

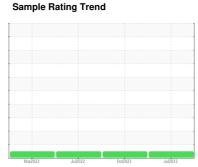
OIL ANALYSIS REPORT



CONSTRUCTORS, INC CATERPILLAR 1717

Left Final Drive

MOBIL MOBILTRANS AST 30 (--- GAL)





Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

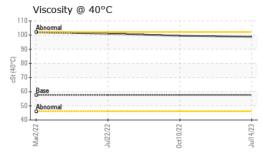
Fluid Condition

The condition of the oil is acceptable for the time in service.

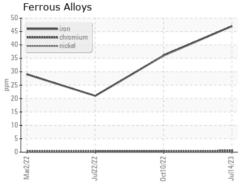
| Sample Number Client Info SBP0004548 SBP0002079 SBP000146 Sample Date Client Info 14 Jul 2023 10 Oct 2022 22 Jul 2022 Machine Age hrs Client Info 8806 7957 7333 734 734 | 451 30 (GAL) | | Mar202 | 2 Jul2022 | Oct2022 Jr | ul2023 | |
|--|------------------|--------|-------------|------------|-------------|-------------|-------------|
| Client Info | SAMPLE INFORM | IATION | method | limit/base | current | history1 | history2 |
| Client Info | Sample Number | | Client Info | | SBP0004548 | SBP0002079 | SBP0001467 |
| Machine Age | | | Client Info | | 14 Jul 2023 | 10 Oct 2022 | 22 Jul 2022 |
| Oil Changed | · | hrs | Client Info | | 8806 | 7957 | 7333 |
| Client Info | | hrs | Client Info | | 849 | 624 | 517 |
| NORMAL NORMAL NORMAL NORMAL WEAR METALS method limit/base current history1 history2 history2 limit limit/base current history1 history2 limit limit/base limit | - | | Client Info | | N/A | Changed | |
| | Sample Status | | | | NORMAL | | Ü |
| Chromium ppm ASTM D5185m >10 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <td>WEAR METALS</td> <td></td> <td>method</td> <td>limit/base</td> <th>current</th> <td>history1</td> <td>history2</td> | WEAR METALS | | method | limit/base | current | history1 | history2 |
| Nickel | Iron | ppm | ASTM D5185m | >800 | 47 | 36 | 21 |
| Titanium | Chromium | ppm | ASTM D5185m | >10 | <1 | <1 | <1 |
| Silver | Nickel | ppm | ASTM D5185m | >5 | 0 | 0 | 0 |
| Silver | Titanium | ppm | ASTM D5185m | >15 | 0 | 0 | 0 |
| Lead | Silver | | ASTM D5185m | >2 | 0 | 0 | <1 |
| Lead | Aluminum | ppm | ASTM D5185m | >75 | 2 | 1 | 1 |
| Copper | Lead | | | | 9 | | 2 |
| Tin | | | | | | | |
| Antimony | Tin | | | | | | |
| Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 37 60 40 Barium ppm ASTM D5185m 0 2 0 Molybdenum ppm ASTM D5185m 3 2 2 2 Manganese ppm ASTM D5185m 21 20 23 Magnesium ppm ASTM D5185m 3020 3003 2966 Phosphorus ppm ASTM D5185m 1022 1000 931 Zinc ppm ASTM D5185m 1240 1215 1148 Sulfur ppm ASTM D5185m 6056 6033 5706 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 0 0< | Antimony | | | >50 | | | |
| Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 37 60 40 Barium ppm ASTM D5185m 0 2 0 Molybdenum ppm ASTM D5185m 3 2 2 Mangnesium ppm ASTM D5185m 21 20 23 Calcium ppm ASTM D5185m 3020 3003 2966 Phosphorus ppm ASTM D5185m 1022 1000 931 Zinc ppm ASTM D5185m 1022 1000 931 Sulfur ppm ASTM D5185m 6056 6033 5706 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 0 0 1 1 Potassium ppm ASTM D5185m 0 0 </td <td>•</td> <td></td> <td></td> <td></td> <th>0</th> <td></td> <td>0</td> | • | | | | 0 | | 0 |
| Boron | Cadmium | | | | - | | |
| Boron | ADDITIVES | | method | limit/base | current | history1 | history2 |
| Barium | Boron | ppm | ASTM D5185m | | 37 | | |
| Manganese ppm ASTM D5185m <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <td>Barium</td> <td></td> <td>ASTM D5185m</td> <td></td> <th>0</th> <td>2</td> <td>0</td> | Barium | | ASTM D5185m | | 0 | 2 | 0 |
| Manganese ppm ASTM D5185m <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <21 <20 23 <23 <23 <23 <23 <23 <23 <23 <23 <23 <23 <23 <23 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 <24 | Molybdenum | ppm | ASTM D5185m | | 3 | 2 | 2 |
| Magnesium ppm ASTM D5185m 21 20 23 Calcium ppm ASTM D5185m 3020 3003 2966 Phosphorus ppm ASTM D5185m 1022 1000 931 Zinc ppm ASTM D5185m 1240 1215 1148 Sulfur ppm ASTM D5185m 6056 6033 5706 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >400 6 7 6 Sodium ppm ASTM D5185m >400 6 7 6 Sodium ppm ASTM D5185m >20 1 42 0 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE NONE NONE | Manganese | ppm | ASTM D5185m | | <1 | <1 | <1 |
| Calcium ppm ASTM D5185m 3020 3003 2966 Phosphorus ppm ASTM D5185m 1022 1000 931 Zinc ppm ASTM D5185m 1240 1215 1148 Sulfur ppm ASTM D5185m 6056 6033 5706 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >400 6 7 6 Sodium ppm ASTM D5185m >20 1 42 0 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE <t< td=""><td>Magnesium</td><td>ppm</td><td>ASTM D5185m</td><td></td><th>21</th><td>20</td><td>23</td></t<> | Magnesium | ppm | ASTM D5185m | | 21 | 20 | 23 |
| Phosphorus ppm ASTM D5185m 1022 1000 931 Zinc ppm ASTM D5185m 1240 1215 1148 Sulfur ppm ASTM D5185m 6056 6033 5706 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >400 6 7 6 Sodium ppm ASTM D5185m >20 1 42 0 VISUAL method limit/base current history1 history2 VISUAL mone none none none none Yellow Metal scalar *Visual none none <td>Calcium</td> <td></td> <td>ASTM D5185m</td> <td></td> <th>3020</th> <td>3003</td> <td>2966</td> | Calcium | | ASTM D5185m | | 3020 | 3003 | 2966 |
| Zinc ppm ASTM D5185m 1240 1215 1148 Sulfur ppm ASTM D5185m 6056 6033 5706 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >400 6 7 6 Sodium ppm ASTM D5185m 0 0 1 1 Potassium ppm ASTM D5185m >20 1 42 0 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 | Phosphorus | | ASTM D5185m | | 1022 | 1000 | 931 |
| Sulfur ppm ASTM D5185m 6056 6033 5706 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >400 6 7 6 Sodium ppm ASTM D5185m 0 0 1 Potassium ppm ASTM D5185m >20 1 42 0 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE Wellow 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 N | Zinc | | ASTM D5185m | | 1240 | 1215 | 1148 |
| Silicon | Sulfur | | | | | 6033 | 5706 |
| Sodium ppm ASTM D5185m 0 0 1 Potassium ppm ASTM D5185m >20 1 42 0 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE NONE NONE Precipitate scalar *Visual NONE NONE <td< td=""><td>CONTAMINANTS</td><td></td><td>method</td><td>limit/base</td><th>current</th><td>history1</td><td>history2</td></td<> | CONTAMINANTS | | method | limit/base | current | history1 | history2 |
| Potassium ppm ASTM D5185m >20 1 42 0 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE NONE Debris scalar *Visual NONE 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 | Silicon | ppm | ASTM D5185m | >400 | 6 | 7 | 6 |
| VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE NONE Debris scalar *Visual NONE NONE NONE NONE NONE Sand/Dirt scalar *Visual NONE 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 | Sodium | ppm | ASTM D5185m | | 0 | 0 | 1 |
| White Metal scalar *Visual NONE 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 NONE Debris scalar *Visual NONE 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 | Potassium | ppm | ASTM D5185m | >20 | 1 | 42 | 0 |
| Yellow Metalscalar*VisualNONENONENONENONEPrecipitatescalar*VisualNONENONENONENONESiltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEG | VISUAL | | method | limit/base | current | history1 | history2 |
| 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 | White Metal | | | | | | |
| 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 | Yellow Metal | | | | | | |
| Debris scalar *Visual NONE 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 | Precipitate | scalar | | | | | |
| Sand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEG | Silt | scalar | *Visual | | NONE | | NONE |
| Appearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEG | Debris | | | | | | |
| Odor scalar *Visual NORML NORML NORML NORML NORML NORML Emulsified Water scalar *Visual >0.2 NEG NEG NEG | Sand/Dirt | scalar | *Visual | NONE | NONE | NONE | NONE |
| Emulsified Water scalar *Visual >0.2 NEG NEG NEG | Appearance | scalar | *Visual | NORML | NORML | NORML | NORML |
| | Odor | scalar | *Visual | NORML | NORML | NORML | NORML |
| Free Water scalar *Visual NEG NEG NEG | Emulsified Water | scalar | *Visual | >0.2 | NEG | NEG | NEG |
| | Free Water | scalar | *Visual | | NEG | NEG | NEG |

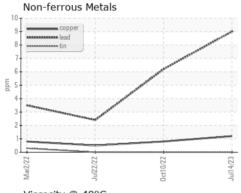


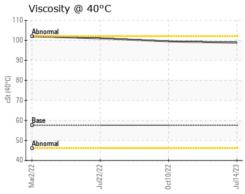
OIL ANALYSIS REPORT



| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|------------------|-----|-----------|------------|----------|----------|----------|
| Visc @ 40°C | cSt | ASTM D445 | 57.6 | 98.8 | 99.5 | 101 |
| SAMPLE IMAGES | | method | limit/base | current | history1 | history2 |
| Color | | | | no image | no image | no image |
| Bottom | | | | no image | no image | no image |
| | | | | | | |









Laboratory Sample No.

Lab Number Unique Number : 10562180 Test Package : FLEET

: SBP0004548 : 05900824

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 17 Jul 2023 Diagnosed : 19 Jul 2023 Diagnostician : Doug Bogart

Constructors Inc. - 603659 1815 Y Street

Lincoln, NE US 68508

Contact: Jack Linhart jackl@constructorslincoln.com

T: (402)434-2157

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)