RESTORATIVE LAYER RESULTS

The restorative layer experiment was initiated on 5/15/11 and the experiment was terminated on 7/14/11. One hundred grams of contaminated sediment created from contaminated sections typically 13 inches or more below the sediment surface from several stations was used as a worse case residual material. The test aquaria were monitored daily for signs of any contaminant breakthrough of the sand cap including visual observance of product either floating on water surface of present in the sediment, any noticeable odors representative of petroleum, and the volume of water passing through the system was measured daily.

GENERAL OBSERVATIONS

A lighter colored sand layer approximately 0.25 inches in thickness was observed in all of the treatment tanks at the surface of sediment layer. This lighter colored layer is thought to be associated with the finer sand particles settling out of the sand surface. Over time green and red algae were observed in most treatment tanks; the biochar treatments had the most predominant growth.

SediMite™

A SediMite™ pellet was noted on the surface of one tank approximately one week after the start of the experiment. This pellet migrated up through the sand cap from the three inch depth. Additionally, there was a noticeable upward migration pattern from the SediMite™ layer towards the surface of the sand cap. This pattern was noted for all three treatment replicates and is illustrated in Figure 13.

FIGURE 13 SEDIMITE™ VERTICAL MIGRATION PATTERN, PELLET ON SURFACE

BIOCHAR

The biochar treatments all showed a black cloud pattern diffusing in all directions from the three inch layer (Figure 14). Algal growth was most prevalent in biochar treatments in association with the black cloud pattern which may indicate that this amendment has the most available carbon to promote more rapid benthic recolonization of the cap.

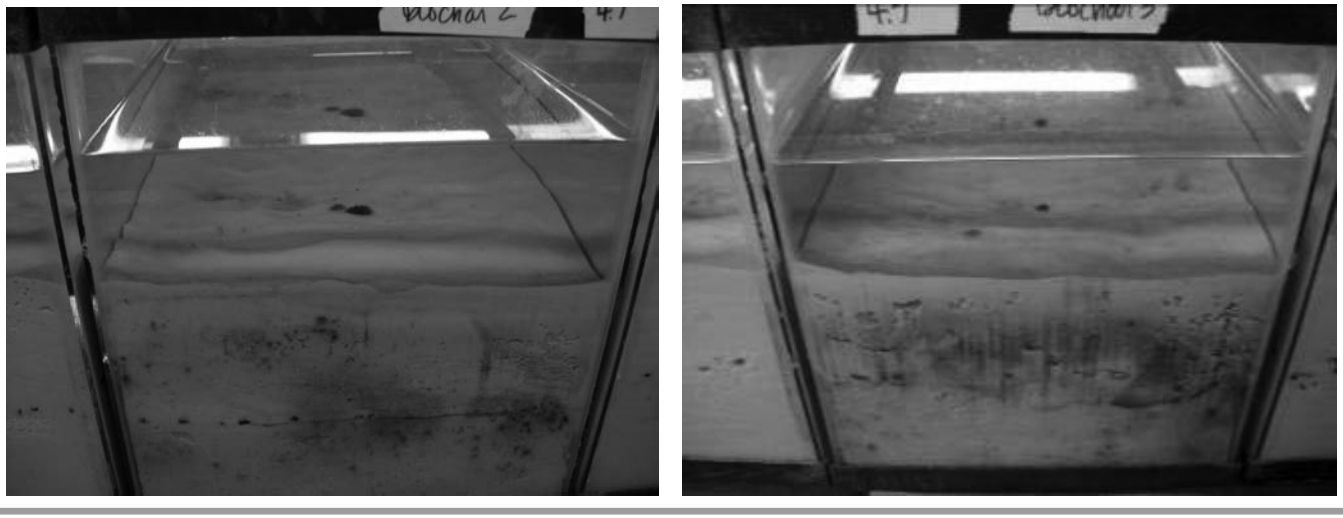

FIGURE 14 BIOCHAR DIFFUSION PATTERNS AND ALGAL GROWTH

Granular Activated Carbon (GAC) – Pellet Form

The GAC treatments had no vertical movement from the three inch depth layer as shown in Figure 15. There was also no observed algal growth associated with any of the GAC replicates.

FIGURE 15GAC TREATMENT REMAINS AT THREE INCH DEPTH INTERVAL