

OIL ANALYSIS REPORT

Sample Rating Trend



NB650-1

Component Hydraulic System Fluid PETRO CANADA HYDREX AW 46 (--- GAL)

DIAGNOSIS

A Recommendation

We recommend you service the filters on this component. We advise that you inspect for the source(s) of metal. We recommend an early resample to monitor this condition. We were unable to perform a particle count due to metal particles present in this sample.

A Wear

High concentration of visible metal present. All component wear rates are normal.

Contamination

No other contaminants were detected in the oil.

Fluid Condition

The AN level is acceptable for this fluid.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		KFS0001670		
Sample Date		Client Info		05 Jan 2024		
Machine Age	hrs	Client Info		0		
Oil Age	hrs	Client Info		0		
Oil Changed		Client Info		N/A		
Sample Status				ABNORMAL		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	15		
Chromium	ppm	ASTM D5185m	>20	0		
Nickel	ppm	ASTM D5185m	>20	0		
Titanium	ppm	ASTM D5185m		0		
Silver	ppm	ASTM D5185m		0		
Aluminum	ppm	ASTM D5185m	>20	0		
Lead	ppm	ASTM D5185m	>20	0		
Copper	ppm	ASTM D5185m	>20	4		
Tin	ppm	ASTM D5185m	>20	0		
Vanadium	ppm	ASTM D5185m		0		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	0		
Barium	ppm	ASTM D5185m	0	0		
Molybdenum	ppm	ASTM D5185m	0	0		
Manganese	ppm	ASTM D5185m	0	0		
Magnesium	ppm	ASTM D5185m	0	0		
Calcium	ppm	ASTM D5185m	50	82		
Phosphorus	ppm	ASTM D5185m	330	419		
Zinc	ppm	ASTM D5185m	430	513		
Sulfur	ppm	ASTM D5185m	760	3326		
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm					
		ASTM D5185m	>15	<1		
Sodium		ASTM D5185m ASTM D5185m	>15	<1 1		
Sodium Potassium	ppm		>15 >20			
Potassium		ASTM D5185m	>20	1		
	ppm ppm %	ASTM D5185m ASTM D5185m	>20	1		
Potassium Water	ppm ppm %	ASTM D5185m ASTM D5185m ASTM D6304	>20 >0.05	1 0 NEG		
Potassium Water FLUID DEGRADA	ppm ppm %	ASTM D5185m ASTM D5185m ASTM D6304 method	>20 >0.05 limit/base	1 0 NEG current		 history2
Potassium Water FLUID DEGRADA Acid Number (AN)	ppm ppm %	ASTM D5185m ASTM D5185m ASTM D6304 method ASTM D8045	>20 >0.05 limit/base 0.70	1 0 NEG current 0.49	 history1 	 history2
Potassium Water FLUID DEGRADA Acid Number (AN) VISUAL White Metal	ppm ppm % TION mg KOH/g	ASTM D5185m ASTM D5185m ASTM D6304 method ASTM D8045 method	>20 >0.05 limit/base 0.70 limit/base	1 0 NEG current 0.49 current	 history1 history1	 history2 history2
Potassium Water FLUID DEGRADA Acid Number (AN) VISUAL White Metal Yellow Metal	ppm ppm % TION mg KOH/g scalar	ASTM D5185m ASTM D5185m ASTM D6304 Method ASTM D8045 method *Visual	>20 >0.05 limit/base 0.70 limit/base NONE	1 0 NEG current 0.49 current HEAVY	 history1 history1	 history2 history2
Potassium Water FLUID DEGRADA Acid Number (AN) VISUAL	ppm ppm % TION mg KOH/g scalar scalar	ASTM D5185m ASTM D5185m ASTM D6304 ASTM D8045 ASTM D8045 method *Visual	>20 >0.05 limit/base 0.70 limit/base NONE NONE NONE	1 0 NEG current 0.49 current HEAVY NONE	 history1 history1 	 history2 history2
Potassium Water FLUID DEGRADA Acid Number (AN) VISUAL White Metal Yellow Metal Precipitate Silt	ppm ppm % TION mg KOH/g scalar scalar scalar	ASTM D5185m ASTM D5185m ASTM D6304 ASTM D8045 ASTM D8045 *Visual *Visual *Visual	>20 >0.05 limit/base 0.70 limit/base NONE NONE	1 0 NEG current 0.49 current MEAVY NONE NONE	 history1 history1 	 history2 history2
Potassium Water FLUID DEGRADA Acid Number (AN) VISUAL White Metal Yellow Metal Precipitate Silt Debris	ppm ppm % TION mg KOH/g scalar scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m ASTM D6304 ASTM D8045 ASTM D8045 *Visual *Visual *Visual *Visual *Visual *Visual	>20 >0.05 limit/base 0.70 limit/base NONE NONE NONE NONE NONE NONE	1 0 NEG current 0.49 current MEAVY NONE NONE NONE NONE NONE	 history1 history1 	 history2 history2
Potassium Water FLUID DEGRADA Acid Number (AN) VISUAL White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt	ppm ppm % TION mg KOH/g scalar scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m ASTM D6304 ASTM D8045 ASTM D8045 *Visual *Visual *Visual *Visual *Visual *Visual *Visual	>20 >0.05 Iimit/base 0.70 Iimit/base NONE NONE NONE NONE NONE NONE NONE	1 0 NEG current 0.49 current MONE NONE NONE NONE	 history1 history1 	 history2 history2
Potassium Water FLUID DEGRADA Acid Number (AN) VISUAL White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance	ppm ppm % TION mg KOH/g scalar scalar scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m ASTM D6304 ASTM D8045 ASTM D8045 *Visual *Visual *Visual *Visual *Visual *Visual *Visual	>20 >0.05 Imit/base 0.70 Imit/base NONE NONE NONE NONE NONE NONE NONE NON	1 0 NEG 0.49 0.49 VICONE NONE NONE NONE NONE NONE NONE NONE	 history1 history1 	 history2 history2
Potassium Water FLUID DEGRADA Acid Number (AN) VISUAL White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt	ppm ppm % TION mg KOH/g scalar scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m ASTM D6304 ASTM D8045 ASTM D8045 *Visual *Visual *Visual *Visual *Visual *Visual *Visual	>20 >0.05 Iimit/base 0.70 Iimit/base NONE NONE NONE NONE NONE NONE NONE	1 0 NEG current 0.49 current MEAVY NONE NONE NONE NONE NONE NONE	 history1 history1 	 history2 history2



OIL ANALYSIS REPORT

method

limit/base

current

history1

history2

FLUID PROPERTIES

Acid Number



Viscosity @ 40°C 54 52 Abnorm 50 () 48 () 0€ 46 Bas ₹3 44 42 Abnormal 40 38 Jan5/24

Visc @ 40°C 46.4 45.4 cSt ASTM D445 SAMPLE IMAGES limit/base method current history1 history2 Color no image no image Bottom no image no image GRAPHS Ferrous Alloys 16 14 nickel 12 10 bpm an5/74 Non-ferrous Metals lead ppm Viscosity @ 40°C Acid Number 54 0.80 52 0.70 Ał 50 <u>_</u>0.60 HOX 0.50 48 46 bg 0.40 š 44 J 0.30 .20 A CI 42 Abr 40 0.10 38 0.00 lan5/24 an 5/74 an5/24 an5/24 : WearCheck USA - 501 Madison Ave., Cary, NC 27513 MARELLI : KFS0001670 Received : 09 Jan 2024 181 BENNETT DR Lab Number : 06055881 Tested : 10 Jan 2024 PULASKI, TN Unique Number : 10821830 Diagnosed : 10 Jan 2024 - Don Baldridge US 38478



Test Package : PLANT Contact: Service Manager Certificate L2367 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. Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Laboratory Sample No.

Contact/Location: Service Manager - MARPUL

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F: