



MAG-SHIELDS® Improve Oil Sample Results in CAT 797F After Brake Failure

The Problem

A CAT 797F off-road truck operated by an Australian mining company had a brake failure. The operator of the truck contacted BAY6 Solutions for a Mag-Shield solution. The operator had failures of this nature before and was aware that follow-on failures were common due to the difficulty in completely removing all contamination from the system.

The Solution

BAY6 Solutions provided a Mag-Shield filter. The operator installed it during repairs performed on August 5th (see chart). The Mag-Shield system is designed to remove ferrous particles from the fluid flow. This prevents the abrasive particles from continuing to circulate within the system and cause additional damage, such as scoring machined surfaces in pumps. The system was flushed according to manufacturer recommended procedures and the unit was returned to service.

The Results

During the oil sampling period after Mag-Shield installation (after 1456 hours), an immediate drop in iron particulates was observed, as was an immediate reduction in PQ levels. At the next oil sampling period, the drop in iron and PQ levels was maintained and the fluid evaluation returned with the next highest letter grade. Additionally, subsequent pump failures that were common after this type of failure and had been expected by site engineering were avoided. The success of Mag-Shield in this application reduced unit downtime and prevented expensive additional repairs.

Lab No		Label	Sample Site	Event Type	Event Date	Meter Read	Equip LTD	CMU Hrs	Fluid Hrs	Cum. Total	Calc. Fluid Hours	Fluid Add	Fluid Chg	Filter Chg	Oil Type	Oil Grade	Resample	Eval
14011102	BC3279229 - HD17516147	797	Sample	28 Sep 2019	38737	37814	37814	548	0.00	548		N	Y	BP AUTRAN TO4	30	N	N	A
13904601	BC3244942 - HD17371995	797	Sample	31 Aug 2019	38189	37266	37266	1456	0.00	1456		Y		BP AUTRAN TO4	30	N	N	B
13808802	BC3214485 - HD17643624	797	Sample	05 Aug 2019	37681	36758	36758	948	0.00	948		N	N	BP AUTRAN TO4	30	N	N	B
13645307	BC3156005 - HD17972965	797	Sample	16 Jun 2019	36733	35810	35810	2380	0.00	2380		Y	Y	BP AUTRAN TO4	30	N	N	B
13565403	BC3131451 - HD14367916	797	Sample	26 May 2019	36441	35518	35518	2088	0.00	2088		N	N	BP AUTRAN TO4	30	N	N	B
13495306	BC3106712 - HD14702569	797	Sample	03 May 2019	36006	35083	35083	1653	0.00	1653		N	Y	BP AUTRAN TO4	30	N	N	B
13406502	BC3077945 - HD14345997	797	Sample	08 Apr 2019	35657	34734	34734	1304	0.00	1304		N	N	BP AUTRAN TO4	30	N	N	B

Eval	Elemental Analysis																FTIR Analysis		Misc	Fluid Characteristics		Particle Analysis					Physical Testing												
	Cu	Fe	Cr	Pb	Al	Si	Sn	Ni	Na	K	Mo	Ca	Mg	P	Zn	Ti	Sb	V		B	S	Ag	Mn	Cd	Ba	UOXI	UNIT	TAN	V40	V100	Li	ISO	PC4	PC6	PC10	PC14	PC50	WAT	WKF
A	<1	9	<1	<1	<1	13	<1	3	<1	<1	3904	15	796	991	<1	<1	<1	2		<1	<1	<1	<1	10	5		99	<1	21/19/15	16206	2781	542	207	8	<0.1		2	L-F-	
B	<1	8	<1	<1	11	<1	3	<1	<1	3955	16	812	979	<1	<1	<1	1	4683	<1	<1	<1	<1	10	5		99	<1	22/20/17	29901	9283	2713	1119	55	0.2		2	L-F-		
B	<1	14	<1	<1	13	<1	3	1	<1	1	3785	15	779	971	<1	<1	<1	2	4038	<1	<1	<1	9	5		101	<1	23/20/15	48207	5560	993	253	8	<0.1		5	N—		
B	<1	11	<1	<1	13	<1	2	2	<1	<1	3786	15	776	947	<1	<1	<1	1	4317	<1	<1	<1	9	5		100	<1	22/20/16	35723	5764	951	398	19	<0.1		4	L-F-		
B	<1	19	<1	<1	17	<1	3	2	<1	<1	3629	14	766	933	<1	<1	<1	1		<1	<1	<1	10	5		102	<1	22/18/13	33131	1546	178	53	<1	<0.1		5	N—		
B	<1	18	<1	<1	17	<1	2	2	<1	<1	3690	14	775	947	<1	<1	<1	1		<1	<1	<1	10	5		101	<1	23/20/16	41708	5565	1220	396	8	<0.1		2	L-F-		
B	<1	17	<1	<1	15	<1	2	2	<1	<1	3768	15	784	923	<1	<1	<1	1	4679	<1	<1	<1	10	5		101	<1	22/19/16	28269	3525	1084	415	29	<0.1		6	L-F-		