

## **OIL ANALYSIS REPORT**

### Area {UNASSIGNED} **JOHN DEERE JD350** Component

**Rear Diesel Engine** {not provided} (8 GAL)

#### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor. The fluid was not specified, however, a fluid match indicates that this fluid is SAE 40 Diesel Engine Oil. Please confirm the oil type and grade, and specify the brand of the oil on your next sample.

#### Wear

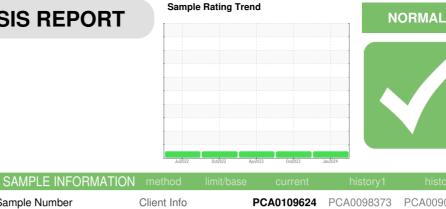
All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

#### Fluid Condition

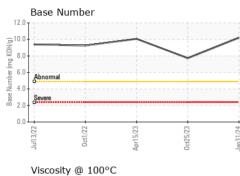
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

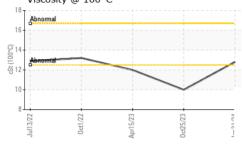


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|---|--|---|--|--|--|---|
| Sample Number   |  | Client Info   |  | PCA0109624   | PCA0098373   | PCA0090829  |
| Sample Date   |  | Client Info   |  | 31 Jan 2024  | 25 Oct 2023  | 15 Apr 2023   |
| Machine Age   | hrs  | Client Info   |  | 3024   | 2744   | 2457  |
| Oil Age   | hrs  | Client Info   |  | 280<br>Ohannad   | 287<br>Okana ak  | 570<br>Okana al   |
| Oil Changed   |  | Client Info   |  | Changed  | Changed  | Changed   |
| Sample Status   |  |   |  | NORMAL   | NORMAL   | NORMAL  |
| CONTAMINAT  | ION  | method  | limit/base   | current  | history1   | history2  |
| Fuel  |  | WC Method   | >2.1   | <1.0   | 0.2  | 0.2   |
| Water   |  | WC Method   | >0.21  | NEG  | NEG  | NEG   |
| Glycol  |  | WC Method   |  | NEG  | NEG  | NEG   |
| WEAR METAL  | S  | method  | limit/base   | current  | history1   | history2  |
| Iron  | ppm  | ASTM D5185m   | >51  | 23   | 32   | 17  |
| Chromium  | ppm  | ASTM D5185m   | >11  | 0  | <1   | 0   |
| Nickel  | ppm  | ASTM D5185m   | >5   | 3  | 2  | 3   |
| Titanium  | ppm  | ASTM D5185m   |  | 0  | 0  | <1  |
| Silver  | ppm  | ASTM D5185m   | >3   | 0  | 0  | 0   |
| Aluminum  | ppm  | ASTM D5185m   | >31  | 3  | 3  | <1  |
| Lead  | ppm  | ASTM D5185m   | >26  | 1  | 0  | 0   |
| Copper  | ppm  | ASTM D5185m   | >26  | 1  | 2  | 2   |
| Tin   | ppm  | ASTM D5185m   | >4   | <1   | <1   | <1  |
| Vanadium  | ppm  | ASTM D5185m   |  | 0  | 0  | 0   |
| Cadmium   | ppm  | ASTM D5185m   |  | 0  | 0  | 0   |
|   |  |   |  |  |  |   |
| ADDITIVES   |  | method  | limit/base   | current  | history1   | history2  |
| Boron   | ppm  | method<br>ASTM D5185m   | limit/base   | current<br>169   | history1<br>275  | history2<br>27  |
|   | ppm<br>ppm   |   | limit/base   |  |  |   |
| Boron   |  | ASTM D5185m   | limit/base   | 169  | 275  | 27  |
| Boron<br>Barium   | ppm  | ASTM D5185m<br>ASTM D5185m  | limit/base   | 169<br>0   | 275<br>0   | 27<br>0   |
| Boron<br>Barium<br>Molybdenum   | ppm<br>ppm   | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m   | limit/base   | 169<br>0<br>189  | 275<br>0<br>236  | 27<br>0<br>65   |
| Boron<br>Barium<br>Molybdenum<br>Manganese  | ppm<br>ppm<br>ppm  | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  | limit/base   | 169<br>0<br>189<br>1   | 275<br>0<br>236<br><1  | 27<br>0<br>65<br><1   |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus  | ppm<br>ppm<br>ppm<br>ppm   | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  | limit/base   | 169<br>0<br>189<br>1<br>728  | 275<br>0<br>236<br><1<br>755<br>1354<br>852  | 27<br>0<br>65<br><1<br>839<br>1144<br>937   |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium  | ppm<br>ppm<br>ppm<br>ppm<br>ppm  | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  | limit/base   | 169<br>0<br>189<br>1<br>728<br>1279  | 275<br>0<br>236<br><1<br>755<br>1354<br>852<br>1001  | 27<br>0<br>65<br><1<br>839<br>1144  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                                   | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  | limit/base   | 169<br>0<br>189<br>1<br>728<br>1279<br>804   | 275<br>0<br>236<br><1<br>755<br>1354<br>852  | 27<br>0<br>65<br><1<br>839<br>1144<br>937   |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                            | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m   | limit/base   | 169<br>0<br>189<br>1<br>728<br>1279<br>804<br>1002   | 275<br>0<br>236<br><1<br>755<br>1354<br>852<br>1001  | 27<br>0<br>65<br><1<br>839<br>1144<br>937<br>1105   |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                            | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  |  | 169<br>0<br>189<br>1<br>728<br>1279<br>804<br>1002<br>2755   | 275<br>0<br>236<br><1<br>755<br>1354<br>852<br>1001<br>2820  | 27<br>0<br>65<br><1<br>839<br>1144<br>937<br>1105<br>3584   |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINAN  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                     | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m   | limit/base   | 169<br>0<br>189<br>1<br>728<br>1279<br>804<br>1002<br>2755<br>current  | 275<br>0<br>236<br><1<br>755<br>1354<br>852<br>1001<br>2820<br>history1  | 27<br>0<br>65<br><1<br>839<br>1144<br>937<br>1105<br>3584<br>history2   |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINAN<br>Silicon   | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>TS               | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m   | limit/base   | 169<br>0<br>189<br>1<br>728<br>1279<br>804<br>1002<br>2755<br>current<br>5   | 275<br>0<br>236<br><1<br>755<br>1354<br>852<br>1001<br>2820<br>history1<br>14  | 27<br>0<br>65<br><1<br>839<br>1144<br>937<br>1105<br>3584<br>history2<br>3  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINAN<br>Silicon<br>Sodium   | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>TS               | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br><b>method</b><br>ASTM D5185m  | limit/base<br>>22<br>>31   | 169<br>0<br>189<br>1<br>728<br>1279<br>804<br>1002<br>2755<br>current<br>5<br>2  | 275<br>0<br>236<br><1<br>755<br>1354<br>852<br>1001<br>2820<br>history1<br>14<br>4   | 27<br>0<br>65<br><1<br>839<br>1144<br>937<br>1105<br>3584<br>history2<br>3<br>3<br>3  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINAN<br>Silicon<br>Sodium<br>Potassium  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>TS               | ASTM D5185m<br>ASTM D5185m   | limit/base<br>>22<br>>31<br>>20  | 169<br>0<br>189<br>1<br>728<br>1279<br>804<br>1002<br>2755<br>current<br>5<br>2<br>2<br><1   | 275<br>0<br>236<br><1<br>755<br>1354<br>852<br>1001<br>2820<br>history1<br>14<br>4<br>1  | 27<br>0<br>65<br><1<br>839<br>1144<br>937<br>1105<br>3584<br>history2<br>3<br>3<br>3<br>0   |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINAN<br>Silicon<br>Sodium<br>Potassium<br>INFRA-RED                                     | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>TS<br>ppm<br>ppm | ASTM D5185m<br>ASTM D5185m  | limit/base<br>>22<br>>31<br>>20<br>limit/base                            | 169<br>0<br>189<br>1<br>728<br>1279<br>804<br>1002<br>2755<br>current<br>5<br>2<br>2<br><1<br>current  | 275<br>0<br>236<br><1<br>755<br>1354<br>852<br>1001<br>2820<br>history1<br>14<br>4<br>1<br>1<br>history1                       | 27<br>0<br>65<br><1<br>839<br>1144<br>937<br>1105<br>3584<br>history2<br>3<br>3<br>0<br>bistory2  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINAN<br>Silicon<br>Sodium<br>Potassium<br>INFRA-RED<br>Soot %                           | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm       | ASTM D5185m<br>ASTM D5185m   | limit/base<br>>22<br>>31<br>>20<br>limit/base<br>>3                      | 169<br>0<br>189<br>1<br>728<br>1279<br>804<br>1002<br>2755<br><i>current</i><br>5<br>2<br><1<br>2<br><1<br><i>current</i>                              | 275<br>0<br>236<br><1<br>755<br>1354<br>852<br>1001<br>2820<br>history1<br>14<br>4<br>1<br>1<br>4<br>1<br>bistory1<br>0.1      | 27<br>0<br>65<br><1<br>839<br>1144<br>937<br>1105<br>3584<br>history2<br>3<br>3<br>3<br>0<br>history2<br>0.2                              |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINAN<br>Silicon<br>Sodium<br>Potassium<br>INFRA-RED<br>Soot %<br>Nitration              | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm       | ASTM D5185m<br>ASTM D5185m                              | limit/base<br>>22<br>>31<br>>20<br>limit/base<br>>3<br>>20               | 169<br>0<br>189<br>1<br>728<br>1279<br>804<br>1002<br>2755<br><i>current</i><br>5<br>2<br><1<br>2<br><1<br><i>current</i><br>0<br>3.5                  | 275<br>0<br>236<br><1<br>755<br>1354<br>852<br>1001<br>2820<br>history1<br>14<br>4<br>1<br>history1<br>0.1<br>6.5              | 27<br>0<br>65<br><1<br>839<br>1144<br>937<br>1105<br>3584<br>history2<br>3<br>3<br>3<br>0<br>history2<br>0.2<br>5.6                       |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINAN<br>Silicon<br>Sodium<br>Potassium<br>INFRA-RED<br>Soot %<br>Nitration<br>Sulfation | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm       | ASTM D5185m<br>ASTM D5185m                              | limit/base<br>>22<br>>31<br>>20<br>limit/base<br>>3<br>>20<br>>30<br>>30 | 169<br>0<br>189<br>1<br>728<br>1279<br>804<br>1002<br>2755<br><i>current</i><br>5<br>2<br><1<br><i>current</i><br>0<br>3.5<br>16.2                     | 275<br>0<br>236<br><1<br>755<br>1354<br>852<br>1001<br>2820<br>history1<br>14<br>4<br>1<br>history1<br>0.1<br>6.5<br>19.5      | 27<br>0<br>65<br><1<br>839<br>1144<br>937<br>1105<br>3584<br>history2<br>3<br>3<br>3<br>0<br>history2<br>0.2<br>5.6<br>18.0<br>history2   |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINAN<br>Silicon<br>Sodium<br>Potassium<br>INFRA-RED<br>Soot %<br>Nitration<br>Sulfation | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm       | ASTM D5185m<br>ASTM D7844<br>*ASTM D7844 | limit/base<br>>22<br>>31<br>>20<br>limit/base<br>>3<br>>20<br>>30<br>>30 | 169<br>0<br>189<br>1<br>728<br>1279<br>804<br>1002<br>2755<br><i>current</i><br>5<br>2<br>2755<br><i>current</i><br>0<br>3.5<br>16.2<br><i>current</i> | 275<br>0<br>236<br><1<br>755<br>1354<br>852<br>1001<br>2820<br>history1<br>14<br>4<br>1<br>1<br>0.1<br>6.5<br>19.5<br>history1 | 27<br>0<br>65<br><1<br>839<br>1144<br>937<br>1105<br>3584<br><b>history2</b><br>3<br>3<br>3<br>0<br><b>history2</b><br>0.2<br>5.6<br>18.0 |



# **OIL ANALYSIS REPORT**







Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Certificate L2367