OIL CONDITION MONITORING REPORT SLNS VIJAYABAHU

GENERATOR PARTCULARS (Information provided by the customer)		
	SSDG (Port)	
Make :	Electro-Motive Division	
Model :	8-645E6	
Sr.No's:	70-H1-1044	
Date sampling :	01 Aug 25	04 Aug 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 (Port)	
Sample ID	M010555	M010556
Oil Running Hours	-	04.00
Total Running Hours of the Machinery	137,939.00	137,943.00

ANALYSIS RESULTS

Description	**Method**	**Uncertainty (K=2)**	Fresh Oil (As per the provided freshoil sample)	**SSDG (Port)**	
				S/I-M010555	**S/I-M010556**
Viscosity @ 40°C(cSt)	ASTM D445	0.006	128.00	128.13	128.07
Viscosity @ 100°C (cSt)		0.005	13.70	13.77	13.80
Viscosity Index	ASTM D 2270	N/A	103	103.84	104.33
Total Base No. mg KOH/g	ASTM D 4739	0.77	10.48*	9.85	9.80
Flash Point (c°)	ASTM D 92	0.026	230	228	228
Water content %	ASTM D 95	0.082	< 0.2	<0.1	<0.1

* 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 (Port)**	
				S/I-M010555	**S/I-M010556**
Fe	80	< 1.000	0.15	N/C	3.804
Cr	10	< 1.000	0.18	N/C	< 1.000
Si	15	< 1.000	0.17	N/C	< 1.000
Al	20	< 1.000	0.28	N/C	1.050
Pb	20	< 1.000	0.13	N/C	1.413
Cu	25	< 1.000	0.17	N/C	1.358
Sn	10	< 1.000	0.20	N/C	< 1.000
Ni	10	< 1.000	0.08	N/C	< 1.000

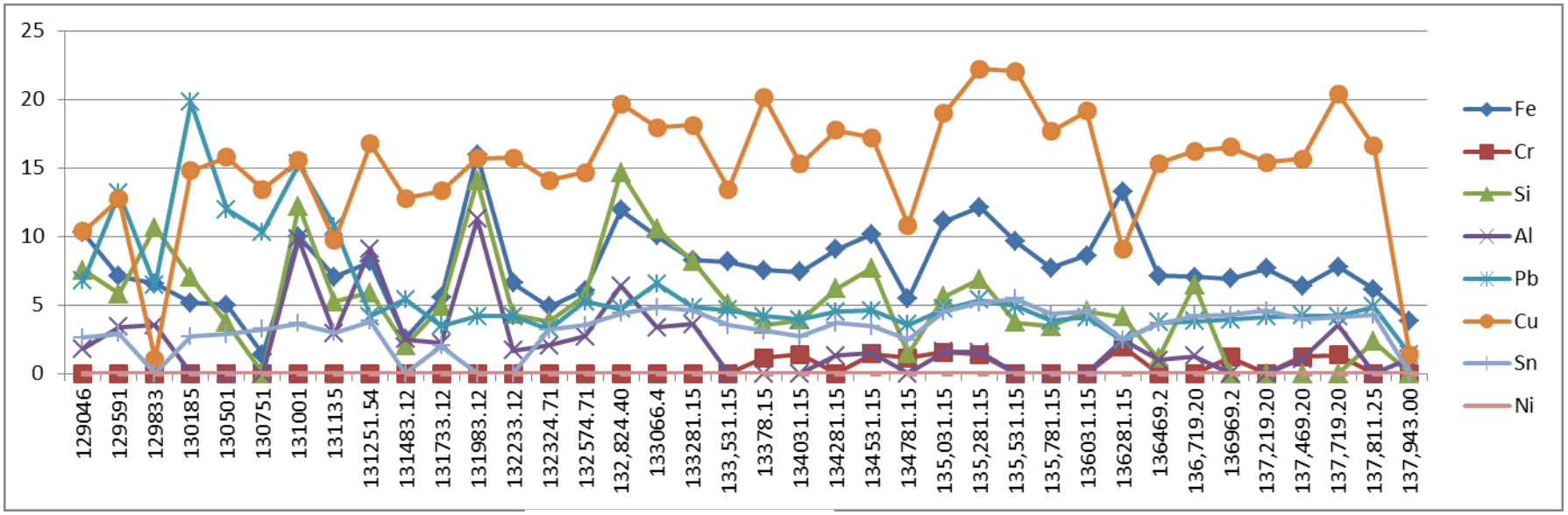
TREND ANALYSIS WITH PREVIOUS REPORT

	Fresh OilSample	SSDG (Port)													
		S/I-M005482	**S/I- M00571**	**S/I-M00574**	**S/I-M00590**	**S/I-M00596**	**S/I-M00599**	**S/I-M00606**	**S/I-M00611**	**S/I-M006173**	**S/I-M006248**	**S/I-M006378**	**S/I-M006512**	**S/I-M006529**	**S/I-M006598**
Oil Running Hrs	-	1001.26	1546.0	1787.5	2139.52	2456.	2706.	2956	3089.39	3206.29	3437.72	3687.32	3937.00	4187.00	4270.31
T/R/H of Machinery	-	129046	129591	129833	130185	130501	130751	131001	131135	131251.54	131483.12	131733.12	131983.12	132233.12	132324.71
Viscosity @ 40°C (cSt)	131.49*	122.44	132.49	131.43	129.82	131.73	132.03	132.04	131.05	132.11	131.02	134.38	133.42	126.95	124.04
Viscosity @ 100°C (cSt)	14.52*	13.37	13.95	13.80	13.74	13.96	14.01	14.02	14.09	14.01	13.68	13.78	14.11	13.50	13.34
Viscosity Index	110.25	104.19	102.01	101.09	101.80	102.88	103.21	103.33	105.18	103.14	104.91.	98.31	103.20	104.25	102.13
Total Base No (mgKOH/g)	9.02*	9.36	N/C	9.98	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Flash Point (°C)	220*	190	N/C	190	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Water content (%)	<0.2	<0.1	N/C	<0.1	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
Elemental Concentration as per ASTM D5185 (ppm)															
Element	**Max. Permissible**														
Fe	80	< 1.000	10.283	7.076	6.562	5.177	5.005	1.415	9.994	7.059	8.150	2.526	5.534	15.937	6.584	4.867
Cr	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	< 1.000	< 1.000	< 1.000
Si	15	< 1.000	7.549	5.833	10.671	6.998	3.733	< 1.000	12.203	5.240	5.915	2.045	4.877	14.034	4.291	3.810
Al	20	< 1.000	1.806	3.386	3.513	< 1.000	< 1.000	< 1.000	9.787	2.912	9.103	2.500	2.233	11.284	1.699	2.043
Pb	20	< 1.000	6.754	13.156	6.453	19.800	11.966	10.332	15.275	10.734	4.175	5.413	3.481	4.178	4.185	3.25
Cu	25	< 1.000	10.371	12.737	1.067	14.809	15.757	13.437	15.546	9.717	16.762	12.789	13.296	15.678	15.720	14.096
Sn	10	< 1.000	2.606	2.928	<1.000	2.721	2.856	3.242	3.628	3.009	3.794	< 1.000	2.023	< 1.000	< 1.000	3.2
Ni	10	< 1.000	< 1.000	N/C	N/C	N/C	N/C	N/C	< 1.000	< 1.000	< 1.000	N/C	N/C	< 1.000	< 1.000	< 1.000

	Fresh Oil Sample	SSDG (Port)																				
		S/I-M006709	M006781	S/I-M006882	S/I-M006991	S/I-M007107	S/I-M007233	S/I-M007439	S/I-M007517	S/I-M007834	S/I-M008075	Fresh Oil Sample	S/I-M008213	S/I-M008259	S/I-M008492	S/I-M008505	S/I-M008605	S/I-M008764	S/I-M008806	S/I-M008967	S/I-M009196	S/I-M009217
Oil Running Hrs	-	4520.31	4770.20	5012.20	5226.55	5,491.35	5741.35	5991.35	6241.35	6491.35	6741.35	-	6991.35	7,258.45	7508.45	7758.45	7991.35	8241.35	8429.40	8679.40	8679.40	9179.40
T/R/H of Machinery	-	132574.71	132,824.40	133066.40	133281.15	133,531.15	13378.15	134031.15	134281.15	134531.15	134781.15	-	135,031.15	135,281.15	135,531.15	135,781.15	136031.15	136281.15	136469.20	136,719.20	136969.20	137,219.20
Viscosity @ 40oC (cSt)	131.49*	131.48	129.27	132.66	129.50	130.72	134.42	132.49	129.14	127.36	130.26	128.00	135.36	123.22	132.98	133.07	131.94	130.59	133.83	131.24	132.43	131.80
Viscosity @ 100oC (cSt)	14.52*	14.00	13.38	13.04	13.66	13.88	14.37	14.09	13.54	13.73	13.56	13.70	14.39	13.27	13.87	13.26	13.20	13.40	14.39	13.95	14.08	13.70
Viscosity Index	110.25*	103.63	97.82	90.43	101.08	102.80	105.52	103.81	99.85	104.10	99.151	103	104.89	101.98	100.55	93.013	93.20	96.93	106.32	103.19	103.753	99.48
Total Base No. mgKOH/g	9.02*	N/C	N/C	N/C	9.30	9.03	8.94	8.79	8.42	8.10	7.90	10.48*	6.73	6.88	6.76	6.68	6.84	6.95	7.10	7.28	7.26	7.19
Flash Point (oC)	220*	N/C	N/C	N/C	200	190	190	190	190	190	192	230	218	214	218	216	214	214	216	218	218	216
Water content%	< 0.2*	N/C	N/C	N/C	< 0.1	< 0.1	<0.1	<0.1	<0.1	<0.1	< 0.1	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	<0.1	<0.1	<0.1
Elemental Concentration as per ASTM D5185 (ppm)																						
Element	**Max. Permissible Limit**																					
Fe	80	< 1.000	6.076	11.925	10.030	8.263	8.149	7.555	7.425	9.038	10.18	5.470	< 1.000	11.122	12.137	9.610	7.703	8.591	13.258	7.130	7.058	6.906	7.671
Cr	10	< 1.000	< 1.000	< 1.000	< 1.000	< 1.000	< 1.000	1.149	1.399	< 1.000	1.425	1.159	< 1.000	1.577	1.387	< 1.000	< 1.000	< 1.000	1.979	< 1.000	< 1.000	1.207	< 1.000
Si	15	< 1.000	5.664	14.652	10.531	8.201	5.027	3.556	3.874	6.188	7.683	1.453	< 1.000	5.595	6.871	3.725	3.449	4.549	4.136	1.121	6.465	< 1.000	< 1.000
Al	20	< 1.000	2.723	6.398	3.350	3.607	< 1.000	< 1.000	< 1.000	1.322	1.476	<1.000	< 1.000	1.589	1.540	< 1.000	< 1.000	< 1.000	2.442	1.000	1.277	< 1.000	< 1.000
Pb	20	< 1.000	5.259	4.710	6.539	4.818	4.619	4.173	3.938	4.528	4.586	3.563	< 1.000	4.708	5.370	4.902	3.839	4.089	2.424	3.723	3.831	3.922	4.160
Cu	25	< 1.000	14.656	19.659	17.955	18.122	13.425	20.103	15.290	17.731	17.222	10.817	< 1.000	18.984	22.194	22.025	17.653	19.136	9.070	15.309	16.225	16.492	15.399
Sn	10	< 1.000	3.539	4.401	4.822	4.603	3.542	3.102	2.689	3.676	3.441	2.451	< 1.000	4.509	5.162	5.465	4.358	4.568	2.476	3.636	4.219	4.299	4.570
Ni	10	< 1.000	N/A	< 1.000	< 1.000	< 1.000	< 1.000	< 1.000	< 1.000	<1.000	<1.000	N/C	< 1.000	< 1.000	< 1.000	< 1.000	< 1.000	< 1.000	< 1.000	< 1.000	< 1.000	< 1.000	< 1.000

		SSDG (Port)					
	Fresh Oil Sample	S/I- M009300	S/I-M009521	S/I-M009849	S/I-M010555	S/I-M010556
Oil Running Hrs		9,429.40	9,679.40	9,771.45	-	04.00
T/R/H of Machinery		137,469.20	137,719.20	137,811.25	137,939.00	137,943.00
Viscosity @ 40°C (cSt)	128.00	130.50	131.59	130.49	128.13	128.07
Viscosity @ 100°C (cSt)	13.7	13.77	14.27	14.01	13.77	13.80
Viscosity Index	103	101.58	106.96	104.69	130.87	104.33
Total Base No. mgKOH/g	10.48*	7.32	7.30	7.10	9.85	9.80
Water content%	< 0.2	< 0.1	<0.1	<0.1	228	228
Flash Point (oC)	230	214	214	212	<0.1	<0.1
Elemental Concentration as per ASTM D5185 (ppm)						
Element	Max. Permissible Limit					
Fe	80	< 1.000	6.346	7.770	6.167	N/C	3.804
Cr	10	< 1.000	1.234	1.361	< 1.000	N/C	< 1.000
Si	15	< 1.000	< 1.000	< 1.000	2.322	N/C	< 1.000
Al	20	< 1.000	1.058	3.542	< 1.000	N/C	1.050
Pb	20	< 1.000	4.226	4.190	4.889	N/C	1.413
Cu	25	< 1.000	15.639	20.382	16.595	N/C	1.358
Sn	10	< 1.000	3.918	4.160	4.259	N/C	< 1.000
Ni	10	< 1.000	< 1.000	< 1.000	< 1.000	N/C	< 1.000

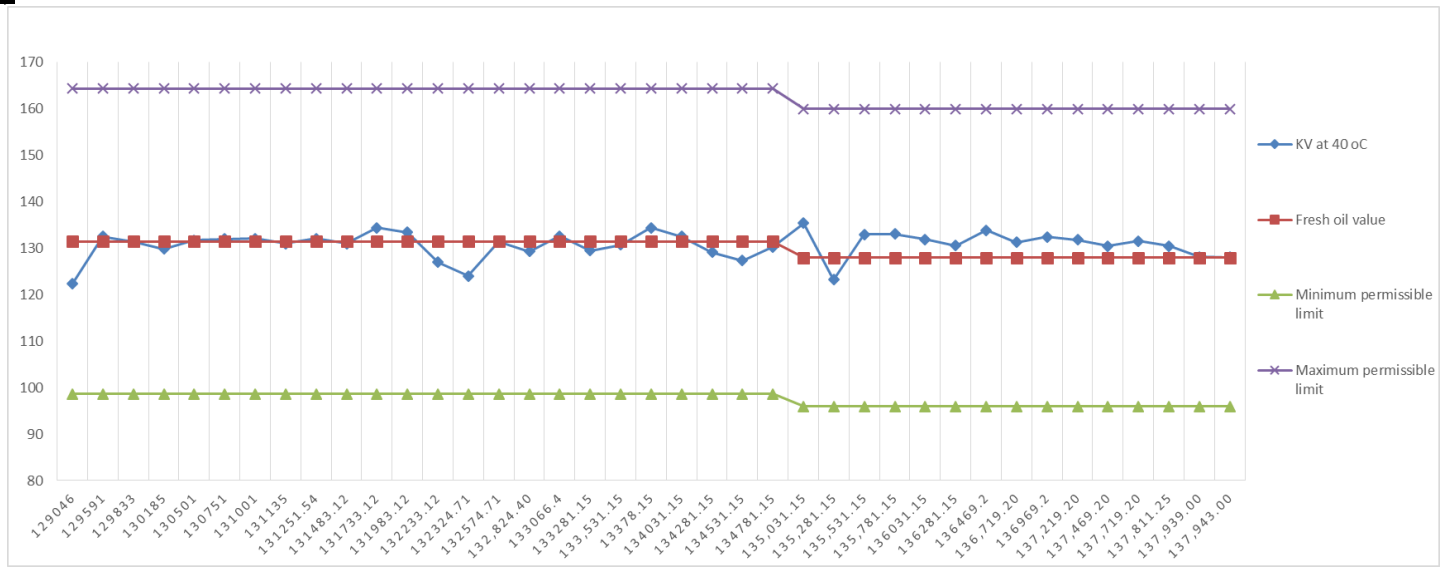
Wear Metals
SSDG (Port)



Total Running Hrs

Element	Maximum Permissible Limit
Fe	80
Cr	10
Si	15
Al	20
Pb	20
Cu	25
Sn	10
Ni	10

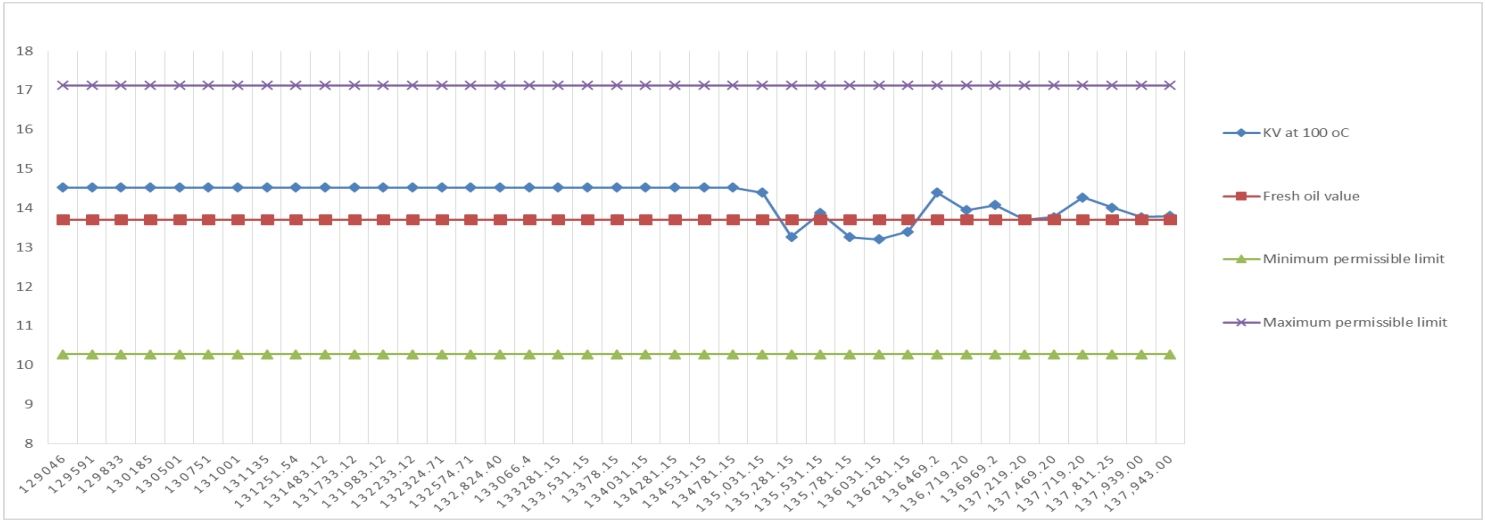
Viscosity
SSDG (Port)
At 40^0C



Total Running hrs

Maximum permissible limit of Shell Gadinia S3 SAE 40 at 40^oC	160 cSt
Shell Gadinia S3 SAE 40 fresh oil viscosity value at 40^oC	128 cSt
Minimum permissible limit of Shell Gadinia S3 SAE 40 at 40^oC	96 cSt

At 100^{0}C



Total Running hrs

Maximum permissible limit of Shell Gadinia S3 SAE 40 at 100^{o}C	17.125 cSt
Shell Gadinia S3 SAE 40 fresh oil viscosity value at 100^{o}C	13.70 cSt
Minimum permissible limit of Shell Gadinia S3 SAE 40 at 100^{o}C	10.275 cSt