



WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Machine Id  
**HYUNDAI ELEVATOR E-4**  
Component  
**Diesel Engine**  
Fluid  
**DIESEL ENGINE OIL SAE 15W40 (12 GAL)**

### RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>LP0002085</b>	LP0000630	WC0661532
Sample Date		Client Info		<b>03 Jun 2024</b>	28 Jun 2023	15 May 2023
Machine Age	hrs	Client Info		<b>6751</b>	6266	6247
Oil Age	hrs	Client Info		<b>495</b>	19	307
Filter Age	hrs	Client Info		<b>495</b>	19	307
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>ABNORMAL</b>	MARGINAL	SEVERE

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>90	<b>24</b>	5	29
Chromium	ppm	ASTM D5185m	>20	<b>2</b>	<1	1
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	<1
Titanium	ppm	ASTM D5185m	>2	<b>0</b>	0	<1
Silver	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	0
Aluminum	ppm	ASTM D5185m	>20	<b>4</b>	0	2
Lead	ppm	ASTM D5185m	>40	<b>&lt;1</b>	0	0
Copper	ppm	ASTM D5185m	>330	<b>&lt;1</b>	<1	<1
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	0	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

### CONTAMINATION

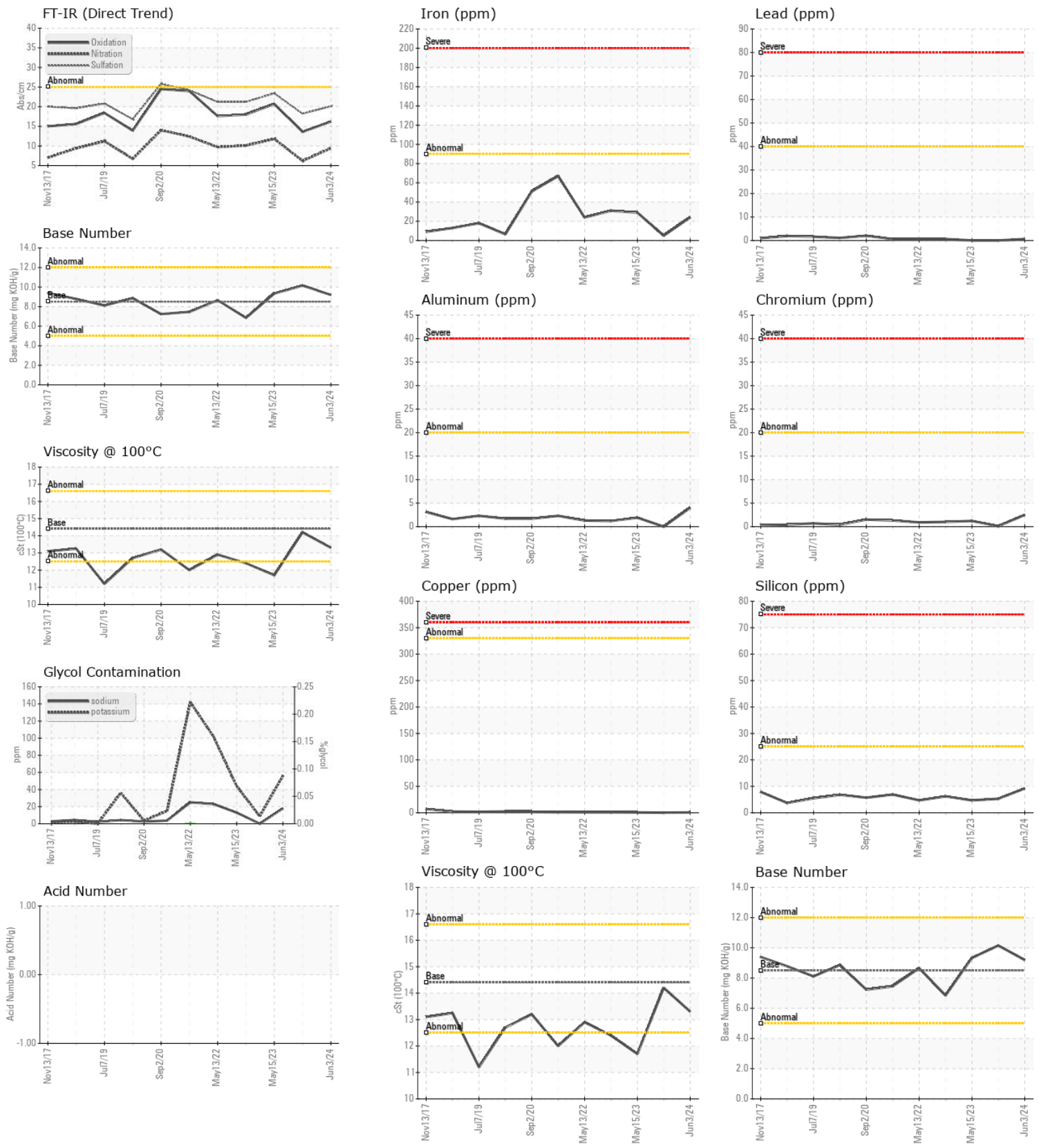
Sodium and/or potassium levels are high. Test for glycol is negative.

Silicon	ppm	ASTM D5185m	>25	<b>9</b>	5	5
Potassium	ppm	ASTM D5185m	>20	<b>56</b>	9	44
Fuel		WC Method	>3.0	<b>&lt;1.0</b>	<b>1.4</b>	<b>9.4</b>
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol	%	*ASTM D2982		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>6	<b>0.7</b>	0.2	1.4
Nitration	Abs/cm	*ASTM D7624	>20	<b>9.4</b>	6.2	11.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>20.1</b>	18.2	23.4
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	NEG

### 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.

Sodium	ppm	ASTM D5185m	>158	<b>18</b>	0	13
Boron	ppm	ASTM D5185m	250	<b>15</b>	28	13
Barium	ppm	ASTM D5185m	10	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	100	<b>69</b>	79	53
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	450	<b>942</b>	836	657
Calcium	ppm	ASTM D5185m	3000	<b>1350</b>	1538	1201
Phosphorus	ppm	ASTM D5185m	1150	<b>1140</b>	1231	885
Zinc	ppm	ASTM D5185m	1350	<b>1399</b>	1399	1108
Sulfur	ppm	ASTM D5185m	4250	<b>3918</b>	4193	3142
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>16.2</b>	13.6	20.7
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>9.19</b>	10.15	9.33
Visc @ 100°C	cSt	ASTM D445	14.4	<b>13.3</b>	14.2	<b>11.7</b>



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : LP0002085  
**Lab Number** : 06224106  
**Unique Number** : 11102303  
**Test Package** : MOB 2 ( Additional Tests: Glycol, KV40, TAN Man )

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*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)*