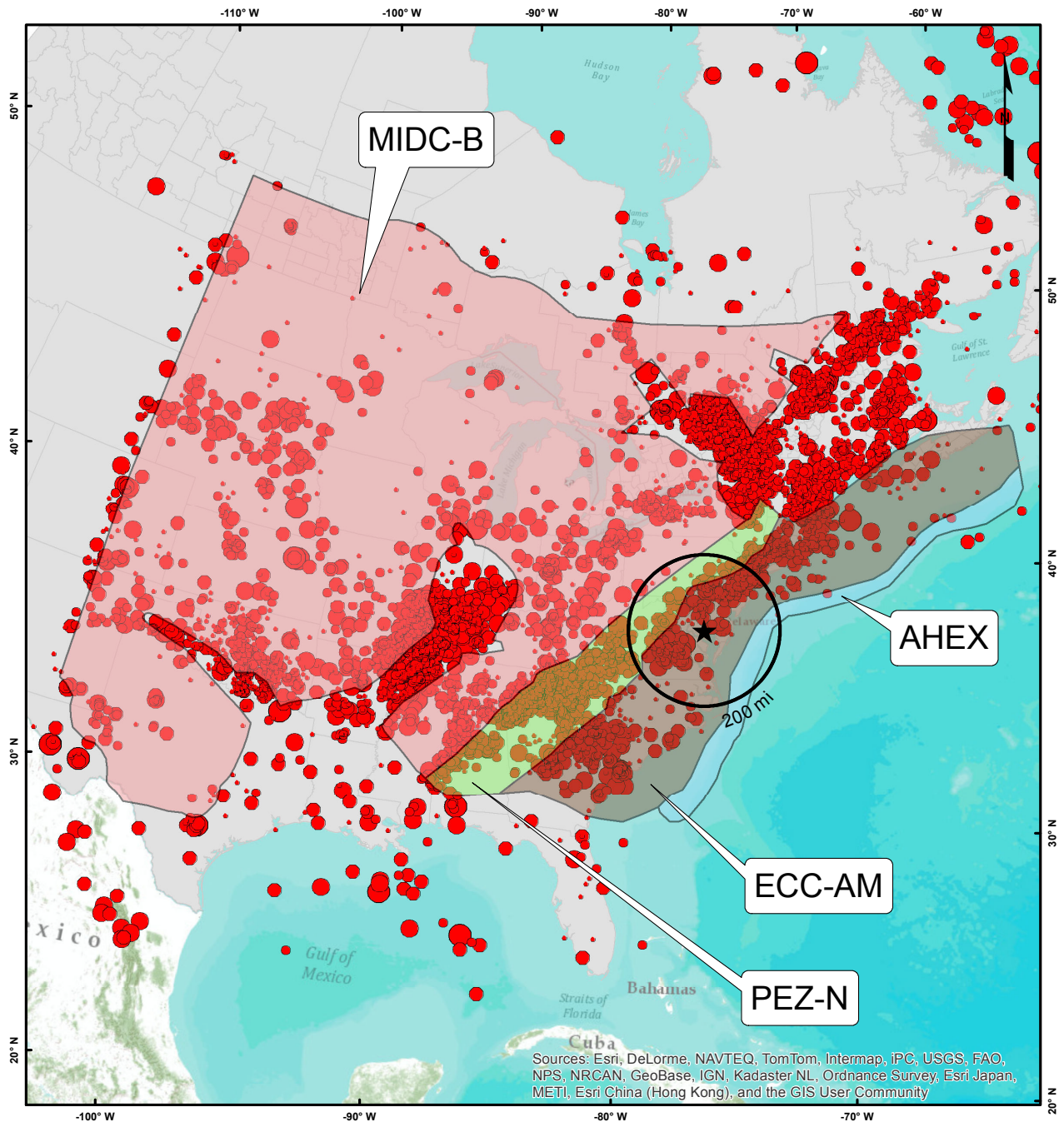


**Figure 2.5-51— {Seismotectonic Zones Showing the Case where the Rough Creek Graben is Part of the Reelfoot Rift (RR-RCG) and the Paleozoic Extended Zone is Narrow (PEZ-N)}**



**Legend**

- ★ Site
- 200 Mile Radius
- AHEX
- ECC-AM
- MIDC-B
- PEZ-N

**Earthquake Magnitude (E[M])**

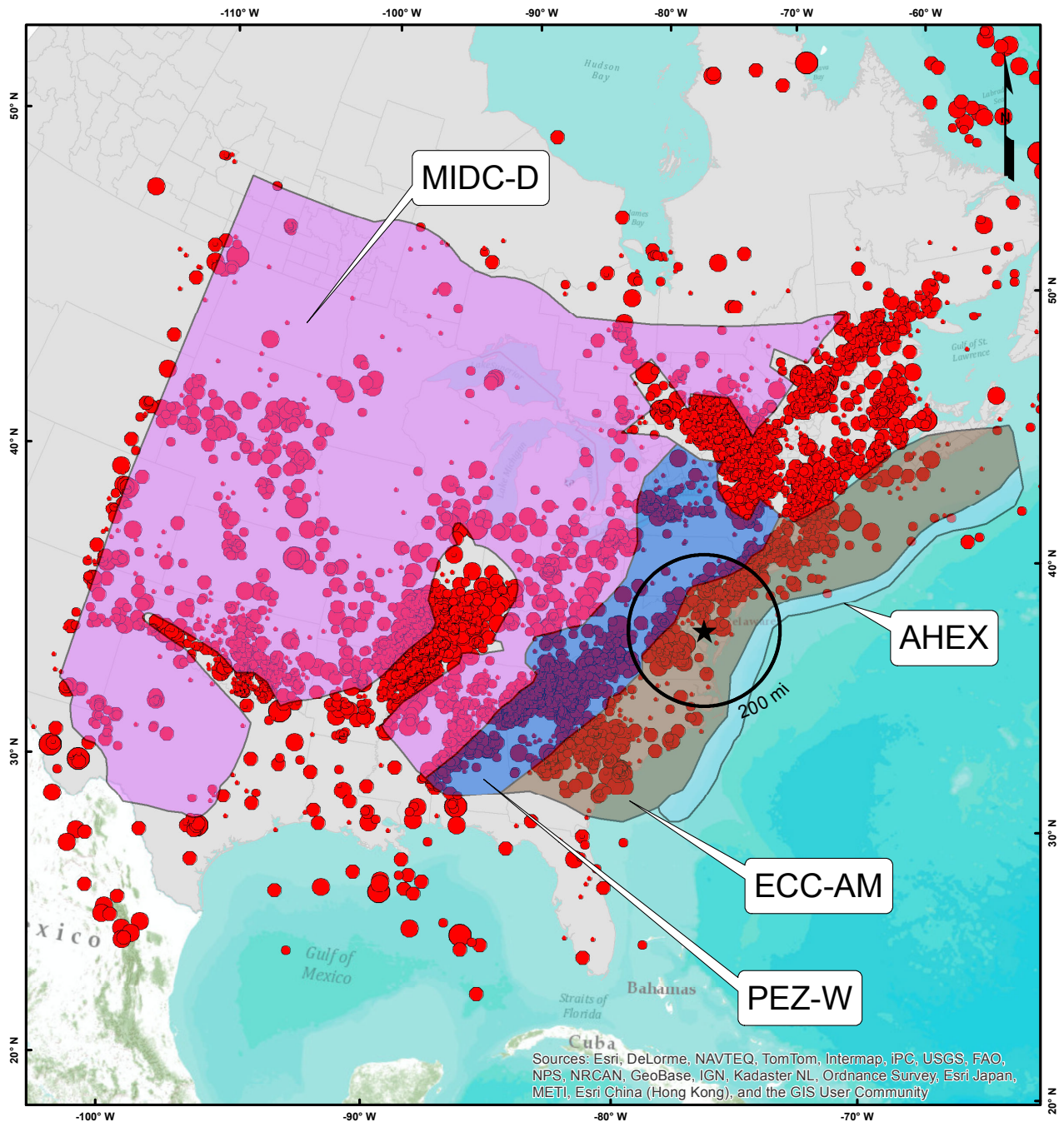
- 2.2 - 2.7
- 2.8 - 3.1
- 3.2 - 3.8
- 3.9 - 4.8
- >=4.9



DATUM: NAD 83

Reference(s):  
1. EPRI/DOE/NRC (2012)  
09-4179-GIS-A009

**Figure 2.5-52— {Seismotectonic Zones Showing the Case where the Rough Creek Graben is not Part of the Reelfoot Rift (RR) and the Paleozoic Extended Zone is Wide (PEZ-W)}**



**Legend**

- ★ Site
- 200 Mile Radius
- AHEX
- ECC-AM
- MIDC-D
- PEZ-W

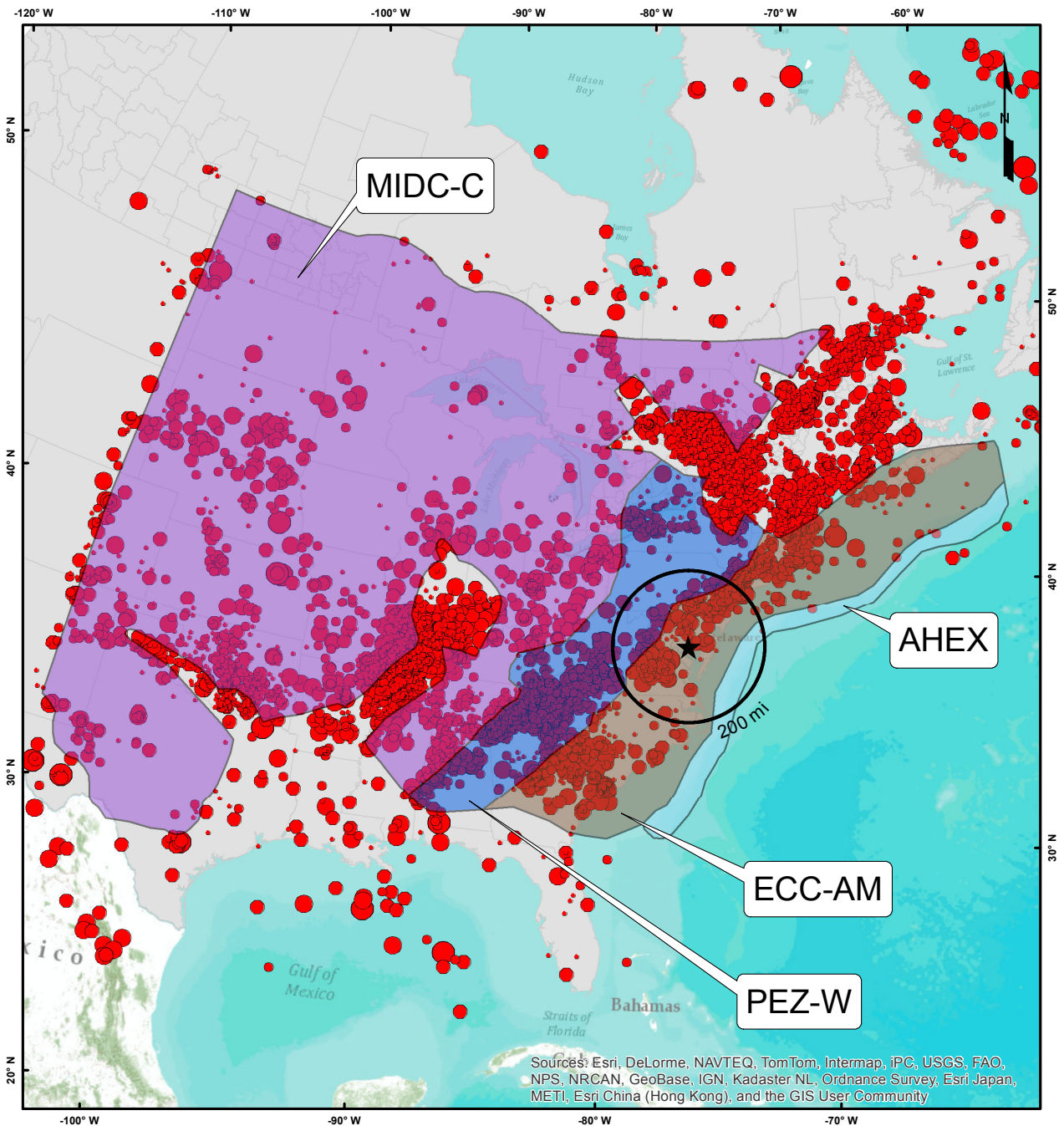
**Earthquake Magnitude (E[M])**

- 2.2 - 2.7
- 2.8 - 3.1
- 3.2 - 3.8
- 3.9 - 4.8
- ≥4.9

**Reference(s):**  
1. EPR/DOE/NRC (2012)

09-4179-GIS-A011

**Figure 2.5-53— {Seismotectonic Zones Showing the Case where the Rough Creek Graben is Part of the Reelfoot Rift (RR-RCG) and the Paleozoic Extended Zone is Wide (PEZ-W)}**



Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community

**Legend**

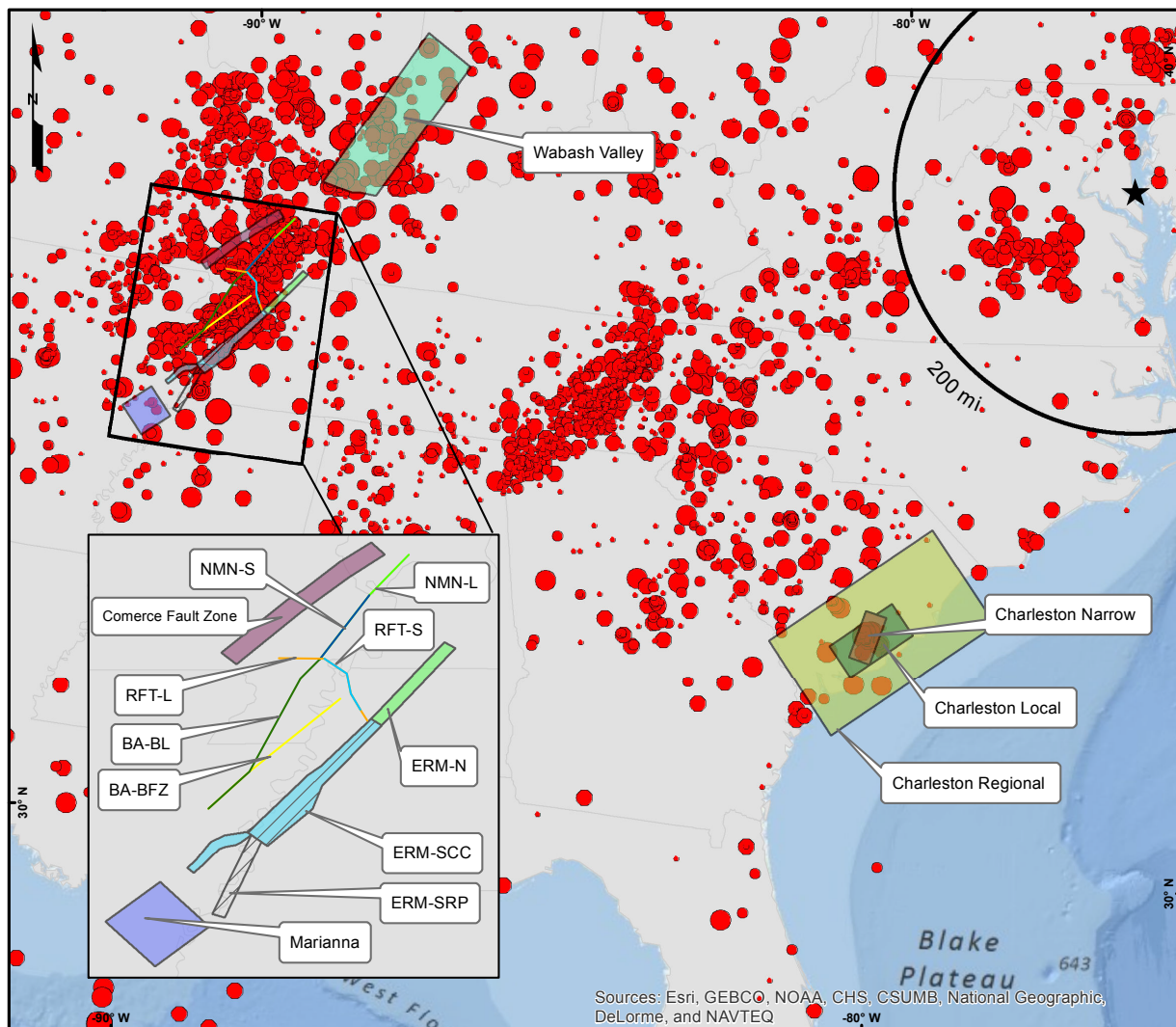
- ★ Site
- 200 Mile Radius
- AHEX
- ECC-AM
- MIDC-C
- PEZ-W

**Earthquake Magnitude (E[M])**

- 2.2 - 2.7
- 2.8 - 3.1
- 3.2 - 3.8
- 3.9 - 4.8
- >=4.9

**Reference(s):**  
 1. EPRI/DOE/NRC (2012)  
 09-4179-GIS-A010

**Figure 2.5-54— {RLME Sources Considered for the PSHA of the CCNPP Unit 3 Site}**



Sources: Esri, GEBCO, NOAA, CHS, CSUMB, National Geographic, DeLorme, and NAVTEQ

**Legend**

DATUM: NAD 83



- ★ Site
- 200 Mile Radius

**Fault**

- NMN Extended: NMN-L
- NMN Short: NMN-S
- NMS: BA-BFZ
- NMS: BA-BL
- RFT Extended: RFT-L
- RFT Short: RFT-S

**Source Zone**

- Commerce Fault Zone
- ERM-N
- ERM-SCC
- ERM-SRP
- Marianna
- Charleston-Local
- Charleston - Narrow
- Charleston - Regional
- Wabash Valley

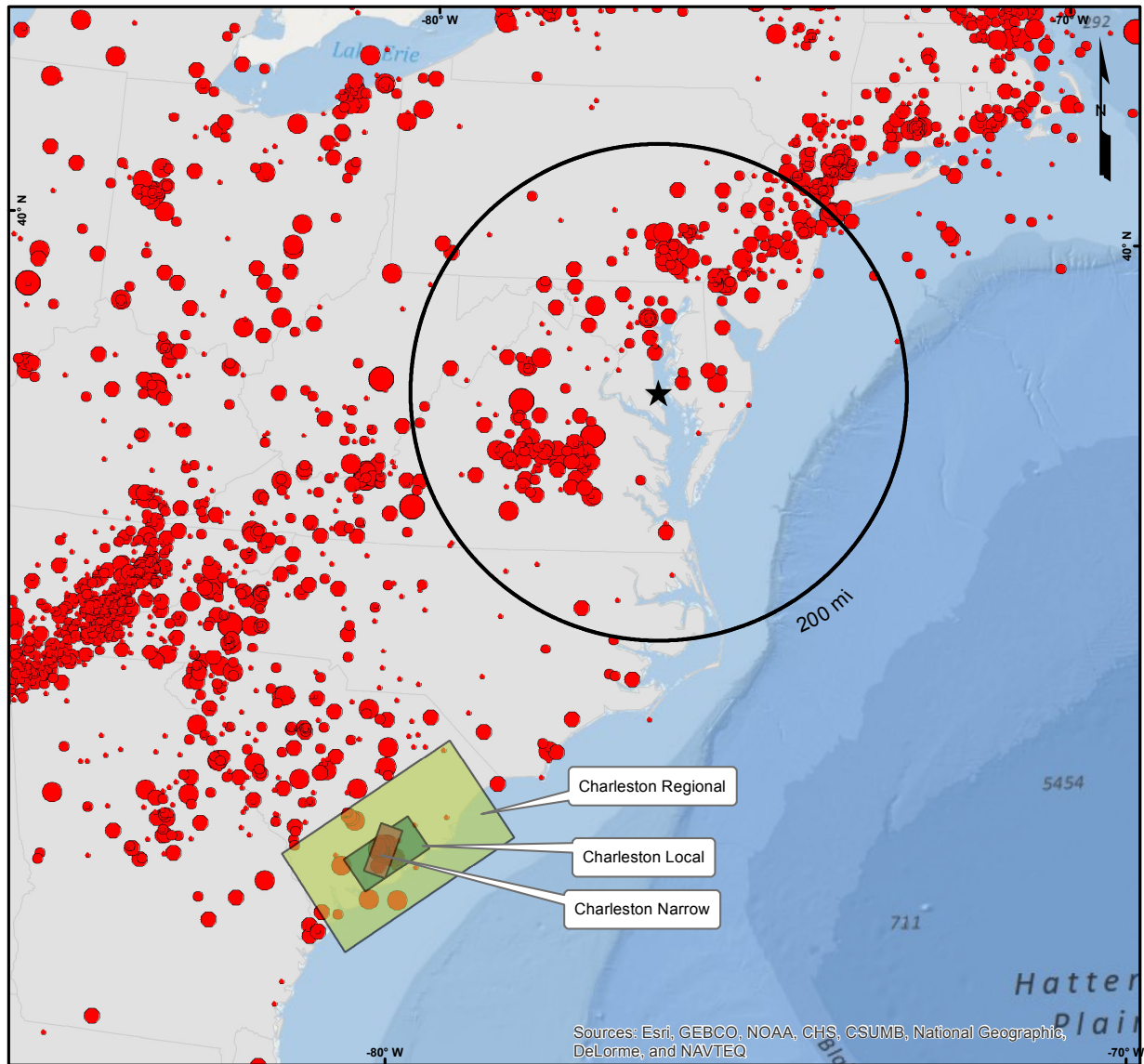
**Earthquake Magnitude (E[M])**

- 2.2 - 2.7
- 2.8 - 3.1
- 3.2 - 3.8
- 3.9 - 4.8
- >=4.9

Reference(s):  
1. EPR/DOE/NRC (2012)

09-4179-GIS-A012

**Figure 2.5-55— {Alternative geometries of Charleston RLME Source}**



**Legend**

- ★ Site
- 200-mile Radius
- Charleston - Local
- Charleston - Narrow
- Charleston - Regional

**Earthquake Magnitude (E[M])**

- 2.2 - 2.7
- 2.8 - 3.1
- 3.2 - 3.8
- 3.9 - 4.8
- >=4.9

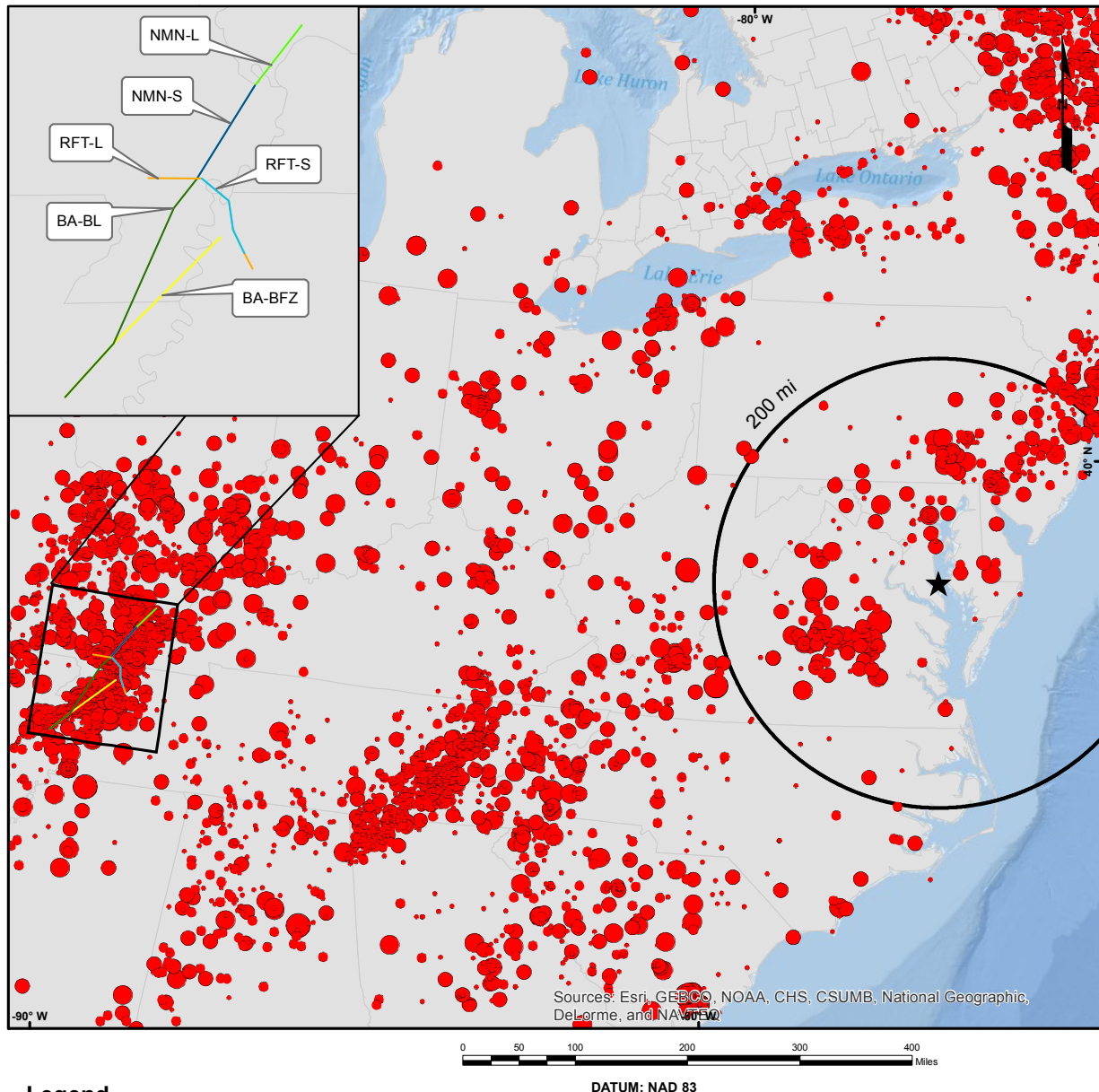
DATUM: WGS84



Reference(s):  
1. EPR/DOE/NRC (2012)

09-4179-GIS-A013

**Figure 2.5-56— {New Madrid Fault System RLME Source}**



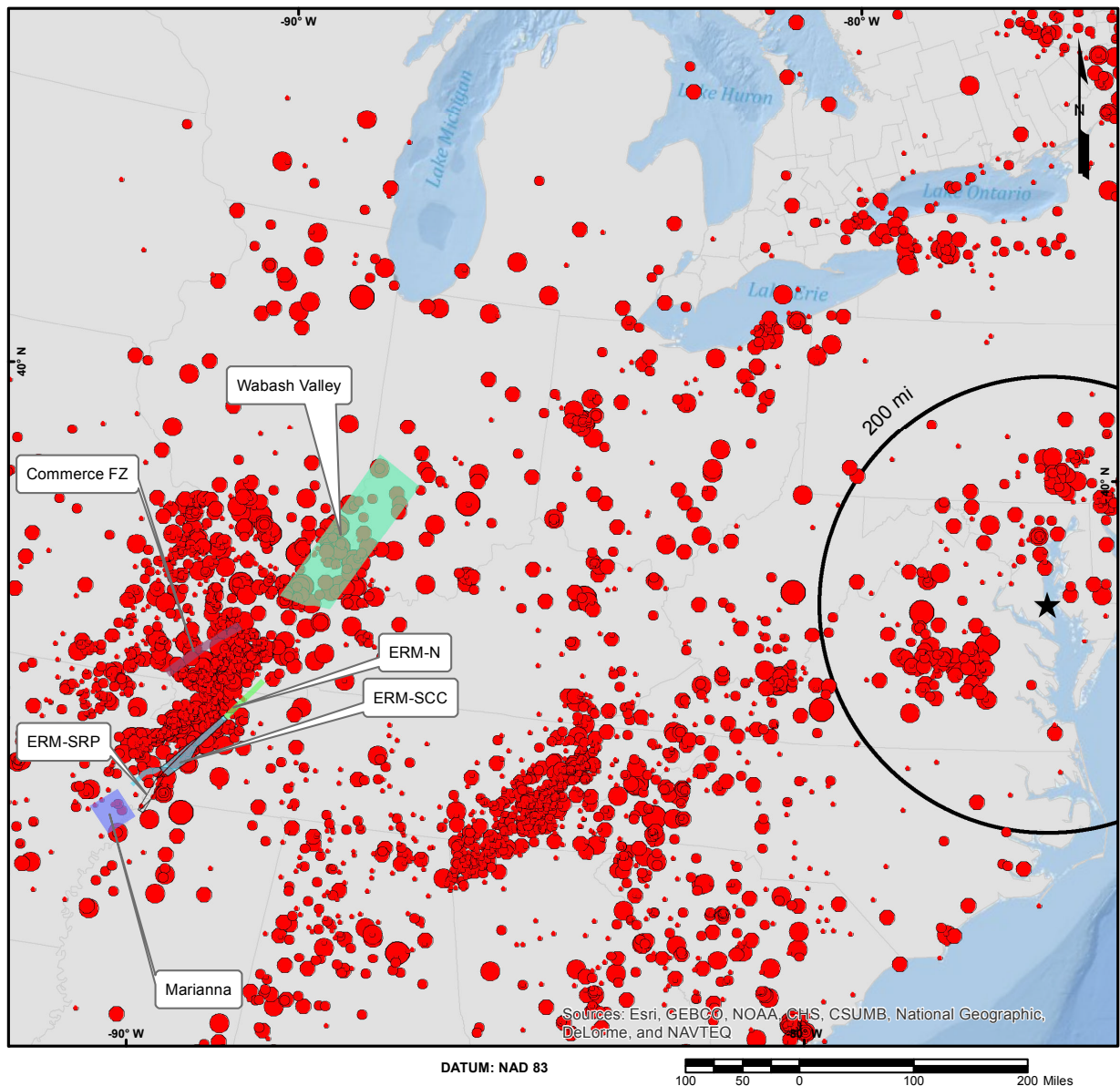
**Legend**

- |              |                     |                                    |                 |
|--------------|---------------------|------------------------------------|-----------------|
| ★            | Site                |                                    |                 |
| <b>Fault</b> |                     | <b>Earthquake Magnitude (E[M])</b> |                 |
| —            | NMN Extended: NMN-L | •                                  | 2.2 - 2.7       |
| —            | NMN Short: NMN-S    | •                                  | 2.8 - 3.1       |
| —            | NMS: BA-BFZ         | •                                  | 3.2 - 3.8       |
| —            | NMS: BA-BL          | •                                  | 3.9 - 4.8       |
| —            | RFT Extended: RFT-L | •                                  | >=4.9           |
| —            | RFT Short: RFT-S    | □                                  | 200 Mile Radius |

Reference(s):  
1. EPRI/DOE/NRC (2012)

09-4179-GIS-A016

**Figure 2.5-57— (Eastern Rift Margin, Wabash Valley, Marianna, and Commerce RLMes}**



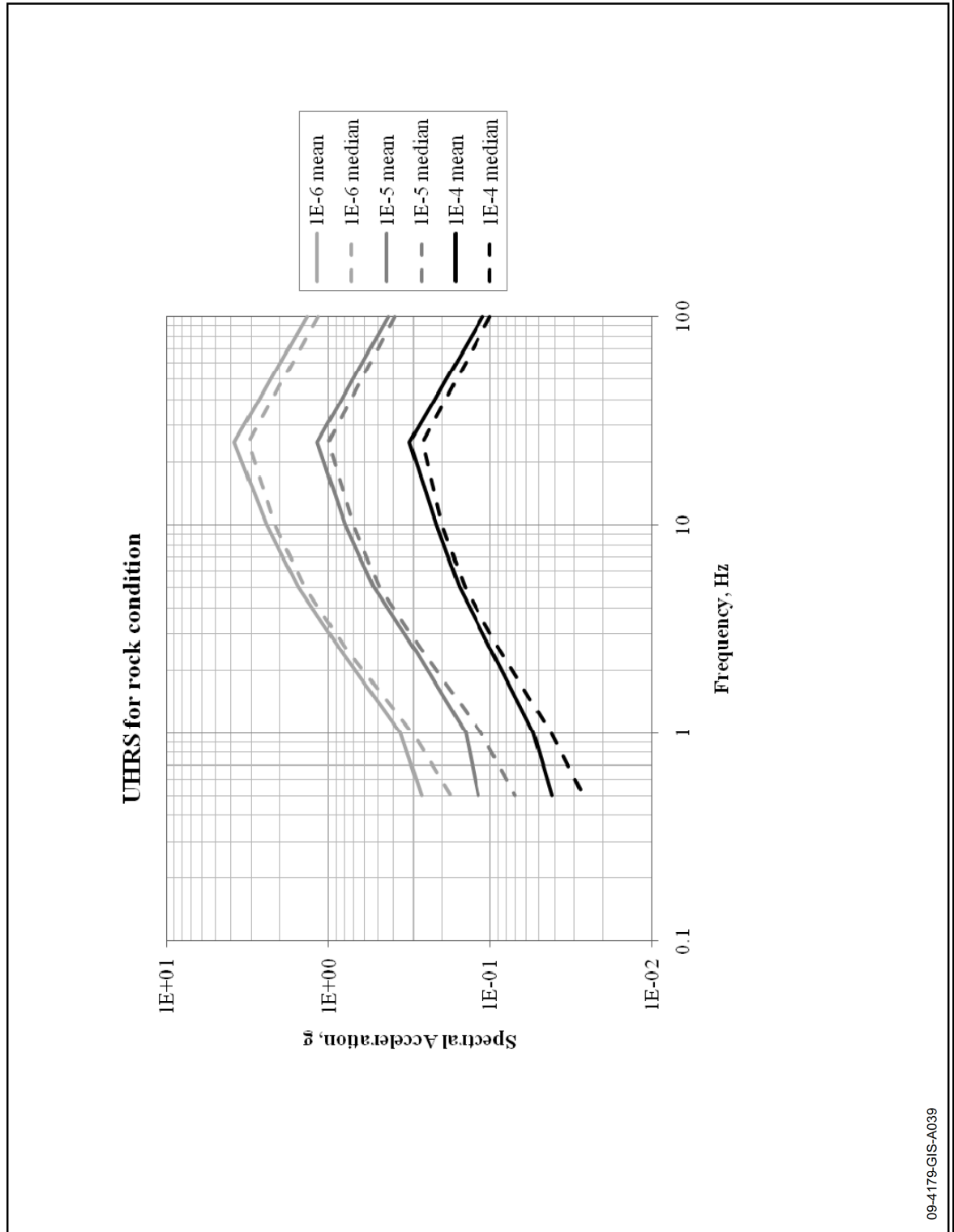
**Legend**

- |   |                     |  |                 |
|---|---------------------|--|-----------------|
| ★ | Site                |  |                 |
|   | Commerce Fault Zone |  | 2.2 - 2.7       |
|   | ERM-N               |  | 2.8 - 3.1       |
|   | ERM-SCC             |  | 3.2 - 3.8       |
|   | ERM-SRP             |  | 3.9 - 4.8       |
|   | Marianna            |  | >=4.9           |
|   | Wabash Valley       |  | 200 Mile Radius |

Reference(s):  
1. EPRI/DOE/NRC (2012)

09-4179-GIS-A017

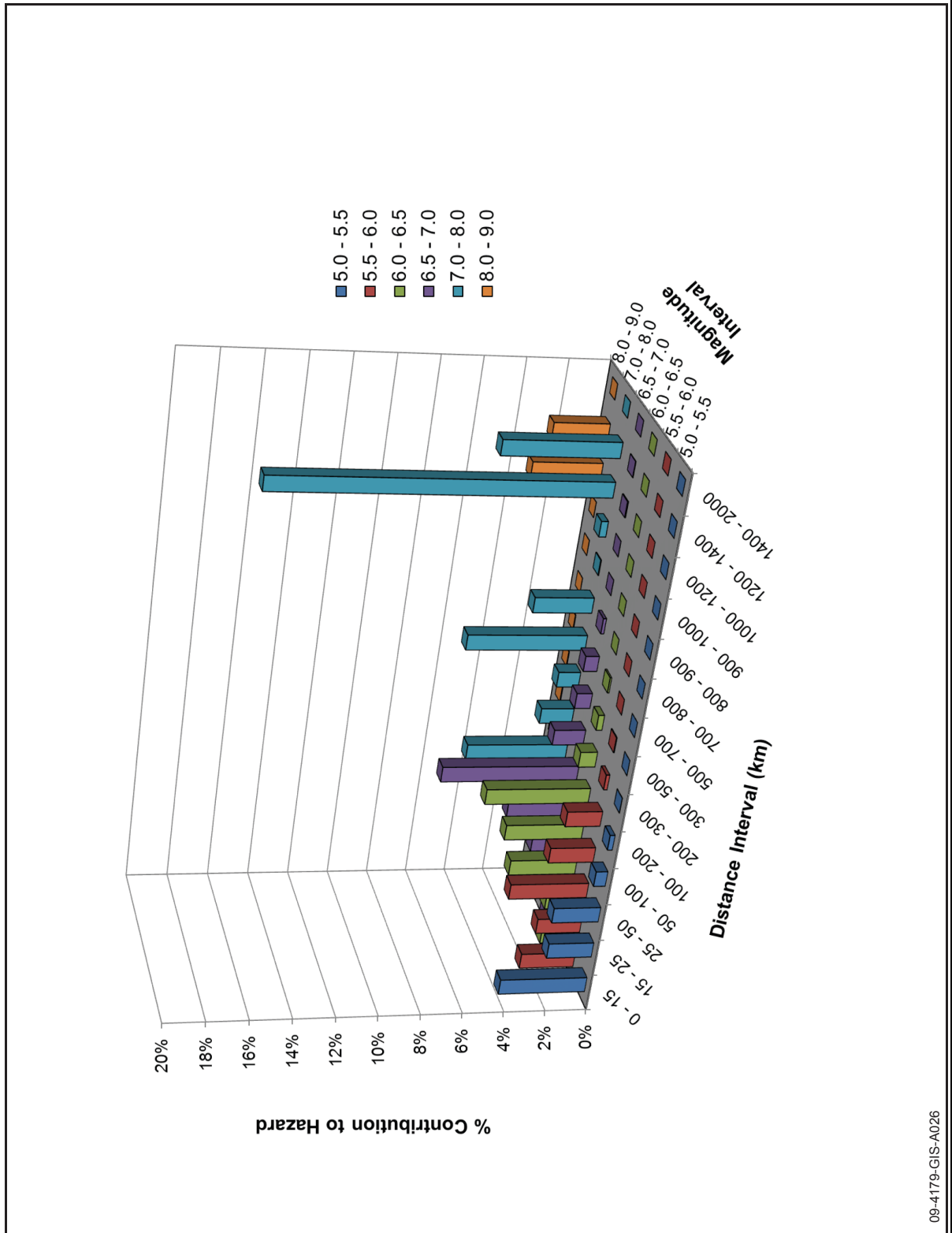
**Figure 2.5-58—{Uniform Hazard Spectra for Rock Conditions at Seven Structural Frequencies for which Ground Motion Equations are Available}**



09-4179-GIS-A039

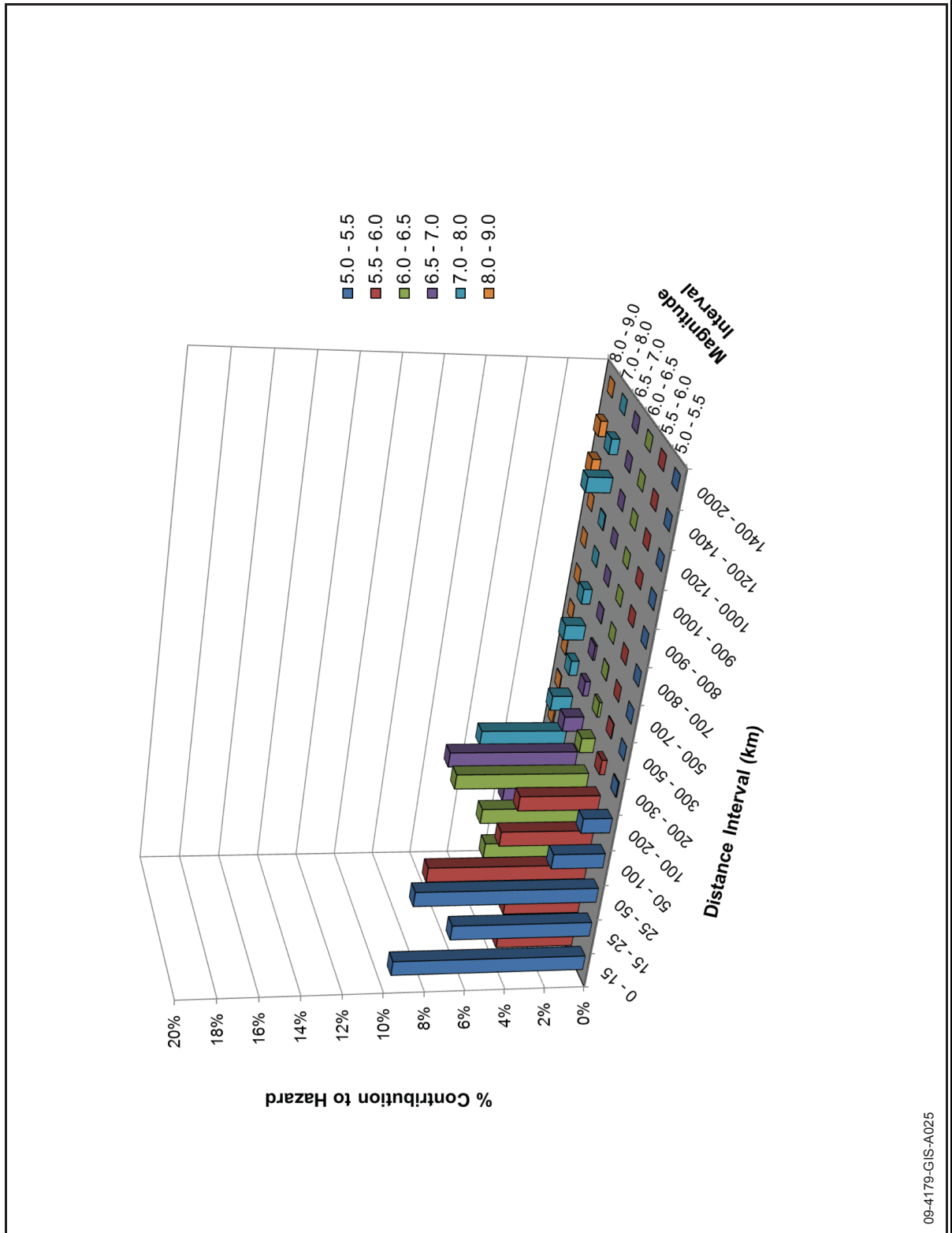


Figure 2.5-59—{Mean  $10^{-4}$  Rock Deaggregation for 1 and 2.5Hz}



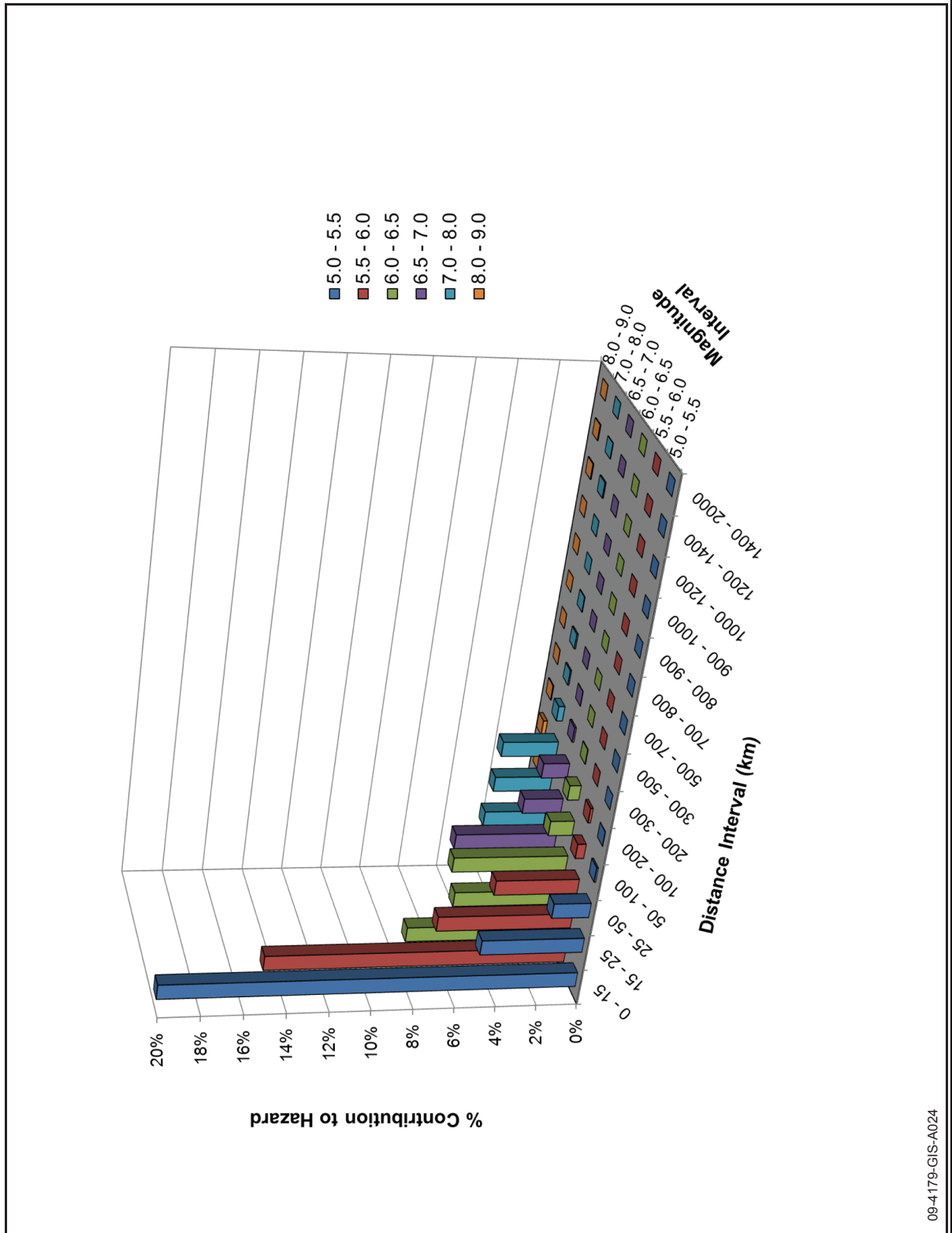
09-4179-GIS-A026

Figure 2.5-60—{Mean  $10^{-4}$  Rock Deaggregation for 5 and 10 Hz}



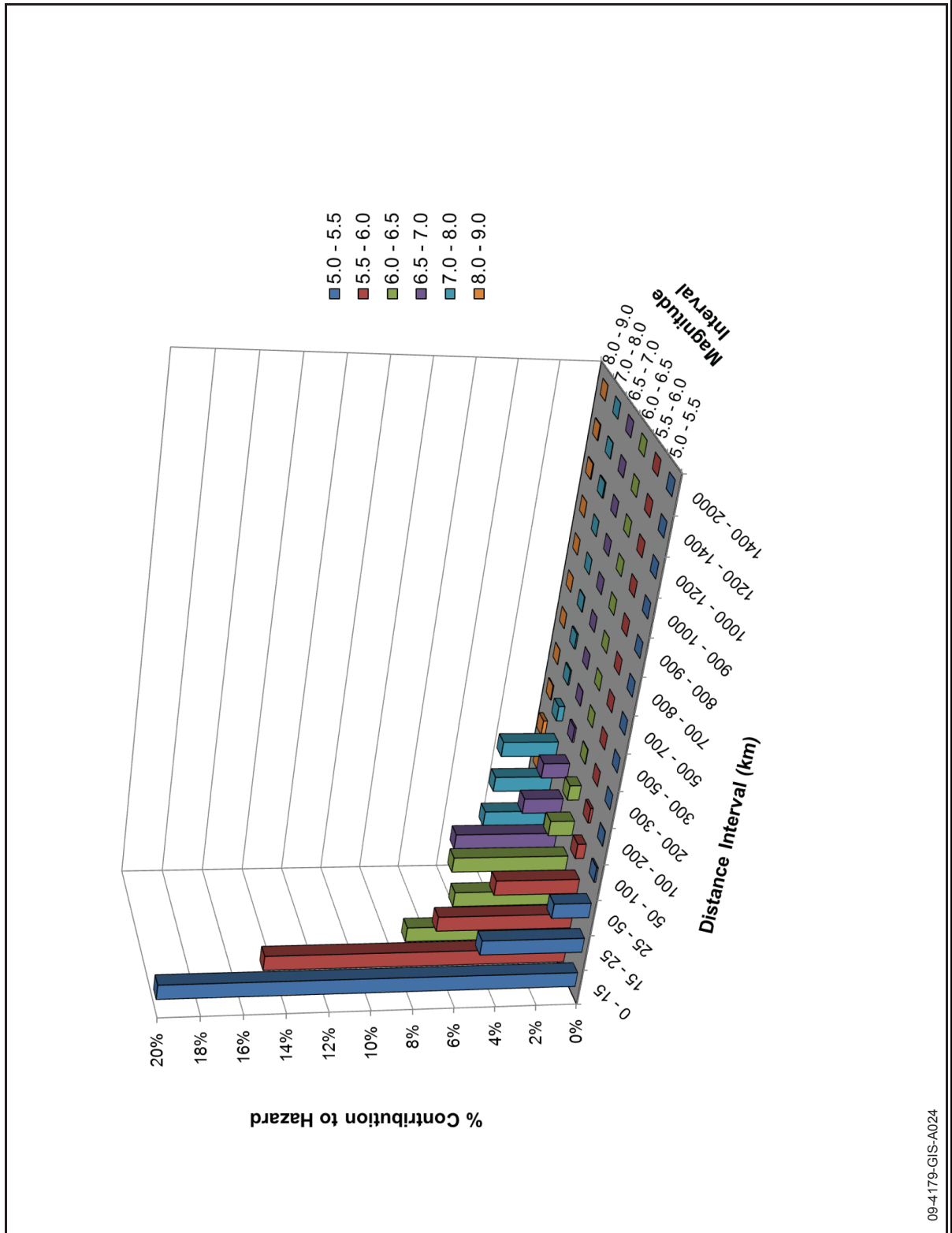
09-4179-GIS-A025

Figure 2.5-61 — {Mean  $10^{-5}$  Rock Deaggregation for 1 and 2.5 Hz}



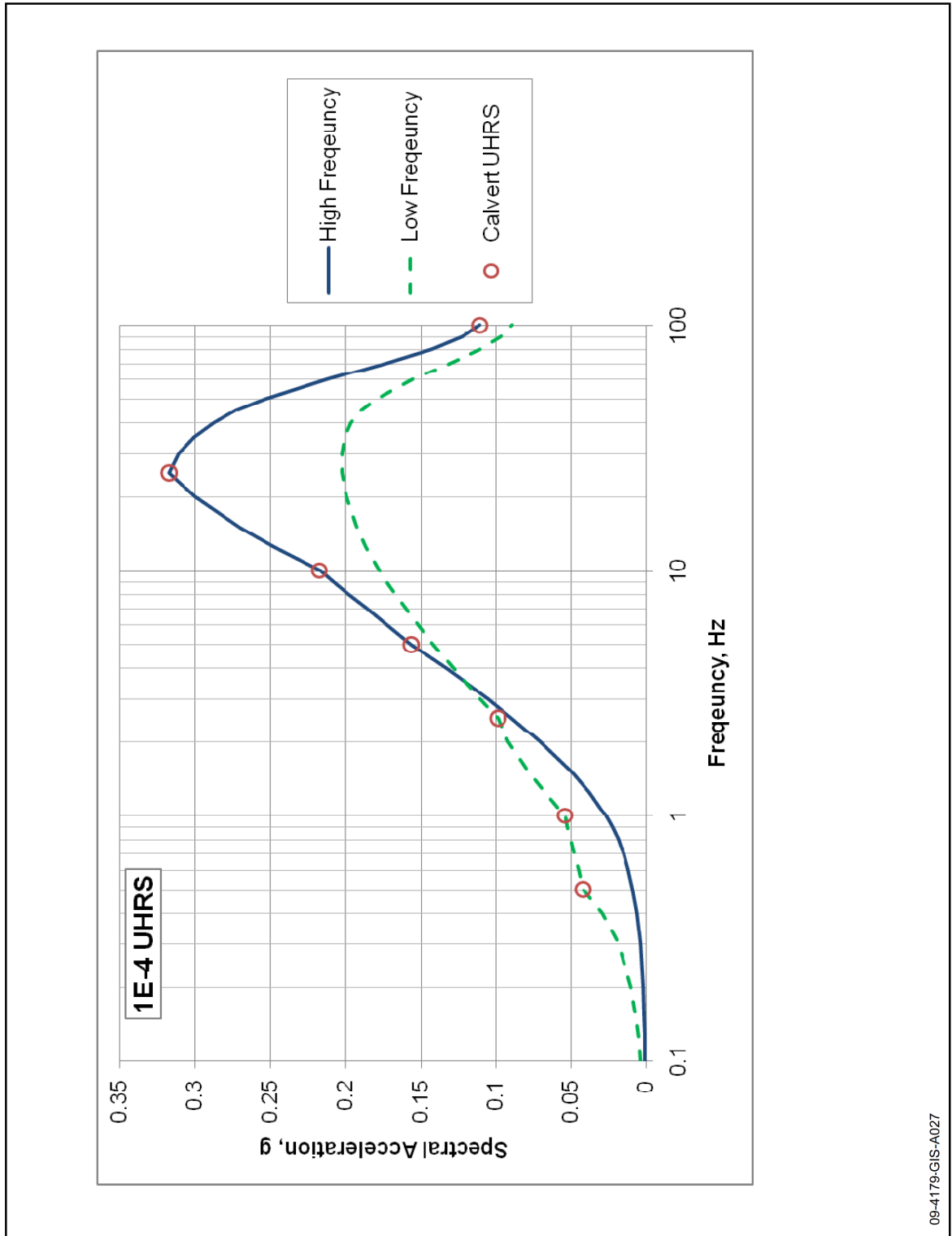
09-4179-GIS-A024

Figure 2.5-62—{Mean  $10^{-5}$  Rock Deaggregation for 5 and 10 Hz}



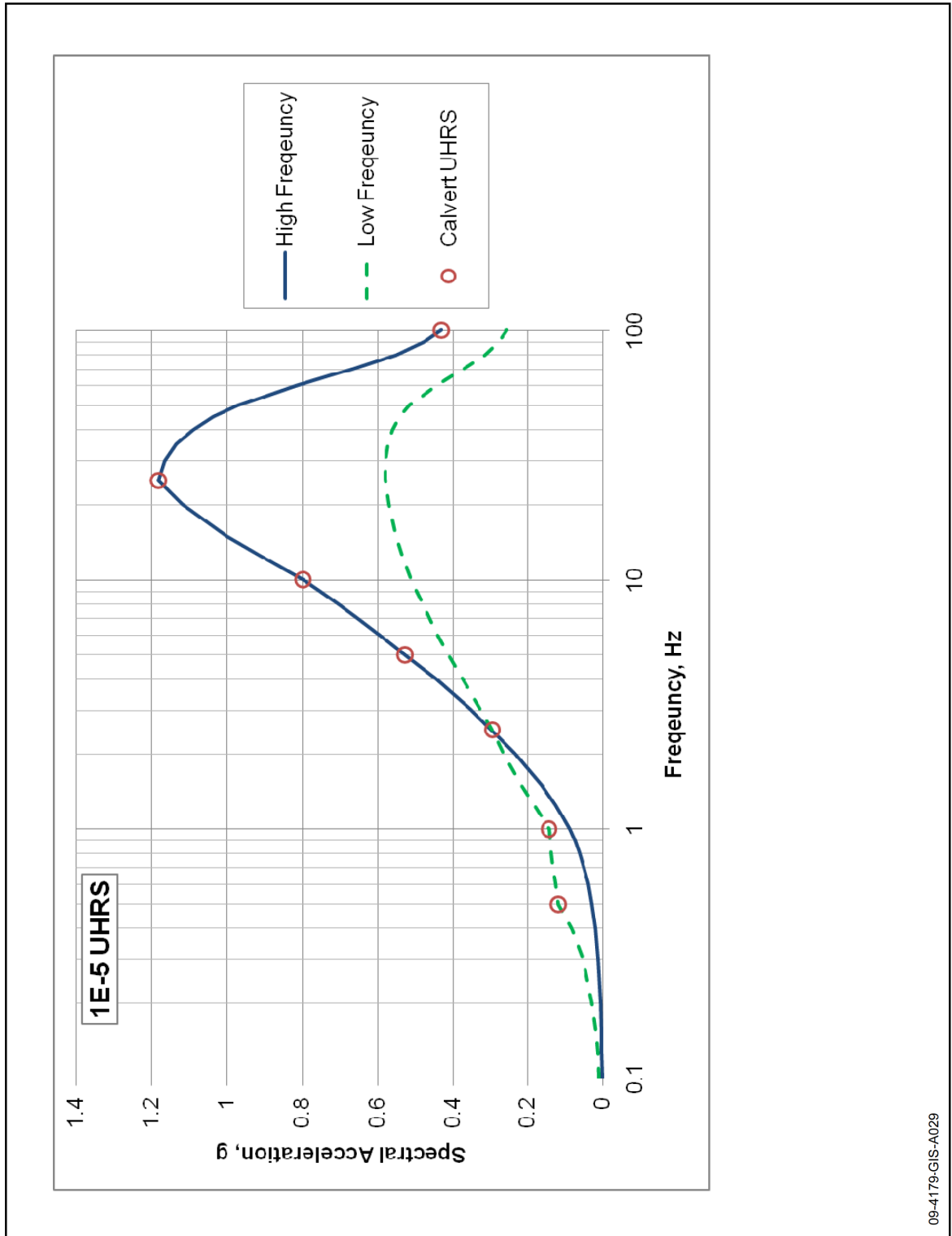
09-4179-GIS-A024

Figure 2.5-63 — {10<sup>-4</sup> Rock UHS Values and Smooth Spectra Fit to HF and LF Spectral Shapes}



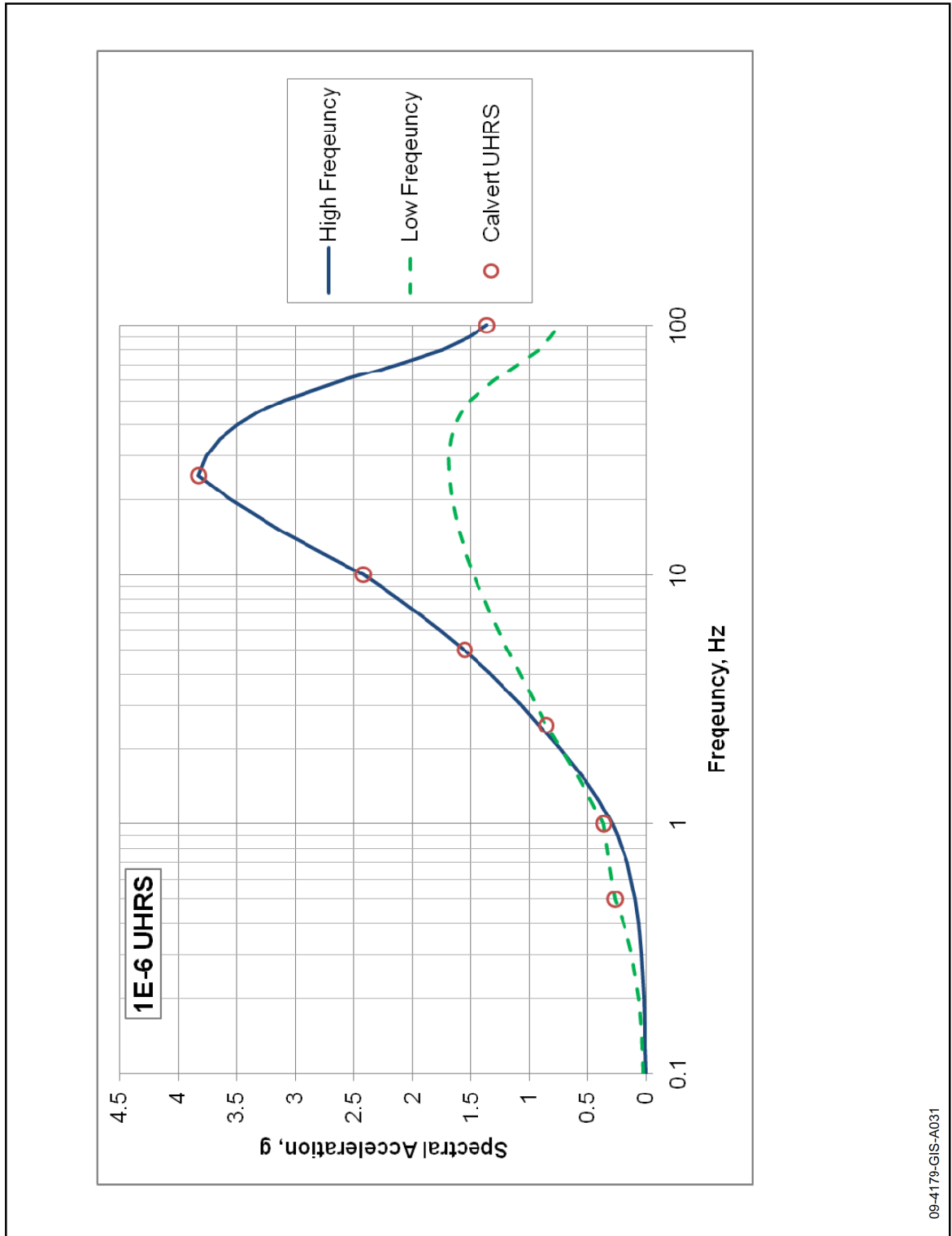
09-4179:GIS-A027

Figure 2.5-64— {10<sup>-5</sup> Rock UHS Values and Smooth Spectra Fit to HF and LF Spectral Shapes}



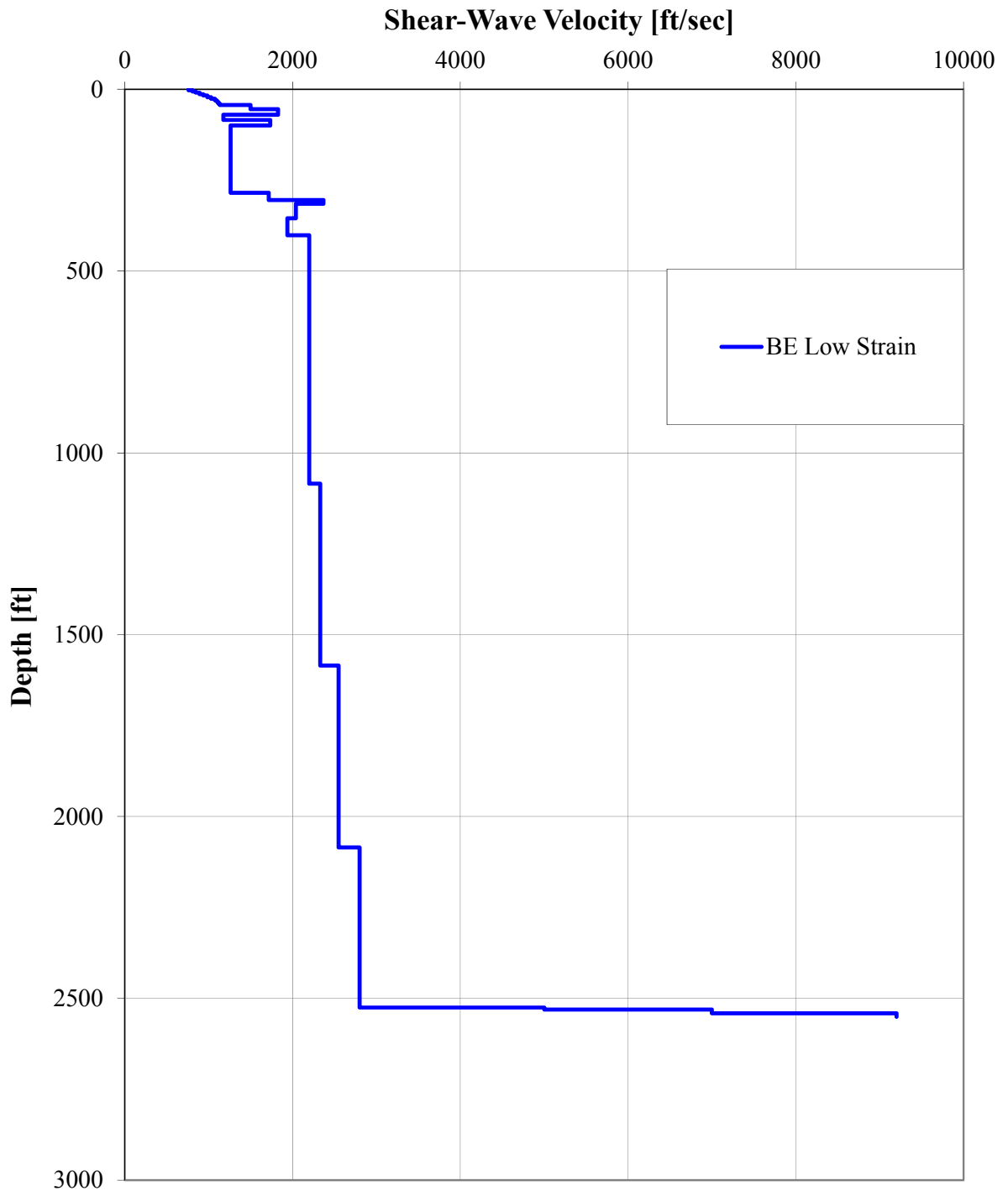
09-4179-GIS-A029

Figure 2.5-65— {10<sup>-6</sup> Rock UHS Values and Smooth Spectra Fit to HF and LF Spectral Shapes}



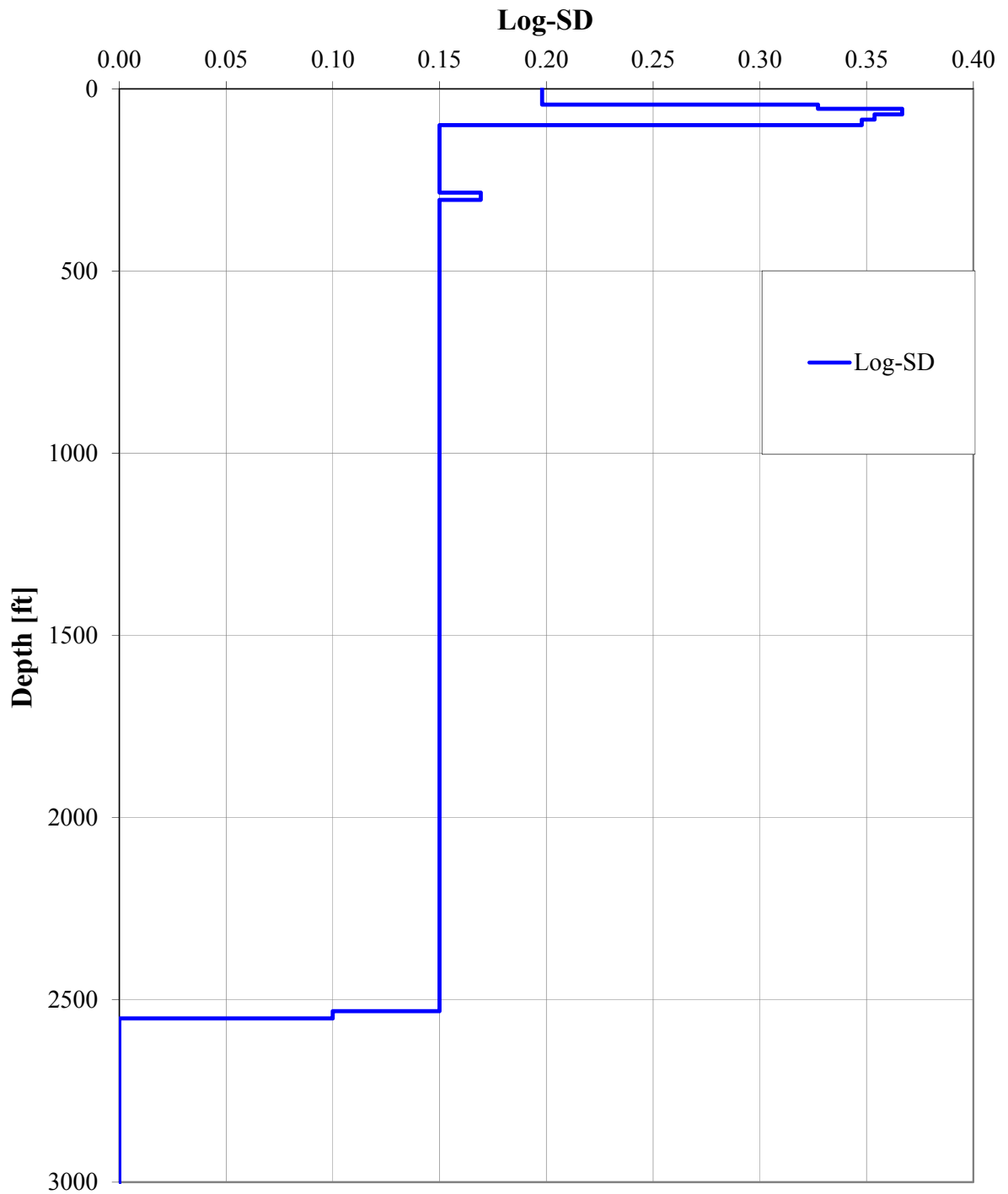
09-4179-GIS-A031

**Figure 2.5-66— {Low-Strain Best Estimate (BE) Shear Wave Velocity Profile}**

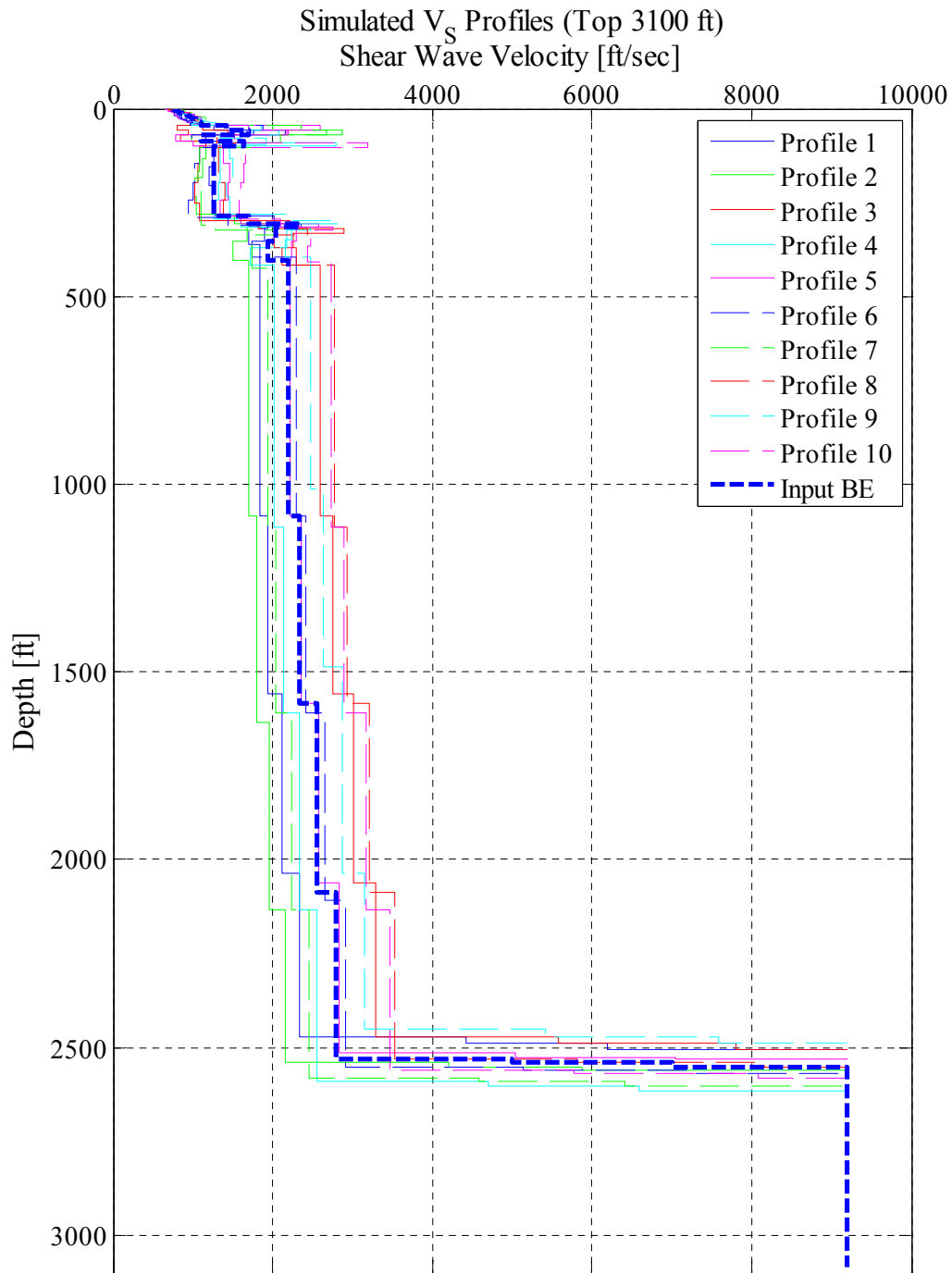




**Figure 2.5-67— {Log-Standard Deviation for Low-Strain Shear Wave Velocity Profile}**



**Figure 2.5-68— {Shear Wave Velocity for Simulated Profiles 1 to 10 – (Halfspace at first occurrence of  $V_s = 9200$  ft/sec)}**



**Figure 2.5-69— {Shear Wave Velocity for 60 Simulated Profiles – (Halfspace at first occurrence of  $V_s = 9200$  ft/sec)}**

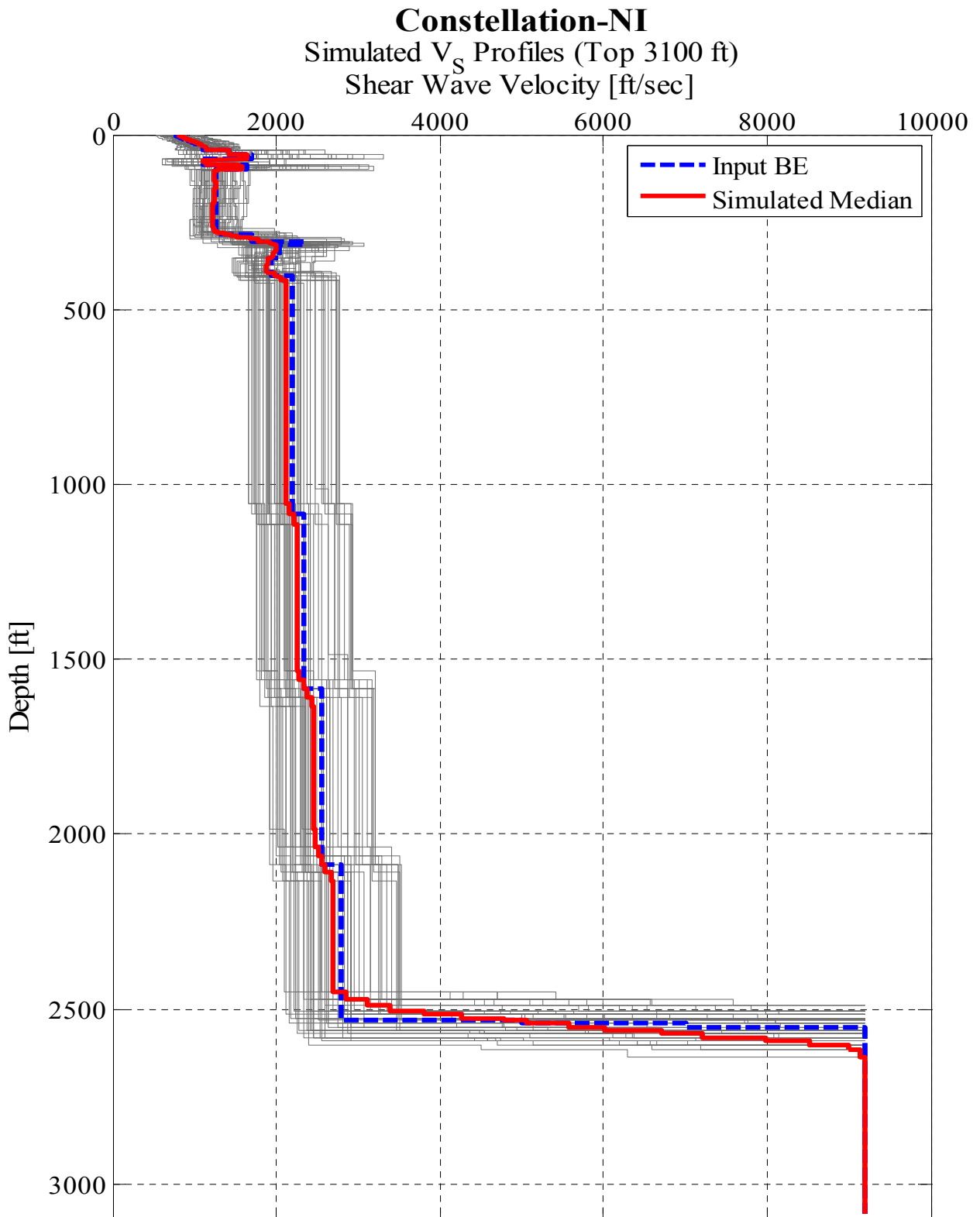


Figure 2.5-70—{Fill 1 Shear Modulus Reduction Curves for 60 Simulated Profiles}

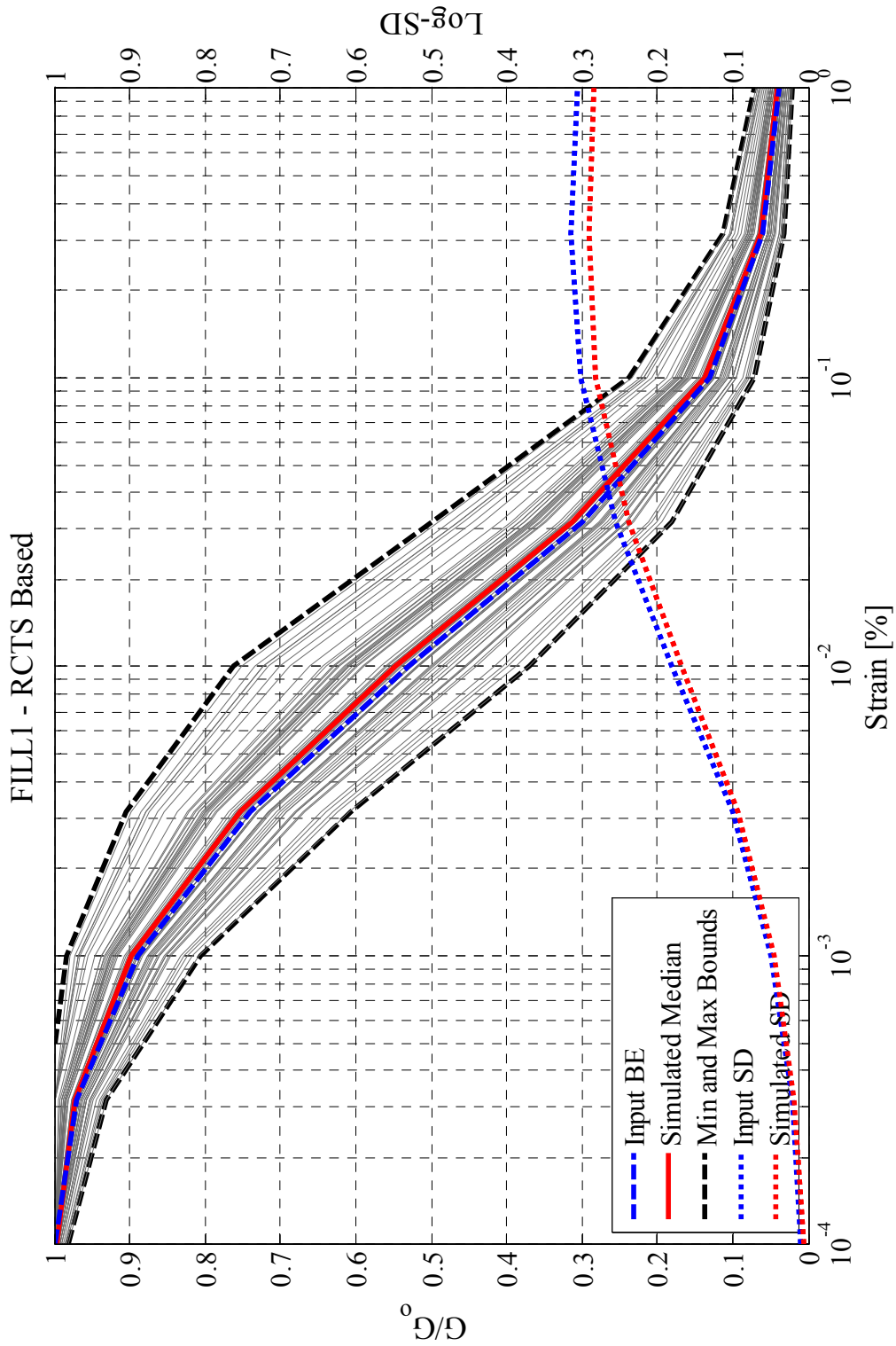
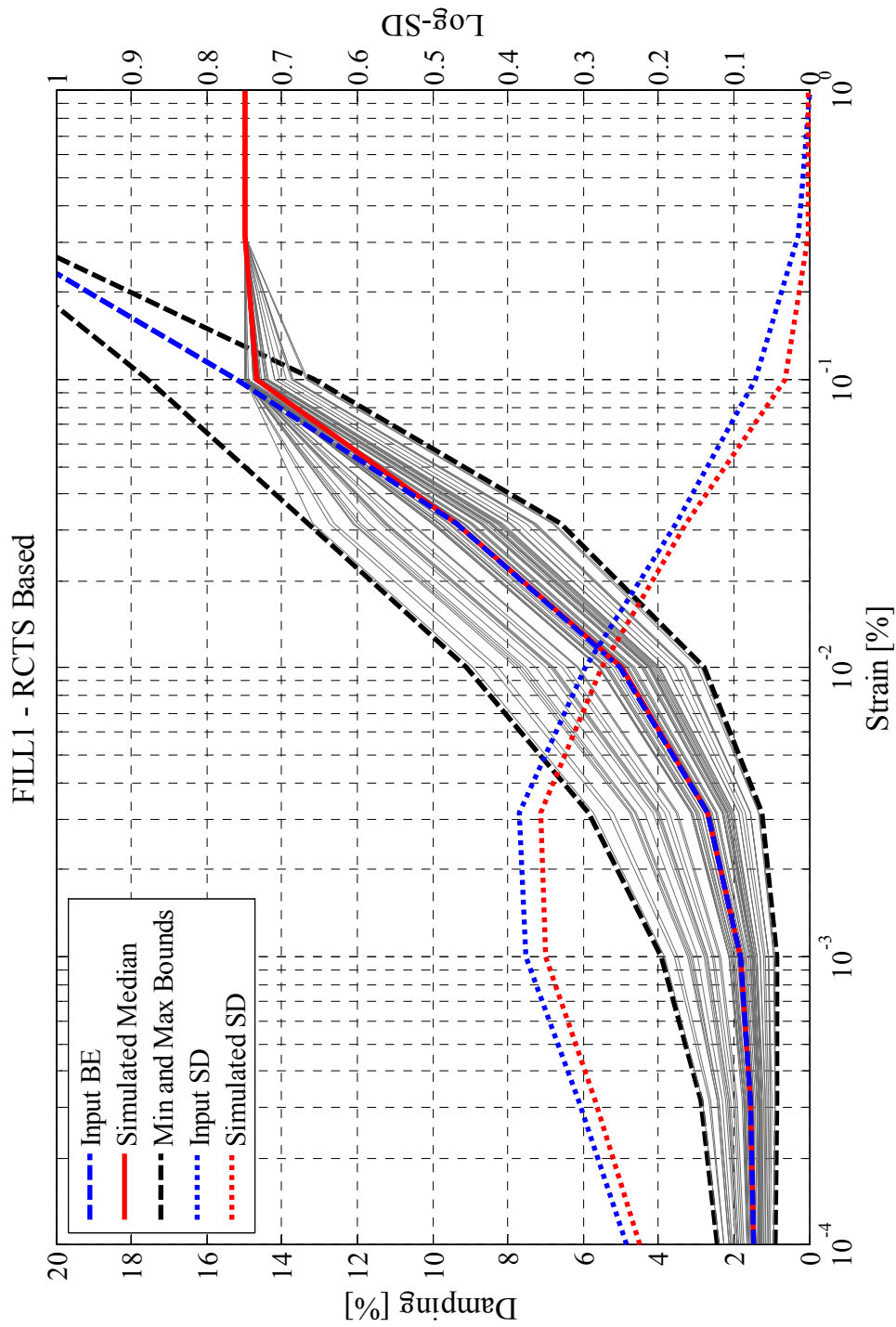


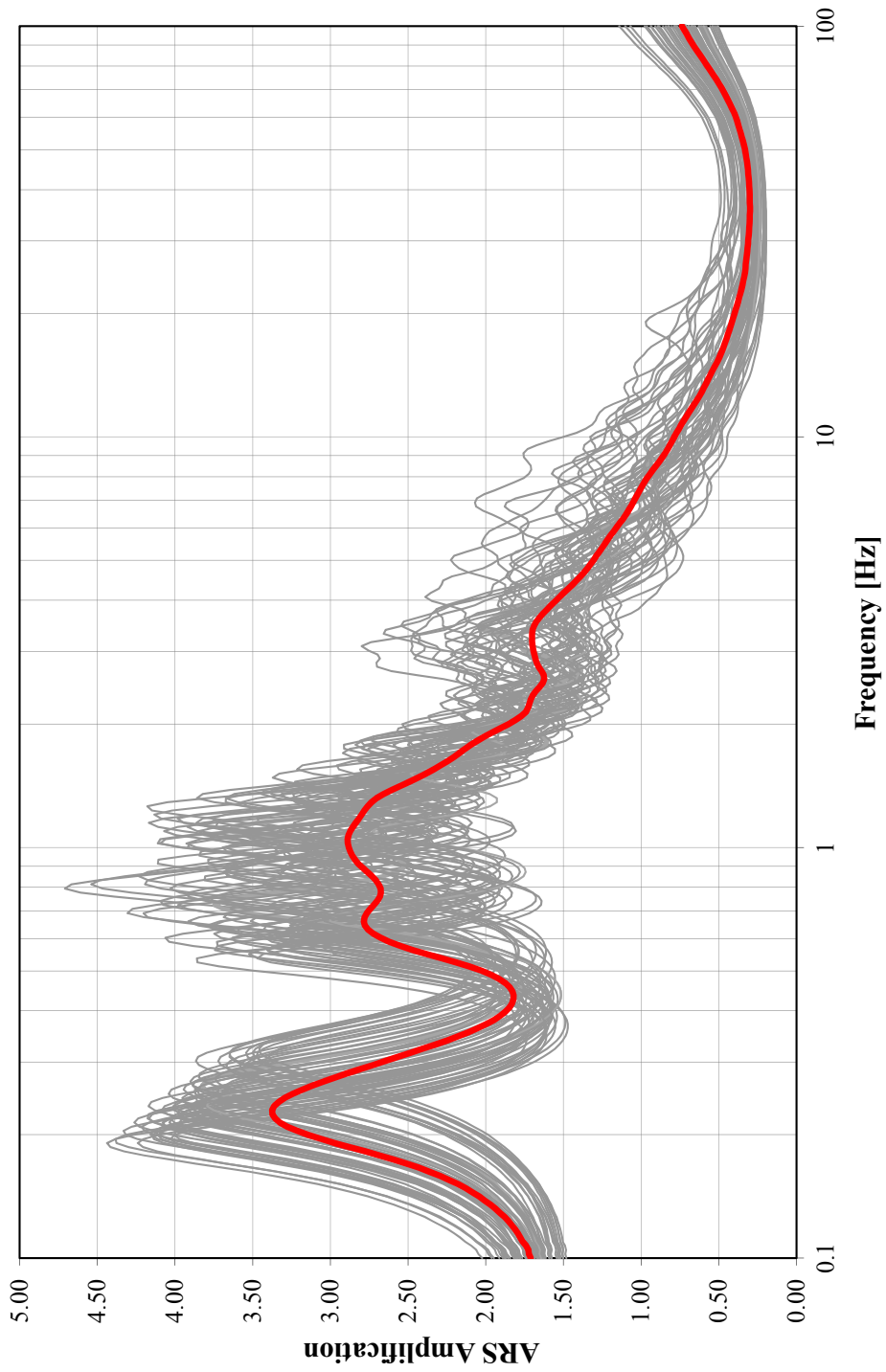
Figure 2.5-71 — {Fill 1 Damping Ratio Curves for 60 Simulated Profiles}



**Figure 2.5-72— {5% Damping ARS Amplification Functions – HF 1E-4}**

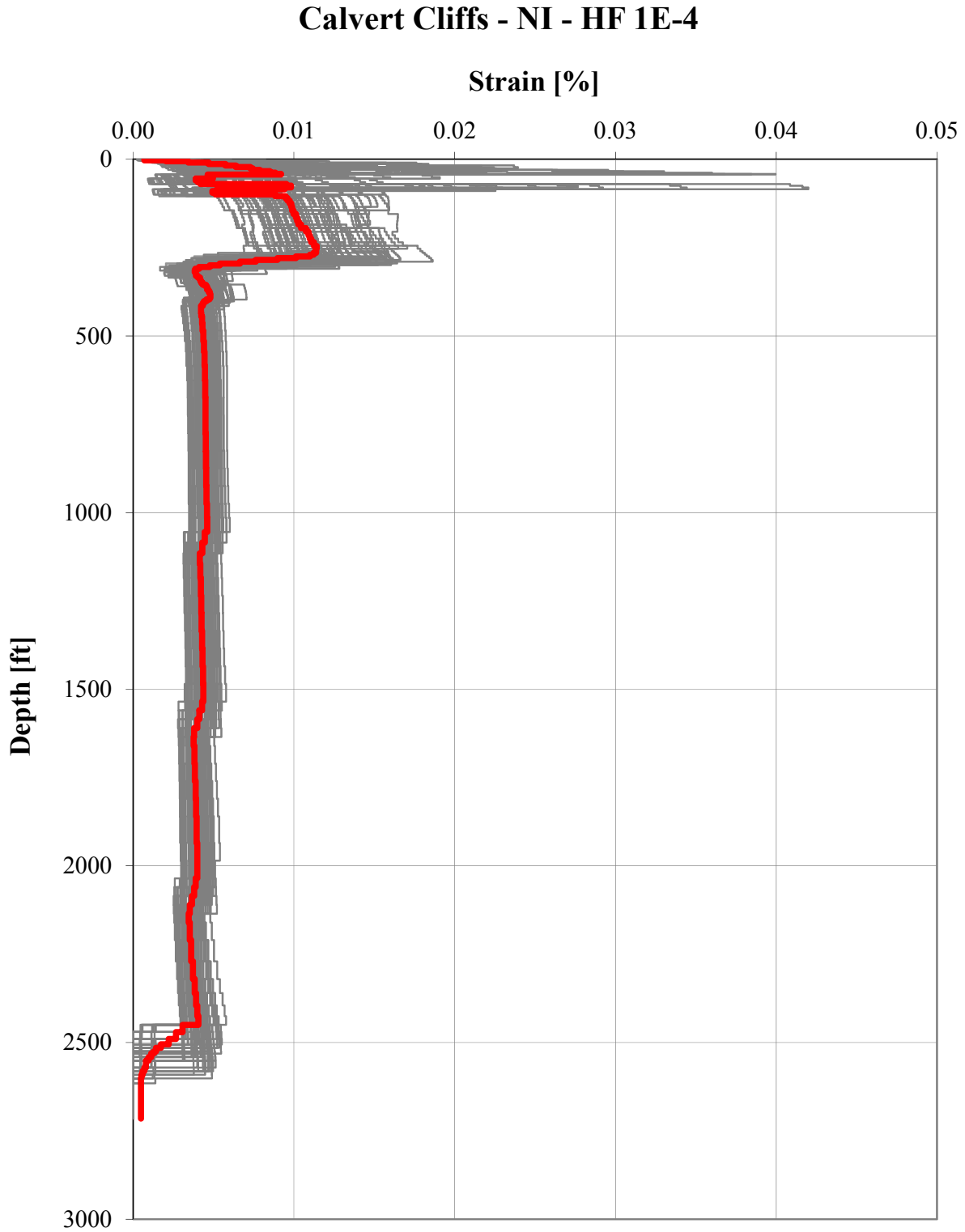
(Gray curves represent the individual profiles while the red curve represents the mean response)

**Calvert Cliffs - GMRS Horizon - HF 1E-4**



**Figure 2.5-73— {Maximum Shear Strain Profiles – HF 1E-4}**

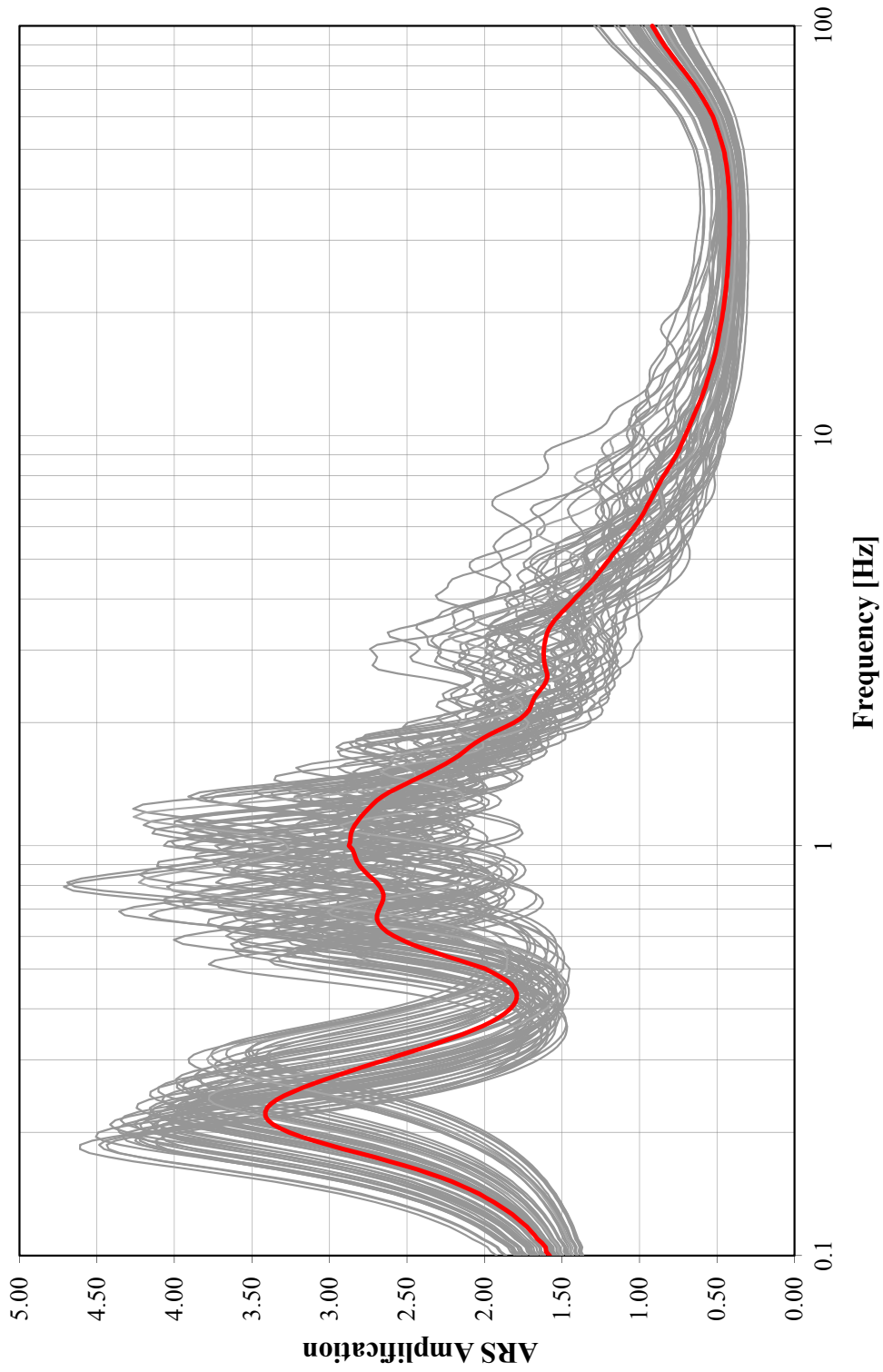
(Gray curves represent the individual profiles while the red curve represents the mean response)



**Figure 2.5-74—{5% Damping ARS Amplification Functions – LF 1E-4}**

(Gray curves represent the individual profiles while the red curve represents the mean response)

**Calvert Cliffs - GMRS Horizon - LF 1E-4**





**Figure 2.5-75— {Maximum Shear Strain Profiles – LF 1E-4}**

(Gray curves represent the individual profiles while the red curve represents the mean response)

