

# **OIL ANALYSIS REPORT**

Area **8 WTG-801** 

Component **Hydraulic System** 

PETRO CANADA HYDREX AW 46 (300 LTR)

# Sample Rating Trend



# 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 component. The amount and size of particulates present in the system is acceptable.

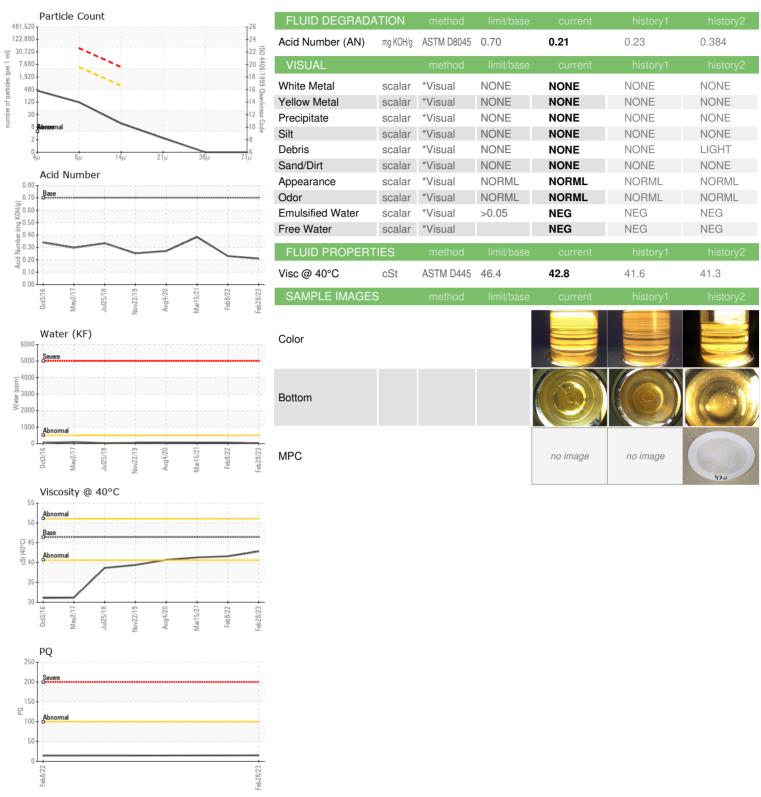
# **Fluid Condition**

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Sample Number	')		Oct2016 N	Tay2017 Jul2018 Nov20	19 Aug2020 Mar2021 Feb2022	Feb2023	
Sample Date	SAMPLE INFORMA	NOITA	method	limit/base	current	history1	history2
Machine Age         mths         Client Info         0         73         0           Oil Age         mths         Client Info         0         0         0         0           Gil Changed         Client Info         Not Changd         Not Changd         Not Changd         Not Changd           Sample Status         method         limit/base         current         fistory1         fistory2           PQ         ASTM D5185m         20         3         2         2         2           Iron         ppm         ASTM D5185m         >20         3         2         2         2           Chromium         ppm         ASTM D5185m         >20         3         3         3         3           Nickel         ppm         ASTM D5185m         >20         0         0         0         0           Rickel         ppm         ASTM D5185m         >20         1         0         0         0           Juminum         ppm         ASTM D5185m         >20         1         0         0         0           Lead         ppm         ASTM D5185m         >20         1         1         1         1           Copper <t< th=""><th>Sample Number</th><th></th><th>Client Info</th><th></th><th>WC0804507</th><th>WC05504476</th><th>WC0547264</th></t<>	Sample Number		Client Info		WC0804507	WC05504476	WC0547264
Oil Age         mths         Client Info         Not Changd         Not Changd <th>Sample Date</th> <td></td> <td>Client Info</td> <td></td> <th>28 Feb 2023</th> <td>08 Feb 2022</td> <td>15 Mar 2021</td>	Sample Date		Client Info		28 Feb 2023	08 Feb 2022	15 Mar 2021
Oil Changed Sample Status	Machine Age	mths	Client Info		0	73	0
NORMAL   NORMAL   NORMAL   WEAR METALS   method   limit/base   current   history1   history2	Oil Age	mths	Client Info		0	0	0
WEAR METALS         method         limit/base         current         history1         history2           PQ         ASTM D8184         15         14            Iron         ppm         ASTM D8185m         >20         3         2         2           Chromium         ppm         ASTM D8185m         >20         0         0         0           Nickel         ppm         ASTM D8185m         >20         0         0         0           Silver         ppm         ASTM D8185m         0         <1         0         0           Silver         ppm         ASTM D8185m         >20         <1         0         0           Aluminum         ppm         ASTM D8185m         >20         <1         1         1           Lead         ppm         ASTM D8185m         >20         <1         1         1           Coopper         ppm         ASTM D8185m         >20         <1         1         1           Vanadium         ppm         ASTM D8185m         >20         <1         0         0           Cadmium         ppm         ASTM D8185m         0         0         0         0           B	Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
PQ	Sample Status				NORMAL	NORMAL	NORMAL
Iron         ppm         ASTM D5185m b ≥20         3         2         2           Chromium         ppm         ASTM D5185m b ≥20         0         0         0           Nickel         ppm         ASTM D5185m b ≥20         0         0         0           Silver         ppm         ASTM D5185m b ≥20         0         0         0           Aluminum         ppm         ASTM D5185m b ≥20         <1         0         0           Aluminum         ppm         ASTM D5185m b ≥20         <1         1         1           Copper         ppm         ASTM D5185m b ≥20         <1         1         1           Tin         ppm         ASTM D5185m b ≥20         <1         1         1           Tin         ppm         ASTM D5185m b ≥20         <1         1         1           Vanadium         ppm         ASTM D5185m b ≥20         <1         0         0           Vanadium         ppm         ASTM D5185m b ≥20         <1         0         0           Cadmium         ppm         ASTM D5185m b 0         0         0         0           Boron         ppm         ASTM D5185m b 0         0         0         0	WEAR METALS		method	limit/base	current	history1	history2
Chromium         ppm         ASTM D5185m         >20         3         3         3           Nickel         ppm         ASTM D5185m         >20         0         0         0           Titanium         ppm         ASTM D5185m         0         0         0         0           Silver         ppm         ASTM D5185m         20         <1	PQ		ASTM D8184		15	14	
Nickel         ppm         ASTM D5185m         >20         0         0         0           Titanium         ppm         ASTM D5185m         0         0         0         0           Silver         ppm         ASTM D5185m         20         <1         0         0           Aluminum         ppm         ASTM D5185m         >20         <1         0         0           Lead         ppm         ASTM D5185m         >20         <1         1         1           Copper         ppm         ASTM D5185m         >20         <1         1         1           Tin         ppm         ASTM D5185m         >20         <1         0         0           Antimony         ppm         ASTM D5185m         0         0         0         0           Vanadium         ppm         ASTM D5185m         0         0         0         0           Cadnium         ppm         ASTM D5185m         0         0         0         0           Boron         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         0         <1         0         0	Iron	ppm	ASTM D5185m	>20	3	2	2
Nickel         ppm         ASTM D5185m         >20         0         0         0           Titanium         ppm         ASTM D5185m         0         0         0         0           Silver         ppm         ASTM D5185m         0         <1			ASTM D5185m	>20	3	3	3
Titanium			ASTM D5185m	>20	0	0	0
Silver         ppm         ASTM D5185m         0         <1         0           Aluminum         ppm         ASTM D5185m         >20         <1			ASTM D5185m		0	0	0
Aluminum         ppm         ASTM D5185m         >20         <1         0         0           Lead         ppm         ASTM D5185m         >20         0         0         <1			ASTM D5185m			<1	0
Lead         ppm         ASTM D5185m         >20         0         0         <1           Copper         ppm         ASTM D5185m         >20         <1				>20	-		
Copper         ppm         ASTM D5185m         >20         <1         1         1           Tin         ppm         ASTM D5185m         >20         <1			ASTM D5185m	>20	0	0	<1
Tin         ppm         ASTM D5185m         >20         <1         0         0           Antimony         ppm         ASTM D5185m           0           Vanadium         ppm         ASTM D5185m         0         0         0           Cadmium         ppm         ASTM D5185m         0         0         0         0           Boron         ppm         ASTM D5185m         0         0         0         0         0           Barium         ppm         ASTM D5185m         0         0         0         0         0           Molybdenum         ppm         ASTM D5185m         0         <1					_		
Antimony         ppm         ASTM D5185m           0           Vanadium         ppm         ASTM D5185m         0         0         0           Cadmium         ppm         ASTM D5185m         0         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0         0         0           Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         0         <1         0         0           Manganese         ppm         ASTM D5185m         0         <1         0         0           Magnesium         ppm         ASTM D5185m         0         43         43         40           Phosphorus         ppm         ASTM D5185m         50         43         43         40           Phosphorus         ppm         ASTM D5185m         50         43         43         43           Sulfur         ppm         ASTM D5185m         760         1755         1663         1556 <th></th> <td></td> <td></td> <td>&gt;20</td> <th></th> <td>0</td> <td>0</td>				>20		0	0
Vanadium         ppm         ASTM D5185m         0         0         0           Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0         0         0           Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         0         <1							
Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0         0         0           Barium         ppm         ASTM D5185m         0         -1         0         0           Molybdenum         ppm         ASTM D5185m         0         -1         0         0           Manganese         ppm         ASTM D5185m         0         -1         0         0           Magnesium         ppm         ASTM D5185m         0         1         0         2           Calcium         ppm         ASTM D5185m         50         43         43         40           Phosphorus         ppm         ASTM D5185m         330         332         351         314           Zinc         ppm         ASTM D5185m         430         399         397         386           Sulfur         ppm         ASTM D5185m         760         1755         1663         1556           CONTAMINANTS         method         limit/base         current         history1					0	0	
ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0         0         0           Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         0         <1					_		
Boron				limit/bass			
Barium         ppm         ASTM D5185m         0         0         0         0         0           Molybdenum         ppm         ASTM D5185m         0         <1         0         0           Manganese         ppm         ASTM D5185m         0         <1         0         0           Magnesium         ppm         ASTM D5185m         50         43         43         40           Phosphorus         ppm         ASTM D5185m         50         43         43         40           Phosphorus         ppm         ASTM D5185m         330         332         351         314           Zinc         ppm         ASTM D5185m         430         399         397         386           Sulfur         ppm         ASTM D5185m         760         1755         1663         1556           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         <1         0         0           Sodium         ppm         ASTM D5185m         >20         <1         0         <1           Water         % </th <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>							
Molybdenum         ppm         ASTM D5185m         0         <1							
Manganese         ppm         ASTM D5185m         0         <1         0         0           Magnesium         ppm         ASTM D5185m         0         1         0         2           Calcium         ppm         ASTM D5185m         50         43         43         40           Phosphorus         ppm         ASTM D5185m         330         332         351         314           Zinc         ppm         ASTM D5185m         430         399         397         386           Sulfur         ppm         ASTM D5185m         760         1755         1663         1556           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         <1         0         0           Sodium         ppm         ASTM D5185m         >1         0         0         0           Vater         %         ASTM D5185m         >20         <1         0         <1           Water         %         ASTM D6304         >0.05         0.003         0.006         0.006           ppm Water         ppm         ASTM D7647         >5000					_		
Magnesium         ppm         ASTM D5185m         0         1         0         2           Calcium         ppm         ASTM D5185m         50         43         43         40           Phosphorus         ppm         ASTM D5185m         330         332         351         314           Zinc         ppm         ASTM D5185m         430         399         397         386           Sulfur         ppm         ASTM D5185m         760         1755         1663         1556           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         <1         0         0           Sodium         ppm         ASTM D5185m         >15         <1         0         0           Sodium         ppm         ASTM D5185m         >20         <1         0         0           Potassium         ppm         ASTM D5185m         >20         <1         0         <1           Water         %         ASTM D6304         >0.05         0.003         0.006         0.006           ppm Water         ppm         ASTM D647         >5000							
Calcium         ppm         ASTM D5185m         50         43         43         40           Phosphorus         ppm         ASTM D5185m         330         332         351         314           Zinc         ppm         ASTM D5185m         430         399         397         386           Sulfur         ppm         ASTM D5185m         760         1755         1663         1556           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         <1		ppm					
Phosphorus         ppm         ASTM D5185m         330         332         351         314           Zinc         ppm         ASTM D5185m         430         399         397         386           Sulfur         ppm         ASTM D5185m         760         1755         1663         1556           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         <1	,						
Zinc         ppm         ASTM D5185m         430         399         397         386           Sulfur         ppm         ASTM D5185m         760         1755         1663         1556           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         <1		ppm			_		
Sulfur         ppm         ASTM D5185m         760         1755         1663         1556           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         <1		ppm					
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         <1		ppm	ASTM D5185m	430	399	397	386
Silicon         ppm         ASTM D5185m         >15         <1	Sulfur	ppm	ASTM D5185m	760	1755	1663	1556
Sodium         ppm         ASTM D5185m         1         0         0           Potassium         ppm         ASTM D5185m         >20         <1         0         <1           Water         %         ASTM D6304         >0.005         0.003         0.006         0.006           ppm Water         ppm         ASTM D6304         >500         25.7         66.4         67.2           FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         372         1145         15672           Particles >6μm         ASTM D7647         >5000         103         250         4677           Particles >14μm         ASTM D7647         >640         10         27         546           Particles >21μm         ASTM D7647         >40         0         0         14           Particles >71μm         ASTM D7647         >10         0         0         2	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185m         >20         <1	Silicon	ppm	ASTM D5185m	>15	<1	0	0
Water         %         ASTM D6304         >0.05         0.003         0.006         0.006           ppm Water         ppm         ASTM D6304         >500         25.7         66.4         67.2           FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         372         1145         15672           Particles >6μm         ASTM D7647         >5000         103         250         4677           Particles >14μm         ASTM D7647         >640         10         27         546           Particles >21μm         ASTM D7647         >160         2         9         156           Particles >38μm         ASTM D7647         >40         0         0         14           Particles >71μm         ASTM D7647         >10         0         0         2	Sodium	ppm	ASTM D5185m		1	0	0
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Potassium	ppm	ASTM D5185m	>20	<1	0	<1
FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         372         1145         15672           Particles >6μm         ASTM D7647 >5000         103         250         4677           Particles >14μm         ASTM D7647 >640         10         27         546           Particles >21μm         ASTM D7647 >160         2         9         156           Particles >38μm         ASTM D7647 >40         0         0         14           Particles >71μm         ASTM D7647 >10         0         0         2	Water	%	ASTM D6304	>0.05	0.003	0.006	0.006
Particles >4μm       ASTM D7647       372       1145       15672         Particles >6μm       ASTM D7647       >5000       103       250       4677         Particles >14μm       ASTM D7647       >640       10       27       546         Particles >21μm       ASTM D7647       >160       2       9       156         Particles >38μm       ASTM D7647       >40       0       0       14         Particles >71μm       ASTM D7647       >10       0       2	ppm Water	ppm	ASTM D6304	>500	25.7	66.4	67.2
Particles >6μm       ASTM D7647       >5000       103       250       4677         Particles >14μm       ASTM D7647       >640       10       27       546         Particles >21μm       ASTM D7647       >160       2       9       156         Particles >38μm       ASTM D7647       >40       0       0       14         Particles >71μm       ASTM D7647       >10       0       2	FLUID CLEANLINE	SS	method	limit/base	current	history1	history2
Particles >14μm         ASTM D7647         >640         10         27         546           Particles >21μm         ASTM D7647         >160         2         9         156           Particles >38μm         ASTM D7647         >40         0         0         14           Particles >71μm         ASTM D7647         >10         0         2	Particles >4µm		ASTM D7647		372	1145	15672
Particles >14μm       ASTM D7647       >640       10       27       546         Particles >21μm       ASTM D7647       >160       2       9       156         Particles >38μm       ASTM D7647       >40       0       0       14         Particles >71μm       ASTM D7647       >10       0       0       2	Particles >6µm		ASTM D7647	>5000	103	250	4677
Particles >21μm       ASTM D7647       >160       2       9       156         Particles >38μm       ASTM D7647       >40       0       0       14         Particles >71μm       ASTM D7647       >10       0       0       2	·		ASTM D7647	>640			
Particles >38μm         ASTM D7647         >40         0         0         14           Particles >71μm         ASTM D7647         >10         0         0         2							156
Particles >71μm         ASTM D7647         >10         0         2							
	Oil Cleanliness					17/15/12	21/19/16



# OIL ANALYSIS REPORT







Laboratory Sample No. Lab Number **Unique Number** 

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : WC0804507

: 05857909 : 10492374 Received Diagnosed Diagnostician

: 26 May 2023 : 30 May 2023 : Don Baldridge

**ENERGIA EOLICA** STA ANA KM25 CARRETERA AL SUR, A 1KM DEL CRUCE FRANCISCO MORAZAN, ZZ

HN

Contact: SANTOS DEL CID

sdelcid@dencmi.com

T: x: F: x:

Test Package : IND 2 (Additional Tests: KF, PQ) 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)

Report Id: ENEFRA [WUSCAR] 05857909 (Generated: 10/24/2023 10:43:52) Rev: 1

Contact/Location: SANTOS DEL CID - ENEFRA