

Results Color Codes

Results outside the normal range are highlighted red Results with borderline values are highlighted yellow

Results within the normal range are highlighted green

Oil Analysis Report

Name:		Joel Negron	Sample Type:		Engine	
Unit ID:	W	P0AA29933S621675	Condition:		GOOD	
Sample Information			Previous	s Samples		
Sample ID #:	AAA-2591		AAA-1957	0	0	0
Sample Date:	12/16/21		3/15/21	1/0/00	1/0/00	1/0/00
Oil Brand:	Driven		Mobil 1	0	0	0
Viscosity Grade:	5W-40		0W-30	0	0	0
Miles:	3000		4000	0	0	0
Oil Health	Test Results	Legend		Previous Sa	mple Results	
iscosity @ 100C:	13.0	cSt Flow Measurement	11.9	0.0	0.0	0.0
xidation Value:	3 13.0	Oil Life	32.6	0.0	0.0	0.0
uel Dilution:	📀 1.14	Contamination	1.91	0	0	0
/ater:	Negative	Contamination	Negative	0	0	0
lycol:	Negative	Contamination	Negative	0	0	0
otassium:	O	Contamination	2	0	0	0
ilicon:	10	Anti-Foam, Dirt	6	0	0	0
dditives (ppm):						
Calcium	1621	Detergent	2934	0	0	0
Sodium	5	Detergent	4	0	0	0
Magnesium	12	Detergent	17	0	0	0
Phosphorus	998	Anti-Wear	957	0	0	0
Zinc	1143	Anti-Wear	1242	0	0	0
Molybdenum	462	Friction Reducer	272	0	0	0
Boron	89	Friction Reducer	184	0	0	0
Equipment Health	Test Results	Legend		Previous Sa	mple Results	
/ear Trend:						
Iron	og 7	Valvetrain, Cylinder Bore Wear	Ø 7	0	0	0
Chromium	0 1	Piston Ring Wear	0	0	0	0
Copper	0 1	Bushing, Bearing Wear	8	0	0	0
Tin		Bearing Wear	0	0	0	0
Lead	0	Bearing Wear	O	0	0	0
Aluminum	5	Piston, Aluminum Bore Wear	6	0	0	0
Manganese	0	Valve Guide Wear/Octane Booster	0 1	0	0	0
Titanium	0	Wrist Pin, Retainer Wear	0	0	0	0
Vanadium	-	Gear, Crank Wear	0	0	0	0
Total Metals:	18	Total Wear Metals	22		0	0
Wear / 1000 Miles:	0 6	Wear Metals / 1000 Miles	6	#DIV/0!	#DIV/0!	#DIV/0!
wear / 1000 miles.		· · · · · · · · · · · · · · · · · · ·		· · ·	· ·	



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Oil Analysis Report - Explained

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	Name:	The name of the customer	Sample Type:	The type of equipment the sample was taken from			
	Unit ID:	The ID of the equipment sampled	Condition:	The overall condition of the sample			
Samp	e Information						
Sample ID #:		ID Number from the sample bottle. Each SPEEDiagnostix sa	mple kit features a unique I	D number that provides traceability for each sample.			
Sample Date:		The date the sample was taken. Knowing when samples we					
Oil Brand:		The brand of the oil used. This information can be used to compared the used oil results to the specifications of the new oil (if available).					
Viscosity Grad	e:	The viscosity grade of the oil. The results of the lab viscosity test is compared to the new oil viscosity to gauge the health of the oil.					
Mileage:		The number of miles on the oil. This is critical information in	the evaluation and calculat	ion of the wear rate.			
(Dil Health	Test Descriptions					
Viscosity @ 10	00C:	Viscosity measurement to check whether or not the oil is still in the correct viscosity range. A change in viscosity means a change in oil health.					
Oxidation Valu	ie:	Oxidation is the chemical breakdown of the oil. The higher the number, the greater the oxidation, which means greater oil degradation.					
Fuel Dilution:		Fuel dilution lowers the viscosity of the oil and indicates tune	e up or fuel delivery problen	ns. POSITIVE indicates abnormal fuel dilution levels.			
Water:		The presence of water in the oil indicates a problem. Water can come from a coolant leak or from extended low temperature operation.					
Glycol:		POSITIVE indicates glycol contamination, which typically con	mes from a coolant leak. Gly	col will destroy the lubricating properties of the oil.			
Potassium:		Potassium can also indicate coolant contamination, which the	ypically comes from a blown	head gasket. Potassium levels under 10 are normal.			
Silicon:		Silicon can come from the anti-foam additive in the oil, airbo	orne dust entering the engir	ne, silicone sealants, or piston and Alusil bore wear.			
Additives (ppi	n):	Different types of oil will contain various additives, so the ind	dividual additive types and l	evels will vary according to application.			
	Calcium	is a detergent additive that keeps parts clean, prevents rust	and neutralizes acids. It is	typically found in motor oils and transmission fluids.			
	Sodium	is also a detergent additive that keeps parts clean and neut	ralizes acids. It is found in so	ome motor oils.			
	Magnesium	is also a detergent additive that keeps parts clean and neut	ralizes acids. It is found in so	ome motor oils and transmission fluids.			
	Phosphorus	is an anti-wear additive, and it typically comes from ZDDP. I	Phosphorus is a key anti-wea	ar additive, and it is limited in API licensed oils.			
	Zinc	is an anti-wear additive and anti-oxidant, and it also comes	from ZDDP. Combined with	Phosphorus, Zinc is a key anti-wear additive in motor oils.			
	Molybdenum	is a multi-functional additive. Molybdenum provides anti-we	ear protection, reduces frict	ion and inhibits oxidation.			
	Boron	reduces friction and reduces wear. Boron is typically used in	combination with Molybde	num and ZDDP.			
Equi	oment Health	Test Descriptions					
Wear Trend:	Wear Metals (ppm):	The parts per million (ppm) of metals in the oil from worn pa	arts in the engine, transmiss	ion, gear box, etc			
	Iron	is the main element in steel and cast iron, so the presence o	of iron in the used oil indicate	es wear of cast iron and steel parts. Rust increases Iron leve			
	Chromium	is an alloy combined with iron to make steel, so the presence of Chromium in the oil indicates wear of steel parts.					
	Copper	r is an alloy combined with tin to make bronze, which is a common material used to make bushings. Also, copper is used to make Babbitt bea					
	Tin	n is an alloy combined with copper to make bronze, which is a common material used to make bushings. Also, tin is used to make Babbitt b					
	Lead	d is an alloy in Babbitt bearings, which are commonly used in automotive engines. Lead is also an anti-knock compound that is found in leade					
	Aluminum	is the main element in most pistons, and some engines utiliz	e aluminum cylinder bores.	So, the presence of Aluminum indicates piston and bore we			
	Manganese	se is an alloy used in Manganese Bronze, which is a high strength bronze often used in valve guides. It is also found in Octane boosters.					
	Titanium	n is a lightweight metal that is sometimes used in racing engines to make parts such as valve spring retainers. Also, Titanium is an additive in so					
	Vanadium	im is an alloy combined with iron to make steel, so the presence of Vanadium in the oil indicates wear of steel parts such as crankshafts or gears					
		The total of all wear metals in parts per million (ppm) from					
	Wear / 1,000 miles:	This is the wear rate, and it is a calculation of the total wear	r metals divided by the num	ber of miles on the oil to yield the rate of wear per 1,000 mi			
Comments / R	ecommendations						
*** Wear Trer	d: Statistical analysis of	the trend in wear rates for each wear metal over the history	y of samples taken from this	piece of equipment. The wear trend can help detect			
problems befo	e the wear levels ever r	reach caution or warning levels. Taking used oil samples on a	regular basis is important b	ecause wear trend analysis is a powerful tool for extending			
the life of equi	oment.						



Results Color Codes - Action Steps

Check sampling method & Re-sample immeadiately.

Re-sample at normal drain interval - Check trend analysis.

No action required - Results are normal.

Warning Caution Good

Oil Analysis Report - Steps To Take

If your report comes back with either a yellow "Caution" or a red "Warning" condition, it can be alarming, especially if the equipment seems to be operating normally. Don't panic, we are here to help. This page provides the steps to take if your report displays a "Caution" or "Warning" condition.

Because of the serious nature of these decisions, it is important to be 100% certain that the data and sample submitted are accurate and representative. The first step is to review the data submitted with the sample. Please ensure the correct information was submitted. The second step is to review the method used to take the sample. An improperly taken sample can cause a false "Caution" or "Warning" condition, so review the recommended sample collection method provided at https://www.speediagnostix.com/taking-a-sample. Once the sample information and sampling method have been verified, the action required for any "Caution" level condition is to resample at the normal drain interval. This provides a conservative opportunity to check the trend analysis. A "Caution" level condition means the results are within acceptable levels, but on the high side of the acceptable range. For a "Caution" level, no other steps need to be taken.

A "Warning" level means the results are beyond acceptable, which means the equipment sampled is at risk. The list of test results and recommended actions below provides the correct steps to take if your report comes back with red "Warning" conditions on one or more individual tests. Besides following the recommended steps below, take another sample as soon as possible to determine the trend analysis. Two samples that both indicate

Oxidation Value: Junised oil to establish the oxidation baseline for your oil. Feed Dilution: As stated above, check the injectors or carburetor. Dirly injectors or gumed-up carburetors can cause fuel dilution problems. Check the coolant system for leaks. Blown head gaskets and damaged bores can introduce water into the oiling system. Also, frequently starting an engine during storage without bringing the engine fully up to operating temperature can cause a build up of water from condensation. As a result, avoid starting the engine unless it is going to run long enough to get up to a normal operating Option: Glycot: Glycot: Glycot: Indicates path on the freeze, so check for coolant system leaks and make sure any funnels used to fill the equipment were not used to fill the radiator. Cross contamination of automotive the test is does happen by accident, and it can be the cause of "Caution" leave! Potassium: check the exilen levels to spike. Continued sampling will reveal if the silicon cane from sealants or from dust and dirt contamination. Good filters with proper fit greatly reduce silicon contamination. Silicon typically indicates (spinder bore and/or valvetrain wear. Oteck leak down and valve lash. Commended Action Wear Metals (ppm): Any red "Warning" level wear metal results should be taken seriously. Recommended actions and investigations should be handled promptly. Tron Typically indicates pistor ing wear wear. Check leak down and valve lash. Corporm: Typically indicates pistor ing wear wear. Check leak down and valve lash. <	 Injectory/carburetor to ensure proper function and air/fuel ratio. It is good practice to periodically use a fuel injector/carburetor cleaning additive to prevent excess fuel dilution from dirty injectors. A high oxidation reading means the oil is past its useful life or it contains Ester base oils. If the oil is not Ester based, then reduce the drain interval. If the oil is Ester based, please submit a sample of the Oxidation value: Insued oil to establish the exidation baseline for your oil. Fuel Dilution. A stated above, check the injectors or carburetor. Dirty injectors or gummed-up carburetors can cause fuel dilution problems. Check the coolant system for leaks. Blown head gaskets and damaged bores can introduce water into the oiling system. Also, frequently starting an engine during storage without bringing the engine unless it is going to run long enough to get up to a normal operating (you to operating temperature can cause a build up of water from condensation. As a result, avoid starting the engine unless it is going to run long enough to get up to a normal operating (you comes from Airbreez econtamination, so glycol indicates a coolant leak. Accordingly, check the cooling system for leaks. Potassium typically comes from anti-freeze, so check for coolant system leak and make sure any funnels used to fill the equipment were not used to fill the radiator. Cross contamination of automotive chemicals does happen by accident, and it can be the cause of "Caution" level conditions. Varient Marcing Marcing Marcing Marcing Marcing Name Marcing Marcing Name Marcing Mar	il Health Recommended Action
Viscosity @ 100: Injection	Viscosity @ 100: Isplicit is due to oxidation. A high oxidation reading means the oil is past its useful life or it contains Ester base oils. If the oil is not Ester based, then reduce the drain interval. If the oil is Ester based, please submit a sample of the oxidation baseline for your oil. Fuel Dilution: As stated above, check the injectors or carburetor. Diriv injectors or gummed-up carburetors can cause fuel dilution problems. Check the coolant system for leaks. Biown head gastets and damaged bores can introduce water into the oiling system. Also, frequently starting an engine during storage without bringing the engine fully up to operating temperature (spically 20 minutes). Giycol: Giycol consets from Anti-Freeze contamination, so glycol indicates a coolant leak. Accordingly, check the cooling system for leaks. Potassium typically comes from anti-freeze contamination, so glycol indicates a coolant leak. Accordingly, check the cooling system for leaks. Potassium typically comes from anti-freeze contamination, so glycol indicates a coolant leak. Accordingly, check the cooling system for leaks. Silicon typically comes from arithore dust, so check the ir and/or breathers on the equipment. High levels of silicon can also come from seals and sealants, so replacing or installing new parts can silicon: cause the silicon levels to spike. Continued sampling will reveal if the silicon came from sealants or from dust and dirt contamination. Good filters with proper fit greatly reduce silicon contamination. Var Meda (Gpm): An yeed Warning' level wear metal results should be taken seriously. Recommended actions and investigations should be handle	Make sure the viscosity listed on the sample submission form is the same as the viscosity installed in the equipment. Once verified, a low viscosity reading is typically due to fuel dilution. Check the
A high oxidation reading means the oil is past its useful life or it contains Ester base oils. If the oil is not Ester based, then reduce the drain interval. If the oil is Ester based, please submit a sample of the Oxidation Value Inter Dilution is stated advow, check the injectors or a curvetors or gummed-up carburetors can cause fuel dilution problems. Check the coolant system for leaks. Blown head gaskets and damaged bores can introduce water into the oiling system. Also, frequently starting an engine during storage without bringing the engine fully up to operating temperature can cause a build up of water from condensation. As a result, avoid starting the engine unless it is going to run long enough to get up to a normal operating water (emperature (typically 20 minutes). Glycol Clycol comes from Anti-Freeze contamination, so glycol indicates a coolant leak. Accordingly, check the cooling system for leaks. Potassium typically comes from anti-freeze so check for coolant system leaks and make sure any funnels used to fill the equipment were not used to fill the radiator. Cross contamination of automotive Potassium chemicals does happen by accident, and it can be the cause of "Caution" level conditions. Silicon typically comes from airborne dust, so check the air filter and/or breathers on the equipment. High levels of silicon can also come from seals and sealants, so replacing or installing new parts can silicon is a subject to spike. Continued sampling will reveal if the silicon came from sealants of from dust and dirt contamination. Good filters with proper fit greatly reduce silicon contamination. Typically indicates point ning wear wear. Check leak down and valve lash. Check mark the user and/or avburetian wear. Check leak down and valve lash. Check filter for wear debris. Lead Typically indicates bearing wear. If cooper, than alle lag, bearing dus as used. Mangames Trypically indicates piston ning wear	A high oxidation reading means the oil is past its useful life or it contains Ester base oils. If the oil is not Ester based, then reduce the drain interval. If the oil is Ester based, please submit a sample of the Oxidation Value: unued oil to establish the oxidation baseline for your oil. Fuel Dilution: As stated above, check the injectors or activeror. Dirty injectors or gummed-up carburetors can cause fuel dilution problems. Check the coolant system for leaks. Blown head gaskets and damaged bores can introduce water into the oiling system. Also, frequently starting an engine during storage without bringing the engine fully up to operating temperature can cause a build up of water from condensation. As a result, avoid starting the engine unless it is going to run long enough to get up to a normal operating temperature (typically 200 minutes). Glycol: Glycol comes from Anti-Freeze contamination, so glycol indicates a coolant leak. Accordingly, check the cooling system for leaks. Potassium typically comes from anti-freeze, so check for coolant system leaks and make sure any funnels used to fill the equipment were not used to fill the radiator. Cross contamination of automotive Potassium typically comes from aritorne dust, so check the air filter and/or breathers on the equipment. High levels of silicon can also come from seals and sealants, so replacing or installing new parts can Silicon: cause the silicon levels to spike. Continued sampling will reveal if the silicon came from sealants of from dust and dirt contamination. Good filters with proper fit greatly reduce silicon contamination. Typically indicates potent ing ware ware. Check leak down and valve lash. Chromium Typically indicates bering, bushing or distributor gear wear. Check filter for wear debris. Typically indicates bering wear. If cooper, in and lead are all high, bering days as used. Lead Typically indicates bering wear. If cooper, in and lead are all high, bering days as used. Lead Typically indicates bering wear. Theck for pla	injectors/carburetor to ensure proper function and air/fuel ratio. It is good practice to periodically use a fuel injector/carburetor cleaning additive to prevent excess fuel dilution from dirty injector
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Vear Trend	ear Trend	
		Wear / 1,000 miles: or hours were recorded on the sample submission form.
	ed "Warning" level indicates a significant shift in the results compared to previous samples. Resample as soon as possible to determine if the abnormal result is an anomaly or indication of a change in equipment health	/ear Trend