Oil Spill Containment And Recovery System
What are the issues?

- Oil sheen containment and capture
- Floating oil from small spills
- Ineffectiveness of polypropylene booms
- Labor intensive methodology
- Skimmer shortcomings for sheen removal
- Cost prohibitive vacuuming procedures
- Inability to leave devices in place for long periods
Development parameters

- Effort to find a solution
- Goal to utilize past experience
- Guardian’s experience with SheenGuard blankets
- Enviro-USA’s experience with years of boom development and construction
- Utilize Guardian’s proprietary solidifying absorbent for maximum effectiveness
**Design parameters**

- Effectiveness for removing oil sheen from fresh or salt water
- Effectiveness in containing floating oil and sheen
- Ease of deploying boom
- Ease of attaching blankets to boom
- Ease of replacing spent blankets
- Eliminate the need for additional polypropylene booms
- Compatibility with skimmer equipment
Introducing “OSCAR”
Construction

- Standard containment boom is 18” approved “protected port” type
- Custom boom lengths & widths available
- Standard blanket constructed of heavy weight nylon mesh with supplemental flotation filled with PetroGuard
- Standard size 36 “ wide and 86” long to conform to containment boom.
- Blankets can be joined together to provide greater surface area to capture oil
- Blanket adaptable to other containment boom sizes and applications
OSCAR System

- Sample section construction
PetroGuard-D  The absorbent

- PetroGuard® advanced molecular capture oil spill solidification polymer
- The original solidifier introduced and in use since 1992
- High capacity and light weight
- Will not release after absorption
- Suitable for waste to energy disposal facilities or solid landfill options
PetroGuard – the absorbent

Example organics absorbed and immobilized

- Diesel and fuel oils
- Silicone oils
- Polynuclear aromatic hydrocarbons
- Chlorinated hydrocarbons
- Ethyl acetate
- Trichloroethylene
- Crude oil
- Methylene chloride
- Naphtha
- Carbon tetrachloride
Boom and blanket design

Dual cables as tension members and for attaching OSCAR Blanket.

ASTM Universal Slide marine grade aluminum connectors.

Heavy Duty 22 oz. yellow PVC

5/16” (8 mm) galvanized chain as bottom tension and ballast
OSCAR’s unique features

- Easy attachment to special cable fitted to containment boom using heavy weight zip-ties or optional Carabiner clips
- Easy replacement of spent blankets leaving long lasting boom in place
- Blankets can be ganged together to provide wider or larger surface area
Design

Blanket attaches to boom
Demo unit in water
Demo in water

OSCAR attached to single side
Single or double action

- Attach OSCAR to one side of boom or to both sides for additional protection
- Secondary blanket will capture oils that escape under boom
Primary and secondary blankets

Secondary blanket → Primary blanket → Oil sheen drifts downstream

Submerged oil drifts to surface to contact blanket

Submerged oil escapees captured by secondary blanket
OSCAR shoreline protection
OSCAR on river application
OSCAR across restricted body
Ship protections
Advantages

- Actually removes oil sheens permanently
- Reduces labor costs
- Long lasting (some blankets in use for 4 months)
- Re-useable boom
- No environmental impact
Approvals

- PetroGuard-D approved by USEPA as sorbent

- SheenGuard Exemption by California Department of Fish and Game dated 4/21/2011

- Enviro-USA products compliant with:
  - ASTM F 1523: Calm, Current & Protected Water
  - US Coast Guard – OSRO: River/Canal, Inland & Great Lakes
  - OPA 90: River/Canal, Inland & Great Lakes
For more information contact

- Guardian Environmental Technologies
  - Bill Litwin  President
  - (860) 350 2200
  - info@guardianenvironmental.com

- Enviro-USA
  - Luis Vargas  President
  - (321) 222 9551
  - luis@enviro-usa.com