

OIL ANALYSIS REPORT

RIVER EAGLE

REA

Port Genset

CHEVRON DELO 400 MULTIGRADE 15W40 (4 GAL)

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Sample Rating Trend



Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

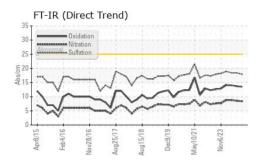
Fluid Condition

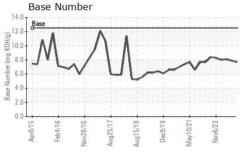
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

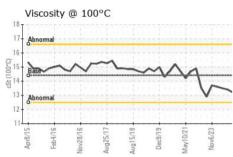
Sample Number Client Info MW0063943 MW0063863 MW0054605 Sample Date Client Info 18 Jun 2024 02 May 2024 15 Mar 2024 Machine Age hrs Client Info 563 562 587 Oil Age hrs Client Info 563 562 587 Oil Changed Client Info 563 562 587 Oil Changed Client Info Changed Changed Changed Changed NORMAL NO	SAMPLE INFORM	IATI <u>ON</u>	method	limit/base	current	history1	history2
Sample Date			Client Info			•	
Machine Age hrs Client Info 3617 3054 2492 Oil Age hrs Client Info 563 562 587 Oil Changed Client Info Changed Changed Changed Changed Sample Status Client Info Changed NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >4.0 <1.0	·						
Oil Age hrs Client Info 563 562 587 Oil Changed Client Info Changed Changed Changed Changed Sample Status NORMAL NORMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history2 Fuel WC Method 94.0 <1.0 <1.0 <1.0 Water WC Method 90.1 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 6 8 9 Chromium ppm ASTM D5185m >12 2 1 1 1 1		hrs					
Client Info Changed NORMAL NORMAL NORMAL NORMAL NORMAL							
CONTAMINATION	-						
Fuel	-					Ü	Ü
Water Glycol WC Method WC Method >0.1 NEG NEG NEG NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 6 8 9 Chromium ppm ASTM D5185m >4 0 <1 <1 Nickel ppm ASTM D5185m >2 <1 <1 <1 Silver ppm ASTM D5185m >2 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1			method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
WEAR METALS	Water		WC Method	>0.1	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >4 0 <1 <1 Nickel ppm ASTM D5185m >2 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>50	6	8	9
Titanium	Chromium	ppm	ASTM D5185m	>4	0	<1	<1
Silver	Nickel	ppm	ASTM D5185m	>2	<1	<1	<1
Aluminum	Titanium	ppm	ASTM D5185m		14	15	15
Lead	Silver	ppm	ASTM D5185m	>5	0	0	0
Copper ppm ASTM D5185m >70 <1 1 0 Tin ppm ASTM D5185m >15 0 1 <1	Aluminum	ppm	ASTM D5185m	>12	2	1	2
Tin	Lead	ppm	ASTM D5185m	>17	0	1	<1
Vanadium ppm ASTM D5185m <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	Copper	ppm	ASTM D5185m	>70	<1	1	0
Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 151 82 93 82 Barium ppm ASTM D5185m 0.4 0 0 0 Molybdenum ppm ASTM D5185m 250 42 40 28 Manganese ppm ASTM D5185m 0 824 706 782 Calcium ppm ASTM D5185m 2046 1586 1422 1523 Phosphorus ppm ASTM D5185m 943 894 801 831 Sulfur ppm ASTM D5185m 5012 3824 3173 3544 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 5 4 Sodium ppm ASTM D5185m >20 3	Tin	ppm	ASTM D5185m	>15	0	1	<1
ADDITIVES	Vanadium	ppm	ASTM D5185m		<1	<1	<1
Boron	Cadmium	ppm	ASTM D5185m		0	<1	0
Barium ppm ASTM D5185m 0.4 0 0 0 Molybdenum ppm ASTM D5185m 250 42 40 28 Manganese ppm ASTM D5185m 1 1 1 <1 Magnesium ppm ASTM D5185m 0 824 706 782 Calcium ppm ASTM D5185m 2046 1586 1422 1523 Phosphorus ppm ASTM D5185m 1043 787 657 714 Zinc ppm ASTM D5185m 943 894 801 831 Sulfur ppm ASTM D5185m 5012 3824 3173 3544 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 5 4 Sodium ppm ASTM D5185m >20 3 5 4 INFRA-RED method limit/base	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 250 42 40 28 Manganese ppm ASTM D5185m 1 1 <1 Magnesium ppm ASTM D5185m 0 824 706 782 Calcium ppm ASTM D5185m 2046 1586 1422 1523 Phosphorus ppm ASTM D5185m 1043 787 657 714 Zinc ppm ASTM D5185m 943 894 801 831 Sulfur ppm ASTM D5185m 5012 3824 3173 3544 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 5 4 Sodium ppm ASTM D5185m >20 3 5 4 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7824 >20 8.4 8.	Boron	ppm	ASTM D5185m	151	82	93	82
Manganese ppm ASTM D5185m 1 1 <1 Magnesium ppm ASTM D5185m 0 824 706 782 Calcium ppm ASTM D5185m 2046 1586 1422 1523 Phosphorus ppm ASTM D5185m 1043 787 657 714 Zinc ppm ASTM D5185m 943 894 801 831 Sulfur ppm ASTM D5185m 5012 3824 3173 3544 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 5 4 Sodium ppm ASTM D5185m >20 3 5 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 8.4 8.5 8.8 Sulfation Abs/:1mm *ASTM D7415 >30 <	Barium	ppm	ASTM D5185m	0.4		0	0
Magnesium ppm ASTM D5185m 0 824 706 782 Calcium ppm ASTM D5185m 2046 1586 1422 1523 Phosphorus ppm ASTM D5185m 1043 787 657 714 Zinc ppm ASTM D5185m 943 894 801 831 Sulfur ppm ASTM D5185m 5012 3824 3173 3544 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 5 4 Sodium ppm ASTM D5185m 3 0 2 Potassium ppm ASTM D5185m >20 3 5 4 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7624 >20 8.4 8.5 8.8 Sulfation Abs/.1mm *ASTM D7415 >30 17.9	Molybdenum	ppm	ASTM D5185m	250	42		28
Calcium ppm ASTM D5185m 2046 1586 1422 1523 Phosphorus ppm ASTM D5185m 1043 787 657 714 Zinc ppm ASTM D5185m 943 894 801 831 Sulfur ppm ASTM D5185m 5012 3824 3173 3544 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 5 4 Sodium ppm ASTM D5185m 3 0 2 Potassium ppm ASTM D5185m >20 3 5 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 0.1 0.1 Nitration Abs/.1mm *ASTM D7415 >30 17.9 18.4 18.4 FLUID DEGRADATION method limit/base current	Manganese	ppm	ASTM D5185m		1	1	<1
Phosphorus ppm ASTM D5185m 1043 787 657 714 Zinc ppm ASTM D5185m 943 894 801 831 Sulfur ppm ASTM D5185m 5012 3824 3173 3544 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 5 4 Sodium ppm ASTM D5185m >20 3 5 4 Potassium ppm ASTM D5185m >20 3 5 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 0.1 0.1 Nitration Abs/.1mm *ASTM D7624 >20 8.4 8.5 8.8 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 18.4 18.4 FLUID DEGRADATION method limit	Magnesium	ppm	ASTM D5185m	0	824	706	782
Zinc ppm ASTM D5185m 943 894 801 831 Sulfur ppm ASTM D5185m 5012 3824 3173 3544 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 5 4 Sodium ppm ASTM D5185m 3 0 2 Potassium ppm ASTM D5185m >20 3 5 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 8.4 8.5 8.8 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 18.4 18.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25	Calcium	ppm	ASTM D5185m	2046	1586	1422	1523
Sulfur ppm ASTM D5185m 5012 3824 3173 3544 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 5 4 Sodium ppm ASTM D5185m 3 0 2 Potassium ppm ASTM D5185m >20 3 5 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 8.4 8.5 8.8 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 18.4 18.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.5 13.7 14.0	Phosphorus	ppm	ASTM D5185m	1043	787	657	714
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 5 4 Sodium ppm ASTM D5185m 3 0 2 Potassium ppm ASTM D5185m >20 3 5 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 8.4 8.5 8.8 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 18.4 18.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.5 13.7 14.0	Zinc	ppm	ASTM D5185m	943	894	801	831
Silicon ppm ASTM D5185m >25 4 5 4 Sodium ppm ASTM D5185m 3 0 2 Potassium ppm ASTM D5185m >20 3 5 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 8.4 8.5 8.8 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 18.4 18.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.5 13.7 14.0	Sulfur	ppm	ASTM D5185m	5012	3824	3173	3544
Sodium ppm ASTM D5185m 3 0 2 Potassium ppm ASTM D5185m >20 3 5 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 8.4 8.5 8.8 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 18.4 18.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.5 13.7 14.0	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 3 5 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 8.4 8.5 8.8 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 18.4 18.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.5 13.7 14.0		• •		>25			
INFRA-RED		ppm	ASTM D5185m				
Soot % % *ASTM D7844 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 8.4 8.5 8.8 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 18.4 18.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.5 13.7 14.0	Potassium	ppm	ASTM D5185m	>20	3	5	4
Nitration Abs/cm *ASTM D7624 >20 8.4 8.5 8.8 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 18.4 18.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.5 13.7 14.0	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 17.9 18.4 18.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.5 13.7 14.0	Soot %	%	*ASTM D7844		0.1	0.1	0.1
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.5 13.7 14.0	Nitration	Abs/cm	*ASTM D7624	>20	8.4	8.5	8.8
Oxidation Abs/.1mm *ASTM D7414 >25 13.5 13.7 14.0	Sulfation	Abs/.1mm	*ASTM D7415	>30	17.9	18.4	18.4
	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 12.5 7.7 7.9 8.1	Oxidation	Abs/.1mm	*ASTM D7414	>25	13.5	13.7	14.0
	Base Number (BN)	mg KOH/g	ASTM D2896	12.5	7.7	7.9	8.1



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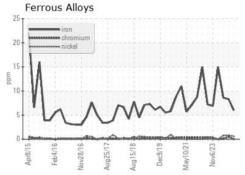


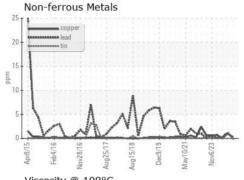


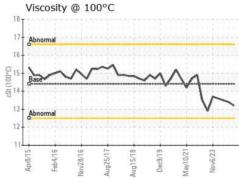
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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
Free Water	scalar	*Visual		NEG	NEG	NEG

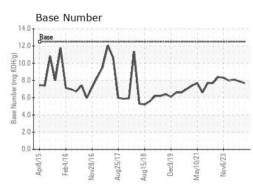
FLUID PROPERTIES		method	ilmit/base		nistory i	nistoryz
Visc @ 100°C	cSt	ASTM D445	14.4	13.2	13.4	13.5

GRAPHS













Certificate 12367

Laboratory Unique Number : 11097630 Test Package : MAR 2

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 **Sample No.** : MW0063943 Lab Number : 06219433

Received **Tested** Diagnosed

: 25 Jun 2024 : 25 Jun 2024 : 25 Jun 2024 - Wes Davis

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

Report Id: AMESAI [WUSCAR] 06219433 (Generated: 06/26/2024 16:13:07) Rev: 1

Contact/Location: BRIAN GRIEWING - AMESAI

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