



OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Machine Id
TIMM 1 A SIDE TANK

Component
Hydraulic System

Fluid
CHEVRON CLARITY HYDRAULIC AW 46 (--- GAL)

DIAGNOSIS

▲ Recommendation

We recommend you service the filters on this component. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

Wear

All component wear rates are normal. The ferrography results are normal indicating no abnormal wear in the system.

▲ Contaminants

There is a moderate amount of silt (particulates < 14 microns in size) present in the oil.

Oil Condition

The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		CB0031702	---	---
Sample Date	Client Info		28 Dec 2023	---	---
Machine Age	hrs	Client Info	0	---	---
Oil Age	hrs	Client Info	0	---	---
Oil Changed	Client Info		Changed	---	---
Sample Status			ABNORMAL	---	---

CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.05	NEG	---	---

WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184*		0	---	---
Iron	ppm	ASTM D5185(m) >20	11	---	---
Chromium	ppm	ASTM D5185(m) >20	2	---	---
Nickel	ppm	ASTM D5185(m) >20	<1	---	---
Titanium	ppm	ASTM D5185(m)	0	---	---
Silver	ppm	ASTM D5185(m)	0	---	---
Aluminum	ppm	ASTM D5185(m) >20	<1	---	---
Lead	ppm	ASTM D5185(m) >20	<1	---	---
Copper	ppm	ASTM D5185(m) >20	2	---	---
Tin	ppm	ASTM D5185(m) >20	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	---	---

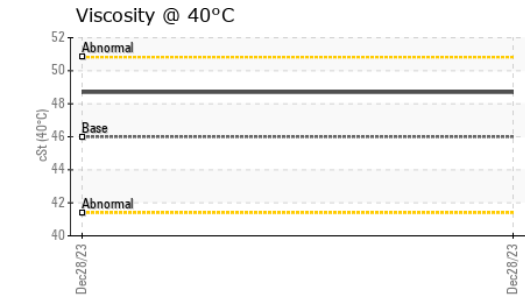
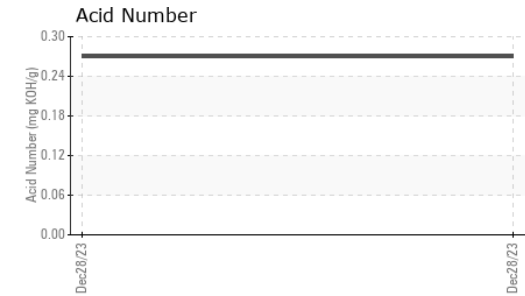
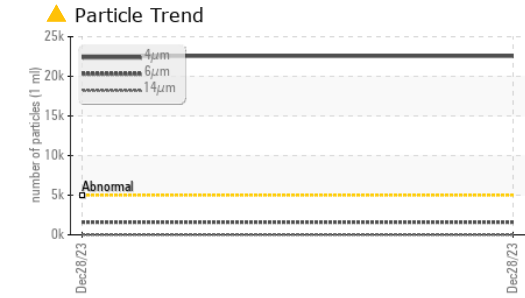
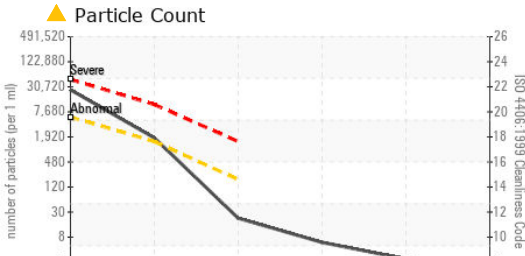
ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	<1	---	---
Barium	ppm	ASTM D5185(m)	0	---	---
Molybdenum	ppm	ASTM D5185(m)	0	---	---
Manganese	ppm	ASTM D5185(m)	0	---	---
Magnesium	ppm	ASTM D5185(m)	<1	---	---
Calcium	ppm	ASTM D5185(m)	2	---	---
Phosphorus	ppm	ASTM D5185(m)	300	---	---
Zinc	ppm	ASTM D5185(m)	7	---	---
Sulfur	ppm	ASTM D5185(m)	300	---	---
Lithium	ppm	ASTM D5185(m)	<1	---	---

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >15	4	---	---
Sodium	ppm	ASTM D5185(m)	0	---	---
Potassium	ppm	ASTM D5185(m) >20	<1	---	---

OIL ANALYSIS REPORT



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : CB0031702
Lab Number : 02607867
Unique Number : 5708953
Test Package : IND 3

TOYOTA MOTOR MANUFACT.
 1055 FOUNTAIN STREET N.
 CAMBRIDGE, ON
 CA N3H 5K2
 Contact: mike clappison
 mike.clappison@toyota.com
 T: (519)212-5023
 F: (519)653-9638

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.

FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>5000	▲ 22552	---	---
Particles >6µm	ASTM D7647	>1300	▲ 1594	---	---
Particles >14µm	ASTM D7647	>160	19	---	---
Particles >21µm	ASTM D7647	>40	5	---	---
Particles >38µm	ASTM D7647	>10	2	---	---
Particles >71µm	ASTM D7647	>3	1	---	---
Oil Cleanliness	ISO 4406 (c)	>19/17/14	▲ 22/18/11	---	---

FLUID DEGRADATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.27	---	---

VISUAL	method	limit/base	current	history1	history2	
White Metal	scalar	Visual*	NONE	NONE	---	---
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	---	---
Emulsified Water	scalar	Visual*	>0.05	NEG	---	---
Free Water	scalar	Visual*		NEG	---	---

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 40°C	cSt	ASTM D7279(m)	46.0	48.7	---	---

SAMPLE IMAGES	method	limit/base	current	history1	history2
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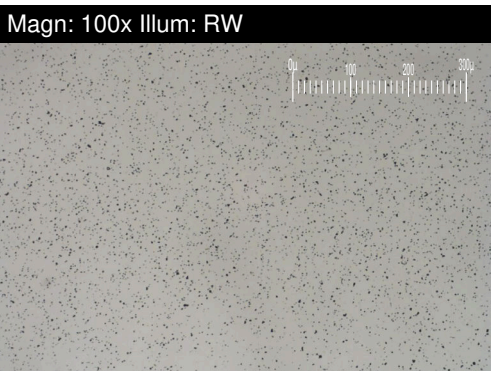
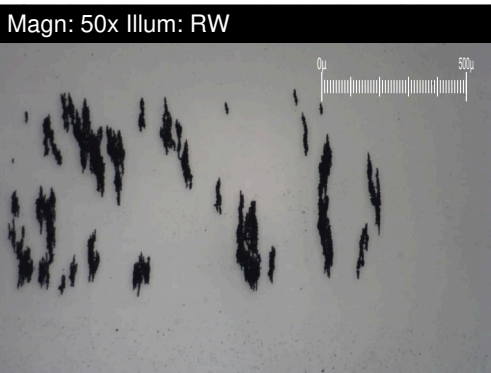
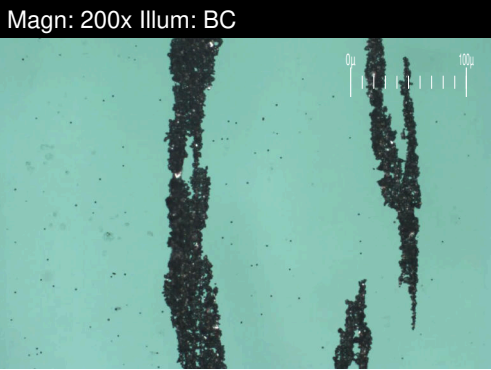
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FERROGRAPHY REPORT

Machine Id
TIMM 1 A SIDE TANK

Component
Hydraulic System

Fluid
CHEVRON CLARITY HYDRAULIC AW 46 (--- GAL)

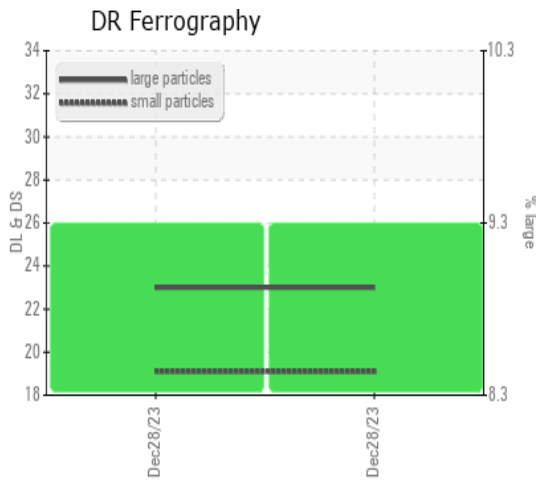


DR-FERROGRAPHY		method	limit/base	current	history1	history2
Large Particles		DR-Ferr*		23.0	---	---
Small Particles		DR-Ferr*		19.1	---	---
Total Particles		DR-Ferr*	>---	42.1	---	---
Large Particles Percentage	%	DR-Ferr*		9.3	---	---
Severity Index		DR-Ferr*		90	---	---

FERROGRAPHY		method	limit/base	current	history1	history2
Ferrous Rubbing	Scale 0-10	ASTM D7684*		<div style="width: 30px; height: 10px; background-color: #008000;"></div> 3		
Ferrous Sliding	Scale 0-10	ASTM D7684*				
Ferrous Cutting	Scale 0-10	ASTM D7684*				
Ferrous Rolling	Scale 0-10	ASTM D7684*		<div style="width: 10px; height: 10px; background-color: #008000;"></div> 1		
Ferrous Break-in	Scale 0-10	ASTM D7684*				
Ferrous Spheres	Scale 0-10	ASTM D7684*				
Ferrous Black Oxides	Scale 0-10	ASTM D7684*		<div style="width: 10px; height: 10px; background-color: #008000;"></div> 1		
Ferrous Red Oxides	Scale 0-10	ASTM D7684*				
Ferrous Corrosive	Scale 0-10	ASTM D7684*		<div style="width: 10px; height: 10px; background-color: #008000;"></div> 1		
Ferrous Other	Scale 0-10	ASTM D7684*				
Nonferrous Rubbing	Scale 0-10	ASTM D7684*				
Nonferrous Sliding	Scale 0-10	ASTM D7684*				
Nonferrous Cutting	Scale 0-10	ASTM D7684*				
Nonferrous Rolling	Scale 0-10	ASTM D7684*				
Nonferrous Other	Scale 0-10	ASTM D7684*				
Carbonaceous Material	Scale 0-10	ASTM D7684*				
Lubricant Degradation	Scale 0-10	ASTM D7684*				
Sand/Dirt	Scale 0-10	ASTM D7684*		<div style="width: 10px; height: 10px; background-color: #008000;"></div> 1		
Fibres	Scale 0-10	ASTM D7684*				
Spheres	Scale 0-10	ASTM D7684*				
Other	Scale 0-10	ASTM D7684*		<div style="width: 10px; height: 10px; background-color: #008000;"></div> 1		

WEAR

All component wear rates are normal.
The ferrography results are normal indicating no abnormal wear in the system.



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