

OIL ANALYSIS REPORT

## Machine Id BUFFALO TURBINE BT514

## Gasoline Engine

## TRC PRO-SPEC IV XP SYN BLEND SAE 10W30 (3 QTS)

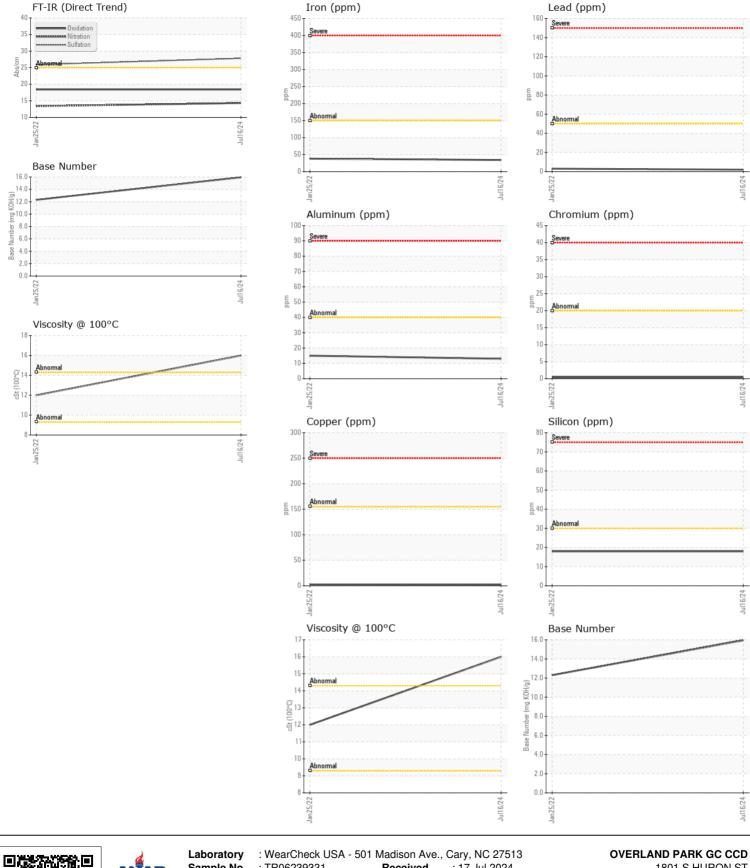
Recommendation         Test Sample Number         UMM         Method         Linktor         Current (1982)         History2           Resample at the next service interval to monitor.         Sample Data Sample Data (1982)         Clent Into         Clent Into         TB625333         TB6254347	INC PRO-SPECTV AF STIN DELIND SAL TUWSU	(3013)						
Beample at the next service interval to monitor.         Sample Number Sample Status         Client Info         16705/34.27	RECOMMENDATION	Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Late         Client Info         To Jul Auk         Solar Auk		Sample Number		Client Info		TR06239331	TR05454847	
Oil Age         Init         Client Info         S26         259            First or, Anged         Client Info         Init or, Client Info         Init And Change         Init And Change<		Sample Date		Client Info		16 Jul 2024	25 Jan 2022	
Filter Age         Ins         Client Info         526         550         Image And Amage Ama		Machine Age	hrs	Client Info		7670	680	
Oil Changed Filter Changed         Client Into         Not Changed Not Changed         Not Change		Oil Age	hrs	Client Info		526	259	
Filter Changed Sample Status         Cleant Interior         Not Changel NORMAL         Image: Component Normal         Normal         Image: Component Normal           All component wear rates are normal.         ir on Nickel         ppm         ASTM DSISm         >50         <1		Filter Age	hrs	Client Info		526	259	
Sample Status         NORMA		Oil Changed		Client Info		Not Changd	Not Changd	
Iron         ppm         ASTM D515m         >150         34         38            All component wear rates are normal.         Promound ppm         ASTM D515m         >20         -1         <1		Filter Changed		Client Info		Not Changd	Not Changd	
All component wear rates are normal.         Chromium         ppm         ASTM D585m         >20         <1		Sample Status				NORMAL	NORMAL	
All component wear rates are normal.         Chromium         ppm         ASTM D585m         >20         <1	WEAR	Iron	mag	ASTM D5185m	>150	34	38	
All component wear rates are normal.       Nickel       ppm       ASTM 0585m       >5       <1								
Titanium         ppm         ASTM D5185m         -         -         -           Silver         ppm         ASTM D5185m         -2         0         -1         -           Silver         ppm         ASTM D5185m         -20         2         3         -           Lead         ppm         ASTM D5185m         >155         2         2         -           Tin         ppm         ASTM D5185m         >10         2         2         -           Tin         ppm         ASTM D5185m         >10         2         2         -           Vanadium         ppm         ASTM D5185m         >10         2         2         -           Valeow         scalar         Visual         NONE         NONE         NONE         NONE         NONE         -           Vellow Metal         scalar         Visual         NONE         NONE         NONE         -         -           Vellow Metal         scalar         Visual         NONE         NONE         NONE         -         -           CONTAMINATION         Silt         scalar         Visual         NONE         NONE         NONE         NONE         NONE         NONE	All component wear rates are normal.							
Silver         ppm         ATM D515m         >20         0         <1								
Aluminum         ppm         ASTM D5165m         >40         13         15            Lead         ppm         ASTM D516m         >50         2         3            Coopper         ppm         ASTM D516m         >50         2         2         2            Tin         ppm         ASTM D516m         >10         2         2            White Metal         scalar         Visual         NONE         NONE         NONE         NONE            CONTAMINATION         Silicon         ppm         ASTM D516m         >30         18         18            There is no indication of any contamination in the oil.         Silicon         ppm         ASTM D516m         >30         13         13.4            Water         V         WC Method         >-0.2         NEG         NEG            Solid         %         MSTM D516m         >30         18         18.4            Water         VC Method         >-0.2         NEG         NEG            Solid         MSTM D516m         >-0.0         T.1         0.1         0.1         0.1<					>2			
Lead         ppm         ASTM D5185n         >50         2         3								
Copper         ppm         ASTM D5185m         >155         2         2         2								
Tin         ppm         ASTM D5185m         >10         2         2								
Vanadium         ppm         ASTM D5185m          <1         <1         <1           White Metal         scalar         "Visual         NONE         NONE         NONE         NONE            CONTAMINATION         Silicon         ppm         ASTM D5185m         >30         18         18         18								
White Metal Yellow Metal         scalar         'Visual         NONE								
Vellow Metal         scalar         *Visual         NONE         NONE         NONE            CONTAMINATION         Potassium         ppm         ASTM D5165m         >20         5         4            Potassium         ppm         ASTM D5165m         >20         5         4            Water         WC Method         >-0.0         KEG         NEG            Glycol         WC Method         >-0.0         NEG         NEG            Soot %         %         *ASTM D7624         >-0         14.3         13.4            Soot %         %         *ASTM D7624         >-00         14.3         13.4            Soot %         %         *ASTM D7624         >-00         14.3         13.4            Silt         scalar         *Visual         NONE         NONE         NONE         NONE         NONE         NONE            Silt         scalar         *Visual         NONE         NONE         NONE            Soad/Dirt         scalar         *Visual         NORM         NORML         NORML					NONE			
Potassium         ppm         ASTM D5185m         >20         5         44            Fuel         WC Method         >4.0         <1.0							-	
Potassium         ppm         ASTM D5185m         >20         5         44            Fuel         WC Method         >4.0         <1.0	CONTAMINATION	Silicon	maa	ASTM D5185m	>30	18	18	
There is no indication of any contamination in the oil.         Fuel         WC Method         >4.0         <1.0								
Water         W Construction         NEG         NEG         NEG           Glycol         WC Method         NC         NEG         NEG            Glycol         %C Method         %C         NEG         NEG            Soti %         %         *ASTM D762         >20         14.3         13.4            Nitration         Abs/m         *ASTM D762         >20         14.3         13.4            Sulfation         Abs/m         *ASTM D762         >20         14.3         13.4            Sulfation         Abs/m         *ASTM D763         >30         27.8         25.9            Sulfation         scalar         *Visual         NONE         NONE         NONE            Appearance         scalar         *Visual         NOR         NORM         NORM         NORM            Odor         scalar         *Visual         NORM         NORM         NORM            Bronn         ppm         ASTM D5185         >400         19         19            Maganese         ppm         ASTM D5185         <1	There is no indication of any contamination in the oil.		le le					
Glycol         WC Method         NEG         NEG         NEG           Soot %         %         'ASTM D7844         Image: Comparison of the comparison					>0.2		NEG	
Soot %         %         *ASTM D7844         0         0.1         0.1            Nitration         Abs/m         *ASTM D7624         >20         14.3         13.4            Sulfation         Abs/m         *ASTM D7624         >20         14.3         13.4            Sulfation         Abs/m         *ASTM D7624         >30         27.8         25.9            Sulfation         Abs/m         *ASTM D745         >30         NONE         NONE         NONE            Sulfation         Abs/m         *ASTM D745         NON         NONE         NONE            Sulfation         scalar         *Visual         NONE         NONE         NONE            Sand/Dirt         scalar         *Visual         NOR         NORML         NORML            Appearance         scalar         *Visual         NORML         NORML         NORML            The Drono         pp         scalar         *Visual         NOR         NORML         NORML            Boron         ppm         ASTM D5185m         >400         19         19		Glycol						
NitrationAbs/cm'ASTM D7624>2014.313.4SulfationAbs/tm'ASTM D7415>3027.825.9Siltscalar'VisualNONENONENONENONEDebrisscalar'VisualNONENONENONENONESadd/Dirtscalar'VisualNONENONENONENONEAppearancescalar'VisualNORMNORML <t< td=""><th></th><td>%</td><td>*ASTM D7844</td><td></td><th>0.1</th><td></td><td></td></t<>			%	*ASTM D7844		0.1		
Siltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMNORMLNORMLNORMLOdorscalar*VisualNORMNORMLNORMLNORMLCdorscalar*VisualNORMNORMLNORMLEmulsified Waterscalar*VisualNORNORMLNORMLBoronppmASTM D5185m>4001919BariumppmASTM D5185m<			Abs/cm		>20	14.3		
Debrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m>4001919BoronppmASTM D5185m>4001919.0BariumppmASTM D5185m<		Sulfation	Abs/.1mm	*ASTM D7415	>30	27.8	25.9	
Sand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMNORMLNORMLNORMLOdorscalar*VisualNORMNORMLNORMLNORMLEmulsified Waterscalar*Visualscalar*VisualscalarNORMLNORMLFLUID CONDITIONSodiumppmASTM D5185m>4001919		Silt	scalar	*Visual	NONE	NONE	NONE	
Sand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMNORMLNORMLNORMLOdorscalar*VisualNORMNORMLNORMLNORMLEmulsified Waterscalar*Visualscalar*VisualscalarNORMLNORMLFLUID CONDITIONSodiumppmASTM D5185m>4001919		Debris	scalar	*Visual	NONE	NONE	NONE	
Appearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGFLUID CONDITIONSodiumppmASTM D5185m>4001919BoronppmASTM D5185m>40077BariumppmASTM D5185m<		Sand/Dirt	scalar		NONE	NONE	NONE	
Emulsified Waterscalar*Visual>0.2NEGFLUID CONDITIONSodiumppmASTM D5185m>4001919BoronppmASTM D5185m>07BariumppmASTM D5185m<		Appearance	scalar		NORML	NORML	NORML	
Sodium       ppm       ASTM D5185m       >400       19       19          Boron       ppm       ASTM D5185m       0       7          Barium       ppm       ASTM D5185m       0       7          Molybdenum       ppm       ASTM D5185m       2       2          Manganese       ppm       ASTM D5185m       21       <1		Odor	scalar	*Visual	NORML	NORML	NORML	
Boron       ppm       ASTM D5185m       0       0       7          Barium       ppm       ASTM D5185m        <1		Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
Boron       ppm       ASTM D5185m       0       0       7          Barium       ppm       ASTM D5185m        <1       0.0          Barium       ppm       ASTM D5185m        <1       0.0          Molybdenum       ppm       ASTM D5185m        2       2          Manganese       ppm       ASTM D5185m        <1       <1          Magnesium       ppm       ASTM D5185m        <2       25       <         Calcium       ppm       ASTM D5185m         <4803          Phosphorus       ppm       ASTM D5185m           <         Sulfur       ppm       ASTM D5185m           <         Quidation       Abs/.1mm       *ASTM D5185m           <         Magnesium       ppm       ASTM D5185m           <         Calcium       ppm       ASTM D5185m           <         Sul	FLUID CONDITION	Sodium	ppm	ASTM D5185m	>400	19	19	
The BN result indicates that there is suitable alkalinity remaining in the oil is suitable for further service.       Barium       ppm       ASTM D5185m				ASTM D5185m		0		
Molybdenum       ppm       ASTM D5185m       2       2          Manganese       ppm       ASTM D5185m       <1		Barium				<1	0	
Manganese       ppm       ASTM D5185m       <1       <1          Magnesium       ppm       ASTM D5185m       0       22       25          Calcium       ppm       ASTM D5185m       5289       4803          Phosphorus       ppm       ASTM D5185m       0       949       888          Zinc       ppm       ASTM D5185m       1317       1154          Sulfur       ppm       ASTM D5185m       0       4487       3879          Oxidation       Abs/.1mm       *ASTM D741       >25       18.4       18.4		Molybdenum		ASTM D5185m		2		
Magnesium       ppm       ASTM D5185m       22       25          Calcium       ppm       ASTM D5185m       5289       4803          Phosphorus       ppm       ASTM D5185m       0       949       888          Zinc       ppm       ASTM D5185m       1317       1154          Sulfur       ppm       ASTM D5185m       0       4487       3879          Oxidation       Abs/.1mm       *ASTM D7414       >25       18.4       18.4		•				<1	<1	
Calcium       ppm       ASTM D5185m       5289       4803          Phosphorus       ppm       ASTM D5185m       0       949       888          Zinc       ppm       ASTM D5185m       1317       1154          Sulfur       ppm       ASTM D5185m       0       4487       3879          Oxidation       Abs/.1mm       *ASTM D7414       >25       18.4       18.4		-					25	
Phosphorus       ppm       ASTM D5185m       949       888          Zinc       ppm       ASTM D5185m       1317       1154          Sulfur       ppm       ASTM D5185m       4487       3879          Oxidation       Abs/.1mm       *ASTM D7414       >25       18.4       18.4								
Zinc       ppm       ASTM D5185m       1317       1154          Sulfur       ppm       ASTM D5185m       4487       3879          Oxidation       Abs/.1mm       *ASTM D7414       >25       18.4       18.4		Phosphorus		ASTM D5185m		949	888	
Sulfur         ppm         ASTM D5185m         4487         3879            Oxidation         Abs/.1mm         *ASTM D7414         >25         18.4         18.4		Zinc						
Oxidation         Abs/.1mm         *ASTM D7414         >25         18.4         18.4								
					>25			
		Base Number (BN)	mg KOH/g	ASTM D2896				

Visc @ 100°C cSt

ASTM D445

12.0

16.0



Sample No. Received 1801 S HURON ST : TR06239331 : 17 Jul 2024 P Lab Number : 06239331 Tested DENVER, CO : 19 Jul 2024 Diagnosed Unique Number : 11128165 : 19 Jul 2024 - Jonathan Hester US 80223 Test Package : MOB 2 Contact: JAMES WEST Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-827-0711. \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: 回歸 F: Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Contact/Location: JAMES WEST - OVEDEN Page 2 of 2