

## **OIL ANALYSIS REPORT**

Sample Rating Trend



Area **REF** Machine Id **A41P98** Component

Hydraulic System

### PETRO CANADA PURITY FG HYDRAULIC AW 68 (--- GAL)

#### DIAGNOSIS

#### A Recommendation

We recommend you service the filters on this component. Resample at the next service interval to monitor.

#### 📥 Wear

The iron level has decreased, but is still abnormal. All other component wear rates are normal.

#### Contamination

There is a high amount of particulates present in the oil.

#### Fluid Condition

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

SAMPLE INFORM	ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0554650	WC0505364	WC0438623
Sample Date		Client Info		05 Mar 2021	06 Nov 2020	01 May 2020
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	ABNORMAL	SEVERE
CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.05	NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	<u> </u>	<b>4</b> 9	<b>•</b> 78
Chromium	ppm	ASTM D5185m	>20	0	0	<1
Nickel	ppm	ASTM D5185m	>20	0	<1	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m		0	0	<1
Aluminum	ppm	ASTM D5185m	>20	0	0	<1
Lead	ppm	ASTM D5185m	>20	1	0	<1
Copper	ppm	ASTM D5185m	>20	<1	1	2
Tin	ppm	ASTM D5185m	>20	0	0	0
Antimony	ppm	ASTM D5185m		0	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM DS185m		U	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current <1	history1 <1	history2 1
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	limit/base	current <1 0	history1 <1 0	history2 1 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current <1 0 0	history1 <1 0 0	history2 1 0 0
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current <1 0 0 <1	history1 <1 0 0 <1	history2 1 0 0 <1 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current <1 0 0 <1 0	history1 <1 0 0 <1 0	history2 1 0 0 <1 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current <1 0 0 <1 0 0	history1 <1 0 0 <1 0 0 0	history2 1 0 0 <1 <1 <1 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current           <1           0           <1           0           <1           0           <10           0           <20	history1 <1 0 0 <1 0 <1 0 0 0 398 0	history2 1 0 0 <1 <1 0 381 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	Current <1 0 0 <1 0 0 420 22 505	history1 <1 0 0 <1 0 0 398 0 410	history2 1 0 0 <1 <1 0 381 0 472
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	Current <1 0 0 <1 0 0 420 22 505	history1 <1 0 0 <1 0 0 398 0 410	history2           1           0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Chosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current         <1         0         <1         0         <1         0         420         22         505         current	history1         <1         0         0         <1         0         <10         0         398         0         410         history1	history2         1         0         -         <1         <1         0         381         0         473         history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Chosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm 1 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 3 ppm 4 ppm 4 ppm 4	method           ASTM D5185m	limit/base limit/base >15	current         <1         0         <1         0         <1         0         420         22         505         current         1	history1         <1         0         0         <1         0         <10         0         398         0         410         history1         2	history2         1         0         -1         <1         0         381         0         473         history2         3
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Chosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm 1 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 3 ppm 4 ppm 2 ppm 2 ppm 2	method           ASTM D5185m	limit/base limit/base >15	current         <1         0         <1         0         <1         0         420         22         505         current         1         <1	history1         <1         0         0         <1         0         <1         0         398         0         410         history1         2         <1	history2           1           0                    0           381           0           473           history2           3           0
ADDITIVES Boron Barium Molybdenum Magnaese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm 1 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 3 ppm 4 ppm 4 ppm 4 ppm 2 ppm 1	method           ASTM D5185m	limit/base limit/base >15 >20	current         <1         0         <1         0         <1         0         22         505         current         1         <1         0	<1         0         0         <1         0         <1         0         398         0         410         history1         2         <1         0	history2           1           0           1           0           <1           <1           0           381           0           473           history2           3           0           0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Chosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm	method           ASTM D5185m	limit/base limit/base >15 >20 limit/base	current         <1         0         <1         0         <1         0         420         22         505         current         1         <1         0         current	history1         <1         0         0         <1         0         398         0         410         history1         2         <1         0         history1         2         <1         0         history1	history2         1         0         -1         -1         0         381         0         473         history2         3         0         0         history2         3         0         0         1         0         1         1         3         0         0         history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLINE Particles >4µm	ppm	method           ASTM D5185m	limit/base limit/base >15 >20 limit/base >5000	current         <1         0         <1         0         <1         0         420         22         505         current         1         <1         0         current         1         <1         0         current         72340	history1         <1         0         0         <1         0         398         0         410         history1         2         <1         0         history1         2         <1         0         history1	history2         1         0         <1         <1         0         381         0         473         history2         3         0         3         0         0         137608
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLINE Particles >4µm Particles >6µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	limit/base   	<1         0         <1         0         <1         0         420         22         505         current         1         <1         0         current         1         <10         0         current         1         <10         0         current         1         0         current         1         <10         0         current         15614	<1         0         <1         0         <1         0         398         0         410         history1         2         <1         0         history1         2         <1         0         history1	history2         1         0         1         0         <1         0         381         0         473         history2         3         0         473         history2         3         0         473
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLINE Particles >4µm Particles >14µm	ppm	method           ASTM D5185m	limit/base	<1         0         <1         0         <1         0         420         22         505         current         1         <10         0         current         1         <10         0         current         1         <10         current         15614         659	<1         0         <1         0         <1         0         398         0         410         history1         2         <1         0         history1	history2         1         0         1         0         <1         1         381         0         473         history2         3         0         473         history2         3         0         473
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLINE Particles >4µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	limit/base   	<1         0         <1         0         <1         0         420         22         505         current         1         <1         0         22         505         current         1         <10         0         current         1         <10         current            <15614         <659         <111	history1         <1         0         0         <1         0         398         0         398         0         410         history1         2         <1         0         history1         2         <1         0         history1	history2         1         0         <1         <1         381         0         381         0         473         history2         3         0         473
ADDITIVES Boron Barium Molybdenum Maganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLINE Particles >4µm Particles >14µm Particles >21µm Particles >38µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m           ASTM D5185m	limit/base   	<1         0         <1         0         <1         0         420         22         505         current         1         <1         0         223         505         current         1         <10         <10         <10         <10         <10         <110         <15614         <111         3	<1         0         0         0         0         398         0         398         0         410         history1         2         <1         0         history1         2         <1         0         history1	history2         1         0         <1         <1         <1         0         381         0         473         history2         3         0         473         history2         3         0         137608         59943         1998         438         28

ISO 4406 (c) >19/17/14 A 23/21/17

**Oil Cleanliness** 

▲ 24/23/18



# **OIL ANALYSIS REPORT**







FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.26	0.196	0.188	0.161
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	🔺 MODER	VLITE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	A HAZY	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.05	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	63.34	66.4	66.6	63.3
SAMPLE IMAGES		method	limit/base	current	history1	history2



Bottom



GRAPHS Ferrous Alloys Particle Count Acid Number 491,52 0.3 122,88 (B/HO) 51 30.7 E 0.18 -20 Jov6/20 Mar5/71 đ 0.12 per 1 Mav1 1,92 Pio Qcie articles Non-ferrous Metals 480 0.00 120 lead Mav 30 Viscosity @ 40°C /av 28. 7( Viscosity @ 40°C (B/H0.30 Acid Number cSt (40°C) 75 Abnormal Base () 70 00 65 Ê 0.20 Ba 령 60. 면 면 0.10 60 Abnorma Acid N 000 Abno 55 Vov6/20 -Mar5/21 5 Vov6/20 /20 lar5/21 Nav Mav1 **INGREDION - BEDFORD PARK** Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. : WC0554650 Recieved : 11 Mar 2021 6400 SOUTH ARCHER ROAD Lab Number : 05201360 : 12 Mar 2021 BEDFORD PARK, IL Diagnosed Unique Number : 9396671 Diagnostician : Don Baldridge US 60501 Test Package : IND 2 Contact: Ricardo Gutierrez Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. Ricardo.Gutierrez@ingredion.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (219)805-1307 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: