



**FILTER  
TECHNOLOGY**

cleaner fluids mean better business

**FIELD INSTALLATION**

Filtration and Contamination Control Specialists



# Shovel Hydraulic Systems

Centerra Gold (Kumtor Mine, Kyrgyzstan, Central Asia)

Recd	05/19/13	05/18/13	05/17/13	01/21/13
Sample	05/18/13	05/17/13	05/16/13	04/18/13
Lab ID	1305190049	1305180035	1305170046	130420013
Lube T/D	48 hr	24 hr	0 hr	0 hr
Comp T/D	0 hr	0 hr	0 hr	47477 hr
Lube/Fit	N/N	N/N	N/N	N/N
PC > 4 ...	302.0	5379.0	37955.0	3293.0
PC > 6 ...	78.0	1880.0	5066.0	1299.0
PC > 14 ...	1.0	200.0	60.0	87.0
PC > 21 ...	0.0	80.0	10.0	30.0
PC > 38 ...	0.0	13.0	3.0	0.0
PC > 70 ...	0.0	0.0	0.0	0.0
ISO Code	15/13/7	20/18/15	22/20/13	19/17/14
UNF Fat ...	0.00	55.35	16.67	6.67

Particle count table reflecting higher oil cleanliness level than manufacturer's recommendation (Hitachi EX3600)

Recd	05/19/13	05/18/13	05/14/13	01/31/13
Sample	05/18/13	05/17/13	05/09/13	00/00/00
Lab ID	1305190050	1305180036	1305140014	1301310025
Lube T/D	24 hr	0 hr	0 hr	0 hr
Comp T/D	0 hr	0 hr	5502 hr	3274 hr
Lube/Fit	N/N	N/N	N/N	N/N
PC > 4 ...	1236.0	1801.0	209563.0	37226.0
PC > 6 ...	305.0	690.0	568135.0	15904.0
PC > 14 ...	35.0	67.0	4859.0	2026.0
PC > 21 ...	8.0	23.0	1391.0	751.0
PC > 38 ...	3.0	3.0	141.0	110.0
PC > 70 ...	0.0	0.0	0.0	3.0
ISO Code	17/15/12	18/17/13	25/23/19	22/21/18
UNF Fat ...	8.14	11.57	1551.44	367.16

Particle count table reflecting higher oil cleanliness level than manufacturer's recommendation (Liebherr R9350)

Kumtor Mine contacted Equipment Placement in regard to aiding their efforts to reduce contamination in the hydraulic systems of their mixed shovel fleet.

Equipment Placement provided a solution with the use of filter technology Australia on-board depth filtration units. Kumtor fitted the FTA units to their Liebherr R9350 and Hitachi EX3600 shovel fleet on the hydraulic reservoirs. Live oil samples were taken before the filtration was added and then over a period of 48 hours. The results have proven the effectiveness of the filtration units to a point that reduction in contamination levels have returned the oil back to a better than industry standards.

The oil analysis shows that there has been a reduction of 99.5% in the 4 µm range, 99.5% reduction in the 6 µm range and a 99.2% reduction in the 14 µm range.

This result will allow Kumtor to extend oil change intervals, which will have a direct impact on operational costs, with savings in oil, waste oil streams, reduced downtime, and maintenance costs and have a huge reduction in the mines environmental impact. The cleanliness of the oil will increase componentry life and machine reliability.



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