



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 1 — OPERATIONAL RISK ASSESSMENT

McNair Hall	Observations	3,911 records	Large sample size supports stable statistical interpretation.		Monitoring cycle analyzed	Complete	Dataset sufficient for reliable trend review.
	Temperature	Mean 100.62°C Min 50.03°C Max 149.98°C	High variability indicates intermittent thermal stress and possible overheating spikes.		Overheat pattern scan	Complete	Temperature should remain the primary watch variable.
	Vibration	Mean 2.54 mm/s Max 4.99 mm/s	Mechanical condition appears moderate; upper readings may		Mechanical anomaly check	Complete	Track with temperature during high-load
	Pressure	Mean 201.24 kPa Range 100.05–299.97 kPa	Hydraulic behavior appears centered within expected operating band.		Pressure stability review	Complete	No immediate hydraulic concern evident from summary statistics.
	Flow Rate	Mean 10.30 L/s Range 0.50–19.99 L/s	Flow remains balanced overall; no obvious flow-driven overheating signal.		Flow consistency review	Complete	Supports conclusion that issue may be localized mechanical.
	RPM	Mean 2,007 rpm Range 1,000–2,999 rpm	Variable speed operation suggests changing load demand across the dataset.		Speed/load evaluation	Complete	Useful context for severity scoring.

Operational Hours	Mean 5,027 hrs Max 9,997 hrs	Runtime suggests the asset is mature enough to justify preventative		Maintenance threshold review	Flagged	Inspection should be scheduled soon.
Maintenance Flag	Mean 0.50	Roughly half of the records indicate maintenance involvement or flagged		Maintenance system update	Logged	Supports proactive service planning.
Severity Percent	Mean 45.89% Max 95.7%	Overall risk is moderate, but critical spikes indicate intermittent high-risk conditions.		Risk severity calculation	Complete	Escalate any events above 90% immediately.
Correlation Insight	Temperature weakly correlated with pressure	Overheating likely arises from localized mechanical or thermal		Root-cause summary	Generated	Use this insight to guide inspection priorities.

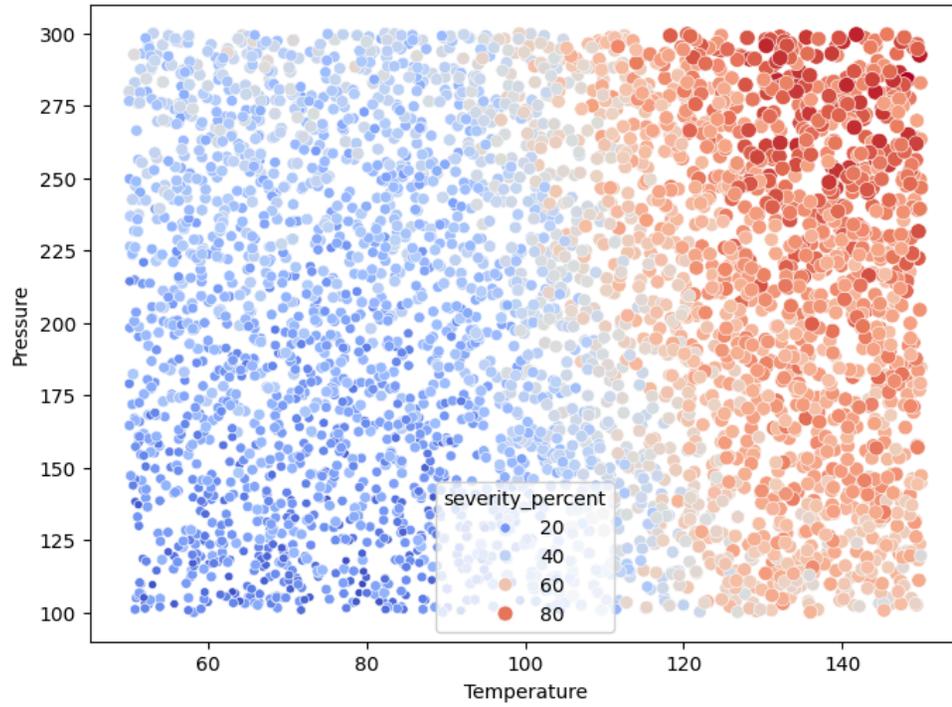
EXECUTIVE INTERPRETATION

Pump 1 operates within nominal ranges but shows moderate operational risk driven by temperature variability, extended runtime, and intermittent high-severity events. Average severity is 45.89%, but spikes up to 95.7% indicate potential critical states under certain conditions. Preventative maintenance and continued monitoring are recommended.

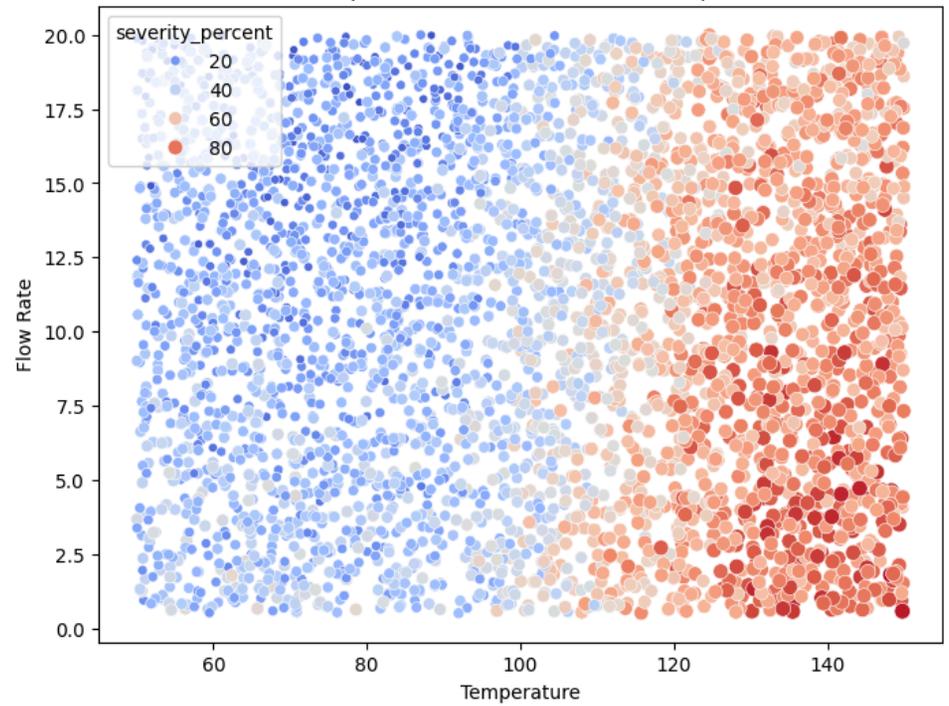
AI SYSTEM EXPLANATION OUTPUT

Pump 1 shows temperature excursions above normal levels. Based on severity history, the system classifies the asset as MODERATE RISK with intermittent CRITICAL events. Inspection should prioritize bearings, lubrication systems, seals, and cooling components.

Temperature vs. Pressure for Pump 1



Temperature vs. Flow Rate for Pump 1



Correlation Matrix for Pump 1

