B.C. companies helping clean up toxic remnants of Vietnam War

Hatfield Consultants and Axys Analytical Services on the trail of Agent Orange and its destructive dioxin legacy in Southeast Asia

CURT CHEREWAYKO

Two B.C. companies are helping Vietnam rid itself of Agent Orange, the toxic defoliant that has persisted in the country's environment since the United States used it during the Vietnam War.

Efforts to cleanup dioxins – Agent Orange's toxic leftovers – in Vietnam are only now taking place 33 years after the end of the Vietnam War and following years of dioxin assessments and analysis by **Hatfield Consultants** and **Axys Analytical Services**, in collaboration with government agencies and non-governmental agencies.

"We're getting to the stage where they're actually now cleaning up the sites," said **Tom Boivin**, Hatfield's president. "The problem seemed to be so big and so complex that nobody really wanted to deal with it because: how do you deal with such a large area of contamination?"

The **Ford Foundation** – a longtime supporter of dioxin cleanup efforts in Vietnam – has granted the Vietnam government's national steering committee another $500,000, which will finance cleanup projects involving Hatfield, Axys and a Vietnamese counterpart.

Since 1994, Hatfield has led nine projects in 20 provinces to determine dioxin levels in soils and food and in the blood and breast milk of the Vietnamese population.

Agent Orange was applied by the United States to roughly 10% of South Vietnam during the war to clear the jungle and uncover North Vietnam's military movements and supply lines.

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Hatfield published a report last year confirming that dioxins continue to linger in highly toxic levels at former United States military airbases.

The company's report is now part of the Vietnam government's case seeking redress from the United States.

The Americans stored Agent Orange at the airbases, where the defoliant was later loaded onto planes and applied to the jungle.

Unaware at the time that Agent Orange was so toxic, soldiers handled it with little care.

Spills were common, as was runoff from planes that were sprayed down after flying missions.

"If the areas we're looking at were in Canada or the U.S. or other locations, cleanup would be required immediately," said Boivin, noting that dioxins can cause cancer and birth defects. "Dioxins are one of the most toxic chemicals known to mankind."

Hatfield Consultants' president, Tom Boivin: "dioxins are one of the most toxic chemicals known to mankind"

While the difficult task of eliminating the dioxins in Vietnam gets underway, Hatfield is helping the Vietnam government mitigate the danger of the dioxins by capping and quarantining three of the most contaminated sites.

For Hatfield's report and for other projects in Vietnam, Axys – which has also been involved in Vietnam since the mid-'90s, working closely with Hatfield – was subcontracted by Hatfield to provide the legally defensible data analysis of dioxins and furans.

In other projects in Vietnam, Axys has trained Vietnamese government lab staff to perform dioxin analysis.

Although their work in Vietnam is perhaps the most high-profile, Hatfield's and Axys' Vietnam projects represent less than 10% of each company's overall annual business.

Hatfield and Axys have worked together since the mid-'80s, primarily conducting dioxin and furan analysis at pulp and paper plants in Canada. Hatfield's staff of 80 has more than doubled in four years.

The West Vancouver company has been around since 1974. It now generates annual revenue of nearly $10 million, primarily from consulting work for industries and governments in such areas as aquatic ecology, environmental assessment and monitoring and contaminant monitoring.

The core business for Axys, which employs a staff of 100 at its laboratory in Sidney, is analyzing persistent organic pollutants such as dioxins, PCBs and pesticides.

Subsequent to Hatfield's report on dioxin levels in Vietnam, the U.S. **Department of Defense** reported that other locations at Da Nang air base, which have yet to be identified, were used to store Agent Orange.

That means that Hatfield and Axys will return to Da Nang this fall to again search for the toxic vestiges of the Vietnam War, much as they did when they first became involved in the Agent Orange cleanup nearly 15 years ago. ■

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FDA letter disappoints Cardiome Corp.

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The U.S. **Food and Drug Administration** (FDA) responded to **Cardiome Pharma Corp.** (TSX:COM; Nasdaq:CRME) last week, but it wasn't to approve the Vancouver company's heart drug as Cardiome had been expecting since January.

Cardiome's stock fell 18% to close at $10.57 on August 11, the day it announced that the FDA had responded to **Astellas**, Cardiome's development partner. At press time, Cardiome shares were trading at $9.07.

The FDA's action letter notified the companies that it requires more information about a subset of patients who suffered severe adverse affects after taking kynapid, a treatment for atrial fibrillation, or irregular heartbeat.

The day after the markets reacted to the action letter, Cardiome released second-quarter results showing an $18 million loss.

Once the FDA approves kynapid, Cardiome will receive a $15 million milestone payment from Astellas.

"The current FDA environment has been a bit of a challenge and a surprise to a lot of companies here in 2008, including Cardiome," Cardiome's president **Doug Janzen** said in a conference call.

Janzen added that the FDA action letter defines a clear pathway to market approval for the company.

Following the quarterly results, Jeff Elliott, an analyst with UBS Investment Research, maintained a buy recommendation on Cardiome, forecasting that the company's share price could reach $18 in 12 months.

In a client note, he said that if Cardiome were to revise its guidance label for kynapid to exclude heart failure patients – the subset that reacted adversely to the drug – it might receive approval sooner. Cardiome's 24% increase in net loss was due to lower licensing fees and increased costs related to the development of vernakalant, another treatment for atrial fibrillation that Cardiome is developing in both oral and injection forms.

Cardiome said it's continuing "strategic discussions," which revolve around licensing its Phase 2b oral vernakalant drug.

"The interest in Cardiome seems to lie around the global rights for the oral program," said Janzen, noting that the rights to the vernakalant injection treatment and to the kynapid treatment are owned by Astellas, with Cardiome collecting royalty and milestone payments. ■

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