

2013 ANNUAL  
REPORT TO THE  
COMMUNITY

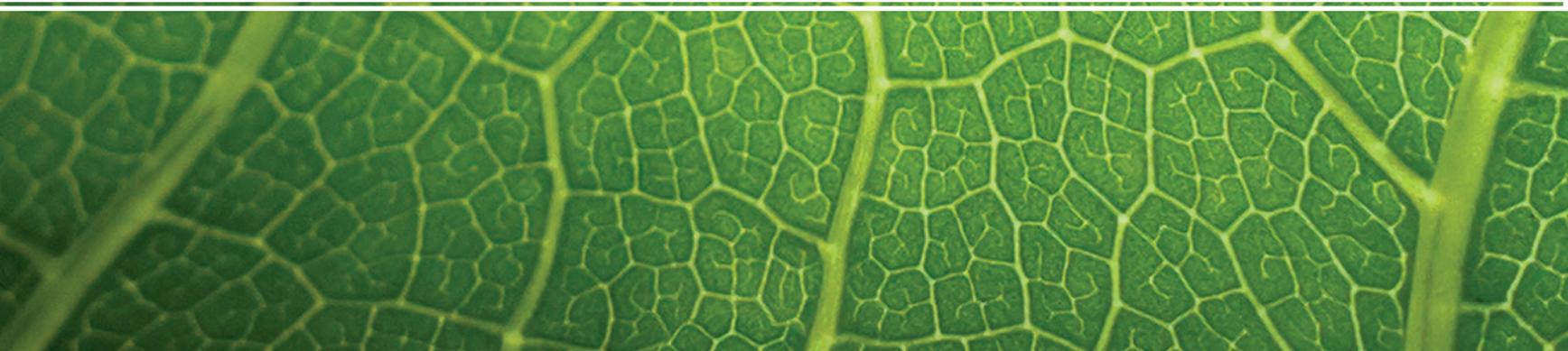
**GREENING**  
Our Capital Region



Strathcona  
Industrial  
Association



Our community is a hive of activity.



Our member companies are working hard to produce a range of useful products that make their way to homes and communities around the world. Our members are proud to be part of this vibrant community and committed to being good neighbours. This means ensuring operations regularly meet and exceed quality and safety standards as well as working collaboratively with our community, industry and government partners for optimal results.



## 2013 SIA BOARD OF DIRECTORS

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**David Knights**  
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KEYERA ALBERTA ENVIROFUELS  
ALTASTEEL  
CAPITAL POWER CORPORATION  
CELANESE EVA PERFORMANCE POLYMERS  
EDMONTON WASTE MANAGEMENT CENTRE  
ENBRIDGE  
EPCOR GOLD BAR WASTEWATER TREATMENT PLANT  
IMPERIAL OIL STRATHCONA REFINERY  
KINDER MORGAN  
OWENS CORNING  
RIO TINTO ALCAN  
SUNCOR ENERGY EDMONTON REFINERY

## MESSAGE FROM THE PRESIDENT OF THE BOARD OF DIRECTORS

In 2013, the Strathcona Industrial Association (SIA) continued to work collaboratively on a number of initiatives to improve environmental performance, safety and community well-being in east Edmonton and Strathcona County.

Our 12 member companies took the opportunity to actively participate in broader government and community initiatives throughout the year. They shared their expertise and experience on multiple steering committees and gave generously to local organizations and charities.

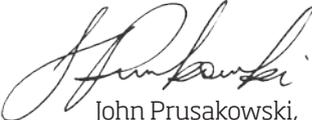
This past year, SIA partners also turned their attention to greening our capital region. Members looked for innovative ways to enhance individual processes and policies while demonstrating their ongoing commitment to environmental responsibility and stewardship.

SIA also continues to work with Strathcona County and the City of Edmonton to ensure sound risk-based land use planning principles are employed.

We are proud of our collective achievements and the progress we have made to date with monitoring ambient air quality, ensuring optimal water use and prudent land use planning strategies.

You will see that much of the information outlined in this report to the community is a summary of our 2013 Annual Ambient Air Monitoring Report, which is required by Alberta Environment and Sustainable Resource Development (ESRD). Our ambient air quality-monitoring network was one of the first established in Alberta and continues to yield valuable data that helps us assess current and historical air quality along with noticeable trends so we may be proactive in our approach.

As President, I'm delighted to see the distance traveled by SIA in 2013. I look forward to working with our partners, regional organizations and neighbours to sustain this momentum in the years to come.



John Prusakowski,  
SIA President

## OUR MEMBERS

SIA is a not-for-profit association representing east Edmonton and Strathcona County heavy industrial operators. We share a commitment to safe and environmentally responsible operations and are proud to provide a common voice for industry. Our 12 member companies employ

### AltaSteel

AltaSteel is a scrap-based melting and casting mini-mill operation and has a production capability of over 350,000 tonnes of steel billets annually.

[altasteel.com](http://altasteel.com)

### Capital Power

Capital Power develops, acquires, operates and optimizes power generation from a variety of energy sources, such as natural gas, wind, solar, coal and biomass. Capital Power owns more than 3,600 megawatts of power generation capacity at 15 facilities across North America.

[capitalpower.com](http://capitalpower.com)

### Celanese

Celanese is a leading North American manufacturer of a full range of EVA copolymers.

[celanese.com](http://celanese.com)

### Edmonton

The Edmonton Waste Management Centre (EWMC) is North America's largest collection of modern, sustainable waste processing and research facilities.

[edmonton.ca/ewmc](http://edmonton.ca/ewmc)

### ENBRIDGE

As a transporter of energy, Enbridge operates the world's longest crude oil and liquids transportation system and is proud to be recognized as one of the Global 100 Most Sustainable Corporations in the World. Enbridge employs more than 10,000 people in Canada and the U.S., and is ranked one of Canada's Greenest Employers and one of Canada's Top 100 Employers for 2013.

[enbridge.com](http://enbridge.com)

### EPCOR

Epcor's Gold Bar Wastewater Treatment Plant opened in 1956, and through continual upgrades, it remains at the forefront of wastewater treatment technology, and is considered one of the most innovative wastewater treatment operations in North America.

[epcor.com](http://epcor.com)

more than 2,500 people in the region. These industry leaders manufacture every day products like plastic grocery bags, home insulation, engine oil, gasoline additives, recycled steel and provide essential power generation and wastewater treatment services to communities.



Imperial Oil's Strathcona refinery produces a wide range of petroleum products, including gasoline, aviation fuel, diesel, lubricating oils, petroleum waxes, heavy fuel oil and asphalts and is the only producer of lubricating base oil and waxes in Western Canada.

[imperialoil.ca](http://imperialoil.ca)



Keyera Alberta EnviroFuels is the largest iso-octane manufacturing facility in the world. The facility produces enough product to fuel approximately 45,000 vehicles per day.

[keyera.com](http://keyera.com)



Kinder Morgan is the largest midstream and the third largest energy company in North America. It owns an interest in or operates approximately 80,000 miles of pipelines and 180 terminals. Its pipelines transport natural gas, gasoline, crude oil, CO<sub>2</sub> and other products, and its terminals store petroleum products and chemicals and handle products like ethanol, coal, petroleum coke and steel.

[kindermorgan.com](http://kindermorgan.com)



Owens Corning is global leader in residential, commercial and industrial building materials ranging from insulation to roofing. It invented fiberglass and fiberglass insulation over 70 years ago, and is best known for its PINK™ insulation products.

[owenscorning.ca](http://owenscorning.ca)



Rio Tinto Alcan is a global supplier of high quality bauxite, alumina and aluminum.

[riotintoalcan.com](http://riotintoalcan.com)



Suncor Energy's refining and marketing operations provide a vital link between our large Canadian resource base and the growing North American energy market. Suncor Edmonton's 140,000-barrel-per-day refinery runs entirely on oil sands-based feedstocks and produces a high yield of light oils.

[suncor.com](http://suncor.com)

## CARING FOR OUR ENVIRONMENT

SIA is committed to environmental performance, safety and community wellbeing.

Together, our members are ensuring heavy industry operators not only lead with responsible and sustainable policies and practices, but that they act as environmental stewards at every step of the way. SIA is greening our capital region.

### AltaSteel

As one of the largest recyclers in Alberta, the scrap-based mini mill operation is giving new life to scrap steel. The company buys shred from automotive recyclers and dismantlers to produce approximately 350,000 tonnes of steel billets each year. AltaSteel is mindful of its environmental impact and buys only scrap that is mercury free. As co-funders of the national Switch Out program, the company recognizes the value in ensuring hazardous components, such as mercury switches, are removed from vehicles prior to melting and casting. AltaSteel is helping to steer the industry towards healthier practices that benefit the community.



### Capital Power

For the last couple of decades, Capital Power's Clover Bar Landfill Gas facility and the Edmonton Waste Management Centre have been working together to ensure that a potent gas resulting from decomposing organic material is appropriately managed. These days, Capital Power is reducing its carbon footprint by harnessing the energy from the methane at the site to create power for 4,600 homes each year.



### **Celanese**

From medical necessities to everyday items like running shoes, life jackets and stroller wheels, Celanese's specialty polymers are now prominent in many Asian, European, South and North American markets. The company supports renewable energy every day by producing EVA film which is now used by a number of solar panel manufacturers as an encapsulate for photo-voltaic cells. Celanese has also invested more than \$400K into resurfacing and landscaping a portion of its 100 acre site that had been disrupted during earlier expansion initiatives.

### **Edmonton Waste Management Centre (EWMC)**

The EWMC is a huge reason why our city is recognized globally as waste management leaders. The 233-hectare site is home to a number of integrated waste treatment plants, biosolids lagoons, a now closed landfill, as well as various state of the art training, research and operational facilities that receive, process, sort, compost and recycle residential, commercial and industrial wastes. In fact, the EWMC is currently able to divert 60 percent of our residential waste and when the Waste-to-Biofuels facility comes on line later this year, that diversion number will increase to 90 percent. This figure represents one of the highest diversion rates in the world and is something all capital region residents should be proud of.

## Enbridge

As an energy delivery company, Enbridge also devotes plenty of energy to its clients, its neighbours, and the environment. At any given time, Enbridge is engaged in numerous environmental initiatives focusing on habitat restoration. Additionally, the company's Neutral Footprint initiative - part of its Corporate Social Responsibility (CSR) activities - provides another demonstration of Enbridge's commitment to the environment. Since 2009, the company has planted a tree for every tree it removes, conserved an acre of land for every acre of wilderness permanently impacted, and generated a kilowatt hour of renewable energy for every kilowatt hour its operations consume. Enbridge continues to demonstrate its commitment to going above and beyond regulatory requirements as it implements sustainable and socially responsible solutions.

## EPCOR

Like many municipalities around the world, EPCOR and the City of Edmonton are making the most of the by-products from domestic wastewater treatment. Biosolids, which are rich in nitrogen, phosphorus and other elements essential for plant growth, can have a tremendous impact on local agriculture and the environment and EPCOR and the City of Edmonton are ensuring that more than 25,000 dry tonnes of biosolids produced each year are not wasted. Neighborhood green thumbs are reaping the rewards of the nutrient rich compost sold at the City's Eco-Stations, while local farmers continue to access biosolids through the NutriGold program, which has been running since 1978. The popular program invites local farmers who have suspended their annual seeding to boost soil conditions and offset the purchase of commercial fertilizers through biosolids application. In fact, in 2012, the versatile by-product was used to enhance crop production and soil water retention properties on roughly 1680 acres of land within 100 kms of Edmonton.



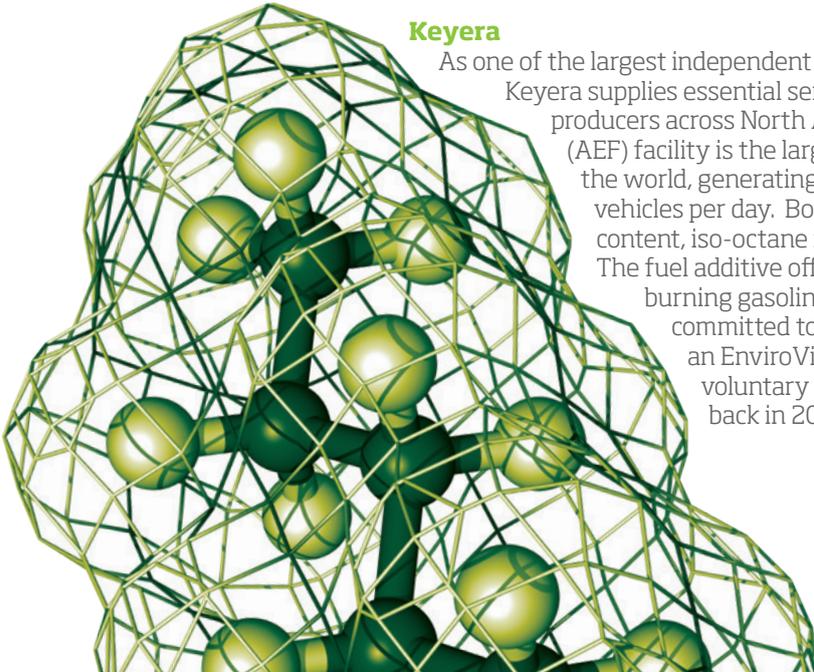
## Imperial Oil

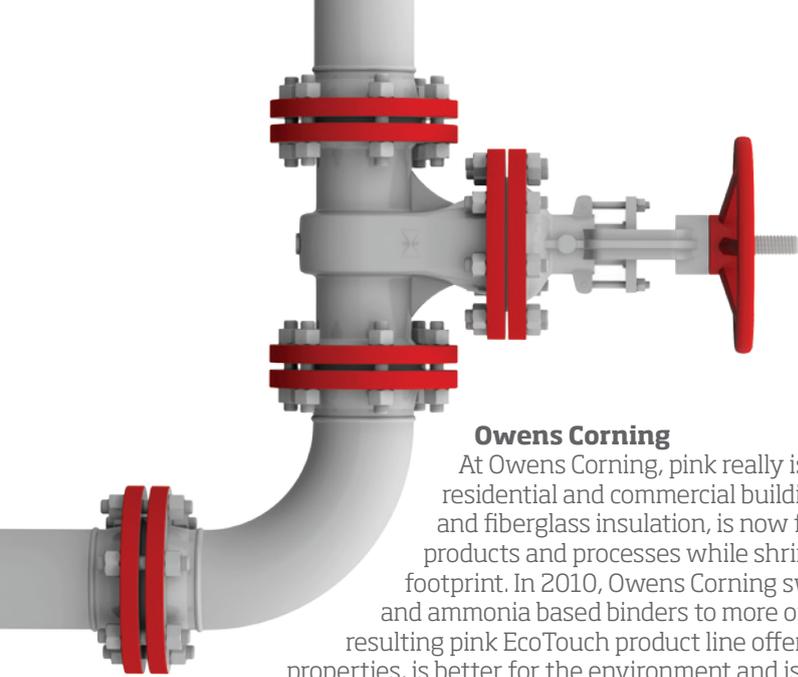
Imperial Oil's 'Protect Tomorrow. Today.' Initiative is just one way the company is demonstrating a strong commitment to operating in a way that protects the environment and takes into account the economic and social needs of the surrounding communities. At the Strathcona refinery, this focus has been reinforced through multiple projects including; implementation of an infrared camera technology to detect hydrocarbon leaks not otherwise visible to the human eye. This investment helps the company to be proactive in the early identification and repair of potential leaks and has had a measurable effect on volatile emission reduction. The refinery has also put structural measures in place to minimize volatile emissions, including upgrades to floating roof tank seals, and installation of expandable covers over the open slots on tank floating roof guide poles. While the facility has its eye on efficiency, processing approximately 187,000 barrels of crude oil each day, it hasn't lost sight of the importance of environmentally responsible production practices.



## Keyera

As one of the largest independent midstream operators in Canada, Keyera supplies essential services and products to oil and gas producers across North America. Its Alberta EnviroFuels (AEF) facility is the largest iso-octane manufacturing plant in the world, generating enough iso-octane to fuel roughly 45,000 vehicles per day. Boasting a high-octane value, low vapor pressure and little to no sulphur content, iso-octane is an ideal blending component used in premium gasoline production. The fuel additive offers improved combustion efficiency and ultimately results in a cleaner burning gasoline, which is good news for consumers and the environment. AEF is committed to minimizing its environmental footprint and has been recognized as an EnviroVista Champion. It was the first company in Alberta to qualify for the voluntary Alberta Environment and Sustainable Resource Development program back in 2007 and continues to honour its Stewardship Agreement today.





### **Kinder Morgan Canada**

As operator of the 1,150km Trans Mountain pipeline that runs from Edmonton, Alberta to Burnaby, BC, Kinder Morgan is committed to being a good neighbor, and part of that is keeping the weeds on its pipeline right-of-way in check. The company maintains the landscape around its infrastructure through careful consideration of the individual characteristics of different areas and tailoring remedial action accordingly using appropriate native plant species. Kinder Morgan's weed management plan is setting industry leading standards for vegetation management.

### **Owens Corning**

At Owens Corning, pink really is green. The company, who transformed residential and commercial building markets 75 years ago with fiberglass and fiberglass insulation, is now focused on ways to improve products and processes while shrinking their environmental footprint. In 2010, Owens Corning switched from formaldehyde and ammonia based binders to more organic materials. The resulting pink EcoTouch product line offers superior insulating properties, is better for the environment and is made with 99 percent natural materials including local recycled bottles and jars from the Edmonton

Waste Management Centre. This past year, the company purchased nearly 29,000 tonnes of crushed glass that had been discarded by capital region residents. The company also recycles rainwater from a portion of its roof, for use in the manufacturing process and inside the facility, timers have been installed and all the lighting has been replaced with low-energy bulbs. Owens Corning is delivering on its pledge to continually reduce environmental emissions and to ensure responsible resource use.



## Rio Tinto Alcan

For the last forty years, a small plant in southeast Edmonton has been playing a big role in the global aluminum industry. The Rio Tinto Alcan facility is responsible for turning a waste by-product from oil refineries into a key ingredient for the production of one of the most widely used, lightest, non-corrosive and infinitely recyclable metals. The facility, which is the only petroleum coke calcining plant in Alberta and one of just a handful in Canada, is committed to responsible resource use. Rio Tinto ensures all water on site is recycled and grey water is fed back into production systems. The company has also invested millions of dollars into replacing older gas treatment infrastructure with more efficient and effective technology, a measure that has helped to reduce fugitive dust emissions by 50 percent. For a small plant, Rio Tinto Alcan has made remarkable progress and continues to look for ways to improve further.



## Suncor

Suncor is resolute in its commitment to greening our capital region. In 2005, the Strathcona County refinery collaborated with EPCOR on an innovative water-recycling project aimed at reducing fresh water consumption. Suncor designed and built a 5.5 kilometre water pipeline that links its facility directly to EPCOR's Gold Bar Wastewater Treatment Plant. The underground pipeline represents the first large scale industrial water reuse project in Canada and means that the refinery now has access to 15 million litres of recycled water each day for its operations.

## CAPITAL REGION INITIATIVES

SIA participates in a number of important regional and provincial initiatives to ensure effective two-way engagement between industry and our stakeholders.



## **Alberta Capital Airshed (ACA)**

ACA is a not-for-profit, multi-stakeholder organization that monitors air quality, facilitates multi-stakeholder approaches to addressing issues and supports air quality education within the greater Edmonton area including SIA's air quality monitoring network.

## **Alberta Environment and Sustainable Resource Development's Capital Region Air Quality Management Framework Implementation Oversight Advisory Committee.**

As a committee member, SIA provides input and feedback to this important framework.

## **Water Management Framework for the Industrial Heartland and Capital Region**

SIA is an active member of the multi-stakeholder Water Steering Committee established to guide the implementation of this framework. This framework presents a collaborative, cumulative effects management approach to protect the reach of the North Saskatchewan River, from Devon to Pakan, which is directly impacted by municipal and industrial effluent discharge.

## **Our Region Our Future (OROF)**

SIA is a partner of OROF, an initiative that brings together industry, municipalities, environmental non-government organizations and government to collaborate on capital regional solutions for the environmental management of air, water and land.

## **Strathcona District Mutual Assistance Program (SDMAP)**

SDMAP is a partnership of more than 30 industrial companies – several of which are SIA members – and community agencies dedicated to emergency response planning in east Edmonton and Strathcona County.

## CARING FOR OUR COMMUNITY

We are committed to making positive contributions to the communities where we live and work. SIA recognizes the value of engagement and is making a difference by promoting dialogue between industry, stakeholders and residents. Whether it is a charitable donation, a gift of time or a new awareness of our actions, we all have the ability to make a profound impact.

The following are a few ways SIA and some of our members gave back in 2013:

### River Day

SIA hosted the pancake breakfast at the City of Edmonton's annual River Day event on June 8 at the Rundle Park Family Centre. The event brought the community together and helped educate residents about North Saskatchewan River recreational water safety.

### Get Prepared, Strathcona!

On April 28, community members were informed of how Strathcona County and its partners, such as SIA, are prepared to handle disasters. Attendees were also educated about what they can do to prepare their families in case of an emergency.

### Owens Corning

- Proud supporter of the habitat for humanity project, providing information, volunteer work days and in 2013, a \$15K donation.
- Sponsoring meaningful events in the community including a BBQ for a local women's shelter in Sherwood Park.



## Celanese

- Fundraising efforts for 2013 Flood Relief in Alberta.
- Ongoing participation in the annual United Way campaign.
- Promoting Men's Health Issues/Movember with fundraising efforts.
- Provision of clothing and supplies to the Bissell Centre and work boots and clothing to the Mustard Seed Church.
- Continued support for the Edmonton Food Bank and the Prescription Eyeglasses Global Vision Project.

## Edmonton Waste Management Centre

- Educating the recyclers of the future by touring 17,000 students through EWMC facilities every year.
- Working in partnership with Quality One Training and Support Inc. to employ, train and support disadvantaged or under-employed residents to perform special services at the EWMC's Integrated Processing and Transfer Facility.

## Imperial Oil

- Total contribution of \$422K to the Edmonton region during the 2013 United Way work place campaign.
- Sponsoring the inaugural "You Be the Chemist" challenge at the University of Alberta. The event provided an opportunity for 15 junior high students from schools across the capital region to compete for a variety of prizes, all the while, learning more about the career opportunities in the chemical industry.
- Ongoing support for the Information and Volunteer Centre, the Strathcona County Library, Strathcona County's Canada Day celebration, employee voluntarism and other projects, all of which was recently recognized by the Sherwood Park and District Chamber of Commerce who presented Imperial with the Community Service and Involvement Award.

## Shelter-in-Place Procedure

Our members take the utmost care to ensure the safety of their employees and everyone in the community. Despite a very low chance of anything serious ever occurring, all industrial processes have some risks. It is important that communities understand the commonly used procedures for Shelter-in-Place.

In case of a major incident with airborne release of a hazardous substance:

- Go inside.
- Close all doors, windows and openings (ex. doors).
- Shut off ventilation systems that exhaust to the outside or draw outdoor air inside (fans, air conditioning units, clothes dryers, turn down furnace and close fireplace dampers).
- Listen to radio or TV for further instructions.
- Keep phone lines free.
- If odour is strong, seal an inside room with wet towels at the base of the door. Breathe through a damp towel to filter air.

911 should be called only in case of emergencies.

## Curious about non-routine industry activity?

 **UPDATE line**  
1-866-653-9959



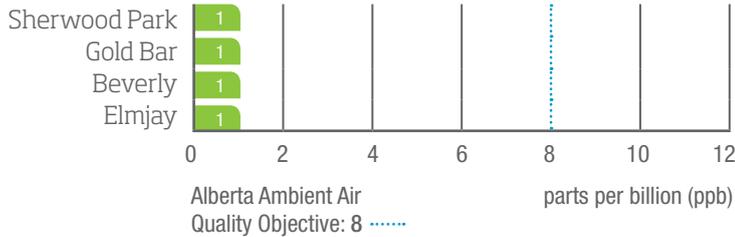
## **AIR QUALITY MONITORING NETWORK**

SIA is leading the way with one of the first ambient air quality monitoring networks in Alberta. By consistently monitoring and measuring our performance, we are better able to understand the effects of industry and gather scientifically valid data about current local air quality and long-term trends. We share this information via our annual Ambient Air Monitoring Report, which we submit to Alberta Environment and Sustainable Resource Development.

## Number of Exceedances above the Alberta Ambient Air Quality Objectives in 2013

Parameter	Number of Stations	Average Type	AAAQO	No. of Occurrences
SO <sub>2</sub>	4	1-hour	172 ppb	0
		24-hour	48 ppb	0
		Annual	8 ppb	0
H <sub>2</sub> S	4	1-hour	10 ppb	7
		24-hour	3 ppb	0
NO <sub>2</sub>	2	1-hour	159 ppb	0
		Annual	24 ppb	0
PM <sub>2.5</sub>	3	24-hour	30 µg/m <sup>3</sup>	4
Passive SO <sub>2</sub>	6	30-day	11 ppb	0

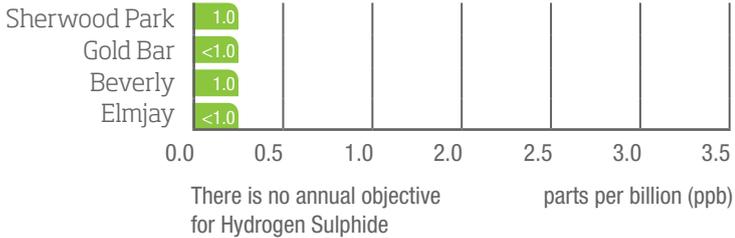
### 2013 Annual Averages (SO<sub>2</sub>)



### Sulphur Dioxide (SO<sub>2</sub>)

Sulphur Dioxide is a colourless, non-flammable gas with a pungent odour. Industrial sources include sulphur extraction plants, natural gas processing plants, oil sands operations, power plants, oil refineries, pulp and paper mills and fertilizer plants. The Sherwood Park, Elmjay, Beverly and Gold Bar stations measure SO<sub>2</sub>.

### 2013 Annual Averages (H<sub>2</sub>S)



### Hydrogen Sulphide (H<sub>2</sub>S)

Hydrogen Sulphide is a colourless, flammable gas that is extremely hazardous and toxic. It has a distinct rotten egg odour, and can be identified at relatively low concentrations by people. The gas commonly exists in places such as sewers, sewage treatment plants and manure stockpiles. Industrial sources include petroleum and natural gas extraction and refining, pulp and paper manufacturing, chemical manufacturing and waste disposal. The Sherwood Park, Elmjay, Beverly and Gold Bar stations measure H<sub>2</sub>S.

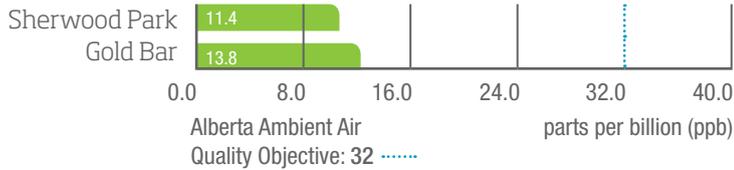
### 2012 Annual Averages (THC)



### Total Hydrocarbons (THC)

Total Hydrocarbons refer to a broad range of chemicals containing carbon and hydrogen atoms, including methane, propane, benzenes and many other compounds. Sources include motor vehicles, petroleum refineries, petrochemical plants, combustion as well as smaller sources like dry cleaning facilities, solvent handling and gas tanks. The Sherwood Park and Beverly stations measure THC.

### 2013 Annual Averages (NO<sub>2</sub>)



### 2013 Annual Averages (NO)



### 2013 Annual Averages (NO<sub>x</sub>)



### Nitrogen Dioxide (NO<sub>2</sub>)

Nitrogen Dioxide is a reddish orange-brown gas with a strong, irritating odour. It is corrosive, highly oxidizing and non-combustible. Man-made sources include motor vehicles, oil and gas industries and power generation plants as well as combustion from forest fires and home heating. The Sherwood Park and Gold Bar stations measure NO<sub>2</sub>.

### Nitrogen Monoxide (NO)

Also known as Nitric Oxide, NO is a common pollutant. It results from the combustion of substances in the air that are present due to fuel burning activities such as driving and power production. While this colorless, toxic gas, plays an important role in our bodies, it is of concern because it can react to form NO<sub>2</sub>, which is a component of smog and may cause acid rain.

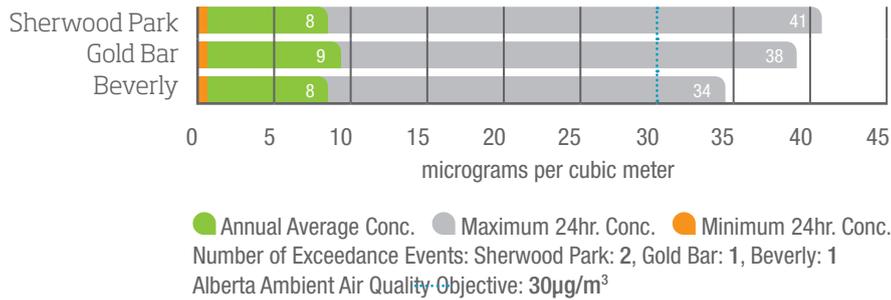
### Ozone (O<sub>3</sub>)

Ozone occurs naturally in the upper atmosphere (stratosphere) and protects us from harmful ultraviolet radiation.

However, ozone in the lower atmosphere (troposphere) acts as a strong oxidant, and is a key component of smog.

According to the results from 30-day passive monitoring of passive ozone samples, measurements ranged between 13 and 39 ppb, with ozone concentration tending to be higher during the spring months.

## 24hr. Particulate Matter Sampling Results (Conc. unit $\mu\text{g}/\text{m}^3$ )

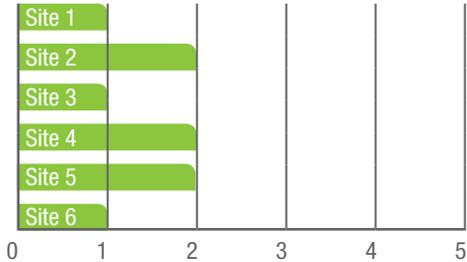


## Particulate Matter ( $\text{PM}_{2.5}$ )

$\text{PM}_{2.5}$  includes particles with diameters less than or equal to 2.5 microns, which at this size can penetrate into lungs and are referred to as respirable. Sources include soil, road and agricultural dust, smoke, forest fires, traffic emissions and industrial activity. The Sherwood Park, Gold Bar and Beverly stations measure  $\text{PM}_{2.5}$ .

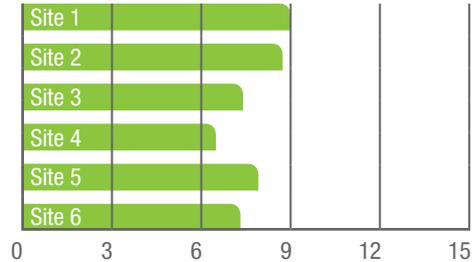
## Passive Station Site's Average Concentrations (ppb)

### Sulphur Dioxide ( $\text{SO}_2$ )



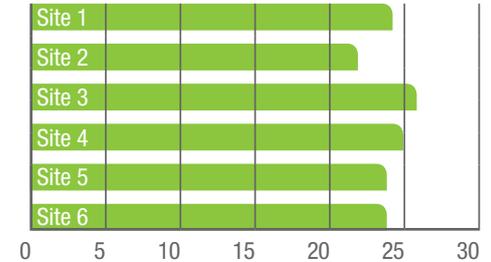
Alberta Ambient Air Quality Objective: 11  
 Number of Exceedance Events: 0 Annual Average: 2

### Nitrogen Dioxide ( $\text{NO}_2$ )



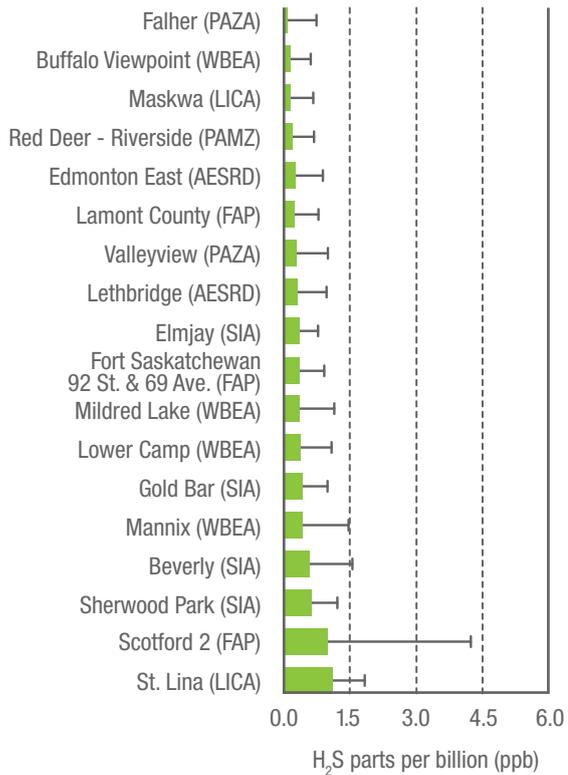
Number of Exceedance Events: 0  
 Annual Average: 7.9

### Ozone ( $\text{O}_3$ )



Annual Average: 24

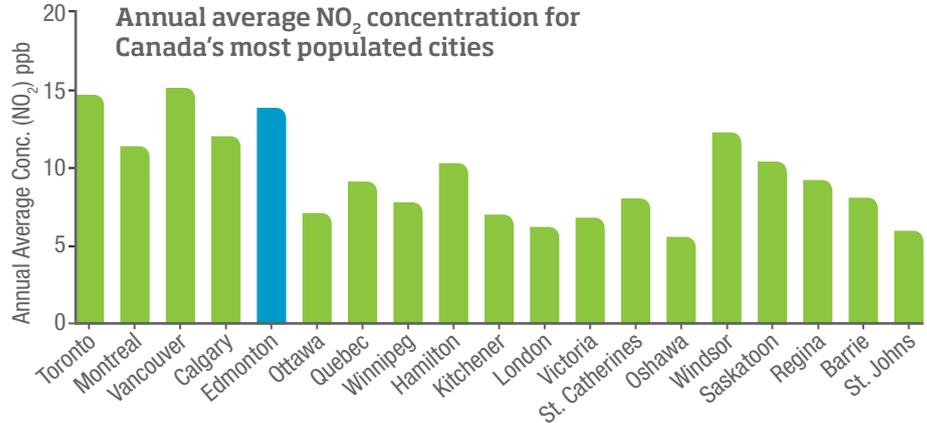
## Annual Average concentrations for H<sub>2</sub>S for the Province of Alberta



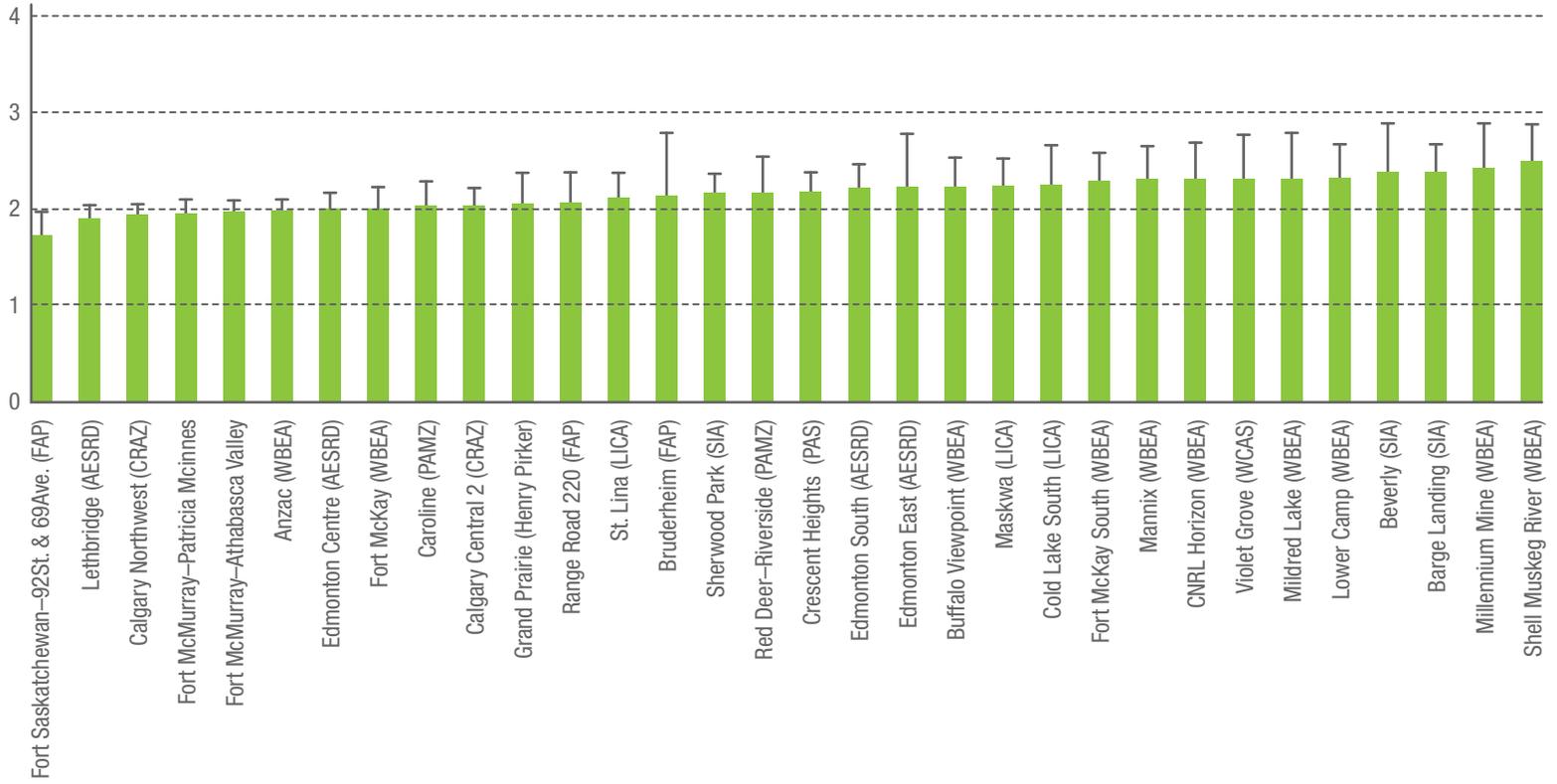
## Annual average SO<sub>2</sub> concentration for Canada's most populated cities



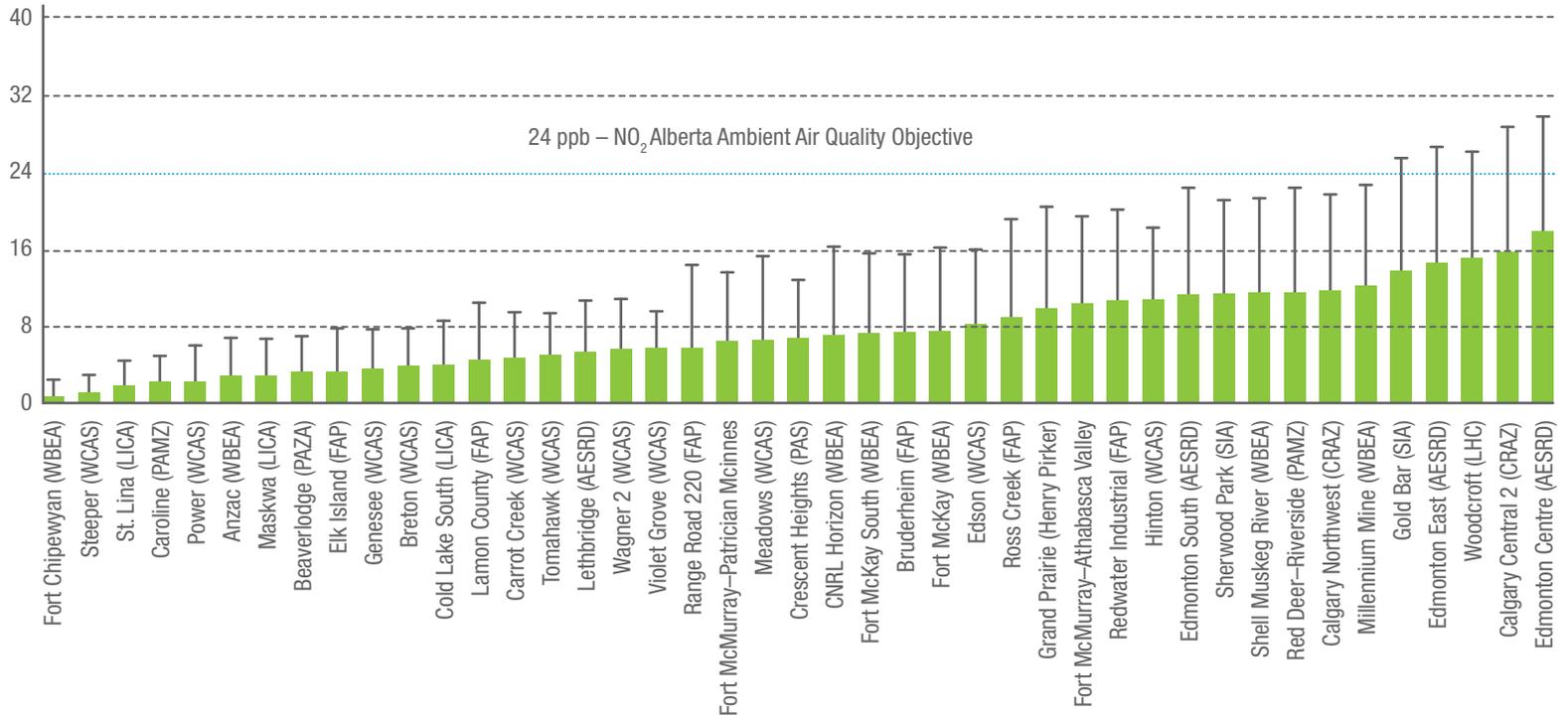
## Annual average NO<sub>2</sub> concentration for Canada's most populated cities



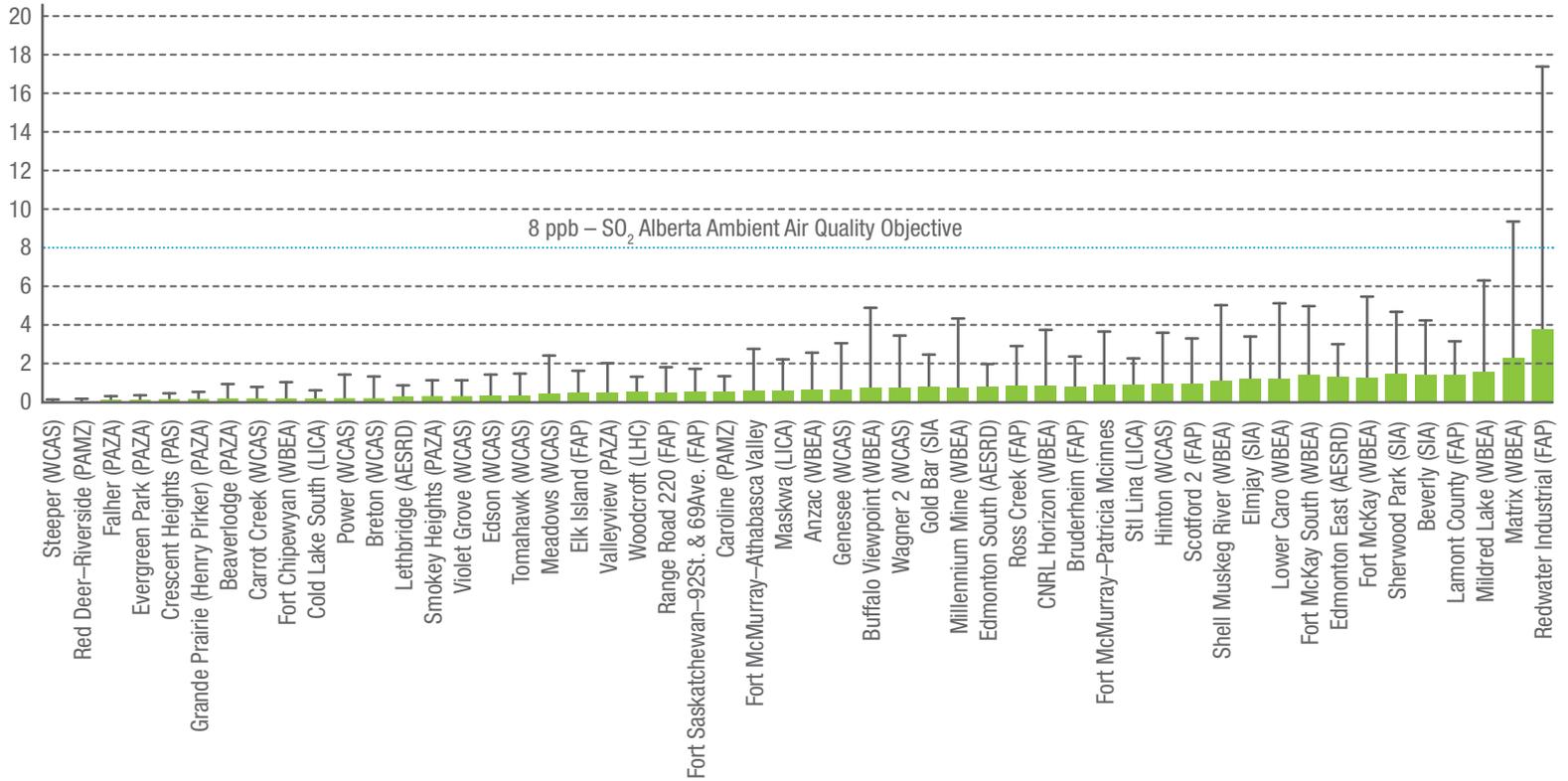
## Annual Average concentrations for THC for the Province of Alberta (ppm)



## Annual Average concentrations for NO<sub>2</sub> for the Province of Alberta (ppb)



## Annual Average concentrations for SO<sub>2</sub> for the Province of Alberta (ppb)



## Learn more about air quality and monitoring in our region:

- **Alberta Environment and Sustainable Resource Development (ESRD)** [environment.alberta.ca](http://environment.alberta.ca)
- **Alberta Capital Airshed (ACA)** [capitalairshed.ca](http://capitalairshed.ca)
- **Clean Air Strategic Alliance (CASA)** [casahome.org](http://casahome.org)
- **Environment Canada** [ec.gc.ca/rnspa-naps](http://ec.gc.ca/rnspa-naps)



**Strathcona  
Industrial  
Association**



**Strathcona Industrial Association**

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