

Area  
**KEMP QUARRIES / BCS - STILLWELL [68279]**

Machine Id  
**WL144**

Component  
**Diesel Engine**

Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

**RECOMMENDATION**

We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. ( Customer Sample Comment: PM-2 changed fluid and filters )

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>PCA0109089</b>	PCA0084811	PCA0085709
Sample Date		Client Info		<b>20 May 2024</b>	17 Oct 2023	05 May 2023
Machine Age	hrs	Client Info		<b>23340</b>	22822	22358
Oil Age	hrs	Client Info		<b>68279</b>	22822	22358
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Changed</b>	Changed	N/A
Filter Changed		Client Info		<b>Changed</b>	Changed	N/A
Sample Status				<b>ABNORMAL</b>	SEVERE	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>85</b>	42	13
Chromium	ppm	ASTM D5185m	>20	<b>6</b>	<1	0
Nickel	ppm	ASTM D5185m	>4	<b>4</b>	<1	<1
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
Silver	ppm	ASTM D5185m	>3	<b>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>5</b>	1	2
Lead	ppm	ASTM D5185m	>40	<b>3</b>	5	<1
Copper	ppm	ASTM D5185m	>330	<b>10</b>	7	1
Tin	ppm	ASTM D5185m	>15	<b>2</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

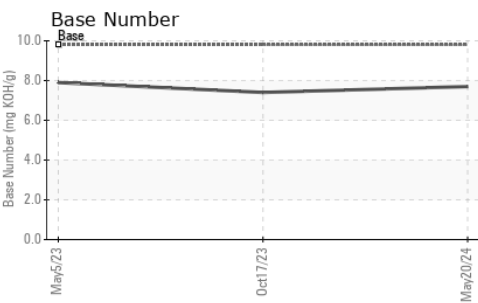
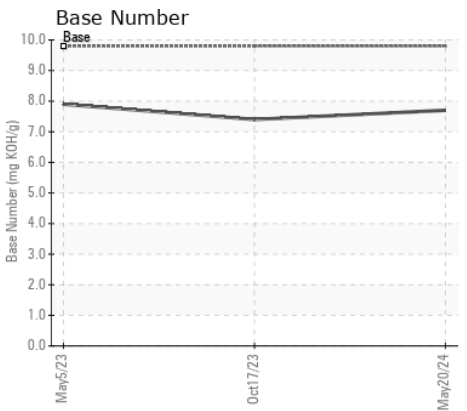
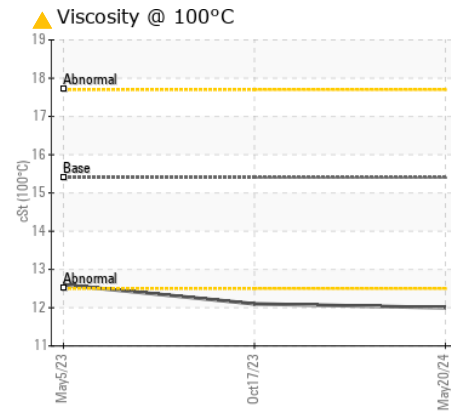
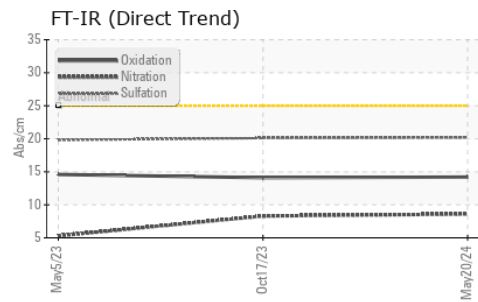
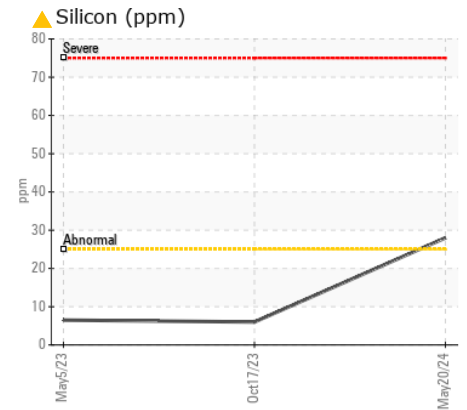
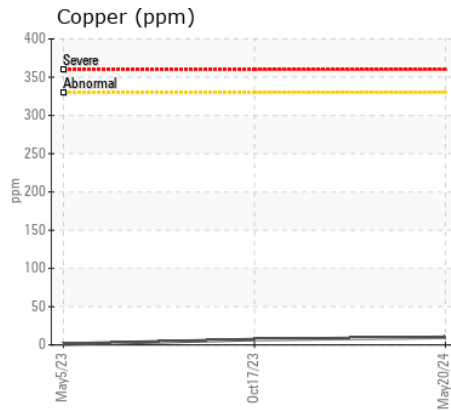
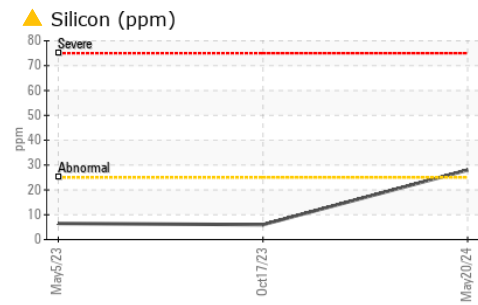
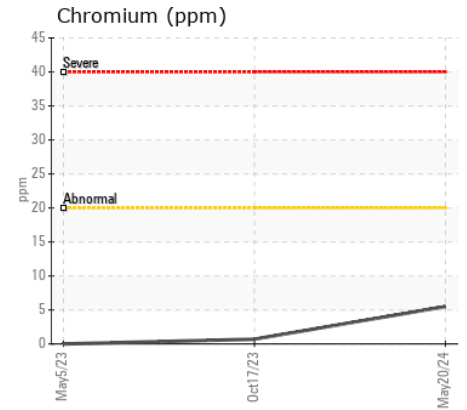
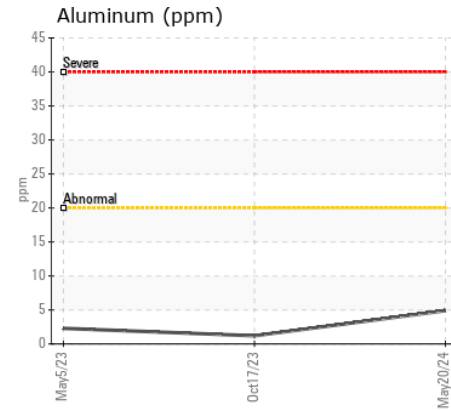
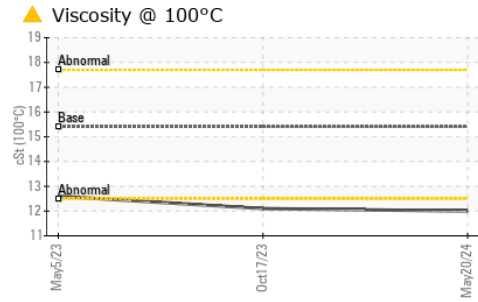
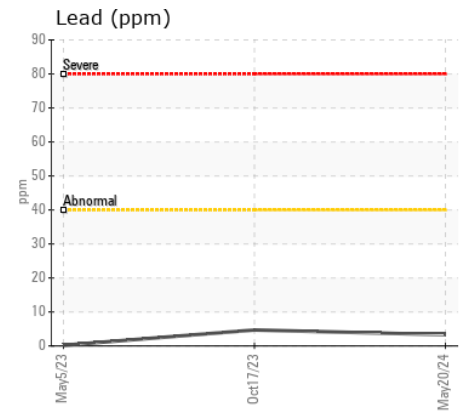
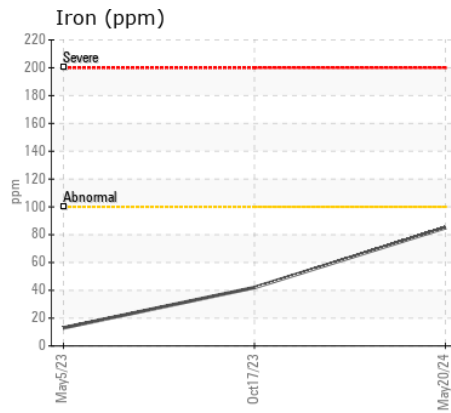
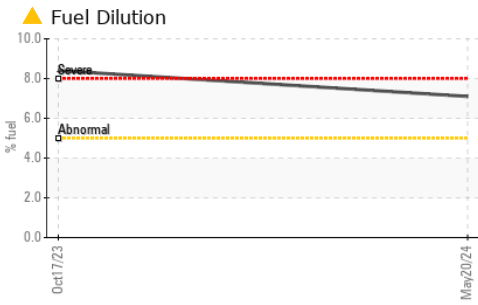
There is a moderate amount of fuel present in the oil. Elemental level of silicon (Si) above normal indicating ingress of seal material.

Silicon	ppm	ASTM D5185m	>25	<b>▲ 28</b>	6	6
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	4	2
Fuel	%	ASTM D3524	>5	<b>▲ 7.1</b>	▲ 8.4	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>1.2</b>	1.4	0.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.6</b>	8.3	5.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>20.2</b>	20.1	19.8
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	NEG

**FLUID CONDITION**

Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

Sodium	ppm	ASTM D5185m		<b>9</b>	17	8
Boron	ppm	ASTM D5185m	0	<b>5</b>	33	318
Barium	ppm	ASTM D5185m	0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	60	<b>62</b>	67	116
Manganese	ppm	ASTM D5185m	0	<b>1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	1010	<b>1019</b>	842	603
Calcium	ppm	ASTM D5185m	1070	<b>1245</b>	1032	1436
Phosphorus	ppm	ASTM D5185m	1150	<b>1099</b>	881	685
Zinc	ppm	ASTM D5185m	1270	<b>1363</b>	1087	844
Sulfur	ppm	ASTM D5185m	2060	<b>3724</b>	2648	2646
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>14.2</b>	14.1	14.6
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	<b>7.7</b>	7.4	7.9
Visc @ 100°C	cSt	ASTM D445	15.4	<b>▲ 12.0</b>	▲ 12.1	12.6



Certificate L2367

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

Sample No. : PCA0109089

Lab Number : 06193215

Unique Number : 11049967

Test Package : MOB 1 ( Additional Tests: PercentFuel, TBN )

Received : 28 May 2024

Tested : 30 May 2024

Diagnosed : 30 May 2024 - Sean Felton

Kemp Quarries - Benton County Stone - Stillwell

463917 Highway 100

Bunch, OK

US 74931

Contact:

stilwell@bentoncountystone.com

T:

F:

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)