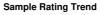


## **OIL ANALYSIS REPORT**





## Machine Id 26213

## Component Diesel Engine

Fluid PETRO CANADA DURON SHP 10W30 (--- 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 INFORMATION         method         limit/base         current         history1         history2           Sample Dumber         Client Info         PCA00116220         PCA0090265         PCA0076408           Machine Age         mis         Client Info         636523         636523         636523           Oil Age         mis         Client Info         636523         636523         636523           Oil Changed         Client Info         NORMAL         NORMAL         NORMAL           Stample Data         WC Method         >5         <1.0         <1.0         <1.0           Water         WC Method         >6         2         NEG         NEG         NEG           Glycol         WC Method         >5         0         <1         <1         <1           Tran         ppm         ASTM05185         >3         0         <1         <1         <1           Nickel         ppm         ASTM  |                      |          |             | -                  | -           |             |             |
|---|----------------------|----------|-------------|--------------------|-------------|-------------|-------------|
| Sample Date         Client Info         15 Feb 2024         13 Jan 2023         20 Jul 2022           Machine Age         mis         Client Info         636523         636523         636523         636523           Oil Age         Client Info         636523         636523         636523         636523           Oil Changed         Client Info         NA         NA         NA         NA           Sample Status         Imit base         current         history1         history2           Fuel         WC Method         >5         <1.0         <1.0         <1.0           Water         WC Method         >0.2         NEG         NEG         NEG           Weater         WC Method         >5         0         <1         <1.0           Water         ppm         ASTM05165m         >80         3         6           Mickel         ppm         ASTM05165m         >20         <1         <1           Itanium         ppm         ASTM05165m         >30         0         <1         <1           Aluminum         ppm         ASTM05165m         >30         0         <1         <1           Lead         ppm         ASTM05165m         >30 </th <th>SAMPLE INFOR</th> <th>MATION</th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th> | SAMPLE INFOR         | MATION   | method      | limit/base         | current     | history1    | history2    |
| Machine Age         mis         Client Info         636523         636523         636523         636523           Oil Age         mis         Client Info         636523         636523         636523           Oil Changed         Client Info         N/A         N/A         N/A           Sample Status         imit/base         current         history1         history2           Fuel         WC Method         >5         <1.0         <1.0         <1.0           Water         WC Method         >0.2         NEG         NEG         NEG           Oli Age         WC Method         imit/base         current         history1         history2           Iron         ppm         ASTM05165m         >80         3         3         6           Chromium         ppm         ASTM05165m         >2         0         <1         1           Iran         ppm         ASTM05165m         >3         0         0         0         1         1         1         1         2         1         1         1         1         1         2         1         1         1         1         1         1         1         1         2         1 <td< th=""><th>Sample Number</th><th></th><th>Client Info</th><th></th><th>PCA0116220</th><th>PCA0090265</th><th>PCA0076408</th></td<>                | Sample Number        |          | Client Info |                    | PCA0116220  | PCA0090265  | PCA0076408  |
| Oil Age         mis         Client Info         S36523         636523         636523         636523         636523           Oil Changed         Client Info         N/A         N/A         N/A         N/A           Sample Status         Imit/base         current         history1         history2           Fuel         WC Method         >5         <1.0         <1.0         <1.0           Water         WC Method         >5         <1.0         <1.0         <1.0           Chromium         ppm         ASTM 05185         S         0         <1         <1           Nickel         ppm         ASTM 05185         >3         0         0         <1         <1           Nickel         ppm         ASTM 05185         >30         0         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         1         1 <th>Sample Date</th> <th></th> <th>Client Info</th> <th></th> <th>15 Feb 2024</th> <th>13 Jan 2023</th> <th>20 Jul 2022</th>                      | Sample Date          |          | Client Info |                    | 15 Feb 2024 | 13 Jan 2023 | 20 Jul 2022 |
| Oli Changed         Client Info         N/A         N/A         N/A         N/A           Sample Status         Image of the status         Image of the status         NoRMAL         NORMAL         NORMAL         NORMAL           CONTAMINATION         method         limit/base         current         history1         history2           Fuel         WC Method         >0.2         NEG         NEG         NEG         NEG           Glycol         WC Method         >0.2         NEG         NEG         NEG         NEG           WEAR METALS         method         imit/base         current         history1         history2           Iron         ppm         ASTM D585m         >80         3         3         6           Titanium         ppm         ASTM D585m         >2         0         <1  | Machine Age          | mls      | Client Info |                    | 636523      | 636523      | 636523      |
| Sample Status         NORMAL         NORMAL         NORMAL         NORMAL         NORMAL           CONTAMINATION         method         imit/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         NEG           WEAR METALS         method         imit/base         current         history1         history2           Iron         ppm         ASTM 05185m         >80         3         3         6           Chromium         ppm         ASTM 05185m         >2         0         <1         <1           Nickel         ppm         ASTM 05185m         30         0         0         <1           Inimum         ppm         ASTM 05185m         30         0         <1         <1         <1           Lead         ppm         ASTM 05185m         50         <1         <1         <1           Antimony         ppm         ASTM 05185m         0         <1         0         <1  | Oil Age              | mls      | Client Info |                    | 636523      | 636523      | 636523      |
| CONTAMINATION         method         imit/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         NEG           WeAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM 05185m         >5         0         <1         <1           Nickel         ppm         ASTM 05185m         >5         0         <1         <1           Attranium         ppm         ASTM 05185m         >3         0         0         <1         <1           Lead         ppm         ASTM 05185m         >30         0         1         1         <1           Lead         ppm         ASTM 05185m         >5         0         <1         <1         <1           Lead         ppm         ASTM 05185m         0         0         <1         <1         <1           Attranium         ppm         ASTM 05185m         0         0   | Oil Changed          |          | Client Info |                    | N/A         | N/A         | N/A         |
| Fuel         WC Method         >5         <1.0  | Sample Status        |          |             |                    | NORMAL      | NORMAL      | NORMAL      |
| Fuel         WC Method         >5         <1.0  | CONTAMINAT           | ION      | method      | limit/base         | current     | history1    | history2    |
| Water         WC Method         >0.2         NEG         NEG         NEG         NEG           Glycol         WC Method         Imit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >5         0         <1         <1           Nickel         ppm         ASTM D5185m         >5         0         <1         <1           Nickel         ppm         ASTM D5185m         >2         0         <1         <1           Nickel         ppm         ASTM D5185m         >3         0         0         <1         <1           Nickel         ppm         ASTM D5185m         >30         <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         NBTM D5185m         S0         S0         S0         S0         S0         S0 <th></th> <th></th> <th>WC Method</th> <th>&gt;5</th> <th>&lt;10</th> <th></th> <th>&lt;10</th>   |                      |          | WC Method   | >5                 | <10         |             | <10         |
| Glycol         WC Method         NEC         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >5         0         <1         <1           Nickel         ppm         ASTM D5185m         >2         0         <1         <1           Nickel         ppm         ASTM D5185m         >2         0         <1         <1           Nickel         ppm         ASTM D5185m         >3         0         0         <1         <1           Aluminum         ppm         ASTM D5185m         >30         <1         <1         <1         <1           Copper         ppm         ASTM D5185m         >30         0         <1         <1         <1           Copper         ppm         ASTM D5185m         >30         0         <1         <1         <1           Copper         ppm         ASTM D5185m         >0         <1         0         <1         <1           Copper         ppm         ASTM D5185m         0         0         <1         0         <1         1         <1           Astot  |                      |          | WC Method   |                    |             |             |             |
| WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >80         3         3         6           Chromium         ppm         ASTM D5185m         >2         0         <1         <1           Nickel         ppm         ASTM D5185m         >2         0         <1         <1           Titanium         ppm         ASTM D5185m         >3         0         0         <1         <1           Aluminum         ppm         ASTM D5185m         >30         0         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 </th <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>  |                      |          |             |                    |             |             |             |
| Iron         ppm         ASTM D5185m         >800         3         3         6           Chromium         ppm         ASTM D5185m         >5         0         <1         <1           Nickel         ppm         ASTM D5185m         >2         0         <1         <1           Titanium         ppm         ASTM D5185m         >3         0         0         0         0           Silver         ppm         ASTM D5185m         >30         <1         <1         <1         <1           Lead         ppm         ASTM D5185m         >30         0         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   | -                    | 0        |             | limit/base         | -           | -           | -           |
| Chromium         ppm         ASTM D5185m         >5         0         <1  |                      | 5        |             |                    |             |             |             |
| Nickel         ppm         ASTM D5185m         >2         0         <1  | -                    |          |             |                    |             |             |             |
| Titanium         ppm         ASTM D5185m         0         0         0         0           Silver         ppm         ASTM D5185m         >3         0         <1         <1           Aluminum         ppm         ASTM D5185m         >30         <1         <1         <1           Lead         ppm         ASTM D5185m         >30         0         1         1         <1           Copper         ppm         ASTM D5185m         >5         0         <1         <1         <1           Antimony         ppm         ASTM D5185m         >5         0         <1         <1         <1           Vanadium         ppm         ASTM D5185m         >5         0         <1         0         <1         <1           Addium         ppm         ASTM D5185m         0         0         <1         0         <1         <1         <5           Boron         ppm         ASTM D5185m         50         58         56         56         <56         <56         <56         <56         <56         <56         <56         <56         <56         <56         <56         <56         <56         <56         <56         <56         <  |                      | ppm      |             |                    |             |             |             |
| Silver         ppm         ASTM D5185m         >3         0         0         <1  |                      |          |             | >2                 |             |             |             |
| Aluminum         ppm         ASTM D5185m         >30         <1   |                      | ppm      |             |                    |             |             |             |
| Lead         ppm         ASTM D5185m         >30         0         1         1           Copper         ppm         ASTM D5185m         >150         1         <1         2           Tin         ppm         ASTM D5185m         >5         0         <1         <1           Antimony         ppm         ASTM D5185m         0         <1         <1           Vanadium         ppm         ASTM D5185m         0         <1         0           Cadmium         ppm         ASTM D5185m         0         <1         0           Cadmium         ppm         ASTM D5185m         0         0         <1         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         2         10         11         5           Barium         ppm         ASTM D5185m         0         0         41         11           Magnese         ppm         ASTM D5185m         0         0         1124         986         1018           Phosphorus         ppm         ASTM D5185m         955         1016         914         916  |                      |          |             |                    | -           |             |             |
| Copper         ppm         ASTM D5185m         >150         1         <1  |                      | ppm      |             |                    |             |             |             |
| Tin         ppm         ASTM D5185m         >55         0         <1  |                      |          |             |                    |             |             |             |
| Antimony         ppm         ASTM D5185m              Vanadium         ppm         ASTM D5185m         0         <1         0           Cadmium         ppm         ASTM D5185m         0         0         <1         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         2         10         11         5           Barium         ppm         ASTM D5185m         0         0         4         0           Molybdenum         ppm         ASTM D5185m         50         58         56         56           Manganese         ppm         ASTM D5185m         0         0         <1         <1           Magnesium         ppm         ASTM D5185m         950         891         827         857           Calcium         ppm         ASTM D5185m         950         1016         914         916           Zinc         ppm         ASTM D5185m         920         3112         3220         2735           CONTAMINANTS         method         imit/base         current         history1         history  | ••                   | ppm      |             |                    |             |             |             |
| Number         ppm         ASTM D5185m         0         <1   | Tin                  | ppm      | ASTM D5185m | >5                 | -           |             | <1          |
| Cadmium         ppm         ASTM D5185m         0         0         <1  | Antimony             | ppm      | ASTM D5185m |                    |             |             |             |
| ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         2         10         11         5           Barium         ppm         ASTM D5185m         0         0         4         0           Molybdenum         ppm         ASTM D5185m         50         58         56         56           Magnesium         ppm         ASTM D5185m         0         0         <1         <1           Magnesium         ppm         ASTM D5185m         950         891         827         857           Calcium         ppm         ASTM D5185m         950         1124         986         1018           Phosphorus         ppm         ASTM D5185m         995         1016         914         916           Zinc         ppm         ASTM D5185m         995         1016         914         916           Zinc         ppm         ASTM D5185m         2600         3112         3220         2735           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20   | Vanadium             | ppm      | ASTM D5185m |                    | 0           |             |             |
| Boron         ppm         ASTM D5185m         2         10         11         5           Barium         ppm         ASTM D5185m         0         0         4         0           Molybdenum         ppm         ASTM D5185m         50         58         56         56           Manganese         ppm         ASTM D5185m         0         0         <1         <1           Magnesium         ppm         ASTM D5185m         950         891         827         857           Calcium         ppm         ASTM D5185m         950         891         827         857           Calcium         ppm         ASTM D5185m         950         1124         986         1018           Phosphorus         ppm         ASTM D5185m         995         1016         914         916           Zinc         ppm         ASTM D5185m         995         1016         914         916           Sulfur         ppm         ASTM D5185m         2600         3112         3220         2735           CONTAMINANTS         method         imit/base         current         history1         history2           Solium         ppm         ASTM D5185m         >20<  | Cadmium              | ppm      | ASTM D5185m |                    | 0           | 0           | <1          |
| Barium         ppm         ASTM D5185m         0         0         4         0           Molybdenum         ppm         ASTM D5185m         50         58         56         56           Manganese         ppm         ASTM D5185m         0         0         <1         <1           Magnesium         ppm         ASTM D5185m         950         891         827         857           Calcium         ppm         ASTM D5185m         1050         1124         986         1018           Phosphorus         ppm         ASTM D5185m         995         1016         914         916           Zinc         ppm         ASTM D5185m         995         1016         914         916           Zinc         ppm         ASTM D5185m         995         1016         914         916           Zinc         ppm         ASTM D5185m         2600         3112         3220         2735           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         0         <1         3           INFRA-RED         method         limit/base <td< th=""><th>ADDITIVES</th><th></th><th>method</th><th>limit/base</th><th>current</th><th>history1</th><th>history2</th></td<>                    | ADDITIVES            |          | method      | limit/base         | current     | history1    | history2    |
| Molybdenum         ppm         ASTM D5185m         50         58         56         56           Manganese         ppm         ASTM D5185m         0         0         <1         <1           Magnesium         ppm         ASTM D5185m         950         891         827         857           Calcium         ppm         ASTM D5185m         1050         1124         986         1018           Phosphorus         ppm         ASTM D5185m         995         1016         914         916           Zinc         ppm         ASTM D5185m         180         1169         1127         1141           Sulfur         ppm         ASTM D5185m         2600         3112         3220         2735           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         3         4         2           Sodium         ppm         ASTM D5185m         >20         0         <1         3           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         3  | Boron                | ppm      | ASTM D5185m | 2                  | 10          | 11          | 5           |
| Manganese         ppm         ASTM D5185m         0         0         <1  | Barium               | ppm      | ASTM D5185m | 0                  | 0           | 4           | 0           |
| Magnesium         ppm         ASTM D5185m         950         891         827         857           Calcium         ppm         ASTM D5185m         1050         1124         986         1018           Phosphorus         ppm         ASTM D5185m         995         1016         914         916           Zinc         ppm         ASTM D5185m         995         1016         914         916           Zinc         ppm         ASTM D5185m         1180         1169         1127         1141           Sulfur         ppm         ASTM D5185m         2600         3112         3220         2735           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         3         4         2           Sodium         ppm         ASTM D5185m         >20         0         <1         3           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7624         >20         6.1         5.3         7.1           Sulfation         Abs/rm         *ASTM D7624   | Molybdenum           | ppm      | ASTM D5185m | 50                 | 58          | 56          | 56          |
| Calcium         ppm         ASTM D5185m         1050         1124         986         1018           Phosphorus         ppm         ASTM D5185m         995         1016         914         916           Zinc         ppm         ASTM D5185m         1180         1169         1127         1141           Sulfur         ppm         ASTM D5185m         2600         3112         3220         2735           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         3         4         2           Sodium         ppm         ASTM D5185m         >20         3         4         2           Sodium         ppm         ASTM D5185m         >20         3         4         2           Sodium         ppm         ASTM D5185m         >20         0         <1         3           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7624         >20         6.1         5.3         7.1           Sulfation         Abs/.1mm         *ASTM D7415         >30<  | Manganese            | ppm      | ASTM D5185m | 0                  | 0           | <1          | <1          |
| Phosphorus         ppm         ASTM D5185m         995         1016         914         916           Zinc         ppm         ASTM D5185m         1180         1169         1127         1141           Sulfur         ppm         ASTM D5185m         2600         3112         3220         2735           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         3         4         2           Sodium         ppm         ASTM D5185m         >20         3         4         2           Sodium         ppm         ASTM D5185m         >20         3         4         2           Sodium         ppm         ASTM D5185m         >20         0         <11   | Magnesium            | ppm      | ASTM D5185m | 950                | 891         | 827         | 857         |
| Zinc         ppm         ASTM D5185m         1180         1169         1127         1141           Sulfur         ppm         ASTM D5185m         2600         3112         3220         2735           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         3         4         2           Sodium         ppm         ASTM D5185m         >20         3         4         2           Sodium         ppm         ASTM D5185m         >20         3         4         2           Potassium         ppm         ASTM D5185m         >20         0         <1         3           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.2         0.1         0.3           Nitration         Abs/cm         *ASTM D7624         >20         6.1         5.3         7.1           Sulfation         Abs/.1mm         *ASTM D7415         >30         17.8         17.2         19.6           FLUID DEGRADATION         method         limit/base  | Calcium              | ppm      | ASTM D5185m | 1050               | 1124        | 986         | 1018        |
| Sulfur         ppm         ASTM D5185m         2600         3112         3220         2735           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         3         4         2           Sodium         ppm         ASTM D5185m         >20         3         4         2           Sodium         ppm         ASTM D5185m         >20         3         4         2           Potassium         ppm         ASTM D5185m         >20         0         <1         3           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.2         0.1         0.3           Nitration         Abs/cm         *ASTM D7624         >20         6.1         5.3         7.1           Sulfation         Abs/.1mm         *ASTM D7415         >30         17.8         17.2         19.6           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414  | Phosphorus           | ppm      | ASTM D5185m | 995                | 1016        | 914         | 916         |
| CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         3         4         2           Sodium         ppm         ASTM D5185m         >20         3         4         2           Sodium         ppm         ASTM D5185m         >20         0         <1         2           Potassium         ppm         ASTM D5185m         >20         0         <1         3           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.2         0.1         0.3           Nitration         Abs/cm         *ASTM D7624         >20         6.1         5.3         7.1           Sulfation         Abs/.1mm         *ASTM D7415         >30         17.8         17.2         19.6           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         13.4         12.7         14.9           Base Number (BN)         mg K0H/g         ASTM  | Zinc                 | ppm      | ASTM D5185m | 1180               | 1169        | 1127        | 1141        |
| Silicon         ppm         ASTM D5185m         >20         3         4         2           Sodium         ppm         ASTM D5185m         <1   | Sulfur               | ppm      | ASTM D5185m | 2600               | 3112        | 3220        | 2735        |
| Sodium         ppm         ASTM D5185m         <1   | CONTAMINAN           | TS       | method      | limit/base         | current     | history1    | history2    |
| Potassium         ppm         ASTM D5185m         >20         0         <1  | Silicon              | ppm      | ASTM D5185m | >20                | 3           | 4           | 2           |
| INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.2         0.1         0.3           Nitration         Abs/cm         *ASTM D7624         >20         6.1         5.3         7.1           Sulfation         Abs/.1mm         *ASTM D7415         >30         17.8         17.2         19.6           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         13.4         12.7         14.9           Base Number (BN)         mg KOH/g         ASTM D2896         8.7         9.2         10.0  | Sodium               | ppm      | ASTM D5185m |                    | <1          | <1          | 2           |
| Soot %         %         *ASTM D7844         >3         0.2         0.1         0.3           Nitration         Abs/cm         *ASTM D7624         >20         6.1         5.3         7.1           Sulfation         Abs/.1mm         *ASTM D7415         >30         17.8         17.2         19.6           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         13.4         12.7         14.9           Base Number (BN)         mg KOH/g         ASTM D2896         8.7         9.2         10.0  | Potassium            | ppm      | ASTM D5185m | >20                | 0           | <1          | 3           |
| Nitration         Abs/cm         *ASTM D7624         >20         6.1         5.3         7.1           Sulfation         Abs/.1mm         *ASTM D7624         >20         6.1         5.3         7.1           Sulfation         Abs/.1mm         *ASTM D7415         >30         17.8         17.2         19.6           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         13.4         12.7         14.9           Base Number (BN)         mg KOH/g         ASTM D2896         8.7         9.2         10.0   | INFRA-RED            |          | method      | limit/base         | current     | history1    | history2    |
| Sulfation         Abs/.1mm         *ASTM D7415         >30         17.8         17.2         19.6           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         13.4         12.7         14.9           Base Number (BN)         mg KOH/g         ASTM D2896         8.7         9.2         10.0   | Soot %               | %        | *ASTM D7844 | >3                 | 0.2         | 0.1         | 0.3         |
| FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.1mm*ASTM D7414>2513.412.714.9Base Number (BN)mg KOH/gASTM D28968.79.210.0   | Nitration            | Abs/cm   | *ASTM D7624 | >20                | 6.1         | 5.3         | 7.1         |
| Oxidation         Abs/.1mm         *ASTM D7414         >25         13.4         12.7         14.9           Base Number (BN)         mg KOH/g         ASTM D2896         8.7         9.2         10.0   | Sulfation            | Abs/.1mm | *ASTM D7415 | >30                | 17.8        | 17.2        | 19.6        |
| Oxidation         Abs/.1mm         *ASTM D7414         >25         13.4         12.7         14.9           Base Number (BN)         mg KOH/g         ASTM D2896         8.7         9.2         10.0   | FLUI <u>D DEGRAI</u> | DATION   | method      | limit/bas <u>e</u> | current     | history1    | history2    |
| Base Number (BN)         mg KOH/g         ASTM D2896         8.7         9.2         10.0   |                      |          |             |                    |             |             |             |
|   |                      |          |             |                    |             |             |             |
|   | 9:14:41) Rev: 1      |          |             |                    |             |             |             |

Submitted By: KEVIN HOOKS

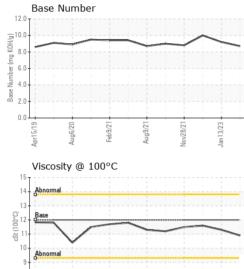


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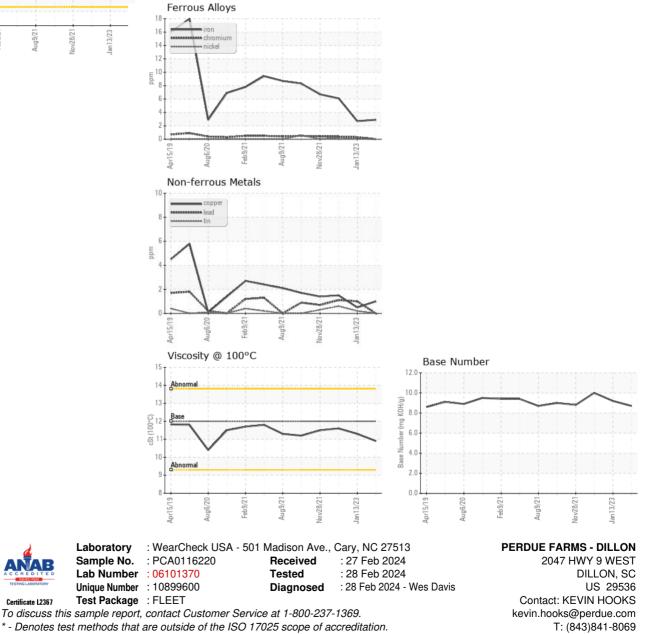
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# **OIL ANALYSIS REPORT**



| 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     |
| 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 PROPE      | RTIES  | method    | limit/base | current | history1 | history2 |
| Visc @ 100°C     | cSt    | ASTM D445 | 12.00      | 10.9    | 11.3     | 11.6     |
| GRAPHS           |        |           |            |         |          |          |



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

F: (843)841-8070