

# **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id

# **TIRIARNAQ (S/N 12RA015134)**

Port Main Engine

CHEVRON DELO 100 SAE 40 (40 LTR)

#### Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

All component wear rates are normal.

### Contamination

Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

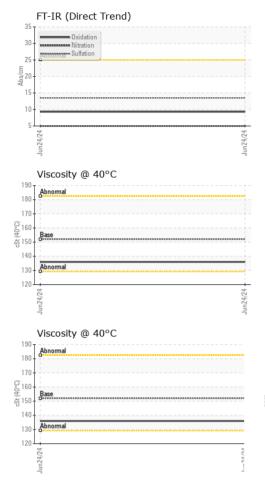
### **Fluid Condition**

The condition of the oil is acceptable for the time in

SAMPLE INFORMATION   method   limit/base   current   history1   history2							<u>'</u>
Sample Number   Client Info   WC0932473					Jun2024		
Client Info   Not Changd   Client Info   Changd   Client   Cli	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age   hrs   Client Info   7060	Sample Number		Client Info		WC0932473		
Oil Age	Sample Date		Client Info		24 Jun 2024		
Contamped   Client Info   Not Changed   Client Info   Normal   Contamped   Client Info   Normal   Contamped   Client Info   Normal   Contamped   Client Info   Normal   Contamped   Cont	Machine Age	hrs	Client Info		7060		
CONTAMINATION   method   limit/base   current   history1   history2   Fuel   WC Method   >4.0   <1.0	Oil Age	hrs	Client Info		221		
CONTAMINATION	Oil Changed		Client Info		Not Changd		
Fuel	Sample Status				NORMAL		
Water   WC Method   So.1   NEG   Signol   WC Method   NEG   Signol   WC Method   NEG   Signol   Sign	CONTAMINATIO	N	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>4.0	<1.0		
WEAR METALS         method         limit/base         current         history1         history2           iron         ppm         ASTM D5185(m)         >75         16             Chromium         ppm         ASTM D5185(m)         >8         <1	Water		WC Method	>0.1	NEG		
ASTM D5185(m)   STS	Glycol		WC Method		NEG		
ASTM D5185(m)   >8	WEAR METALS		method	limit/base	current	history1	history2
ASTM D5185(m)   >2   <1	ron	ppm	ASTM D5185(m)	>75	16		
Description	Chromium	ppm	ASTM D5185(m)	>8	<1		
Silver	Nickel	ppm	ASTM D5185(m)	>2	<1		
Astronomega	Titanium	ppm	ASTM D5185(m)	>3	0		
Deep	Silver	ppm	ASTM D5185(m)	>2	0		
Action	Aluminum	ppm	ASTM D5185(m)	>15	2		
Antimony	_ead	ppm	ASTM D5185(m)	>18	2		
Antimony	Copper	ppm	ASTM D5185(m)	>80	4		
Vanadium         ppm         ASTM D5185(m)         0             Beryllium         ppm         ASTM D5185(m)         0             Cadmium         ppm         ASTM D5185(m)         0             Boron         ppm         ASTM D5185(m)         125             Barium         ppm         ASTM D5185(m)         0             Barium         ppm         ASTM D5185(m)         112             Manganese         ppm         ASTM D5185(m)         1061             Magnesium         ppm         ASTM D5185(m)         401             Phosphorus         ppm         ASTM D5185(m)         980         789             Phosphorus         ppm         ASTM D5185(m)         1080         972             Sulfur         ppm         ASTM D5185(m)         2402             Sulfur         ppm         ASTM D5185(m)         220         5            CONTAMINANTS         method         limit/base	Γin	ppm	ASTM D5185(m)	>14	2		
Description	Antimony	ppm	ASTM D5185(m)		0		
Description	√anadium	ppm	ASTM D5185(m)		0		
ADDITIVES	Beryllium	ppm	ASTM D5185(m)		0		
Soron   ppm   ASTM D5185(m)   125	Cadmium	ppm	ASTM D5185(m)		0		
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185(m)         112             Manganese         ppm         ASTM D5185(m)         1061             Magnesium         ppm         ASTM D5185(m)         401             Calcium         ppm         ASTM D5185(m)         980         789             Phosphorus         ppm         ASTM D5185(m)         1080         972             Zinc         ppm         ASTM D5185(m)         2402             Sulfur         ppm         ASTM D5185(m)         <1	Boron	ppm	ASTM D5185(m)		125		
Manganese         ppm         ASTM D5185(m)         <1             Magnesium         ppm         ASTM D5185(m)         1061             Calcium         ppm         ASTM D5185(m)         401             Phosphorus         ppm         ASTM D5185(m)         980         789             Zinc         ppm         ASTM D5185(m)         1080         972             Sulfur         ppm         ASTM D5185(m)         2402             Lithium         ppm         ASTM D5185(m)         <1	Barium	ppm	ASTM D5185(m)		0		
Magnesium         ppm         ASTM D5185(m)         1061             Calcium         ppm         ASTM D5185(m)         401             Phosphorus         ppm         ASTM D5185(m)         980         789             Zinc         ppm         ASTM D5185(m)         1080         972             Sulfur         ppm         ASTM D5185(m)         2402             Lithium         ppm         ASTM D5185(m)         <1	Molybdenum	ppm	. ,		112		
Calcium         ppm         ASTM D5185(m)         401             Phosphorus         ppm         ASTM D5185(m)         980         789             Zinc         ppm         ASTM D5185(m)         1080         972             Sulfur         ppm         ASTM D5185(m)         2402             Lithium         ppm         ASTM D5185(m)         <1	Manganese	ppm	ASTM D5185(m)		<1		
Phosphorus         ppm         ASTM D5185(m)         980         789             Zinc         ppm         ASTM D5185(m)         1080         972             Sulfur         ppm         ASTM D5185(m)         2402             Lithium         ppm         ASTM D5185(m)         <1	Magnesium	ppm			1061		
Zinc		ppm			-		
Sulfur		ppm					
CONTAMINANTS   method   limit/base   current   history1   history2			. ,	1080			
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >20         5             Sodium         ppm         ASTM D5185(m)         >75         2             Potassium         ppm         ASTM D5185(m)         >20         4             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         ASTM D7844*         0             Nitration         Abs/cm         ASTM D7624*         >20         5.0							
Silicon   ppm   ASTM D5185(m)   >20   5			( /		<1		
Sodium         ppm         ASTM D5185(m)         >75         2             Potassium         ppm         ASTM D5185(m)         >20         4             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         ASTM D7844*         0             Nitration         Abs/cm         ASTM D7624*         >20         5.0	CONTAMINANTS	S	method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185(m)         >20         4             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         ASTM D7844*         0             Nitration         Abs/cm         ASTM D7624*         >20         5.0		ppm	. ,	>20			
INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         ASTM D7844*         0             Nitration         Abs/cm         ASTM D7624*         >20         5.0		ppm	. ,	>75	2		
Soot %         %         ASTM D7844*         0             Nitration         Abs/cm         ASTM D7624*         >20         5.0	Potassium	ppm	ASTM D5185(m)	>20	4		
Nitration   Abs/cm   ASTM D7624*   >20   <b>5.0</b>	INFRA-RED		method	limit/base	current	history1	history2
	Soot %	%	ASTM D7844*		0		
Sulfation Abs/.1mm ASTM D7415* >30 <b>13.5</b>	Nitration	Abs/cm	ASTM D7624*	>20	5.0		
	Sulfation	Abs/.1mm	ASTM D7415*	>30	13.5		

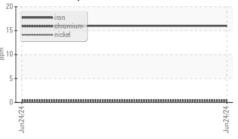


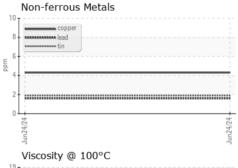
## **OIL ANALYSIS REPORT**

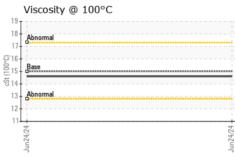


FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	9.3		
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	VLITE		
Yellow Metal	scalar	Visual*	NONE	NONE		
Precipitate	scalar	Visual*	NONE	NONE		
Silt	scalar	Visual*	NONE	NONE		
Debris	scalar	Visual*	NONE	NONE		
Sand/Dirt	scalar	Visual*	NONE	NONE		
Appearance	scalar	Visual*	NORML	NORML		
Odor	scalar	Visual*	NORML	NORML		
<b>Emulsified Water</b>	scalar	Visual*	>0.1	NEG		
Free Water	scalar	Visual*		NEG		
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	152	136		
Visc @ 100°C	cSt	ASTM D7279(m)	15.0	14.6		
Viscosity Index (VI)	Scale	ASTM D2270*	99	106		
GRAPHS						

Ferrous Alloys









CALA ISO 17025:2017 Accredited Laboratory

Sample No. Lab Number : 02645095 Unique Number : 5802634

Laboratory

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 : WC0932473

Received

**Tested** Diagnosed

: 02 Jul 2024 : 03 Jul 2024

: 03 Jul 2024 - Kevin Marson

Test Package : MAR 1 ( Additional Tests: KV40, VI ) 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.

**PB MARINE CONSULTANT** 

453 HEAD STREET ESQUIMALT, BC CA V9A 5S1 Contact: Pierre Besner Pierre@Pbmarineconsultant.ca T: (250)893-4161