Your Challenge:
You need a system to pump out sump tanks and to re-inject the drained fluid back to the pipeline. You need the system to handle particulates with a simple design that requires minimal routine maintenance. Colfax Americas offers an engineered system solution for pipeline drainage re-injection.

Solution:
The system is designed for pumping crude oil from a pipeline collection tank or sump approximately once a week; and in some instances once a month.

With its PVD hardened internal surfaces, unlike standard PD pump technologies, the Emtec-A® design allows for extended operation in services with particulates.

Results:
Moving to an engineered systems solution for pipeline drainage re-injection means leaving the design and engineering to experts. From Colfax you get a system with a simple design capable of handling particulates. You also receive a system that requires minimal routine maintenance resulting in maximized cost reduction. You ultimately get a customized solution for your critical fluid-handling need.
Performance capabilities for Emtec-A® three-screw rotary PD pump:

<table>
<thead>
<tr>
<th>Available Models</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity range @ 0 psi differential pressure</td>
<td>25,40,65,85 and 110 BPH</td>
</tr>
<tr>
<td>Suction pressure</td>
<td>145 psig</td>
</tr>
<tr>
<td>Discharge pressure</td>
<td>1160 psig (up to 1450 psig with smaller screw pitches)</td>
</tr>
<tr>
<td>Fluid viscosity</td>
<td>down to 1 cSt</td>
</tr>
<tr>
<td>Fluid temperature</td>
<td>175° F</td>
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</tbody>
</table>

The heart of the system:

Emtec-A® three-screw pump

- Less parts, simplified design
  - Easier assembly
  - Easier maintenance
  - Increased reliability
- Optimal shaft design
  - Reduced loading on screw
  - Greater volumetric efficiency
  - Reduced internal velocities control internal wear

Physical Vapor Deposition (PVD) Process:
The special material combination used on Emtec® brings together the highest possible hardness with optimal elasticity and resistance to fracture.

- Base material: Special steel
  - Hardened zone 62 HRC
  - PVD hard coating 1200 HV
  - Ceramic like edge layer 1200 HV
  - Special hardened casting 62 HRC
  - Base material

Advantages:

- Complete package to pump out sump tank to re-inject the drained fluid into the pipeline
  - Simpler overall design
  - More reliable
  - Eliminates leak points to the environment
- Smooth, non-pulsating pump flow
  - Minimizes foundation requirements
  - Eliminates source of damaging vibration
- Simple pump design with 3 rotating parts, 1 bearing and 1 mechanical seal
  - Few parts to stock and maintain
  - Manufactured with highly abrasive resistant materials and components
  - Translate into a long MTBR
- Minimal routine maintenance
  - Pre-greased for life pump bearing
  - Dry type motor/pump shaft coupling
  - Greasing only required on motor

Available scope of supply:

- 1000 gallon (~24 barrel) vertical, foot mounted tank with removable cover for clean out provision - carbon or stainless steel
- Re-injection pump package with integral suction drop pipe (gusset braced) and surface mounted discharge connection
- Suction drop pipe equipped with suction strainer and suction check valve to maintain prime of pump during idle periods
- Starter/breaker panel
- VFD controller
- Level switch controls
- Discharge pressure transmitter
- Pressure-limiting valve (external type)

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