

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id Grand Blanc CAT

Biogas Engine Fluid

CHEVRON HDAX 9500 GAS I

T 6 GBLM0	6RF					
ENGINE OIL 40 (GAL)	52023 Apr20	23 Jun2023 Aug2023	Sep2023 Nov2023 Jan2024	Feb2024	
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0905747	WC0905682	WC0905679
Sample Date		Client Info		03 Apr 2024	05 Mar 2024	26 Feb 2024
Machine Age	hrs	Client Info		92740	92124	91974
Dil Age	hrs	Client Info		0	91406	780
Oil Changed		Client Info		N/A	Not Changd	Not Changd
Sample Status				NORMAL	ABNORMAL	ABNORMAL
CONTAMINATIO	N	method	limit/base	current	history1	history2
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method		NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
ron	ppm	ASTM D5185m	>14	3	5	4
Chromium	ppm	ASTM D5185m	>3	0	0	0
Nickel	ppm	ASTM D5185m		0	0	0
Fitanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>5	2	3	2
ead	ppm	ASTM D5185m	>8	0	2	2
Copper	ppm	ASTM D5185m	>5	1	1	<1
Fin	ppm	ASTM D5185m	>3	0	2	2
√anadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		4	2	2
Barium	ppm	ASTM D5185m		0	0	<1
Molybdenum	ppm	ASTM D5185m		2	2	2
Manganese	ppm	ASTM D5185m		0	0	0
Magnesium	ppm	ASTM D5185m		5	7	8
Calcium	ppm	ASTM D5185m		1660	1925	1875
Phosphorus	ppm	ASTM D5185m		226	270	273
Zinc	ppm	ASTM D5185m		301	327	333
Sulfur	ppm	ASTM D5185m		2687	3127	2993
CONTAMINANTS	\$	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>180	59	163	131
Sodium	ppm	ASTM D5185m	>20	16	3	<1
Potassium	ppm	ASTM D5185m	>20	<1	0	0
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		0	0	0.1
Nitration	Abs/cm	*ASTM D7624		5.5	6.1	6.1
Sulfation	Abs/.1mm	*ASTM D7415		19.7	27.3	25.8
FLUID DEGRADA	ATION	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414		10.4	18.8	18.0
Acid Number (AN)	mg KOH/g	ASTM D8045	1.0	0.98	▲ 2.53	▲ 2.34
Baco Numbor (BNI)	ma KO∐/a	ASTM D2806	5.4	2 10	A 1.00	▲ 1 77

3.19

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

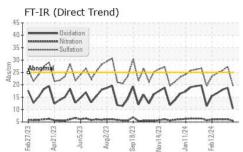
The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

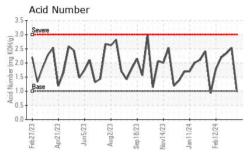
Base Number (BN) mg KOH/g ASTM D2896 5.4

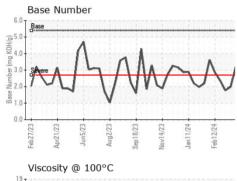
1.99 ▲ 1.77 Submitted By: DARREL HILTZ Page 1 of 2

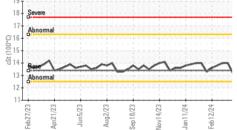


OIL ANALYSIS REPORT









White Metal scalar Visual NONE NONE Yellow Metal scalar Visual NONE NONE Precipitate scalar Visual NONE NONE Silt scalar Visual NONE NONE Sand/Dirt scalar Visual NONE NONE Appearance scalar Visual NORML NORML Odor scalar Visual NORML NORML MORML NORML Odor scalar Visual NORML NORML MEG Free Water scalar Visual NORML NORML Silt scalar Visual NORML NORML MEG Free Water scalar Visual NORML NORML MEG FLUID PROPERTIES method limit/base current Visc @ 100°C cSt ASTM D445 13.4 13.2 GRAPHS Iron (ppm) Aluminum (ppm) Copper (ppm) Silicon (ppm)	history1
Precipitate scalar *Visual NONE NONE Silt scalar *Visual NONE NONE Debris scalar *Visual NONE NONE Sand/Dirt scalar *Visual NONE NONE Appearance scalar *Visual NORML NORML Odor scalar *Visual NORML NORML Odor scalar *Visual NORML NORML Emulsified Water scalar *Visual NORML NORML Free Water scalar *Visual NORML NEG Free Water scalar *Visual NORML NEG FLUID PROPERTIES method limit/base current Visc @ 100°C cSt ASTM D445 13.4 13.2 GRAPHS Iron (ppm) Aluminum (ppm) Copper (ppm) Silicon (ppm)	NONE
Silit scalar *Visual NONE NONE Debris scalar *Visual NONE NONE Sand/Dirt scalar *Visual NONE NONE Sand/Dirt scalar *Visual NONE NONE Sand/Dirt scalar *Visual NORML NORML Door scalar *Visual NORML NORML NORML Door scalar *Visual NORML NORML NORML Scalar *Visual *Visual NORML NORML Scalar *Visual *Visua	NONE
Debris scalar *Visual NONE NONE Sand/Dirt scalar *Visual NONE NONE Sand/Dirt scalar *Visual NONE NONE Spepearance scalar *Visual NORML NORML Simulsified Water scalar *Visual NORML NORML FLUID PROPERTIES method imit/base current fisc @ 100°C cSt ASTM D445 13.4 13.2 GRAPHS Iron (ppm) Lead (ppm) Aluminum (ppm) Sclower Sclower Copper (ppm) Sclower Sclower Sclower Stilicon (ppm) Sclower Sclower Sclower Stilicon (ppm) Sclower Sclower Sc	NONE
Sand/Dirt scalar *Visual NONE NONE scalar *Visual NORML NORML NORML NORML NORML NORML mulsified Water scalar *Visual NORML NORML mulsified Water scalar *Visual NORML NORML State Water scalar *Visual NORML NORML FLUID PROPERTIES method Imit/base current fisc @ 100°C cSt ASTM D445 13.4 13.2 GRAPHS Iron (ppm) Seeee Corrent Aluminum (ppm) Seeee Corrent Aluminum (ppm) Seeee Corrent Copper (ppm) Seeee Corrent State Corrent St	NONE
pppearance scalar *Visual NORML NORM	NONE
Door scalar *Visual NORML NORML Emulsified Water scalar *Visual NEG FLUID PROPERTIES method limit/base current fisc @ 100°C cSt ASTM D445 13.4 13.2 GRAPHS Iron (ppm) Lead (ppm) Jonomal Jonomal Jonomal Jonomal Jonomal <t< td=""><td>NONE</td></t<>	NONE
Emulsified Water scalar *Visual NEG Free Water scalar *Visual NEG FLUID PROPERTIES method limit/base current Visce @ 100°C cSt ASTM D445 13.4 13.2 GRAPHS Iron (ppm) Aluminum (ppm) Copper (ppm) Viscosity @ 100°C method limit/base current	NORML
Free Water scalar *Visual NEG FLUID PROPERTIES method limit/base current Visc @ 100°C cSt ASTM D445 13.4 13.2 GRAPHS Iron (ppm) Lead (ppm) Anonmal 62000 62000 62000 Aluminum (ppm) 6000 62000 62000 Aluminum (ppm) 60000 62000 62000 Aluminum (ppm) 60000 62000 62000 Anonmal 600000 62000 62000 Anonmal 600000 62000 62000 Anonmal 600000 62000 62000 Anonmal 600000 62000 62000 Anonmal 6000000 62000 62000 Anonmal 6000000 62000 6	NORML
FLUID PROPERTIES method limit/base current Visc @ 100°C cSt ASTM D445 13.4 13.2 GRAPHS Iron (ppm) Imit/base Lead (ppm) Imit/base Iron (ppm) Imit/base Imit/base Imit/base Iron (ppm) Imit/base Imit/base Imit/base Imit/base Iron (ppm) Imit/base Imit/base Imit/base Imit/base Iron (ppm) Imit/base Imit/base Imit/base Imit/base Abnormal Imit/base Imit/base Imit/base Imit/base Aluminum (ppm) Imit/base Imit/base Imit/base Imit/base Imit/base Imit/base Im	NEG
Visc @ 100°C cSt ASTM D445 13.4 13.2 GRAPHS Iron (ppm)	NEG
GRAPHS Iron (ppm)	history1
Iron (ppm) Lead (ppm) Chromium (ppm) Lead (ppm) Lead (ppm) Chromium (ppm) Lead (ppm) Chromium (ppm) Silicon (ppm) Lead (ppm) Chromium (ppm) Silicon (ppm) Viscosity @ 100°C	14.0
Aluminum (ppm) Copper (ppm) Viscosity @ 100°C	
Severe Abnormal Abnormal Aluminum (ppm) Chromium (p Copper (pmm)	
Abnormal Abnorm	
$V_{\text{recosity}} (\text{p} = 100 \text{ Correction} ($	
Aluminum (ppm) Aluminum (ppm) Aluminum (ppm) Aluminum (ppm) Copper (ppm) Viscosity @ 100°C	
ESTISTA Almainum (ppm) ESTISTA Almainum (ppm) Almainum (ppm) ESTISTA Almainum (ppm) Almainum (ppm) ESTISTA Almainum (ppm) Almainum (ppm) A	1
Aluminum (ppm) Aluminum (ppm) Abnormal Abnormal Abnormal Abnormal Abnormal Copper (ppm) Copper (ppm) Copp	V L
Aluminum (ppm) Chromium (p Abnormal Abnormal Copper (ppm) Copper (p	Aug2/23 Sep18/23
Severe Abnormal Copper (ppm) Severe Copper (ppm) Severe Se	0,
Abnormal Abnorm	
Abnormal Abnormal Abnormal Abnormal Abnormal Abnormal Copper (ppm) Copper (ppm)	
Copper (ppm) Silicon	
Copper (ppm) Copper (ppm) Co	
Copper (ppm) Severe Abnomal Copper (ppm) Silicon (ppm) Silicon (ppm) Copper (ppm) Silicon (ppm) Copper (pp	
Copper (ppm) Severe Abnormal Abnormal CZU Zigurf Viscosity @ 100°C Severe CZU Zigurf Viscosity @ 100°C Severe CZU Zigurf CZU Zi	Aug2/23 Sep18/23
Abnormal EZZ/IZ/aj Viscosity @ 100°C	0,
Abnormal Abnorm	
50 50 50 50 50 50 50 50 50 50	1
50 50 50 50 50 50 50 50 50 50	/ 1 / .
EZ/IZ2994 Viscosity @ 100°C	v v vv
Viscosity @ 100°C Base Number	
Viscosity @ 100°C Base Number	Aug2/23 Sep18/23
6 0	
Severe	r
Abnormal grad.0	- 1
	7 AAA
	V VV

ase 1.0

0.0

Feb 12/24 -Feb27/23 -Apr21/23 . Apr21/23 Nov14/23 Jan 11/24 un5/23 un5/23 Nov14/23 Feb12/24 Feb27/23 ua2/73 ep 18/23 Aug2/23 Sep 18/23 Jan 11/24 Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 **EDL NA Recips-Grand Blanc** Sample No. : WC0905747 Received : 04 Apr 2024 Grand Blanc Powerstation, 2361 West Grand Blanc Road Lab Number : 06138726 Tested : 05 Apr 2024 Grand Blanc, MI Unique Number : 10963534 Diagnosed : 06 Apr 2024 - Don Baldridge US 48439 Test Package : MOB 2 Contact: Tony Saint Marie Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. tony.saintmarie@edlenergy.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: 回题 F:

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

10

Report Id: EDLGRA [WUSCAR] 06138726 (Generated: 04/06/2024 12:56:48) Rev: 1

Submitted By: DARREL HILTZ Page 2 of 2

Jan 11/24

eb1

NONE

NONE

NONE NONE

NONE

NONE

NORML

NORML NEG

NEG

14.0