

## OIL CONDITION MONITORING REPORT SLNS VIJAYABAHU

GENERATOR PARTICULARS (Information provided by the customer)		
	SSDG (Stbd)	
Make :	Electro-Motive Drive	
Model :	8-645E6	
Sr. No:	70-G1-1092	
Date sampling :	27 May 25	09 Jun 25
Sampling point :	Lub oil sump	
Sampling Method :	Extraction	
Type of Lubricant :	Shell Gadinia S3 SAE 40	
System Capacity :	250 US gal	

RUNNING HRS DETAILS (Information provided by the customer)		
	SSDG (Stbd)	
Sample ID	M010252	M010253
Oil Running Hours	8713.35	8963.35
After Major routine RH	23,250.00	23,500.00
Total Running Hours of the Machinery	133,585.40	133,835.40

### ANALYSIS RESULTS

Description	Method	Uncertainty (K=2)	Fresh Oil (As per OEM data sheet)	SSDG (Stbd)	
				M010252	M010253
Viscosity @ 40°C (cSt)	ASTM D 445	0.006	128.00	128.38	127.18
Viscosity @ 100°C (cSt)		0.005	13.7	13.77	13.60
Viscosity Index	ASTM D 2270	N/A	103	103.60	102.51
Total Base No (mgKOH/g)	ASTM D 4739	0.77	10.48*	N/C	7.62
Water content (%)	ASTM D 95	0.082	< 0.2	N/C	<0.1
Flash Point (°C)	ASTM D 92	0.026	230	N/C	210

\* Results were extracted from a fresh oil sample tested at MTTU laboratory as per ASTM D 4739 method.

### Elemental Concentration as per ASTM D5185 (ppm)

Element	Maximum Permissible Limit	Fresh Oil Sample	Uncertainty (K=2)	SSDG (Stbd)	
				M010252	M010253
Fe	80	< 1.000	0.15	4.946	4.550
Cr	10	< 1.000	0.18	< 1.000	< 1.000
Si	15	< 1.000	0.17	3.154	
Al	20	< 1.000	0.28	< 1.000	1.247
Pb	20	< 1.000	0.13	4.906	4.589
Cu	25	< 1.000	0.17	<b>13.194</b>	<b>13.206</b>
Sn	10	< 1.000	0.20	<b>3.790</b>	<b>3.824</b>
Ni	10	< 1.000	0.08	< 1.000	< 1.000

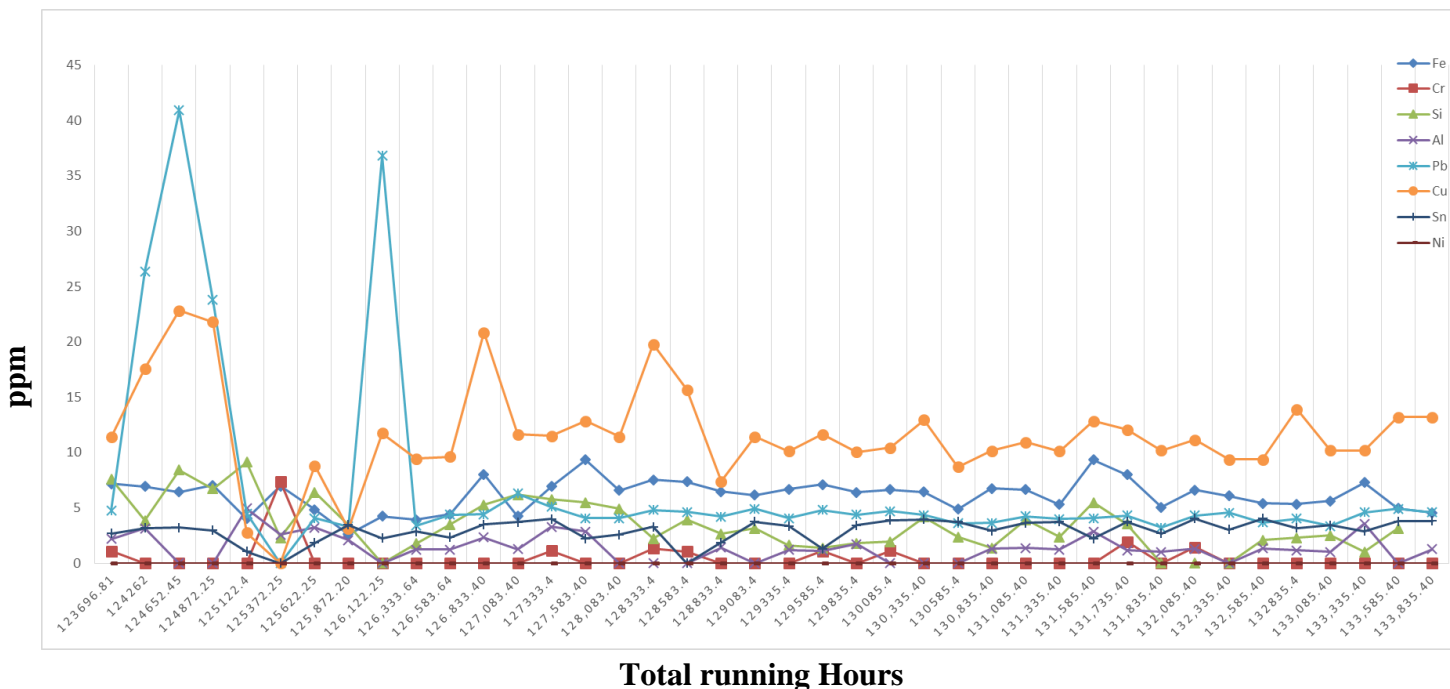
## **TREND ANALYSIS WITH PREVIOUS REPORTS**

		Fresh Oil Sample	SSDG (Stbd)														
			(S/I-M005483)	(S/I-M005711)	(S/I-M005901)	(S/I-M005967)	(S/I-M006095)	Fresh Oil Sample	(S/I-M006227)	(S/I-M006293)	(S/I-M006473)	(S/I-M006557)	(S/I-M006601)	(S/I-M006696)	S/I-M006782	S/I-M006881	S/I-M006990
Oil Running Hrs		N/I	1437.45	1804.11	2023.51	250.00	-	500.00	750.00	1000.00	1250.00	1461.23	1711.39	1961.25	2211.25	2461.25	
T/R/H of Machinery		123696.81	124262.00	124652.45	124872.25	125122.40	-	125372.25	125622.25	125,872.2	126,122.25	126,333.64	126,583.64	126,833.40	127,083.40	127333.40	
Viscosity @ 40°C (cSt)	131.49*	130.08	112.33	113.99	116.63	126.48	128.00	130.42	128.24	130.51	131.06	133.30	130.85	131.47	130.81	131.22	
Viscosity @ 100°C (cSt)	14.52*	13.68	12.45	12.85	12.79	13.75	13.7	13.78	13.99	13.98	13.98	14.01	13.97	14.22	13.43	13.95	
Viscosity Index	110.25	100.76	101.92	106.02	102.1	105.22	103	101.75	106.63	104.28	102.23	102.048	103.82	106.44	97.12	103.21	
Total Base No. mgKOH/g	9.02*	9.46	N/C	N/C	N/C	N/C	10.48*	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	
Water content%	< 0.2	190	N/C	N/C	N/C	N/C	< 0.2	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	
Flash Point (°C)	220*	<0.1	N/C	N/C	N/C	N/C	230	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	
<b><u>Elemental Concentration as per ASTM D5185 (ppm)</u></b>																	
Element	Max. Permissible																
Fe	80	< 1.000	7.191	6.941	6.439	7.039	4.010	< 1.000	6.971	4.825	2.623	4.233	3.911	4.401	8.018	4.243	6.924
Cr	10	< 1.000	1.078	< 1.000	< 1.000	< 1.000	< 1.000	< 1.000	7.386	< 1.000	< 1.000	< 1.000	< 1.000	< 1.000	< 1.000	< 1.000	1.126
Si	15	< 1.000	<b>7.595</b>	3.863	8.403	<b>6.703</b>	9.134	< 1.000	2.305	6.394	3.429	< 1.000	1.757	3.506	5.257	<b>6.170</b>	5.753
Al	20	< 1.000	2.175	3.137	< 1.000	< 1.000	4.950	< 1.000	2.574	3.204	2.072	< 1.000	1.22	1.222	2.320	1.263	3.294
Pb	20	< 1.000	4.773	<b>26.374</b>	<b>40.905</b>	<b>23.760</b>	4.473	< 1.000	< 1.000	4.047	3.300	<b>36.811</b>	<b>3.39</b>	4.391	4.398	6.278	5.074
Cu	25	< 1.000	11.398	<b>17.578</b>	<b>22.814</b>	<b>21.810</b>	2.751	< 1.000	< 1.000	8.793	3.108	<b>11.739</b>	<b>9.45</b>	<b>9.608</b>	<b>20.846</b>	<b>11.619</b>	11.483
Sn	10	< 1.000	2.671	3.162	3.216	2.948	1.041	< 1.000	< 1.000	1.832	3.445	2.246	2.87	2.308	3.498	3.692	3.986
Ni	10	< 1.000	< 1.000	N/A	N/A	N/A	N/A	< 1.000	< 1.000	N/A	< 1.000	< 1.000	< 1.000	N/A	< 1.000	< 1.000	< 1.000

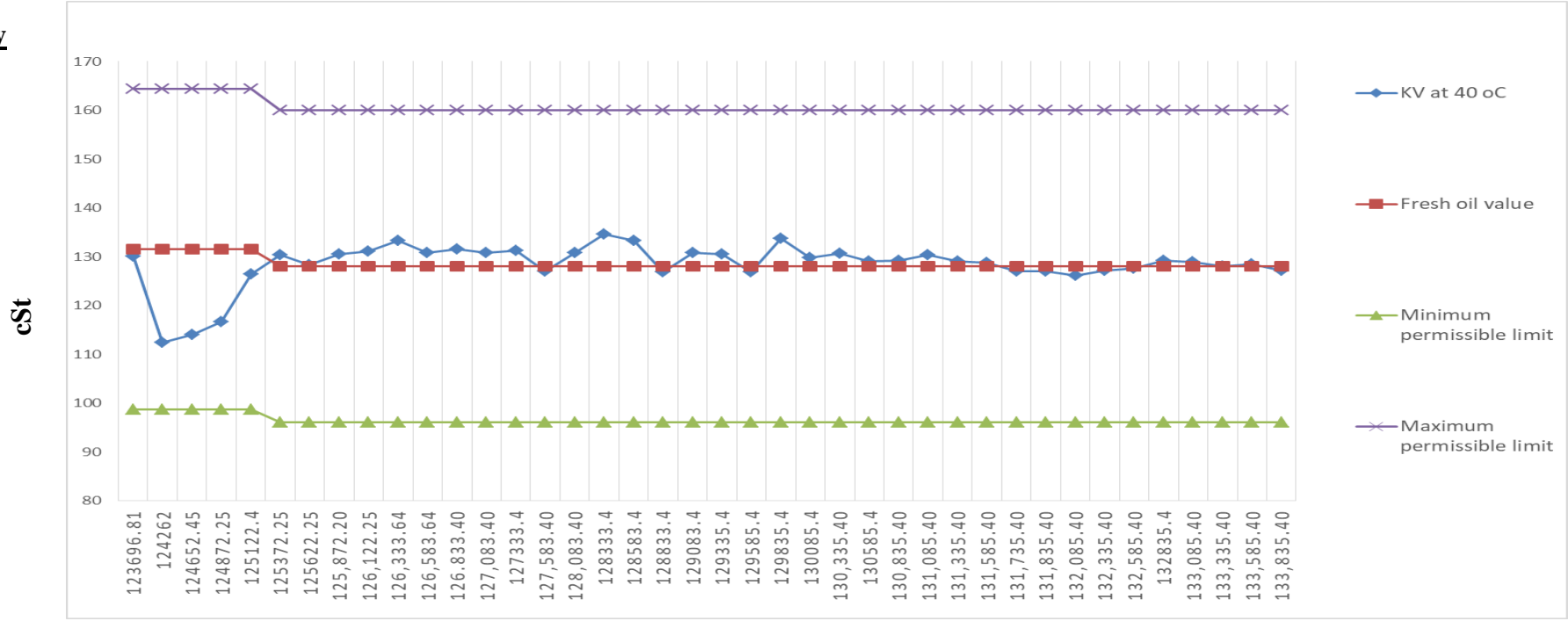
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		SSDG (Stbd)											
		Fresh Oil Sample	S/I- M009034	S/I- M009035	S/I- M009049	S/I- M009197	S/I- M009301	S/I- M009388	S/I- M009522	S/I- M009644	S/I- M009848	S/I- M010252	S/I- M010253
Oil Running Hrs			6,713.35	6,863.35	6963.35	7213.35	7,463.35	7,713.35	7963.35	8,213.35	8,463.35	8713.35	8963.35
T/R/H of Machinery			131,585.40	131,735.40	131,835.40	132,085.40	132,335.40	132,585.40	132835.40	133,085.40	133,335.40	133,585.40	133,835.40
Viscosity @ 40°C (cSt)	128.00	128.79	127.02	126.98	126.13	127.16	127.61	129.19	128.90	127.95	128.38	127.18	
Viscosity @ 100°C (cSt)	13.7	14.30	13.98	13.66	13.52	13.66	14.06	13.85	13.78	13.68	13.77	13.60	
Viscosity Index	103	110.10	107.75	103.54	102.497	103.26	108.20	103.86	103.25	102.82	103.60	102.51	
Total Base No. mgKOH/g	10.48*	7.34	7.58	7.62	7.64	7.77	7.86	7.35	7.48	7.41	N/C	7.62	
Water content%	< 0.2	< 0.1	< 0.1	< 0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	N/C	<0.1	
Flash Point (oC)	230	216	214	214	218	216	210	210	208	208	N/C	210	
Elemental Concentration as per ASTM D5185 (ppm)													
Element	Max. Permissible Limit												
Fe	80	< 1.000	9.333	8.000	5.045	6.611	6.088	5.391	5.319	5.599	7.284	4.946	4.550
Cr	10	< 1.000	< 1.000	1.950	< 1.000	1.444	< 1.000	< 1.000	< 1.000	< 1.000	< 1.000	< 1.000	< 1.000
Si	15	< 1.000	5.475	3.539	< 1.000	< 1.000	< 1.000	2.063	2.276	2.492	1.024	3.154	
Al	20	< 1.000	2.842	1.171	1.032	1.283	< 1.000	1.344	1.152	1.006	3.569	< 1.000	1.247
Pb	20	< 1.000	4.062	4.299	3.212	4.310	4.540	3.654	4.025	3.360	4.601	4.906	4.589
Cu	25	< 1.000	12.823	12.055	10.198	11.155	9.370	9.381	13.892	10.176	10.192	13.194	13.206
Sn	10	< 1.000	2.232	3.749	2.691	4.006	3.035	4.025	3.179	3.433	2.906	3.790	3.824
Ni	10	< 1.000	< 1.000	< 1.000	< 1.000	< 1.000	< 1.000	< 1.000	< 1.000	< 1.000	< 1.000	< 1.000	< 1.000

## Wear Metals



Viscosity  
40<sup>0</sup>C



100<sup>0</sup>C

