

OIL ANALYSIS REPORT

Sample Rating Trend

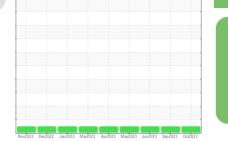
SAMPLE INFORMATION method limit/base





Machine Id 429144-19 Component Diesel Engine

PETRO CANADA DURON SHP 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 NumberClient IntSample DateClient Int | | | | |
|--|--|--|--|--|
| | fo | GFL0098483 | GFL0083708 | GFL0083684 |
| | fo | 09 Oct 2023 | 20 Sep 2023 | 13 Jun 2023 |
| Machine Age hrs Client Int | fo | 0 | 0 | 0 |
| Oil Age hrs Client Int | fo | 0 | 0 | 0 |
| Oil Changed Client Int | fo | N/A | Not Changd | N/A |
| Sample Status | | NORMAL | NORMAL | NORMAL |
| | L Parelt/Income | | Internet | history O |
| CONTAMINATION method | | current | history1 | history2 |
| Fuel WC Metho | | <1.0 | <1.0 | <1.0 |
| Glycol WC Metho | bd | NEG | NEG | NEG |
| WEAR METALS method | l limit/base | current | history1 | history2 |
| Iron ppm ASTM D518 | 5m >120 | 25 | 25 | 8 |
| Chromium ppm ASTM D518 | 5m >20 | <1 | <1 | <1 |
| Nickel ppm ASTM D518 | 5m >5 | <1 | 0 | 0 |
| Titanium ppm ASTM D518 | 5m >2 | 0 | <1 | 0 |
| Silver ppm ASTM D518 | 5m >2 | <1 | 0 | 0 |
| Aluminum ppm ASTM D518 | 5m >20 | 3 | 0 | <1 |
| Lead ppm ASTM D518 | 5m >40 | <1 | <1 | <1 |
| Copper ppm ASTM D518 | 5m >330 | 2 | 1 | 2 |
| Tin ppm ASTM D518 | 5m >15 | <1 | <1 | <1 |
| Vanadium ppm ASTM D518 | 5m | 0 | <1 | 0 |
| Cadmium ppm ASTM D518 | 5m | 0 | <1 | 0 |
| ADDITIVES method | l limit/base | current | history1 | history2 |
| Boron ppm ASTM D518 | 5m O | 4 | <1 | 6 |
| Barium ppm ASTM D518 | 5m O | 0 | 0 | 0 |
| ppin norm boro | | | | 0 |
| Molybdenum ppm ASTM D518 | 5m 60 | 55 | 55 | 56 |
| Molybdenum ppm ASTM D518 | | 55 <1 | | |
| MolybdenumppmASTM D518ManganeseppmASTM D518 | 5m O | | 55 | 56 |
| MolybdenumppmASTM D518ManganeseppmASTM D518 | 5m 0 5m 1010 | <1 | 55 <1 | 56 <1 |
| MolybdenumppmASTM D518ManganeseppmASTM D518MagnesiumppmASTM D518 | 5m 0 5m 1010 5m 1070 | <1 858 | 55 <1 883 | 56 <1 919 |
| MolybdenumppmASTM D518ManganeseppmASTM D518MagnesiumppmASTM D518CalciumppmASTM D518PhosphorusppmASTM D518 | 5m 0 5m 1010 5m 1070 5m 1150 | <1 858 1167 | 55 <1 883 1203 | 56 <1 919 1188 |
| MolybdenumppmASTM D518ManganeseppmASTM D518MagnesiumppmASTM D518CalciumppmASTM D518PhosphorusppmASTM D518 | 5m 0 5m 1010 5m 1070 5m 1150 5m 1270 | <1 858 1167 1017 | 55 <1 883 1203 949 | 56 <1 919 1188 1021 |
| MolybdenumppmASTM D518ManganeseppmASTM D518MagnesiumppmASTM D518CalciumppmASTM D518PhosphorusppmASTM D518ZincppmASTM D518 | 5m 0 5m 1010 5m 1070 5m 1150 5m 1270 5m 2060 | <1 858 1167 1017 1228 2873 | 55 <1 883 1203 949 1187 | 56 <1 919 1188 1021 1253 |
| MolybdenumppmASTM D518ManganeseppmASTM D518MagnesiumppmASTM D518CalciumppmASTM D518PhosphorusppmASTM D518ZincppmASTM D518SulfurppmASTM D518 | 5m 0 5m 1010 5m 1070 5m 1150 5m 1270 5m 2060 4 limit/base | <1 858 1167 1017 1228 2873 | 55 <1 883 1203 949 1187 3416 | 56 <1 919 1188 1021 1253 3752 |
| MolybdenumppmASTM D518ManganeseppmASTM D518MagnesiumppmASTM D518CalciumppmASTM D518PhosphorusppmASTM D518ZincppmASTM D518SulfurppmASTM D518CONTAMINANTSmethod | 5m 0 5m 1010 5m 1070 5m 1150 5m 1270 5m 2060 1 limit/base 5m >25 | <1 858 1167 1017 1228 2873 current | 55 <1 883 1203 949 1187 3416 history1 | 56 <1 919 1188 1021 1253 3752 history2 |
| MolybdenumppmASTM D518ManganeseppmASTM D518MagnesiumppmASTM D518CalciumppmASTM D518PhosphorusppmASTM D518ZincppmASTM D518SulfurppmASTM D518CONTAMINANTSmethodSiliconppmASTM D518 | 5m 0 5m 1010 5m 1070 5m 1150 5m 1270 5m 2060 Limit/base 5m >25 5m | <1 858 1167 1017 1228 2873 current 6 | 55 <1 883 1203 949 1187 3416 history1 6 | 56 <1 919 1188 1021 1253 3752 history2 4 |
| MolybdenumppmASTM D518ManganeseppmASTM D518MagnesiumppmASTM D518CalciumppmASTM D518PhosphorusppmASTM D518ZincppmASTM D518SulfurppmASTM D518CONTAMINANTSmethodSiliconppmASTM D518SodiumppmASTM D518 | 5m 0 5m 1010 5m 1070 5m 1150 5m 1270 5m 2060 1 limit/base 5m >25 5m 5 5m >20 | <1 858 1167 1017 1228 2873 current 6 4 5 | 55 <1 883 1203 949 1187 3416 history1 6 2 | 56 <1 919 1188 1021 1253 3752 history2 4 2 |
| MolybdenumppmASTM D518ManganeseppmASTM D518MagnesiumppmASTM D518CalciumppmASTM D518PhosphorusppmASTM D518ZincppmASTM D518SulfurppmASTM D518CONTAMINANTSmethodSiliconppmASTM D518SodiumppmASTM D518PotassiumppmASTM D518 | 5m 0 5m 1010 5m 1070 5m 1150 5m 1270 5m 2060 4 limit/base 5m >25 5m - 5m >20 4 limit/base | <1 858 1167 1017 1228 2873 current 6 4 5 | 55 <1 883 1203 949 1187 3416 history1 6 2 4 | 56 <1 919 1188 1021 1253 3752 history2 4 2 4 |
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| MolybdenumppmASTM D518ManganeseppmASTM D518MagnesiumppmASTM D518CalciumppmASTM D518PhosphorusppmASTM D518ZincppmASTM D518SulfurppmASTM D518CONTAMINANTSmethodSiliconppmASTM D518SodiumppmASTM D518PotassiumppmASTM D518INFRA-REDmethodSoot %%*ASTM D78 | 5m 0 5m 1010 5m 1070 5m 1150 5m 2060 4 >25 5m >20 4 >4 24 >20 | <1 858 1167 1017 1228 2873 current 6 4 5 5 | 55 <1 883 1203 949 1187 3416 history1 6 2 4 history1 | 56 <1 919 1188 1021 1253 3752 history2 4 2 4 4 2 4 history2 |
| MolybdenumppmASTM D518ManganeseppmASTM D518MagnesiumppmASTM D518CalciumppmASTM D518PhosphorusppmASTM D518ZincppmASTM D518SulfurppmASTM D518CONTAMINANTSmethodSiliconppmASTM D518SodiumppmASTM D518PotassiumppmASTM D518INFRA-REDmethodSoot %%*ASTM D78NitrationAbs/cm*ASTM D78 | 5m 0 5m 1010 5m 1070 5m 1150 5m 2060 5m >25 5m >20 5m >20 4 >4 24 >20 15 >30 | <1 858 1167 1017 1228 2873 Current 6 4 5 Current 0.4 7.2 19.2 | 55 <1 883 1203 949 1187 3416 history1 6 2 4 4 history1 0.3 6.6 | 56 <1 919 1188 1021 1253 3752 history2 4 2 4 2 4 4 2 4 0.2 5.6 |
| MolybdenumppmASTM D518ManganeseppmASTM D518MagnesiumppmASTM D518CalciumppmASTM D518PhosphorusppmASTM D518ZincppmASTM D518SulfurppmASTM D518SulfurppmASTM D518SodiumppmASTM D518PotassiumppmASTM D518INFRA-REDmethodSoot %%*ASTM D78NitrationAbs/cm*ASTM D78SulfationAbs/.1mm*ASTM D78 | 5m 0 5m 1010 5m 1070 5m 1150 5m 2060 5m >25 5m >20 4 >4 24 >20 15 >30 4 Imit/base | <1 858 1167 1017 1228 2873 Current 6 4 5 Current 0.4 7.2 19.2 | 55 <1 883 1203 949 1187 3416 history1 6 2 4 history1 0.3 6.6 18.3 | 56 <1 919 1188 1021 1253 3752 history2 4 2 4 2 4 4 2 4 history2 0.2 5.6 18.3 |
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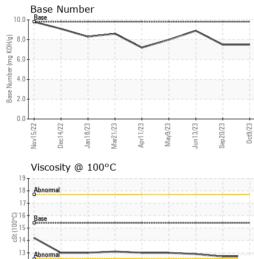


12 11

Nov15/22

Dec14/22 Jan18/23 Mar21/23

OIL ANALYSIS REPORT



| | VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|----------|---------------------------------------|---|----------------------------------|---------------------------------|-----------------------------------|
| | White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| | Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| | Precipitate | scalar | *Visual | NONE | NONE | NONE | NONE |
| | Silt | scalar | *Visual | NONE | NONE | NONE | NONE |
| | Debris | scalar | *Visual | NONE | NONE | NONE | NONE |
| | Sand/Dirt | scalar | *Visual | NONE | NONE | NONE | NONE |
| Apr11/23 May9/23 Jun13/23 Sep20/23 | Appearance | scalar | *Visual | NORML | NORML | NORML | NORML |
| Ap Jur Sey | Udor | scalar | *Visual | NORML | NORML | NORML | NORML |
| | Emulsified Water | scalar | *Visual | >0.2 | NEG | NEG | NEG |
| | Free Water | scalar | *Visual | | NEG | NEG | NEG |
| | FLUID PROPE | | method | limit/base | current | history1 | history2 |
| | | cSt | ASTM D445 | 15.4 | 12.7 | 12.7 | 12.9 |
| | GRAPHS | | | | | | |
| | Ferrous Alloys | | | | | | |
| | Mou-ferrors Weta Jan 18/23 Jan 18/23 | als | Jun13/23 | 0ct3/23 | | | |
| | Viscosity @ 100°(| С | | 10.0 | Base Number | | |
| | 18 - Abnormal | | | | | ~ _ | |
| | 17- | | | 0.8 (u) 0.6 KOH(d) 1.4 Base Number (u) 1.4 Base Number (u) | | | \sim |
| | (; 16 00) 15 43 14 | | ++ | <u>B</u> 6.0 | D | | |
| | ti 14 | | | | | | |
| | | | | ase Nu | | | |
| | Abnormal | | | <u>2.0</u> | 0 | | |
| | | | | | | | |
| | Nov15/22 Dec14/22 Jan18/23 Mar21/23 | Apr11/23 | May9/23 Jun 13/23 Sep 20/23 | 0ct9/23 | Nov15/22 Dec14/22 Jan18/23 | Mar21/23 Apr11/23 May9/23 | Jun 13/23 Sep 20/23 Oct9/23 |
| Laboratory Sample No. Lab Numbe Unique Numb Test Packag | : WearCheck USA - : GFL0098483 r : 05978820 per : 10696115 | | son Ave., Ca d : 13 (ed : 16 (| | | ronmental - 846 - | |

Contact/Location: Jack Lindsey - GFL846