



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Machine Id
72
 Component
Hydraulic System
 Fluid
{not provided} (20 GAL)

RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR0001544	TR0001334	TR0001204
Sample Date		Client Info		17 Apr 2024	21 Dec 2023	06 Oct 2023
Machine Age	hrs	Client Info		22691	22669	22249
Oil Age	hrs	Client Info		22691	22669	22249
Filter Age	hrs	Client Info		22691	22669	22249
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

WEAR

The copper level is abnormal. All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>20	8	6	5
Chromium	ppm	ASTM D5185m	>10	<1	<1	0
Nickel	ppm	ASTM D5185m	>10	<1	0	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m		0	0	<1
Aluminum	ppm	ASTM D5185m	>10	2	2	1
Lead	ppm	ASTM D5185m	>10	<1	0	2
Copper	ppm	ASTM D5185m	>75	▲ 155	▲ 114	▲ 96
Tin	ppm	ASTM D5185m	>10	<1	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

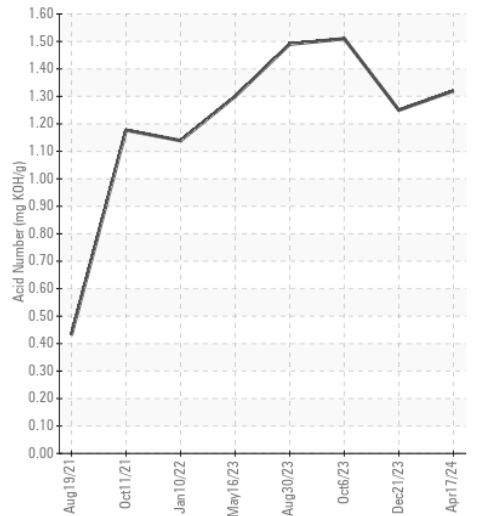
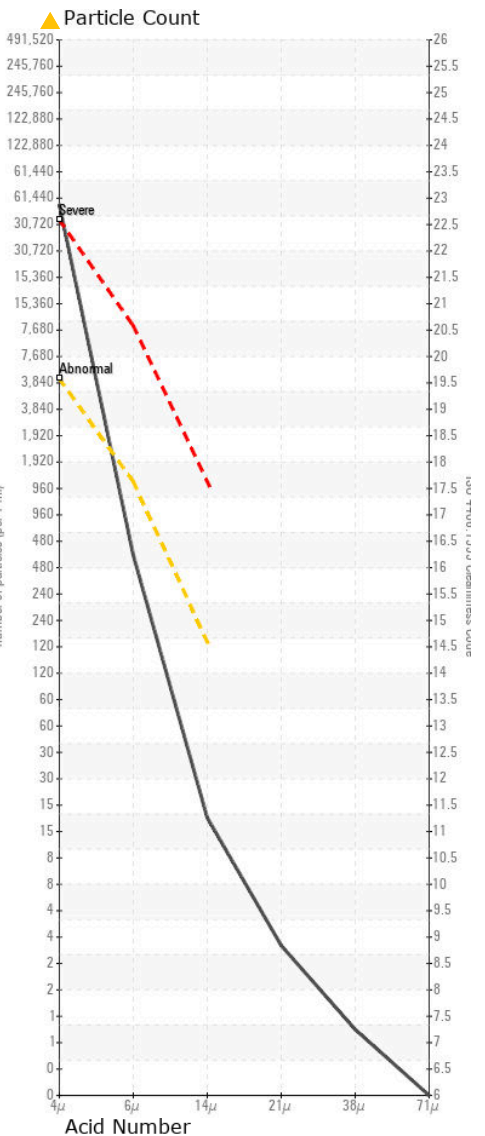
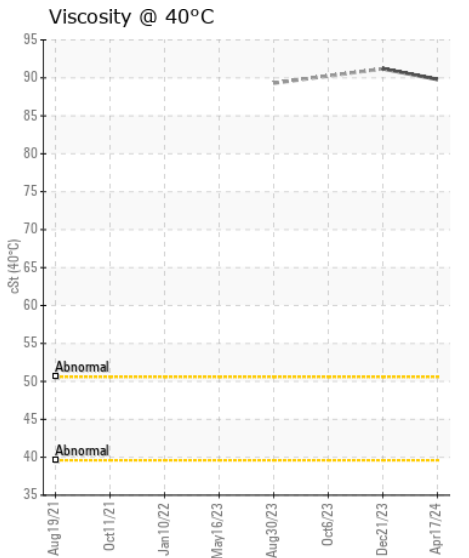
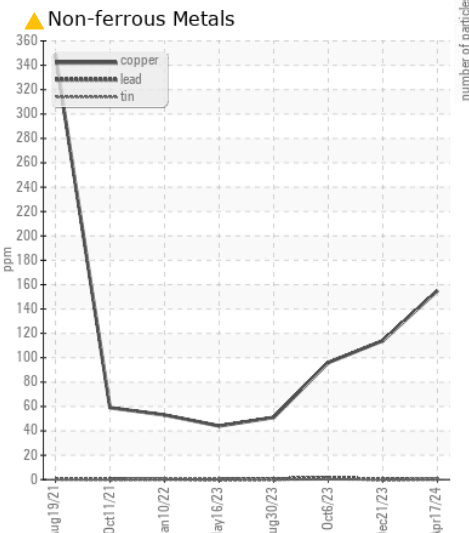
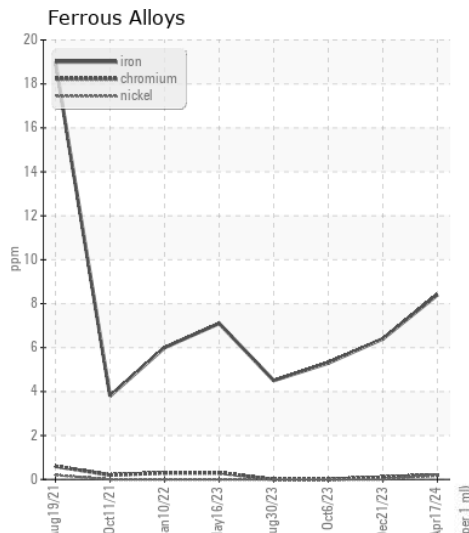
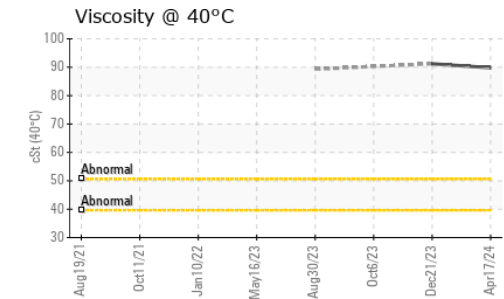
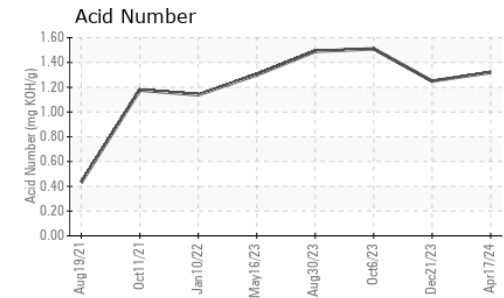
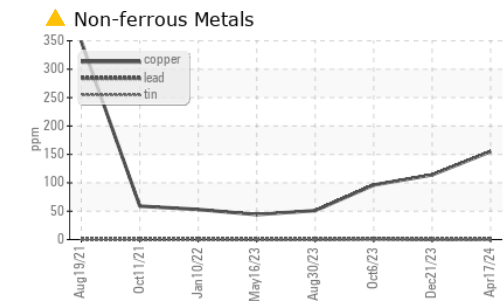
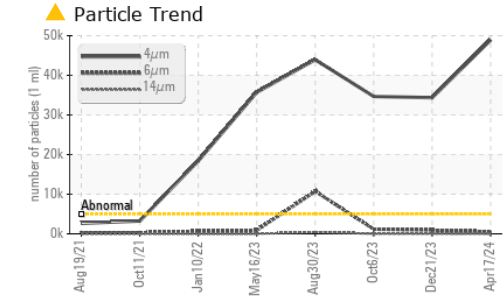
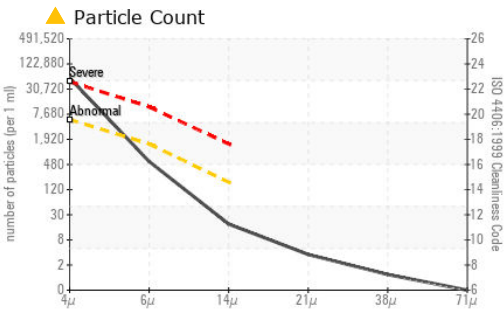
There is a high amount of silt (particulates < 6 microns in size) present in the oil.

Silicon	ppm	ASTM D5185m	>20	9	10	6
Potassium	ppm	ASTM D5185m	>20	3	2	1
Water		WC Method	>0.1	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>5000	▲ 48918	▲ 34353	▲ 34675
Particles >6µm		ASTM D7647	>1300	497	906	1173
Particles >14µm		ASTM D7647	>160	16	32	29
Particles >21µm		ASTM D7647	>40	3	6	10
Particles >38µm		ASTM D7647	>10	1	0	2
Particles >71µm		ASTM D7647	>3	0	0	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	▲ 23/16/11	▲ 22/17/12	▲ 22/17/12
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG

FLUID CONDITION

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		0	0	4
Boron	ppm	ASTM D5185m		6	7	7
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		8	7	7
Manganese	ppm	ASTM D5185m		<1	0	0
Magnesium	ppm	ASTM D5185m		19	20	26
Calcium	ppm	ASTM D5185m		2484	2572	2319
Phosphorus	ppm	ASTM D5185m		834	836	820
Zinc	ppm	ASTM D5185m		982	1079	1044
Sulfur	ppm	ASTM D5185m		3409	3701	3415
Acid Number (AN)	mg KOH/g	ASTM D8045		1.32	1.25	1.51
Visc @ 40°C	cSt	ASTM D445		89.8	91.2	---
Visc @ 100°C	cSt	ASTM D445		11.0	11.0	11.57
Viscosity Index (VI)	Scale	ASTM D2270		108	105	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR0001544 **Received** : 19 Apr 2024
Lab Number : 06155190 **Tested** : 23 Apr 2024
Unique Number : 10990613 **Diagnosed** : 24 Apr 2024 - Jonathan Hester
Test Package : MOB 2 (Additional Tests: KV100, VI)

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To discuss this sample report, contact Customer Service at 1-800-827-0711.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)