

OIL ANALYSIS REPORT

Sample Rating Trend

ISO

Machine Id LEROI VRUOXY0029 (S/N LE13132) Component

Compressor Fluid

CIMARRON HB-150 (--- GAL)

DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

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

Fluid Condition

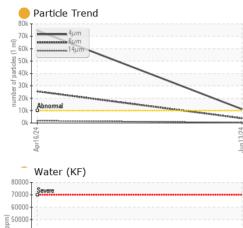
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION method Imit/base current History1 History2 Sample Number Client Info 13 Jun 2024 16 Apr 2024 Machine Age hrs Client Info 0 0 Oil Age hrs Client Info 0 0 Oil Age hrs Client Info 0 0 Sample Status Client Info 0 0 WEAR METALS method Imit/base current history1 History2 Iron ppm ASTM 05185m >50 16 40 WEAR METALS method Imit/base current history1 History2 Iron ppm ASTM 05185m >10 <1 Mikel ppm ASTM 05185m >25 0 1 Chromium ppm ASTM 05185m >50 0 1 Aluminum				Pres It //s a sec		In the second	history O
Sample Date Client Info 13 Jun 2024 16 Apr 2024 Machine Age hrs Client Info 0 0 Oil Age hrs Client Info 0 0 Oil Changed Client Info Changed N/A Sample Status Imit base current history1 history2 Iron ppm ASTM 05185n >50 16 40 Nickel ppm ASTM 05185n >50 1 Nickel ppm ASTM 05185n >25 2 2 Aluminum ppm ASTM 05185n >25 0 1 Copper ppm ASTM 05185n >25 0 1 Vanadium ppm ASTM 05185n 0 1 Addenum ppm ASTM 05185n 0 1 Adatim ppm		ATION	method	limit/base		history1	history2
Machine Age hrs Client Info 0 0 Oil Age hrs Client Info 0 0 Sample Status Imit Mode Client Info 0 0 WEAR METALS method Imit Mose current ABNORMAL WEAR METALS method Imit Mose current history1 history2 Iron ppm ASTM 05185m >50 16 40 Nickel ppm ASTM 05185m 0 1 Silver ppm ASTM 05185m >25 2 2 Copper ppm ASTM 05185m >25 0 1 Cadmium ppm ASTM 05185m >25 0 1 ADDITIVES method Imit base current history1 history2 Readum ppm ASTM 05185m 0 1 ADDITI			Client Info				
Oil Age hrs Client Info 0 Changed Client Info Changed N/A WEAR METALS method Imit/base current history1 history2 Iron ppm ASTM D5185m >50 16 40 Chromium ppm ASTM D5185m >10 -1 Nickel ppm ASTM D5185m 0 1 Auminum ppm ASTM D5185m 0 1 Auminum ppm ASTM D5185m 0 1 Auminum ppm ASTM D5185m 225 0 1 Auminum ppm ASTM D5185m >50 0 1 Auminum ppm ASTM D5185m 0 1 1 Auminum ppm ASTM D5185m 0 1 1 Cadmium ppm	· · · · · · · · · · · · · · · · · · ·		Client Info		13 Jun 2024	16 Apr 2024	
Oli Changed Sample Status Client Info Changed ATTENTION N/A ABNORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 16 40 Nickel ppm ASTM D5185m >50 16 40 Nickel ppm ASTM D5185m 0 <1	•	hrs			-		
Sample Status ATTENTION ABNORMAL WEAR METALS method imit/base current history1 history2 Iron ppm ASTM D5185m >50 16 40 Chromium ppm ASTM D5185m >10 <1	-	hrs			-	÷	
WEAR METALS method imit/base current history1 history2 Iron ppm ASTM 05165m >50 16 40 Chromium ppm ASTM 05165m >10 <1	U		Client Info		•		
Iron ppm ASTM D5185m >50 16 40 Nickel ppm ASTM D5185m 0 1 Nickel ppm ASTM D5185m 0 -1 Nickel ppm ASTM D5185m 0 -1 Aluminum ppm ASTM D5185m >25 2 2 Lead ppm ASTM D5185m >50 0 1 Copper ppm ASTM D5185m >50 0 1 Vanadium ppm ASTM D5185m >50 0 1 Cadmium ppm ASTM D5185m 0 -1 ADDITIVES method imit/base current history1 history2 Boron ppm ASTM D5185m 0 -1 Magnese ppm ASTM D5185m 0 1 Magnesium ppm	Sample Status				ATTENTION	ABNORMAL	
Chromium ppm ASTM D5185m >10 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m 0 1 Titanium ppm ASTM D5185m 0 <1	Iron	ppm	ASTM D5185m	>50	16	40	
Tatanium ppm ASTM D5185m 0 <1 Silver ppm ASTM D5185m 0 <1	Chromium	ppm	ASTM D5185m	>10	<1	<1	
Silver ppm ASTM D5185m 0 <1 Aluminum ppm ASTM D5185m >25 2 2 Lead ppm ASTM D5185m >25 0 1 Copper ppm ASTM D5185m >50 0 1 Vanadium ppm ASTM D5185m >15 0 1 Cadmium ppm ASTM D5185m 0 1 ADDITIVES method Imit/base current history1 history2 Boron ppm ASTM D5185m 0 0 1 Magnesium ppm ASTM D5185m 0 1 Magnesium ppm ASTM D5185m 0 1 Magnesium ppm ASTM D5185m 0 1 Calcium ppm ASTM D5185m 0 3 Sulfur <td< td=""><td>Nickel</td><td>ppm</td><td>ASTM D5185m</td><td></td><th>0</th><td>1</td><td></td></td<>	Nickel	ppm	ASTM D5185m		0	1	
Aluminum ppm ASTM D5185m >25 2 2 Lead ppm ASTM D5185m >25 0 1 Copper ppm ASTM D5185m >50 0 1 Vanadium ppm ASTM D5185m 50 0 1 Vanadium ppm ASTM D5185m 0 1 Cadmium ppm ASTM D5185m 0 1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 1 Magnese ppm ASTM D5185m 0 0 1 Magnesium ppm ASTM D5185m 0 0 5 Zinc ppm ASTM D5185m 0 3 Sulfur ppm ASTM D5185m 0 362 823	Titanium	ppm	ASTM D5185m		0	<1	
Lead ppm ASTM D5185m >25 0 1 Copper ppm ASTM D5185m >50 0 1 Vanadium ppm ASTM D5185m >15 0 1 Vanadium ppm ASTM D5185m 0 1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 <1	Silver	ppm	ASTM D5185m		0	<1	
Copper ppm ASTM D5185m >50 0 1 Tin ppm ASTM D5185m >15 0 1 Vanadium ppm ASTM D5185m >15 0 1 Cadmium ppm ASTM D5185m 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 <1	Aluminum	ppm	ASTM D5185m	>25	2	2	
Tin ppm ASTM D5185m >15 0 1 Vanadium ppm ASTM D5185m 0 <1	Lead	ppm	ASTM D5185m	>25	0	1	
Vanadium ppm ASTM D5185m 0 <1 Cadmium ppm ASTM D5185m 0 1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 <1	Copper	ppm	ASTM D5185m	>50	0	1	
Cadmium ppm ASTM D5185m 0 1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 <1 <1 Barium ppm ASTM D5185m 0 0 1 Manganese ppm ASTM D5185m 0 0 1 Manganese ppm ASTM D5185m 0 <1 <1 Calcium ppm ASTM D5185m 0 <11 <15 Calcium ppm ASTM D5185m 0 0 3 Calcium ppm ASTM D5185m 0 362 823 Sulfur ppm ASTM D5185m 0 362 823 Sulfur ppm ASTM D5185m 25 0 2 Sulfur ppm ASTM D5185m >20 1 20 <td>Tin</td> <td>ppm</td> <td>ASTM D5185m</td> <td>>15</td> <th>0</th> <td>1</td> <td></td>	Tin	ppm	ASTM D5185m	>15	0	1	
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 <1	Vanadium	ppm	ASTM D5185m		0	<1	
Boron ppm ASTM D5185m 0 <1	Cadmium	ppm	ASTM D5185m		0	1	
Barium ppm ASTM D5185m 0 0 0 1 Manganese ppm ASTM D5185m 0 0 1 Manganese ppm ASTM D5185m 0 <1 Magnesium ppm ASTM D5185m 0 <1 Calcium ppm ASTM D5185m 0 0 5 Calcium ppm ASTM D5185m 0 0 3 Zinc ppm ASTM D5185m 0 0 3 Sulfur ppm ASTM D5185m 0 362 823 Sodium ppm ASTM D5185m 0 2 Sodium ppm ASTM D5185m >20 <1 2 Vater % ASTM D5185m >20 <1 2 ppm Water ppm ASTM D6304 >2.26 0.7433 1.01	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 0 0 1 Manganese ppm ASTM D5185m 0 <1 Magnesium ppm ASTM D5185m 0 <1 Calcium ppm ASTM D5185m 0 0 5 Calcium ppm ASTM D5185m 0 11 55 Zinc ppm ASTM D5185m 0 0 3 Sulfur ppm ASTM D5185m 0 362 823 Soliton ppm ASTM D5185m 0 362 823 Soliton ppm ASTM D5185m 0 362 823 Soliton ppm ASTM D5185m >20 <1 2 Soliton ppm ASTM D5185m >20 <1 2 Soliton ppm ASTM D5185m >20 <1 2 Soliton ppm ASTM D5185m >20 <1 20 <td>Boron</td> <td>ppm</td> <td>ASTM D5185m</td> <td>0</td> <th><1</th> <td><1</td> <td></td>	Boron	ppm	ASTM D5185m	0	<1	<1	
Manganese ppm ASTM D5185m 0 1 Magnesium ppm ASTM D5185m 0 <1	Barium	ppm	ASTM D5185m	0	0	0	
Magnesium ppm ASTM D5185m 0 <1 <1 Calcium ppm ASTM D5185m 0 0 5 Phosphorus ppm ASTM D5185m 0 11 55 Zinc ppm ASTM D5185m 0 362 823 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 0 362 823 Sodium ppm ASTM D5185m 0 362 823 Sodium ppm ASTM D5185m >25 0 2 Sodium ppm ASTM D5185m >20 <1	Molybdenum	ppm	ASTM D5185m	0	0	1	
Calcium ppm ASTM D5185m 0 0 5 Phosphorus ppm ASTM D5185m 0 11 55 Zinc ppm ASTM D5185m 0 0 3 Sulfur ppm ASTM D5185m 0 362 823 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 0 2 Sodium ppm ASTM D5185m >25 0 2 Sodium ppm ASTM D5185m >20 <1	Manganese	ppm	ASTM D5185m		0	1	
Phosphorus ppm ASTM D5185m 0 11 55 Zinc ppm ASTM D5185m 0 0 3 Sulfur ppm ASTM D5185m 0 362 823 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 0 2 Sodium ppm ASTM D5185m >25 0 2 Sodium ppm ASTM D5185m >20 <1 2 Vater % ASTM D5185m >20 <1 2 Water % ASTM D6304 >2.260 O.743 1.01 ppm Water ppm ASTM D647 >10000 11205 74734 Particles >4µm ASTM D7647 >2500 3794 25529 Particles >14µm ASTM D7647 >20 4	Magnesium	ppm	ASTM D5185m	0	<1	<1	
Zinc ppm ASTM D5185m 0 0 3 Sulfur ppm ASTM D5185m 0 362 823 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 0 2 Sodium ppm ASTM D5185m >20 <1	Calcium	ppm	ASTM D5185m	0	0	5	
SulfurppmASTM D5185m0362823CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>2502SodiumppmASTM D5185m>20<1	Phosphorus	ppm	ASTM D5185m	0	11	55	
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 0 2 Sodium ppm ASTM D5185m >20 <1	Zinc	ppm	ASTM D5185m	0	0	3	
Silicon ppm ASTM D5185m >25 0 2 Sodium ppm ASTM D5185m >20 <1	Sulfur	ppm	ASTM D5185m	0	362	823	
Sodium ppm ASTM D5185m 5 6 Potassium ppm ASTM D5185m >20 <1 2 Water % ASTM D6304 >2.26 0.743 1.01 ppm Water ppm ASTM D6304 >22600 7430 10100 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >10000 11205 74734 Particles >6µm ASTM D7647 >2500 3794 25529 Particles >6µm ASTM D7647 >320 299 1803 Particles >14µm ASTM D7647 >80 68 368 Particles >38µm ASTM D7647 >20 4 7 Particles >71µm ASTM D7647 >4 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 21/19/15 23/22/18 <	CONTAMINANTS	3	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 <1 2 Water % ASTM D6304 >2.26 0.743 1.01 ppm Water ppm ASTM D6304 >2.26 0.743 1.01 ppm Water ppm ASTM D6304 >2.2600 7430 10100 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >10000 11205 74734 Particles >6µm ASTM D7647 >2500 3794 25529 Particles >14µm ASTM D7647 >320 299 1803 Particles >21µm ASTM D7647 >20 4 7 Particles >38µm ASTM D7647 >20 4 7 Particles >71µm ASTM D7647 >4 0 0 Oil Cleanliness ISO 4406 (c) 20/18/15 21/19/15 <t< td=""><td>Silicon</td><td>ppm</td><td>ASTM D5185m</td><td>>25</td><th>0</th><td>2</td><td></td></t<>	Silicon	ppm	ASTM D5185m	>25	0	2	
Water % ASTM D6304 >2.26 0.743 1.01 ppm Water ppm ASTM D6304 >2.2600 7430 10100 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >10000 11205 74734 Particles >6µm ASTM D7647 >2500 3794 25529 Particles >14µm ASTM D7647 >320 299 1803 Particles >21µm ASTM D7647 >20 4 7 Particles >38µm ASTM D7647 >20 4 7 Particles >71µm ASTM D7647 >4 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 21/19/15 23/22/18 FLUID DEGRADATION method limit/base current history1 history2	Sodium		ASTM D5185m		5	6	
ppm Water ppm ASTM D6304 >22600 7430 10100 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >10000 11205 74734 Particles >6µm ASTM D7647 >2500 3794 25529 Particles >14µm ASTM D7647 >320 299 1803 Particles >21µm ASTM D7647 >80 68 368 Particles >38µm ASTM D7647 >20 4 7 Particles >71µm ASTM D7647 >4 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 21/19/15 23/22/18 FLUID DEGRADATION method limit/base current history1 history2	Potassium	ppm	ASTM D5185m	>20	<1	2	
FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >10000 11205 74734 Particles >6µm ASTM D7647 >2500 3794 25529 Particles >6µm ASTM D7647 >320 299 1803 Particles >14µm ASTM D7647 >80 68 368 Particles >21µm ASTM D7647 >20 4 7 Particles >38µm ASTM D7647 >20 4 7 Particles >71µm ASTM D7647 >4 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 21/19/15 23/22/18 FLUID DEGRADATION method limit/base current history1 history2	Water	%	ASTM D6304	>2.26	0.743	1.01	
Particles >4µm ASTM D7647 >10000 11205 74734 Particles >6µm ASTM D7647 >2500 3794 25529 Particles >14µm ASTM D7647 >320 299 1803 Particles >21µm ASTM D7647 >80 68 368 Particles >21µm ASTM D7647 >20 4 7 Particles >38µm ASTM D7647 >20 4 7 Particles >71µm ASTM D7647 >4 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 21/19/15 23/22/18 FLUID DEGRADATION method limit/base current history1 history2	ppm Water	ppm	ASTM D6304	>22600	7430	10100	
Particles >6µm ASTM D7647 >2500 3794 ▲ 25529 Particles >14µm ASTM D7647 >320 299 ▲ 1803 Particles >21µm ASTM D7647 >80 68 ▲ 368 Particles >38µm ASTM D7647 >20 4 7 Particles >38µm ASTM D7647 >4 0 0 Particles >71µm ASTM D7647 >4 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 21/19/15 ▲ 23/22/18 FLUID DEGRADATION method limit/base current history1 history2	FLUID CLEANLIN	IESS	method	limit/base	current	history1	history2
Particles >14µm ASTM D7647 >320 299 ▲ 1803 Particles >21µm ASTM D7647 >80 68 ▲ 368 Particles >38µm ASTM D7647 >20 4 7 Particles >71µm ASTM D7647 >4 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 21/19/15 ▲ 23/22/18 FLUID DEGRADATION method limit/base current history1 history2	Particles >4µm		ASTM D7647	>10000	e 11205	▲ 74734	
Particles >21μm ASTM D7647 >80 68 ▲ 368 Particles >38μm ASTM D7647 >20 4 7 Particles >37μm ASTM D7647 >4 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 ≥1/19/15 ≥23/22/18 FLUID DEGRADATION method limit/base current history1 history2	Particles >6µm		ASTM D7647	>2500	<mark> </mark> 3794	▲ 25529	
Particles >38μm ASTM D7647 >20 4 7 Particles >71μm ASTM D7647 >4 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 21/19/15 23/22/18 FLUID DEGRADATION method limit/base current history1 history2	Particles >14µm		ASTM D7647	>320	299	1 803	
Particles >71μm ASTM D7647 >4 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 21/19/15 ▲ 23/22/18 FLUID DEGRADATION method limit/base current history1 history2	Particles >21µm		ASTM D7647	>80	68	<u> </u>	
Oil Cleanliness ISO 4406 (c) >20/18/15 • 21/19/15 • 23/22/18 FLUID DEGRADATION method limit/base current history1 history2	Particles >38µm		ASTM D7647	>20	4	7	
FLUID DEGRADATION method limit/base current history1 history2	Particles >71µm		ASTM D7647	>4	0	0	
	Oil Cleanliness		ISO 4406 (c)	>20/18/15	e 21/19/15	▲ 23/22/18	
Acid Number (AN) mg KOH/g ASTM D8045 0.38 0.60	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
	Acid Number (AN)	mg KOH/g	ASTM D8045		0.38	0.60	

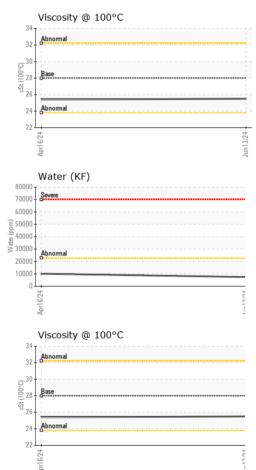
Contact/Location: CARLOS LEAL - CIMCAR Page 1 of 2



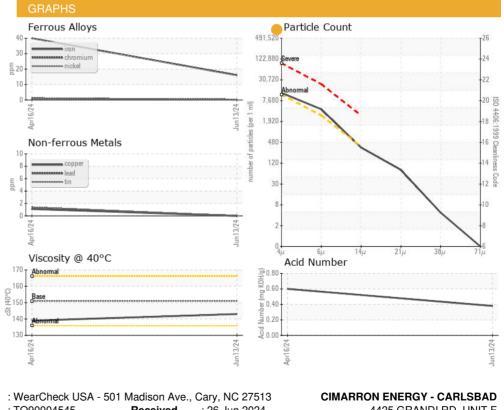
OIL ANALYSIS REPORT







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	LIGHT	NONE	
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Appearance	scalar	*Visual	NORML	NORML	NORML	
Odor	scalar	*Visual	NORML	NORML	NORML	
Emulsified Water	scalar	*Visual	>2.26	NEG	NEG	
Free Water	scalar	*Visual		NEG	NEG	
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	151	143	139	
Visc @ 100°C	cSt	ASTM D445	28	25.5	25.4	
Viscosity Index (VI)	Scale	ASTM D2270	224	213	218	
SAMPLE IMAGES	3	method	limit/base	current	history1	history2
Color					a	no image
						no image no image
Bottom GRAPHS Ferrous Alloys				Particle Count		no image
Bottom GRAPHS Ferrous Alloys			491,52			no image
Bottom GRAPHS Ferrous Alloys			491,52 122,88	l l	t	no image
Bottom GRAPHS Ferrous Alloys				0 Severe	E	no image
Bottom GRAPHS Ferrous Alloys			122,88 30,72	D Severe D Abnormal		no image
Ferrous Alloys			30,72	0 Severe Abnormal		no image





Laboratory Received Sample No. : TO90004545 : 26 Jun 2024 4425 GRANDI RD, UNIT F Lab Number : 06221306 Tested : 27 Jun 2024 CARLSBAD, NM Unique Number : 11099503 Diagnosed : 28 Jun 2024 - Don Baldridge UM 88220-8923 Test Package : IND 2 (Additional Tests: KF, KV100, PrtCount, VI) Contact: CARLOS LEAL Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. cleal@cimarron.com * - 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)

Report Id: CIMCAR [WUSCAR] 06221306 (Generated: 06/29/2024 02:40:07) Rev: 1

Contact/Location: CARLOS LEAL - CIMCAR

Т:

F: