

Pharmaceutical and Illicit Drug Waste Processing Trial – To-Date Summary

- Regulatory approval for the Trial was granted by the NSW Department of Planning & Environment on 15 September 2015 (DA 86-04-01 Mod 9) and by the NSW Environment Protection Authority on 29 September 2015 (Notice 1534264), permitting the receipt, storage and processing of up to 1,000 tonnes of pharmaceutical and up to 200 tonnes of illicit drug wastes over a 24 month period;
- Trial commencement (by Notification) occurred on 14 October 2015;
- Scheduled Trial conclusion mid-October 2017, with extension sought for up to 6-months;
- To-date, 141 tonnes of pharmaceutical and 1.9 tonnes of illicit drug wastes have been received and processed to-date. It is noted that input waste tonnages are much lower than anticipated during the Trial interval, and for which approval was originally sought (i.e. up to 1,000 and 200 tonnes respectively).

Whilst the generation of exhibit (illicit drug) waste and consequential demand for destruction services has (and will continue to be) highly variable, pharmaceutical waste sourcing constraints during the Trial are attributable to unanticipated competition market forces (monopolized medical waste processing provider) and contractual arrangements limited by WA's 'Trial' status. To elaborate further:

- The monopoly service provider in NSW (Daniels Health; with strong awareness of Weston Aluminium's Trial activities) has forced generators / managers of medical waste (clinical, cytotoxic, anatomical, pharmaceutical, etc.) to sole-supply them with pharmaceutical waste arisings or risk penalty through an increased service charges for all other waste inputs. This situation has effectively starved Weston Aluminium of consistent pharmaceutical waste inputs throughout the Trial phase; and
- Large pharmaceutical product manufacturers are encouraged by Weston Aluminium's Trial successes and deliberate market disruption, but are reluctant to provide consistent, large and Contracted waste quantities for processing whilst Weston Aluminium hold regulatory approval for a *Trial-scale* only. Producers of wastes are awaiting commercial-scale regulatory approval confirmation before Contractual arrangements can be finalized.

Whilst Weston Aluminium's Trial has proven to be very successful, and environmental and operation performance has been verified (refer points below), material sourcing constraints (and the consequentially limited processing batches) potentially limit the opportunity for Weston Aluminium to optimize process and energy efficiencies.

- All material storage, processing and handling has been performed within enclosed production buildings. No spills of Trial inputs have occurred;

- Independent, NATA-certified air emissions testing events have occurred on a quarterly basis (stock permitting). To-date, a total of five emissions monitoring and reporting events have occurred (refer westonal.com.au/monitoring.html). Testing events confirm full compliance with approval requirements. A summary of air emissions monitoring data gained to date are presented in **Table 1**;
- Continuous monitoring of fluoride and solid particulate emissions (Stack 1 discharge) was performed during processing intervals. Data confirm full compliance with approval / licence requirements. A summary of fluoride and particulate continuous air emissions monitoring data gained to date are presented in **Figures 1** and **2** respectively;
- Process sequences and associated plant and equipment utilized for the Trial are deemed suitable for the effective thermal treatment of waste inputs;
- Processing residue yields (principally carbonate ashes) are negligible, physico-chemically compatible with existing process residue streams, and have been incorporated into conventional alternative material product streams; and
- Due to the performance verification and successes of the Trial, Weston Aluminium is currently in the process of seeking regulatory approval for the ongoing processing of domestically-sourced pharmaceutical and illicit drug wastes within existing rotary furnaces (lodged as DA 86-04-01 Mod 12; NOTE: independent of, and in parallel with, State Significant Development SSD 15_9396). The proposed scale of the Development Consent Modification / Environment Protection Licence Variation is up to 5,000 tonnes of pharmaceutical and up to 5 tonnes of illicit drug wastes per annum. Beyond Exhibition Period conclusion (21 August 2017), Weston Aluminium is now in the process of preparing its Response to Submissions Report.

Table 1: Independent Air Emissions Monitoring – Preliminary Data Summary

Emission Parameter	Units	Trial Emissions Monitoring Events					Approval Limits
		1	2	3	4	5	
Total Particulate	mg/m ³	3.2	1.0	2.6	4.9	8.7	25
PM10	mg/m ³	0.24	0.049	0.83	2.0	3.7	NL
Chlorine	mg/m ³	<5.3	<0.5	<1.8	<4.6	11	NL
Sulfuric Acid Mist	mg/m ³	<1.9	<1.7	<1.9	<8.5	<1.6	100
Sulfur Dioxide	mg/m ³	<9.3	<8.5	<9.6	<1.7	<8	NL
Hydrochloric Acid	mg/m ³	<5.3	<1	<9.1	<9.3	<7.7	400
Heavy Metals	mg/m ³	0.013	0.011	0.0087	0.017	0.071	10
Cyanide	mg/m ³	0.22	0.35	0.33	0.25	0.38	0.5
Gaseous Fluoride	mg/m ³	0.14	0.018	0.03	0.095	0.028	2
Particulate Fluoride	mg/m ³	0.37	0.055	0.13	0.11	0.38	NL
Oxides of Nitrogen	mg/m ³	6	2	7	12	12	2500
Carbon Monoxide	mg/m ³	38	76	2	28	20	100
Polycyclic Aromatic Hydrocarbons	mg/m ³	0.29	0.082	0.053	0.015	0.11	NL
Dioxins & Furans	ng/m ³	0.0012 ¹	0.0014 ¹	0.0027 ¹	0.0022 ¹	0.0007 ¹	0.1 ²
Volatile Organic Compounds	mg/m ³	0.11	5.2	0.4	<0.36	<0.35	NL
Carbon Dioxide	mg/m ³	<0.1	<0.1	<0.1	0.2	0.2	NL

NOTES:

Emission concentrations expressed at dry gas, 273 K and 101.3 kPa conditions, unless otherwise defined.

NL Not Listed

*1 Value is a rolling annual average for direct comparison with the regulatory limit.

*2 Limit value is a rolling annual average.

Exceedances this period: Nil

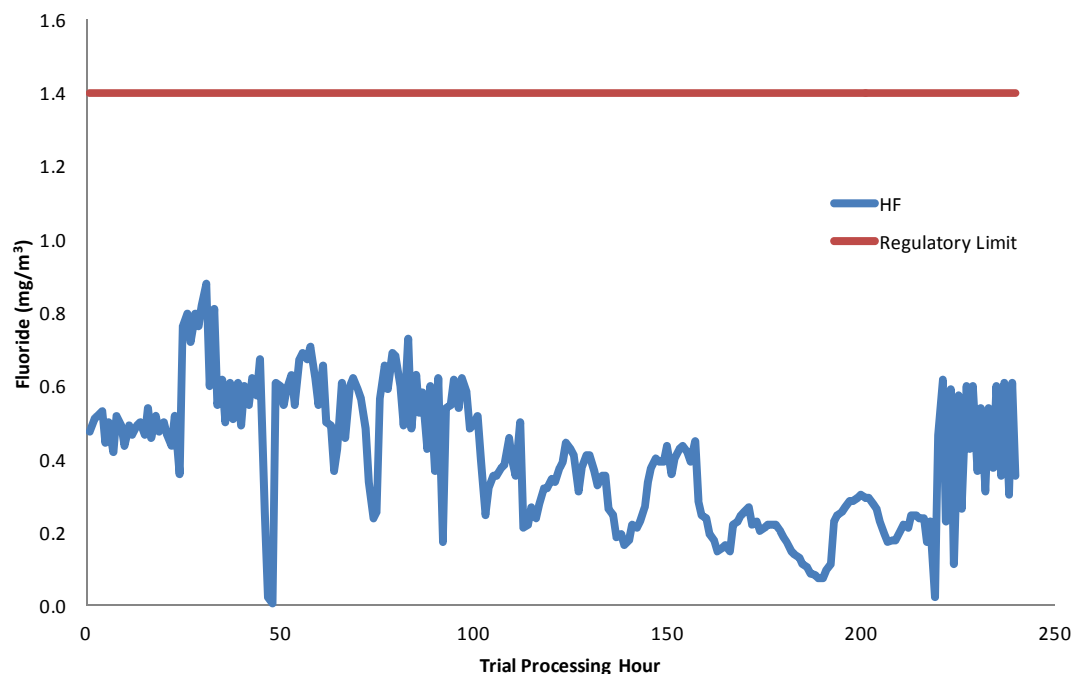


Figure 1: Real-time, Continuous Fluoride Emissions Monitoring – Preliminary Data Summary

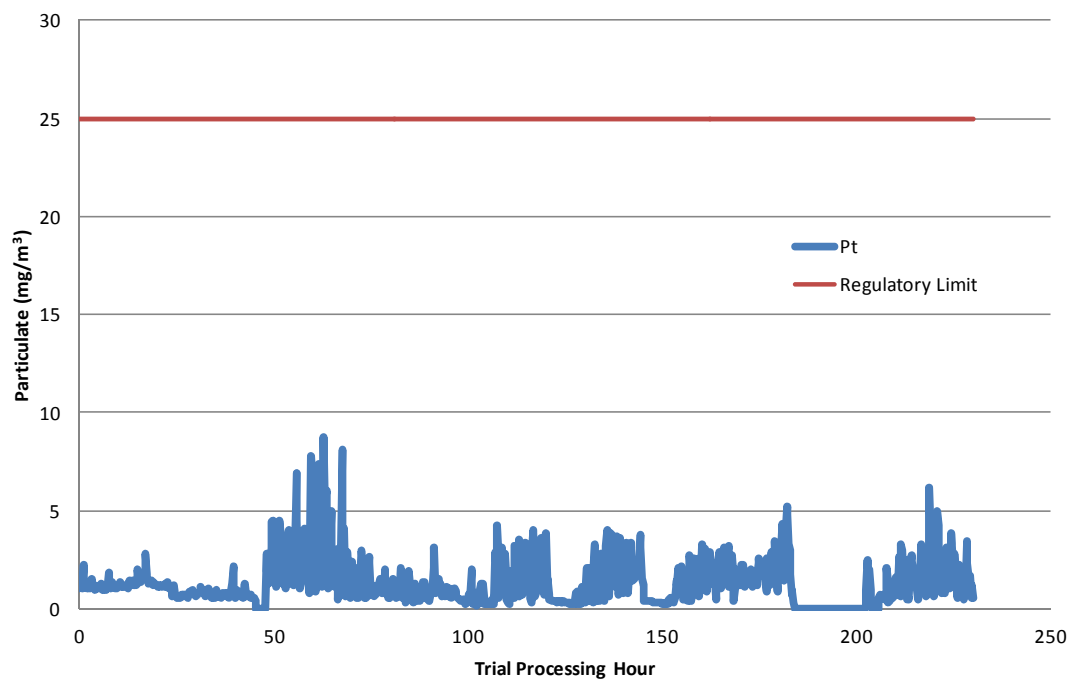


Figure 2: Real-time, Continuous Particulate Emissions Monitoring – Preliminary Data Summary