



NO SAFE WAY TO MINE URANIUM!

Government in 'hot' water for lifting moratorium

EDITORIAL

In February of 1980 Bill Bennett made the following statement: "It is clearly the mood of the people of this province that they are not prepared to live with uranium mining. What uranium resources British Columbia has will be left in the ground until the people are prepared to do otherwise."

The people of this province are still not prepared to tolerate uranium mining, but the government is allowing it anyway.

The former premier retired from the legislature more than one year ago. He is now on the board of directors of Teck Corporation, principle owner of Cominco, one of the mining companies involved in B.C. uranium claims.

Bennett's successor, Bill Vander Zalm, in letting the uranium mining ban expire, claimed that the moratorium was a hindrance to all types of mining. He is getting advice from such people as Energy, Mines and Petroleum Resources Minister Jack Davis and former cabinet minister Tom Waterland. Davis at one time advised the C.D. Howe Institute on financial matters relating to Atomic Energy Canada Limited. Waterland quit politics in 1986 to head up the Mining Association of B.C.

The government in Victoria appears willing to jeopardize the fruit growing and tourism industries in the Okanagan as well as the health of mine workers. More than a decade ago, an Ontario Royal Commission Study identified 466 Elliot Lake miners as having lung disabilities in whole or in part as the direct result of dust exposure in the uranium industry. The commission concluded in 1974 that 81 lung cancer deaths were probably attributable to uranium operations. The Environmental Protection Agency in the U.S. estimates that 20,000 cancer deaths per year are attributable to radon gas alone. Radon is released at all uranium mines and mills.

The majority of B.C. residents DON'T WANT THE MINES. In the Okanagan, which would have the first mines, almost 90 percent of those surveyed by the Committee for a Clean Kettle Valley voiced strong support for reinstatement of the moratorium. Many of the municipal governments in the same region, including major centres like Kelowna, have called for a permanent ban on uranium mining.

**TO BAN
URANIUM
MINING VOTE
YES NOV. 21**

In Kootenay-Boundary Regional District, voters must make a very important decision Nov. 21.

Voice your concern for a future free of radioactive contamination

An ad paid for by the Committee for a Clean Kettle Valley



VICTORIA, IN FRONT OF THE LEGISLATURE, SPRING 1987. Provincial sheriffs drag off demonstrators who had been camped out on the front lawn, protesting the expiry of the moratorium on uranium exploration and mining. In a week long series of scuffles, a number of tents were seized and several people were injured. The removal of demonstrators raises important questions about civil liberties and the right to voice opposition to government policies.

Mining rules grossly inadequate

The B.C. government's new uranium regulations went into effect on the expiry of the moratorium. The government described them as "stringent," although many, including the B.C. Medical Association, consider them inadequate.

For example:

1. Radium 226 is only monitored if the chief inspector of mines chooses to check for radium;
2. Public hearings are not required, although they are "allowed for" under the existing mine development review process;
3. Uranium mining and milling would only be regulated "if needed," should B.C. go beyond exploration;

4. Radioactive contamination is not supposed to exceed 10 percent above "average background level." The government feels that "increases in background radiation levels can be reduced by covering any source with inert material."

If uranium mining proceeds, the B.C. government will, unless it develops its own regulations, rely on uranium mining regulations developed by the Atomic Energy Control Board. These regulations have been drafted, but they have not yet been approved by the federal government. By November 1987 this still had not happened. When regulations are finally approved, the question is, will they be adequate? Almost

certainly not, because experience elsewhere in the world has shown that the technology simply DOES NOT exist to mine uranium safely.

A radioactive gold rush

In the late 1970s uranium prospectors swarmed over B.C. for what some people called the radioactive gold rush.

In 1977 Rexspar Minerals and Chemicals announced its intention to open B.C.'s first uranium mine at Birch Island, 120 km. north of Kamloops. On December 18 of the same year more than 800 people attended a stormy meeting at nearby Clearwater to debate the plan. Public opposition to uranium mining quickly spread across B.C. It was particularly strong in Kelowna, Rock Creek, Genelle and Atlin, all of which are situated near uranium deposits.

Uranium exploration that involves trenching and drilling holes and removing ore samples is mini-mining. Though not as dangerous as full scale uranium mining and milling, exploration nonetheless poses serious problems. It can contaminate sources of drinking water especially if a drill hole crosses an aquifer. Once ground water is polluted with radioactive and/or chemical contaminants,

people using such water are at risk.

About half of all uranium in B.C. lies 80 km. southeast of Kelowna at the Blizzard site. The claim is owned by several companies—*none from B.C.*—headed by Norcen Energy Resources of Calgary. Norcen says the ore body contains about 11 million pounds of uranium with an average concentration of two pounds per ton of ore and a maximum of 140 pounds per ton.

In 1979 it was worth more than half a billion dollars, but at today's prices is worth only about half that amount.

"Every exposure to the population has a harmful effect."

—Dr. Rosalie Bertell



OUR UNION OF MINERS,
MANUFACTURING AND
SERVICE WORKERS
HAS BEEN ON RECORD
OPPOSING
URANIUM MINING
SINCE 1977

New Commission demanded

Representatives from trade unions, municipal governments and environmental groups are demanding that a new Royal Commission be established to study the safety of uranium mining.

When asked about their position, such diverse groups as the Canadian Association of Industrial, Mechanical and Allied Workers, the Kootenay Boundary Regional District, Greenpeace and the B.C. Medical Association all agree that we must look at why the first uranium inquiry was established back in 1979 and address those same health and safety questions.

It was clear to the coalition of more than 100 groups in 1980 that the Bates Inquiry was halted before really devastating evidence was entered into the record. Two thirds of the witnesses scheduled to testify on worker health and safety and on environmental impact were

never allowed to do so.

Premier Bill Bennett's Social Credit government had established the Royal Commission to study how uranium could be mined safely, but when the evidence began to mount that there was no safe way to do so, the government passed an order in council cancelling the inquiry. To deflect both the commissioners' unhappiness with the abrupt halt to their work and to prevent further public outrage, a seven year uranium mining moratorium was put in place. Now, seven years later, the sleeping monster has reawakened.

By 1987 the province had a new premier and a new government, neither of which had learned from past experience. They refused to extend the seven year uranium moratorium which expired on February 27. In the meantime, opposition has grown and even Okanagan

South Social Credit MLA, Cliff Serwa, and a number of municipal governments, have joined the clamour to stop the mining.

Resolutions opposing the lifting of the moratorium were passed by various city councils, including those in Grand Forks, Penticton, Summerland, Kelowna and Vernon. All regional districts in the Okanagan also passed resolutions.

It is interesting to note that during the 1986 B.C. election campaign Premier Bill Vander Zalm said in Grand Forks that since there is "a perceived danger" in uranium mining, he would like to see a vote taken on such mining in the affected areas. No doubt the people there would as well, but the new uranium regulations, released 18 weeks later, contain no provisions for either public hearings or referendums.

Nuclear power - the nonviable option

The nuclear power industry was created in part to provide energy and in part as a public relations move to give a better name to nuclear technology which, until then, had only been used to create weapons of mass destruction. It also served to employ the thousands of engineers and technicians who had built the first atomic bombs.

Nuclear power and nuclear weapons are based on the same principle: the splitting of uranium atoms to create energy or heat.

In nuclear power plants, this heat is used to change water into steam which then turns turbines and generates electricity. Although the technology of controlled nuclear fission is very complex, the principle is simple - it's a fancy way to boil water. Since most of the heat produced cannot be used, it's also a very wasteful technology - sort of like cutting butter with a chainsaw.

Nuclear power plants create various highly radioactive

materials of which plutonium is the best known. It is named after the Greek god Pluto, the god of the dead. Deadly it is - plutonium is 20,000 times more lethal than cobra venom. It remains deadly for about 250,000 years and science still does not know how to store it safely for such a long time. As little as a millionth of a gram is enough to give a human lung cancer, fatal to 95 percent of victims. The average nuclear reactor produces 500 pounds of plutonium per year.

There are 19 reactors at seven nuclear power plants in Canada which together produce less than two percent of the energy consumed in this country. Accidents around the world from Chalk River, Ontario to Three Mile island and Chernobyl have produced economic losses of tens of billions of dollars. The same accidents will cause the premature deaths of hundreds of thousands of people, according to estimates by scientists who specialize in low level radiation.

Current plans by AECL to market food irradiation

equipment may be a last ditch effort by Canada's nuclear establishment to stave off collapse of an industry which would be dead were it not for infusions of tax money. Recent polls show that Canadians are fed up with nuclear power and everything nuclear. The World Watch Institute reports that a majority of this country's citizens would like to see no more nuclear plants constructed and existing plants phased out.

What happens to Canada's nuclear industry now depends on the rising tide of public opposition. The momentum built up by the industry over the years keeps the machine rolling ahead. Only when politicians realize that they could lose an election because of their nuclear position, will the tide shift. A lot more work needs to be done before Canada adopts the position of countries like Sweden and Austria which are permanently shutting down their nuclear power plants.

Supreme Court dismisses claim

The Supreme Court of B.C. dismissed a class action suit Oct. 19, 1987, which sought to establish that the Royal Commission Inquiry probing the safety of uranium exploration and mining in B.C. was illegally terminated in 1980.

Justice Hugh Legg announced his decision in late October after taking evidence Sept. 24 and Oct. 9 in Vancouver's law courts. The action was brought by Greenpeace, which financed the case, the Union of B.C. Indian Chiefs representing 110 Indian bands, the Canadian Coalition for Nuclear Responsibility, and the 40,000 member Confederation of Canadian Unions.

Justice Legg dismissed the case because the groups had argued that lifting the moratorium without allowing the commission to complete its investigation violated the Charter of Rights. The moratorium was imposed in 1980 while the Charter came into effect in 1982. The Charter cannot be applied retroactively, said the judge.

On Sept. 24, Justice Legg dismissed a claim by the coalition that the Bates Royal Commission of Inquiry was still in effect.

He did not agree with the plaintiffs that the inquiry was cancelled illegally before the commission had completed its investigation.

Although unsuccessful, lawyer Calvin Sanborn of the West Coast Environmental Law Association, who presented the case, says that a number of important legal points were made that will be beneficial in future anti-uranium cases.

According to Sanborn, in failing to deny the evidence about health threats, the Ministry of the Attorney General, charged in the suit, admitted that these threats exist and that the evidence is factual.

On four areas of health concern, Joe Arvay, acting for the government, did not address evidence presented by the Greenpeace lawyer. Sanborn presented affidavits from some of Canada's leading experts in this field, proving he says, that radon, radium, uranium dust and gamma radiation cannot be dealt with in a manner which would make uranium mining safe.



YOUR
OPINION
COUNTS!

The Honourable Bill Vander Zalm
Premier of British Columbia
Legislative Buildings
Victoria, B.C.
V8V 1X4

OPPOSE URANIUM MINING

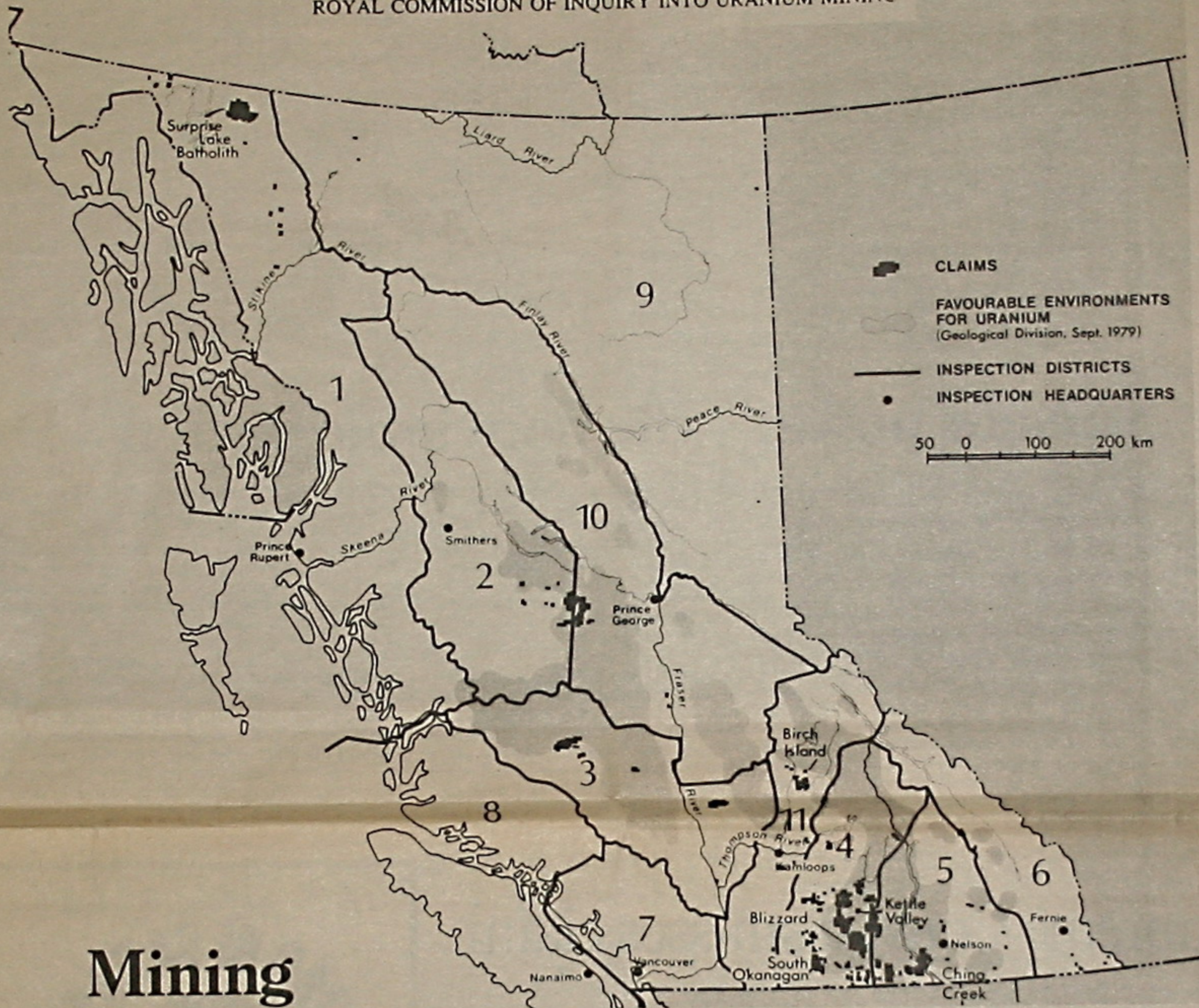


OUR 20,000 MEMBERS
HAVE OPPOSED
URANIUM MINING,
NUCLEAR WEAPONS
AND NUCLEAR ENERGY
FOR THE PAST DECADE

URANIUM HOLDINGS IN BRITISH COLUMBIA

(1979)

ROYAL COMMISSION OF INQUIRY INTO URANIUM MINING



Mining dangers

To understand the deadly consequences of uranium mining, it is important to understand the process. First, the uranium-bearing ore is crushed in a mill and uranium oxide ore is separated from the tailings. About 85 percent of the ore's radioactivity remains in the tailings which are usually dumped near the mine site. These tailings contain very dangerous radioactive substances produced in the uranium decay process.

Scientists say it takes about 10 half-lives for any radioactive substance to reach safe levels. One of the deadliest decay products is a gas called radon 222.

Although its half-life is only four days, it is continuously replenished by the decay of radium 226. Radon is inevitably inhaled, after which it breaks down into radioactive lead, polonium and bismuth capable of altering healthy cells into cancerous ones. Mining uranium and crushing it during the milling process greatly increases the release of radon into the atmosphere. Radon's source, radium 226 is so toxic that as little as one millionth of a gram can cause leukemia or bone cancer, according to the U.S. Academy of Sciences. Radium 226 has a half-life of 1622 years.

During the entire hearings of the B.C. Royal Commission into Uranium Mining, not a single piece of evidence was produced to show that uranium tailings can be safely contained. The nuclear industry is simply incapable of preventing these radioactive contaminants from escaping the mine site and entering the environment until they are no longer radioactive. In the case of thorium 230, the required isolation time is 800,000 years. Uranium 238 takes 4.5 billion years to lose just half its radioactivity and turn into thorium 234.

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Under the Workers' Compensation Act, uranium miners and their families are not able to sue either the government or the mining companies when various types of cancer start to take their toll. According to physicians, federal and provincial uranium mining safety standards are completely inadequate. The B.C. Medical Association, which represents the doctors who will have to deal with what the association calls "an industrially induced cancer epidemic," supports one of the strongest positions: THERE IS NO SAFE WAY TO MINE URANIUM!!

There are dozens of dangers to the environment, such as the bioaccumulation of radioactive materials in the majority of food crops, that haven't even been studied. The Bates Commission heard from both Fisheries and Oceans Canada and the B.C. Environment Ministry on concerns that there was limited knowledge on the effects of low-level radiation on fish, especially Pacific salmon. A large number of the watersheds which would receive effluent from uranium mining operations are also used by spawning salmon.

The Kootenay Boundary Regional District is holding a uranium mining referendum Nov. 21. District representatives see this direct democratic process as very powerful and hard for the provincial government to ignore. It is expected that even people who don't usually vote will turn out at the polls for the referendum because of the strong feeling people have about this issue.

A cloak of secrecy

Negligence and secrecy go hand in hand in the nuclear industry. Whenever errors are made or laws are broken, nuclear officials duck behind a cloak of secrecy.

The high incidence of cancer among Canadian uranium miners was long known by government and industry officials but the information was kept from the workers and their unions for years. A medical report submitted to the Ontario Workmen's Compensation Board in 1969 showed that 16 of 20 uranium miners' deaths were caused by cancer, more than three times what it should have been. Incredibly, this information became public knowledge for the first time during an international

conference, five years later.

In 1972, a top secret meeting was held in Paris between the governments of Canada, France, and South Africa and Rio Tinto Zinc, the world's largest uranium producer which operates three mines in Ontario under the name Rio Algom. The secret cartel conspired to artificially increase the price of uranium. By doing so Canada broke its own anti-combines legislation. The secret dealings worked and the price of uranium shot up from \$4 per pound in 1971 to \$50 per pound in 1978, the same year there was frantic uranium exploration in B.C.

All exposures to radiation risky

Uranium and all its decay products emit ionizing radiation. These waves or particles are capable of changing the electrical charge of atoms and the structure of cells—the building blocks of all life.

When human cells are damaged by radiation, cancer or birth defects may result. Recent discoveries show that all exposure to radiation is potentially harmful. Generally, the greater the radiation dose and the longer the exposure, the bigger the biological risk. Moreover, the effects of radiation are cumulative and may not manifest themselves as cancer until up to 25 years after exposure. Some birth defects can skip generations if recessive genes are damaged.

Radiation is often measured in units called rems (roentgen equivalent man). Usually exposure is expressed in terms of millirems or one-thousandth of a rem. The average Canadian is exposed to about 100

millirems per year from unavoidable sources such as cosmic radiation. Air travel exposes a person to about one millirem per hour. A chest x-ray, provided the equipment is in safe working order, is about 50 millirems.

The so-called "acceptable level" of exposure for nuclear workers in Canada is set at 5,000 millirems, the equivalent of a chest x-ray every three days. In the U.S.,

army personnel who were exposed to far less radiation during atom bomb tests in Nevada, have since developed leukemia at a rate four times the national average according to the American Medical Association.

Radiation cannot be detected by any of the human senses. More important, perhaps, is the fact that modern science can create radiation, but cannot eliminate it.

No insurance possible

Neither this province nor indeed the rest of Canada needs B.C. uranium. In fact, more than 85 percent of Canadian uranium is exported. According to the periodical, *The Northern Miner*, Canada has hiked its uranium output to the point where it now produces one-third of the world total. That is a 7 percent increase from 1985 to 1986. Canada has doubled its uranium output since 1981 to where it exported just short of \$1 billion worth of the mineral last year.

Even those sufficiently callous to disregard the health and environmental risks have to recognize that, even economically, uranium mining makes no sense. Using Norcen's own figures, the Blizzard site in the Kettle River Valley would only last a maximum of 10 years. The annual payroll would be about \$2.6 million. At 1987 prices, the Norcen Blizzard mine could make a total of \$150 million profit for the company.

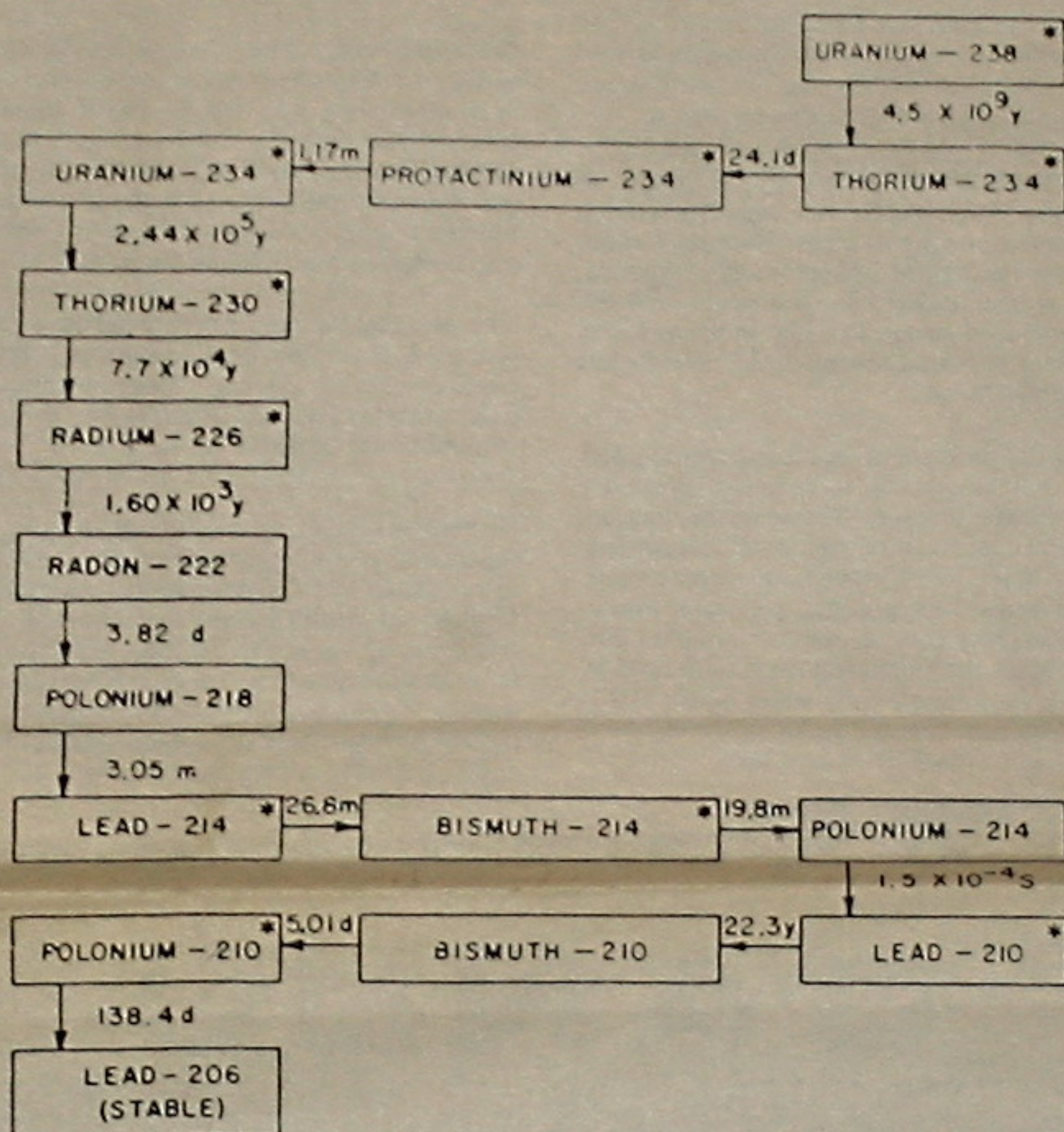
This contrasts to an annual value of more than \$200 million for the Okanagan's two principal industries, tourism and fruit growing. Why jeopardize these vital industries, which can conceivably continue indefinitely, for a \$2.6 million payroll that will last only a few short years? There is no market for radioactive fruit, and dead fish don't draw tourists.

Finally, it is possible to insure almost anything in the world, but no insurance company will cover losses due to radioactive contamination (it's in small print in your homeowners' policy under losses excluded). If insurance companies refuse to take the risk, why should you?

So, the bottom line is *you*. If you arm yourself with the facts, write the premier, letters to the editor, join or start an anti-uranium group such as the Canadian Coalition for Nuclear Responsibility and, if there are enough of us, we will keep B.C. nuclear free.

The majority of the people of B.C. oppose uranium mining and won this battle in 1979. We can, we must win again. After all that's what democracy means: government that serves the public interest. And uranium exploration, mining and milling are definitely *not* in the public interest.

RADIOACTIVE DECAY SERIES OF URANIUM 238



NOTE:

VERTICAL DIRECTION REPRESENTS ALPHA DECAY, HORIZONTAL DIRECTION INDICATES BETA DECAY. TIMES SHOWN ARE HALF LIVES. ONLY THE DOMINANT DECAY MODE IS SHOWN.
* ALSO GAMMA EMITTERS

Union says welfare better than mining uranium

When asked about the prospect of his union members working in uranium mines, United Steel Workers' District 3 president Tom Hill said September 9, "To hell with it, we would be better off on welfare than mining uranium."

There is no safe way to mine uranium according to the union boss, who was interviewed from his Kimberly office by this newspaper. Hill says he wants a real close look at the new provincial uranium mining regulations.

IT IS IMPOSSIBLE TO EXTRACT URANIUM IN AN ENVIRONMENTALLY SOUND WAY!

Donations are needed to help prevent radioactive contamination of our environment. Funds will be used for further research and educational work about uranium mining.

Please send your tax deductible contribution to:
Western Canada Wilderness Committee
#103-1520 West 6th Ave.
Vancouver, B.C. V6J 1R2

- I would like to make the enclosed tax deductible donation of \$_____ to help prevent radioactive contamination of the environment.
- I would like to become a member of the Western Canada Wilderness Committee and enclose my \$15 annual membership dues.

Name: _____

Address: _____

Postal Code: _____

Your support

is greatly appreciated!



Some Okanagan soils too 'hot' to grow vegetables

If root crops were allowed to be grown in some Okanagan soils, the vegetables would be so radioactive that they would be dangerous to eat.

Dr. Chris Van Netten, a toxicologist from the University of British Columbia, published studies in 1982 which showed that soil collected from Summerland produced very high concentrations of uranium in the roots of some vegetables. "It is clear therefore," said Dr. Van Netten, "that radishes, and possibly other vegetables, could be a formidable source of uranium for people consuming crops harvested from these soils." In one case radish roots contained 1130 times background levels of uranium. An adult could only eat about two ounces of the fresh vegetable before exceeding national safety standards for this radioactive mineral.

At the end of his abstract, Dr. Van Netten said, "Other crops and possible sources of uranium exposure around these deposits should be investigated." Very little such work has been done since that recommendation.

According to Dave Morley of the B.C. Ministry of Health, Radiation Protection Service, only hay is being grown at the moment on the 70 acres of farmland which was found to have the highest concentrations of uranium. The Ministry is monitoring known deposits and the crops being produced there. The hay is being fed to cattle and Morley says that testing of the animals has shown "negligible" results.

"Compounding the problem of uranium-contaminated soil is the fact that many water wells in the Okanagan are contaminated with uranium. This is further exacerbated by the fact that most of the people consuming these crops are likely to live near these deposits and consequently may also be exposed to well water which, in some instances, may contain uranium of up to .200 mg/L (i.e., 10 times the suggested maximum level in drinking water). Assuming a daily water intake of 2 L per day, this source could result in an intake of 5 to 6 times the maximum allowable daily intake."

A lot of Okanagan residents have shown interest in an ongoing water well testing program. A short-lived series of Ministry of Environment tests were dropped in 1982. A large number of wells were identified as being uranium contaminated and recommendations were made to the owners to install water purification equipment. Anyone wishing to have water wells tested now must pay about \$10 to private companies for this service.

Ironically, the Radiation Protection Service doesn't have the facilities to test for uranium contamination and must farm the work out.

According to Dr. John Hughes, an M.D. from Rock Creek, the Radiation Protection Service should have been monitoring water in the Kettle River below the Blizzard site this year but hasn't gotten around to it because it is having a disagreement with the laboratory which does the tests. Ironically, the Radiation Protection Service doesn't have the facilities to test for uranium contamination and must farm the work out.

The economic interests of a small powerful group of pro-uranium mining industrialists and their political allies are pitted against a huge majority of British Columbians who don't want to see this radioactive mineral being exploited here.

No further studies on uranium uptake are planned for the immediate future, contrary to the recommendations of the Bates Royal Commission Inquiry. Even a B.C. Ministry of Health Report in 1981 said, "Vegetables and drinking water are the most significant pathways for uranium ingestion by man. More extensive uptake studies, e.g. lettuce and potatoes, must be done." These studies have not been done despite preliminary results which the government said showed that root crops

grown on these high level uranium deposits "are not suitable for human consumption."

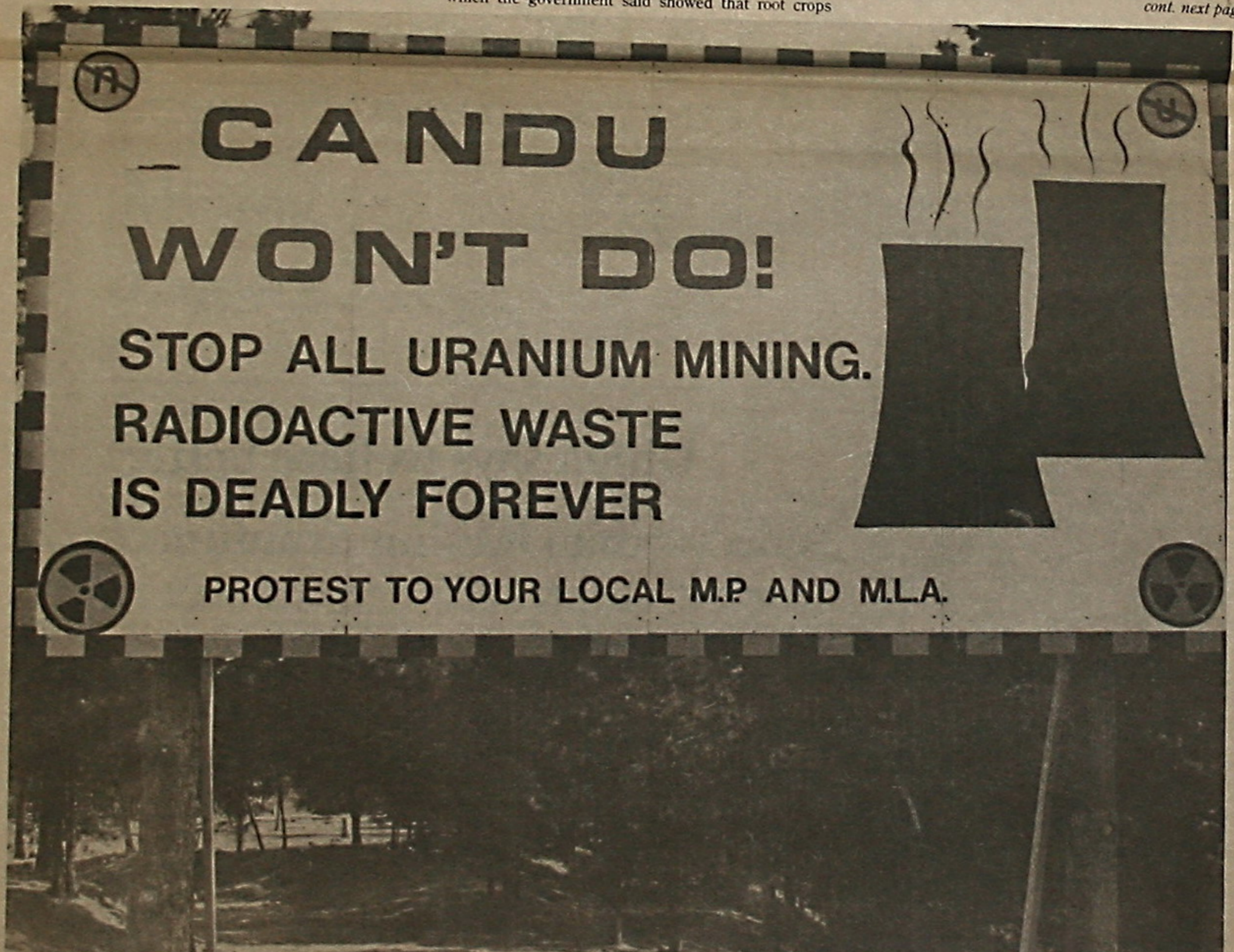
Health and Welfare Canada, whose standards are considered inadequate by many scientists, recommends that drinking water contain no more than 20 parts per billion uranium. One well in the Okanagan measured 113 parts per billion, almost six times the government's recommended safe level. Although the federal government sets safety standards for drinking water, these are non-enforceable and purely voluntary.

Should uranium mining go ahead there is the inevitable leaking of radioactive contaminants from tailings ponds into the environment. Escape of contaminated dust from open pit mines and radon gas releases from milling operations will affect forage crops, livestock, fruit trees as well as honey bees and other insects which are so important for pollination.

In some areas in Saskatchewan and Ontario where tailings have ended up in streams and rivers, radium accumulations of 11,400 times the normal have been found in the bones of fish. When uranium is mined, more than 80 percent of the original radioactivity remains in the tailings. A large part of this is found in radium which has the radioactivity of about half that of the accompanying uranium.

Pollution by radium is very serious because it bio-accumulates in algae, easily concentrating at levels 1000 times the surrounding water. The algae in turn forms the basis of the food chain. The U.S. Academy of Sciences says that radium 226 is so toxic that one millionth of a gram can produce bone cancer or leukemia. The provincial government does not address the problem of radium in its new uranium exploration regulations. The Bates Commission noted that in many mining situations radium is "the radionuclide of greatest concern in the inhalation pathway and radium and thorium are

cont. next page



A CLEAR MESSAGE. Motorists entering Westbank on Highway 97 from the south are greeted by this powerful message. The sign was erected more than seven years ago at another site by members of *Candu Won't Do* and moved recently to this prominent location. There has been no vandalism to this sign through the many years it has stood.

Canadian uranium used in first bombs

Should the mining of uranium be allowed to go ahead in British Columbia — and at the moment precious little stands in its way — the citizens of this province will be plunged into the murky world of being suppliers to the nuclear power and atomic weapons industries.

Since the top secret days of World War II when Canadian pitchblende from the Northwest Territories was used in the atomic bombs dropped on Japan, this country has been at the forefront of the nuclear industry. Now the whole world faces both the possibility of global nuclear war and radioactive contamination from nuclear power plant accidents.

As the new arms race escalated, uranium mining mushroomed worldwide. By 1987 there were eight uranium mines operating in Canada — five at Elliott Lake in Ontario and three in northern Saskatchewan.

A single Trident submarine with its 24 missiles, each with 14 warheads, can destroy 336 cities anywhere in the world. The U.S. and USSR each have only about 200 major cities. These missiles can deliver atomic bombs with pinpoint accuracy at speeds of up to 32,000 km./hr.

The nuclear arms race is a race neither side can win, but everyone will lose. Even without a war, it is killing people through radioactive poisoning and the spending of billions of dollars that could feed and educate the poor and hungry on earth.

On November 21, 1984 at the United Nations, 111 countries voted in favour of a nuclear weapons freeze. Only 12 nations including Canada and the U.S., voted against it.

British Columbians could shortly join the residents of Ontario, Saskatchewan and NWT in allowing crown lands to be exploited for uranium. We would be participating in an industry which is leaving a legacy of contamination which will last hundreds of thousands of years. Some scientists are now saying that there have been 13 million premature deaths around the world due to everything nuclear from uranium mining to weapons testing.

Following the war, the Atoms for Peace campaign went into high gear to provide employment for the thousands

of engineers and technicians who had worked to build the atomic bomb. Politicians and policy makers jumped on the bandwagon, eager to believe that nuclear energy could be used peacefully and safely. Spending on Atoms for Peace in Canada has been incredibly wasteful. Atomic Energy Canada Limited is a bottomless hole which has

already swallowed up more than \$3.5 billion. Canadians have had very little benefit from this spending, especially since promises of unlimited inexpensive electricity have evaporated. Producing power this way costs two to three times as much as other methods, according to the World Watch Institute.

A lethal legacy

Uranium is a radioactive metal, softer than iron and more common than silver or mercury. It is found in most parts of the world and very often on land occupied by native people such as the aborigines, Navajo, Saskatchewan Cree and Namibians. About 20 percent of the world's known uranium reserves are found in Canada.

Uranium was first identified in Germany in 1789. Until the early 1940s it was considered nearly worthless. When it began to be used it was for its radioactive properties. Uranium emits ionizing radiation as it sequentially changes into 14 other elements before turning into lead. Some of these changes take only a few minutes while others take many thousands of years.

The first conversion phase in this decay process changes uranium 238 into thorium 234. It takes 4.5 billion years, the age of the earth, for half of a given amount of uranium 238 to change into thorium 234, but only 24 days for half of it to change into protactinium 234. The time it takes a radioactive substance to lose half its radioactivity is called a half-life. The two best known elements in this decay series are radium 226 and radon 222.

To understand the deadly consequences of uranium mining, it is important to understand the process. First, the uranium-bearing ore is crushed in a mill and uranium oxide is separated from the tailings. About 85 percent

of the ore's radioactivity remains in the tailings which are usually dumped near the mine site. These tailings contain very dangerous radioactive substances produced in the uranium decay process.

RADON RISK EVALUATION CHART

| WL | Estimated number of lung cancer deaths due to radon exposure (out of 1000) | Comparable exposure levels | Comparable risk |
|-------|--|----------------------------------|---|
| 1 | 440-770 | 1000 times average outdoor level | More than 60 times non-smoker risk |
| 0.5 | 270-630 | 100 times average indoor level | 4 pack-a-day smoker |
| 0.2 | 120-380 | 100 times average outdoor level | 20,000 chest x-rays per year |
| 0.1 | 60-210 | 100 times average indoor level | 2 pack-a-day smoker |
| 0.05 | 30-120 | 10 times average outdoor level | 1 pack-a-day smoker |
| 0.02 | 13-50 | 10 times average indoor level | 5 times non-smoker risk |
| 0.01 | 7-30 | Average outdoor level | 200 chest x-rays per year |
| 0.005 | 3-13 | Average indoor level | Non-smoker risk of dying from lung cancer |
| 0.001 | 1-3 | Average outdoor level | 20 chest x-rays per year |

BERNARD BENNELL, Globe and Mail

CASTLEGAR AND TRAIL, B.C.
251 homes in B.C.'s Southern Interior tested in federal survey (1978).
"Significant number" with high radon levels, probably due to radon in drinking water from underground wells.
Worst house contained almost 1,000 times the average outdoor level of radon.
17.2 per cent (43 houses) would require fixing in the United States.
2.4 per cent (six houses) would be recommended for fixing in Canada.

"What uranium resources British Columbia has will be left in the ground until the people are prepared to do otherwise."
— Bill Bennett, 1980.

Nuclear industry ended up on trial

A 1978 proposal supported by about 50 B.C. organizations called for a public judicial inquiry to determine whether uranium should be mined here.

Instead the government instructed a Royal Commission headed by Dr. David Bates to determine how uranium should be mined.

In spite of this obvious bias, the evidence submitted soon showed in embarrassing detail that mining companies were unable to mine uranium safely. In a sense the whole nuclear industry was on trial. Evidence questioning industry safety was a key factor in the premature cancellation of the Bates Inquiry.

The announcement of a moratorium on uranium exploration and mining was made February 27, 1980, barely 48 hours before a huge anti-uranium rally was scheduled to take place during the opening ceremonies of the B.C. Legislature.

Incredibly, the three members of the aborted Commission then pleaded with the government for extra time to write their report. The time was granted. As a result of the termination of the public hearings, expert witnesses were denied the opportunity to personally present evidence. The scheduled hearings on social impact, ethical considerations and jurisdiction, and regulations and enforcement were never held. Phases on environmental impact and public and worker-health were not completed.

The Commission's report was issued on October 30, 1980. Of its approximately 1,000 pages, 80 percent comprises tables and appendices... With the filing of the report, the Commission ceased to exist. It cost B.C. taxpayers \$2.3 million.

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the greatest concern for ingestion of vegetables, wild game and drinking water contaminated by liquid releases."

Although the federal government has set safety standards for the amount of uranium considered safe in water and food, many scientists think the levels are far too high. Dr. Rosalie Bertell, an epidemiologist who is considered one of the world's leading experts on low level radiation,

says, "Every exposure to the population has a harmful effect."

The B.C. Medical Association says that the current allowable exposure to radiation is much too high with 200 to 300 extra lung cancer cases alone expected per 10,000 people per lifetime. "These levels are possible from uranium mines. In the light of current knowledge this might be considered tantamount to allowing an industrially induced and publicly sanctioned epidemic of cancer," says the BCMA.

YES! I WANT TO STOP URANIUM MINING FROM CONTAMINATING OUR WATER AND AIR.

Let's convince the B.C. government to reactivate the Royal Commission of Inquiry Health and Environmental Protection Uranium Mining.

Take your pick: environmental devastation by uranium mining **—OR—** a healthy long term agricultural economy

TELL ME MORE ABOUT URANIUM MINING. I've enclosed an extra \$5 for an information package with detailed reports and references.

YES! I phoned and/or wrote Mr. Vander Zalm at Premier's Office, Legislative Buildings, Victoria, B.C., V8V 1X4. Ph. 387-1715

YES! I will distribute _____ copies of the Greenpeace brochure, FIVE GOOD REASONS TO STOP URANIUM MINING IN B.C.

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Most political parties oppose mining

There is a mixed bag of positions on uranium mining among the political parties in the province. NDP leader Mike Harcourt agrees with his environment critic, Joan Smallwood, that there should be no uranium mining in B.C. Smallwood has been a thorn in the side of the governing Social Credit Party, asking for clarification of dozens of points concerning uranium and health issues.

In an interview with this newspaper July 2, Smallwood, said that the government isn't concerned enough about health problems which are associated with uranium mining.

"The provincial government dropped surveillance of drinking water three to four years ago because of the restraint program," she said. This means that there is no protection for anyone using any water in the province unless they initiate such tests and pay for them. (People who have ordered their own water tests can specify which substances they want the water tested for, including uranium.)

There is an unknown danger associated with drinking water contaminated with uranium. The Bates Commission inquiry, cancelled by the B.C. government in 1979, gathered only limited information about bio-accumulation of uranium before being put out of business. Because of this, Smallwood has asked the B.C. Medical Association to look into the cancer incidence near uranium deposits and where ground water is contaminated. Up to now in Canada, only lung cancer in miners has been studied in connection with uranium.

The Liberal Party of B.C. has yet to develop a policy on uranium mining and with no leader currently, all such questions were referred to the Liberal Party of Canada office.

The Green Party of B.C. is unanimous in its resolve to oppose uranium mining. Laura Porcher of the Greens recently said, "Radon gas can drift 1,600 kilometres to cover all of the province if uranium mining goes ahead." She says 60 percent of uranium miners will die from cancer and lung-related diseases. "We need no further inquiries to be convinced of the deadly nature of uranium," she said. "We have no right to lay this legacy of poison on future generations for the sake of profits of a few mining companies."

Even some of the backbench Socreds are getting into the act by opposing their party's position. Cliff Serwa, the Okanagan South MLA, told this newspaper Sept. 2 that he was working to have a uranium mining moratorium reinstated in British Columbia.

Among other things, he described how he arrived at a Socred caucus meeting with a box of Okanagan apples for government members. After everyone dug in, he announced that he was glad the apples weren't "hot" yet but that if uranium mining went ahead, that would no longer be the case.

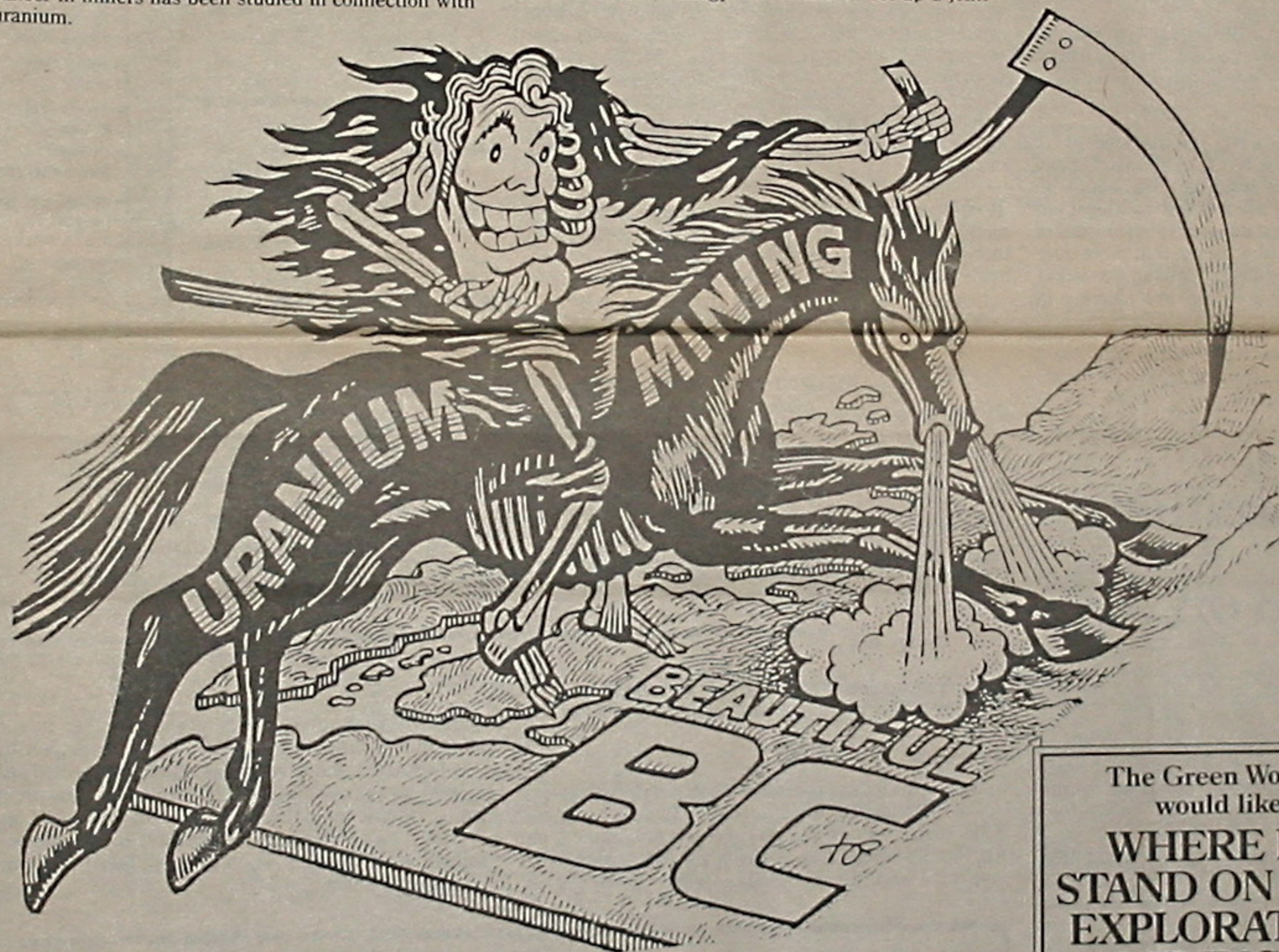
The Okanagan South MLA is lobbying the ministries of Environment, Energy and Health to set up a joint

task force to study uranium mining. Serwa hasn't had any positive response yet but says he feels that government members need to be educated.

All regional districts, cities, towns and native groups in the Okanagan South riding have voted against allowing uranium mining. This puts Serwa in the unique position of trying to justify an unpopular government position with his constituents. Because the NDP's position in B.C. calls for the reimposition of a uranium mining moratorium, the New Democrats will undoubtedly take advantage of the Socred position in mounting a strong challenge for the Okanagan South riding in the next election.

Mayor Jim Stewart of Kelowna, who is also chairman of Central Okanagan Regional District, said recently that water and irrigation systems in his area were a concern. "We have delicate and difficult watersheds here to deal with and I'm sure we couldn't meet the water standards if the (uranium) mining proceeded," he explained.

Stewart said he was optimistic that there would be no uranium mines in the Okanagan, based in part on the fact that there have been no applications for exploration or mining. Asked if there would be more public input on the issue, he said prophetically that this would certainly happen if anyone tried to do any uranium mining.



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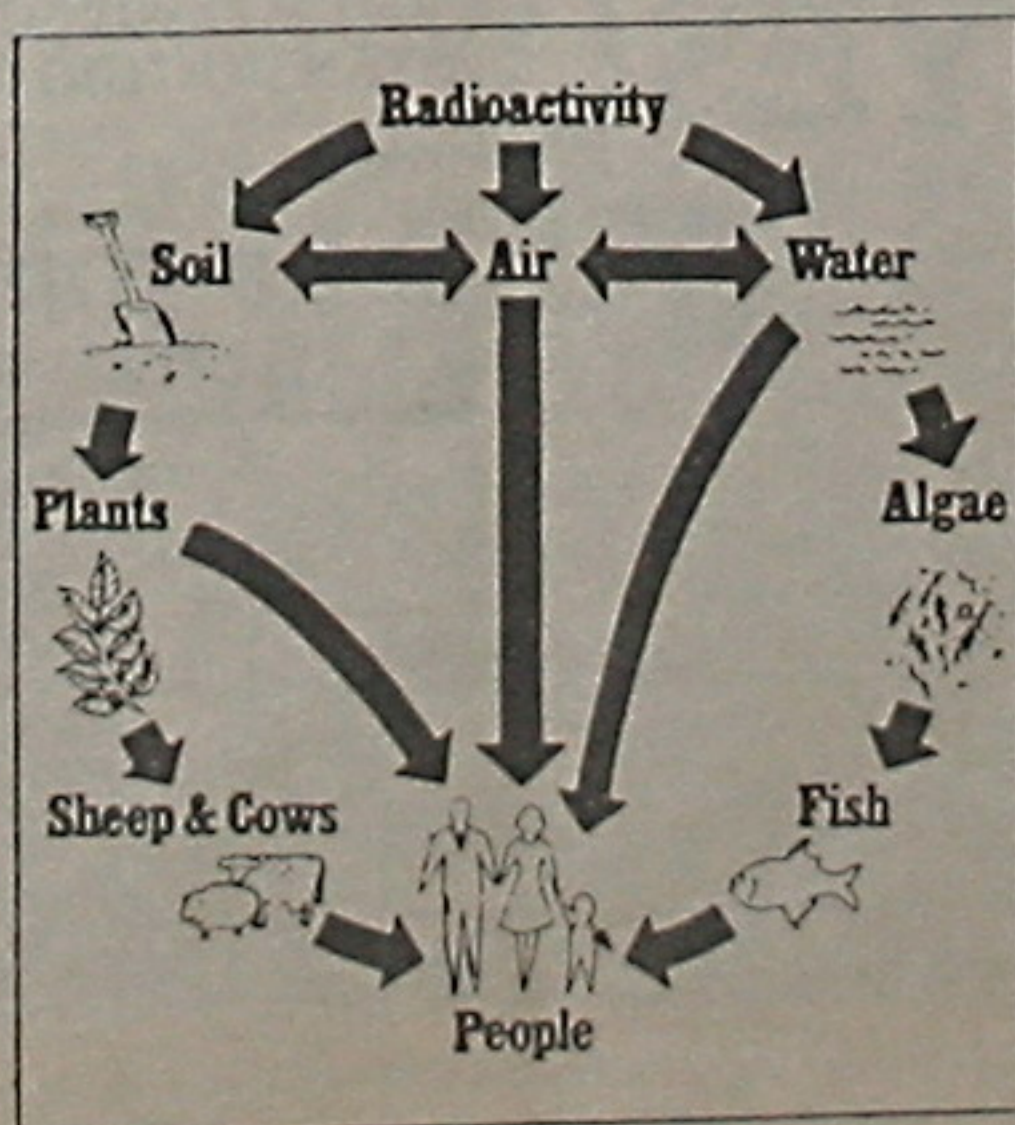
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The Green Women's Caucus would like to know:

WHERE DO YOU STAND ON URANIUM EXPLORATION AND MINING IN B.C.?

- I am for it.
- I am against it.
- No opinion.
- I feel so strongly about this issue that it will affect how I vote in the next election.
- I would like to have more information about the Green Women's Caucus.

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