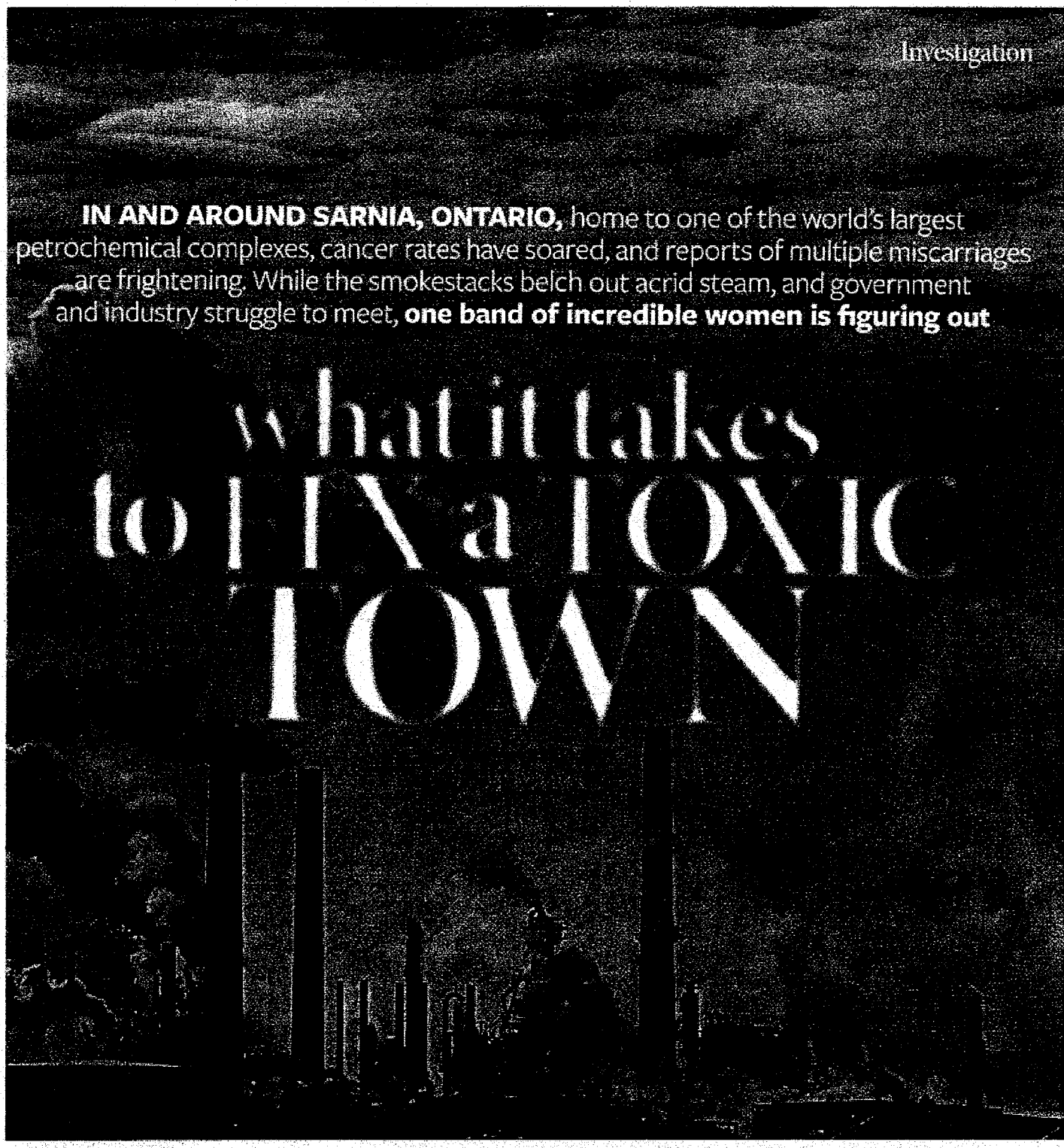


Investigation

IN AND AROUND SARNIA, ONTARIO, home to one of the world's largest petrochemical complexes, cancer rates have soared, and reports of multiple miscarriages are frightening. While the smokestacks belch out acrid steam, and government and industry struggle to meet, **one band of incredible women is figuring out**

what it takes to live in a TOXIC TOWN





Aamjiwnaang First Nation, a 2,700-acre reserve in south-western Ontario, sits, preposterously, in the centre of one of the world's largest petrochemical complexes, home to such companies as Imperial Oil, Dow Chemical Canada, Shell Canada, Suncor Energy and NOVA Chemicals. The reserve itself is idyllic, with a modern daycare centre, a handsome administrative building with a roof designed in the shape of a teepee and suburban-style homes nestled among woods, marshes and farmland.

But a glance to the skyline, just beyond the houses, reveals a landscape that looks like the set of a science-fiction thriller. Mammoth oil refineries and chemical plants line Vidal Street, the thoroughfare that connects Aamjiwnaang to downtown Sarnia, a city of nearly 75,000 on the Canada-U.S. border. Smokestacks topped with contaminant-burning flares tower above the more than 35 facilities in the industrial area dubbed Chemical Valley.

Sometimes, when the wind shifts, wafts of bitter air drive residents to pull out their asthma puffers. Spills and accidents at the facilities are signalled by shrill warning sirens. One sounded in March, when the roof collapsed on a large holding tank containing a mixture of chemicals, including benzene, a carcinogen used in the production of everything from plastics and detergents to dyes and pesticides, at the Imperial Oil site. Residents in Aamjiwnaang and Sarnia were forced to shut themselves indoors for four hours with their windows and doors closed tight.

A decade or two ago, the incident might have passed without remark or protest,

accidents being the price of producing close to half of the country's petrochemicals and housing 20 percent of its refineries, which, historically, were the bedrock of the local economy. But that silence and resignation ended when people started getting sick: Fatal cancers appear at an alarming rate in Chemical Valley workers, asthma and reproductive problems plague Aamjiwnaang, and the number of boys being born on the reserve appears to be on the decline. Evidence is mounting that pollution might be, at least partially, to blame.

But there's a movement afoot to save this place, and Jim Brophy, the executive director of the Sarnia office of Occupational Health Clinics for Ontario Workers (OHCOW), says what's striking is the leading role that women are playing. "Women and widows are the engine that's driving" the charge, he says. Angered by the deaths of their husbands and fathers and fearful of the impact pollution may have on their fertility and the health of their children, they are taking on the very industry that sustains their community. And what they're attempting to do is no less a feat than to right the balance of power between corporations and citizens and win back their city.



da Lockridge grew up in Aamjiwnaang. For a long time the smokestacks, sirens and smells didn't seem strange to her. "Sometimes you don't notice what's around you until people point it out to you," she explains over a late breakfast at a busy diner on the reserve. As a kid, she used to swim near Talfourd Creek, which winds through Aamjiwnaang and empties into the St. Clair River, a tributary connecting the south shore of Lake Huron with Lake St. Clair near Windsor, Ont. These days, the creek is marked with signs that warn people to keep out; its sludgy depths are full of runoff from the plants.

In 2003, Suncor Energy announced plans to build one of the country's largest ethanol plants. One of the proposed sites was a wooded area across from the band office. Lockridge joined a successful campaign to prevent it. "I thought, 'Not another frigging plant,'" Lockridge says. "Enough was enough." Around this time, she and other members of

FOR A LONG TIME THE SMOKESTACKS, SIRENS AND SMELLS DIDN'T SEEM STRANGE. "SOMETIMES YOU DON'T NOTICE WHAT'S AROUND YOU UNTIL PEOPLE POINT IT OUT TO YOU."

DREWING PHOTOGRAPHY: ALAMY



Aamjiwnaang's newly formed environmental committee went to a community meeting at OHCOW. For several years, the clinic had been monitoring local disease rates. Among males, lung-cancer hospitalization rates were 50 percent higher than the provincial average. Staff attributed the high incidence of some cancers to direct exposure to industrial substances, particularly asbestos. They wondered if the health of the people living in Aamjiwnaang, where pollution was most intense, might be affected as well.

Scientists from the clinic offered to help Aamjiwnaang decipher a 1996 study by the University of Windsor, which found elevated levels of mercury, pesticides, arsenic and lead in the reserve's soil and creek bed. When Lockridge heard descriptions of the illnesses caused by exposure to these chemicals, something clicked. "I thought, 'Oh my God, I know people who have this.'" Then, one of the scientists asked if there was anything unusual about the birth ratio on the reserve. Someone remembered that the community had three girls' baseball teams one summer but just one for boys. Was it possible that the number of boys on the reserve was dropping?

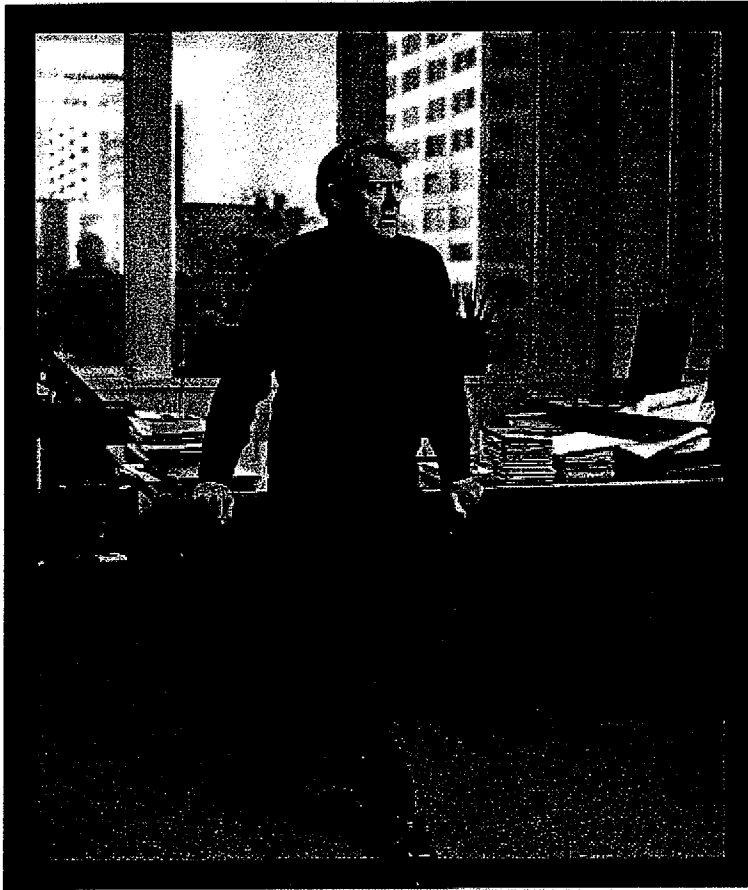
Lockridge worked with researchers from the universities of Windsor and Ottawa to review the band's birth registries for a 20-year period, from 1984 to 2003. The findings, which

Ada Lockridge (above) found a high rate of miscarriage on the reserve. Some women reported having as many as six.

were published in 2005 in the journal *Environmental Health Perspectives*, are disturbing. After a fairly stable and typical sex ratio of about 50-50 in the early 1990s, the number of boy babies began to drop to just under 35 percent by 2003. Around this time, Lockridge helped conduct a community health survey, which took her door to door to the 850 people who live on the reserve, asking for their family's medical history. Only one household reported no chronic health concerns. The rest suffered from ailments like asthma, hearing problems, arthritis, skin rashes and cancer.

Lockridge also noticed what appeared to be an alarming trend: an above-average incidence of learning and behavioural disabilities among children and high rates of miscarriage. Some women reported having as many as six. "No one had put it all together before," Lockridge says. "People just thought that miscarriages, or having only girls, ran in the family."

The roots of Chemical Valley date to the mid 19th century, when oil was discovered just south of Sarnia and the country's first commercial wells were established in the villages of Petrolia and Oil Springs. The abundance of crude and its proximity to Detroit, Chicago and Toronto made it the ideal location for a petrochemical centre. By the late 1960s, many of the largest oil and chemical companies in the world had built facilities in Chemical Valley. The economy boomed: The city had the highest standard of living in the country in the 1970s, with a per capita disposable income 35 percent greater than the national average. For several years, an iconic image of the city graced the back >>



Mayor Mike Bradley (above) says that in the postwar period, "the community was very focused on what was new and happening and, at the time, the chemical industry could do no wrong."

of the purple 10-dollar bill. It wasn't a shot of Sarnia's postcard-pretty beaches along Lake Huron, or the cantilevered Blue Water Bridge that links the city to the United States. It was a photo of an oil refinery. Such was the clout – both emotional and financial – of industry; it became a symbol of the city itself.

In his downtown office overlooking the St. Clair River and the city of Port Huron, Michigan, on the opposite side, Mayor Mike Bradley rolls his eyes when he jokes he'd like to meet "the genius who came up with the Chemical Valley moniker," a nickname that's become a bit of a punchline. In the postwar period, he says, "the community was very focused on what was new and happening, and at that time the chemical industry could do no wrong. It was like nuclear power. It was the future." Bradley shows me a picture of the city's original Victorian-style city hall, which was razed to make way for the blocky, brutalist building

THE RATE OF ASBESTOS-RELATED DISEASE IS SO HIGH THAT "THERE'S BARELY A WORKING-CLASS FAMILY THAT HASN'T BEEN AFFECTED."

where he's worked for more than 20 years. "It was all about progress," he says.

Starting in the 1980s, that vision of progress began to sour. First came the Blob: an accidental spill by Dow of 11,000 litres of the dry-cleaning fluid perchloroethylene, which sank to the bottom of the St. Clair River in a dense clump, picking up even more contaminants on its way. In an editorial in the *Sarnia Observer*, Dan McCaffery called the ensuing North American media coverage "a black eye that [the city] has never fully recovered from." Then, the recession of the early 1990s arrived and, with it, mass layoffs. "Blind loyalty to a corporation [began to disappear]," Bradley says. "People didn't want a job at any price anymore. We're a community of 75,000, and when 6,000 got marched out the gate in the 1990s, that changed how people responded to the health issues that were then coming up."

One of the first people to bring the cluster of asbestos-related diseases to Jim Brophy's attention was George "Bud" Simpson, who worked at Fiberglas Canada until it closed its Sarnia plant in 1991. Shortly after, he was diagnosed with throat cancer, which spread to his nose and mouth. Certain that his disease was related to the substances he was exposed to on the job, Simpson began to clip obituaries from the local papers of other workers who had died of cancer. By the time he died in 1997, after enduring more than 100 radiation treatments, the loss of his saliva glands and all his teeth, and the growth of a disfiguring tumour in his nose, he had gathered 34 other names.

Some of those men also made their way to OHCOW, where staff were diagnosing an unusual number of cases of mesothelioma, a rare and virulent form of cancer in the tissue around the lungs, which is caused by exposure to asbestos. The material was used widely in Chemical Valley as an insulator until the early 1980s, but because of the long latency period of mesothelioma, the cancer didn't strike workers for another decade. The incidence of such diseases has become so great that, Brophy says, "there's barely a working-class family in Sarnia that hasn't >>

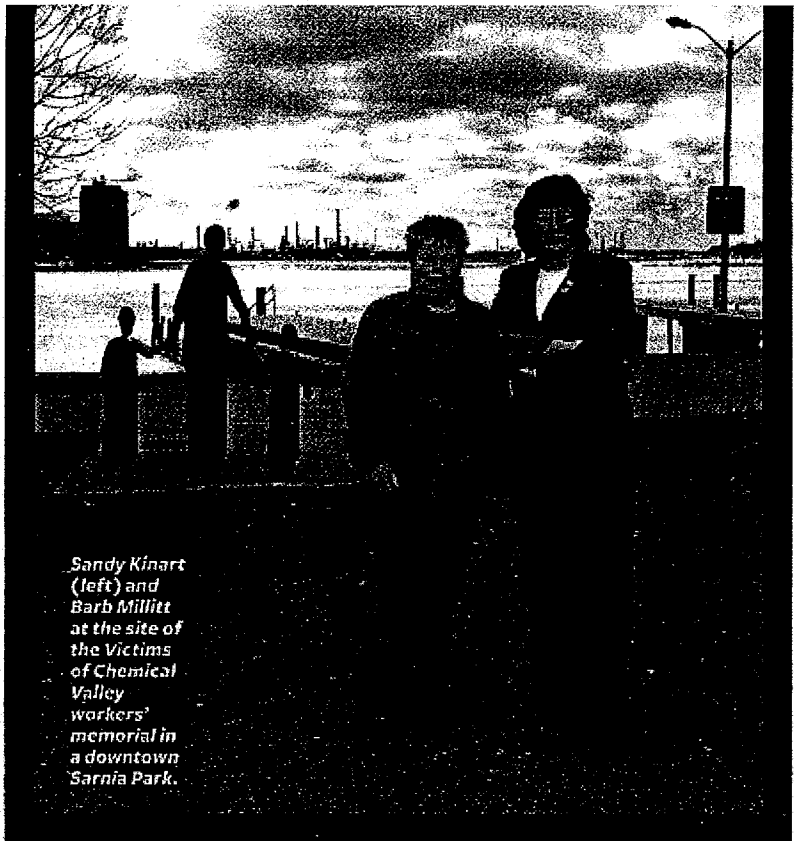
ONE WIDOW IN HER EIGHTIES BEGAN A CLAIM 28 YEARS AGO AND IS STILL WAITING TO BE COMPENSATED FOR HER HUSBAND'S WORK-RELATED ILLNESS.

been affected." Among males in the Sarnia area, the rates of mesothelioma are four to six times higher than in the rest of the province. Between 1999 and 2007, more than 600 cases of asbestos-related cancer or disease were diagnosed or recorded at OHCOW.

After Simpson's death, his widow, Jean, and his daughter Barb Millitt helped form Victims of Chemical Valley, a support and advocacy group. Sitting in her living room, filled with antiques, angel figurines and paintings, Millitt flips through a knee-high stack of binders stuffed with newspaper clippings, obituaries, legal documents, flyers from political demonstrations and scientific research. Millitt has an elephantine memory, quickly rhyming off the names of the men who died and those of their widows and children.

"These men went to work to do the best job they could," she says. "They had mortgages to pay and children to raise and maybe they had dreams of putting a little money aside. They had pride in their work." Millitt's mission is twofold: to honour those who have died and to prevent further industrial accidents and illness. A few years ago, she helped establish a workers' memorial in a downtown park, a grassroots effort funded entirely by donations and a garage sale.

Some of her most time-consuming work has been helping families file compensation claims with Ontario's Workplace Safety and Insurance Board (WSIB), an



Sandy Kinart (left) and Barb Millitt at the site of the Victims of Chemical Valley workers' memorial in a downtown Sarnia Park.

absurdly Byzantine process. One widow is now in her eighties and lives in a nursing home; 28 years after she began her claim, she is still waiting to be compensated for her husband's work-related illness.

"The burden of proof on the worker is huge," Millitt says. "You need worker testimony, work-history documents, epidemiological studies, statements from witnesses and doctors. Some people don't want to speak up. They have a fear of losing their job, of getting blackballed, of losing their pension."

The cost of these outstanding claims is a burden not just on their families, but on the health-care system as a whole, Millitt says. While the claims process stalls, taxpayers carry the costs of expensive treatments and care. "When a compensation claim is awarded, WSIB has to reimburse the health-care system. If those claims went through, it would be a shot in the arm for the [whole] system."

Sandy Kinart's story is typical of a Sarnia widow's. "One day my husband was fine," she explains, "the next day he wasn't." Blayne Kinart was exposed to asbestos while working as a millwright at the now-defunct Welland Chemical plant. "Blayne also worked with aluminum chloride," Sandy says, "and he was always concerned about getting Alzheimer's. [That] was the least of his worries." Instead, in 2004, Blayne died painfully of mesothelioma. He was 57. Before he passed away, he decided to go public by appearing in a photo essay in *The Globe and Mail*. Shots of his >>

emaciated body alongside an interview he gave outraged some in Sarnia, who felt he was painting an unfair and ugly picture of the city.

"People were very angry," Sandy says. "But some said, 'Thank you for speaking out.' For Blayne and I, it was the natural thing to do. It wasn't his way of saying, 'Poor me.' It was about telling the story so that it won't ever happen again."

A feisty woman with spiky blond hair, Sandy speaks about her husband in a voice thick with emotion. She recalls the care he took in his appearance, even when he was so weak that he needed a rest break while shaving. His illness galvanized her. After wading through the complicated paperwork to receive compensation from the WSIB (Blayne received just a single lump sum of \$38,000), she began assisting workers and their families. Along the way, she's become an advocate for workers' rights. "When I speak out," she says, "industry people say, 'How dare you?' My response is, 'You've taken away what's most precious to me in the world. How could I not speak out?'"

Io the credit of many companies in Chemical Valley, Sarnia is a cleaner, safer place than it was in the 1960s and '70s. In 2002, Imperial Oil reported a 92 percent reduction in benzene emissions from a decade prior. A year later, NOVA Chemicals announced that it was able to cut its emissions of benzene by 79 percent from the previous year, simply by sending out work crews with wrenches to tighten leaky valves. And in 2004, Dow, which is shutting down its Sarnia operation in 2009, finished a river remediation project, removing sediment containing mercury and other dangerous chemicals.

Dean Edwardson is the general manager of the Sarnia-Lambton Environmental Association (SLEA), an industry

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umbrella group that addresses environmental issues through public outreach and air and water monitoring. He bristles at the suggestion that industry has been lax in protecting residents. He points to several expensive upgrades to local facilities and to SLEA's monitoring. "There's been marked improvements in air and water quality. Do we have areas to improve on still? Sure. And we're going to continue to keep working on it. There have been dramatic improvements in preventing and containing [spills]. Unfortunately, accidents

happen. Every time one does, this organization studies what happens and how we can prevent that from reoccurring."

Yet, in many ways, the spills and accidents, which get media coverage and government attention - including an investigation of several facilities in 2004 by a Ministry of the Environment SWAT team, following incidents at several plants - are not as significant as the mundane, daily exposures.

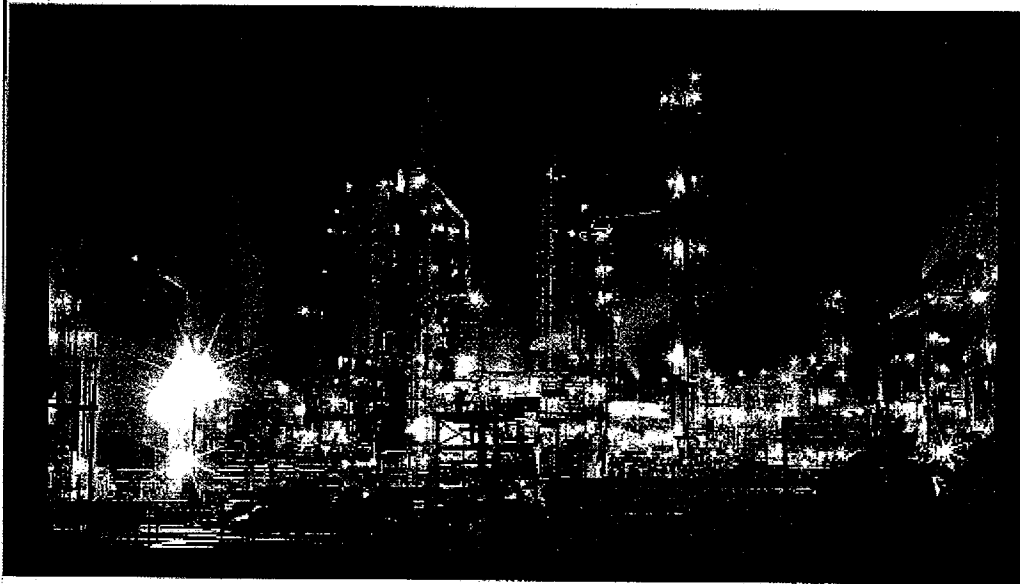
In 2007, the environmental group Ecojustice published a study on the cumulative air-pollution emissions in the Sarnia area, using data from Canada's National Pollutant Release Inventory, the U.S. Toxic Release Inventory and the Canadian Greenhouse Gas Reporting program. It found that the region was responsible for more than one-fifth of Ontario's total industrial greenhouse-gas emissions and that three of the local facilities were in the list of the top 10 air polluters in the province. In its summary, Ecojustice called the region "one of the most polluted hotspots in Canada." A number of air pollutants are known or suspected carcinogens, respiratory toxicants, developmental and reproductive toxicants or hormone disrupters. What will their impact be?

Sandy Kinart calls the people in Sarnia "guinea pigs." In 2006, she took part in a project led by the national advocacy group Environmental Defence, and had her blood tested for toxic chemicals. It contained relatively high levels of mercury and arsenic, as well as pesticides and lead. Perhaps it's no wonder, then, that despite all the efforts made by industry, the residents of Sarnia and Aamjiwnaang remain skeptical: They needn't look further than Blayne Kinart and Bud Simpson to find people who once believed what they touched and inhaled was safe.

Still, the greatest challenge for environmental activists and scientists is drawing the direct line between the pollutants and the diseases. With the asbestos-related diseases, linking the cause and effect is straightforward. Other conditions, like asthma and lymphoma, which also appear to be prevalent in the area, are trickier. A recent >>

study examining hospital admissions found that Sarnia had higher rates of respiratory problems than other nearby cities. But the source of those problems might be anything: industrial pollution, car and truck exhaust, smog from the U.S., something genetic or a combination of all those factors.

CONSIDER THIS: THE TIRES ON OUR CARS, THE PAINT ON OUR WALLS AND THE COSMETICS IN OUR PURSES ALL CAME FROM A PLACE LIKE SARNIA.



One of the facilities in Chemical Valley.

That's the frustration for Margaret Keith, the occupational health research coordinator at OHCOV. "In Sarnia, it's incredibly complicated to isolate exposed groups from non-exposed groups. And there are so many variables, like shifts in wind, and the number of spills. In epidemiology you're talking about probabilities. We know that there are tremendous exposures to pollutants and huge emissions of carcinogens, respiratory irritants, neurotoxins and hormone disrupters. And we know that we also have people here who are sick with cancer, asthma and reproductive problems, [and there's evidence of an unusual] sex ratio. We cannot absolutely say that a particular plant or a particular pollutant from that plant is causing these problems, but I think we can say that it would appear that these health problems are caused, at least in part, by pollution."

Even some who are sympathetic to environmental issues aren't fully convinced by the small-scale studies, such as the sex-ratio findings, arguing that the research is too limited to be conclusive. The Aamjiwnaang chief, Chris Plain, is among them. "[The study] only covers a short period of time and we're seeing more boys being born now. [As well,] those numbers were taken from our entire membership, but only half actually live here in the community."

However, he does believe that the pervasiveness of cancer and asthma on the reserve is due to the surrounding industry. "We're getting to the point where our children can differentiate between [chemical emission] smells and know when something dangerous is in the air. That's just not right. We're having a hard time proving that the illnesses and disease we see around us can be attributed to the plants, but on the flip side, [industry] has done nothing to alleviate our concerns."

A county-wide board with representatives from First Nations, labour, public health, non-government organizations, industry and government is currently working on a broad community

health study. Its hope is to determine which diseases and conditions are prevalent in the area and whether they're caused by exposure to industrial pollutants. Not surprisingly, progress has been slowed by disagreements over funding of the study and the size of its catchment area. Two years in and they've only reached the point where all parties have agreed to come to the table.

Sarnia's troubles may seem localized, a mess in someone else's backyard, but consider this: The tires on our cars, the containers keeping leftovers fresh in our fridges, the foam cushioning in our furniture, the paint on our walls, the cosmetics in our purses and the plastic toys in our children's rooms all had their start in a place like Chemical Valley. "Everyone is an environmentalist until you put them to the test," Bradley says. "[But] how willing are they to change their lifestyle? The country depends on this community. You wouldn't >>

"INDUSTRY IS LIKE A BATTERING SPOUSE. [ITS ATTITUDE IS] IF I LEAVE YOU, YOU'LL HAVE NOTHING AND NO ONE ELSE WILL HAVE YOU. AND IF YOU FORGIVE ME, I PROMISE I'LL NEVER [POLLUTE] AGAIN."

have the auto industry at all without the oil refineries and chemical plants in Sarnia. The country depends upon us, but at the same time, it's fearful of us."

If that dependency is complicated for the rest of the country, imagine what it's like for the people who live in Sarnia. Chief Plain used to work at a plant in Chemical Valley and much of his community's economic and social success – its safe, modern housing, its access to health care and good schools, an employment rate that rivals the national average and a band that posts regular annual surpluses – comes as a direct result of its location. And while Ada Lockridge tries to keep industry and its government regulators honest, by monitoring air quality and reporting unusual smells to the provincial Ministry of the Environment's Spill Action Centre, her husband has worked in several plants. As does the husband of Lisa Matlovich, a member of the group Sarnia Environmental Alliance, which

spearheaded an ongoing campaign to ban pesticides in the city.

Matlovich says Sarnia's dependency on industry is just as psychological as it is economic. "Industry is like a battering spouse. [Its attitude is] if I leave you, you'll have nothing and no one else will have you. And if you forgive me, I promise I'll never [pollute] again."

Those fears aren't without merit. Jobs are scarcer in Chemical Valley, and the multinational companies Dow and LANXESS have announced plans to shut down facilities in Sarnia. With growing attention to global warming, greenhouse gases and the political perils of oil addiction, the entire petrochemical business is starting to seem like a relic. Despite the gold-rush frenzy over the Alberta oil sands – and a new state-of-the-art Shell refinery to process that oil being proposed for the Sarnia area – even insiders admit that the industry has to adjust. "As long as we like to drive our cars, oil products will be in demand," Edwardson says. "But how we produce them may change. Will Sarnia look very different 20 years from now? I suspect it might."

In the meantime, Lockridge, Millitt, Kinart and their allies are keeping up the fight. As for their mayor, he wants a green revolution. The city recently received \$34.9 million from all levels of government to upgrade its waste-water system, which will considerably reduce sewage overflow into the lake and river. There are also plans to build North America's biggest solar farm in Sarnia, which will generate enough power for up to 15,000 homes.

"No city is going to diversify its economy when there's prosperity," he says. "I bet Fort McMurray isn't talking about diversifying. The problem we had here is that no one thought the good times were going to end. For us, they did in the 1990s. And I think the petrochemical industry is one that people might look at 100 years from now and say, 'What was oil all about anyway?'" ■

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