

## **OIL ANALYSIS REPORT**

## Sample Rating Trend

# **NORMAL**



**Port Hydraulic System** 

**MOBIL DTE 10 EXCEL 46 (200 LTR)** 





### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using MAR 2 test kits, this testkit includes Particle Count to determine the ISO cleanliness of the fluid. this testkit includes AN to determine the suitability of the oil for continued use.

#### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the component(unconfirmed).

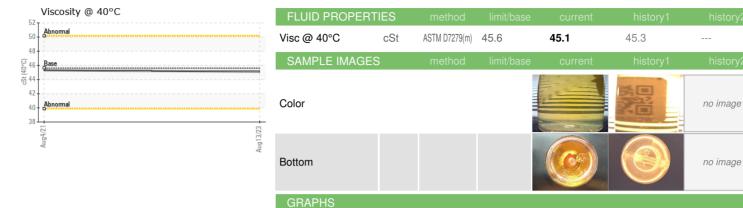
#### **Fluid Condition**

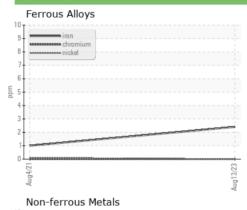
The condition of the oil is acceptable for the time in service (unconfirmed).

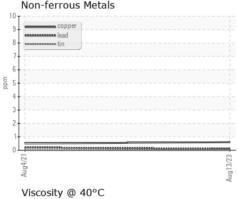
SAMPLE INFORMATION   method   limit/base   current   Ristory1   Sample Number   Client Info   13 Aug 2023   04 Aug 2021				Aug2021	Aug2023		
Sample Number		IATION	ام مالم مما	1::		h:	history.O
Sample Date	SAMPLE INFORM	IATION	method	ilmit/base	current		nistory2
Machine Age	Sample Number		Client Info				
Oil Age         hrs         Client Info         531         519            Oil Changed Sample Status         Client Info         Not Changd Not Changd Not Changd Nor Mal            WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185(m)         >20         2         1            Chromium         ppm         ASTM D5185(m)         >10         0         0            Nickel         ppm         ASTM D5185(m)         >10         0         0            Aluminum         ppm         ASTM D5185(m)         >10         0         0            Copper         ppm         ASTM D5185(m)         >10         0         0            Vanadium         ppm         ASTM D5185(m)         0         0<	Sample Date		Client Info		13 Aug 2023	04 Aug 2021	
Oil Changed   Client Info   Not Changed   NORMAL   NORM	Machine Age	hrs	Client Info		531	519	
NORMAL   N	Oil Age	hrs	Client Info		531	519	
WEAR METALS	Oil Changed		Client Info		Not Changd	Not Changd	
Iron	Sample Status				NORMAL	NORMAL	
Chromium	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185(m)	>20	2	1	
Titanium	Chromium	ppm	ASTM D5185(m)	>10	0	0	
Silver	Nickel	ppm	ASTM D5185(m)	>10	0	<1	
Aluminum	Titanium	ppm	ASTM D5185(m)		0	0	
Lead	Silver	ppm	ASTM D5185(m)		0	0	
Copper	Aluminum	ppm	ASTM D5185(m)	>10	0	0	
Tin	Lead	ppm	ASTM D5185(m)	>10	<1	<1	
Antimony	Copper	ppm	ASTM D5185(m)	>75	<1	<1	
Vanadium         ppm         ASTM D5185(m)         0         0            Beryllium         ppm         ASTM D5185(m)         0         0            Cadmium         ppm         ASTM D5185(m)         0         0            ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185(m)         0         0            Barium         ppm         ASTM D5185(m)         0         0            Molybdenum         ppm         ASTM D5185(m)         0         0            Magnesium         ppm         ASTM D5185(m)         0         0            Magnesium         ppm         ASTM D5185(m)         95         98            Calcium         ppm         ASTM D5185(m)         95         98            Phosphorus         ppm         ASTM D5185(m)         95         98            Sulfur         ppm         ASTM D5185(m)         36         34            Sulfur         ppm         ASTM D5185(m)         20         1         41	Tin	ppm	ASTM D5185(m)	>10	0	0	
Vanadium         ppm         ASTM D5185(m)         0         0            Beryllium         ppm         ASTM D5185(m)         0         0            Cadmium         ppm         ASTM D5185(m)         0         0            ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185(m)         0         0            Barium         ppm         ASTM D5185(m)         0         0            Molybdenum         ppm         ASTM D5185(m)         0         0            Manganese         ppm         ASTM D5185(m)         0         0            Manganesium         ppm         ASTM D5185(m)         95         98            Calcium         ppm         ASTM D5185(m)         95         98            Phosphorus         ppm         ASTM D5185(m)         36         34            Sulfur         ppm         ASTM D5185(m)         1641         1674            Sulfur         ppm         ASTM D5185(m)         20         <1	Antimony	ppm	ASTM D5185(m)		0	0	
Cadmium         ppm         ASTM D5185(m)         0         0            ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185(m)         <1         1            Barium         ppm         ASTM D5185(m)         0         0            Molybdenum         ppm         ASTM D5185(m)         0         0            Manganese         ppm         ASTM D5185(m)         0         0            Magnesium         ppm         ASTM D5185(m)         95         98            Calcium         ppm         ASTM D5185(m)         95         98            Phosphorus         ppm         ASTM D5185(m)         36         34            Sulfur         ppm         ASTM D5185(m)         36         34            Sulfur         ppm         ASTM D5185(m)         -1         -1         -1            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         -20 <th>Vanadium</th> <th></th> <th>ASTM D5185(m)</th> <th></th> <th>0</th> <th>0</th> <th></th>	Vanadium		ASTM D5185(m)		0	0	
ADDITIVES	Beryllium	ppm	ASTM D5185(m)		0	0	
Boron	Cadmium		ASTM D5185(m)		0	0	
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185(m)         0         0            Manganese         ppm         ASTM D5185(m)         0         0            Magnesium         ppm         ASTM D5185(m)         <1         <1            Calcium         ppm         ASTM D5185(m)         95         98            Phosphorus         ppm         ASTM D5185(m)         433         431            Zinc         ppm         ASTM D5185(m)         36         34            Sulfur         ppm         ASTM D5185(m)         1641         1674            Lithium         ppm         ASTM D5185(m)         >20         <1         <1            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >20         <1         <1            Sodium         ppm         ASTM D5185(m)         >20         <1         <1            Sodium         ppm         ASTM D5185(m)         >20         <1         <1            VISUAL	Boron	ppm	ASTM D5185(m)		<1	1	
Manganese         ppm         ASTM D5185(m)         0            Magnesium         ppm         ASTM D5185(m)         <1         <1            Calcium         ppm         ASTM D5185(m)         95         98            Phosphorus         ppm         ASTM D5185(m)         433         431            Zinc         ppm         ASTM D5185(m)         36         34            Sulfur         ppm         ASTM D5185(m)         1641         1674            Sulfur         ppm         ASTM D5185(m)         <1         <1            Lithium         ppm         ASTM D5185(m)         >20         <1         <1            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >20         <1         <1            Sodium         ppm         ASTM D5185(m)         >20         <1         <1            VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         V	Barium	ppm	ASTM D5185(m)		0	0	
Magnesium         ppm         ASTM D5185(m)         <1	Molybdenum	ppm	ASTM D5185(m)		0	0	
Calcium         ppm         ASTM D5185(m)         95         98            Phosphorus         ppm         ASTM D5185(m)         433         431            Zinc         ppm         ASTM D5185(m)         36         34            Sulfur         ppm         ASTM D5185(m)         1641         1674            Lithium         ppm         ASTM D5185(m)         <1         <1            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >20         <1         <1            Sodium         ppm         ASTM D5185(m)         >20         <1         <1            Sodium         ppm         ASTM D5185(m)         >20         <1         <1            Sodium         ppm         ASTM D5185(m)         >20         <1         <1            VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         Visual*         NONE         NONE         NONE           Yellow Meta	Manganese	ppm	ASTM D5185(m)		0	0	
Phosphorus         ppm         ASTM D5185(m)         433         431            Zinc         ppm         ASTM D5185(m)         36         34            Sulfur         ppm         ASTM D5185(m)         1641         1674            Lithium         ppm         ASTM D5185(m)         <1	Magnesium	ppm	ASTM D5185(m)		<1	<1	
Zinc	Calcium	ppm	ASTM D5185(m)		95	98	
Sulfur         ppm         ASTM D5185(m)         1641         1674            Lithium         ppm         ASTM D5185(m)         <1	Phosphorus	ppm	ASTM D5185(m)		433	431	
Lithium         ppm         ASTM D5185(m)         <1	Zinc	ppm	ASTM D5185(m)		36	34	
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >20         <1         <1            Sodium         ppm         ASTM D5185(m)         >20         <1         <1            Potassium         ppm         ASTM D5185(m)         >20         <1         <1            VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         Visual*         NONE         NONE         NONE            Yellow Metal         scalar         Visual*         NONE         NONE         NONE            Precipitate         scalar         Visual*         NONE         NONE         NONE            Silt         scalar         Visual*         NONE         NONE         NONE            Debris         scalar         Visual*         NONE         NONE         NONE            Sand/Dirt         scalar         Visual*         NORML         NORML         NORML            Appearance         scalar	Sulfur	ppm	ASTM D5185(m)		1641	1674	
Silicon         ppm         ASTM D5185(m)         >20         <1	Lithium	ppm	ASTM D5185(m)		<1	<1	
Sodium         ppm         ASTM D5185(m)         1         <1	CONTAMINANTS		method	limit/base	current	history1	history2
Sodium         ppm         ASTM D5185(m)         1         <1	Silicon	ppm	ASTM D5185(m)	>20	<1	<1	
Potassium         ppm         ASTM D5185(m)         >20         <1							
White Metal         scalar         Visual*         NONE         NONE         NONE            Yellow Metal         scalar         Visual*         NONE         NONE         NONE            Precipitate         scalar         Visual*         NONE         NONE         NONE            Silt         scalar         Visual*         NONE         NONE         NONE            Debris         scalar         Visual*         NONE         NONE         NONE            Sand/Dirt         scalar         Visual*         NONE         NONE         NONE            Appearance         scalar         Visual*         NORML         NORML         NORML            Odor         scalar         Visual*         NORML         NORML         NORML            Emulsified Water         scalar         Visual*         >0.1         NEG         NEG            Free Water         scalar         Visual*         NEG			( /	>20			
Yellow Metal         scalar         Visual*         NONE         NONE         NONE            Precipitate         scalar         Visual*         NONE         NONE         NONE            Silt         scalar         Visual*         NONE         NONE         NONE            Debris         scalar         Visual*         NONE         NONE         NONE            Sand/Dirt         scalar         Visual*         NONE         NONE         NONE            Appearance         scalar         Visual*         NORML         NORML         NORML            Odor         scalar         Visual*         NORML         NORML         NORML            Emulsified Water         scalar         Visual*         >0.1         NEG         NEG            Free Water         scalar         Visual*         NEG         NEG	VISUAL		method	limit/base	current	history1	history2
Precipitate         scalar         Visual*         NONE         NONE         NONE            Silt         scalar         Visual*         NONE         NONE         NONE            Debris         scalar         Visual*         NONE         NONE         NONE            Sand/Dirt         scalar         Visual*         NONE         NONE         NONE            Appearance         scalar         Visual*         NORML         NORML         NORML            Odor         scalar         Visual*         NORML         NORML         NORML            Emulsified Water         scalar         Visual*         >0.1         NEG         NEG            Free Water         scalar         Visual*         NEG         NEG	White Metal	scalar	Visual*	NONE	NONE	NONE	
Silt         scalar         Visual*         NONE         NONE         NONE            Debris         scalar         Visual*         NONE         NONE         NONE            Sand/Dirt         scalar         Visual*         NONE         NONE         NONE            Appearance         scalar         Visual*         NORML         NORML         NORML            Odor         scalar         Visual*         NORML         NORML         NORML            Emulsified Water         scalar         Visual*         >0.1         NEG         NEG            Free Water         scalar         Visual*         NEG         NEG	Yellow Metal	scalar	Visual*	NONE	NONE	NONE	
Debris         scalar         Visual*         NONE         NONE         NONE            Sand/Dirt         scalar         Visual*         NONE         NONE         NONE            Appearance         scalar         Visual*         NORML         NORML         NORML            Odor         scalar         Visual*         NORML         NORML         NORML            Emulsified Water         scalar         Visual*         >0.1         NEG         NEG            Free Water         scalar         Visual*         NEG         NEG	Precipitate	scalar	Visual*	NONE	NONE	NONE	
Sand/Dirt         scalar         Visual*         NONE         NONE            Appearance         scalar         Visual*         NORML         NORML         NORML            Odor         scalar         Visual*         NORML         NORML         NORML            Emulsified Water         scalar         Visual*         >0.1         NEG         NEG            Free Water         scalar         Visual*         NEG         NEG	Silt	scalar	Visual*	NONE	NONE	NONE	
Appearance scalar Visual* NORML NORML NORML Odor scalar Visual* NORML NORML NORML Emulsified Water scalar Visual* >0.1 NEG NEG Free Water scalar Visual* NEG NEG	Debris	scalar	Visual*	NONE	NONE	NONE	
Odor         scalar         Visual*         NORML         NORML         NORML            Emulsified Water         scalar         Visual*         >0.1         NEG         NEG            Free Water         scalar         Visual*         NEG         NEG	Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	
Emulsified Water scalar Visual* >0.1 NEG NEG Free Water scalar Visual* NEG NEG	Appearance	scalar	Visual*	NORML	NORML	NORML	
Free Water scalar Visual* NEG NEG	Odor	scalar	Visual*	NORML	NORML	NORML	
	Emulsified Water	scalar	Visual*	>0.1	NEG	NEG	
		scalar	Visual*		NEG	NEG	

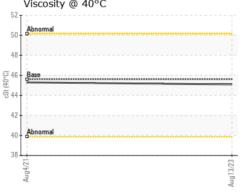


# **OIL ANALYSIS REPORT**











CALA ISO 17025:2017 Accredited Laboratory

Laboratory Sample No. Lab Number Unique Number : 5633750 Test Package : MAR 1

: WC0754030 : 02580690

Received Diagnosed Diagnostician : Kevin Marson

: 06 Sep 2023 : 06 Sep 2023

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 Horizon Maritime Services Ltd. - Horizon Enabler 87 Water Street, 2nd Floor

St. John's, NL **CA A1C 1A5** 

Contact: Andrew Whalen chiefeng.enabler@horizonmaritime.com

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.

F:

T: