

# **OIL ANALYSIS REPORT**

Sample Rating Trend



Area KEMP QUARRIES / RIVER VALLEY BACKBONE WL147 Component Front Left Final Drive Fluid

TDTO FLUID SAE 50 (--- GAL)

## DIAGNOSIS

Recommendation

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.

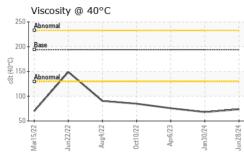
## Fluid Condition

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

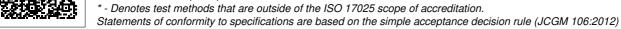
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0108591	PCA0069948	PCA0085828
Sample Date		Client Info		28 Jun 2024	30 Jan 2024	06 Apr 2023
Machine Age	hrs	Client Info		29928	29627	28770
Oil Age	hrs	Client Info		301	1200	345
Oil Changed		Client Info		Not Changd	Changed	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG	NEG	NEG
WEAR METAL	_S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>800	32	7	11
Chromium	ppm	ASTM D5185m	>10	0	<1	0
Nickel	ppm	ASTM D5185m	>5	0	0	0
Titanium	ppm	ASTM D5185m	>15	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>75	<1	2	<1
Lead	ppm	ASTM D5185m	>10	0	0	0
Copper	ppm	ASTM D5185m	>75	1	1	1
Tin	ppm	ASTM D5185m	>8	0	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	37	1	<1	0
Barium	ppm	ASTM D5185m	7	0	5	0
Molybdenum	ppm	ASTM D5185m	5	3	5	2
				.4	0	
Manganese	ppm	ASTM D5185m		<1	0	<1
Magnesium	ppm ppm	ASTM D5185m	40	43	89	18
Magnesium Calcium			40 2650			18 566
Magnesium Calcium Phosphorus	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2650 1050	43 635 466	89 191 402	18 566 440
Magnesium Calcium Phosphorus Zinc	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2650 1050 1075	43 635 466 568	89 191 402 517	18 566 440 595
Magnesium Calcium Phosphorus	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2650 1050	43 635 466	89 191 402	18 566 440
Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2650 1050 1075	43 635 466 568	89 191 402 517	18 566 440 595
Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2650 1050 1075 5750	43 635 466 568 1717	89 191 402 517 1069	18 566 440 595 1967
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	2650 1050 1075 5750 limit/base	43 635 466 568 1717 current	89 191 402 517 1069 history1	18 566 440 595 1967 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ypm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	2650 1050 1075 5750 limit/base >400	43 635 466 568 1717 current 5	89 191 402 517 1069 history1 0	18 566 440 595 1967 history2 2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm VTS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2650 1050 1075 5750 limit/base >400	43 635 466 568 1717 current 5 1	89 191 402 517 1069 history1 0 0	18 566 440 595 1967 history2 2 0
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm VTS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m	2650 1050 1075 5750 limit/base >400 >20	43 635 466 568 1717 current 5 1 0	89 191 402 517 1069 history1 0 0 1	18 566 440 595 1967 history2 2 0 0
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL	ppm ppm ppm ppm ppm ppm VTS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2650 1050 1075 5750 limit/base >400 >20 limit/base	43 635 466 568 1717 current 5 1 0 current	89 191 402 517 1069 history1 0 0 1 1 history1	18 566 440 595 1967 history2 2 0 0 0 0
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAM Silicon Sodium Potassium VISUAL White Metal	ppm ppm ppm ppm ppm vTS ppm ppm ppm scalar	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> *Visual	2650 1050 1075 5750 limit/base >400 >20 limit/base NONE	43 635 466 568 1717 current 5 1 0 current NONE	89 191 402 517 1069 history1 0 0 0 1 1 history1 NONE	18 566 440 595 1967 history2 2 0 0 0 0 history2 MODER
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal	ppm ppm ppm ppm ppm vTS ppm ppm ppm scalar scalar	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> *Visual	2650 1050 1075 5750 limit/base >400 >20 limit/base NONE NONE	43 635 466 568 1717 current 5 1 0 current NONE NONE	89 191 402 517 1069 history1 0 0 0 1 1 history1 NONE NONE	18 566 440 595 1967 history2 2 0 0 0 history2 MODER NONE
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate	ppm ppm ppm ppm ppm vTS ppm ppm ppm scalar scalar scalar	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Visual *Visual *Visual	2650 1050 1075 5750 <b>limit/base</b> >400 >20 <b>limit/base</b> NONE NONE NONE NONE	43 635 466 568 1717 current 5 1 0 current NONE NONE NONE NONE	89 191 402 517 1069 history1 0 0 0 1 1 history1 NONE NONE NONE	18 566 440 595 1967 history2 2 0 0 0 history2 MODER NONE NONE
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt	ppm ppm ppm ppm ppm ppm vTS ppm ppm ppm ppm scalar scalar scalar scalar	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m XASTM D5185m •Visual *Visual *Visual *Visual	2650 1050 1075 5750 <b>Iinit/base</b> >400 >20 <b>Iinit/base</b> NONE NONE NONE NONE	43 635 466 568 1717 current 5 1 0 current NONE NONE NONE NONE	89 191 402 517 1069 history1 0 0 0 1 1 history1 NONE NONE NONE NONE	18 566 440 595 1967 <b>history2</b> 2 0 0 0 <b>history2</b> MODER NONE NONE NONE
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt Debris	ppm ppm ppm ppm ppm ppm ppm ppm ppm scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m XSTM D5185m *Visual *Visual *Visual *Visual *Visual	2650 1050 1075 5750 <b>Imit/base</b> >400 >20 <b>Imit/base</b> NONE NONE NONE NONE NONE NONE NONE	43 635 466 568 1717 current 5 1 0 current 0 current NONE NONE NONE NONE NONE NONE	89 191 402 517 1069 history1 0 0 0 1 1 history1 NONE NONE NONE NONE NONE NONE	18 566 440 595 1967 <b>history2</b> 2 0 0 0 0 <b>history2</b> MODER NONE NONE NONE NONE NONE
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal Yellow Metal Precipitate Silt Debris Sand/Dirt	ppm ppm ppm ppm ppm ppm vTS ppm ppm ppm scalar scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual	2650 1050 1075 5750 <b>Imit/base</b> >400 >20 <b>Imit/base</b> NONE NONE NONE NONE NONE NONE NONE NON	43 635 466 568 1717 <b>current</b> 5 1 0 <b>current</b> NONE NONE NONE NONE NONE NONE NONE	89 191 402 517 1069 history1 0 0 0 1 1 <u>history1</u> NONE NONE NONE NONE NONE NONE NONE	18 566 440 595 1967 <b>history2</b> 2 0 0 0 <b>history2</b> MODER NONE NONE NONE NONE NONE NONE
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance	ppm ppm ppm ppm ppm ppm vTS ppm ppm ppm scalar scalar scalar scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual	2650 1050 1075 5750 <b>Imit/base</b> >400 >20 <b>Imit/base</b> NONE NONE NONE NONE NONE NONE NONE NON	43 635 466 568 1717 <b>current</b> 5 1 0 <b>current</b> NONE NONE NONE NONE NONE NONE NONE NON	89 191 402 517 1069 history1 0 0 0 1 1 history1 NONE NONE NONE NONE NONE NONE NONE NON	18 566 440 595 1967 <b>history2</b> 2 0 0 0 <b>history2</b> MODER NONE NONE NONE NONE NONE NONE NONE NO
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance Odor	ppm ppm ppm ppm ppm ppm ppm ppm ppm scalar scalar scalar scalar scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual	2650 1050 1075 5750 <b>Imit/base</b> >400 >20 <b>Imit/base</b> NONE NONE NONE NONE NONE NONE NONE NON	43 635 466 568 1717 <b>current</b> 5 1 0 <b>current</b> NONE NONE NONE NONE NONE NONE NONE NON	89 191 402 517 1069 history1 0 0 0 1 history1 NONE	18 566 440 595 1967 <b>history2</b> 2 0 0 0 <b>history2</b> MODER NONE NONE NONE NONE NONE NONE NONE NO



# **OIL ANALYSIS REPORT**



	FLUID PROPE	.RTIES m	ethod limit/base	current	history1	history2
	Visc @ 40°C	cSt AST	M D445 194	73.7	67.9	75.8
	SAMPLE IMAC	GES m	ethod limit/base	current	history1	history2
6 4 4	Color			no image	no image	no image
Apr6/23 Jan30/24	Bottom			no image	no image	no image
	GRAPHS					
	Iron (ppm)			Lead (ppm)		
	1500 Severe			25 - Severe		
	E 1000		ud d	20-		
				0 Abnormal		
	500-			5		
	Mar15/22 Jun22/22 - Aug4/22 -	0ct10/22 - Apr6/23 -	Jan30/24 - Jun28/24 -	Mar15/22	Aug4/22 - 0ct10/22 - Δnr6/23	Jan 30/24 -
	툴 키 러	A Oc	Jur	툴 특 Chromium (p		Lar
	200 Severe	1 1		<sup>30</sup>	, , , , , , , , , , , , , , , , , , ,	
	150 -			25 - Severe		
	톱 100 Abnormal		und d	Abrement		
	50 -		1	0 - Abnormal 5 -		1
	22 23 0	22	24	22	22	24
	Mar15/22 Jun22/22 Aug4/22	0ct10/22 Apr6/23	Jan30/24 Jun28/24	Mar15/22 Jun22/22	Aug4/22 0ct10/22	Jan30/24
	Copper (ppm)		100	Silicon (ppm)	)	
	Severe		80	Severe		
	5 100		60 E			
	Abnormal		40			
	0		20	0		
	Mar15/22 Jun22/22 Aug4/22	0ct10/22 Apr6/23	Jan30/24 Jun28/24	Mar15/22	Aug4/22 0ct10/22	Jan 30/24
	≝	00	Ju Ja	≊ ⊰ Additives	A O A	- P
	250 Abnormal		300	<sup>00</sup> T	1	
	200 - <b>Base</b>		250	phosphoi	rus	
	(Jo 0 150 Abnormal		툍 15(			
	100		100	1 Present		
	50 22 22 22	22	24	0 ZZ ZZ	22	24+
	Mar15/22 Jun22/22 Aug4/22	0ct10/22 Apr6/23	Jan30/24 Jun28/24	Mar15/22 Jun22/22	Aug4/22 0ct10/22	Jan30/24
Laboratory Sample No. Lab Number Unique Number Test Package	: WearCheck USA - 50 : PCA0108591 : 06230938 : 11114431	0	e., Cary, NC 27513 : 08 Jul 2024 : 10 Jul 2024	Kemp	Quarries - River Va 5	~



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