Crash Detection Report

Event Details

VIN Number: 1234567890ABCDEF

ECU Identifier: ECU-XYZ-001

Distance Traveled: 150

Date: 2025-02-26

Time: 14:30:00

Location: New York, USA

DeepSeek Analysis

File: reckless_driving_data.xlsx

Structured Report: Crash Detection Analysis

Crash Likelihood: **High**

Detected Anomalies:

1. **Sudden Deceleration Events**:

- Multiple instances of extreme negative acceleration (deceleration) exceeding -2.5g, with peaks at **-3.84g** and **-3.21g**. These values are significantly higher than typical braking deceleration (usually around -0.5g to -1g).

   - Example: At **10:24.1**, the vehicle decelerated from **66.1 km/h** with an acceleration of **-3.84g**.

2. **Erratic Speed Fluctuations**:

   - Rapid changes in vehicle speed, such as dropping from **125.7 km/h** to **73 km/h** within milliseconds, followed by inconsistent acceleration patterns.

3. **Throttle Position Inconsistencies**:

   - Throttle position fluctuates dramatically, even during high deceleration events. For example, at **10:24.1**, the throttle position was **64.3%** during a **-3.84g** deceleration.

4. **Engine Power Drops**:

   - Instances of engine power dropping to near-zero or negative values (e.g., **-4.3 hp** at **10:24.4**), indicating potential loss of control or system failure.

5. **Unusual Fuel Consumption Patterns**:

   - Fuel consumption spikes and drops inconsistently, such as **42.61 km/L** at **10:25.1**, which is unrealistic and suggests sensor malfunction or system instability.

Possible Causes:

1. **Collision or Impact**:

   - The extreme deceleration values and erratic speed changes are consistent with a collision or sudden impact.

2. **Loss of Traction or Control**:

   - The combination of high deceleration, throttle inconsistencies, and engine power drops could indicate a loss of traction (e.g., skidding or hydroplaning).

3. **System Malfunction**:

   - Sensor errors or system failures (e.g., throttle position sensor, accelerometer) could explain the anomalous data.

4. **Driver Behavior**:

   - Aggressive braking or sudden maneuvers by the driver could contribute to the observed patterns, though the severity of deceleration suggests more than just driver action.

Recommendations:
1. **Immediate Vehicle Inspection**:

   - Conduct a thorough inspection of the vehicle for signs of collision damage, including the chassis, suspension, and safety systems (e.g., airbags, seatbelt pretensioners).

2. **Diagnostic Check**:

   - Run a full diagnostic scan to identify any sensor or system malfunctions that may have

contributed to the anomalies.

3. **Driver Feedback**:

   - If the driver is available, gather their account of the event to determine if the anomalies were caused by external factors (e.g., collision, road conditions) or driver error.

4. **Data Logging Review**:

   - Analyze additional data logs (e.g., ABS activation, stability control systems) to confirm the nature of the event and identify contributing factors.

5. **Safety System Activation Check**:

   - Verify if safety systems (e.g., airbags, collision avoidance systems) were activated during the event.

6. **Preventive Measures**:

   - If no collision occurred, investigate potential causes (e.g., road conditions, vehicle maintenance) and implement preventive measures to avoid future incidents.

This analysis suggests a high likelihood of a crash or severe loss of control event. Immediate action is recommended to assess the vehicle's condition and ensure safety.