

009-8


LubeWatch®

Lubricant Analysis Report

North America: +1-866-341-0487

0	1	2	3	4
NORMAL		ABNORMAL		CRITICAL

Overall report severity based on comments.

Account Information		Component Information		Sample Information	
Account Number:	LUB307-0037-0000	Component ID:	8955 H	Tracking Number:	25168593403
Company Name:	PIDHERNEY'S	Secondary ID:	1T0331GKLMF401398	Lab Number:	E-033457
Contact:	CARLA MERKLIN	Component Type:	HYDRAULIC	Lab Location:	Edmonton
Address:	RANGE RD 70 PO BOX 940	Manufacturer:	JOHN DEERE	Data Analyst:	KDN
	ROCKY MOUNTAIN HOUSE,	Model:	331G	Sampled:	20-Sep-2025
	AB T4T 1A7 CA	Application:	CONSTRUCTION	Submitted:	03-Oct-2025
Phone Number:	403-845-3072	Sump Capacity:		Received:	07-Oct-2025
				Completed:	15-Oct-2025
Filter Information		Miscellaneous Information		Product Information	
Filter Type:	Information Requested	Wildcard 1:	Your Rep.: Cary Maxwell	Product Manufacturer:	CHEVRON
Micron Rating:	0	Wildcard 2:	Ph:(403) 861-9957	Product Name:	RANDO HDZ
				Viscosity Grade:	ISO 46
Comments	Flagged data does not indicate an immediate need for maintenance action. Continue to observe the trend and monitor equipment and fluid conditions. Viscosity is MODERATELY LOW. Causes include contamination, incorrectly identified viscosity grade, or adding a different viscosity grade to the component. Iron is at a MINOR LEVEL. IRON in hydraulic systems could possibly be pistons/rods (if piston pump), gears or bearings (if gear pump), or fluid conductors such as piping, tubing or steel fittings; Flagged additives do not match current baseline reference for the specified product (this does not imply the lubricant does not meet proper API, SAE, or ISO classifications). Please provide this units sump capacity with next sample.				

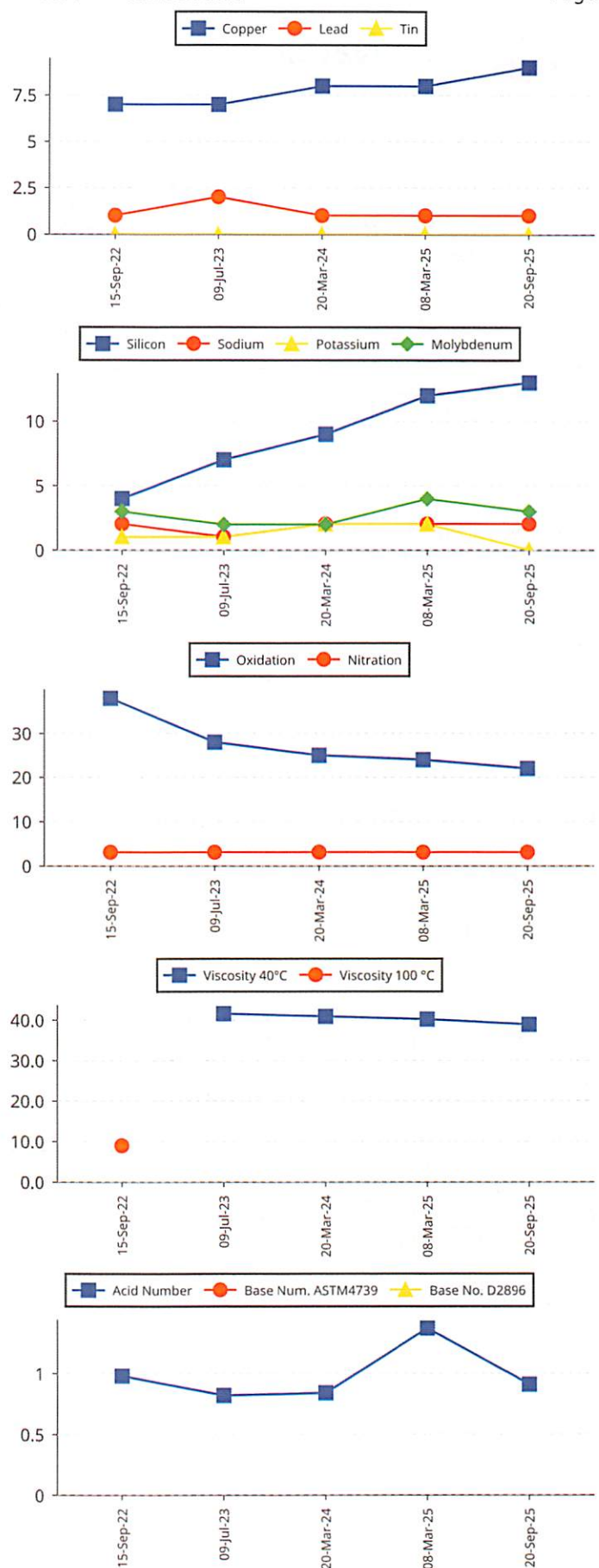
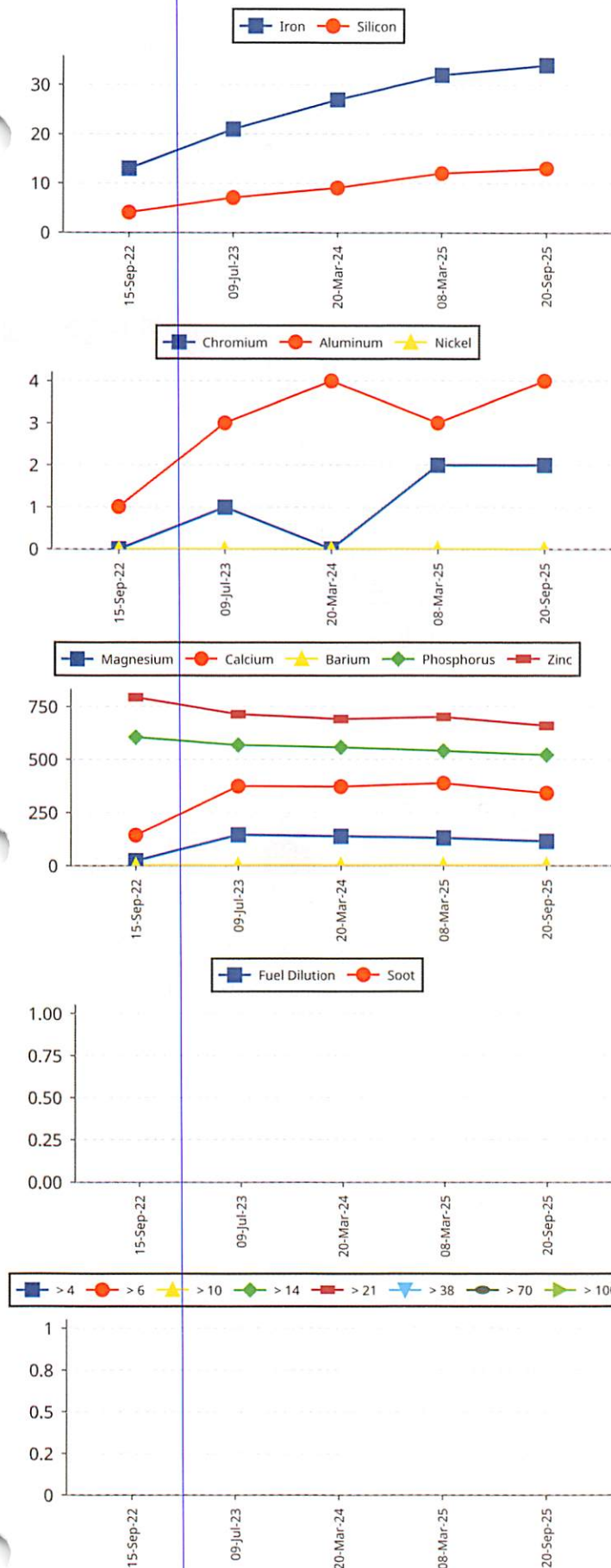
Sample #	Wear Metals (ppm)										Contaminant Metals (ppm)			Multi-Source Metals (ppm)					Additive Metals (ppm)					
	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
BL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	56	0	399	505
1	13	0	0	1	7	1	0	0	0	0	4	2	1	0	3	0	0	0	8	23	141	0	605	792
2	21	1	0	3	7	2	0	0	0	0	7	1	1	0	2	1	1	0	23	145	371	0	568	712
3	27	0	0	4	8	1	0	0	0	0	9	2	2	0	2	0	0	0	22	138	369	0	557	689
4	32	2	0	3	8	1	0	0	0	0	12	2	2	0	4	0	1	0	21	130	385	0	540	699
5	34	2	0	4	9	1	0	0	0	0	13	2	0	0	3	0	1	0	19	114	338	0	521	657

Sample #	Sample Information							Contaminants			Fluid Properties					
	Date Sampled	Date Received	Lube Time	Unit Time	Lube Change	Lube Added	Filter Change	Fuel Dilution	Soot	Water	Viscosity 40°C	Viscosity 100 °C	Acid Number	Base Num. ASTM4739	Oxidation	Nitration
			h	h		L		%	%	%	cSt	cSt	mg KOH / g	mg KOH / g	abs / cm	abs / 0.1mm
BL	10-May-2023	15-May-2023	0	0	Unk	0	Unk			<.1 - FTIR	47.8		0.52		16	2
1	15-Sep-2022	21-Oct-2022	564	564	No	0	Yes			<.1 - FTIR		8.9	0.98		38	3
2	09-Jul-2023	12-Jul-2023	0	977	No	0	Yes			<.1 - FTIR	41.6		0.82		28	3
3	20-Mar-2024	24-Apr-2024	0	1420	No	0	No			<.1 - FTIR	40.9		0.84		25	3
4	08-Mar-2025	14-Mar-2025	0	1945	No	0	Yes			<.1 - FTIR	40.2		1.37		24	3
5	20-Sep-2025	07-Oct-2025	447	2392	No	0	No			<.1 - FTIR	38.9		0.91		22	3

Sample #	ISO Code	Particle Count (particles/mL)								Test Method	Additional Testing
		> 4	> 6	> 10	> 14	> 21	> 38	> 70	> 100		
BL	/ /										
1	/ /										
2	/ /										
3	/ /										
4	/ /										
5	/ /										

Comments are advisory only and are based on the sample information provided by the customer being valid. Results related only to the items tested. Missing fluid or component information limits the evaluation. No warranty is expressed or implied. Measurement uncertainty available upon request.

Historical Comments	1	LUBRICANT CHANGE is suggested if not done at sampling time. Infrared results indicate OXIDATION is SEVERELY HIGH; Viscosity is SEVERELY LOW. Causes include contamination, incorrectly identified viscosity grade, or adding a different viscosity grade to the component. Increased component wear possible. If grade is misidentified, it can be updated in HORIZON. Flagged additives do not match current baseline reference for the specified product (this does not imply the lubricant does not meet proper API, SAE, or ISO classifications). Is the FLUID MANUFACTURER, PRODUCT NAME and/or VISCOSITY GRADE correctly identified? Please provide this units sump capacity with next sample. Filter change acknowledged.
	2	LUBRICANT CHANGE is suggested if not done at sampling time. Infrared results indicate OXIDATION is SEVERELY HIGH; Bearing metal is at a MINOR LEVEL; Flagged additives do not match current baseline reference for the specified product (this does not imply the lubricant does not meet proper API, SAE, or ISO classifications). LUBRICANT TIME was not provided for this sample. Filter change acknowledged.
	3	Flagged data does not indicate an immediate need for maintenance action. Continue to observe the trend and monitor equipment and fluid conditions. Acid Number is SLIGHTLY HIGH, which may be due to oxidation, contamination with an acidic product, extended drain interval, or lubricant mixing. Viscosity is SLIGHTLY LOW. Causes include contamination, incorrectly identified viscosity grade, or adding a different viscosity grade to the component. Flagged additive levels are higher than expected for the identified lubricant. This may have been topped off with a different lubricant, the fluid may be misidentified, or a different lubricant or formulation may have been in use prior to a recent change. Oxidation is flagged, however we cannot determine the severity of this oxidation value. If using a synthetic lubricant starting oxidation values are typically higher. Continue to monitor other fluid properties for trends of oil degradation. LUBRICANT TIME was not provided for this sample. Please provide this units sump capacity with next sample.
	4	LUBRICANT CHANGE is suggested if not done at sampling time. Suggest monitoring the drain interval and equipment operating temperature. Acid number is SIGNIFICANTLY HIGH, which may be due to oxidation, contamination with an acidic product, or lubricant mixing. Iron is at a MINOR LEVEL. IRON in hydraulic systems could possibly be pistons/rods (if piston pump), gears or bearings (if gear pump), or fluid conductors such as piping, tubing or steel fittings; Infrared results indicate beginning lube oxidation; Viscosity is SLIGHTLY LOW. Causes include contamination, incorrectly identified viscosity grade, or adding a different viscosity grade to the component. Flagged additive levels are higher than expected for the identified lubricant. This may have been topped off with a different lubricant, the fluid may be misidentified, or a different lubricant or formulation may have been in use prior to a recent change. LUBRICANT TIME was not provided for this sample. Filter change acknowledged.





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0	1	2	3	4
NORMAL		ABNORMAL		CRITICAL

Overall report severity based on comments.

Account Information		Component Information		Sample Information	
Account Number: LUB307-0037-0000 Company Name: PIDHERNEY'S Contact: CARLA MERKLIN Address: RANGE RD 70 PO BOX 940 ROCKY MOUNTAIN HOUSE, AB T4T 1A7 CA Phone Number: 403-845-3072		Component ID: 8955 E Secondary ID: 1T0331GKLMF401398 Component Type: DIESEL ENGINE Manufacturer: YANMAR Model: 4TNV94-FHT Application: CONSTRUCTION Sump Capacity:		Tracking Number: 25168S93792 Lab Number: E-033432 Lab Location: Edmonton Data Analyst: FLG Sampled: 20-Sep-2025 Submitted: 03-Oct-2025 Received: 07-Oct-2025 Completed: 14-Oct-2025	
Filter Information		Miscellaneous Information		Product Information	
Filter Type: Information Requested Micron Rating: 0		Wildcard 1: Your Rep.: Cary Maxwell Wildcard 2: Ph:(403) 861-9957 Wildcard 3: _		Product Manufacturer: CHEVRON Product Name: DELO 400 XSP Viscosity Grade: SAE 5W40	
Comments	Flagged data does not indicate an immediate need for maintenance action. Continue to observe the trend and monitor equipment and fluid conditions. Boron is slightly low for this lubricant. Boron levels may naturally decline with use so this is not a cause for concern. Please provide this units sump capacity with next sample. Lubricant and filter change acknowledged.				

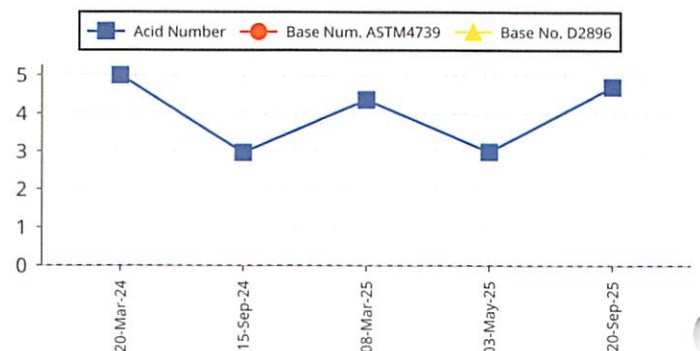
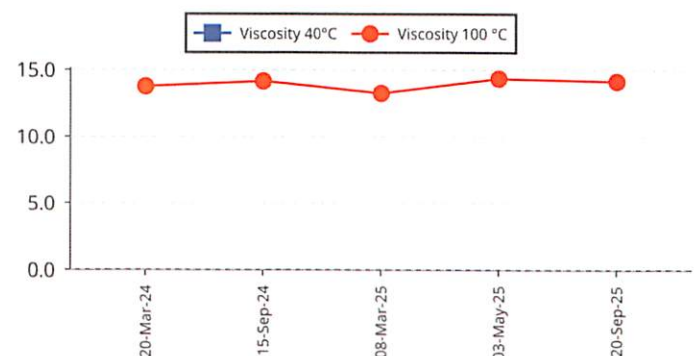
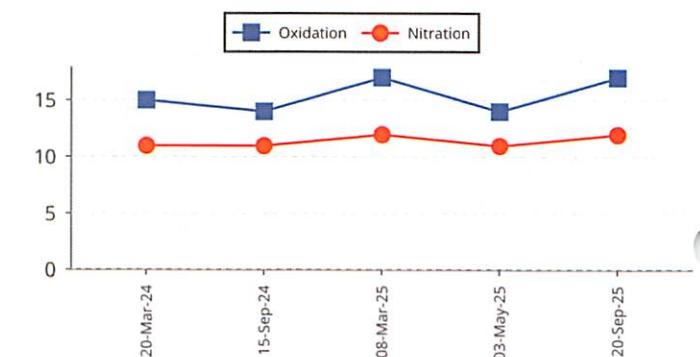
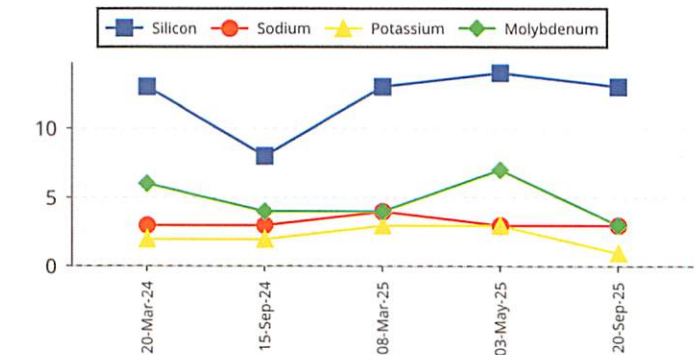
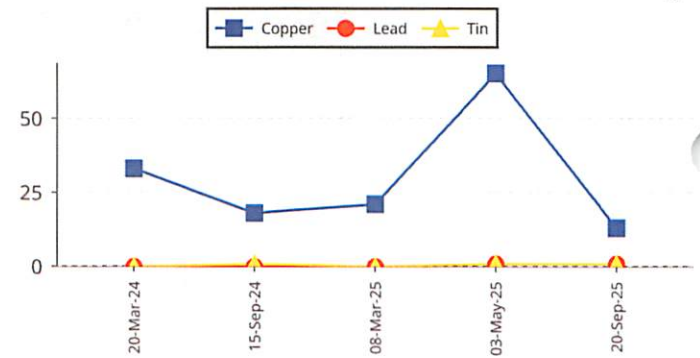
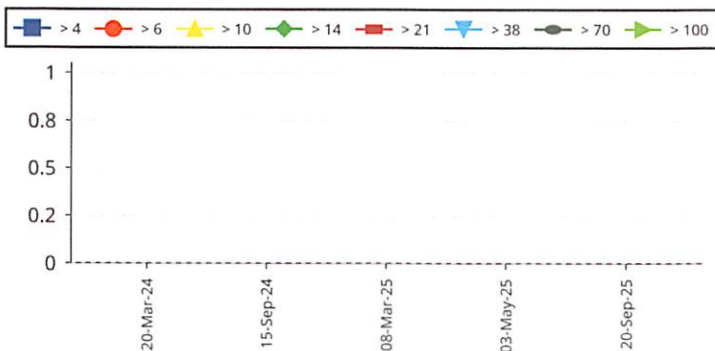
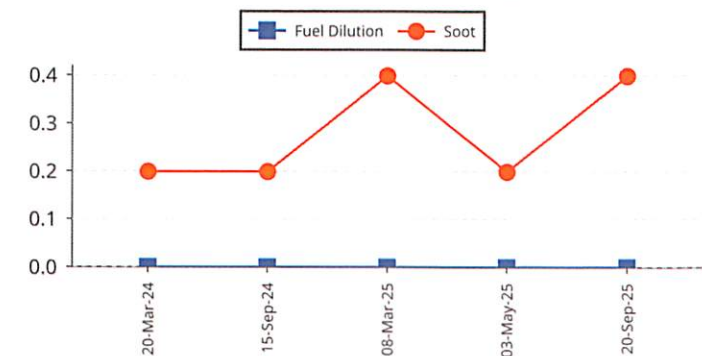
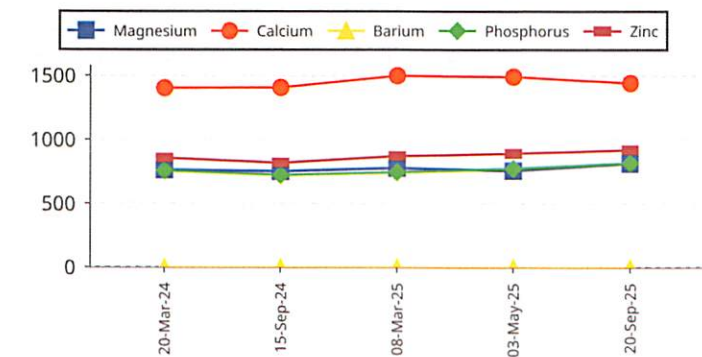
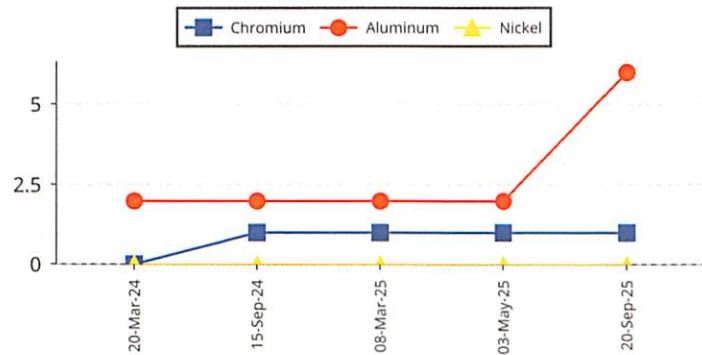
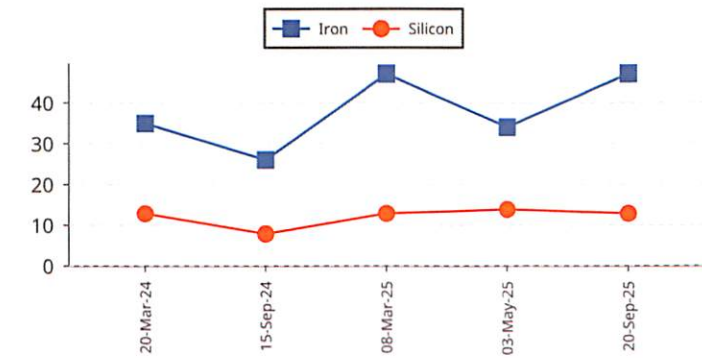
	Wear Metals (ppm)										Contaminant Metals (ppm)			Multi-Source Metals (ppm)						Additive Metals (ppm)				
Sample #	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
BL	3	0	0	1	0	1	0	0	0	0	6	3	3	1	0	0	0	1	98	775	1323	0	768	869
6	35	0	0	2	33	0	0	0	0	0	13	3	2	1	6	1	0	1	41	763	1405	0	758	859
7	26	1	0	2	18	0	1	0	0	0	8	3	2	1	4	1	1	1	43	752	1409	0	722	821
8	47	1	0	2	21	0	0	0	0	0	13	4	3	1	4	0	1	1	32	778	1501	0	745	874
9	34	1	0	2	65	1	1	0	0	0	14	3	3	1	7	0	1	0	51	757	1493	0	775	895
10	47	1	0	6	13	1	1	0	0	0	13	3	1	1	3	0	1	0	32	815	1444	0	818	923

Sample #	Sample Information							Contaminants			Fluid Properties					
	Date Sampled	Date Received	Lube Time	Unit Time	Lube Change	Lube Added	Filter Change	Fuel Dilution	Soot	Water	Viscosity 40°C	Viscosity 100 °C	Acid Number	Base Num. ASTM4739	Oxidation	Nitration
			h	h		L		%	%	%	cSt	cSt	mg KOH / g	mg KOH / g	abs / cm	abs / 0.1mm
BL	01-Jan-2023	18-Sep-2023	0	0	Unk	0	Unk			<.1 - FTIR		15.3		6.21	10	7
6	20-Mar-2024	24-Apr-2024	443	1420	Yes	0	Yes	<2 - Estimate	0.2 - E2412	<.1 - FTIR		13.8	5.00		15	11
7	15-Sep-2024	03-Oct-2024	242	1662	No	0	No	<2 - Estimate	0.2 - E2412	<.1 - FTIR		14.2	2.97		14	11
8	08-Mar-2025	14-Mar-2025	525	1945	Yes	0	Yes	<2 - Estimate	0.4 - E2412	<.1 - FTIR		13.3	4.36		17	12
9	03-May-2025	21-May-2025	211	2156	No	0	No	<2 - Estimate	0.2 - E2412	<.1 - FTIR		14.4	2.99		14	11
10	20-Sep-2025	07-Oct-2025	447	2392	Yes	0	Yes	<2 - Estimate	.4 - E2412	<.1 - FTIR		14.2	4.70		17	12

Sample #	ISO Code	Particle Count (particles/mL)								Test Method	Additional Testing
		> 4	> 6	> 10	> 14	> 21	> 38	> 70	> 100		
BL	/ /										
6	/ /										
7	/ /										
8	/ /										
9	/ /										
10	/ /										

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Historical Comments	6	Flagged data does not indicate an immediate need for maintenance action. Continue to observe the trend and monitor equipment and fluid conditions. Copper is at a MINOR LEVEL; COPPER is most likely LEACHING into the oil via the OIL COOLER core tubing. This typically DOES NOT REQUIRE MAINTENANCE ACTION unless there is evidence of COOLANT in the oil. Boron is slightly low for this lubricant. Boron levels may naturally decline with use so this is not a cause for concern. Please provide this units sump capacity with next sample. Lubricant and filter change acknowledged.
	7	Flagged data does not indicate an immediate need for maintenance action. Continue to observe the trend and monitor equipment and fluid conditions. Boron is slightly low for this lubricant. Boron levels may naturally decline with use so this is not a cause for concern.
	8	Flagged data does not indicate an immediate need for maintenance action. Continue to observe the trend and monitor equipment and fluid conditions. Copper is at a MINOR LEVEL; COPPER is most likely LEACHING into the oil via the OIL COOLER core tubing. This typically DOES NOT REQUIRE MAINTENANCE ACTION unless there is evidence of COOLANT in the oil. Boron is slightly low for this lubricant. Boron levels may naturally decline with use so this is not a cause for concern. Please provide this units sump capacity with next sample. Lubricant and filter change acknowledged.
	9	Flagged data does not indicate an immediate need for maintenance action. Continue to observe the trend and monitor equipment and fluid conditions. Copper is at a MODERATE LEVEL; COPPER is most likely LEACHING into the oil via the OIL COOLER core tubing. This typically DOES NOT REQUIRE MAINTENANCE ACTION unless there is evidence of COOLANT in the oil.





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0	1	2	3	4
NORMAL		ABNORMAL		CRITICAL

Overall report severity based on comments.

Account Information		Component Information		Sample Information	
Account Number: LUB307-0037-0000 Company Name: PIDHERNEY'S Contact: CARLA MERKLIN Address: RANGE RD 70 PO BOX 940 ROCKY MOUNTAIN HOUSE, AB T4T 1A7 CA Phone Number: 403-845-3072		Component ID: 8955 LFD Secondary ID: 1T0331GKLMF401398 Component Type: FINAL DRIVE Manufacturer: JOHN DEERE Model: 331G Application: CONSTRUCTION Sump Capacity:		Tracking Number: 25168593405 Lab Number: E-033416 Lab Location: Edmonton Data Analyst: I9B Sampled: 20-Sep-2025 Submitted: 03-Oct-2025 Received: 07-Oct-2025 Completed: 14-Oct-2025	
Filter Information		Miscellaneous Information		Product Information	
Filter Type: Information Requested Micron Rating: 0		Wildcard 1: Your Rep.: Cary Maxwell Wildcard 2: Ph:(403) 861-9957		Product Manufacturer: CHEVRON Product Name: MULTIGEAR EP-5 Viscosity Grade: SAE 80W90	
Comments	Flagged data does not indicate an immediate need for maintenance action. Continue to observe the trend and monitor equipment and fluid conditions. Phosphorus is slightly high for this lubricant. Please provide this units sump capacity with next sample. LUBRICANT TIME was not provided for this sample. Lubricant change acknowledged.				

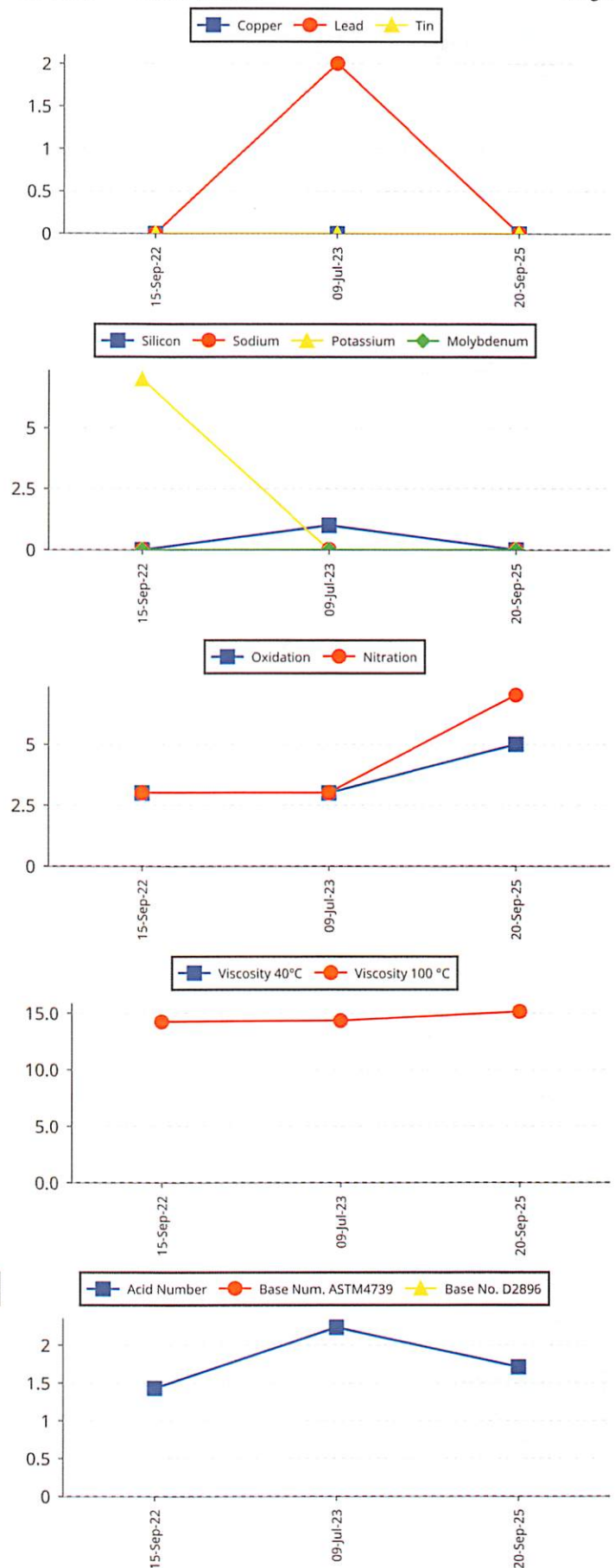
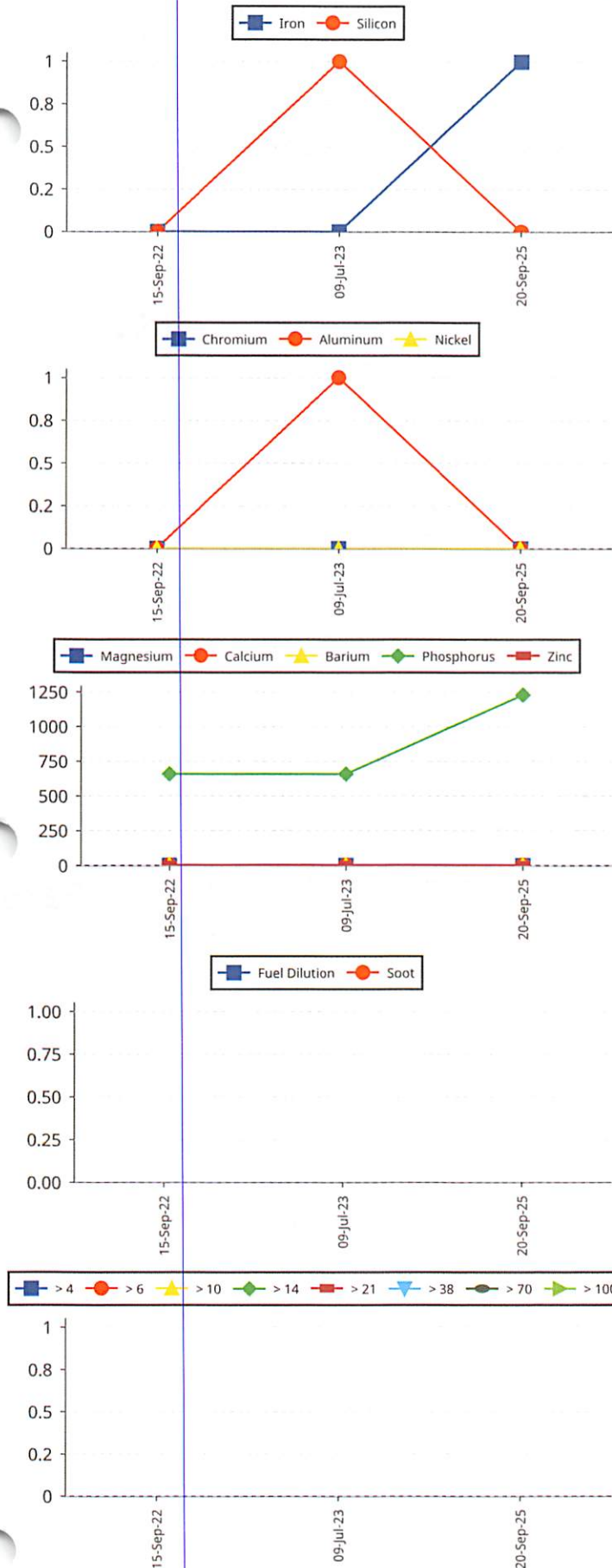
	Wear Metals (ppm)										Contaminant Metals (ppm)			Multi-Source Metals (ppm)						Additive Metals (ppm)				
Sample #	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
BL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	133	1	2	0	775	3
1	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	7	0	0	0	658	0
2	0	0	0	1	0	2	0	0	0	0	1	0	0	0	0	0	0	0	2	1	1	0	658	1
3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	175	0	1	0	1230	0

Sample Information								Contaminants			Fluid Properties					
Sample #	Date Sampled	Date Received	Lube Time	Unit Time	Lube Change	Lube Added	Filter Change	Fuel Dilution	Soot	Water	Viscosity 40°C	Viscosity 100 °C	Acid Number	Base Num. ASTM4739	Oxidation	Nitration
			h	h		L		%	%	%	cSt	cSt	mg KOH / g	mg KOH / g	abs / cm	abs / 0.1mm
BL	N/A	18-Sep-2017	0	0	Unk	0	Unk			<.1 - FTIR		14.1	1.59		3	2
1	15-Sep-2022	21-Oct-2022	564	564	Yes	0	No			<.1 - FTIR		14.2	1.43		3	3
2	09-Jul-2023	12-Jul-2023	0	977	Yes	0	No			<.1 - FTIR		14.3	2.23		3	3
3	20-Sep-2025	07-Oct-2025	0	2392	Yes	0	No			<.1 - FTIR		15.1	1.71		5	7

Particle Count (particles/mL)										Additional Testing	
Sample #	ISO Code	> 4	> 6	> 10	> 14	> 21	> 38	> 70	> 100	Test Method	
	Based On 4/6/14	particles / mL	particles / mL	particles / mL	particles / mL	particles / mL	particles / mL	particles / mL	particles / mL		
BL	/ /										
1	/ /										
2	/ /										
3	/ /										

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Historical Comments	1	Flagged data does not indicate an immediate need for maintenance action. Continue to observe the trend and monitor equipment and fluid conditions. Boron is slightly low for this lubricant. Boron levels may naturally decline with use so this is not a cause for concern. Lubricant change acknowledged.
	2	Flagged data does not indicate an immediate need for maintenance action. Continue to observe the trend and monitor equipment and fluid conditions. Acid Number is SLIGHTLY HIGH, which may be due to oxidation, contamination with an acidic product, extended drain interval, or lubricant mixing. Boron is slightly low for this lubricant. Boron levels may naturally decline with use so this is not a cause for concern. LUBRICANT TIME was not provided for this sample. Lubricant change acknowledged.



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NORMAL		ABNORMAL		CRITICAL

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Account Information		Component Information		Sample Information	
Account Number: LUB307-0037-0000 Company Name: PIDHERNEY'S Contact: CARLA MERKLIN Address: RANGE RD 70 PO BOX 940 ROCKY MOUNTAIN HOUSE, AB T4T 1A7 CA Phone Number: 403-845-3072		Component ID: 8955 RFD Secondary ID: 1T0331GKLMF401398 Component Type: FINAL DRIVE Manufacturer: JOHN DEERE Model: 331G Application: CONSTRUCTION Sump Capacity:		Tracking Number: 25168593404 Lab Number: E-033463 Lab Location: Edmonton Data Analyst: FLG Sampled: 20-Sep-2025 Submitted: 03-Oct-2025 Received: 07-Oct-2025 Completed: 14-Oct-2025	
Filter Information		Miscellaneous Information		Product Information	
Filter Type: Information Requested Micron Rating: 0		Wildcard 1: Your Rep.: Cary Maxwell Wildcard 2: Ph:(403) 861-9957		Product Manufacturer: CHEVRON Product Name: MULTIGEAR EP-5 Viscosity Grade: SAE 80W90	
Comments	Flagged data does not indicate an immediate need for maintenance action. Continue to observe the trend and monitor equipment and fluid conditions. Flagged additives do not match current baseline reference for the specified product (this does not imply the lubricant does not meet proper API, SAE, or ISO classifications). Please provide this units sump capacity with next sample. LUBRICANT TIME was not provided for this sample. Lubricant change acknowledged.				

Wear Metals (ppm)											Contaminant Metals (ppm)			Multi-Source Metals (ppm)						Additive Metals (ppm)				
Sample #	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
BL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	133	1	2	0	775	3
1	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	7	0	0	0	687	0
2	0	0	0	1	0	2	0	0	0	0	1	0	0	0	0	0	0	0	2	3	7	0	645	8
3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	174	1	27	0	1235	11

Sample Information								Contaminants			Fluid Properties					
Sample #	Date Sampled	Date Received	Lube Time	Unit Time	Lube Change	Lube Added	Filter Change	Fuel Dilution	Soot	Water	Viscosity 40°C	Viscosity 100 °C	Acid Number	Base Num. ASTM4739	Oxidation	Nitration
			h	h		L		%	%	%	cSt	cSt	mg KOH / g	mg KOH / g	abs / cm	abs / 0.1mm
BL	N/A	18-Sep-2017	0	0	Unk	0	Unk									
1	15-Sep-2022	21-Oct-2022	564	564	Yes	0	No			<.1 - FTIR		14.1	1.59		3	2
2	09-Jul-2023	12-Jul-2023	0	977	Yes	0	No			<.1 - FTIR		14.1	1.43		3	3
3	20-Sep-2025	07-Oct-2025	0	2392	Yes	0	No			<.1 - FTIR		15.2	2.25		5	6

Particle Count (particles/mL)										Additional Testing	
Sample #	ISO Code	> 4	> 6	> 10	> 14	> 21	> 38	> 70	> 100		
	Based On 4/6/14	particles / mL	particles / mL	particles / mL	particles / mL	particles / mL	particles / mL	particles / mL	particles / mL		
BL	/ /										
1	/ /										
2	/ /										
3	/ /										

Comments are advisory only and are based on the sample information provided by the customer being valid. Results related only to the items tested. Missing fluid or component information limits the evaluation. No warranty is expressed or implied. Measurement uncertainty available upon request.

Historical Comments	1	Flagged data does not indicate an immediate need for maintenance action. Continue to observe the trend and monitor equipment and fluid conditions. Boron is slightly low for this lubricant. Boron levels may naturally decline with use so this is not a cause for concern. Lubricant change acknowledged.
	2	Flagged data does not indicate an immediate need for maintenance action. Continue to observe the trend and monitor equipment and fluid conditions. Boron is slightly low for this lubricant. Boron levels may naturally decline with use so this is not a cause for concern. LUBRICANT TIME was not provided for this sample. Lubricant change acknowledged.

