

# Applications In Action

LAND IMAGING SYSTEMS



## Durable Land Acquisition Equipment for Rapid 2D Seismic Surveys

ION's Land Technology Maximizes Efficiency

**SEGMENT:** Land Seismic Acquisition

**REGION:** Turkey, Europe

**TECHNOLOGIES:** ARIES™ Acquisition System, SENSOR® Geophones, AHV-IV™ Vibrators, and Pelton Vib Pro™ Controllers

### The Challenge

**Seismic crews conducting 2D and 3D surveys seek opportunities to maximize productivity through simplified start-up, reduced downtime, and advanced technology.**

ARAR Oil & Gas, Inc. is a vertically integrated exploration, drilling, production, and marketing company specializing in oil and gas prospect development in Turkey. While ARAR wholly owns 19 concessions where they are actively exploring and producing oil and gas, they are also a turnkey solution provider for other E&P operators interested in the region offering services and project management that includes, among other things, seismic data acquisition. Due to a limited number of seismic crews available in Turkey and because mobilizing personnel and equipment can be costly and time prohibitive, E&P operators sometimes employ their own acquisition crews to acquire seismic data.

ARAR has two survey crews that specialize in 2D data acquisition in Turkey and Kurdistan for land operations. The crews acquire data in a relatively short timeframe during the spring and summer months before the start of the rainy season which dramatically impacts crew productivity and data quality. The crews quickly acquire data with an average 2D acquisition lasting a mere two to three weeks, at the end of which the crew and equipment are immediately mobilized for the next project. Downtime results in a loss of productivity and can cause a logistics backlog; therefore, 2D crews depend on high quality technology and services to optimize efficiency and maximize productivity. To accommodate the rapid pace of 2D seismic, an experienced crew relies heavily upon durable, intuitive acquisition equipment that is reliable, easy to operate, and adaptable to a variety of survey parameters and environments.



Turkey is positioned between the Middle East and Asia as part of Europe.

ARAR also utilizes an ARIES SPM Lite system, a highly portable and user-friendly acquisition system ideal for efficient 2D and transition zone surveys.



Operating two crews, ARAR relies heavily upon the durability of ION's land technology including AHV-IV vibrators, Pelton Vib Pro controllers, Sensor SM-24 geophones, and the ARIES cable-based acquisition system.

"ION's acquisition technology is truly the key to our success in that we have been able to keep our operating costs low based on the quality and reliability of the equipment while achieving the seismic data quality we need to properly image our prospects and make strategic drilling decisions for the future."

Tony Scales  
Seismic Manager  
ARAR Oil & Gas, Inc.

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### The Solution

**A full ION land technology solution of equipment and service designed with out-of-the-box functionality, simplified in-field maintenance, and rugged dependability backed by customer support to accommodate a variety of terrains, climates, and environments.**

In 2006, ARAR sought to partner with reputable equipment suppliers who could provide extensive training and support to assist with the start-up of their new 2D crews. Initially, the company engaged ARAM Systems, now an ION subsidiary, to rent two 2,000-channel ARIES SPM Lite Systems, a highly intuitive, durable, and portable recording system ideal for remote locations, transition zone surveys, and efficient 2D acquisition. ARAM offered full-service training for the crews in their Calgary location and provided an experienced field engineer to commission the systems and further educate onsite personnel during the first acquisition. ARAR has expanded their channel capacity several times over the past two years by renting additional ARIES equipment from the local Dubai Rental Center and SM-24 geophone strings provided by ION's Sensor division.

In 2009, ARAR further expanded their seismic capacity to accommodate vibroseis operations where they partnered with ION to purchase five AHV-IV vibrators and corresponding Pelton Vib Pro controllers, the industry standards for highly reliable vibroseis technology. As the crews transitioned from dynamite to vibroseis operations, they required additional in-field training and support to kick off their first acquisition in July, 2009. ION provided two field engineers to commission the vibrators, provide onsite training on the Pelton Vib Pro controllers, and teach the crew how to efficiently utilize the AREIS SPM Lite system for vibroseis acquisition.

### The Results

**Long-term ROI achieved through training, support, and high quality, durable equipment that enables maximum productivity with minimal downtime from one project to the next.**

For the past three years, ARAR has successfully been acquiring 2D seismic data and has continuously developed their service offering to include the latest advancements in seismic acquisition technology to accommodate all terrains, environments, and survey parameters. With the user-friendly ARIES software that allows crews to easily set up survey-specific parameters by way of simplified drop-down menus for types of source, sweep specifications, geophones, spacing intervals, cable lengths, and batteries, the crews were able to quickly initiate new projects. ARAR has also experienced a significant cost advantage by operating an ARIES acquisition system because the ground electronics are made of aircraft grade aluminum, stainless steel, and bullet-proof polymers which protect the equipment from harsh handling and rough operating environments that can easily damage internal components. The durability of the equipment reduces maintenance costs and prolongs the life of the system, increasing the return on the investment. In addition, when considering the purchase of vibrators and controllers, ARAR chose ION's AHV-IV and Pelton Vib Pro combination because of the simplified in-field maintenance and troubleshooting that would allow their crews to utilize local resources for parts and repairs.

While the equipment was a significant investment and essential to their growth as a company, the training and support from ARAM and ION was absolutely critical to ARAR's success. The crews would not have been able to maintain the necessary production rates and data quality standards to ensure operational efficiency had they not received excellent training and support in the classroom and in the field.



ION's AHV-IV vibrators were recently commissioned and utilized with Pelton Vib Pro controllers.

"ARAR is actively exploring in Turkey as a result of 26 years of oilfield experience and we recognize the need to stay abreast of the latest trends in seismic data acquisition to further identify valuable prospects in a relatively under explored region. Establishing the seismic crews gave us the opportunity to more aggressively explore our blocks and has proven to be critical to our recent successful discovery that we are in the process of commercializing."

S. Fatih Alpay  
President  
ARAR Oil & Gas, Inc.

We would like to thank ARAR for permission to share the results referenced herein.

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