

## **OIL ANALYSIS REPORT**

#### **VIS DEBRIS**



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Sample Rating Trend

-	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
9	Sample Number		Client Info		WC0819529	WC0385802	WCI2335470
	Sample Date		Client Info		17 Jan 2024	18 Nov 2019	07 Jan 2019
	Machine Age	yrs	Client Info		0	0	0
t (	Oil Age	yrs	Client Info		0	0	0
(	Oil Changed		Client Info		N/A	N/A	N/A
ę	Sample Status				ABNORMAL	NORMAL	NORMAL
	CONTAMINATION	١	method	limit/base	current	history1	history2
	Water		WC Method	>0.05	NEG	NEG	NEG
	WEAR METALS		method	limit/base	current	history1	history2
I	Iron	ppm	ASTM D5185m	>20	<1	<1	<1
(	Chromium	ppm	ASTM D5185m	>20	0	0	0
1	Nickel	ppm	ASTM D5185m	>20	0	0	0
	Titanium	ppm	ASTM D5185m		0	0	0
Ş	Silver	ppm	ASTM D5185m		0	0	0
1	Aluminum	ppm	ASTM D5185m	>20	<1	0	0
I	Lead	ppm	ASTM D5185m	>20	<1	0	<1
(	Copper	ppm	ASTM D5185m	>20	15	13	12
-	Tin	ppm	ASTM D5185m	>20	<1	0	<1
1	Antimony	ppm	ASTM D5185m			0	0
١	Vanadium	ppm	ASTM D5185m		0	0	0
(	Cadmium	ppm	ASTM D5185m		0	0	0
	ADDITIVES		method	limit/base	current	history1	history2
г	Boron			_			
L	DOIOII	ppm	ASTM D5185m	5	0	0	0
	Barium	ppm ppm	ASTM D5185m ASTM D5185m	5	0 6	0 8	0 8
E							
E T	Barium	ppm	ASTM D5185m	5	6	8	8
1 1 1	Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	5	6 0	8 0	8 0
1 1 1	Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	5 5	6 0 <1	8 0 0	8 0 0
1 1 1 1 1	Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 5 25	6 0 <1 4	8 0 0 <1	8 0 0 0
1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 5 25 200	6 0 <1 4 40	8 0 0 <1 37	8 0 0 0 33
	Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 5 25 200 300	6 0 <1 4 40 334	8 0 <1 37 312	8 0 0 0 33 286
	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 5 25 200 300 370	6 0 <1 4 40 334 371	8 0 <1 37 312 345	8 0 0 0 33 286 326
	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 5 25 200 300 370 2500	6 0 <1 4 40 334 371 1501	8 0 <1 37 312 345 1274	8 0 0 0 33 286 326 1295
	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 5 25 200 300 370 2500 Limit/base	6 0 <1 4 40 334 371 1501 current	8 0 () () () () () () () () () () () () ()	8 0 0 0 33 286 326 1295 history2
	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	5 5 25 200 300 370 2500 limit/base >15	6 0 <1 4 40 334 371 1501 current 2	8 0 () () () () () () () () () () () () ()	8 0 0 33 286 326 1295 history2 <1
	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m ASTM D5185m	5 5 25 200 300 370 2500 limit/base >15	6 0 <1 4 40 334 371 1501 current 2 <	8 0 0 <1 37 312 345 1274 history1 <1 <1	8 0 0 33 286 326 1295 history2 <1 0
	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m ASTM D5185m ASTM D5185m	5 5 25 200 300 370 2500 limit/base >15 >20	6 0 <1 4 40 334 371 1501 current 2 <1 <1	8 0 0 <1 37 312 345 1274 history1 <1 <1 8	8 0 0 33 286 326 1295 history2 <1 0 0
	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	5 5 25 200 300 370 2500 limit/base >20 limit/base >2500	6 0 <1 4 40 334 371 1501 current 2 <1 <1 <1 current	8 0 0 <1 37 312 345 1274 history1 <1 <1 8 history1	8 0 0 33 286 326 1295 history2 <1 0 0 0
	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	5 5 25 200 300 370 2500 bimit/base >15 >20 bimit/base >2500 >320	6 0 <1 4 40 334 371 1501 2 2 <1 <1 <1 <1 	8 0 0 <1 37 312 345 1274 history1 <1 <1 8 history1 622	8 0 0 0 33 286 326 1295 history2 <1 0 0 0 history2 127
	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	5 5 200 300 370 2500 bimit/base >15 >20 bimit/base >2500 >320 >320	6 0 <1 4 40 334 371 1501 current 2 <1 <1 <1 <1 	8 0 0 <1 37 312 345 1274 history1 <1 <1 <1 8 history1 622 153	8 0 0 0 33 286 326 1295 history2 <1 0 0 0 history2 127 32
	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm Particles >14µm	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647	5 5 200 300 370 2500 bimit/base >15 >20 bimit/base >2500 >320 >320 >80 >20	6 0 <1 4 40 334 371 1501 current 2 <1 <1 <1 <1 <1  	8 0 0 <1 37 312 345 1274 history1 <1 <1 <1 8 history1 622 153 31	8 0 0 0 33 286 326 1295 history2 <1 0 0 0 history2 127 32 3 3
1 1 1 1 1 2 2 2 2 2 2 3 1 1 1 1 1 1 1 1	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	5 5 200 300 370 2500 bimit/base >15 >20 bimit/base >2500 >320 >320 >80 >20 >4	6 0 <1 4 40 334 371 1501 current 2 <1 <1 <1 <1 current 	8 0 0 <1 37 312 345 1274 history1 <1 <1 <1 8 history1 622 153 31 10	8 0 0 0 33 286 326 1295 history2 <1 0 0 0 history2 127 32 3 1 1

### NISSEI B-09 (S/N S21813103K1) Component

**Hydraulic System** AW HYDRAULIC OIL ISO 46 (124 GAL)

#### DIAGNOSIS

#### Recommendation

We recommend you service the filters on this component. Resample at the next service interva monitor. We were unable to perform a particle co due to a high concentration of particles present in this sample.

### Wear

All component wear rates are normal.

#### Contamination

Moderate concentration of visible dirt/debris pres in the oil.

#### Fluid Condition

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

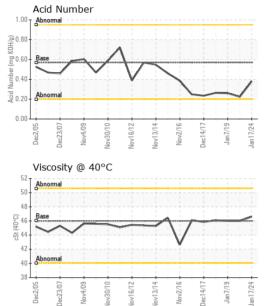


Dec2/05

Inv4/09

lec23/07

# **OIL ANALYSIS REPORT**

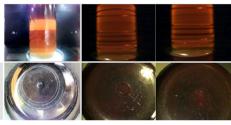


ov16/12

Vov2/16 Dec14/17

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.57	0.38	0.224	0.260
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	LIGHT	NONE	NONE
Debris	scalar	*Visual	NONE	🔺 MODER	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	>0.05	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	46	46.6	46.0	45.99
SAMPLE IMAGES	method	limit/base	current	history1	history2	

Color



Bottom

