

OIL ANALYSIS REPORT

Area **Pillen Family Farms LSTK 72** Component **Diesel Engine**

Fluid DIESEL ENGINE OIL SAE 40 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

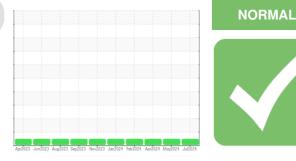
Metal levels are typical for a new component breaking in.

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.



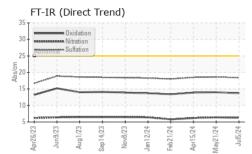
| SAMPLE INFORM | IATION | method | limit/base | current | history1 | history2 |
|---|--|---|--|---|---|--|
| Sample Number | | Client Info | | SBP0005396 | SBP0006845 | SBP0006809 |
| Sample Date | | Client Info | | 05 Jul 2024 | 21 May 2024 | 15 Apr 2024 |
| Machine Age | mls | Client Info | | 12000 | 12000 | 12000 |
| Oil Age | mls | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | Not Changd | Not Changd | Not Changd |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |
| CONTAMINATION | N | method | limit/base | current | history1 | history2 |
| Fuel | | WC Method | >5 | <1.0 | <1.0 | <1.0 |
| 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 | >100 | 5 | 7 | 6 |
| Chromium | ppm | ASTM D5185m | >20 | 0 | <1 | 0 |
| Nickel | ppm | ASTM D5185m | >4 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m | >3 | 0 | <1 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 2 | 1 | <1 |
| Lead | ppm | ASTM D5185m | >40 | 0 | <1 | <1 |
| Copper | ppm | ASTM D5185m | >330 | <1 | 0 | 0 |
| Tin | ppm | ASTM D5185m | >15 | <1 | 0 | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| | | | | | | |
| ADDITIVES | | method | limit/base | current | history1 | history2 |
| ADDITIVES Boron | ppm | method ASTM D5185m | limit/base 250 | current 4 | history1 0 | history2 0 |
| | ppm ppm | | | | | |
| Boron | | ASTM D5185m | 250 | 4 | 0 | 0 |
| Boron Barium | ppm | ASTM D5185m ASTM D5185m | 250 10 | 4 0 | 0 | 0 |
| Boron Barium Molybdenum | ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m | 250 10 | 4 0 56 | 0 0 62 | 0 0 63 |
| Boron Barium Molybdenum Manganese | ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 250 10 100 | 4 0 56 0 | 0 0 62 <1 | 0 0 63 0 |
| Boron Barium Molybdenum Manganese Magnesium | ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 250 10 100 450 | 4 0 56 0 950 | 0 0 62 <1 1118 | 0 0 63 0 1081 |
| Boron Barium Molybdenum Manganese Magnesium Calcium | ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 250 10 100 450 3000 | 4 0 56 0 950 1061 | 0 0 62 <1 1118 1251 | 0 0 63 0 1081 1177 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus | ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 250 10 100 450 3000 1150 | 4 0 56 0 950 1061 1031 | 0 0 62 <1 1118 1251 1194 | 0 0 63 0 1081 1177 1151 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc | ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 250 10 100 450 3000 1150 1350 | 4 0 56 0 950 1061 1031 1259 | 0 0 62 <1 1118 1251 1194 1497 | 0 0 63 0 1081 1177 1151 1411 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur | ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 250 10 100 450 3000 1150 1350 4250 | 4 0 56 0 950 1061 1031 1259 3564 | 0 0 62 <1 1118 1251 1194 1497 4163 | 0 0 63 0 1081 1177 1151 1411 3974 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS | ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 250 10 100 450 3000 1150 1350 4250 | 4 0 56 0 950 1061 1031 1259 3564 current | 0 0 62 <1 1118 1251 1194 1497 4163 history1 | 0 0 63 0 1081 1177 1151 1411 3974 history2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 250 10 100 450 3000 1150 1350 4250 imit/base >25 | 4 0 56 0 950 1061 1031 1259 3564 <i>current</i> 4 | 0 0 62 <1 1118 1251 1194 1497 4163 history1 3 | 0 0 63 0 1081 1177 1151 1411 3974 history2 3 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 250 10 100 450 3000 1150 1350 4250 limit/base >25 >216 | 4 0 56 0 950 1061 1031 1259 3564 <u>current</u> 4 2 | 0 0 62 <1 1118 1251 1194 1497 4163 history1 3 1 | 0 0 63 0 1081 1177 1151 1411 3974 history2 3 2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | 250 10 100 450 3000 1150 1350 4250 limit/base >25 >216 >20 | 4 0 56 0 950 1061 1031 1259 3564 current 4 2 5 | 0 0 62 <1 1118 1251 1194 1497 4163 history1 3 1 3 1 3 | 0 0 63 0 1081 1177 1151 1411 3974 history2 3 2 2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | 250 10 100 450 3000 1150 1350 4250 Iimit/base >25 >216 >216 >20 Iimit/base | 4 0 56 0 950 1061 1031 1259 3564 <i>current</i> 4 2 5 <i>current</i> | 0 0 62 <1 1118 1251 1194 1497 4163 history1 3 1 3 1 3 history1 | 0 0 63 0 1081 1177 1151 1411 3974 history2 3 2 2 history2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | 250 10 100 450 3000 1150 1350 4250 Iimit/base >25 >216 >216 >20 Iimit/base | 4 0 56 0 950 1061 1031 1259 3564 <i>current</i> 4 2 5 <i>current</i> 0.3 | 0 0 62 <1 1118 1251 1194 1497 4163 history1 3 1 3 1 3 history1 0.3 | 0 0 63 0 1081 1177 1151 1411 3974 history2 3 2 2 2 history2 0.3 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | 250 10 100 450 3000 1150 1350 4250 i mit/base >25 >216 >20 i mit/base >3 >20 | 4 0 56 0 950 1061 1031 1259 3564 <i>current</i> 4 2 5 <i>current</i> 0.3 6.3 | 0 0 62 <1 1118 1251 1194 1497 4163 history1 3 1 3 1 3 history1 0.3 6.4 | 0 0 63 0 1081 1177 1151 1411 3974 history2 3 2 2 history2 0.3 6.2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | 250 10 100 450 3000 1150 1350 4250 Imit/base >216 >216 >20 Imit/base >3 >20 >30 | 4 0 56 0 950 1061 1031 1259 3564 <i>current</i> 4 2 5 <i>current</i> 0.3 6.3 18.4 | 0 0 62 <1 1118 1251 1194 1497 4163 history1 3 1 3 history1 0.3 6.4 18.6 | 0 0 63 0 1081 1177 1151 1411 3974 history2 3 2 2 history2 0.3 6.2 18.5 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844 | 250 10 100 450 3000 1150 1350 4250 20 216 >216 >20 >20 imit/base >3 >20 >30 | 4 0 56 0 950 1061 1031 1259 3564 <i>current</i> 4 2 5 <i>current</i> 0.3 6.3 18.4 <i>current</i> | 0 0 62 <1 1118 1251 1194 1497 4163 history1 3 1 3 history1 0.3 6.4 18.6 history1 | 0 0 63 0 1081 1177 1151 1411 3974 history2 3 2 2 history2 0.3 6.2 18.5 history2 |

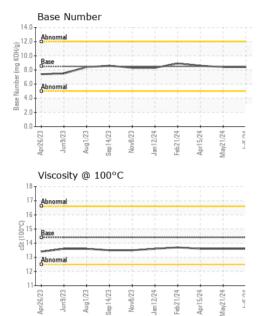
Sample Rating Trend



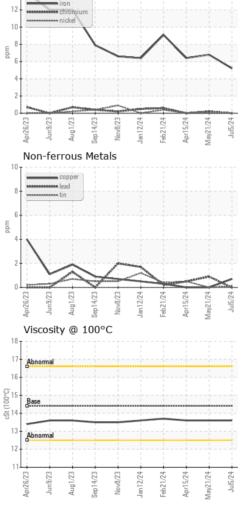
OIL ANALYSIS REPORT

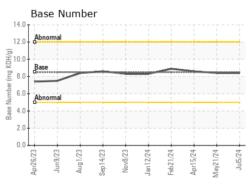
Ferrous Alloys





| 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 |
| Appearance | scalar | *Visual | NORML | NORML | NORML | NORML |
| Odor | scalar | *Visual | NORML | NORML | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.2 | NEG | NEG | NEG |
| Free Water | scalar | *Visual | | NEG | NEG | NEG |
| FLUID PROPER | TIES | method | limit/base | current | history1 | history2 |
| Visc @ 100°C | cSt | ASTM D445 | 14.4 | 13.6 | 13.6 | 13.6 |
| | | | | | | |





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Pillen Family Farms - 722828 : SBP0005396 Sample No. Received : 17 Jul 2024 26741 NE-91 Lab Number : 06239786 Tested : 18 Jul 2024 Humphrey, NE US 61357 Unique Number : 11128620 Diagnosed : 18 Jul 2024 - Wes Davis Test Package : FLEET Contact: Troy Runge Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. troyfr@pillenfamilyfarms.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (308)390-6733 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

Report Id: PILHUM [WUSCAR] 06239786 (Generated: 07/18/2024 14:35:09) Rev: 1

Submitted By: JUSTIN HANSON

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