A Wholly Owned Subsidiary of ECO Integrated Technologies, Inc.

Tenth Biennial
OSPR/Chevron Oil Spill Response Technology Workshop

project portfolio operations technology Chevron sustainability investors about search

sustainability

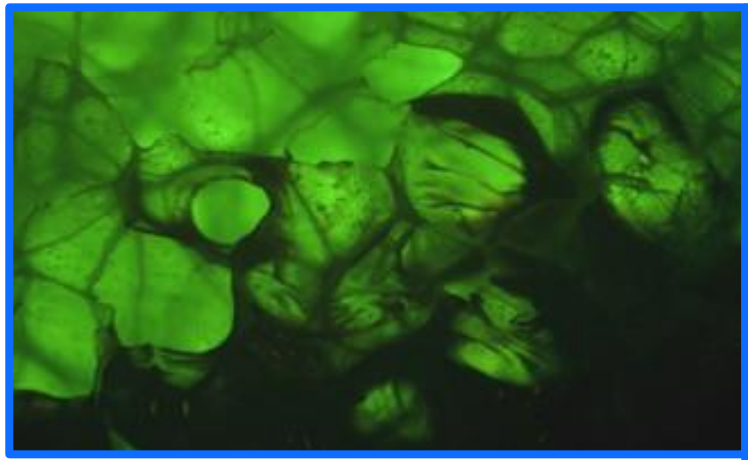
advancing a lower carbon future

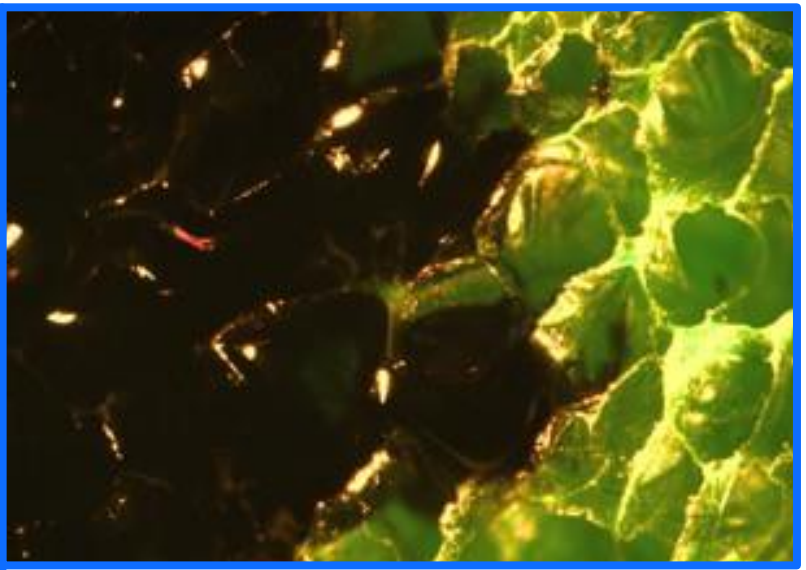
Chevron's commitment to sustainability has never been stronger. Our approach is integrated throughout our business to strive to protect the environment, empower people, and get results the right way—today and tomorrow.

Chevron's Website
March 28, 2023

ECO AQUAFLEX™

Sustainable Open-Cell Polyolefin Sorbent Foams for Oil and Chemical Spills, and Results of Tests Conducted at Ohmsett and in Real World Spills as Endorsed by BP and the API





Video Link: 17 Years Ago I Realized Water Testing and Remediation were Seriously Flawed

OSPR-Chevron 2023 Conf: History of Scott Smith & Oil Contaminated Flood & Chuck Schumer Jun-2006

AquaFlex Open-Cell Foam Technology as Used in a Lotion-Infused Medical Device Since 2002

This Open-Cell Medical Foam was Sitting in a Corner of the Factory During the 2006 Flood – It was Absorbing Oil Quickly without Absorbing Water while the Single-Use White Plastic Booms and Pads were not – Hence, My Obsession with Water Testing and Remediation Began...

ECO AQUAFLEX™

U.S. Small Business Administration

SBA

Your Small Business Resource

News Release

PRESS OFFICE

Release Date: March 24, 2008
Release No: 08-322

Contact: Carol Chastang (202) 205-6987
Internet Address: www.sba.gov/news/

SBA Honors New York Business Owner Scott C. Smith For Outstanding Disaster Recovery Effort

WASHINGTON –Scott Smith, owner of Cellect, LLC**,** faced every business owner's nightmare when his company had to shut down for four months in the aftermath of torrential rainfall on June 18, 2006 and the flooding that followed. Fifteen feet of water rose inside the plastic foam factory located in St. Johnsville, N.Y., destroying expensive equipment, supplies and inventory in Cellect's 200,000 square-foot plant.

Although Cellect sustained an estimated $10 million in damages and lost revenue, Smith's priority was to take care of his employees first. He organized a meeting with the New York State Department of Labor, quickly securing unemployment assistance for his 100 employees.

The care, concern and innovation that Smith displayed in getting his employees back to work in the aftermath of the devastating flood and his tireless devotion to the rebuilding and subsequent expansion of this St. Johnsville business has earned him the ***2008 Phoenix Award for Small Business Disaster Recovery.***

ECO AQUAFLEX™

SBA News Release March 24, 2008

The award will be presented during the U.S. Small Business Administration's (SBA) *National Small Business Week 2008*, to be held in Washington, D.C and New York City April 21-25.

"The Phoenix Award is an acknowledgment of an individual's heroic effort and recognition of contributions to the physical and economic recovery of their communities," said SBA Administrator Steve Preston. "Mr. Smith displayed tremendous courage and resourcefulness in the aftermath of the disaster, and he exemplifies the spirit one must have to rebuild after a tragedy like this."

This marks the 10th year the SBA has given Phoenix Awards to business owners, public officials and volunteers who displayed courage, ingenuity and tenacity in the aftermath of a disaster, while contributing to the rebuilding of their communities.

The SBA makes low-interest, taxpayer-backed disaster loans to homeowners, renters, and businesses of all sizes. Following the 2005 Gulf Coast hurricanes, the SBA has approved more than $10.9 billion in disaster loans to more than 160,000 hurricane survivors, the largest response in the agency 55-year history. To find out more about the SBA's disaster assistance program, visit the Web site at http://www.sba.gov/services/disasterassistance/.

For more information about National Small Business Week, visit www.sba.gov/sbw.

# # #

US Homeland Security

RSDL REMOVES OR NEUTRALIZES KNOWN CHEMICAL WARFARE AGENTS FROM THE SKIN.

- Tabun
- Sarin
- Soman
- Cyclohexyl Sarin
- VX
- HD (Mustard)
- T2 Toxin

Although soap and a large amount of water may be effective in physically removing CWAs, they do not neutralize CWAs. Soap and water can increase dermal absorption of mustard agents and can result in contaminated runoff that can affect others.

AquaFlex Open-Cell foam is only material that absorbs the medical lotion without reacting or interfering with the lotion that removes/neutralizes chemical agents. – For the same reason, because of specialized non-polar medical grade polymer, that this Open-Cell Foam attracts, absorbs, and retains oil and other chemicals.

In 2003, the FDA Stated in a Press Release as Follows:

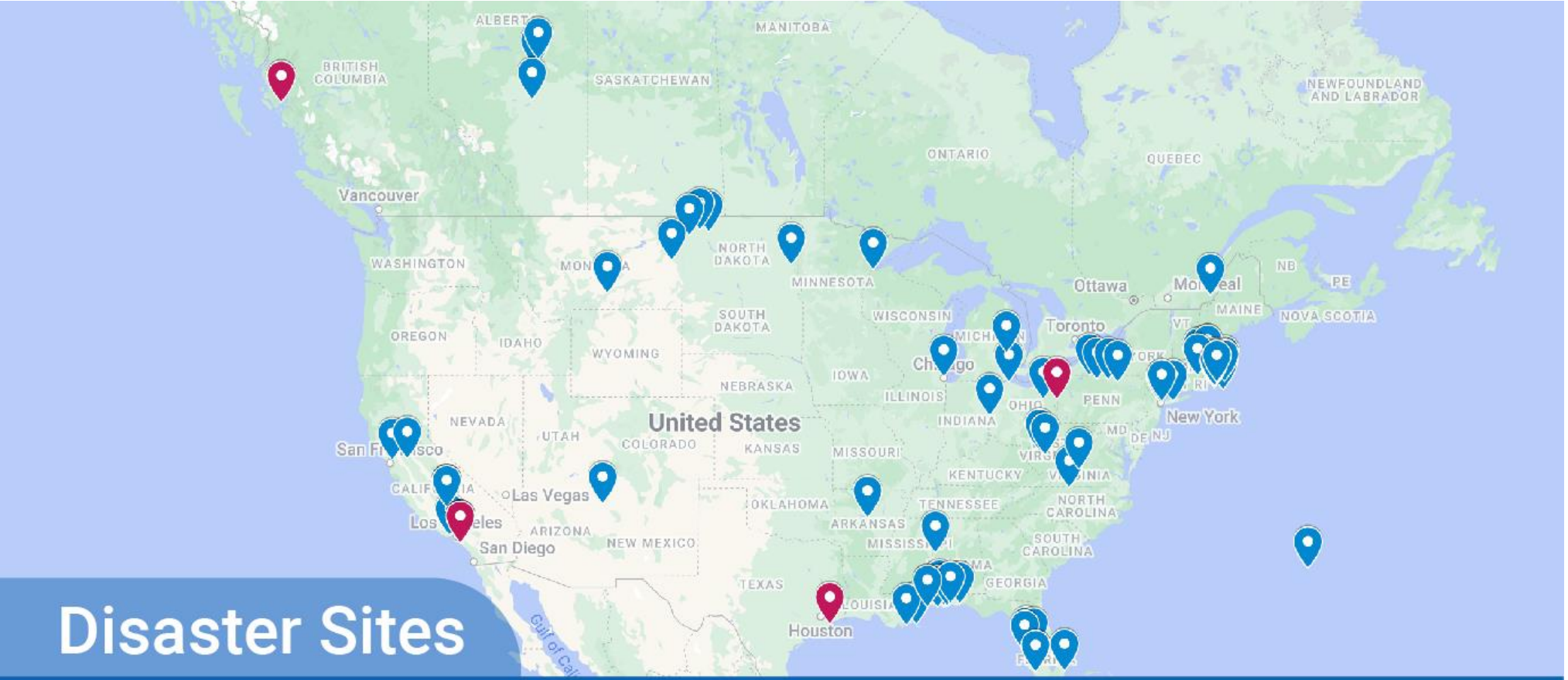
"The Food and Drug Administration (FDA) has cleared for use by the U.S. military a liquid decontamination lotion intended to remove or neutralize chemical warfare agents and T-2 fungal toxin from the skin.

The lotion, called Reactive Skin Decontamination Lotion (RSDL), must be applied to exposed skin as soon as possible after exposure to a chemical agent.

The lotion is impregnated in a Sponge pad [AquaFlex Non-Polar Open-Cell foam sponge] packaged as a single unit in a heat-sealed foil pouch. When exposed to chemical warfare agents, the user wipes the exposed skin with the lotion. The lotion removes the agents or the T-2 toxin and also reacts with the chemical agents, rapidly neutralizing them so they are non-toxic."

A complete copy of the FDA press release is here:

https://www.fda.gov/drugs/bioterrorism-and-drug-preparedness/fda-clears-skin-lotion-military-protect-against-chemical-burns



Disaster Sites

St. Johnsville, NY
Venice, LA
Fort Walton, FL
Fairhope, AL
Orange Beach, AL
Venice, LA
Dalian, China
Grand Isle, LA
Fort Morgan, AL
Horn Island, MS
Perdido, FL
Pensacola, FL
Wellesley, MA
Charles River, Boston, MA
Childs River, Falmouth, MA
Barnstable Harbor, Cape Cod, MA
Laurel, MT

New Bedford, MA
Horn Island, MS
Berkeley, CA
Giglio, Italy
Bermuda
Gowanus Canal, Brooklyn, NY
Enbridge, WI
Bayshore, NY
Malibu Lagoon, CA
Newtown Creek, Brooklyn, NY
Port of Stockton, CA
Grafton, MA
Mayflower, AR
Lac-Mégantic, Quebec
Stanley, ND
Athabasca, Alberta
Tioga, ND

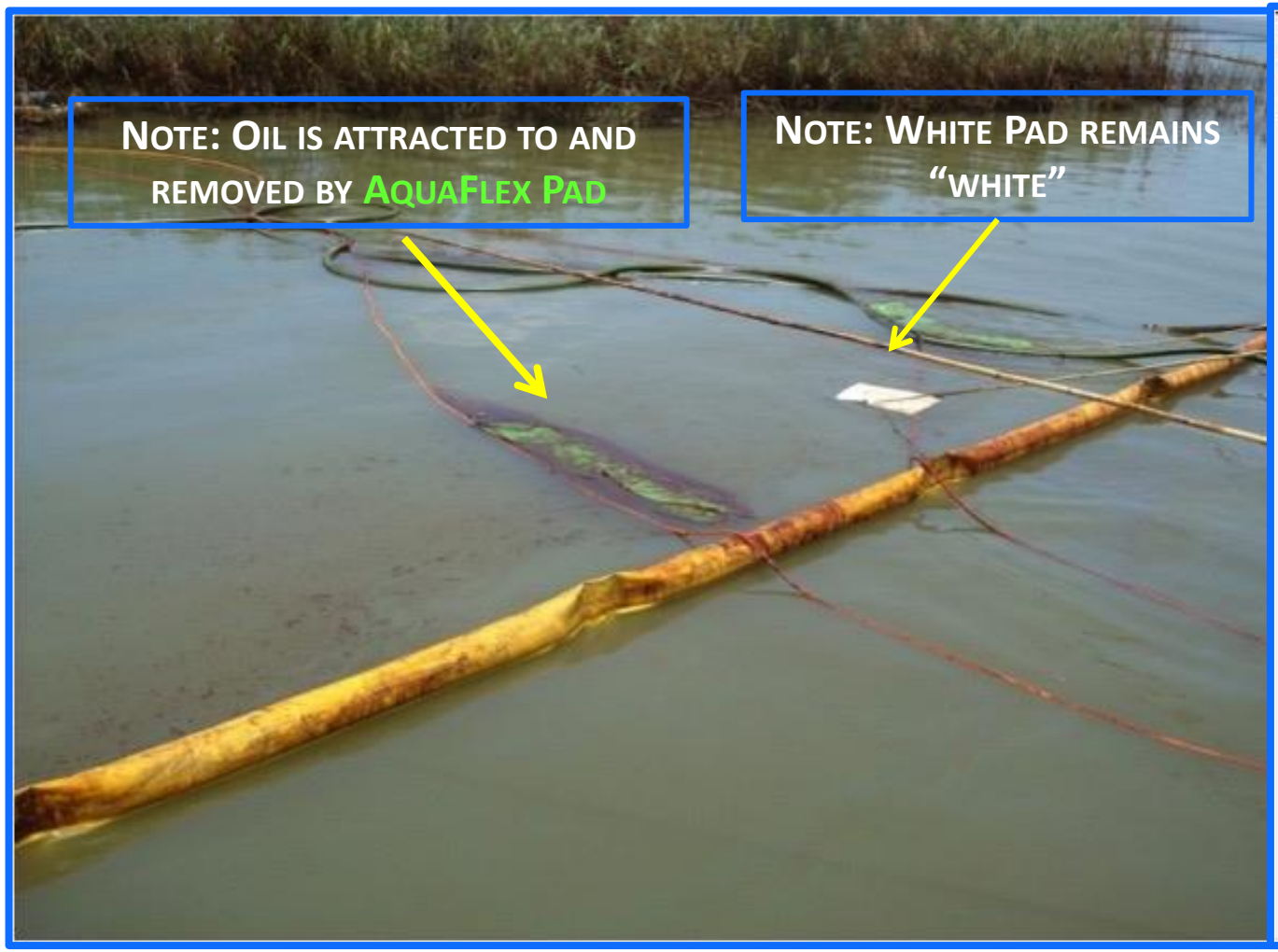
Edmonton, Alberta
Aliceville, AL
Duke Center, Knapp Creek, PA
Coudersport, PA
Casselton, ND
Charleston, WV
Dorchester, MA
Eden, NC
East Falmouth, MA
Oak Glen, OH
Galveston, TX
Lynchburg, VA
Eastham, MA
Nantucket, MA
Toledo, OH
Brewster, MA
Kern County, CA

Williston, ND
Charles River, Boston, MA
Glendive, MT
Mount Carbon, WV
Kern County, CA
Bourne, MA
Santa Barbara / Refugio
Wellsboro, PA
Leroy, PA
Barnstable Harbor, MA
Snake Pond, MA
Harding's Beach, MA
Navajo Nation / EPA Animas River Spill
Kern County, CA
Navajo Nation / EPA Animas River Spill

Flint, MI
Tampa, FL
Mulberry, FL
Pascoag, RI
Fort Meyers, FL
Chicago, IL
Martha's Vineyard, MA
Tisbury, MA
Huntington Beach, CA
Tampa Bay, FL
Mashpee, MA
West Palm Beach, FL
Fort Myers, FL
Hartley Bay, Canada
Huntington Beach, CA
East Palestine, OH

ECO AQUAFLEX™

BP Endorsed Open-Cell Foam in 2010 Macondo/Gulf of Mexico Oil Spill - 2010



USA TODAY

After BP oil spill, thousands of ideas poured in for cleanup

Updated 11/15/2010 3:25 PM

By Julie Schmit, USA TODAY

Scott Smith of Cellect Technologies shows his oil-absorbing Opflex foam.

Costner.

Cover story

Most of the ideas weren't workable: freeze the well into submission or bury it in a nuclear explosion. Many of the ideas had already been tried or discarded. Some of the ideas would've created other problems: dump popcorn from airplanes to soak up oil but create a tasty toxic treat for marine life.

But more than 100 ideas were good enough to

Please see COVER STORY next page ▸

in different way

300 Miles of Shoreline Deployment

ECO AQUAFLEX™

USA Today Business Section Cover – Nov 2010

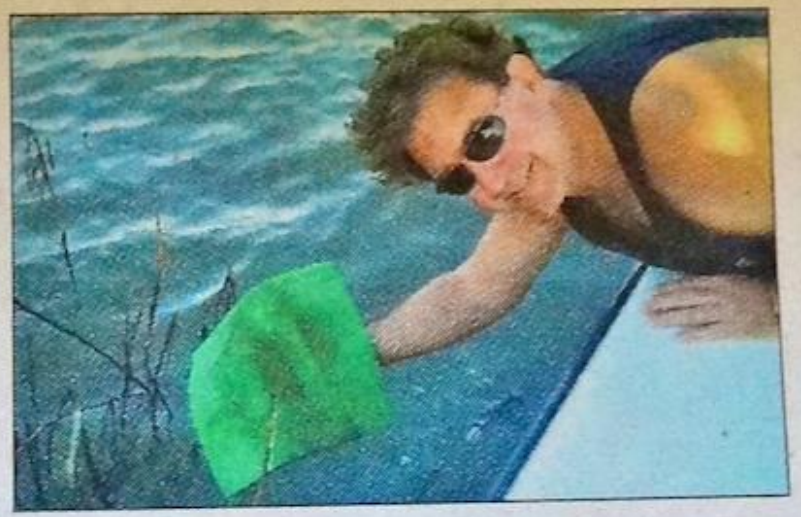
Ideas poured in for BP oil spill cleanup

No magic bullets, but tactics that worked could improve industry's response next time

By Julie Schmit
USA TODAY

HOUSTON — As oil spewed from the BP well in the Gulf of Mexico last summer, so did ideas on how to stop it and clean it up.

BP received about 123,000 ideas, 80,000 of which had to do with plugging the leak and 43,000 on ways to clean up the oil. The ideas came in crayon from 9-year-old boys, in shaky handwriting from 90-year-old men and from scientists, inventors and engineers — even actor Kevin Costner.



Workable: Scott Smith of Cellect Technologies shows his oil-absorbing Opflex foam.

Cover story

Most of the ideas weren't workable: freeze the well into submission or bury it in a nuclear explosion. Many of the ideas had already been tried or discarded. Some of the ideas would've created other problems: dump popcorn from airplanes to soak up oil but create a tasty toxic treat for marine life.

But more than 100 ideas were good enough to

Please see COVER STORY next page ▶

As Deployed and Endorsed by BP and the American Petroleum Institute in the Deepwater Horizon Gulf of Mexico Oil Spill - 2010

ECO AQUAFLEX™

bp

Gulf Update

Home | Alabama | Florida | Louisiana | Mississippi | Gulf Coast activity | Videos | News | Claims | Contact us

You are here: Home ▸ Gulf Coast activity ▸ Cleanup updates ▸ Specialized foam takes on new role in Gulf cleanup

DATE: September 1, 2010 9:42:04 AM CDT

Specialized foam takes on new role in Gulf cleanup

bp

Alternative Response Technology
API Study-Progressing Learnings

Michael J. Cortez
BP America-Oil Spill Technology Manager
RRT-3 Presentation- November 6, 2013

Early in the Gulf response, Kinnaird was impressed by a product demonstration of Opflex and contacted Lou Weltzer, who was stationed in the Critical Resources Unit in New Orleans with responsibility for evaluating cleanup materials. After receiving his own product demonstration, Weltzer placed an order for a truckload of the material. Subsequent orders from BP total about two million square feet. Weltzer also began contacting associates at other locations to spread awareness of Opflex's capabilities. Since the experience with BP, Smith has received an order from the Chinese government to assist in the Dalian Oil Port cleanup, as well as a range of other cleanup operations throughout the country, which continues to solidify Opflex's role as a new and effective method for oil spill cleanup.

ECO AQUAFLEX™

From: David Kinnaird [redacted]
Date: Fri, 10 Dec 2010 07:16:38 -0600
To: Scott Smith [redacted]>>
Subject: RE: question

Mr. Smith.
With respect to your question, I respond as follows:

We had light sheening in 4 port and stbd ballast tanks on the t/b Valiant. In lieu of cleaning the tanks, we placed Oplex snares and pom poms in the tank to absorb the oil therein. I am delighted to say that it workedextremely well. We cycled clean Oplex through the tanks twice and after thesecond application, no oil or sheening was observed. The tanks were sufficiently cleaned to pass a US Coast Guard Stage lll Inspection for Decon. I might add that the USCG is particularly sensitive to ballast tanks, for obvious reasons, so it is particularly significant that this worked so well because it alleviated the need to go in and clean by hand.
Sincerely,

Dave Kinnaird
BP Site Leader
Lake Charles, La.

David J. Kinnaird

8090 Sage Thistle Trail,

Houston, Tx 77406

Date: 31st March 2021

Ref: AquaFlex

To Whom it may concern,

I have been asked to provide details of my experience with AquaFlex in 2010 on the Macondo Oil Spill. At the time the tragedy occurred, I was working as a Project Director at BP where I had been employed for over 25 years. As a long standing member of BP's Emergency Management and Response Team, I was deployed to Venice, Louisiana two days after the explosion and subsequent oil spill occurred.

By way of background, I have been involved in emergency management since 1989 when I was a first responder to Ocean Shores in Washington State to assist with the cleanup of a 6,000 barrel Heavy Fuel Oil spill. This spill, from a barge two days before Christmas, had fouled some of the most pristine shorelines in the world. The alliance of Industry, State and Federal Agencies put together to clean up the oil was a benchmark for cooperation then and for years to come.

Since 1989, I have had held many ICS roles ranging from Incident Commander to Situation Unit Leader and this includes major spells as Operations Section Chief, Decontamination Section Chief and Planning Section Chief. During this period, I responded to a wide range of crisis events, many of them oil spill related.

Over this period of time, I have had extensive experience in the deployment, use of and retrieval of the commonly used white sorbent pads and sausage booms. Once this material gets oiled, it is of no further use and in fact tends to add to the problem. This is because white polypropylene sorbent materials do soak up oil but they also soak up vast amounts of water as well. This water adds to the weight of these materials making them extremely heavy and difficult to manage. They also need to be handled as hazardous waste and by law must be disposed of and manifested as such!

AquaFlex is a unique product and works very differently. Deploy it in the morning, come back in the afternoon hours, recover the materials and wring the oil out of it then redeploy. The oil can be collected and sent to a refinery to be used productively and the AquaFlex and be reused over and over again. This reduces the time and cost to dispose of soaking wet sorbent pads as hazardous material!

One of the best uses for the technology is as "eelgrass" where the AquaFlex is made into what looks like bunches of hay strands. These are deployed behind skirt boom helping to prevent the oil from entraining [passing underneath the boom in tidal or windy conditions]. It collects the oil instead adding to the overall effectiveness of the skirt boom.

Another use for the eelgrass was to clean oil from the ballast tanks of vessels that were used in the Macondo spill response effort. These vessels were often forced to take ballast whilst over the well and thus got crude in their ballast tanks. The eelgrass was highly effective in removing the oil sheen from these ballast tanks after deep cleaning and was good enough to pass a USCG inspection after only two or three passes with clean AquaFlex.

After many, many uses, AquaFlex does start to fall apart. Wring it out thoroughly and send the [now] oil free AquaFlex to the landfill. With both products there is handling involved. The difference is that with AquaFlex, the oil is recovered and thus does not go into a land fill. What this means in practical terms is far fewer trips to the landfill with far less weight and thus a lot less money spent for disposal. As a responsible party in an oil spill scenario, you can count the recovered oil in your daily reports and statistics. This helps reduce your fines under OPA 90 and other Federal and State mandates.

There is no denying that to use AquaFlex efficiently, you must provide a means of wringing the oil out. The more effective the wringer, the more time and effort you will save. The wringer is a onetime cost and the machinery used to fabricate or manufacture wringers is basic and inexpensive.

In the saltwater marshes in lower Louisiana, AquaFlex was the ***only*** way of effectively removing the oil other than burning the reeds to the water line. In-situ burning is a dangerous, expensive and environmentally unfriendly way of removing this oil. White Sorbent pads were worse than useless and mainstream media newsreels are full of pictures depicting the white pads, sitting waterlogged and doing nothing of value!

I wish to add, for the record that I was a user of this product and have received no remuneration from the Company. Quite simply, I believe AquaFlex is a far superior product. It is re-usable, you can recover spilled oil and when it is time to dispose of the AquaFlex, it is far friendlier to the environment than white, polypropylene pads that are soaking wet and covered in oil.

David J Kinnaird

+1 281 224 6466

kinnaidj@yahoo.com

ECO AQUAFLEX™

"…In the saltwater marshes in lower Louisiana, AquaFlex was the *only* way of effectively removing the oil other than burning the reeds to the water line. In-situ burning is a dangerous, expensive and environmentally unfriendly way of removing this oil. White Sorbent pads were worse than useless and mainstream media newsreels are full of pictures depicting the white pads, sitting waterlogged and doing nothing of value!"

David J. Kinnaird

Dave Kinnaird (Formerly of BP), *“Status Quo of Inaction No Longer Sustainable…”*

Alternative Oil Spill Response Technology: Results from the *Deepwater Horizon* Response

Michael J. Cortez, Manager of Oil Spill Response Technology, and **Hunter G. Rowe,** Deputy Manager of Oil Spill Response Technology, BP's Crisis & Continuity Management/Safety & Operational Risk Group

Journal of Petroleum Technology (2012)

TABLE 1—ALTERNATIVE RESPONSE TECHNOLOGY SUCCESSES
Ideas recommended for use by responders

OFFSHORE

- Controlled In-Situ Burning [Spilltec]: Extended, field-scale implementation of in-situ burning techniques previously planned and practiced only on a limited basis.
- Laser Fluorometer Submerged Oil Detection [EIC Laboratories with funding from the US Coast Guard]: Uses laser fluorescence polarization to detect nonfloating oil.
- Coda Octopus 3D Sonar [US Coast Guard R&D]: In conjunction with EIC's Laser Fluorometer, uses proprietary underwater sonar technology for detecting nonfloating oil.
- Side Scan Sonar [Fairweather Science]: Calibration and use of side scan sonar to detect nonfloating oil.
- Acoustic Doppler Current Profiler [T&T Marine]: Calibration and use of ADCP to detect nonfloating oil.
- Big Gulp Skimmer [LAD Services]: Barge equipped with wide weir skimmer and settling tanks for high-volume open water oil skimming.
- Wave Glider [Liquid Robotics]: Autonomous, self-propelled, remotely steered vehicle with capability to carry a wide range of monitoring instruments.

NEAR SHORE

- Tar Ball Net [Tobu Services]: Modified shrimp net for capturing tar balls.
- V2 Vyper Platform [Vyper Adams]: Four-wheel drive vehicle with superior stability and light footprint, for use in sensitive beach and shallow water operations.
- Parachute Surf Skimmer [Holen Synergy Group]: Hand-deployed pond/pool skimmer adapted for use in recovering shallow water tar balls.
- Helicopter Boom Removal [Various sources]: Use of helicopter and grapple to vertically retrieve boom stranded in sensitive shoreline areas [e.g., marsh].
- Yates Boom Cleaner [Yates Construction]: Use of dishwasherlike assembly line transport and spray system to streamline used boom cleaning operations [improved cleaning rate].
- Boom Blaster [Gulf Coast Environmental Resources]: Use of car wash concept [cleaner, spray, brushes] to streamline used boom cleaning operations [improved cleaning rate and reduced manpower].
- Opflex Buoyant Open-Cell Foam [Cellect Plastics]: Bouyant polyolefin foam with high absorbency; reusable and available in multiple forms [pad, boom, pom pom, etc.].
- Low-Pressure Marsh Flusher [Core 4 – KEBAWK Group]: Barge equipped with low-pressure water wand for gently irrigating marsh areas to mobilize oil for recovery.
- Truxor Amphibious Tool Carrier [Megator]: Versatile, trailerable amphibious vehicle capable of tool transport, skimming operations, raking, pumping, and other uses.
- Water Curtain [D02E Wastewater Treatment]: Use of directed aeration pumps to create water positive flow barrier for protection of inland waterway from advancing floating oil without impeding vessel ingress/egress.
- Oil/Water Separation [Ocean Therapy Solutions]: High-volume centrifugal oil/water separator.
- "HOSS" Heavy Oil Skimming System [VOO Captain Gerry Matherne]: Custom-designed frame and netting device deployed from the vessel for highly efficient tar ball recovery.
- X-Tex Silt Barrier Fence [UltraTech] and Eco-Barrier Fence [Trinity Industrial Services]: Hydrophilic textile material installed as in-water "fences" to stop and divert oil approaching shorlines.

Alternative Response Technology API Study-Progressing Learnings

Michael J. Cortez
BP America-Oil Spill Technology Manager
RRT-3 Presentation- November 6, 2013

Macondo experience

- 120,00+ total submissions
- Multiple technical reviews required
- Conventional & non-conventional ideas submitted
- Submissions via phone, fax, e:mail, internet, walk-up
- From 100 countries in 88 languages
- Multiple submission channels (PIERS, EPA, IATAP, LABOEC)
- Multiple Incident Command Posts and a Unified Area Command
- Seek out Operational needs
- Field Tested 100 new technologies; 45 were proved and implemented
- Limited exposure within Planning cycle increased testing logistics difficulties

List of Recommended Items (Successes)

- **Offshore**
  - Laser Fluorometer Submerged Oil Detection (Oscar)
  - Coda Octopus for Submerged Oil Detection
  - Big Gulp Skimmer
- **Near Shore**
  - Tarball Net and Test Net
  - V2 Vyper Platform for Marsh and Shallow Water Skimming
  - Parachute Surf Skimmer
  - Helicopter Boom Removal
  - Yates Boom Cleaner
  - Boom Blaster (Boom Cleaning Machine)
  - Opflex Buoyant Open-cell Foam
  - Low Pressure Marsh Flusher
  - Amphibious Tool Carrier (Truxor DM 5000)
  - Water Curtain (DO2E Wastewater Treatment)
  - Oil/Water Separation: Ocean Therapy Solutions
  - Bio Based Absorbent (Nature's Broom) – oil cleaning on beach/marshes
  - Bio Based Absorbent (Nature's Broom) – decon/cleaning procedures
  - Heavy Oil Skimming System (HOSS)
  - Silt Barrier Fence (X-Tex®)
  - Eco-Barrier Trinity Fence
  - RAT (Rapid Attack Tactic) for Skimming
- **Onshore**
  - Bio Energy Gasifier
  - Green Earth Sand Cleaner
  - Petromax Sand Wash
  - M-I SWACO Sand Cleaning
  - STS-101 Solids Washing
  - Eco-Oil Vortex (Beach Sand Washer)
  - Gravely Sand Cleaner
  - Ergonomic Beach Cleaning Tool (EZ-Zacks)
  - Sand Shark 3000 LeeBoy for Beach Cleaning
  - Ozzies OPP-200 for Beach Cleaning
  - Beach Tech 2000 & 3000 for Beach Cleaning
  - Cherrington 4600 & 5000 for Beach Cleaning
  - RECOVERIT from GOLF Energy Service
  - Clean Beach Technologies, Inc (Beach Restoration System™)
  - Chemstation Degreaser
  - Biomass Based Sorbent (Show Me Energy)
  - Field Analytical Methods (SiteLab Corporation)
  - REUSE recycling

Captain Frank M. Paskewich USCG (Ret.) – Expert Report Sep 26 2014

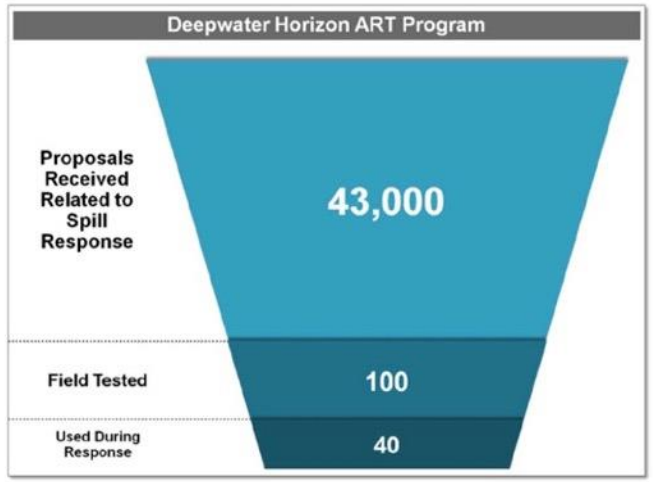


Figure 2: *Deepwater Horizon* ART Program By the Numbers

The Unified Command implemented spill response technologies identified through the ART Program for use in off-shore, near shore and shoreline operations during the Response, as summarized below.

2. BP Has Shared Spill Response Innovations and Lessons Learned.

BP has proactively shared innovations and lessons learned from the Response with others to advance spill response capabilities. During the Response, BP actively engaged with stakeholders to provide information about Response tools and techniques. BP engaged the community through meetings, the internet, community outreach centers, state and local officials, and other channels. BP shared information with its Unified Command partners, including through weekly technology updates.[56] The ART team also prepared a Final Report documenting its work, which they provided to the Unified Command.[57]

BP also took the initiative to share spill response innovations and learnings from the Response with those outside of the Unified Command. BP prepared and published a report, titled *Deepwater Horizon Containment and Response: Harnessing Capabilities and Lessons Learned*, documenting the advancements and lessons learned during the Response.[58] BP representatives traveled around the world, making dozens of presentations to industry groups, governments, and others about learnings from the Response.[59] BP representatives also took lead

[54] VanHaverbeke Report at 17.

[55] Lubchenco et al., *Science in Support of the Deepwater Horizon Response*, (Ex. 12500) at 6; *Alternative Oil Spill Response Technology*.

[56] *See, e.g.*, ART Updates (HCG904-003788; EPE082-007079; HCE912-003408; US_PP_USCG2_1916822; US_PP_NOAA146389).

[57] *ART Program Final Report*; 6/10/10 J. Best Email to Coast Guard personnel (HCG952-003603).

Alternative Response Technology Innovations

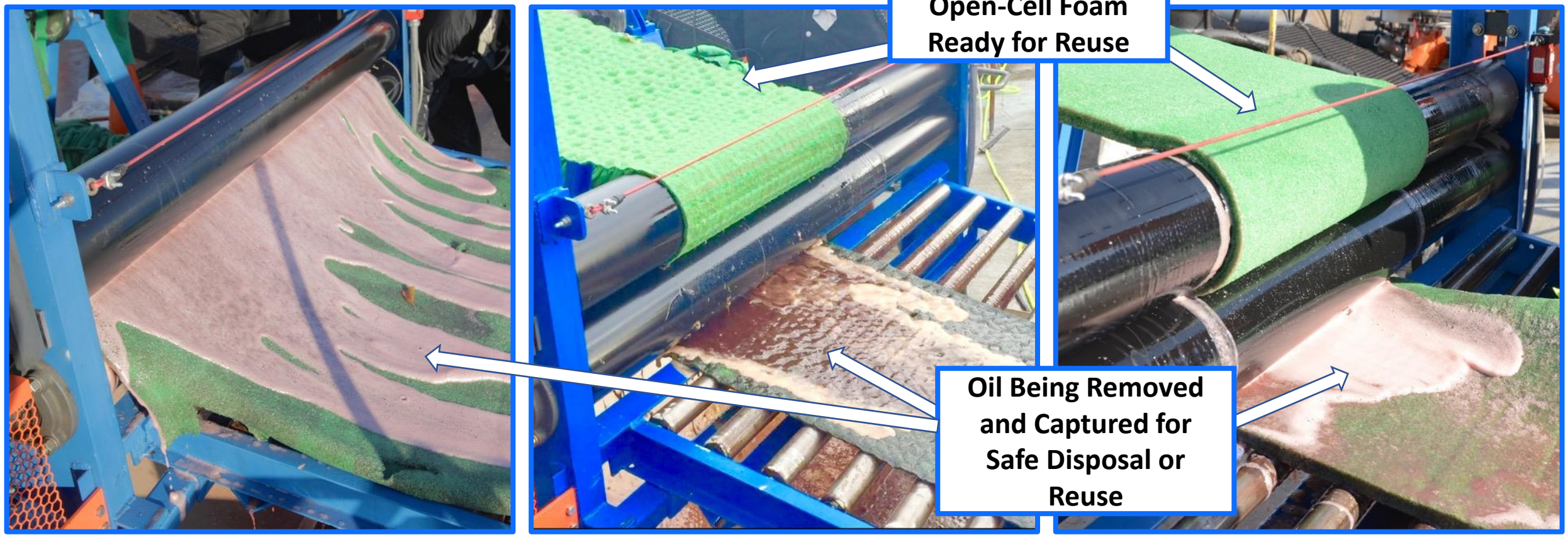
Offshore	• Laser Fluorometer Submerged Oil Detection • Coda Octopus 3D Sonar • Side Scan Sonar	• Acoustic Doppler Current Profiler • Big Gulp Skimmer • Wave Glider	 Coda and EIC Oscar  Big Gulp Skimmer
Near Shore	• Tar Ball Net • V2 Vyper Platform • Parachute Surf Skimmer • Helicopter Boom Removal • Yates Boom Cleaner • Boom Blaster • Opflex Buoyant Open-Cell Foam • Water Curtain	• Low-Pressure Marsh Flusher • Truxor Amphibious Tool Carrier • Oil/Water Separation • "HOSS" Heavy Oil Skimming System • X-Tex Silt Barrier Fence and Eco-Barrier Fence	 Boom Blaster  Water Curtain  X-Tex Silt Barrier  HOSS
Onshore	• Reflectance Spectrometer • Bio Energy Gasifier • Booms to Bumpers • Soft Boom Recycling • Tar Balls to Asphalt • Green Earth Sand Cleaner • Petromax Sand Wash • M-I SWACO Sand Cleaning • STS-101 Solids Washing • Vortex Beach Sand Washer • Big Green Sand Machine • Gravely Sand Cleaner and Barber Sand Man	• EZ-Zacks Ergonomic Beach Cleaning Tool • Sand Shark • Ozzies OPP-200 • Beach Tech 2000, 2800 & 3000 for Beach Cleaning • Cherrington 4600 & 5000 for Beach Cleaning • RECOVERIT • Beach Restoration System • ChemStation "7248" Degreaser	 Sand Shark  Contaminated Beach  Sand Shark Cleaned Beach

ECO AQUAFLEX™

Open-Cell Technology maximizes surface area and can be deployed to remove oil from the entire water column.

ECO AQUAFLEX™

Wringing System Originally Deployed by BP in 2010



Pictures are from Ohmsett Outdoor Tank Testing - 2014

ECO AQUAFLEX™

Video Link: Open-Cell Foam Ohmsett Tank Outdoor Testing 2014

[OSPR-Chevron 2023 Conf: AquaFlex Open-Cell Foam Ohmsett Tank Outdoor Testing 2014]

Video Link: Open-Cell Foam Eelgrass Boom Ohmsett Tank Testing 2014

OSPR-Chevron 2023 Conf: AquaFlex Open-Cell Foam Eelgrass Ohmsett Tank Testing 2014

Video Link: Eelgrass Submerged for Oil in Water Column Ohmsett 2014

OSPR-Chevron 2023 Conf: AquaFlex Open-Cell Foam Test at Ohmsett with Submerged Oil Water Column

Video Link: Galveston, TX Oil Spill 2014

OSPR-Chevron 2023 Conf: Galveston Barge Oil Spill March 2014 & Tragic Spread of Spilled Oil

Ohmsett Newsletter
Spring 2020

The Ohmsett Gazette

The National Oil Spill Response Research & Renewable Energy Test Facility

Sustainable Sorbent Products to Protect Waterways

Since 2014 when AquaFlex Holdings, LLC first came to Ohmsett to test their reusable Open-Cell foam sorbent for oil spill recovery, they have been eagerly working to perfect their technology. The AquaFlex® products are built on its founder Scott Smith's technology for the detection and removal of oil from water. "AquaFlex technology is based on an Open-Cell foam membrane that traps water contaminants that may otherwise remain undetected," says Smith. "Like a sponge, the flexible elastomeric foam acts like a capillary network similar to the alveoli of the human lungs; the Open-Cell foam absorbs contamination and exhales clear water."

Armed with the successful testing results from 2014 and continued development of the technology, AquaFlex entered into a partnership with the multinational company, Palziv, in 2017 for the development of continuous Open-Cell roll foams. Their efforts came to realization in 2019 with the commercialization of AquaPal®.

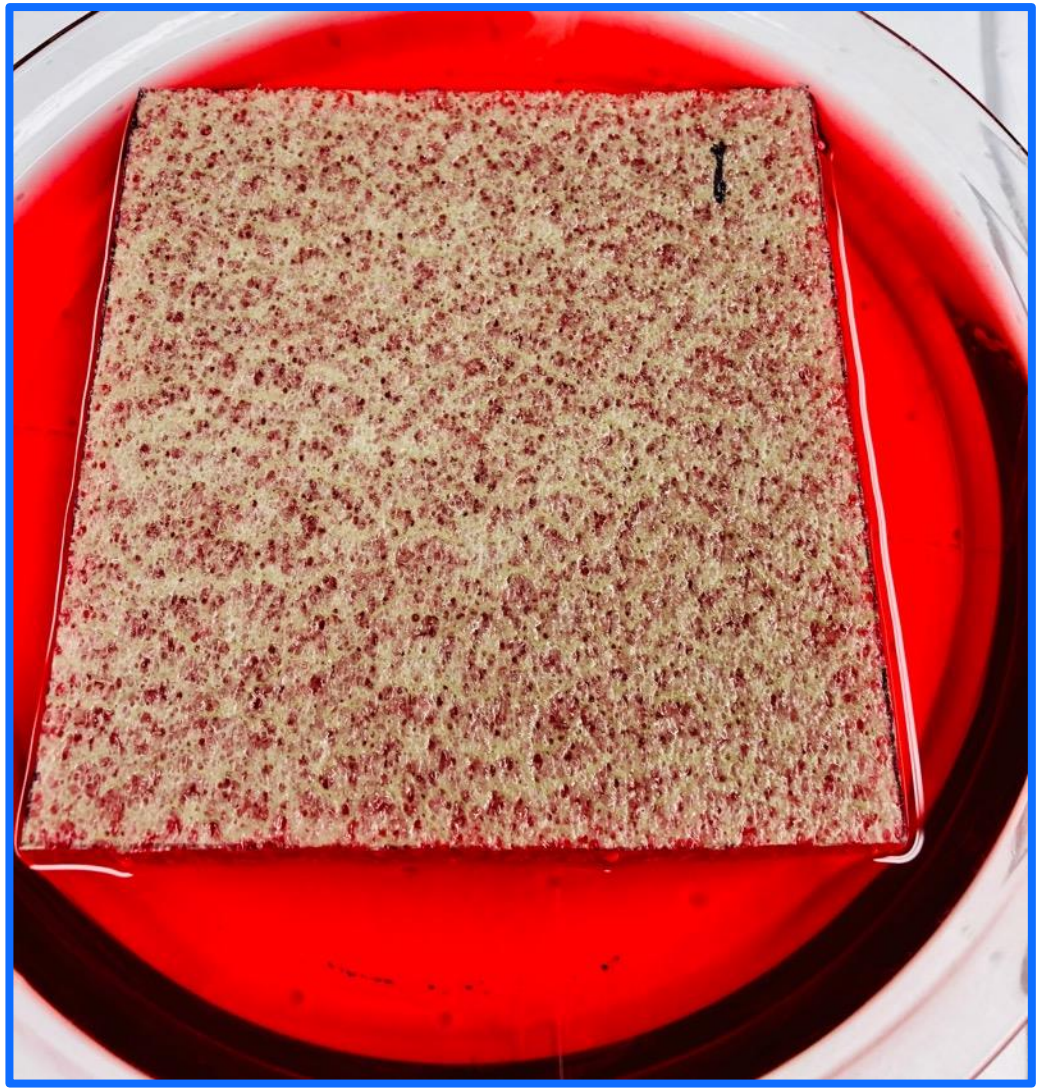
AquaFlex sorbent products were tested using the newly developed sorbent protocol.

Open-Cell products in order to compare the new roll-based Open-Cell foam sorbents," said Smith.

As a part of the evaluation, a total of 27 field tests were performed, in addition to 46 tests using the ASTM F726 *Standard Test Method for Sorbent Performance of Adsorbents for use on Crude Oil and Related Spills.* The testing method included a number of variables; sorbent types, oil viscosity, as well as static and mixing energy scenarios. The four test oils used for the study were light, medium, heavy, and weathered.

According to Smith, using Ohmsett as a third party, independent testing facility is important to verify the performance of sorbents under the current ASTM F 726. "In addition to ASTM F726, the development of an additional industry standard test method at Ohmsett better reflects the real-world conditions, such as oil mixed with water, moving water, wind, rough seas, etc. during oil spills."

Measurements collected during the tests included: Sorbent Maximum Oil

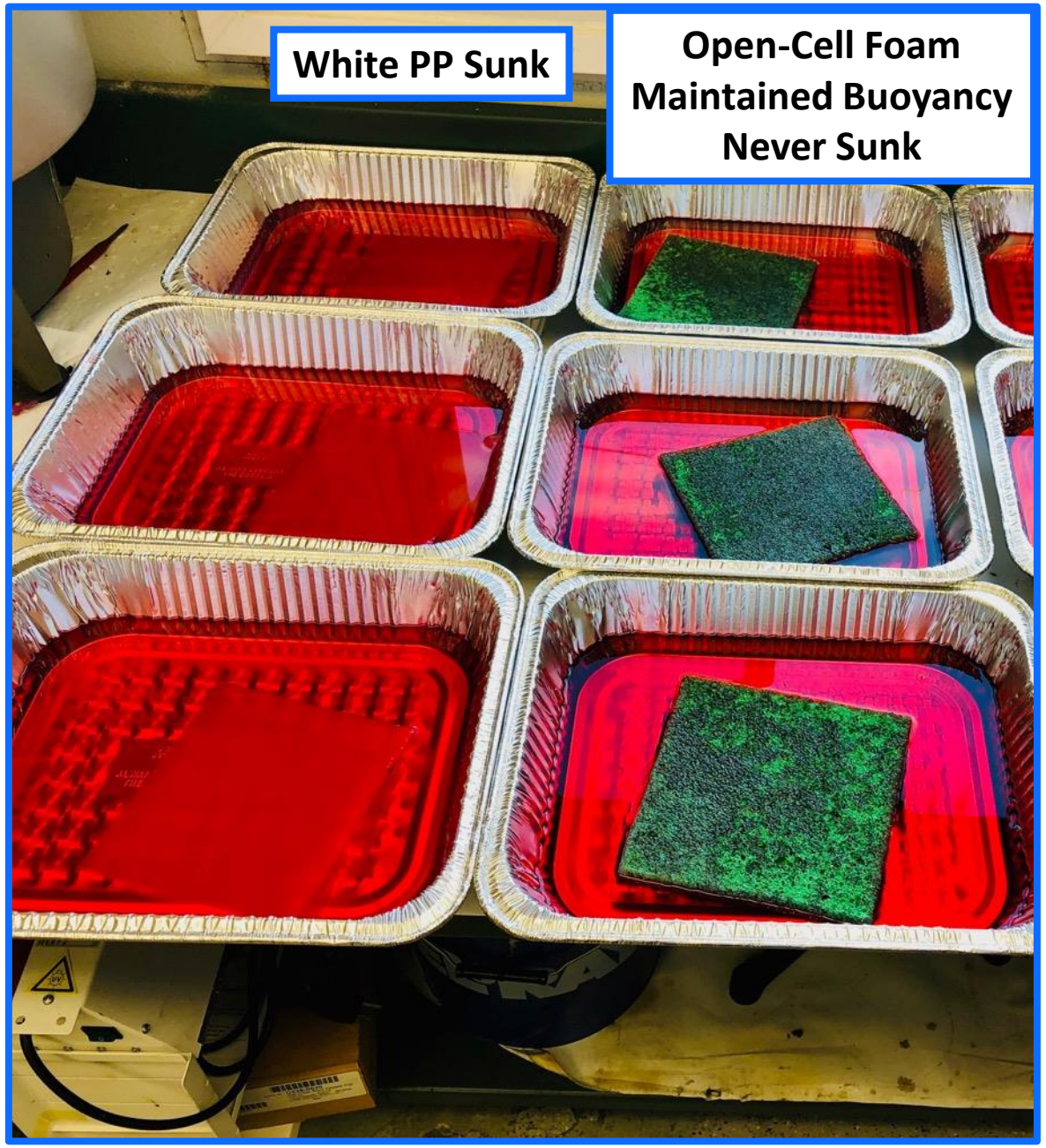


SustainabilitywithoutCompromise

ECO AQUAFLEX™

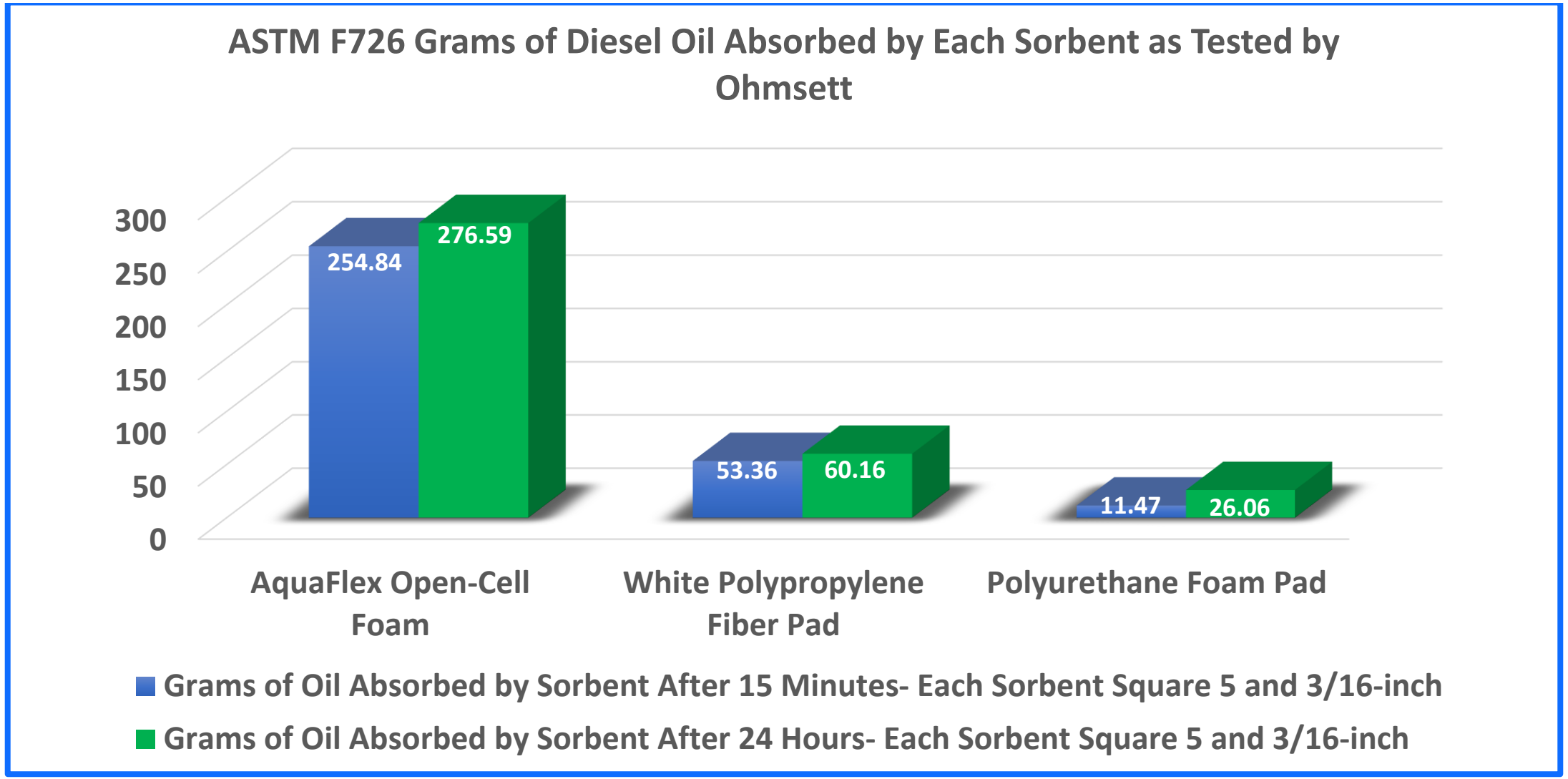
ASTM F726 Testing for 15 Minutes and 24 Hours at Ohmsett

ECO AQUAFLEX™

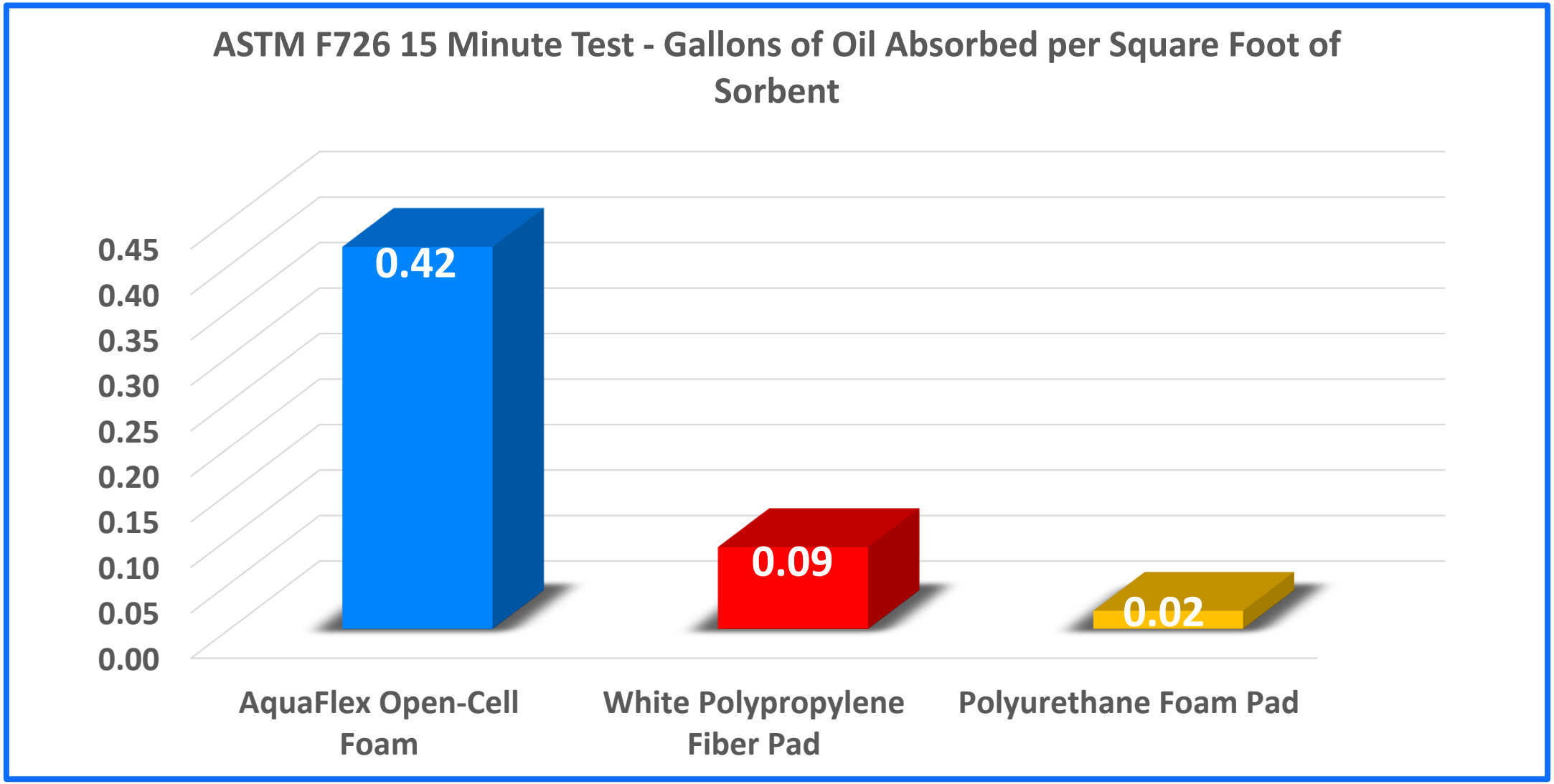


ECO AQUAFLEX™

Test Data Obtained at Ohmsett
August 2019



Test Data Obtained at Ohmsett
August 2019



Video Link: Huntington Beach Oil Spill Oct 2, 2021 vs. US BSEE Ohmsett Open-Cell Eelgrass Validation 11-18-14

OSPR-Chevron 2023 Conf: Huntington Beach CA Oil Spill & Failed Booms vs. AquaFlex Eelgrass

Hunting Beach Oil Spill Oct 2, 2021

US BSEE Ohmsett Open-Cell Eelgrass Validation/Testing Nov 18. 2014

SustainabilitywithoutCompromise

ECO AQUAFLEX™

Hunting Beach Oil Spill Oct 2, 2021

SustainabilitywithoutCompromise

All Patent Filings are Based on Field Testing over 60 Contamination Events/Disasters in the Real World with Testing from Certified/Accredited Labs

(12) **United States Patent**
Smith

(10) **Patent No.: US 11,203,533 B2**
(45) **Date of Patent: Dec. 21, 2021**

(54) **REMOVAL AND DETECTION OF ALGAE, THEIR TOXINS, AND EXCESS NUTRIENTS**

(71) Applicant: **Scott C. Smith**, Osterville, MA (US)

(72) Inventor: **Scott C. Smith**, Osterville, MA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **16/580,611**

(22) Filed: **Sep. 24, 2019**

(65) **Prior Publication Data**

US 2020/0156960 A1 May 21, 2020

(56) **References Cited**

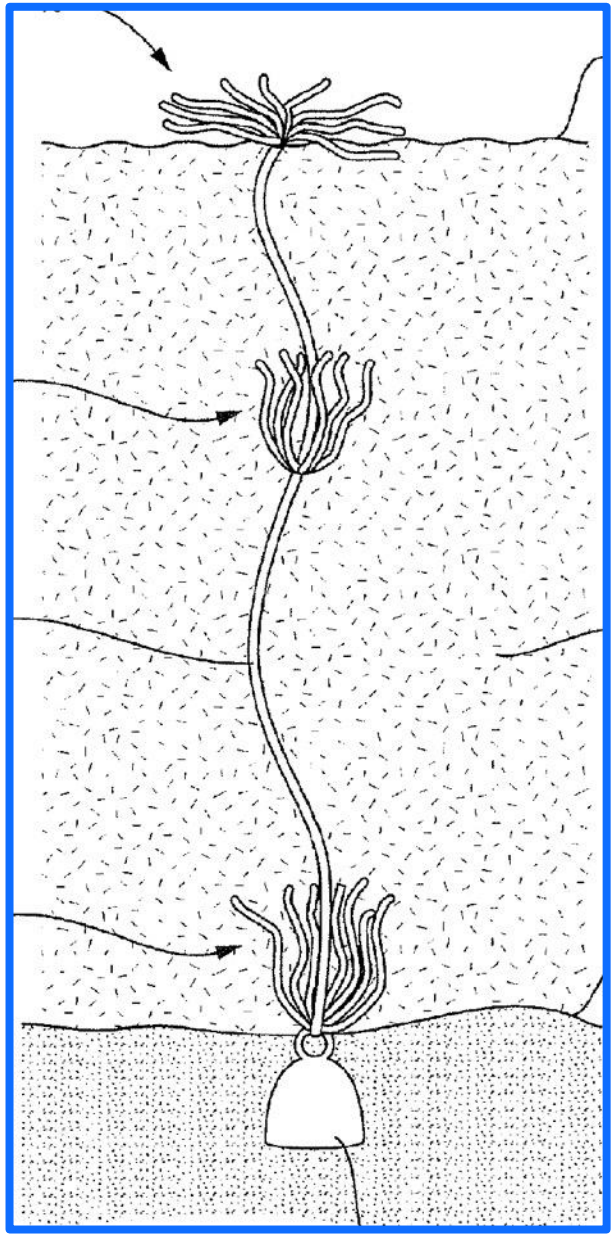
U.S. PATENT DOCUMENTS

8,853,289	B2	10/2014	Smith et al.	
9,878,924	B2	1/2018	Beierwaltes et al.	
2013/0087503	A1 *	4/2013	Youngs	E02B 15/10 210/660
2013/0213872	A1 *	8/2013	Phelan	C02F 1/003 210/198.1
2013/0240451	A1	9/2013	Curtis, Jr. et al.	
2016/0229709	A1	8/2016	Beierwaltes et al.	
2017/0146435	A1	5/2017	Smith	
2017/0241870	A1	8/2017	Smith	
2019/0017983	A1	1/2019	Smith	

FOREIGN PATENT DOCUMENTS

CN	101125268	A	8/2016

OTHER PUBLICATIONS



All Patent Filings are Based on Field Testing over 60 Contamination Events/Disasters in the Real World with Testing from Certified/Accredited Labs

(19) **United States**

(12) **Patent Application Publication**

Smith

(10) **Pub. No.: US 2022/0185703 A1**

(43) **Pub. Date: Jun. 16, 2022**

(54) **REMOVAL AND DETECTION OF ALGAE, THEIR TOXINS, AND EXCESS NUTRIENTS, OTHER CONTAMINANTS, AND TOXIC SUBSTANCES**

(71) Applicant: **Scott C. Smith**, Osterville, MA (US)

(72) Inventor: **Scott C. Smith**, Osterville, MA (US)

(21) Appl. No.: **17/556,845**

(22) Filed: **Dec. 20, 2021**

Related U.S. Application Data

(63) Continuation-in-part of application No. 16/580,611, filed on Sep. 24, 2019, now Pat. No. 11,203,533.

(60) Provisional application No. 62/735,302, filed on Sep. 24, 2018.

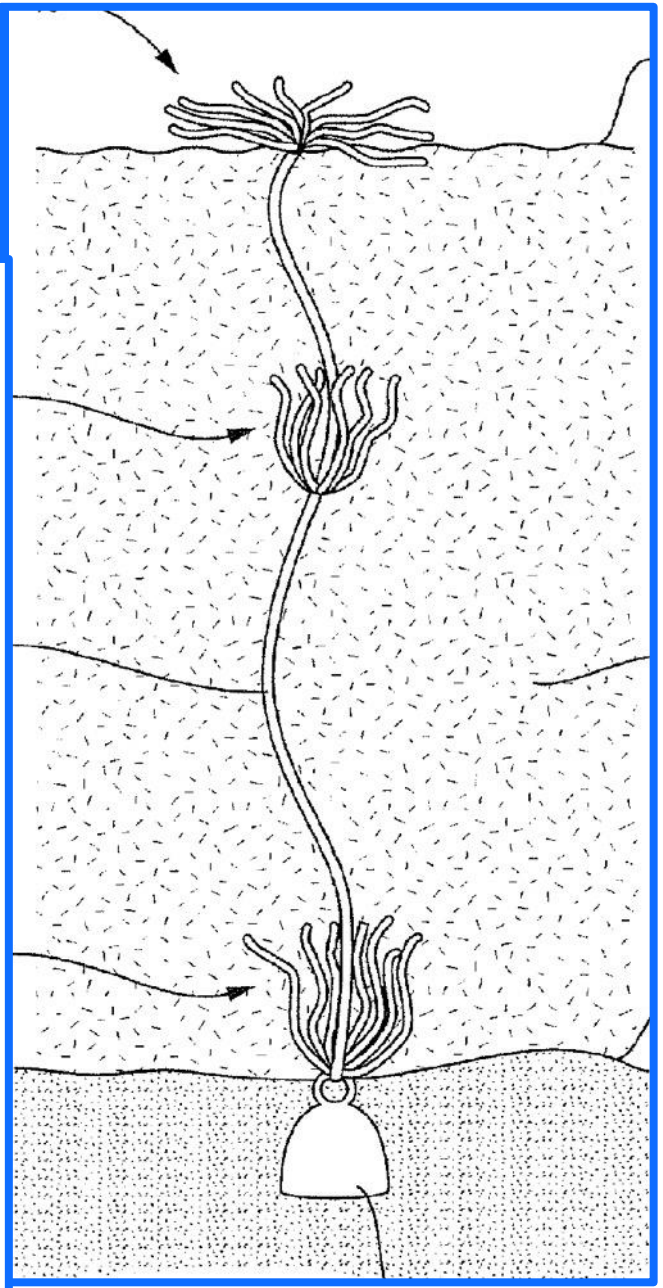
Publication Classification

(51) **Int. Cl.**
C02F 1/28 (2006.01)

(52) **U.S. Cl.**
CPC ***C02F 1/283*** (2013.01); *C02F 2101/105* (2013.01); ***C02F 1/285*** (2013.01)

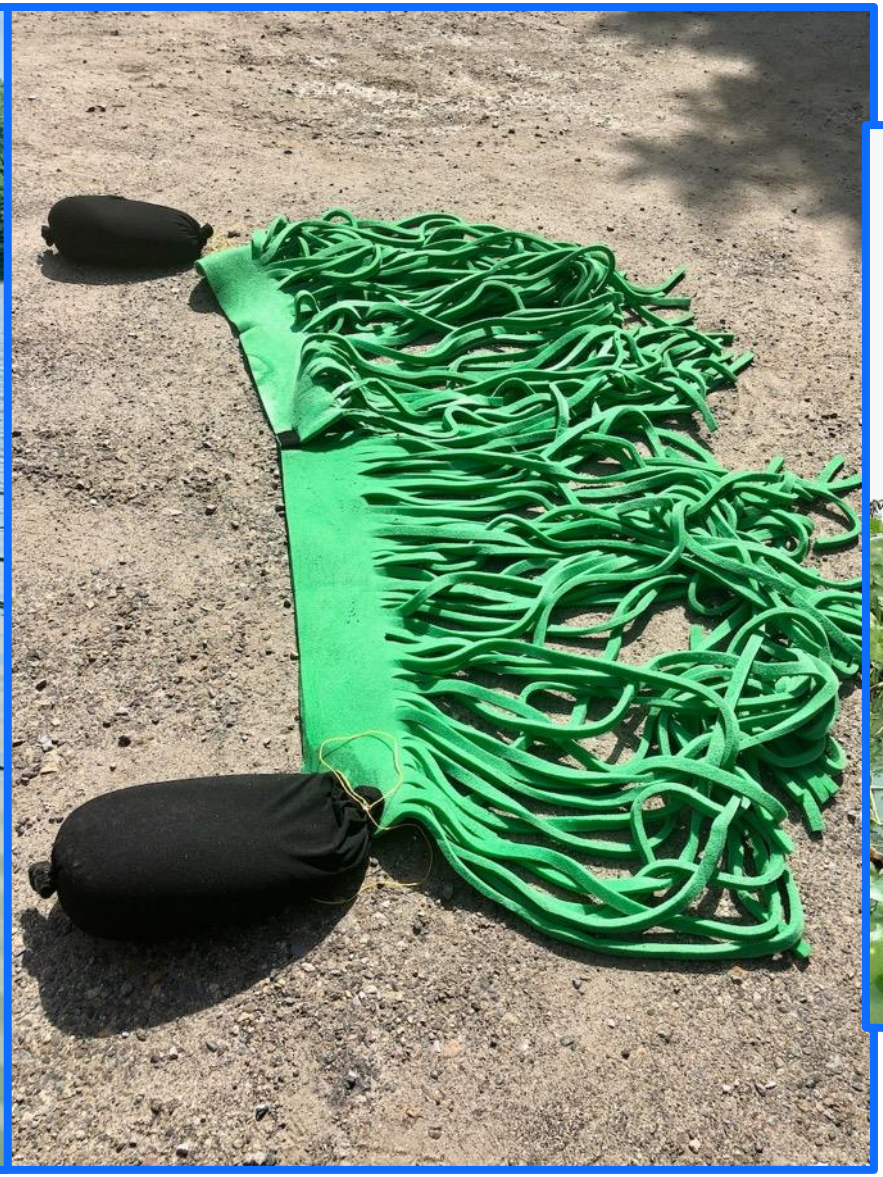
(57) **ABSTRACT**

A method of removing nutrients and/or toxic substances from water by placing an open-cell foam material together with a biochar material into the water, leaving the foam and biochar materials in the water for sufficient time to adsorb/absorb at least some of excess nutrients and/or toxic substances present in the water, and then removing from the water the open-cell foam material together with the biochar material.



ECO AQUAFLEX™

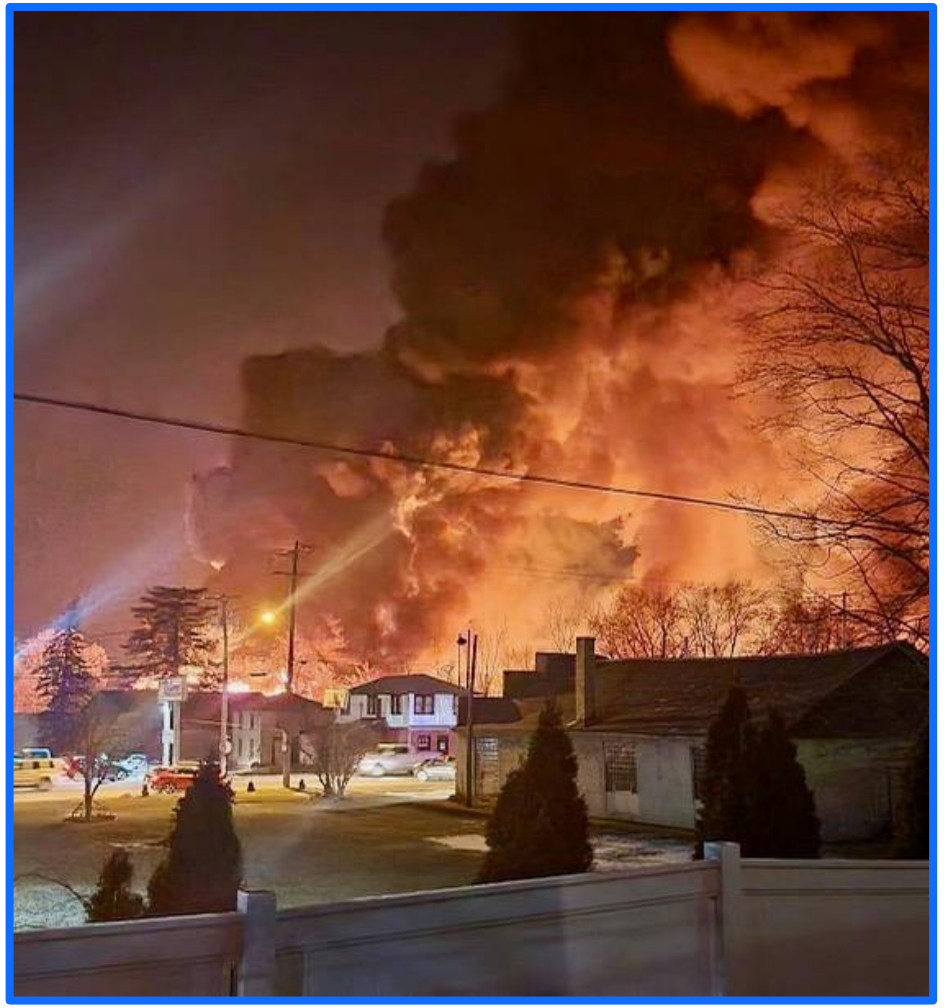
Open-Cell Foam Combined with Biochar



ECO AQUAFLEX™

“Welcome To Ohio”

East Palestine Ohio Norfolk Southern Train Derailment



The Purpose and Commitments: East Palestine, OH and Beyond

The Goal: **Setting the new standard** from Corporations to Tax Exempt Corporations for Sustainability Officers and Sustainability without Compromise.

The Mission: **To help local residents** independently evaluate and understand what is really in their water, soil, and on their surfaces. Comprehensive testing builds trust.

Testing Results: **"You Can't Find What You Don't Look For."** Dioxin independent lab testing: water, soil. Preliminary results are in. Note that we are testing the ENTIRE water column as opposed to "surface grabs".

Truth: **We've gained the TRUST of the Community**; Politically agnostic; Getting to the Truth of what is in the water, air, and soil to the appropriate doctors and toxicology experts; **We provide what the Community needs to know as opposed to what Authorities and/or Norfolk Southern want to spin (e.g. Chemicals Ubiquitous in Environment, Mass Psychosis).** Have to remember Facts are not necessarily the Truth.

COOPERATIVE EFFORT: **Working in close conjunction with EPA Region 5**. It's an honest collaboration with irrefutable 3rd party testing with the people doing the work – no political contamination..

CONFLICTS OF INTEREST COULD UNDERMINE EAST PALESTINE CLEANUP: "...a certain dissonance creeps in - profits and growth above all else" https://time.com/6262343/east-palestine-train-toxic-cleanup-conflicts-of-interest/ letting the foxes be in charge of the hen houses (which leads to needless filling of landfills, not getting contaminants out of water quickly, greater harm to residents in affected communities, and ultimately a much greater financial loss to the responsible party).

THE OPPORTUNITY: **Achieving a Truth-Based win for all parties involved**. The Community, the EPA, the Environment, and Norfolk Southern.

Video Link: East Palestine: Why Isn't Contractor Using BP-API Proven & Endorsed Tech to Stop the Spread & Limit Liability?

OSPR-Chevron 2023 Conf: East Palestine OH & Booms Spreading Contamination & Filling Landfills

EXCLUSIVE: The TRUTH about East Palestine train disaster five weeks on: Cleanup efforts bring new troubles as residents are ill with sore throats, rashes and nosebleeds, the air is thick with stench of chemicals and toxins are leaching into water and soil

By LAURA COLLINS, CHIEF INVESTIGATIVE REPORTER
PUBLISHED: 13 March 2023 | UPDATED: 17:00 EDT, 13 March 2023

Scott Smith, 57, Chief Sustainability Officer at **ECO Integrated Technologies Inc** and President of **ECO AquaFlex LLC**, has carried out tests in more than 60 disaster zones across the past 17 years.

He first visited two weeks ago and has returned to carry on testing, working with the blessing and cooperation of the Environmental Protection Agency (EPA).

Smith called out the inadequacy of official testing that drew only small samples from the bodies of water tested saying: 'It's important to understand that water and contaminants are never in equilibrium or a steady state... people don't go in the water and/or swim for a split second and fish don't swim in the water for a split second.

'Therefore, testing only a few water samples in a 250ml jar from a surface of a body of water only tells you what's in that jar. Hence, it's important to take water samples from the entire water column using a variety of sampling methods.'

Smith has carried out meticulous testing of the creek water, the sludge at its bed and the soil of its bank where dioxins could settle. He has also swabbed black soot from the air filters that Miller removed from her home furnace.

As he puts it: *'You can't find what you're not looking for. The official tests are not looking for dioxins.'*

Smith, a Baylor- and Harvard-educated crusader whose interest in water testing and environmental disasters was inspired by his own experience of a devastating oil and chemical flood back in 2006, has gained a reputation as a respected independent expert.

“Welcome To Ohio”
East Palestine Ohio Norfolk Southern Train Derailment

All,

<u>This is a summary of my Round 2 Initial Screening of the soil from the Sulphur Run Creek Bed:</u>

First and foremost, no matter what the testing results are there is no need for anyone to panic, because once we know what is really in the water, soil, and surfaces (including furnace filters) people that may be suffering health effects have the information necessary for their doctor to treat them and the contamination can be remediated properly, efficiently, and rapidly. The only thing to fear is not being told the Truth about what is really in the water, in the soil, and on surfaces (including furnace filters).

Note: these Sulphur Run Creek Bank soil samples (taken two days apart and within just about 20 feet of each other and in the attached pictures) illustrate the fact that water and soil contamination are not in a steady state or equilibrium; hence, the need for this kind of comprehensive testing with many data points before any definitive conclusions are made as to the interpretation of the results and final conclusions related to “safety”.

It is important to understand that the main purpose of the first 2 rounds of initial screening was to identify the presence of Dioxins and the full spectrum of Volatile Organic Compounds (VOC’s), Semi-Volatile Organic Compounds (SVOC’s), Polycyclic Aromatic Hydrocarbons (PAH’s), diesel range organics (DROs) in water, soil, and surfaces (including but not limited to furnace filters). If the East Palestine residents can understand what is in the water, in the soil, and deposited on surfaces, they will be able to make their own decisions including but not limited to seeking medical advice from their doctors.

“Welcome To Ohio” - East Palestine Ohio Norfolk Southern Train Derailment

Additionally, it is important to understand that water and contaminants are never in equilibrium, or a steady state and people don’t go in the water and/or swim in the water for a split second and fish don’t swim in the water for a split second. Therefore, testing only a few water samples in a 250 ml to 1 liter jar from a surface of a body of water only tells you what is in that jar; hence, why it is important to take water samples from the entire water column using a variety of sampling methods (using instantaneous grab sampling with time weighted average exposure testing) and acquiring as much comprehensive sampling data as possible before declaring things “safe”.

Life exists in the water column which is defined as beneath the surface and above the bottom. People walk in the creek which mean what is really in the soil/sediment matters along with the entire water column. Hence, the need for the testing and methods we have used for the entire water column including the soil/sediment, not just the surface.

The Dioxins present in the Creek Bank Soil are as follows:

1. 1,2,3,4,6,7,8-HpCDD
2. 1,2,3,4,6,7,8-HpCDF
3. 1,2,3,4,7,8-HxCDD
4. 1,2,3,4,7,8-HxCDF
5. 1,2,3,4,7,8,9-HpCDF
6. 1,2,3,6,7,8-HxCDD
7. 1,2,3,6,7,8-HxCDF
8. 1,2,3,7,8-PeCDD
9. 1,2,3,7,8-PeCDF
10. 1,2,3,7,8,9-HxCDD
11. 1,2,3,7,8,9-HxCDF
12. 2,3,4,6,7,8-HxCDF
13. 2,3,4,7,8-PeCDF
14. 2,3,7,8-TCDF
15. 2,3,7,8-TCDD
16. OCDD
17. OCDF
18. Total HxCDD
19. Total HxCDF
20. Total HpCDD
21. Total HpCDF
22. Total PeCDD
23. Total PeCDF
24. Total TCDD
25. Total TCDF

ECO AQUAFLEX™

“Welcome To Ohio”
East Palestine Ohio Norfolk Southern Train Derailment

The Other Chemicals present in the water (highlighted in yellow on the detailed lab report) in our testing are as follows:

-

1. Dibenzo(a,h)anthracene
2. Acenaphthene
3. Fluorene
4. Phenanthrene
5. Diesel Range Organics Total Petroleum Hydrocarbons C20-C34

Please remember this is for water only and is only a small portion of our comprehensive screening.

The Other Chemicals present in the Creek Bank Soil are as follows:

-

1. Di-n-octyl phthalate
2. Fluoranthene
3. Phenanthrene

Please remember this is only a small portion of our comprehensive screening and we are expecting many more results and much more data within the next 15-30 days.

Your Furnace Filter Is As Close As You Can Get To Testing A Human Lung

East Palestine Ohio Norfolk Southern Train Derailment

Video Link: East Palestine Ohio Soil Testing and News

OSPR-Chevron 2023 Conf: East Palestine OH Media Coverage with Residents & Independent Soil Test

Thank You

Scott C. Smith
Chief Sustainability Officer, ECO Integrated Technologies, Inc.
President, ECO AquaFlex, LLC
Twitter: @WaterWarriorOne
Email: ssmith@aqflx.com
Phone: (508) 345-6520