

# **OIL ANALYSIS REPORT**

## Sample Rating Trend

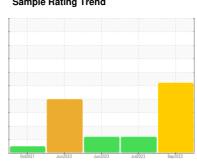
## **GLYCOL**



# **EDLTAY TAYM02BE (S/N 1256574)**

**Landfill Biogas Engine** 

CHEVRON HDAX 6500 LFG GAS ENGINE OIL (180 GAL)





### **DIAGNOSIS**

#### Recommendation

We recommend that you drain the oil and perform a filter service on this component if not already done. We recommend an early resample to monitor this condition.

## Wear

The iron level is abnormal. The tin level is abnormal.

#### Contamination

Sodium and/or potassium levels are high. Test for glycol is negative.

#### ▲ Fluid Condition

The AN level is above the recommended limit. The BN level is low.

				Jun2023 Jul2023	Sep2023	
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0788204	WC0788243	WC0788168
Sample Date		Client Info		26 Sep 2023	10 Jul 2023	28 Jun 2023
Machine Age	hrs	Client Info		4172	4000	350986
Oil Age	hrs	Client Info		287351	0	63635
Oil Changed		Client Info		N/A	Changed	N/A
Sample Status				ABNORMAL	ATTENTION	ATTENTION
CONTAMINATION	N	method	limit/base	current	history1	history2
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	<u>^</u> 23	18	18
Chromium	ppm	ASTM D5185m	>5	2	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>5	0	<1	0
Aluminum	ppm	ASTM D5185m	>15	<1	2	<1
Lead	ppm	ASTM D5185m	>20	<1	<1	<1
Copper	ppm	ASTM D5185m	>15	2	2	1
Tin	ppm	ASTM D5185m	>5	<u>^</u> 6	2	1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	mag	method ASTM D5185m	limit/base		history1	
Boron	ppm	ASTM D5185m	limit/base	0	<1	0
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	0	<1 0	0
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 <1	<1	0 0 <1
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 <1 <1	<1 0 <1	0 0 <1 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 <1 <1 7	<1 0 <1 1	0 0 <1 <1 10
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 <1 <1 7 1830	<1 0 <1 1 10 1747	0 0 <1 <1 10 1812
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 <1 <1 7 1830 283	<1 0 <1 1 10 1747 275	0 0 <1 <1 10 1812 288
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 <1 <1 7 1830	<1 0 <1 1 10 1747	0 0 <1 <1 10 1812
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 <1 <1 7 1830 283 368	<1 0 <1 1 10 1747 275 344	0 0 <1 <1 10 1812 288 364
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base	0 0 <1 <1 7 1830 283 368 4892 current	<1 0 <1 1 10 1747 275 344 3937	0 0 <1 <1 10 1812 288 364 3240
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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	limit/base >200	0 0 <1 <1 7 1830 283 368 4892	<1 0 <1 1 10 1747 275 344 3937 history1	0 0 <1 <1 10 1812 288 364 3240
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >200	0 0 <1 <1 7 1830 283 368 4892 current	<1 0 <1 1 10 1747 275 344 3937 history1	0 0 <1 <1 10 1812 288 364 3240 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >200 >20	0 0 <1 <1 7 1830 283 368 4892 current 23 ▲ 63	<1 0 <1 1 10 1747 275 344 3937 history1 6	0 0 <1 <1 10 1812 288 364 3240 history2 7 ▲ 65
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >200 >20 >20 >20	0 0 <1 <1 7 1830 283 368 4892 current 23 ▲ 63 1	<1 0 <1 1 10 1747 275 344 3937 history1 6 65 3	0 0 <1 <1 10 1812 288 364 3240 history2 7 △ 65
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m  method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base >200 >20 >20 limit/base	0 0 <1 <1 7 1830 283 368 4892 current 23 ▲ 63 1	<1 0 <1 1 10 1747 275 344 3937 history1 6 ▲ 65 3	0 0 <1 <1 10 1812 288 364 3240 history2 7 ▲ 65 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >200 >20 >20 limit/base >2	0 0 <1 <1 7 1830 283 368 4892 current 23 ▲ 63 1 current	<1 0 <1 1 10 1747 275 344 3937 history1 6 ▲ 65 3 history1 0.1	0 0 <1 <1 10 1812 288 364 3240 history2 7 ▲ 65 1 history2
Boron Barium Molybdenum 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  method ASTM D5185m	limit/base >200 >20 >20 limit/base >2 >20	0 0 <1 <1 7 1830 283 368 4892 current 23 ▲ 63 1 current 0 4.6	<1 0 <1 1 10 1747 275 344 3937 history1 6 ▲ 65 3 history1 0.1 4.9	0 0 <1 <1 10 1812 288 364 3240 history2 7 ▲ 65 1 history2 0.1 4.7
Boron Barium Molybdenum 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  method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76145	limit/base	0 0 <1 <1 7 1830 283 368 4892 current 23 ▲ 63 1 current 0 4.6 30.5	<1 0 <1 1 10 1747 275 344 3937 history1 6 ▲ 65 3 history1 0.1 4.9 20.5	0 0 <1 <1 10 1812 288 364 3240 history2 7 ▲ 65 1 history2 0.1 4.7 17.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm	ASTM D5185m  method  *ASTM D5185m ASTM D5185m  ASTM D5185m ASTM D5185m  ASTM D5185m  method  *ASTM D7844  *ASTM D7624  *ASTM D7415  method	limit/base >200 >20 >20 >20 >20 >20 limit/base >2 >20 >30 limit/base	0 0 <1 <1 7 1830 283 368 4892 current 23 ▲ 63 1 current 0 4.6 30.5	<1 0 <1 1 10 1747 275 344 3937 history1 6 ▲ 65 3 history1 0.1 4.9 20.5 history1	0 0 <1 <1 10 1812 288 364 3240 history2 7 ▲ 65 1 history2 0.1 4.7 17.6 history2



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