

Environment Act Proposal Form



Name of the development: West End Radiators	
Type of development per Classes of Development Regulation (Manitoba Regulation 164/88): Class 2	
Legal name of the applicant: Tessa Jaspers	
Mailing address of the applicant: 2008 Logan Ave. Contact Person: Tessa Jaspers City: Winnipeg Province: MB Postal Code: R2R 0H7 Phone Number: 204-633-5649 Fax: 204-633-4679 email: tessa@westendrad.ca	
Location of the development: Winnipeg Contact Person: Tessa Jaspers Street Address: 2008 Logan Ave. & 2020 Logan Ave. Legal Description: Radiator Repair and Manufacturing City/Town: Winnipeg Province: MB Postal Code: R2R 0H7 Phone Number: 204-633-5649 Fax: 204-633-4679 email: info@westendrad.ca	
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Date:	Signature of proponent, or corporate principal of corporate proponent: Printed name:

A complete **Environment Act Proposal (EAP)** consists of the following components:

- **Cover letter**
- **Environment Act Proposal Form**
- **Reports/plans supporting the EAP** (see "Information Bulletin - Environment Act Proposal Report Guidelines" for required information and number of copies)
- **Application fee** (Cheque, payable to Minister of Finance, for the appropriate fee)

Per Environment Act Fees Regulation
(Manitoba Regulation 168/96):

Class 1 Developments	\$1,000
Class 2 Developments	\$7,500
Class 3 Developments:	
Transportation and Transmission Lines ..	\$10,000
Water Developments	\$60,000
Energy and Mining	\$120,000

Submit the complete EAP to:

Director
Environmental Approvals Branch
Manitoba Conservation and Water Stewardship
Suite 160, 123 Main Street
Winnipeg, Manitoba R3C 1A5

For more information:

Phone: (204) 945-8321

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<http://www.gov.mb.ca/conservation/eal>

West End Radiators

Environmental Act Proposal for the Existing West End Radiators Operations & Proposed Plant, Winnipeg, Manitoba

FOR PUBLIC RELEASE

Prepared by:

Tessa Jaspers, EIT

Date:

January 11, 2017

Executive Summary

West End Radiators is planning to expand their warehouse and manufacturing facility in Winnipeg, Manitoba. A new supporting infrastructure is proposed to diversify production. As part of this process, a Provincial Environmental Act License is required for the existing facility and any additions.

West End Radiators has been located at 2010 Logan Ave. in Winnipeg, Manitoba since 1960 and at 2008 Logan Ave. since 2002.

This Environmental Act Proposal provides details on current operations and the proposed project and operations (approximately 10,000 ft² supporting infrastructure).

The proposed facility construction activities are predicted to begin the earliest this coming spring (2017), and anticipated to be complete the fall of 2017.

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1. Introduction & Background

I. Project Overview

West End Radiators (WER) is planning to re-organize their warehouses and diversify their manufacturing operations in Winnipeg, Manitoba. The proposed new facility is anticipated to be at 2020 Logan Ave.

WER currently operates at the following locations:

- 2020 Logan – Parking Lot
- 2010 Logan – Initial facility: currently used for a warehouse
- 2008 Logan – Main facility: currently used for service and manufacturing
- 1940 Logan – Warehouse

WER's original facility was located at 2010 Logan Ave. To accommodate the expanding business and ensure proper health, safety and comfort, WER built a new facility in 2002 (2008 Logan Ave.). Manitoba Conservation recently asked WER to submit an application in accordance with Manitoba Regulation 164/88 providing detailed information on the existing and future operations.

This report documents the existing facility, the proposed plant, potential environmental effects and proposed mitigation measures.

II. Regulatory Framework

The existing facilities and the proposed facility are considered a Class 2 Development under the Classes of Development Regulation.

2. Project Description

WER has been operating in Winnipeg, Manitoba since 1960. The current and future sites are zoned M1 – Light Manufacturing. Activities at the 2008 Logan Ave. facility include, manufacturing of copper/brass heat exchangers, steel fuel tanks and servicing heat exchangers and industrial equipment. 2010 Logan Ave. houses the manufacturing supplies and off-shelf products. For a complete list of products and services please see WER's website.

A new facility is proposed to allow efficient storage solutions and diversified manufacturing. The following sections provide an overview of the existing and proposed operations at WER.

I. Existing On-Site Facilities and Operations

WER consists of manufacturing, fabricating, servicing, warehousing, and parking. Equipment located in the main plant includes: saws, a punch press, ovens, welders and a washing station.

The following subsections provide an overview of the existing processing steps at WER.

II. Methods of Operation

i. Raw Material/Warehouse Storage

Copper, brass, steel, and aluminum sheets and/or coils arrive via truck and are unloaded using a forklift. Materials are stored inside the main facility or warehouse on various storage racks or pallets. Products are eventually retrieved from storage for processing.

ii. Heat Exchanger Manufacturing

Brass tubes are measured and cut to length. A vacuum system is connected to the cutting area to collect debris. Semi-raw materials are fed through a fin machine to produce heat exchanger fin stock. The heat exchanger cores are assembled through stacking or sliding methods. Brass sheets are then formed into headers and assembled onto the core. Next, flux is applied to the heat exchanger inside the flux tank. Heat exchangers are then placed in the oven to allow solder to bond components together. Completed heat exchanger cores are brought to the assembly department for additional processing or to the shipping area for as-is sale.

iii. Assembly Area

Assembly methods and components are dependent on the type and construction of the heat exchanger. Components can be tanks, gaskets, side plates and brackets. Methods can vary from welding, soldering and bolting.

If disassembly is required prior to assembly, methods of grinding or melting solder are performed. Grinding is completed in the welding area or enclosed grinding room. Removing components through melting solder is completed at an exhausted soldering booth. Used solder is collected and disposed of through a metal recycling company.

Assembly through welding and soldering methods are both completed at the designated stations. Supporting these processes is a variety of gases. All gases are stored and handled in accordance with Work Place Health and Safety standards.

The welding station is equipped with a fume-extracting arm and the welder wears a filtrating mask. The solder booth (as mentioned above) is also equipped with exhausting methods.

iv. Fabrication

Replacement and custom tanks and brackets are also produced at WER. Semi-raw materials are taken from storage and can be rolled, bent, punched, drilled and welded (depending on the customer's specifications). All the previous operations have been mentioned in previous sections.

v. Cleaning/Testing

For thorough testing to occur, products must be cleaned prior to evaluation. WER has three main methods for cleaning; pressure washer, parts washer, and ultrasonic machine. The initial step to every cleaning method is to remove a maximum amount of unwanted substance from the product. Oil and antifreeze are commonly extracted from products. Recycling these substances back into the new/fixed product is preferred. If performance is altered by recycling then disposal is necessary. Storage containers for used antifreeze and oil are stored in the main WER facility. Green for Life (GFL) properly disposes of these substances.

The pressure washer may be used to clean a product. The current WER water collection pit has a separator to extract any sludge from entering into the Winnipeg water system. Due to increased environmental awareness, WER plans to implement an additional separation system in the next year.

For tough-to-clean products, the parts washer may be the better cleaning method. Parts are cleaned by water cycling through the enclosed unit. An oil skimmer is situated on the back of the washer. Like all used oil at WER, on a regular basis the oil is removed from the skimmer and disposed of in the GFL barrel. The water exiting the washing system is drained into the same collection pit as the pressure washer. Therefore implementing the additional separating system will filter multiple operations.

The ultrasonic machine is also used to clean components. Parts are loaded in mesh baskets and submerged in an ultrasonic specific cleaning solution. The movement of sound waves through the solution cleans the parts. If products being cleaned contain oil, oil absorbency pads are placed inside the tank to remove all oil from the solution. Once a month the ultrasonic solution is replaced, and filtered through the current pit separating system.

The current water separator system is cleaned twice a year by a certified company.

vi. Diesel Particulate Filter (DPF) Cleaning

DPF's are cleaned with baking and blowing methods. WER has recently added DPF cleaning to the list of services and hasn't accumulated enough contaminants to require disposal. WER has contacted GFL to ensure when disposal is needed GFL will collect and store contaminants in compliance with environmental standards.

vii. Painting

Depending on customer request or component materials, paint may be applied to products. WER provides two types of paints: water based paint and spray paint. Application of paint is completed in the paint booth area. The paint booth is equipped with exhaust fans and a filtration system.

viii. Service

With two service bays WER can directly help customers with trouble shooting through heat exchanger cleaning and replacement, DPF cleaning and fuel tank repairs. Common requirements are part repair or replacement, coolant replacement and nitrogen charging.

Used antifreeze is stored in large drums and picked up by GFL for proper disposal. Plastic antifreeze containers (from new products) are also collected and brought to GFL.

The initial step for fuel tank repair/replacement is to remove fuel from the tank (if required). All fuel is collected in standby fuel barrels. Once repair is complete fuel is recycled back into the tank.

ix. Recycling Scrap Process

WER has two main types of scrap, semi-raw materials (from manufacturing and fabrication areas) and product materials (from components unable to be fixed). The semi-raw materials are collected through organized bins and picked up by a recycling scrap business. The used products may need disassembly to separate the metals and plastic. Plastic radiator tanks are removed from all cores and collected for recycling. Metal components are placed on pallets and also picked up by a designated scrap recycler.

x. Facility Personnel

WER currently has 19 employees and 1 owner. Hours of operation are Monday to Friday, 8:00 am to 5:00 pm. Shop, warehouse and manufacturing employees typically operate Monday to Friday, 8:00 am to 4:30 pm.

In 2015 WER established a safety committee. In 2016 Workplace Health and Safety (WHS) completed thorough air quality, noise level and surface cleanliness testing at WER. With minor adjustments WER complied with WHS's standards. To protect WER employees, ear and eye protection is required at all times in the shop area. Signs are posted for reminders and consequences are enforced.

III. Proposed On-Site Facilities and Operations

WER is proposing to construct a new facility to house a warehouse/storage and manufacturing area. The facility will be a stand-alone structure with approximately 10,000 ft². The facility location is proposed at 2020 Logan Ave. Currently WER employees are using the proposed site as a parking lot. A certified building contractor will construct the facility, and WER will accumulate all requiring permits and variances where necessary.

The warehouse/storage portion of the facility will accumulate roughly half the facility footprint. Off-the-shelf products and semi-raw materials will be stored efficiently on multiple storage shelves. Products will be gathered using electric forklifts.

The manufacturing portion of the facility will encompass a complete production area for building aluminum heat exchanger cores. Assembly basics are the same as mentioned above (existing operating methods for copper/brass manufacturing), but consumables (materials, lubricants and flux) as well as methods of baking differ.

IV. Construction Inputs and Outputs

Materials required for construction of the new facility may include concrete, rebar, steel, drywall, sinks, toilets, desks, light fixtures and others. Most of the construction items and materials will be brought in from external sites.

Construction outputs will be typical of a small construction site: surface runoff and construction debris. Through good housekeeping measures, construction debris will be kept to a minimum resulting in minimal effect to surface runoff. All packaging materials, extra building materials, waste, etc. from the site will be removed regularly and disposed of in accordance with existing regulations.

V. Existing Operational Inputs and Outputs

Operational inputs and outputs are dependent on the market demand. The table below displays a summary of WER's inputs and outputs.

	Process Inputs 2015-2016
Steel Purchases	2,300 lbs
Copper Purchases	16,500 lbs
Brass Purchases	21,600 lbs
Aluminum Purchases	4,300 lbs
Solder	3,175 lbs
Electricity	122,360 KWh
Natural Gas	36,412 m ³
Propane	602 kg
Water	684 m ³
Oxygen	248 m ³
Nitrogen	17 m ³
Inert Gas Mixture (CO2)	0 m ³
Water Based Paint	360 gal
Spray Paint	290 cans
Soap (Parts washer and Pressure Washer)	160 L
Oil	80 L
Ultrasonic Solution	32.4 gal
	Process Outputs 2015-2016
Raw Steel - Scrap	13,862 lbs
Raw Aluminum – Scrap	13,500 lbs
Raw Copper – Scrap	1,575 lbs
Raw Brass– Scrap	2,350 lbs
Solder - Scrap	2,775 lbs
Oil	1,100 L
Antifreeze	80 L
Plastic Tanks	720 lbs
Garbage	7.5 tons

VI. Proposed Operational Inputs and Outputs

Based off extrapolated data from WER's aluminum product purchasing trends; the following inputs and outputs are expected. (See table below)

	Process Inputs 2017-2018
Aluminum Materials	15,000 lbs
Water	35 m ³
Electricity	300,000 kWh
Natural Gas (for manufacturing)	3,420 m ³

	Process Outputs 2017-2018
Raw Aluminum – Scrap	1,500 lbs
Alumina Beads Replacement	N/A
Water	34.9 m ³
Garbage	750 lbs

VII. Schedule

WER plans to start construction in the early spring (March 2017) and complete construction by fall of 2017. WER anticipates the facility being in full operation by the spring of 2018.

VIII. Funding

WER will provide funding for the project.

3. Existing Environment

I. Land Use

Surrounding Environment (See the figure below)

- South and South-East of WER facilities is residential area
- North, West and East of WER is industrial land
- Across the street (north) of WER's main facility is Carte International (a large manufacturer)
- WER's surrounding industrial businesses are dominantly for trucking sales and service – a large portion of WER's business



i. Zoning

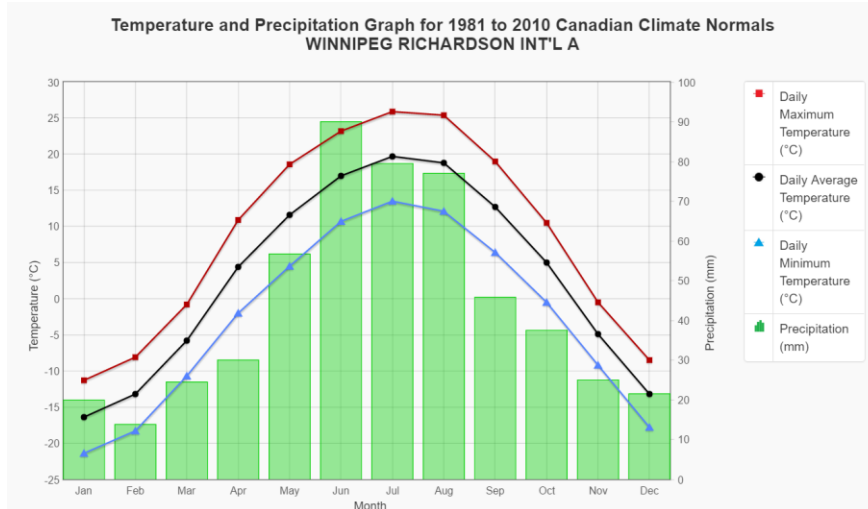
According to the City of Winnipeg, WER's locations fall under zone M1, Light Manufacturing. The areas surrounding WER are mix between M1 (Light Manufacturing), R1-M (Single Family Residential) and M2 (General Manufacturing).

ii. Certificate of Title

Please see Appendix A for the land titles that WER operates on.

II. Climate

The closest weather station to WER is located at the Winnipeg Airport. See figure below for complete details.



III. Topography

Each WER site is generally flat. The elevation of each site is approximately 230 meters above sea level.

IV. Geological Background

WER is located within the Winnipeg City Limits. Winnipeg is located along the eastern edge of the prairies (see the figure below).



V. Water

i. Surface Water

The closest waterways to WER are the Assiniboine River (5.5 km) and the Red River (6.7 km). Major lakes close to Winnipeg are Lake Winnipeg and Lake Manitoba. WER's water ultimately drains to the Assiniboine River.

ii. Ground Water

All water used by WER is provided through the city water system; therefore no ground water is removed or replaced by WER.

VI. Vegetation and Wildlife

Roughly 90% of the WER land is occupied by buildings or covered with asphalt or gravel. Rarely are rabbits and various bird species seen. WER is unaware of any negative impacts on aquatic or protected species in the area.

VII. Socio-Economic Environment

i. City of Winnipeg

As mentioned previously WER is located within the City of Winnipeg (population: 663,617 (2011 census)). Employees live both inside and outside the city limits.

The average house hold income in Winnipeg is \$74,040 (2011 census). Major industries in Manitoba include manufacturing, aerospace, agriculture, energy, construction, information, communications and technologies. Winnipeg has several professional sports teams, Winnipeg Jets, Winnipeg Blue Bombers, and Winnipeg Goldeyes.

ii. First Nations

There are 114,225 First Nations people in Manitoba (about 13.4 % of all First Nations people). 42% of First Nations People live off reserves. Winnipeg has the highest population of Metis people (46,325). **All above values from Statistics Canada*

iii. Protected Areas

North of WER (past Carte) is Woodsworth Park. Woodsworth Park is a green space made-up of a pond and various sports fields.

4. Potential Environmental Effects and Mitigation

I. Construction Effects

i. Topography

The proposed building site (2020 Logan) will see minimal topographic changes as the site is currently flat (used as WER employee parking lot) and the proposed WER operations require no significant changes. The proposed facility floor will be built to code and the new parking lot will have minimal grade to divert storm surface water to a one-site drainage basin.

ii. Noise Generation

Noise generated during the construction phase will be typical of a small industrial work site. When construction equipment arrives the noise level may increase for short periods of time. Effects on humans and animals due to construction noise are expected to be minimal to negligible.

iii. Dust Generation

Through the foundation work, site work and other portions of the construction project, dust levels may increase due to placement and compaction of aggregates. For a small industrial work site, dust levels are anticipated to be average.

II. Operation

i. Noise Generation

Noises produced by the existing WER operations are in compliance with industrial zoning. All current processes are within the enclosed facility and typically are not audible from outdoors. At limited times the facility doors are opened for traffic to enter or leave the facility. Through these small increments, sounds may be audible to the outside environment. The passing by tractor-trailer traffic exceeds the sounds produced within the WER facility. WER is unaware of an excessive noise being caused by its operations.

The warehouse portion of the new facility will have minimal amounts of noise. The forklifts will be electrically powered, and operation will be minimal.

The proposed manufacturing portion of the new facility will be compatible with industrial zoning. All processes will be contained within the building and typically will not be audible to the outside environment. The operation creating the most noise will be the cool-down station. Multiple fans draw hot air away from the finished product, decreasing the cool-down time. Noise from the preheating burners and fans may also be audible for very short periods, when

the oven door is opened to exchange a load. Tractor-trailer traffic operating on Logan Ave. and Brookside Blvd. will continually exceed WER's audible operations.

ii. Dust Generation

Dust in the WER facility is mitigated by air diverting (exhaust system) and filtration methods (as described in Section 2.II.). WER's interior air conditions are in compliance with Manitoba's WSH as thorough tests were completed in February 2016. WER is unaware of any other significant air pollutants created by its operations.

Consistent maintenance and housekeeping measures keep dust levels in WER to a minimum.

The proposed manufacturing process to be implemented requires an extremely clean environment and is intolerant of any form of contaminants and impurities. Cleanliness must be enforced or products will fail. Due to these conditions dust contamination cannot and will not be an issue.

iii. Green House Gas Emissions (GHGE)

The current operations at WER that emit GHGE are listed below:

- Propane fuel –onsite fork lifts
- Natural gas combusted – manufacturing oven, header dip tank and heaters

WER keeps GHGE's to a minimum by limiting equipment use to small increments – activating equipment only when necessary, and decreasing building temperatures afterhours and on weekends.

The proposed new warehouse and manufacturing plant will be designed to keep GHGE's to a minimum. The warehouse portion will emit no GHGE's as forklifts will be powered by electricity.

The proposed manufacturing area will emit the following GHGE:

- Natural gas combustion – preheating oven and heaters
- Hydrogen fluoride (HF) – flux on products (captured by HF Alumina Scrubber, amount of HF emitted to atmosphere will be minimal: to-date is unmeasurable)

iv. Surface Water

WER's current operations consist of various catch basins and a separator pit (mentioned previously). The current facility was built in 2002 and all water systems are in compliance with building codes. The water separating systems are cleaned twice a year by a certified extracting company.

The proposed WER facility will consist of a storm water catch basin on the property. Inside the new facility catch basins will be located close to outside traffic areas (overhead and man doors).

The current WER water maintenance schedule will be followed for the proposed facility.

v. Vegetation, Wildlife and Aquatic Resources

The existing sites are composed of asphalt, buildings or gravel parking lots. As mentioned previously, minimal amounts of vegetation and wildlife are on the WER sites. WER is unaware of any negative impacts on aquatic or protected species in the area.

The proposed new facility will be replacing a gravel parking lot. No disturbances will be made to vegetation. With minimal population of wildlife within the city limits and the construction project having normal specifications, effects on animals will be negligible.

III. Accidents and Malfunctions

i. Fire/Explosion

The risk of fires and explosions are taken seriously at WER. Proactive measures taken to reduce these risks are as follows

- Good housekeeping measures are followed
 - Metal fabricating is contained to specific area (wood shavings and metal shavings are not mixed)
 - Shop floor is washed daily to remove misc. dust and contaminants
- Varieties of gases are contained in certified cylinders. These gases are stored and handled in accordance with Work Place Health and Safety standards
- Appropriate fire extinguishers are on site and comply with manufactures specifications
- Chemicals, oils and greases are stored in appropriate containers and locations

During construction of the new facility the same prevention measures will be enforced.

ii. Spills

WER strives to create a safe and environmentally-friendly facility by identifying dangerous products, foreseeing potential hazards and taking appropriate measures to mitigate the risk of an environmental occurrence. In the unfortunate event that a spill does occur, appropriate steps are taken in accordance with the related Material Safety Data Sheets (MSDS) and Manitoba regulations.

During the WER construction phase, spills will be mitigated through the following procedures:

- If hazardous products are required on-site, they will be stored in pre-designated safe and secure areas in accordance with applicable rules and regulations
- Minor on-site repairs will be performed by trained personnel in designated areas
- Equipment on site will be routinely checked for leaks

5. Monitoring and Reporting

WER is committed to having a safe and environmentally friendly facility. As of June 2016, WER is in compliance with WHS's standards. WER is required to complete hearing tests for all employees on a yearly basis. The test results are evaluated and used to determine whether changes are required for workplace conditions.

Regular preventative maintenance is performed on all equipment according to the equipment specifications. Filter changes and cleaning components are completed to ensure WER provides proper working conditions for their employees.

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Appendix A: Land Titles

Appendix B: Current Chemical MSDS

Appendix C: Proposed Chemical MSDS