

## **OIL ANALYSIS REPORT**

### COLORADO/443/EG - EXCAVATOR 20.23W [COLORADO^443^EG - EXCAVATOR] Component

**Hydraulic System** 

### MOBIL MOBILTRANS AST 30 (--- GAL)

#### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

#### Contamination

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

#### Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.





NORMAL

Sample Rating Trend

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2		
Sample Number	nple Number			WC0859615	WC0750001	WC0672123		
Sample Date		Client Info		20 Nov 2023	10 Nov 2022	03 Mar 2022		
Machine Age	hrs	Client Info		9587	9145	8699		
Oil Age	hrs	Client Info		8216	8394	516		
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd		
Sample Status				NORMAL	NORMAL	NORMAL		
CONTAMINATION	N	method	limit/base	current	history1	history2		
Water	•		0.1			NEC		
Vater		WC Method	>0.1	NEG	NEG	NEG		
WEAR METALS		method	limit/base	current	history1	history2		
Iron	ppm	ASTM D5185m	>20	15	14	13		
Chromium	ppm	ASTM D5185m	>10	<1	0	<1		
Nickel	ppm	ASTM D5185m	>10	0	0	0		
Titanium	ppm	ASTM D5185m		<1	<1	<1		
Silver	ppm	ASTM D5185m		0	2	<1		
Aluminum	ppm	ASTM D5185m	>10	3	3	3		
Lead	ppm	ASTM D5185m	>10	0	<1	<1		
Copper	ppm	ASTM D5185m	>75	3	2	2		
Tin	ppm	ASTM D5185m	>10	0	0	0		
Antimony	ppm	ASTM D5185m				0		
Vanadium	ppm	ASTM D5185m		<1	0	0		
Cadmium	ppm	ASTM D5185m		0	0	<1		
ADDITIVES		method	limit/base	current	history1	history2		
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 33	history1 34	history2 33		
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	limit/base	current 33 0	history1 34 0	history2 33 0		
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 33 0 0	history1 34 0 <1	history2 33 0 <1		
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 33 0 0 <1	history1 34 0 <1 <1	history2 33 0 <1 <1		
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current     33     0	history1 34 0 <1 <1 30	history2 33 0 <1 <1 <1 34		
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current     33     0	history1 34 0 <1 <1 30 3191	history2 33 0 <1 <1 <1 34 3095		
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current     33     0     20     <1     25     2914     977	history1 34 0 <1 <1 30 3191 1016	history2 33 0 <1 <1 34 3095 1047		
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current     33     0     21     25     2914     977     1218	history1     34     0     <1     30     3191     1016     1248	history2 33 0 <1 <1 34 3095 1047 1297		
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current     33     0	history1     34     0     <1     <1     30     3191     1016     1248     5917	history2 33 0 <1 <1 34 3095 1047 1297 4631		
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current     33     0     0     <1     25     2914     977     1218     4786     current	history1   34   0   <1   30   3191   1016   1248   5917   history1	history2 33 0 <1 <1 34 3095 1047 1297 4631 history2		
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	method     ASTM D5185m	limit/base	current     33     0     0     <1     25     2914     977     1218     4786     current     12	history1   34   0   <1   <1   30   3191   1016   1248   5917   history1   8	history2   33   0   <1   <1   34   3095   1047   1297   4631   history2   8		
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	method     ASTM D5185m	limit/base limit/base >20	current     33     0     0     <1     25     2914     977     1218     4786     current     12     5	history1   34   0   <1   <1   30   3191   1016   1248   5917   history1   8   0	history2   33   0   <1   <1   34   3095   1047   1297   4631   history2   8   2		
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method     ASTM D5185m	limit/base	current     33     0     0     <1     25     2914     977     1218     4786     current     12     5     0	history1     34     0     <1     <1     30     3191     1016     1248     5917     history1     8     0     3	history2   33   0   <1   <1   34   3095   1047   1297   4631   history2   8   2   2		
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method     ASTM D5185m	limit/base	current   33   0   -0   <1   25   2914   977   1218   4786   current   12   5   0   current   12   5   0   current	history1   34   0   <1   <1   30   3191   1016   1248   5917   history1   8   0   3   history1	history2   33   0   <1   <1   34   3095   1047   1297   4631   history2   8   2   history2		
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method     ASTM D5185m	limit/base	current     33     0     0     <1     25     2914     977     1218     4786     current     12     5     0     current     43366	history1   34   0   <1   <1   30   3191   1016   1248   5917   history1   8   0   3   history1   54391	history2   33   0   <1   <1   34   3095   1047   1297   4631   history2   8   2   2   history2   67382		
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method     ASTM D5185m	limit/base	current     33     0     -     25     2914     977     1218     4786     current     12     5     0     current     43366     55	history1   34   0   <1   30   3191   1016   1248   5917   history1   8   0   3   history1   54391   1042	history2   33   0   <1   <1   34   3095   1047   1297   4631   history2   8   2   history2   67382   222		
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm Particles >14µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method     ASTM D5185m	limit/base	current     33     0     -     25     2914     977     1218     4786     current     12     5     0     current     43366     55     5	history1   34   0   <1   30   3191   1016   1248   5917   history1   8   0   3   history1   54391   1042   86	history2   33   0   <1   <1   34   3095   1047   1297   4631   history2   8   2   history2   67382   222   16		
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method     ASTM D5185m	limit/base 	current     33     0     -     25     2914     977     1218     4786     current     12     5     0     current     43366     55     5     3	history1   34   0   <1   30   3191   1016   1248   5917   history1   8   0   3   history1   54391   1042   86   21	history2   33   0   <1   <1   34   3095   1047   1297   4631   history2   8   2   history2   67382   222   16   5		
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >4µm Particles >21µm Particles >38µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method     ASTM D5185m     ASTM D7647     ASTM D7647     ASTM D7647     ASTM D7647     ASTM D7647     ASTM D7647     ASTM D7647	limit/base	current     33     0     0     <1     25     2914     977     1218     4786     current     12     5     0     current     43366     55     5     3     1	34   0   <1   30   3191   1016   1248   5917   history1   8   0   3   history1   8   0   3   history1   8   0   3   1042   86   21   2	history2   33   0   <1   <1   34   3095   1047   1297   4631   history2   8   2   history2   67382   222   16   5   0		
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >4µm Particles >14µm Particles >38µm Particles >71µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method     ASTM D5185m     ASTM D7647     ASTM D7647	limit/base	current   33   0   21   25   2914   977   1218   4786   current   12   5   0   43366   55   3   1   0	Nistory1   34   0   <1   30   3191   1016   1248   5917   history1   8   0   3   history1   54391   1042   86   21   2   0	history2   33   0   <1   <1   34   3095   1047   1297   4631   history2   8   2   history2   67382   222   16   5   0   0		



# **OIL ANALYSIS REPORT**







FLUID DEGRADATION		method			history1	history2	
Acid Number (AN)	mg KOH/g	ASTM D8045		1.14	1.22	1.31	
VISUAL		method	limit/base	current	history1	history2	
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE	
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE	
Precipitate	scalar	*Visual	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	
Odor	scalar	*Visual	NORML	NORML	NORML	NORML	
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG	
Free Water	scalar	*Visual		NEG	NEG	NEG	
FLUID PROPERT	IES	method	limit/base	current	history1	history2	
Visc @ 40°C	cSt	ASTM D445	57.6	93.1	94.8	95.3	
SAMPLE IMAGES		method	limit/base	current	history1	history2	



Bottom





GR	APHS															
Fer	rous A	lloys						/01 E2	Par	ticle C	ount					26
_ 20	iron	1						122.88								24
10- 10-	nick	el	-	~	~		-	30.72	A							22
0			00	5				Ê 7.68								20 20
0ct8/1	vug 13/1	Jec20/1	Feb27/1	Apr3/1	Apr29/2	Jun2/2	dov20/2	La 1,92	0-	-						-18 -18
Nor	n-ferro	us Me	tals				~	salote 48	0			•				-16 Ce
<sup>10</sup>	Copy	per 🔨						d jo 12	0-	1						-14 animes
Ed 5-	in tin	1	1					amu 3	0-	-						-12 Gode
0	S	1	5		trapanti uni	and the passes			8 Sereen	nal	/					10
Jct8/13	g13/15	c20/16	b27/18	Apr3/19	or29/20	lun2/21	v20/23		2-					-		-8
Vis	rositv (	് ര 40 യ	۳ ۲	1	Aŗ	2	No		04µ	6µ	1	4μ	21µ	38µ		71µ 71µ
100 T Abn	ormal	2 10					-	(B/HO) 2.0		a Num	iber					
5 80 - <b>Ber</b>	ermal		F					Bul) 1.0	0			_	~	$\sim$	-	1
3 40-		_	-					Numbe		~						
20	3/15 -	0/16 -	7/18 +	3/19 -	9/20 +	2/21-	0/23 +	Acid 0.0	8/13+10	3/15 -	0/16 -	1/18	3/19 -	9/20 -	2/21-	0/23 +
Oct	Aug1	Dec2	Feb2	Apr	Apr2	Jun	Nov2		Oct	Aug1	Dec2	Feb2	Apr	Apr2	Jun	Nov2
·Wea	urCheck		- 501	Madis	on Av	e Ca	rv NC	2751	3	SH	FRWC		ONSTR	RUCTIO		
: WC0	085961	5	Rec	ceived	l	: 22 N	Nov 20	23	0	0.1		02 0	3219	9 WES	T MA	Y ST
: 0601	15724		Dia	gnose	ed	: 26 N	lov 20	)23						WI		4, KS
: CON	94008 IST		Dia	gnost	ician	. wes	Javi	5					Conta	act: DO	US 6 DUG I	/213 KING

Centificate 12367 **Test Package** : CONST 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)

Laboratory

Sample No. Lab Number Unique Number

Submitted By: BRANDEN JAQUIAS

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