

OIL ANALYSIS REPORT

Sample Rating Trend

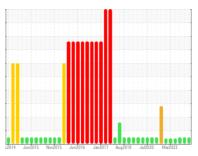
NORMAL



KEMP QUARRIES / RIVER VALLEY ARKOMA **WL062**

Component **Front Differential**

MOBIL MOBILTRANS HD 50 (--- GAL)





DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

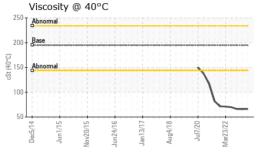
Fluid Condition

The condition of the oil is acceptable for the time in service.

Client Info	1D 50 (GAL)		c2014 Jun20	15 Nov2015 Jun2016	Jan2017 Aug2018 Jul2020 I	Mar2022	
Client Info	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 1500 48815 24267 242	Sample Number		Client Info		PCA0084237	PCA0070343	PCA007038
Dil Age	Sample Date		Client Info		04 Aug 2023	21 Apr 2023	03 Jan 2023
Coli Changed Client Info Not Changed NORMAL NOR	Machine Age	hrs	Client Info		25405	24885	24267
NORMAL NORMAL NORMAL NORMAL WEAR METALS method limit/base current history1 history1 history2 history3 cron ppm ASTM D5185m >3 2 3 3 2 2 3 3 2 3 2 3 2 3 2 3 3	Oil Age	hrs	Client Info		1500	48315	24267
WEAR METALS method limit/base current history1 history1 ron ppm ASTM D5185m >500 83 70 68 Chromium ppm ASTM D5185m >3 2 3 2 Nickel ppm ASTM D5185m >3 <1	Oil Changed		Client Info		Not Changd	Not Changd	Changed
Chromium	Sample Status				NORMAL	NORMAL	NORMAL
ASTM D5185m S3 2 3 2 2 3 2 2 3 2 2	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>500	83	70	68
Description	Chromium	ppm	ASTM D5185m	>3	2	3	2
Silver	Nickel	ppm	ASTM D5185m	>3	<1	<1	0
ASTM D5185m >2	Titanium	ppm	ASTM D5185m	>2	0	<1	0
Astronomic Ast	Silver		ASTM D5185m	>2	0	0	0
December Part Par	Aluminum	ppm	ASTM D5185m	>30	2	0	1
Description					11	10	8
ASTM D5185m STM D5185m ST	Copper						
Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barrium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m <1 1 2 Magnesium ppm ASTM D5185m 7 11 16 Calcium ppm ASTM D5185m 87 91 134 Phosphorus ppm ASTM D5185m 387 367 371 Zinc ppm ASTM D5185m 444 458 443 Sulfur ppm ASTM D5185m >1640 1671 1300 CONTAMINANTS method limit/base current history1 history1 Billicon ppm ASTM D5185m >10							
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m <1							
Boron ppm ASTM D5185m 0							
Starium	ADDITIVES		method	limit/base	current	history1	history
Molybdenum ppm ASTM D5185m <1 1 2 Manganese ppm ASTM D5185m <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	Boron	ppm	ASTM D5185m		0	0	0
Manganese ppm ASTM D5185m <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <td>Barium</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <td>0</td> <td>0</td> <td>0</td>	Barium	ppm	ASTM D5185m		0	0	0
Manganese ppm ASTM D5185m <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <td>Molybdenum</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <td><1</td> <td>1</td> <td>2</td>	Molybdenum	ppm	ASTM D5185m		<1	1	2
Magnesium ppm ASTM D5185m 7 11 16 Calcium ppm ASTM D5185m 87 91 134 Phosphorus ppm ASTM D5185m 387 367 371 Zinc ppm ASTM D5185m 444 458 443 Sulfur ppm ASTM D5185m 1640 1671 1300 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >100 5 5 6 Sodium ppm ASTM D5185m >100 5 5 6 Sodium ppm ASTM D5185m >20 0 <1	Manganese	ppm	ASTM D5185m		<1	<1	<1
Calcium ppm ASTM D5185m 87 91 134 Phosphorus ppm ASTM D5185m 387 367 371 Zinc ppm ASTM D5185m 444 458 443 Sulfur ppm ASTM D5185m 1640 1671 1300 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >100 5 5 6 Sodium ppm ASTM D5185m >100 5 5 6 Sodium ppm ASTM D5185m >20 0 <1	Magnesium	ppm	ASTM D5185m		7	11	16
Phosphorus ppm ASTM D5185m 387 367 371 Zinc ppm ASTM D5185m 444 458 443 Sulfur ppm ASTM D5185m 1640 1671 1300 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >100 5 5 6 Sodium ppm ASTM D5185m >20 0 <1	Calcium		ASTM D5185m		87	91	134
Zinc ppm ASTM D5185m 444 458 443 Sulfur ppm ASTM D5185m 1640 1671 1300 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >100 5 5 6 Sodium ppm ASTM D5185m >20 0 <1	Phosphorus		ASTM D5185m		387	367	371
Sulfur ppm ASTM D5185m 1640 1671 1300 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >100 5 5 6 Sodium ppm ASTM D5185m >100 5 5 6 Sodium ppm ASTM D5185m >20 0 <1 1 Potassium ppm ASTM D5185m >20 0 <1 1 VISUAL method limit/base current history1 history1 White Metal scalar *Visual NONE NONE NONE NONE Precipitate scalar *Visual NONE NONE	•		ASTM D5185m		444	458	443
Silicon ppm ASTM D5185m >100 5 5 6 Sodium ppm ASTM D5185m <1 1 1 1 Potassium ppm ASTM D5185m >20 0 <1 0 VISUAL method limit/base current history1 history1 White Metal scalar *Visual NONE NONE NONE NONE MODER Precipitate scalar *Visual NONE NONE NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE NONE NONE NONE NON					1640		
Sodium ppm ASTM D5185m	CONTAMINAN	TS	method	limit/base	current	history1	history?
Potassium ppm ASTM D5185m >20 0 <1 0 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE MODER MODER Precipitate scalar *Visual NONE NONE NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE NONE Debris scalar *Visual NONE NONE NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE NONE Appearance scalar *Visual NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML Ddor scalar *Visual NORML NORML NORML NORML Emulsified Water scalar *Visual >.2 NEG NEG NEG FLUID PROPERTIES method limit/base current history1 history3	Silicon	ppm	ASTM D5185m	>100	5	5	6
VISUAL Metal scalar *Visual NONE NONE NONE NONE NONE Yellow Metal scalar *Visual NONE NONE MODER Moder None Moder Moder Moder Moder Moder Precipitate scalar *Visual NONE NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE NONE Debris scalar *Visual NONE NONE NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE NONE Appearance scalar *Visual NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML NORML Didor scalar *Visual NORML NORML NORML NORML Emulsified Water scalar *Visual >.2 NEG NEG NEG Free Water scalar *Visual NEG NEG NEG FLUID PROPERTIES method limit/base current history1 history:	Sodium	ppm	ASTM D5185m		<1	1	1
Mhite Metal scalar *Visual NONE NONE NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE NONE Debris scalar *Visual NONE NONE NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE NONE Appearance scalar *Visual NONE NONE NONE NONE NONE Dodor scalar *Visual NORML NORML NORML NORML NORML Dodor scalar *Visual NORML NORML NORML NORML Emulsified Water scalar *Visual >.2 NEG NEG NEG FLUID PROPERTIES method limit/base current history1 history:	Potassium	ppm	ASTM D5185m	>20	0	<1	0
Yellow Metalscalar*VisualNONENONEMODERMODERPrecipitatescalar*VisualNONENONENONENONESiltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLDdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>.2NEGNEGNEGFree Waterscalar*VisualNEGNEGNEGFLUID PROPERTIESmethodlimit/basecurrenthistory1history1	VISUAL		method	limit/base	current	history1	history;
Precipitate scalar *Visual NONE 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 NORML Ddor scalar *Visual NORML NORML NORML NORML NORML Emulsified Water scalar *Visual >.2 NEG NEG NEG Free Water scalar *Visual NEG NEG NEG FLUID PROPERTIES method limit/base current history1 history2	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silt scalar *Visual NONE 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 NORML Ddor scalar *Visual NORML NORML NORML NORML NORML Emulsified Water scalar *Visual >.2 NEG NEG NEG Free Water scalar *Visual NEG NEG NEG FLUID PROPERTIES method limit/base current history1 history2	Yellow Metal	scalar	*Visual	NONE	NONE	MODER	MODER
Debris scalar *Visual NONE NONE NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML NORML Ddor scalar *Visual NORML NORML NORML NORML NORML Emulsified Water scalar *Visual >.2 NEG NEG NEG Free Water scalar *Visual NEG NEG NEG FLUID PROPERTIES method limit/base current history1 history2	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt scalar *Visual NONE NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML NORML Emulsified Water scalar *Visual >.2 NEG NEG NEG Free Water scalar *Visual NEG NEG NEG Free Water scalar *Visual Scalar NEG	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance scalar *Visual NORML NORM	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Odor scalar *Visual NORML NORML NORML NORML NORML Emulsified Water scalar *Visual >.2 NEG NEG NEG Free Water scalar *Visual NEG NEG NEG FLUID PROPERTIES method limit/base current history1 history2	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Emulsified Water scalar *Visual >.2 NEG NEG NEG NEG Free Water scalar *Visual NEG NEG NEG NEG FLUID PROPERTIES method limit/base current history1 history1	Appearance	scalar	*Visual	NORML	NORML	NORML	
Emulsified Water scalar *Visual >.2 NEG NEG NEG NEG Free Water scalar *Visual NEG NEG NEG NEG FLUID PROPERTIES method limit/base current history1 history1	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Free Water scalar *Visual NEG NEG NEG FLUID PROPERTIES method limit/base current history1 history2	Emulsified Water						
·	Free Water						
Visc @ 40°C	FLUID PROPE	RTIES	method	limit/base	current	history1	history2
	Visc @ 40°C	cSt	ASTM D445	195	66.3	66.1	66.3



OIL ANALYSIS REPORT



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

GRAPHS												
Iron (ppm)					Lea	ad (ppi	n)					
Severe					30 J Sev	ere						
					20							
Abnormal	1				E	normal						
Λ	~	1			10							
1_		h	_		5-							
5 5	9		V.	${}$	0	- 2	- LS	9	-	-	<u>'\</u>	\
Jun1/15	Jun24/16 Jan13/17	Aug4/18	Jul7/20	Mar23/22	Dec5/14	Jun1/15	Vov20/15	Jun24/16	Jan 13/17	Aug4/18	Jul7/20	
Aluminum (pp				2	Ch	romiur	_		,			
Severe	22222	111711			7 Sev							11
					5							
Abnormal					E 4 Abr	10000000000000000000000000000000000000						
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	10		7 0z	722	0 1 1	150	22	91		100		+
Dec5/14 Jun1/15 Nov20/15	Jun24/16 Jan13/17	Aug4/18	Jul7/20	Mar23/22	Dec5/14	Jun1/15	Nov20/15	Jun24/16	Jan 13/17	Aug4/18	Jul7/20	
Copper (ppm)				_	Sili	con (p		,				
Severe					200 - Sev							
					150							
Abnormal					톱 100 - Abr	normal						
				/								
					50							
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Jun1/15	Jun24/16	Aug4/18	Jul7/20	Mar23/22	Dec5/14	Jun1/15	Nov20/15	Jun24/16	Jan13/17	Aug4/18	Jul7/20	_
Viscosity @ 40	7 ,	Aug4/18	Jul7/20	Mar23/22	PA Dec5/14	ditives	Nov20/15	Jun24/16	Jan13/17-	Aug4/18	Jul7/20	_
2		Aug4/18	Jul7/20	Mar23/22	Ad	ditives	sium	Jun24/16	Jan13/17	Aug4/18	Jul7/20	
Viscosity @ 40		Aug4/18	Jul7/20	Mar23/22	Ad 4000 3500 3000	ditives		Jun24/16	Jan13/17	Aug4/18	Jul7/20	
Viscosity @ 40		Aug4/18	Jul7/20	Mar23/22	Ad 4000 3500 3000 2500	ditives	sium	Jun24/16-	Jan13/17-	Aug4/18 -	Jul7/20	
Viscosity @ 40		Aug4/18	July/20	Mar23/22	Ad 4000 3500 2500 E 2000 1500	ditives	sium	Jun24/16	Jan13/17-	Aug4/18 -	Jul7/20	
Viscosity @ 40		Aug4/18	Jul720	Mar23/22	Ad 4000 3500 3000 2500	ditives	sium	Jun24/16-	Jan13/17		Jul7/20	



Certificate L2367

Laboratory Sample No. Lab Number Unique Number : 10592288 Test Package : MOB 1

: 05920374

: PCA0084237

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 09 Aug 2023 Diagnosed : 10 Aug 2023 Diagnostician : Sean Felton

Kemp Quarries - River Valley - Arkoma 12971 HWY 9a

Shawnee, OK US 74804 Contact:

To discuss this sample report, contact Customer Service at 1-800-237-1369.

arkomashop@kempquarries.net

* - 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)

T:

F: