Management, Regulatory Compliance
Assistance, Permitting, Development & Analysis
of Risk-Based Corrective Actions, Phase I/II
Environmental Site Assessments, Data Analysis
& Interpretation

Project Director; 2017 Brownfields Contract, City of St. Petersburg—Project manager for City of St. Petersburg Brownfields assessment grant. Grant activities include conducting Phase I and Phase II environmental site assessments (ESAs), as well as providing programmatic support.

Project Manager; RCRA 3013 Work Plan for Bartow Facility, U.S. Agri-Chemicals Corporation (USAC)—USAC is conducting a site assessment under a RCRA 3013(a) order at their chemical complex in Bartow, Florida. Historically, the facility produced sulfuric acid, phosphoric acid, and diammonium phosphate. Chemical operations at the facility have subsequently ceased, and many of the features, such as the phosphogypsum stack system and process water ponds, have undergone closure under an FDEP permit. Prepared responses to U.S. Environmental Protection Agency (EPA) and FDEP comments on the draft site assessment report. Developed a work plan for a hydrogeological assessment designed to assess mechanisms for contaminant transport within the facility and evaluate the potential for offsite migration of phosphogypsum indicator parameters.

Project Manager; NPDES Numeric Nutrient Criteria Analysis, USAC—USAC, as a condition of their NPDES permit, is required to obtain all necessary data and information to confirm that the receiving water body (Bear Branch Creek), downstream from two outfalls meets the applicable numeric nutrient criteria for streams in accordance with Paragraph 62-302.531(2)(c), Florida Administrative Code (F.A.C.). Developed plan of study to conduct the necessary evaluation. Divided plan of study into phases to allow for changes in approach based on stream characteristics and whether the creek meets the criteria for a stream or whether it is a managed conveyance.

Project Manager; Site Assessment, Florida Pest Control & Chemical Co.—Conducted site assessment of pesticide blending operations and active pest control operations in Gainesville, Florida. Site assessment included onsite and offsite assessments, including obtaining site access agreement from CSX. All work was conducted in accordance with Chapter 62-780, F.A.C.

Project Manager; Airport Site Assessment: Former Ag Flying Services, City of Avon Park—Conducted site assessment along the side of a runway where airplanes were staged and filled with chemicals for spraying crops. Conducted site assessment in accordance with Chapter 62-780, F.A.C., and included a summary of source removal activities conducted by the city. FDEP approved the site assessment and the site achieved a site rehabilitation completion order.

Project Director; Assessment of Short- and Long-Term Effect of Event-Driven Fecal Coliform Loading, Clam Bayou Central Stormwater Pond, City of St. Petersburg, Florida—ECT's rapid response and sound reporting relieved public pressure on the city, demonstrating that discharge from a stormwater pond impacted by a raw sewage overflow in a heavy, extended storm event did not present a long-term hazard. ECT conducted a sediment and surface water assessment examining for fecal coliform, *E. coli*, and biomarker analysis to verify there would be no long-term effects and no apparent residual source material in the pond sediment. Collected field parameters, sediment depth, and sediment lithology at six locations within the stormwater pond.

Project Manager; Former Pensacola Manufactured Gas Plant, Confidential Client—Prepared no further action (NFA) modification proposal and engineering control maintenance plan. Worked with FDEP and the Florida Department of Transportation (FDOT) to develop exhibits for Memorandum of Understanding between FDEP and FDOT, Indemnification Agreement between the client and FDOT, and a Conditional Site Rehabilitation Completion Order.

Project Director; Facility Response Plan Update, Gainesville Regional Utilities (GRU)—Updated facility response plan for Deerhaven Generating Station in Gainesville, Florida.

Project Manager; Brownfield Site Rehabilitation Agreement (BSRA), ZP No. 317 LLC—Prepared BSRA for Zimmer Development Corporation's redevelopment of former CSX Parcel 4 in Tallahassee, Florida. Developed soil management plan for contractors to follow during construction activities at the site. Coordinated collection of information and developed voluntary cleanup tax credit application.

Project Manager; Compliance Monitoring of Closed Solid Waste Ponds, Confidential Client—Conducted groundwater monitoring and reporting to comply with a closure permit issued by FDEP. Conducted hydrogeologic investigation of the facility in Fort Meade, Florida, to provide data needed to

complete the closure permit application. In addition, conducted an evaluation of the existing groundwater monitoring program and provided recommendations to reduce the number of parameters requiring monitoring and proposed a regulatory closure strategy to address groundwater quality issues.

Project Manager; Airport Site Assessment: Pool Aircraft, City of Avon Park—Conducted site assessment at a former engine test stand. Site assessment was conducted in accordance with Chapter 62-780, F.A.C. Site assessment included summary of source removal activities conducted by the city. Supplemental site assessment activities are underway to complete the assessment.

Project Geologist; City of Tallahassee: Gas Pocket Investigation—Conducted subsurface assessment along Capitol Circle to investigate sources of depressurization events associated with driving piles for roadway construction. Found depressurization was likely because of excessive heat buildup in the steel piles as piles were driven through dense formations reacting moisture in the formation.

Project Manager; Groundwater Monitoring Plan Evaluation, GRU—Conducted evaluation of groundwater monitoring plan for the Deerhaven Generating Station to evaluate sources of arsenic and gross alpha in groundwater samples collected from one of the monitoring wells. Prepared report summarizing results of the evaluation which was approved by the FDEP.

Project Director, Stormwater Pollution Prevention Plan (SWPPP), GRU—Updated the SWPPP for the Deerhaven Generating Station in Gainesville, Florida.

Project Director; Monitoring Well Replacement, GRU—Replaced groundwater monitoring well damaged by a contractor at the Kelly Generating Station in Gainesville, Florida.

Project Director; Third-Party Advisor on Chlorinated Solvent Remediation at the Young-Rainey STAR Center, Pinellas County—Served as technical advisor to Pinellas County concerning an historic manufacturing facility built in the 1950s that was sold by the U.S. Department of Energy (DOE) to the Pinellas County Industry Council in 1995. One of the legacies from the historic manufacturing operations was chlorinated solvent contamination. The DOE is responsible for conducting remediation of the chlorinated solvents at the STAR Center. Provided technical advice to the county and represented their interests in negotiations with DOE and their consultants. Services included reviewing DOE's reports and plans for supplemental remediation and proposed closure alternatives.

Project Geologist; Citrus County Combined-Cycle Project, Confidential Client—Prepared portions of the site certification application related to geology and hydrogeology. Work consisted of compilation, analysis, and evaluation of existing geologic and hydrogeologic information.

Project Manager; RCRA Closure, Former General Components, Inc.—Conducted closure permit-required groundwater monitoring for purposes of evaluating effectiveness of remedial actions. Prepared RCRA permit transfer for transfer of permit to new owner of the property in Largo, Florida. In addition, submitted application for renewal of post-closure permit in accordance with Chapter 62-730, F.A.C. Acted as liaison between the property owner and the FDEP.

Project Manager; Brownfield Contractor; City of St. Petersburg—Worked with the economic development coordinator for the city, providing programmatic support and participated in community meetings. In addition to conducting 19 Phase I ESAs, prepared 17 health and safety plans, quality assurance project plans (QAPPs), and Phase II ESAs. Conducted Assessments on a variety of properties, including former residential, commercial, and industrial properties. Assessed both petroleum and non-petroleum sites.

Project Manager, RCRA 3013 Actions, Confidential Client—Managing RCRA 3013 assessments at two phosphate processing and fertilizer manufacturing facilities in the phosphate district of Central Florida. Duties include preparation of work plans, negotiating work plans with EPA and FDEP, implementing work plans which includes collection and analysis of soil, groundwater, sediment, and surface water samples. Prepared reports and reviewed with EPA and FDEP.

Project Manager; Site Assessment and Remedial Actions at Former Fertilizer Blending Facility, Vigindustries—Conducted site assessment at former fertilizer and blending facility in Winter Haven, Florida. Contamination consists of typical fertilizer-related chemicals (nitrates, ammonia, and sulfates), organochlorine pesticides, as well as petroleum compounds. The assessment consisted of the analysis of soil, groundwater, sediments, and surface water. A municipal potable well is located within 500 yards of the facility and was sampled to confirm there were no water quality impacts at that well and other water supply wells in the area. Conducted nitrogen and oxygen isotope analyses to investigate the source of nitrates, ammonia, and sulfates in groundwater. A peat layer present in the subsurface is acting as a growth medium for reducing bacteria, which are consuming pesticides compounds and acting as a passive remedial action. Prepared two RAPs based on redevelopment of the property. The RAPs propose soil excavations of areas that will remain unpaved, and the use of buildings and parking areas as engineering controls for underlying portions of the site.

Project Manager; Phase II ESA and Redevelopment Consulting, Former Harmon Glass Property, City of Tallahassee—Retained by the City of Tallahassee to evaluate a property in the Gaines Street Brownfields Area to evaluate the options for site closure and identify soil management requirements that will facilitate redevelopment. Prepared a Phase II ESA report and attended meetings with the FDEP.

Project Manager; Phase II ESA and Redevelopment Consulting, O'Connell Property, City of Tallahassee—Retained by the City of Tallahassee to evaluate a property in the Gaines Street Brownfields area to evaluate the options for site closure and identify soil management requirements that will facilitate redevelopment. Assessed petroleum contamination and found that previously documented groundwater quality impacts were no longer present. Developed a soil management strategy to allow for redevelopment and proper management of potentially impacted soils.

Project Manager; NFA Proposal for J.R. Kelly Generating Station. GRU—Reviewed existing site assessment data and prepared a NFA proposal in accordance with Chapter 62-780, F.A.C. for an historic No. 6 fuel oil release. The NFA proposal consisted of an evaluation of geologic and hydrogeologic setting, a human health and ecological risk assessment, and an evaluation of technical impracticability.

Project Manager; Underground Injection Control (UIC) Permitting, J.R. Kelly Generating Station, GRU—Prepared a UIC permit application to allow for discharge of cooling water into an injection well. Project consisted of evaluating various discharge options including the existing surface water discharge option to Sweetwater Branch Creek. Background water quality in the aquifer has been impacted by stormwater recharge wells and sinkholes. The groundwater in the aquifer is used as a source of cooling tower make-up water. This water does not meet the surface water standards and the UIC permit was envisioned as an alternative means of discharging this water.

Project Manager; Spill Prevention, Control, and Countermeasures (SPCC) Plans; GRU—Prepared SPCC plans for J.R. Kelly Generating Station, Deerhaven Generating Station, the Admin Building, and several GRUCOM facilities in Gainesville, Florida.

Project Manager; Coal Combustion By-Product Characterization, Tampa Electric Company (Tampa Electric)—Developed a sampling plan to characterize the chemical characteristics of coal combustion by-products, namely fly ash and bottom ash at the former Gannon Power Plant in Tampa, Florida. The objective of the study was to evaluate the potential for leachate generated from exposure to coal combustion by-products to contain target analyses at concentrations greater than the maximum contaminant limits for groundwater resources. Following FDEP's approval of the sampling plan, implemented the plan and analyzed statistical tests to characterize data. Prepared a report summarizing the results.

Project Manager; Coal Combustion By-Product Characterization, Confidential Client—Developed a sampling plan to characterize the chemical characteristics of coal combustion by-products, namely fly ash and bottom ash at the Crystal River Power Plant in Crystal River, Florida. The objective of the study was to evaluate the potential for leachate generated from exposure to coal combustion by-products to

contain target analytes at concentrations greater than the maximum contaminant limits for groundwater resources. Following FDEP's approval of the sampling plan, implemented the plan and analyzed statistical tests to characterize the data. Prepares a report summarizing the results.

Project Director; Programmatic Support for Brownfields Assessment Grant, City of Tallahassee—Provided oversight of programmatic support activities of the Brownfields Assessment Grant for the City of Tallahassee. Programmatic support includes assisting in the preparation of minority business enterprise/women's business enterprise utilization forms and financial reimbursement forms; drafting EPA Brownfields Cleanup Quarterly Reports and Performance Evaluation Reports for review; drafting and preparing Quarterly Measures reports required by the terms and conditions of the EPA Cleanup Grants, as necessary; and providing data entry of EPA property profile information into the ACRES database as required by grant's terms and conditions.

Project Quality Assurance Officer and Project Geologist; Brownfields Assessment Grant, City of Tallahassee—Provided review and revision of QAPP, prepared work plans, reviewed field notes and laboratory reports, and prepared the Phase II ESA report for the Art Alley project.

Project Quality Assurance Officer and Project Geologist; Building Deconstruction Project for Former Incinerator Building, City of Tallahassee—Project consisted of deconstruction of the former incinerator building containing residual ash, which had been tested and classified as hazardous. Conducted project under a RCRA RAP. Prepared QAPP, and reviewed work plan for characterization of residual ash present in the building for hazardous waste determination. Reviewed analytical data from ash and revised waste determination. Prepared responses to regulatory agency comments regarding waste determination and method of deconstruction.

Project Geologist; Chlorinated Solvent Site Assessment, Daytona Beach International Airport, Volusia County—Developed dynamic work plan to evaluate the distribution of chlorinated solvents and assess hydrogeologic factors controlling plume migration at the Daytona Beach International Airport. Implemented work plan and found that chlorinated solvents were preferentially moving along a shell hash that varied in depth and thickness across the site and gave the plume an appearance of a diving plume.

Project Geologist; Environmental Consulting Services, Tampa International Airport, Hillsborough County Aviation Authority (HCAA)—Conducted due diligence in the Drew Park area prior to acquisition for airport expansion. Prepared and implemented contamination assessment and remedial actions for numerous isolated contaminated areas within the Drew Park area. Conducted assessment and prepared RAP for a chlorinated solvent plume. Represented HCAA in regulatory agency negotiation. Provided oversight of implementation of remedial actions.

Project Geologist; Piney Point Phosphates Decommissioning Support, HRK Holdings—Conducted emergency management of two billion gallons of industrial wastewater in an environmentally sensitive setting near Cockroach Bay, a pristine aquatic preserve in lower Tampa Bay. Assisted in review of assessment data collected by others and evaluation of water treatment data as part of the closure of gypsum stacks and impounded water in the stacks. This 24/7 operation required treatment of industrial waste water prior to discharge.

Project Manager; Miscellaneous Consulting Services, Industrial Galvanizers—Provided miscellaneous services, including support on hazardous materials management, aboveground storage tank compliance, health and safety regulations, spill response and removal actions, and regulatory agency negotiations for facility in Tampa, Florida. Served as technical representative on Superfund and RCRA-related issues.

Project Manager; Assessment of Three Former Landfills, Pinellas County—Assessed soil and groundwater quality at three former landfills in Pinellas County, Florida. The landfills are near a residential area and it is anticipated that these landfills will be redeveloped. Assessment concluded that the existing conditions at the landfills do not pose a threat to human health in their current condition. Proposed to FDEP that additional assessment and remediation be delayed until redevelopment plans are prepared.

Task Manager; Permitting for a Bulk Commodities Terminal (Active Brownfields), Southern Monitoring and Environmental, LLC—Prior to dredging operations, prepared a sampling and analysis plan and a QAPP. The objectives of the study were to evaluate possible uses of the sediments after they were dredged and to determine if there were potential impacts to surface water quality during the dredging operations. Included statistical procedure to evaluate whether a sufficient number of samples had been collected to characterize the variability of the data in the sampling and analysis plan. Provided oversight of the sampling. Upon receipt of the data, conducted statistical analyses to confirm a sufficient number of samples had been collected. Conducted the analysis of the data and compared the data to soil cleanup target levels to evaluate re-use options for the sediments. Analyzed the analyses of elutriate samples and determined that there could be surface water quality issues related to the dredging operations and made recommendations to minimize potential surface water quality problems. Analyzed the existing analytical data for samples of screened material from the onsite landfill. Prepared and submitted a report to the FDEP requesting authorizing reuse of screened solid waste. The report consisted of statistical analysis of the analytical data and a comparison to soil cleanup target levels. Once the statistical analyses were completed, identified possible re-use options and conducted an exposure assessment based on re-use options.

Project Geologist; Development of a Sampling and Analysis Plan to Evaluate Reuse of Screened Materials from a Former Industrial Landfill, Southern Monitoring and Environmental, LLC—Reviewed existing analytical data from solid waste in a former industrial landfill used by a wood pulp operation in Jacksonville, Florida. Conducted an exposure assessment for potential reuse of the screened solid waste to evaluate whether reuse of the screened material posed a threat to human health or the environment under redevelopment scenarios. Prepared a sampling and analysis plan to characterize the screened materials prior to reuse, to confirm its chemical characteristics, and to ensure assumptions of the exposure assessment were not violated.

Project Manager; Phase I and II ESAs, Site Assessments, and Remedial Actions, Lowes Home Companies— Provided Phase I and Phase II ESAs, site assessments, and rapid response remedial actions as needed for numerous facilities in Florida. Worked with Lowes real estate group during redevelopment projects by conducting asbestos and lead-based paint surveys prior to demolition of existing facilities. At one site, prepared permit to allow for development on top of a former landfill and conducted methane monitoring of facility after construction.

Project Manager; Contamination Assessment, Texaco— Conducted contamination assessment of retail petroleum marketing facility in Nassau, Bahamas. The assessment evaluated the extent of free product, dissolved hydrocarbons, and adsorbed hydrocarbons. Controlled the distribution of hydrocarbons and subsequent remediation by the karst nature of the limestone and island hydraulics.

Project Geologist, Preliminary Assessment, Confidential Client—Conducted a preliminary assessment of possible soil and groundwater impacts related to an accidental release of diesel fuel in a coastal environment in Antigua in the Caribbean.

Project Geologist; Contamination Assessment at Former Coal Gasification Site, GRU—Performed a contamination assessment investigation at a former coal gasification plant site that had operated from the 1890s to 1960 in Gainesville, Florida. The contamination assessment included the installation of 16 monitoring wells, the drilling of soil test borings, and the collection of groundwater and soil samples for laboratory chemical analyses. The monitoring wells were used to measure water level elevations for determining hydraulic gradients and groundwater flow velocities. Installed a free-product recovery well (6-inch diameter) to recover non-aqueous phase liquid along the southern boundary of the site. Prepared and approved contamination assessment plans, quality assurance plans, and health and safety plans prior to implementation of the field activities. Performed technical negotiations and interactions with local and state regulatory agencies during the investigation. Conducted and regulatory agencies approved a human health and ecological risk assessment and a feasibility study in support of the preparation of a RAP.

Project Geologist; Tropicana Field Tampa Bay Devil Rays Baseball Stadium, Former Gasification Site Contamination Assessment-Remedial Action, City of St. Petersburg— Performed a supplemental site assessment to assess extent of residual soil and groundwater quality impacts following previous remedial actions. Conducted evaluation of surface water quality and groundwater quality below Booker Creek to assess effectiveness of a bulkhead in preventing impacted groundwater from entering the creek and the surficial aquifer beneath the creek. Designed and implemented supplemental source removal to remove residual coal tars identified in the supplemental assessment. Conducted groundwater monitoring and demonstrated that the plume was stable and not migrating offsite or into surface waters. Based on supplemental data, proposed to FDEP that the site be given a NFA status under Risk Management Option II.

Project Advisor; Depot Park Redevelopment, City of Gainesville—Depot Park is being constructed on top of formerly contaminated property in Gainesville, Florida. ECT completed the assessment, documented the extent of contamination, conducted a human health and ecological risk assessment, prepared a remedial action feasibility study and RAP, and implemented the remedial actions. ECT also designed the stormwater ponds constructed following remedial actions and is assisting in documenting the property into a park. ECT is conducting post-remediation monitoring, participating in public outreach events, and documenting that site conditions are safe for use as a park.

Project Manager; Phase I/II ESAs for Brownfield Sites, Pinellas County Economic Development—Responsible for Phase I/II on the Gooden Crossing and Korkis properties in the Pinellas County brownfields area.

Project Manager; Initial Response Actions, Tampa Electric—Responded to mineral oil release following transformer/substation fire in Tampa, Florida. Recovered mineral oil and contaminated groundwater and documented clean groundwater within 21 days of initial contact.

Project Manager; Environmental and Health and Safety Audit, Delta Group Australia—Conducted environmental, health, and safety audits of five Industrial Galvanizers operations in the southeastern United States.

Project Manager, Petroleum Assessment and Remediation, Pebble Creek Collection—Conducted assessment of the site related to historic petroleum releases. Developed an innovative RAP and remedial actions for petroleum impacted property in Tampa, Florida.

Project Manager; Site Assessment of Former Manufacturing Facility, Highwoods Properties— Developed soil and groundwater sampling program to characterize the arsenic geochemistry of the surficial aquifer following release of mineral spirits from an underground storage tank (UST) in Hillsborough County, Florida.

Demonstrated using geostatistics that arsenic was naturally occurring in the soils at the site based on historical soil classifications and geochemistry. Furthermore, the arsenic detected in groundwater samples suggested dissolution of arsenic from the soils as a result of the reducing conditions that developed with the release of the mineral spirits.

Project Manager; Site Assessment of Former Wood Preserving Facility, Courtesy Toyota—Developed site assessment strategy to assess soil and groundwater characteristics at a former wood preserving facility in Hillsborough County, Florida. Initial assessment consisted of cone penetrometer survey to characterize stratigraphy and vertical variations in relative permeability and laser-induced fluorescence to screen the soils for the presence of residual creosote. Site assessment consisted of installing nested monitoring wells, soil and groundwater sampling, surface water sampling, and sediment sampling. Provided oversight and confirmatory sampling for source removal.

Project Manager; Initial Response Actions, Sunoco—Provided initial response actions throughout Florida when accidental releases of petroleum occurred at Sunoco facilities. Initial responses typically consisted of recovering available product, removal of impacted media, working with appropriate regulatory agencies, and documenting all actions.

Project Manager; Tank Closure Assessments, Sunoco—Provided closure assessment services throughout Florida as needed and prepared closure assessment reports.

Project Manager; Site Assessments, Sunoco—Provided contaminated site assessments at retail marketing facilities in Hillsborough and Pinellas counties, in Florida.

Project Manager; Phase I and II ESAs, Federal Deposit Insurance Corporation (FDIC)—Conducted numerous Phase I and II ESAs of vacant and undeveloped properties and operating facilities throughout Florida. Scope of work was provided by FDIC.

Project Manager; Phase I ESAs, Republic Bank—Conducted numerous Phase I audits throughout Hillsborough and Pinellas counties, Florida. Audits conformed to proposed American Society for Testing and Materials guidelines.

Project Manager; ESA, Sabal Realty Corporation—Conducted numerous site assessments of commercial properties prior to sale in Hillsborough County, Florida. Assessments consisted of geophysical surveys, monitoring well installation, and soil and groundwater sampling. One assessment included evaluating the soil, groundwater, and surface water quality characteristics of a property located adjacent to Reeves Southeastern Galvanizing, a National Priorities List Superfund site. Another assessment included a ground penetrating radar survey to identify the morphology of a paleo sink.

Project Manager; Contamination Assessment, Archbold Biological Station—Conducted a contamination assessment as a result of the suspected release of petroleum products detected during the removal of existing tanks in Venus, Florida. Completed assessment with an NFA recommendation. FDEP accepted this recommendation.

Project Manager; Closure of Existing UST System and Installation of New USTs and Dispensing Equipment, Archbold Biological Station—Conducted a compliance inspection of existing UST and dispensing systems in Venus, Florida. Designed and installed new petroleum product storage and distribution system in accordance with applicable environmental regulations and building codes. Removed and conducted a closure assessment of former petroleum product storage and distribution system.

Project Manager; UST Closure and Installation, Central Florida Gas—Removed and conducted closure assessment of existing UST in Winter Haven, Florida. Installed new UST in accordance with all appropriate environmental regulations.

Project Manager; Initial Remedial Action (IRA), Contamination Assessment, and Remedial Action, Eaton Corporation—Prepared contamination assessment plan and conducted contamination assessment of chlorinated solvent spill from degreasing operations of manufacturing facility in Sarasota, Florida. Plume was approximately 35-ft thick and covered approximately five acres. Installed, operated, and maintained vacuum extraction system designed as an IRA to remove adsorbed solvents from the soils prior to entering the surficial aquifer. Designed the RAP to remediate the surficial aquifer. FDEP approved all plans and reports.

Project Manager; Contamination Assessment and Remediation, Manatee Towne Centre—Conducted a contamination assessment at a dry-cleaning facility operation of the groundwater extraction system to remove dissolved chlorinated solvents and the soil vapor extraction (SVE) system to remove adsorbed solvents in the dewatered zone. To enhance removal of adsorbed hydrocarbons, proposed shutting down the groundwater recovery pumps to allow the dewatered zone to resaturate; therefore, allowing for desorption of adsorbed solvents. After equilibration, the groundwater recovery system will be restarted to again remove the mobile dissolved mass of solvents and the vacuum extraction operation will again continue to enhance volatilization of the adsorbed solvents and recover vapors. The client and FDEP approved the remedial action approach.

Project Manager; Hydrocarbon Contamination Assessments and Remedial Actions, Numerous Clients—Conducted numerous contamination assessments and designed and implemented remedial actions for petroleum-contaminated sites throughout Florida. These assessments and remedial actions were conducted in accordance with the Florida petroleum cleanup regulations in Chapter 62-770, Florida Administrative Code.

Project Manager; Contamination Assessment, Texaco, Clifton Terminal—Conducted contamination assessment at bulk storage terminal in Nassau, Bahamas. Site contained free product and dissolved hydrocarbons in a karst limestone. Assessment included evaluation of island hydraulics and contaminant transport in a karst environment.

Project Manager; Contamination Assessment and Remedial Action, PDVSA—Designed work plan and conducted contamination assessment of a weathered marine fuel oil in a fractured pillow basalt. Free product was accumulating in residential wells from pipeline leaks between refinery and terminal in Curacao. Data gathered during the assessment was used to design remedial actions for three residential areas. Remedial design included evaluation of alternate water supplies for the residents and reuse of treated groundwater for agricultural purposes.

Project Geologist; 58th Street Landfill, EPA Superfund Site—Conducted geophysical surveys (electromagnetic terrain conductivity) to delineate contaminant plume in carbonate aquifer as part of feasibility study evaluating closure and remediation alternatives. Used geophysical data to develop a monitoring well network and subsequent groundwater model for the site in Miami, Florida.

Project Manager; Coal Tar Assessment, Peoples Gas Systems—Conducted contamination assessment at a former coal gas manufacturing facility in Miami, Florida. Assessment included geophysical investigations to identify the presence of subsurface features acting as reservoirs holding coal tars. Used monitoring well and laboratory analyses of soil and groundwater samples to evaluate the extent of coal tars in the subsurface.

Geologist; Geophysical Surveys, Sherwood Medical—Conducted surface and borehole geophysical investigations in Deland, Florida. Used ground penetrating radar to locate subsurface features and evaluate shallow stratigraphy. Reviewed a suite of borehole geophysical logs to evaluate the lithology of the site and flow zones in existing open hole fire water supply well. Used geophysical logs, including electric logs, gamma logs, caliper, and flow meter logs.

Project Manager; Preliminary Contamination Assessment, Former Coal Gas Manufacturing Facility—Preliminary contamination assessment that involved extensive soil sampling followed by monitoring well installation and groundwater sampling in Jacksonville, Florida.

Project Manager; Contamination Assessment and RAP, T&T, Inc.—Conducted contamination assessment at retail petroleum marketing facility in Sarasota, Florida. Site contained free product, adsorbed hydrocarbons, and a three-acre dissolved hydrocarbon plume. Upgradient contaminant plume is migrating onto this site. The RAP comprised conducting a long-term pumping test, a vacuum extraction pilot study, and an air sparging pilot study.

Project Manager; Tank Closure Assessment, IRA and Contamination Assessment, Fina Oil and Chemical Company—Excavated and removed six USTs from active retail petroleum marketing facility in Clewiston, Florida. Excessively contaminated soils were removed and thermally treated. A contamination assessment was completed.

Project Manager; Remedial Action, Fina Oil and Chemical Company—Maintained and operated remediation system at this active retail petroleum marketing facility in St. Petersburg, Florida. Remediation system consisted of groundwater recovery and treatment as well as vacuum extraction. Prepared all necessary monitoring reports as required by FDEP.

Technical Manager; Contamination Assessment, Shell Oil and Texaco Refining and Marketing—Provided technical oversight during the contamination assessment for these two adjacent retail petroleum marketing facilities in Gainesville, Florida. The dissolved hydrocarbon plumes were commingled and migrating through a karst limestone.

Project Manager; Tank Closure and IRA, Environmental Waste Management Associates, Inc. (EWMAI)—Excavated USTs and excessively contaminated soils from former retail petroleum marketing facility in Tampa, Florida. Results of closure assessment indicated that no further actions should be required at the site. The closure assessment and IRA report were submitted to the Environmental Protection Commission of Hillsborough County.

Project Manager; Tank Closure and IRA, EWMAI—Excavated two USTs and excessively contaminated soils at former retail petroleum marketing facility in Tampa, Florida. Transported approximately 350 cubic yards of excessively contaminated soils offsite for thermal treatment and disposal.

Project Manager; Contamination Assessment, First Union National Bank—Conducted a contamination assessment at a former retail petroleum marketing facility in Clearwater, Florida. The recommendation provided in the contamination assessment report (CAR) was for an NFA; FDEP approved the CAR.

Project Manager; Tank Closure, IRA, and Contamination Assessment, First Union National Bank—Excavated and removed three USTs and excessively contaminated soils at a site in Lake Suzy, Florida. Transported the soils offsite for thermal treatment and disposal. The results of the closure assessment indicated the presence of hydrocarbons in the subsurface. Completed a contamination assessment and the FDEP approved the CAR along with an NFA recommendation.

Project Manager; Remedial Actions, Texaco (Star Enterprises)—Acquired project management responsibilities for operation and maintenance (O&M) of remediation systems at two retail petroleum marketing facilities in Naples, Florida.

Remediation systems included groundwater recovery and treatment, as well as vacuum extraction.

Project Manager; Remedial Actions, Texaco (Star Enterprises)—Acquired project management responsibilities for O&M of remediation systems at two retail petroleum marketing facilities in Fort Myers, Florida. Modified remediation systems to enhance performance by adding vacuum extraction systems.

Project Manager; Remedial Actions, Fina Oil and Chemical Company—Acquired project management responsibilities for O&M of remediation systems in Cape Coral, Florida. Plugged burner portion of recovery well that was screened in a high permeability shell hash. Following plugging, influent concentrations from the recovery well increased by one order of magnitude.

Project Manager; Contamination Assessment and Remedial Actions, Texaco (Star Enterprises)—Conducted a contamination assessment and prepared a RAP for the retail petroleum marketing facility in Sarasota, Florida. Remedial actions consisted of groundwater extraction as treatment along with vacuum extraction. Treated groundwater was discharged to the stormwater sewer under a NPDES permit.

Project Manager; Contamination Assessment, Remedial Action, and Monitoring, Fina Oil and Chemical Company—Conducted a contamination assessment after the USTs were removed at this former retail marketing facility in North Miami Beach, Florida. The assessment results suggested that the most appropriate remedial action would consist of excavating excessively contaminated soils followed by a monitoring period. Dade County Department of Environmental Resources Management approved the recommendation.

Project Manager; Contamination Assessment and Monitoring, Fina Oil and Chemical Company—Completed a contamination assessment at this former retail petroleum marketing facility in Fort Lauderdale, Florida. Recommendation presented in the CAR was for monitoring only. Therefore, a monitoring only plan was prepared for and approved by Broward County.

Project Manager; Contamination Assessment and Remedial Actions, Fina Oil and Chemical Company—Completed a contamination assessment at retail petroleum marketing facility in Tamarac, Florida. Broward County approved the CAR and a RAP consisting of both groundwater extraction and treatment, and soil vacuum extraction. The recovery systems were installed according to specifications and operated as outlined in the RAP.

Project Manager; Contamination Assessment and Remediation, Eaton Corporation—Completed a contamination assessment at an electronics manufacturing facility in Sarasota, Florida, as part of a consent order. The

assessment was conducted following a spill of trichloroethene, which was used as a degreaser. Direct push technologies (DPTs) were utilized in the beginning of the assessment to rapidly characterize the subsurface stratigraphy and to collect groundwater samples at discrete depths. These samples were analyzed using an onsite gas chromatograph to rapidly delineate the horizontal and vertical extent of contamination. Permanent nested monitoring wells were subsequently installed to confirm the presence of chlorinated solvents. Designed and operated a SVE system installed in the spill area as an IRA. Designed the RAP using a phased approach. The first phase was for strictly groundwater recovery only with air stripping as the treatment followed by discharge to the sanitary sewer. Air sparging is currently being evaluated as an additional remedial technology to volatilize adsorbed hydrocarbons in the source area.

Project Manager; Contamination Assessment, Unique Electronics—Conducted a contamination assessment at an electronics manufacturing company in Orlando, Florida. Dissolved chlorinated solvents were detected in soil and groundwater samples. Utilized DPT to quickly characterize the site stratigraphy and collect groundwater samples at discrete depths.

Project Geologist; Contamination Assessment, ERO Industries—Conducted a contamination assessment at a manufacturing facility that had a loss of solvents from aboveground storage tanks in Winter Haven, Florida. The solvents included methyl ethyl ketone, methyl isobutyl ketone, and toluene. Backhoe test pits were used to evaluate the shallow stratigraphy beneath the tank farm. A peat layer around the tank farm was found to be adsorbing much of the solvents. Underlying the peat layer was a very thick layer of well-sorted sands. Given the regional hydrogeology, contaminant migration was found to be nearly vertical. The horizontal and vertical extent of dissolved solvents was found to be very limited. The hydrogeology and geochemistry of the site were evaluated for dilution and degradation of the solvents. The assessment was completed and approved with an NFA recommendation.

Project Manager; Initial Assessment, Commercial Carriers, Inc.—Conducted an initial assessment at a vehicle repair facility following a spill of tetrachloroethene in Tampa, Florida. The assessment consisted of collecting soil samples into the water table and groundwater samples for temporary wells. A field gas chromatograph was used to quickly provide analytical results and delineate the extent of contamination.

Representative Publications

Culbreth, M.A., D.R. Ehlenbeck, R.R. Colberg, A.C. Bailey. 1998. Accelerated Remediation of Chlorinated Solvents via Cyclic Multiphase Extraction, in Physical, Chemical, and Thermal Technologies, Remediation of Chlorinated and Recalcitrant Compounds, p. 147-152, eds. G.B. Wickramanayake, and R.E. Hinchee, Battelle Press, Columbus.

- Culbreth, M.A. 1988. Geophysical Investigation of Lineaments in South Florida. Master's Thesis, University of South Florida, Tampa, Florida.
- Littlefield, J.R., M.A. Culbreth, S.B. Upchurch, and M.T. Stewart. 1984. Relationship of Modern Sinkhole Development to Large Scale Photolinear Features. In: Sinkholes: Their Geology, Engineering, and Environmental Impact. Proceedings of the First Multidisciplinary Conference on Sinkholes, Orlando, Florida, October 15-17, 1984, B.F. Beck, editor.
- Culbreth, M.A. 1983. Significance of Lineaments in Florida. Florida Scientist, 48(1):48-49.
- Culbreth, M.A., R.E. Bretnall, Jr., and M.T. Stewart. 1982. Structural Framework and Movement of Regional Groundwaters. In: Proceedings of the Tampa Bay Area Scientific Information Symposium, 65-86. S.F. Treat, J.L. Simon, R.R. Lewis, and R.L. Whitman, editors. Report number 65, Florida Sea Grant College.
- Geophysical Investigation of Lineaments in South Florida. 1988. University of South Florida.
- Karst Processes in Cave Development. 1983. National Association of Cave Divers.
- Structural Framework and Movement of Regional Groundwaters. 1982. Tampa Bay Area Scientific Information Symposium.

Presentations

- Unusual Dichloroethylene Isomer Ratios and External Nitrate Input Help Decipher *In Situ* Pilot Test Outcomes. 2017. Florida Remediation Conference.
- Biogeochemical Reductive Dechlorination (BiRD) Bench Study: TCE in Tampa Limestone. 2015. Battelle's Bioremediation Conference. Miami, Florida.
- Innovations in Remedial Technologies. 2003. Training Program for the Southwest District of Florida Department of Environmental Protection and County Agencies.
- Use of Induced Fluorescence in Coal Tar and Creosote Assessments. 2000. Second International Conference Remediation of Chlorinated and Recalcitrant Compounds. May 2000. Monterey, California.
- Role of Well Development on Performance of Extraction Systems. 2000. Second International Conference Remediation of Chlorinated and Recalcitrant Compounds. May 2000. Monterey, California.
- Contamination Assessment and Remedial Action Activities at Hydrocarbon Contaminated Sites. 1990. Training Program for the Southwest District of Florida Department of Environmental Protection and County Agencies.
- Accelerated Remediation of Chlorinated Solvents via Cyclic Multiphase Extraction. 1998. First International Conference Remediation of Chlorinated and Recalcitrant Compounds. May 1998. Monterey, California.



PETER M. WALLACE, MS

President, Ecosystem Research Corporation

Natural and Disturbed Ecosystems Ecologist

Peter Wallace, a natural and disturbed ecosystems ecologist and Registered Gopher Tortoise Agent, has more than 40 years of experience in Florida's ecosystems, including ground verification of upland and wetland habitat, aerial photo interpretation of natural and disturbed Florida habitats, T&E species surveys, wetland jurisdictions, plant community mapping, permitting, and wetlands mitigation and monitoring. He has provided Environmental Assessments on over 1000 projects within the State of Florida and southeastern United States. The projects include State and Federal government projects as well as providing assessments within 33 counties within Florida. He has extensive experience in Phosphate mining areas and has designed and monitored many wetland mitigation projects. He has performed assessment for 7 counties for lands acquired for landfill construction and has worked on several projects involving several thousand acres for the Gainesville Regional Deerhaven Power Plant and City of Gainesville Annexation Property. Mr. Wallace has extensive experience with performance of baseline inventory and operational monitoring of several large wastewater to wetlands systems throughout Florida. He has performed the wetlands delineation, habitat mapping, and listed species surveys for the Baseline Inventory Studies for siting of the Orange County ($\pm 4,000$ acres), Sarasota County ($\pm 6,000$ acres), and Okeechobee County ($\pm 2,000$ acres) landfills. In addition, Mr. Wallace was contracted by the U.S. Air Force to perform the wetlands delineation of the Avon Park Bombing Range (125,000 acres). He also assisted with habitat delineations for development of a Management Plan by Florida Natural Areas Inventory for this property. Mr. Wallace assisted the Florida Department of Environmental Protection as a team member for providing technical support for developing a State of Florida Assumption Package for the Federal 404 Permit Program. In addition, he is a coauthor of the Florida Department of Environmental Protection manual *Identification Manual for Wetland Plant Species of Florida and Florida Wetland Plants: An Identification Manual*. He was invited by FDEP to assist in preparation of this book to aid the public and consulting personnel in application of the Florida Wetland and Surface Water Delineation Rule as described in Chapter 62-340 FAC.

EDUCATION

M.S. Systems Ecology, University of Florida

B.S. Biology, Virginia Tech, *cum laude*

PROFESSIONAL EXPERIENCE

1980–1993 Peter M. Wallace, Ecologist

1993–Pres Ecosystem Research Corporation,
President

PERSONAL

Born: 13 April 1953, Newport News, Virginia

REPRESENTATIVE PROJECT EXPERIENCE

Florida Native Plant Nursery. Since 1980 Mr. Wallace has owned and operated a Florida native plant nursery. The nursery specializes in growth and propagation of Florida native trees, shrubs, grasses, sedges, and rushes. Through his cooperation with the Alachua County Farmers Market and Florida Native Plant Society, Mr. Wallace has educated the public and provided to the public information regarding growth and management of native plants.

Environmental Resource Assessment, Habitat Mapping, and Listed Plant and Animal Surveys for Camp McConnell. ERC was retained by Alachua County Forever (ACF) to perform an Environmental

Resource Assessment (ERA) for Camp McConnell, which is a recent acquisition property for Alachua County. The ERA was in support of a Conservation Easement and Conservation Management Plan that was being proposed for this property.

Celebration Pointe: A Transit Oriented Development, Celebration Pointe Partners, LLC & Viking Construction Company of FL, LLC, Gainesville, Florida, 2007–2017. Celebration Pointe is a 210-acre Transit Oriented Development located in southwest Alachua County within the Hogtown Prairie Strategic Ecosystem. Following many years of predevelopment application studies beginning in 2007, construction began in 2016 and continue to date. In 2007, Ecosystem Research Corporation was retained to perform an Environmental Assessment of the project site, which included high-quality Mesic Uplands, agricultural lands historically maintained in silviculture and pasture, and a large borrow historically associated with construction of I-75. The property is associated with Lake Kanapaha and Hogtown Creek and occurs within the Hogtown Prairie Strategic Ecosystem Overlay as mapped by Alachua County. The Environmental Resource Assessment consisted of mapping all native and disturbed upland habitats, delineation of the wetland boundary, and subsequent approval by Alachua County, the St. Johns River Water Management District, and the U.S. Army Corps of Engineers. In addition, listed species surveys were performed and a gopher tortoise relocation effort was performed following completion of the 100% survey of all project site uplands. Within the project site, the boundaries of all significant upland and wetland habitats were mapped and a ±88-acre Conservation Management Area (CMA) was delineated for perpetual protection. A CMA Management Plan was written that details the perpetual management strategies to be employed in the CMA area to include performance of an exotic species removal, maintenance, and monitoring plan. In addition, a Conservation Easement was established and granted in favor of Alachua County.

Santa Fe Village Transit Oriented Development and Conservation Management Area Management Plan, Santa Fe Health Care, Inc., and Law Office of C. David Coffey, PA, Gainesville, Florida, 2012–2015. Santa Fe Village is a proposed 159-acre Transit Oriented Development (TOD) that was making application to Alachua County, Florida, to construct and operate a TOD in northwest Alachua County. With the Santa Fe Village TOD there exists expansive undeveloped significant upland and wetland habitat. Significant Habitat within Alachua County is defined as habitats with an S1, S2, or S3 state ranking as defined by the Florida Natural Areas Inventory. The Santa Fe Village TOD habitats bordered the Conservation Lands associated with San Felasco Hammock owned by the State of Florida. For this project, Ecosystem Research Corporation was retained to delineate all project site uplands and wetlands with special deference to describing the Significant Habitat areas and delineating a Conservation Management Area (CMA) to protect the Significant Habitat Resources. To accomplish this, a CMA Management Plan was written in which a Baseline Inventory report was attached that described all habitat resources and identification and delineation of all listed species habitats. The CMA further protected by creation of a Conservation Easement that was dedicated in favor of Alachua County. The CMA forms the central focus of the Development Plan and further protects the adjacent State resources. Specifically, affected by the CMA Management Plan were a number of stream-to-sink habitats with associated Hydric and Mesic Hammock communities that surround well-defined active sinkhole depressions. These are the most unique environmental features within Alachua County. The CMA currently consists of ±45 acres.

Springhills Transit Oriented and Traditional Neighborhood Developments, Pennsylvania Real Estate Investment Trust (PREIT) and Law Office of C. David Coffey, PA, Gainesville, Florida, 2012–2105. The Springhills property is a 389-acre parcel of land consisting of agricultural lands with a mosaic of native upland and wetland habitats. In 2010, PREIT (the owner of the Springhills property)

petitioned Alachua County with a series of comprehensive plans and zoning requests in preparation of a Preliminary Development Plan (PDP) submittal for a mixed Transit Oriented Development and Traditional Neighborhood Development for the property. As part of these series of applications, Ecosystem Research Corporation performed a host of environmental services in support of these applications, to include the following: 1. Performance of a formal wetland delineation with the St. Johns River Water Management District; 2. Upland and wetland habitat mapping with delineation of Significant Upland Habitats, which are defined as those ranked as S1, S2, or S3 by the Florida Natural Areas Inventory; 3. Surveys for listed plant and animal species and delineation of listed species habitat; 4. Delineation of a Conservation Management Area (CMA) to protect the Significant Upland and Wetland Habitats; 5. Preparation of a CMA Management Plan that details the conservation strategies that will be employed to protect the Significant Habitat areas in perpetuity; 6. Assistance in preparation of a Conservation Easement as the perpetual conservation protection tool; 7. Assistance in all aspects of project permitting to a Comprehensive Plan Amendment to Rezoning to Development Plan Applications. The CMA that is protected as part of this development project totals ±88 acres, which will protect all Significant Habitat areas on site. In addition, the CMA lies adjacent to lands that abut San Felasco Hammock, a State Preserve, and this CMA provides valuable protection for the State Preserve.

Gainesville 121 Planned Unit Development, Weyerhaeuser NR Company. ERC performed habitat mapping, wetlands evaluation, and listed species surveys for a 1,788-acre Planned Development. For this project, natural habitats and areas converted to silviculture were assessed related to existing habitat quality and hydrologic conditions. Comprehensive plant community maps were constructed and related to the delineated wetland boundary, soil mapping units, and the 100-year and annual flood elevations. Surveys were conducted for listed species as well as exotic and native nuisance species. Significant natural habitat areas were identified, and a comprehensive Conservation Management Area Management Plan and Conservation Easement are currently being prepared for protection of these areas.

Weyerhaeuser Site 1, Montechoa (800 ac). ERC was contracted to evaluate development potential of an 800-acre silvicultural site located in northwest Alachua County. The project involved performance of an Environmental Resource Assessment, wetland delineation, habitat mapping, and listed species surveys for the potential development site.

Weyerhaeuser Site 2, Windsor (350 ac). ERC was contracted to evaluate development potential of an 350-acre silvicultural site located in northeast Alachua County. The project involved performance of an Environmental Resource Assessment, wetland delineation, habitat mapping, and listed species surveys for the potential development site.

Special Area Study: Paynes Prairie West Strategic Ecosystem, Alachua County Department of Growth Management. ERC was retained by Alachua County to perform wetland surveys, plant community mapping, and environmental features inventory on a 503.97-acre group of parcels located west of Paynes Prairie. This project involved performance of the first Special Area Plan conducted by Alachua County for determination of a development footprint within multiple private parcels located within a designated Strategic Ecosystem Overlay area. For this project, a Baseline Inventory Report was prepared identifying the location of native and man-altered habitats as well as defining the boundaries of significant habitat areas to be set-aside and protected within a Conservation Management Area and Conservation Easement.

Trout Lake Water Reclamation Project, Watershed Technologies, LLC, and Florida Department of Agriculture and Consumer Services, Lake County, Florida. Performed an Environmental

Assessment consisting of wetland jurisdiction, listed species surveys, and feasibility analysis for using Hybrid Wetland Treatment Technology for renovation of agricultural discharges to Hicks Ditch and Trout Lake. The Trout Lake project is a natural lake/wetland reuse and renovation project in which phosphorus-contaminated waters from historical agricultural runoff sources are collected from Trout Lake and treated within constructed floating and emergent macrophyte treatment ponds. This is an FDACS project contracted through Watershed Technologies, LLC. For this project extensive natural habitat mapping of the Trout Lake wetland system was performed. The wetland boundary was delineated and surveys for listed species were performed. Nuisance and exotic species populations were documented and plans were devised to avoid reintroduction of exotic species into renovated waters.

Deep Creek Water Reclamation Project, Watershed Technologies, LLC, and Florida Department of Agriculture and Consumer Services, St. Johns County, Florida. Performed an Environmental Assessment consisting of wetland jurisdiction, listed species surveys, and feasibility analysis for using Hybrid Wetland Treatment Technology for renovation of agricultural discharges to Deep Creek. The Deep Creek water reclamation project is an FDACS project contracted through Watershed Technologies, LLC. The project is designed to renovate the phosphate-contaminated surface waters of Deep Creek (St. Johns County) that have been affected by long-term historical agricultural discharges. For this project, extensive field surveys were performed to document the existing native and man-altered agricultural habitats. Listed species surveys were performed and extensive analysis of mean annual and 100-year flood elevations were also provided. The Baseline Inventory studies were used to determine the most appropriate areas where waters could be pumped from and discharged into Deep Creek to effect the minimal impacts to the natural system.

Hatchet Creek: An Environmental Cluster Subdivision, Gainesville East Development Partners, LLC. Performed wetlands jurisdiction, T&E species surveys, and environmental features inventory on a 498± acre site to be developed for a mixed use commercial and residential area located adjacent to the Ironwood Golf Course.

Gainesville Regional Utilities Deerhaven Annexation Property, Gainesville Regional Utilities, City of Gainesville. Performed wetland/upland and plant community boundary mapping, T&E species survey, and environmental features inventory for the Deerhaven Power Plant Land Annexation, a 2,342-acre site.

Gainesville Regional Utilities Eastside Maintenance Facility, Gainesville Regional Utilities, City of Gainesville. Performed wetlands jurisdiction, mitigation, and permitting services on a 117-acre parcel for the GRU Eastside Maintenance Facility.

Gainesville Regional Utilities Deerhaven Power Plant Rezoning, Gainesville Regional Utilities, City of Gainesville. Performed wetlands jurisdiction, T&E species surveys and plant community mapping for the Gainesville Regional Utilities rezoning application (136-acre site).

T. J. Hawes Trustee Conceptual Water Management District ERP Application, T. J. Hawes Trustee, Henderson Engineering. Performed wetlands jurisdiction on 185 acres for obtaining a binding jurisdiction determination from SJRWMD for a conceptual ERP modification for lands located along NW 39th Avenue east of North Main Street.

RECENT AND CURRENT FLORIDA COUNTY-ROAD PROJECTS

Environmental Resource Assessments, Listed Species Surveys, and wetland delineations for drainage and safety improvements for the following:

- Carlton Cemetery Road, Taylor County
- Houck Road, Taylor County
- Pine Crest Road, Taylor County
- Foley Cut-off Road, Taylor County
- 199 St. Road, Marion County
- 212 St. Road, Marion County
- CR 491, Citrus County
- SE 49th Avenue, Bradford County
- NW 53rd Avenue/NW 219th Street, Bradford County

EXAMPLE TECHNICAL REPORTS AND PUBLICATIONS

Kent, Donald M., M. A. Langston, D. W. Hanf, and P. M. Wallace. 1997. "Utility of a camera system for investigating gopher tortoise burrows." *Florida Scientist* 60(3):193-196.

Tobe, John D., K. C. Burks, R. W. Cantrell, M. A. Garland, M. E. Sweeney, D. W. Hall, P. Wallace, G. Anglin, G. Nelson, J. R. Cooper, D. Bickner, K. Gilbert, N. Aymond, K. Greenwood, and N. Raymond. 1998. *Florida Wetland Plants: An Identification Manual*. Gainesville, FL: University Presses of Florida. 598 pp.

Wallace, P. M., R. A. Garren, and J. C. Carter. 2009. *Environmental Features Inventory: Plant Communities & Natural Resources Occurring within the Hatchet Creek Project Site*. Environmental Data Submitted in Support of a Design Plat Application. 299 pp.

Wallace, P. M., R. A. Garren, and J. C. Carter. 2008. *Environmental Resource Assessment: Plant Communities & Natural Resources Occurring within the Gainesville Regional Utilities Deerhaven Annexation Properties February–April 2008*. Prepared for Gainesville Regional Utilities, City of Gainesville. 369 pp.

Wallace, P. M., R. A. Garren, and J. C. Carter. 2007. *Special Area Study: Ecological Assessment of the Plant Communities & Natural Resources Occurring within the Paynes Prairie West Strategic Ecosystem*. Prepared for Department of Growth Management, Alachua County. 264 pp.

Wallace, P. M., R. A. Garren, and J. C. Carter. 2008. *The Market at Schmidt Farms: Environmental Resource Assessment, Large-Scale Comprehensive Plan Amendment, City of Alachua, Alachua County, Florida*. Prepared for Mesa-Sand Realty, LLC, Indianapolis, IN. 156 pp.

Wallace, P. M., R. A. Garren, and J. C. Carter. 2008. *Megahee Enterprises, LTD, LLLP: Environmental Resource Assessment, Large-Scale Comprehensive Plan Amendment, City of Alachua, Alachua County, Florida*. Prepared for Megahee Enterprises, LTD, LLLP. 112 pp.

Wallace, P. M., D. M. Kent, and D. R. Rich. 1996. "Responses of Wetland Tree Species to Hydrology and Soils." *Restoration Ecology* 4(1):33—41.

Schwartz, Larry N., P. M. Wallace, P. M. Gale, W. F. Smith, J. T. Wittig, and S. L. McCarty. 1994. "Orange County Florida Eastern Service Area Reclaimed Water Wetlands Reuse System." *Water Science Technology* 29(4):273-281.

- Schwartz, L. N., P. M. Wallace, P. M. Gale, W. F. Smith, J. T. Wittig, and S. L. McCarty. 1992. "Orange County Florida Eastern Service Area Reclaimed Water Wetlands Reuse System." Pages 40.1–40.10 in *Wetland Systems in Water Pollution Control. Proceedings of the Wetlands Downunder International Specialist Conference, 30 November–3 December, University of New South Wales, Sydney, Australia.*
- Schwartz, L. N., P. M. Wallace, P. M. Gale, W. F. Smith, J. T. Wittig, and S. L. McCarty. 1992. "Orange County Florida Eastern Service Area Reclaimed Water Wetlands Reuse System." In *Natural Systems for Wastewater Treatment. Proceedings of a Technology Transfer Seminar presented by the Georgia Department of Natural Resources, Environmental Protection Division, 22–23 October.*
- Wallace, P. M. 1988. *The role of mycorrhizae in reclamation of phosphate mined lands by ecological successional processes. Master's thesis. University of Florida, Gainesville.*
- Wallace, P. M., G. R. Best, and J. A. Feiertag. 1985. "Mycorrhizae enhanced growth of sweetgum (*Liquidambar styraciflua*) in phosphate mined overburden soils." In *Better Reclamation with Trees. Proceedings of a conference June 5-7, 1985, University of Southern Illinois, Carbondale.*
- Erwin, K. L., G. R. Best, W. J. Dunn, and P. M. Wallace. 1985. "Effects of hydroperiod on survival and growth of tree seedlings in phosphate surface-mined reclaimed wetland." *Journal of the Society of Wetland Scientists.*
- Wallace, P. M., G. R. Best, J. A. Feiertag, and K. M. Kervin. 1984. "Mycorrhizae enhanced growth of sweetgum (*Liquidambar styraciflua*) in phosphate mined overburden soils." In *Symposium on Surface Mining, Hydrology, Sedimentology, and Reclamation. University of Kentucky, Lexington.*
- Wallace, P. M., and G. R. Best. 1984. "Applications of mycorrhizal fungi in reclamation of phosphate mined lands." Pages 69-78 in J. J. Ferguson, ed., *Applications of mycorrhizal fungi in crop production. Proceedings of a workshop at the University of Florida, Gainesville, Feb. 22-23, 1984.*
- Best, G. R., W. J. Dunn, and P. M. Wallace. 1983. "Enhancing ecological succession: 1. Effects of various soil amendments on establishment and growth of forest trees from seeds." In *Symposium on Reclamation and the Phosphate Industry. Florida Institute of Phosphate Research, Bartow, Florida.*
- Wallace, P. M., and G. R. Best. 1983. "Enhancing ecological succession: 3. Succession of endomycorrhizal fungi on phosphate strip mined lands." In *Symposium on Reclamation and the Phosphate Industry. Florida Institute of Phosphate Research, Bartow, Florida.*
- Best, G. R., W. J. Dunn, P. M. Wallace, and J. A. Feiertag. 1983. "Enhancing ecological succession: 4. Growth, density, and species richness of forest communities established from seed on amended overburden soils." In *Symposium on Surface Mining, Hydrology, Sedimentology, and Reclamation. University of Kentucky, Lexington.*
- Wallace, P. M., and G. R. Best. 1983. "Enhancing ecological succession: 6. Succession of endomycorrhizal fungi on phosphate strip mined lands." In *Symposium on Surface Mining, Hydrology, Sedimentology, and Reclamation. University of Kentucky, Lexington.*
- Neal, J. L., A. E. Linkins, and P. M. Wallace. 1980. "Influence of temperature on nonenzymatic hydrolysis of p-Nitrophenyl phosphate in soil." *Commun. in Soil Science and Plant Analysis* 12(3):279-287.

GERRY DEDENBACH, AICP, LEED AP

Vice President

(352) 331-1976 · gerryd@chw-inc.com

ROLE

Working with communities across the State of Florida with varying economies, conditions, and socio-economic clines, focused on creating and designing socially, economically, and environmentally sound communities through collaboration. Assisting communities through focused work on economic development, educational, and master planning that links Land Use and Transportation decisions in a sustainable framework at all levels and for all user groups. Utilizing Geographic Information Systems (GIS) and sustainability principals, Gerry has facilitated numerous community design charrettes, public engagement processes, and built strong consensus on local, regional, and statewide planning initiatives.

SPECIALIZATIONS

- Project Development and Management
- Community Design and Charrette Facilitation
- Comprehensive Site / Campus Master Planning
- Development of Regional Impact (DRI) Facilitation
- Development Order / Agreement Preparation & Negotiation
- Multimodal Transportation Corridor Design
- Special Use / Special Exception Permitting
- Rezoning and Planned Development Zoning Preparation
- Expert Witness/Testimony – Quasi-Judicial Proceedings
- Comprehensive Plan & Land Development Code Author

EXPERIENCE

Supervise and facilitates strategic planning and development initiatives focused on long-term community and development implementation on local and region context level

Principal owner of CHW, serving the Southeastern U.S. and Florida since 1988

Former CHW Planning Department Director serving public and private clients in Florida

Manager of both technical and non-technical planning initiatives for both public- and private-sector clients

Facilitation of approximately 75-100 projects annually; including Due Diligence Planning, Conceptual Master Planning, Annexation, Comprehensive Plan Amendments, Rezoning, Variances, and similar related regulatory permitting efforts

EDUCATION

B.S., Bachelor of Science in Landscape Architecture, University of Florida, 1989

PROFESSIONAL LICENSE / CERTIFICATIONS

American Institute of Certified Planners – 017024, 2001

Green Building Certification Institute, LEED Accredited Professional Certification – 2009

ACTIVITIES

Urban Land institute (ULI) North Central Florida, Gainesville Chapter Chair

Gainesville/Alachua County Airport Regional Airport Authority, Strategy and Facilities Planning Chair

Builders Association of North Central Florida, 1997-present, Immediate Past Associate Vice President

Gainesville Area Chamber of Commerce, 2003-present, Member & Leadership Gainesville Graduate, Class 38 President

City of Gainesville Land Development Code Updated Task Force, Co-Chair, 2014-2016

City of Gainesville Mayor's Blue Ribbon Advisory Committee on Economic Competitiveness, 2015-2016

Innovation Gainesville (iG), 2010-2015, Land Development Subcommittee Co-Chair

City of Gainesville Community Development Review Committee, Chair, 2011-2012

KEVIN HEWETT, PSM

Vice President / Principal Surveyor
(386) 518-5131 kevinh@chw-inc.com

ROLE

Mr. Hewett is a Principal owner and Vice President of CHW since 2007, with over 35 years of experience in the Land Surveying Industry throughout Florida. He ensures the successful delivery of 400 survey projects annually and all survey department personnel.

Mr. Hewett has experience with all phases of production for boundary, topographic, geodetic, route, easement, and control surveys for a variety of projects including design surveys, boundary surveys, detailed topographic maps, and right-of way maps for road and utility corridors, pipeline projects, electrical transmission, and distribution lines and contract administration. Kevin is proficient with a number of specialty AutoCAD add-on engineering and surveying software packages, as well as current field work data and points collection methods using total stations, robotics electronic data collection devices, and survey quality Global Positioning Systems (GPS).

SPECIALIZATIONS

- Project Management
- Subdivision Design and Layout
- Large and Small Acreage Boundary Surveys
- Topographic, As-built, and Route Surveys
- Geodetic Surveys
- Record and Title Research
- Survey Data Analysis

EXPERIENCE

City of Alachua San Felasco Parkway
Alachua, FL | 7,300 lf roadway | \$6.75M

City of Alachua Legacy Park Master Plan, Phases I + II
Alachua, FL | 105 acres | \$7.5M

UF Data Science and Information Technology
Gainesville, FL | 260,000 sf | \$96M

UF Baseball Stadium
Gainesville, FL | 127,900 sf | \$45.8M

PROFESSIONAL LICENSE / CERTIFICATIONS

Professional Land Surveyor – [Florida](#) 6093, 2000