



**OMAN GREEN AWARDS 2011**  
**NOMINATION FORM**

**Instructions for completing the nomination form:**

1. Please use a separate Nomination Form for each award category.
2. You may attach extra paper as necessary
3. In the event you attach photographs, Statistical Tables and Reports to support your nomination they should be clearly labeled and marked
4. Please note that it is mandatory to provide two independent referees for the Nomination to be considered.

**Organization Details:**

Organization Name AL-ABRAR PETROGAS LLC

CR No. 1704249

Organization Type (Business/NGO/Gov) BUSINESS

Website <http://www.apegas.com>

Location /Address GHALA, EXHIBITION ROAD, AL-WASIT BUILDING, 1<sup>ST</sup> FLOOR,  
206/207

**Award Category** GREEN INNOVATION AWARD

**Project Details:**

Project Title **OIL SPILLS AND SEA WATER CONTAMINATIONS RESULTED FROM OIL PRODUCERS AND END-USERS**

Location of Project OMAN

One Line Description of Project: ***Voraxial Technology is innovative solution in recovering oil resulted from oil spills and from produced water treatment associated with oil producers.***

**Effectiveness**

**What were your goals?**

**Our Goals:**

- 1- To have latest technology in combat oil spillage resulted from crude oil tankers in Oman coasts

- 2- To be able to treat the oil contaminated water within short time
- 3- To have quick response and fast means of cleaning the oil spills
- 4- To recover wasted oil that is re-injected with water into reservoir within oil producers
- 5- To treat produced water to meet with disposable oil in water standards in the sultanate
- 6- To help oil companies and refineries to treat their waste water to meet the standards before the water is dumped into Oman Sea and cause pollution that will result in destroying our marine life.
- 7- To helps some industries to have oil-water separations before they dump the water to the ground and cause contamination to our ground water resources
- 8- To help waste water companies to treat their water from contaminations such as solids and oils before they dispose it to the sea.
- 9- The technology will be of great importance to the Dry Dock Port, since there will be a lot of oil spills resulted from the ships thus come for services, this technology will be able to treat the water and recover the oil and return the clean water back to the sea at same time.
- 10- Above all the main goal is to protect our water resources from oil contaminations either ground water or sea water.

***How have you measured your success?*** The technology is still new in Oman, and we have just started to market it, but so far we have got very positive responses. It has been used somewhere else and it has proven to be working well and great results. This technology was tested during the Gulf of Mexico spillage and the results surprised many people. I believe that, the technology will be widely accepted in Oman market and it's the only one of its kind.

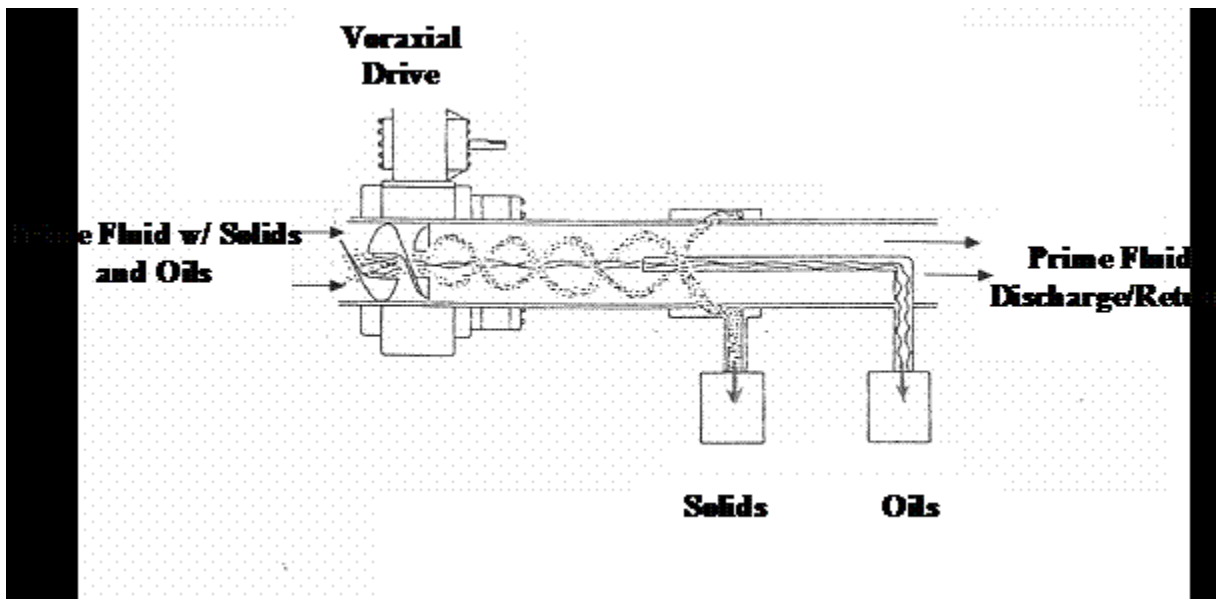
### **Innovation & Creativity**

#### ***How were innovative methods, strategies or ideas applied?***

Enviro Voraxial Technology, Inc, (EVTN) manufactures a series of separation equipment designed to treat a range of wastewater flow rates. EVTN's patented Voraxial Separators can simultaneously separate liquid/liquid, liquid/solid, or liquid/liquid/solid mixture flowing through the separator, depending on design requirements.

The Voraxial Separator is a compact, 2-way or 3-way separator that is able to process large volume of liquids with a small footprint and without any pressure loss.

The Voraxial Separator is a continuous flow separator that acts as a pump as it separates the oil/sand/water streams. The Voraxial produces a high centrifugal force and generates a vortex to separate a mixture of fluids or a combination of fluids and solids by their different densities. The heavier elements are drawn to the outside of the vortex while the lighter materials are drawn toward the center, forming the central core of the vortex. A specially designed manifold is utilized at the exit of the separation chamber to collect the separated streams. The Voraxial separation principle is illustrated below.



The Voraxial is efficient as a liquid/liquid, liquid/solid or liquid/liquid/solid separator. There are several main differences between our product and the ones in the market but the main difference is the no pressure drop requirement with the Voraxial. This allows the Voraxial to be used in high pressure zones as well as atmospheric areas. Further, there are no gauges, valves to adjust if flow rate or oil/sand inlet concentration fluctuates. These benefits are illustrated in the attached Case Studies and PowerPoint.

The advantages of the Voraxial include:

1. High volume / small footprint
2. No Pressure Drop requirement – acts as a pump
3. High G force
4. Treats a wide range of flows, even slugging flows
5. Handles fluctuation in flow rates without any adjustments
6. Handles fluctuation in contaminants without any adjustments
7. Separation of 2 or 3 components simultaneously
8. Non-clogging - open impeller
9. Low maintenance
10. Can operate dry

11. Since there is no pressure drop, there is very little wear caused by sand

12. Ease of operation and installation

The compactness and high separation efficiency of the Voraxial allows us to provide our customers with a complete, compact and economical turnkey solution to solve their separation issues. Depending on our customers needs we can customize a solution specific to our customers needs.

**The following links show a video of the Voraxial Separator conducting produced water separation on an offshore oil rig:**

(DSL link): [http://www.evtm.com/old\\_site/wmv/EVTN1\\_offshore\\_DSL.wmv](http://www.evtm.com/old_site/wmv/EVTN1_offshore_DSL.wmv)

The following links show how the Voraxial Separator performs oil/water separation through the creation of a centrifugal force.

(DSL link): [http://www.evtm.com/videos/EVTN33\\_DSL.wmv](http://www.evtm.com/videos/EVTN33_DSL.wmv)

Additional videos can be obtained on the website, [www.evtm.com](http://www.evtm.com).

### **Impact**

#### ***How has the project/initiative/work motivated others to contribute to a greener Oman***

The impact of this technology will be seen in the future projects, and will be mainly in protecting contamination of water resources, ground waters and sea waters. Also this technology will help oil producer and refineries which dump produced water or waster into Oman Sea to treat their water and meet the standards. God forbidden, but in case of big oil spillage in our coast, this technology is going to contribute a lot in combat the spillage and also treat the contaminated water immediately. For oil producers who are disposing the produce water with traces of oil, now, with this technology they will be able to recovery maximum waste oil from produce water before they dispose the water back into formation. More recovery of oil will generate great revenues for them. Also the technology in direct contribute to the reducing CO<sub>2</sub> emissions, since it use less power and energy.

### **Originality and Leadership**

#### **How has the nominee demonstrated vision, foresight and persistence?**

As I have mentioned above that, this technology is not been utilized in Oman yet, but we believe that it is going to receive acceptance from local market. We have met with some key potential client, and they have shown interest on the technology, so, in near future we will see some projects in Oman. The technology will also contribute to monitor the ships which come to Oman to load the crude and unload balanced water in our sea water; as at the moment, I'm not aware of any measures taken in this regards. The coast guards shall be equipped with this kind of technology to monitor our coastal from any oil spillage. Also at the ports and dry dock ports where the crude tankers go for services, this kind of technology will play a great role in keeping our sea water free from oil contamination and free from pollutants.

### **Continuity & Sustainability**

**How sustainable is the initiative carried out?** The technology is relatively new; and more research and development is going on, but as it is now, it has proved track records thus a promising future for the technology.

**Explain how it will be effective in the long term:** In the long run, the technology is going to play a great role is helping environmental sector to monitor and to control oil spills on the sea water or ground water which receive a lot pollutants from industries. Industrial waters must be treated well to meet the disposal standards before it is disposed to the ground, and we believe that this technology can be utilized for that purpose. Moreover, this technology is going to help oil producers to recovery more oil from produced waters, and thus will generate more revenues to the companies.