Methanol
As A
Substrate

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Plant Layout
**Methanol Use Systems**

- Truck Unloading
- Storage
- Transfer
- Feed
- Monitoring
  - Safety
  - Process

**Unloading Stations**

**Locking Caps**
Signage

Above Grade or Below Grade Storage

Below Grade Storage
Thermal Flow Measurement

Flow Monitoring - Coriolis

Analyzer Utilization Terminology

- On-line
- Off-line
- In-situ
- Ex-situ

- Colorimetric
- ISE (Ion Specific Electrode)
- UV
**On-line Nitrate Interferences**

<table>
<thead>
<tr>
<th>Method</th>
<th>Colorimetric</th>
<th>ISE</th>
<th>UV</th>
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<tbody>
<tr>
<td>Grease &amp; Oils</td>
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<tr>
<td>Turbidity</td>
<td>Mercury</td>
<td>Turbidity</td>
<td></td>
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<tr>
<td>Color</td>
<td>Silver</td>
<td>Organic Matter</td>
<td></td>
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<tr>
<td>Mg and Ca</td>
<td>High ionic string</td>
<td>Some Inorg Ion</td>
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<tr>
<td>pH</td>
<td>pH</td>
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**Conformance Testing**

**IN-SITU NITRATE ANALYZERS**
**ANALYZER MOUNTING**

**Control Strategies**

- Constant MeOH Feed
- Time Step Variable MeOH Feed
- Flow Pacing
- Feed Forward
- Feed Forward with Feed Back Trim

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**Endress + Hauser Stamosens Nitrate Average (mg/L)**

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**Endress + Hauser Stamosens Nitrate Measurement (mg/L)**