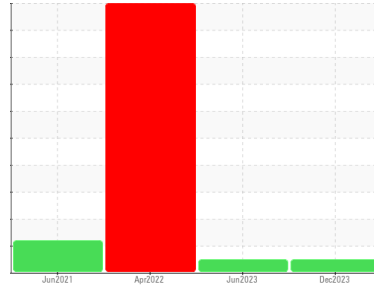




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Area  
**GM Renton Dump Truck Shop**  
 Machine Id  
**[GM Renton Dump Truck Shop] S12-551**  
 Component  
**Diesel Engine**  
 Fluid  
**CASTROL Vecton LD 10W30 (--- GAL)**

## DIAGNOSIS

### Recommendation

Oil and filter change at the time of sampling has been noted. 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 Number      | Client Info |             |            | <b>PE0002334</b>   | PE0001222   | PE12290220  |
| Sample Date        | Client Info |             |            | <b>04 Dec 2023</b> | 09 Jun 2023 | 16 Apr 2022 |
| Machine Age        | hrs         | Client Info |            | <b>1782</b>        | 929         | 1852        |
| Oil Age            | hrs         | Client Info |            | <b>1782</b>        | 929         | 1852        |
| Oil Changed        | Client Info |             |            | <b>Changed</b>     | Not Changd  | Changed     |
| Sample Status      |             |             |            | <b>NORMAL</b>      | NORMAL      | SEVERE      |

| CONTAMINATION |           | method | limit/base | current        | history1 | history2 |
|---------------|-----------|--------|------------|----------------|----------|----------|
| Fuel          | WC Method | >5     |            | <b>&lt;1.0</b> | <1.0     | <1.0     |
| Water         | WC Method | >0.2   |            | <b>NEG</b>     | NEG      | NEG      |
| Glycol        | WC Method |        |            | <b>NEG</b>     | NEG      | NEG      |

| WEAR METALS |     | method      | limit/base | current      | history1 | history2 |
|-------------|-----|-------------|------------|--------------|----------|----------|
| Iron        | ppm | ASTM D5185m | >100       | <b>92</b>    | 49       | ▲ 112    |
| Chromium    | ppm | ASTM D5185m | >20        | <b>1</b>     | <1       | 1        |
| Nickel      | ppm | ASTM D5185m | >4         | <b>&lt;1</b> | 0        | 1        |
| Titanium    | ppm | ASTM D5185m |            | <b>&lt;1</b> | 0        | 0        |
| Silver      | ppm | ASTM D5185m | >3         | <b>0</b>     | <1       | <1       |
| Aluminum    | ppm | ASTM D5185m | >20        | <b>9</b>     | 7        | ◆ 49     |
| Lead        | ppm | ASTM D5185m | >40        | <b>&lt;1</b> | 0        | 2        |
| Copper      | ppm | ASTM D5185m | >330       | <b>12</b>    | 7        | 15       |
| Tin         | ppm | ASTM D5185m | >15        | <b>3</b>     | 2        | 4        |
| Antimony    | ppm | ASTM D5185m |            | <b>---</b>   | ---      | 0        |
| Vanadium    | ppm | ASTM D5185m |            | <b>&lt;1</b> | 0        | 0        |
| Cadmium     | ppm | ASTM D5185m |            | <b>0</b>     | 0        | ---      |

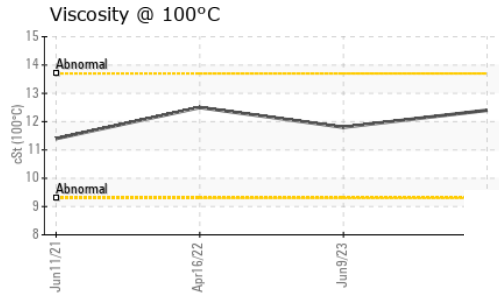
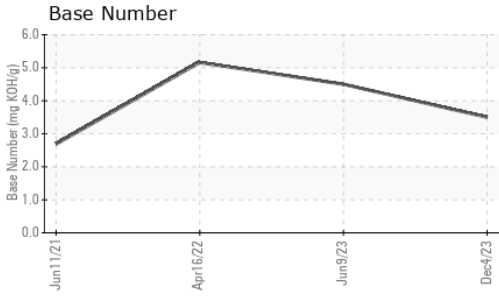
| ADDITIVES  |     | method      | limit/base | current     | history1 | history2 |
|------------|-----|-------------|------------|-------------|----------|----------|
| Boron      | ppm | ASTM D5185m |            | <b>21</b>   | 24       | 22       |
| Barium     | ppm | ASTM D5185m |            | <b>1</b>    | 0        | 1        |
| Molybdenum | ppm | ASTM D5185m |            | <b>7</b>    | 6        | 42       |
| Manganese  | ppm | ASTM D5185m |            | <b>2</b>    | 2        | ---      |
| Magnesium  | ppm | ASTM D5185m |            | <b>463</b>  | 572      | 1025     |
| Calcium    | ppm | ASTM D5185m |            | <b>1841</b> | 1792     | 1240     |
| Phosphorus | ppm | ASTM D5185m |            | <b>984</b>  | 892      | 962      |
| Zinc       | ppm | ASTM D5185m |            | <b>1119</b> | 1104     | 1144     |
| Sulfur     | ppm | ASTM D5185m |            | <b>3101</b> | 4009     | ---      |

| CONTAMINANTS |     | method      | limit/base | current   | history1 | history2 |
|--------------|-----|-------------|------------|-----------|----------|----------|
| Silicon      | ppm | ASTM D5185m | >25        | <b>21</b> | 18       | ▲ 21     |
| Sodium       | ppm | ASTM D5185m |            | <b>11</b> | 3        | 13       |
| Potassium    | ppm | ASTM D5185m | >20        | <b>18</b> | 12       | ◆ 116    |

| INFRA-RED |          | method      | limit/base | current     | history1 | history2 |
|-----------|----------|-------------|------------|-------------|----------|----------|
| Soot %    | %        | *ASTM D7844 | >3         | <b>0.8</b>  | 0.5      | 0.6      |
| Nitration | Abs/cm   | *ASTM D7624 | >20        | <b>13.0</b> | 10.8     | 15       |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30        | <b>31.4</b> | 26.4     | ---      |

| FLUID DEGRADATION |          | method      | limit/base | current     | history1 | history2 |
|-------------------|----------|-------------|------------|-------------|----------|----------|
| Oxidation         | Abs/.1mm | *ASTM D7414 | >25        | <b>28.7</b> | 22.6     | 32       |
| Base Number (BN)  | mg KOH/g | ASTM D2896  |            | <b>3.5</b>  | 4.5      | 5.16     |

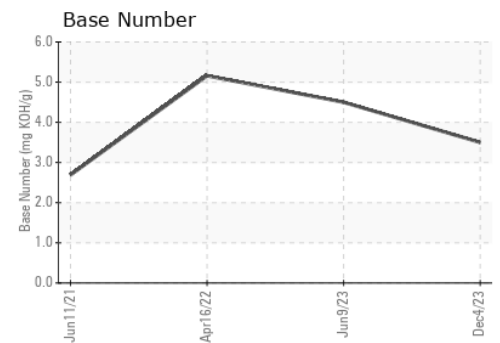
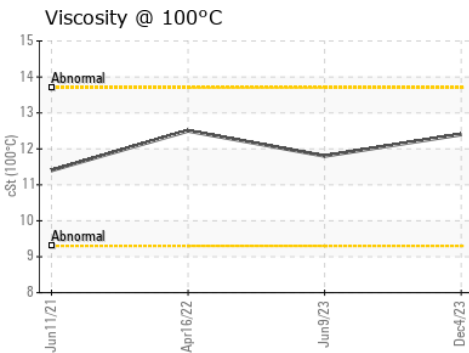
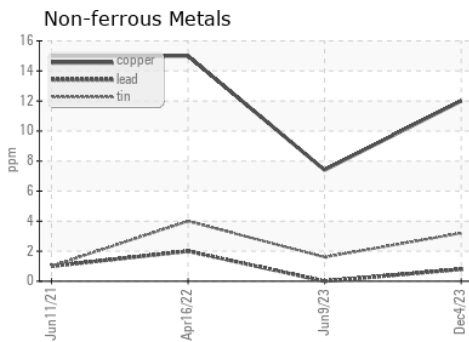
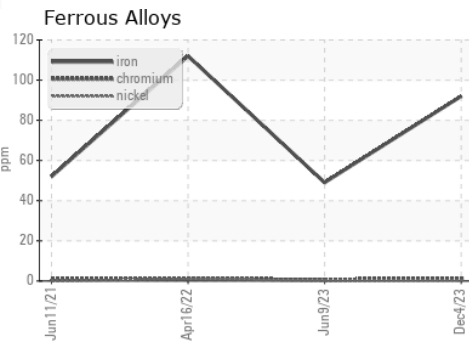
# OIL ANALYSIS REPORT



| VISUAL           | method | limit/base | current | history1     | history2 |     |
|------------------|--------|------------|---------|--------------|----------|-----|
| White Metal      | scalar | *Visual    | NONE    | <b>NONE</b>  | NONE     | --- |
| Yellow Metal     | scalar | *Visual    | NONE    | <b>NONE</b>  | NONE     | --- |
| Precipitate      | scalar | *Visual    | NONE    | <b>NONE</b>  | NONE     | --- |
| Silt             | scalar | *Visual    | NONE    | <b>NONE</b>  | NONE     | --- |
| Debris           | scalar | *Visual    | NONE    | <b>NONE</b>  | NONE     | --- |
| Sand/Dirt        | scalar | *Visual    | NONE    | <b>NONE</b>  | NONE     | --- |
| Appearance       | scalar | *Visual    | NORML   | <b>NORML</b> | NORML    | --- |
| Odor             | scalar | *Visual    | NORML   | <b>NORML</b> | NORML    | --- |
| Emulsified Water | scalar | *Visual    | >0.2    | <b>NEG</b>   | NEG      | --- |
| Free Water       | scalar | *Visual    |         | <b>NEG</b>   | NEG      | --- |

| FLUID PROPERTIES | method | limit/base | current     | history1 | history2 |
|------------------|--------|------------|-------------|----------|----------|
| Visc @ 100°C     | cSt    | ASTM D445  | <b>12.4</b> | 11.8     | ▲ 12.5   |

## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : PE0002334 **Received** : 12 Jan 2024  
**Lab Number** : **06060121** **Diagnosed** : 16 Jan 2024  
**Unique Number** : 10831503 **Diagnostician** : Doug Bogart  
**Test Package** : CONST ( Additional Tests: FT-IR, ICP, KV100, SCREEN, TBN )

**Gary Merlino Construction - Off Road Shop**  
 9125 10TH AVE SOUTH  
 SEATTLE, WA  
 US 98108  
 Contact: Zack  
 oilsamples@gmccinc.com

Certificate L2367  
 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)