

**From:** Stephen Meer, P.E. <smeer@thesigmagroup.com>  
**Sent:** Friday, May 10, 2019 10:45 AM  
**To:** Michalets, Linda M - DNR  
**Subject:** former Biogenesis - PECFA #53154-1437-10-C - additional excavation costs approval request

Good morning, Linda:

Per our discussion, we have completed the approved PECFA remedial excavations at the former Biogenesis site. Based on the anticipated dimensions and depths we anticipated a total excavation volume of 1,845 tons from the six targeted petroleum impacted areas. Excavation activities were completed to the proposed dimensions and depths however review of the actual tonnage excavated indicates the total tonnage removed was 1,961.11 tons, approximately 115.11 tons over the estimated amount. The additional tonnage is likely associated with relatively high moisture content in the excavated material due to spring rains.

To estimate the tonnage based on the calculated volume of the excavation areas, Sigma has used a weight/volume conversion factor of 1.7 tons/cubic yard. Comparison of the actual tonnage to volume ratio indicates an actual conversion factor of 1.8 tons/cubic yard is more representative of the actual conditions encountered. Again, the discrepancy is likely associated with the seasonal conditions present at the time of excavation.

Based on the additional tonnage, Sigma is requesting approval for the additional commodity costs associated with the approved remediation scope of work. The additional commodity costs are as follows:

115.11 tons x \$27.50/ton = \$3,165.52.

Please let us know if you need any additional information.

Regards,

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