

**APPENDIX XI**  
**TRECAN COMBUSTION**

**Birett, Philip**

**From:** David Burnett [david.burnett@treca.com]  
**Sent:** July 27, 2007 6:01 AM  
**To:** Birett, Philip  
**Cc:** Peter Richardson  
**Subject:** Incinerator-Request for Information on Animal Waste Incinerators

Good Morning,

Peter Richardson requested we forward information on our incinerators and thus we respond item by item.

- 1 The last animal waste incinerator we had to test was a T-7 in Ontario, which is a batch load machine. This had very good results namely an average of 8.38 mg/DRm3. Thus for our batch load incinerators we feel confident of meeting 50mg/m3. The unit tested had no scrubber.
- 2 Our standard batch load has a front loading door and would normally be loaded by hand. For larger parts a fork lift could be used particularly on the larger batch models. We have also supplied top loading incinerators whereby large animal parts can be lowered into the primary chamber through an airlock type of double loading doors, the animal parts being transported to the loading area by overhead chain falls on a runway beam. In the past we have supplied animal waste incinerator of the batch type but fitted with a ram feeder such that the burn time could be extended by the additional loading via the ram feeder.
- 3 Most of our larger medical and anatomical waste incinerators are equipped with ram feeders. The ram feeder itself has a cart unloader, thus the waste is delivered in appropriate packaging in the carts and the operator initiates the loading into the ram feeder on a timed basis, once loaded into the ram feeder the feed into the primary chamber is automatic. Most of the larger incinerators equipped with ram feeders also are equipped with continuous ash removal devices which in Treca's case consists of a very slowly moving ash ram (s) which gradually advances the waste and ash towards the rear of the primary chamber. However the movement of the incoming feed and the residuals on the grate will cause higher emissions, thus necessitating the use of a clean up device to meet the particulate requirements.
- 4 Mobile incinerators- Our T-3 incinerator can be mounted on an air ride trailer along with a fuel tank (if oil fired) and made mobile. The unit requires a stub stack of approx 17' height mounted on top of the incinerator secondary chamber. For movement this would have to be dismounted. To provide for the maximum refractory integrity because of the likelihood of damage during transportation we would include for extra anchors back to the steel shell and use of ceramic modules in the roof which have been used by one of our customers.
- 5 For larger size incinerators to handle large parts or whole cows we would recommend top loading as described in paragraph 2 above where motorized chain falls can feed the carcass into the primary chamber. For front loading a batch type we would provide an oversized loading door such that a small fork lift can drive into the primary chamber, there is still a difficulty in loading the chamber to 85% of its volumetric capacity due to the height restrictions, thus for the larger batch incinerators front loaded we would end up with a longer primary chamber to accommodate the waste to obtain the design charge. For ram fed machines, the size of animal carcass is limited by the capacity of the ram feeder, obviously some packaging may be required so that the limbs can be entirely packed into the hoppers. We have in the past provided incinerators with twin primary chambers feeding to one secondary chamber, the primary chambers can be isolated by a water cooled damper from the secondary chamber. Thus one primary chamber can be going through its burn cycle whilst the other is in cool down mode and or clean out phase.
- 6 Liquid waste can be burned in the secondary chamber to offset the quantity of prime fuel used to maintain the secondary chamber outlet temperature. This may result in a larger secondary chamber.
- 7 References, we will follow with our reference list.
- 8 We will advise .
- 9 The incinerators can burn plastics, but then will probably be reclassified and dioxins may be of concern. It may be better to burn plastics in a separate machine.
- 10 If frozen wastes are to be burned, consideration must be given to the time and heat required to thaw the wastes and its effect on the operating cycle. More monitoring is required to ensure burn out is completed before burn done of cool down occurs.
- 11 CFIA guidelines can be met assuming they are not unlike CCME guidelines. In Treca incinerators the waste remains in the primary chamber for time periods substantially in excess of 15 minutes at temperatures up to and in excess of 850 C.
- 12 We would expect opacity to run at 0% under normal conditions, it would only be under upset conditions that the opacity could approach 10% and then there should be a frequency built in.
- 13 Our incinerators are all designed to burn medical waste and have to meet the stringent requirements of the CCME which generally necessitates exotic scrubbers to make sure the dioxin levels are achieved. Animal waste is generally straight forward when compared to medical waste since there are no man made products involved

03/08/2007

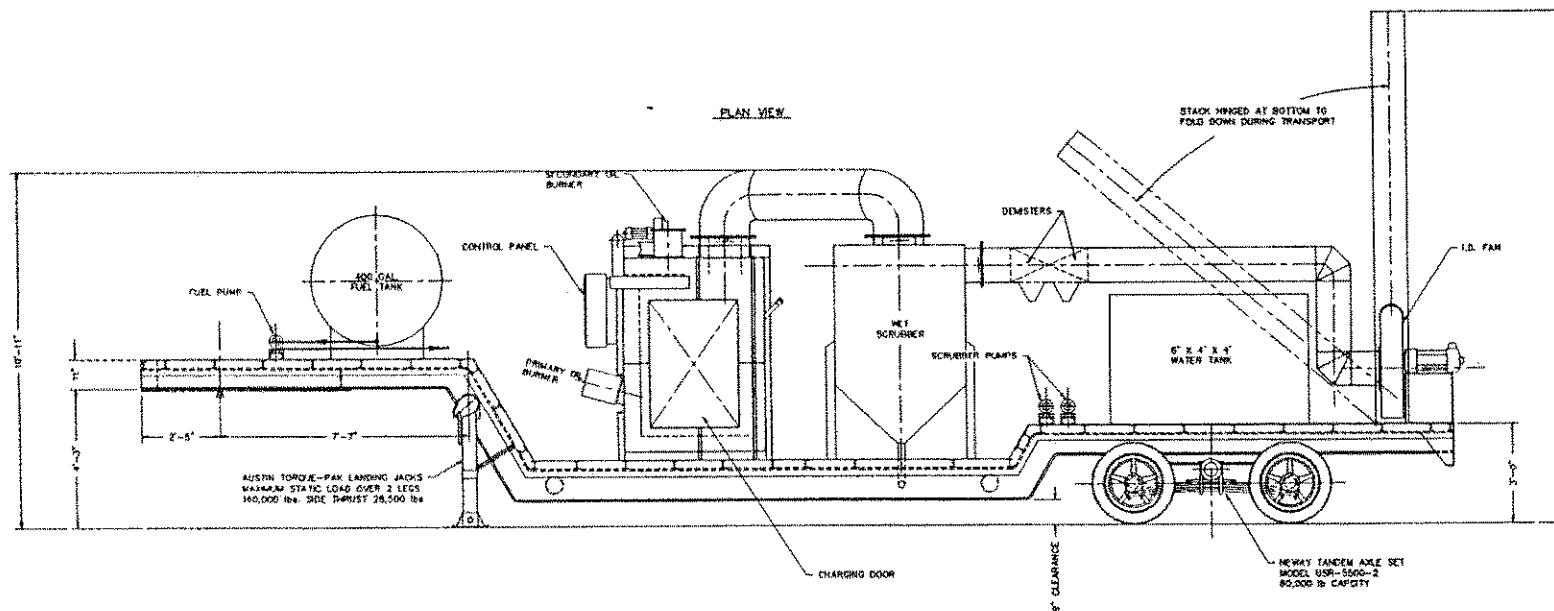
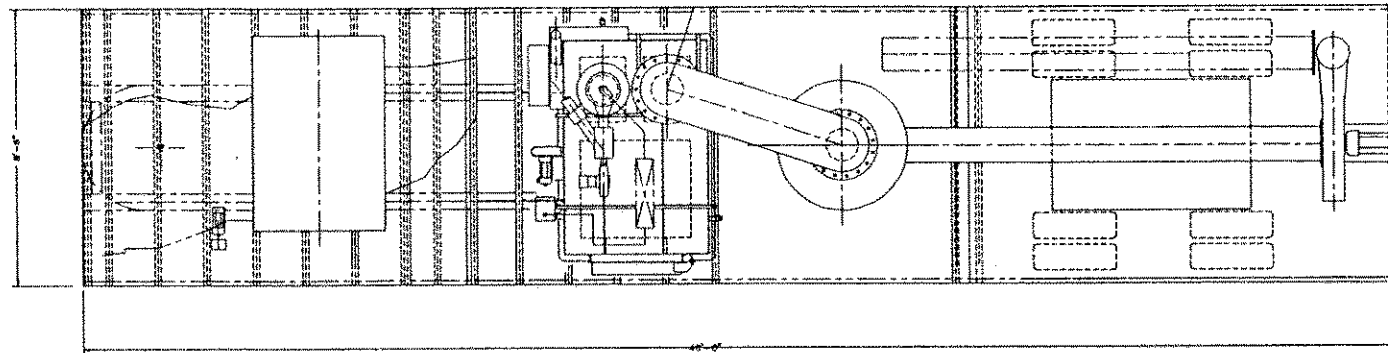
TRECAN COMBUSTION ATTACHMENT A: Incinerator Information

Model and Manufacturer	T7 TRECAN	20-R (FUTURE) TRECAN	36-R TRECAN	T-11 TRECAN
Description:				
Batch / Continuous Feed	BATCH	BATCH (FUTURE PLAN)	RAM FEEDER	TOP LOAD BATCH
Tested on SRMs / Air emission	YES	YES	YES	YES
After burner / Secondary chamber	YES	YES	YES	YES
Foot Print	1 SEC RESIDENCE TIME	1 SEC RESIDENCE TIME	1 SEC RESIDENCE TIME	1 SEC RESIDENCE TIME
Capacity (kg/hr)	2971 X 2286	4890 X 2170	7552 X 2507	3653 X 2590
Capital Cost (\$)	90	91	340	90
Typical Installation Cost (\$)	240,000	632,840 **	840,000 **	260,000
Operation Costs:	20,000	195,000 <sup>1</sup>	120,000	130,000 <sup>1</sup>
Labour / Training (\$/year)	5,000	5,500	6,000	6,000
Major Repair Contingency (\$/event)	10,000	12,000	14,000	12,000
Fuel	REFRACTORY	NG	PROPANE 17.7 MGD/CYCLE <sup>2</sup>	NG
Options:				
Feed Ram	YES	YES	INCLUDED	TOP LOADING
Ash Management / Auto outload	NO	NO	VACUUM SYSTEM	NO
Waste Oil Burner	YES	YES	YES	YES
Feed weigh scale	YES	YES	YES	YES
Mobilization upgrade				
Other				

\* EMISSION TESTS ALL CONDUCTED ON DESIGN WASTE  
 1 ESTIMATED ONLY, INSTALLATION BY CUSTOMER  
 \*\* INCLUDES WASTE HEAT RECOVERY  
 2 BASED ON 6 HOURS BURN TIME.

- IF IN DOUBT ASK -

ITEM	REQ.	ML	DESCRIPTION	MATERIAL
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REV.	BY	DATE	DESCRIPTION	BY	DATE	CHK.	APP.
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**MBB-TRECAN** MBB-TRECAN INCORPORATED  
 HALIFAX/MISSISSAUGA/MONTREAL  
 CANADA  
 T-7 MOBILE  
 SOLID WASTE  
 THERMAL OXIDIZER  
 FOR  
 EL QUANTARA  
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