



# **Solutions**

## **ENVIRONMENTAL SCIENCES**

Vol. 6 No. 1

*The Newsletter For The Aquatic Sciences*

June 2006

### **Currents & Waves Projects**

#### **Gateway Environmental Assessment - Kitimat, BC**

Enbridge Gateway Pipeline has initiated significant environmental work to support the proposed development of two new pipelines as part of the Enbridge Gateway Project. ASL Environmental Sciences was contracted by Jacques Whitford to provide physical oceanographic input to the Gateway Project Environmental Assessment. ASL is summarizing historical data and collecting current and wave data to be fed into an oil spill model. The proposed crude oil pipeline would transport oil sands production from Edmonton, Alberta to a new marine terminal in Kitimat, on the north coast of BC, where it would be shipped by tanker to China, other Asia-Pacific markets, and California.

#### **Real time ADCP for oil rig off Trinidad**

ASL was contracted to install a real-time ADCP system from an oil rig for a drilling program off Trinidad and Tobago, January - April, 2006. Current profile data was displayed in real-time on the rig and was also used for current predictions. Following completion of the program a report has been prepared that included tidal analyses.



#### **Campbell River Terminal Current Survey**

Current data, both transect and moored, as well as tide data, were collected by ASL for Westmar Consultants to assist with vessel operations and to verify a numerical current model developed by Westmar using the program MIKE 21. The site is the Campbell River Cruise Ship Terminal that is owned by the Campbell River Indian Band. The terminal is presently under construction for the 2007 cruise ship season, and is designed for berthing Voyager of the Seas class ships.

### **Numerical Modeling**

#### **Cooling Water Discharge to Lake Izabal, Guatemala**

Klohn Crippen Consultants contracted ASL to do the preliminary assessment of the effects of the cooling water discharge into the northwest sector of Lake Izabal, Guatemala. ASL's 3D-COCIRM model was run with a 150m by 150m grid size over the full domain of Lake Izabal (20 x 40 km in size). For the area of the cooling water discharge canal, a nested grid having a higher resolution of 10m by 10m was applied. The model was operated for various combinations of winds, cooling water discharges and inflows from the Rio Polochic, the major river tributary to Lake Izabal from the west.

#### **Mine Tailing Discharges into an Inlet - International Molybdenum plc - Greenland**

ASL has been contracted to do numerical modeling of the Molybdenum mine tailings discharge into a small ocean inlet in East Greenland for International Molybdenum plc. This modeling was carried out to estimate discharges of highly diluted tailings water to the basin. A total of 9 model runs in 4 cases were conducted over the 20 year predicted project duration.

## Sales & Leases

**Ice Profilers:** 10 sold recently including:  
5 Ice Profilers to **CJSC Elvay Neftegaz** (an affiliate of BP Exploration Operating Co. Ltd.) for use near Sakhalin Island, Russia.

2 Ice Profilers to the **Norwegian Polar Institute** for use in the Arctic Ocean.

### Water Column Profilers

The Water Column Profiler monitors the presence and location of zooplankton, fish or sediments. Dr. Kelly Benoit-Bird of **Oregon State University** has ordered another Water Column Profiler to add to the 3 she had purchased last year. She is deploying them off the coast of Oregon for her research on zooplankton and the migration patterns of Micronekton.

**Pearson College** of Victoria, BC has purchased 1 Water Column Profiler to track zooplankton populations at Race Rocks Marine Ecological Reserve. It is similar to the 4 units recently bought by the University of Victoria for VENUS (Victoria Experimental Network Under the Sea) as it is also equipped for real-time output over the cable to shore and a plastic pressure housing.



### IRIS:

ASL's has just sold an IRIS (Image Recorder for Imagenex Sonar) to the **University of Delaware**.

### Equipment Leases:

2 Ice Profilers to AgipKCO, Kazakhstan

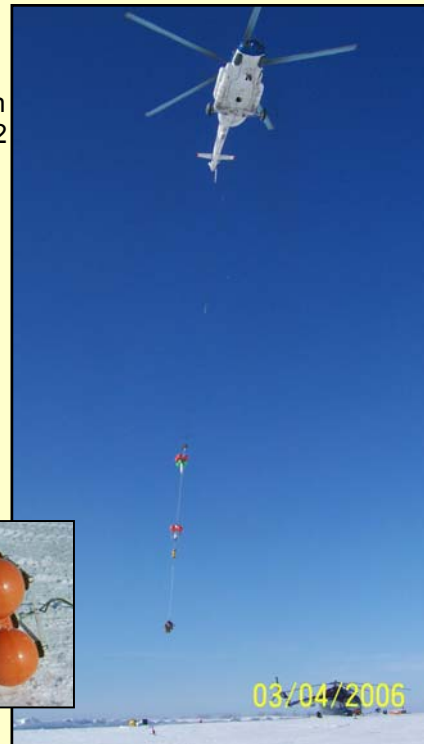
## Custom Acoustic Instrument

ASL has designed and built a custom acoustic instrument for OYO Geospace, which measures the average speed of sound in the water column. The product produces an important input for conducting differential seismic studies in the ocean floor, where compensating for variations of speed of sound in water is required. The instrument produces real-time output.

## Ice Profiler Projects

### **Sakhalin Ice Measurement Program, 2006-2008**

Elvay Neftegaz has contracted ASL through Metocean Engineers, to conduct 3 years of measurements at 3 sites for the Sakhalin Ice Measurement Program in the Northern Sakhalin 5 area. The first site deployment was in December 2005, then sites 2 and 3 were in March 2006 from a helicopter through thin sea ice and included 2 Ice Profilers with 2 ADCP Sentinel Workhorses. Each mooring contained one Ice Profiler and one ADCP with tandem ORE Cart releases. This is ASL's first project for Elvay Neftegaz.



## Meet Us at Events

ASL will be attending the following trade shows & conferences. We would welcome the opportunity to meet with you.

ONS 2006	Aug 22-25	Stavanger, Norway
IAHR Ice	Aug 28-Sept 1	Sapporo, Japan
Oceans Americas 2006	Sept 18-22	Boston, USA
Intl' Waves Workshop	Sept 24-29	Victoria, BC



David Fissel,  
V.P. of ASL at  
OTC 2006  
Houston, TX  
May 2006.

