

OIL ANALYSIS REPORT

Sample Rating Trend

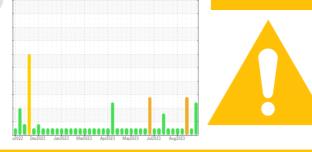




WVTM02BE Component

Biogas Engine Fluid

CHEVRON HDAX 6500 LFG GAS ENGINE OIL (--- GAL)



DIAGNOSIS	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
A Recommendation	Sample Number		Client Info		WC0629357	WC0629354	WC0629353
We recommend that you drain the oil from the	Sample Date		Client Info		26 Sep 2023	14 Sep 2023	06 Sep 2023
component if this has not already been done. We	Machine Age	hrs	Client Info		40316	40055	39874
recommend an early resample to monitor this	Oil Age	hrs	Client Info		442	181	1038
condition.	Oil Changed		Client Info		Not Changd	Not Changd	Changed
Wear	Sample Status				ABNORMAL	NORMAL	ABNORMAL
All component wear rates are normal.	CONTAMINATION		method	limit/base		history1	history2
Contamination		v					
There is no indication of any contamination in the bil.	Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Fluid Condition	Glycol		WC Method		NEG	NEG	NEG
The BN level is low. The AN level is at the top-end	WEAR METALS		method	limit/base	current	history1	history2
of the recommended limit.	Iron	ppm	ASTM D5185m	>15	6	2	8
	Chromium	ppm	ASTM D5185m	>4	0	0	<1
	Nickel	ppm	ASTM D5185m	>2	0	0	1
	Titanium	ppm	ASTM D5185m		0	0	0
	Silver	ppm	ASTM D5185m	>5	0	0	0
	Aluminum	ppm	ASTM D5185m	>6	4	3	4
	Lead	ppm	ASTM D5185m		5	<1	6
	Copper	ppm	ASTM D5185m	>6	<1	<1	2
	Tin	ppm	ASTM D5185m		5	2	6
	Vanadium	ppm	ASTM D5185m		0	0	0
	Cadmium	ppm	ASTM D5185m		0	0	0
	ADDITIVES		method	limit/base	current	history1	history2
	Boron	ppm	ASTM D5185m		0	0	<1
	Barium	ppm	ASTM D5185m		0	0	0
		pp					
	Molybdenum	nnm			1		2
	Molybdenum	ppm	ASTM D5185m		1	1	2
	Manganese	ppm	ASTM D5185m ASTM D5185m		<1	1 <1	<1
	Manganese Magnesium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		<1 7	1 <1 8	<1 8
	Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		<1 7 1860	1 <1 8 1757	<1 8 1879
	Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		<1 7 1860 278	1 <1 8 1757 250	<1 8 1879 262
	Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		<1 7 1860	1 <1 8 1757	<1 8 1879
	Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/hase	<1 7 1860 278 326 3703	1 <1 8 1757 250 310 2912	<1 8 1879 262 332 3828
	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	<1 7 1860 278 326 3703 current	1 <1 8 1757 250 310 2912 history1	<1 8 1879 262 332 3828 history2
	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m		<1 7 1860 278 326 3703 current 166	1 <1 8 1757 250 310 2912 history1 69	<1 8 1879 262 332 3828 history2 191
	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>181	<1 7 1860 278 326 3703 <u>current</u> 166 <1	1 <1 8 1757 250 310 2912 history1 69 0	<1 8 1879 262 332 3828 history2
	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>181 >20	<1 7 1860 278 326 3703 <u>current</u> 166 <1 0	1 <1 8 1757 250 310 2912 history1 69 0 <1	<1 8 1879 262 332 3828 history2 ▲ 191 <1 1
	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>181	<1 7 1860 278 326 3703 <u>current</u> 166 <1 0 <u>current</u>	1 <1 8 1757 250 310 2912 history1 69 0 <1 history1	<1 8 1879 262 332 3828 history2 ↓ 191 <1 1 history2
	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	>181 >20 limit/base	<1 7 1860 278 326 3703 current 166 <1 0 current 0	1 <1 8 1757 250 310 2912 history1 69 0 <1 history1 0.1	<1 8 1879 262 332 3828 history2 ▲ 191 <1 1 history2 0.1
	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	>181 >20 limit/base >20	<1 7 1860 278 326 3703 <u>current</u> 166 <1 0 <u>current</u> 0 5.2	1 <1 8 1757 250 310 2912 history1 69 0 <1 history1 0.1 5.2	<1 8 1879 262 332 3828 history2 191 <11 10 history2 0.1 5.3
	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	>181 >20 limit/base >20	<1 7 1860 278 326 3703 current 166 <1 0 current 0	1 <1 8 1757 250 310 2912 history1 69 0 <1 history1 0.1	<1 8 1879 262 332 3828 history2 ▲ 191 <1 1 history2 0.1
	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	>181 >20 limit/base >20	<1 7 1860 278 326 3703 <u>current</u> 166 <1 0 <u>current</u> 0 5.2	1 <1 8 1757 250 310 2912 history1 69 0 <1 history1 0.1 5.2	<1 8 1879 262 332 3828 history2 191 <1 1 history2 0.1 5.3
	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7844	>181 >20 limit/base >20 >30 limit/base	<1 7 1860 278 326 3703 current 166 <1 0 current 0 5.2 26.4	1 <1 8 1757 250 310 2912 history1 69 0 <1 69 0 <1 0.1 5.2 18.5	<1 8 1879 262 332 3828 history2 ▲ 191 <1 1 history2 0.1 5.3 26.2
	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7624	>181 >20 limit/base >20 >30 limit/base >25	<1 7 1860 278 326 3703 current 166 <1 0 current 0 5.2 26.4 current	1 <1 8 1757 250 310 2912 history1 69 0 <1 69 0 <1 history1 0.1 5.2 18.5 history1	<1 8 1879 262 332 3828 history2 ▲ 191 <1 1 history2 0.1 5.3 26.2 history2



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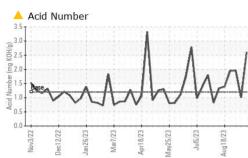
Nov3/22

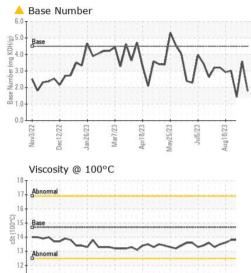
Jan 26/23 -

Dec12/22

OIL ANALYSIS REPORT

VISUAL





AA	W	White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt	scalar *\ scalar *\ scalar *\ scalar *\ scalar *\	/isual /isual /isual /isual /isual	NONE NONE NONE NONE NONE NONE	NONE NONE NONE NONE NONE	NONE NONE NONE NONE NONE	NONE NONE NONE NONE NONE
	Jul5/23 Aug18/23	Appearance Odor Emulsified Water Free Water	scalar *\ scalar *\	/isual	NORML NORML >0.1	NORML NORML NEG NEG	NORML NORML NEG NEG	NORML NORML NEG NEG
-wV	M	FLUID PROPERT Visc @ 100°C GRAPHS Iron (ppm)		method STM D445	limit/base 14.7	current 13.6 _ead (ppm)	history1 13.3	history2 13.8
O Apr18/23 Mar/26/23	Jul5/23 - Aug18/23 -	0 0 0 0 0 0 0 0 0 0 0 0 0 0	Apri 8/23	Jul5/23-55	15	Şevere Abnormal	Mai7/23 { Apr18/23 } May25/23 \$	Jul5/23
Mar1/23		Aluminum (ppm)	Apr18/23	Jul5/23	6 5	Chromium (ppm Severe Abnormal	-	Jul5/23 \$ Aug 18/23 \$ Aug 18/23
		Copper (ppm) 20 15 10 5 0 5 0 5 0 5 5 2 2 2 2 2 2 2 2 2 2 2	Apr18/23	Jul5/23 }	250 T	Silicon (ppm)	Mai/123 + 60 + 10 + 10 + 10 + 10 + 10 + 10 + 10	Aug 18/23
	cSt (100°C)	Viscosity @ 100°C	Apri 823 Apri May 25 (23 Nay 2	UL	€.0 €.0]	Base Number	Marit23 Ma Apri823 Apri May25/23 May2	Julis 23 Julis 24 Jul
Certificate L2367 To discuss this s * - Denotes test i	Sample No. Lab Number Jnique Number Fest Package ample report, co methods that are	: WearCheck USA - 5 : WC0629357 F : 05962373 [01 Madisor Received Diagnosed Diagnostici ce at 1-800 7025 scope	Ave., Car : 27 S : 28 S an : Jona -237-1369. of accredit	y, NC 27513 ep 2023 ep 2023 than Hester tation.	Watervliet P	EDL NA Recip owerstation, 3563 H V	s-Watervliet lennessey Road Vatervliet, MI US 49098 cott Eastman

limit/base

current

method

history1

history2