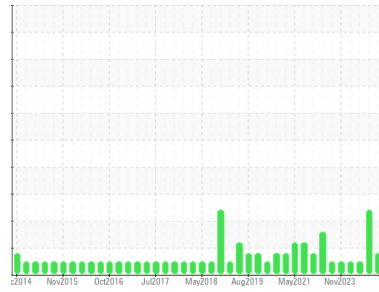




OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Area
RIVER EAGLE
 Machine Id
REA
 Component
Starboard Main Engine
 Fluid
CHEVRON DELO 400 MULTIGRADE 15W40 (39 GAL)

DIAGNOSIS

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			MW0063942	MW0063862	MW0054604
Sample Date	Client Info			18 Jun 2024	02 May 2024	15 Mar 2024
Machine Age	hrs	Client Info		5115	4276	3443
Oil Age	hrs	Client Info		839	833	923
Oil Changed	Client Info			Changed	Changed	Changed
Sample Status				MARGINAL	SEVERE	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Water	WC Method	>0.1		NEG	NEG	NEG
Glycol	WC Method			NEG	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>75	5	19	18
Chromium	ppm	ASTM D5185m	>8	0	1	<1
Nickel	ppm	ASTM D5185m	>2	<1	<1	<1
Titanium	ppm	ASTM D5185m	>3	14	16	16
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	2	2	1
Lead	ppm	ASTM D5185m	>18	0	5	2
Copper	ppm	ASTM D5185m	>80	<1	2	<1
Tin	ppm	ASTM D5185m	>14	0	2	0
Vanadium	ppm	ASTM D5185m		<1	<1	<1
Cadmium	ppm	ASTM D5185m		0	<1	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	151	99	100	79
Barium	ppm	ASTM D5185m	0.4	0	0	0
Molybdenum	ppm	ASTM D5185m	250	41	43	28
Manganese	ppm	ASTM D5185m		1	1	<1
Magnesium	ppm	ASTM D5185m	0	813	806	795
Calcium	ppm	ASTM D5185m	2046	1561	1606	1638
Phosphorus	ppm	ASTM D5185m	1043	791	777	783
Zinc	ppm	ASTM D5185m	943	887	925	870
Sulfur	ppm	ASTM D5185m	5012	3871	3753	3714

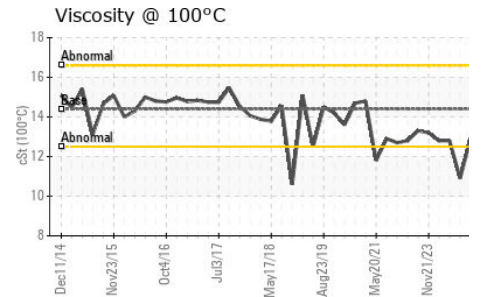
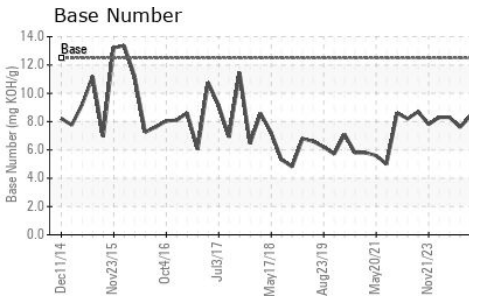
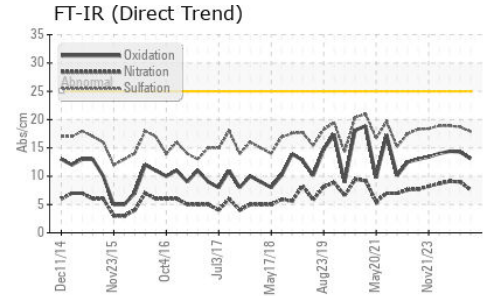
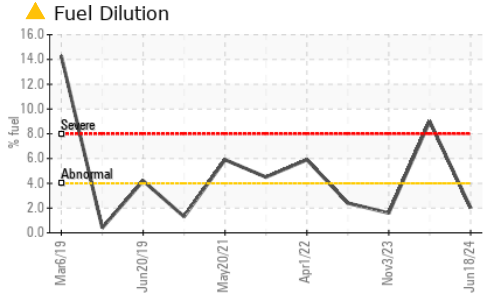
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	5	9	5
Sodium	ppm	ASTM D5185m	>75	3	<1	2
Potassium	ppm	ASTM D5185m	>20	3	5	<1
Fuel	%	ASTM D3524	>4.0	▲ 2.0	▲ 9.0	<1.0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		0.1	0.3	0.3
Nitration	Abs/cm	*ASTM D7624	>20	7.6	9.0	9.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	17.9	18.7	18.9

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.1	14.3	14.4
Base Number (BN)	mg KOH/g	ASTM D2896	12.5	8.4	7.6	8.3



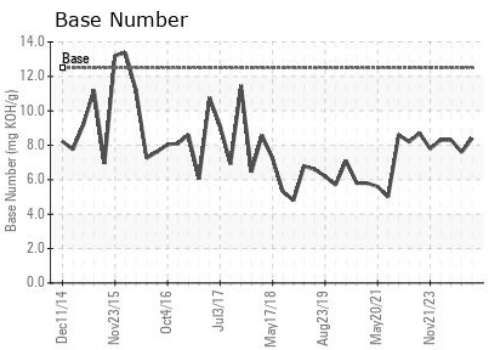
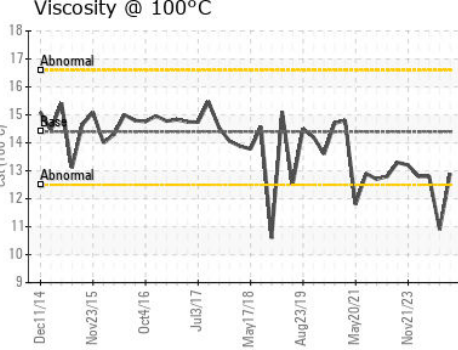
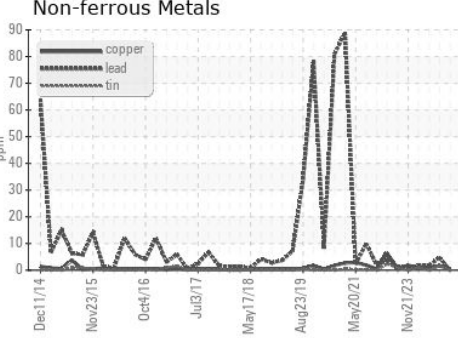
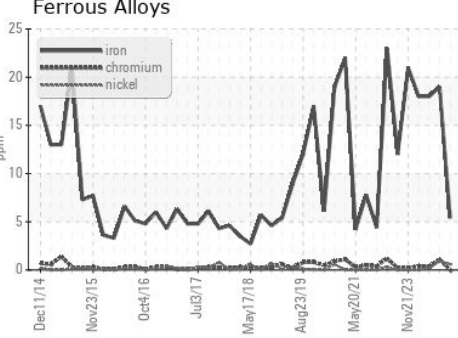
OIL ANALYSIS REPORT



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	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

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	14.4	12.9	▲ 10.9	12.8

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0063942 **Received** : 25 Jun 2024
Lab Number : **06219434** **Tested** : 27 Jun 2024
Unique Number : 11097631 **Diagnosed** : 27 Jun 2024 - Jonathan Hester
Test Package : MAR 2 (Additional Tests: PercentFuel)

AMERICAN RIVER TRANSPORTATION CO.
 P.O. BOX 2889
 ST. LOUIS, MO
 US 63111
 Contact: BRIAN GRIEWING
 brian.griewing@adm.com

To discuss this sample report, contact Customer Service at 1-800-237-1369.
 * - 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) F: (314)481-5278