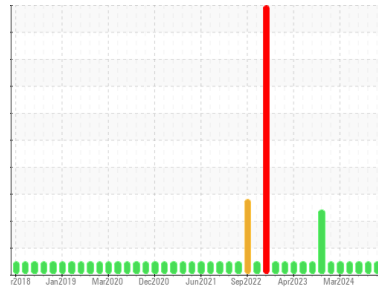




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
CRANE - T LANGE
Machine Id
T LANGE MAIN ENGINE
Component
Main Engine
Fluid
CHEVRON DELO 400 LE 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|--------------------|-------------|-------------|------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | | WC0892637 | WC0922385 | WC0892640 |
| Sample Date | Client Info | | | 03 Jul 2024 | 31 May 2024 | 16 Apr 2024 |
| Machine Age | hrs | Client Info | | 37733 | 37245 | 36508 |
| Oil Age | hrs | Client Info | | 500 | 500 | 500 |
| Oil Changed | Client Info | | | Changed | Changed | Changed |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---------------|-----------|--------|------------|----------------|----------|----------|
| Fuel | WC Method | >4.0 | | <1.0 | <1.0 | <1.0 |
| Water | WC Method | >0.1 | | NEG | NEG | NEG |
| Glycol | WC Method | | | NEG | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|-------------|-----|-------------|------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185m | >75 | 8 | 5 | 4 |
| Chromium | ppm | ASTM D5185m | >8 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | >3 | <1 | 0 | <1 |
| Silver | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >15 | 4 | 3 | 3 |
| Lead | ppm | ASTM D5185m | >18 | 2 | 3 | 0 |
| Copper | ppm | ASTM D5185m | >80 | 3 | 3 | 2 |
| Tin | ppm | ASTM D5185m | >14 | <1 | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | <1 | 0 |
| Cadmium | ppm | ASTM D5185m | | 0 | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|------------|-----|-------------|------------|-------------|----------|----------|
| Boron | ppm | ASTM D5185m | | 294 | 352 | 444 |
| Barium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | 126 | 129 | 127 |
| Manganese | ppm | ASTM D5185m | | 0 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | | 638 | 702 | 699 |
| Calcium | ppm | ASTM D5185m | | 1508 | 1661 | 1610 |
| Phosphorus | ppm | ASTM D5185m | 1200 | 676 | 751 | 748 |
| Zinc | ppm | ASTM D5185m | 1300 | 843 | 904 | 872 |
| Sulfur | ppm | ASTM D5185m | 3200 | 2316 | 2923 | 2969 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|--------------|-----|-------------|------------|----------|----------|----------|
| Silicon | ppm | ASTM D5185m | >20 | 5 | 6 | 6 |
| Sodium | ppm | ASTM D5185m | >75 | 2 | 2 | 2 |
| Potassium | ppm | ASTM D5185m | >20 | 2 | 1 | 0 |

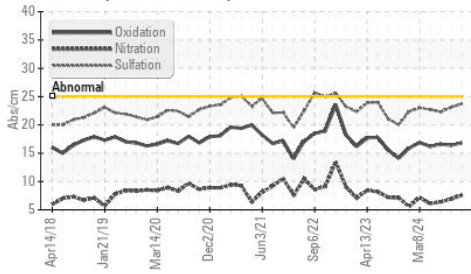
| INFRA-RED | | method | limit/base | current | history1 | history2 |
|-----------|----------|-------------|------------|-------------|----------|----------|
| Soot % | % | *ASTM D7844 | | 0.5 | 0.4 | 0.2 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 7.6 | 6.9 | 6.4 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 23.7 | 23.1 | 22.3 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|-------------------|----------|-------------|------------|-------------|----------|----------|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 16.8 | 16.4 | 16.6 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.6 | 8.2 | 8.9 | 9.4 |

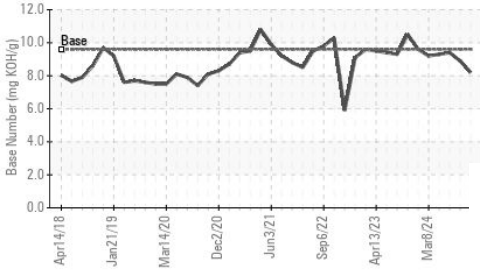


OIL ANALYSIS REPORT

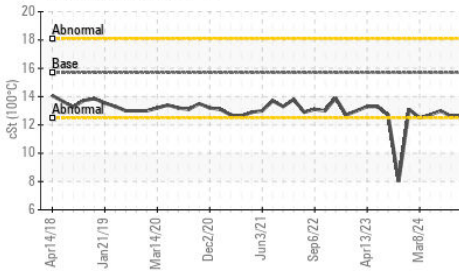
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C

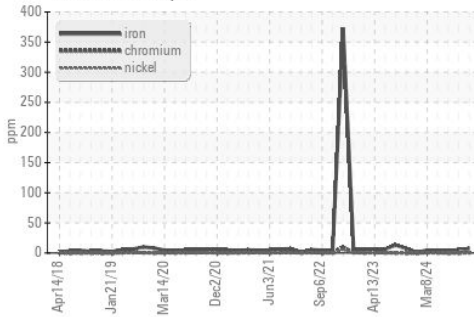


| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | NONE | NONE |
| Silt | scalar | *Visual | NONE | NONE | NONE |
| Debris | scalar | *Visual | NONE | NONE | NONE |
| Sand/Dirt | scalar | *Visual | NONE | NONE | NONE |
| Appearance | scalar | *Visual | NORML | NORML | NORML |
| Odor | scalar | *Visual | NORML | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.1 | NEG | NEG |
| Free Water | scalar | *Visual | | NEG | NEG |

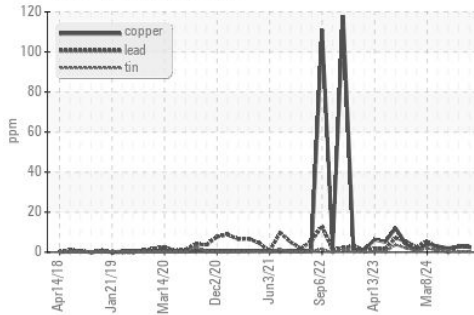
| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Visc @ 100°C | cSt | ASTM D445 | 15.7 | 12.6 | 12.6 |

GRAPHS

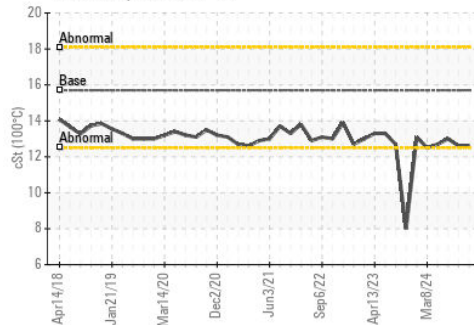
Ferrous Alloys



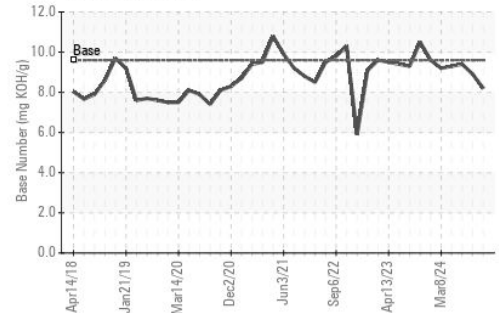
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : WC0892637
 Lab Number : 06241250
 Unique Number : 11130084
 Test Package : FLEET

Received : 18 Jul 2024
 Tested : 19 Jul 2024
 Diagnosed : 19 Jul 2024 - Wes Davis

ASSOCIATED TERMINALS - CRANE

CONVENT, LA
 US 70723

Contact: GREG JOSEY
 gjosey@associatedterminals.com

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

T:
 F: (225)562-3515