

## WEAR NORMAL CONTAMINATION ABNORMAL FLUID CONDITION NORMAL

## Machine Id KOMATSU PC-490 TH-12 (S/N A41656)

Hydraulic System

AW HYDRAULIC OIL ISO 46 (--- GAL)

RECOMMENDATION

No corrective action is recommended at this time. The filter change at the time of sampling has been noted. Resample at the next service interval to monitor.



All component wear rates are normal.

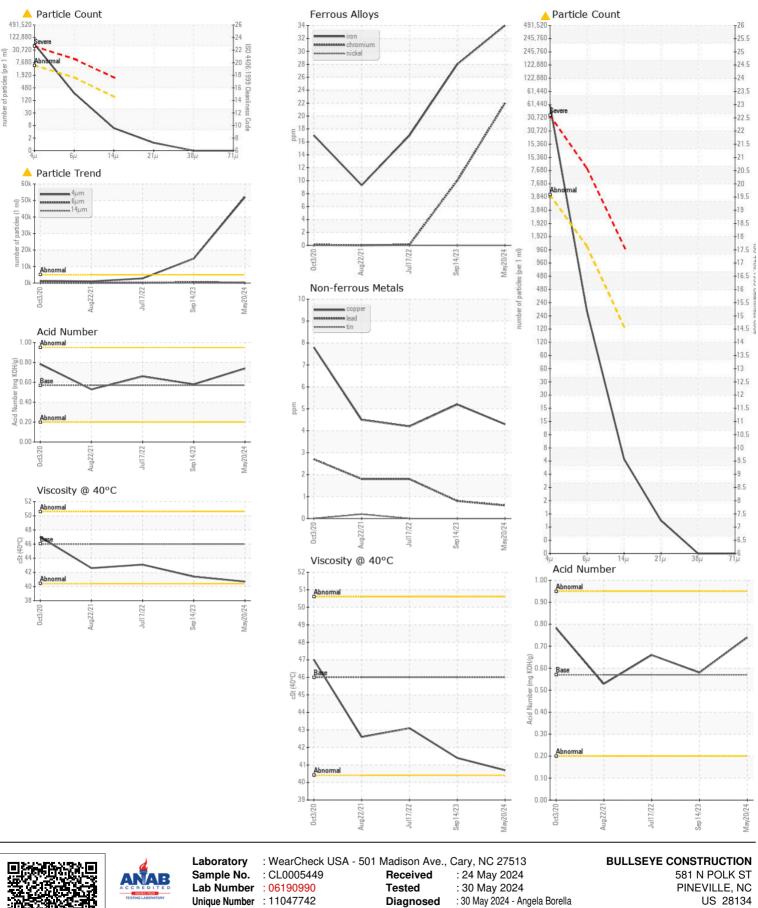
## CONTAMINATION

There is a high amount of silt (particulates < 14 microns in size) present in the oil.

## FLUID CONDITION

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

Test     UOM     Method     Limit/An     Current     History1     History2       Sample Number     Client Info     2004y324     14 Sep 2023     17 Jul 2022       Machine Age     hrs     Client Info     20 May 2024     14 Sep 2023     17 Jul 2022       Machine Age     hrs     Client Info     0     0     0       Filter Age     hrs     Client Info     0     0     0       Gil Changed     Client Info     Changed     Changed     Changed     Changed       Sample Status     -     ASTM D5185m     >10     22     10     <1       Iron     ppm     ASTM D5185m     >10     0     0     0       Nickel     ppm     ASTM D5185m     >10     5     5     4       Lead     ppm     ASTM D5185m     >10     0     0     0       Vanadium     ppm     ASTM D5185m     >10     0     0     0       Vanadium     ppm     ASTM D5185m     >10     0     0     0 </th <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>							
Sample Date     Client Info     20 May 2024     14 Sep 2023     17 Jul 2022       Machine Age     hrs     Client Info     5857     5325     4755       Oll Age     hrs     Client Info     5857     0     0     0       Filter Age     hrs     Client Info     Not Changed	Test	UOM	Method	Limit/Abn	Current	History1	History2
Machine Age     hrs     Client Info     5857     5325     4755       Oil Age     hrs     Client Info     5857     0     0       Filter Age     hrs     Client Info     Not Changed     Not Changed     Not Changed       Filter Changed     Client Info     Not Changed     Not Changed     Changed     Not Changed       Sample Status     Client Info     Not Changed     ABNORMAL     ABNORMAL     NORMAL       Iron     ppm     ASTM D5185m     >20     34     28     17       Chromium     ppm     ASTM D5185m     >10     0     0     0       Titanium     ppm     ASTM D5185m     >10     5     4     1       Lead     ppm     ASTM D5185m     >10     0     0     0       Visual     NONE     NONE     NONE     NONE     NONE     NONE       Visual     NONE     NONE     NONE     NONE     NONE     NONE       Visual     NONE     NONE     NONE     NONE	Sample Number		Client Info				CL0003391
Oil Age     hrs     Client Info     5857     0     0       Filter Age     hrs     Client Info     Not Changed     Not Changed     Not Changed       Filter Changed     Client Info     Changed     Changed     Changed     Changed       Sample Status     Client Info     Changed     ABNORMAL     Not Changed     Changed       Iron     ppm     ASTM D5185m     >20     34     28     17       Chromium     ppm     ASTM D5185m     >10     22     10     <1       Nickel     ppm     ASTM D5185m     >10     0     0     0       Aluminum     ppm     ASTM D5185m     >10     5     4     2       Copper     ppm     ASTM D5185m     >10     0     0     0       Vanadium     ppm     ASTM D5185m     >20     Q     <1     <1     2       Velow Metal     scalar     "Visual     NONE     NONE     NONE     NONE       Velow Metal     scalar     "Visual							
Filter Age     hrs     Client Info     Not Changd     Not Changd       Filter Changed     Client Info     Not Changd     Not Changd     Not Changed       Sample Status     Client Info     ABNORMAL     ABNORMAL     Not Changed       Sample Status     ASTM D5185m     >10     22     10     <1       Iron     ppm     ASTM D5185m     >10     0     0     0       Nickel     ppm     ASTM D5185m     >10     0     0     0       Mickel     ppm     ASTM D5185m     >10     0     0     0       Aluminum     ppm     ASTM D5185m     >10     <1     <1     2       Copper     ppm     ASTM D5185m     >10     0     0     0       Vanadium     ppm     ASTM D5185m     >10     0     1     0     0       Vanadium     ppm     ASTM D5185m     >20     9     7     7       Petioles solum     ppm     ASTM D5185m     >20     2     <1     <1	Machine Age	hrs	Client Info		5857	5325	4755
Oil Changed     Client Info     Not Changed     Not Changed     Changed	•	hrs					
Filter Changed Sample Status     Client Info     Changed ABNORMAL     Changed ABNORMAL     Changed ABNORMAL     Changed ABNORMAL     Changed ABNORMAL     Changed ABNORMAL     Changed ABNORMAL     Changed ABNORMAL     NORMAL       Iron     ppm     ASTM D5185m     >10     22     10     <1       Nickel     ppm     ASTM D5185m     >10     0     0     0       Silver     ppm     ASTM D5185m     >10     5     5     4       Lead     ppm     ASTM D5185m     >10     0     0     0       Vanadium     ppm     ASTM D5185m     >10     0     0     0       Vanadium     ppm     ASTM D5185m     >10     0     0     0       Vanadium     ppm     ASTM D5185m     >20     9     7     7       Potassium     ppm     ASTM D5185m     >20     2     1     <1       Vater     WC Method     >0.1     NEG     NEG     NEG       Particles >4µm     ASTM D7647     >10     0     0	-	hrs			0	0	•
Sample Status     ABNORMAL     ABNORMAL     NORMAL     NORMAL       Iron     ppm     ASTM D5185m     >20     34     28     17       Chromium     ppm     ASTM D5185m     >10     0     0     0       Nickel     ppm     ASTM D5185m     >10     0     0     0       Aluminum     ppm     ASTM D5185m     >10     5     5     4       Lead     ppm     ASTM D5185m     >10     5     4     2       Copper     ppm     ASTM D5185m     >10     0     0     0       Vanadium     ppm     ASTM D5185m     >10     0     0     0       Vanadium     ppm     ASTM D5185m     >20     2     <1     <1       Yellow Metal     scalar     *Visual     NONE     NONE     NONE     NONE       Yellow Metal     scalar     *Visual     NONE     NONE     NORE     NORE       Yellow Metal     scalar     *Visual     NONE     NONE     1	0				v	0	0
Iron     ppm     ASTM D5185m     >20     34     28     17       Chromium     ppm     ASTM D5185m     >10     0     0     0       Nickel     ppm     ASTM D5185m     >10     0     0     0       Titanium     ppm     ASTM D5185m     0     0     0     0       Aluminum     ppm     ASTM D5185m     >10     5     5     4       Lead     ppm     ASTM D5185m     >10     0     0     0       Vanadium     ppm     ASTM D5185m     >10     0     0     0     0       Vanadium     ppm     ASTM D5185m     >10     0     0     0     0       Vanadium     ppm     ASTM D5185m     >20     2     <1     <1     0       Vanadium     ppm     ASTM D5185m     >20     2     <1     <1     0       Vanadium     ppm     ASTM D5185m     >20     2     <1     <1     0       Vanadium     p	•		Client Info		•	0	Changed
Chromium     ppm     ASTM D5185m     >10     22     10     <1	Sample Status				ABNORMAL	ABNORMAL	NORMAL
Chromium     ppm     ASTM D5185m     >10     22     10     <1	Iron			. 00		00	17
Nickel     ppm     ASTM D5185m     >10     0     0     0     0       Titanium     ppm     ASTM D5185m      <1     <1     <1     <1       Silver     ppm     ASTM D5185m     >10     5     5     4       Lead     ppm     ASTM D5185m     >10     <1     <1     2       Copper     ppm     ASTM D5185m     >10     0     0     0       Vanadium     ppm     ASTM D5185m     >10     0     0     0       Vanadium     ppm     ASTM D5185m     >10     0     0     0     0       Vanadium     ppm     ASTM D5185m     >20     9     7     7       Potassium     ppm     ASTM D5185m     >20     9     7     7       Potassium     ppm     ASTM D5185m     >20     9     7     7       Potassium     ppm     ASTM D7647     >5000     502086     14807     2784       Particles >4µm     ASTM D7647	-						
Titanium     ppm     ASTM D5185m     <1				-			
Silver     ppm     ASTM D5185m     0     0     0     0     0       Aluminum     ppm     ASTM D5185m     >10     <1     <1     2       Copper     ppm     ASTM D5185m     >10     <1     <1     2       Copper     ppm     ASTM D5185m     >10     0     0     0       Vanadium     ppm     ASTM D5185m     >10     0     <1     0       White Metal     scalar     *Visual     NONE     NONE     NONE     NONE       Yellow Metal     scalar     *Visual     NONE     NONE     NONE     NONE       Silicon     ppm     ASTM D5185m     >20     2     <1     <1       Water     W CMethod     >0.1     NEG     NEG     NEG       Particles >4µm     ASTM D7647     >100     238     477     146       Particles >71µm     ASTM D7647     >10     0     0     0       Particles >71µm     ASTM D7647     >3     0     0     0				>10	-		
Aluminum     ppm     ASTM D5185m     >10     5     5     4       Lead     ppm     ASTM D5185m     >75     4     5     4       Tin     ppm     ASTM D5185m     >75     4     5     4       Tin     ppm     ASTM D5185m     >10     0     0     0       Vanadium     ppm     ASTM D5185m     >10     0     <1     0       White Metal     scalar     *Visual     NONE     NONE     NONE     NONE       Silicon     ppm     ASTM D5185m     >20     2     <1     <1       Water     WC Metal     scalar     *Visual     NONE     NONE     NONE       Particles >4µm     ASTM D7647     >5000     ▲ 52086     ▲ 14807     2784       Particles >6µm     ASTM D7647     >100     0     0     0       Particles >5µm     ASTM D7647     >40     1     6     5       Particles >71µm     ASTM D7647     >3     0     0     0							
Lead     ppm     ASTM D5185m     >10     <1				<u>\10</u>	-		
Copper     ppm     ASTM D5185m     >75     4     5     4       Tin     ppm     ASTM D5185m     >10     0     0     0       Vanadium     ppm     ASTM D5185m     0     <1     0       White Metal     scalar     *Visual     NONE     NONE     NONE     NONE       Yellow Metal     scalar     *Visual     NONE     NONE     NONE     NONE     NONE       Silicon     ppm     ASTM D5185m     >20     9     7     7       Potassium     ppm     ASTM D5185m     >20     2     <1     <1       Water     WC Method     >0.1     NEG     NEG     NEG       Particles >4µm     ASTM D7647     >100     238     477     146       Particles >21µm     ASTM D7647     >40     1     6     5       Particles >21µm     ASTM D7647     >3     0     0     0       Oli Cleanliness     ISO 4406 (c)     >1917/14     23/15/10     21/16/12     19/14/11					-		
Tin     ppm     ASTM D5185m     >10     0     0     0     0       Vanadium     ppm     ASTM D5185m     0     <<1     0       White Metal     scalar     *Visual     NONE     NONE     NONE     NONE       Yellow Metal     scalar     *Visual     NONE     NONE     NONE     NONE       Silicon     ppm     ASTM D5185m     >20     9     7     7       Potassium     ppm     ASTM D5185m     >20     2     <1     <1       Water     WC Method     >0.1     NEG     NEG     NEG       Particles >4µm     ASTM D7647     >100     0     0     0       Particles >6µm     ASTM D7647     >10     0     0     0       Particles >1µm     ASTM D7647     >3     0     0     0       Particles >38µm     ASTM D7647     >3     0     0     0       Oil Cleanliness     ISO 4406 (c)     1917/14     23/15/10     21/16/12     19/14/11							
Vanadium     ppm     ASTM D5185m     0     <1					-		
White Metal     scalar     *Visual     NONE     NONE     NONE     NONE       Yellow Metal     scalar     *Visual     NONE     NONE     NONE     NONE       Silicon     ppm     ASTM D5185m     >20     2     <1     <1       Potassium     ppm     ASTM D5185m     >20     2     <1     <1       Water     WC Method     >0.1     NEG     NEG     NEG       Particles >4µm     ASTM D7647     >1300     238     4777     146       Particles >14µm     ASTM D7647     >10     0     0     0       Particles >21µm     ASTM D7647     >10     0     0     0       Particles >38µm     ASTM D7647     >3     0     0     0       Oil Cleanliness     ISO 4406 (c)     >191/1714     23/15/10     21/16/12     19/14/11       Silt     scalar     *Visual     NONE     NONE     NONE     NONE       Debris     scalar     *Visual     NORE     NORML     NORML     NO					-		
Yellow Metal     scalar     *Visual     NONE     NONE     NONE     NONE       Silicon     ppm     ASTM D5185m     >20     2     <1     <1       Potassium     ppm     ASTM D5185m     >20     2     <1     <1       Water     WC Method     >0.1     NEG     NEG     NEG       Particles >4µm     ASTM D7647     >5000     ▲ 52086     ▲ 14807     2784       Particles >6µm     ASTM D7647     >100     5     29     15       Particles >14µm     ASTM D7647     >40     1     6     5       Particles >71µm     ASTM D7647     >10     0     0     0       Oil Cleanliness     ISO 4406 (c)     19/17/4     23/15/10     ▲ 21/16/12     19/14/11       Silt     scalar     *Visual     NONE     NONE     NONE     NONE       Debris     scalar     *Visual     NORE     NORE     NORE     NORE       Appearance     scalar     *Visual     NORE     NORML     NORML				NONE	-		
Silicon     ppm     ASTM D5185m     >20     9     7     7       Potassium     ppm     ASTM D5185m     >20     2     <1     <1       Water     WC Method     >0.1     NEG     NEG     NEG       Particles >4µm     ASTM D7647     >5000     ▲ 52086     ▲ 14807     2784       Particles >6µm     ASTM D7647     >1300     238     477     146       Particles >6µm     ASTM D7647     >160     5     29     15       Particles >14µm     ASTM D7647     >40     1     6     5       Particles >38µm     ASTM D7647     >10     0     0     0       Particles >38µm     ASTM D7647     >3     0     0     0       Oil Cleanliness     IS0 4406 (c)     91/1/14     23/15/10     ▲ 21/16/12     19/14/11       Silt     scalar     *Visual     NONE     NONE     NONE     NONE       Debris     scalar     *Visual     NORH     NORML     NORML     NORML     NORML <th></th> <th></th> <th></th> <th></th> <th>-</th> <th></th> <th></th>					-		
Potassium     ppm     ASTM D5185m     >20     2     <1							
Water     WC Method     >0.1     NEG     NEG     NEG       Particles >4µm     ASTM D7647     >5000     ▲ 52086     ▲ 14807     2784       Particles >6µm     ASTM D7647     >1300     238     477     146       Particles >6µm     ASTM D7647     >160     5     29     15       Particles >21µm     ASTM D7647     >40     1     6     5       Particles >38µm     ASTM D7647     >10     0     0     0       Particles >71µm     ASTM D7647     >3     0     0     0       Particles >71µm     ASTM D7647     >3     0     0     0       Oil Cleanliness     ISO 4406 (c)     >19/17/14     23/15/10     21/16/12     19/14/11       Silt     scalar     *Visual     NONE     NONE     NONE     NONE       Debris     scalar     *Visual     NOR     NORML     NORML     NORML     NORML       Appearance     scalar     *Visual     NORM     NORML     NORML     NORML	Silicon	ppm		>20		7	7
Particles >4µm     ASTM D7647     >5000     52086     14807     2784       Particles >6µm     ASTM D7647     >1300     238     477     146       Particles >6µm     ASTM D7647     >160     5     29     15       Particles >21µm     ASTM D7647     >40     1     6     5       Particles >38µm     ASTM D7647     >40     0     0     0       Particles >71µm     ASTM D7647     >3     0     0     0       Particles >71µm     ASTM D7647     >3     0     0     0       Oil Cleanliness     ISO 4406 (c)     >19/17/14     23/15/10     21/16/12     19/14/11       Silt     scalar     *Visual     NONE     NONE     NONE     NONE       Debris     scalar     *Visual     NOR     NORM     NORML     NORML     NORML       Appearance     scalar     *Visual     NORM     NORML     NORML     NORML       Odor     scalar     *Visual     NORM     NORM     NORML     NOR	Potassium	ppm	ASTM D5185m	>20	2	<1	<1
Particles >6µm     ASTM D7647     >1300     238     477     146       Particles >14µm     ASTM D7647     >160     5     29     15       Particles >21µm     ASTM D7647     >40     1     6     5       Particles >38µm     ASTM D7647     >10     0     0     0       Particles >71µm     ASTM D7647     >3     0     0     0       Oil Cleanliness     ISO 4406 (c)     >1917/14     23/15/10     21/16/12     19/14/11       Silt     scalar     *Visual     NONE     NONE     NONE     NONE       Debris     scalar     *Visual     NONE     NONE     NONE     NONE     NONE       Appearance     scalar     *Visual     NORM     NORML     NORML     NORML     NORML       Gdor     scalar     *Visual     NORM     NORML     NORML     NORML     NORML       Mappearance     scalar     *Visual     NORM     NORML     NORML     NORML     NORML       Boron     ppm			WC Method	>0.1	NEG	NEG	
Particles >14µm     ASTM D7647     >160     5     29     15       Particles >21µm     ASTM D7647     >40     1     6     5       Particles >38µm     ASTM D7647     >10     0     0     0       Particles >71µm     ASTM D7647     >3     0     0     0       Oil Cleanliness     ISO 4406 (c)     >19/17/14     23/15/10     21/16/12     19/14/11       Silt     scalar     *Visual     NONE     NONE     NONE     NONE       Debris     scalar     *Visual     NONE     NONE     NONE     NONE     NONE       Sand/Dirt     scalar     *Visual     NOR     NORML     NORE     NORL     NORL       Appearance     scalar     *Visual     NORM     NORML     NORML     NORML     NORML       Gron     scalar     *Visual     NORM     NORE     NEG     NEG       Barium     ppm     ASTM D5185m     5     0     0     <1       Maganese     ppm     ASTM D5185m </th <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>							
Particles >21µm     ASTM D7647     >40     1     6     5       Particles >38µm     ASTM D7647     >10     0     0     0       Particles >71µm     ASTM D7647     >3     0     0     0       Oil Cleanliness     ISO 4406 (c)     >19/17/14     ▲ 23/15/10     ▲ 21/16/12     19/14/11       Silt     scalar     *Visual     NONE     NONE     NONE     NONE       Debris     scalar     *Visual     NONE     NONE     NONE     NONE     NONE       Sand/Dirt     scalar     *Visual     NONE     NORML     NORML     NORML     NORML       Appearance     scalar     *Visual     NORML     NORML     NORML     NORML     NORML       Odor     scalar     *Visual     NORML     NORML     NORML     NORML     NORML       Agreance     scalar     *Visual     >0.1     NEG     NEG     NEG       Boron     ppm     ASTM D5185m     5     0     0     0       Magnae							
Particles >38µm     ASTM D7647     >10     0     0     0       Particles >71µm     ASTM D7647     >3     0     0     0       Oil Cleanliness     ISO 4406 (c)     >19/17/14     ▲ 23/15/10     ▲ 21/16/12     19/14/11       Silt     scalar     *Visual     NONE     NONE     NONE     NONE       Debris     scalar     *Visual     NONE     NONE     NONE     NONE     NONE       Sand/Dirt     scalar     *Visual     NONE     NONE     NONE     NONE     NONE       Appearance     scalar     *Visual     NORML     NORML     NORML     NORML     NORML       Odor     scalar     *Visual     NORM     NORML     NORML     NORML     NORML       Odor     scalar     *Visual     >0.1     NEG     NEG     NEG       Baron     ppm     ASTM D5185m     5     0     0     0       Magnaese     ppm     ASTM D5185m     5     10     0     6       C					-		
Particles >71µm     ASTM D7647     >3     0     0     0       Oil Cleanliness     ISO 4406 (c)     >19/17/14     ▲ 23/15/10     ▲ 21/16/12     19/14/11       Silt     scalar     *Visual     NONE     NONE     NONE     NONE       Debris     scalar     *Visual     NONE     NONE     NONE     NONE     NONE       Sand/Dirt     scalar     *Visual     NONE     NONE     NONE     NONE     NONE       Appearance     scalar     *Visual     NORML     NORML     NORML     NORML     NORML       Odor     scalar     *Visual     NORM     NORML     NORML     NORML     NORML       Odor     scalar     *Visual     NORM     NORML     NORML     NORML     NORML       Emulsified Water     scalar     *Visual     >0.1     NEG     NEG     NEG       Sodium     ppm     ASTM D5185m     5     0     0     <1       Barium     ppm     ASTM D5185m     5     1     <					-		
Oil Cleanliness     ISO 4406 (c)     >19/17/14     23/15/10     21/16/12     19/14/11       Silt     scalar     *Visual     NONE     NONE     NONE     NONE     NONE       Debris     scalar     *Visual     NONE     NONE     NONE     NONE     NONE       Sand/Dirt     scalar     *Visual     NONE     NONE     NONE     NONE     NONE       Appearance     scalar     *Visual     NORML     NO					-		
Siltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONENONENONENONESand/Dirtscalar*VisualNONENONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.1NEGNEGNEGSodiumppmASTM D5185m220BoronppmASTM D5185m500<1BariumppmASTM D5185m5000MolybdenumppmASTM D5185m5<1<1<1MagnesiumppmASTM D5185m251006CalciumppmASTM D5185m20013811191PhosphorusppmASTM D5185m370313329316SulfurppmASTM D5185m250014641534879Acid Number (AN)mg KOH/gASTM D80450.570.740.580.66					-	÷	÷
Debrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.1NEGNEGNEGSodiumppmASTM D5185m220BoronppmASTM D5185m500<1BariumppmASTM D5185m5000MolybdenumppmASTM D5185m5<1<10ManganeseppmASTM D5185m251006CalciumppmASTM D5185m20013811191PhosphorusppmASTM D5185m370313329316SulfurppmASTM D5185m250014641534879Acid Number (AN)mg KOHgASTM D80450.570.740.580.66			( )				
Sand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.1NEGNEGNEGSodiumppmASTM D5185m220BoronppmASTM D5185m500<1BariumppmASTM D5185m5000MolybdenumppmASTM D5185m5<1<10ManganeseppmASTM D5185m251006CalciumppmASTM D5185m20013811191PhosphorusppmASTM D5185m370313329316SulfurppmASTM D5185m250014641534879Acid Number (AN)mg KOHgASTM D80450.570.740.580.66					-		
Appearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.1NEGNEGNEGSodiumppmASTM D5185m220BoronppmASTM D5185m500<1BariumppmASTM D5185m5000MolybdenumppmASTM D5185m5<1<10ManganeseppmASTM D5185m251006CalciumppmASTM D5185m20013811191PhosphorusppmASTM D5185m370313329316SulfurppmASTM D5185m250014641534879Acid Number (AN)mg KOH/gASTM D80450.570.740.580.66							
Odorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.1NEGNEGNEGSodiumppmASTM D5185m220BoronppmASTM D5185m500<1BariumppmASTM D5185m5000MolybdenumppmASTM D5185m5000MagneseppmASTM D5185m251006CalciumppmASTM D5185m200138111191PhosphorusppmASTM D5185m300286310272ZincppmASTM D5185m370313329316SulfurppmASTM D5185m250014641534879Acid Number (AN)mg KOHgASTM D80450.570.740.580.66					-		
Emulsified Water     scalar     *Visual     >0.1     NEG     NEG     NEG       Sodium     ppm     ASTM D5185m     2     2     0       Boron     ppm     ASTM D5185m     5     0     0     <1       Barium     ppm     ASTM D5185m     5     0     0     0       Molybdenum     ppm     ASTM D5185m     5     <1     <1     0       Magnese     ppm     ASTM D5185m     5     <1     <1     <1       Magnesium     ppm     ASTM D5185m     25     10     0     6       Calcium     ppm     ASTM D5185m     200     138     1111     91       Phosphorus     ppm     ASTM D5185m     300     286     310     272       Zinc     ppm     ASTM D5185m     370     313     329     316       Sulfur     ppm     ASTM D5185m     2500     1464     1534     879       Acid Number (AN)     mg KOHg     ASTM D8045     0.57     0.7					-		
Sodium     ppm     ASTM D5185m     2     2     0       Boron     ppm     ASTM D5185m     5     0     0     <1       Barium     ppm     ASTM D5185m     5     0     0     <1       Barium     ppm     ASTM D5185m     5     0     0     0       Molybdenum     ppm     ASTM D5185m     5     <1     <1     0       Manganese     ppm     ASTM D5185m     25     10     0     6       Calcium     ppm     ASTM D5185m     200     138     111     91       Phosphorus     ppm     ASTM D5185m     300     286     310     272       Zinc     ppm     ASTM D5185m     370     313     329     316       Sulfur     ppm     ASTM D5185m     2500     1464     1534     879       Acid Number (AN)     mg KOH/g     ASTM D8045     0.57     0.74     0.58     0.66					-		
Boron     ppm     ASTM D5185m     5     0     0     <1		Scalar	visual	20.1		NEG	NLQ
Boron     ppm     ASTM D5185m     5     0     0     <1	Sodium	ppm	ASTM D5185m		2	2	0
Barium     ppm     ASTM D5185m     5     0     0     0       Molybdenum     ppm     ASTM D5185m     5     <1     <1     0       Manganese     ppm     ASTM D5185m     25     <10     <1     <1       Magnesium     ppm     ASTM D5185m     25     10     0     6       Calcium     ppm     ASTM D5185m     200     138     111     91       Phosphorus     ppm     ASTM D5185m     300     286     310     272       Zinc     ppm     ASTM D5185m     370     313     329     316       Sulfur     ppm     ASTM D5185m     2500     1464     1534     879       Acid Number (AN)     mg K0Hg     ASTM D8045     0.57     0.74     0.58     0.66			ASTM D5185m	5	0		<1
Manganese     ppm     ASTM D5185m     <1	Barium				0	0	0
Magnesium     ppm     ASTM D5185m     25     10     0     6       Calcium     ppm     ASTM D5185m     200     138     111     91       Phosphorus     ppm     ASTM D5185m     300     286     310     272       Zinc     ppm     ASTM D5185m     370     313     329     316       Sulfur     ppm     ASTM D5185m     2500     1464     1534     879       Acid Number (AN)     mg KOH/g     ASTM D8045     0.57     0.74     0.58     0.66	Molybdenum	ppm	ASTM D5185m	5	<1	<1	0
Calcium     ppm     ASTM D5185m     200     138     111     91       Phosphorus     ppm     ASTM D5185m     300     286     310     272       Zinc     ppm     ASTM D5185m     370     313     329     316       Sulfur     ppm     ASTM D5185m     2500     1464     1534     879       Acid Number (AN)     mg KOH/g     ASTM D8045     0.57     0.74     0.58     0.66	Manganese	ppm	ASTM D5185m		<1	<1	<1
Phosphorus     ppm     ASTM D5185m     300     286     310     272       Zinc     ppm     ASTM D5185m     370 <b>313</b> 329     316       Sulfur     ppm     ASTM D5185m     2500 <b>1464</b> 1534     879       Acid Number (AN)     mg KOH/g     ASTM D8045     0.57 <b>0.74</b> 0.58     0.66	Magnesium	ppm	ASTM D5185m	25	10	0	6
Zinc     ppm     ASTM D5185m     370     313     329     316       Sulfur     ppm     ASTM D5185m     2500     1464     1534     879       Acid Number (AN)     mg KOH/g     ASTM D8045     0.57     0.74     0.58     0.66	Calcium	ppm	ASTM D5185m	200	138	111	91
Sulfur     ppm     ASTM D5185m     2500     1464     1534     879       Acid Number (AN)     mg KOH/g     ASTM D8045     0.57     0.74     0.58     0.66	Phosphorus	ppm	ASTM D5185m	300	286	310	272
Acid Number (AN) mg KOH/g ASTM D8045 0.57 0.74 0.58 0.66	Zinc	ppm		370			
		ppm		2500			879
Visc @ 40°C cSt ASTM D445 46 40.7 41.4 43.1							
	Visc @ 40°C	cSt	ASTM D445	46	40.7	41.4	43.1



Certificate 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)

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Submitted By: JEFF CHALMERS Page 2 of 2

Contact: SERVICE MANAGER

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