



Charlie Crist  
Governor

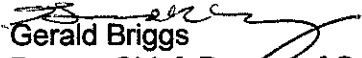
Ana M. Viamonte Ros, M.D., M.P.H.  
Secretary of Health


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**MEMORANDUM OF UNDERSTANDING**

**DATE:** March 22, 2007

**TO:** Mark Mechling  
Ellis & Associates, Inc.

**THROUGH:**   
Gerald Briggs  
Bureau Chief, Bureau of Onsite Sewage Programs, Division of Environmental  
Health, Department of Health

**FROM:** Elke Ursin   
Environmental Health Program Consultant, Bureau of Onsite Sewage  
Programs, Division of Environmental Health, Department of Health

**SUBJECT:** Addition of Core Characterization Task in "Multiple Nitrogen Loading  
Assessments Wekiva Study Area" project

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An additional task is included under the agreement DOH-26032000 "Multiple Nitrogen Loading Assessments Wekiva Study Area". While this is an additional task, the overall amount of the agreement remains unchanged and no additional funds are required. This memorandum restates the task and our approval of your cost proposal transmitted to you via e-mail on 2/28/2007.

The following related task elements are added to the scope of the agreement:

B)1)a) Task 4)c) core characterization: Subsurface solids shall be characterized to provide information on the subsurface beyond what is obtained from task 3)a)3. This characterization shall occur at one location on each site in the vicinity of an anticipated or previously established ground water probing location that appears to be in the effluent plume. A continuous core description and subsurface solids samples from the unsaturated and saturated zones will be obtained by hand augering, direct push or a combination thereof. The core description shall utilize USDA classification, make particular note of features that may influence effluent flow, and shall extend to depth of refusal or when the plume boundary has been crossed by five feet, whichever comes first. To address the creation of preferential pathways the provider will proceed with coring with appropriate measures. Subsurface solid samples shall be taken about every two feet throughout the unsaturated and saturated zone and shall correspond to groundwater sampling depths in the saturated zone. Organic-rich layers may warrant additional samples. Solid Samples will be characterized at least by loss on ignition per method 5a of the USDA Soil Survey Laboratory Methods Manual or approved equivalent.

B)4) Deliverables  
Task 4)c) For each core characterization: core description

For each solid sample analyzed: % organic matter

C)1) fixed price presentation

Task 4)c) core characterization; each site: \$1,500/boring, one boring per site anticipated  
Solid sample analysis for organic matter; each analysis: \$30/sample, 10 samples per site anticipated

As item B)1)a) task 4) a) of the agreement anticipated, budget constraints require to plan for fewer ground water probing locations at the last two sites. Ellis & Associates and DOH staff agreed to plan for three background probings, three (instead of four) drainfield probings and five (instead of eight) cross section probings.

If you have any questions regarding this, please contact Elke Ursin at 850-245-4070 x 2708, [Elke\\_Ursin@doh.state.fl.us](mailto:Elke_Ursin@doh.state.fl.us) or Eberhard Roeder at 850-245-4070 x 2698, [Eberhard\\_Roeder@doh.state.fl.us](mailto:Eberhard_Roeder@doh.state.fl.us)

cc: David Wiggins, Facilities Management and Building Construction, Department of Management Services

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