Private Equity
Methane Solutions Summit

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KODA Emissions Management Program

- Headquarters: Denver, CO
- Focused on the acquisition, development and exploitation of oil and natural gas properties in the Rockies
- ~150,000 net acres Uinta Basin in Utah; ~77,000 net acres in Williston Basin in North Dakota

- KODA’s sustainability strategy is centered around culture
  - Strategic change in mindset across all layers of the company from sponsors to executives to boots on the ground
    - We live where we work: Improvements in air quality directly impact their families and local communities
    - Emissions reduction impacts safety: Reducing potential for explosions or inhalation of harmful emissions
    - Run an emissions program like a business: Improve revenue (“product burnt / lost is product not sold”), reduce costs, and focus on continuous improvement
  - Provide ozone cause and effect training for local KODA employees and contractors

### KODA Emissions Management Journey

<table>
<thead>
<tr>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
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</thead>
<tbody>
<tr>
<td>Conducted field-wide LDAR survey of all ~1,200 operating sites</td>
<td>Rolled out real-time situational awareness 4-gas monitors for all field personnel</td>
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<td>Field wide support for continued innovative approach</td>
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- Moved to compressed instrument air and high efficiency pilotless boilers for all multi-well pad locations
- Replaced all high-bleed pneumatic valves with low/no-bleed valves
- Installed flame and gas detection on pad facilities (fire-eye and LEL monitor tied to ESD’s)
- Utilized dual fuel system for drilling operations replacing diesel with natural gas
- Hired SLR consulting for emissions accounting

- Recently received accolades for leadership on emissions management
  - 2019 Recipient of Leadership in Ozone Reduction Awareness Award by the TriCounty Health Department
  - 2020 Recipient of Environmental Excellence Award by the Utah Board of Oil, Gas and Mining
Leak Detection & Repair (LDAR) Program

**Leak Detection**
- LDAR done by certified HSE team members with company-owned optical gas imaging camera
- Semi-annual EPA OOOOa inspections on any well drilled after 9/18/2015
- Voluntary LDAR with field-wide spot checks

**Rapid Repair**
- Seek to repair identified leaks as quickly as possible, some of which are immediate (LTM avg ~5 days)
- Perform repair verification with FLIR camera, workorder process/emails

**Data Management**
- Track data including location of leak, component leaking, date of leak, date of repair, and date of verification
- Data collected is compiled to ensure timely repair and to allow for trend analysis for more detailed root cause analysis

**Root Cause Analysis**
- Perform root cause analysis on every leak identified to determine if there is a viable solution to prevent similar leaks going forward

**LDAR inspections with owned FLIR OGI camera**

**Tracking LDAR results enables trend analysis**

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<th>Component</th>
<th>2018</th>
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<th>2020</th>
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<tbody>
<tr>
<td>Valve</td>
<td>23</td>
<td>19</td>
<td>10</td>
</tr>
<tr>
<td>Connector</td>
<td>47</td>
<td>20</td>
<td>6</td>
</tr>
<tr>
<td>Regulator</td>
<td>24</td>
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Connection leak identified with Optical Gas Imaging camera
Reducing Emissions + Generating Returns

Installation of Low/No-Bleed Pneumatic Valves

- Existing Snap heads were a continuous bleed emitting ~2 mcfd/device
- MIZER No-Bleed Pilot Valve most cost-effective solution for converting high-bleed pneumatics to low-bleed which reduces emitted methane to ~0.5 mcfd/device
- Replaced ~800 valves across the field over 6-8 months
- Total cost of $280k ($350/unit)
- **Reduced vented emission by 75% (1,200 Mcfpd) and generated annual savings of $880k**

Conversion to Compressed Instrument Air for All Pads + High Efficiency Boiler

- Conversion to compressed instrument air and high efficiency boilers allowed for derating facility classification which generated significant savings in facility design
- Compressed air provides affordable and reliable control and virtually eliminates maintenance on pneumatics
- One high efficiency boiler could replace 16 line heaters allowing for ~92% reduced footprint (120 ft² vs 1,280 ft²)
- KODA recently moved four pads with 40 wells to compressed instrument air and high efficiency boilers
- Total cost of $90k ($20k Compressed air pneumatics + $70k boiler and equipment)
- **Reduced total emissions by 15.2 tons/yr and generated annual savings of $300k**

Conversion to Dual Fuel Drilling Rig Operations

- KODA has utilized dual fuel generators that replace diesel with natural gas for their drilling operations
- On average, 50% of diesel is replaced with natural gas saving ~$2k/day savings in diesel fuel
- Existing Tier 2 generators can be retrofitted with dual fuel capability
- **Reduced NOx by 46.8 tons & CO₂ by 8.0 tons and generated savings of $450k on multi well pad (~225 days)**
## Key Take-Aways

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<tr>
<td>1</td>
<td><strong>Sustainability strategy should be centered around culture and requires a strategic change in mindset across all layers of the company</strong></td>
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<td>2</td>
<td><strong>Emissions management is a journey that requires a continuous improvement approach</strong></td>
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<td>3</td>
<td><strong>Company run LDAR programs can be managed with minimal cost and allow for voluntary inspections and increased focus on data collection and root cause analysis</strong></td>
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<td>4</td>
<td><strong>There are numerous projects that generate attractive returns while meaningfully reducing emissions</strong></td>
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