Before NGL (Natural Gas Liquids) fractionation facilities can process mixed NGL streams into sales quality products (ethane, propane, normal butane, isobutane and natural gasoline), it needs to be treated to remove hydrogen sulfide (H2S) and carbon dioxide (CO2). This process is called amine treating, also known as amine scrubbing or gas sweetening.

NGL containing H2S and CO2 are commonly referred to as sour or acid laden NGL and amine sweetening is essential to make the NGLs marketable and suitable for transportation. H2S and CO2 need to be removed because:

- H2S is an extremely poisonous, lethal and corrosive.
- CO2 when combined with water creates carbonic acid which is corrosive to pipeline infrastructure.
- CO2 also reduces the BTU value of the NGL and in concentrations of more than 2% or 3%, it becomes unmarketable.

Once the NGL stream has had the acid gases and water vapor removed, it is now classified as dry and sweet, and is suitable for sale or further processing.

Traditionally, amine sweetening is done in large amine contact towers. These are capital-intensive large-scale projects. Based on our decades of filtration and separation expertise and experience, Jonell Systems has developed a unique compact solution for pre-fractionation NGL amine contacting that reduces the footprint of the solution, cost and time to market.

Advantages of Jonell Systems’ compact NGL Pre-Fractionation Amine Sweetening Solution:

- Modular compact system that can easily be scaled
- Reduced manufacturing & commissioning times
- Field proven solution currently installed in many locations
- Design, manufacturing, project management and commissioning expertise
- Solution package includes:
  - Pre-filtration for dirt and solids removal
  - Feed coalesce for water removal
  - Compact Amine contactor/ separator
  - Amine regeneration loop
  - Post amine sweetening water wash coalescer for improved efficiency
Traditional Amine Sweetening Solution

Jonell Systems’ Compact Amine Sweetening Solution

<table>
<thead>
<tr>
<th>Compact Amine Sweetening Solution by Jonell Systems</th>
<th>Traditional large Amine contact tower solutions</th>
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<tbody>
<tr>
<td><strong>Approach</strong></td>
<td>Unique approach of reducing the size of the droplet before coalescing leading to faster mass transfer.</td>
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<tr>
<td><strong>Capital cost</strong></td>
<td>Lower due to the compact size of the vessels.</td>
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<tr>
<td><strong>Maintenance cost</strong></td>
<td>Lower due to ease of maintenance and changeouts driven by horizontal configuration and package size of the vessels.</td>
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<tr>
<td><strong>Risk management</strong></td>
<td>Ability to respond and fix the issues with carryover are easier and faster since the contactor turnover is faster (hours).</td>
</tr>
<tr>
<td><strong>Response to upset conditions</strong></td>
<td>Faster &amp; easier.</td>
</tr>
</tbody>
</table>

If you are looking to optimize your existing Amine Sweetening facility or are looking to build a new one, get in touch with Jonell systems to discuss your NGL Fractionation plant application.