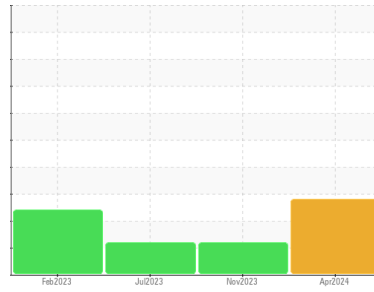




OIL ANALYSIS REPORT

Sample Rating Trend



DIRT



Area
BARTO
 Machine Id
7032 [BARTO]
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is a moderate amount of fuel present in the oil. Elemental level of silicon (Si) above normal.

Fluid Condition

Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORMATION

| method | limit/base | current | history1 | history2 | |
|---------------|-------------|--------------------|---------------|-------------|--------|
| Sample Number | Client Info | SBP0006494 | SBP0005881 | SBP0004379 | |
| Sample Date | Client Info | 17 Apr 2024 | 10 Nov 2023 | 12 Jul 2023 | |
| Machine Age | mls | Client Info | 608755 | 582897 | 559198 |
| Oil Age | mls | Client Info | 25858 | 23699 | 25000 |
| Oil Changed | Client Info | Changed | Changed | Changed | |
| Sample Status | | ABNORMAL | ABNORMAL | ABNORMAL | |

CONTAMINATION

| method | limit/base | current | history1 | history2 | |
|--------|------------|---------|------------|----------|-----|
| Water | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | WC Method | | NEG | NEG | NEG |

WEAR METALS

| method | limit/base | current | history1 | history2 | | |
|----------|------------|-------------|----------|--------------|----|----|
| Iron | ppm | ASTM D5185m | >80 | 41 | 77 | 64 |
| Chromium | ppm | ASTM D5185m | >5 | 2 | 2 | 2 |
| Nickel | ppm | ASTM D5185m | >2 | <1 | <1 | <1 |
| Titanium | ppm | ASTM D5185m | | <1 | <1 | 0 |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >30 | 2 | 2 | 2 |
| Lead | ppm | ASTM D5185m | >30 | 3 | 3 | 3 |
| Copper | ppm | ASTM D5185m | >150 | 2 | 2 | 2 |
| Tin | ppm | ASTM D5185m | >5 | 2 | 2 | 2 |
| Vanadium | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | <1 | <1 | 0 |

ADDITIVES

| method | limit/base | current | history1 | history2 | | |
|------------|------------|-------------|----------|--------------|------|------|
| Boron | ppm | ASTM D5185m | 0 | 5 | 15 | 2 |
| Barium | ppm | ASTM D5185m | 0 | <1 | 0 | 1 |
| Molybdenum | ppm | ASTM D5185m | 60 | 57 | 48 | 54 |
| Manganese | ppm | ASTM D5185m | 0 | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 1010 | 861 | 775 | 833 |
| Calcium | ppm | ASTM D5185m | 1070 | 1095 | 1107 | 1214 |
| Phosphorus | ppm | ASTM D5185m | 1150 | 922 | 809 | 955 |
| Zinc | ppm | ASTM D5185m | 1270 | 1171 | 1090 | 1172 |
| Sulfur | ppm | ASTM D5185m | 2060 | 2780 | 3062 | 3071 |

CONTAMINANTS

| method | limit/base | current | history1 | history2 | | |
|-----------|------------|-------------|----------|--------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >20 | ▲ 31 | 5 | 5 |
| Sodium | ppm | ASTM D5185m | | 6 | <1 | <1 |
| Potassium | ppm | ASTM D5185m | >20 | 2 | 2 | 1 |
| Fuel | % | ASTM D3524 | >5 | ▲ 6.5 | ▲ 6.4 | ▲ 7.5 |

INFRA-RED

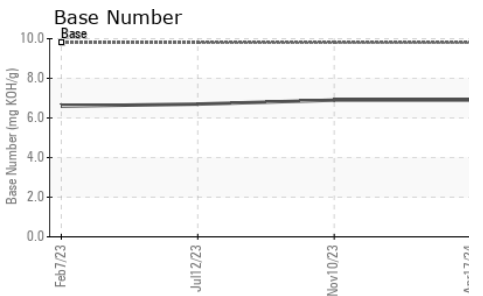
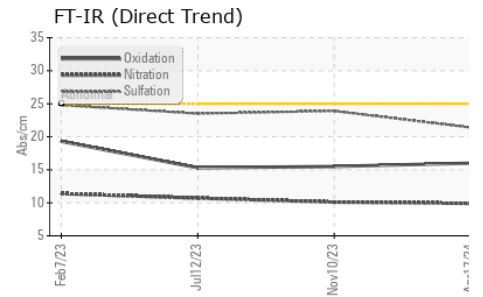
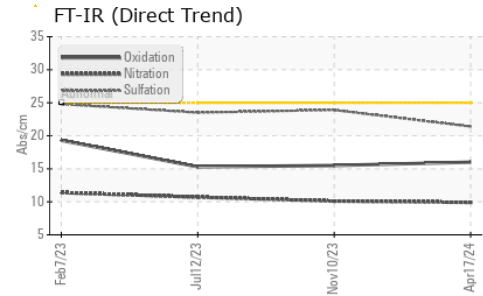
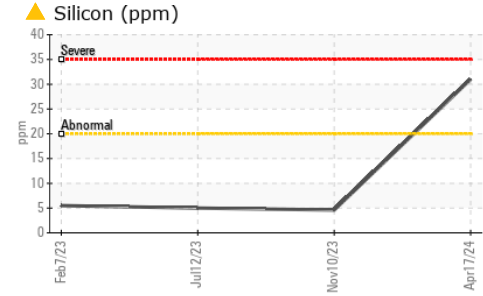
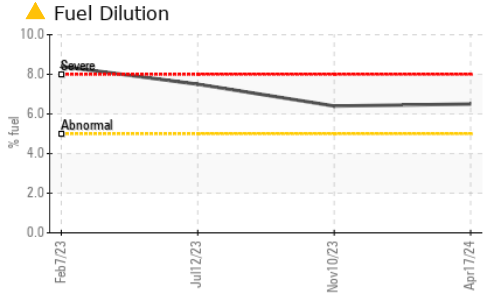
| method | limit/base | current | history1 | history2 | | |
|-----------|------------|-------------|----------|-------------|------|------|
| Soot % | % | *ASTM D7844 | >3 | 1.7 | 2.8 | 2.6 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 9.9 | 10.1 | 10.7 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 21.4 | 23.9 | 23.5 |

FLUID DEGRADATION

| method | limit/base | current | history1 | history2 | | |
|------------------|------------|-------------|----------|-------------|------|------|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 16.0 | 15.5 | 15.3 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.8 | 6.9 | 6.9 | 6.7 |



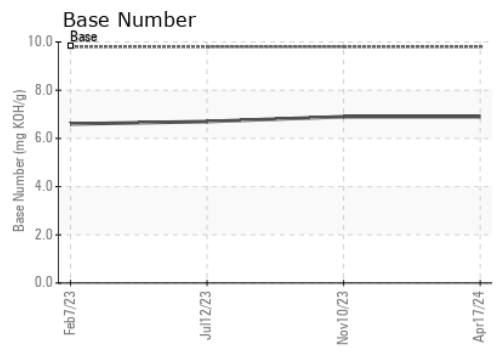
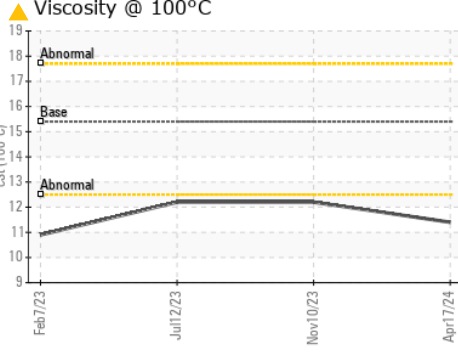
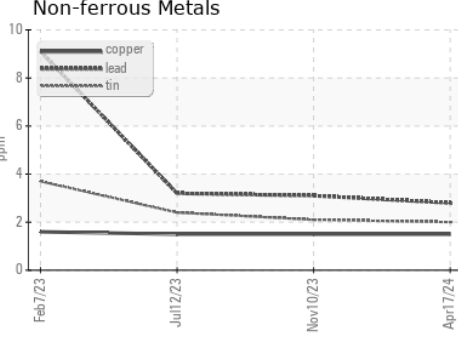
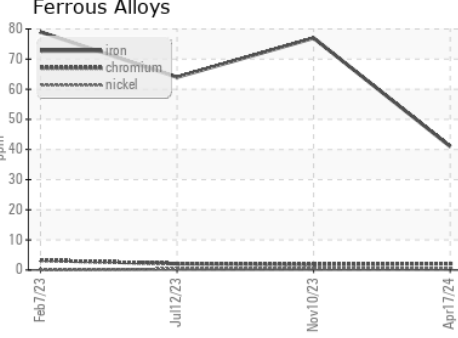
OIL ANALYSIS REPORT



| 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 | >0.2 | NEG | NEG |
| Free Water | scalar | *Visual | | NEG | NEG |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | ▲ 11.4 | ▲ 12.2 |

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : SBP0006494 **Received** : 22 Apr 2024
Lab Number : 06156604 **Tested** : 25 Apr 2024
Unique Number : 10992027 **Diagnosed** : 25 Apr 2024 - Don Baldrige
Test Package : FLEET (Additional Tests: PercentFuel)

SCHMIDT TRANSPORTATION - BARTO
 108 E Bay Road
 Plattsmouth, NE
 US 68048
 Contact: Service Manager

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)