

OIL ANALYSIS REPORT



Map Runner
Machine Id [Map Runner] Oil - Aft Genset

Aft Genset

DIESEL ENGINE OIL SAE 15W40 (5 GAL)



Sample Rating Trend



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: Scheduled to change on 9-28-23)

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

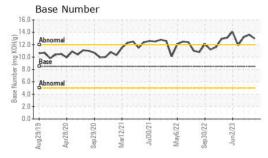
Fluid Condition

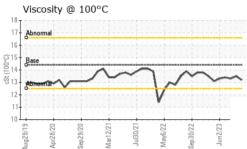
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

		gzo15 Apizo	0 Sep2020 Mar2021			
SAMPLE INFORM	NOITAN	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0719212	WC0769088	WC0769543
Sample Date		Client Info		27 Sep 2023	30 Aug 2023	27 Jul 2023
Machine Age	hrs	Client Info		6952	6615	6207
Oil Age	hrs	Client Info		337	408	303
Oil Changed		Client Info		Not Changd	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	N .	method	limit/base	current	history1	history2
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	5	5	5
Chromium	ppm	ASTM D5185m	>4	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>12	<1	<1	<1
Lead	ppm	ASTM D5185m	>17	6	10	5
Copper	ppm	ASTM D5185m	>70	4	10	5
Tin	ppm	ASTM D5185m	>15	<1	<1	0
Vanadium	ppm	ASTM D5185m		0	<1	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	3	3	13
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	65	65	60
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	450			
Calcium		AO IIVI DO IOOIII	430	1581	1528	1398
	ppm	ASTM D5185m	3000	1581 1222	1528 1212	1398 1162
Phosphorus	ppm ppm					
Phosphorus Zinc		ASTM D5185m ASTM D5185m	3000	1222	1212	1162
	ppm	ASTM D5185m ASTM D5185m	3000 1150 1350	1222 1091	1212 1069	1162 1005
Zinc	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	3000 1150 1350	1222 1091 1424	1212 1069 1340	1162 1005 1265
Zinc Sulfur	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	3000 1150 1350 4250	1222 1091 1424 3638	1212 1069 1340 4064	1162 1005 1265 3734
Zinc Sulfur CONTAMINANTS	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	3000 1150 1350 4250 limit/base	1222 1091 1424 3638 current	1212 1069 1340 4064 history1	1162 1005 1265 3734 history2
Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	3000 1150 1350 4250 limit/base >25	1222 1091 1424 3638 current	1212 1069 1340 4064 history1	1162 1005 1265 3734 history2
Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	3000 1150 1350 4250 limit/base >25 >158	1222 1091 1424 3638 current 3	1212 1069 1340 4064 history1 3	1162 1005 1265 3734 history2 3
Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m	3000 1150 1350 4250 limit/base >25 >158 >20	1222 1091 1424 3638 current 3 <1	1212 1069 1340 4064 history1 3 1	1162 1005 1265 3734 history2 3 2
Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	3000 1150 1350 4250 limit/base >25 >158 >20 limit/base	1222 1091 1424 3638 current 3 <1 <1	1212 1069 1340 4064 history1 3 1 <1	1162 1005 1265 3734 history2 3 2 2 history2
Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method *ASTM D5185m	3000 1150 1350 4250 limit/base >25 >158 >20 limit/base	1222 1091 1424 3638 current 3 <1 <1	1212 1069 1340 4064 history1 3 1 <1 history1 0.1	1162 1005 1265 3734 history2 3 2 2 history2 0.1
Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm Abs/cm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method *ASTM D7844 *ASTM D7624	3000 1150 1350 4250 limit/base >25 >158 >20 limit/base	1222 1091 1424 3638 current 3 <1 <1 current 0.1 10.0	1212 1069 1340 4064 history1 3 1 <1 history1 0.1 10.7	1162 1005 1265 3734 history2 3 2 2 history2 0.1 9.6
Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm Abs/cm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D7415	3000 1150 1350 4250 limit/base >25 >158 >20 limit/base	1222 1091 1424 3638 current 3 <1 <1 <1 current 0.1 10.0 21.0	1212 1069 1340 4064 history1 3 1 <1 history1 0.1 10.7 21.9	1162 1005 1265 3734 history2 3 2 2 history2 0.1 9.6 20.3
Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7624 *ASTM D7415 method	3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >20 >30 limit/base	1222 1091 1424 3638 current 3 <1 <1 current 0.1 10.0 21.0	1212 1069 1340 4064 history1 3 1 <1 history1 0.1 10.7 21.9 history1	1162 1005 1265 3734 history2 3 2 2 history2 0.1 9.6 20.3 history2



OIL ANALYSIS REPORT



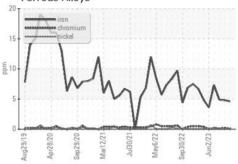


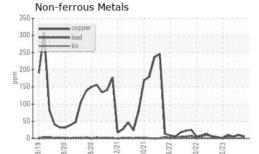
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

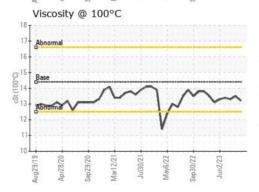
FLUID PROPER	RTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	14.4	13.2	13.5	13.3

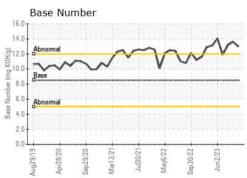
GRAPHS

Ferrous Alloys













Certificate L2367

Laboratory Sample No. Lab Number Test Package : IND 2

Unique Number : 10673074

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : WC0719212 Received : 05966523 Diagnosed

: 02 Oct 2023 : 03 Oct 2023 Diagnostician : Sean Felton MARATHON PETROLEUM CO.

101 12TH ST CATLETTSBURG, KY US 41169

Contact: CORY GUMBERT

cagumbert@marathonpetroleum.com T: (606)585-3950

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)

F: x: