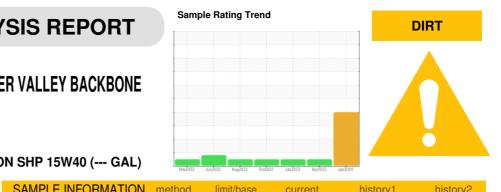


## **OIL ANALYSIS REPORT**



KEMP QUARRIES / RIVER VALLEY BACKBONE WL147 Component **Diesel Engine** 

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

### DIAGNOSIS Recommendation

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Fluid

### A Wear

Exhaust valve wear is indicated. Cylinder, crank, or cam shaft wear is indicated.

#### Contamination

Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

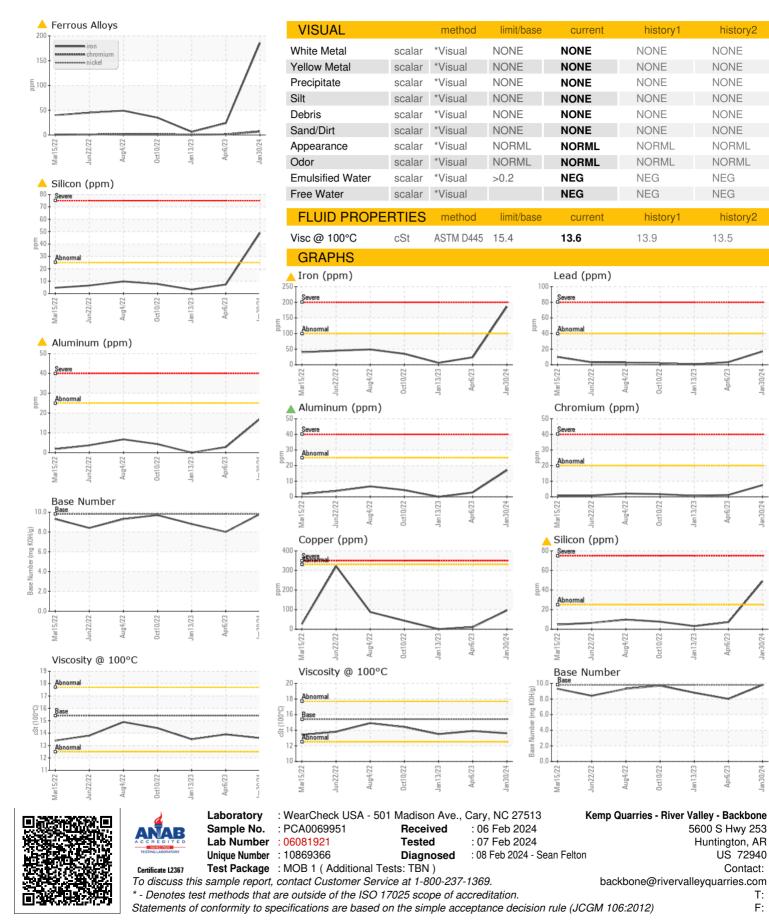
#### Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sample Number     Client Info     9CA0069951     PCA0085823     PCA0037164       Sample Date     Client Info     30 Jan 2024     06 Apr 2023     13 Jan 2023       Machine Age     hrs     Client Info     312     345     214       Oil Age     hrs     Client Info     312     345     214       Oil Anged     Client Info     Changed		MATION	method	limit/base	current	history1	history2
Machine AgeInsClient InfoSeq272877028425Oil AgoInsClient InfoS12S12S14ChangedSampe StatusIntIntChangedNORMALNORMALCONTAMINATIONwith Mathematican	Sample Number		Client Info		PCA0069951	PCA0085823	PCA0037164
Oli Age     Ins     Client Info     312     345     214       Oil Changed     Client Info     Changed     Changed     Changed     Changed     Changed     Sample Status     NORMAL	Sample Date		Client Info		30 Jan 2024	06 Apr 2023	13 Jan 2023
Oli Changed Client Info Changed Changed Changed Changed Changed Changed NORMAL   Sample Status I Imethod limit/base current Nistory1 Noread   CONTAMINATION We changed >5.2 <1.0 <1.0 <1.0   Water WC Method >0.2 NEG NEG NEG   Glycol WC Method >0.2 NEG NEG NEG   WEAR METALS method limit/base current history1 history2   Iron ppm ASTM D518m >20 8 1 <1   Nickel ppm ASTM D518m >20 8 1 <1   Itanium ppm ASTM D518m >20 8 1 <1   Itanium ppm ASTM D518m >20 8 1 <1   Itanium ppm ASTM D518m >20 1 <1 <1   Itanium ppm ASTM D518m >20 1 <1 <1   Itanium ppm ASTM D518m >20 1 <1 <1   Itanium ppm ASTM D518m >25 1 1 <1		hrs	Client Info		29627	28770	28425
Oli Changed Client Info Changed Changed Changed Changed Changed Changed NORMAL   Sample Status I Imethod limit/base current Nistory1 Noread   CONTAMINATION We changed >5.2 <1.0 <1.0 <1.0   Water WC Method >0.2 NEG NEG NEG   Glycol WC Method >0.2 NEG NEG NEG   WEAR METALS method limit/base current history1 history2   Iron ppm ASTM D518m >20 8 1 <1   Nickel ppm ASTM D518m >20 8 1 <1   Itanium ppm ASTM D518m >20 8 1 <1   Itanium ppm ASTM D518m >20 8 1 <1   Itanium ppm ASTM D518m >20 1 <1 <1   Itanium ppm ASTM D518m >20 1 <1 <1   Itanium ppm ASTM D518m >20 1 <1 <1   Itanium ppm ASTM D518m >25 1 1 <1	0	hrs	Client Info		312	345	214
Sample Status     Image: method     ABNORMAL     NORMAL     NORMAL     NORMAL       CONTAMINATION     method     imil/base     current     history1     history2       Fuel     WC Method     >5     <1.0     <1.0     <1.0       Water     WC Method     >5.2     NEG     NEG     NEG       Glycol     WC Method     >5.2     NEG     NEG     NEG       WEAR METALS     method     imit/base     current     history1     history2       Iron     ppm     ASTM D5185m     >20     8     1     <1     0       Chromium     ppm     ASTM D5185m     >2     4     6     <1     0       Silver     ppm     ASTM D5185m     >2     17     3     0     1       Lead     ppm     ASTM D5185m     >40     17     3     0     1       Vanduim     ppm     ASTM D5185m     5     4     0     0     0       Lead     ppm     ASTM D5185m     1 <th>-</th> <th></th> <th>Client Info</th> <th></th> <th>Changed</th> <th>Changed</th> <th>Changed</th>	-		Client Info		Changed	Changed	Changed
CONTAMINATION     method     limit/base     current     history1     history2       Fuel     WC Method     >0.2     NEG     NEG     NEG       Glycol     WC Method     >0.2     NEG     NEG     NEG       WEAR METALS     method     limit/base     current     history1     history2       Iron     ppm     ASTM D5185m     >100     ▲     186     24     6       Chromium     ppm     ASTM D5185m     >20     8     1     <1	•				-		
Fuel     WC Method     >5     <1.0				11			
Water     WC Method     >0.2     NEG     NEG     NEG     NEG       Glycol     WC Method     Imit/base     current     history1     history2       Iron     ppm     ASTM D5185m     >100     ▲     186     24     6       Chromium     ppm     ASTM D5185m     >20     8     1     <1       Nickel     ppm     ASTM D5185m     >2     ▲     6     <1     0       Silver     ppm     ASTM D5185m     >2     <     1     <1     0       Auminum     ppm     ASTM D5185m     >2     <     1     0     0       Lead     ppm     ASTM D5185m     >330     96     111     <1     1       Vanadium     ppm     ASTM D5185m     >30     96     110     <10       Adminum     ppm     ASTM D5185m     0     2     4     0       Baron     ppm     ASTM D5185m     0     2     1     0       Magnageium	CONTAMINAT	ION		limit/base	current		
Glycol     WC Method     NEG     NEG     NEG       WEAR METALS     method     limit/base     current     history1     history2       Iron     ppm     ASTM D5185m     >100     186     24     6       Chromium     ppm     ASTM D5185m     >2     6     <1     0       Nickel     ppm     ASTM D5185m     >2     1     <1     0       Aluminum     ppm     ASTM D5185m     >2     1     <1     0       Aluminum     ppm     ASTM D5185m     >2     17     3     0       Lead     ppm     ASTM D5185m     >25     17     3     0       Cadmium     ppm     ASTM D5185m     >300     96     11     <1       Vanadium     ppm     ASTM D5185m     15     4     <1     0       Cadmium     ppm     ASTM D5185m     0     2     4     0       Baron     ppm     ASTM D5185m     0     75     63     55  Ma							
WEAR METALS     method     limit/base     current     history1     history2       Iron     ppm     ASTM D5185m     >100     ▲ 186     24     6       Chromium     ppm     ASTM D5185m     >20     8     1     <1				>0.2			
Iron     ppm     ASTM D5185m     >100     ▲ 186     24     6       Chromium     ppm     ASTM D5185m     >20     8     1     <1	Glycol		WC Method		NEG	NEG	NEG
Chromium     ppm     ASTM D5185m     >20     8     1     <1	WEAR METAL	S	method	limit/base	current	history1	history2
Chromium     ppm     ASTM D5185m     >20     8     1     <1       Nickel     ppm     ASTM D5185m     >2     1     <1	Iron	ppm	ASTM D5185m	>100	<b>4</b> 186	24	6
Titanium     ppm     ASTM D5185m     >2     1     <1     0       Silver     ppm     ASTM D5185m     >2     <1	Chromium		ASTM D5185m	>20	8	1	<1
Titanium     ppm     ASTM D5185m     >2     1     <1     0       Silver     ppm     ASTM D5185m     >2     <1	Nickel				<u> </u>	<1	0
Silver     ppm     ASTM D5185m     >2     <1     0     0       Aluminum     ppm     ASTM D5185m     >25     17     3     0       Lead     ppm     ASTM D5185m     >40     17     3     <1	Titanium		ASTM D5185m	>2	1	<1	0
Aluminum     ppm     ASTM D5185m     >25     ▲ 17     3     0       Lead     ppm     ASTM D5185m     >40     17     3     <1					<1		
Lead     ppm     ASTM D5185m     >40     17     3     <1       Copper     ppm     ASTM D5185m     >330     96     11     <1	Aluminum			>25		3	0
Copper     ppm     ASTM D5185m     >330     96     11     <1       Tin     ppm     ASTM D5185m     >15     4     <1	Lead			>40			<1
Tin     ppm     ASTM D5185m     >15     4     <1     <1       Vanadium     ppm     ASTM D5185m     Imit/base     <1	Copper		ASTM D5185m	>330	96		<1
Vanadium     ppm     ASTM D5185m     <1     0     0       Cadmium     ppm     ASTM D5185m     <1				>15	4	<1	<1
CadmiumppmASTM D5185m<100ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185m0240BariumppmASTM D5185m0000MolybdenumppmASTM D5185m02<1	Vanadium		ASTM D5185m		<1	0	0
Boron     ppm     ASTM D5185m     0     2     4     0       Barium     ppm     ASTM D5185m     0     0     0     0     0       Molybdenum     ppm     ASTM D5185m     60     75     63     55       Manganese     ppm     ASTM D5185m     0     2     <1	Cadmium		ASTM D5185m		<1		
Barium     ppm     ASTM D5185m     0     0     0     0       Molybdenum     ppm     ASTM D5185m     60 <b>75</b> 63     55       Manganese     ppm     ASTM D5185m     0 <b>2</b> <1     0       Magnesium     ppm     ASTM D5185m     1010 <b>1097</b> 943     864       Calcium     ppm     ASTM D5185m     1010 <b>1097</b> 943     864       Calcium     ppm     ASTM D5185m     1010 <b>1097</b> 943     864       Calcium     ppm     ASTM D5185m     1070 <b>1404</b> 1194     1006       Phosphorus     ppm     ASTM D5185m     1070 <b>1528</b> 1283     1137       Sulfur     ppm     ASTM D5185m     2060 <b>3300</b> 2987     2580       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >20     16     2     <1       INFRA-RED     method	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum     ppm     ASTM D5185m     60     75     63     55       Manganese     ppm     ASTM D5185m     0     2     <1							
Maganese     ppm     ASTM D5185m     0     2     <1     0       Magnesium     ppm     ASTM D5185m     1010     1097     943     864       Calcium     ppm     ASTM D5185m     1070     1404     1194     1006       Phosphorus     ppm     ASTM D5185m     1070     1404     1194     1006       Phosphorus     ppm     ASTM D5185m     1150     1308     1109     948       Zinc     ppm     ASTM D5185m     1270     1528     1283     1137       Sulfur     ppm     ASTM D5185m     2060     3300     2987     2580       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >20     16     2     <1	Boron	ppm	ASTM D5185m	0	2	4	0
Magnesium     ppm     ASTM D5185m     1010     1097     943     864       Calcium     ppm     ASTM D5185m     1070     1404     1194     1006       Phosphorus     ppm     ASTM D5185m     1070     1404     1194     1006       Phosphorus     ppm     ASTM D5185m     1150     1308     1109     948       Zinc     ppm     ASTM D5185m     1270     1528     1283     1137       Sulfur     ppm     ASTM D5185m     2060     3300     2987     2580       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >25     49     7     3       Sodium     ppm     ASTM D5185m     >20     16     2     <1							
Calcium     ppm     ASTM D5185m     1070     1404     1194     1006       Phosphorus     ppm     ASTM D5185m     1150     1308     1109     948       Zinc     ppm     ASTM D5185m     1270     1528     1283     1137       Sulfur     ppm     ASTM D5185m     2060     3300     2987     2580       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >25     49     7     3       Sodium     ppm     ASTM D5185m     >25     49     7     3       Sodium     ppm     ASTM D5185m     >20     16     2     <1	Barium	ppm	ASTM D5185m	0	0	0	0
Phosphorus     ppm     ASTM D5185m     1150     1308     1109     948       Zinc     ppm     ASTM D5185m     1270     1528     1283     1137       Sulfur     ppm     ASTM D5185m     2060     3300     2987     2580       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >25     499     7     3       Sodium     ppm     ASTM D5185m     >25     499     7     3       Sodium     ppm     ASTM D5185m     >20     16     2     <1	Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	0 60	0 75	0 63	0 55
Zinc     ppm     ASTM D5185m     1270     1528     1283     1137       Sulfur     ppm     ASTM D5185m     2060     3300     2987     2580       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >25     49     7     3       Sodium     ppm     ASTM D5185m     >25     49     7     3       Sodium     ppm     ASTM D5185m     >20     16     2     <1	Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0	0 75 2	0 63 <1	0 55 0
SulfurppmASTM D5185m2060330029872580CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>25<	Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010	0 75 2 1097	0 63 <1 943	0 55 0 864
CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>25▲ 4973SodiumppmASTM D5185m2340PotassiumppmASTM D5185m>20162<1	Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070	0 75 2 1097 1404	0 63 <1 943 1194	0 55 0 864 1006
Silicon   ppm   ASTM D5185m   >25   ▲ 49   7   3     Sodium   ppm   ASTM D5185m   23   4   0     Potassium   ppm   ASTM D5185m   >20   16   2   <1	Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150	0 75 2 1097 1404 1308	0 63 <1 943 1194 1109	0 55 0 864 1006 948
Sodium     ppm     ASTM D5185m     23     4     0       Potassium     ppm     ASTM D5185m     >20     16     2     <1       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7844     >3     1     0.5     0.5       Nitration     Abs/cm     *ASTM D7624     >20     12.7     8.8     8.4       Sulfation     Abs/.1mm     *ASTM D7415     >30     27.2     19.5     19.9       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     20.7     15.8     15.0	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270	0 75 2 1097 1404 1308 1528	0 63 <1 943 1194 1109 1283	0 55 0 864 1006 948 1137
Potassium     ppm     ASTM D5185m     >20     16     2     <1	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060	0 75 2 1097 1404 1308 1528 3300	0 63 <1 943 1194 1109 1283 2987	0 55 0 864 1006 948 1137 2580
Potassium     ppm     ASTM D5185m     >20     16     2     <1       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7844     >3     1     0.5     0.5       Nitration     Abs/cm     *ASTM D7624     >20     12.7     8.8     8.4       Sulfation     Abs/.1mm     *ASTM D7415     >30     27.2     19.5     19.9       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     20.7     15.8     15.0	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base	0 75 2 1097 1404 1308 1528 3300 current	0 63 <1 943 1194 1109 1283 2987 history1	0 55 0 864 1006 948 1137 2580 history2
Soot %     %     *ASTM D7844     >3     1     0.5     0.5       Nitration     Abs/cm     *ASTM D7624     >20     12.7     8.8     8.4       Sulfation     Abs/.1mm     *ASTM D7415     >30     27.2     19.5     19.9       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     20.7     15.8     15.0	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base	0 75 2 1097 1404 1308 1528 3300 current ▲ 49	0 63 <1 943 1194 1109 1283 2987 history1 7	0 55 0 864 1006 948 1137 2580 history2 3
Nitration     Abs/cm     *ASTM D7624     >20     12.7     8.8     8.4       Sulfation     Abs/.1mm     *ASTM D7415     >30     27.2     19.5     19.9       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     20.7     15.8     15.0	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25	0 75 2 1097 1404 1308 1528 3300 current ▲ 49 23	0 63 <1 943 1194 1109 1283 2987 history1 7 4	0 55 0 864 1006 948 1137 2580 history2 3 0
Nitration     Abs/cm     *ASTM D7624     >20     12.7     8.8     8.4       Sulfation     Abs/.1mm     *ASTM D7415     >30     27.2     19.5     19.9       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     20.7     15.8     15.0	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25	0 75 2 1097 1404 1308 1528 3300 <u>current</u> ▲ 49 23 16	0 63 <1 943 1194 1109 1283 2987 history1 7 4 2	0 55 0 864 1006 948 1137 2580 history2 3 0 <1
Sulfation     Abs/.1mm     *ASTM D7415     >30     27.2     19.5     19.9       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     20.7     15.8     15.0	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	0 75 2 1097 1404 1308 1528 3300 current 49 23 16 current	0 63 <1 943 1194 1109 1283 2987 history1 7 4 2 2 history1	0 55 0 864 1006 948 1137 2580 history2 3 0 <1 history2
Oxidation Abs/.1mm *ASTM D7414 >25 20.7 15.8 15.0	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3	0 75 2 1097 1404 1308 1528 3300 current ▲ 49 23 16 current 1	0 63 <1 943 1194 1109 1283 2987 history1 7 4 2 2 history1 0.5	0 55 0 864 1006 948 1137 2580 history2 3 0 <1 history2 0.5
Oxidation     Abs/.1mm     *ASTM D7414     >25     20.7     15.8     15.0	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20	0 75 2 1097 1404 1308 1528 3300 current ▲ 49 23 16 23 16 current 1 12.7	0 63 <1 943 1194 1109 1283 2987 history1 7 4 2 history1 0.5 8.8	0 55 0 864 1006 948 1137 2580 history2 3 0 <1 history2 0.5 8.4
	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20 >30	0 75 2 1097 1404 1308 1528 3300 current 49 23 16 23 16 current 1 12.7 27.2	0 63 <1 943 1194 1109 1283 2987 history1 7 4 2 history1 0.5 8.8 19.5	0 55 0 864 1006 948 1137 2580 history2 3 0 <1 history2 0.5 8.4 19.9
	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAI	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 60 0 1010 1070 1150 1270 2060 limit/base >25 	0 75 2 1097 1404 1308 1528 3300 current ▲ 49 23 16 23 16 current 1 12.7 27.2 current	0 63 <1 943 1194 1109 1283 2987 history1 7 4 2 history1 0.5 8.8 19.5 history1	0 55 0 864 1006 948 1137 2580 history2 3 0 <1 history2 0.5 8.4 19.9 history2
	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAI Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 60 0 1010 1070 1150 1270 2060 imit/base >25 · >20 imit/base >3 >20 >30 imit/base >3	0 75 2 1097 1404 1308 1528 3300 current 49 23 16 current 1 12.7 27.2 current 20.7	0 63 <1 943 1194 1109 1283 2987 history1 7 4 2 history1 0.5 8.8 19.5 history1 15.8	0 55 0 864 1006 948 1137 2580 history2 3 0 <1 history2 0.5 8.4 19.9 history2 15.0



# **OIL ANALYSIS REPORT**



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Contact:

T:

F:

Apr6/23

history2

history

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