

OIL ANALYSIS REPORT

Sample Rating Trend

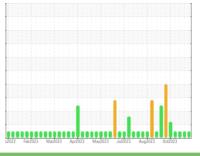
NORMAL



Machine Id WVTM02BE Component

Biogas Engine

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





GAS ENGINE OIL (GAL)									
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2			
Sample Number		Client Info		WC0785388	WC0785386	WC0785392			
Sample Date		Client Info		20 Nov 2023	14 Nov 2023	02 Nov 2023			
Machine Age	hrs	Client Info		41642	41500	41214			
Oil Age	hrs	Client Info		642	500	214			
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd			
Sample Status				NORMAL		NORMAL			
CONTAMINATION		method	limit/base	current	history1	history2			
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0			
Water		WC Method	>0.1	NEG	NEG	NEG			
Glycol		WC Method		NEG	NEG	NEG			
WEAR METALS		method	limit/base	current	history1	history2			
Iron	ppm	ASTM D5185m	>15	6	4	2			
Chromium	ppm	ASTM D5185m	>4	0	0	<1			
Nickel	ppm	ASTM D5185m	>2	<1	0	<1			
Titanium	ppm	ASTM D5185m		0	0	0			
Silver	ppm	ASTM D5185m	>5	0	0	0			
Aluminum	ppm	ASTM D5185m	>6	2	2	1			
Lead	ppm	ASTM D5185m	>9	4	2	2			
Copper	ppm	ASTM D5185m	>6	<1	1	<1			
Tin	ppm	ASTM D5185m	>4	4	A 3	2			
Vanadium	ppm	ASTM D5185m		0	<1	0			
Cadmium	ppm	ASTM D5185m		0	0	<1			
ADDITIVES		method	limit/base	current	history1	history2			
Boron	ppm	ASTM D5185m		0	0	<1			
Barium	ppm	ASTM D5185m		0	0	2			
Molybdenum	ppm	ASTM D5185m		<1	<1	1			
Manganese	ppm	ASTM D5185m		<1	<1	0			
Magnesium	ppm	ASTM D5185m		9	7	6			
Calcium	ppm	ASTM D5185m		1707	1863	1521			
Phosphorus	ppm	ASTM D5185m		273	251	247			
Zinc	ppm	ASTM D5185m		311	354	287			
Sulfur	ppm	ASTM D5185m		3533	3813	3174			
CONTAMINANTS	3	method	limit/base	current	history1	history2			
Silicon	ppm	ASTM D5185m	>181	129	141	73			
Sodium	ppm	ASTM D5185m		2	2	0			
Potassium	ppm	ASTM D5185m	>20	1	0	2			
INFRA-RED		method	limit/base	current	history1	history2			
Soot %	%	*ASTM D7844		0.1	0	0			
Nitration	Abs/cm	*ASTM D7624	>20	5.1	5.0	4.9			
Sulfation	Abs/.1mm	*ASTM D7415	>30	25.2	25.7	21.0			
		method	limit/base	current	history1	history2			
FLUID DEGRAD		method	initia base	current	Thistory				
FLUID DEGRAD	Abs/.1mm	*ASTM D7414	>25	13.8	14.5	11.0			

2.90

Base Number (BN) mg KOH/g ASTM D2896 4.5

Birtartoolo

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: Oil sample only) $% \label{eq:commutative}$

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

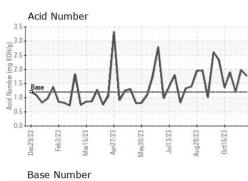
Submitted By: Scott Eastman

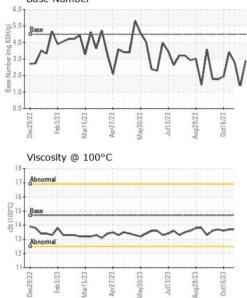
1.28

2.79



OIL ANALYSIS REPORT





	VISUAL		method	limit/base	current	history1	history2
	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
A N	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
ALAZYVY	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
/23 - /23 - /23 -	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
May30/23 Jul13/23 Aug28/23 Dct16/23	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
2 4	Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG
	Free Water	scalar	*Visual	20.1	NEG	NEG	NEG
					NEG		
Λ	FLUID PROPERT		method	limit/base	current	history1	history2
JIMAN,	Visc @ 100°C	cSt	ASTM D445	14.7	13.8	13.9	13.7
VUV	GRAPHS						
	Iron (ppm)			15	Lead (ppm)		
	20 Severe				Severe		
May30/23 Jul13/23 Aug28/23 0ct16/23	Abaamal	111		10	Abnormal		
M. L O.				mqq			
	5.0 00	· 1-	1 10	5			An.
	- www	NV	VVV	N		-	JVV
red a cohereo la contre		0/23 -	3/23 -		ec29/22 Feb3/23	7/23 0/23	8/23
	Dec29/22 Feb3/23 Mar15/23 Apr27/23	May30/23	Jul13/23 Aug28/23 Oct16/23		Dec29/22 Feb3/23 Mar15/23	Apr27/23 May30/23 Jul13/23	Aug28/23 0ct16/23
	Aluminum (ppm)	Ban .			Chromium (pp		
$\sim\sim\sim\sim\sim$	¹² Severe		122200000000	6	T 2000000000000000		
	10-			5	Abnormal		
	g 6 Abnormal			4 843	TITIT		
May30,23 Jul13,23 Aug28,23 Det16,23	B 0 0			8-3 2			
May Jul Aug	2-	-	M	~	I .		
		$\Delta \mathcal{A}$,			<u> </u>
	Dec29/22 Feb3/23 Mar15/23 Apr27/23	May30/23	Jul13/23 Aug28/23 Oct16/23		Dec29/22 Feb3/23 Mar15/23	Apr27/23 May30/23 Jul13/23	Aug28/23 Oct16/23
		Ma	Aun			Ap Ma	Au
	Copper (ppm)			250	Silicon (ppm)		
	Severe			200	Severa	n han hand h	enderste ken
	15			100	0		ÂA
	튭 10			E 100	The second second set	Λ_{Λ} / V	17 VWr
	5 - Abnormal			50	MAAN	VVV	V V V
		~~	n				
	9/22 3/23 5/23)/23	3/23		lec29/22 Feb3/23 -	7/23 -	8/23 -
	Dec29/22 Feb3/23 Mar15/23 Apr27/23	May30/23	Jul13/23 Aug28/23 Det16/23		Dec29/22 Feb3/23 Mar15/23	Apr27/23 May30/23 Jul13/23	Aug28/23 Oct16/23
	Viscosity @ 100°C		-		Base Number	and the second second	10779
	18 Abnormal		122220000000000000000000000000000000000				
	16-			KoH	Base	A	
				B 4.0	NW	121V	
	Base	THE ROOM OF STREET		0 3.0		V VV	71 11
	000114 Abnormal	\sim	\sim	E 2 (Y Y	VIJV
	Base Base Abnomal 12	~	~~~	월 2.0 왕 1.0) =		VUV
	12			(0)Hoy Bull Jack Str.			
	12	y30/23	al13/23	0.0		v30/23 v30/23 113/23	16/23
	12-	May30/23	Juli 3/23	0.0	Dec29/22	Apr27/23 May30/23	Aug28/23
	Dec29/22	~	4	0.0	Dec29/22 + Feb3/23 + Mar15/23 +	<	
Laboratory	: WearCheck USA - 5	501 Madis	son Ave., Ca	ry, NC 27513	Dec29/22 + Feb3/23 + Mart 5/23 +	EDL NA Rec	ips-Watervlie
	: WearCheck USA - 5 : WC0785388	~	son Ave., Ca 1 : 24	0.0	Dec29/22 + Feb3/23 + Mart 5/23 +	<	ips-Watervlie
Laboratory Sample No.	: WearCheck USA - 5 : WC0785388	501 Madis Received	son Ave., Ca I : 24 ed : 28	ry, NC 27513 Nov 2023	Dec29/22 + Feb3/23 + Mart 5/23 +	EDL NA Rec	ips-Watervlie 3 Hennessey Road
Laboratory Sample No. Lab Number Unique Number Test Package	: WearCheck USA - 5 : WC0785388 : 06016640 r : 10755784 : MOB 2	501 Madis Received Diagnose Diagnost	son Ave., Ca 1 : 24 ed : 28 ician : Sea	ry, NC 27513 Nov 2023 Nov 2023 an Felton	Mart 5,23	EDL NA Rec Powerstation, 356 Contact:	Sips-Watervlie 3 Hennessey Roa Watervliet, M US 49098 Scott Eastman
Laboratory Sample No. Lab Number Unique Number	: WearCheck USA - 5 : WC0785388 : 06016640 r : 10755784 : MOB 2 contact Customer Servit	501 Madis Received Diagnose Diagnost ice at 1-8	son Ave., Ca I : 24 ed : 28 ician : Sea 00-237-1365	ry, NC 27513 Nov 2023 Nov 2023 an Felton <i>D</i> .	Mart 5,23	EDL NA Rec Powerstation, 356	Sips-Watervlie 3 Hennessey Roa Watervliet, M US 49098 Scott Eastman