SFM Reliability Solutions

Lubrication Based Reliability Consulting

Tire Manufacturing Facility

PROJECT SUMMARY REPORT

RESERVOIR CLEANING / OIL FILTRATION

Various Tire Press Hydraulic Systems

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This report documents the Oil Evacuation, Oil Purification, and Reservoir Cleaning Service performed on the (4) hydraulic systems at a large Tire manufacturer. There were two service technicians performing the work. This report documents the objectives, scope, performance, cleanliness specifications, project logs, photo documentation, and safety while performing the work.

Benefits:

- Peace of Mind that the lube oil systems have been cleaned to industry-accepted standards.
- Peace of Mind that the oil is clean and dry due to required specifications.
- Improved long-term reliability of oil systems due to cleaner systems and cleaner oil.

Primary Objectives:

- ***To complete all work focusing on Goal Zero with no Safety Incidents or Injuries!***
- To work with Tire Manufacturer as a team to provide detailed planning and procedures in advance of service execution.
- To provide reservoir and oil cleaning and dehydration on (4) hydraulic systems.
- To provide that the lubricating oil systems and Hydraulic Oil product meets the requirements set forth by Tire Manufacturer.

Overall Scope:

- To provide Project Management, technical assistance, labor and equipment to perform the flushing service.
- To document that the oil and system cleanliness as required has been achieved.

PERFORMANCE DOCUMENTATION

All objectives were met as agreed upon. Approved T&M sheets, project, particle counts and photo documentation will follow in this document.

Oil Evacuation, Reservoir Cleaning, Oil Filtration/De-Hydration

Safety

Management and technicians completed the service without any safety recordable.

Daily Activities

- October 9 –
  - Offloaded equipment and set up in containment.
  - Hooked up Dehydrator and installed clean filter.
  - Drained and cleaned each tire press hydraulic reservoir into one common tote tank.
  - Began circulating hydraulic oil through dehydrator and filtration system (one system).
  - Cleaned each reservoir and took pictures.
  - Continued filtering and dehydrating oil until it met customer's desired specification of 18/16/17 ISO particle count and oil was clear

General Equipment Used to Perform Oil Evacuation, Reservoir Cleaning, and Oil Filtration/Dehydration on (4) Tire Press Hydraulic Systems

- One 3 gpm Dehydrator with Post Filter.
- One 330-gallon storage tote.
- Temporary hoses to connect to dehydrator to 330-gallon storage tote.
- Squeegees, Rags, Oil Pads

Particle Count Progress
F25-26: 21/17/12
F17-18: too wet to get ISO count
I11-12: 22/21/18
Final return to Reservoir: 18/16/17

OIL CLEANLINESS PARTICLE COUNT FINAL RESULTS

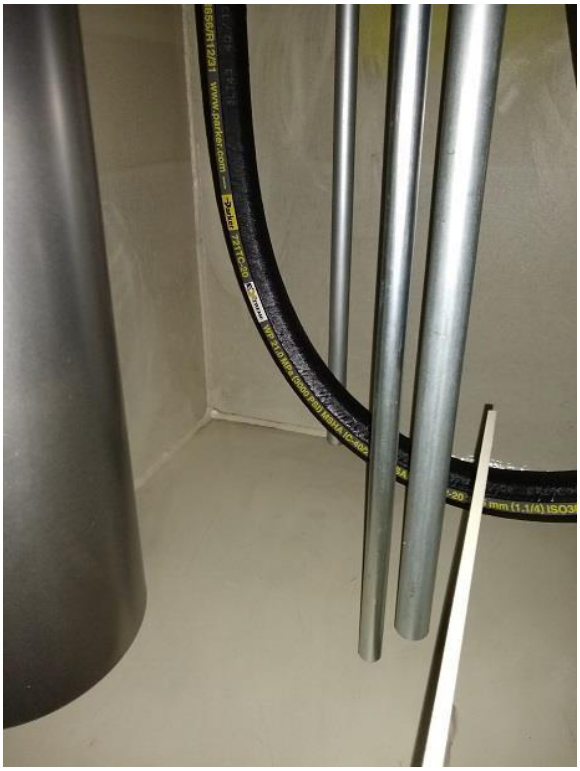
System	Oil Type	Oil Cleanliness Criteria	Final Oil Particle Count
4 Tire Press Hydraulic Systems	**ISO 46 Hydraulic Oil**	**ISO Code 17/15/12**	**ISO Code 18/16/15**

The entire project including set-up, Oil Flushing, final screening, and break down took 11 hours. We were trying to reach 17/15/12 IOS particle count. But were unable to reach it within the one day time period. We would have had to charge additional time if we continued to filter the oil. Therefore, Tire Manufacturer accepted the 18/16/15 final particle count.

The (4) Tire Press Hydraulic Reservoirs and oil were cleaned to the above specification and approved clean by Tire Manufacturer representative. The "Final Acceptance" documents for the system, particle count, project logs, and photo documentation are included in this report.

11-12A

11-12B



11-12C

11-12D

11-12F

11-12H

17-18A

17-18B

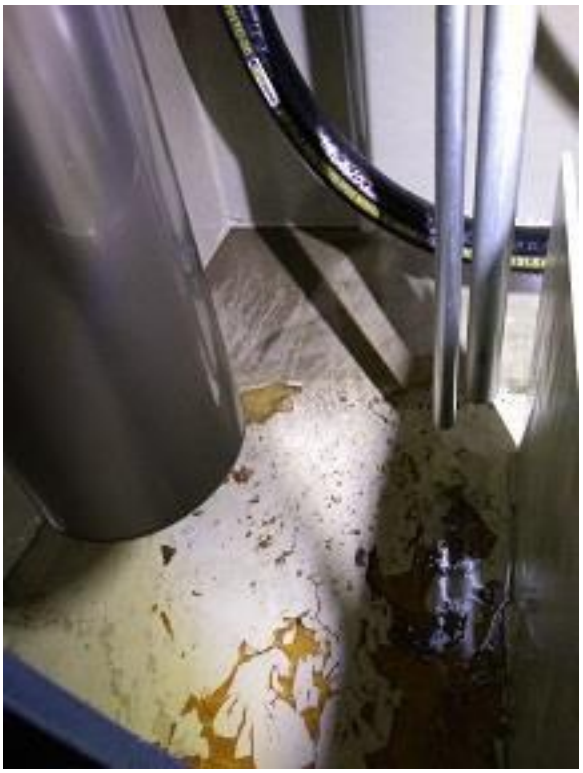
17-18C

17-18D

17-18E

17-18F

25-26A



25-26B

25-26C

25-26D

25-26E

25-26F

F17-18G

F17-18H