

OIL ANALYSIS REPORT

Sample Rating Trend



Bernardsville MACK 6735

Diesel Engine

GIBRALTAR 15W/40 SUPER S-3 LX (11 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Area

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

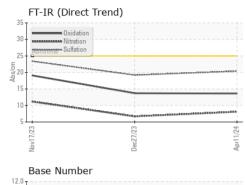
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

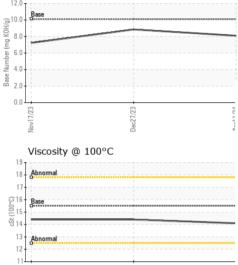
| SAMPLE INFORM | IATION | method | limit/base | current | history1 | history2 |
|---|--|--|--|--|--|---|
| Sample Number | | Client Info | | WC0900035 | WC0875349 | WC0875361 |
| Sample Date | | Client Info | | 11 Apr 2024 | 27 Dec 2023 | 17 Nov 2023 |
| Machine Age | hrs | Client Info | | 0 | 10584 | 10379 |
| Oil Age | hrs | Client Info | | 11367 | 0 | 10379 |
| Oil Changed | | Client Info | | Not Changd | Not Changd | N/A |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |
| CONTAMINATION | ٧ | method | limit/base | current | history1 | history2 |
| Fuel | | WC Method | >3.0 | <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 | >120 | 38 | 11 | 20 |
| Chromium | ppm | ASTM D5185m | >20 | 2 | <1 | 1 |
| Nickel | ppm | ASTM D5185m | >5 | 1 | <1 | 0 |
| Titanium | ppm | ASTM D5185m | >2 | <1 | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | <1 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 4 | 3 | 2 |
| Lead | ppm | ASTM D5185m | >40 | 2 | 2 | 11 |
| Copper | ppm | | >330 | 1 | 0 | 1 |
| Tin | ppm | | >15 | 2 | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | <1 | 0 | 0 |
| | | | | | | |
| Cadmium | ppm | ASTM D5185m | | 1 | 0 | <1 |
| ADDITIVES | ppm | ASTM D5185m method | limit/base | 1 current | 0 history1 | <1 history2 |
| | ppm ppm | | limit/base | current 11 | history1 9 | history2 12 |
| ADDITIVES | | method | | current 11 0 | history1 9 0 | history2 12 0 |
| ADDITIVES Boron | ppm | method ASTM D5185m | limit/base | current 11 0 61 | history1 9 0 56 | history2 12 0 64 |
| ADDITIVES Boron Barium Molybdenum Manganese | ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 66 | current 11 0 61 1 | history1 9 0 56 <1 | history2 12 0 64 <1 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium | ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 66 1000 | current 11 0 61 1 703 | history1 9 0 56 <1 829 | history2 12 0 64 <1 785 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium | ppm ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 66 1000 1050 | Current 11 0 61 1 703 1246 | history1 9 0 56 <1 829 1140 | history2 12 0 64 <1 785 1209 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus | ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 66 1000 1050 1150 | Current 11 0 61 1 703 1246 973 | history1 9 0 56 <1 829 1140 1046 | history2 12 0 64 <1 785 1209 991 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc | ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m | 66 1000 1050 | Current 11 0 61 1 703 1246 973 1140 | history1 9 0 56 <1 829 1140 1046 1269 | history2 12 0 64 <1 785 1209 991 1203 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur | ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 66 1000 1050 1150 1270 | Current 11 0 61 1 703 1246 973 1140 3108 | history1 9 0 56 <1 829 1140 1046 1269 3263 | history2 12 0 64 <1 785 1209 991 1203 3242 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS | ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 66 1000 1050 1150 1270 limit/base | Current 11 0 61 1 703 1246 973 1140 3108 Current | history1 9 0 56 <1 829 1140 1046 1269 3263 history1 | history2 12 0 64 <1 785 1209 991 1203 3242 history2 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon | ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m | 66 1000 1050 1150 1270 limit/base | Current 11 0 61 1 703 1246 973 1140 3108 Current 6 | history1 9 0 56 <1 829 1140 1046 1269 3263 history1 4 | history2 12 0 64 <1 785 1209 991 1203 3242 history2 10 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium | ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m | 66 1000 1050 1150 1270 limit/base >25 | Current 11 0 61 1 703 1246 973 1140 3108 current 6 3 | history1 9 0 56 <1 829 1140 1046 1269 3263 history1 4 2 | history2 12 0 64 <1 785 1209 991 1203 3242 history2 10 0 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium | ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m | 66 1000 1050 1150 1270 limit/base >25 | Current 11 0 61 1 703 1246 973 1140 3108 Current 6 | history1 9 0 56 <1 829 1140 1046 1269 3263 history1 4 | history2 12 0 64 <1 785 1209 991 1203 3242 history2 10 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium | ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m | 66 1000 1050 1150 1270 limit/base >25 | current 11 0 61 1 703 1246 973 1140 3108 current 6 3 11 Current 6 3 11 | history1 9 0 56 <1 829 1140 1046 1269 3263 history1 4 2 8 history1 | history2 12 0 64 <1 785 1209 991 1203 3242 history2 10 0 6 history2 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % | ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m | 66 1000 1050 1150 1270 limit/base >25 >20 limit/base >20 | current 11 0 61 1 703 1246 973 1140 3108 current 6 3 11 current 1 1.4 | history1 9 0 56 <1 829 1140 1046 1269 3263 history1 4 2 8 history1 0.6 | history2 12 0 64 <1 785 1209 991 1203 3242 history2 10 0 6 history2 0.6 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED | ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m | 66 1000 1050 1150 1270 limit/base >25 >20 limit/base | current 11 0 61 1 703 1246 973 1140 3108 current 6 3 11 Current 6 3 11 | history1 9 0 56 <1 829 1140 1046 1269 3263 history1 4 2 8 history1 | history2 12 0 64 <1 785 1209 991 1203 3242 history2 10 0 6 history2 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m | 66 1000 1050 1150 1270 limit/base >25 >20 limit/base >20 | current 11 0 61 1 703 1246 973 1140 3108 current 6 3 11 current 1 1.4 | history1 9 0 56 <1 829 1140 1046 1269 3263 history1 4 2 8 history1 0.6 | history2 12 0 64 <1 785 1209 991 1203 3242 history2 10 0 6 history2 0.6 |
| ADDITIVES 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 | method ASTM D5185m | 66 1000 1050 1150 1270 270 imit/base >25 >20 imit/base >4 >20 | Current 11 0 61 1 703 1246 973 1140 3108 current 6 3 11 current 1 1.4 8.1 | history1 9 0 56 <1 829 1140 1046 1269 3263 history1 4 2 8 history1 0.6 6.7 | history2 12 0 64 <1 785 1209 991 1203 3242 history2 10 0 6 history2 0.6 11.2 |
| ADDITIVES 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 | method ASTM D5185m ASTM D5185m | 66 1000 1050 1150 1270 imit/base >25 >20 imit/base >4 >20 >30 | current 11 0 61 1 703 1246 973 1140 3108 current 6 3 11 current 1 1.4 8.1 20.4 | history1 9 0 56 <1 829 1140 1046 1269 3263 history1 4 2 8 history1 0.6 6.7 19.2 | history2 12 0 64 <1 785 1209 991 1203 3242 history2 10 0 6 history2 0.6 11.2 23.4 |



Nov17/23

OIL ANALYSIS REPORT





Dec27/23

| 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 | 15.5 | 14.1 | 14.4 | 14.4 |
| GRAPHS | | | | | | |
| Iron (ppm) | | | 100 | Lead (ppm) | | |
| 250 Severe | | | 80 | Severe | | |
| 200 - | | | co | | | |
| Abnormal | | | 40 | Abaranal | | |
| 100 | | | 20 | | | |
| 0 | | | | | | |
| Nov17/23 | Dec27/23 | | Apr11/24 | 17/23 | Jec27/23 | Apr11/24 |
| | | | Apr | Nov1 | | Apr |
| Aluminum (ppm) | | Chromium (ppm) | | | | |
| 40 Severe | | | 50 | Severe | | |
| | | | | | | |
| 20 - Abnormal | | | E 20 | Abnormal | | |
| 10- | | | 10 | | | |
| 0 | | | o | | | |
| Nov17/23 | Dec27/23 | | Apr11/24 | Nov17/23 | Jec27/23 | Apr11/24 |
| | Dec | | Apı | — | | Apr |
| Copper (ppm) | | | 80 | Silicon (ppm) | | |
| Abnonnal | | | | | 1 | 1 |
| 300 | | | 60 | | | |
| 툴 200 | | | 특 40 | Abnormal | | |
| 100- | | | | - | | |
| 0 | | | 0 | | | |
| Nov17/23 | Dec27/23 | | Apr11/24 | v17/23 | Dec27/23 | Apr11/24 |
| — | | | Ap | Nov1 | | Ap |
| Viscosity @ 100° | | Base Number | | | | |
| 18 Abnormal | | | | Base | | |
| T | | | (D)H0.0 Buy sequence Buy sequence Base 2.0 | | | |
| 0 16 - Base 3 14 - Abaamal | | | 10 6.0 | 1 | | |
| 12 - Abnormal | | | 2 4.0 % 2.0 | 1 | | |
| 10 | ~~~~~ | | 0.0 | | | |
| Nov17/23 | Dec27/23 | | Apr11/24 | Nov17/23 | Dec27/23 | Apr11/24 |
| No | De | | Ap | No | De | Ap |
| · MoorChook USA - 5 | 01 Madia- | | NO 07510 | | | |
| : WearCheck USA - 50 : WC0900035 | 01 Madiso Recei | | 7, NC 27513 3 Apr 2024 | INTERS | 33 OLD O | UARRY ROAD |
| : 06152824 | Teste | | Apr 2024 | | | RDSVILLE, NJ |
| : 10982902 | Diagr | nosed : 19 | Apr 2024 - W | es Davis | | US 07924 |
| · MOB 1 (Additional T | Pester TRN | 1) | | | Contact | Pablo Chardon |

Unique Number : 10982902 Certificate 12367

Laboratory Sample No. Lab Number

- Test Package : MOB 1 (Additional Tests: TBN)
- 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)

Report Id: INTBER [WUSCAR] 06152824 (Generated: 04/19/2024 09:02:55) Rev: 1

Contact/Location: Pablo Chardon - INTBER Page 2 of 2

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