

ENGINE

EQUIP NUM: AG120

SERIAL NUMBER: ZDF134400

H177-54353-0231

SAMPLE SHIP TIME (days) : 8

RUMMEL CONSTRUCTION

CO

RECEIVED DATE: 18-Dec-24

CASE 550_CASE

 No Action Required

Interpreted On: 18-Dec-24

NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.

SAMPLE INFORMATION

	10-Dec-24	04-Dec-24	09-Oct-24	31-Jul-24
Sampled Date	10-Dec-24	04-Dec-24	09-Oct-24	31-Jul-24
Sample Id	H177-54353-0231	H177-54341-0060	H177-54288-0056	H160-54219-0432
Lab Date	18-Dec-24	06-Dec-24	14-Oct-24	06-Aug-24
Meter [Hr]	12255.0	12184.0	11996.0	11734.0
Comp Meter [Hr]	12255.0	12184.0	11996.0	11734.0
Meter On Fluid	259.0	188.0	262.0	297.0
Fluid Brand	CONOCO	CONOCO	CONOCO	CONOCO
Fluid Weight	15W-40	15W-40	15W-40	15W-40
Fluid Type				
Fluid Change	Y	N	Y	Y
Filter Change	Y	N	Y	Y
PM Level	1000		250	500
Total Fluid Added	0	0	0	0

WEAR LEVELS / ADDITIVES

	10-Dec-24	04-Dec-24	09-Oct-24	31-Jul-24
ELEMENTAL ANALYSIS (PPM) ASTM D6185 (OIL) / ASTM D6130 (COOLANT)				
Cu Copper	5	2	2	5
Fe Iron	12	10	10	15
Cr Chromium	2	2	1	2
Al Aluminum	0	0	1	0
Pb Lead	0	0	1	1
Sn Tin	1	0	3	1
Si Silicon	7	8	5	8
Na Sodium	6	8	2	6
K Potassium	2	2	3	2
Mo Molybdenum	111	123	106	115
Ni Nickel	0	0	0	0
Ag Silver	0	0	0	0
Ti Titanium	1	2	1	0
V Vanadium	0	0	0	0
Mn Manganese	0	0	0	0
Ca Calcium	2990	2968	2715	3255
P Phosphorus	1279	1324	1222	1243
Zn Zinc	1487	1549	1404	1447
Mg Magnesium	37	29	34	28
Ba Barium	0	0	0	0
B Boron	41	54	36	29

PREVIOUS SAMPLE

NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL. FUEL VOLATILES NOT DETECTED.

For additional sample history, go to:

[S.O.S WEB](#)

CONDITION / CONTAMINATION

		10-Dec-24	04-Dec-24	09-Oct-24	31-Jul-24
VISCOSITY (CENTISTOKES) ASTM D445					
V100	Viscosity at 100 C	14.40	14.30	14.30	14.80
INFRARED (JFM) ASTM E2412					
ST	Soot	8	8	9	10
OXI	Oxidation	16	16	17	18
SUL	Sulfur Products	20	19	20	22
NIT	Nitration	9	9	10	10

WATER

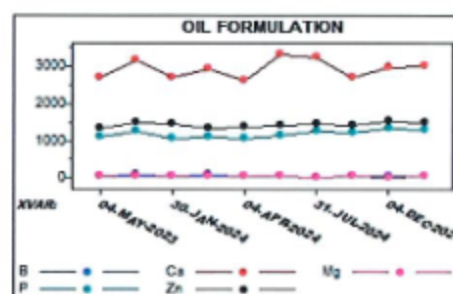
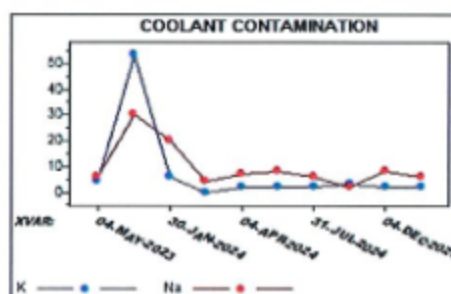
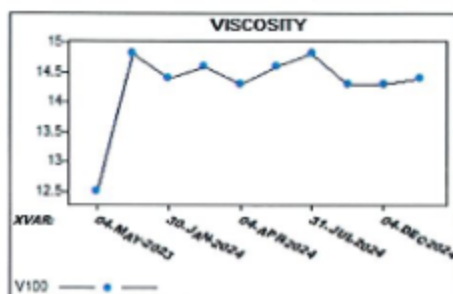
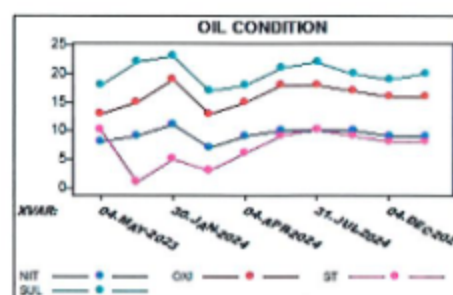
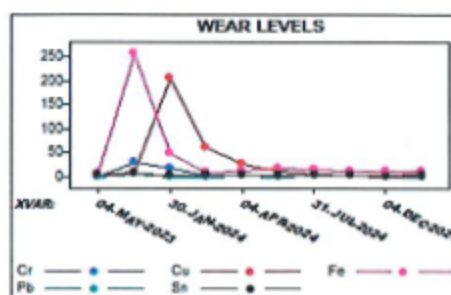
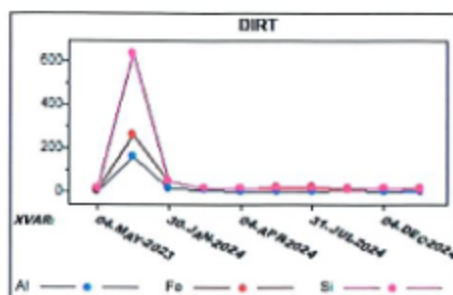
W	Water	N	N	N	N
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ANTIFREEZE

A	Antifreeze	N	N	N	N
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FUEL

F	Fuel	N	N	N	N
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Report Comment

Our sample report has been updated! For more information on the new report, go to - <https://www.youtube.com/watch?v=4h8bREJvUrs>

TRANSMISSION

EQUIP NUM: AG120

SERIAL NUMBER: ZDF134400

CASE 550_CASE



Monitor Compartment

H177-54353-0233

SAMPLE SHIP TIME (days) : 8

RUMMEL CONSTRUCTION

CO

RECEIVED DATE: 18-Dec-24

Interp By:

Interpreted On: 18-Dec-24

ELEVATED IRON MAY BE SOURCED TO WEAR OF GEARS, SPLINES, SHAFTS, HOUSING, BEARINGS... MONITOR COMPARTMENT.

SAMPLE INFORMATION

	10-Dec-24	31-Jul-24	04-Apr-24	01-Dec-23
Sampled Date	10-Dec-24	31-Jul-24	04-Apr-24	01-Dec-23
Sample Id	H177-54353-0233	H160-54219-0434	H160-54101-0004	H160-53341-0325
Lab Date	18-Dec-24	06-Aug-24	10-Apr-24	07-Dec-23
Meter [Hr]	12255.0	11734.0	500.0	10148.0
Comp Meter [Hr]	12255.0		500.0	10148.0
Meter On Fluid	12255.0	11734.0		
Fluid Brand	CONOCO	CONOCO	CONOCO	CONOCO
Fluid Weight	30	10W	10W	10W
Fluid Type	TRANS	TRANS	TRANS	TRANS
Fluid Change	N	N	N	N
Filter Change	Y	Y	Y	Y
PM Level	1000	500	500	500
Total Fluid Added	0	0	0	0

WEAR LEVELS / ADDITIVES

	10-Dec-24	31-Jul-24	04-Apr-24	01-Dec-23
ELEMENTAL ANALYSIS (PPM) ASTM D6165 (OIL) / ASTM D6130 (COOLANT)				
Cu Copper	8	8	8	8
Fe Iron	279	283	244	230
Cr Chromium	1	1	1	0
Al Aluminum	0	0	0	0
Pb Lead	7	8	8	7
Sn Tin	1	1	1	0
Si Silicon	6	6	5	6
Na Sodium	6	7	8	10
K Potassium	2	3	2	2
Mo Molybdenum	9	3	5	4
Ni Nickel	0	0	0	0
Ag Silver	1	0	0	0
Ti Titanium	0	0	0	0
V Vanadium	0	0	0	0
Mn Manganese	3	3	2	2
Ca Calcium	3506	3786	3139	3045
P Phosphorus	635	581	511	510
Zn Zinc	515	448	435	429
Mg Magnesium	15	16	9	14
Ba Barium	1	1	1	1
B Boron	29	25	23	23

PREVIOUS SAMPLE

ELEVATED IRON MAY BE SOURCED TO WEAR OF GEARS, SPLINES, SHAFTS, HOUSING, BEARINGS... ALL OTHER RESULTS APPEAR TO BE NORMAL. MONITOR COMPARTMENT.

For additional sample history, go to:

[S.O.S WEB](#)

CONDITION / CONTAMINATION

		10-Dec-24	31-Jul-24	04-Apr-24	01-Dec-23
VISCOSITY (CENTISTOKES) ASTM D445					
V100	Viscosity at 100 C	7.900	7.800	7.700	7.800

INFRARED (UFM) ASTM E2412

ST	Soot	2	1	1	0
OXI	Oxidation	11	12	11	13
SUL	Sulfur Products	21	22	21	25
NIT	Nitration	4	4	4	5

WATER

W	Water	N	N	N	N
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ANTIFREEZE

A	Antifreeze	N	N	N	N
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CLEANLINESS

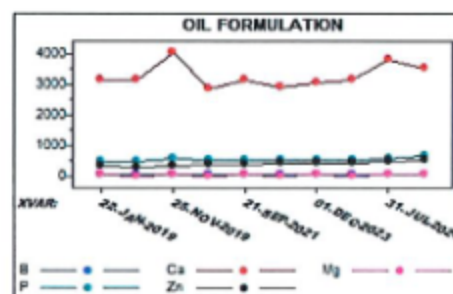
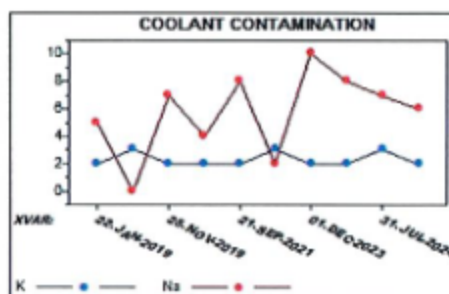
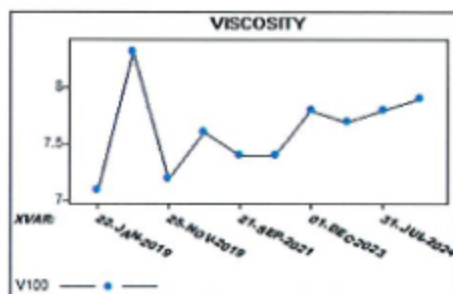
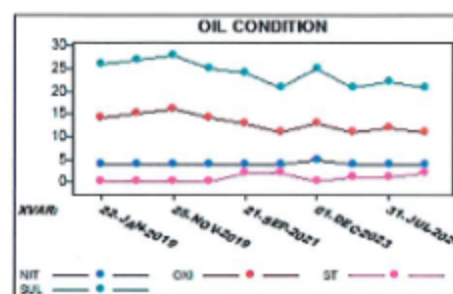
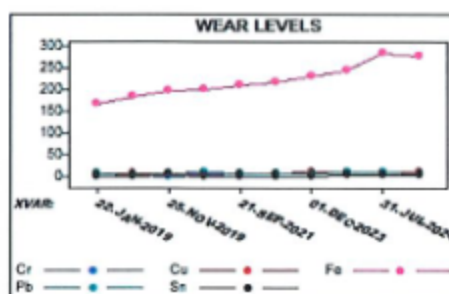
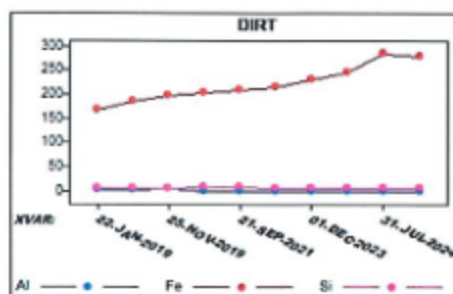
		10-Dec-24	31-Jul-24	04-Apr-24	01-Dec-23
PARTICLE COUNT - ISO 11171:1999 reported per ISO 4406					
ISO	ISO Code Rating	19/15/12	20/15/12	20/18/12	19/16/12
4µ	4µ	2791	5140	9006	3456
6µ	6µ	294	272	1467	432
10µ	10µ	65	49	140	86
14µ	14µ	27	22	26	36
21µ	21µ	11	10	2	19
38µ	38µ	2	0	0	4

PARTCL VOL INDICATOR

PVI	PVI	0.22	0.24	0.45	0.48
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DEBRIS

Debrl	Debris	N	N	N	N
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Report Comment

Our sample report has been updated! For more information on the new report, go to - <https://www.youtube.com/watch?v=4h8bREJVUrs>

HYDRAULIC SYSTEM

EQUIP NUM: AG120

SERIAL NUMBER: ZDF134400

H177-54353-0232

SAMPLE SHIP TIME (days) : 8

RUMMEL CONSTRUCTION

CO

RECEIVED DATE: 18-Dec-24

CASE 550_CASE

No Action Required

NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.

Interp By:

Interpreted On: 18-Dec-24

SAMPLE INFORMATION

	10-Dec-24	31-Jul-24	04-Apr-24	01-Dec-23
Sample Id	H177-54353-0232	H160-54219-0433	H160-54101-0005	H160-53341-0320
Lab Date	18-Dec-24	06-Aug-24	10-Apr-24	07-Dec-23
Meter [Hr]	12255.0	11734.0	500.0	10148.0
Comp Meter [Hr]	12255.0	11734.0	500.0	10148.0
Meter On Fluid	12255.0	11734.0	500.0	10148.0
Fluid Brand	CONOCO	CONOCO	CONOCO	CONOCO
Fluid Weight	15W-40	15W-40	15W-40	15W-40
Fluid Type	HYD	HYD	HYD	HYD
Fluid Change	N	N	N	N
Filter Change	Y	Y	Y	Y
PM Level	1000	500	500	500
Total Fluid Added	0	0	0	0

WEAR LEVELS / ADDITIVES

		10-Dec-24	31-Jul-24	04-Apr-24	01-Dec-23
ELEMENTAL ANALYSIS (PPM) ASTM D6165 (OIL) / ASTM D6130 (COOLANT)					
Cu	Copper	4	4	3	4
Fe	Iron	14	13	14	12
Cr	Chromium	0	0	0	0
Al	Aluminum	1	0	1	5
Pb	Lead	1	2	1	3
Sn	Tin	0	1	1	4
Si	Silicon	10	7	8	9
Na	Sodium	3	3	6	14
K	Potassium	1	2	2	3
Mo	Molybdenum	32	35	38	43
Ni	Nickel	0	0	0	0
Ag	Silver	0	0	0	0
Ti	Titanium	0	0	0	0
V	Vanadium	0	0	0	0
Mn	Manganese	0	0	0	0
Ca	Calcium	3374	3207	2663	2430
P	Phosphorus	1242	1154	1028	972
Zn	Zinc	1460	1340	1298	1334
Mg	Magnesium	131	184	150	177
Ba	Barium	0	0	0	0
B	Boron	81	72	74	89

PREVIOUS SAMPLE

NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.

For additional sample history, go to:

[S.O.S WEB](#)

CONDITION / CONTAMINATION

		10-Dec-24	31-Jul-24	04-Apr-24	01-Dec-23
VISCOSITY (CENTISTOKES) ASTM D445					
V100	Viscosity at 100 C	10.00	10.90	11.00	10.40
INFRARED (UPM) ASTM E2412					
ST	Soot	1	2	1	0
OXI	Oxidation	6	7	7	10
SUL	Sulfur Products	14	14	14	17
NIT	Nitration	4	5	5	6

WATER

W	Water	N	N	N	N
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ANTIFREEZE

A	Antifreeze	N	N	N	N
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CLEANLINESS

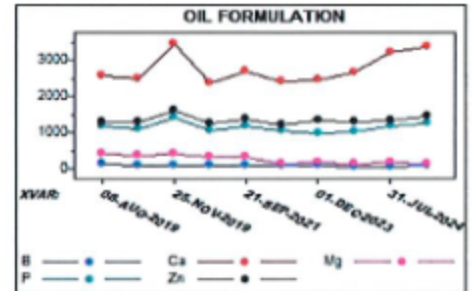
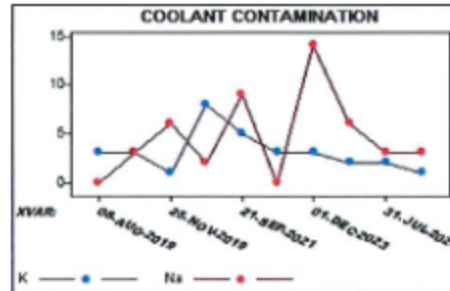
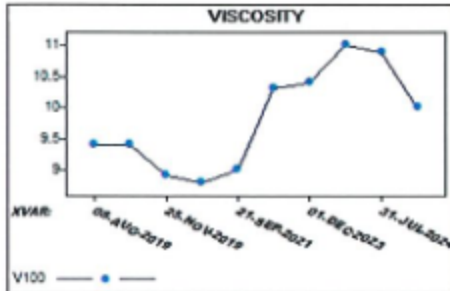
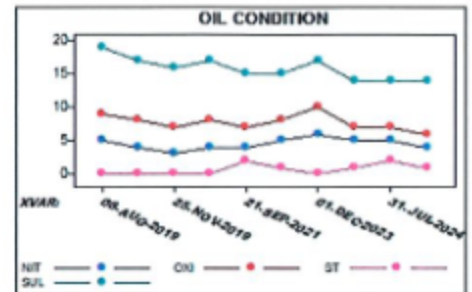
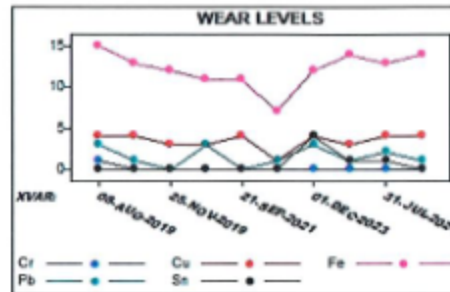
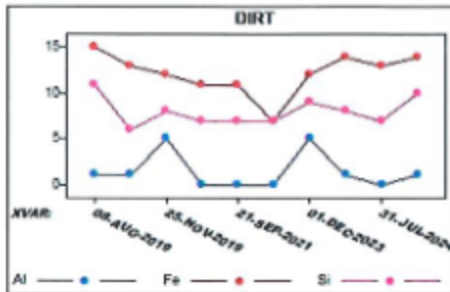
		10-Dec-24	31-Jul-24	04-Apr-24	01-Dec-23
PARTICLE COUNT - ISO 11171:1999 reported per ISO 4406					
ISO	ISO Code Rating	19/16/12	20/15/11	21/18/12	20/18/14
4µ	4µ	4535	5424	18518	6587
6µ	6µ	455	294	1889	1558
10µ	10µ	87	49	154	336
14µ	14µ	31	19	28	127
21µ	21µ	9	8	6	39
38µ	38µ	1	1	0	8

PARTCL VOL INDICATOR

PVI	PVI	0.26	0.27	0.81	0.76
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DEBRIS

Debrl	Debris	N	N	N	N
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Report Comment

Our sample report has been updated! For more information on the new report, go to - <https://www.youtube.com/watch?v=4h8bREJvUrs>

FRONT DIFF

EQUIP NUM: AG120

SERIAL NUMBER: ZDF134400

CASE 550_CASE

COMP SERIAL NUM: ZDF134400

H160-54219-0435

SAMPLE SHIP TIME (days) : 6

RUMMEL CONSTRUCTION

CO

RECEIVED DATE: 06-Aug-24

 No Action Required

Interpreted On: 06-Aug-24

OIL TYPE/ GRADE MAY HAVE BEEN CHANGED - NOTE CHANGES TO VISCOSITY & METAL ADDITIVE PACKAGE. NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.

SAMPLE INFORMATION

	31-Jul-24	22-Jan-19	11-Jan-18
Sampled Date	31-Jul-24	22-Jan-19	11-Jan-18
Sample Id	H160-54219-0435	H160-49024-0105	H160-48016-0143
Lab Date	06-Aug-24	24-Jan-19	16-Jan-18
Meter [Hr]	11734.0	5756.0	4126.0
Comp Meter [Hr]	11734.0		
Meter On Fluid	11734.0	5756.0	4126.0
Fluid Brand	CONOCO	CONOCO	CONOCO
Fluid Weight		10W	
Fluid Type			
Fluid Change	N	N	N
Filter Change			
PM Level	500	500	500
	0		

WEAR LEVELS / ADDITIVES

		31-Jul-24	22-Jan-19	11-Jan-18
ELEMENTAL ANALYSIS (PPM) ASTM D5185 (OIL) / ASTM D6130 (COOLANT)				
Cu	Copper	4	4	7
Fe	Iron	16	11	17
Cr	Chromium	0	0	0
Al	Aluminum	0	1	2
Pb	Lead	1	0	0
Sn	Tin	0	0	0
Si	Silicon	8	7	6
Na	Sodium	5	5	16
K	Potassium	2	1	0
Mo	Molybdenum	34	14	30
Ni	Nickel	0	0	1
Ag	Silver	0	0	0
Ti	Titanium	0	1	0
V	Vanadium	0	0	0
Mn	Manganese	0	0	1
Ca	Calcium	3150	2508	2007
P	Phosphorus	1140	1094	989
Zn	Zinc	1321	1283	1103
Mg	Magnesium	149	293	462
Ba	Barium	0	0	0
B	Boron	73	98	37

PREVIOUS SAMPLE

NO	PROBLEMS	PRESENTLY	ASSOCIATED	WITH	THIS	SAMPLE.	CONTINUE
SAMPLING AT THE NORMAL INTERVAL.							

For additional sample history, go to:

[S.O.S WEB](#)

CONDITION / CONTAMINATION

		31-Jul-24	22-Jan-19	11-Jan-18
VISCOSITY (CENTISTOKES) ASTM D445				
V100	Viscosity at 100 C	10.90	8.7	10.5
INFRARED (UFM) ASTM E2412				
ST	Soot	2	0	0
OXI	Oxidation	7	7	11
SUL	Sulfur Products	14	16	18
NIT	Nitration	5	4	4

WATER

W	Water	N	N
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CLEANLINESS

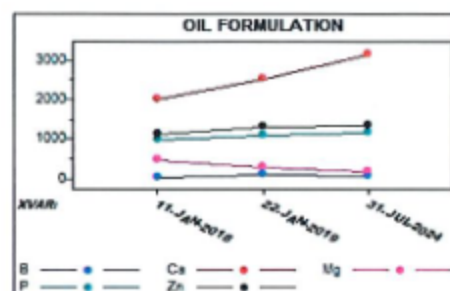
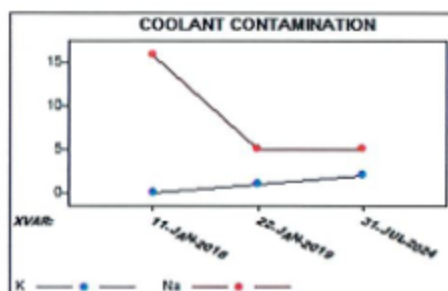
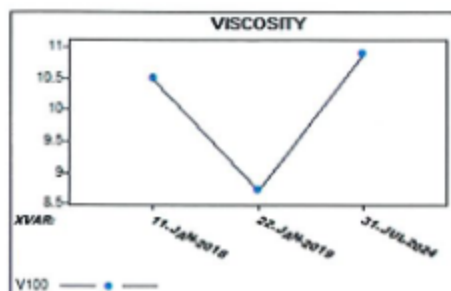
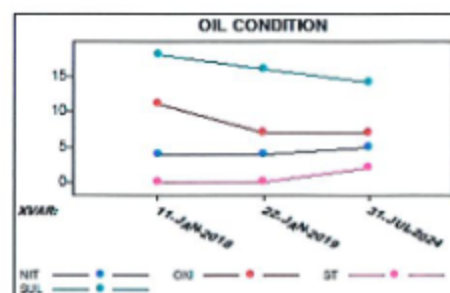
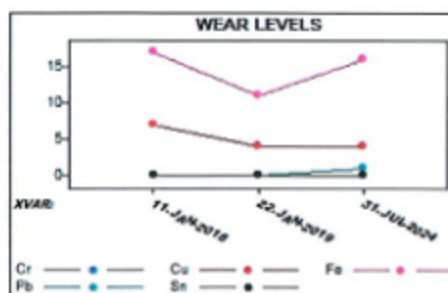
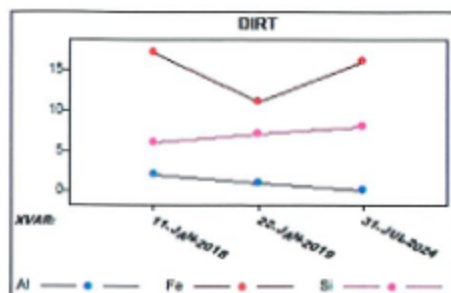
		31-Jul-24	22-Jan-19	11-Jan-18
PARTICLE COUNT - ISO 11171:1999 reported per ISO 4406				
ISO	ISO Code Rating	23/22/17	21/19/15	23/22/19
4µ	4µ	77668	15875	57516
6µ	6µ	34689	2748	20220
10µ	10µ	5042	771	5429
14µ	14µ	868	315	2706
18µ	18µ		156	1823
21µ	21µ	112	93	1352
25µ	25µ	36		
38µ	38µ	2	7	211
70µ	70µ	0	1	31

PARTCL VOL INDICATOR

PVI	PVI	7.23	2.00	22.28
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DEBRIS

Debrl	Debris	N	N
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Report Comment

Our sample report has been updated! For more information on the new report, go to - <https://www.youtube.com/watch?v=4h8bREJvUrs>

REAR DIFF

EQUIP NUM: AG120

SERIAL NUMBER: ZDF134400

CASE 550_CASE

COMP SERIAL NUM: ZDF134400

 No Action Required

H160-54219-0438

SAMPLE SHIP TIME (days) : 6

RUMMEL CONSTRUCTION

CO

RECEIVED DATE: 06-Aug-24

Interpreted On: 06-Aug-24

NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.

SAMPLE INFORMATION

	31-Jul-24	22-Jan-19	11-Jan-18
Sampled Date	31-Jul-24	22-Jan-19	11-Jan-18
Sample Id	H160-54219-0438	H160-49024-0106	H160-48016-0145
Lab Date	06-Aug-24	24-Jan-19	16-Jan-18
Meter [Hr]	11734.0	5756.0	4126.0
Comp Meter [Hr]	11734.0		
Meter On Fluid	11734.0	5756.0	4126.0
Fluid Brand	CONOCO	CONOCO	CONOCO
Fluid Weight			
Fluid Type			
Fluid Change	N	N	N
Filter Change			
PM Level	500	500	500
	0		

WEAR LEVELS / ADDITIVES

	31-Jul-24	22-Jan-19	11-Jan-18
ELEMENTAL ANALYSIS (PPM) ASTM D6165 (OIL) / ASTM D6130 (COOLANT)			
Cu Copper	4	4	13
Fe Iron	13	11	13
Cr Chromium	0	0	0
Al Aluminum	0	2	2
Pb Lead	0	1	0
Sn Tin	1	0	0
Si Silicon	8	6	5
Na Sodium	3	5	13
K Potassium	2	1	0
Mo Molybdenum	35	15	31
Ni Nickel	0	1	1
Ag Silver	0	0	0
Ti Titanium	0	1	0
V Vanadium	0	0	0
Mn Manganese	0	0	0
Ca Calcium	3153	2542	1979
P Phosphorus	1151	1111	986
Zn Zinc	1340	1282	1105
Mg Magnesium	151	295	467
Ba Barium	0	0	0
B Boron	74	100	37

PREVIOUS SAMPLE

NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.

For additional sample history, go to:

[S.O.S WEB](#)

CONDITION / CONTAMINATION

	31-Jul-24	22-Jan-19	11-Jan-18
VISCOSITY (CENTISTOKES) ASTM D445			
V100 Viscosity at 100 C	10.90	9.2	10.2
INFRARED (JFM) ASTM E2412			
ST Soot	1	0	0
OXI Oxidation	7	8	11
SUL Sulfur Products	15	17	18
NIT Nitration	5	4	4

WATER

W Water	N	N	N
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CLEANLINESS

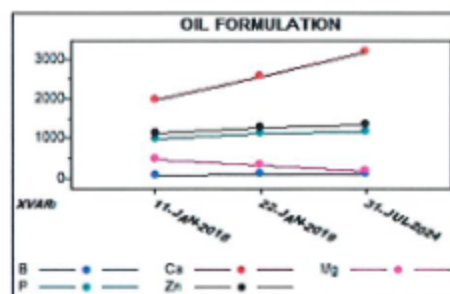
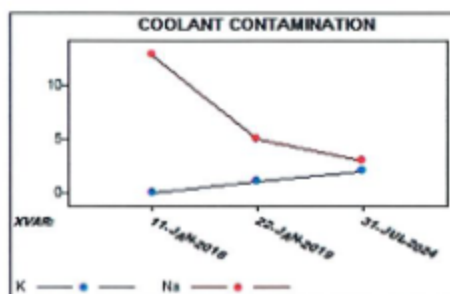
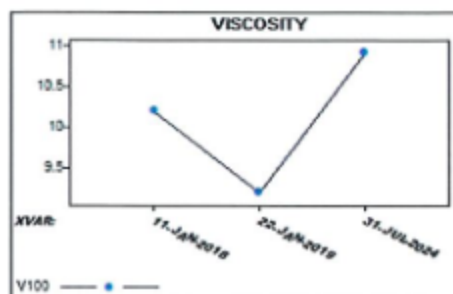
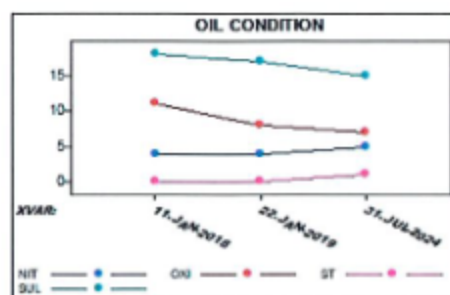
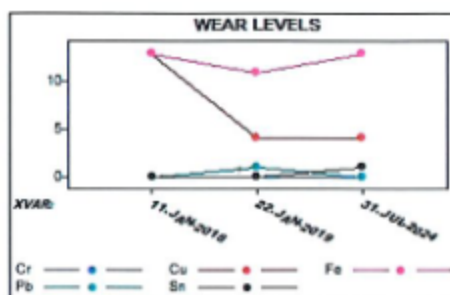
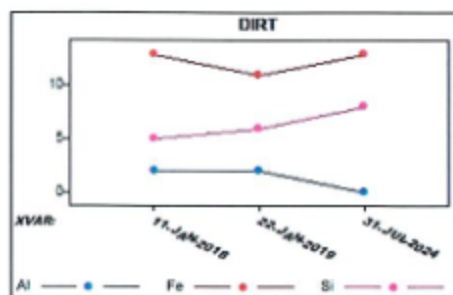
	31-Jul-24	22-Jan-19	11-Jan-18
PARTICLE COUNT - ISO 11171:1999 reported per ISO 4406			
ISO ISO Code Rating	22/19/14	22/20/17	22/21/19
4µ 4µ	30854	20776	30017
6µ 6µ	4620	6238	12563
10µ 10µ	423	1960	4792
14µ 14µ	102	876	2846
18µ 18µ		465	2115
21µ 21µ	31	294	1710
25µ 25µ	15		
38µ 38µ	1	27	356
70µ 70µ	0	3	50

PARTCL VOL INDICATOR

PVI PVI	1.62	4.94	27.79
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DEBRIS

Debrl Debris	N
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Report Comment

Our sample report has been updated! For more information on the new report, go to - <https://www.youtube.com/watch?v=4h8bREJVUrs>