

# **OIL ANALYSIS REPORT**

Sample Rating Trend



904-M38-01A - #1 WEST PROD BOOM

**Hydraulic System** 

**NOT GIVEN (--- GAL)** 

### 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.

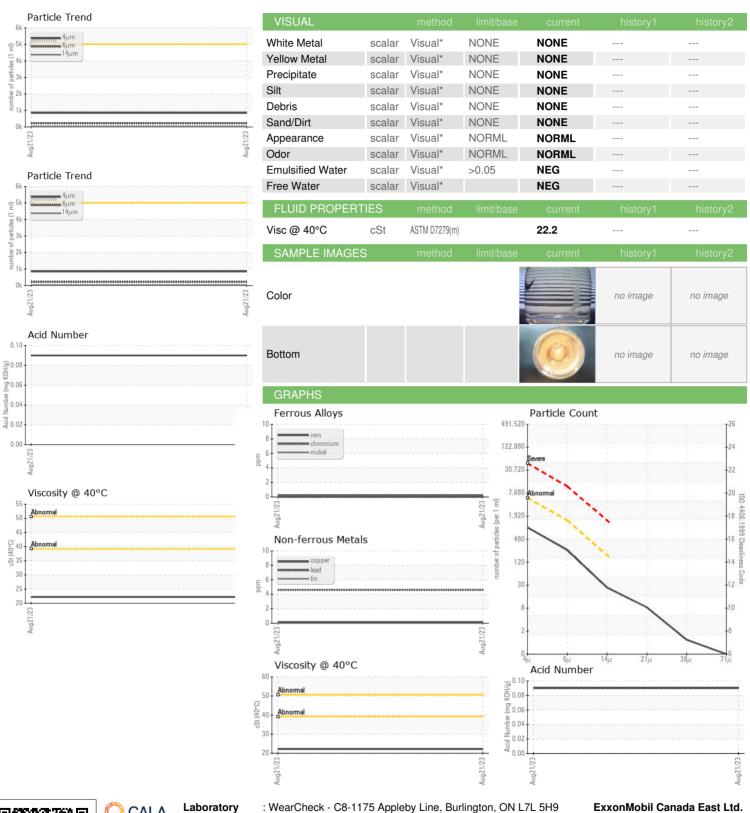
### **Fluid Condition**

The condition of the oil is acceptable for the time in service.

| SAMPLE INFORMATION   |                 |        |               |            |          |          |          |
|--|-----------------|--------|---------------|------------|----------|----------|----------|
| SAMPLE INFORMATION   method   limit/base   current   history1   history2   |                 |        |               |            | Aug 2022 |          |          |
| Sample Number  | SAMPLE INFORM   | MATION | method        |            |          | history1 | history2 |
| Sample Date  |                 |        |               |            |          |          |          |
| Machine Age         hrs         Client Info         0  |                 |        |               |            |          |          |          |
| Oil Age         hrs         Client Info         N/A             Sample Status         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185(m)         >20         <1             Chromium         ppm         ASTM D5185(m)         >10         0             Nickel         ppm         ASTM D5185(m)         >10         <1             Silver         ppm         ASTM D5185(m)         >10         0             Aluminum         ppm         ASTM D5185(m)         >0             Aluminum         ppm         ASTM D5185(m)         >20         5            Copper         ppm         ASTM D5185(m)         >0             Tin         ppm         ASTM D5185(m)         0             Antimony         ppm         ASTM D5185(m)         0             Vanadium         ppm         ASTM D5185(m)         0             Cadmium         ppm <th></th> <th>bro</th> <th></th> <th></th> <th>•</th> <th></th> <th></th>  |                 | bro    |               |            | •        |          |          |
| Oil Changed Status         Client Info         N/A   |                 |        |               |            | _        |          |          |
| Sample Status  | •               | 1115   |               |            | · ·      |          |          |
| WEAR METALS  |                 |        | Ciletit IIIIO |            | ,        |          |          |
| Iron   |                 |        |               |            | NONWAL   |          |          |
| Chromium         ppm         ASTM D5185(m)         >10         0             Nickel         ppm         ASTM D5185(m)         >10         <1             Titanium         ppm         ASTM D5185(m)         0             Silver         ppm         ASTM D5185(m)         >0             Aluminum         ppm         ASTM D5185(m)         >20         5             Lead         ppm         ASTM D5185(m)         >10         0             Copper         ppm         ASTM D5185(m)         >10         0             Antimory         ppm         ASTM D5185(m)         0             Vanadium         ppm         ASTM D5185(m)         0             Beryllium         ppm         ASTM D5185(m)         0             Beryllium         ppm         ASTM D5185(m)         0             Beryllium         ppm         ASTM D5185(m)         0             Barium         p  |                 |        |               |            |          | history1 | history2 |
| Nickel   ppm   ASTM D5185(m)   >10   <1  | -               | ppm    | . ,           |            |          |          |          |
| Titanium         ppm         ASTM D5185(m)         0   |                 |        | . ,           |            | -        |          |          |
| Silver         ppm         ASTM D5185(m)         0             Aluminum         ppm         ASTM D5185(m)         >20         5             Copper         ppm         ASTM D5185(m)         >20         ≤1             Tin         ppm         ASTM D5185(m)         0             Antimony         ppm         ASTM D5185(m)         0             Antimony         ppm         ASTM D5185(m)         0             Vanadium         ppm         ASTM D5185(m)         0             Beryllium         ppm         ASTM D5185(m)         0             Cadmium         ppm         ASTM D5185(m)         0             Boron         ppm         ASTM D5185(m)         0             Molybdenum         ppm         ASTM D5185(m)         0             Magnesium         ppm         ASTM D5185(m)         0             Magnesium         ppm         ASTM D5185(m)         <1   | Nickel          | ppm    | . ,           | >10        |          |          |          |
| Aluminum   | Titanium        | ppm    | , ,           |            | 0        |          |          |
| Lead         ppm         ASTM D5185(m)         >20         5             Copper         ppm         ASTM D5185(m)         >20         <1   | Silver          | ppm    | ASTM D5185(m) |            |          |          |          |
| Copper         ppm         ASTM D5185(m)         >20         <1  | Aluminum        | ppm    | ASTM D5185(m) | >10        | 0        |          |          |
| Tin  | Lead            | ppm    | ASTM D5185(m) | >20        | 5        |          |          |
| Antimony         ppm         ASTM D5185(m)         0             Vanadium         ppm         ASTM D5185(m)         0             Beryllium         ppm         ASTM D5185(m)         0             Cadmium         ppm         ASTM D5185(m)         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185(m)         0             Barium         ppm         ASTM D5185(m)         0             Molybdenum         ppm         ASTM D5185(m)         0             Magnesium         ppm         ASTM D5185(m)         0             Magnesium         ppm         ASTM D5185(m)         115             Phosphorus         ppm         ASTM D5185(m)         477             Sulfur         ppm         ASTM D5185(m)         4             Sulfur         ppm         ASTM D5185(m)         <1  | Copper          | ppm    | ASTM D5185(m) | >20        | <1       |          |          |
| Vanadium         ppm         ASTM D5185(m)         0             Beryllium         ppm         ASTM D5185(m)         0             Cadmium         ppm         ASTM D5185(m)         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185(m)         0             Barium         ppm         ASTM D5185(m)         0             Molybdenum         ppm         ASTM D5185(m)         0             Magnesium         ppm         ASTM D5185(m)         0             Magnesium         ppm         ASTM D5185(m)         41             Calcium         ppm         ASTM D5185(m)         477             Phosphorus         ppm         ASTM D5185(m)         4             Sulfur         ppm         ASTM D5185(m)         4             Sulfur         ppm         ASTM D5185(m)         1   | Tin             | ppm    | ASTM D5185(m) | >10        | 0        |          |          |
| Beryllium  | Antimony        | ppm    | ASTM D5185(m) |            | 0        |          |          |
| Cadmium         ppm         ASTM D5185(m)         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185(m)         0             Barium         ppm         ASTM D5185(m)         0             Molybdenum         ppm         ASTM D5185(m)         0             Manganese         ppm         ASTM D5185(m)         0             Magnesium         ppm         ASTM D5185(m)         115             Calcium         ppm         ASTM D5185(m)         477             Phosphorus         ppm         ASTM D5185(m)         4             Zinc         ppm         ASTM D5185(m)         4             Sulfur         ppm         ASTM D5185(m)         1334             Lithium         ppm         ASTM D5185(m)         >15         <1   | Vanadium        | ppm    | ASTM D5185(m) |            | 0        |          |          |
| ADDITIVES  | Beryllium       | ppm    | ASTM D5185(m) |            | 0        |          |          |
| Boron   ppm   ASTM D5185(m)   Q  | Cadmium         | ppm    | ASTM D5185(m) |            | 0        |          |          |
| Barium   | ADDITIVES       |        | method        | limit/base | current  | history1 | history2 |
| Molybdenum   ppm   ASTM D5185(m)   0         Manganese   ppm   ASTM D5185(m)   0         Magnesium   ppm   ASTM D5185(m)   <1         Calcium   ppm   ASTM D5185(m)   115       Phosphorus   ppm   ASTM D5185(m)   477       Zinc   ppm   ASTM D5185(m)   4       Zinc   ppm   ASTM D5185(m)   1334         Lithium   ppm   ASTM D5185(m)   <1       CONTAMINANTS   method   limit/base   current   history1   history2     Silicon   ppm   ASTM D5185(m)   >15   <1       Sodium   ppm   ASTM D5185(m)   >20   <1       Potassium   ppm   ASTM D5185(m)   >20   <1       FLUID CLEANLINESS   method   limit/base   current   history1   history2     Particles >4μm   ASTM D7647   >5000   852       Particles >6μm   ASTM D7647   >1300   218       Particles >14μm   ASTM D7647   >160   23       Particles >21μm   ASTM D7647   >40   7       Particles >38μm   ASTM D7647   >3   0       Particles >71μm   ASTM D7647   >3   0       Oil Cleanliness   ISO 4406 (c)   >19/17/14   17/15/12  | Boron           | ppm    | ASTM D5185(m) |            | 0        |          |          |
| Manganese         ppm         ASTM D5185(m)         0             Magnesium         ppm         ASTM D5185(m)         <1   | Barium          | ppm    | ASTM D5185(m) |            | 0        |          |          |
| Magnesium         ppm         ASTM D5185(m)         <1   | Molybdenum      | ppm    | ASTM D5185(m) |            | 0        |          |          |
| Calcium         ppm         ASTM D5185(m)         115             Phosphorus         ppm         ASTM D5185(m)         477             Zinc         ppm         ASTM D5185(m)         4             Sulfur         ppm         ASTM D5185(m)         1334             Lithium         ppm         ASTM D5185(m)         <1             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >1             Sodium         ppm         ASTM D5185(m)         >20         <1             Potassium         ppm         ASTM D5185(m)         >20         <1             FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4µm         ASTM D7647         >5000         852             Particles >94µm         ASTM D7647         >160         23             Particles >21µm   | Manganese       | ppm    | ASTM D5185(m) |            | 0        |          |          |
| Phosphorus         ppm         ASTM D5185(m)         477             Zinc         ppm         ASTM D5185(m)         4             Sulfur         ppm         ASTM D5185(m)         1334             Lithium         ppm         ASTM D5185(m)         <1             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >15         <1             Sodium         ppm         ASTM D5185(m)         >20         <1             Potassium         ppm         ASTM D5185(m)         >20         <1             Patticles >4μm         ASTM D7647         >5000         852             Particles >6μm         ASTM D7647         >1300         218             Particles >14μm         ASTM D7647         >160         23             Particles >21μm         ASTM D7647         >10         1             Particles >71μm </th <th>Magnesium</th> <th>ppm</th> <th>ASTM D5185(m)</th> <th></th> <th>&lt;1</th> <th></th> <th></th> | Magnesium       | ppm    | ASTM D5185(m) |            | <1       |          |          |
| Zinc   ppm   ASTM D5185(m)   4       Sulfur   ppm   ASTM D5185(m)   1334   | Calcium         | ppm    | ASTM D5185(m) |            | 115      |          |          |
| Sulfur         ppm         ASTM D5185(m)         1334             Lithium         ppm         ASTM D5185(m)         <1   | Phosphorus      | ppm    | ASTM D5185(m) |            | 477      |          |          |
| Lithium         ppm         ASTM D5185(m)         <1   | Zinc            | ppm    | ASTM D5185(m) |            | 4        |          |          |
| CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >15         <1             Sodium         ppm         ASTM D5185(m)         1             Potassium         ppm         ASTM D5185(m)         >20         <1             FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >5000         852             Particles >6μm         ASTM D7647         >1300         218             Particles >14μm         ASTM D7647         >160         23             Particles >21μm         ASTM D7647         >40         7             Particles >38μm         ASTM D7647         >10         1             Particles >71μm         ASTM D7647         >3         0             Oil Cleanliness         ISO 4406 (c)         >19/17/14         17/15/12   | Sulfur          | ppm    | ASTM D5185(m) |            | 1334     |          |          |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$   | Lithium         | ppm    | ASTM D5185(m) |            | <1       |          |          |
| Sodium         ppm         ASTM D5185(m)         1             Potassium         ppm         ASTM D5185(m)         >20         <1  | CONTAMINANTS    | ;      | method        | limit/base | current  | history1 | history2 |
| Potassium         ppm         ASTM D5185(m)         >20         <1   | Silicon         | ppm    | ASTM D5185(m) | >15        | <1       |          |          |
| Potassium         ppm         ASTM D5185(m)         >20         <1   | Sodium          | ppm    | ASTM D5185(m) |            | 1        |          |          |
| $\begin{array}{cccccccccccccccccccccccccccccccccccc$   | Potassium       | ppm    | ASTM D5185(m) | >20        | <1       |          |          |
| Particles >6μm       ASTM D7647       >1300       218           Particles >14μm       ASTM D7647       >160       23           Particles >21μm       ASTM D7647       >40       7           Particles >38μm       ASTM D7647       >10       1           Particles >71μm       ASTM D7647       >3       0           Oil Cleanliness       ISO 4406 (c)       >19/17/14       17/15/12   | FLUID CLEANLIN  | IESS   | method        | limit/base | current  | history1 | history2 |
| Particles >6μm       ASTM D7647       >1300       218           Particles >14μm       ASTM D7647       >160       23           Particles >21μm       ASTM D7647       >40       7           Particles >38μm       ASTM D7647       >10       1           Particles >71μm       ASTM D7647       >3       0           Oil Cleanliness       ISO 4406 (c)       >19/17/14       17/15/12   | Particles >4µm  |        | ASTM D7647    | >5000      | 852      |          |          |
| Particles >14μm       ASTM D7647       >160       23           Particles >21μm       ASTM D7647       >40       7           Particles >38μm       ASTM D7647       >10       1           Particles >71μm       ASTM D7647       >3       0           Oil Cleanliness       ISO 4406 (c)       >19/17/14       17/15/12   | ·               |        | ASTM D7647    | >1300      | 218      |          |          |
| Particles >21μm       ASTM D7647       >40       7           Particles >38μm       ASTM D7647       >10       1           Particles >71μm       ASTM D7647       >3       0           Oil Cleanliness       ISO 4406 (c)       >19/17/14       17/15/12  | Particles >14µm |        |               |            | 23       |          |          |
| Particles >38μm       ASTM D7647       >10       1           Particles >71μm       ASTM D7647       >3       0           Oil Cleanliness       ISO 4406 (c)       >19/17/14       17/15/12   | ·               |        |               | >40        |          |          |          |
| Particles >71μm         ASTM D7647         >3         0             Oil Cleanliness         ISO 4406 (c)         >19/17/14         17/15/12  |                 |        | ASTM D7647    | >10        | 1        |          |          |
| Oil Cleanliness ISO 4406 (c) >19/17/14 <b>17/15/12</b>   |                 |        |               | >3         | 0        |          |          |
| FLUID DEGRADATION method limit/base current history1 history2  | ·               |        |               |            |          |          |          |
|  | FLUID DEGRADA   | TION   | method        | limit/base | current  | history1 | history2 |



## **OIL ANALYSIS REPORT**





ISO 17025:2017
Accredited
Laboratory

Laboratory Sample No. Lab Number Unique Number

Test Package

y : We o. : PF oer : 02

: PP13895687 : 02579358 : 5632418

: MAR 2

687 Received
Diagnosed

Received : 30 Aug 2023 Diagnosed : 31 Aug 2023 Diagnostician : Kevin Marson ExxonMobil Canada East Ltd.

Hebron-Materials and Repair Coordin, Suite 1000, 100 New Gow

St. John`s, NL CA A1C 6K3 Contact: Liam Maher liam.m.maher@exxonmobil.com

b. T: (709)273-3729

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.