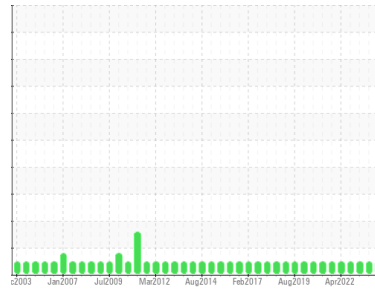




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area

WCR [10000107406]

Machine Id

DIXNHPU1

Component

Hydraulic System

Fluid

PETRO CANADA HYDREX AW 32 (300 LTR)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | WC0908349 | WC0794333 | WC0794324 |
| Sample Date | Client Info | | 12 Mar 2024 | 17 Oct 2023 | 01 Mar 2023 |
| Machine Age | hrs | Client Info | 169814 | 169789 | 166283 |
| Oil Age | hrs | Client Info | 51131 | 51108 | 47602 |
| Oil Changed | Client Info | | Changed | Filtered | Filtered |
| Sample Status | | | NORMAL | NORMAL | NORMAL |

CONTAMINATION

| | method | limit/base | current | history1 | history2 |
|-------|-----------|------------|------------|----------|----------|
| Water | WC Method | >0.05 | NEG | NEG | NEG |

WEAR METALS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|-------------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185(m) >30 | 0 | 0 | 0 |
| Chromium | ppm | ASTM D5185(m) >2 | 0 | 0 | 0 |
| Nickel | ppm | ASTM D5185(m) >2 | 2 | 2 | 2 |
| Titanium | ppm | ASTM D5185(m) | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | 0 | <1 | 0 |
| Aluminum | ppm | ASTM D5185(m) >2 | 0 | <1 | 0 |
| Lead | ppm | ASTM D5185(m) >10 | 0 | <1 | <1 |
| Copper | ppm | ASTM D5185(m) >25 | <1 | <1 | <1 |
| Tin | ppm | ASTM D5185(m) >20 | 0 | <1 | 0 |
| Antimony | ppm | ASTM D5185(m) | 0 | 0 | 0 |
| Vanadium | ppm | ASTM D5185(m) | 0 | 0 | 0 |
| Beryllium | ppm | ASTM D5185(m) | 0 | 0 | 0 |
| Cadmium | ppm | ASTM D5185(m) | <1 | <1 | <1 |

ADDITIVES

| | method | limit/base | current | history1 | history2 |
|------------|--------|-------------------|--------------|----------|----------|
| Boron | ppm | ASTM D5185(m) 0 | 0 | <1 | <1 |
| Barium | ppm | ASTM D5185(m) 0 | <1 | <1 | 0 |
| Molybdenum | ppm | ASTM D5185(m) 0 | 0 | 0 | 0 |
| Manganese | ppm | ASTM D5185(m) 0 | 0 | 0 | 0 |
| Magnesium | ppm | ASTM D5185(m) 0 | <1 | <1 | <1 |
| Calcium | ppm | ASTM D5185(m) 50 | 138 | 136 | 135 |
| Phosphorus | ppm | ASTM D5185(m) 330 | 245 | 239 | 251 |
| Zinc | ppm | ASTM D5185(m) 430 | 321 | 335 | 326 |
| Sulfur | ppm | ASTM D5185(m) 760 | 629 | 638 | 626 |
| Lithium | ppm | ASTM D5185(m) | <1 | <1 | <1 |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|-------------------|--------------|----------|----------|
| Silicon | ppm | ASTM D5185(m) >25 | 2 | 2 | 2 |
| Sodium | ppm | ASTM D5185(m) | <1 | <1 | 0 |
| Potassium | ppm | ASTM D5185(m) >20 | <1 | 0 | 0 |

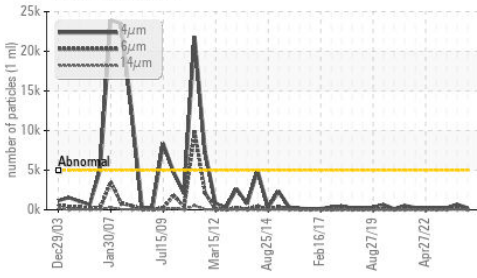
FLUID CLEANLINESS

| | method | limit/base | current | history1 | history2 |
|-----------------|--------------|------------|-----------------|----------|----------|
| Particles >4µm | ASTM D7647 | >5000 | 239 | 694 | 248 |
| Particles >6µm | ASTM D7647 | >1300 | 68 | 292 | 93 |
| Particles >14µm | ASTM D7647 | >160 | 7 | 42 | 11 |
| Particles >21µm | ASTM D7647 | >40 | 2 | 12 | 3 |
| Particles >38µm | ASTM D7647 | >10 | 0 | 1 | 1 |
| Particles >71µm | ASTM D7647 | >3 | 0 | 0 | 0 |
| Oil Cleanliness | ISO 4406 (c) | >19/17/14 | 15/13/10 | 17/15/13 | 15/14/11 |

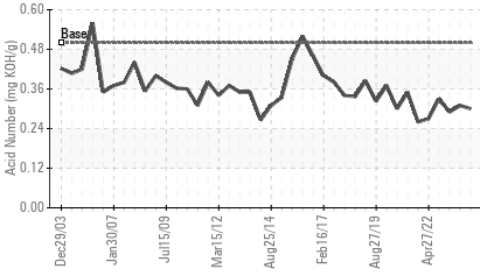


OIL ANALYSIS REPORT

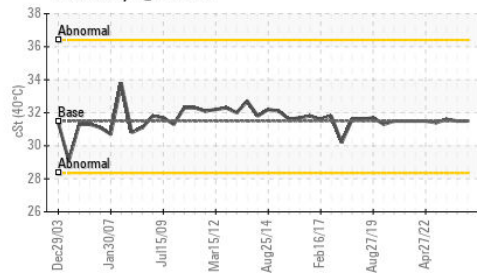
Particle Trend



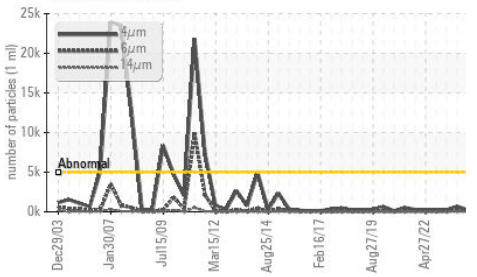
Acid Number



Viscosity @ 40°C



Particle Trend



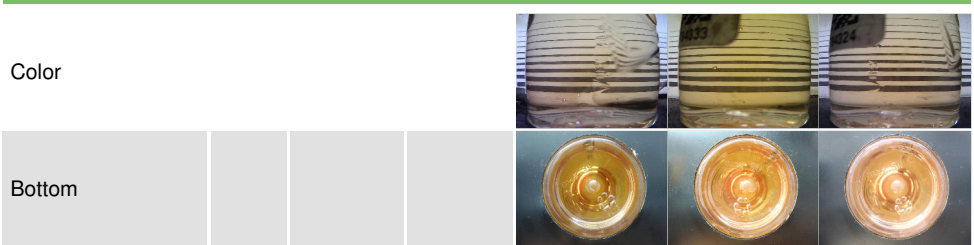
FLUID DEGRADATION

| method | limit/base | current | history1 | history2 | |
|------------------|---------------------|---------|-------------|--------------|-------|
| Acid Number (AN) | mg KOH/g ASTM D974* | 0.50 | 0.30 | 0.31 | 0.29 |
| VISUAL | | | | | |
| 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* | >0.05 | NEG | NEG |
| Free Water | scalar | Visual* | | NEG | NEG |

FLUID PROPERTIES

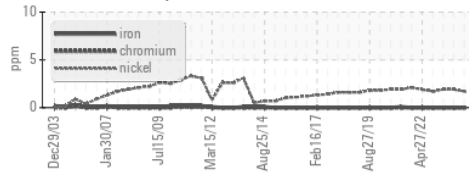
| method | limit/base | current | history1 | history2 | |
|-------------|-------------------|---------|-------------|----------|------|
| Visc @ 40°C | cSt ASTM D7279(m) | 31.5 | 31.5 | 31.5 | 31.6 |

SAMPLE IMAGES

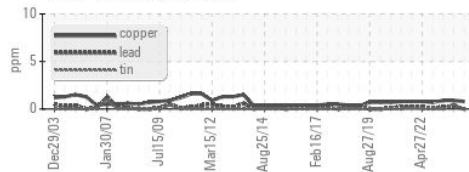


GRAPHS

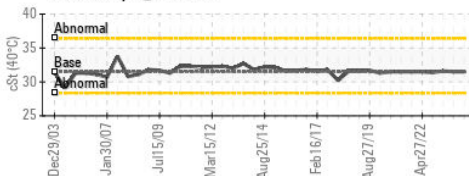
Ferrous Alloys



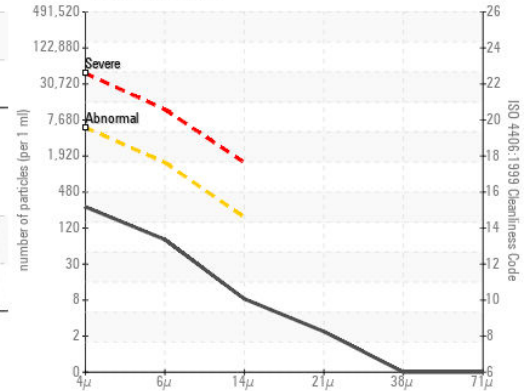
Non-ferrous Metals



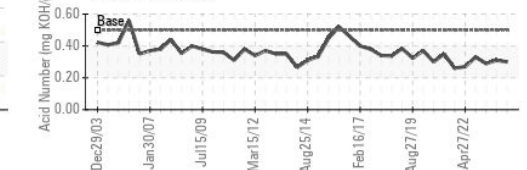
Viscosity @ 40°C



Particle Count



Acid Number



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
 Sample No. : WC0908349
 Lab Number : 02627014
 Unique Number : 5760146
 Test Package : IND 2

ALGONQUIN POWER SYSTEMS INC.
 354 DAVIS ROAD
 OAKVILLE, ON
 CA L6J 2X1

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.

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 F: x: