

## WEAR ABNORMAL CONTAMINATION NORMAL FLUID CONDITION NORMAL



## BELL B45E B93A645EP03408183

Component Center Differential

GEAR OIL SAE 80W90 (--- GAL)

RECOMMENDATION

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor.

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High concentration of visible metal present. 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.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		BE0018052		
Sample Date		Client Info		07 Feb 2024		
Machine Age	hrs	Client Info		2016		
Oil Age	hrs	Client Info		0		
Filter Age	hrs	Client Info		0		
Oil Changed		Client Info		Changed		
Filter Changed		Client Info		Changed		
Sample Status				ABNORMAL		
PQ		ASTM D8184	>3000	1135		
Iron	ppm	ASTM D5185m	>HR:1=	380		
Chromium	ppm	ASTM D5185m	>10	2		
Nickel	ppm	ASTM D5185m	>10	3		
Titanium	ppm	ASTM D5185m		0		
Silver	ppm	ASTM D5185m		0		
Aluminum	ppm	ASTM D5185m	>25	4		
Lead	ppm	ASTM D5185m	>25	<1		
Copper	ppm	ASTM D5185m	>100	6		
Tin	ppm	ASTM D5185m	>10	0		
Vanadium	ppm	ASTM D5185m		0		
White Metal	scalar	*Visual	NONE	A HEAVY		
Yellow Metal	scalar	*Visual	NONE	NONE		
Silicon	ppm	ASTM D5185m	>201	55		
Potassium	ppm ppm	ASTM D5185m	>20	3		
Potassium Water	ppm	ASTM D5185m WC Method	>20 >1.01	3 NEG		
Potassium		ASTM D5185m	>20	3		
Potassium Water Silt Debris	ppm scalar scalar	ASTM D5185m WC Method *Visual *Visual	>20 >1.01 NONE NONE	3 NEG NONE NONE		
Potassium Water Silt	ppm scalar	ASTM D5185m WC Method *Visual	>20 >1.01 NONE NONE NONE	3 NEG NONE		
Potassium Water Silt Debris	ppm scalar scalar	ASTM D5185m WC Method *Visual *Visual	>20 >1.01 NONE NONE	3 NEG NONE NONE		
Potassium Water Silt Debris Sand/Dirt	ppm scalar scalar scalar	ASTM D5185m WC Method *Visual *Visual *Visual	>20 >1.01 NONE NONE NONE	3 NEG NONE NONE NONE		  
Potassium Water Silt Debris Sand/Dirt Appearance	ppm scalar scalar scalar scalar	ASTM D5185m WC Method *Visual *Visual *Visual *Visual	>20 >1.01 NONE NONE NONE	3 NEG NONE NONE NONE NORML	   	   
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water	ppm scalar scalar scalar scalar scalar	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual	>20 >1.01 NONE NONE NORML NORML >1.01	3 NEG NONE NONE NORML NORML NEG		
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium	ppm scalar scalar scalar scalar scalar scalar	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m	>20 >1.01 NONE NONE NORML NORML >1.01	3 NEG NONE NONE NORML NORML NEG		
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron	ppm scalar scalar scalar scalar scalar scalar ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m	>20 >1.01 NONE NONE NORML >1.01 >170 400	3 NEG NONE NONE NORML NORML NEG <1 3		
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium	ppm scalar scalar scalar scalar scalar scalar ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m	>20 >1.01 NONE NONE NORML NORML >1.01 >170 400 200	3 NEG NONE NONE NORML NORML NEG <1 3 0		
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum	ppm scalar scalar scalar scalar scalar ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m	>20 >1.01 NONE NONE NORML >1.01 >170 400	3 NEG NONE NONE NORML NORML NEG <1 3 0 2		
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese	ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >1.01 NONE NONE NORML >1.01 >170 400 200 12	3 NEG NONE NONE NORML NORML NEG <1 3 0 2 8		
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium	ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >1.01 NONE NONE NORML NORML >1.01 >170 400 200 12	3 NEG NONE NONE NORML NORML NEG <1 3 0 2 8 8 18		
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Malybdenum Manganese Magnesium Calcium	ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >1.01 NONE NONE NORML NORML >1.01 >170 400 200 12 12	3 NEG NONE NONE NORML NORML NEG <1 3 0 2 8 18 93		
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium	ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >1.01 NONE NONE NORML >1.01 >1.01 200 200 12 12 150 1650	3 NEG NONE NONE NORML NORML NEG <1 3 0 2 8 1 8 18 93 462		Image: select
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >1.01 NONE NONE NORML >1.01 >1.01 200 12 12 12 150 1650 125	3 NEG NONE NONE NORML NORML NEG <1 3 0 2 8 18 93 462 64		
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium	ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >1.01 NONE NONE NORML >1.01 >1.01 200 200 12 12 150 1650	3 NEG NONE NONE NORML NORML NEG <1 3 0 2 8 1 8 18 93 462		Image: select





