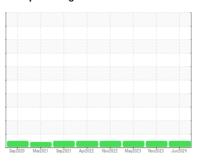


# **OIL ANALYSIS REPORT**

Sample Rating Trend







Machine Id **DT38** Front Differential

**CHEVRON DELO SYNTHETIC GEAR 75W90 (** 

## DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the

## **Fluid Condition**

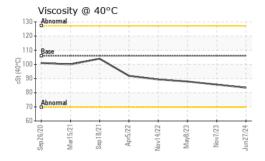
The condition of the oil is acceptable for the time in service.

Sample Date   Client Info   27 Jun 2024   07 Nov 2023   08 May 2023   Machine Age   mls   Client Info   210975   179319   15516	0 ( QTS)		Sep 2020	Vlar2021 Sep2021 Apr20.	22 Nov2022 May2023 Nov2023	Jun 2024	
Client Info   27 Jun 2024   07 Nov 2023   08 May 2023   08 Machine Age   mis   Client Info   210975   179319   155169   010   155169   010   155169   010   155169   010   155169   010   155169   010   155169   010   155169   010   155169   010   155169   010   155169   010   155169   010   155169   010   155169   010   0	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Date	Sample Number		Client Info		PCA0116156	PCA0090321	PCA0098263
Machine Age         mls         Client Info         210975         179319         155169           Oil Age         mls         Client Info         210975         75000         155169           Oil Changed         Client Info         NoRMAL         NORMAL         NORMAL         NORMAL           Asmple Status         NORMAL         NORMAL         NORMAL         NORMAL         NORMAL           CONTAMINATION         method         limit/base         current         history1         history2           Wear         WC Method         -2         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM 05185m         >500         209         94         110           Chromium         ppm         ASTM 05185m         >10         2         -1         -1         0           Nickel         ppm         ASTM 05185m         >10         -1         -1         0         0           Silver         ppm         ASTM 05185m         >10         -1         -1         0         0           Copper         ppm         ASTM 05185m         >10	·		Client Info		27 Jun 2024	07 Nov 2023	08 May 2023
Oil Changed Dil Changed Client Info         210975         75000         155169           Oil Changed Status         Client Info         Not Changed NoRMAL         NO	•	mls				179319	-
NORMAL   NORMAL   NORMAL   NORMAL		mls	Client Info		210975	75000	155169
NORMAL   NORMAL   NORMAL   NORMAL	•		Client Info		Not Changd	N/A	Changed
Water         WC Method         >.2         NEG         NEG         NEG           WEAR METALS         method         limil/base         current         history1         history2           Iron         ppm         ASTM D5185m         >500         209         94         110           Chromium         ppm         ASTM D5185m         >10         2         -1         -1           Nickel         ppm         ASTM D5185m         >10         -1         -1         0           Silver         ppm         ASTM D5185m         -1         0         0         0           Aluminum         ppm         ASTM D5185m         >25         6         2         0           Aluminum         ppm         ASTM D5185m         >25         6         2         0           Aluminum         ppm         ASTM D5185m         >10         -1         -1         0           Lead         ppm         ASTM D5185m         >10         -1         -1         0         0           Copper         ppm         ASTM D5185m         >10         -1         -1         0         0           Cadadium         ppm         ASTM D5185m         -1         0	-					NORMAL	
WEAR METALS	CONTAMINAT	ION	method	limit/base	current	history1	history2
Iron	Water		WC Method	>.2	NEG	NEG	NEG
Chromium         ppm         ASTM D5185m         >10         2         <1	WEAR METAL	.S	method	limit/base	current	history1	history2
Nickel         ppm         ASTM D5185m         >10         <1	Iron	ppm	ASTM D5185m	>500	209	94	110
Titanium	Chromium	ppm	ASTM D5185m	>10	2	<1	<1
Silver	Nickel	ppm	ASTM D5185m	>10	<1	<1	0
Aluminum         ppm         ASTM D5185m         >25         6         2         0           Lead         ppm         ASTM D5185m         >25         0         0         0           Copper         ppm         ASTM D5185m         >100         50         4         12           Tin         ppm         ASTM D5185m         >10         <1         <1         0           Vanadium         ppm         ASTM D5185m         <1         0         0           Cadmium         ppm         ASTM D5185m         <1         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         206         243         229           Barium         ppm         ASTM D5185m         1         0         0           Molybdenum         ppm         ASTM D5185m         1         0         0         0           Molybdenum         ppm         ASTM D5185m         1         1         0         0         0           Molybdenum         ppm         ASTM D5185m         1         1         0         0         0         0	Titanium	ppm	ASTM D5185m		<1	<1	0
Aluminum	Silver		ASTM D5185m		<1	0	0
Copper         ppm         ASTM D5185m         >100         50         4         12           Tin         ppm         ASTM D5185m         >10         <1         <1         0           Vanadium         ppm         ASTM D5185m         <1         0         0           Cadmium         ppm         ASTM D5185m         <1         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         206         243         229           Barium         ppm         ASTM D5185m         1         0         0           Molybdenum         ppm         ASTM D5185m         1         0         0           Manganese         ppm         ASTM D5185m         5         2         6           Manganesium         ppm         ASTM D5185m         108         129         79           Calcium         ppm         ASTM D5185m         224         209         105           Phosphorus         ppm         ASTM D5185m         191         196         109           Sulfur         ppm         ASTM D5185m         191         196	Aluminum	ppm	ASTM D5185m	>25	6	2	0
Copper         ppm         ASTM D5185m         >100         50         4         12           Tin         ppm         ASTM D5185m         >10         <1         <1         0           Vanadium         ppm         ASTM D5185m         <1         0         0           Cadmium         ppm         ASTM D5185m         <1         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         206         243         229           Barium         ppm         ASTM D5185m         1         0         0           Molybdenum         ppm         ASTM D5185m         11         10         6           Manganese         ppm         ASTM D5185m         5         2         6           Manganesium         ppm         ASTM D5185m         108         129         79           Calcium         ppm         ASTM D5185m         224         209         105           Phosphorus         ppm         ASTM D5185m         191         196         109           Sulfur         ppm         ASTM D5185m         18476         21100	Lead		ASTM D5185m	>25	0	0	0
Vanadium         ppm         ASTM D5185m         <1	Copper	ppm	ASTM D5185m	>100	50	4	12
Vanadium         ppm         ASTM D5185m         <1	Tin	ppm	ASTM D5185m	>10	<1	<1	0
Cadmium         ppm         ASTM D5185m         <1	Vanadium		ASTM D5185m		<1	0	0
Boron	Cadmium		ASTM D5185m		<1	0	0
Barium         ppm         ASTM D5185m         1         0         0           Molybdenum         ppm         ASTM D5185m         11         10         6           Manganese         ppm         ASTM D5185m         5         2         6           Magnesium         ppm         ASTM D5185m         108         129         79           Calcium         ppm         ASTM D5185m         224         209         105           Phosphorus         ppm         ASTM D5185m         1262         1392         1359           Zinc         ppm         ASTM D5185m         191         196         109           Sulfur         ppm         ASTM D5185m         18476         21100         26523           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >75         60         46         18           Sodium         ppm         ASTM D5185m         >20         3         1         2           VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         11         10         6           Manganese         ppm         ASTM D5185m         5         2         6           Magnesium         ppm         ASTM D5185m         108         129         79           Calcium         ppm         ASTM D5185m         224         209         105           Phosphorus         ppm         ASTM D5185m         1262         1392         1359           Zinc         ppm         ASTM D5185m         191         196         109           Sulfur         ppm         ASTM D5185m         18476         21100         26523           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >75         60         46         18           Sodium         ppm         ASTM D5185m         >20         3         1         2           VISUAL         method         limit/base         current         history1         history2           VISUAL         method         limit/base         current         history1         history2	Boron	ppm	ASTM D5185m		206	243	229
Manganese         ppm         ASTM D5185m         5         2         6           Magnesium         ppm         ASTM D5185m         108         129         79           Calcium         ppm         ASTM D5185m         224         209         105           Phosphorus         ppm         ASTM D5185m         1262         1392         1359           Zinc         ppm         ASTM D5185m         191         196         109           Sulfur         ppm         ASTM D5185m         18476         21100         26523           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >75         60         46         18           Sodium         ppm         ASTM D5185m         >20         3         1         2           VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Yellow Metal	Barium	ppm	ASTM D5185m		1	0	0
Magnesium         ppm         ASTM D5185m         108         129         79           Calcium         ppm         ASTM D5185m         224         209         105           Phosphorus         ppm         ASTM D5185m         1262         1392         1359           Zinc         ppm         ASTM D5185m         191         196         109           Sulfur         ppm         ASTM D5185m         18476         21100         26523           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >75         60         46         18           Sodium         ppm         ASTM D5185m         >20         3         1         2           VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE         NONE           VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE	Molybdenum	ppm	ASTM D5185m		11	10	6
Calcium         ppm         ASTM D5185m         224         209         105           Phosphorus         ppm         ASTM D5185m         1262         1392         1359           Zinc         ppm         ASTM D5185m         191         196         109           Sulfur         ppm         ASTM D5185m         18476         21100         26523           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >75         60         46         18           Sodium         ppm         ASTM D5185m         >20         3         1         2           VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE           Precipitate         scalar         *Visual         NONE         NONE         NONE           Silt         sca	Manganese	ppm	ASTM D5185m		5	2	6
Phosphorus         ppm         ASTM D5185m         1262         1392         1359           Zinc         ppm         ASTM D5185m         191         196         109           Sulfur         ppm         ASTM D5185m         18476         21100         26523           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >75         60         46         18           Sodium         ppm         ASTM D5185m         >20         3         1         2           VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Precipitate         scalar         *Visual         NONE         NONE         NONE         NONE           Silt         scalar         *Visual         NONE         NONE         NONE         NONE           Debris         scalar         *Visual         NONE         NONE         NONE <th>Magnesium</th> <th>ppm</th> <th>ASTM D5185m</th> <th></th> <th>108</th> <th>129</th> <th>79</th>	Magnesium	ppm	ASTM D5185m		108	129	79
Zinc         ppm         ASTM D5185m         191         196         109           Sulfur         ppm         ASTM D5185m         18476         21100         26523           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >75         60         46         18           Sodium         ppm         ASTM D5185m         0         1         3           Potassium         ppm         ASTM D5185m         >20         3         1         2           VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Precipitate         scalar         *Visual         NONE         NONE         NONE         NONE           Silt         scalar         *Visual         NONE         NONE         NONE         NONE           Debris         scalar         *Visual         NONE         NONE         NONE	Calcium	ppm	ASTM D5185m		224	209	105
Sulfur         ppm         ASTM D5185m         18476         21100         26523           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >75         60         46         18           Sodium         ppm         ASTM D5185m         >0         1         3           Potassium         ppm         ASTM D5185m         >20         3         1         2           VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Precipitate         scalar         *Visual         NONE         NONE         NONE         NONE           Silt         scalar         *Visual         NONE         NONE         NONE         NONE           Debris         scalar         *Visual         NONE         NONE         NONE         NONE           Sand/Dirt         scalar         *Visual         NORML         NORML         <	Phosphorus	ppm	ASTM D5185m		1262	1392	1359
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >75         60         46         18           Sodium         ppm         ASTM D5185m         0         1         3           Potassium         ppm         ASTM D5185m         >20         3         1         2           VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE           Precipitate         scalar         *Visual         NONE         NONE         NONE         NONE           Silt         scalar         *Visual         NONE         NONE         NONE         NONE           Debris         scalar         *Visual         NONE         NONE         NONE         NONE           Sand/Dirt         scalar         *Visual         NORML         NORML         NORML	Zinc	ppm	ASTM D5185m		191	196	109
Silicon         ppm         ASTM D5185m         >75         60         46         18           Sodium         ppm         ASTM D5185m         0         1         3           Potassium         ppm         ASTM D5185m         >20         3         1         2           VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Precipitate         scalar         *Visual         NONE         NONE         NONE         NONE           Silt         scalar         *Visual         NONE         NONE         NONE         NONE           Debris         scalar         *Visual         NONE         NONE         NONE         NONE           Sand/Dirt         scalar         *Visual         NONE         NORML	Sulfur	ppm	ASTM D5185m		18476	21100	26523
Sodium         ppm         ASTM D5185m         0         1         3           Potassium         ppm         ASTM D5185m         >20         3         1         2           VISUAL         method         limit/base         current         history1         history2           White Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Yellow Metal         scalar         *Visual         NONE         NONE         NONE         NONE           Precipitate         scalar         *Visual         NONE         NONE         NONE         NONE           Silt         scalar         *Visual         NONE         NONE         NONE         NONE           Debris         scalar         *Visual         NONE         NONE         NONE         NONE           Sand/Dirt         scalar         *Visual         NORM         NORML	CONTAMINAN	ITS	method	limit/base	current	history1	history2
PotassiumppmASTM D5185m>20312VISUALmethodlimit/basecurrenthistory1history2White Metalscalar*VisualNONENONENONENONEYellow Metalscalar*VisualNONENONENONENONEPrecipitatescalar*VisualNONENONENONENONESiltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONELIGHTNONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>.2NEGNEGNEG	Silicon	ppm	ASTM D5185m	>75	60	46	18
White Metal scalar *Visual NONE NONE NONE NONE NONE NONE NONE NON	Sodium	ppm	ASTM D5185m		0	1	3
White Metal scalar *Visual NONE NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE Debris scalar *Visual NONE LIGHT NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML Emulsified Water scalar *Visual >.2 NEG NEG NEG	Potassium	ppm	ASTM D5185m	>20	3	1	2
Yellow Metalscalar*VisualNONENONENONENONEPrecipitatescalar*VisualNONENONENONENONESiltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONELIGHTNONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>.2NEGNEGNEG	VISUAL		method	limit/base	current	history1	history2
Precipitate scalar *Visual NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE Debris scalar *Visual NONE LIGHT NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML Emulsified Water scalar *Visual >.2 NEG NEG NEG	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silt scalar *Visual NONE NONE NONE NONE Debris scalar *Visual NONE LIGHT NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML Emulsified Water scalar *Visual >.2 NEG NEG NEG	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Debrisscalar*VisualNONELIGHTNONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>.2NEGNEGNEG	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>.2NEGNEGNEG	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>.2NEGNEGNEG	Debris	scalar	*Visual	NONE	LIGHT	NONE	NONE
Odor scalar *Visual NORML NORML NORML NORML NORML Emulsified Water scalar *Visual >.2 NEG NEG NEG	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Emulsified Water scalar *Visual >.2 NEG NEG NEG	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Free Water scalar *Visual NEG NEG NEG	Emulsified Water	scalar	*Visual	>.2	NEG	NEG	NEG
	Free Water	scalar	*Visual		NEG	NEG	NEG

Submitted By: Paul Riddick

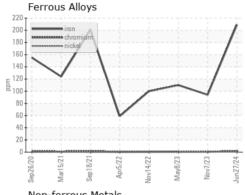


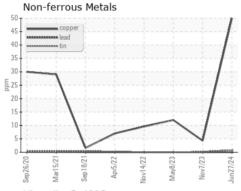
# **OIL ANALYSIS REPORT**

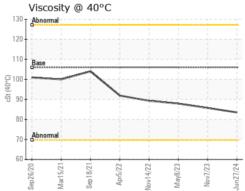


FLUID PROPE	ERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	106	83.5	85.7	87.9
SAMPLE IMAG	GES	method	limit/base	current	history1	history2
Color				no image	no image	no image
Bottom				no image	no image	no image

### **GRAPHS**









Certificate 12367

Laboratory Sample No.

Lab Number : 06224857 Unique Number : 11103054 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : PCA0116156 Received : 01 Jul 2024

Tested : 02 Jul 2024 Diagnosed

: 02 Jul 2024 - Don Baldridge

US 29169 Contact: GEORGE EDWARDS gedwards@nwwhite.com

Submitted By: Paul Riddick

To discuss this sample report, contact Customer Service at 1-800-237-1369. \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

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

**HK STEELE INC** 400 N PARSON ST

WEST COLUMBIA, SC