

EXTRACTIONS



a newsletter from **O'CONNOR ASSOCIATES**

Number 7, May 1989

ALBERTA SPECIAL WASTE TREATMENT CENTRE UPDATE

In November 1988, following nine months of testing more than 5 000 samples, Alberta Environment renewed Chemi-Security (Alberta) Ltd.'s licence to operate the Swan Hills Special Waste Treatment facility. The performance evaluation program and independent audit of the tests found that the incinerator system consistently met and surpassed regulatory requirements. The incinerator achieved a destruction and removal efficiency of 99.9999%, meaning that for every one million kilograms of material processed, the system produces up to the allowable limit of one kilogram of residue. The four principal organic hazardous compounds burned in the test program were carbon tetrachloride, tetrachloroethylene, PCBs, and trichlorobenzene. These compounds were chosen because they are difficult to decompose thermally and because it is anticipated they will be delivered to the centre for disposal frequently.

The incinerator system was designed in Switzerland and consists of two heavily lined rocking kilns, which operate separately but share the same pollution control system. The kilns are designed to process 11 000 tonnes of material annually, operating 24 hours a day at temperatures of 1 200 degrees Celsius or higher. PCBs and petrochemical wastes comprise approximately 75% of the material received at the Centre. Residue left after incineration is chemically stabilized and then placed in a secure landfill.

The first secure landfill site at the centre will probably be filled by summer 1989, after about 15 months of operation. It will then be covered with an impervious cap and the area will be revegetated. The landfill is lined with a heavy plastic liner to prevent water seepage and equipped with a sophisticated leachate collection system. No liquids enter the landfill. Future cells will have a life expectancy of about one year.

The Swan Hills complex was judged the most advanced treatment facility of its kind by members of a touring Norwegian delegation, who had visited eight other waste treatment centres around the world. Tours are available for interested groups and the public. To arrange a tour, contact Carmen Beattie at (403) 333-4264.

"GAMMA-GO" GOLF BALLS

Atomic Energy of Canada Ltd. (AECL) has the perfect gift for some member of your nuclear family—the irradiated golf ball. AECL produced the novelty to stimulate interest in the irradiation process and its applications. Exposure to radiation changes the molecular structure of a golf ball's core and apparently improves golfers' drives by three to eight percent. Last summer the Whiteshell Nuclear Research Establishment offered to irradiate golf balls, and over 1 000 Manitoba golfers sent in 2 000 balls for the experiment.

EPA STUDY OF UNDERGROUND TANK CORROSION

An EPA-funded study on underground corrosion of 500 bare steel tanks has turned up some interesting facts. External corrosion appears to be a much more significant cause of perforation than internal corrosion. The study found that nearly 22% of perforations were attributable to external corrosion while only 1.6% were caused by internal corrosion. Tank size was more important than age in predicting tank failure, with smaller tanks more likely to perforate because of their thinner wall construction. Only 1 of the 143 perforated tanks had a capacity greater than 6 000 gallons. Tanks were found generally to be in worse shape than indicated by in-ground testing. Unexpectedly, the study showed that leaks did not always start immediately on perforation.

BACKYARD PC WEATHER STATION

A new computer program, called PC Weather Pro, allows you to use your PC to log weather observations into a database and perform analyses using the data. The program runs in your computer's background so you can continue with other things while the data are being logged. Using this program, your PC can also become a weather monitoring system, set to give an alarm when a specific set of potentially threatening weather conditions occurs.

SAFEGUARDING UNDERGROUND DRINKING WATER SUPPLIES

The EPA estimates 60% of all hazardous wastes disposed of in the U.S. are placed down injection wells. Migration of untreated waste from the injection zone can contaminate underground sources of drinking water. Recently, the EPA Administrator signed final rules strengthening EPA's protection of groundwater sources. Enforced under the Safe Drinking Water Act and the Resource Conservation and Recovery Act, the rules require that hazardous wastes meet current land disposal standards before they can be disposed of by injection. If they do not meet the standards, the operator must demonstrate to the EPA that waste cannot migrate from the injection site.

ALZHEIMER'S AND ALUMINUM

British researchers at the Medical Research Council at Southampton have confirmed a link between Alzheimer's disease and aluminum in drinking water. Based on studies in 88 areas in England and Wales, they found that the risk of developing Alzheimer's disease is 1.5 times greater in areas where drinking water contains more than 0.11 mg of aluminum per litre compared to areas where concentrations are less than 0.01 mg per litre.

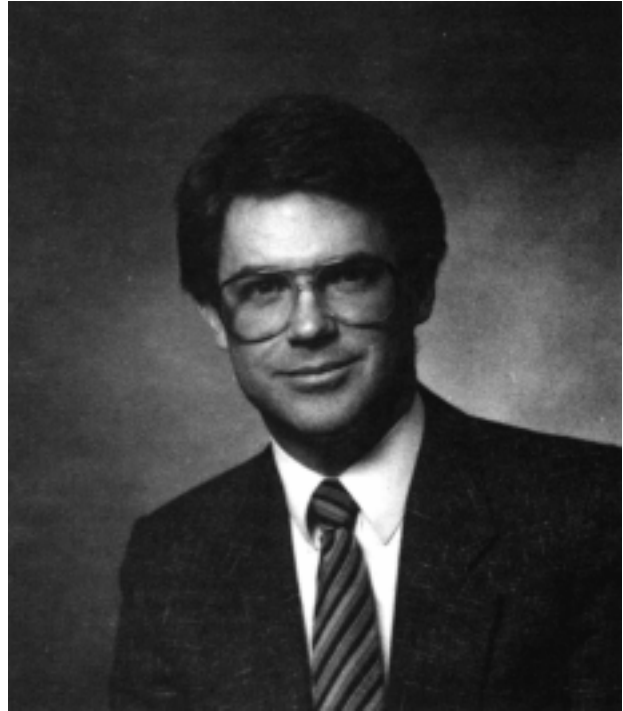
PUBLICATIONS

Hazardous Chemicals: Information and Disposal Guide, 3rd edition, The University of Alberta. This report, prepared by the University of Alberta Department of Chemistry, provides information on thoroughly tested, safe and practical methods of disposal for large and small amounts of chemical waste.

UPCOMING MEETINGS

6th Technical Seminar on Chemical Spills, June 5 -6, 1989, Calgary, Alberta. Topics discussed will include the fate and effects of spilled chemicals, technology for the containment, treatment, and storage of spills, and approaches to assessing the hazards associated with spills. The seminar will be directly followed by a second, the *12th Arctic and Marine Oilspill Program Technical Seminar*, June 7-9, 1989. Both seminars are sponsored by Environment Canada and will be held at the Marlborough Inn. For additional information contact Merv Fingas, Environment Canada at 613-998-9622 or S. Morrow, Trade Show Managers Inc. at 403-250-3526.

O'CONNOR UPDATE



James Carss, who joined O'Connor Associates last year, is currently involved in development of a state-of-the-art leak detection system for installation at petroleum storage and transfer sites. The system includes the remote acquisition and evaluation of data and allows for the remediation of leaks or spills under optional supervisory control. Mr. Carss has over 12 years of geotechnical engineering experience and, since joining O'Connor Associates, has coordinated numerous environmental investigations and provided geotechnical input to a number of projects. He has also supervised the design and installation of vapour management systems for multi-story buildings and has been active in the development of technology for the automatic monitoring and control of remediation activities at remote locations.

Margaret and Drew Allan became proud parents on February 28th with the arrival of 5 pound 15 ounce **Gordon Allister**. Gordon, Mom and Dad are doing well.

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