

Recycling Markets  
&  
Residential Curbside Recycling  
Contamination

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Resource Management Companies

# **Part 1**

## **MRF Paper Fiber Recycling Markets**

**Outthrows** – All ‘papers’ that are so manufactured or treated or are in such form as to be undesirable for consumption as the grade specified.

**Prohibitive Materials** – ‘Any materials’ by which their presence in a packing of paper stock, in excess of the amount allowed, will make the pack unusable as the grade specified; or any materials that may be damaging to equipment.

# ISRI 2018 Guidelines for Paper Stock Domestic & Export Transactions – **Mixed Paper**

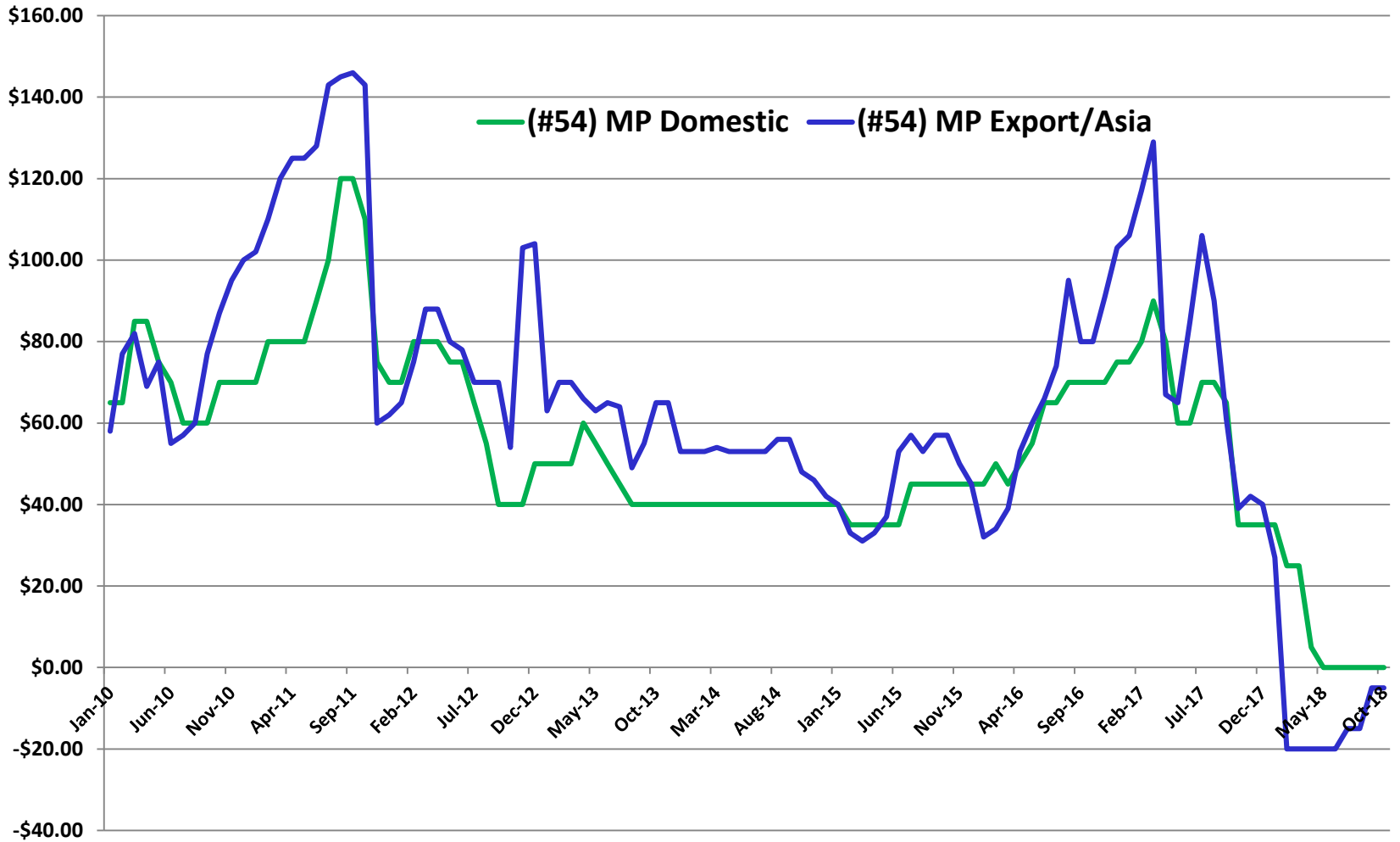
## **Mixed Paper (MP #54)**

**Paper & paperboard of various qualities not limited to type of fiber, sorted & processed at a recycling facility.**

- **Prohibitives  $\leq 2\%$**
- **Outthrows (paper)  $\leq 3\%$**



# Pulp & Paper Week Index Pricing - **Mixed Paper**



# ISRI 2018 Guidelines for Paper Stock Domestic & Export Transactions - *Newspaper*

**News (#8 ONP – no longer a paper stock guideline)**

**Sorted Clean News (#58 ONP)**

*Newspapers from source separated collection programs free of excessive ink, brown grade or non-paper material*

- **Prohibitives  $\leq 1/2\%$**
- **Outthrows (paper)  $\leq 1\%$**
- **Other Papers  $\leq 10\%$**

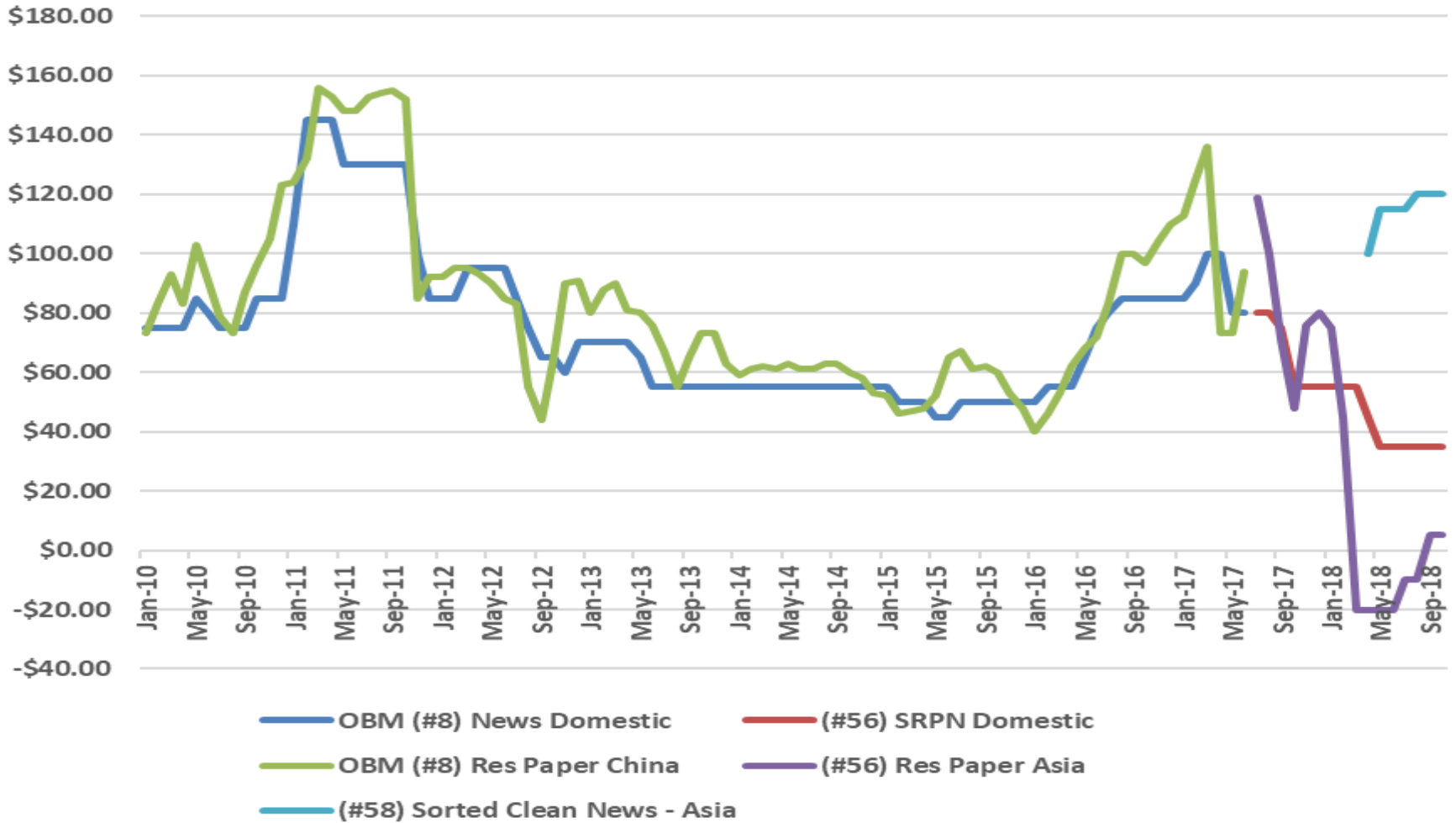
**Sorted Residential Paper & News (#56 SRPN)**

*Newspaper, junk mail, magazines, print & writing and other papers from residential recycling programs sorted & processed at a recycling facility (no brown grades)*

- **Prohibitives  $\leq 2\%$**
- **Outthrows  $\leq 3\%$**

# Pulp & Paper Week Index Pricing

## #8 ONP to SRPN to ONP



# ISRI 2018 Guidelines for Paper Stock Domestic & Export Transactions - *Cardboard*

- **Old Corrugated Containers (#11 OCC)**

*Corrugated containers having liners of either test liner or kraft.*

- **Prohibitives**

**PSI  $\leq$  1%**      **China  $\leq$  1/2%**

- **Outthrows (paper)**

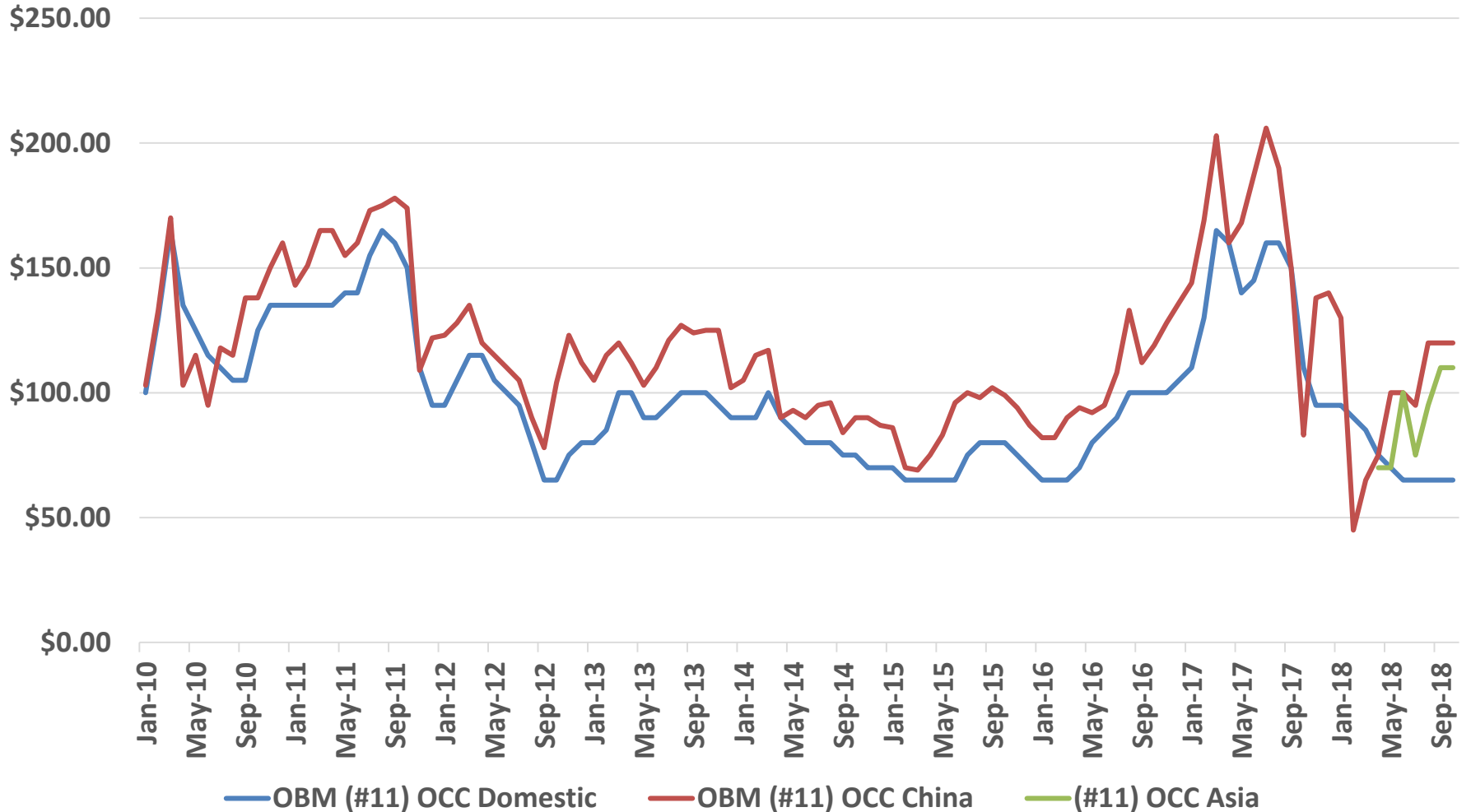
**PSI  $\leq$  5%**      **China  $\leq$  1/2% ?**





# Pulp & Paper Week Index Pricing

## Cardboard (#11) OCC



# **Part 2**

## **Post Consumer Containers**

## **Recycling Markets**

# Aluminum Cans - Novelis Feb, 2015

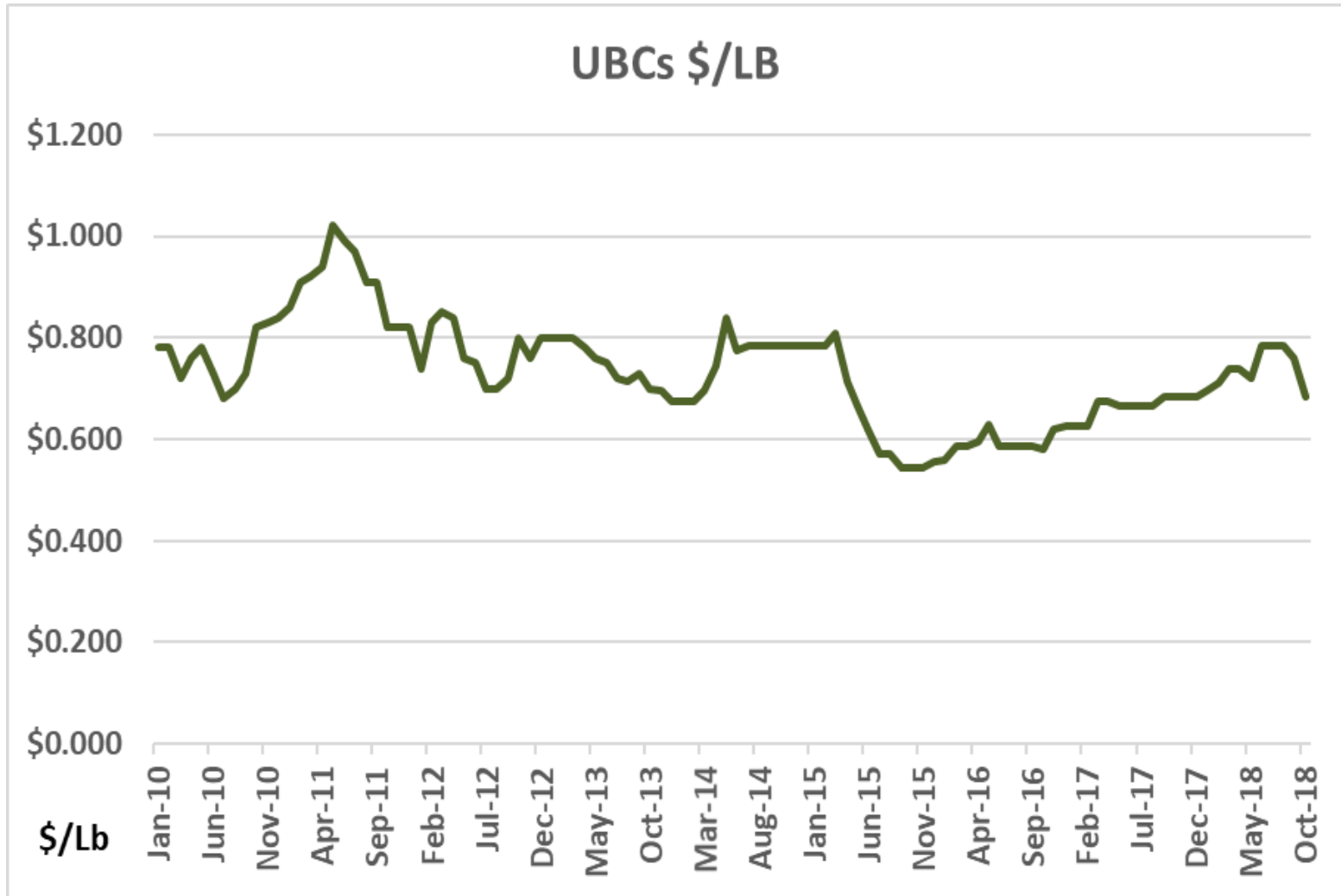
## **IMMEDIATE REJECTION**

- a) **Medical waste/Hypodermic needles**
- b) **Pressurized Aerosol cans with or without liquid**
- c) **Live ammunition/explosives**
- d) **Butane lighters**
- e) **Fertilizers/oxidizers**
- f) **Containers of liquid**
- g) **Propane/gasoline containers**
- h) **Free lead**
- i) **Radioactive sources**
- j) **Unidentifiable materials/substance**
- k) **Infestation of the UBC by insects, rodents, etc.**
- l) **Batteries (lead cell)**

## **ITEMS THAT MAY DEEM CAUSE FOR REJECTION**

- a) **Paper**
- b) **Plastic**
- c) **Iron & Steel, brass, bronze and other nonferrous metals**
- d) **Batteries**
- e) **Rocks, dirt, sand and glass**
- f) **Rubber, foil, pie pans, and wood**
- g) **Insulated beverage containers**
- h) **Excessive Moisture – Loads with moisture greater than 4% of the load weight will be subject to a weight deduction (financial penalty) or rejection.**

# Aluminum Cans



# Steel Cans



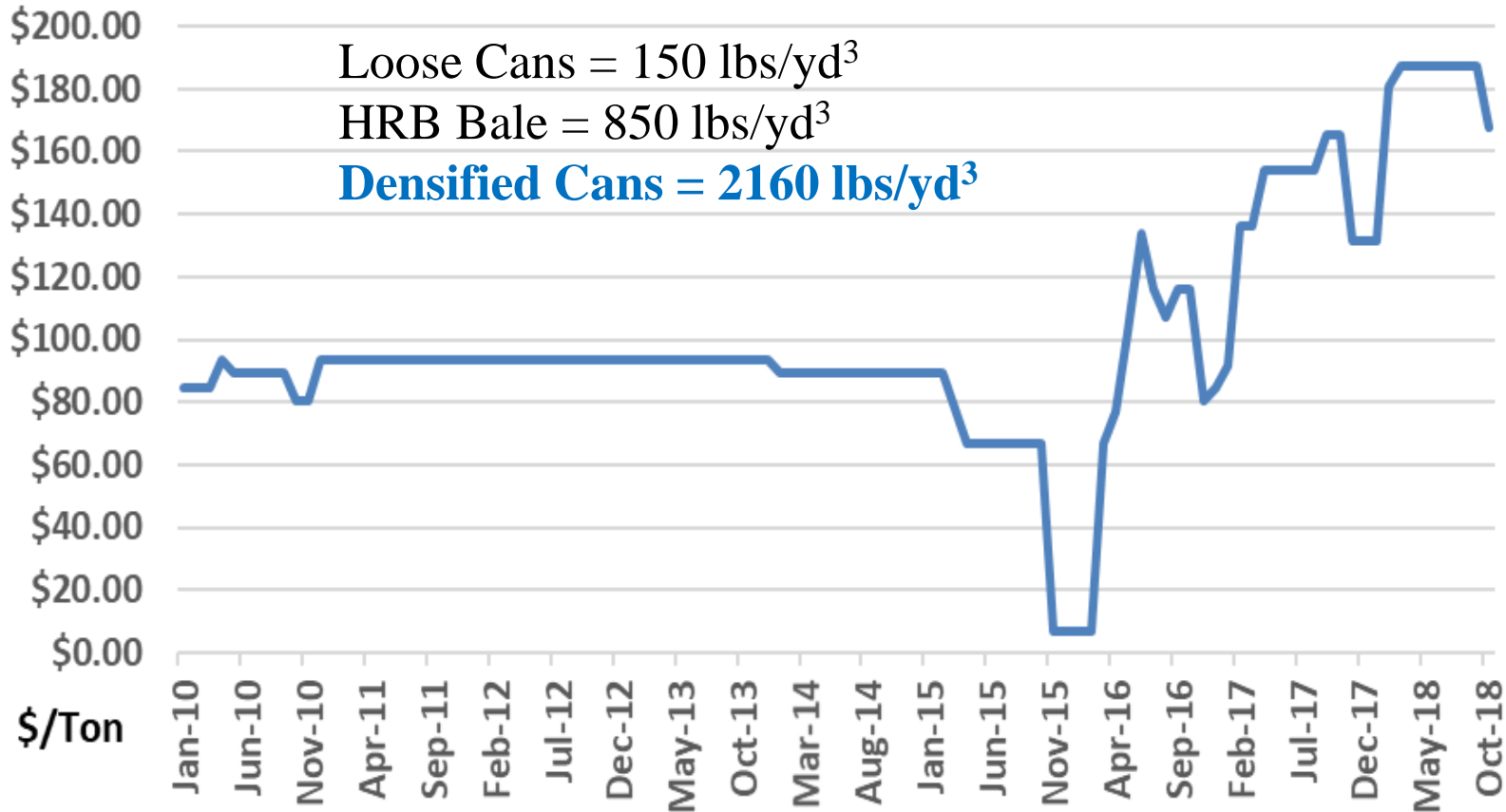
**850 lbs/yd<sup>3</sup>**  
**\$35.00/ton**



**2160 lbs/yd<sup>3</sup>**  
**\$180.00**

# Steel Cans

## Densified Steel Cans \$/Ton

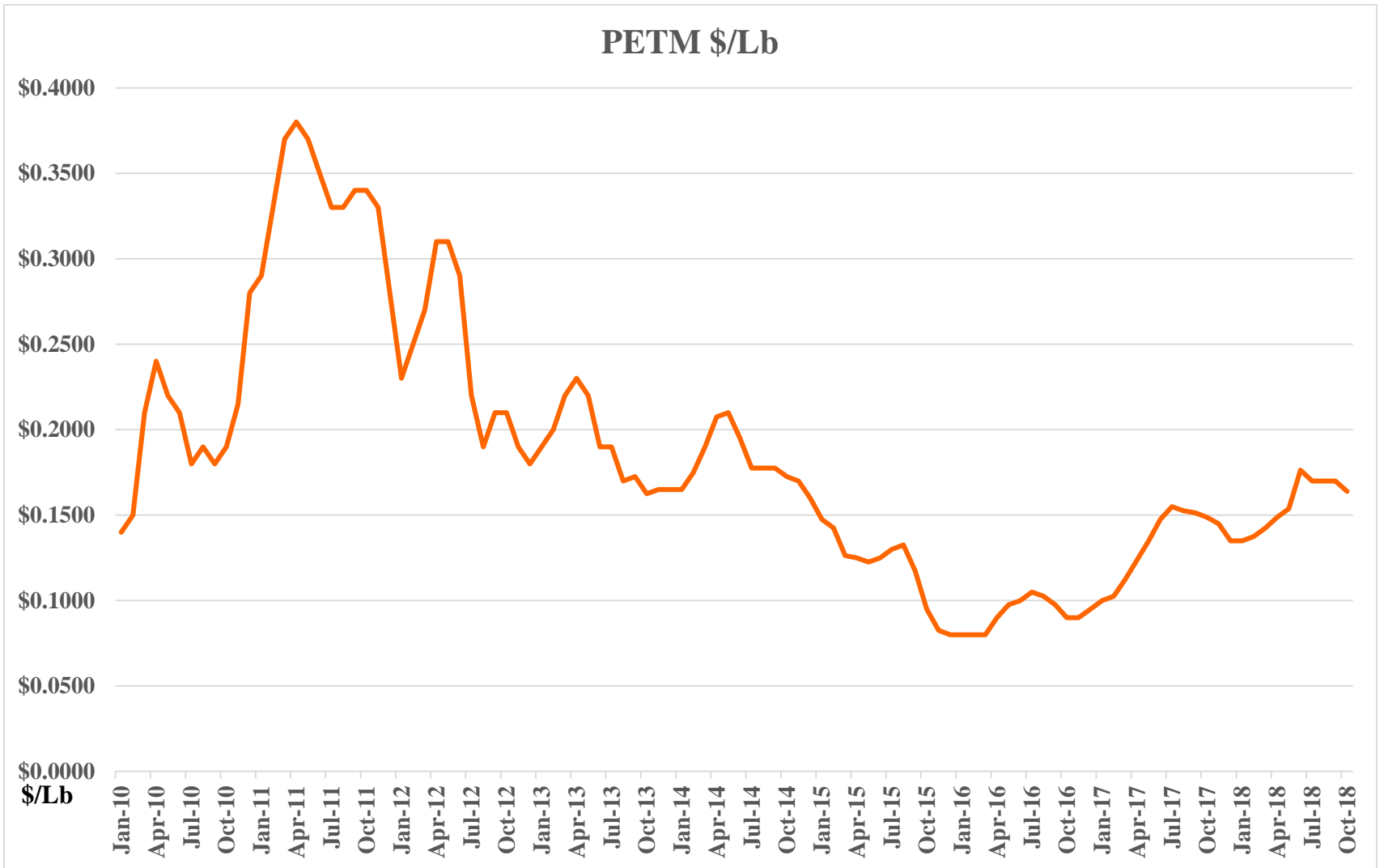


# PET Bottles

The Association of Plastic Recyclers

- **PLEASE CHECK WITH YOUR PET BUYER(S) as to their allowances for: § Other Colored PET Containers § PET Thermoforms**, e.g., microwave trays, dishes, bakery trays, deli containers, clamshell containers, drink cup
- **ALLOWABLE LEVELS OF CONTAMINANTS:** Total contaminants should not exceed the percentages, by weight, as defined by PET bale grades. § HDPE (#2) Rigid Plastic Containers § LDPE (#4) Rigid Plastic Containers § PP (#5) Rigid Plastic Containers § Aluminum § Metal containers or cans § Paper or cardboard § Liquid residues, primarily water (2% maximum allowed)
- **THE FOLLOWING CONTAMINANTS ARE NOT ALLOWED AT ANY LEVEL:** § PVC (#3) in any form § Chemically incompatible low temperature melting materials, including PS (#6) plastic and PLA plastic, as rigid or foam in any product. § Chemically compatible low temperature melting materials, such as PETG § Any plastic bags or plastic film § Wood, glass, oils and grease § Rocks, stones, mud, dirt § Medical and hazardous waste § Items containing degradable additives

# PET Containers





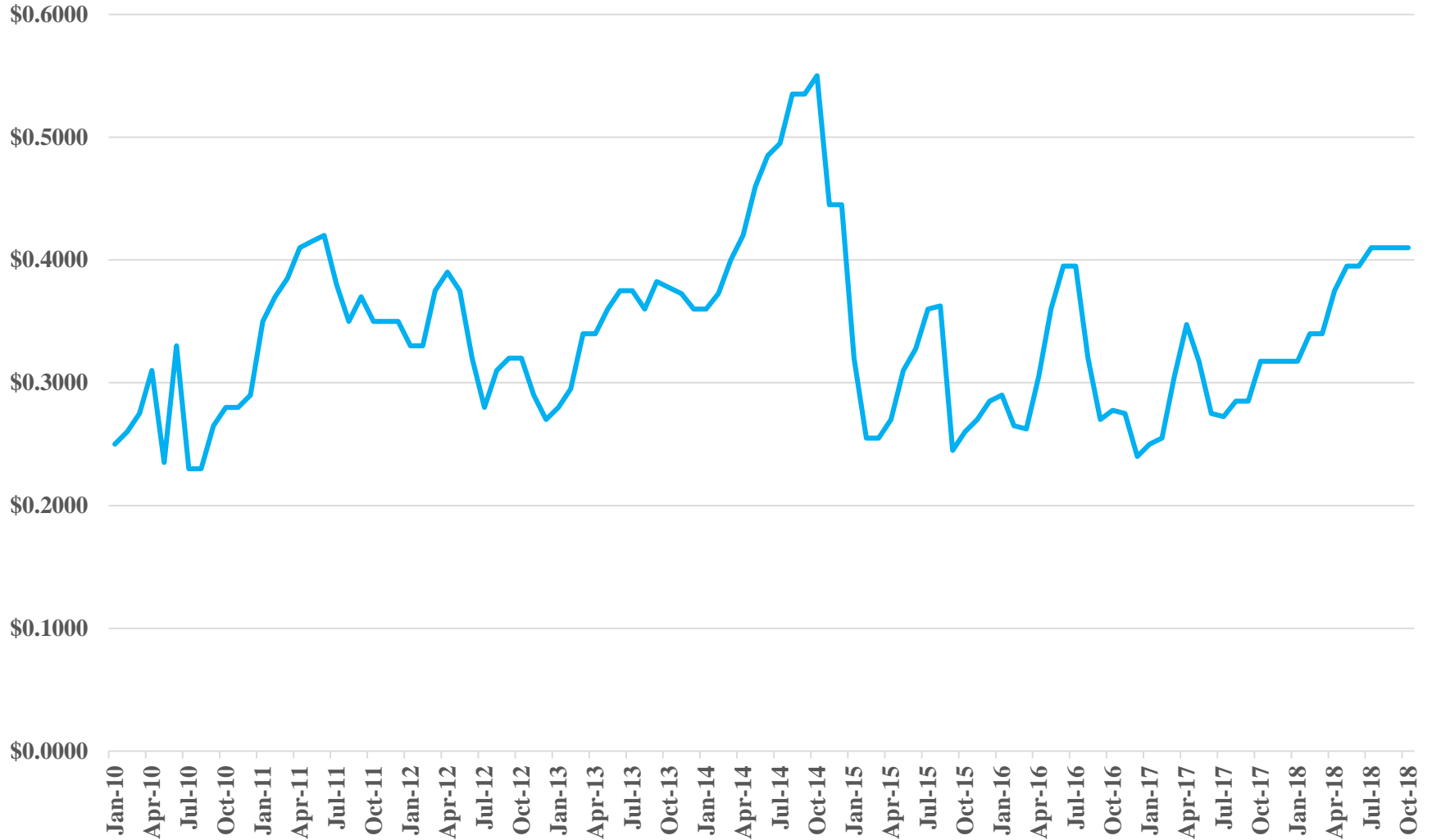
# HDPE-Natural Bottles

## The Association of Plastic Recyclers

- **ALLOWABLE LEVELS OF CONTAMINANTS:** Total contaminants should not exceed the percentages, by weight, as defined by the HDPE bale grades in chart above. **No more than 2% by weight of any of the following “individual” contaminants will be allowed:** • Non-dairy pigmented HDPE (#2 Bottles) • Paper or Cardboard • Any other non-HDPE rigid plastic container • Liquid Residues • Or packaging, including PET (#1), LDPE (#4), • Aluminum • PP (#5), PS (#6), Other (#7) • Injection-molded HDPE (#2) based cups, tubs, other wide-mouthed containers or non-bottle HDPE (#2) materials.
- **THE FOLLOWING CONTAMINANTS ARE NOT ALLOWED AT ANY LEVEL:** • Pigmented white and yellow HDPE milk jugs • Bulky Rigids • Any Plastics with PLA or Foaming Agents • Wood, glass, oils, grease • Rocks, Stones, Mud, Dirt • Medical and Hazardous Waste • Any plastic bags or film from any resin • PVC (#3) in any form • Metal

# HDPE-Natural Containers

HDPE-N \$/Lb



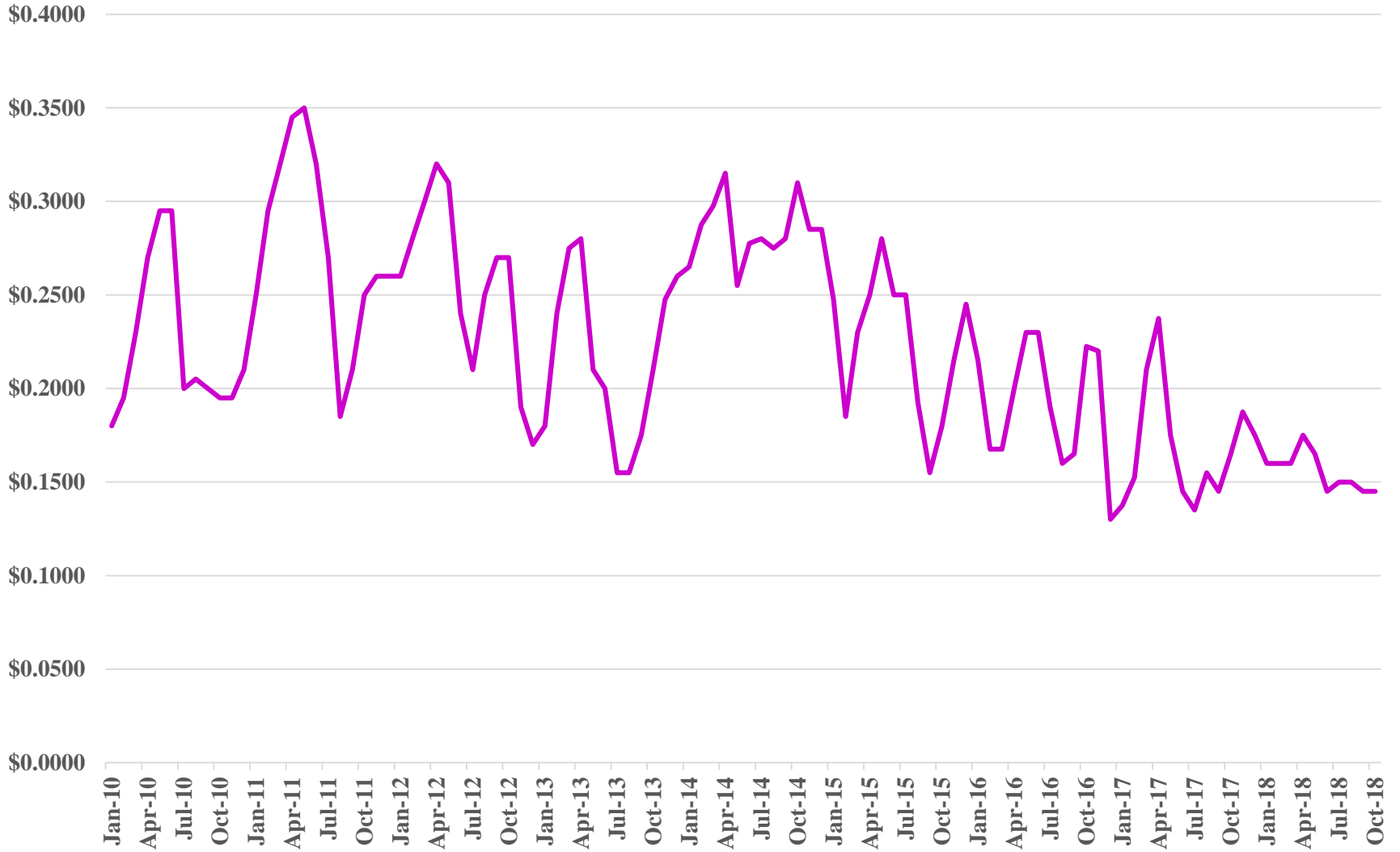
# HDPE-Colored Bottles

## The Association of Plastic Recyclers

- **ALLOWABLE LEVELS OF CONTAMINANTS:** Total contaminants should not exceed the percentages, by weight, as defined by the HDPE bale grades in chart above. **No more than 2% by weight of any of the following “individual” contaminants will be allowed:** • Any other non-HDPE rigid plastic container or packaging, including PET (#1), LDPE (#4), PP (#5), PS (#6), Other (#7) • Liquid Residues • Aluminum • Paper or Cardboard
- **THE FOLLOWING CONTAMINANTS ARE NOT ALLOWED AT ANY LEVEL:** • Bulky Rigids • Any Plastics with PLA or Foaming Agents • Rocks, Stones, Mud, Dirt • Any plastic bags or film from any resin • Metal • Wood, glass, oils, grease • Medical and Hazardous Waste • PVC (#3) in any form • HDPE (#2) motor oil or other automotive fluids.

# HDPE-Color Containers

HDPE-C \$/Lb



**Mixed Baled #3 - #7**

**Plastics Containers**

**\$0.00 to \$.02 / Lb**

*Numerous Market Failures & Interruptions*

**Polypropylene Containers (#5)**

**\$0.06 to \$0.11 / Lb**

*Fewer Markets*

# Glass Containers

## Glass Containers Delivered to Glass Recycler

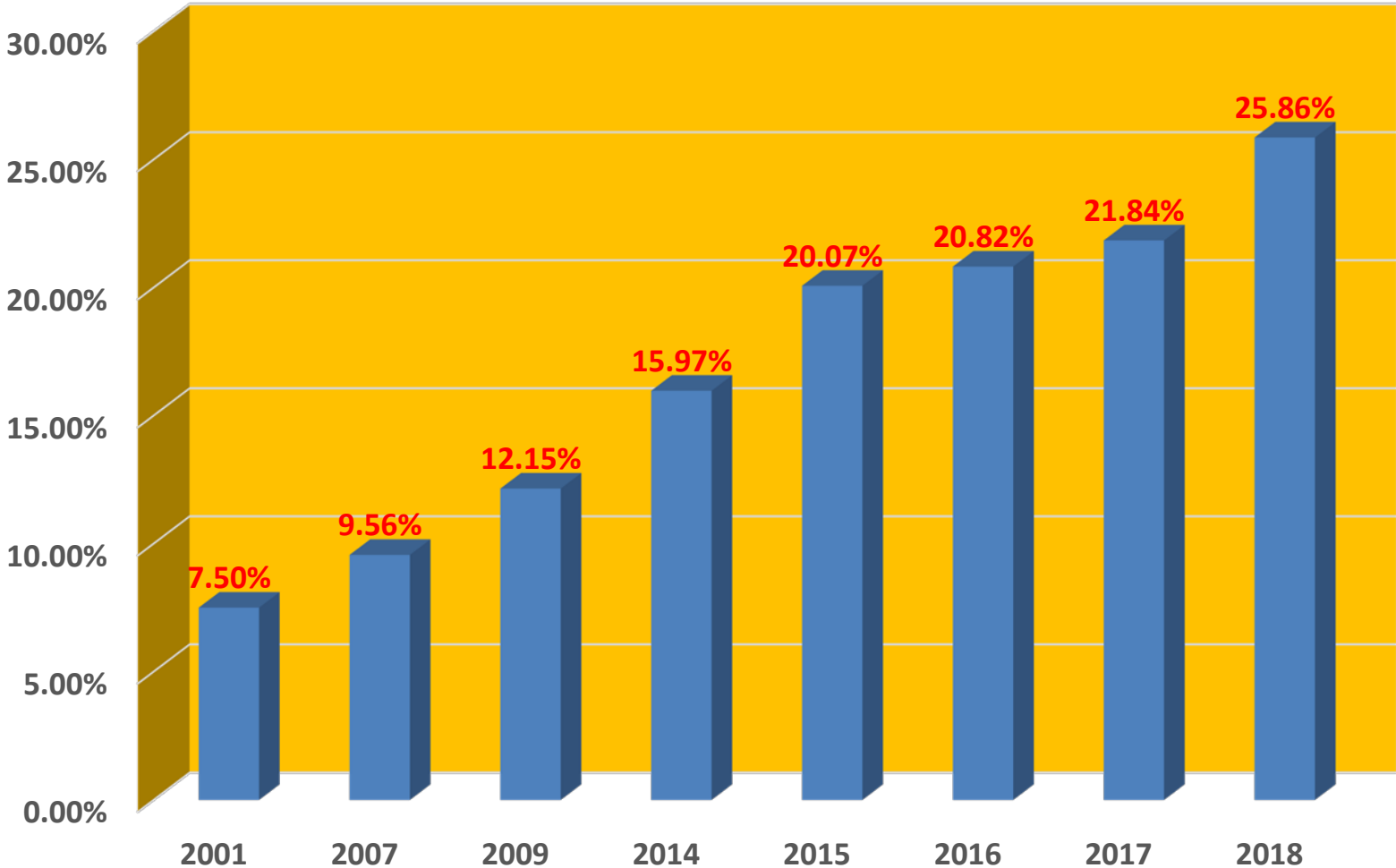


## **Part 3**

# **Residential Single Stream Recycling Contamination**

# Residential Single Stream Recycling Contamination Chicago Suburbs Annual Averages

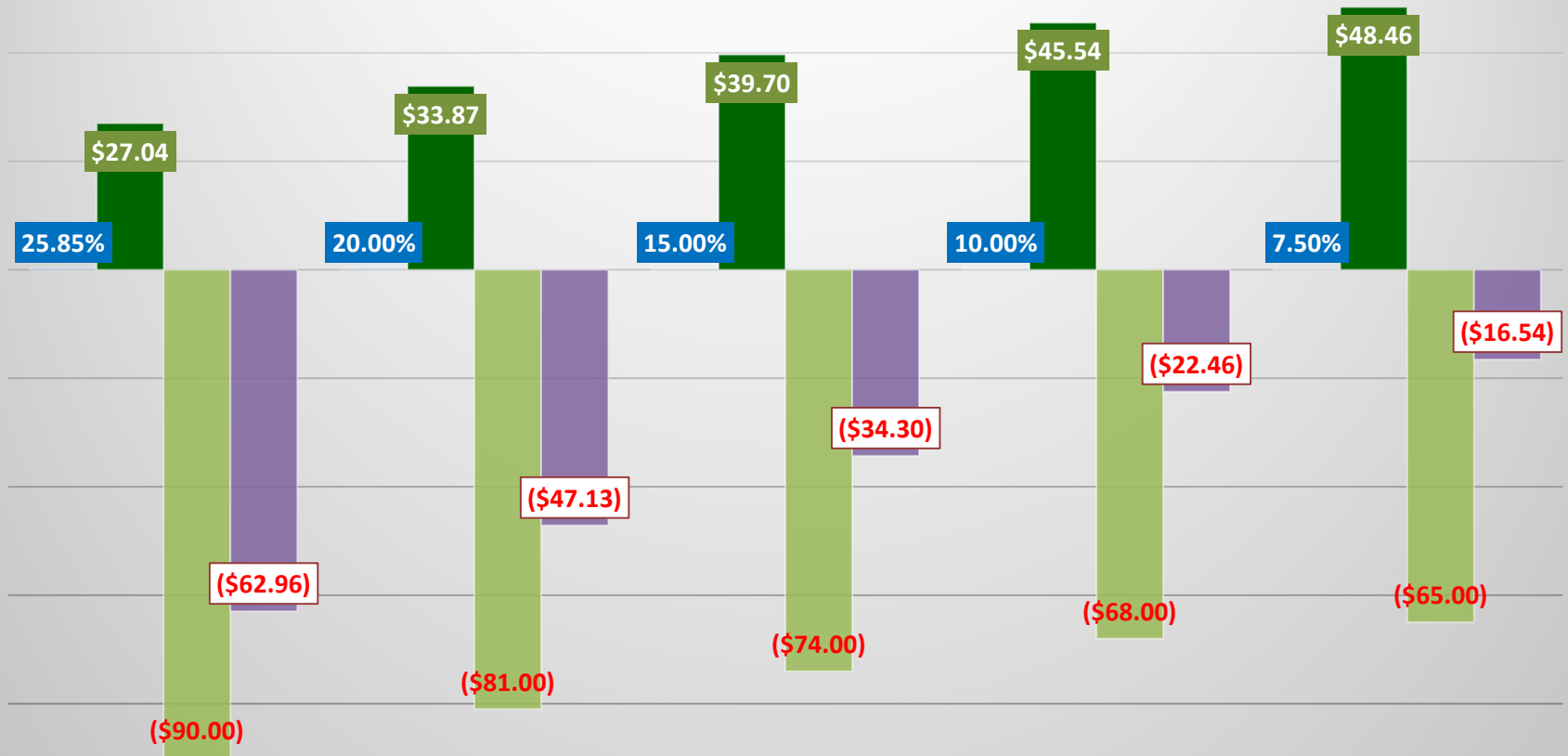
% Contamination





# Material Value With Contamination

Value vs Contamination Illustration



Process fees are in the range of \$60 to \$90 per ton - RecyclingToday Sept, 2018 - Scott Paternak

■ % Contamination   ■ Material Value   ■ Process Cost   ■ Net Value

**“Always  
Moving The  
Future Is”**

***Yoda***

