Traditional Oil Spill Response Technology

C-sponge™ Recycled Cotton Oil Spill Absorbent Pad/Roll

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ABSTRACT

C-sponge™ is made in Michigan with recycled cotton materials. C-sponge ™ can absorb >1,100% its weight in (heavy) oil from water, without soaking up water. 1" thick pads and rolls were used in the Enbridge oil spill cleanup in Michigan in July 2010.

Product Name:	C-sponge™
Product Classification:	Oil Spill Absorbent Material (Recycled)
Product Makeup:	Recycled Cotton/PET
Thickness:	Typically one-inch, thickness can be varied, length variable
Testing:	ASTM F 726
Manufacturing Location:	Jenison, Michigan
Experience:	Material Used in Enbridge Michigan Oil Spill July 2010

Section A: Technical Approach

Cellulose Material Solutions, LLC (CMS) manufactures a pad/roll material— C-sponge™ — that is a superior and "green" approach as an absorbent material for oil spill cleanup. Where many absorbent materials used in oil spill technology use materials that are derived from a petroleum base, C-sponge™ is made with recycled materials. Because this material is made on existing equipment that has other markets, making oil absorbent material for short-term emergency spills is not problematic, supply easily keeps pace with demand. In a 3 shift production operation, CMS can produce 75,000 square feet of C-sponge in 1" thickness daily.

C-sponge™ is easily placed on coastal areas or in open waters. The material can easily be recovered, and disposal represents a cleaner and safer approach than traditional oil spill technologies. **C-sponge™ was successfully used in the Enbridge Oil Spill (July 2010) in Michigan.**

C-Sponge™ is made on an *airlay, nonwoven,* textile machine that is adaptable to a wide range of fibers, e.g., recycled paper, cotton (virgin and recycled), and polyester. The

pad/board can be made in any thickness from .125 to 3.5 inches and widths to 2.5 meters in any manageable length. Density of the product can also be varied. Oil that is absorbed by the pad can be mechanically squeezed to extract the bound oil.

The C-Sponge™ cotton (recycled) pad/roll at one-inch (25mm) thickness can absorb >1,100% of its weight in (heavy) oil. When the pad is removed from the water, a small amount of retained water falls out, oil does not drain from the pad (unless more than 1,100% has been absorbed). **An independent lab has also tested the product for ASTM F 726, including material degradation testing for use in open waters. Test data is available upon request.**

The material can be ordered to any width up to 8 feet and lengths to 30 feet and longer. C-Sponge can also be rolled for easy shipping and storage. C-Sponge™ contains no hazardous materials; an MSDS is available upon request.

We feel the CMS product represents a “Green” solution for extracting oil in water. As with any “Green” product, the CMS pad has a positive public message for using a recycled material to clean areas contaminated with oil spills. The C-Sponge™ material has been successfully used in the recent (July 2010) Enbridge Spill in Michigan.

Section B: Rough Order of Magnitude (ROM) Cost

C-Sponge™ is sold by square foot costing F.O.B. Jenison, Michigan. The material density, thickness, length and width can be made to customer defined specifications. C-sponge™ provided for the Enbridge Oil Spill in Michigan (July 2010) was 1" thick, in 4' x 4' pads and 4' x 30' rolls. 3 shift production capacity is 75,000 square feet , 1” thick, daily.