



**C. Dave Copeland**  
President

---

## **HYDROCARBON SURVEYS™ SYSTEM INTRODUCTION - March 2012**

Hydrocarbon Surveys (HydrocarbonSurveys.com) technology was developed by C. David Copeland of Austin, Texas. Prior to entering the petroleum industry in 1986, Copeland worked in broadcast engineering, servicing and inventing industrial electronics and robotics products and systems. Over the past twenty years, he has investigated a number of remote sensing technologies (Including a NASA research grant.) in the oil and gas industry and established associations with many talented and knowledgeable individuals in the field.

Research and development together with countless field trials resulted in a working integrated system that delivers relative readings for net cumulative hydrocarbons below points being measured as well as fault indications.

Copeland and several engineering associates are in the process of taking the system to the next level of field application development broadening and expediting data acquisition capabilities.

Following extensive in testing of this remote sensing technology, they have put together a bullet point presentation of capabilities.

### **TDS SYSTEM WILL:**

1. Find hydrocarbons below the point of measurement.
2. Help establish lateral extent of reservoirs.
3. Give relative strength readings for total reservoir density.
4. Give a distinct reading for non-hydrocarbon bearing faults.
5. Gives an indication of gas or gassy zones versus oil-only zones.
6. Is very pin pointed in the cone of influence below the point of measurement.
7. Provides geocoded mapping that can be integrated in layers with client geology.
8. Map presentation capability in several formats to accommodate different needs.

### **TDS SYSTEM WILL NOT:**

1. Tell how many zones or faults are below the point of measurement.
2. Measure depth of zones or faults.
3. Measure finite amounts of fluids in place.

This system, as well as all data sources, is most valuable when correlated with other geological and geophysical data to develop a picture of hydrocarbons in place.

**It is important to know that this system, other than finding faults, does not see structures but rather identifies actual hydrocarbons in place, real time, directly below the point of measurement.** It is a receiver that measures the effect that fluid hydrocarbons in a reservoir and faulting have on a certain signal. Hydrocarbons have a positive effect and faulting has a negative effect. In cases where a fault trapped reservoir is encountered, the hydrocarbon predominant effect is somewhat dampened in the area of the fault.

Data output presentation examples can be seen on the associated Hydrocarbon Surveys General Introduction sheet and on our web site. Our GIS personnel work with client geological, geophysical, and operational staff to deliver products to fit specific requirements.