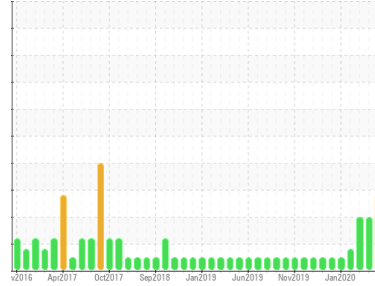


Area
Turret [300231613]
 Machine Id
WHPU - HP 1 Accumulator Bank/HP Umbilical Supply (S/N Sample Tag XX-58600-MV1/11)
 Component
Hydraulic System
 Fluid
CASTROL TRANSAQUA HT (4500 LTR)



DIAGNOSIS

Recommendation
 We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. We recommend an early resample to monitor this condition.

Wear
 All component wear rates are normal.

Contamination
 There is a moderate amount of particulates (2 to 100 microns in size) present in the oil. The system cleanliness is above the acceptable limit for the target SAE AS4059 (replaces NAS 1638) cleanliness code.

Fluid Condition
 Viscosity of sample indicates oil is within ISO 3 range, advise investigate. The AN level is acceptable for this fluid. The pH level of this fluid is within the acceptable limits. The reserve alkalinity of this fluid is acceptable. The water concentration level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			PC	PC	PC0023111
Sample Date	Client Info			08 Jan 2024	08 Jun 2020	24 Mar 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	ABNORMAL

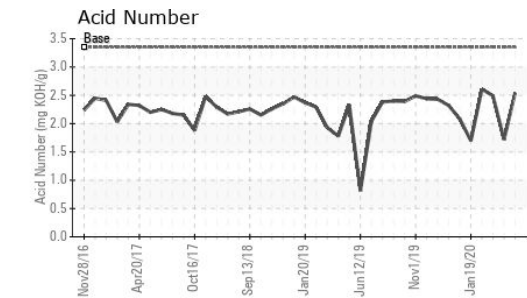
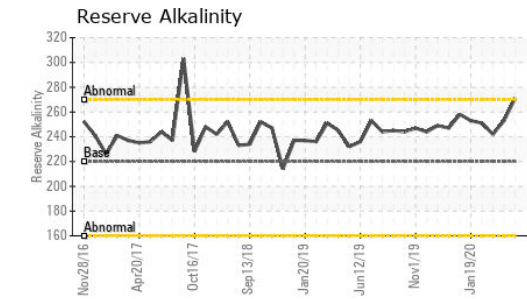
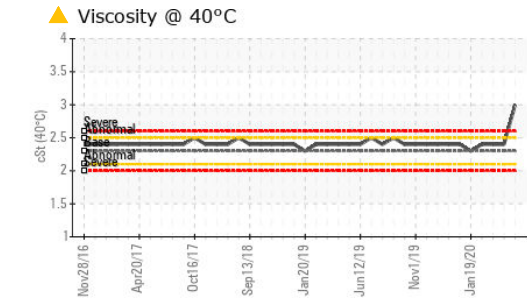
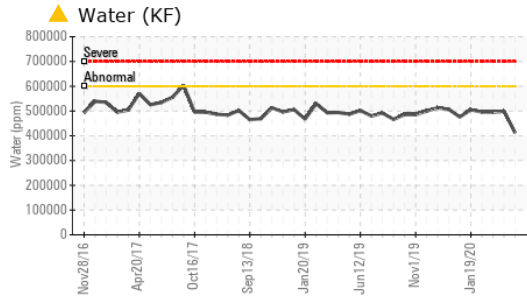
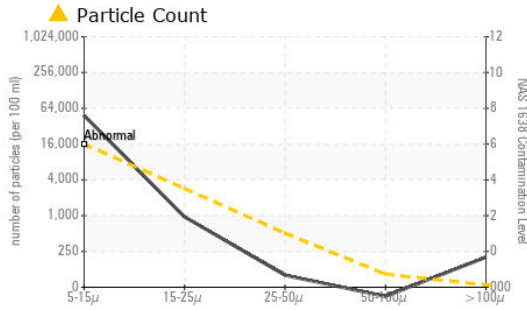
WEAR METALS		method	limit/base	current	history1	history2
PQ	ASTM D8184*			0	0	▲ 51
Iron	ppm ASTM D5185(m)	>20		2	12	7
Chromium	ppm ASTM D5185(m)	>10		0	<1	<1
Nickel	ppm ASTM D5185(m)	>10		0	<1	<1
Titanium	ppm ASTM D5185(m)			0	<1	<1
Silver	ppm ASTM D5185(m)			<1	<1	1
Aluminum	ppm ASTM D5185(m)	>10		0	<1	<1
Lead	ppm ASTM D5185(m)	>20		0	<1	3
Copper	ppm ASTM D5185(m)	>20		0	<1	<1
Tin	ppm ASTM D5185(m)	>10		0	▲ 10	<1
Antimony	ppm ASTM D5185(m)			<1	<1	0
Vanadium	ppm ASTM D5185(m)			0	<1	<1
Beryllium	ppm ASTM D5185(m)			0	0	0
Cadmium	ppm ASTM D5185(m)			0	<1	<1

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm ASTM D5185(m)			143	193	192
Barium	ppm ASTM D5185(m)			<1	<1	1
Molybdenum	ppm ASTM D5185(m)			13	1	<1
Manganese	ppm ASTM D5185(m)			0	<1	<1
Magnesium	ppm ASTM D5185(m)			1	1	2
Calcium	ppm ASTM D5185(m)			17	2	14
Phosphorus	ppm ASTM D5185(m)	145		107	140	172
Zinc	ppm ASTM D5185(m)			4	1	10
Sulfur	ppm ASTM D5185(m)			64	31	35
Lithium	ppm ASTM D5185(m)			1	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185(m)	>15		5	3	4
Sodium	ppm ASTM D5185(m)	>650		709	671	643
Potassium	ppm ASTM D5185(m)	>20		48	1	3
Water	% ASTM D6304*	>60		▲ 41.2	49.9	49.5
ppm Water	ppm ASTM D6304*	>600000		▲ 412000	499000	495000

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles 5-15µm	count NAS 1638	>16000		▲ 48384	▲ 48000	6000
Particles 15-25µm	count NAS 1638	>2850		955	▲ 6000	1500
Particles 25-50µm	count NAS 1638	>506		84	▲ 700	200
Particles 50-100µm	count NAS 1638	>90		-64	0	0
Particles >100µm	count NAS 1638	>16		▲ 200	0	0
NAS 1638	Class NAS 1638	>6		10	▲ 8	6

OIL ANALYSIS REPORT



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	3.35	2.54	1.72	2.49
Alkiline Reserve (Oils)	ml KOH/g	ASTM D1121*	220	271	253	242

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	NONE	NONE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>60	NEG	>10%	>10%
Free Water	scalar	Visual*		NEG	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
pH	Scale 0-14	ASTM D1287*		8.47	8.59	8.70
Visc @ 40°C	cSt	ASTM D7279(m)	2.3	3	2.4	2.4
Visc @ 100°C	cSt	ASTM D7279(m)		1	---	---

SAMPLE IMAGES		method	limit/base	current	history1	history2
Color						
Bottom						
PrtFilter				no image		



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC
Lab Number : 02611321
Unique Number : 5720416
Test Package : MAR 2 (Additional Tests: KF, KV100, pH, PQ, PrtCountNAS, ReserveAlk, TAN Man, VI)

Suncor - Terra Nova Projects
 Scotia Centre, 235 Water Street
 St. John's, NL
 CA A1C 1B6
 Contact: Josh Hynes
 joshynes@suncor.com
 T: (709)778-3575
 F: (709)724-2835

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.