

Environmental Act Proposal for the Existing West End Radiators Operations & Proposed Plant, Winnipeg MB – Additional Information

See detailed answers below

1. Detail information including maintenance requirements of the welding fume filtration system.
 - Welding operator wears filtering mask – equipped with a Charcoal Filter – replacement occurs every month
 - Fume extractor arm draws welding fumes into filtrating system – equipped with a LongLife Cellulose Cartridge Filter – cleaning occurs every month
2. Detail on the soldering station exhaust system. Location of exhaust (wall or roof mounted) and any filter in place with required maintenance schedule.
 - There are two solder stations:
 - Dip-pot – molten solder tank
 - Solder Booth
 - Stations are equipped with backdraft fume extractors – all systems are in compliance with Workplace Health and Safety (WHS) standards - completed June 2016.
 - Fume extracting systems house large Dayton Tubeaxial Fans which exhaust fumes to roof mounted vents.
 - No filters are in place:
 - Equipment is purchased from Tanks-A-Lot, a radiator equipment manufacturing company in California, USA and components are fabricated from a reputable HVAC Winnipeg company; Brookdale Plumbing and Heating.
 - Equipment does not come with filtrating methods; the volumetric air flow dilutes the solder-lead content.

****Important Note***

- **WER molten solder concentration tests reveal tin is released into the atmosphere at greater rate than lead (see table below), therefore large portion of lead is recycled through proper metal recycling methods.**

	Lead (Pb) %	Tin (Sn) %
Purchased Solder Sample 1	66.12	33.53
Purchased Solder Sample 2	63.12	36.66
Molten Solder Sample 1	70.19	26.96
Molten Solder Sample 2	69.66	28.33
Molten Solder Sample 3	69.89	27.85
Molten Solder Sample 4	67.13	30.31

3. Detail of the paint booth filtration system.

- Ventilation System is filtered through a Dry Polyester Pad Filter.
- Filter is replaced every month

4. Volume of the chemicals stored in the facility at any given time. Include volume of antifreeze, fuel and coolant stored for the purpose of disposal.

Maximum amount of chemicals stored @ WER:

Chemical	Volume/Weight	QTY
New Anti-freeze	4 L	366
Flux	45 US GAL	2
Water Based Paint	5 US GAL	135
Spray Paint	340/426 g	20
Soap - Parts Washer	150 lbs	1
Soap – Pressure Washer	5 US GAL	4
Oil	0 *Order on demand	0
Ultrasonic Solution	45 US GAL	1
Used Oil	45 US GAL	1
Used Anti-freeze	45 US GAL	1
Used Fuel ¹	45 US GAL	1

1: Enviro West Inc. properly disposes WER's used fuel

5. Detail of the Alumina Scrubber including its specification.

Alumina Scrubber

- The scrubber filters the hydro fluoride (HF) molecules which arise during the brazing process
- Air is cleaned through the scrubber by passing through the packing – HF molecules bind to the packing element surfaces
- Packing element surfaces consist of activated alumina which have a large surface area and result in a low pressure loss (for the air)

HF Measurement

- The only toxic components developed during the aluminum brazing process are HF molecules
- These molecules are developed during the brazing process between 530 to 600 °C
- Most of these molecules are filtered out by the activated alumina through adsorption – minimal amounts of HF are released to the atmosphere
- Measurements on a continuous furnace (much larger than WER proposed) of HF values never reached 1 ppm (detection limit)

Measured by: Dräger test measuring tube (measuring range 1 to 10 ppm)

Measurement distance 1 m fare of the unit / 0,8-1 m height from the floor