

## **OIL ANALYSIS REPORT**

# Sample Rating Trend **WEAR**

Machine Id

## **LEROI VRUOXV0015 - HP5 (S/N LE17856)**

Compressor

CIMARRON HB-150 (--- GAL)

### **DIAGNOSIS**

#### Recommendation

We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor.

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

#### Contamination

There is a high amount of particulates present in the oil.

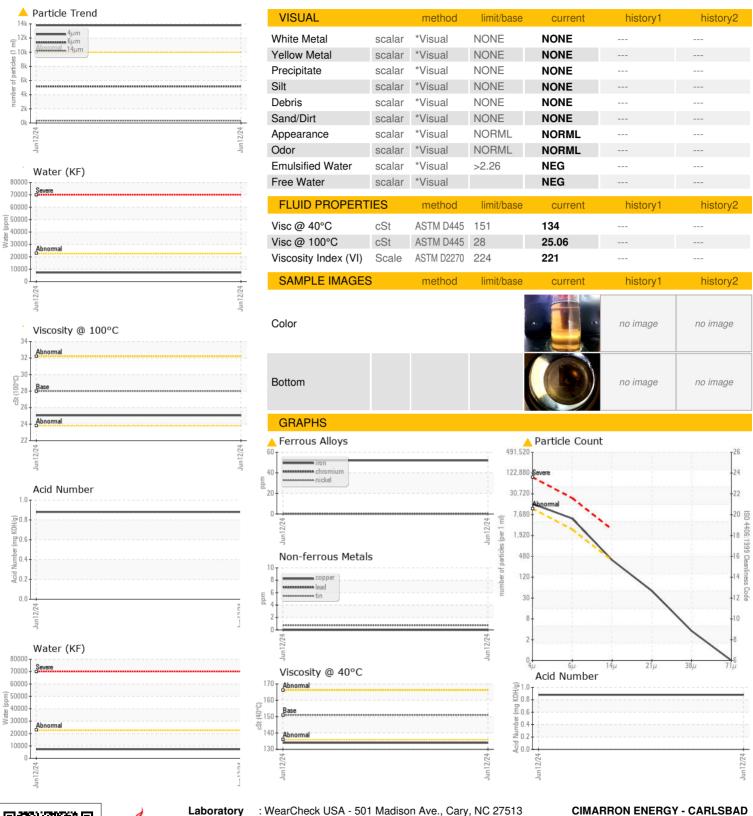
#### **Fluid Condition**

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

Iron							
Sample Number         Client Info         TO90004069            Sample Date         Client Info         12 Jun 2024            Machine Age         hrs         Client Info         0            Oil Age         hrs         Client Info         0            Oil Changed         Client Info         N/A            Sample Status         WEAR METALS         method         limit/base         current         history1           Iron         ppm         ASTM D5185m         >50         ♣ 52            Chromium         ppm         ASTM D5185m         >10         <1            Nickel         ppm         ASTM D5185m         >10         <1            Silver         ppm         ASTM D5185m         0             Lead         ppm         ASTM D5185m         >25         2            Copper         ppm         ASTM D5185m         >15         <1            Vanadium         ppm         ASTM D5185m         0 <th></th> <th></th> <th><u>-</u></th> <th></th> <th>Jun2024</th> <th></th> <th></th>			<u>-</u>		Jun2024		
Sample Number         Client Info         TO90004069            Sample Date         Client Info         12 Jun 2024            Machine Age         hrs         Client Info         0            Oil Age         hrs         Client Info         0            Oil Changed         Client Info         N/A            Sample Status         WEAR METALS         method         limit/base         current         history1           Iron         ppm         ASTM D5185m         >50         ♣ 52            Chromium         ppm         ASTM D5185m         >10         <1            Nickel         ppm         ASTM D5185m         >10         <1            Silver         ppm         ASTM D5185m         0             Lead         ppm         ASTM D5185m         >25         2            Copper         ppm         ASTM D5185m         >15         <1            Vanadium         ppm         ASTM D5185m         0 <th>CAMDI E INICODA</th> <th>MATION</th> <th>mothod</th> <th>limit/bass</th> <th>Ourront</th> <th>hiotonul</th> <th>hiotory</th>	CAMDI E INICODA	MATION	mothod	limit/bass	Ourront	hiotonul	hiotory
Sample Date         Client Info         12 Jun 2024             Machine Age         hrs         Client Info         0             Oil Age         hrs         Client Info         0             Oil Changed         Client Info         N/A             Sample Status         MBNORMAL             WEAR METALS         method         Imitibase         current         history1         history2           Iron         ppm         ASTM D5185m         >50         ♣ 52             Chromium         ppm         ASTM D5185m         >10         <1             Nickel         ppm         ASTM D5185m         0              Silver         ppm         ASTM D5185m         0              Aluminum         ppm         ASTM D5185m         >25         2             Aluminum         ppm         ASTM D5185m         >25         0             Lead         ppm         ASTM D5185m		IATION		iiiiii/base		flistory i	HIStory2
Machine Age         hrs         Client Info         0             Oil Changed         Client Info         0             Sample Status         N/A         N/A             WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >50         ♣ 52             Chromium         ppm         ASTM D5185m         >10         -1             Nickel         ppm         ASTM D5185m         >10              Niker         ppm         ASTM D5185m         0              Niker         ppm         ASTM D5185m         0              Niker         ppm         ASTM D5185m         >5         2         2             Aluminum         ppm         ASTM D5185m         >50         0             Copper         ppm         ASTM D5185m         >50         0							
Oil Age         hrs         Client Info         N/A             Oil Changed         Client Info         N/A             Sample Status         method         limit/base         current         history1         history2           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >50         52             Chromium         ppm         ASTM D5185m         >10         <1							
Oil Changed Sample Status         Client Info         N/A							
Sample Status         Method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >50         ▲ 52             Chromium         ppm         ASTM D5185m         0             Nickel         ppm         ASTM D5185m         0             Titanium         ppm         ASTM D5185m         0             Aluminum         ppm         ASTM D5185m         25         2             Aluminum         ppm         ASTM D5185m         >25         0             Aluminum         ppm         ASTM D5185m         >25         0             Lead         ppm         ASTM D5185m         >50         0             Copper         ppm         ASTM D5185m         >50         0             Vanadium         ppm         ASTM D5185m         0         0             ADDITIVES         method         limit/base         current         history1         history2	-	hrs			-		
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >50         ▲ 52             Nickel         ppm         ASTM D5185m         0             Nickel         ppm         ASTM D5185m         0             Silver         ppm         ASTM D5185m         0             Aluminum         ppm         ASTM D5185m         25         2             Aluminum         ppm         ASTM D5185m         >50         0             Lead         ppm         ASTM D5185m         >50         0             Copper         ppm         ASTM D5185m         >50         0             Tin         ppm         ASTM D5185m         0         0             Vanadium         ppm         ASTM D5185m         0         0             ASTM D5185m         0         3              ASTM D5185m			Client Info				
Iron	Sample Status				ABNORMAL		
Chromium         ppm         ASTM D5185m         >10         <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>50	<b>52</b>		
Titanium	Chromium	ppm	ASTM D5185m	>10	<1		
Silver	Nickel	ppm	ASTM D5185m		0		
Aluminum         ppm         ASTM D5185m         >25         2             Lead         ppm         ASTM D5185m         >50         0             Copper         ppm         ASTM D5185m         >50         0             Tin         ppm         ASTM D5185m         0              Vanadium         ppm         ASTM D5185m         0              Vanadium         ppm         ASTM D5185m         0              ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0             Boron         ppm         ASTM D5185m         0         0         <	Titanium	ppm	ASTM D5185m		0		
Lead         ppm         ASTM D5185m         >25         0             Copper         ppm         ASTM D5185m         >50         0             Tin         ppm         ASTM D5185m         >15         <1             Vanadium         ppm         ASTM D5185m         0             Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         3             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0             Barium         ppm         ASTM D5185m         0         0             Magnesium         ppm         ASTM D5185m         0         0             Calcium         ppm         ASTM D5185m         0         2	Silver	ppm	ASTM D5185m		0		
Copper         ppm         ASTM D5185m         >50         0             Tin         ppm         ASTM D5185m         >15         <1             Vanadium         ppm         ASTM D5185m         0             Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         3             Barium         ppm         ASTM D5185m         0         0             Molybdenum         ppm         ASTM D5185m         0         0             Magnesium         ppm         ASTM D5185m         0         0             Calcium         ppm         ASTM D5185m         0         0             Phosphorus         ppm         ASTM D5185m         0         124             Sulfur         ppm         ASTM D5185m         0         2         <	Aluminum	ppm	ASTM D5185m	>25	2		
Tin ppm ASTM D5185m >15 <1	Lead	ppm	ASTM D5185m	>25	0		
Vanadium         ppm         ASTM D5185m         0             Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         3             Barium         ppm         ASTM D5185m         0         0             Molybdenum         ppm         ASTM D5185m         0         0             Manganese         ppm         ASTM D5185m         0         0             Magnesium         ppm         ASTM D5185m         0         0             Magnesium         ppm         ASTM D5185m         0         0             Calcium         ppm         ASTM D5185m         0         124             Phosphorus         ppm         ASTM D5185m         0         2             Sulfur         ppm         ASTM D5185m         0         1282	Copper	ppm	ASTM D5185m	>50	0		
Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         3             Barium         ppm         ASTM D5185m         0         0             Molybdenum         ppm         ASTM D5185m         0         0             Manganese         ppm         ASTM D5185m         0              Magnesium         ppm         ASTM D5185m         0         0             Magnesium         ppm         ASTM D5185m         0         0             Calcium         ppm         ASTM D5185m         0         0             Phosphorus         ppm         ASTM D5185m         0         2             Zinc         ppm         ASTM D5185m         0         2             Sulfur         ppm         ASTM D5185m         >25         0	Tin	ppm	ASTM D5185m	>15	<1		
ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         3             Barium         ppm         ASTM D5185m         0         0             Molybdenum         ppm         ASTM D5185m         0         0             Manganese         ppm         ASTM D5185m         0              Manganesium         ppm         ASTM D5185m         0              Magnesium         ppm         ASTM D5185m         0         0             Magnesium         ppm         ASTM D5185m         0         0             Phosphorus         ppm         ASTM D5185m         0         124             Zinc         ppm         ASTM D5185m         0         2             Sulfur         ppm         ASTM D5185m         0         1282             Silicon         ppm         ASTM D5185m         >25	Vanadium	ppm	ASTM D5185m		0		
Boron         ppm         ASTM D5185m         0         3             Barium         ppm         ASTM D5185m         0         0             Molybdenum         ppm         ASTM D5185m         0         0             Manganese         ppm         ASTM D5185m         0              Magnesium         ppm         ASTM D5185m         0         21             Calcium         ppm         ASTM D5185m         0         0             Phosphorus         ppm         ASTM D5185m         0         124             Phosphorus         ppm         ASTM D5185m         0         2             Sulfur         ppm         ASTM D5185m         0         1282             Sulfur         ppm         ASTM D5185m         >25         0             Silicon         ppm         ASTM D5185m         >25         0             Sodium         ppm         ASTM D5185m         >20	Cadmium	ppm	ASTM D5185m		0		
Barium	ADDITIVES		method	limit/base	current	history1	history2
Barium	Boron	mqq	ASTM D5185m	0	3		
Molybdenum         ppm         ASTM D5185m         0         0             Manganese         ppm         ASTM D5185m         0              Magnesium         ppm         ASTM D5185m         0              Calcium         ppm         ASTM D5185m         0         0             Phosphorus         ppm         ASTM D5185m         0         124             Zinc         ppm         ASTM D5185m         0         2             Sulfur         ppm         ASTM D5185m         0         1282             Silicon         ppm         ASTM D5185m         >25         0             Sodium         ppm         ASTM D5185m         >25         0             Potassium         ppm         ASTM D5185m         >20         1             Water         %         ASTM D6304         >2.26         0.727             ppm Water         ppm         ASTM D6304         >26 <th>Barium</th> <th></th> <th>ASTM D5185m</th> <th>0</th> <th>0</th> <th></th> <th></th>	Barium		ASTM D5185m	0	0		
Manganese         ppm         ASTM D5185m         0             Magnesium         ppm         ASTM D5185m         0         <1             Calcium         ppm         ASTM D5185m         0         0             Phosphorus         ppm         ASTM D5185m         0         124             Zinc         ppm         ASTM D5185m         0         2             Sulfur         ppm         ASTM D5185m         0         1282             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         0             Sodium         ppm         ASTM D5185m         5             Potassium         ppm         ASTM D5185m         >20         1             Water         %         ASTM D6304         >2.26         0.727             ppm Water         ppm         ASTM D6304         >2.2600         7270         -	Molybdenum		ASTM D5185m	0	0		
Magnesium         ppm         ASTM D5185m         0         <1             Calcium         ppm         ASTM D5185m         0         0             Phosphorus         ppm         ASTM D5185m         0         124             Zinc         ppm         ASTM D5185m         0         2             Sulfur         ppm         ASTM D5185m         0         1282             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         0             Sodium         ppm         ASTM D5185m         >25         0             Potassium         ppm         ASTM D5185m         >20         1             Water         %         ASTM D6304         >2.26         0.727             ppm Water         ppm         ASTM D6304         >2.2600         7270             FLUID CLEANLINESS         method         limit/base			ASTM D5185m		0		
Calcium         ppm         ASTM D5185m         0         0             Phosphorus         ppm         ASTM D5185m         0         124             Zinc         ppm         ASTM D5185m         0         2             Sulfur         ppm         ASTM D5185m         0         1282             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         0             Sodium         ppm         ASTM D5185m         5             Potassium         ppm         ASTM D6304         >2.2.26         0.727            Water         %         ASTM D6304         >2.2600         7270             FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >10000         13790             Particles >6μm         ASTM D7647         >2500         5167	-		ASTM D5185m	0	<1		
Phosphorus         ppm         ASTM D5185m         0         124             Zinc         ppm         ASTM D5185m         0         2             Sulfur         ppm         ASTM D5185m         0         1282             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         0             Sodium         ppm         ASTM D5185m         5             Potassium         ppm         ASTM D6304         >2.26         0.727             Water         %         ASTM D6304         >2.2600         7270             ppm Water         ppm         ASTM D6304         >22600         7270             FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >10000         13790             Particles >6μm         ASTM D7647         >2500         <	_		ASTM D5185m	0	0		
Zinc         ppm         ASTM D5185m         0         2             Sulfur         ppm         ASTM D5185m         0         1282             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         0             Sodium         ppm         ASTM D5185m         5              Potassium         ppm         ASTM D5185m         >20         1             Water         %         ASTM D6304         >2.260         0.727             ppm Water         ppm         ASTM D6304         >22600         7270             FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >10000         13790             Particles >6μm         ASTM D7647         >2500         5167	Phosphorus		ASTM D5185m	0	124		
Sulfur         ppm         ASTM D5185m         0         1282             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         0             Sodium         ppm         ASTM D5185m         5             Potassium         ppm         ASTM D5185m         >20         1             Water         %         ASTM D6304         >2.26         0.727             ppm Water         ppm         ASTM D6304         >22600         7270             FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >10000         13790             Particles >6μm         ASTM D7647         >2500         5167			ASTM D5185m	0	2		
Silicon       ppm       ASTM D5185m       >25       0           Sodium       ppm       ASTM D5185m       5           Potassium       ppm       ASTM D5185m       >20       1           Water       %       ASTM D6304       >2.26       0.727           ppm Water       ppm       ASTM D6304       >22600       7270           FLUID CLEANLINESS       method       limit/base       current       history1       history2         Particles >4μm       ASTM D7647       >10000       13790           Particles >6μm       ASTM D7647       >2500       5167	Sulfur			0	1282		
Sodium         ppm         ASTM D5185m         5             Potassium         ppm         ASTM D5185m         >20         1             Water         %         ASTM D6304         >2.26         0.727             ppm Water         ppm         ASTM D6304         >22600         7270             FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >10000         ▲ 13790             Particles >6μm         ASTM D7647         >2500         ▲ 5167	CONTAMINANTS		method	limit/base	current	history1	history2
Sodium         ppm         ASTM D5185m         5             Potassium         ppm         ASTM D5185m         >20         1             Water         %         ASTM D6304         >2.26         0.727             ppm Water         ppm         ASTM D6304         >22600         7270             FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >10000         ▲ 13790             Particles >6μm         ASTM D7647         >2500         ▲ 5167	Silicon	maa	ASTM D5185m	>25	0		
Potassium         ppm         ASTM D5185m         >20         1             Water         %         ASTM D6304         >2.26 <b>0.727</b> ppm Water         ppm         ASTM D6304         >22600 <b>7270</b> FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >10000         ▲ <b>13790</b> Particles >6μm         ASTM D7647         >2500         ▲ <b>5167</b>							
Water         %         ASTM D6304         >2.26         0.727             ppm Water         ppm         ASTM D6304         >22600         7270             FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >10000         ▲ 13790             Particles >6μm         ASTM D7647         >2500         ▲ 5167	Potassium			>20	1		
ppm Water         ppm         ASTM D6304         >22600         7270             FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >10000         ▲ 13790             Particles >6μm         ASTM D7647         >2500         ▲ 5167					0.727		
Particles >4μm       ASTM D7647       >10000       ▲ 13790           Particles >6μm       ASTM D7647       >2500       ▲ 5167		ppm					
Particles >6μm ASTM D7647 >2500 Δ 5167	FLUID CLEANLIN	ESS	method	limit/base	current	history1	history2
Particles >6μm ASTM D7647 >2500 Δ 5167	Particles >4μm		ASTM D7647	>10000	<b>▲</b> 13790		
·	·		ASTM D7647	>2500	<u> 5167</u>		
			ASTM D7647	>320	<b>330</b>		
Particles >21µm ASTM D7647 >80 <b>43</b>							
Particles >38μm ASTM D7647 >20 <b>3</b>	Particles >38µm			>20			
Particles >71µm	·		ASTM D7647		0		
Oil Cleanliness ISO 4406 (c) >20/18/15 <b>21/20/16</b>			ISO 4406 (c)	>20/18/15	<b>21/20/16</b>		
FLUID DEGRADATION method limit/base current history1 history2	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Acid Number (AN)         mg KOH/g         ASTM D8045         0.88	Acid Number (AN)	mg KOH/g	ASTM D8045		0.88		



## **OIL ANALYSIS REPORT**





Certificate 12367

Laboratory

Sample No.

Lab Number Unique Number : 11099489

: TO90004069 : 06221292

Received **Tested** 

: 26 Jun 2024 : 01 Jul 2024 Diagnosed

: 01 Jul 2024 - Jonathan Hester

Test Package : IND 2 (Additional Tests: KF, KV100, PrtCount, VI) To discuss this sample report, contact Customer Service at 1-800-237-1369.

CARLSBAD, NM UM 88220-8923 Contact: CARLOS LEAL cleal@cimarron.com T:

4425 GRANDI RD, UNIT F

 $^st$  - 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] 06221292 (Generated: 07/02/2024 02:49:30) Rev: 1

Contact/Location: CARLOS LEAL - CIMCAR

F: