



Pollution Prevention at Helmer

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Helmer's Environmental Impacts

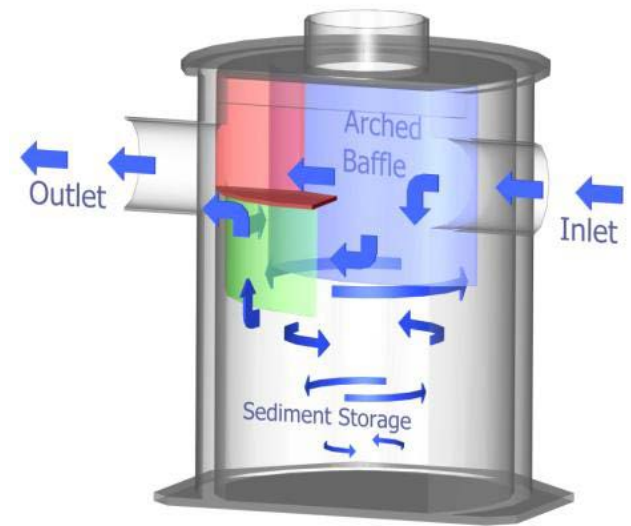
- Helmer strives for excellence in its environmental impacts
- Being a small facility, there are not a high magnitude of environmental impacts. This lets us really focus on what impacts we do have, and to improve on those as much as possible
- Helmer uses BMPs and other practices to ensure environmental excellence here at the facility
- Helmer also strives to provide environmentally friendly products to our customers.



Helmer's Environmental Impacts

- Helmer has zero processes outside which results in little to no exposure to storm water pollution
 - 2 BMP devices (AquaSwirl) to collect debris and any floatables from the parking lots
- Helmer has an exempt status for air permitting
 - Few potential air pollution sources
 - Low emissions are released from those sources

Aqua-Swirl™



AquaShield™
STORMWATER TREATMENT SOLUTIONS

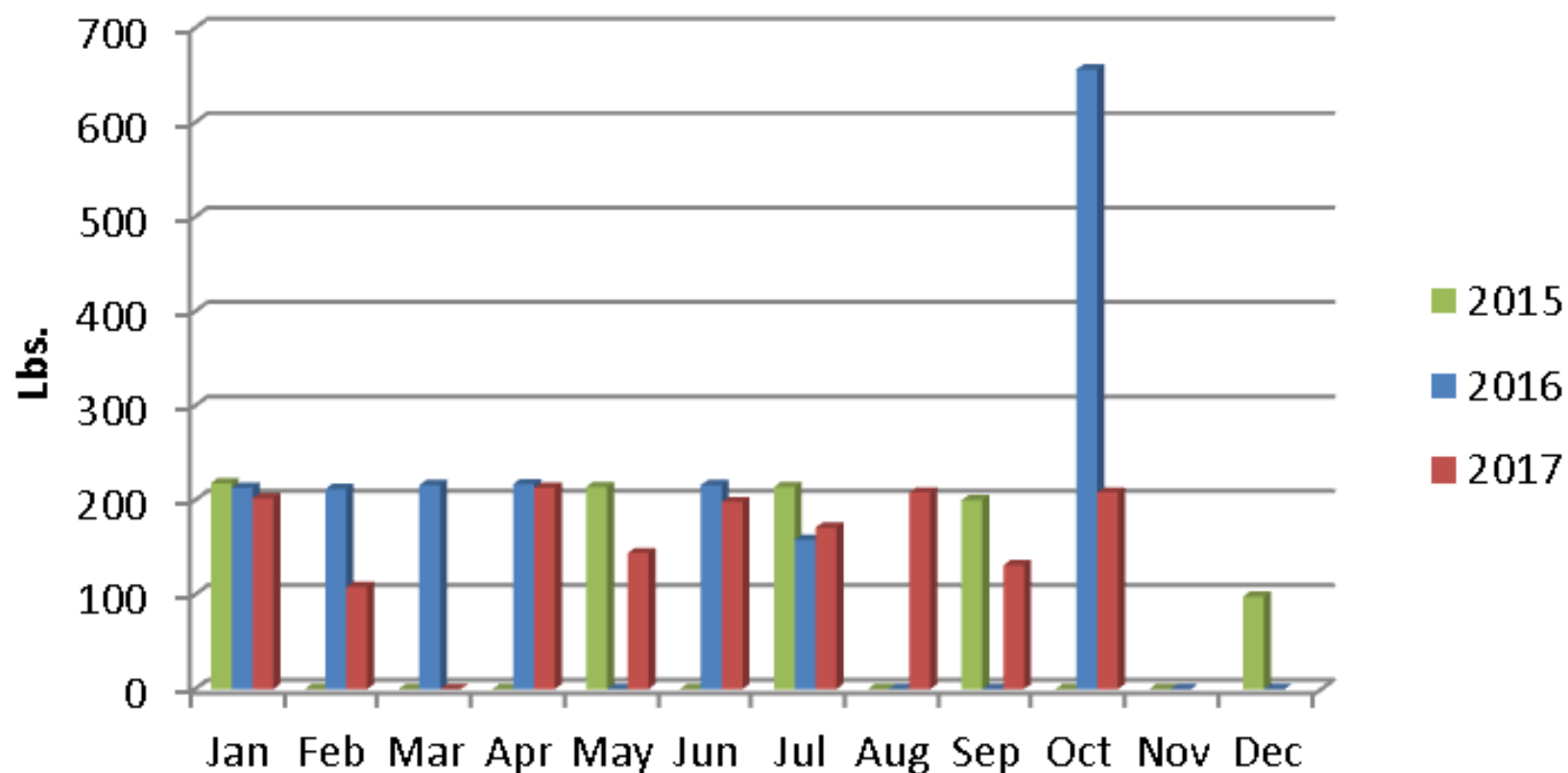


Hazardous Waste Management

- Two hazardous waste streams
 - Filters
 - Aerosols/paint
- Managed Monthly to remain CESQG
- All waste is either recycled, reclaimed, or used for energy
- Environmentally friendly shipping containers are used for disposal when possible
- New materials/ chemicals must have EHS approval
 - Have to be assessed for environmental and safety impact



Hazardous Waste Disposal



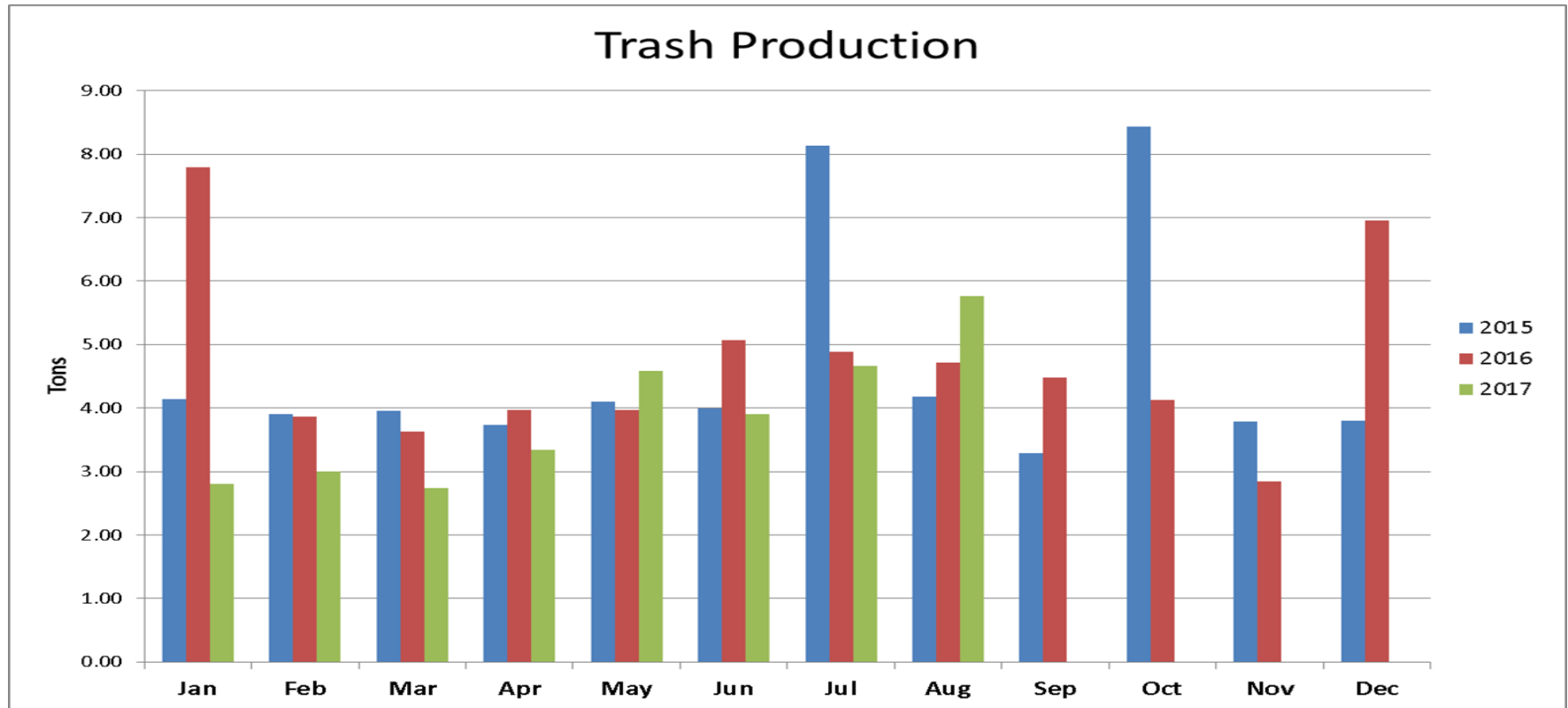
Trash and Cardboard

- Zero landfill facility
 - All trash goes to incineration
 - All hazardous/non-hazardous waste is sent for reclamation/recycling or for energy production
- Recycling program
 - Reduces amount of trash
 - Containers throughout all of building
- Two 42 yard dumpsters with compactors on site



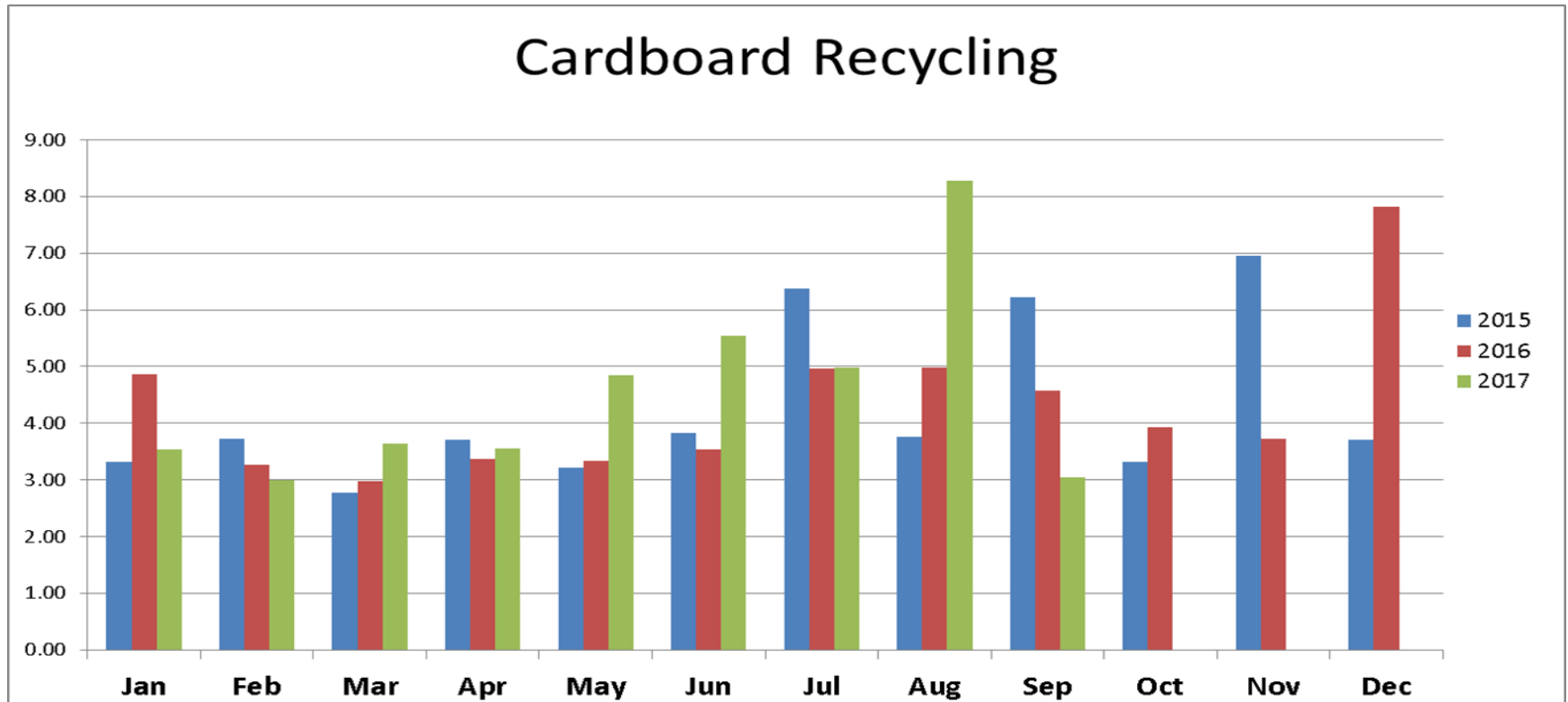
Trash reduction efforts

- Decrease of 13.66 Tons (23%) YOY as of the beginning of Q4 2017



Cardboard Recycling

- Increase in Cardboard driven by Unit Cooler packaging.
- YOY - 13% increase as of Q4 2017
- Source of revenue



Facilities Impacts

- Power Savings
 - At least 90% of the facilities lighting is on motion sensing equipment
 - 15 minute setting
 - The building (5 yrs old) has an occupied/un-occupied setting
 - This is programed into the buildings heating and cooling program
 - From 5 pm – 5 am the building will be “un-occupied” and the program will run lower temperatures
- New fiber laser
 - Energy Rebate



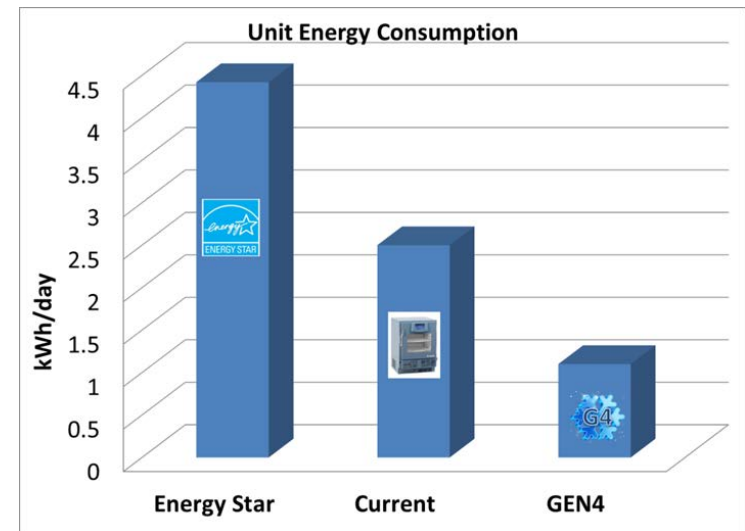
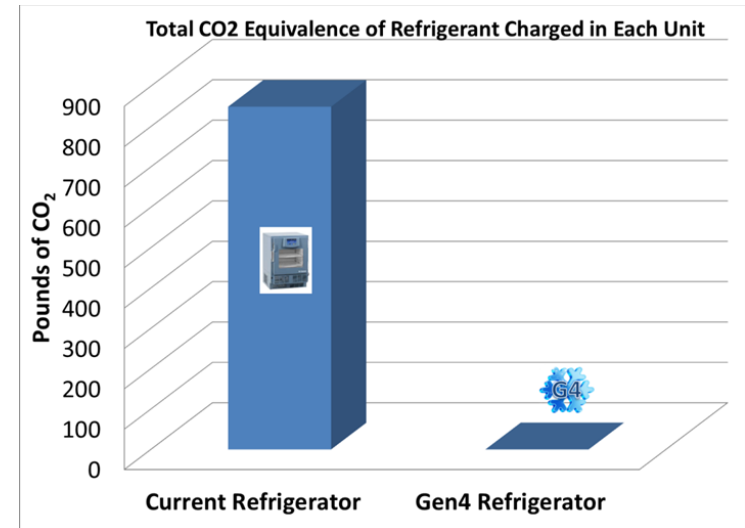
Materials

- Implemented milk-runs on select parts
 - This has improved truck utilization and reduces emissions
 - Assessing future milk-run possibilities on other parts
- Evaluating returnable containers
 - This will reduce corrugate waste
 - Creates better truck utilization by providing loaded back hauls
 - Evaluating the elimination of corrugate packaging for largest finished goods (Upright refrigerators & freezers).
- Currently implementing a reduction of internal packaging

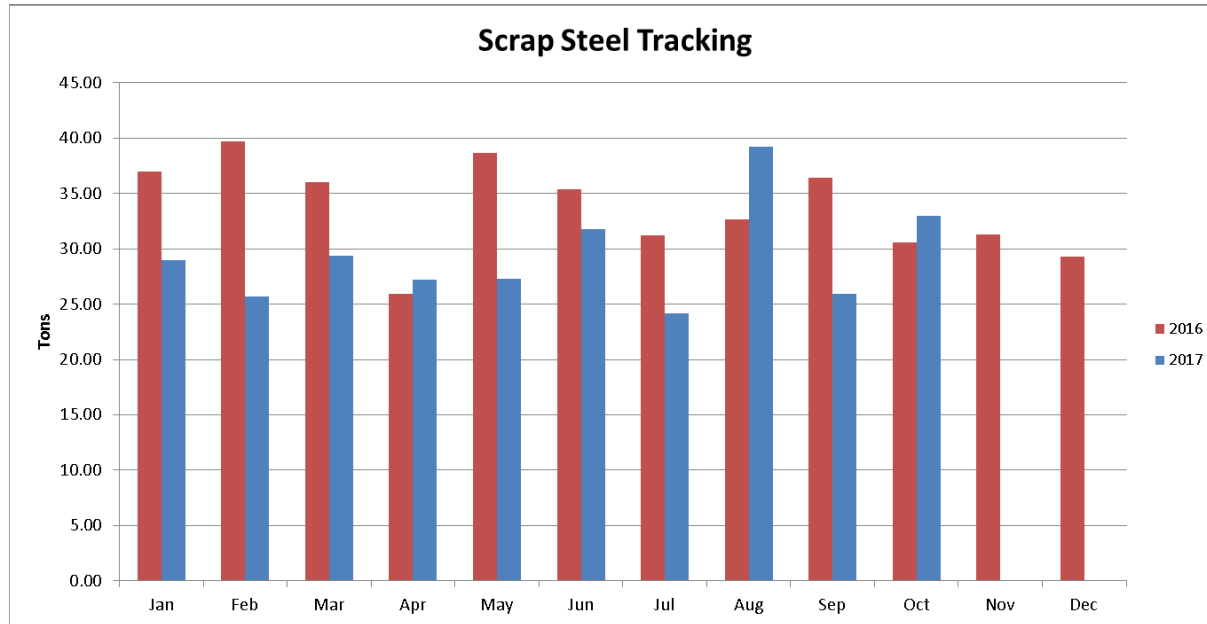


Engineering

- Redesigning refrigeration systems of Helmer products.
 - Significant decreases in energy consumption by the product.
 - Platelet Incubators- reduction of 9.34 kWh/day
 - Undercounter Refrigerator/Freezer- reduction of ~1.25 kWh/day
- These designs are also lowering the Global Warming Potential and the total CO2 equivalence of refrigerant in each unit
 - This is through a reduction in unit refrigerant charge and the phase out of current HFC refrigerants (134A & 404) to Hydrocarbons (R600a & R290)
- The design changes are also providing a reduction of raw material used in the manufacture of the unit refrigeration systems




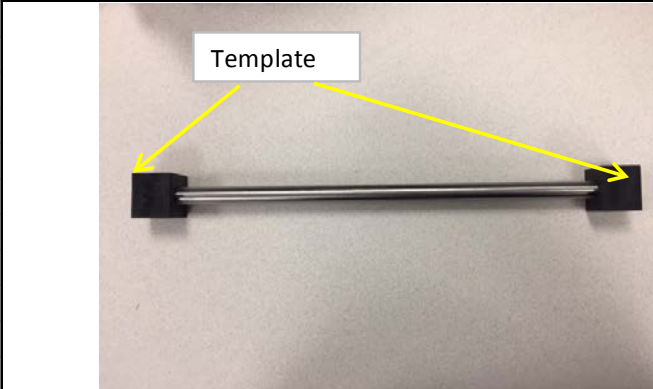
Fabrication



- Scrap reduction through...
 - Sheet utilization
 - Paint Quality
 - Defect elimination.
 - Repair process created.

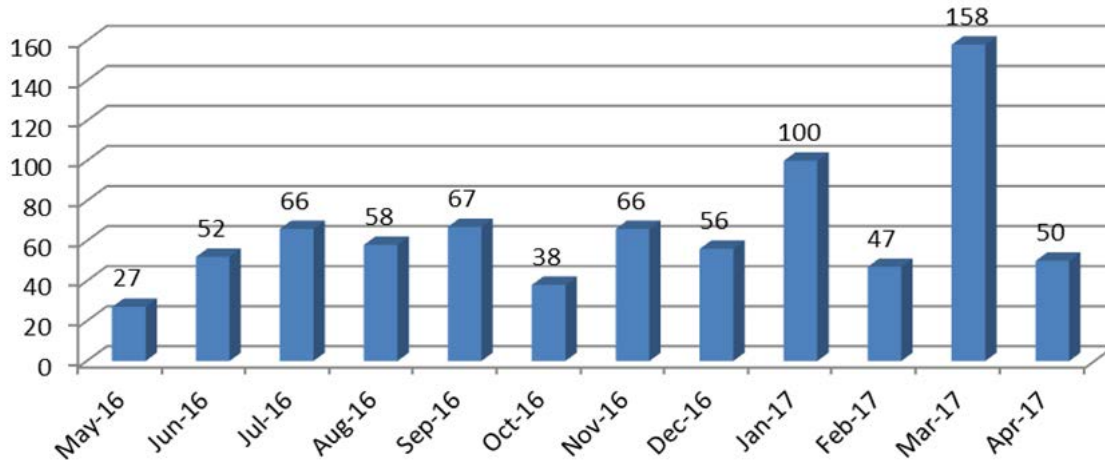
Scrap VS Purchased					
2017 Q1-Q3			2016 Q1-Q3		
Scrap Lbs.	Purchased Lbs.	Scrap %	Scrap Lbs.	Purchased Lbs.	Scrap %
534,932	1,986,049	26.93%	625,751	2,117,764	29.55%



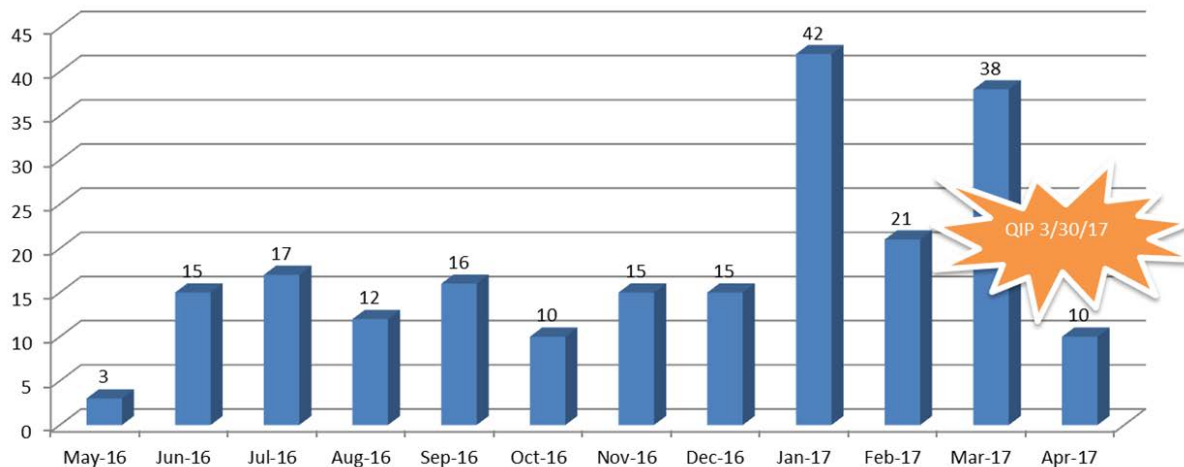
Countermeasure Form									
Part#	400551-1	Part Name	BASE, PF15 ASMB		Date				
Area Detected	Assembly	Defect	Front was too narrow for the rod.		QTY	36			
Area Responsible	Spot Welding	Operator Responsible	DV	Date Manufactured					
1	Root Cause	No method to hold to tolerance while welding.		1	Countermeasure	Have template made to hold tolerance. (add to print)			
2	Root Cause			2	Countermeasure				
3	Root Cause			3	Countermeasure				
Sketch or Picture of the issue				Sketch or Picture of Countermeasure					
									
					Person Responsible	Date			
					Due Date	Status			
					Date Completed				
Notes: This was the #1 defect for the first half of 2017. We have not had a defect since the implementation.				1	Countermeasure	Ron/Jac	6/23/2017	In process	6/29/2017
				2	Countermeasure				
				3	Countermeasure				



Total Paint Defects



Debris In Paint

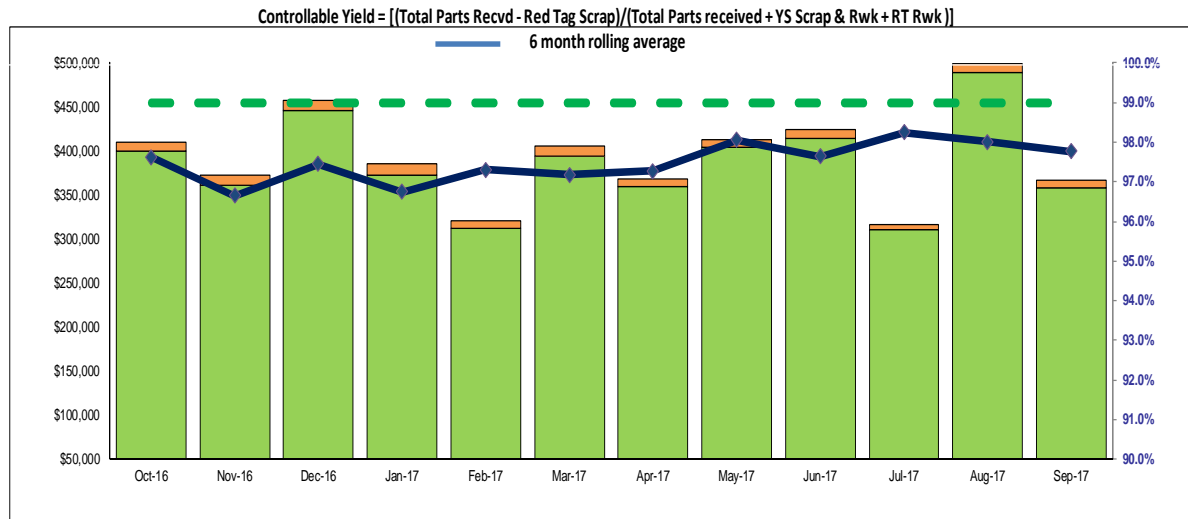


- **Overview:**
- Paint Defects from Debris in paint on decline.
- We had a team work through a QIP
- QIP was implemented in March of 2017



Fabrication Quality

Helmer Fabricated Parts - Controllable Yield and Cost of Quality



- **Overview:**
- Back on goal for the year to date.
- Paint Defects from Debris in paint on decline.
- Eliminated PF15 defect.
- Developed Rework for the DH Tanks cost avoidance.

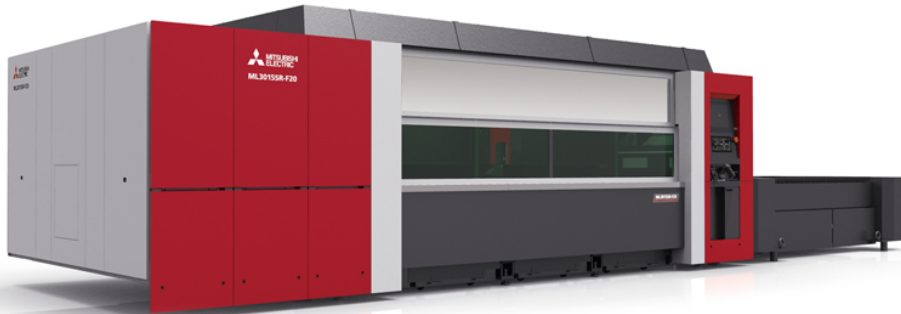
	10/1/2016	11/1/2016	12/1/2016	1/1/2017	2/1/2017	3/1/2017	4/1/2017	5/1/2017	6/1/2017	7/1/2017	8/1/2017	9/1/2017	Last 12 Months	Goal	Delta
Net Good Parts	\$400,128	\$360,704	\$445,943	\$372,327	\$312,298	\$394,621	\$358,896	\$404,799	\$414,774	\$310,748	\$489,409	\$358,577	\$4,623,225		
Red Tag Scrap Total (excludes supplier)	\$5,697	\$6,957	\$5,013	\$5,895	\$4,804	\$7,943	\$7,062	\$4,981	\$5,435	\$2,776	\$4,877	\$6,360	\$67,821		
YS All + RT Rwk (excludes supplier)	\$4,022	\$5,536	\$6,694	\$6,646	\$3,849	\$3,525	\$2,957	\$3,050	\$4,559	\$2,759	\$5,041	\$1,839	\$50,478		
Helmer Quality Cost	\$9,719	\$12,493	\$11,708	\$12,541	\$8,653	\$11,468	\$10,039	\$8,031	\$9,994	\$5,534	\$9,919	\$8,199	\$118,299		
2017 Stretch Target Scrap and Rework Cost	\$-	\$-	\$-	\$8,300	\$16,601	\$24,901	\$33,201	\$41,502	\$49,802	\$58,102	\$66,403	\$74,703			
2017 Target Scrap and Rework Cost	\$-	\$-	\$-	\$9,800	\$19,600	\$29,400	\$39,200	\$49,000	\$58,800	\$68,600	\$78,400	\$88,200			
2017 Cautionary Scrap and Rework Cost	\$-	\$-	\$-	\$11,167	\$22,333	\$33,500	\$44,667	\$55,833	\$67,000	\$78,167	\$89,333	\$100,500			
Actual Scrap and Rework Cost (YTD)	\$-	\$-	\$-	\$12,541	\$21,195	\$32,663	\$42,702	\$50,733	\$60,727	\$66,261	\$76,180	\$87,548			
Controllable Yield	97.6%	96.7%	97.4%	96.7%	97.3%	97.2%	97.3%	98.1%	97.6%	98.3%	98.0%	97.8%	97.5%	99%	-2%



SR-F Series

**MC MACHINERY
SYSTEMS, INC.**

a subsidiary of  Mitsubishi Corporation



Existing Machine

- Annual Energy use @ 61.6KW
- 7280 Run Hours x 44.5 kwh use per hour
= 323,960 kwh annual use
- Annual Energy Use By Month
- 607 Run Hours x 44.5 kwh use per hour
= 27,011 kwh per month use

New Fiber Optics

- New Annual Energy Use @ 18.4 kw
- 3640 Run Hours x 13.3 kwh use per hour
= 48,412 kwh annual use
- New Annual Energy Use By Month
- 303 Run Hours x 13.3 kwh use per hour
= 4030 kwh per month use

Total kwh savings = 275,548

**Total utility company incentive @
\$06.5 per kwh = \$17,910**



Any Questions?

Please join us at Helmer after lunch to tour the facility and learn more about our products and their environmental impacts!

