### E.S. Fox Limited Fabrication Services



#### **COMPANY CONTACT**

E.S. Fox Limited — Fabrication www.esfox.com 905-354-3700

HEAD OFFICE P.O. Box 1010 9127 Montrose Road Niagara Falls, Ontario L2E 7J9 TELEPHONE: 905-354-3700 WEBSITE: www.esfox.com





### SERVICES

- FABRICATION
- NUCLEAR
- STRUCTURAL STEEL
- BRIDGES
- TECHNICAL SERVICES



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#### E.S. Fox Limited

#### **CORPORATE OVERVIEW**

Since 1934, E.S. Fox Limited (ESFL) has set the standard for safety and quality in the fabrication and construction industry. ESFL is a privately owned, Canadian, multi-trade company, providing a single source for Industrial, Institutional, Commercial, and Energy projects. With over 3.5 million direct -hire person-hours last year, we self-perform Structural Steel Fabrication and Erection, Mechanical, Electrical, Sheet Metal, HVAC, Refrigeration, Millwright / Rigging, and Boiler Making.

The strength of our company stems from the vast experience of its people, the integration of a variety of skilled trades, and dedication to total control of construction through computerized planning and monitoring techniques.

ESFL has established a reputation for high quality workmanship, operational flexibility, efficiency, and timely project completion.

#### **CONSTRUCTION CAPABILITIES**

As a fully integrated, multi-trade construction firm, E.S. Fox Limited provides clients with a single source solution for their detail engineering, fabrication, construction, and maintenance needs. We are a solutions based provider that delivers a superior level of service from "cradle-to-grave," as we offer multi-trade, service oriented solutions for all your ICI and Energy projects.

#### **FABRICATION CAPABILITIES**

E.S. Fox Limited is proud to operate three state-of-the-art fabrication facilities across Ontario. At our main fabrication facility in Port Robinson, we offer over 83,000 square feet of production space. We work to the highest standards to produce Pipe Spools, Modules, Cryogenic Cold Boxes, and Pressure Vessels. With over 800 weld procedures and 40 quality certifications including nuclear, E.S. Fox Limited continues to be a leader and a symbol of Canadian strength and tradition in the supply of Quality Fabrication Services for the Industrial, Commercial, Institutional, and Energy markets for over eight decades.



### E.S. Fox Limited Environmental Health and Safety

#### SAFETY CULTURE

At ESFL, employee safety, protection of the environment, and work quality are the main focus of our safety culture. Both management and employees work together in an effort to further advance knowledge of safety and incident prevention. Together we work to ensure a safe work environment for all. Our employees believe in the fundamental principle that safety is everyone's responsibility.

One of our core values is to "Prevent the Event." Incident prevention is the integral part of every job with the safety and well-being of each individual the <u>number one priority.</u>

#### SAFETY PROGRAM KEY ELEMENTS

- Corporate Safety Manual
- Site Specific Safety Plans
- Orientation and Training
- Incident Investigation
- Lessons Learned Bulletins
- Job Safety Analysis
- Workplace Inspections
- Senior Management Review

- Safety First Attitude
- Trending and Analysis
- Setting Objectives and Targets
- Safety Workshops
- Mentoring Program
- J.H.S.C.
- Strong Communication
- Accountable Supervision
- Safety Meetings



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### **E.S.** Fox Limited **Quality Assurance**



E.S. Fox Limited - Safety and Quality Assurance Certifications

ISO	CSA	ASME
<ul> <li>ISO 9001:2015</li> <li>ISO 14001</li> <li>ISO 45001</li> </ul>	<ul> <li>CSA N285.0 Nuclear Class 1, 2, 3, &amp; 4 Parts, Components &amp; Support</li> <li>CSA N285.0 Nuclear Material Supply Ferrous and Non-Ferrous (3 Locations)</li> <li>CSA N286-12 Nuclear</li> <li>CSA N299.1 – 2016</li> <li>CSA B51 Boiler, Pressure Vessels &amp; Pressure Piping &amp; Repairs</li> <li>CSA B51 Category A, B, C, E &amp; H Type Welded Non-Welded Fittings</li> <li>CSA B51 Hot Tap &amp; Line Stopping</li> <li>CSA B52 Mechanical Refrigeration Code</li> <li>CSA Z7396. 1-17 Medical Gas Pipeline Systems Part 1</li> </ul>	<ul> <li>ASME Section III, Division 1: N, NPT, NA, NS</li> <li>ASME Section VIII, Division 1 &amp; 2 Pressure Vessels</li> <li>ASME U, U2, S, &amp; PP Stamps</li> <li>ASME B31.1 Power Piping</li> <li>ASME B31.3 Process Piping</li> <li>ASME B31.5 Refrigeration Piping</li> <li>National Board Registration for ASME Section I, III, VIII</li> </ul>
CWB <ul> <li>Structural Steel CWB W47.1 Div. 1</li> <li>Structural Aluminum CWB W47.2 Div. 1</li> </ul>		COR COR and Infrastructure Health and Safety Association Certification
СШВ	<b>SP</b> ®	COR STANDARD
HEAD OFFICE P.O. Box 1010 9127 Montrose Road Niagara Falls, Ontario L2E 7J TELEPHONE: 905-354-3700		PORT ROBINSON HAMILTON SARNIA TORONTO MILLARTON OSHAWA

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**FABRICATION SERVICES** 

OSHAWA KINGSTON THUNDER BAY

### E.S. Fox Limited Locations & Facilities

#### Head Office: Niagara Falls, ON —250,000 square feet

Branch Location	Сара	bilities	Square Footage
Darlington, ON	Construction		
Hamilton, ON	Construction	Fabrication	10,000 sq. ft.
Kingston, ON	Construction	Fabrication	17,000 sq. ft.
Port Robinson, ON		Fabrication	83,000 sq. ft.
Thunder Bay, ON	Construction	Fabrication	5,000 sq. ft.
Tiverton (Kincardine), ON	Construction		
Vaughan (Toronto), ON	Construction		
Oshawa, ON	Construction		
Sarnia, ON	Construction		
		Total Fabrication	115,000 sq. ft.



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#### **ENGINEERING CAPABILITIES**

E.S. Fox Limited has extensive engineering experience relating to quality programs such as ISO 9001, CSA N299/Z299, and CSA M285.0/MCA-4000; ranging from conventional piping to Class 1 Nuclear components. Our Engineering team's commitment and goal is not just to complete the project on time, but also to add value to your project in the most efficient manner possible.

E.S. Fox Limited Engineering provides the following services but not limited to:

- Design Engineering
- Virtual Construction
- Total Station Services
- CAD Services
- Welding, Manufacturing, and Metallurgical Engineering



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#### **FABRICATION SERVICES**

At our main fabrication facility in Port Robinson, Ontario, we offer over 83,000 square feet of production space. We work to the highest standards required to produce Cryogenic Cold Boxes, Pipe Spools, Modules, and Pressure Vessels. With more than 800 weld procedures, we fabricate:

#### **Modules and Vessels**

- Process Modules and Equipment Skids
- Cryogenic Air Distillation Columns for: Oxygen, Nitrogen, and Argon
- Air Liquefaction / Separation
- Hydrogen Purification
- Catalyst Reclamation
- Oil / Water Purification

#### **Pipe Fabrication**

- Stand alone contracts & support of field projects and other fabrication projects
- Area of expertise is high alloy materials: Stainless Steel, Aluminum, Titanium, Chrome-Moly
- Carbon Steel up to 84" Diameter
- Victaulic—Roll Grooved Piping up to 48" Dia.
- Jacketed Pipe



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# E.S. Fox Limited

#### **CONSTRUCTION SERVICES**

As a fully integrated, multi-trade construction firm, E.S. Fox Limited provide clients with a single source solution for their detail engineering, fabrication, construction, and maintenance needs. We are a solutions-based provider that delivers a superior level of service from "cradle-to-grave," as we offer multi-trade, service-oriented solutions for all your ICI and Energy projects.

We provide the following Construction Services:

- Construction Management
- Piping
- Electrical
- Structural Steel
- Ironworking
- Millwrighting
- Boiler Making

- Sheet Metal
- HVAC
- Instrumentation & Controls
- Operating Engineering
- Insulation
- Carpentry
- Refrigeration



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#### **NUCLEAR SERVICES**

E.S. Fox Limited is a people-first, environmentally conscious, socially responsible EPC provider in the Nuclear sector with every aspect of its development. E.S. Fox Limited's Nuclear Services contributed millions of hours in support of Ontario's safe and reliable Nuclear power industry. We provide our clients with a streamlined solution for their detailed engineering, fabrication, construction, and maintenance needs. As the Nuclear power generation sector evolves from large Nuclear reactors to Small Modular Reactors, we are primed to support the transition.

We provide the following Nuclear Services:

- Safety & Quality Control
- Nuclear Fabrication
- Project Management
- Engineering, Procurement, & Construction (EPC)
- Indigenous Relations



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#### STRUCTURAL STEEL AND BRIDGE DIVISION

E.S. Fox Limited's Structural Steel & Bridge Division operates as a fabrication and erection service provider throughout Canada. With our highly skilled team of erectors and supervision, E.S. Fox Limited has distinguished itself through our dedication to quality and excellence in all phases of Structural Steel construction. From Commercial and Industrial projects to Bridges and Roller Coasters, E.S. Fox Limited continues to be an industry leader focused on organizational excellence through principles such as Safety, Quality, and Service.

We provide the following Structural Steel and Bridge Services:

- Architecturally Exposed Structural Steel
- Commercial and Industrial Steel
- Institutional Steel
- Bridges
- Themed Entertainment



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#### **TECHNICAL SERVICES AND MAINTENANCE**

ESFL's highly-qualified factory-trained technicians provide services on all types and brands of equipment encountered across all Industrial, Commercial, Institutional, and Energy markets. They are certified for specialized critical environments such as oil & gas (onshore, offshore, oil sands), nuclear, biopharmaceutical research, healthcare, data centres, museums, and art galleries.

ESFL offers maintenance agreements tailored to meet the specific needs of different systems and owner priorities.



#### WE OFFER SERVICES FOR:

- Installations
- Heating, Ventilation, & Air Conditioning
- Mechanical Repairs & Maintenance
- Refrigeration
- Technical Services Building Analysis
- Energy Retrofit Projects
- Savings & Incentives

From HVAC and Controls to Design-Build systems, ESFL offers a wide range of technical services.



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#### **MODULE FABRICATION**

Our skilled multi-trade workforce fabricates modules in a controlled shop environment resulting in outstanding levels of quality. By integrating our construction and fabrication expertise, we have the unique capability to supply, fabricate, and test process modules before they shipped.

Our work often involves the construction of heavy oil facilities, oil sands development, gas plants, power stations and a host of other heavy-industrial projects, including those that require stringent "clean-room" conditions.



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#### **NUCLEAR FABRICATION**

At ESFL, we provide a fully-integrated, single source of engineering, fabrication, construction, and maintenance for all nuclear markets. We have manufactured numerous nuclear components for projects in Canada, China, Romania, and Korea. We also hold ASME Nuclear Certifications N, NPT, NA, and NS, allowing us to provide fabrication services to the international market.

#### **Examples of our Nuclear Fabrication:**

- Pressure Vessels
- Spent Fuel Storage Modules
- Low Level Waste Containers
- Feeder Tubes



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#### PIPING, PROCESS, AND EQUIPMENT SKIDS

In general, fabrication of piping, process skids, and equipment skids (racks) in a controlled shop environment, uninterrupted by climatic conditions, results in higher quality, shorter delivery times, reduced costs, and a mitigation of risk inherent with field construction.

ESFL offers custom integrated process skid fabrication to create mechanical and electrical skid mounted process systems that are pre-wired and mounted on a common base to meet your specific design and process requirements.

ESFL has two facilities for pipe and equipment skid fabrication: Port Robinson, and Kingston, Ontario. Both are UA shops and have fabricated racks and skids of varying sizes and dimensions for destinations in North America and throughout the world.



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#### **CRYOGENIC FABRICATION**

As one of our specialties, ESFL regularly manufactures Cryogenic Cold Boxes for air separation plants. These plants operate at temperatures below -200 degrees F; aluminum and stainless steel are used for vessels, piping, and instrumentation systems.

Special materials, highly specialized welding techniques, documented quality control, and meticulous attention to detail are mandatory since the units cannot be maintained or repaired while operating. By utilizing a "clean room" bay, ESFL is able to control ambient factors when fabricating components such as aluminum pipe spools.

ESFL has manufactured numerous Cryogenic Cold Boxes for air separation process plants, chemical plants, refineries, and power generation plants.



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#### PORT ROBINSON: MAIN BUILDING DIMENSIONS

**South Bay:** 470ft. Long x 75ft. Wide x 50ft. High, giving 35,250 sq. ft., (Qty. 5) Overhead Cranes Each having 25 Ton and 5 Ton Capacity.

**North Bay:** 210ft. Long x 75ft. Wide x 50ft. High, giving 15,750 sq. ft., (Qty. 2) Overhead Cranes Each having 25 Ton and 5 Ton Capacity.

**Clean Bay:** 170ft. Long x 75ft. Wide x 50ft. High, giving 12,750 sq. ft., (Qty 2) 25 Ton Overhead Crane with 5 Ton Capacity.

**Production Bay:** 130ft. Long x 30ft. Wide x 20ft. High, giving 4,000 sq. ft. nuclear production fabrication for customer supplied material.



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#### PORT ROBINSON SHIPPING

We are unique in that we have access to the Welland Canal at our Port Robinson facility. This includes our own loading dock, where we can ship oversized modules from up to 800 tons to any water accessible location in the world.

#### **Transportation Access & Dock Facilities**

- 1/2 mile from Highway 406 extension providing direct access to Queen Elizabeth Highway
- 1/4 mile from Canadian National Railroad line
- Heavy Barge Roll On/Roll Off Loading Dock extending into the Welland Ship Canal turning basin providing 10' draught and 400 ton capacity
- Heavy Lift Dock of 800 ton capacity, dock face 475 ft. draught 25 ft. The dock can accommodate maximum Seaway length vessels
- The site incorporates 5 acres of level, well compacted, crushed stone assembly area



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#### UIG Cryogenic A-500 Cold Box

Client	Universal Industrial Gases Inc.
Scope	<ul> <li>Dimensions: 159'0" (L) x 28"-9" (W) x 15"-4" (H); Weight: Approx 500,000 Lbs</li> <li>End User: NUCOR Gallatin Steel (Ghent, Kentucky)</li> <li>Use: Supplies Oxygen to Steel Mill</li> <li>Other Uses: Nitrogen and Argon sold as by-products</li> <li>Transport: Shipped via laker barge from Port Robinson to site and transported under hook on NUCOR access road</li> </ul>
Trades	Production Workers   Vessel Workers

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<u>MPTP—TDO 1&2</u>

Client	Ontario Power Generation	
Scope	<ul> <li>Fabrication of 5 Units</li> <li>Code of Construction of Outer Package—ASME Section VIII E</li> <li>QA Program N299.3</li> <li>Used for Transportation of Tritiated Heavy Water via Containm Package from Nuclear Generating Stations to Western Waste</li> <li>Material of Construction—SA-240-304L (Outer Package)</li> <li>Material of Construction—SA-240-304L Section III Nuclear Gravessel)</li> <li>Outer Package Container was of Double Wall Construction and Foam (General Plastics Inc.) for Crash Protection</li> <li>Units were permanently mounted to OPG supplied trailer with assembly</li> </ul>	nent Vessel Inside Outer Facility ade Material (Containment d filled with High Density
Trades	Production Workers	
•	010	PORT ROBINSON HAMILTON SARNIA TORONTO MILLARTON

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OSHAWA KINGSTON THUNDER BAY



#### **Reactivator Overhead Accumulator Vessel**

Client

Shell Canada

#### Scope 3'-0" Inside Diameter Material of Construction—SA-516-70N Carbon Steel Vessel was PWHT Delivered to Corunna, Ontario • **Operated in Sour Wet H2S Service** • Shipping Weight—3,986 Lbs Trades Production Workers | Vessel Workers **HEAD OFFICE** PORT ROBINSON HAMILTON P.O. Box 1010 SARNIA 9127 Montrose Road TORONTO Niagara Falls, Ontario L2E 7J9 ARTON TELEPHONE: 905-354-3700 SHAWA WEBSITE: www.esfox.com **FABRICATION SERVICES** ΟN JNDFR BAY



#### **Bruce A — Standby Generators Fuel Skid Fabrication**

Client	Kinetrics Inc.
Scope	<ul> <li>Fabrication of Fuel Skid structural frame, ladders, &amp; walking platforms to CSA W59-13</li> <li>Component Machining</li> <li>Pressure Boundary welding of stainless steel piping to ASME B31.1</li> <li>Assembly, mounting, &amp; connecting of pumps, instrumentation, meters, and various specialty devices</li> <li>On-skid electrical power &amp; instrumentation wiring</li> <li>Painting &amp; finishing</li> <li>Materials supply &amp; procurement to N299.4 standard</li> <li>Quality Assurance &amp; inspections to N299.3 standard</li> </ul>
Trades	Production Workers   Vessel Workers

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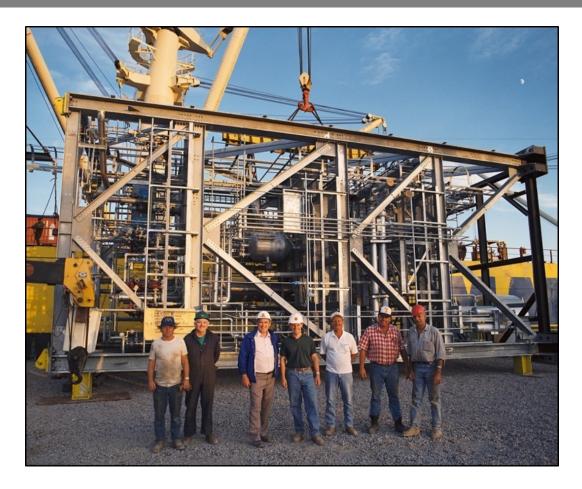
#### Water Treatment for SAGD

Client	GE Power and Water		
Scope	<ul> <li>Supply of all materials, labour, and equipment to fabricate and</li> <li>Seven piping and process modules for the Sunshine Oil Sand</li> <li>Steam Assisted Gravity Drainage (SAGD) development</li> <li>Fabrication of structural frames</li> <li>Procured, fabricated, and installed all process piping systems</li> <li>Insulation &amp; Electrical Heat Tracing</li> <li>The majority of the piping was stainless steel</li> </ul>	s	
Trades	Production Workers   Vessel Workers		
IEAD OFFICE 2.O. Box 1010 127 Montrose liagara Falls,		PORT ROBINSON HAMILTON SARNIA TORONTO MILLARTON	

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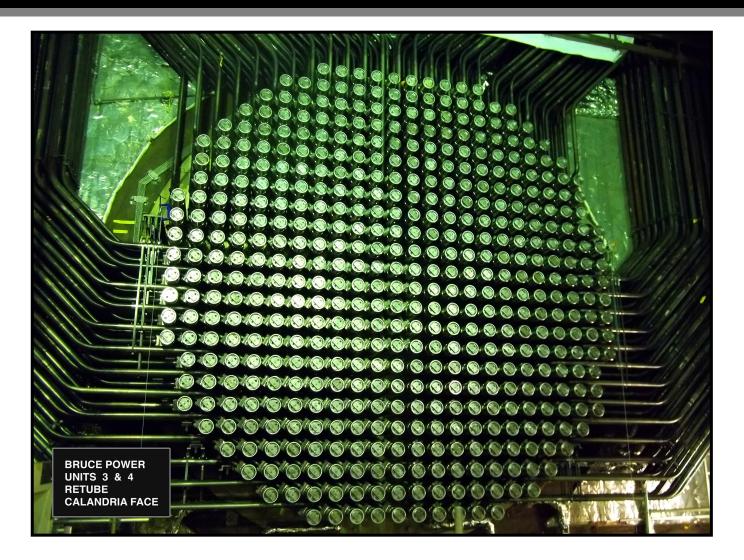


OSHAWA KINGSTON THUNDER BAY



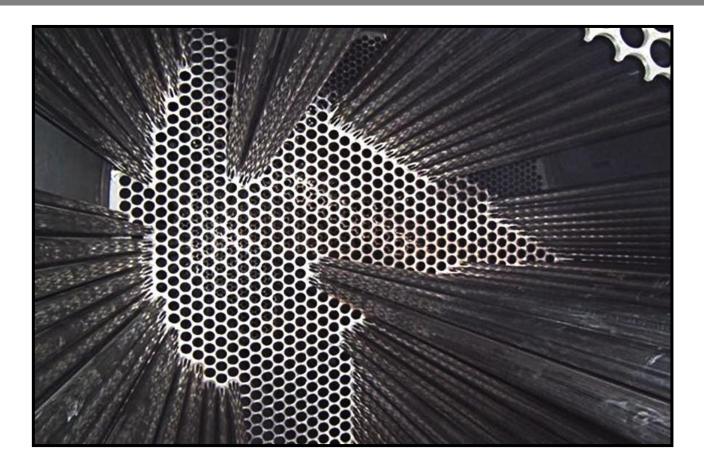
#### **U.O.P Des Plaines, Illinois**

Client	Burnco Manufa	acturing Inc.	
Scope	<ul> <li>Fabricated and shipped two modules for the Irving Oil Refinery in Saint John, NB</li> <li>Supply &amp; fabricate eight interconnect Process Modules for a Continuous Catalyst Regeneration Unit</li> <li>Electrical power instrumentation wiring and tubing</li> <li>Handling of customer supplied equipment and material in addition to ESFL supplied equipment and material</li> <li>Tagging and documentation of all parts</li> <li>Material and equipment load onto ocean-going vessel "M.V. Project Americas"</li> </ul>		
Trades	Production Wo	rkers   Vessel Workers	
HEAD OFFICE P.O. Box 1010 9127 Montrose R Niagara Falls, Or FELEPHONE: 9 WEBSITE: www	ntario L2E 7J9 05-354-3700	E.S. CONSTRUCTORS	PORT ROBINSON HAMILTON SARNIA TORONTO MILLARTON OSHAWA KINGSTON THUNDER BAY



#### Feeder Tubes — Bruce Retube Project

Client	Bruce Power		
Scope	Original specif	install 1,920 replacement Feeder Tube S fication called for welded fittings on comp changed to utilize all bent feeders (weldeo	ound bends
Trades	Production Worke	ers   Pipe Fitters	
HEAD OFFICE P.O. Box 1010 9127 Montrose F Niagara Falls, Or TELEPHONE: 9 WEBSITE: www	ntario L2E 7J9 05-354-3700	E.S. CONSTRUCTORS FABRICATION SERVICES	PORT ROBINSON HAMILTON SARNIA TORONTO MILLARTON OSHAWA KINGSTON THUNDER BAY



#### Falling Film Evaporators

Client	Black Rock Engineering
Scope	<ul> <li>Fabricated in sections at Port Robinson shop</li> <li>Shipped to Nisku, AB for off-site assembly</li> <li>Transported to Cold Lake, AB site as complete units for immediate installation</li> </ul>
Trades	Boilermakers   Production Workers

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