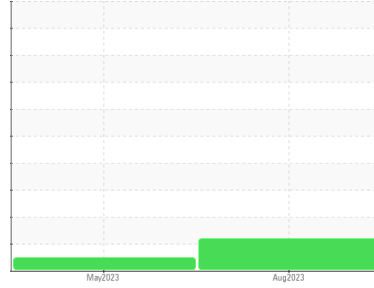


Area
PULSION EQUIPMENT
Machine Id
ROLLS ROYCE STEERING GEAR HPU (CAL004) (S/N 18S000484)
Component
Hydraulic System
Fluid
MOBIL DTE 10 EXCEL 32 (240 LTR)



DIAGNOSIS

Recommendation
We advise that you check for visible metal particles in the oil. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition. The fluid was specified as MOBIL DTE 10 EXCEL 32, however, a fluid match indicates that this fluid is ISO 32 AW Hydraulic Oil. Please confirm the oil type and grade on your next sample. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using MOB 2 test kits, this testkit includes Particle Count to determine the ISO cleanliness of the fluid.

Wear
Light concentration of visible metal present.

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

Fluid Condition
Additive levels indicate the addition of a different brand, or type of oil. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			PC0010707	PC0011650	---
Sample Date	Client Info			09 Aug 2023	01 May 2023	---
Machine Age	hrs	Client Info		20530	0	---
Oil Age	hrs	Client Info		0	0	---
Oil Changed	Client Info			N/A	N/A	---
Sample Status				MARGINAL	NORMAL	---

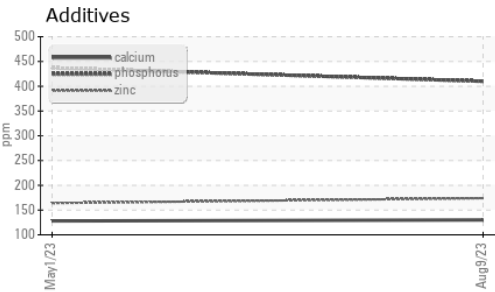
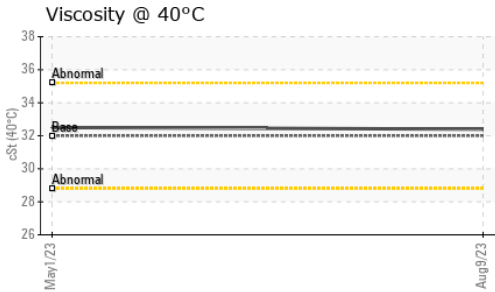
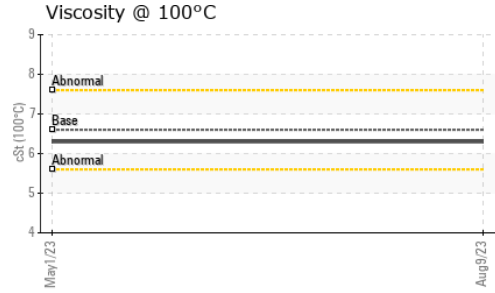
CONTAMINATION		method	limit/base	current	history1	history2
Water	WC Method		>0.05	NEG	NEG	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>20	7	6	---
Chromium	ppm	ASTM D5185(m)	>10	0	0	---
Nickel	ppm	ASTM D5185(m)	>10	<1	<1	---
Titanium	ppm	ASTM D5185(m)		0	0	---
Silver	ppm	ASTM D5185(m)		<1	0	---
Aluminum	ppm	ASTM D5185(m)	>10	<1	<1	---
Lead	ppm	ASTM D5185(m)	>20	<1	<1	---
Copper	ppm	ASTM D5185(m)	>20	<1	<1	---
Tin	ppm	ASTM D5185(m)	>10	<1	1	---
Antimony	ppm	ASTM D5185(m)		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)		2	2	---
Barium	ppm	ASTM D5185(m)		<1	0	---
Molybdenum	ppm	ASTM D5185(m)		<1	<1	---
Manganese	ppm	ASTM D5185(m)		0	0	---
Magnesium	ppm	ASTM D5185(m)		21	20	---
Calcium	ppm	ASTM D5185(m)	120	130	128	---
Phosphorus	ppm	ASTM D5185(m)	475	410	437	---
Zinc	ppm	ASTM D5185(m)		174	164	---
Sulfur	ppm	ASTM D5185(m)	1275	1255	1267	---
Lithium	ppm	ASTM D5185(m)		<1	<1	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	2	1	---
Sodium	ppm	ASTM D5185(m)		2	2	---
Potassium	ppm	ASTM D5185(m)	>20	0	<1	---

OIL ANALYSIS REPORT

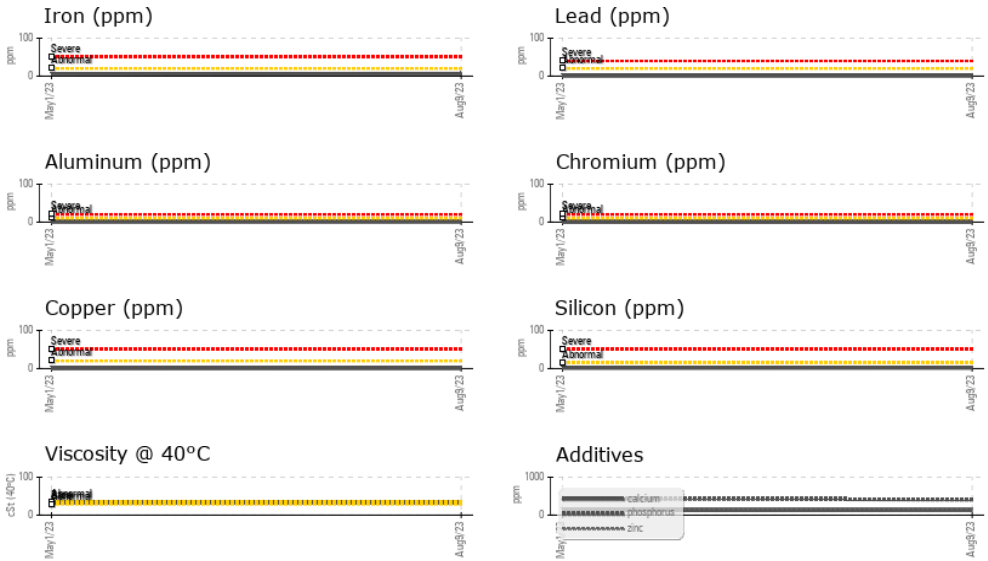


PARAMETER	method	limit/base	current	history1	history2
VISUAL					
White Metal	scalar	Visual*	NONE	▲ VLITE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE
Silt	scalar	Visual*	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	VLITE
Appearance	scalar	Visual*	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.05	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG

PARAMETER	method	limit/base	current	history1	history2
FLUID PROPERTIES					
Visc @ 40°C	cSt	ASTM D7279(m)	32	32.5	---
Visc @ 100°C	cSt	ASTM D7279(m)	6.6	6.3	---
Viscosity Index (VI)	Scale	ASTM D2270*	164	147	---

PARAMETER	method	limit/base	current	history1	history2
SAMPLE IMAGES					
Color					no image
Bottom					no image
PrtFilter				no image	no image

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 Ocean Choice International - MV Calvert
Sample No. : PC0010707 **Recieved** : 18 Dec 2023 1315 Topsail Rd, P.O. Box 8190
Lab Number : 02603784 **Diagnosed** : 20 Dec 2023 St. John's, NL
Unique Number : 5696869 **Diagnostician** : Kevin Marson CA A1B 3N4
Test Package : MOB 1 (Additional Tests: Bottom, BottomAnalysis, FilterPatch, OilTAC, OilValvert Engine Control Room
 calvertengine@oceanchoice.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.