



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
Furnaces
 Machine Id
N/A N/A 61-31-000-030 (S/N 31030)
 Component
Gear Reducer
 Fluid
ESSO SPARTAN EP 220 (--- LTR)

RECOMMENDATION

Confirm the source of the lubricant being utilized for top-up/fill.
 Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

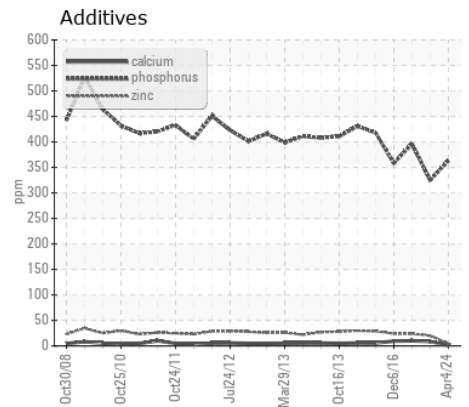
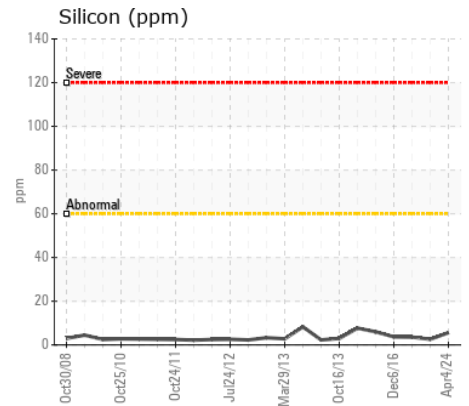
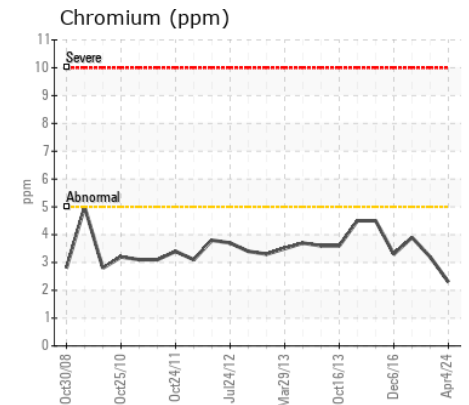
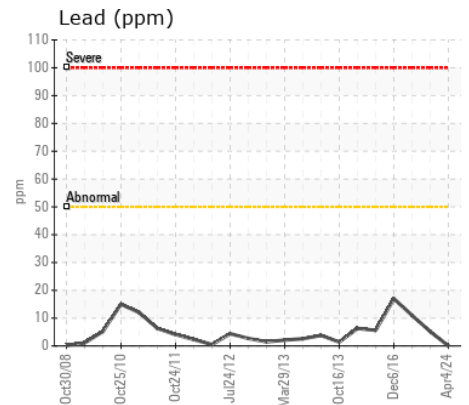
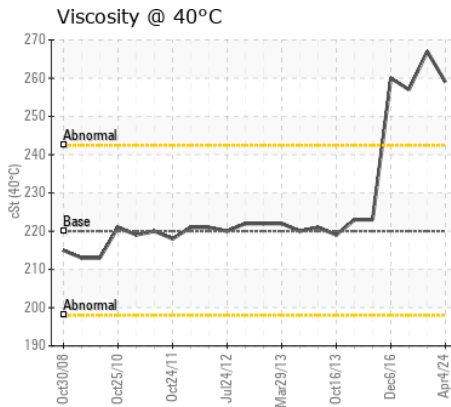
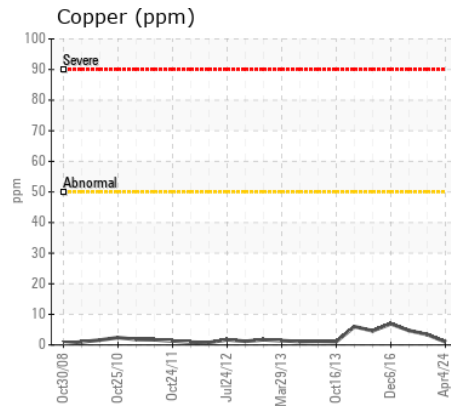
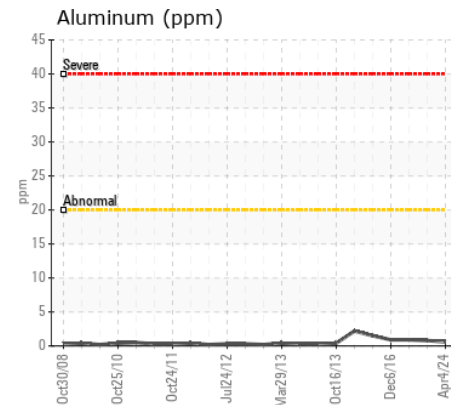
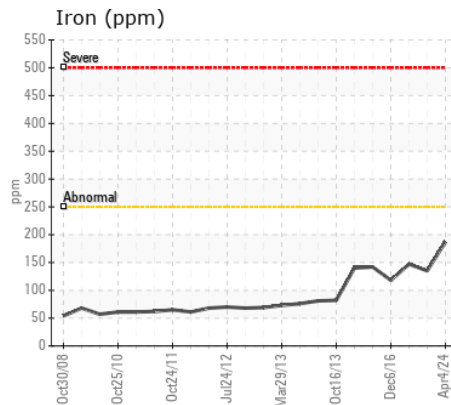
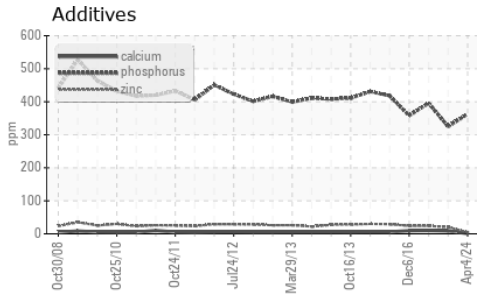
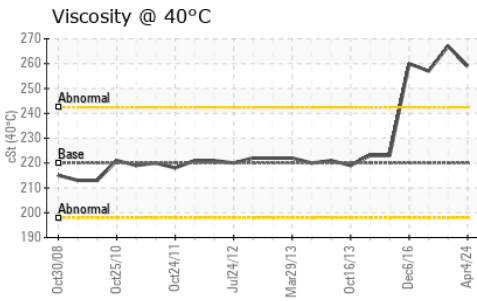
CONTAMINATION

There is no indication of any contamination in the oil.

FLUID CONDITION

Additive levels indicate the addition of a different brand, or type of oil.
 The condition of the oil is acceptable for the time in service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0910769	WC0292611	WC0281965
Sample Date		Client Info		04 Apr 2024	18 Jul 2018	15 Aug 2017
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
Iron	ppm	ASTM D5185(m)	>250	187	135	147
Chromium	ppm	ASTM D5185(m)	>5	2	3	4
Nickel	ppm	ASTM D5185(m)	>5	<1	2	2
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)		0	0	0
Aluminum	ppm	ASTM D5185(m)	>20	<1	<1	<1
Lead	ppm	ASTM D5185(m)	>50	0	5	11
Copper	ppm	ASTM D5185(m)	>50	1	3	5
Tin	ppm	ASTM D5185(m)	>5	0	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185(m)	>60	6	3	4
Potassium	ppm	ASTM D5185(m)	>20	<1	<1	1
Water		WC Method	>0.2	NEG	NEG	NEG
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	VLITE	NONE
Sand/Dirt	scalar	Visual*	NONE	VLITE	NONE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
Sodium	ppm	ASTM D5185(m)		<1	2	2
Boron	ppm	ASTM D5185(m)	.5	18	11	13
Barium	ppm	ASTM D5185(m)		0	<1	<1
Molybdenum	ppm	ASTM D5185(m)	0	0	0	0
Manganese	ppm	ASTM D5185(m)		<1	<1	<1
Magnesium	ppm	ASTM D5185(m)	0	<1	<1	<1
Calcium	ppm	ASTM D5185(m)	1.7	<1	9	10
Phosphorus	ppm	ASTM D5185(m)	250	363	325	396
Zinc	ppm	ASTM D5185(m)	.3	5	20	24
Sulfur	ppm	ASTM D5185(m)		4749	8104	9554
Visc @ 40°C	cSt	ASTM D7279(m)	220	259	267	257



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0910769
Lab Number : 02627479
Unique Number : 5760611
Test Package : MOB 1
Received : 08 Apr 2024
Tested : 09 Apr 2024
Diagnosed : 09 Apr 2024 - Wes Davis

Vale - Copper Cliff Smelter
 COPPER CLIFF SMELTER WAREHOUSE, 155 BALSAM ST.
 COPPER CLIFF, ON
 CA P0M 1N0
 Contact: Andy Kozachanko
 andrew.kozachanko@vale.com
 T: (705)682-6687
 F: (705)682-6939

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.