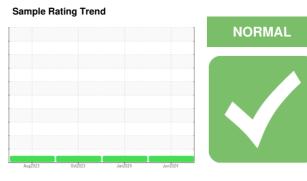


# **OIL ANALYSIS REPORT**

# SYNOIL 8K FG **QUINCY 96673H - MSI EXPRESS**

Component Compressor



### Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the

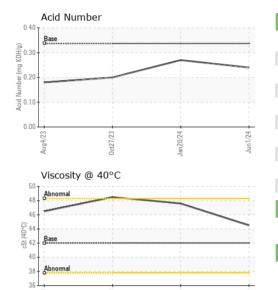
### **Fluid Condition**

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

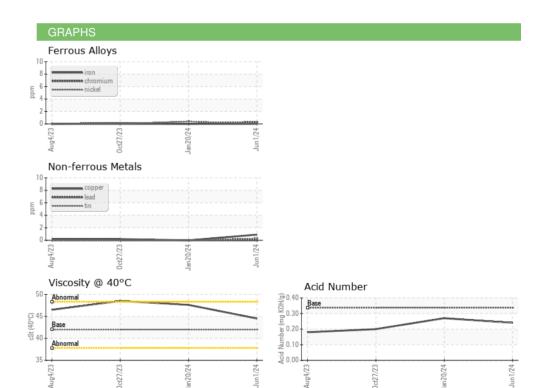
| Sample Date   | SAMPLE INFORM    | MATION   | method      | limit/base | current     | history1    | history2    |
|---|------------------|----------|-------------|------------|-------------|-------------|-------------|
| Machine Age         hrs         Client Info         146646         143884         142369           Oil Age         hrs         Client Info         2762         5695         4180           Oil Changed         Client Info         N/A         N/A         N/A         N/A           Sample Status         NORMAL         NORMAL         NORMAL         NORMAL         NORMAL           CONTAMINATION         method         limit/base         current         history1         history1           Water         WC Method         >0.1         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history1           Iron         ppm         ASTM D5185m         >50         0         0         0           Iron         ppm         ASTM D5185m         >5         <1   | Sample Number    |          | Client Info |            | UCZ06206667 | UCZ06074903 | UCZ05997432 |
| Oil Age         hrs         Client Info         2762         5695         4180           Oil Changed         Client Info         N/A         N/A         N/A         N/A           Sample Status         method         limit/base         current         history1         history1           Water         WC Method         >0.1         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history1           Iron         ppm         ASTM D5185m         >50         0         0         0         0           Chromium         ppm         ASTM D5185m         >50         0         0         0         1           Iron         ppm         ASTM D5185m         >50         0         0         0         1           Iron         ppm         ASTM D5185m         >50         0         0         0         1           Iron         ppm         ASTM D5185m         >50         0         0         0         0           Illuminum         ppm         ASTM D5185m         >15         2         <1         <1         <1           Lead         ppm         ASTM D518  | Sample Date      |          | Client Info |            | 01 Jun 2024 | 20 Jan 2024 | 27 Oct 2023 |
| Oil Changed Sample Status         Client Info         N/A         N/A <t< td=""><td>Machine Age</td><td>hrs</td><td>Client Info</td><td></td><th>146646</th><td>143884</td><td>142369</td></t<> | Machine Age      | hrs      | Client Info |            | 146646      | 143884      | 142369      |
| NORMAL   NORMAL   NORMAL   NORMAL   CONTAMINATION   method   limit/base   current   history1   history  | Oil Age          | hrs      | Client Info |            | 2762        | 5695        | 4180        |
| CONTAMINATION         method         limit/base         current         history1         history1           Water         WC Method         >0.1         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history1           Iron         ppm         ASTM D5185m         >50         0         0         0           Chromium         ppm         ASTM D5185m         >50         <1         0         <1           Nickel         ppm         ASTM D5185m         >5         <1         0         <1         0           Silver         ppm         ASTM D5185m         >15         2         <1         <1         0         0           Aluminum         ppm         ASTM D5185m         >15         2         <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   | Oil Changed      |          | Client Info |            | N/A         | N/A         | N/A         |
| Water         WC Method         >0.1         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history1           Iron         ppm         ASTM D5185m         >50         0         0         0           Chromium         ppm         ASTM D5185m         >5         <1         0         <1           Nickel         ppm         ASTM D5185m         >5         <1         0         0           Silver         ppm         ASTM D5185m         0         0         0         0           Silver         ppm         ASTM D5185m         >15         2         <1         <1           Lead         ppm         ASTM D5185m         >15         2         <1         <1           Lead         ppm         ASTM D5185m         >65         0         0         0           Copper         ppm         ASTM D5185m         >10         <1         0         <1           Vanadium         ppm         ASTM D5185m         >10         <1         0         0           Cadmium         ppm         ASTM D5185m         0         0         0         0   | Sample Status    |          |             |            | NORMAL      | NORMAL      | NORMAL      |
| WEAR METALS         method         limit/base         current         history1         history           Iron         ppm         ASTM D5185m         >50         0         0         0           Chromium         ppm         ASTM D5185m         >5         <1  | CONTAMINATIO     | N        | method      | limit/base | current     | history1    | history2    |
| Iron  | Water            |          | WC Method   | >0.1       | NEG         | NEG         | NEG         |
| Chromium         ppm         ASTM D5185m         >5         <1         0         <1           Nickel         ppm         ASTM D5185m         0         <1   | WEAR METALS      |          | method      | limit/base | current     | history1    | history2    |
| Nickel  | Iron             | ppm      | ASTM D5185m | >50        | 0           | 0           | 0           |
| Titanium         ppm         ASTM D5185m         <1         0         0           Silver         ppm         ASTM D5185m         0         0         0           Aluminum         ppm         ASTM D5185m         >15         2         <1  | Chromium         | ppm      | ASTM D5185m | >5         | <1          | 0           | <1          |
| Silver         ppm         ASTM D5185m         0         0         0           Aluminum         ppm         ASTM D5185m         >15         2         <1         <1           Lead         ppm         ASTM D5185m         >65         0         0         0           Copper         ppm         ASTM D5185m         >65         <1         0         <1           Tin         ppm         ASTM D5185m         >10         <1         0         0           Vanadium         ppm         ASTM D5185m         0         0         0         0           Cadmium         ppm         ASTM D5185m         0         0         0         0           ADDITIVES         method         limit/base         current         history1         history1           Boron         ppm         ASTM D5185m         0         0         0         0           Barium         ppm         ASTM D5185m         0.3         0         0         0         0           Barium         ppm         ASTM D5185m         0.3         0         0         0         0           Magnesium         ppm         ASTM D5185m         0         <1         <1   | Nickel           | ppm      | ASTM D5185m |            | 0           | <1          | 0           |
| Aluminum         ppm         ASTM D5185m         >15         2         <1         <1           Lead         ppm         ASTM D5185m         >65         0         0         0           Copper         ppm         ASTM D5185m         >65         <1   | Titanium         | ppm      | ASTM D5185m |            | <1          | 0           | 0           |
| Lead  | Silver           | ppm      | ASTM D5185m |            | 0           | 0           | 0           |
| Copper         ppm         ASTM D5185m         >65         <1         0         <1           Tin         ppm         ASTM D5185m         >10         <1   | Aluminum         | ppm      | ASTM D5185m | >15        | 2           | <1          | <1          |
| Tin ppm ASTM D5185m >10 <1 0 0  Vanadium ppm ASTM D5185m 0 0 0  Cadmium ppm ASTM D5185m 0 0 0  ADDITIVES method limit/base current history1 history  Boron ppm ASTM D5185m 1 0 0 0 0  Barium ppm ASTM D5185m 0 0 0 0  Molybdenum ppm ASTM D5185m 0 0 0 0  Manganese ppm ASTM D5185m 0 0 0 0  Magnesium ppm ASTM D5185m 0 0 0 0 0  Magnesium ppm ASTM D5185m 0 0 0 0 0  Magnesium ppm ASTM D5185m 0 0 0 0 0  Magnesium ppm ASTM D5185m 0 0 1 0 0  Magnesium ppm ASTM D5185m 0 0 1 0 0  Magnesium ppm ASTM D5185m 0 0 1 0 0  Phosphorus ppm ASTM D5185m 0.5 0 0 1 0  Phosphorus ppm ASTM D5185m 0.2 0 0 0 0  Sulfur ppm ASTM D5185m 0.2 0 0 0 0  Sulfur ppm ASTM D5185m 0.2 0 0 0 0  Sulfur ppm ASTM D5185m 0.2 0 0 0 0  Sulfur ppm ASTM D5185m 0.2 0 0 0 0  Sulfur ppm ASTM D5185m 0.2 0 0 0 0  Sulfur ppm ASTM D5185m 0.2 0 0 0 0  FOONTAMINANTS method limit/base current history1 history  Silicon ppm ASTM D5185m >35 1 4 7  Sodium ppm ASTM D5185m >20 <1 0 0  Potassium ppm ASTM D5185m >20 <1 0 1   | Lead             | ppm      | ASTM D5185m | >65        | 0           | 0           | 0           |
| Vanadium         ppm         ASTM D5185m         0         0         0           Cadmium         ppm         ASTM D5185m         <1         0         0           ADDITIVES         method         limit/base         current         history1         history1           Boron         ppm         ASTM D5185m         1         0         0         0           Barium         ppm         ASTM D5185m         0.3         0         0         0           Molybdenum         ppm         ASTM D5185m         0         0         0         0           Magnesium         ppm         ASTM D5185m         0         0         <1         0           Magnesium         ppm         ASTM D5185m         0.5         0         <1         <1           Calcium         ppm         ASTM D5185m         0.5         0         <1         0           Phosphorus         ppm         ASTM D5185m         0.2         0         0         0           Sulfur         ppm         ASTM D5185m         0.2         0         0         0           CONTAMINANTS         method         limit/base         current         history1         history1 <tr< td=""><td>Copper</td><td>ppm</td><td>ASTM D5185m</td><td>&gt;65</td><th>&lt;1</th><td>0</td><td>&lt;1</td></tr<>  | Copper           | ppm      | ASTM D5185m | >65        | <1          | 0           | <1          |
| Cadmium         ppm         ASTM D5185m         <1         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         1         0         0         0           Barium         ppm         ASTM D5185m         0.3         0         0         0           Molybdenum         ppm         ASTM D5185m         0         0         0         0           Manganese         ppm         ASTM D5185m         0         <1   | Tin              | ppm      | ASTM D5185m | >10        | <1          | 0           | 0           |
| ADDITIVES         method         limit/base         current         history1         history           Boron         ppm         ASTM D5185m         1         0         0         0           Barium         ppm         ASTM D5185m         0.3         0         0         0           Molybdenum         ppm         ASTM D5185m         0         0         0         0           Manganese         ppm         ASTM D5185m         0         0         <1   | Vanadium         | ppm      | ASTM D5185m |            | 0           | 0           | 0           |
| Boron         ppm         ASTM D5185m         1         0         0         0           Barium         ppm         ASTM D5185m         0.3         0         0         0           Molybdenum         ppm         ASTM D5185m         0         0         0         0           Manganese         ppm         ASTM D5185m         0         0         <1         0           Magnesium         ppm         ASTM D5185m         0         <1         <1         <1           Calcium         ppm         ASTM D5185m         0.5         0         <1         0           Phosphorus         ppm         ASTM D5185m         536         168         106         71           Zinc         ppm         ASTM D5185m         0.2         0         0         0           Sulfur         ppm         ASTM D5185m         649         758         433         390           CONTAMINANTS         method         limit/base         current         history1         history1           Silicon         ppm         ASTM D5185m         >20         <1         0         1           Potassium         ppm         ASTM D5185m         >20         <1   | Cadmium          | ppm      | ASTM D5185m |            | <1          | 0           | 0           |
| Barium         ppm         ASTM D5185m         0.3         0         0         0           Molybdenum         ppm         ASTM D5185m         0         0         0         0           Manganese         ppm         ASTM D5185m         0         0         <1  | ADDITIVES        |          | method      | limit/base | current     | history1    | history2    |
| Molybdenum         ppm         ASTM D5185m         0         0         0         0           Manganese         ppm         ASTM D5185m         0         0         <1         0           Magnesium         ppm         ASTM D5185m         0         <1         <1         <1           Calcium         ppm         ASTM D5185m         0.5         0         <1         0           Phosphorus         ppm         ASTM D5185m         536         168         106         71           Zinc         ppm         ASTM D5185m         0.2         0         0         0           Sulfur         ppm         ASTM D5185m         649         758         433         390           CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >35         1         4         7           Sodium         ppm         ASTM D5185m         >20         <1         0         1           FLUID DEGRADATION         method         limit/base         current         history1         history1   | Boron            | ppm      | ASTM D5185m | 1          | 0           | 0           | 0           |
| Manganese         ppm         ASTM D5185m         0         0         <1         0           Magnesium         ppm         ASTM D5185m         0         <1         <1         <1           Calcium         ppm         ASTM D5185m         0.5         0         <1         0           Phosphorus         ppm         ASTM D5185m         536         168         106         71           Zinc         ppm         ASTM D5185m         0.2         0         0         0           Sulfur         ppm         ASTM D5185m         649         758         433         390           CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >35         1         4         7           Sodium         ppm         ASTM D5185m         >20         <1         0         1           FLUID DEGRADATION         method         limit/base         current         history1         history   | Barium           | ppm      | ASTM D5185m | 0.3        | 0           | 0           | 0           |
| Magnesium         ppm         ASTM D5185m         0         <1         <1         <1           Calcium         ppm         ASTM D5185m         0.5         0         <1         0           Phosphorus         ppm         ASTM D5185m         536         168         106         71           Zinc         ppm         ASTM D5185m         0.2         0         0         0           Sulfur         ppm         ASTM D5185m         649         758         433         390           CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >35         1         4         7           Sodium         ppm         ASTM D5185m         >20         <1         0         1           FLUID DEGRADATION         method         limit/base         current         history1         history1   | Molybdenum       | ppm      | ASTM D5185m | 0          | 0           | 0           | 0           |
| Calcium         ppm         ASTM D5185m         0.5         0         <1         0           Phosphorus         ppm         ASTM D5185m         536         168         106         71           Zinc         ppm         ASTM D5185m         0.2         0         0         0           Sulfur         ppm         ASTM D5185m         649         758         433         390           CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >35         1         4         7           Sodium         ppm         ASTM D5185m         >20         <1  | Manganese        | ppm      | ASTM D5185m | 0          | 0           | <1          | 0           |
| Calcium         ppm         ASTM D5185m         0.5         0         <1         0           Phosphorus         ppm         ASTM D5185m         536         168         106         71           Zinc         ppm         ASTM D5185m         0.2         0         0         0           Sulfur         ppm         ASTM D5185m         649         758         433         390           CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >35         1         4         7           Sodium         ppm         ASTM D5185m         >20         <1  | Magnesium        | ppm      | ASTM D5185m | 0          | <1          | <1          | <1          |
| Zinc         ppm         ASTM D5185m         0.2         0         0         0           Sulfur         ppm         ASTM D5185m         649         758         433         390           CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >35         1         4         7           Sodium         ppm         ASTM D5185m         0         <1         0           Potassium         ppm         ASTM D5185m         >20         <1         0         1           FLUID DEGRADATION         method         limit/base         current         history1         history   | Calcium          |          | ASTM D5185m | 0.5        | 0           | <1          | 0           |
| Sulfur         ppm         ASTM D5185m         649         758         433         390           CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >35         1         4         7           Sodium         ppm         ASTM D5185m         0         <1  | Phosphorus       | ppm      | ASTM D5185m | 536        | 168         | 106         | 71          |
| CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >35         1         4         7           Sodium         ppm         ASTM D5185m         0         <1   | Zinc             | ppm      | ASTM D5185m | 0.2        | 0           | 0           | 0           |
| Silicon         ppm         ASTM D5185m         >35         1         4         7           Sodium         ppm         ASTM D5185m         0         <1         0           Potassium         ppm         ASTM D5185m         >20         <1         0         1           FLUID DEGRADATION         method         limit/base         current         history1         history   | Sulfur           | ppm      | ASTM D5185m | 649        | 758         | 433         | 390         |
| Sodium         ppm         ASTM D5185m         0         <1         0           Potassium         ppm         ASTM D5185m         >20         <1  | CONTAMINANTS     | ;        | method      | limit/base | current     | history1    | history2    |
| Potassium ppm ASTM D5185m >20 <1 0 1  FLUID DEGRADATION method limit/base current history1 history  | Silicon          | ppm      | ASTM D5185m | >35        | 1           | 4           | 7           |
| Potassium         ppm         ASTM D5185m         >20         <1         0         1           FLUID DEGRADATION         method         limit/base         current         history1         history   | Sodium           | ppm      | ASTM D5185m |            | 0           | <1          | 0           |
|   | Potassium        |          | ASTM D5185m | >20        | <1          | 0           | 1           |
| Acid Number (AN)         mg KOH/g         ASTM D8045         0.337         0.24         0.27         0.20   | FLUID DEGRADA    | NOITA    | method      | limit/base | current     | history1    | history2    |
|   | Acid Number (AN) | mg KOH/g | ASTM D8045  | 0.337      | 0.24        | 0.27        | 0.20        |



## **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    | LIGHT    | NONE     |
| Sand/Dirt               | scalar | *Visual   | NONE       | NONE    | NONE     | NONE     |
| Appearance              | scalar | *Visual   | NORML      | NORML   | NORML    | NORML    |
| Odor                    | scalar | *Visual   | NORML      | NORML   | NORML    | NORML    |
| <b>Emulsified Water</b> | scalar | *Visual   | >0.1       | NEG     | NEG      | NEG      |
| Free Water              | scalar | *Visual   |            | NEG     | NEG      | NEG      |
| FLUID PROPERT           | IES    | method    | limit/base | current | history1 | history2 |
| Visc @ 40°C             | cSt    | ASTM D445 | 42.0       | 44.5    | 47.6     | 48.5     |
| SAMPLE IMAGES           | 3      | method    | limit/base | current | history1 | history2 |
|                         |        |           | J          |         |          |          |







Certificate 12367

Laboratory Sample No.

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : UCZ06206667 Lab Number : 06206667

Color

**Bottom** 

Unique Number : 11074128 Test Package : IND 2

Received : 11 Jun 2024 **Tested** Diagnosed

: 13 Jun 2024 : 13 Jun 2024 - Wes Davis

**ZORN COMP & EQUIPMENT CO (GB)** 733 POTTS AVE GREEN BAY, WI US 54304

Contact: DEAN SCHAD dean.schad@zornair.com

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.

T: (920)391-8121 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: (920)499-1168 Contact/Location: DEAN SCHAD - UCZORGRE

Report Id: UCZORGRE [WUSCAR] 06206667 (Generated: 06/13/2024 08:47:22) Rev: 1