



Solvent Reclaim and Secondary Chemical Markets 2018 Hazardous Waste Workshop West Michigan AWMA

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Agenda



Explore how solvent reclaim or secondary markets can provide options for waste generators, beyond direct disposal.

Primary focus will be reclaim, brief discussion of Secondary market

Define some terms, especially around reclaim.

Explore what candidates might look like

Explore why these options should be of interest to generators

Discuss some of the facilities involved, specific to Veolia

What is the Secondary market?

- Secondary Chemical Market: A non-waste option, typically for raw materials. Involves as-is use of a product/material by a 3rd party.
- Typically for one-off situations:
 - *Expired, short dated, off spec unused materials*
 - *Obsolete raw material- process changes, etc.*
 - *Volumes vary from a few dozen drums, truck load, tanker load.*
 - *Specialty or high value materials feasible at lower volumes*
- Potential Benefits:
 - *Avoids disposal as a waste*
 - *Often at a credit, or at no charge, including outbound freight*
 - *Can offset potential revenue loss due excess/unusable inventory*
- Potential Hardships:
 - *Not all materials have a “home” in the secondary market*
 - *Some companies may have protocol that would restrict this type of management*

Secondary Market - How can Veolia Help?

- ▣ We may purchase the materials directly
 - *Solvents or reagents we may use in our nationwide operations*
 - *Across divisions...Water, Energy, Waste*
- ▣ We may be able to place directly with an end user
 - *Veolia has customers nationwide*
- ▣ We work with strategic partners in the secondary market
 - *Nationwide contacts with secondary market partners to provide a wide net*

Solvent Recycling - What is it?

Solvent recycling – 3 categories:

- As-Is Use/Beneficial reuse
 - *Material is useable as-is, without further processing.*
 - *Often ship on BOL, not waste manifest*
 - *Audit process to ensure end use is legitimate*
- Toll Recycling
 - *Spent material is shipped from a generator, run through a process to remove contaminants and meet spec, then returned to the same customer for reuse .*
 - *Typically make sense for large volumes (5000 gal+), and for more expensive solvents, but is not as closely tied to market values as.....*
- Reclaim recycling
 - *Solvents from one or several generators are combined in a batch, processed and turned into a usable solvent product for other end users.*
 - *Can be large or smaller volumes, tend to be tied more to market values of solvents.*

Solvent Recycling - Why pursue it?

Solvent reclaim can help you and your business....

- ◻ Meet waste reduction goals, or pursue most desirable disposal method
- ◻ Meet sustainability goals and initiatives
- ◻ Support cost savings initiatives
 - *Versus direct disposal*
 - *Versus continued purchase of virgin materials (Toll)*
 - *Versus virgin product where available recycled solvents can be used*
- ◻ Explore a treatment option that you may not have known about
- ◻ Enhance company image, internally and externally

Who might materials suited to reclaim?

Some common industries with reclaimable solvents:

- *Adhesive and Polymer manufacturing*
 - *Automotive Industries*
 - *Cold Solvent Cleaners*
 - *Electronics Industry*
 - *Metal Fabricators*
- *Paint and Coatings Manufacturing*
- *Pharmaceutical Manufacturing*
- *Semiconductor Manufacturing*
- *Specialty Chemical Manufacturing*
 - *...many others; maybe you!*

Solvent recycling...What does a candidate look like?

Some characteristics of good candidates:

- High solvent content
- Good recovery rate
- Separable from contaminants
- Low odor (from contaminants)
- Recurring generation (not a deal-breaker though...)
- Good volume, esp. for Toll
- Good market value – has to make sense economically for all
- *We will assist with all this to assess a prospective material!*

Solvent Recycling...Who are the Candidates?

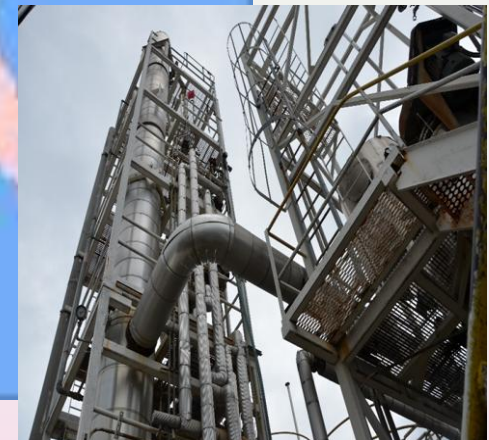
Solvents frequently and currently reclaimed at Veolia facilities are highlighted in red

- **Acetone**
- **Auto Purge Solvents**
- **Butanol**
- **Butyl Acetate**
- Dibasic ester
- Ethanol
- **Ethyl Acetate**
- Ethyl Lactate
- Ethylene Glycol
- **Isopropanol**
- Isoamyl Alcohol
- **Isopropyl Acetate**
- Isobutyl Alcohol
- **MEK**
- **MIBK**
- Methanol
- **Methylene Chloride**
- n-Ethylpyrrolidone
- Fomblin
- **n-Methylpyrrolidone**
- d-Limonene
- **Perchloroethylene**
- **PM Acetate**
- **Hexane**
- **Heptane**
- **N-Propyl Bromide**
- Propylene Glycol
- Sulfolane
- **Tetrahydrofuran**
- **Toluene**
- **1,1,1-Trichloroethane**
- **Trichloroethylene**
- **Xylene**
- **Wash Solvents**
- All Asahiklin blends
- All Vertrell blends
- All Fluoronet blends

Solvent Recycling...Where does it happen?



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- A map of the United States with color-coded regions. The locations of solvent recycling facilities are marked with orange dots. The locations are: Azusa, CA; Henderson, CO; Middlesex, NJ; and West Carrollton, OH. Each facility is also listed in a bulleted format below the map.
- **Azusa, CA**
 - **Henderson, CO**
 - **Middlesex, NJ**
 - **West Carrollton, OH**
- **Each facility:**
 - ***Has a RCRA Part-B permit***
 - ***Performs fuel blending***



Veolia West Carrollton, OH



Equipment

- *Fractional Distillation Column (2)*
- *Thin Film Evaporator*
- *Pot Still*
- *Molecular Sieve*

Processes

- *Methylene Chloride*
- *Mono-chlorobenzene*
- *Ethyl Acetate*
- *Heptane*
- *NMP*
- *Thinner*

Ships/Receives

- *Tanker Truck*
- *Container*

Veolia Middlesex, NJ



Equipment

- *Fractional Distillation Column*
- *Thin Film Evaporator*
- *Molecular Sieve*
- *4 x pot stills*

Processes

- *Thinners*
- *Acetone*
- *IPA*
- *Methylene Chloride*
- *NMP*
- *Ethyl acetate*

Ships/Receives

- *Tanker Truck*
- *Containers*
- *Railcar*

Veolia Henderson, CO



Equipment

- *Fractional Distillation Column (2)*
- *Thin Film Evaporator*
- *Pot Still*
- *Liquid – Liquid extractor*

Processes

- *Thinners*
- *NMP*
- *Methylene Chloride*
- *Iso-butyl acetate*
- *Cyclohexanone*
- *Ethyl Lactate*

Ships/Receives

- *Tanker Truck*
- *Containers*
- *Railcar*

Veolia Azusa, CA



Equipment

- *Fractional Distillation Column*
- *Thin Film Evaporator*
- *Glass Distillation Column*

Processes

- *Thinners*
- *NMP*
- *Methylene Chloride*
- *Mineral Spirits*
- *Acetone*
- *Ethanol*

Ship/Receives

- *Tanker Truck*
- *Railcar*
- *Containers*

Thank You Very Much!

Questions?