# Dossier: HILL ENGINEERING LLC

## SBIR Award Details

**Award Title:** N/A

**Amount:** $1,250,000.00

**Award Date:** 2024-03-04

**Branch:** USAF

## AI-Generated Intelligence Summary

**Company Overview:**

HILL ENGINEERING LLC specializes in providing engineering services, primarily focused on failure analysis, fracture mechanics, fatigue analysis, and stress analysis. Their core mission centers around assisting clients in preventing failures in mechanical components and structures through the application of advanced engineering analysis techniques. They aim to solve complex engineering problems related to structural integrity, longevity, and reliability in demanding environments within the aerospace, defense, energy, and medical device industries. Their unique value proposition lies in their deep expertise in residual stress measurement and analysis, offering clients a comprehensive understanding of the factors that contribute to component failure and enabling them to design more robust and durable systems.

**Technology Focus:**

* Residual Stress Measurement & Analysis:\*\* HILL ENGINEERING LLC uses various techniques (e.g., deep hole drilling, contour method, slitting) to accurately measure residual stresses in components, providing crucial data for fatigue and fracture analysis. They offer both field and laboratory measurement services.
* Finite Element Analysis (FEA):\*\* Utilizing commercial FEA software, they conduct complex simulations to predict stress distributions, fatigue life, and fracture behavior of components under various loading conditions. They specialize in incorporating measured residual stress data into FEA models for enhanced accuracy.

**Recent Developments & Traction:**

* Awarded DoD Contract for Structural Integrity Research (2022):\*\* Secured a significant contract from the Department of Defense to conduct research on improving the structural integrity of critical aerospace components using advanced residual stress analysis techniques. Specific funding amount not publicly disclosed.
* Expanded Laboratory Capabilities (2021):\*\* Expanded their laboratory testing facilities to include advanced fatigue testing equipment, enhancing their ability to provide comprehensive material characterization services.
* Partnership with Leading Aerospace Manufacturer (2023):\*\* Established a strategic partnership with a major aerospace manufacturer to provide ongoing failure analysis and residual stress measurement support for aircraft engine components. Specific details of the partnership are not publicly available.

**Leadership & Team:**

* Dr. Michael Hill (CEO):\*\* Holds a Ph.D. in Mechanical Engineering with extensive experience in residual stress analysis and fracture mechanics. Has published numerous peer-reviewed articles in leading journals in the field.
* Dr. Matthew Peak (President):\*\* Possesses over 20 years of experience in the development and application of advanced engineering analysis techniques. Acted as principal investigator in several government-funded research projects related to structural integrity.

**Competitive Landscape:**

* Element Materials Technology:\*\* A global provider of testing, inspection, and certification services, including materials testing and failure analysis. Hill Engineering differentiates itself through its specialized expertise in residual stress measurement and its integration into FEA simulations, offering a more focused and in-depth analysis.
* Stress Technology Incorporated:\*\* Provides similar services in residual stress and fracture mechanics. Hill Engineering distinguishes itself through a strong focus on research and development related to residual stress measurement techniques, leading to innovative solutions and a strong reputation for technical expertise.

**Sources:**

1. [https://www.hill-engineering.com/](https://www.hill-engineering.com/)

2. [https://www.hill-engineering.com/services/](https://www.hill-engineering.com/services/)

3. [https://www.hill-engineering.com/residual-stress/](https://www.hill-engineering.com/residual-stress/)

4. [https://m.youtube.com/watch?v=L29r0Vj6bQc](https://m.youtube.com/watch?v=L29r0Vj6bQc) (Provides independent insight into their capabilities)