Heating Oil Case Study

Ric Hosley (Hale Hill)
Loren Nauss (Biodiesel One)
Christopher Perkins (CESE)
Rich Sulinski (AgriFuels)
Resolution Process

Suspect Non Conformance
product, equipment, process

C & P ACTIONS
Corrective & Preventive

Problem Identification – source, type

Disposition:
✓ Accept As-Is - no non-conformance
✓ Action Required – confirmed non-conformance

List Potential Cause & Effect
Determine How-to-Measure
Rank Relevant
One or more C & P Actions - high ranked

Problem Identification – status, who’s-affected
Corrective Action Plan – assign team, root-cause
Implement - approved plan
Audit Results - Root Cause Eliminated
✓ YES – close / root cause eliminated
✓ NO – open / not eliminated, more analysis
Title: Heating Oil Causes Burner Fuel Pump to Seize

Description:
Selected new customers receiving biodiesel blended oils experienced failures associated with burner pump

Source: Customer  (choices: customer, internal, supplier)
Type: Equipment  (choices: product, process, equipment)

Material Review Board:  others:
• Ric Hosley (Hale Hill)
• Loren Nauss (Biodiesel One)
• Christopher Perkins (CESE)
• Service Technician
• OEM – pump supplier
• Rich Sulinski (AgriFuels)

Disposition

Problem Definition:
a) New Customers received Biodiesel Blended Heating Oil
b) Previous fuel usage assumed to be straight petroleum product
c) Existing environment of tanks, filters, burners
d) Selected accounts experienced repeated pump failures, but majority experienced no problems

Investigation Results:
Adhesive build-up on internal housing & pump plates causes seizing

Disposition:
Confirmed Non-conformance / Corrective Actions Required
**Cause & Effort Review**

**Non Conformance**

- **B99/B100 Blendstock**
  - Spec Fuel: B1-B5 @ D396
  - CoA does not match fuel
  - Tier-I Check (pass)
  - Tier-I Plus (not known)
  - Tier-I Full (not known)

- **Biodiesel Blend Bxx**
  - Spec Fuel: B100 @ D6751
  - CoA does not match fuel
  - Tier-I Check (pass)
  - Tier-I Plus (not known)
  - Tier-I Full (not known)
  - D396 Tier-I
  - D7467 Tier-I
  - Fuel @ Tank
  - Fuel @ Pump

- **Petroleum Blendstock**
  - Spec Fuel: B1-B5 @ D396
  - CoA does not match fuel
  - Tier-I Check (pass)
  - Tier-I Plus (not known)
  - Tier-I Full (not known)

**Equipment**

- **Pump Type**
- **Pump Temp**
- **Filters /Screens**
- **Tank Environment**

**Additives**

- **Additive Brand**
- **Additive Interaction**
- **Additive Type**

**Process**

- **Seller Certification**
- **Buyer Screening**
- **Blender (anti microbial)**
- **B100 Producer (ox-stability)**
- **Petroleum Rack (heat oil plus)**

**ANALYSIS**

*If It Can’t Be Measured It Can’t Be Corrected*
## Resulting Corrective & Preventive Actions

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<th>OPEN</th>
<th>Title</th>
<th>Reason</th>
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<th>Status</th>
<th>Root Cause</th>
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</table>
C&P Action Detail

**Problem Identification**

**Title:** Filters & Screens causes Pump Failure

**Description:**
Evaluate Filters for potential causes of failure

**Affected Area:**
Distributor, Customer, OEM

**Type:** product

**Status:** reject

**Reason:** identify problem, plan, implement, audit, reject, close

**Establish Corrective Action Plan**

**Team:** Ric Hosley (Hale Hill), Loren Nauss (Biodiesel One), Christopher Perkins (CESE)

Service Technician, OEM

**Problem Analysis:** xxxx

**Root Cause:** xxxx

**Recommended Action:** xxxx

**Implementation**

**Action Taken:** xxx

**Audit Results**

**Root Cause Eliminated:** Y / N

**Audit Results:** xxxx

**Audit Recommendations:** xxxxx
Conclusions

Case Next Steps

Supply Chain Recommendation
  • rich to provide
  • 
  •
Q & A