



## PUMP MONITORING, RISK ANALYSIS, AND ACTIONS LOG

ASSET	SENSOR & RISK SUMMARY				AUTOMATED RESPONSE & OUTPUT		
	Metric	Value / Range	Interpretation		Triggered Output	Status	Client Note

### TACT PUMP PRODUCTIONS

### PUMP 3 — OPERATIONAL RISK ASSESSMENT (GIBBS HALL)

Gibbs Hall	<b>Observations</b>	3,931 records	Large sample size supports stable statistical interpretation.		Monitoring cycle analyzed	Complete	Dataset sufficient for reliable
	<b>Temperature</b>	Mean 100.65°C   Min 50.00°C   Max 149.98°C	High variability indicates intermittent thermal stress and possible		Overheat pattern scan	Complete	Temperature should remain the
	<b>Vibration</b>	Mean 2.51 mm/s   Max 5.00 mm/s	Mechanical condition appears moderate; upper readings may		Mechanical anomaly check	Complete	Track with temperature during
	<b>Pressure</b>	Mean 199.28 kPa   Range 100.08–299.98 kPa	Hydraulic behavior appears centered within expected operating		Pressure stability review	Complete	No immediate hydraulic
	<b>Flow Rate</b>	Mean 10.09 L/s   Range 0.50–20.00 L/s	Flow remains balanced overall; no obvious flow-driven overheating		Flow consistency review	Complete	Supports conclusion that issue
	<b>RPM</b>	Mean 2,002.40 rpm   Range 1,000.11–2,999.51	Variable speed operation suggests changing load demand		Speed/load evaluation	Complete	Useful context for severity
	<b>Operational Hours</b>	Mean 5,048.86 hrs   Max 9,993.87 hrs	Runtime suggests the asset is mature enough to justify preventative inspection.		Maintenance threshold review	Flagged	Inspection should be scheduled soon.

<b>Maintenance Flag</b>	Mean 0.50   Median indicates recurring maintenance states	Roughly half of the records indicate maintenance		Maintenance system update	Logged	Supports proactive service
<b>Severity Percent</b>	Mean 45.78%   Max 95.8%	Overall risk is moderate, but critical spikes indicate intermittent high-risk conditions.		Risk severity calculation	Complete	Escalate any events above 90% immediately.
<b>Correlation Insight</b>	Temperature has weak correlation with pressure	Overheating likely arises from localized mechanical or thermal		Root-cause summary	Generated	Use this insight to guide

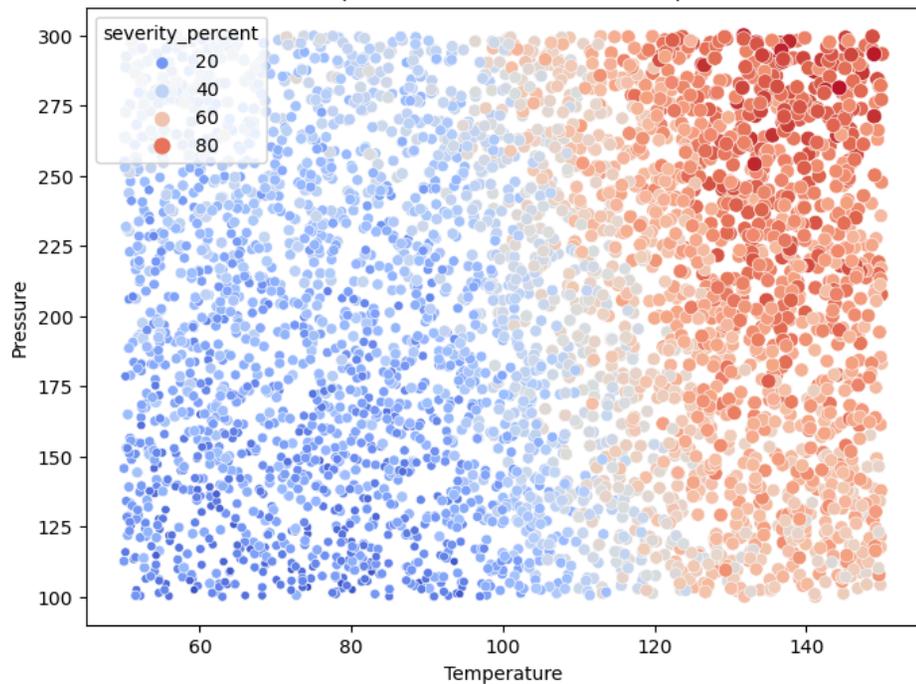
## EXECUTIVE INTERPRETATION

Pump 3 is operating within broad nominal ranges, but the data indicates moderate operational risk driven by temperature variability, extended runtime, and intermittent high-severity events. The average severity score of 45.78% suggests the pump is not in immediate failure mode; however, spikes up to 95.8% show that critical conditions can emerge under certain operating states. Recommended action is to continue continuous monitoring, investigate thermal spikes, and schedule preventative maintenance before the next 500 operating hours.

## AI SYSTEM EXPLANATION OUTPUT

Pump 3 has shown repeated temperature excursions above its average operating level. Based on the statistical profile and severity history, the system classifies the asset as MODERATE RISK with intermittent CRITICAL events. A maintenance review has been logged, and operators should prioritize inspection of bearings, lubrication systems, seals, and cooling-related components.

Temperature vs. Pressure for Pump 3



Temperature vs. Flow Rate for Pump 3

