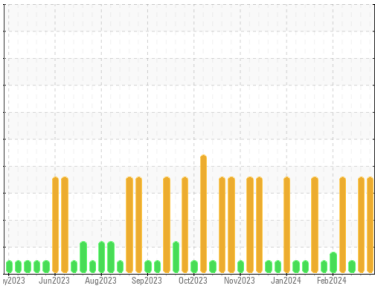
# OIL ANALYSIS REPORT

Sample Rating Trend



**PH**

Machine Id
## LIDM03BE (S/N GZJ-00163)
Component
**Biogas Engine**
Fluid
**CHEVRON HDAX 9500 GAS ENGINE OIL 40 (540 LTR)**

## DIAGNOSIS

**Recommendation**

Nous avons pris note que la vidange d`huile a été effectuée au moment de l`échantillonnage. Échantillonner de nouveau l`équipement au prochain intervalle de vidange afin d`en surveiller la condition.

**Wear**

Les taux d`usure de tous les composants sont normaux.

**Contamination**

Il n`y a aucun indice de contamination dans l`huile.

**Fluid Condition**

Le niveau de i-pH est anormalement bas. Le niveau de AN est supérieur à la limite recommandée. Le niveau de BN est inférieur à la normale. l`huile ne peut plus être utilisée.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC0904328** | WC0904342 | WC0904350 |
| Sample Date | | Client Info | | **25 Mar 2024** | 18 Mar 2024 | 11 Mar 2024 |
| Machine Age | hrs | Client Info | | **43348** | 43224 | 43055 |
| Oil Age | hrs | Client Info | | **329** | 205 | 36 |
| Oil Changed | | Client Info | | **Changed** | Not Changd | Changed |
| Sample Status | | | | **ABNORMAL** | ABNORMAL | NORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >4.0 | **<1.0** | <1.0 | <1.0 |
| Water | | WC Method | >0.1 | **NEG** | NEG | NEG |
| Glycol | | WC Method | | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185(m) | >15 | **8** | 6 | 3 |
| Chromium | ppm | ASTM D5185(m) | >4 | **0** | 0 | 0 |
| Nickel | ppm | ASTM D5185(m) | >2 | **0** | <1 | <1 |
| Titanium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | >5 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >6 | **2** | 2 | 2 |
| Lead | ppm | ASTM D5185(m) | >9 | **0** | 0 | <1 |
| Copper | ppm | ASTM D5185(m) | >6 | **1** | 1 | <1 |
| Tin | ppm | ASTM D5185(m) | >4 | **1** | 1 | <1 |
| Antimony | ppm | ASTM D5185(m) | | **2** | 2 | 0 |
| Vanadium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Beryllium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |

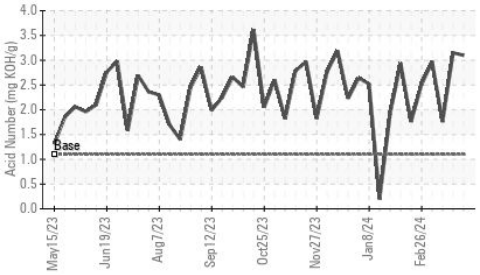
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185(m) | | **4** | 4 | 4 |
| Barium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | | **<1** | 1 | 1 |
| Manganese | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Magnesium | ppm | ASTM D5185(m) | | **13** | 13 | 12 |
| Calcium | ppm | ASTM D5185(m) | | **1774** | 1804 | 1661 |
| Phosphorus | ppm | ASTM D5185(m) | | **246** | 258 | 243 |
| Zinc | ppm | ASTM D5185(m) | | **307** | 299 | 287 |
| Sulfur | ppm | ASTM D5185(m) | | **3257** | 3310 | 2060 |
| Lithium | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >181 | **88** | 68 | 27 |
| Sodium | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |
| Potassium | ppm | ASTM D5185(m) | >20 | **<1** | 2 | 3 |

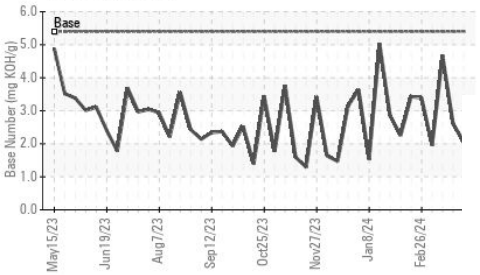
| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | ASTM D7844* | | **0** | 0 | 0 |
| Nitration | Abs/cm | ASTM D7624* | >20 | **5.2** | 5.1 | 4.7 |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | **25.3** | 22.8 | 16.5 |

# OIL ANALYSIS REPORT

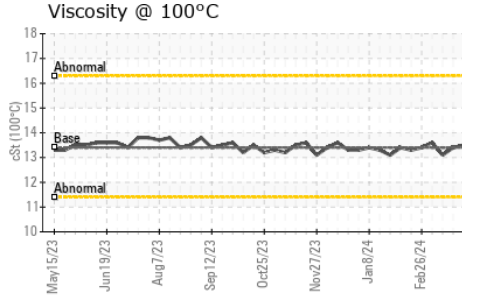
Acid Number




Base Number




Viscosity @ 100°C



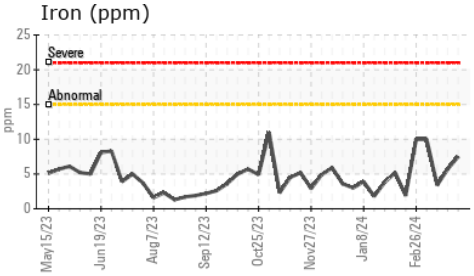

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | ASTM D7414* | >25 | **13.6** | 12.1 | 7.6 |
| Acid Number (AN) | mg KOH/g | ASTM D974* | 1.1 | ▲ **3.10** | ▲ 3.15 | 1.76 |
| Base Number (BN) | mg KOH/g | ASTM D2896* | 5.4 | ▲ **2.06** | ▲ 2.61 | 4.67 |
| i-pH | Scale 0-14 | ASTM D7946* | <4.5 | ▲ **3.66** | ▲ 4.13 | 5.43 |

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Emulsified Water | scalar | Visual* | >0.1 | **NEG** | NEG | NEG |
| Free Water | scalar | Visual* | | **NEG** | NEG | NEG |

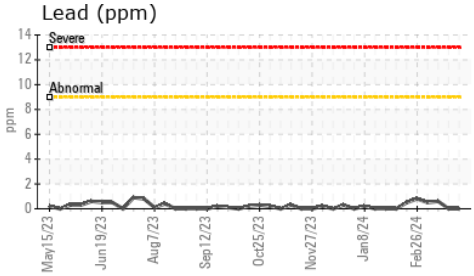
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D7279(m) | 13.4 | **13.5** | 13.4 | 13.1 |

## GRAPHS

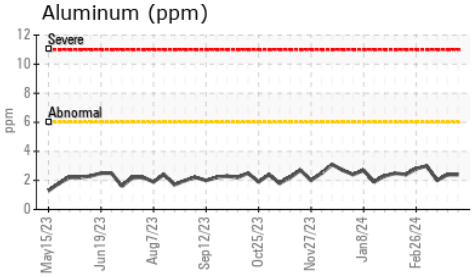
Iron (ppm)



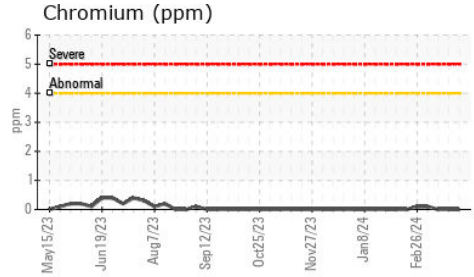

Lead (ppm)



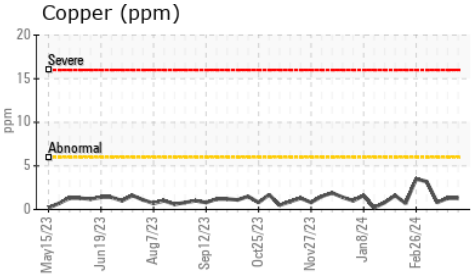

Aluminum (ppm)



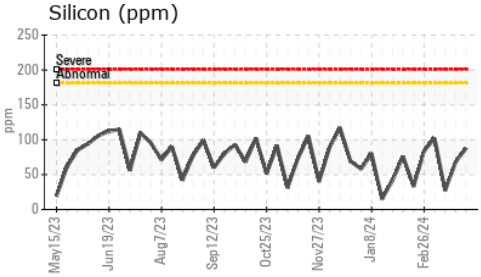

Chromium (ppm)



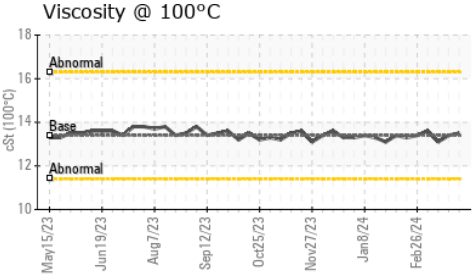

Copper (ppm)



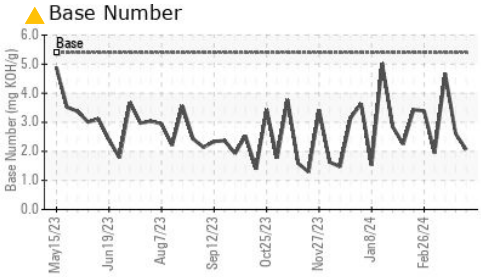

Silicon (ppm)




Viscosity @ 100°C




Base Number




ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
**Sample No.** : WC0904328 **Received** : 27 Mar 2024
**Lab Number** : 02624929 **Tested** : 28 Mar 2024
**Unique Number** : 5750048 **Diagnosed** : 28 Mar 2024 - Kevin Marson
**Test Package** : MOB 2 ( Additional Tests: i-pH, TAN Auto, TAN Man )

*To discuss this sample report, contact Customer Service at 1-800-268-2131.*
*Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.*
*Validity of results and interpretation are based on the sample and information as supplied.*

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