

### **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id

# 1000004779 (S/N H04A0194059)

Hydraulic System

AW HYDRAULIC OIL ISO 68 (2000 LTR)

#### DIAGNOSIS

#### Recommendation

Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

#### Wear

All component wear rates are normal.

#### Contamination

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

#### Fluid Condition

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

| SAMPLE INFORM  | IATION   | method  | limit/base  | current   | history1   | history2  |
|--|--|---|---|---|--|---|
| Sample Number  |  | Client Info   |   | WC0905457   |  |   |
| Sample Date  |  | Client Info   |   | 04 Apr 2024   |  |   |
| Machine Age  |  | Client Info   |   | 0   |  |   |
| Oil Age  |  | Client Info   |   | 0   |  |   |
| Oil Changed  |  | Client Info   |   | N/A   |  |   |
| Sample Status  |  |   |   | NORMAL  |  |   |
| CONTAMINATION  | J  | method  | limit/base  | current   | history1   | history2  |
| Water  |  | WC Method   | >0.05   | NEG   |  |   |
| WEAR METALS  |  | method  | limit/base  | current   | history1   | history2  |
| Iron   | ppm  | ASTM D5185(m)   | >20   | 3   |  |   |
| Chromium   | ppm  | ASTM D5185(m)   | >20   | 0   |  |   |
| Nickel   | ppm  | ASTM D5185(m)   | >20   | 0   |  |   |
| Titanium   | ppm  | ASTM D5185(m)   |   | 0   |  |   |
| Silver   | ppm  | ASTM D5185(m)   |   | 0   |  |   |
| Aluminum   | ppm  | ASTM D5185(m)   | >20   | 0   |  |   |
| Lead   | ppm  | ASTM D5185(m)   | >20   | 0   |  |   |
| Copper   | ppm  | ASTM D5185(m)   | >20   | 1   |  |   |
| Tin  |  | ASTM D5185(m)<br>ASTM D5185(m)  | >20   | 0   |  |   |
| Antimony   | ppm  | ASTM D5185(m)   | 220   | 0   |  |   |
| Vanadium   | ppm  | ASTM D5185(m)<br>ASTM D5185(m)  |   | 0   |  |   |
|  | ppm  |   |   | 0   |  |   |
| Beryllium  | ppm  | ASTM D5185(m)   |   |   |  |   |
| Cadmium  | ppm  | ASTM D5185(m)   |   | 0   |  |   |
| ADDITIVES  |  | method  | limit/base  | current   | history1   | history2  |
| Boron  | ppm  | ASTM D5185(m)   | 5   | 1   |  |   |
| Barium   | ppm  | ASTM D5185(m)   | 5   | <1  |  |   |
|  | ppm  | ASTM D5185(m)   | 5   | 0   |  |   |
| Molybdenum   | pp   | ( )   | -   |   |  |   |
| ,  | ppm  | ASTM D5185(m)   |   | 0   |  |   |
| Manganese  |  | ( )   | 25  | 0<br>8  |  |   |
| Manganese<br>Magnesium   | ppm  | ASTM D5185(m)   |   |   |  |   |
| Manganese<br>Magnesium<br>Calcium  | ppm<br>ppm   | ASTM D5185(m)<br>ASTM D5185(m)  | 25  | 8   |  |   |
| Manganese<br>Magnesium<br>Calcium<br>Phosphorus  | ppm<br>ppm<br>ppm                                    | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)   | 25<br>200   | 8<br>109  |  |   |
| Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc  | ppm<br>ppm<br>ppm<br>ppm                             | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)  | 25<br>200<br>300  | 8<br>109<br>270   |  |   |
| Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur  | ppm<br>ppm<br>ppm<br>ppm                             | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)   | 25<br>200<br>300<br>370   | 8<br>109<br>270<br>329  |  |   |
| 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 D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)  | 25<br>200<br>300<br>370   | 8<br>109<br>270<br>329<br>628   |  |   |
| Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINANTS   | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm        | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)   | 25<br>200<br>300<br>370<br>2500   | 8<br>109<br>270<br>329<br>628<br><1   | <br><br>   |   |
| Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINANTS<br>Silicon  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm               | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br><b>method</b>  | 25<br>200<br>300<br>370<br>2500<br>limit/base   | 8<br>109<br>270<br>329<br>628<br><1<br>current  | <br><br>   | <br><br><br><br>history2                              |
| Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINANTS<br>Silicon<br>Sodium  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm        | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br><b>method</b><br>ASTM D5185(m)   | 25<br>200<br>300<br>370<br>2500<br>limit/base   | 8<br>109<br>270<br>329<br>628<br><1<br>current<br>0   | <br><br><br><br>history1<br>                                 | <br><br><br>history2                                  |
| Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINANTS<br>Silicon<br>Sodium  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)   | 25<br>200<br>300<br>370<br>2500<br>limit/base<br>>15  | 8<br>109<br>270<br>329<br>628<br><1<br>current<br>0<br>2  | <br><br><br><br>history1<br>                                 | <br><br><br>history2                                  |
| Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium<br>FLUID CLEANLIN   | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)  | 25<br>200<br>300<br>370<br>2500<br><b>limit/base</b><br>>15   | 8<br>109<br>270<br>329<br>628<br><1<br><u>current</u><br>0<br>2<br>0  | <br><br><br><br>history1<br><br>                             | <br><br><br>history2                                  |
| Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium<br>FLUID CLEANLIN<br>Particles >4µm   | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm | ASTM D5185(m)<br>ASTM D5185(m)   | 25<br>200<br>300<br>370<br>2500<br>limit/base<br>>15<br>>20<br>limit/base   | 8<br>109<br>270<br>329<br>628<br><1<br>current<br>0<br>2<br>0<br>0<br>current   | <br><br><br><br>history1<br><br><br>history1                 | <br><br><br>history2<br><br><br>history2              |
| Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium<br>FLUID CLEANLIN<br>Particles >4µm<br>Particles >6µm   | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm | ASTM D5185(m)<br>ASTM D5185(m)  | 25<br>200<br>300<br>370<br>2500<br><b>limit/base</b><br>>15<br>>20<br><b>limit/base</b><br>>5000                                | 8<br>109<br>270<br>329<br>628<br><1<br>current<br>0<br>2<br>0<br>2<br>0<br>0<br>current<br>1146                                   | <br><br><br><br>history1<br><br><br>history1<br>             | <br><br><br>history2<br><br><br>history2              |
| Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium<br>FLUID CLEANLIN<br>Particles >4µm<br>Particles >6µm<br>Particles >14µm                                      | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm | ASTM D5185(m)<br>ASTM D7647<br>ASTM D7647<br>ASTM D7647                             | 25<br>200<br>300<br>370<br>2500<br><b>limit/base</b><br>>15<br>>20<br><b>limit/base</b><br>>5000<br>>1300<br>>160               | 8<br>109<br>270<br>329<br>628<br><1<br>0<br>2<br>0<br>2<br>0<br>0<br><i>current</i><br>1146<br>237<br>21                          | <br><br><br><br>history1<br><br><br>history1<br>             | <br><br>history2<br><br>history2                      |
| Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium<br>FLUID CLEANLIN<br>Particles >4µm<br>Particles >14µm<br>Particles >21µm                                     | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm | ASTM D5185(m)<br>ASTM D7647<br>ASTM D7647<br>ASTM D7647<br>ASTM D7647                                | 25<br>200<br>300<br>370<br>2500<br><b>limit/base</b><br>>15<br>>20<br><b>limit/base</b><br>>5000<br>>1300<br>>160<br>>40        | 8<br>109<br>270<br>329<br>628<br><1<br>current<br>0<br>2<br>0<br>current<br>1146<br>237<br>21<br>9                                | <br><br><br><br>history1<br><br>history1<br><br>history1     | <br><br>history2<br><br><br>history2                  |
| Maganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium<br>FLUID CLEANLIN<br>Particles >4µm<br>Particles >6µm<br>Particles >14µm<br>Particles >21µm<br>Particles >38µm | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm | ASTM D5185(m)<br>ASTM D7647<br>ASTM D7647<br>ASTM D7647<br>ASTM D7647<br>ASTM D7647 | 25<br>200<br>300<br>370<br>2500<br><b>limit/base</b><br>>15<br>>20<br><b>limit/base</b><br>>5000<br>>1300<br>>160<br>>40<br>>10 | 8<br>109<br>270<br>329<br>628<br><1<br>0<br>2<br>0<br>2<br>0<br>2<br>0<br>0<br><i>current</i><br>1146<br>237<br>21<br>9<br>9<br>2 | <br><br><br><br>history1<br><br><br>history1<br><br><br>     | <br><br>history2                                      |
| Silicon<br>Sodium<br>Potassium   | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm | ASTM D5185(m)<br>ASTM D7647<br>ASTM D7647<br>ASTM D7647<br>ASTM D7647                                | 25<br>200<br>300<br>370<br>2500<br><b>limit/base</b><br>>15<br>>20<br><b>limit/base</b><br>>5000<br>>1300<br>>160<br>>40        | 8<br>109<br>270<br>329<br>628<br><1<br>current<br>0<br>2<br>0<br>current<br>1146<br>237<br>21<br>9                                | <br><br><br><br>history1<br><br>history1<br><br>history1<br> | <br><br><br>history<br><br>history<br><br>history<br> |



6k

per of particles (1 ml) 3k 3k 5k

le 1k 0k

(B/H0.80 0.60 Base

-a u 0.40 .20 Pciq Ab

> 0.00 Apr4/24

> > 80 75 А

(10°C) 25 (40°C) 25 65 B

> 60 Abnorma 55 Apr4/24 .

6k

f particles (1 ml) 8 k 8 k

to 10 2k ē 1,

<sub>0k</sub>

1.00 T Abnormal

## **OIL ANALYSIS REPORT**

| article Trend   | FLUID DEGRADA             | TION                    | method                           | limit/base                                 | current             | history1            | history2   |
|---|---------------------------|-------------------------|----------------------------------|--|---------------------|---------------------|--|
| onomar 4μm<br>6μm<br>   | Acid Number (AN)          | mg KOH/g                | ASTM D974*                       | 0.57                                       | 0.44                |                     |  |
| r ptill   | VISUAL                    |                         | method                           | limit/base                                 | current             | history1            | history2   |
|   | White Metal               | scalar                  | Visual*                          | NONE                                       | NONE                |                     |  |
|   | Yellow Metal              | scalar                  | Visual*                          | NONE                                       | NONE                |                     |  |
|   | Precipitate               | scalar                  | Visual*                          | NONE                                       | NONE                |                     |  |
| 424   | Silt                      | scalar                  | Visual*                          | NONE                                       | NONE                |                     |  |
| April-  | Debris                    | scalar                  | Visual*                          | NONE                                       | NONE                |                     |  |
|   | Sand/Dirt                 | scalar                  | Visual*                          | NONE                                       | NONE                |                     |  |
| cid Number  | Appearance                | scalar                  | Visual*                          | NORML                                      | NORML               |                     |  |
|   | Odor                      | scalar                  | Visual*                          | NORML                                      | NORML               |                     |  |
|   | Emulsified Water          | scalar                  | Visual*                          | >0.05                                      | NEG                 |                     |  |
| lase.   | Free Water                | scalar                  | Visual*                          |  | NEG                 |                     |  |
| bnormal   | FLUID PROPERT             | IES                     | method                           | limit/base                                 | current             | history1            | history2   |
|   | Visc @ 40°C               | cSt                     | ASTM D7279(m)                    | 68   | 59.5                |                     |  |
| Apr\$/24 -  | SAMPLE IMAGES             | S                       | method                           | limit/base                                 | current             | history1            | history2   |
| Ť   |                           |                         |                                  |  |                     |                     |  |
| 'iscosity @ 40°C  | Color                     |                         |                                  |  |                     | no image            | no image   |
| Abnormal  |                           |                         |                                  |  | -                   |                     |  |
|   |                           |                         |                                  |  |                     |                     |  |
| lase  | Pottom                    |                         |                                  |  |                     | no imere            | no image   |
|   | Bottom                    |                         |                                  |  |                     | no image            | no image   |
| lbnormal  |                           |                         |                                  |  |                     |                     |  |
|   | GRAPHS                    |                         |                                  |  |                     |                     |  |
| tie prove   | Ferrous Alloys            |                         |                                  | 491,520                                    | Particle Count      |                     | т26  |
|   | iron                      |                         |                                  | 122,880                                    |                     |                     | +24  |
| article Trend   | E. 5 - nickel             |                         |                                  |  | Severe              |                     |  |
| <del>conomian</del> 4μm<br>6μm  |                           |                         |                                  | 30,720                                     |                     |                     | -22  |
| ατατάτατα 0μ/m<br>14μm  | 74<br>74                  |                         |                                  | 7,680                                      | Abnormal            |                     | -20  |
|   | Apr4/24                   |                         |                                  | Apr4/24<br>(per 1 ml)<br>1'950             |                     |                     | -20<br>-18<br>-16  |
|   | Non-ferrous Metal         | s                       |                                  | ·<br>단 480                                 | 1                   |                     | -16  |
|   | 10 <sub>T</sub>           | -                       |                                  | ind jo<br>120                              |                     |                     | 14   |
|   | copper                    |                         |                                  | qua  |                     |                     | 14   |
|   | E 5-                      |                         |                                  | ≓ 30                                       |                     |                     | -12  |
| Α   |                           |                         |                                  | 8  | +                   |                     | -10  |
|   | 4/24                      |                         |                                  | 4/24<br>2                                  | -                   |                     |  |
|   | Apr4/24                   |                         |                                  | Apr4/24                                    |                     |                     |  |
|   | Viscosity @ 40°C          |                         |                                  | 0  | ہوں۔<br>Acid Number | 4μ 21μ              | 38µ 71µ  |
|   | 80 T                      |                         |                                  | 물 <sup>1.00</sup>                          |                     |                     |  |
|   |                           |                         |                                  | ng KO                                      | Base                |                     |  |
|   | € 70<br>Base<br>3 65      |                         |                                  | ja 0.50                                    |                     |                     |  |
|   | 60 - Abnormal             |                         |                                  | Acid Number<br>0000 acid Number            | Abnormal            |                     |  |
|   | 55 <b>1</b><br>\$7        |                         |                                  | 00.0 PG                                    | /24                 |                     | 74   |
|   | Apr4/24                   |                         |                                  | Apr4/24<br>A                               | Apr4/24             |                     | Ant4/24  |
| Laboratory<br>Sample No.<br>Laboratory<br>Sample No.<br>Lab Number<br>Unique Number<br>Test Package | : 5761337<br>: IND 2      | Recei<br>Teste<br>Diagr | ved : 11<br>d : 12<br>losed : 12 | 1 Apr 2024<br>2 Apr 2024<br>2 Apr 2024 - W | 1<br>es Davis       |                     | L PARK ROAD<br>TILBURY, ON<br>CA N0P 2L0<br>Kevin Bindne |
| To discuss this sample report<br>Test denoted (*) outside scop                                      | t, contact Customer Servi | ethod ma                | odified, (e) te                  | ested at exteri                            | nal lab.            | evin.bindner@<br>T: |  |

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Validity of results and interpretation are based on the sample and information as supplied.

Contact/Location: Kevin Bindner - SIETIL Page 2 of 2

F: (519)682-5054