

May 11, 2012

Mr. Steve Morgan  
Solid Waste Section  
Florida Department of Environmental Protection - Southwest District  
13051 North Telecom Parkway  
Temple Terrace, Florida 33637-0926

FLORIDA DEPARTMENT OF  
ENVIRONMENTAL PROTECTION  
MAY 16 2012  
SOUTHWEST DISTRICT  
TAMPA

RE: Enterprise Recycling and Disposal Facility  
Cell 6 Construction Completion Report – Response to RAI No. 2  
Angelo's Aggregate Materials, LTD  
FDEP Permit Nos. 177982-008-SC/T3 and 177982-007-SO/T3  
WACS No.: 87895  
Pasco County, Florida

Dear Mr. Morgan:

This letter is in response to the April 24, 2012 request for additional information (RAI) we received from you. In this response we've reiterated the Department's comments in italics, with our response immediately following.

1. *The narrative in Attachment G indicates that in Areas B-2, B-3 and B-4 "The western most extent of limerock will be determined at a later date with the mining of the area west of Cell 6." Therefore it appears that limerock which may be west of Cell 6 in these areas was not over excavated and a 3' clay layer was not constructed over exposed limerock, which may result in the direct discharge of contact stormwater (i.e. leachate) diverted to the western edge of Cell 6 into the exposed limestone.*

*As shown on Sheet C-10 of the construction/operation drawings, a temporary stormwater diversion swale was to be constructed west of Cell 6. The details for this diversion swale, shown on Details 1 & 3 of Drawing C-22 of the construction/operation drawings, show the constructed cell bottom clay layer continuing in the constructed swale. The revised engineer of record narrative report, weekly construction photographs, and as-built surveys do not appear to describe or show the constructed diversion swale. The daily observation reports for July 14<sup>th</sup> and 15<sup>th</sup> discuss the "excavation & benching of western edge of cut for stormwater control, but do not appear to discuss the construction of the diversion swale, including the construction of the clay layer in the constructed swale.*

- a. *Please verify and provide supporting documentation that the permitted temporary stormwater diversion swale was constructed along the western edge of Cell 6.*

Response: The temporary stormwater diversion swale was constructed in accordance with the referenced requirements under the observation of the Engineer of Record. The signed/sealed construction completion certification report included this feature. Specifically, the certification statement, "...the project has been constructed in substantial

accordance with the permit requirements” applies to this element of the work. This level of documentation/certification is consistent with what we have provided to the Department on previous cell certifications. We believed that previously accepted reporting standards would remain suitable for certification of this cell given the temporary, minor nature of this feature. However, to be clear, we have revised the enclosed pages of the certification report (footnoted; *Engineering Report Rev. 2; May 2012*) to specifically make mention of and to certify that the temporary stormwater diversion swale was constructed per the permit requirements. Since this feature is temporary and outside the cell footprint, there are no specific data reporting requirements or testing schedule (especially since this feature will become part of future Cell 7 and will be constructed to the permit requirements). However, field observations and measurements were performed by the Engineer of Record during construction to make sure that the undercut, clay backfill, and construction met the permit requirements. The enclosed revision pages should be used to replace the pages in the previous submittal.

- b. Please provide the supporting rationale for not determining the western extent of the limestone encountered during Cell 6 construction and not mitigating these areas to prevent potential discharge of contact stormwater (i.e., leachate) from Cell 6 into the limerock.*

Response: The referenced sentence, “...westernmost extent....west of Cell 6” language in the completion report refers to both the areas west of the temporary stormwater diversion swale and the borrow pit (mine), associated with the areas B-2, B-3, and B-4. Accordingly, there are no areas of exposed limerock that could serve as a preferential drainage path via limestone as they would relate to the operations of this landfill. The last sentence of paragraphs describing each of these areas state, “All limerock exposed at this location was over-excavated to a depth of 3’ as required to construct the clay barrier layer.” These areas are shown on Figure 1 in Attachment G. If limerock exists in the mine west of these areas (which are outside the operational limits of the landfill) it will be revealed as mine operations progress. This is consistent with the practices used to certify previous cells and in operating the mine. The western extent of the limestone associated with Cell 6 construction and mitigation has been determined and mitigated per the permit requirements.

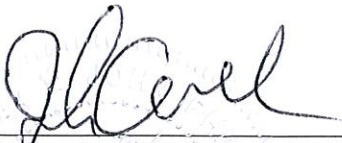
2. *Geologic Boring Log MW-15B: Please provide a revised boring log for this well that includes the SPT blow count data.*



Response: The geologic boring log for MW-15B is complete with all recorded SPT blow count data (N-values). The Florida registered professional geologist on-site and directing the driller, Mr. John Locklear, P.G., advanced the soil boring using a combination of split spoon sampling (for which N-values are recorded) and auger boring (for which soil cuttings are evaluated). The purpose of the geologic soil boring was to characterize the lithology in terms of monitoring well construction and placement of the screened interval. Mr. Locklear discussed the vertical placement of wells screens with respect to lithology with Mr. Morris, P.G. prior to the field work. MW-15B was advanced in the field based on the professional judgment of Mr. Locklear to achieve those goals.

We trust this submittal, along with the financial assurance update, will satisfy the Department's certification requirements. Please call me at (352) 339-1408 if you have any questions or require any additional information.

Sincerely,



John Arnold, P.E.      Date: 5/14/12  
State of Florida P.E. No.: 47164  
34924 Williams Cemetery Road  
Dade City, FL 33525  
Tel.: (352) 339-1408

attachments

cc:      Dominic Iafrate, Angelo's Recycled Materials

## **Background**

This report documents the activities and methods of construction for Cell 6 (approximately 10.86 acres in size) in accordance with FDEP Permit No. 177982-008-SC/T3.

Record Drawings of the tops of both the subgrade and 3' clay layer were performed by the Surveyor and evaluated by the Engineer of Record (Engineer) for conformance with the Department requirements. The Record Drawings are provided in Attachment B. The surveys show that the subgrade was over-excavated a minimum of 3-feet and backfilled with clay to the prescribed minimum finished grades, or higher. The clay was placed in three (3) 12-inch thick compacted lifts. Tests for each completed clay lift were performed to ensure compliance with the Department requirements. The top of the finished clay layer is higher than the minimum elevations shown on the approved plans.

Universal Engineering Sciences, Inc. (UES) performed all field and laboratory testing in accordance with the Construction Quality Assurance (CQA) requirements. Simmons and Beall Land Surveyors provided layout control throughout construction activities and performed Record Surveys of both the over-excavated (subgrade) surface and top-of-clay surface. Mr. John Arnold, P.E. served as the professional engineer of record and he, or his designee was on-site at all times during construction to monitor construction activities.

## **Confining Layer Construction**

Cell 6 was over-excavated by a minimum of 3 feet below the finished grade of the top of the clay layer. This was primarily accomplished as part of the mining activities associated with this site. The over-excavation was performed using tracked excavating equipment. The Surveyor provided grade stakes and performed field layout services to verify that the excavation was sufficient to meet the 3-foot over-excavation criteria. In the bottom (excludes southern side slope) of Cell 6, clay was placed and compacted in the over-excavated cell area using 12-inch lifts to construct the confining layer. The side slope along the south side of Cell 6 was constructed in accordance with Details 1A and 1B – “Typical Clay Side Slope Construction Detail” on Drawing C-23 Details, submitted on November 13, 2006 with Permit 177982-007-SC/T3. Clay was placed in several 12 ft wide sections (approximately 2' thick) and compacted up the side slope, with the excess soils removed after construction. Signed and Sealed drawings documenting the As-Built conditions of the tops of both the over-excavation and confining layer are provided in Attachment B.

Clay from on-site was used to construct the confining layer. The clay was installed and compacted to within at least 95% of the maximum dry density in accordance with ASTM D698. The clay for each lift was spread with a bull dozer and compacted with multiple passes of loaded off-road (articulating) dump trucks. The in-place density and moisture content for each lift of the confining layer was evaluated by the Universal representative using nuclear-density testing and Speedy Moisture Content devices, respectively. Cell 6 was subdivided by row and column into 12 sections for testing. Each section was less than 1 acre in size, which was the approved testing frequency used for in-place materials, per lift. Lifts were designated as Lift 1, 2, or 3 (from bottom to top). Columns A and B ran north-south and are 140' wide. Rows 1 thru 6 rows ran east-west and are approximately 282' long. A figure depicting the Cell 6 Test Plan is attached.



The UES field technician collected undisturbed Shelby tube samples for each test section, per completed lift, to verify that the installed permeability met or exceeded the Department approved criteria. Permeability testing was performed on the undisturbed Shelby tube samples in the laboratory using a triaxial-permeameter device. The collected samples were also used to evaluate Atterberg Limits.

Results of the density, permeability, and moisture content tests, including the testing plan key map, are in the Universal Testing Report provided as Attachment C.

### **Temporary Stormwater Diversion Swale Construction**

The temporary stormwater diversion swale along the west side of Cell 6 was constructed in accordance with the permit requirements, as observed in the field by the Engineer of Record. The permit documents do not specify a testing schedule for this temporary feature. Field grade stakes and depth measurements were performed on a daily basis for the construction of this feature. The subgrade soils were excavated by a minimum of 3' below the top of the finished swale. Clay from the same source as the bottom liner was used to construct the temporary stormwater diversion swale; which was placed and compacted in 12-inch thick lifts. The subgrade extending approximately 20' west of the temporary stormwater diversion swale was also over-excavated by a minimum of 3' and backfilled with bottom liner clay. At the completion of Cell 6 construction, all occurrences of limestone were remediated per the permit requirements.

### **Field Inspection, Review, Conformance Assessment, and Major Deviations**

John Arnold, P.E., serving as the Engineer of Record, reviewed the UES Testing Report, As-Built (Record) drawings, performed daily field inspections/observations, and prepared and submitted this report and Certification of Construction Completion to the Department for review and approval. In accordance with requirements of Specific Condition 177982-008-SC/T3, Part B, 6.b.:

1. There were no occurrences of sinkholes, soft zones, ravel areas, or unstable conditions associated with construction of Cell 6.
2. There were no submittal or change orders associated with construction of Cell 6.
3. Weekly progress meeting were informal and minutes were not taken.
4. Daily observation reports and photographs of construction activity are attached to this Engineer of Record Narrative Report.

### **Summary**

Review of the UES Testing Report, Record Drawings, and field observations during construction indicate that Cell 6 has been constructed in substantial accordance with the Department approved permit requirements.