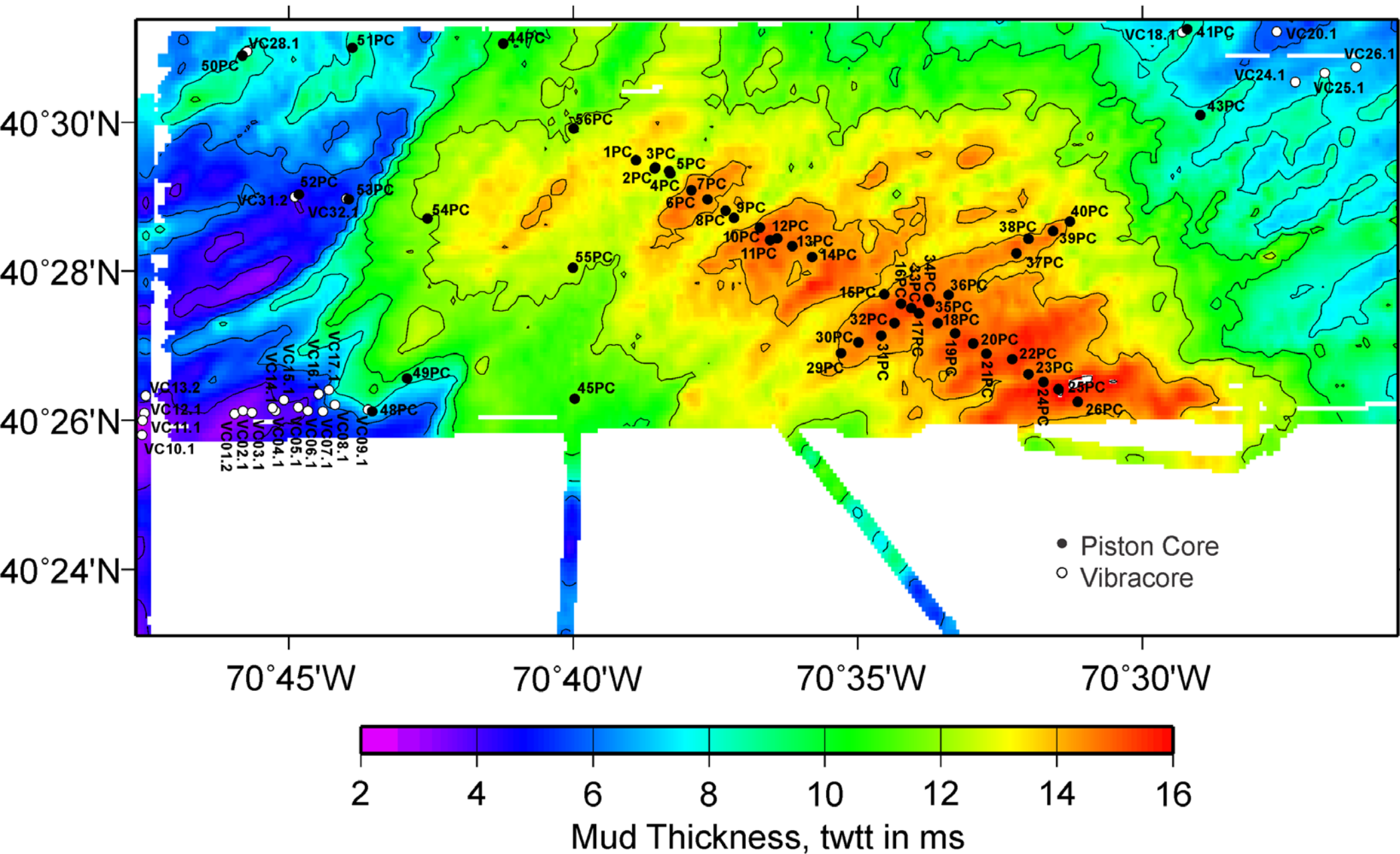
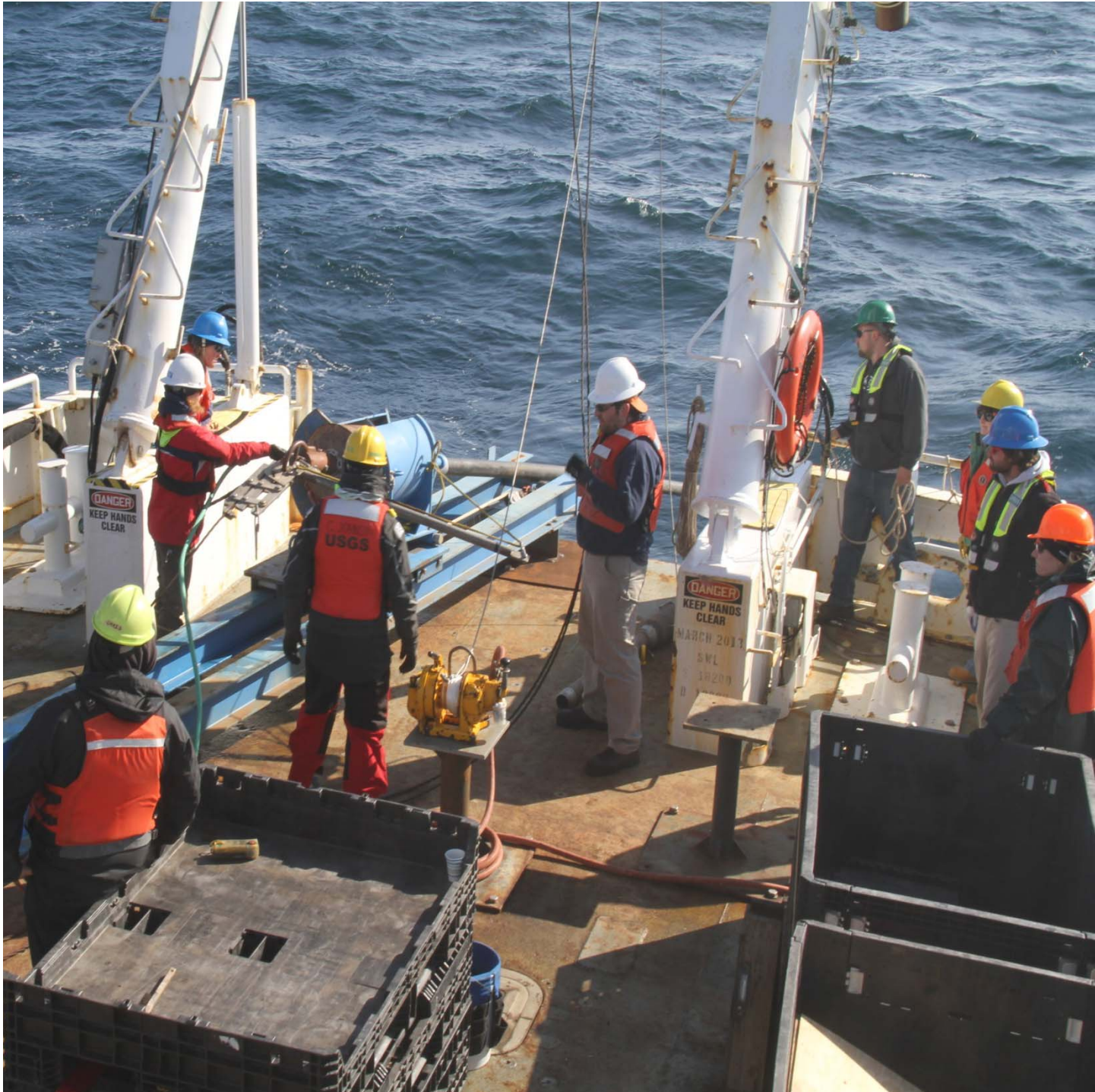


P-wave velocity and Density

Core Logging –
Leg I and II of the ONR NEMP
Characterization: 2016
Allen Reed and Edward Braithwaite

En577 Piston Core and Vibracore Locations





New England Mud Patch 2016
ONR Acoustics Characterization
of Sediments –
USGS with NRL7430



Leg I –
Piston Coring Coring
(18 April – 25 May)

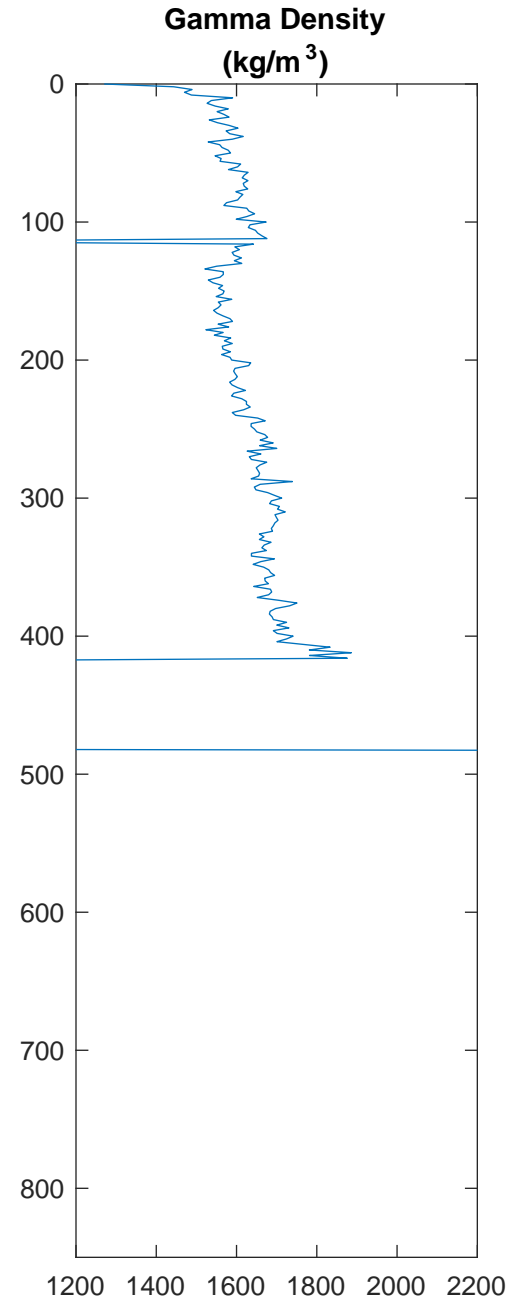
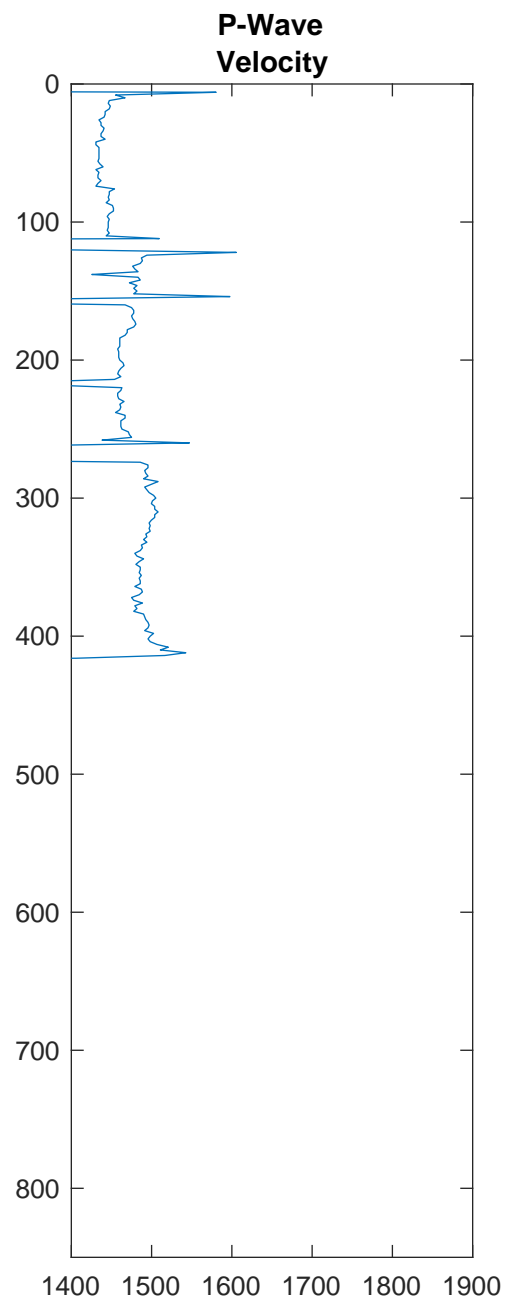
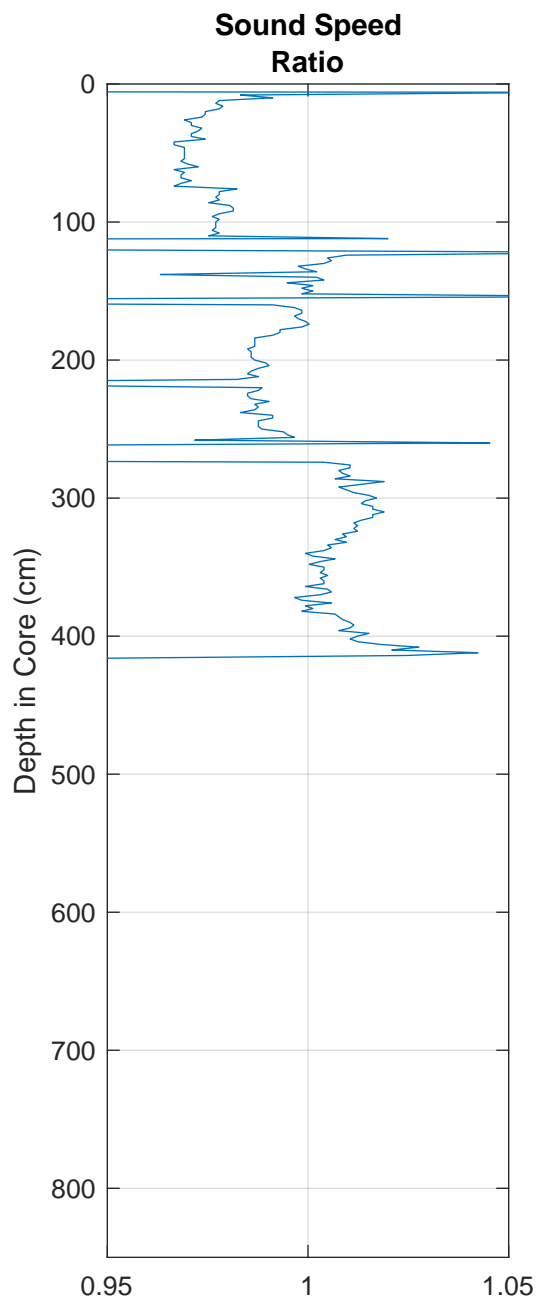
(320 meters of core
collected and logged)

← Leg I – USGS

Piston Cores

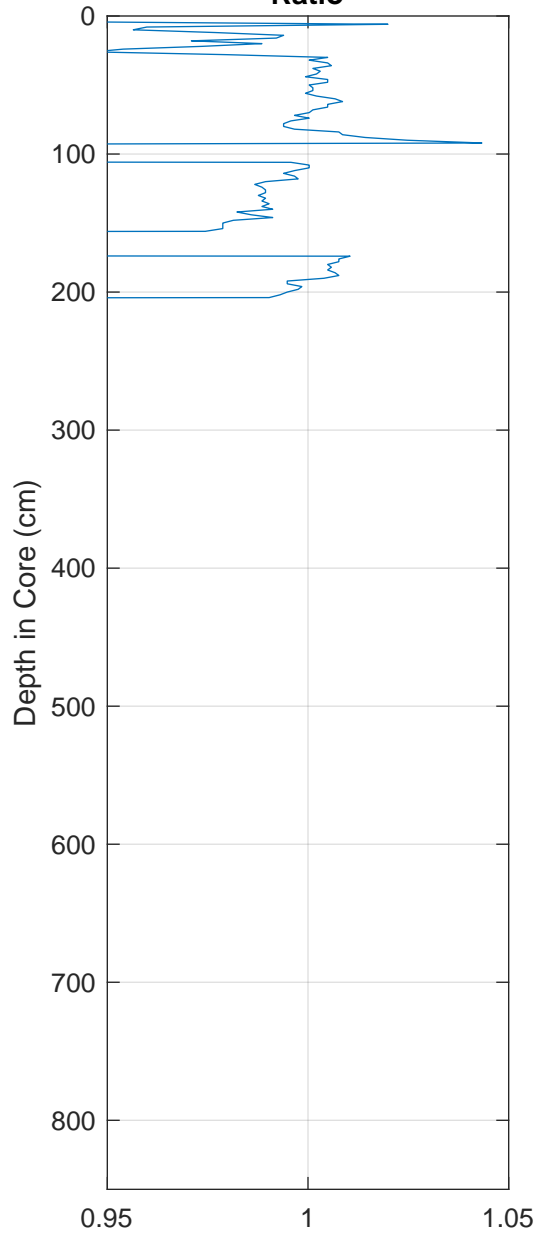
- 54 cores were logged
- Length ranged from <2 m to> 8m in length
- Data presented :
 - Vp ratio
 - (Vp water = 1480 m/s for all sites as measured)
 - Vp and Density
 - Resistivity and magnetics data was also collected

Core: 1PC_EN577_

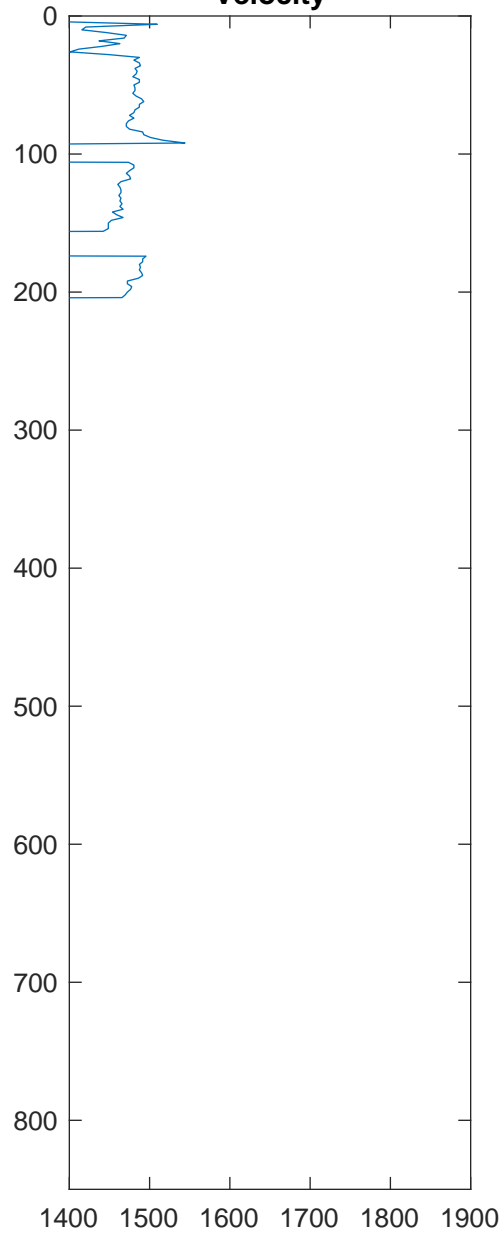


Core: 2PC_EN577_

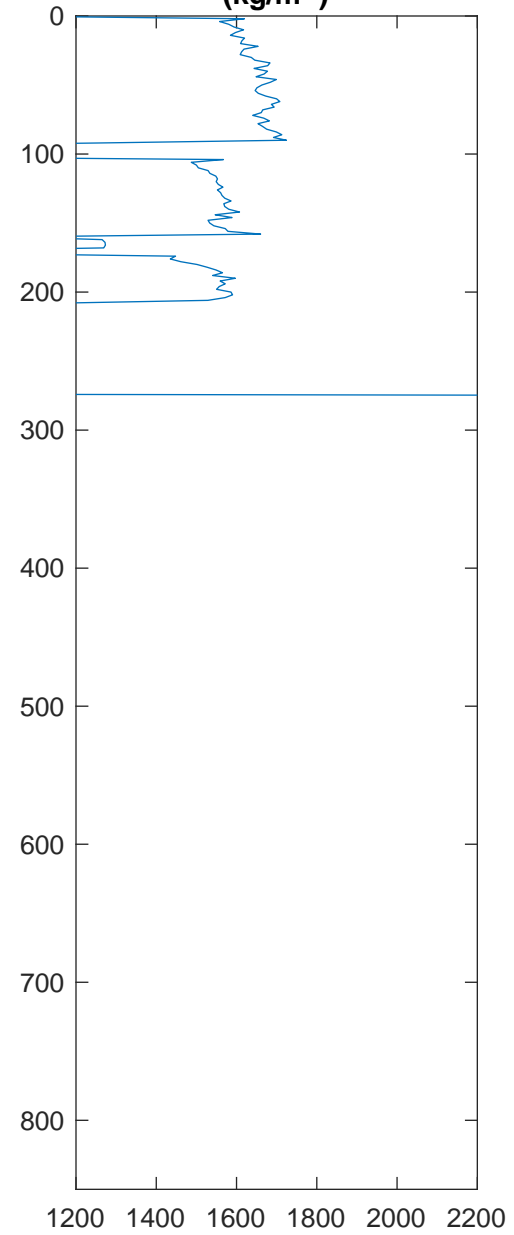
**Sound Speed
Ratio**



**P-Wave
Velocity**

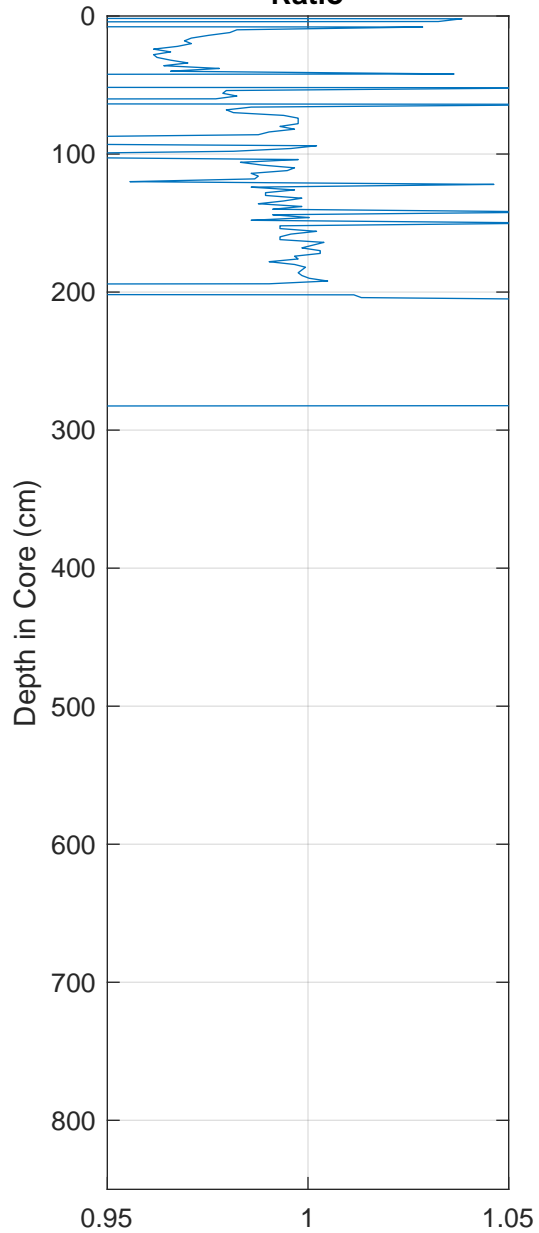


**Gamma Density
(kg/m³)**

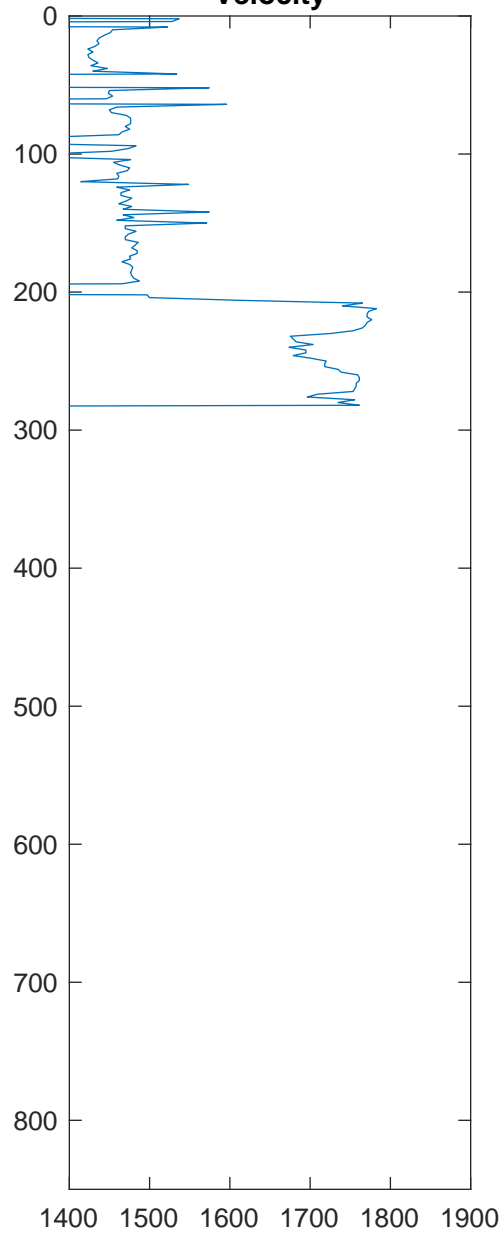


Core: 3PC_EN577_

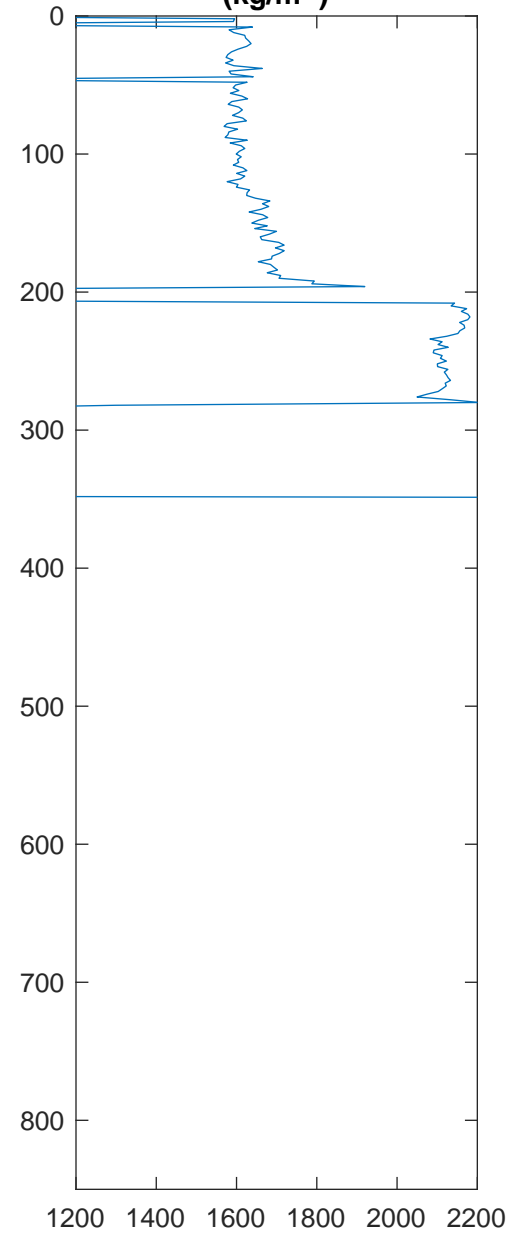
**Sound Speed
Ratio**



**P-Wave
Velocity**

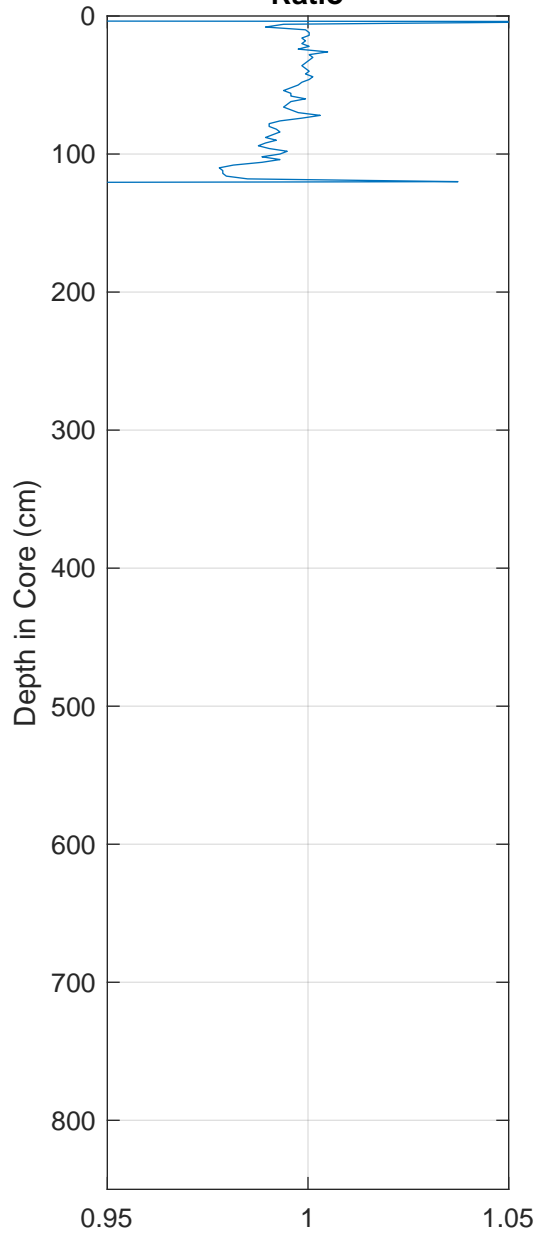


**Gamma Density
(kg/m³)**

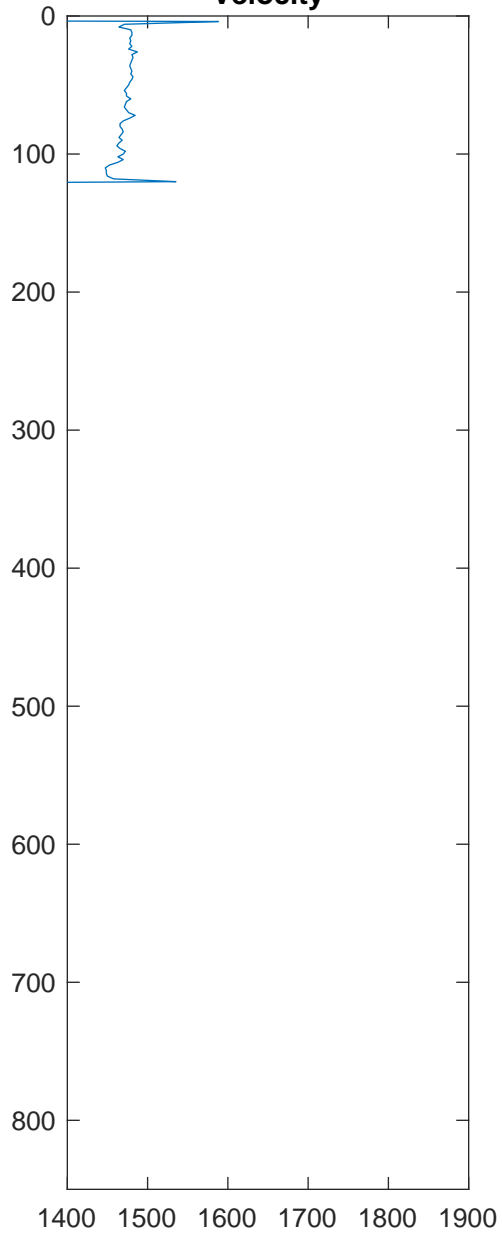


Core: 4PC_EN577_

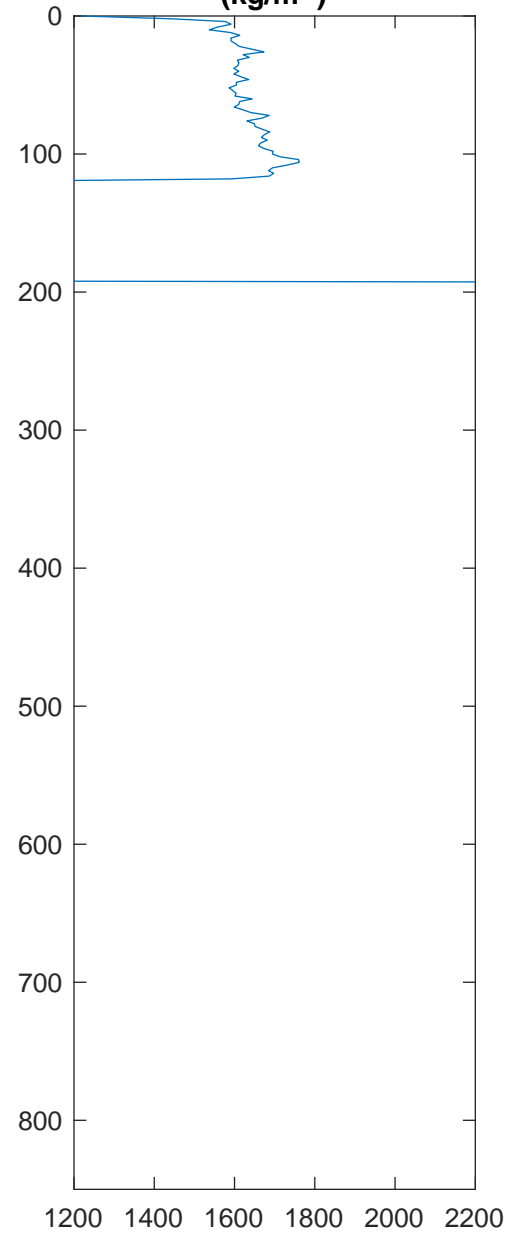
**Sound Speed
Ratio**



**P-Wave
Velocity**

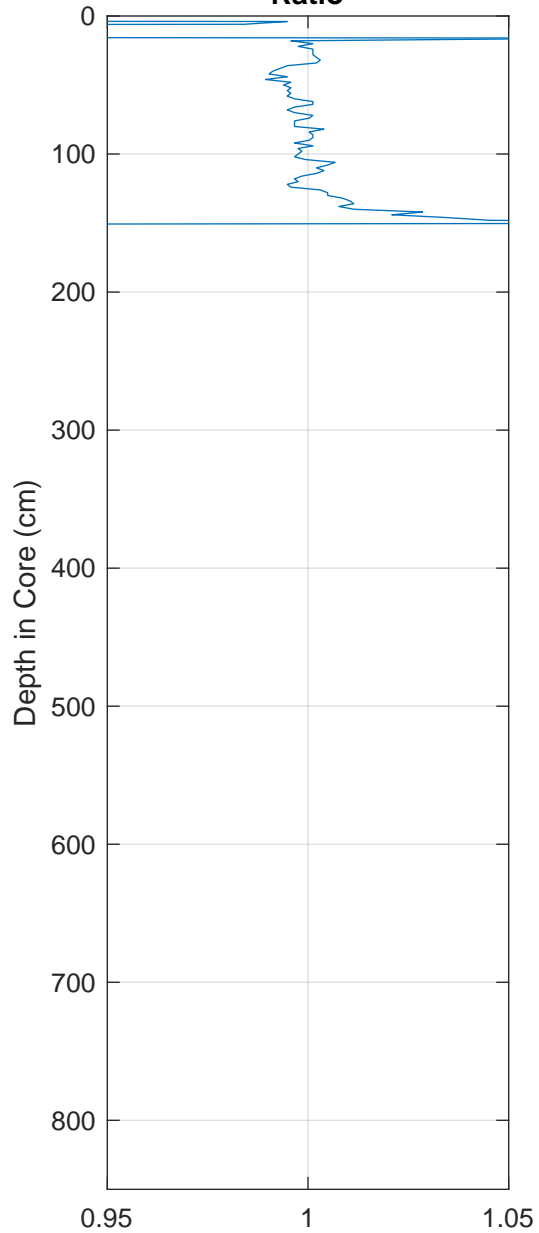


**Gamma Density
(kg/m³)**

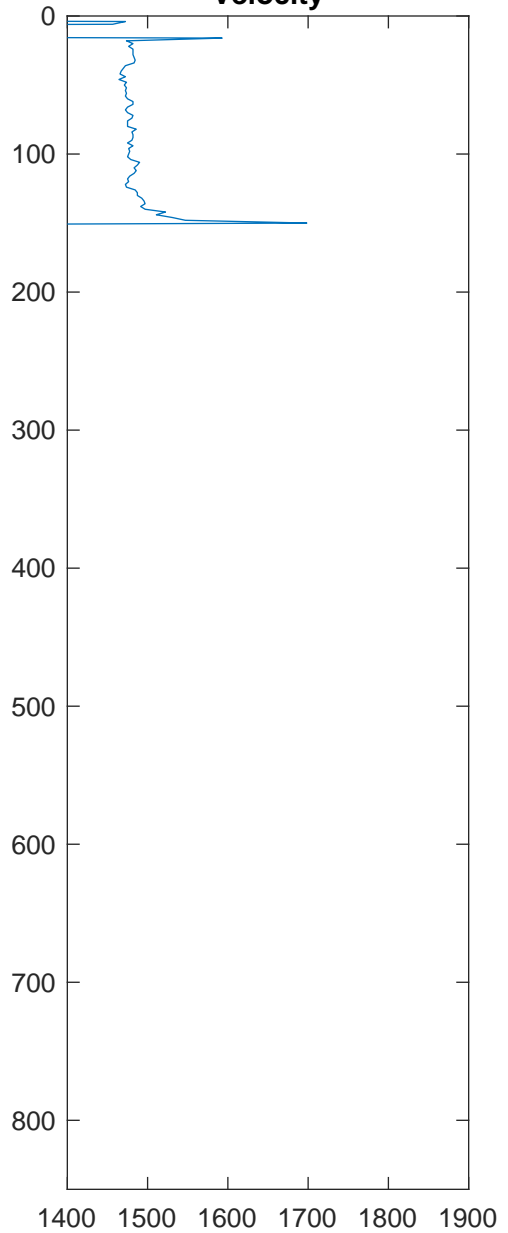


Core: 5PC_EN577_

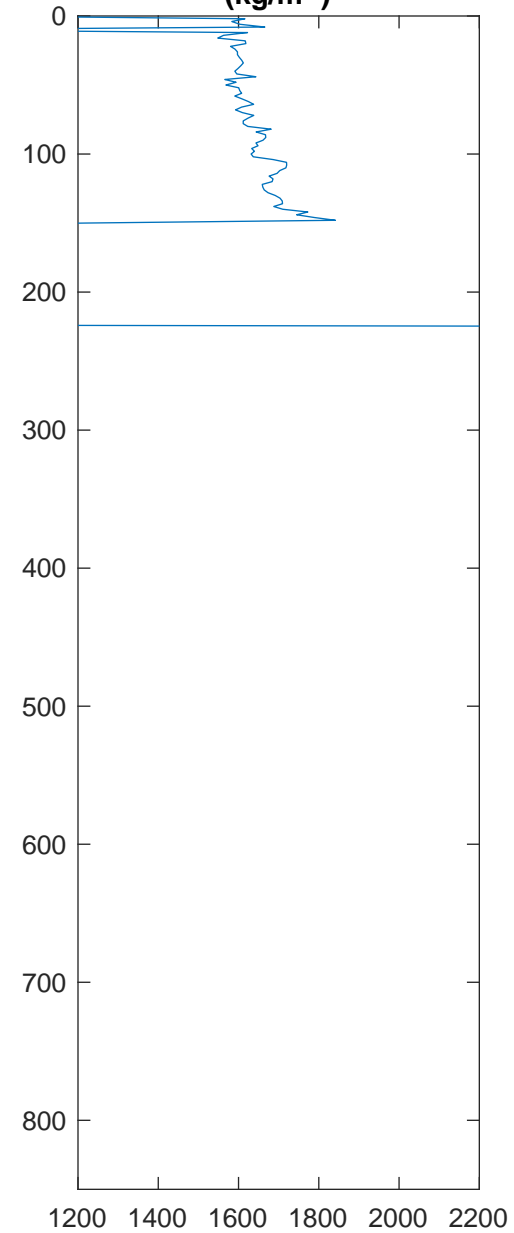
**Sound Speed
Ratio**



**P-Wave
Velocity**

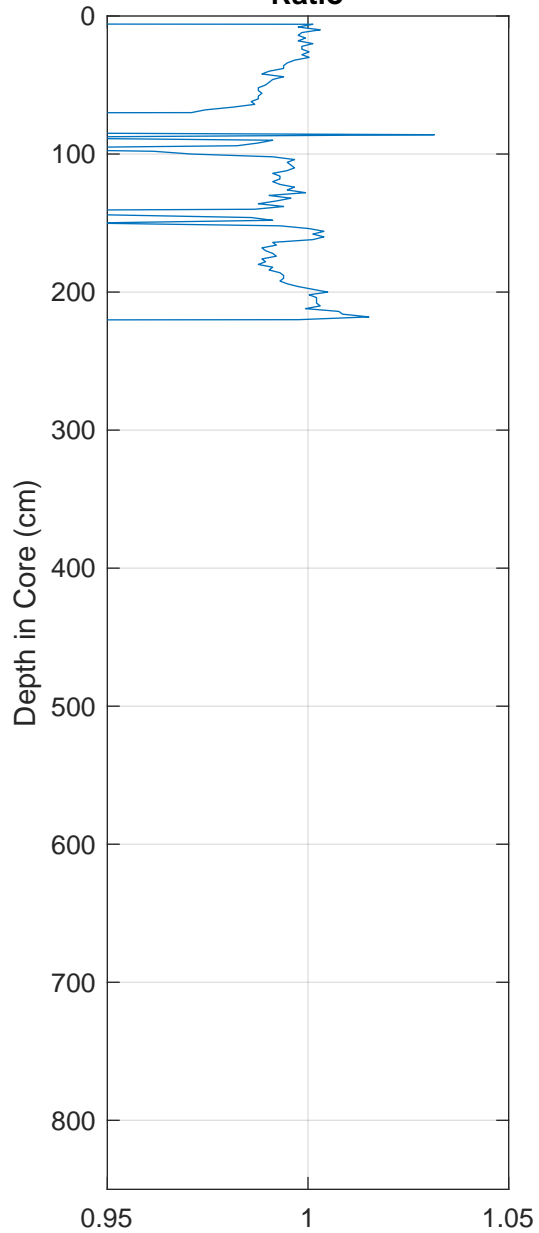


**Gamma Density
(kg/m³)**

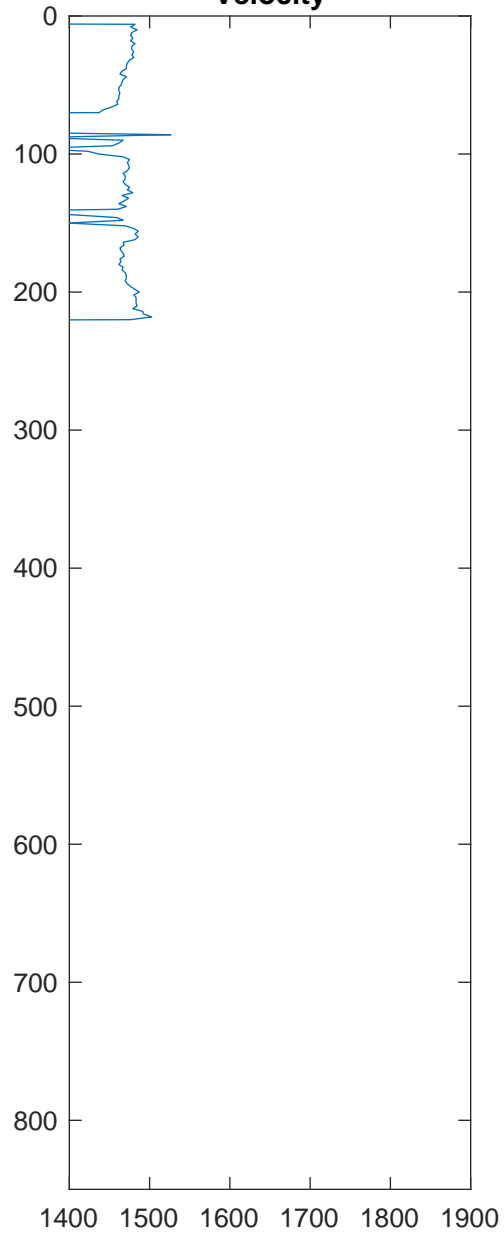


Core: 6PC_EN577_

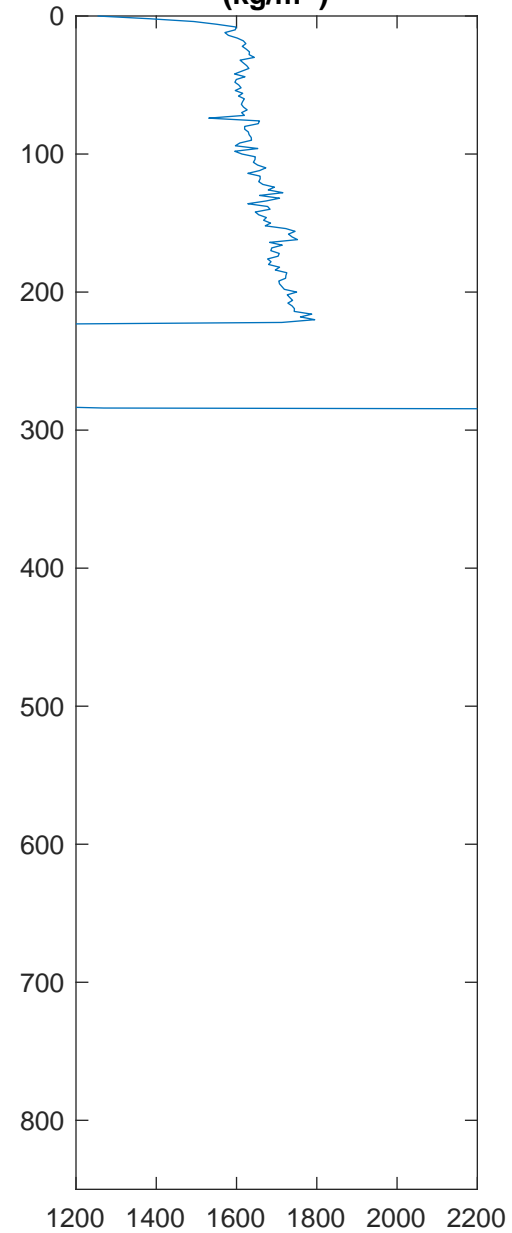
**Sound Speed
Ratio**



**P-Wave
Velocity**

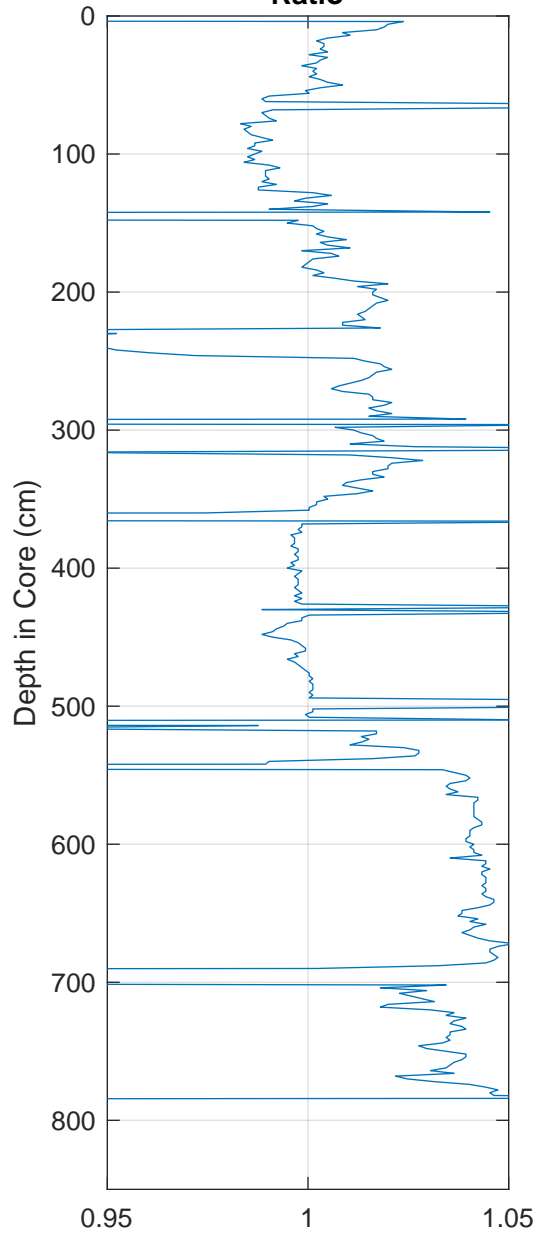


**Gamma Density
(kg/m³)**

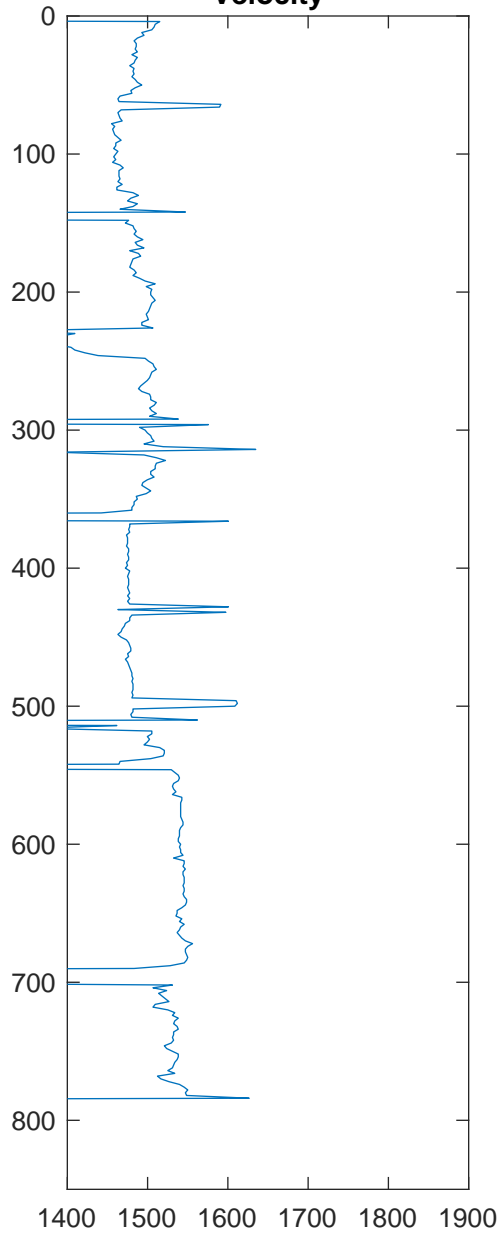


Core: 7PC_EN577_

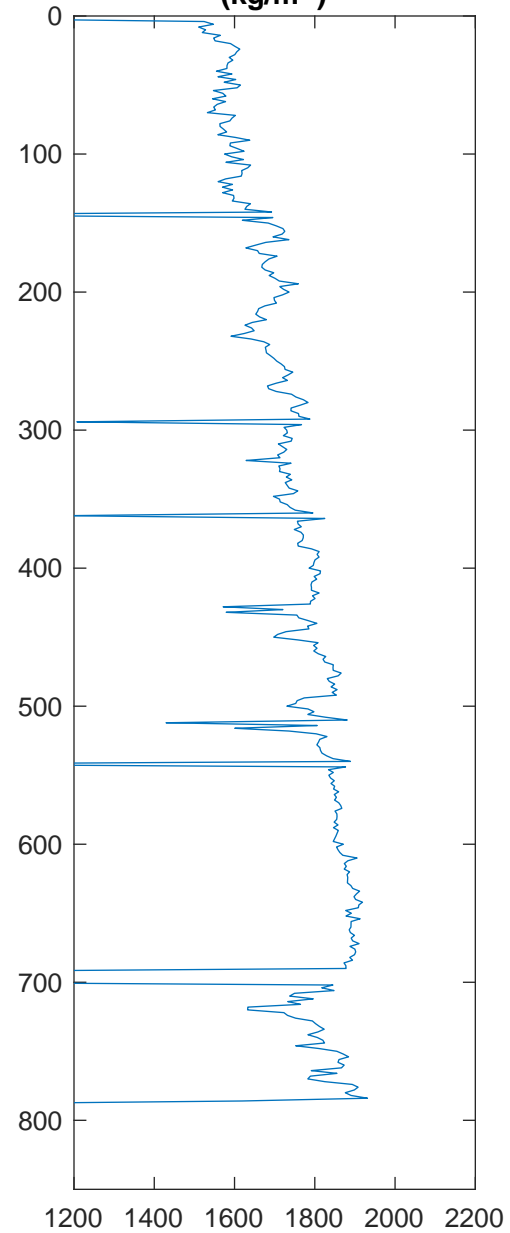
Sound Speed
Ratio



P-Wave
Velocity

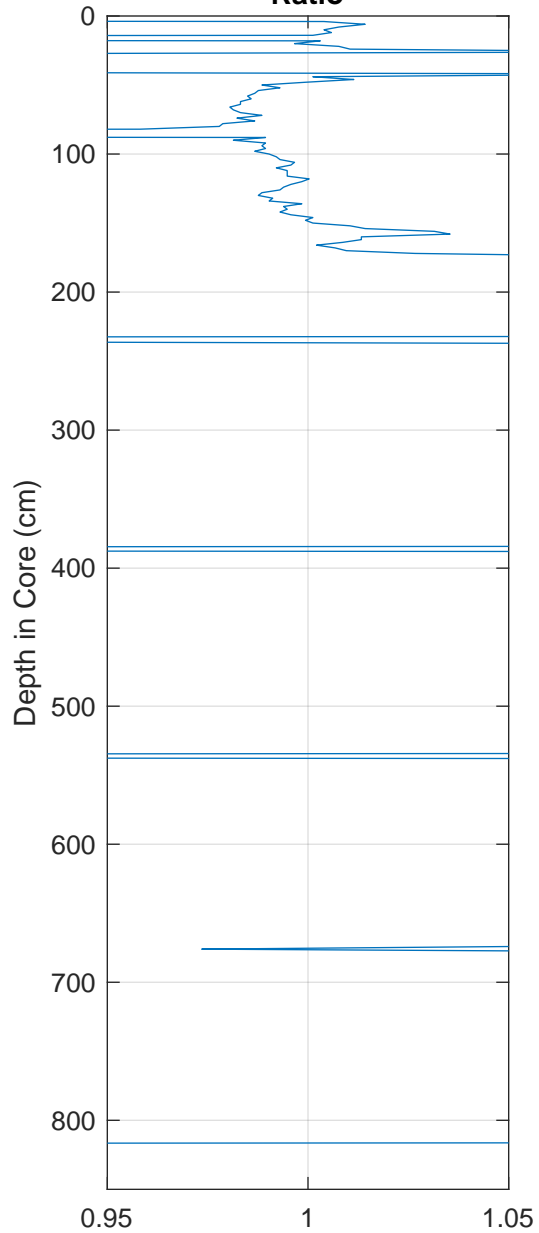


Gamma Density
(kg/m³)

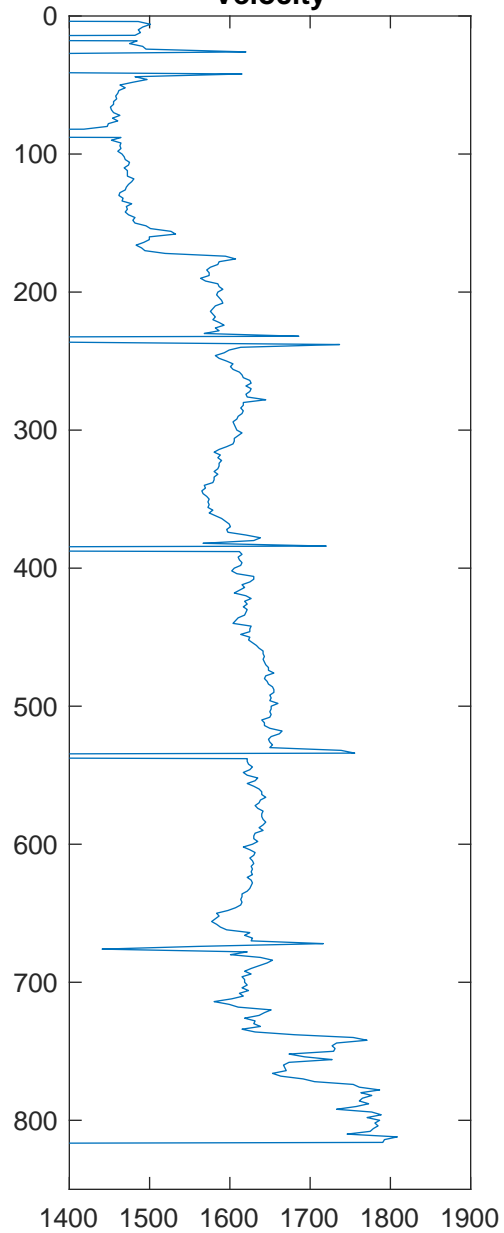


Core: 8PC_EN577_

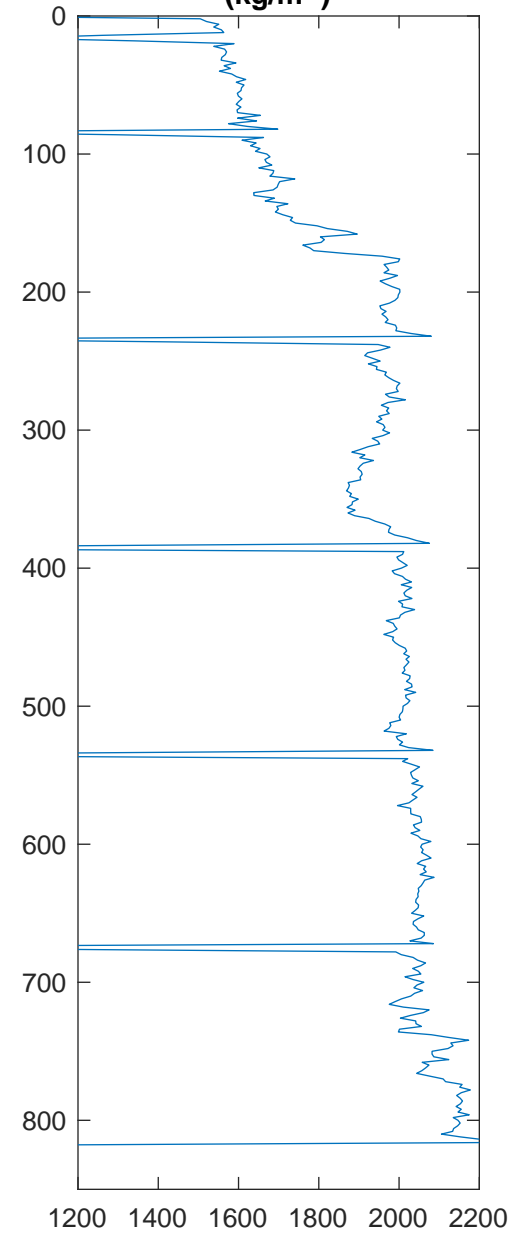
**Sound Speed
Ratio**



**P-Wave
Velocity**

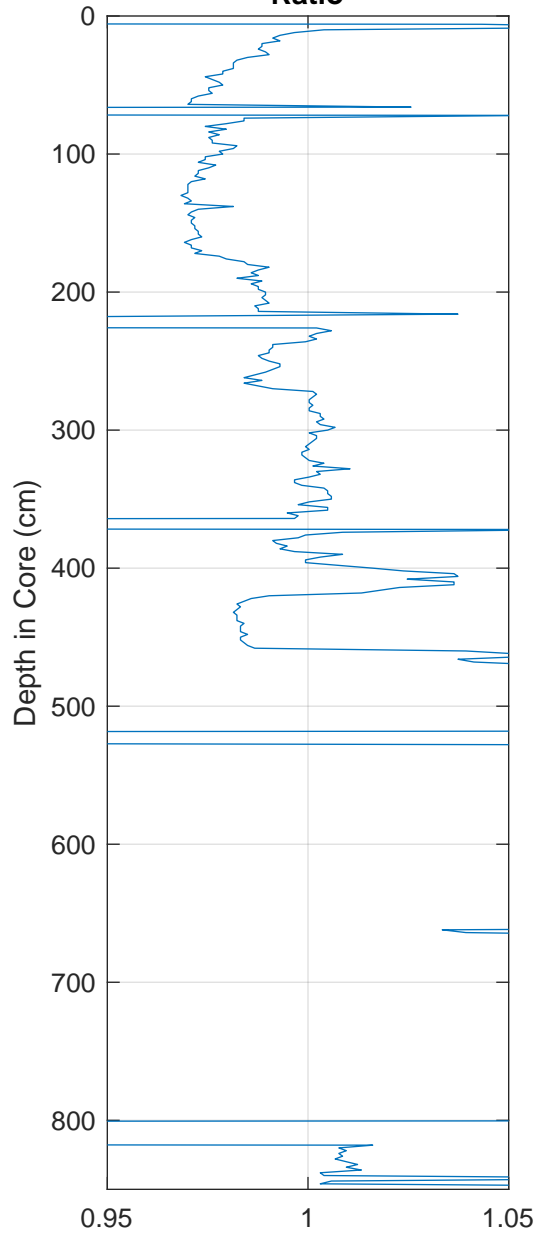


**Gamma Density
(kg/m³)**

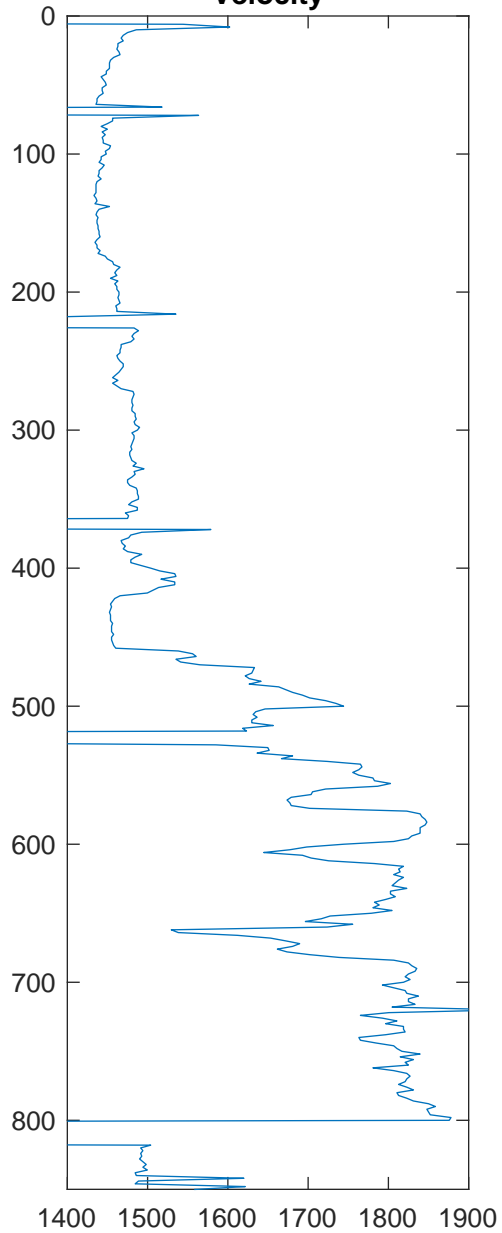


Core: 9PC_EN577_

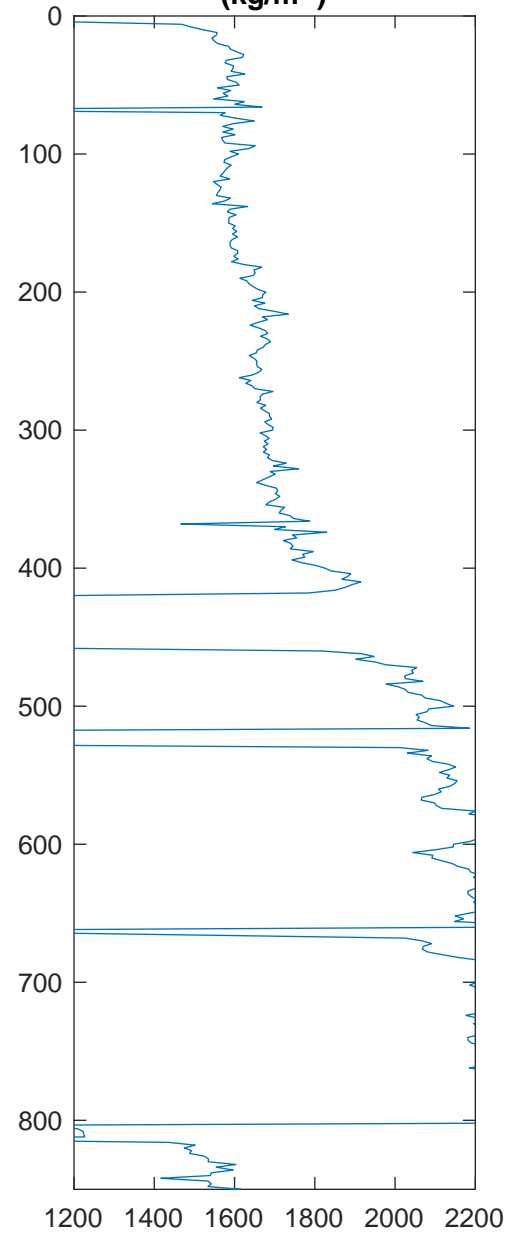
**Sound Speed
Ratio**



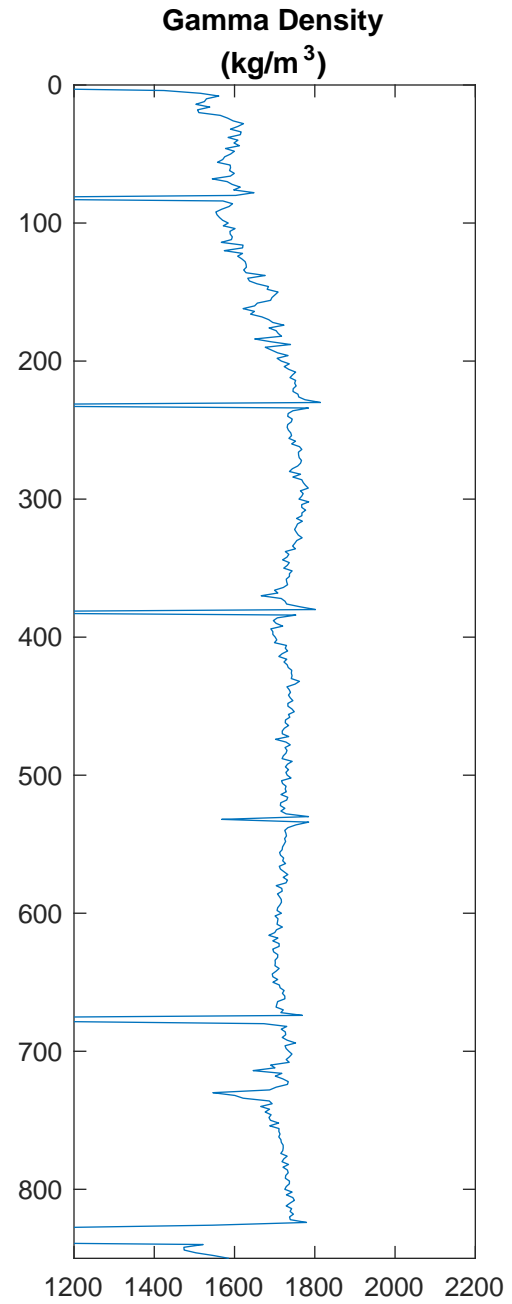
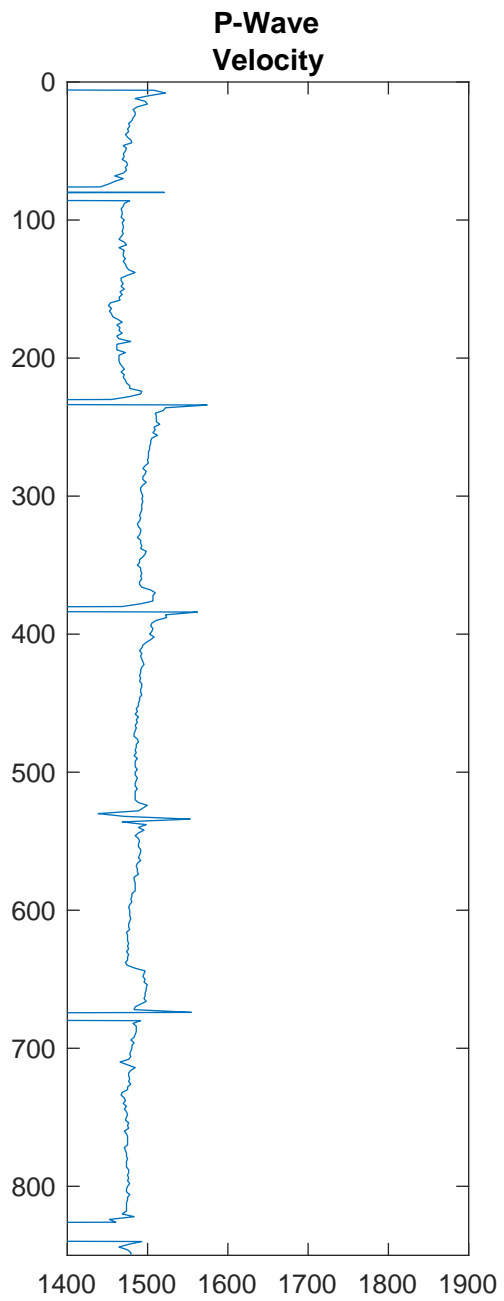
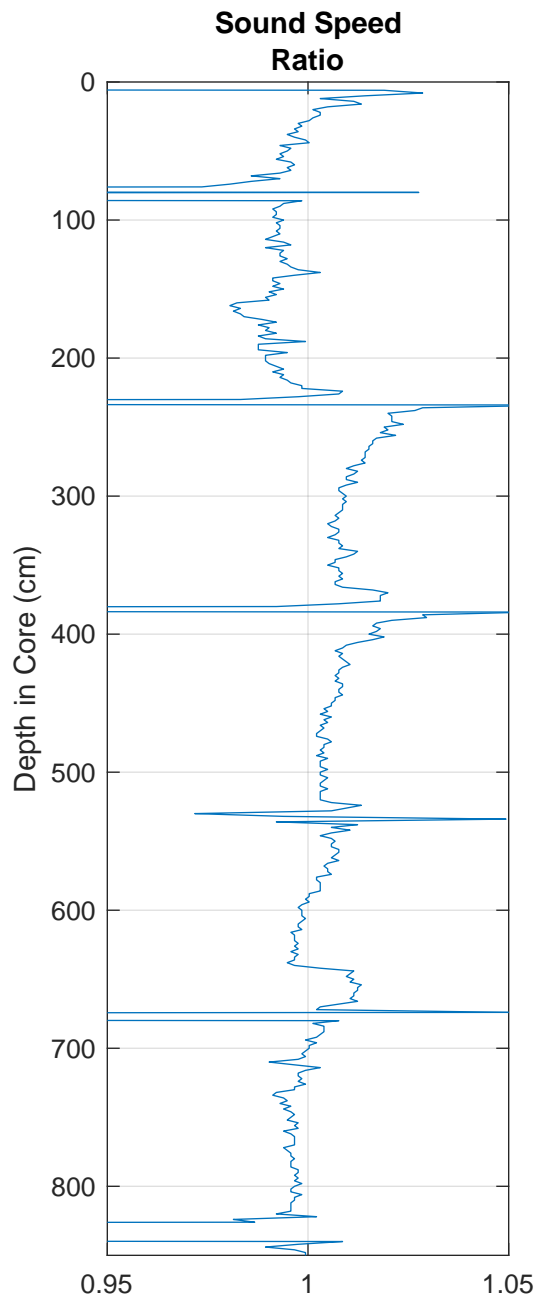
**P-Wave
Velocity**



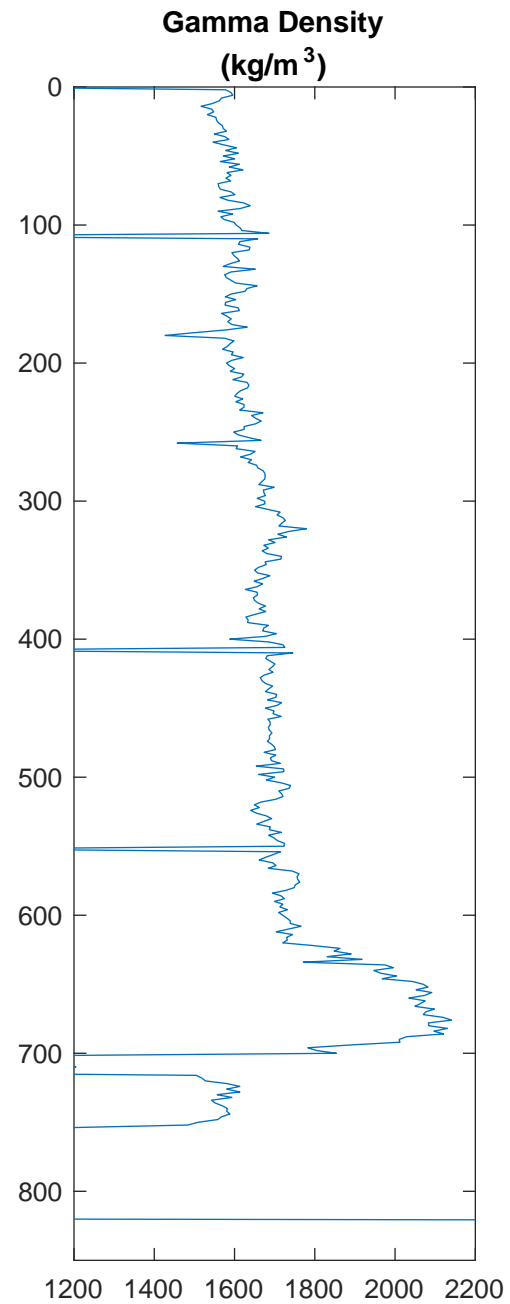
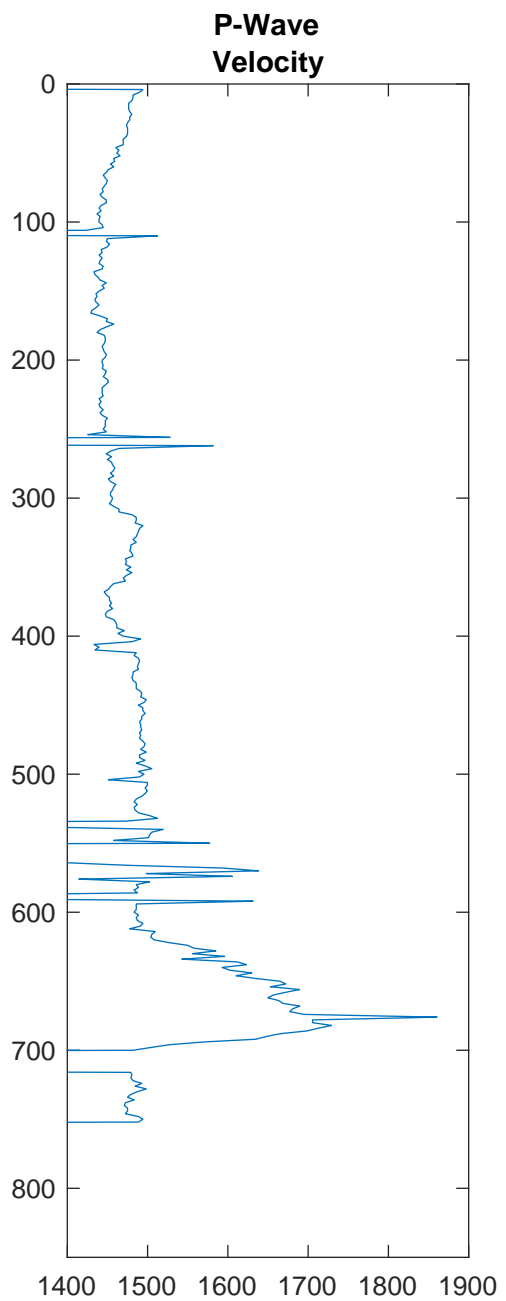
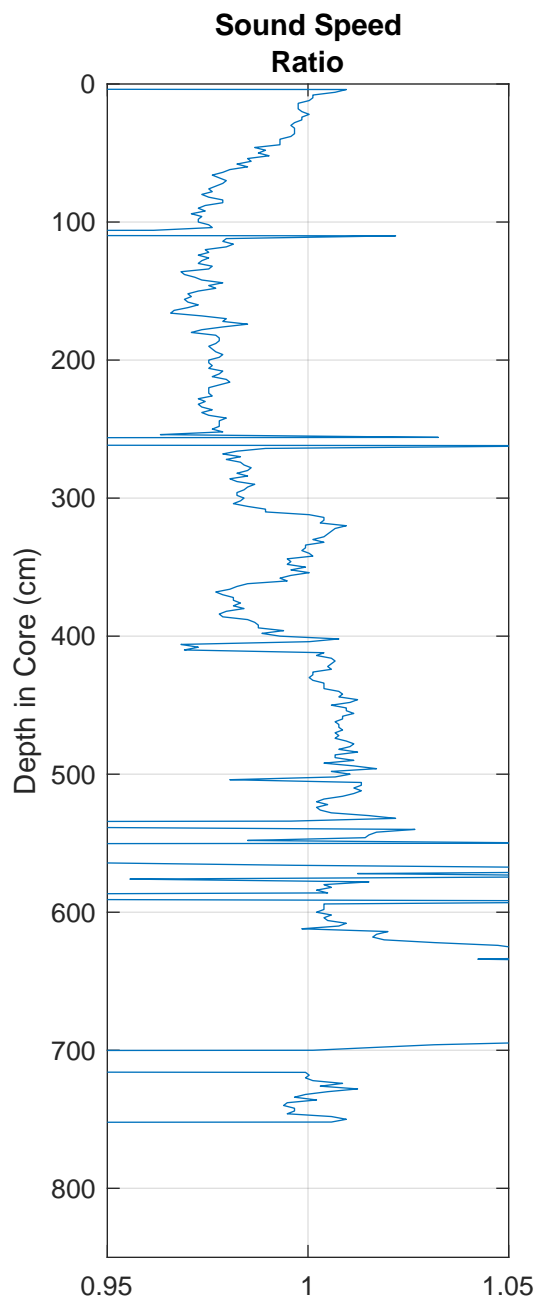
**Gamma Density
(kg/m³)**



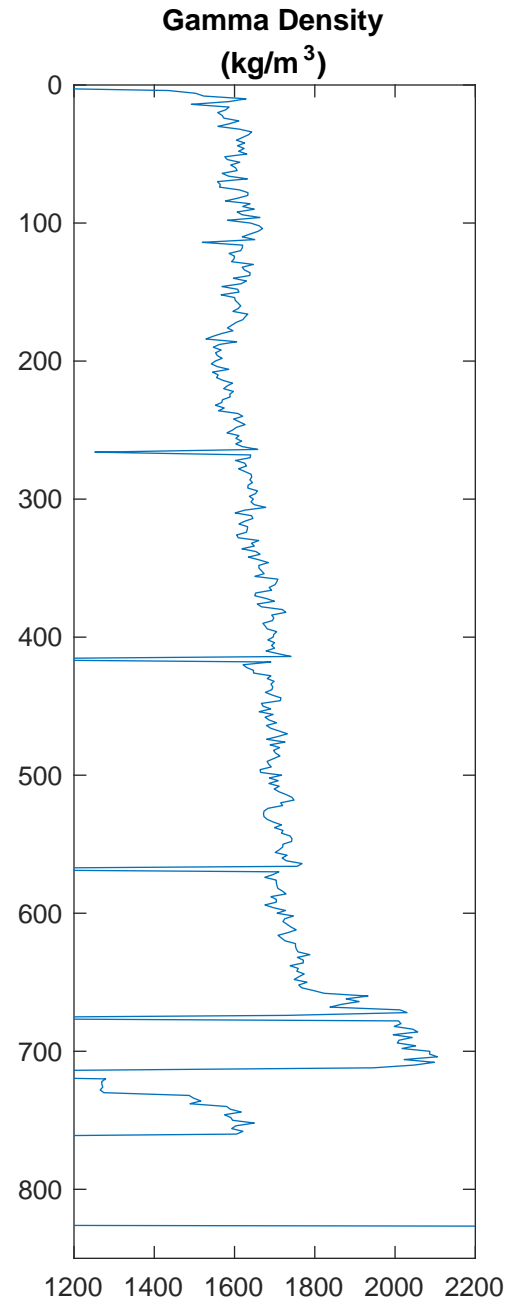
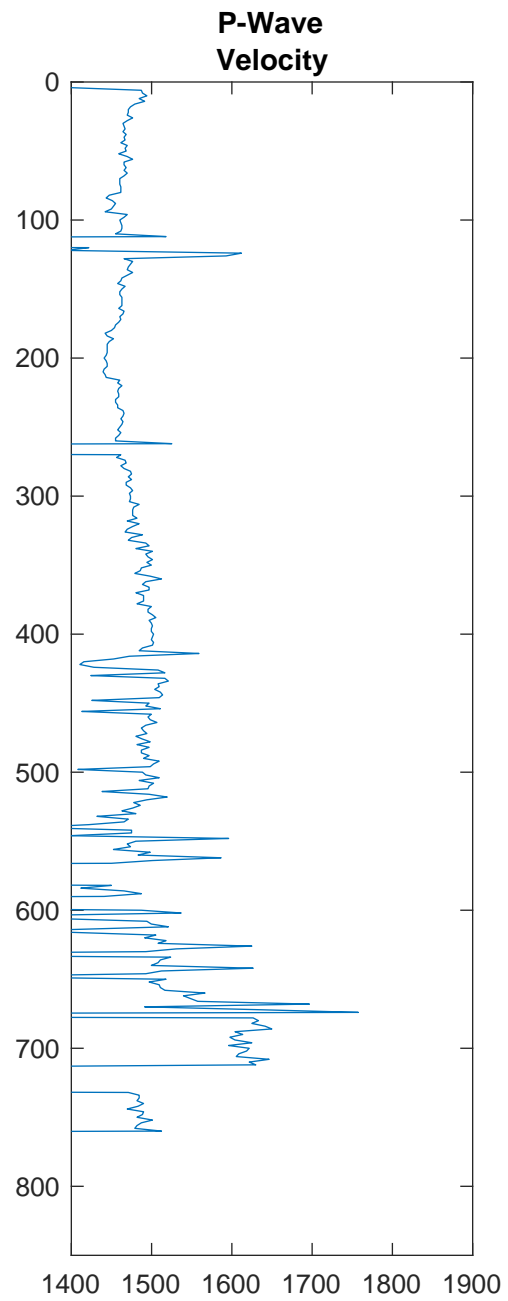
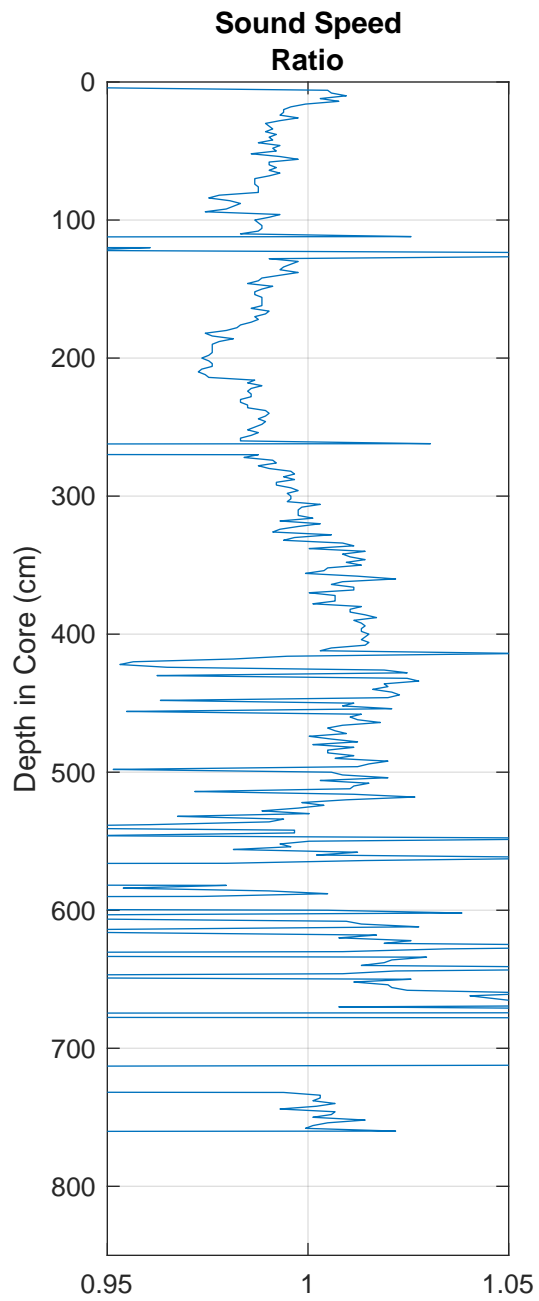
Core: 10PC_EN577_



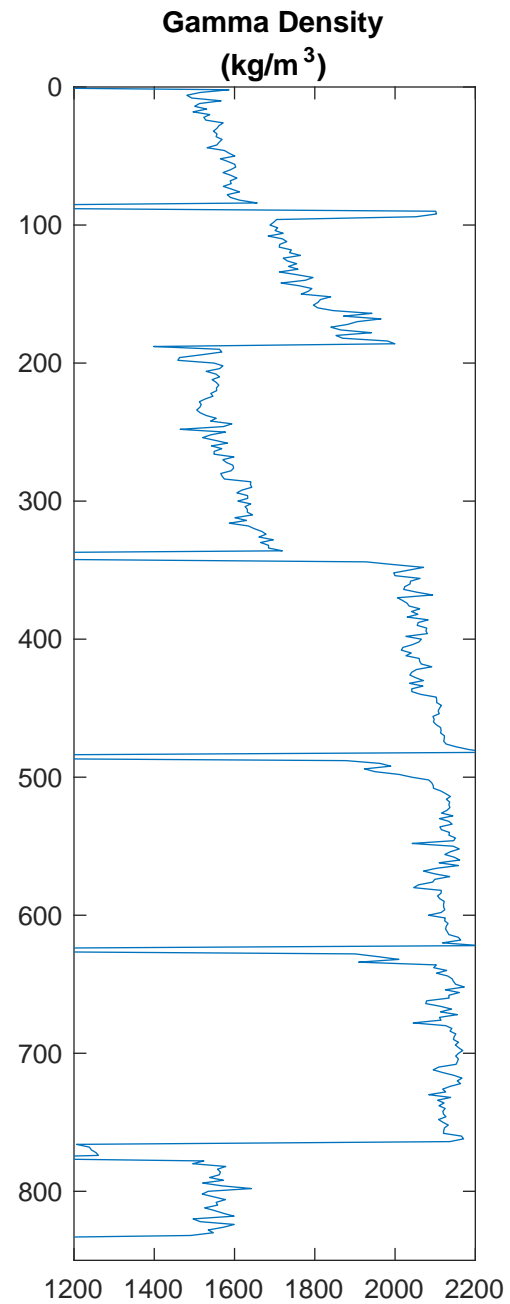
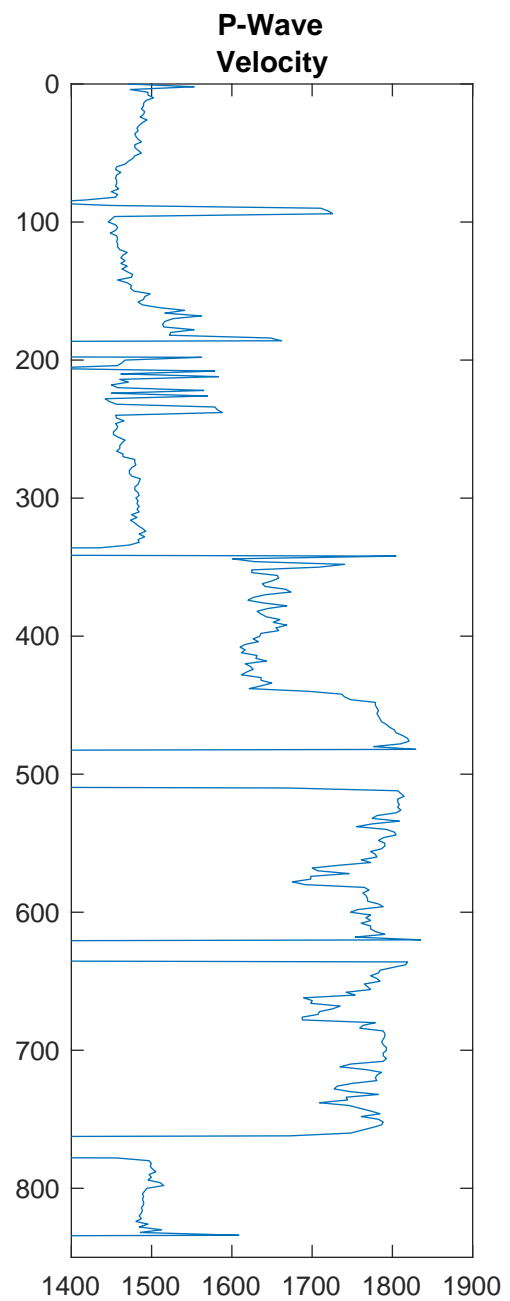
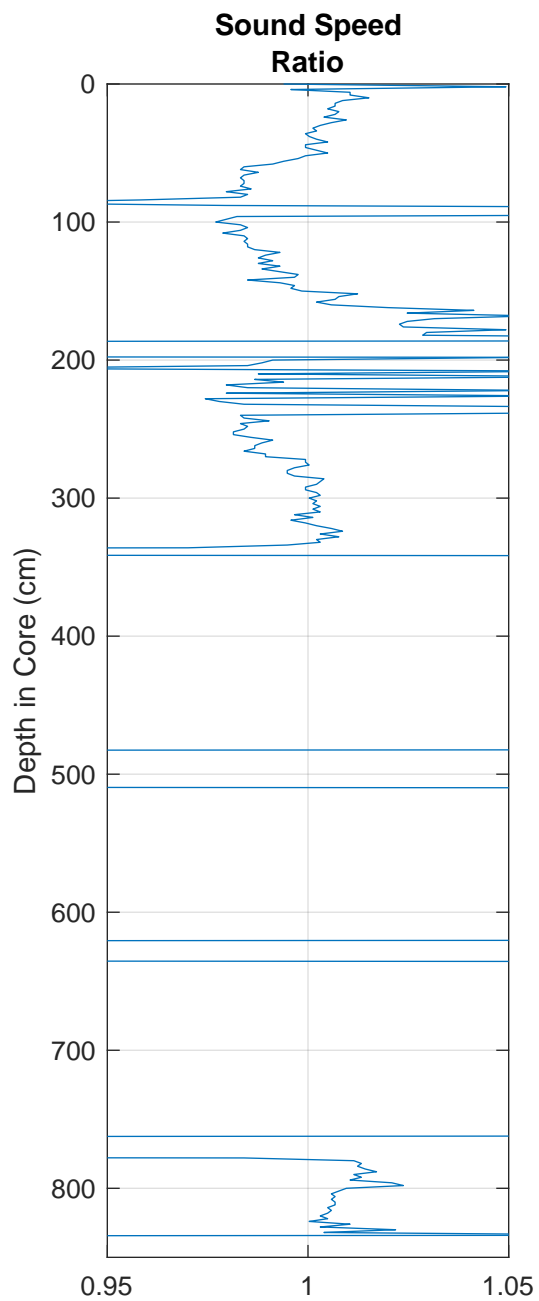
Core: 12PC_EN577_



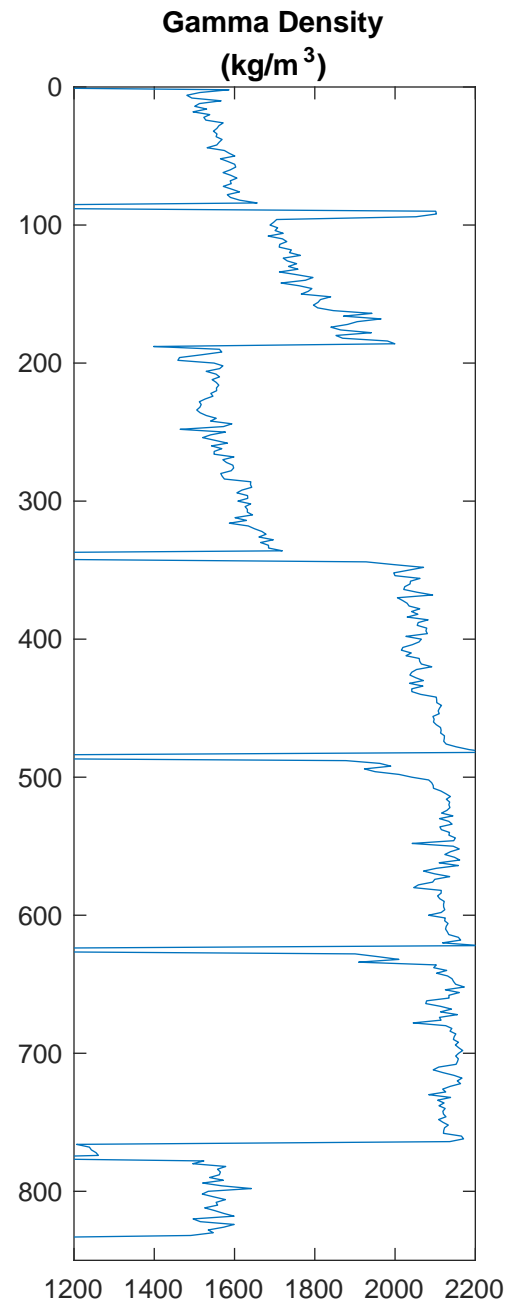
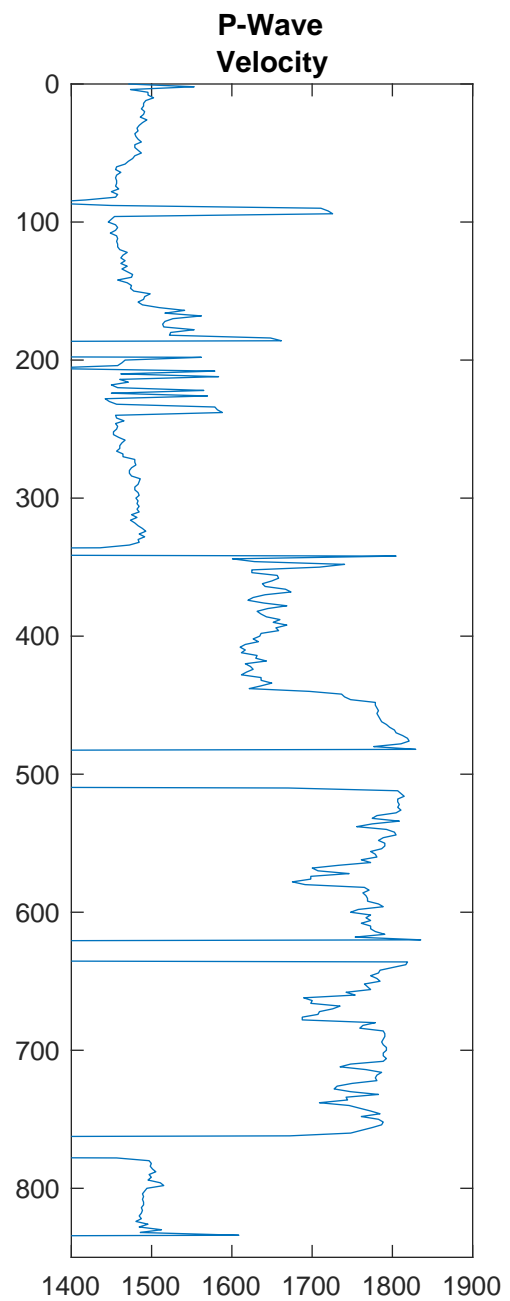
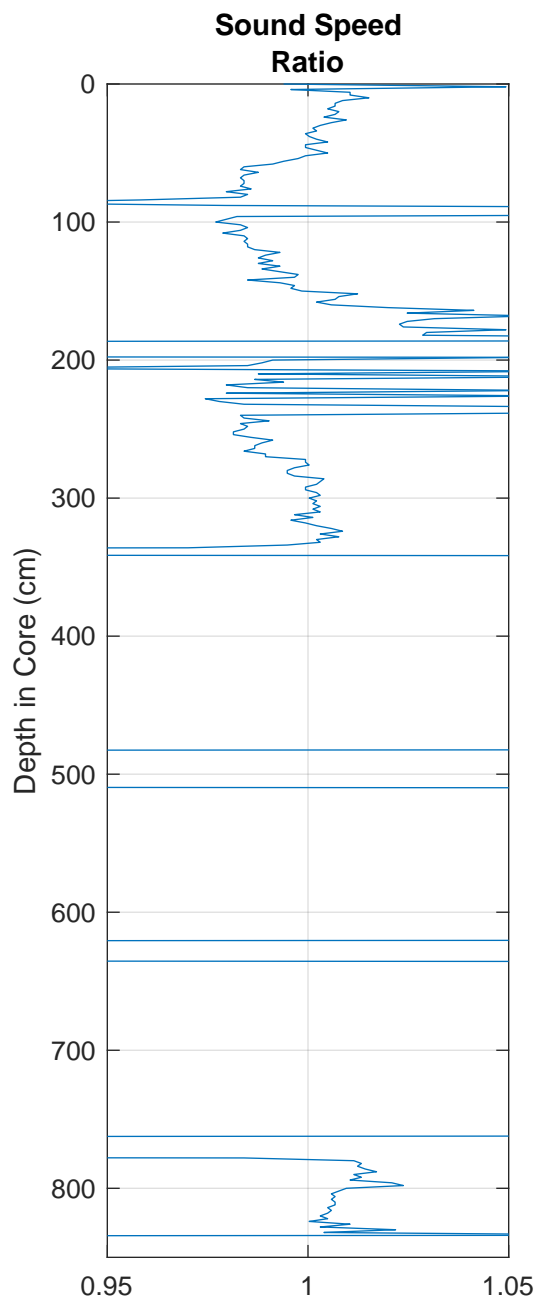
Core: 13PC_EN577_



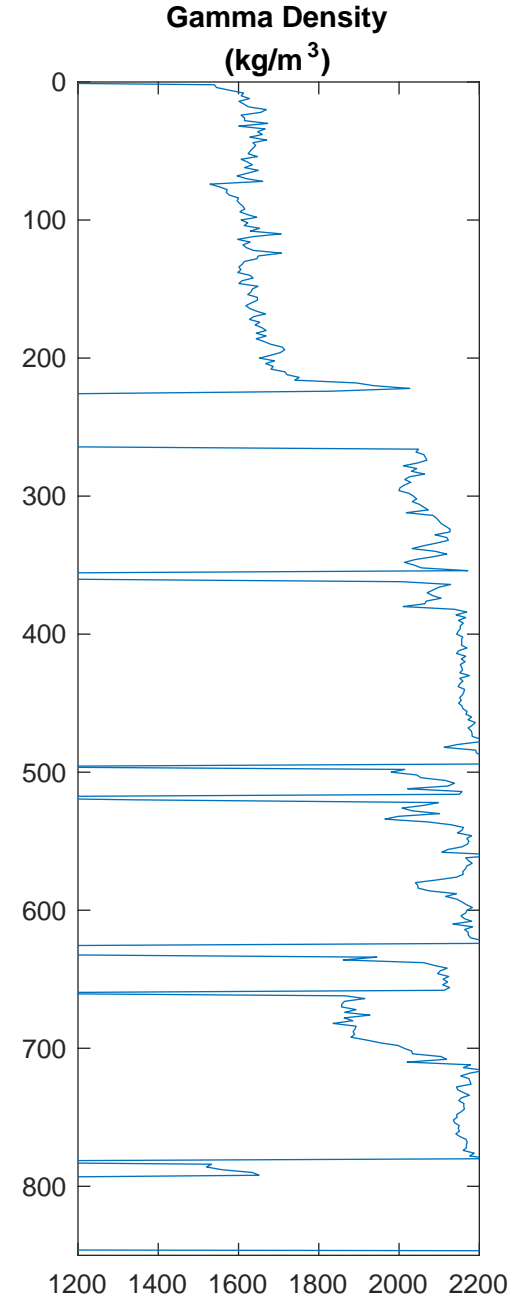
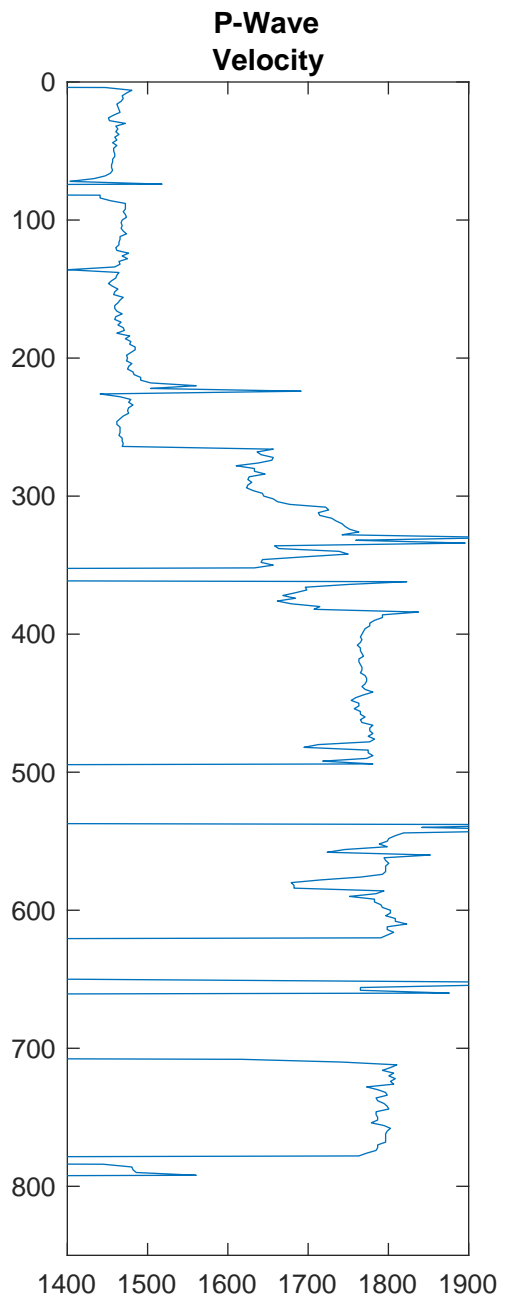
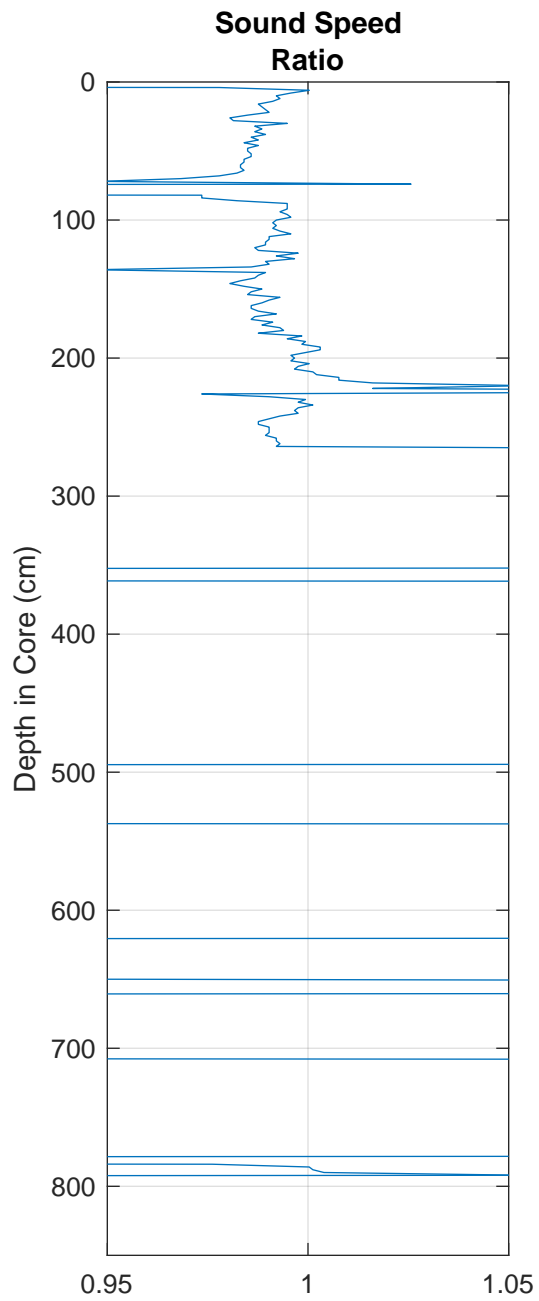
Core: 14PC_EN577_



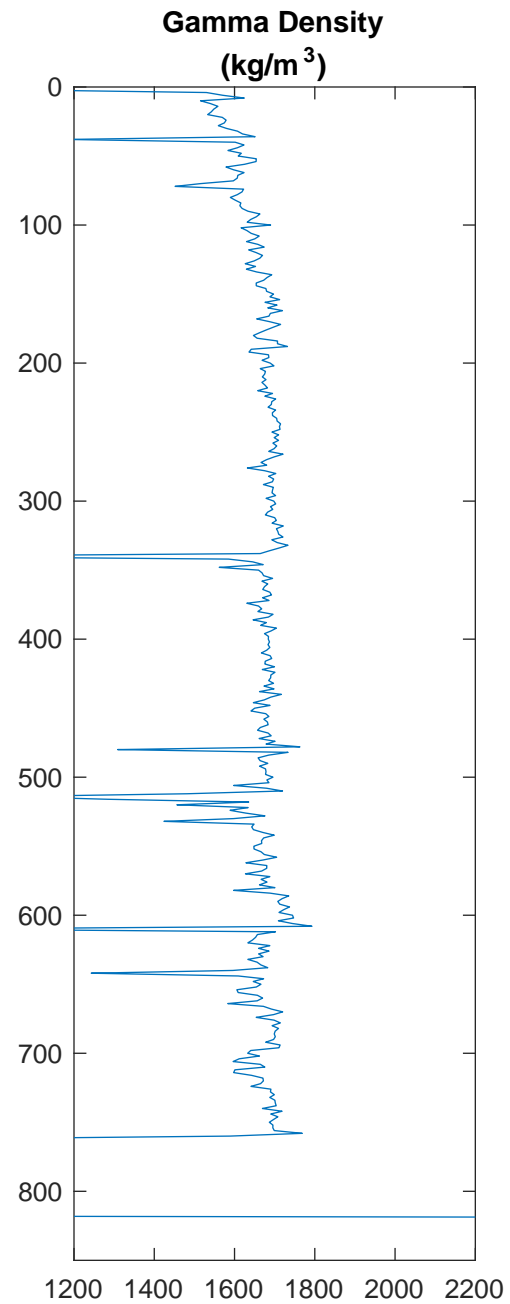
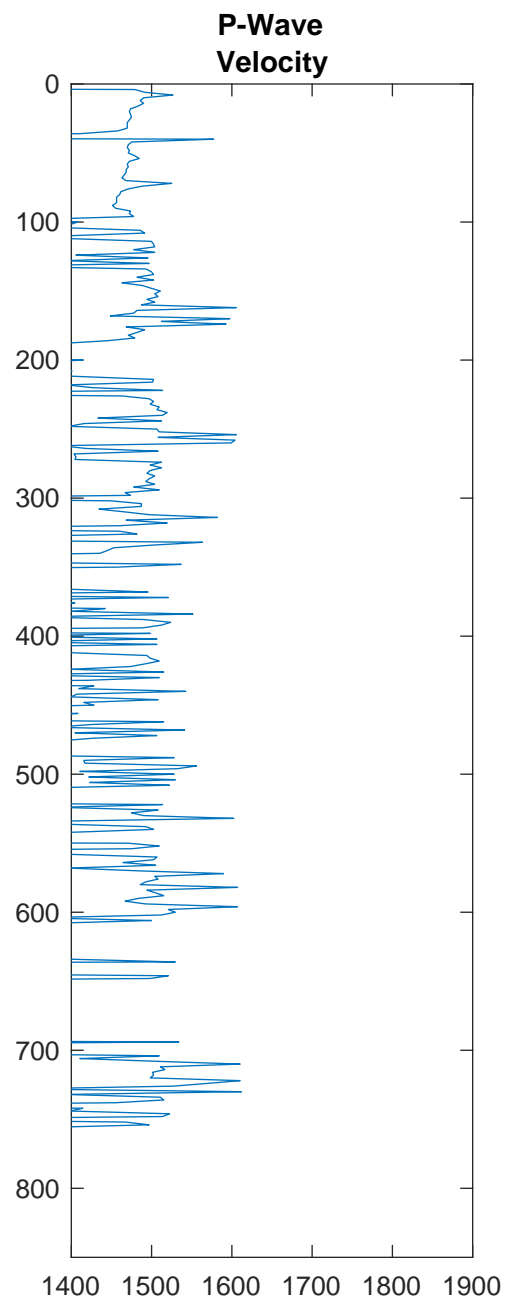
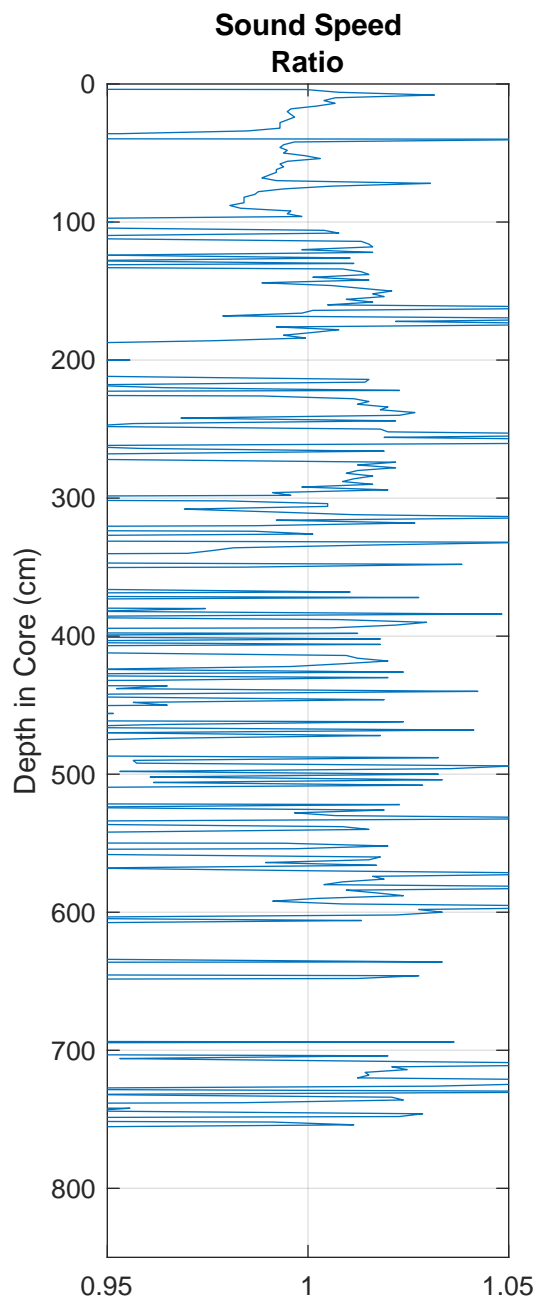
Core: 14PC_EN577_



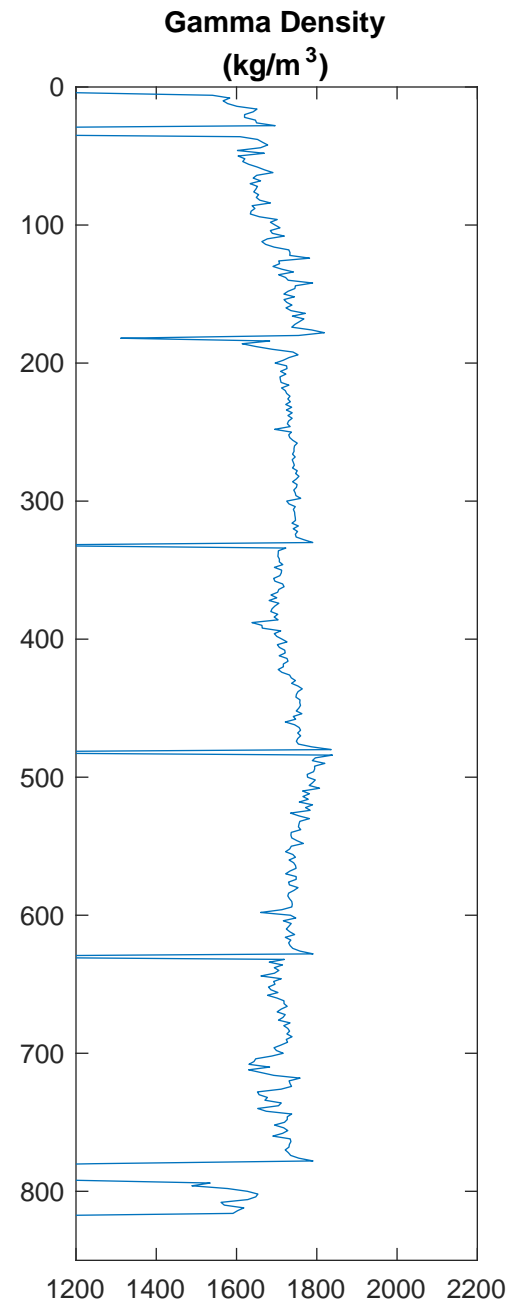
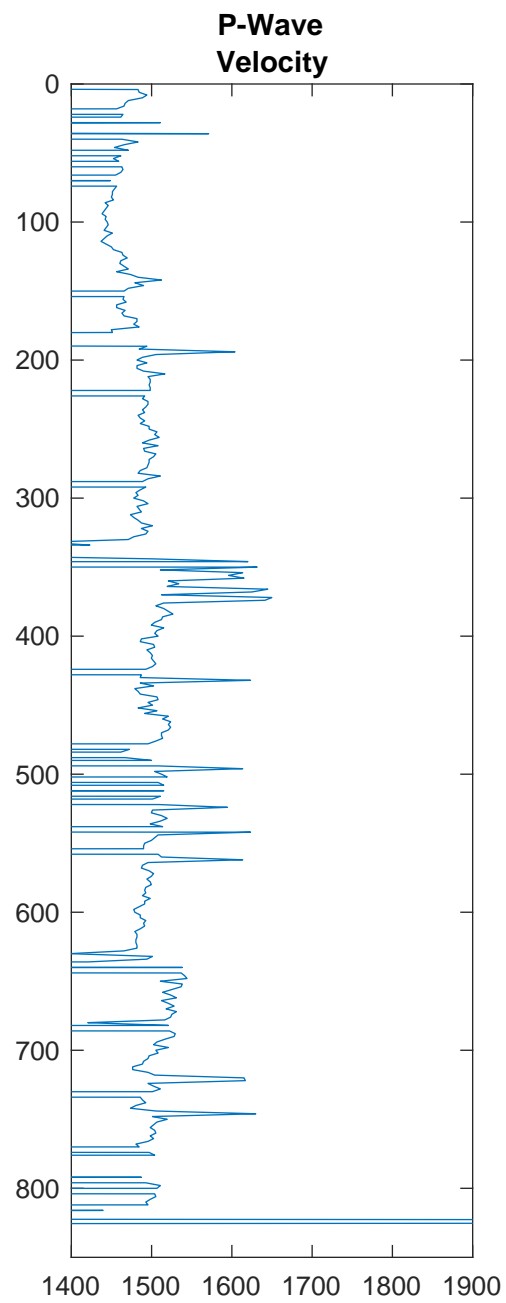
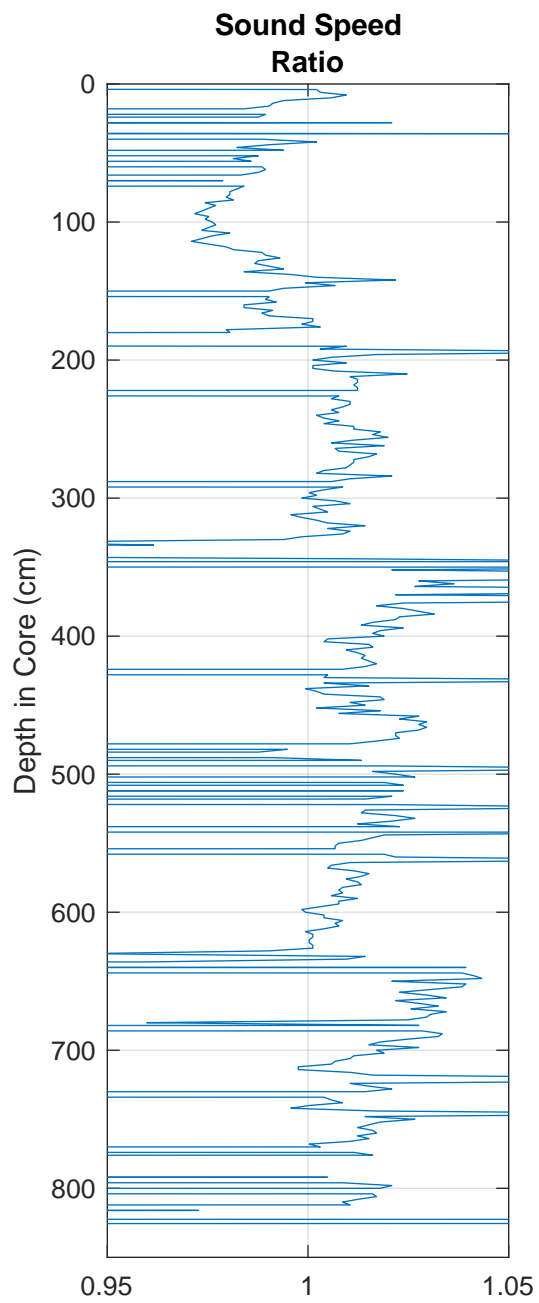
Core: 15PC_EN577_



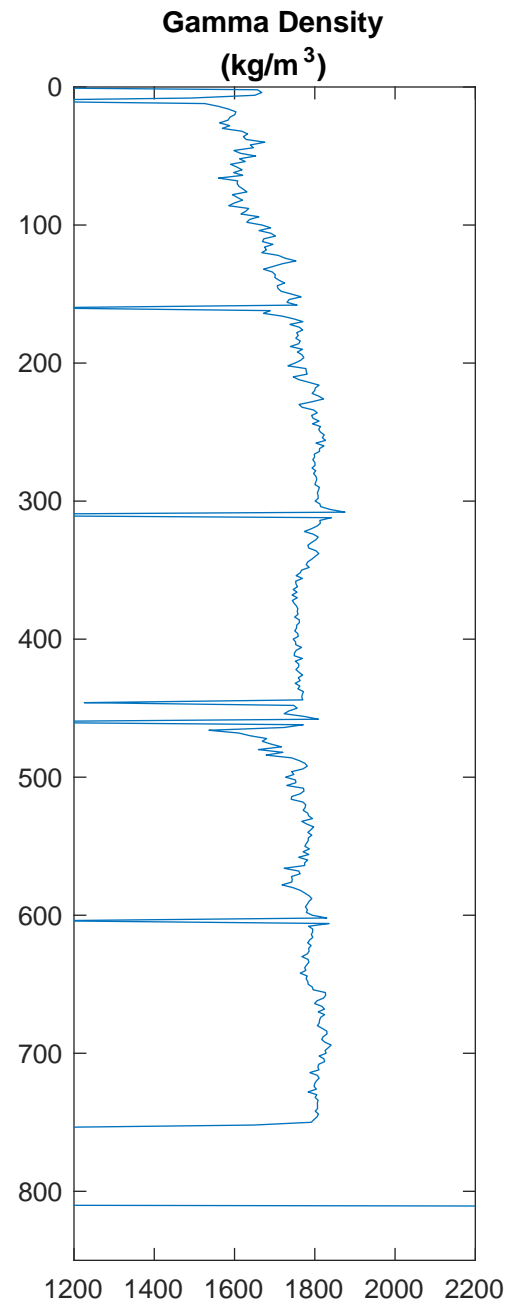
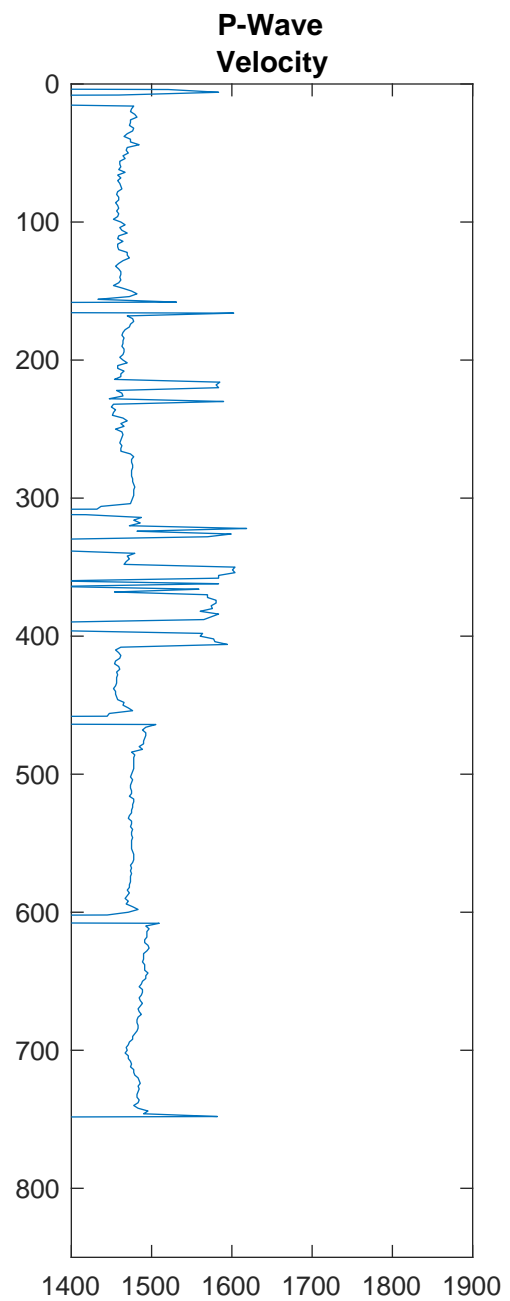
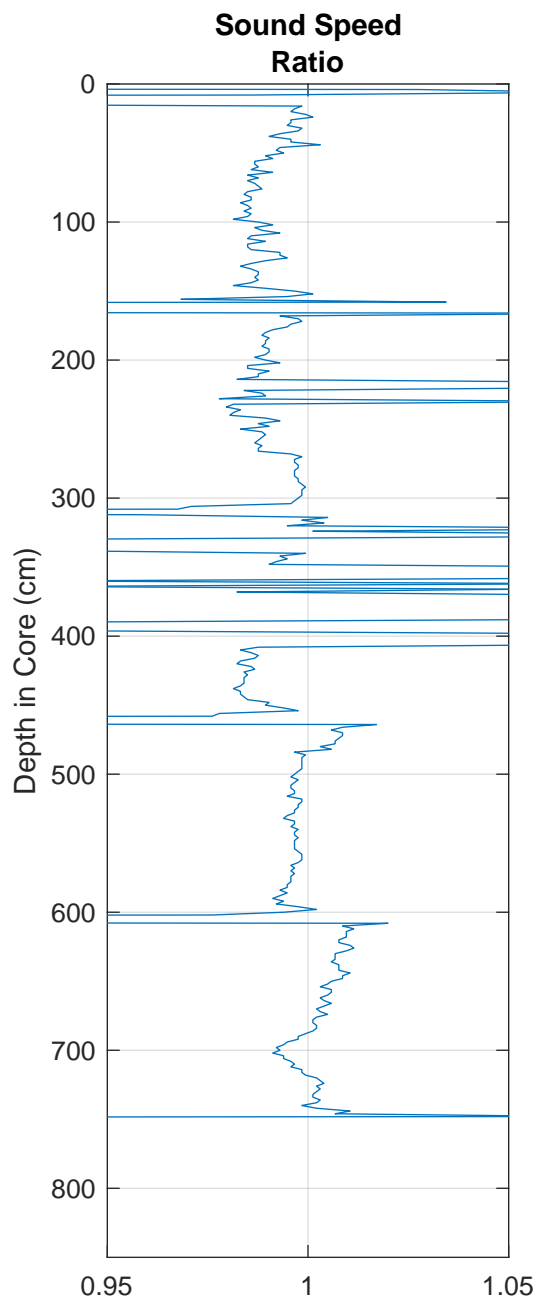
Core: 16PC_EN577_



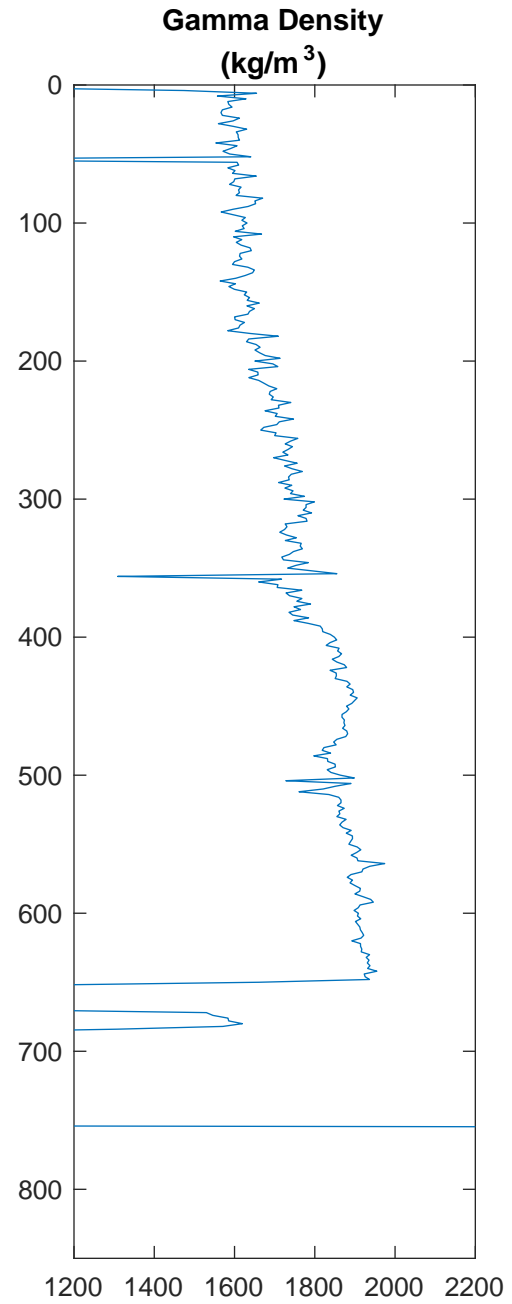
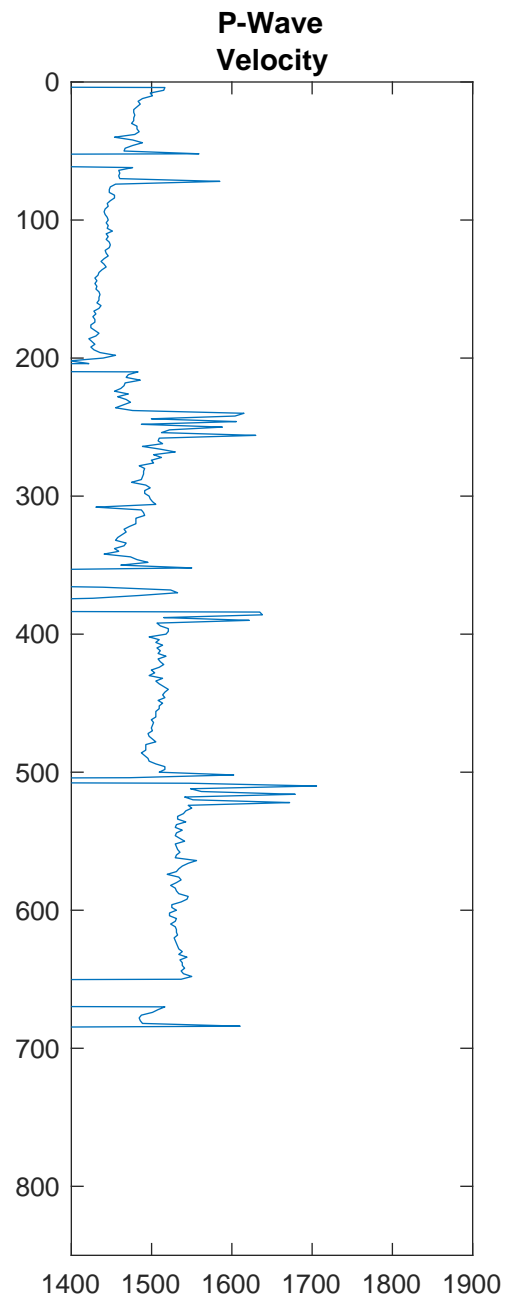
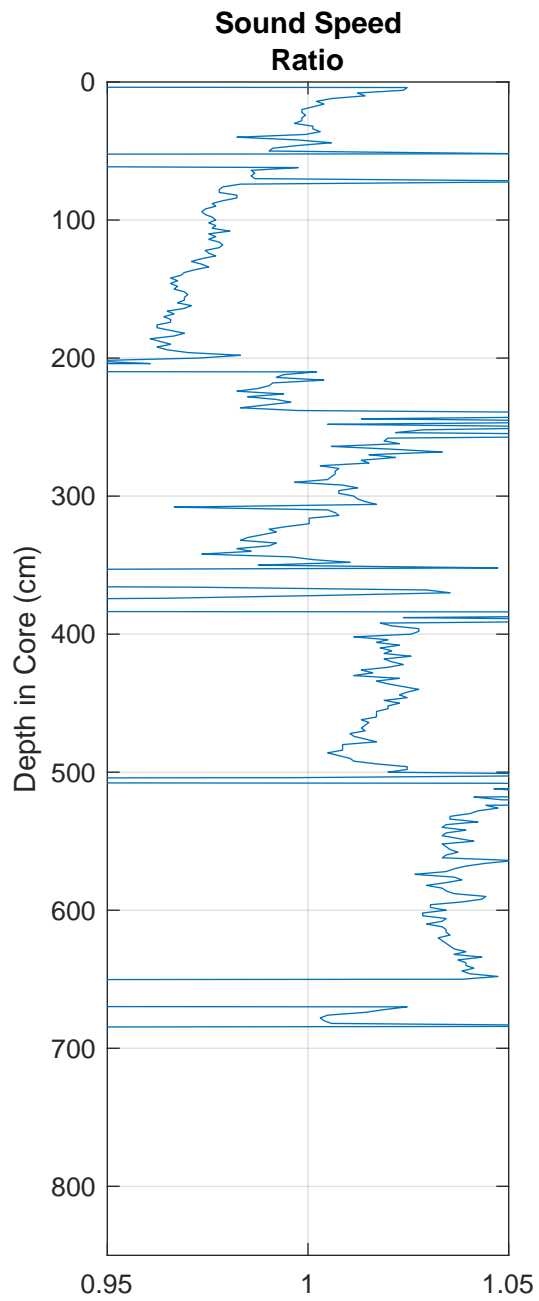
Core: 17PC_EN577_



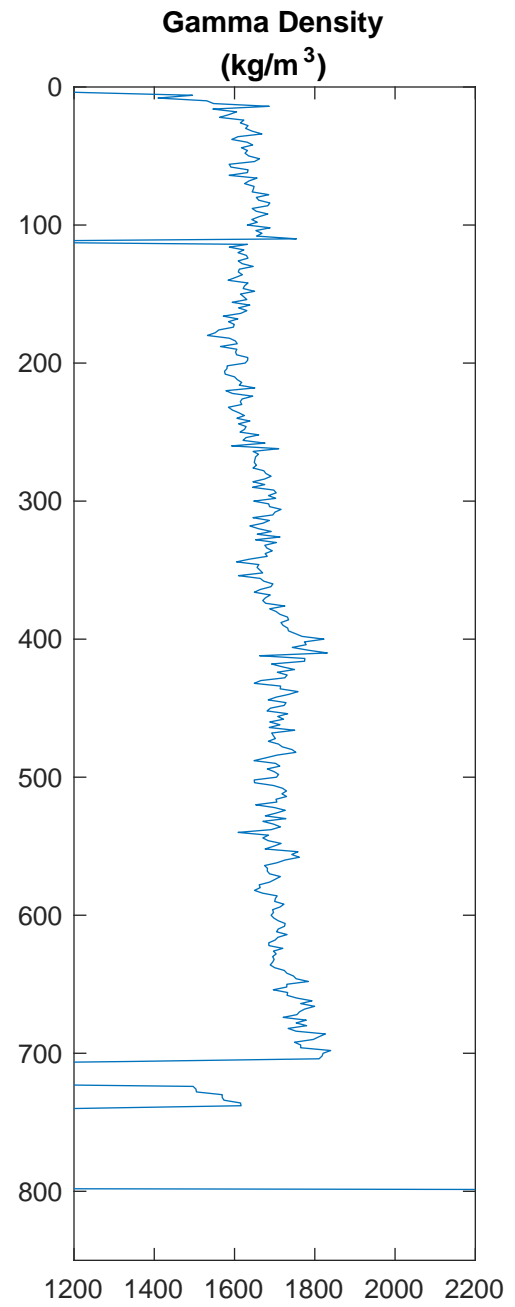
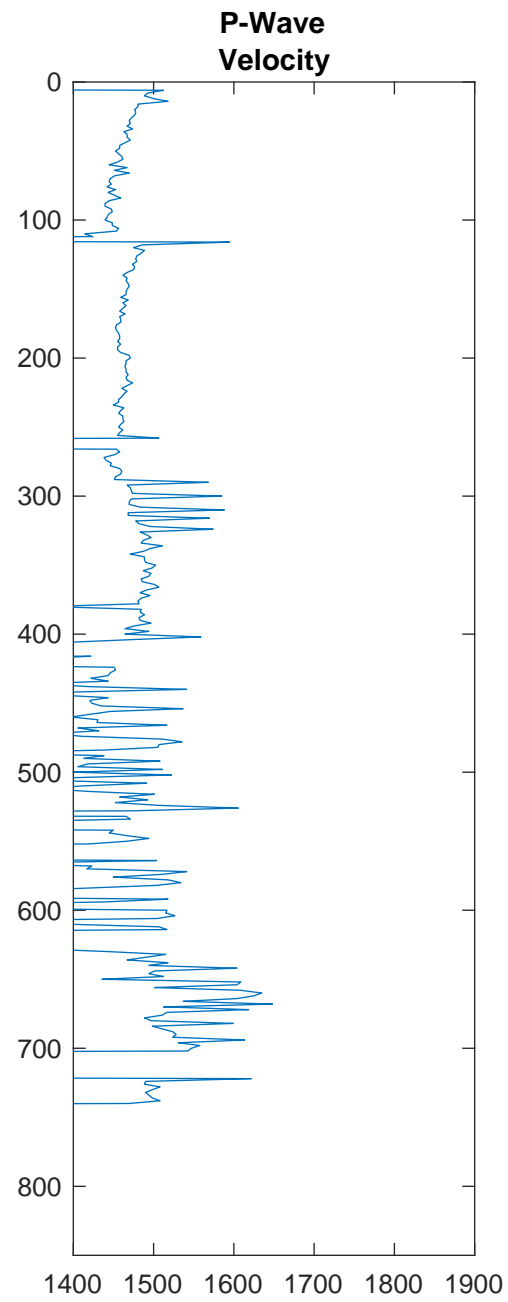
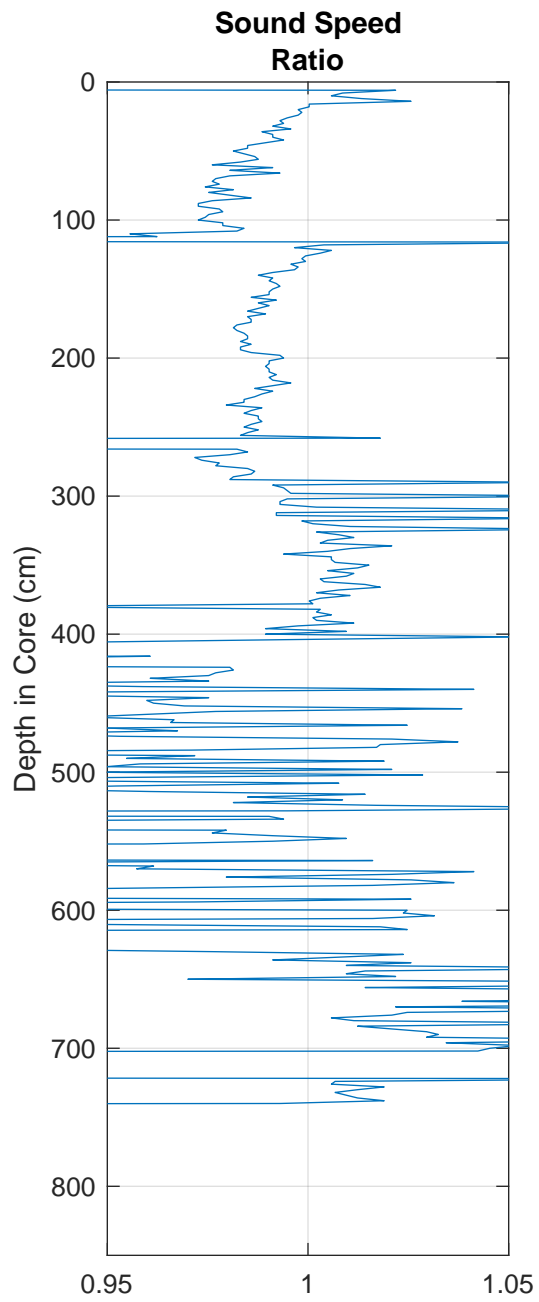
Core: 18PC_EN577_



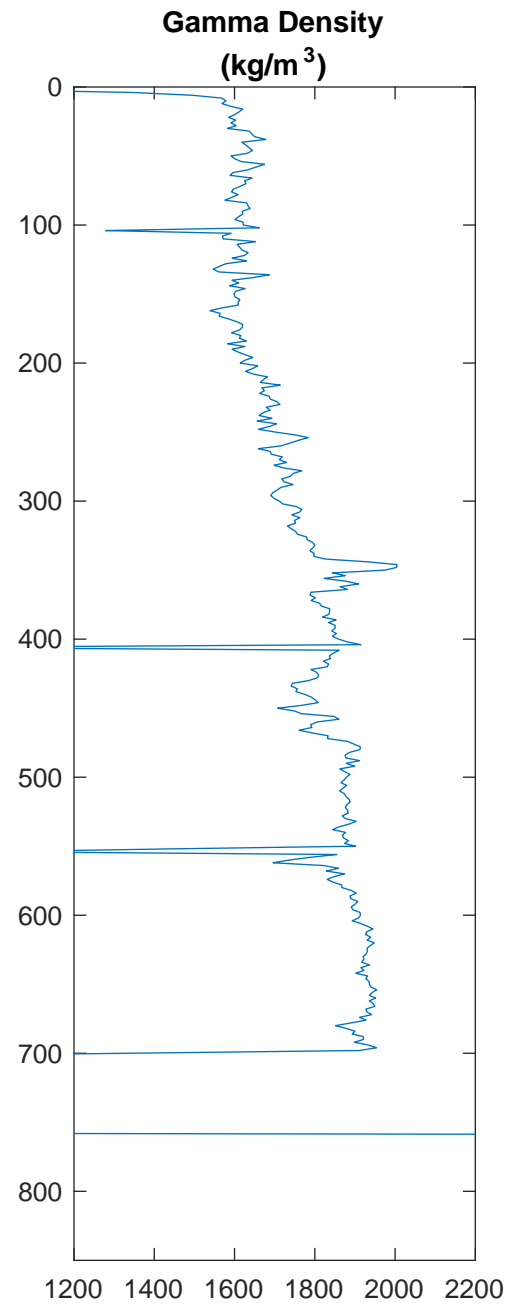
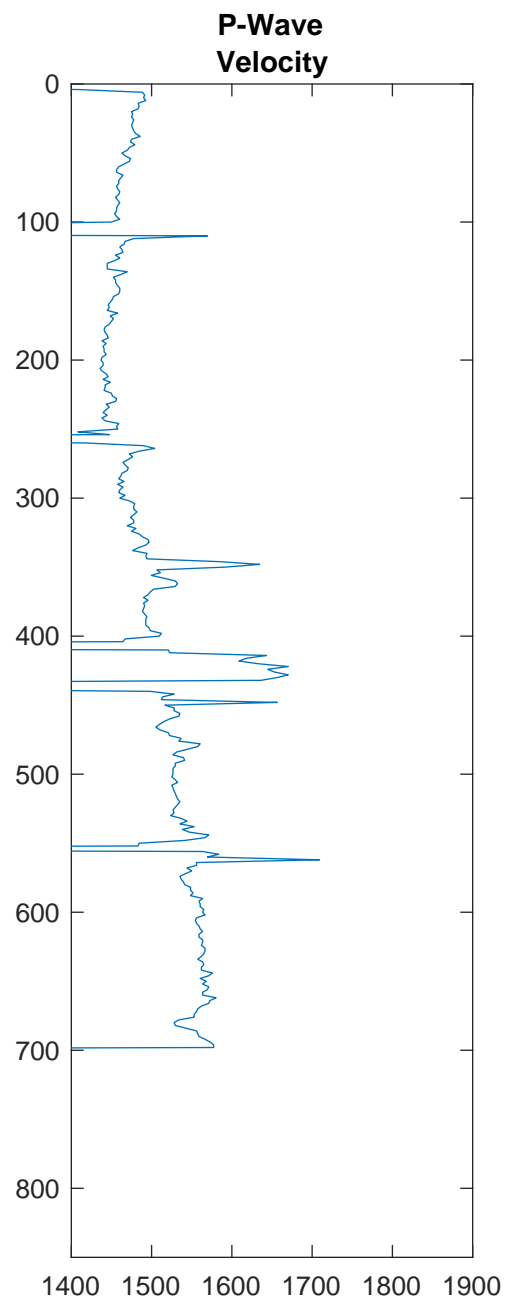
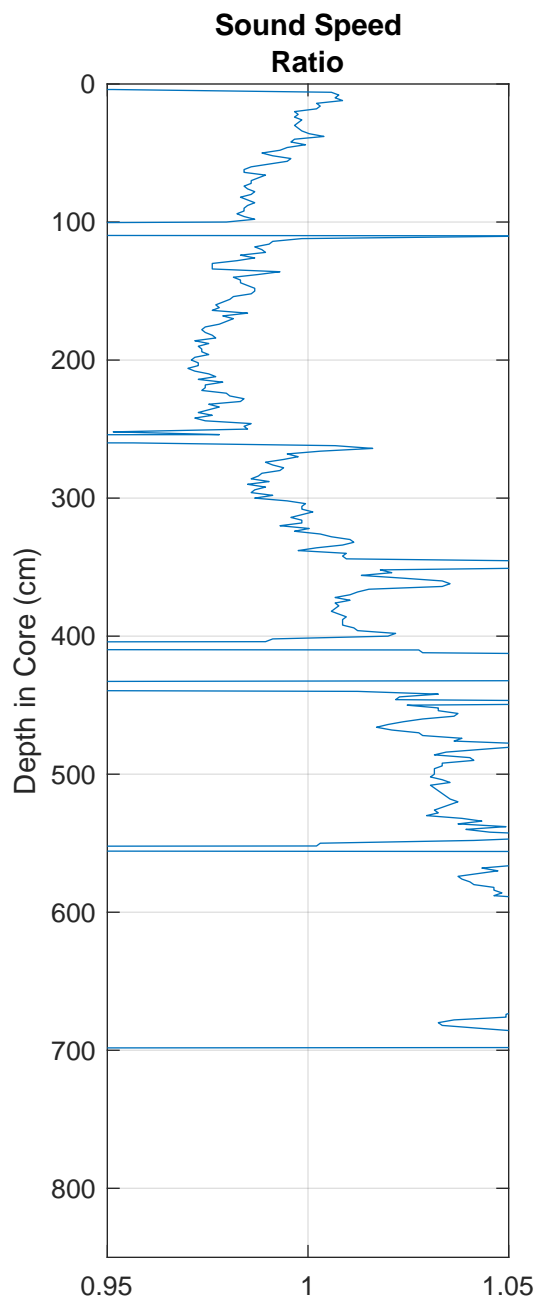
Core: 19PC_EN577_



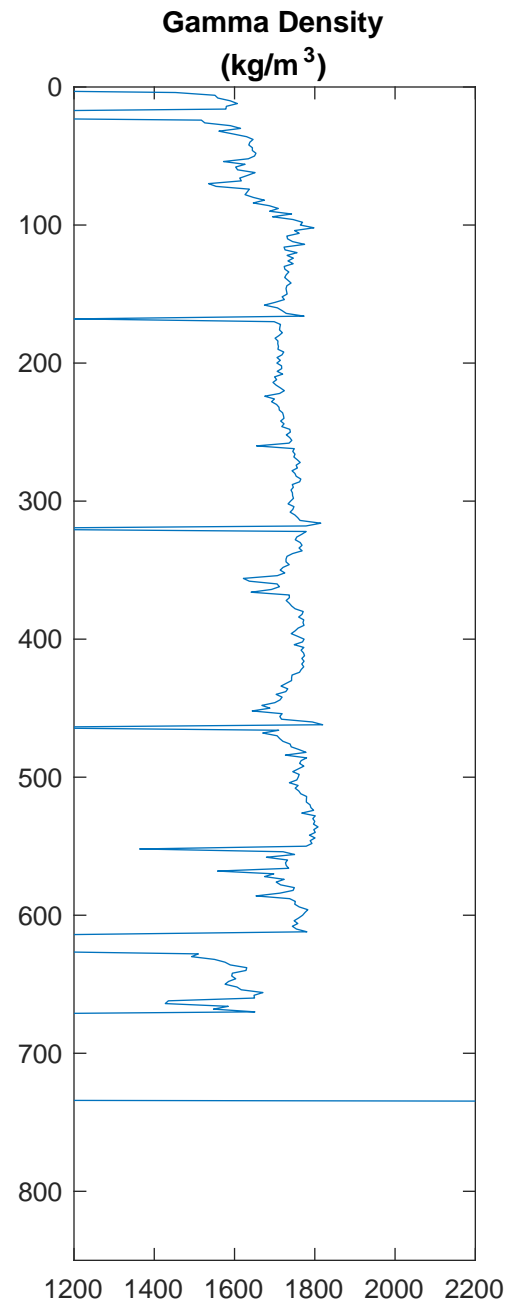
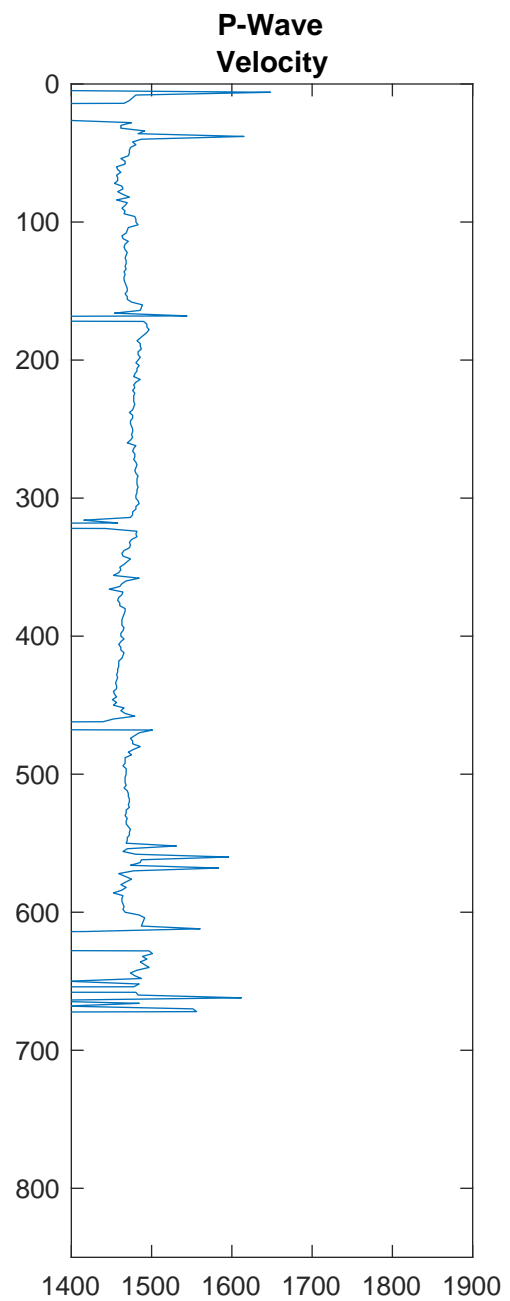
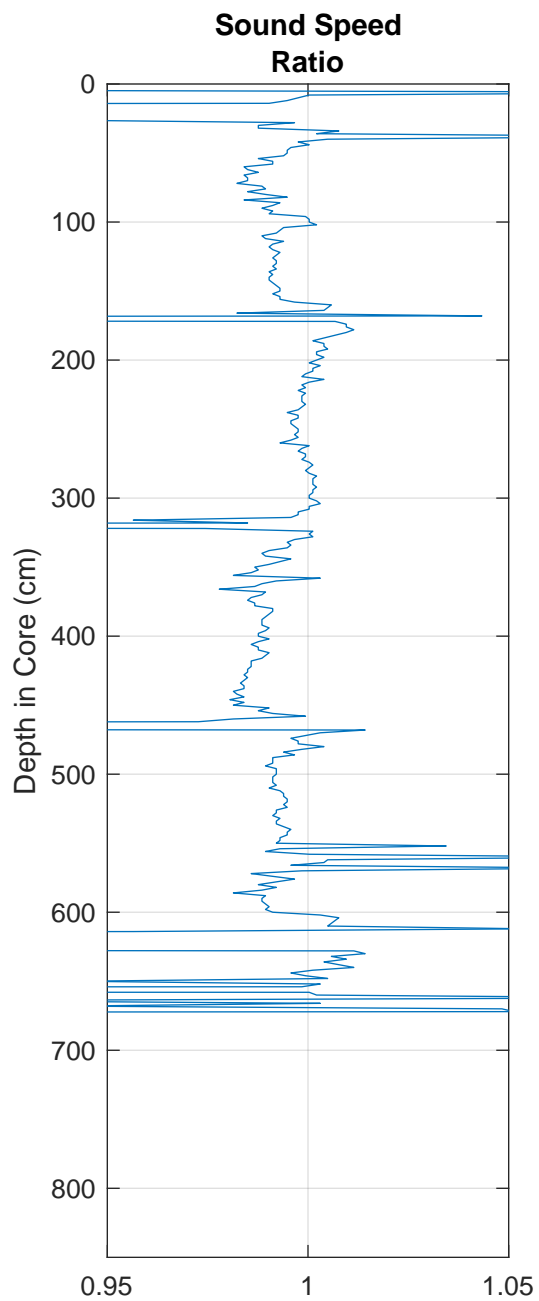
Core: 20PC_EN577_



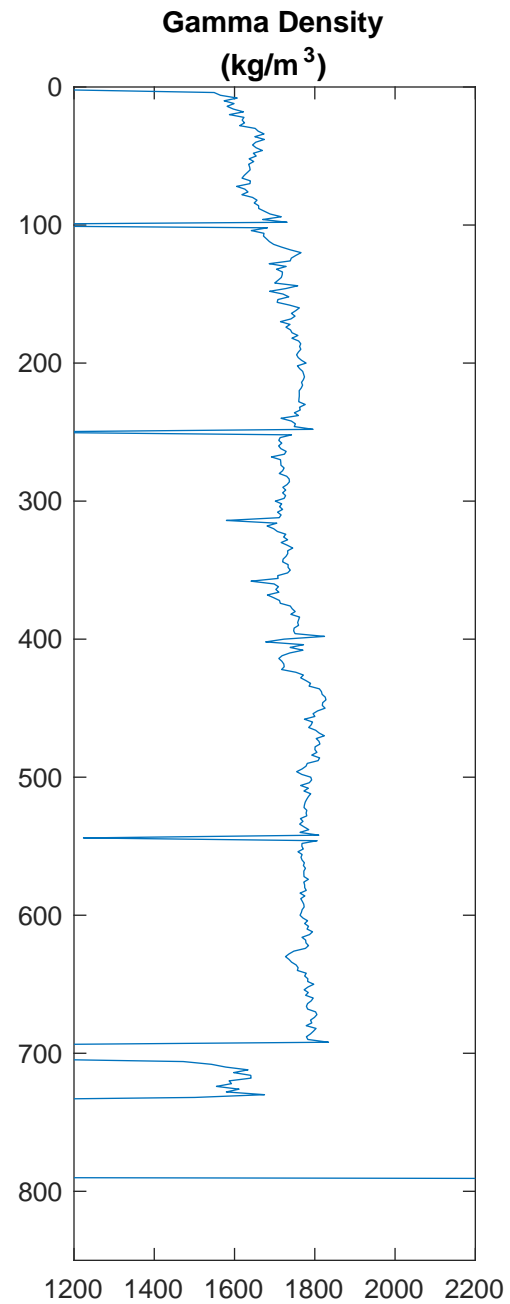
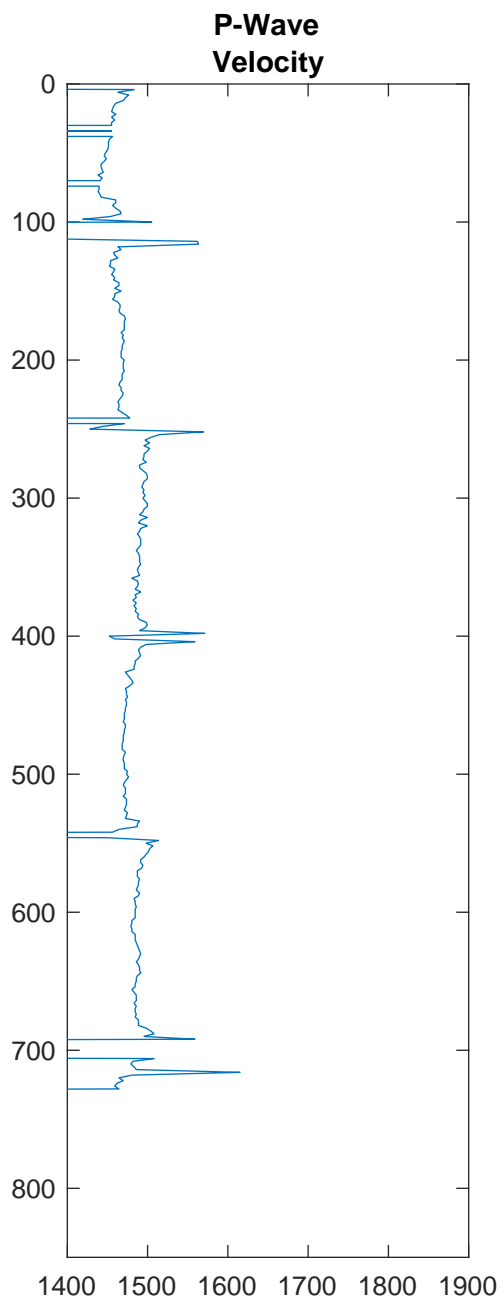
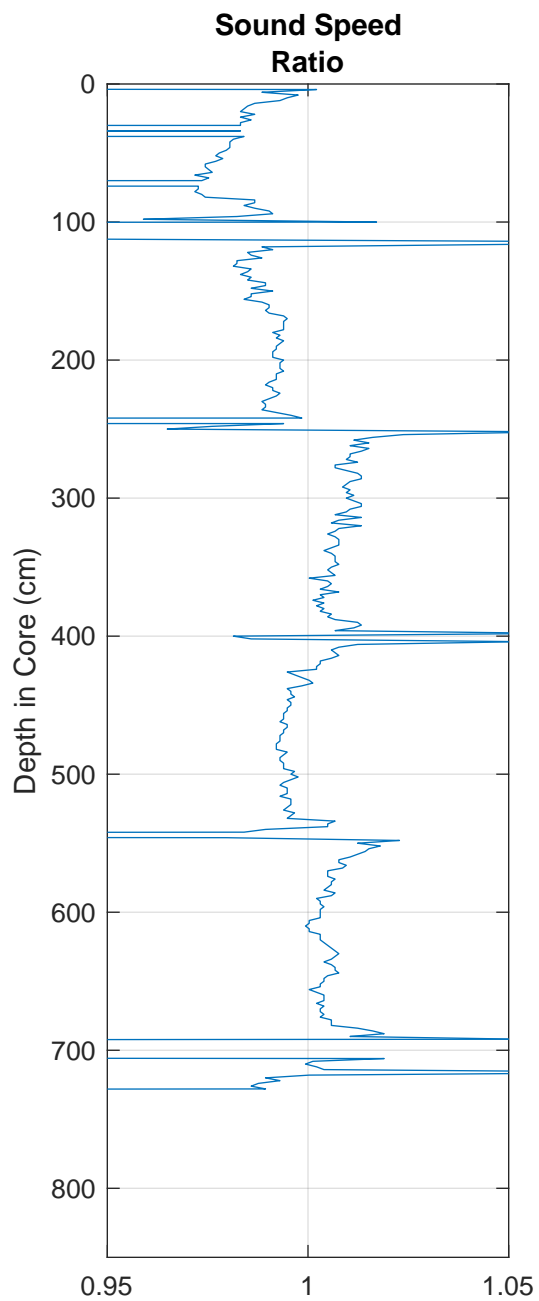
Core: 21PC_EN577_



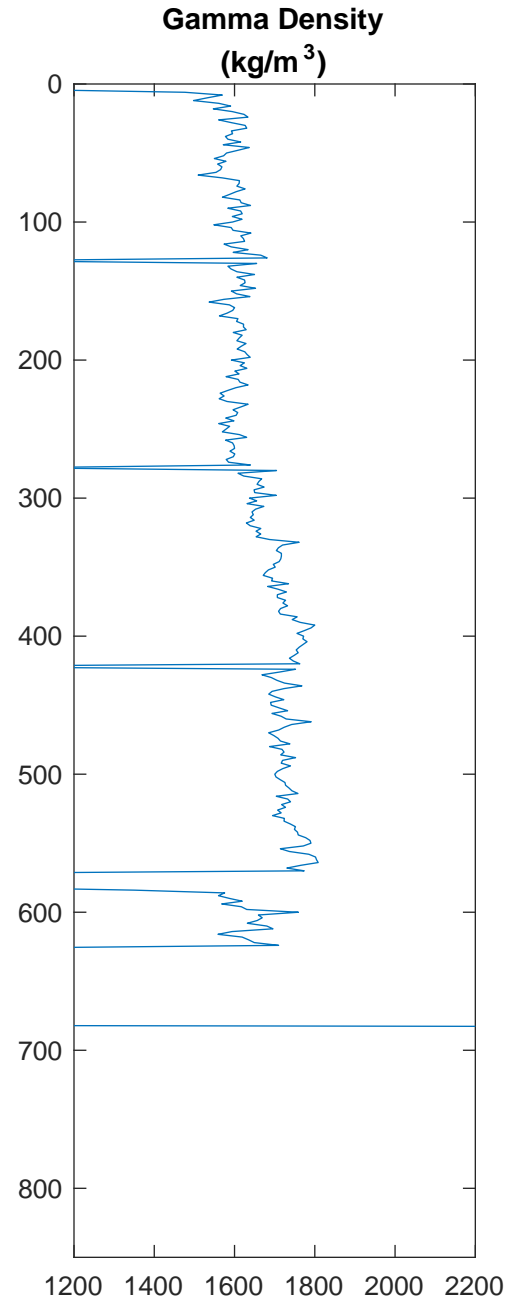
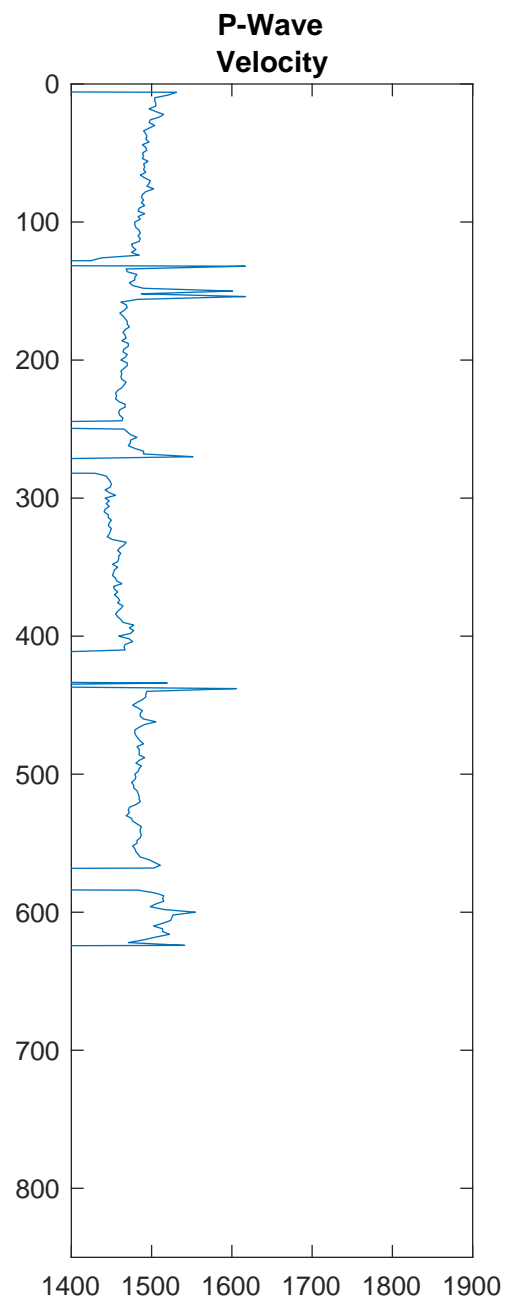
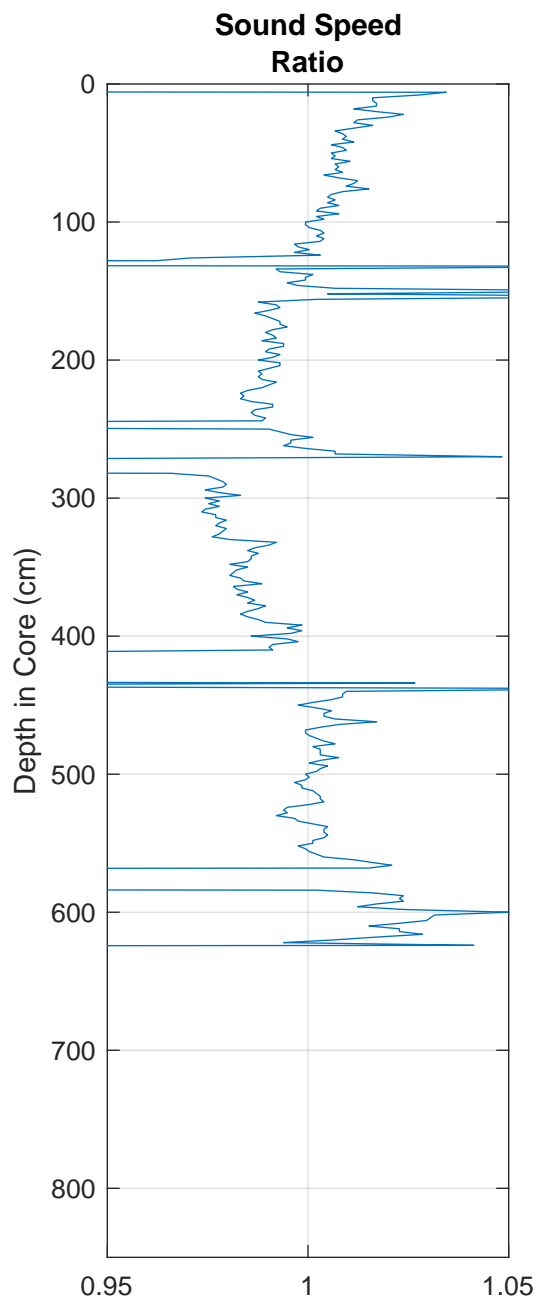
Core: 22PC_EN577_



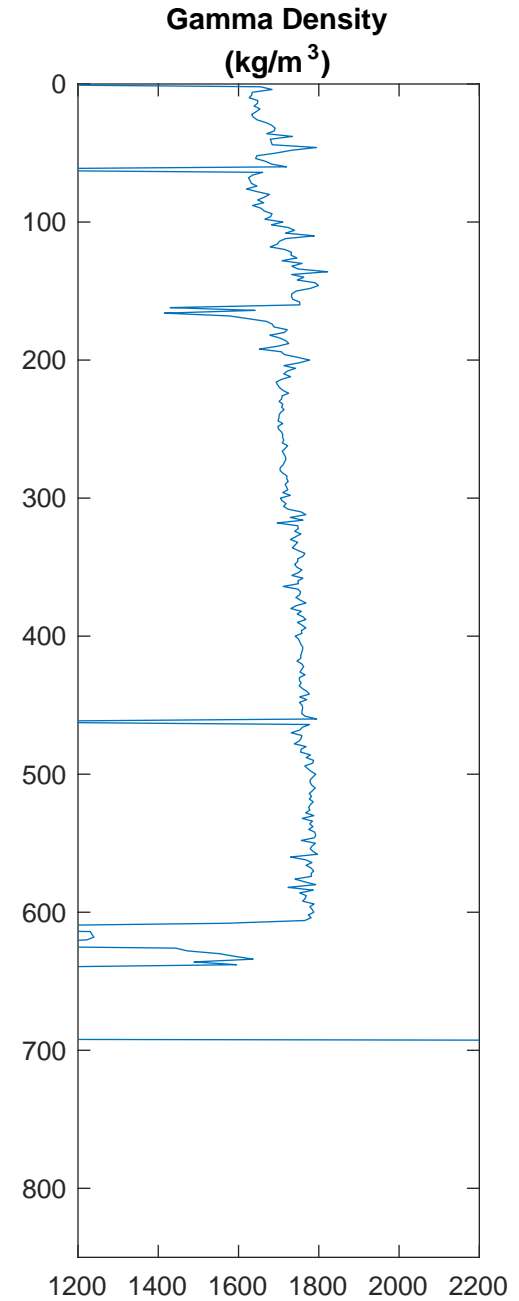
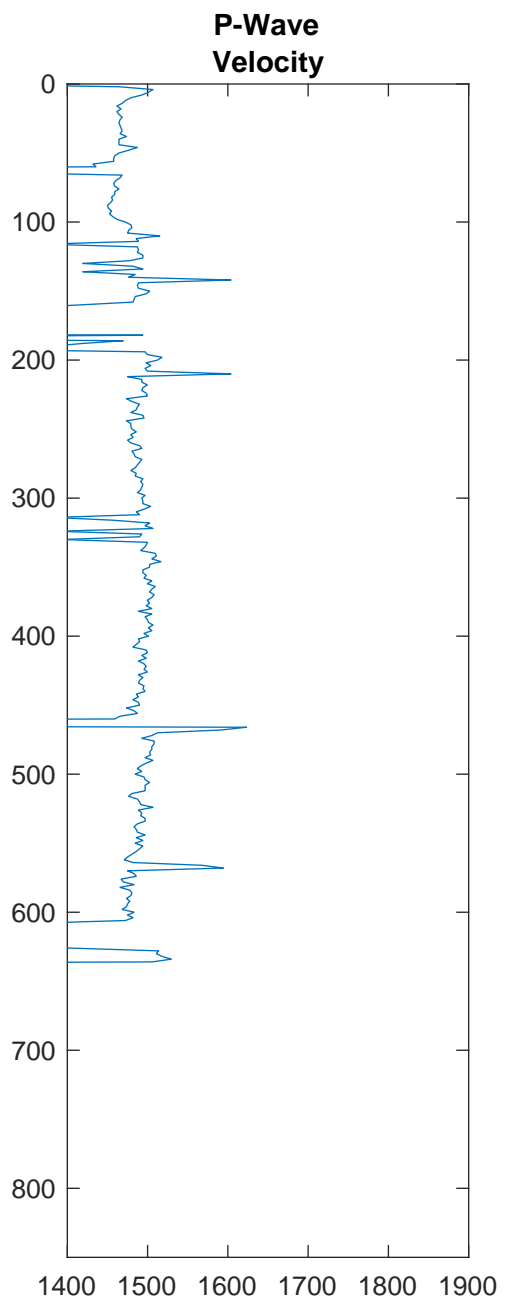
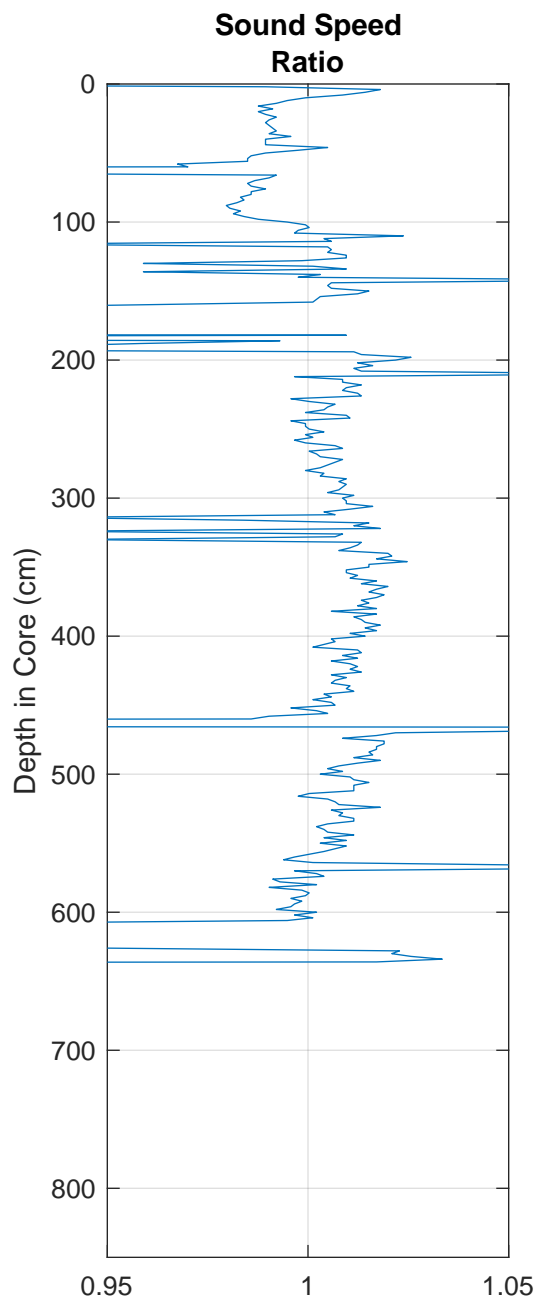
Core: 23PC_EN577_



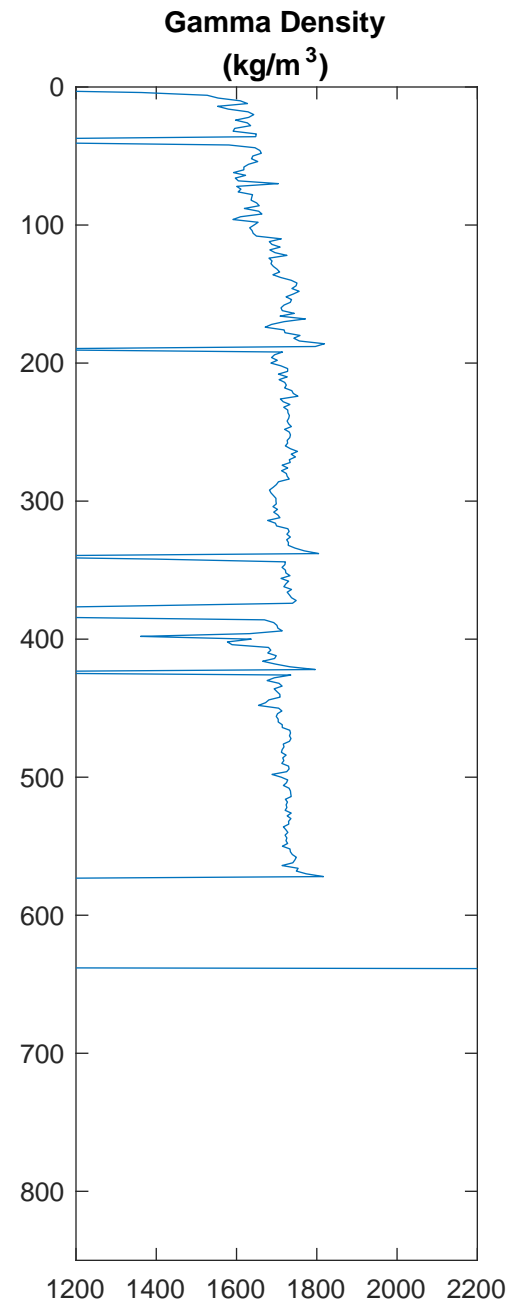
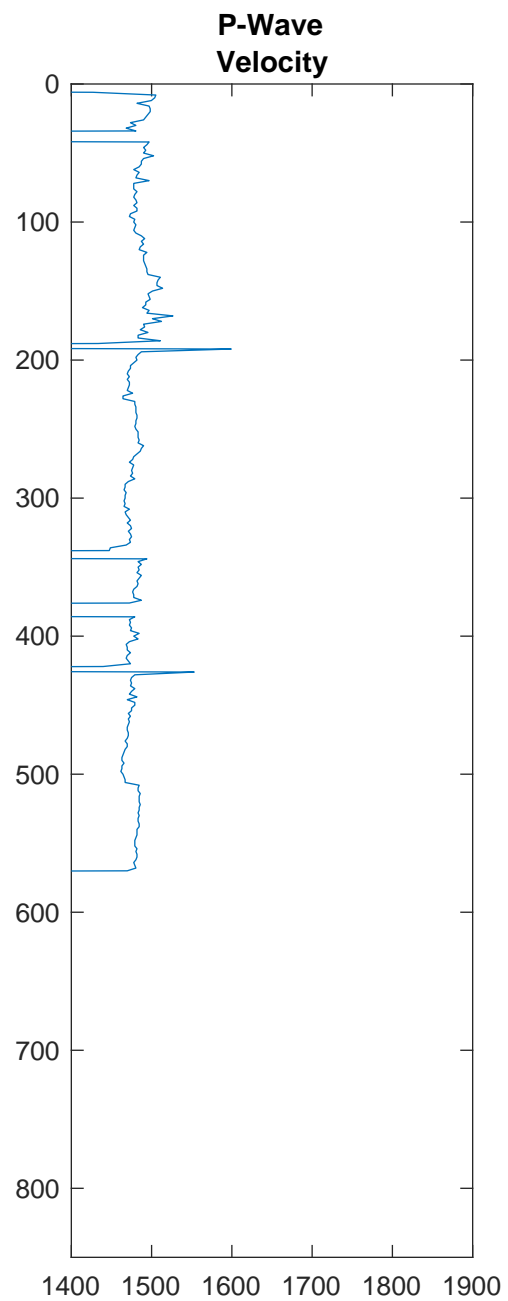
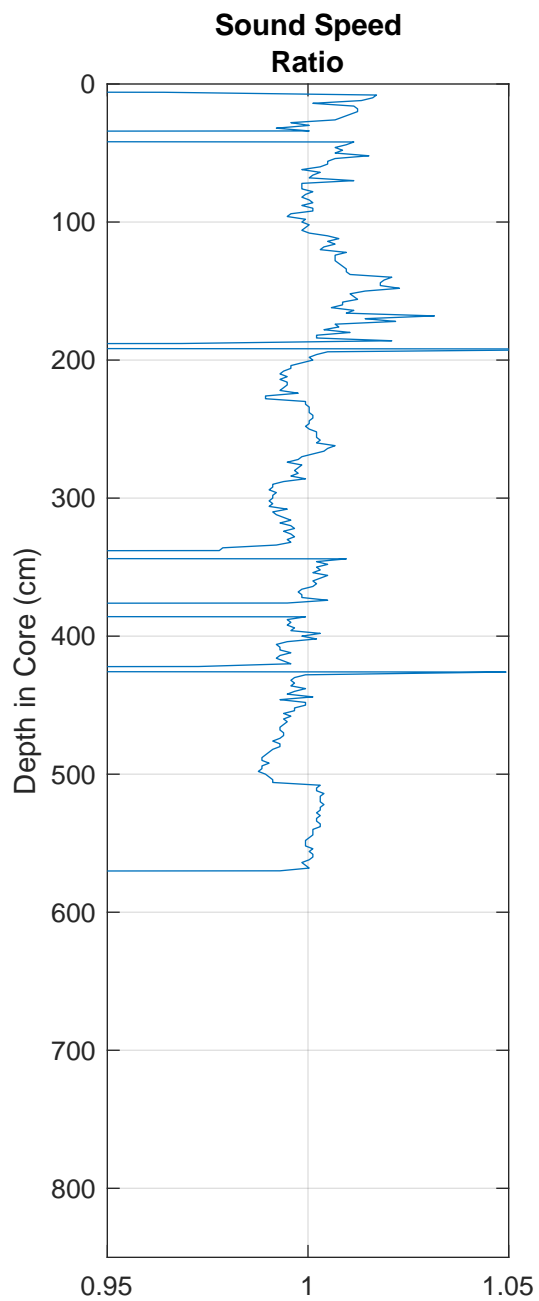
Core: 24PC_EN577_



Core: 25PC_EN577_

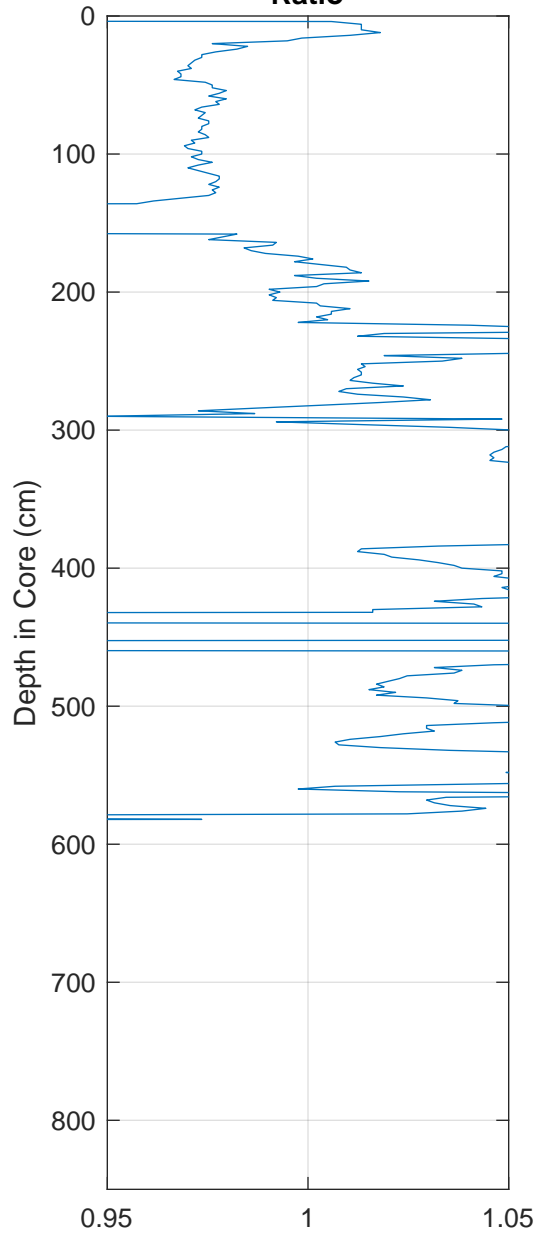


Core: 26PC_EN577_

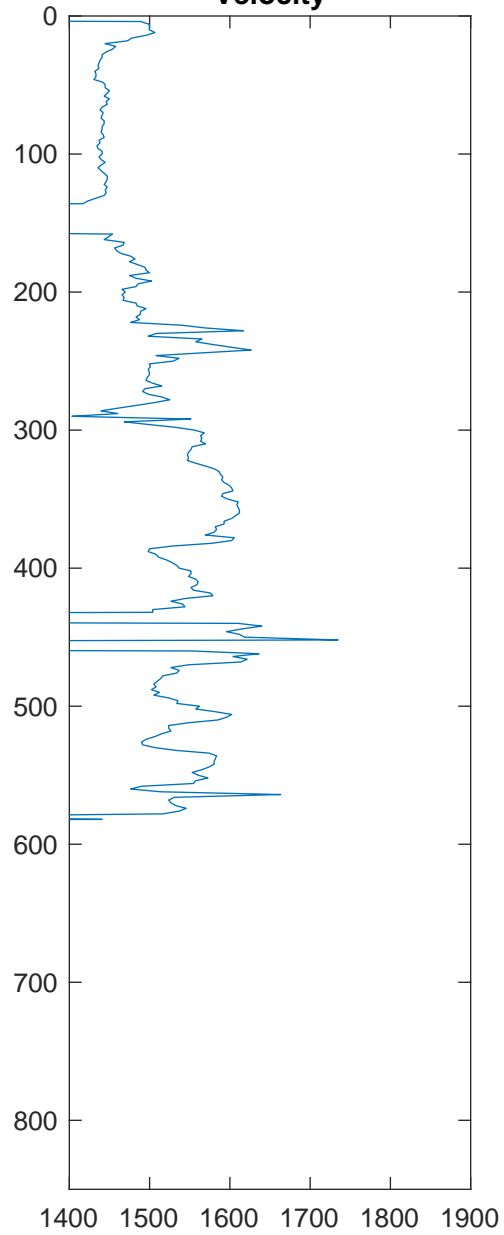


Core: 27PC_EN577_

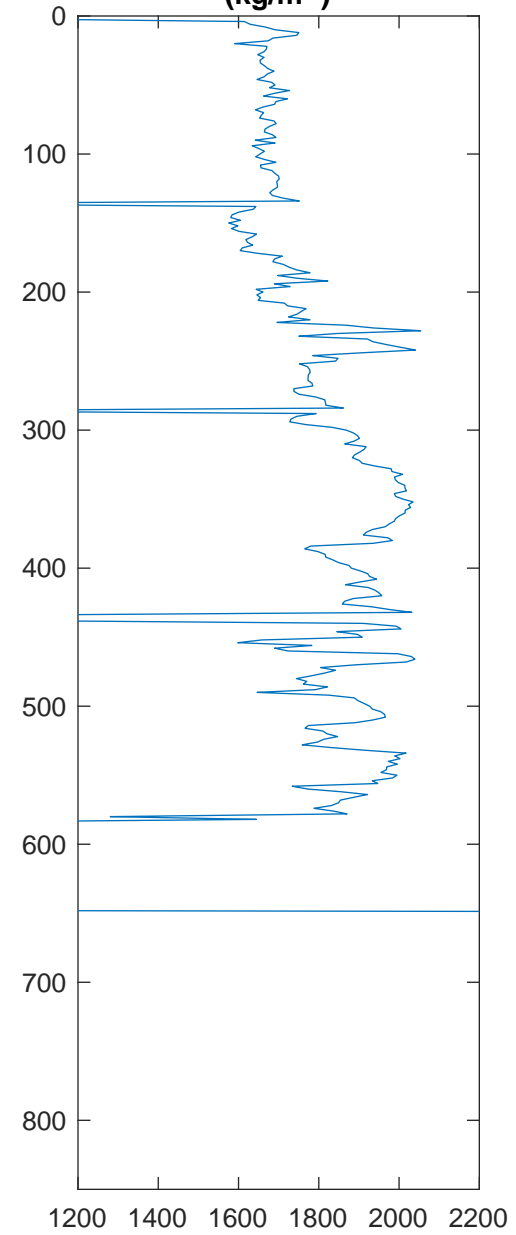
**Sound Speed
Ratio**



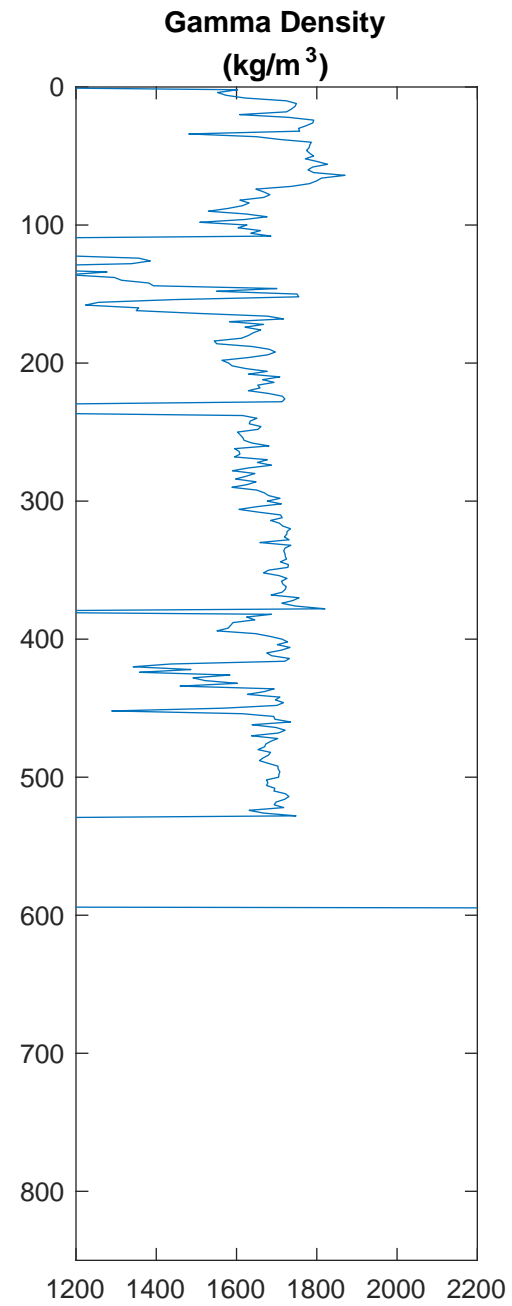
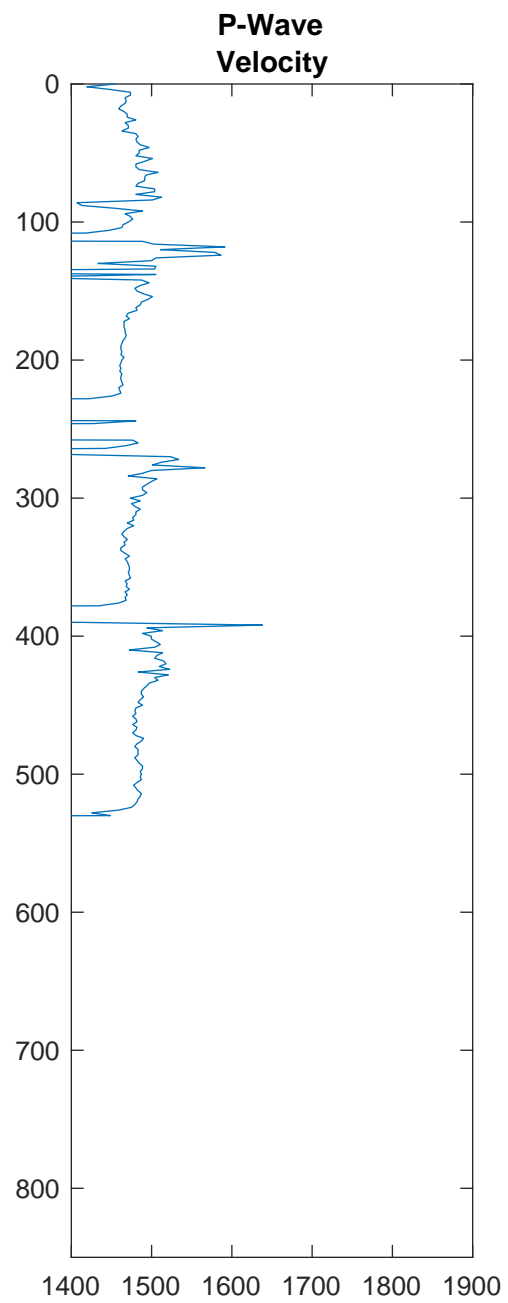
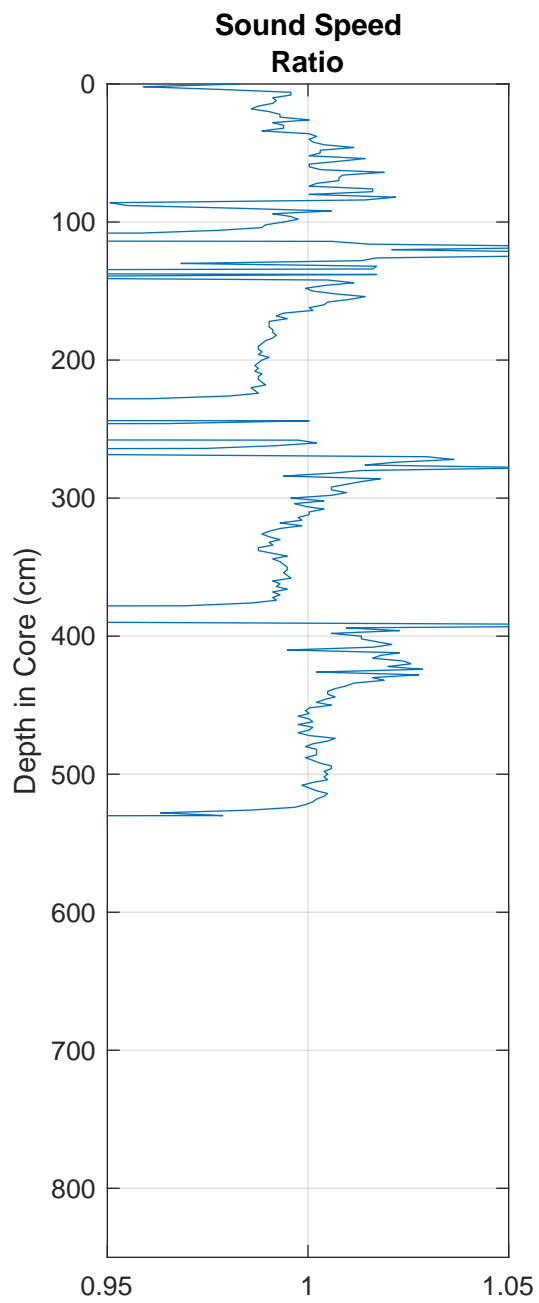
**P-Wave
Velocity**



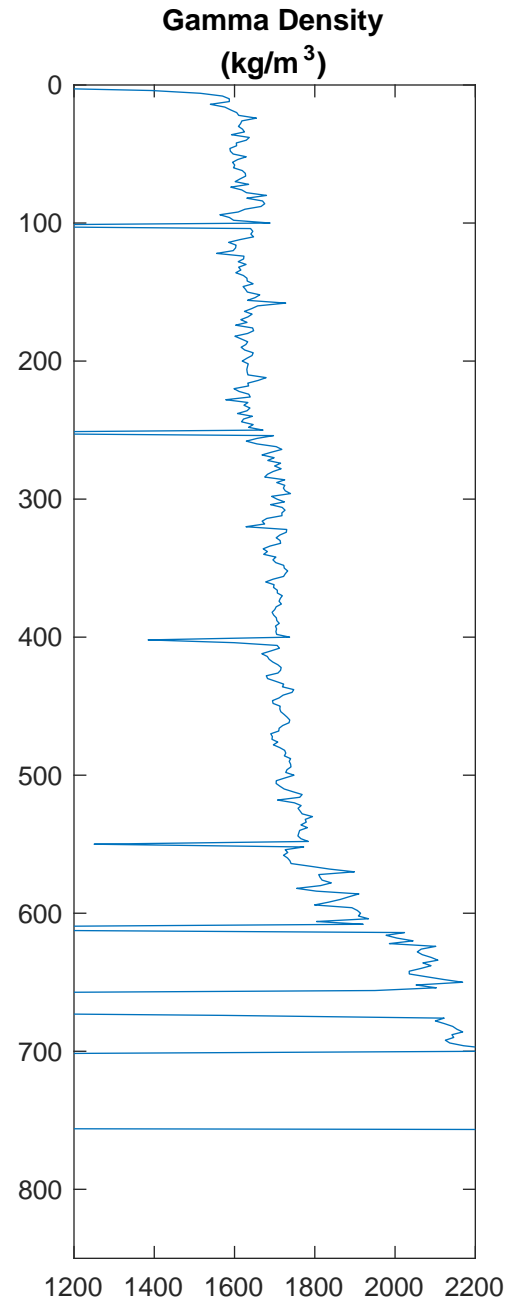
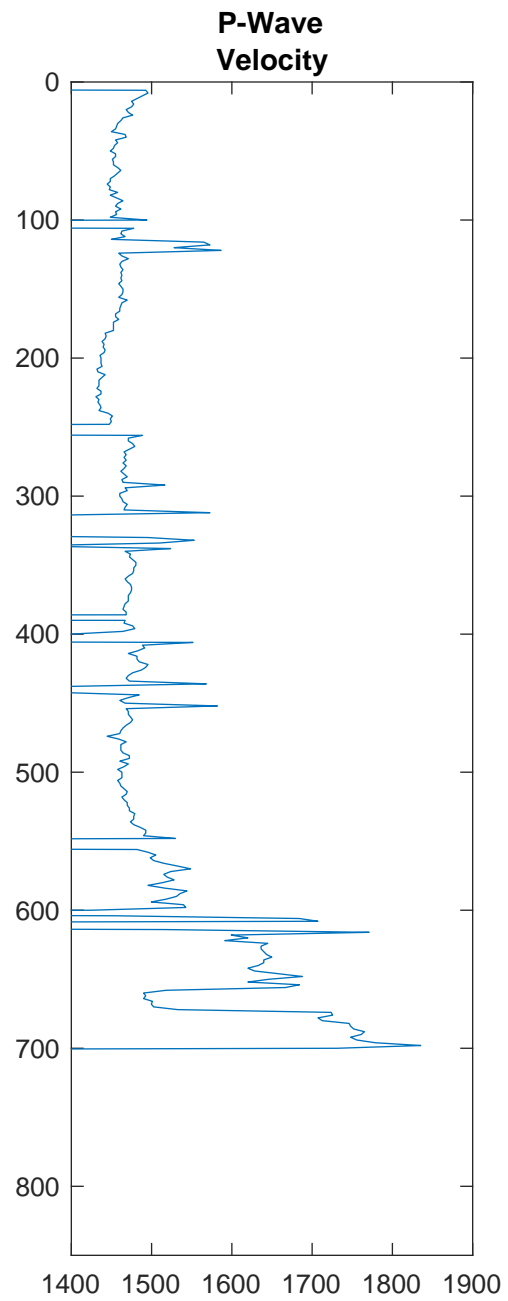
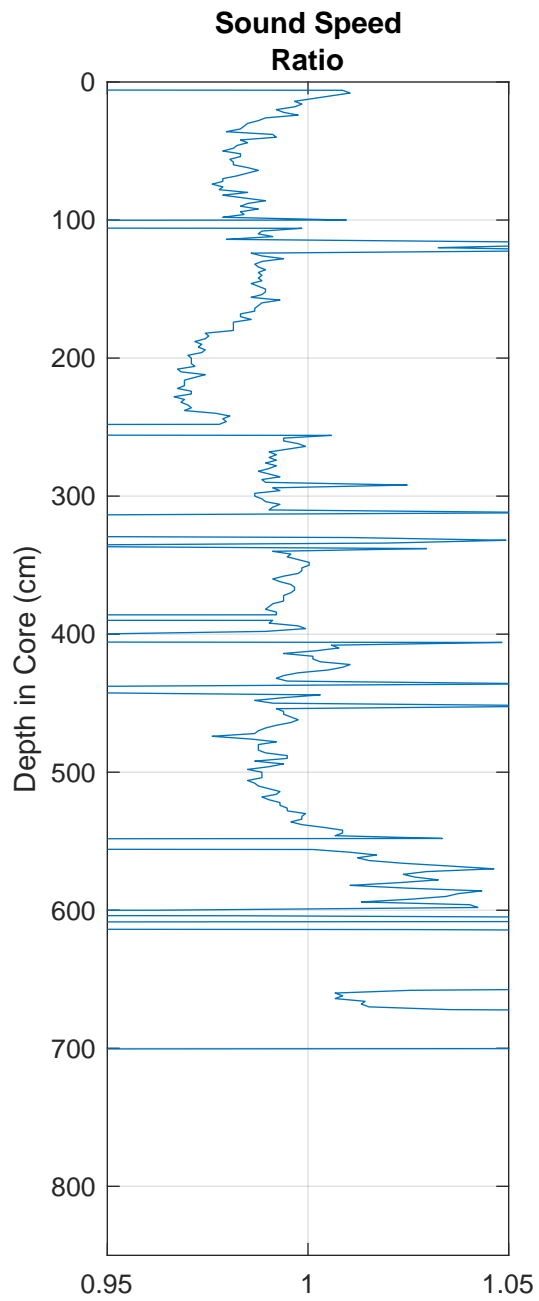
**Gamma Density
(kg/m³)**



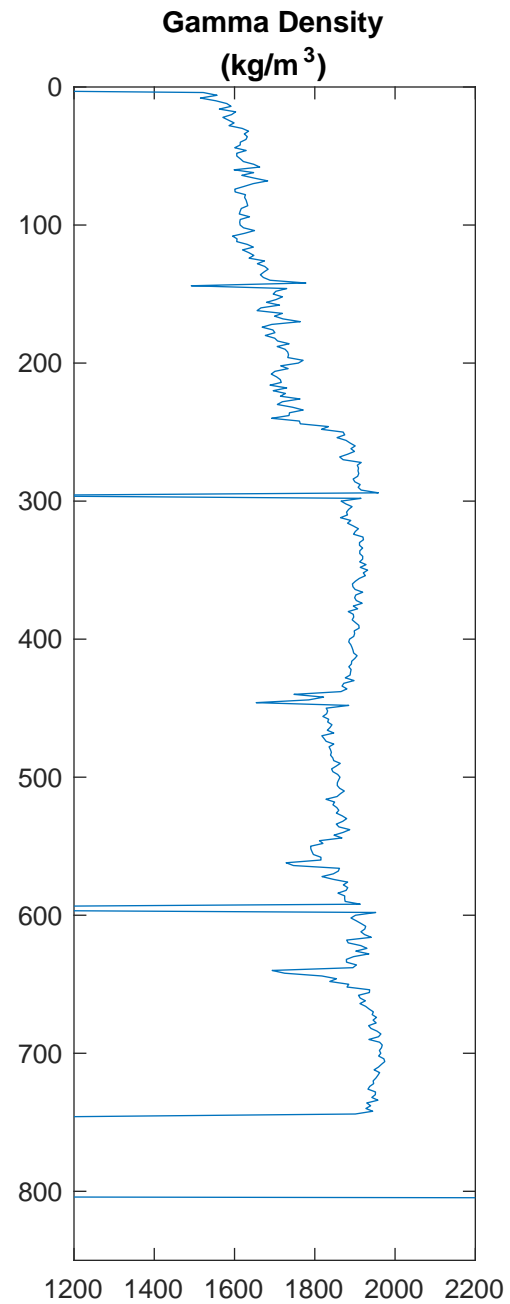
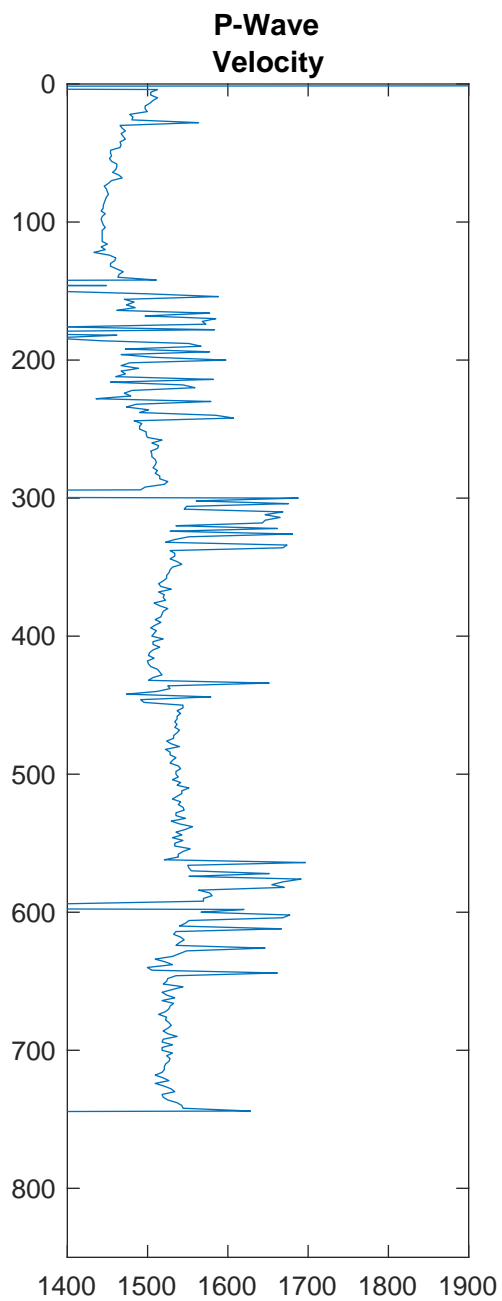
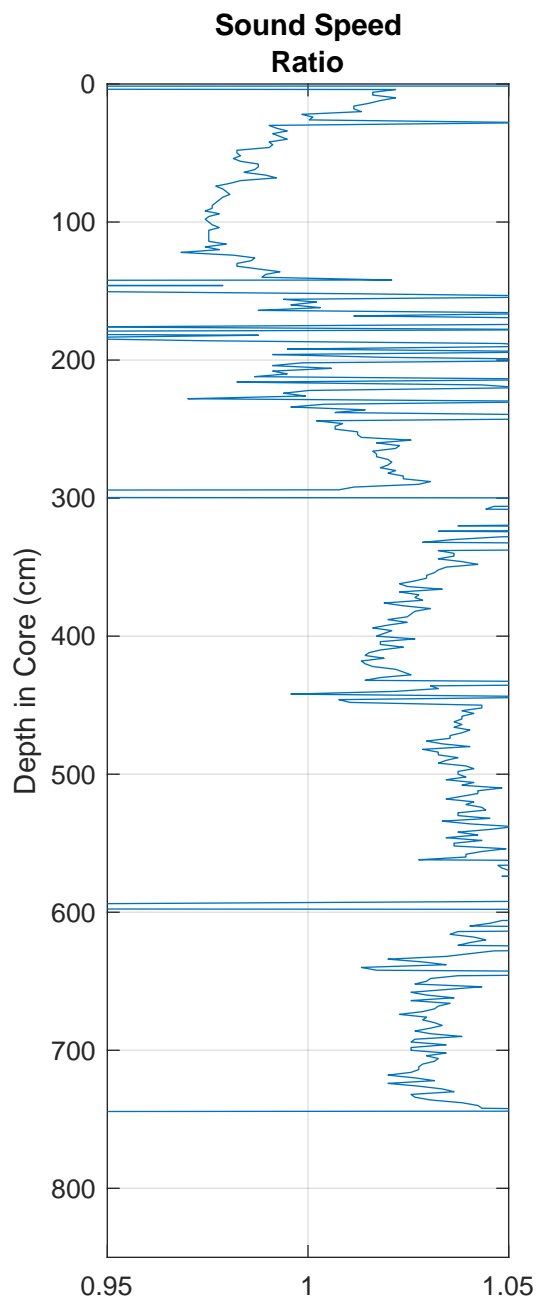
Core: 28PC_EN577_



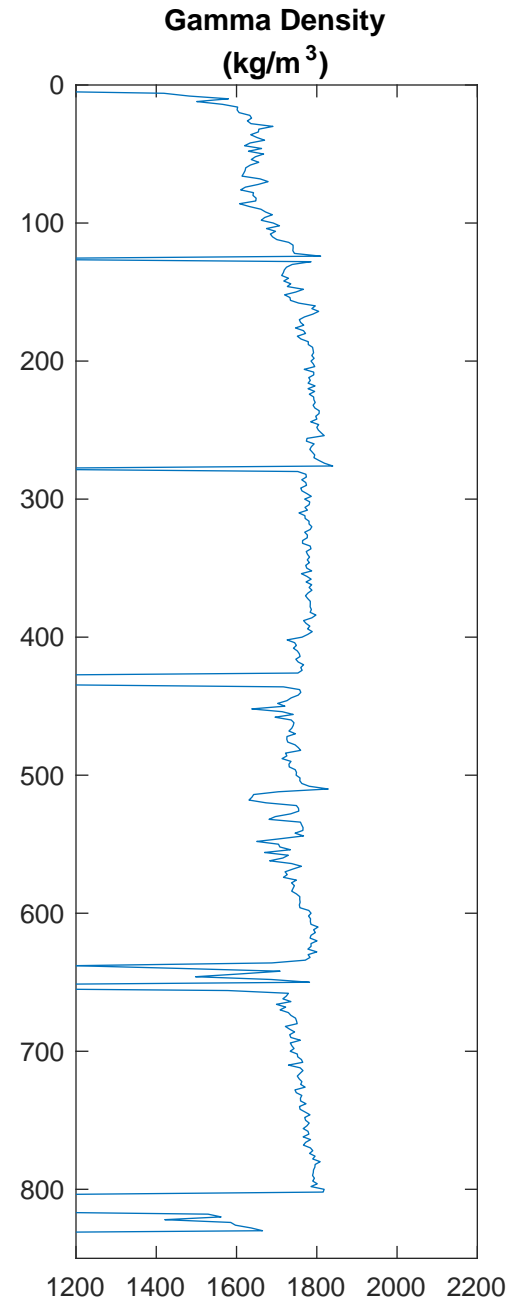
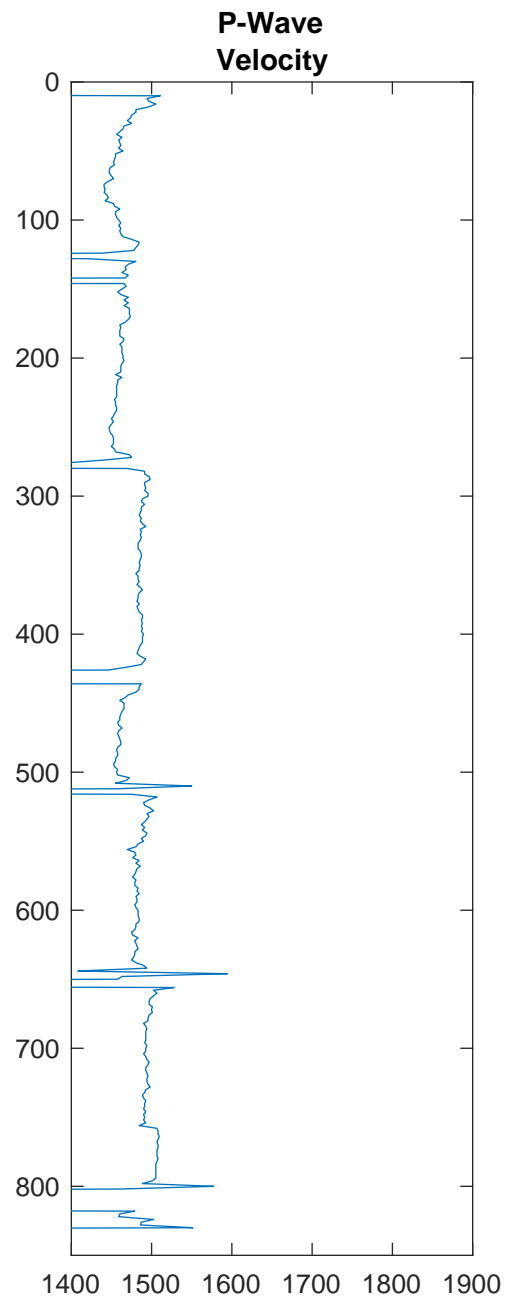
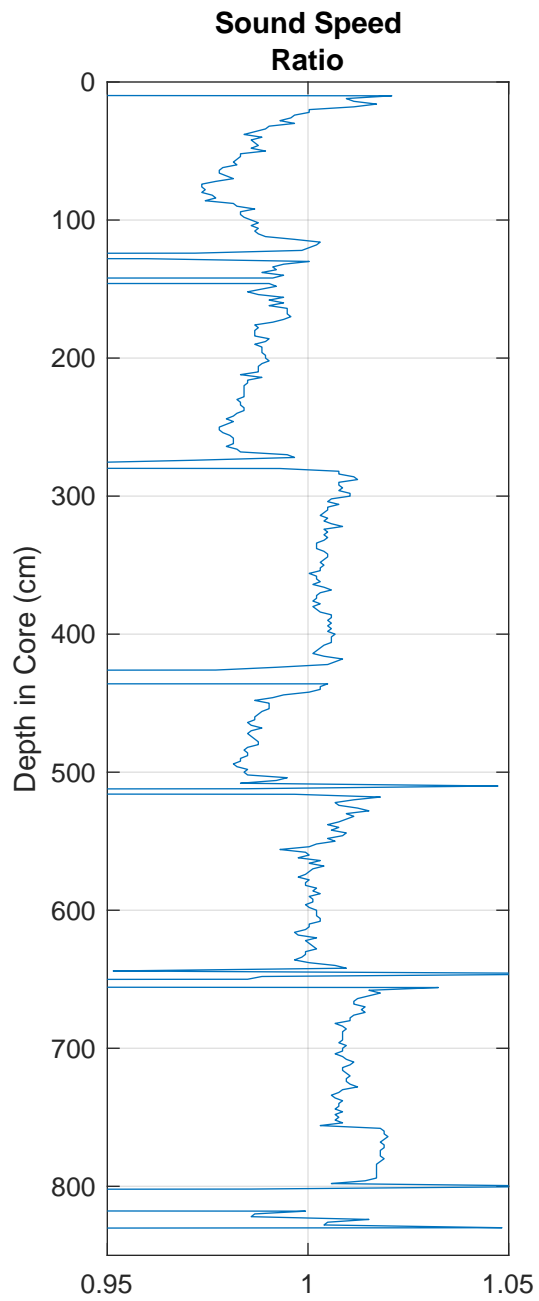
Core: 29PC_EN577_



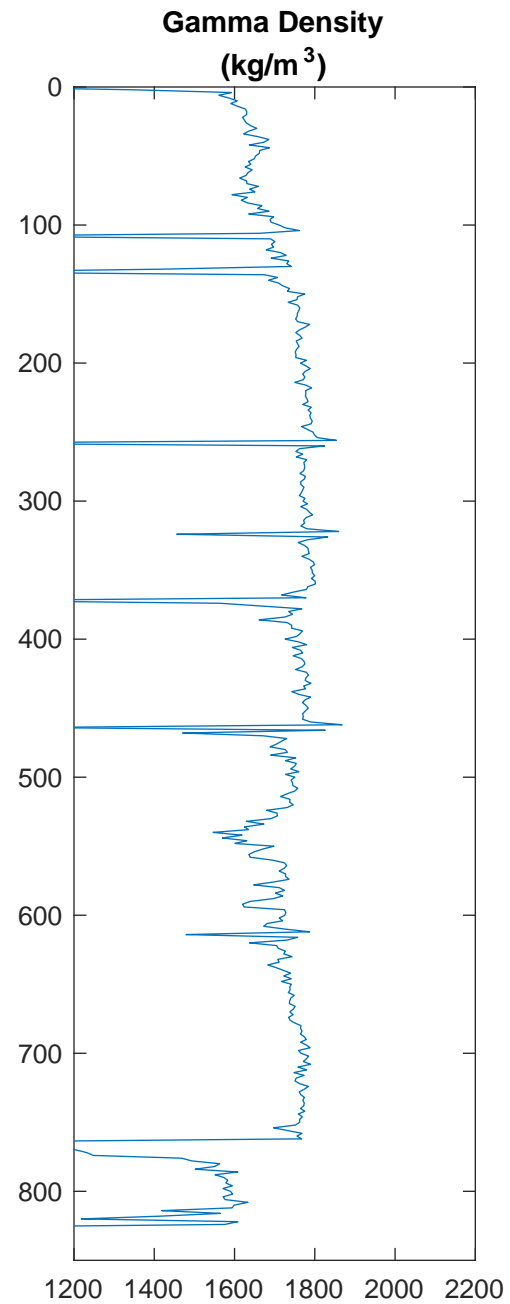
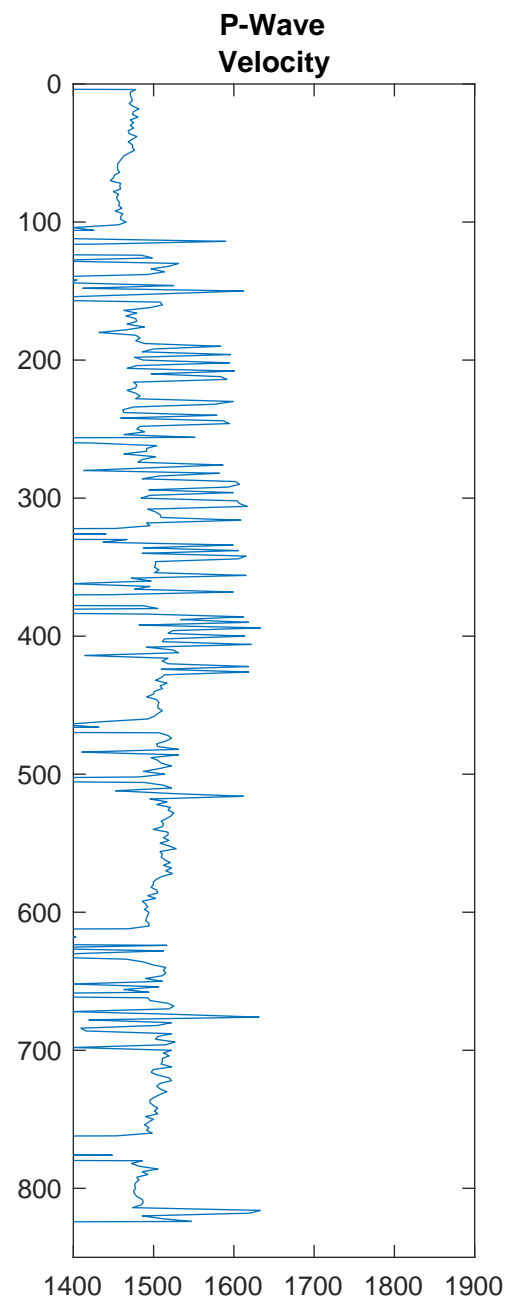
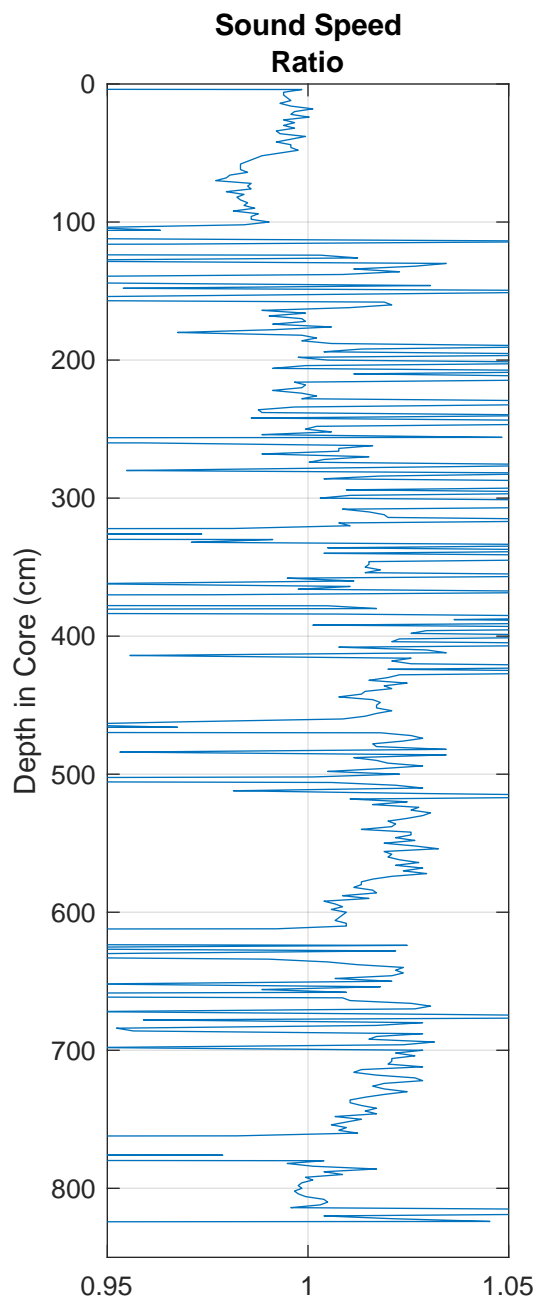
Core: 30PC_EN577_



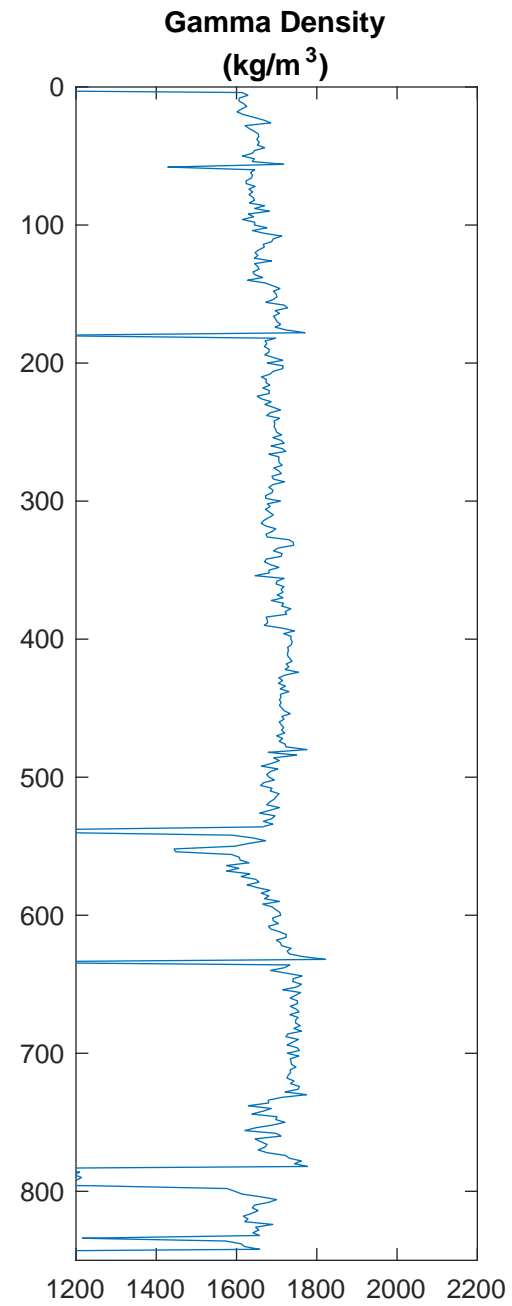
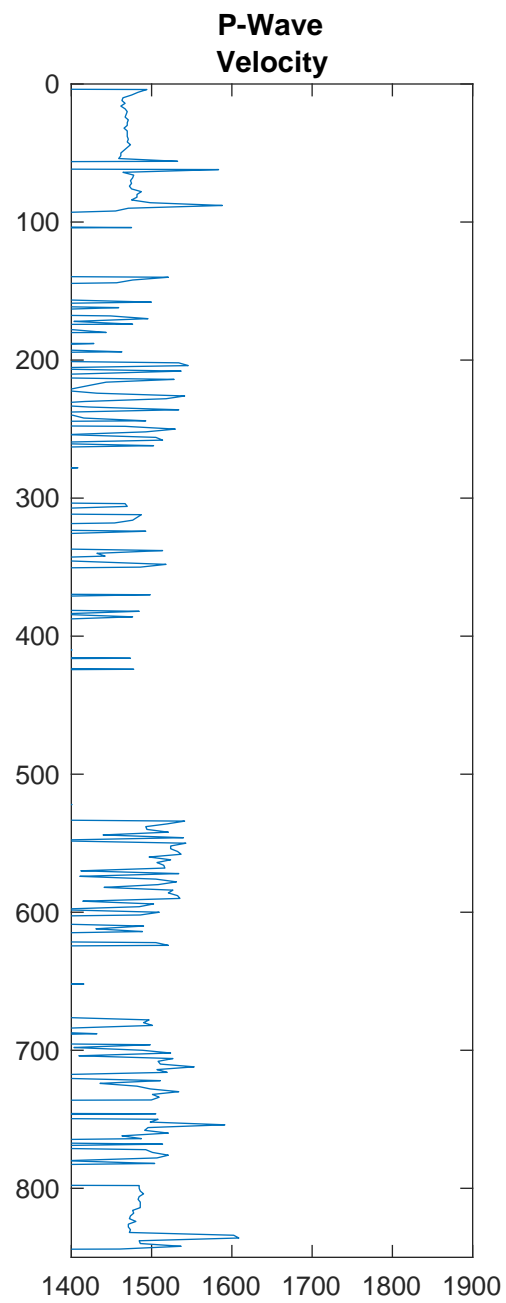
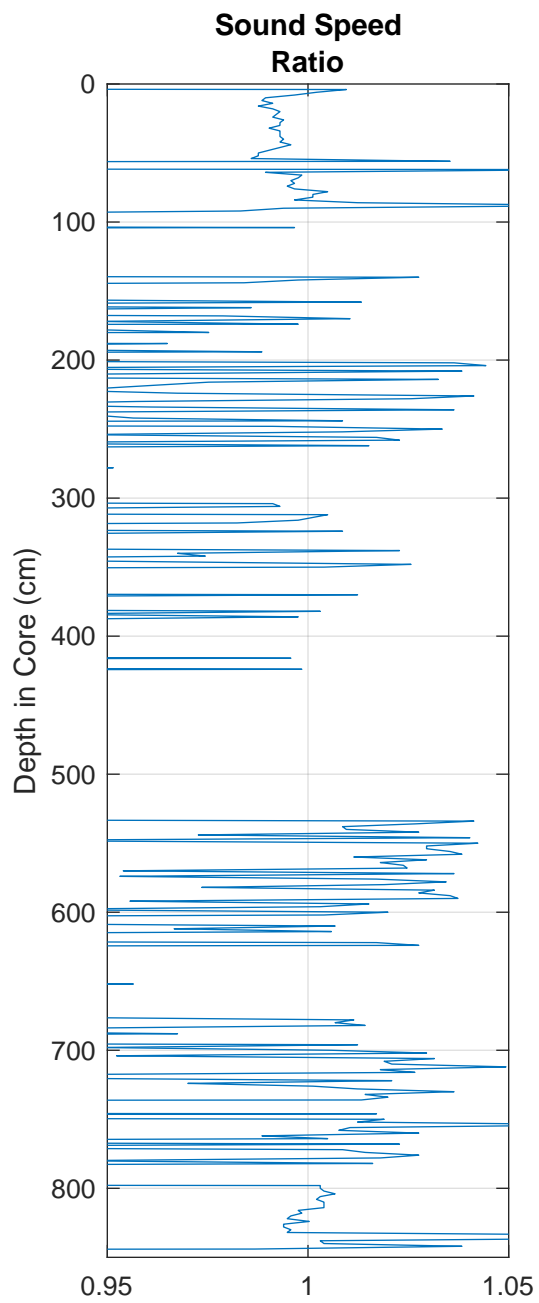
Core: 31PC_EN577_



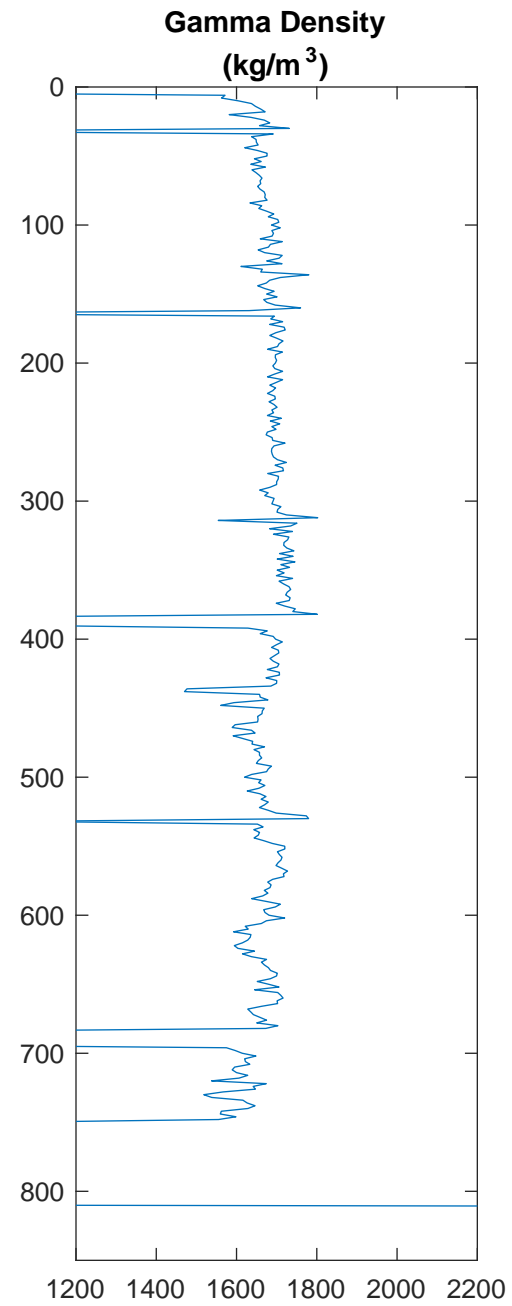
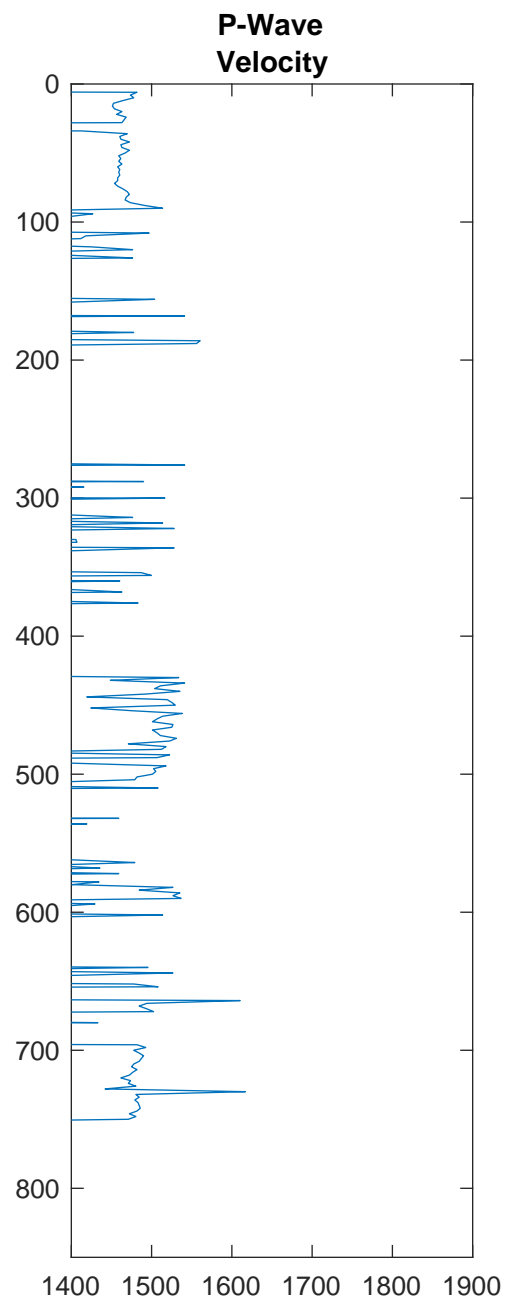
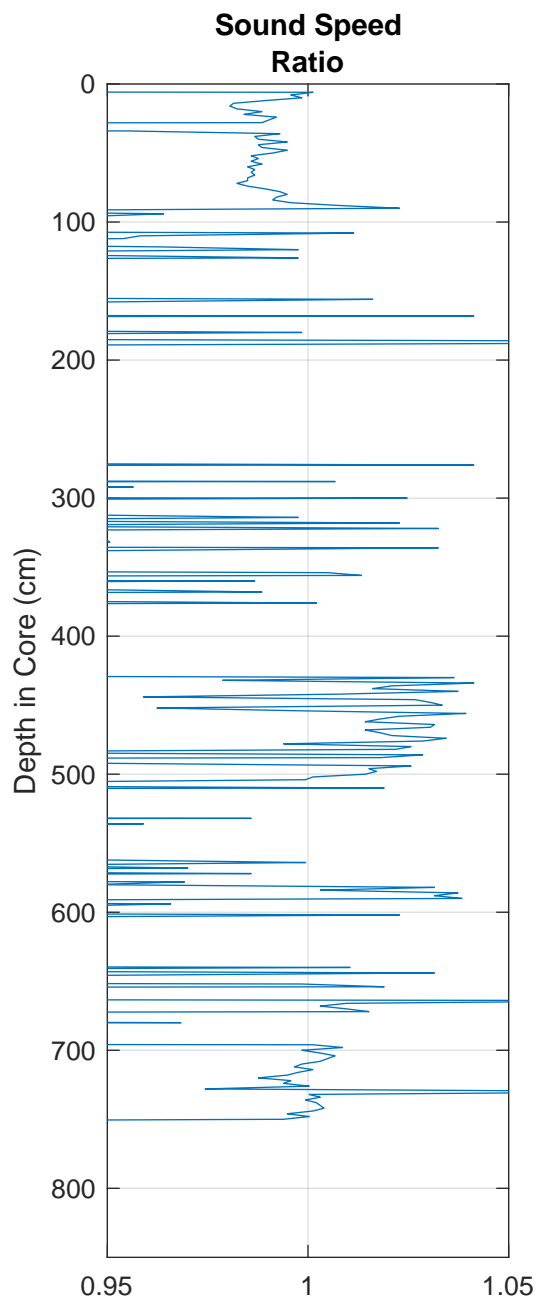
Core: 32PC_EN577_



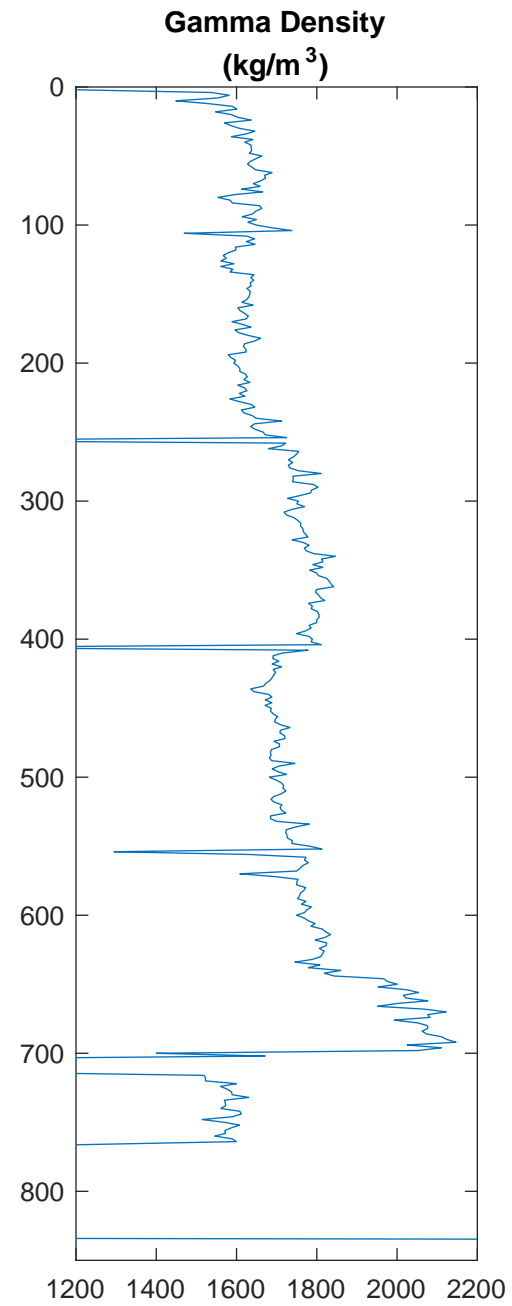
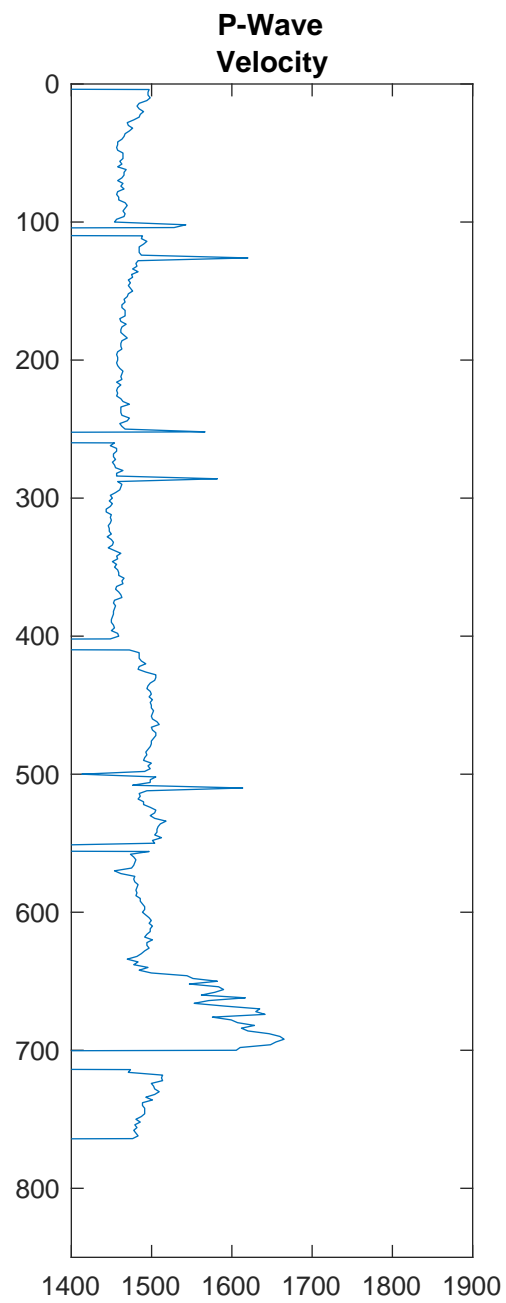
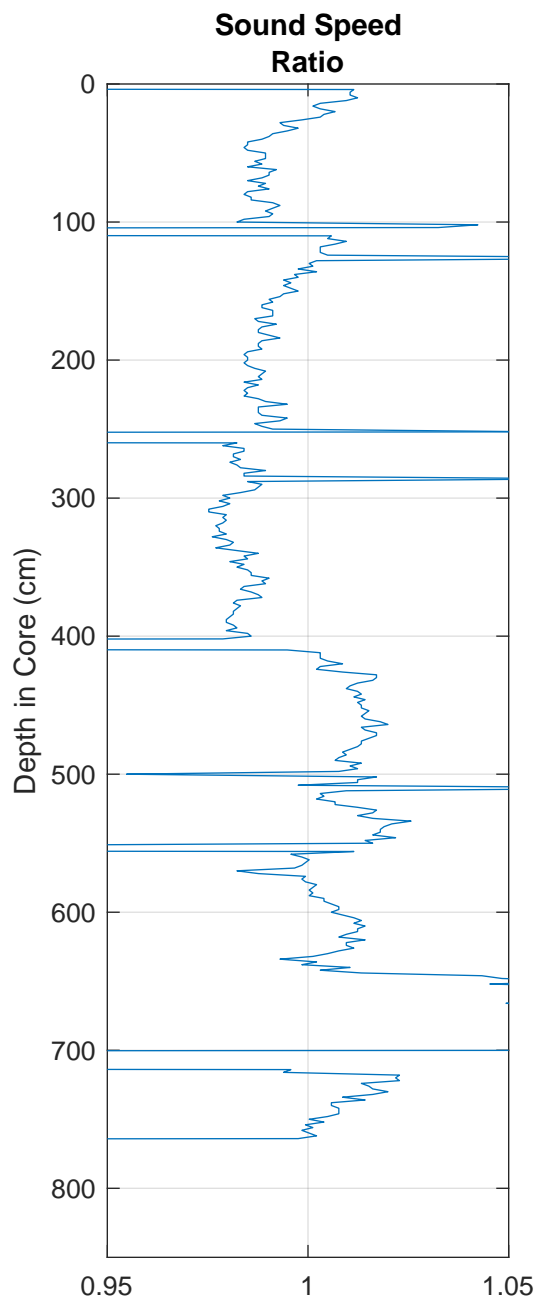
Core: 33PC_EN577_



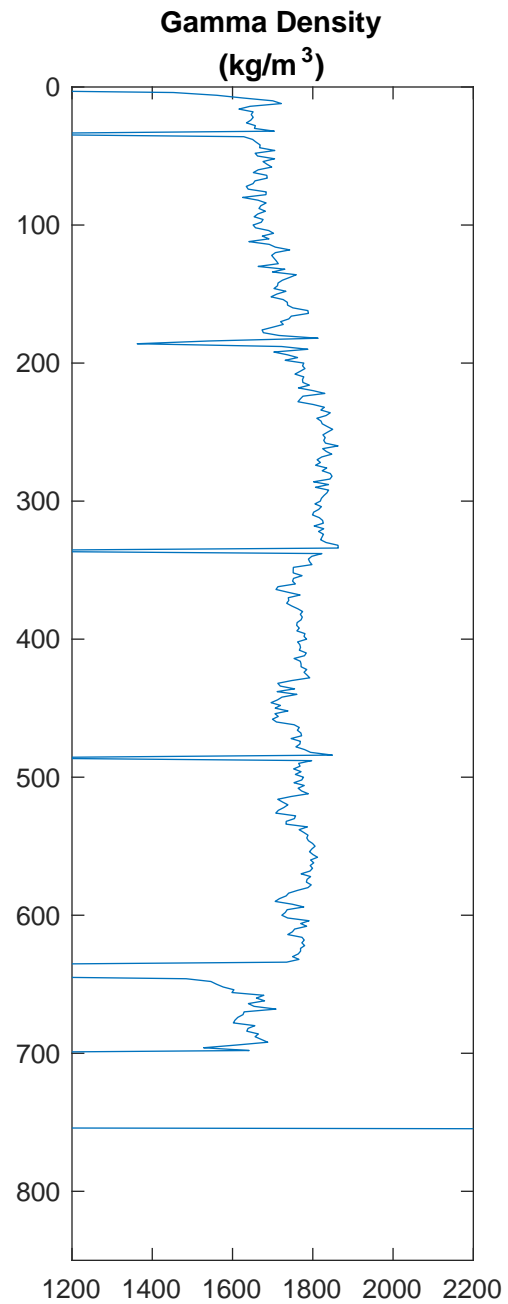
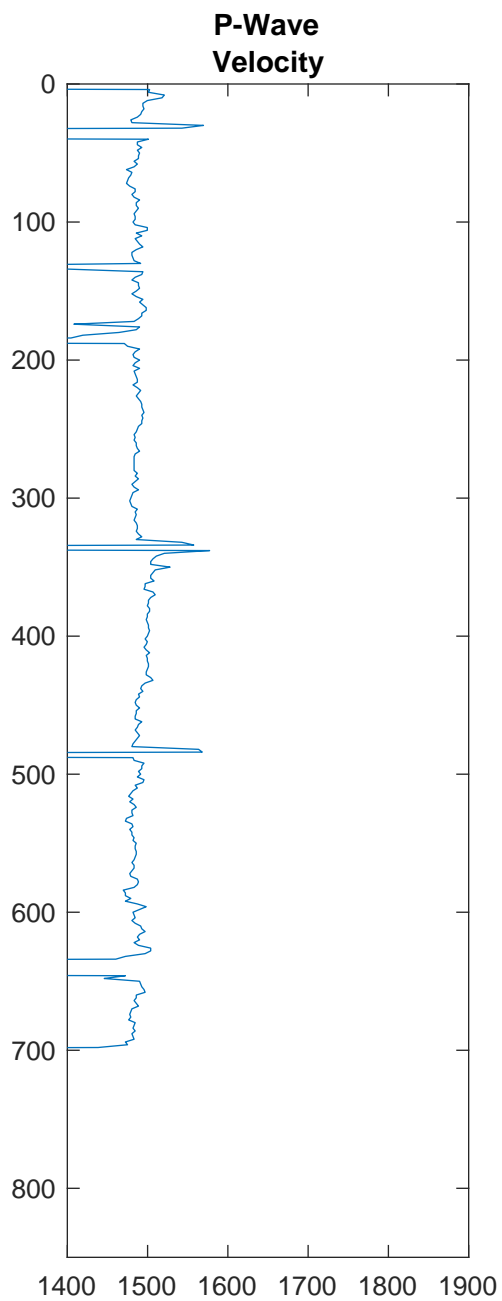
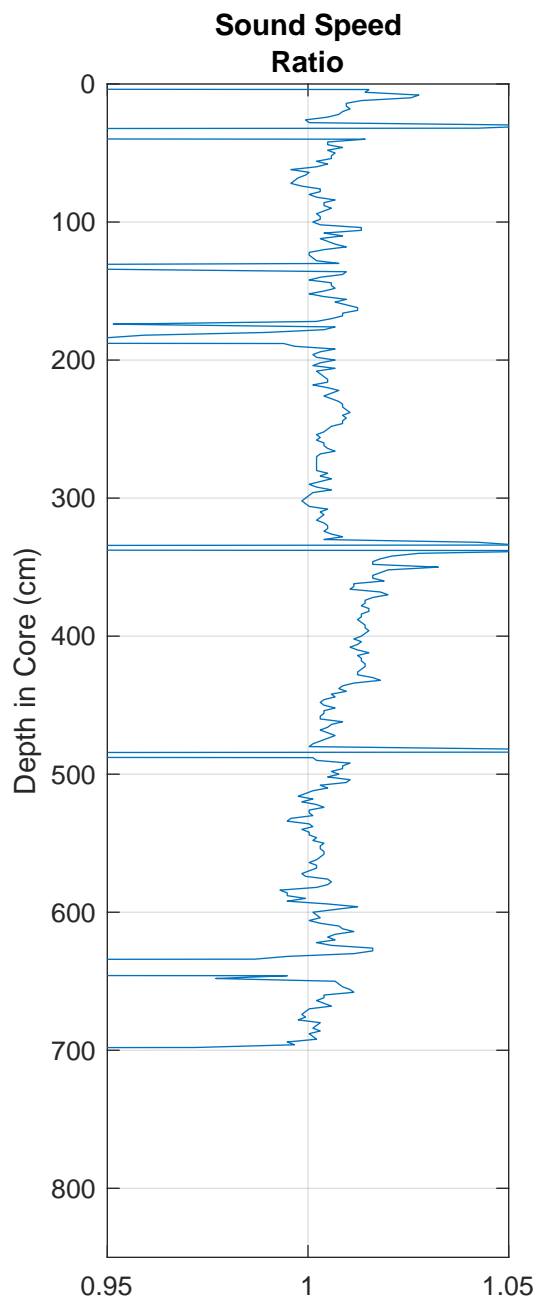
Core: 35PC_EN577_



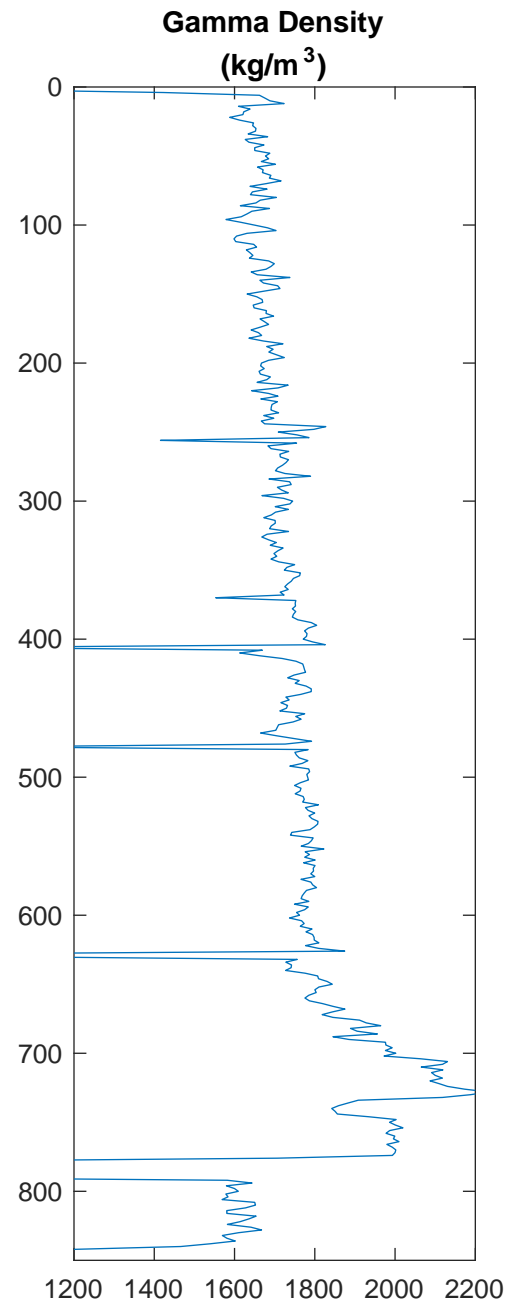
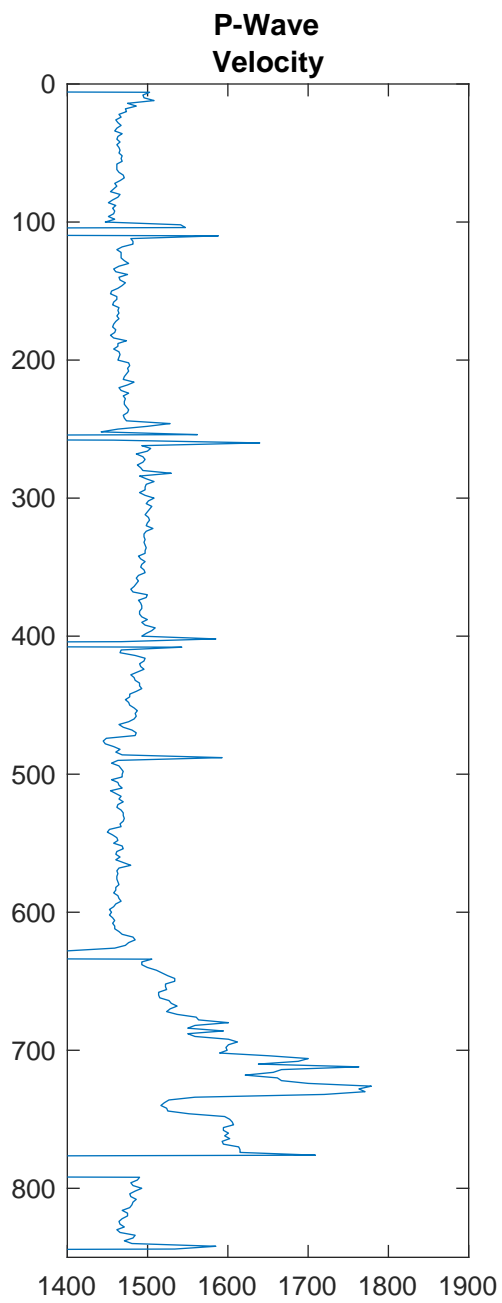
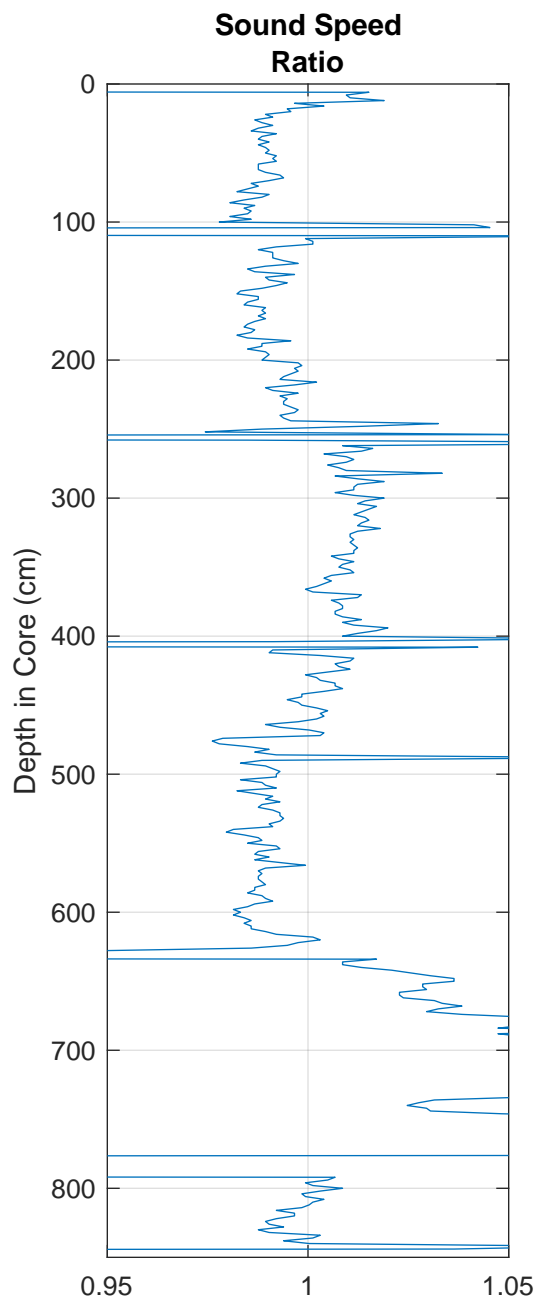
Core: 36PC_EN577_



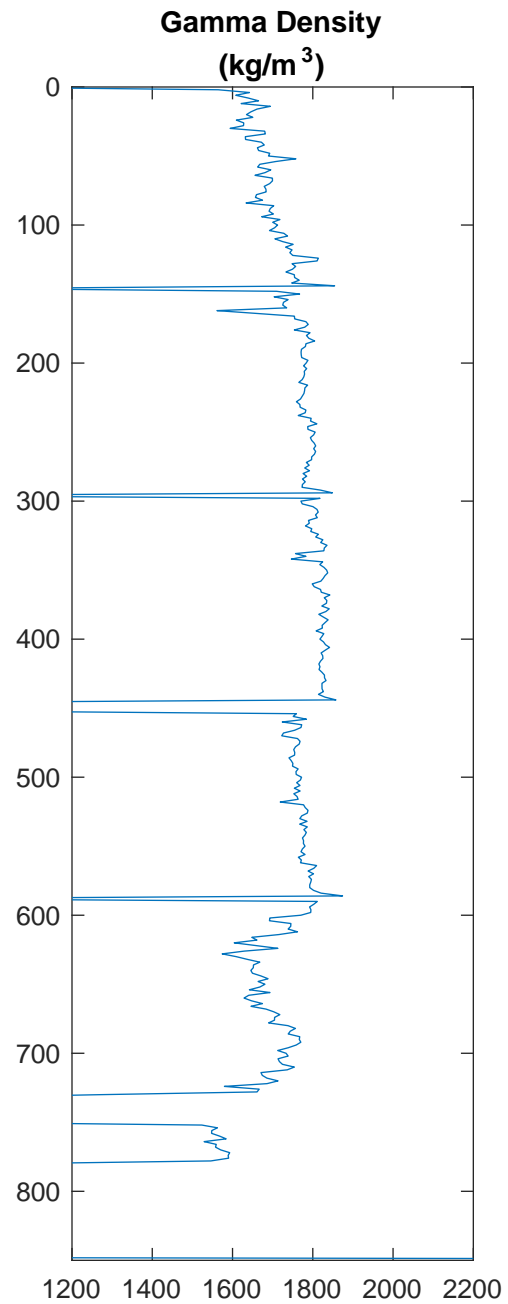
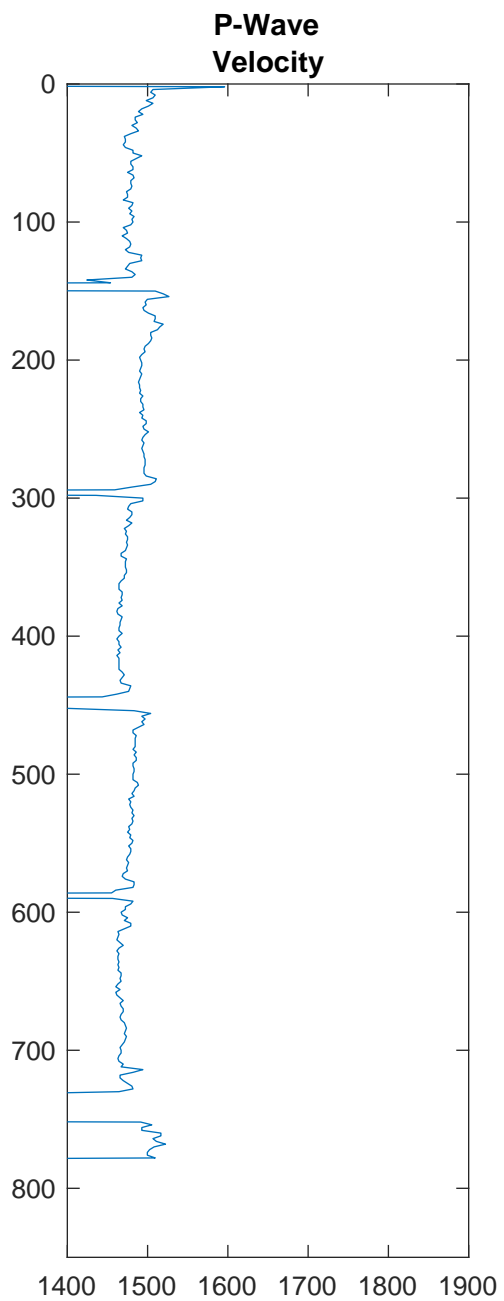
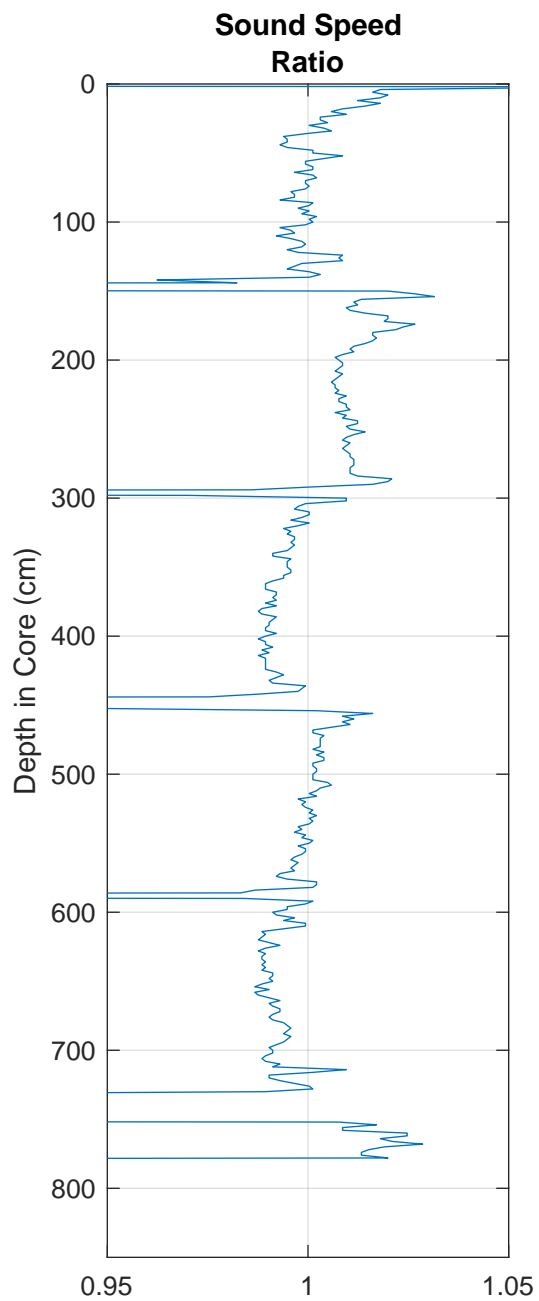
Core: 37PC_EN577_



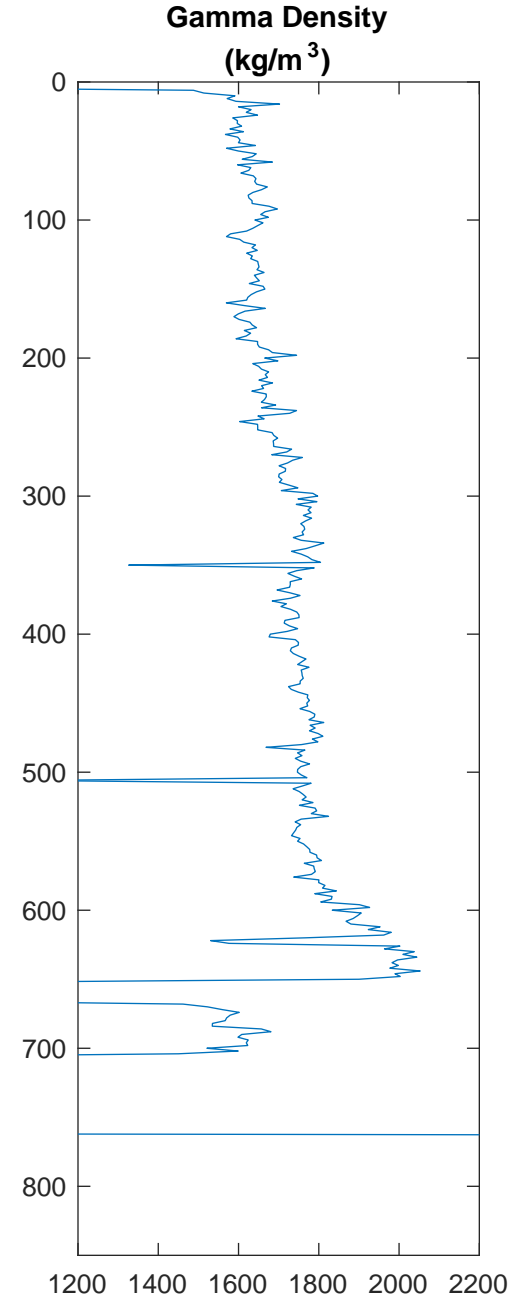
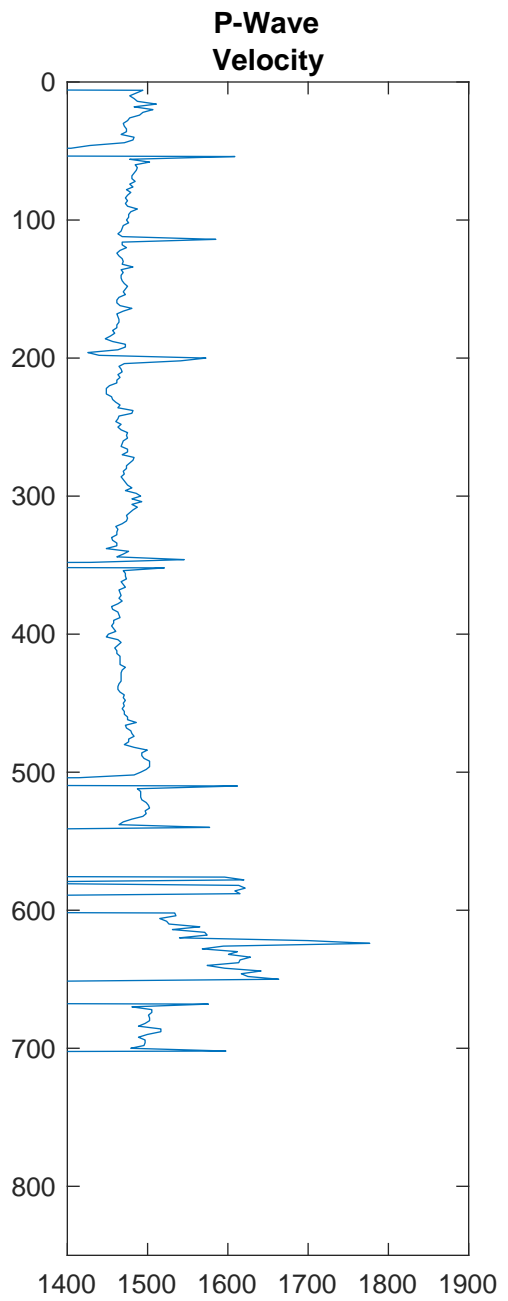
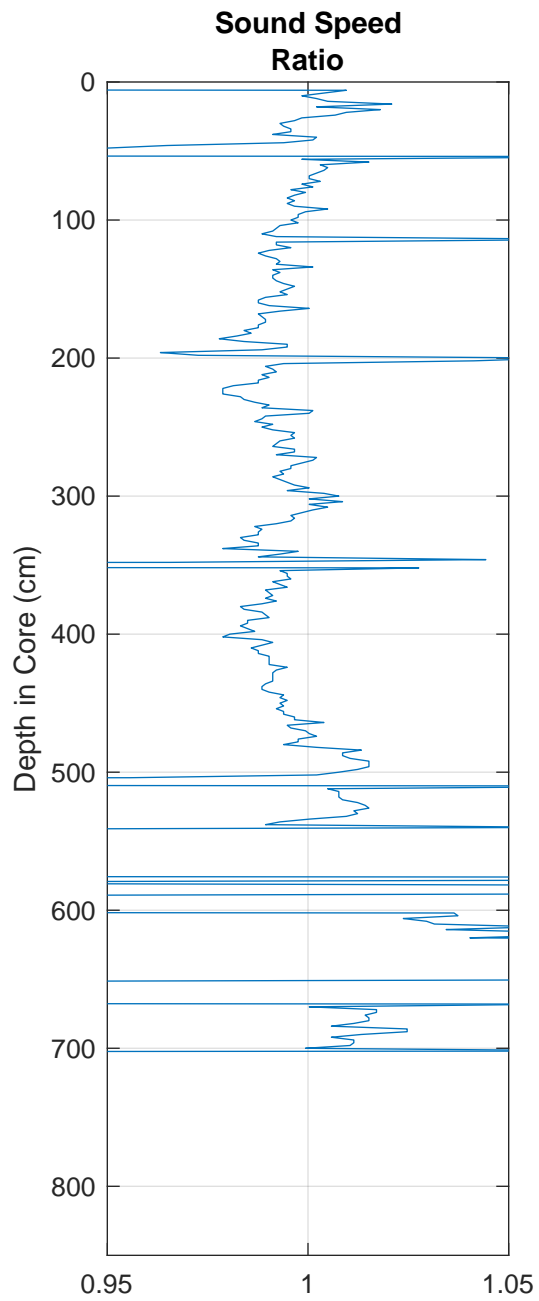
Core: 38PC_EN577_



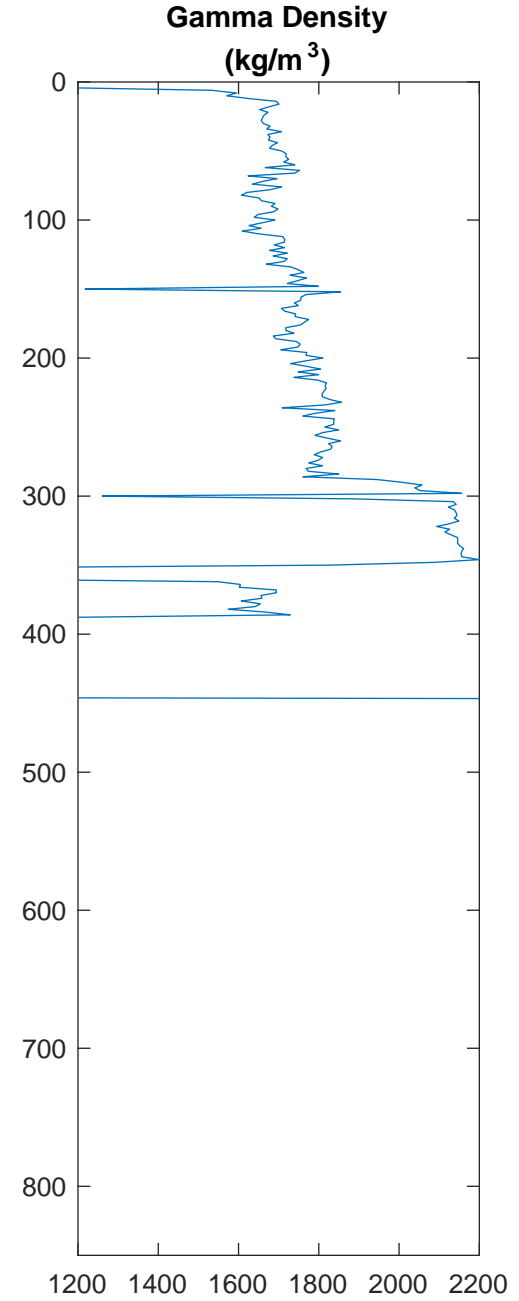
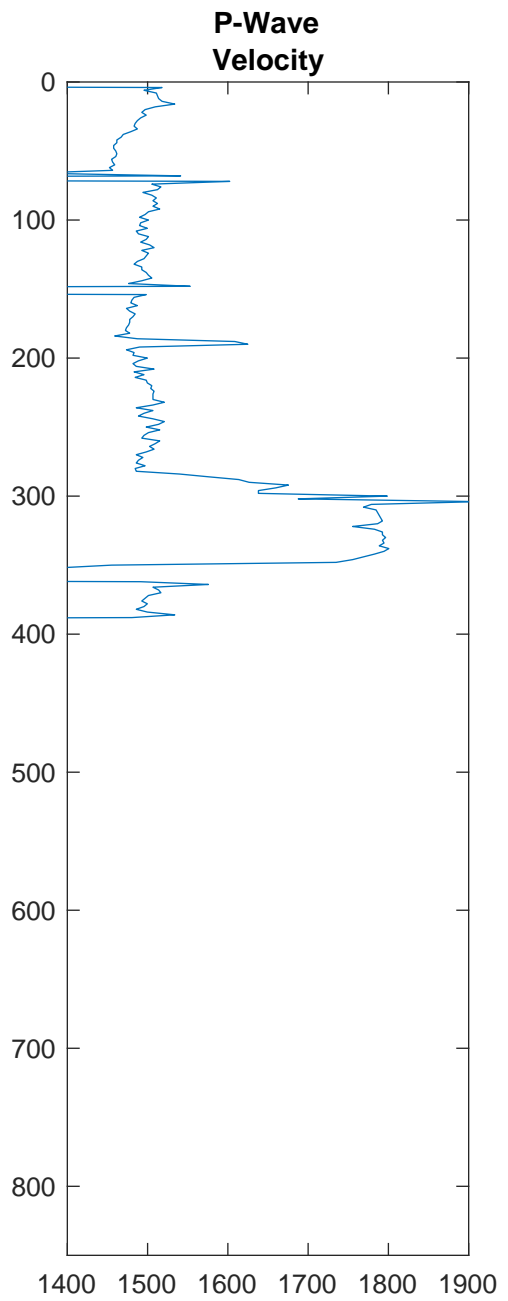
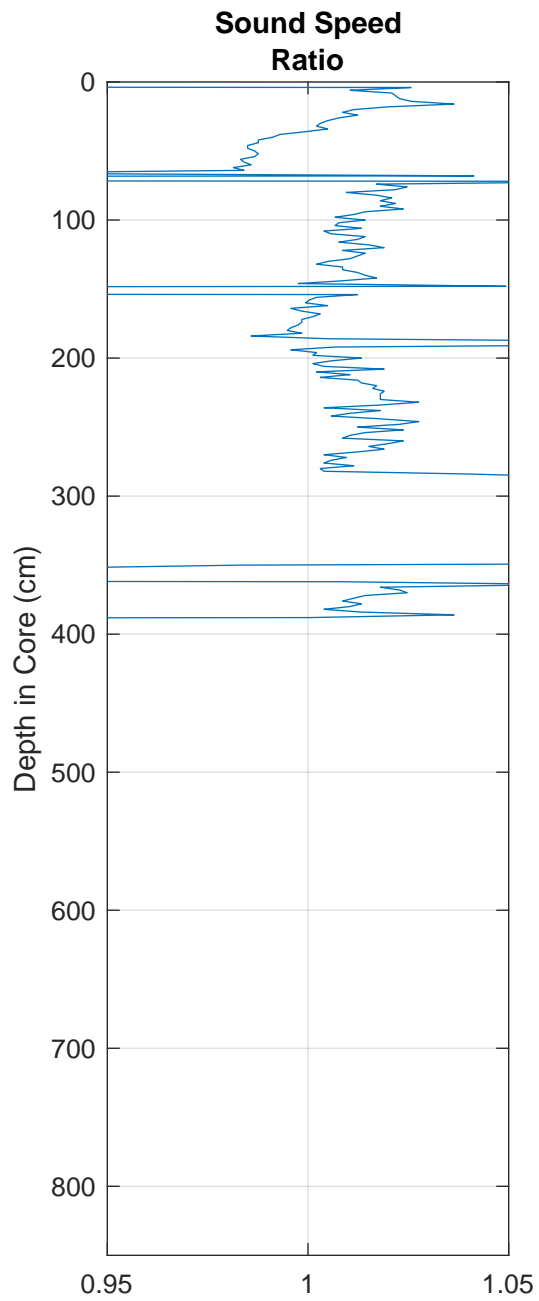
Core: 39PC_EN577_



Core: 40PC_EN577_

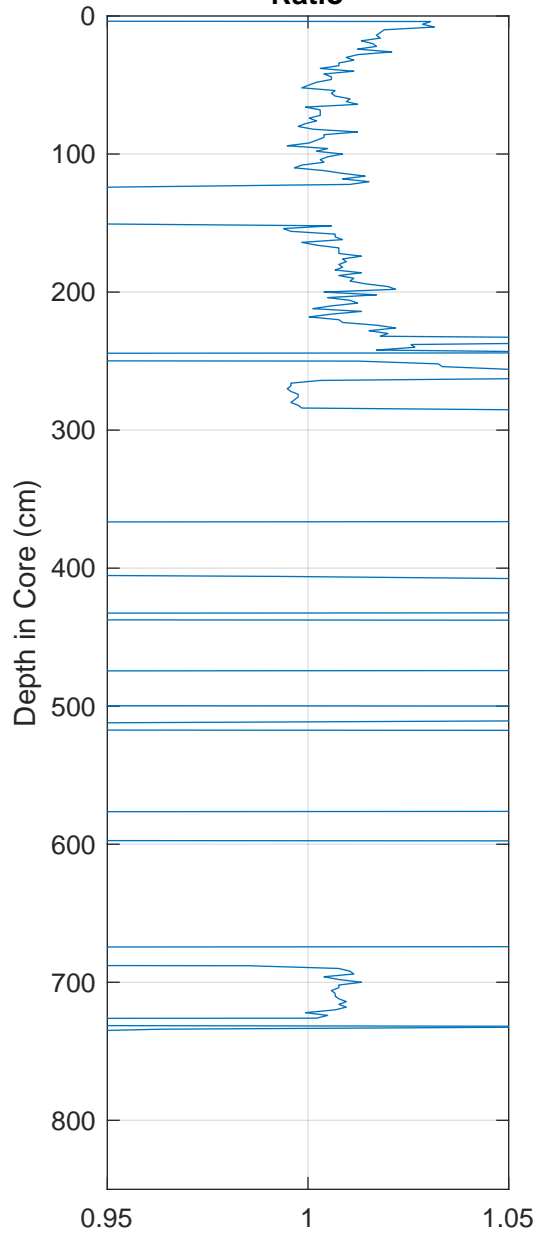


Core: 41PC_EN577_

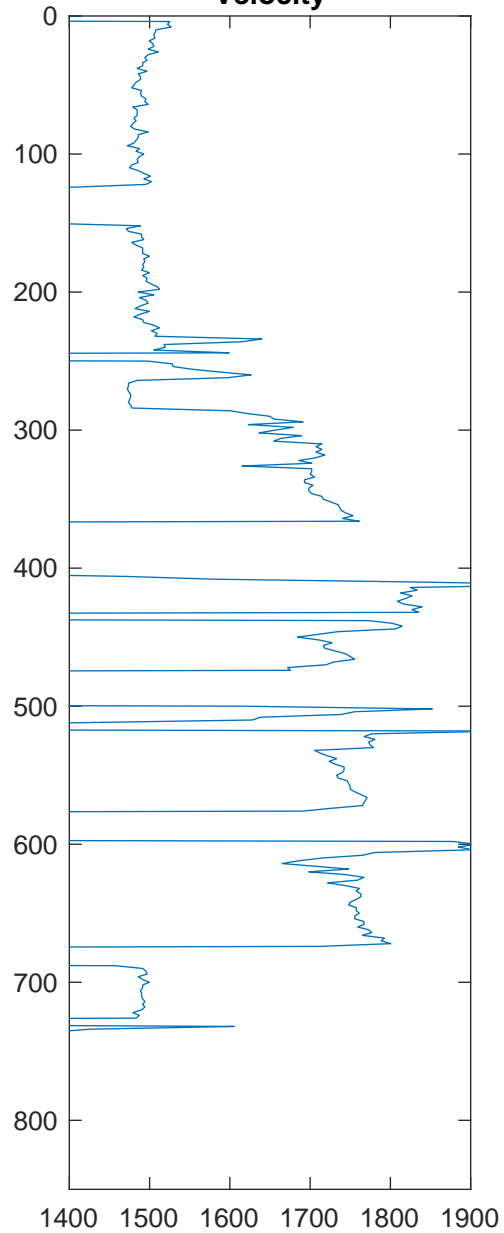


Core: 43PC_EN577_

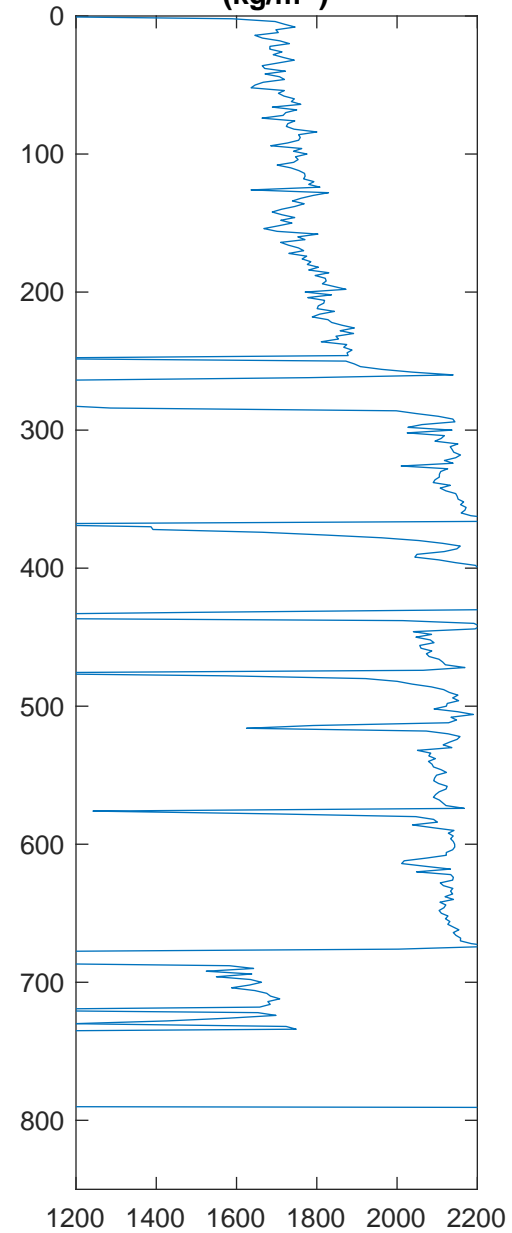
**Sound Speed
Ratio**



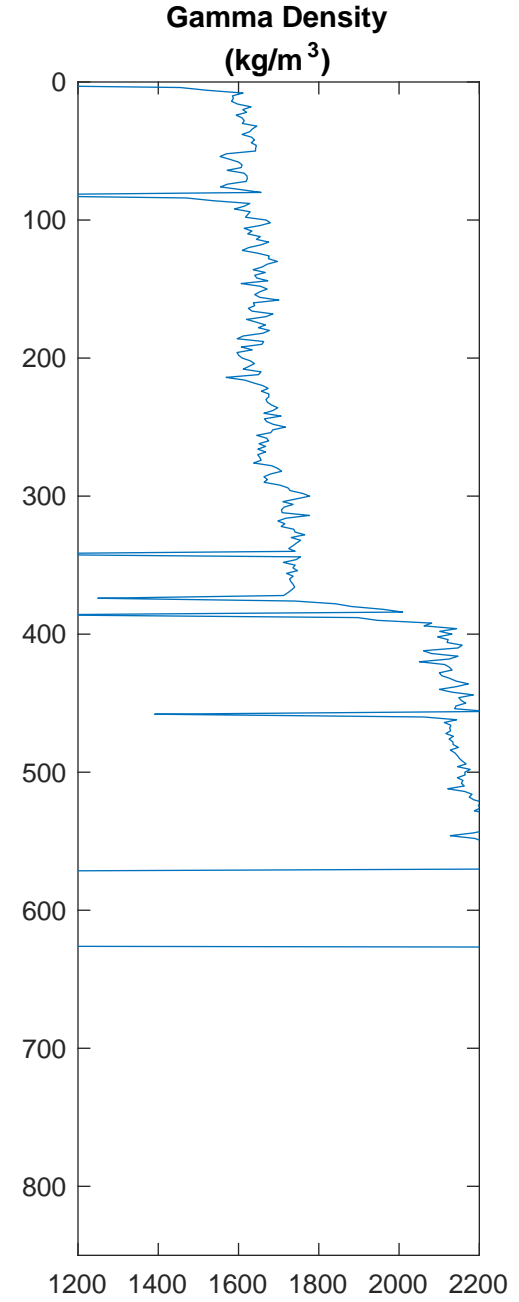
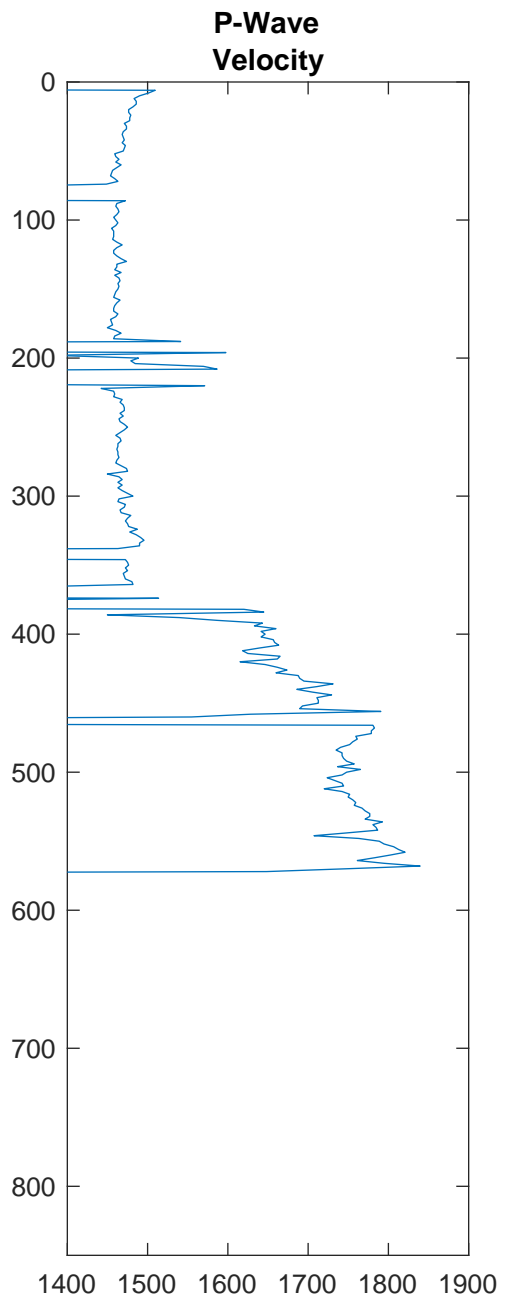
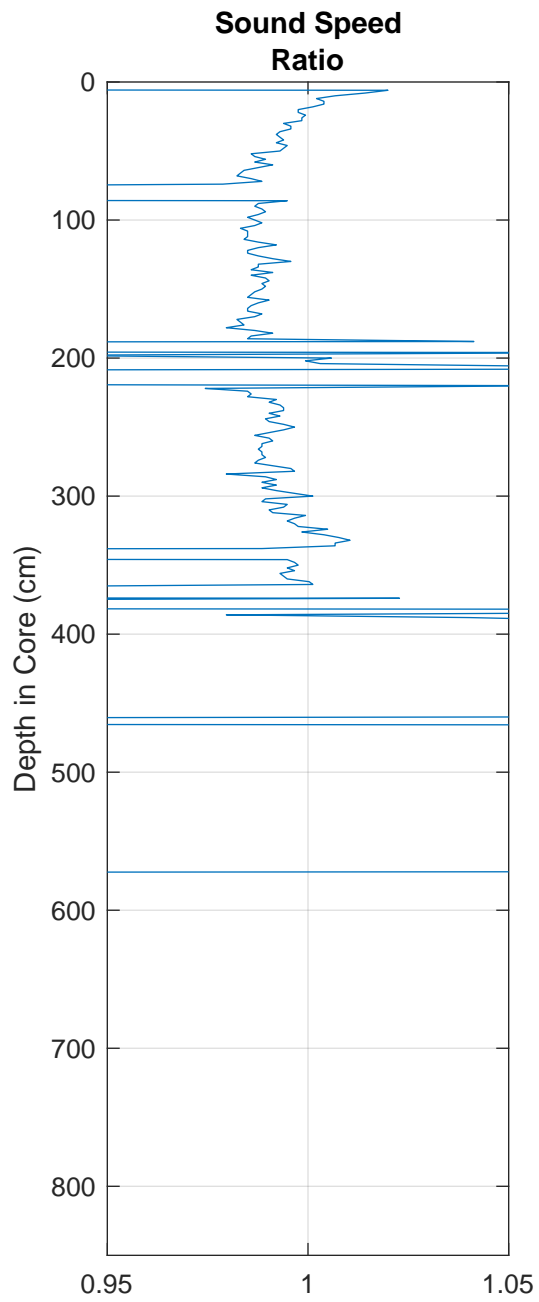
**P-Wave
Velocity**



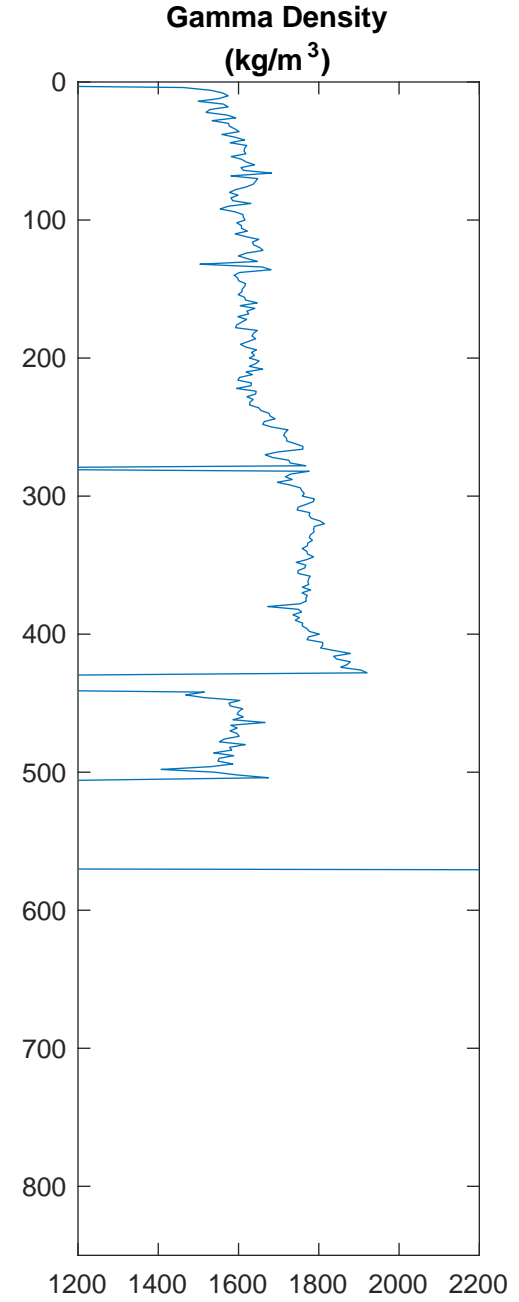
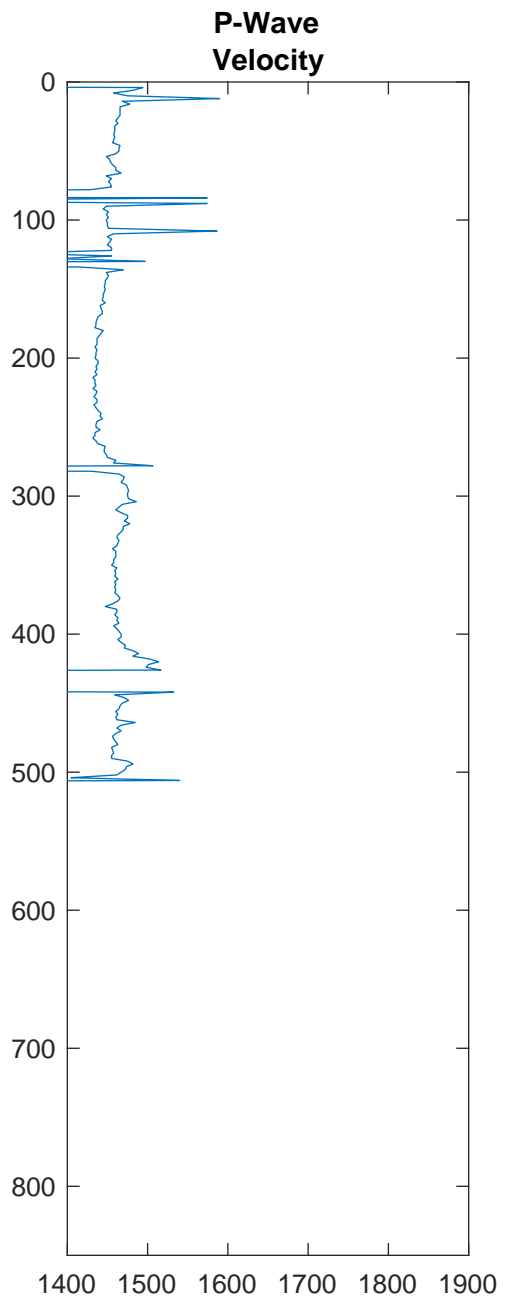
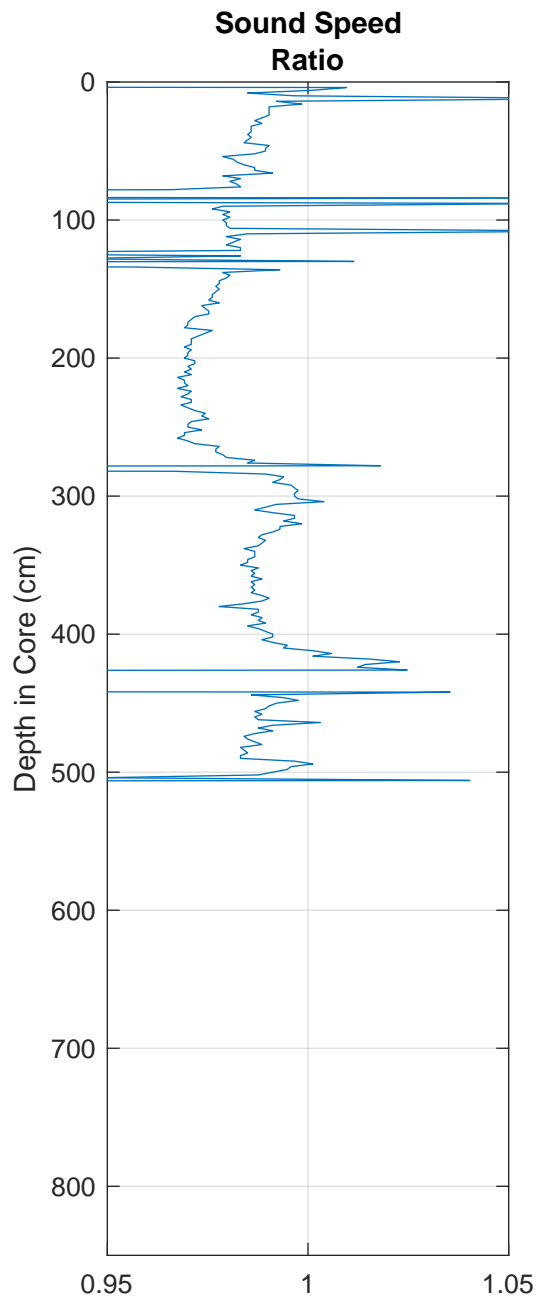
**Gamma Density
(kg/m³)**



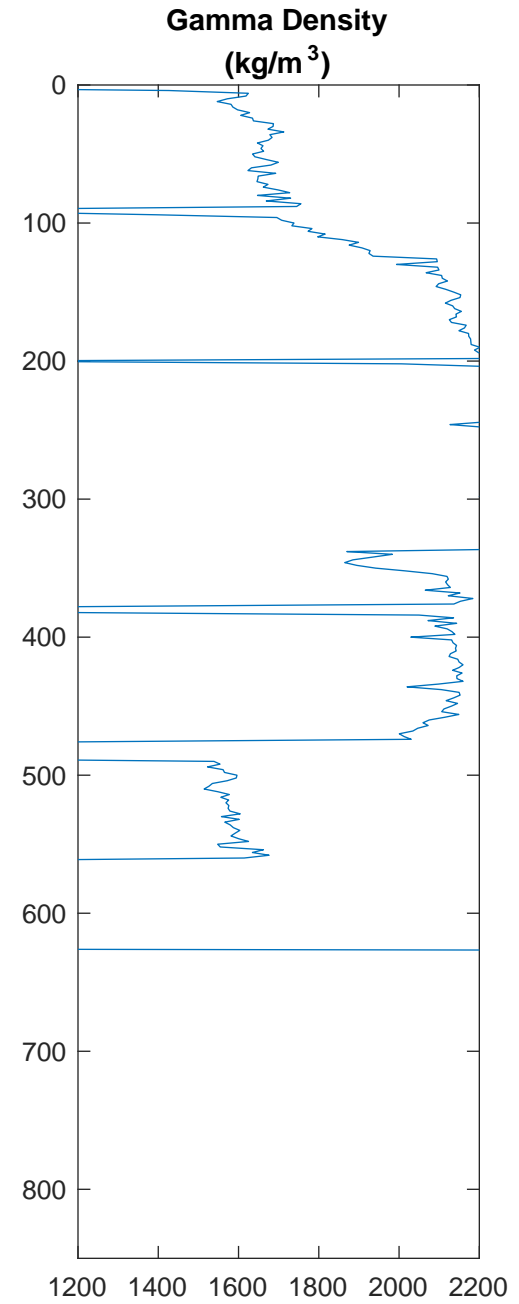
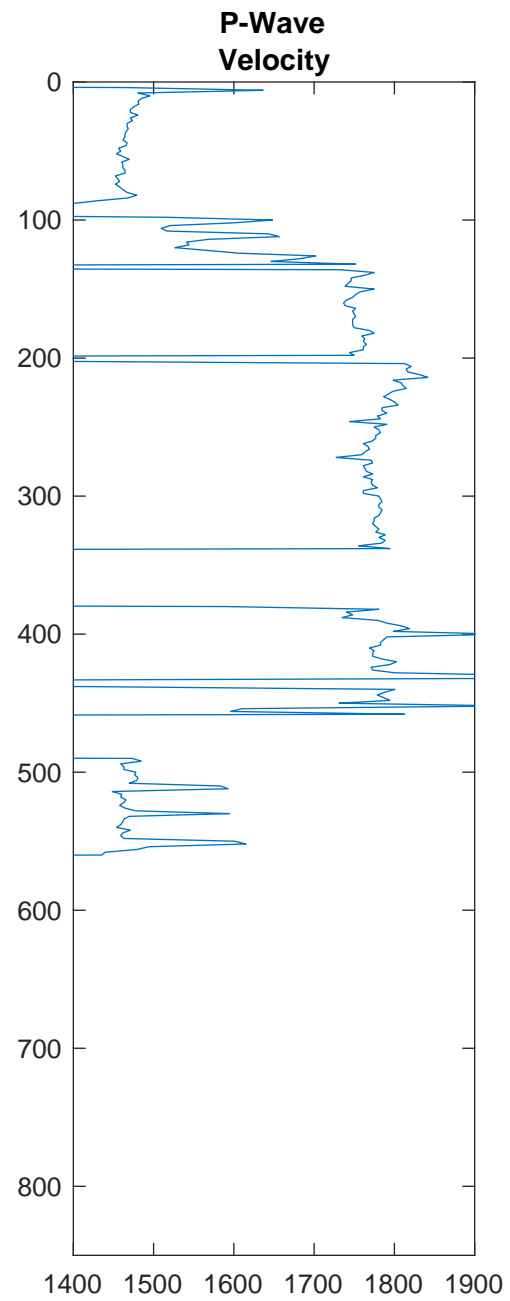
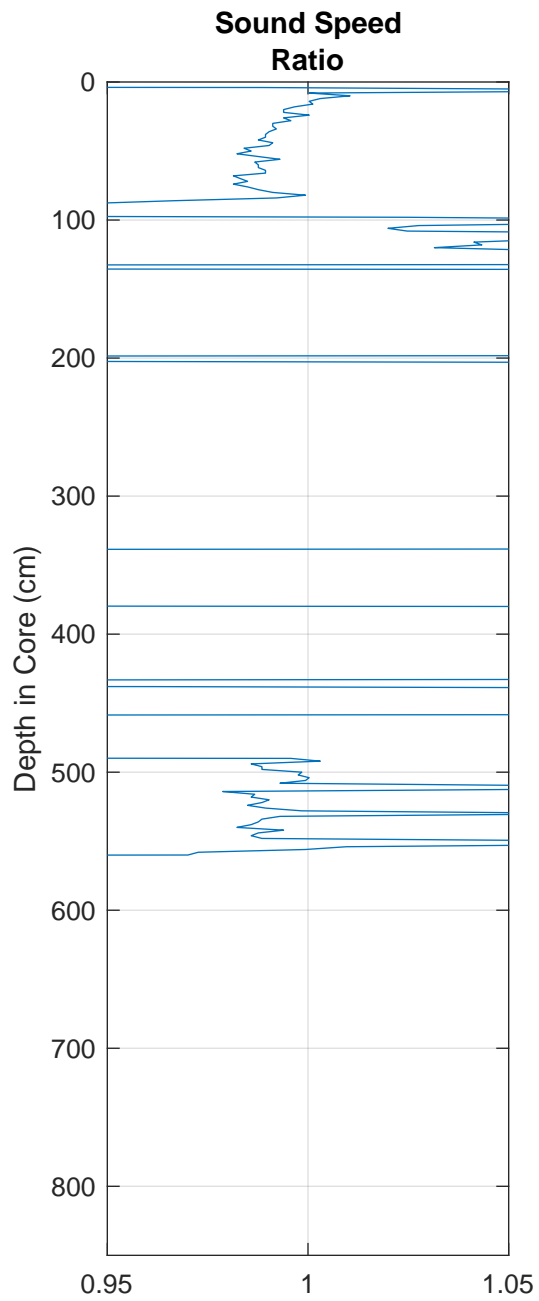
Core: 44PC_EN577_



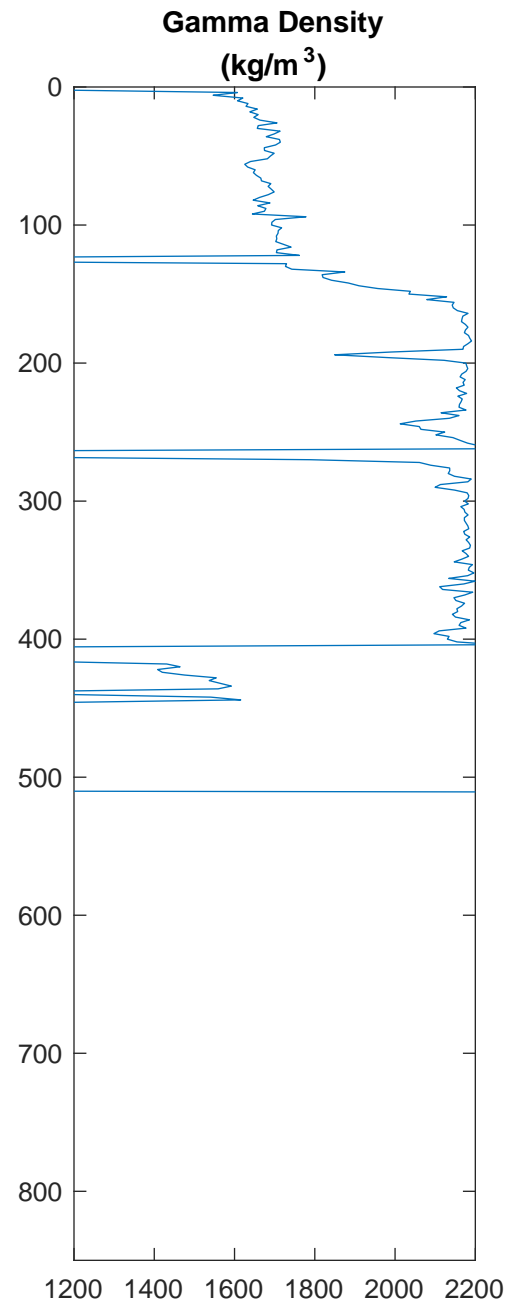
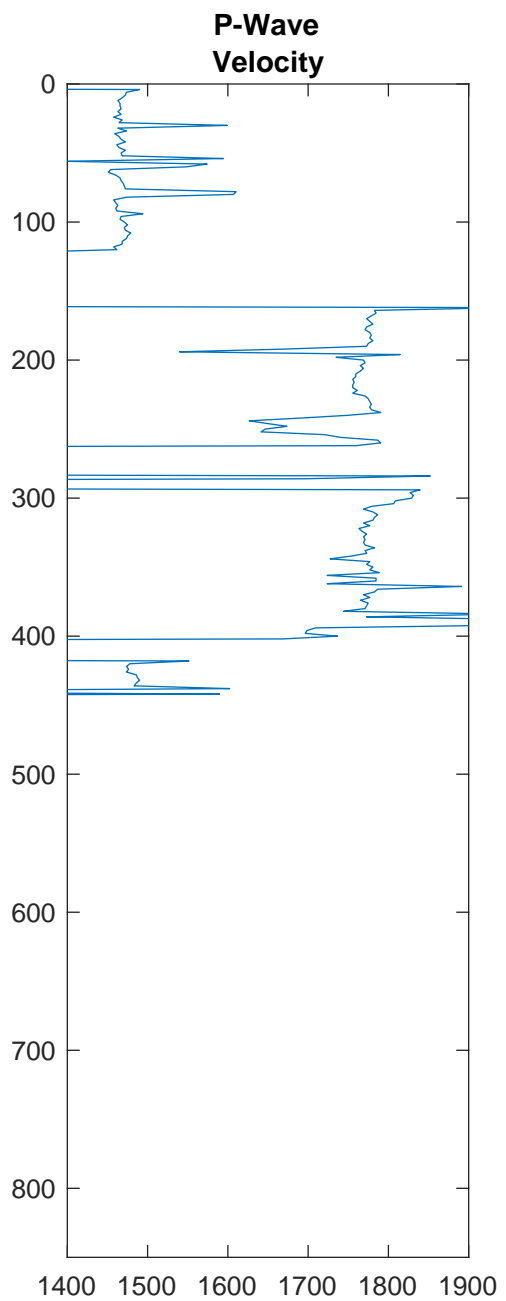
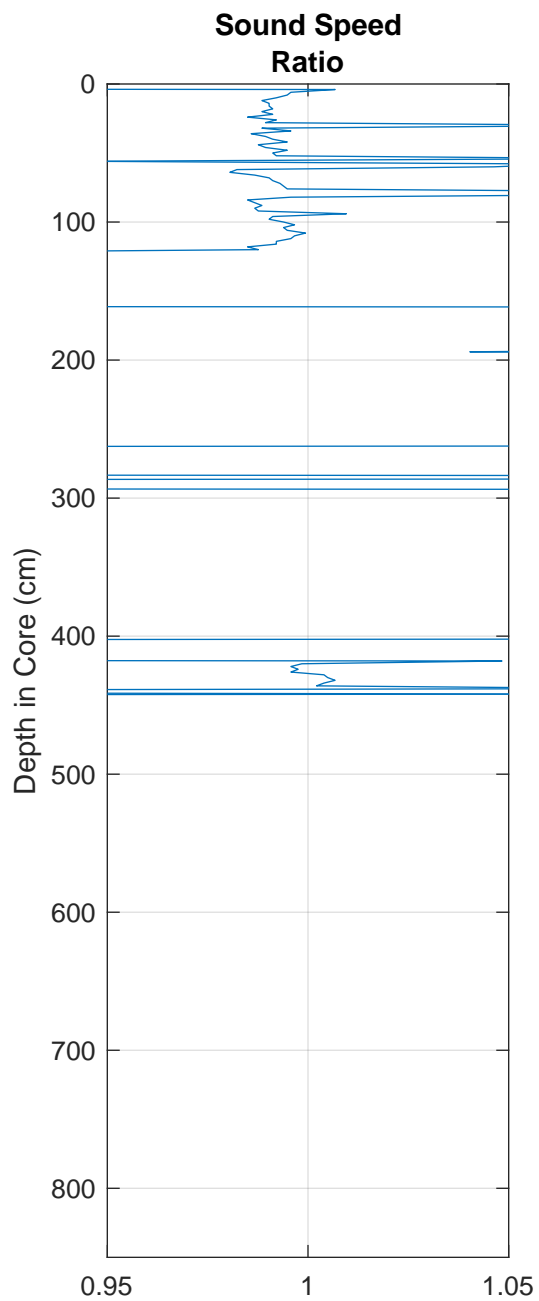
Core: 45PC_EN577_



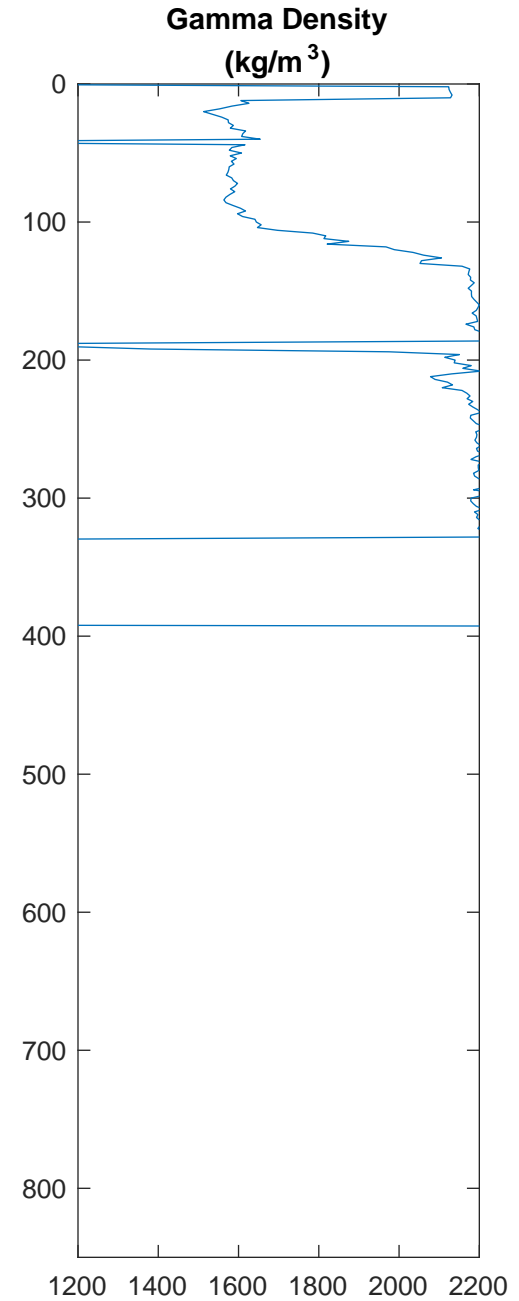
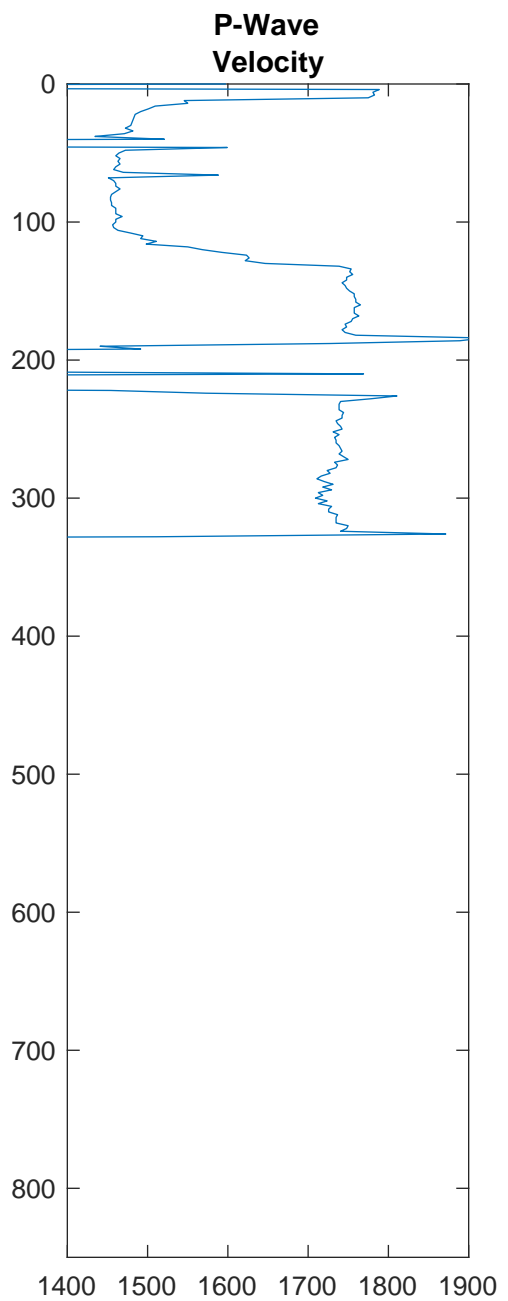
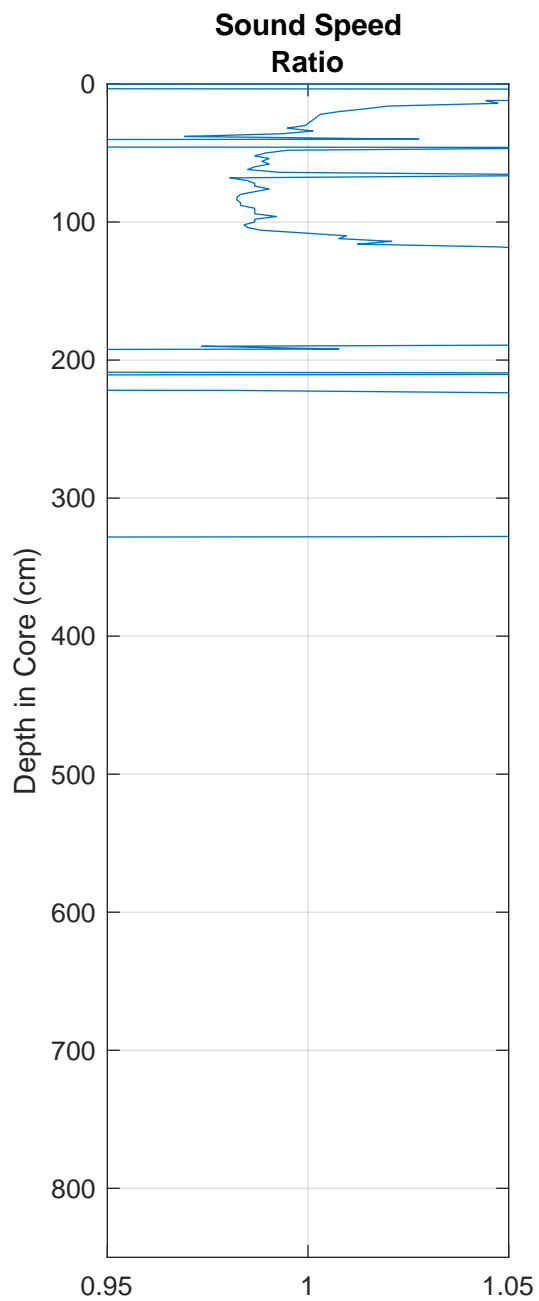
Core: 46PC_EN577_



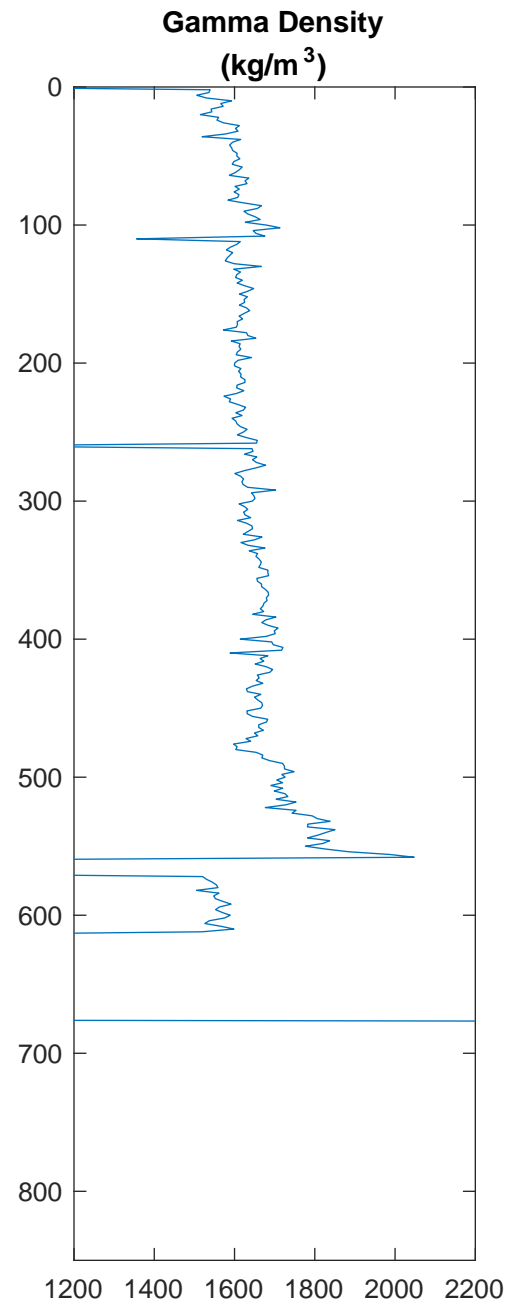
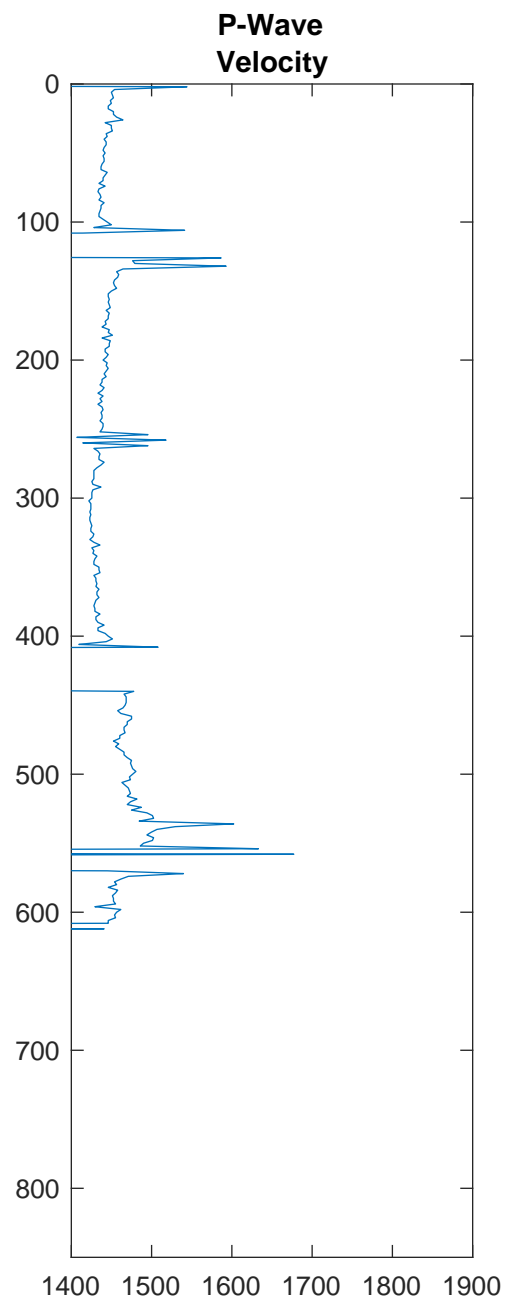
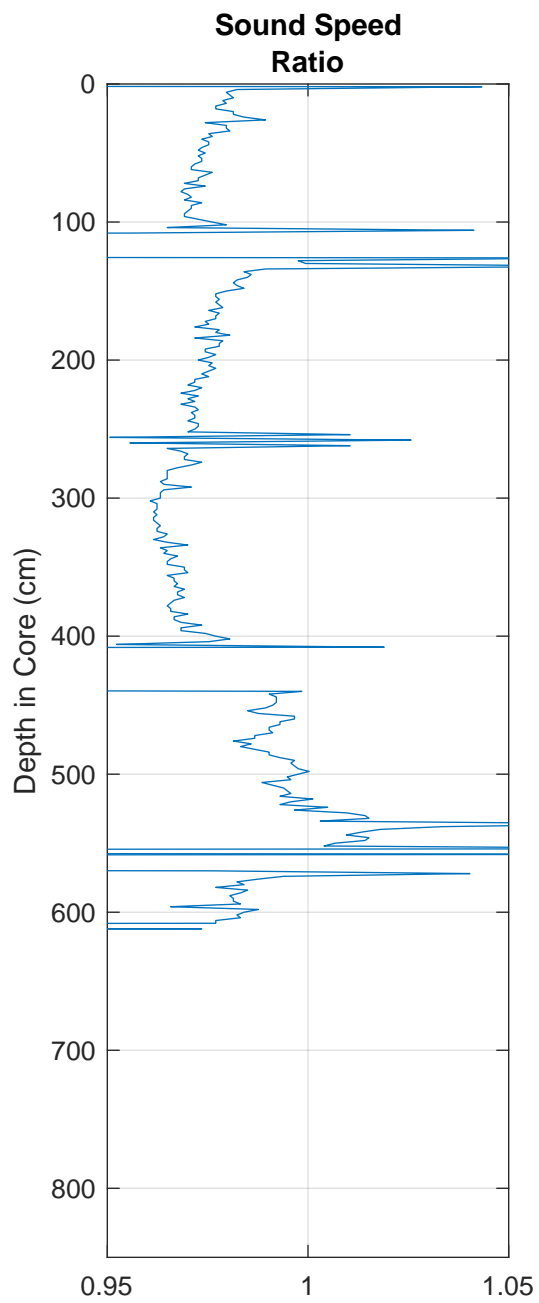
Core: 47PC_EN577_



Core: 48PC_EN577_

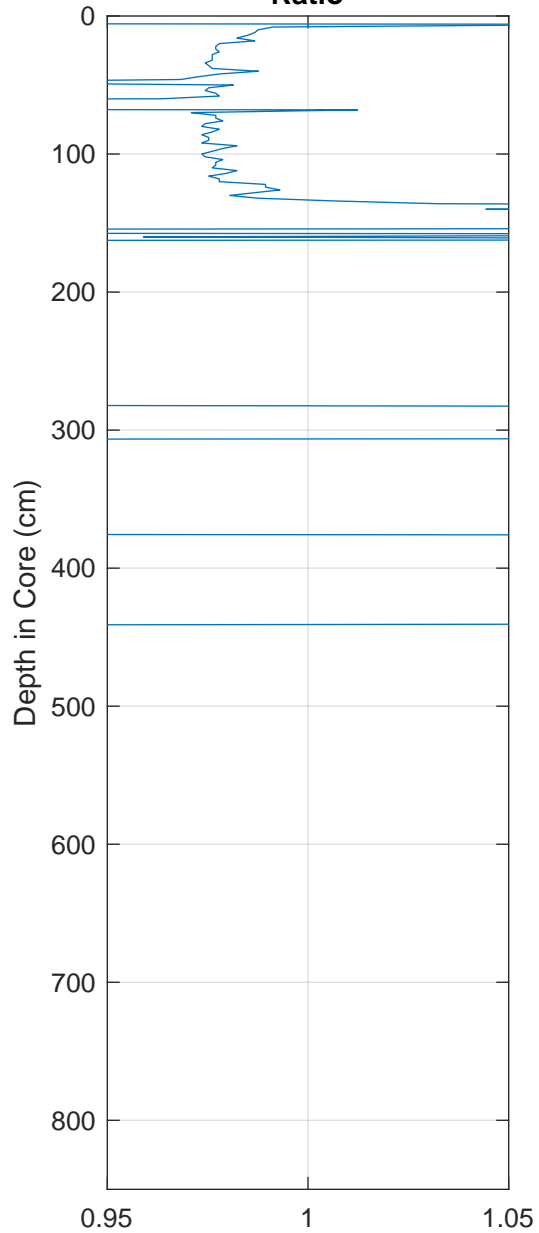


Core: 49PC_EN577_

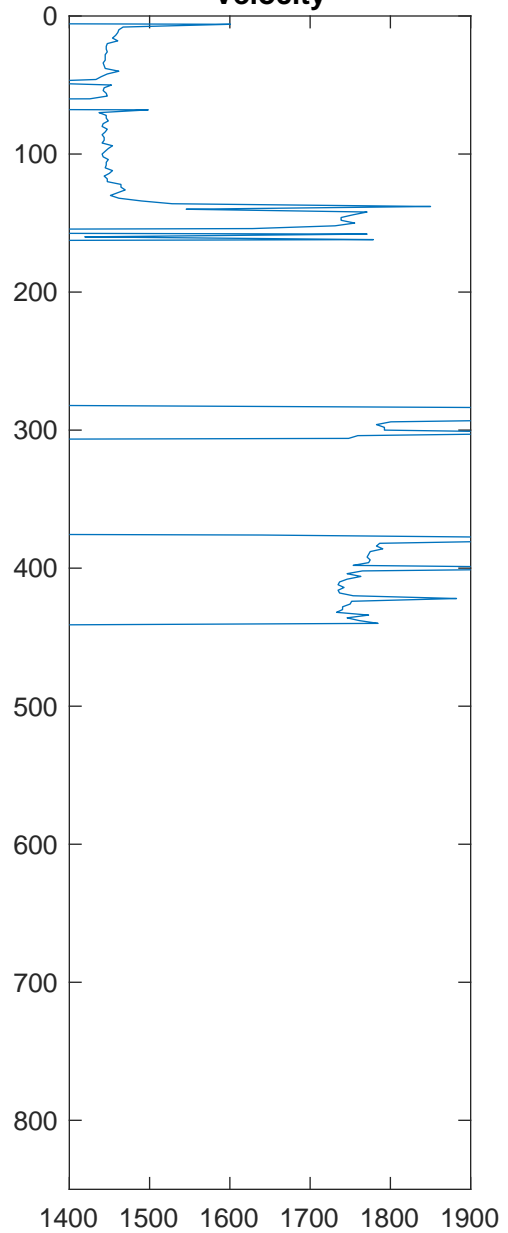


Core: 50PC_EN577_

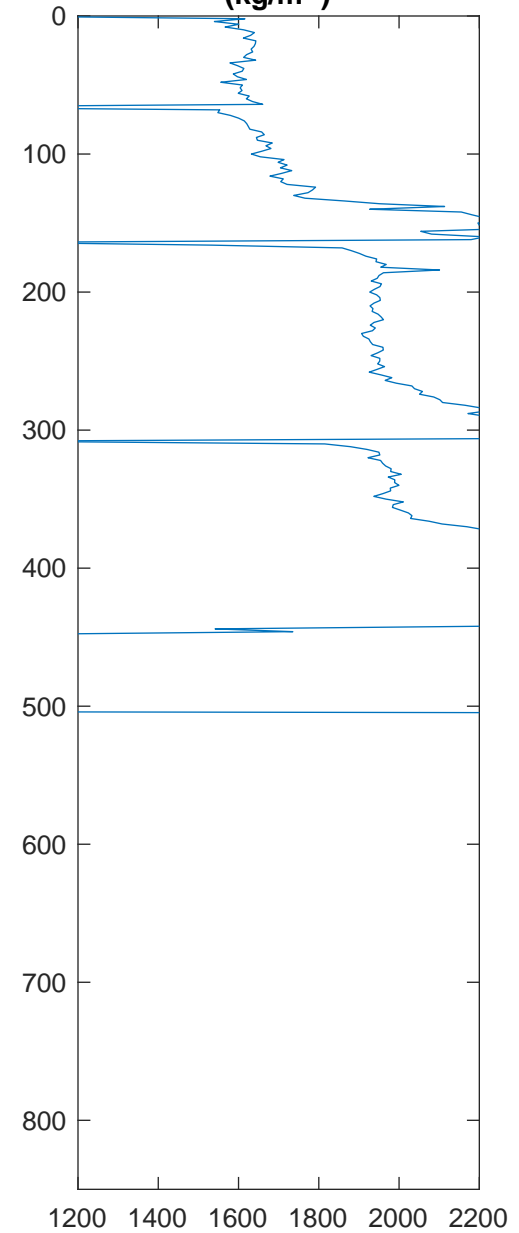
**Sound Speed
Ratio**



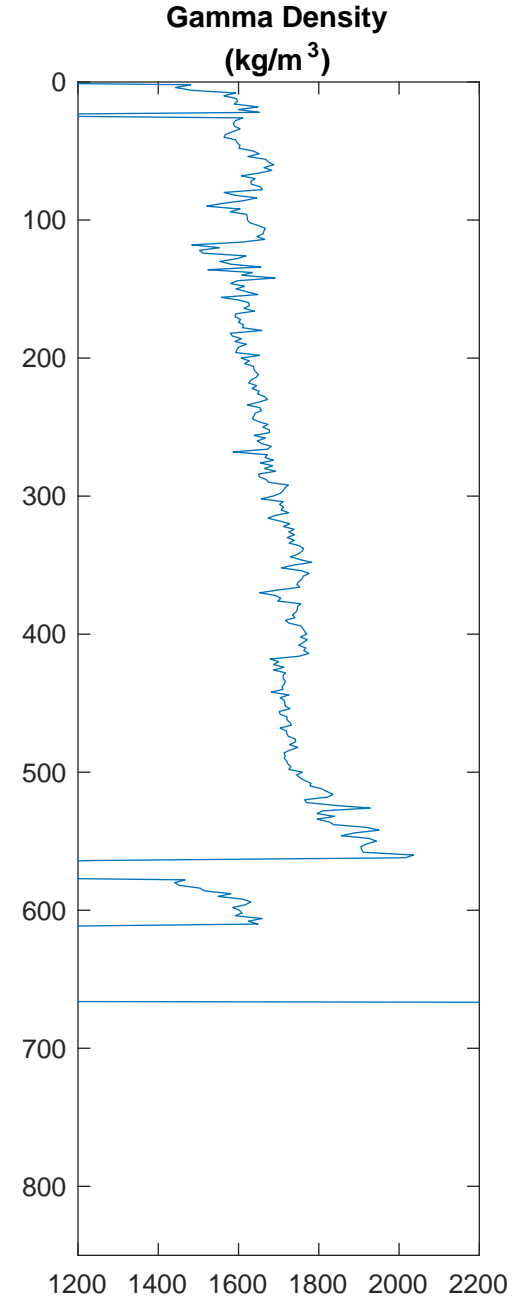
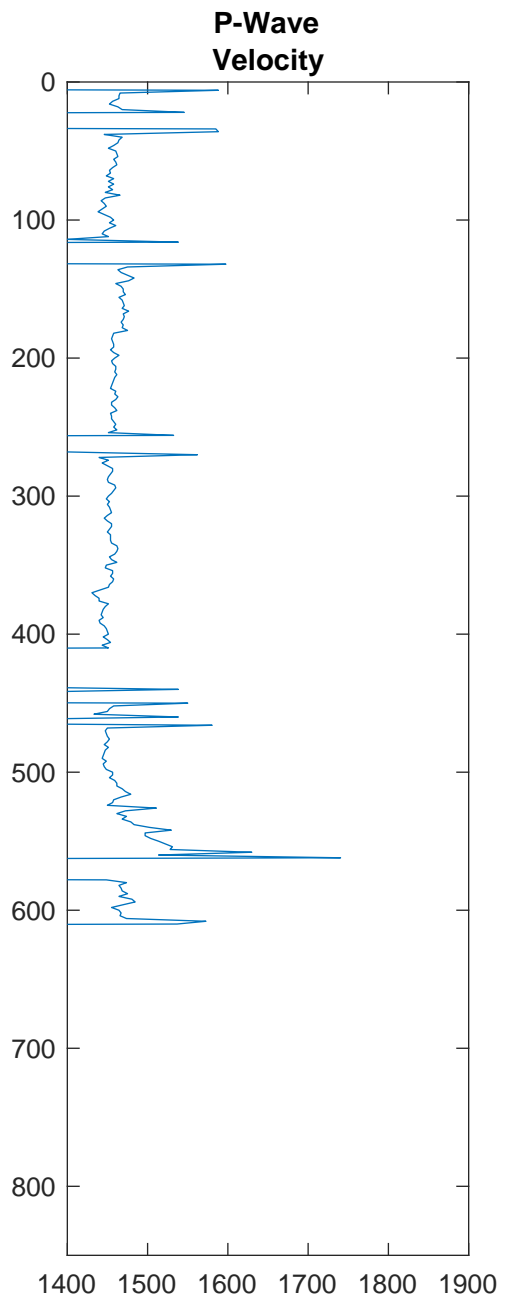
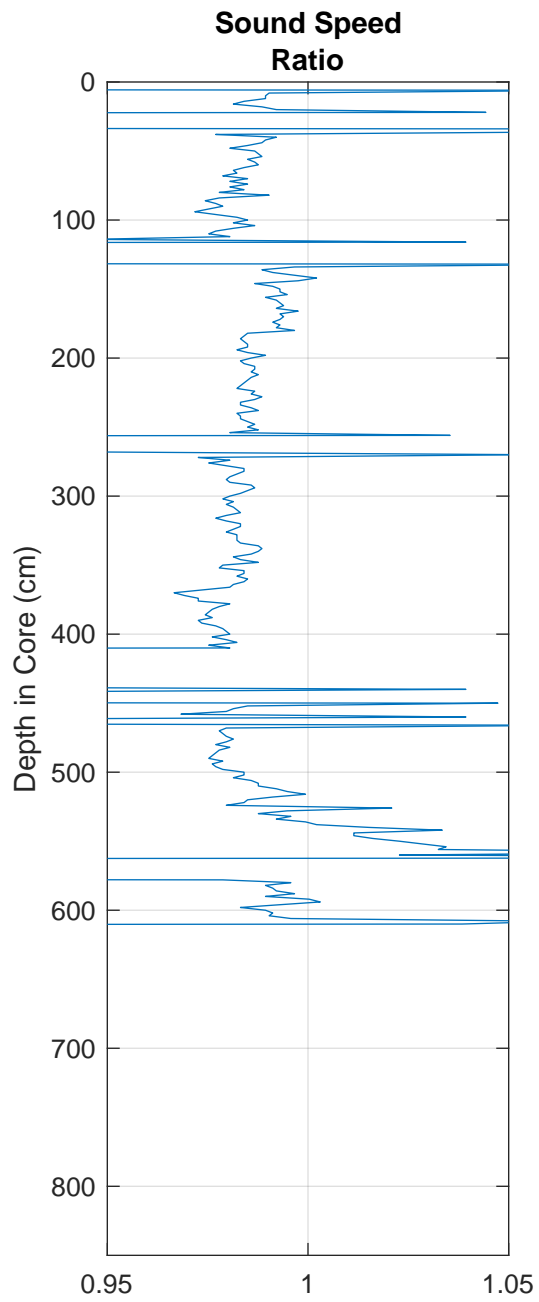
**P-Wave
Velocity**



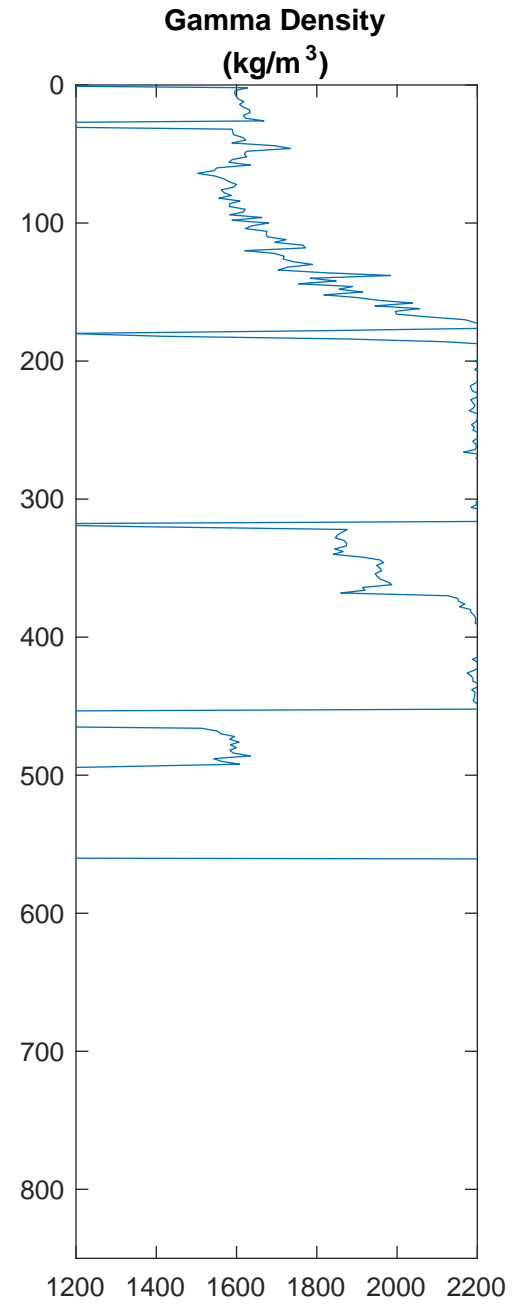
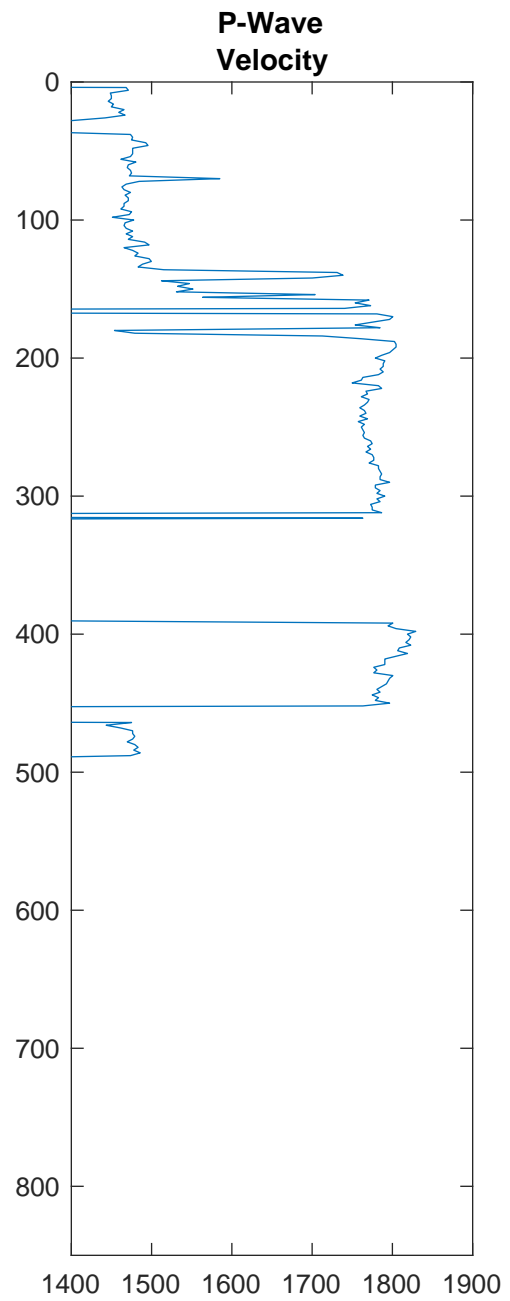
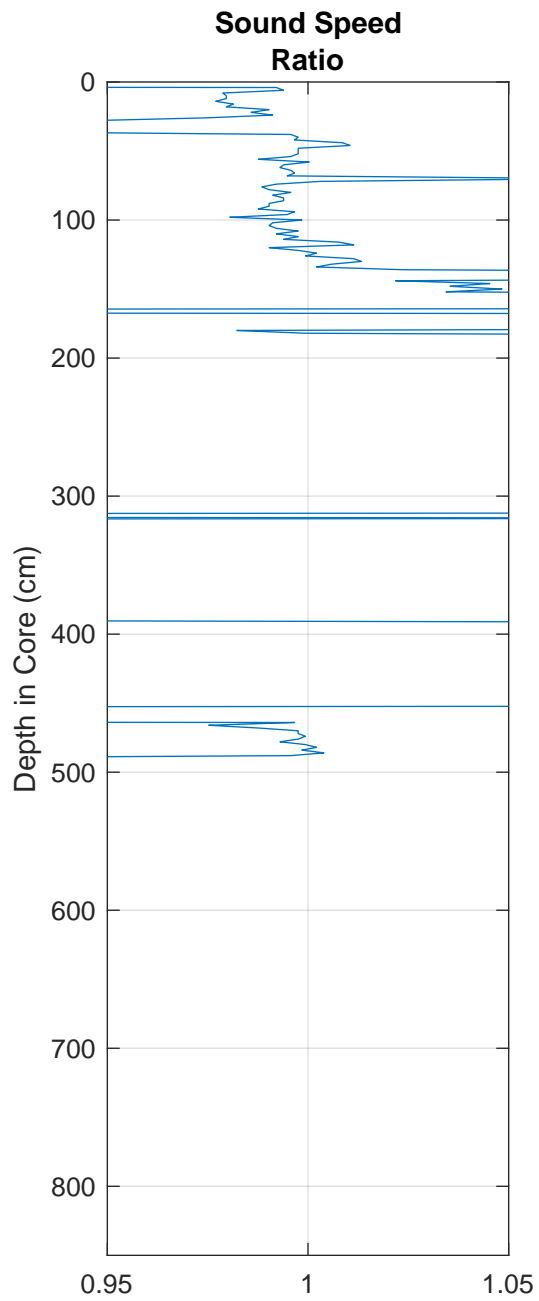
**Gamma Density
(kg/m³)**



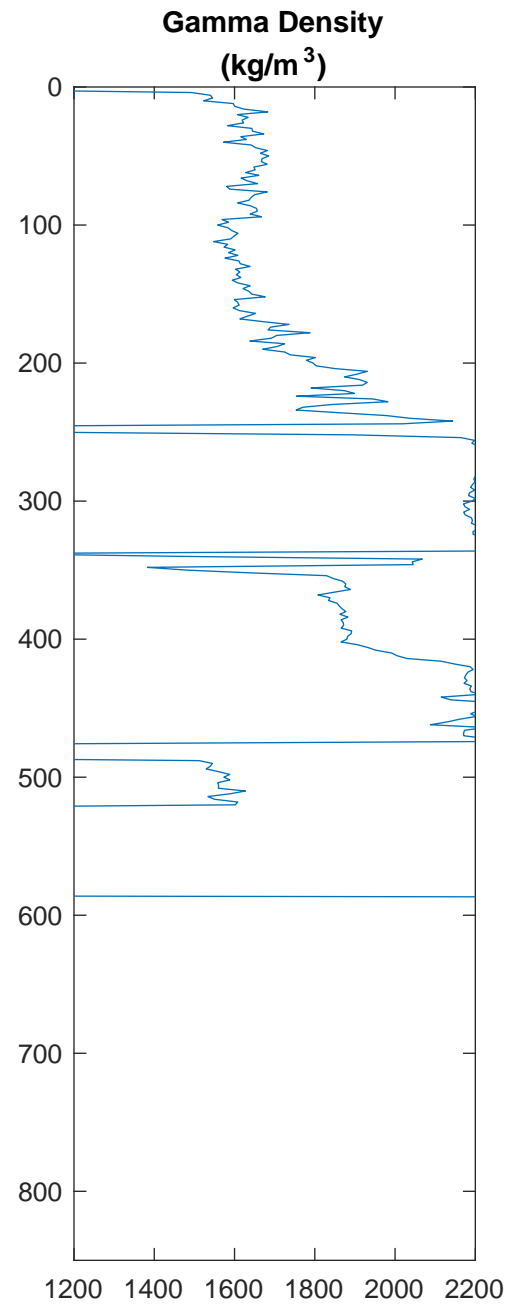
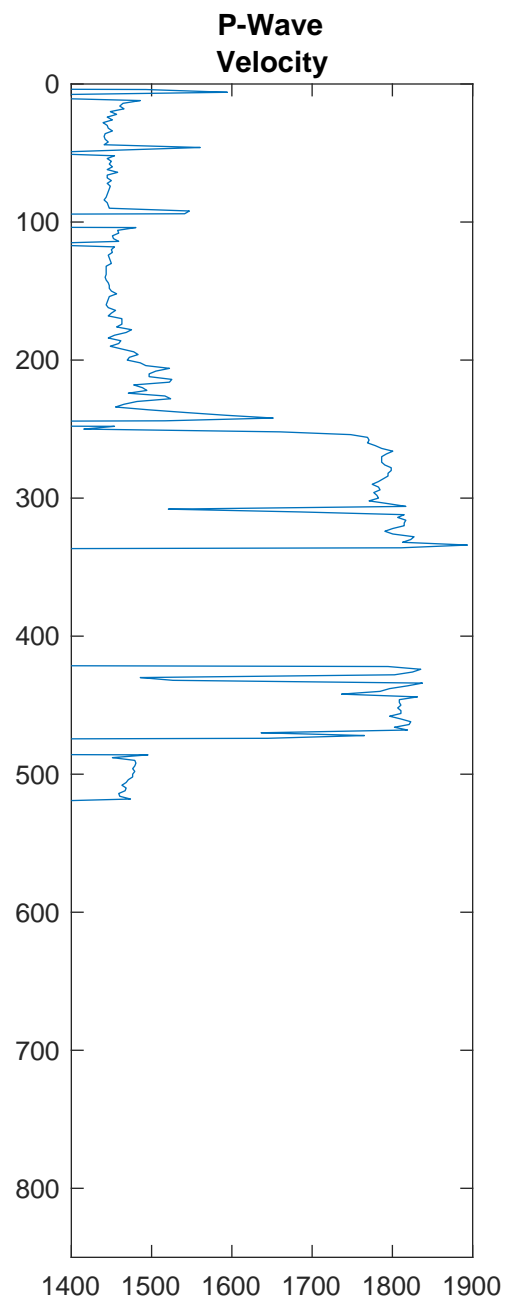
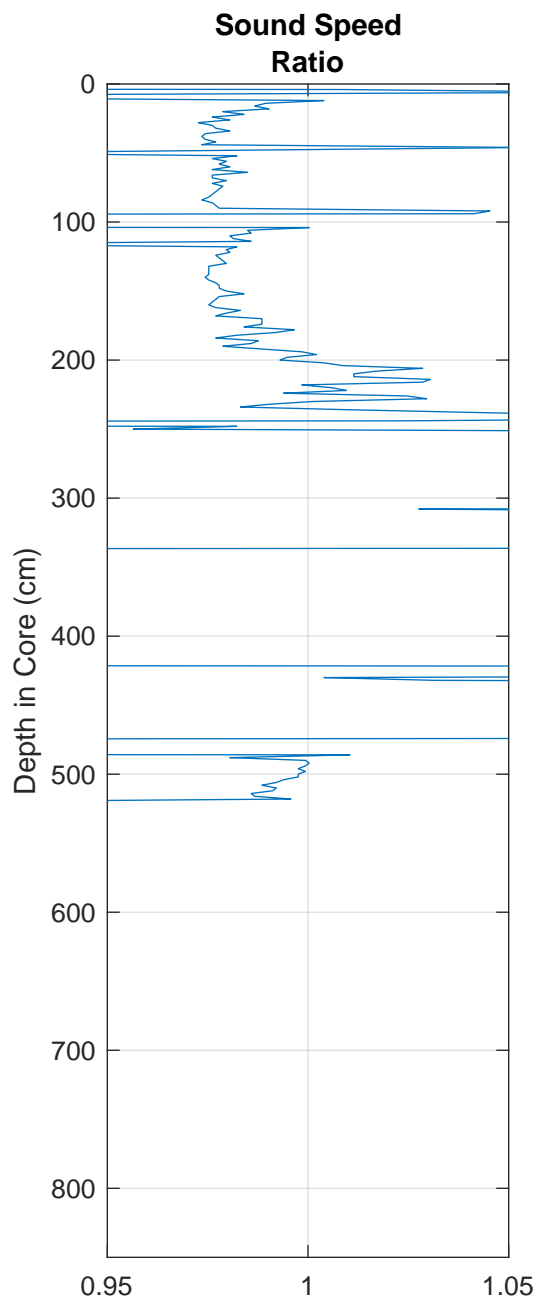
Core: 51PC_EN577_



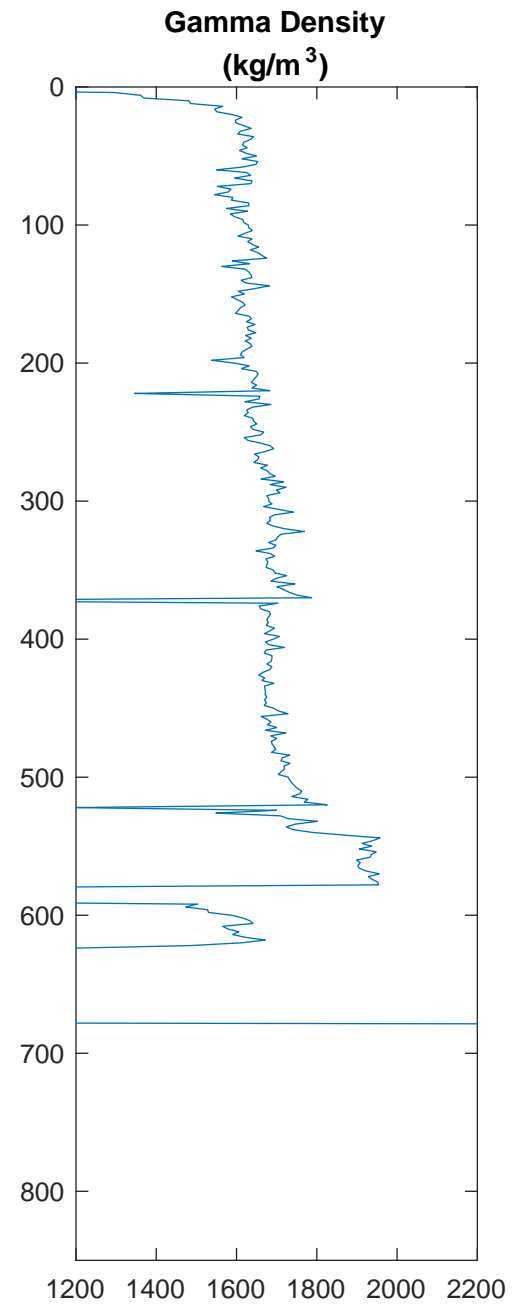
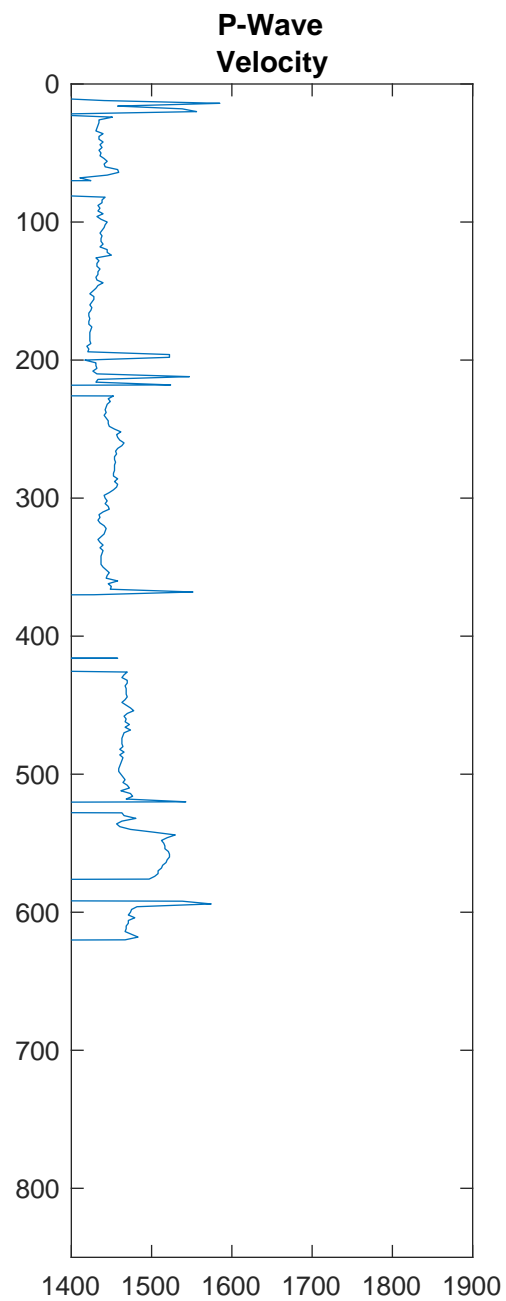
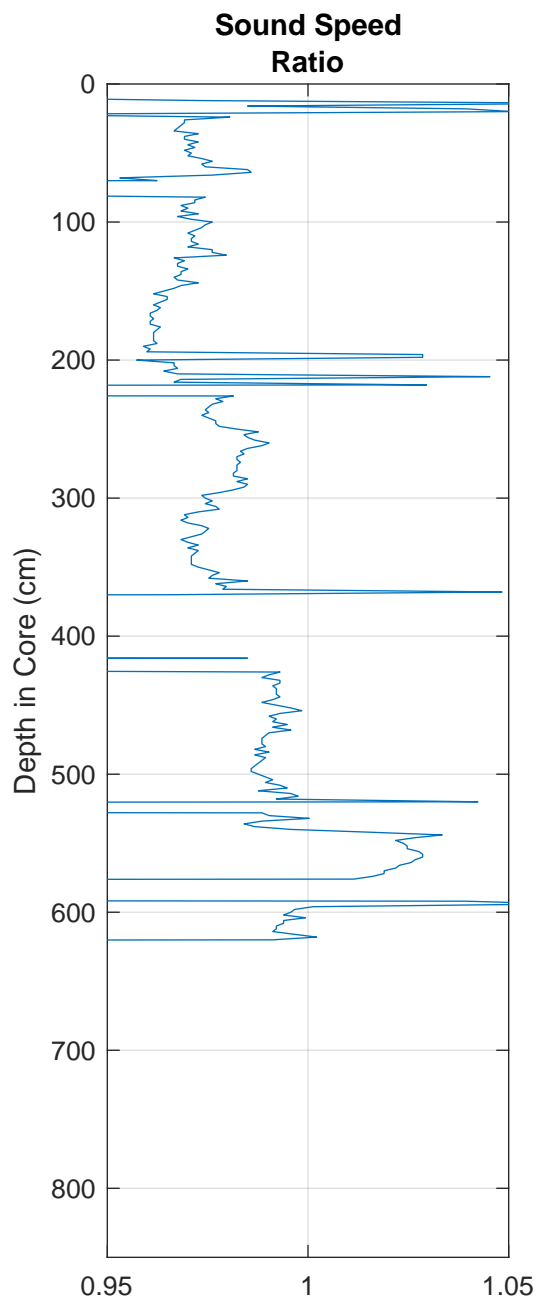
Core: 52PC_EN577_



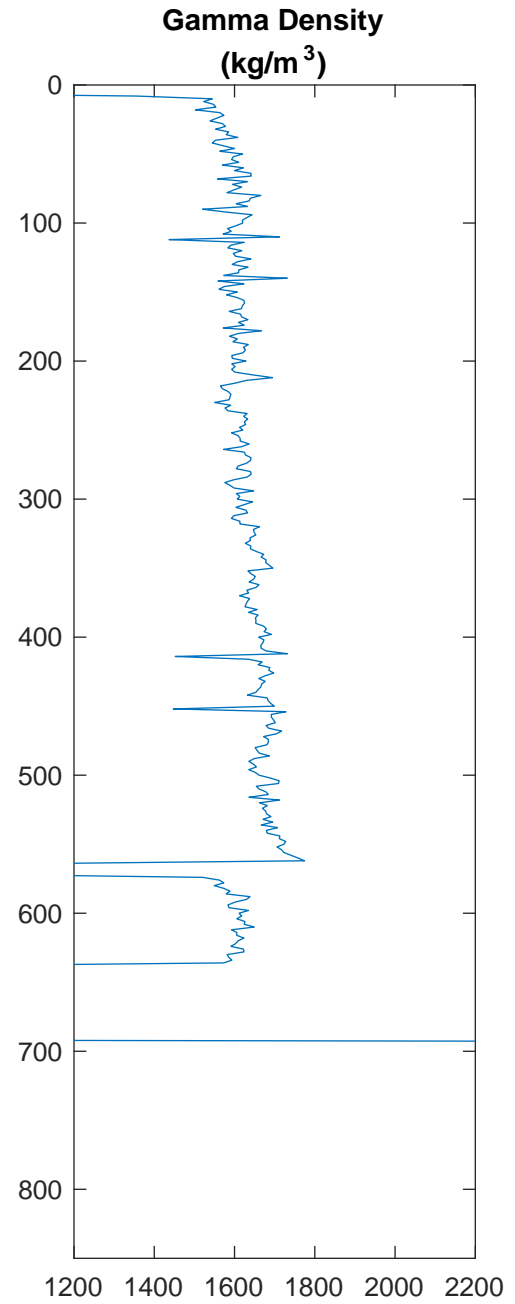
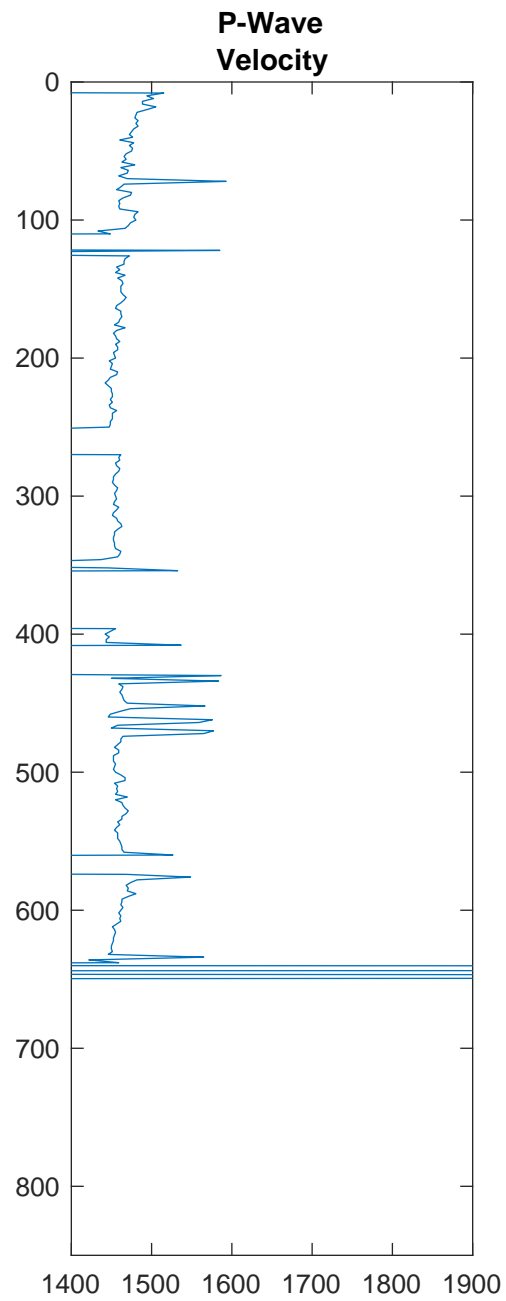
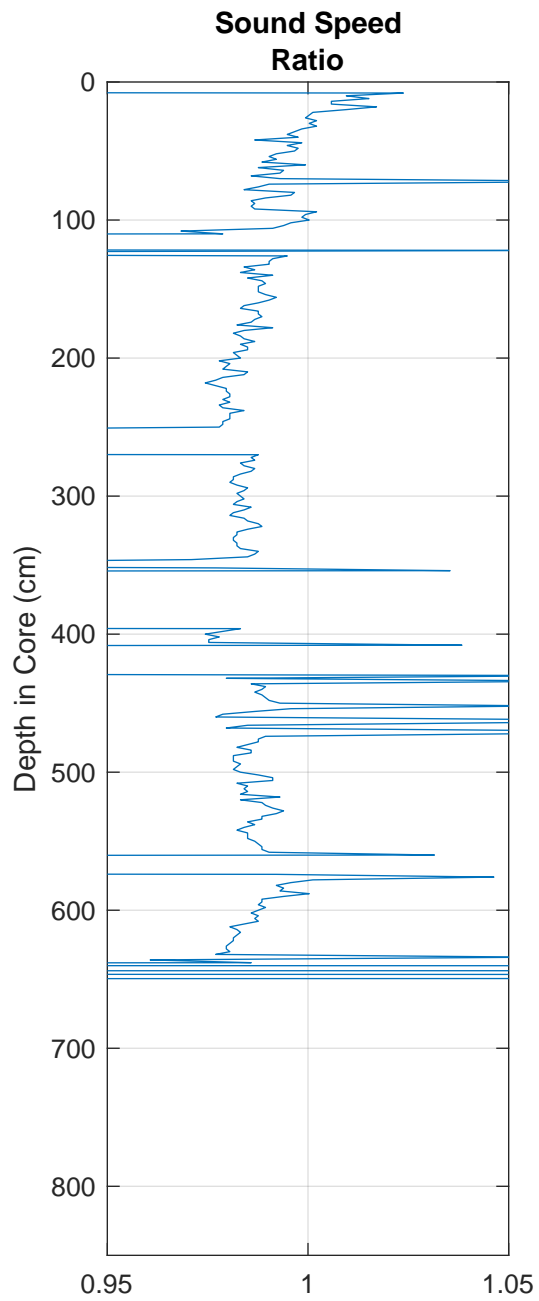
Core: 53PC_EN577_



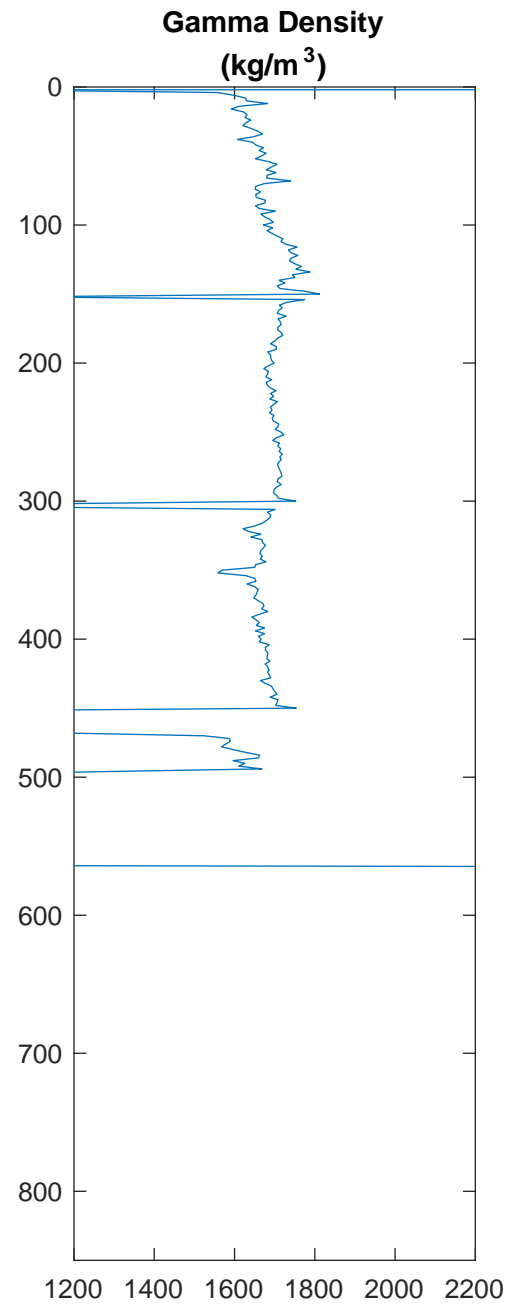
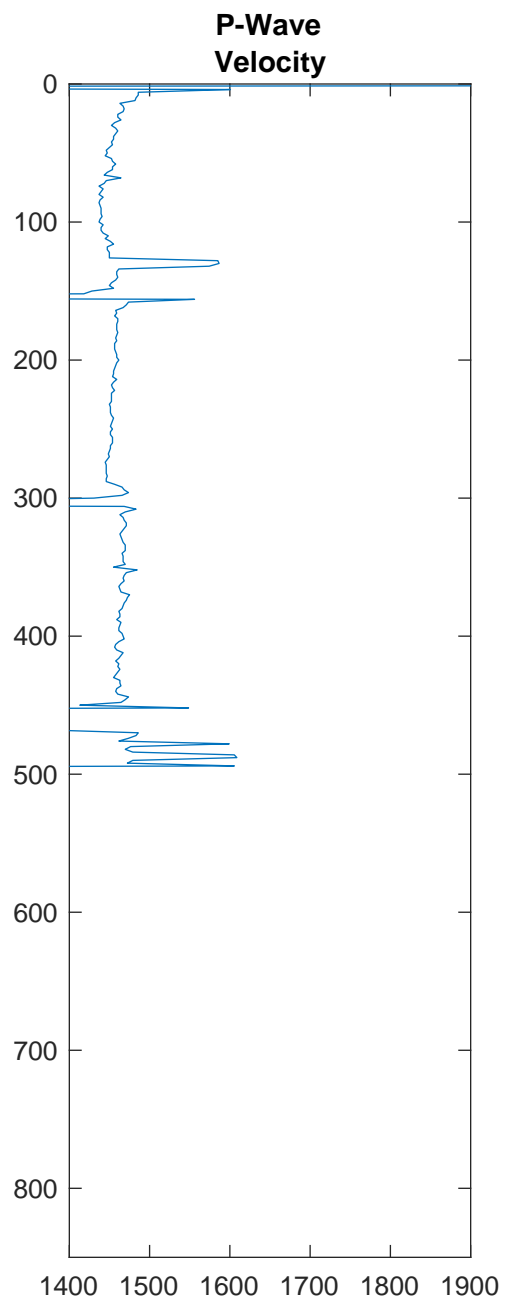
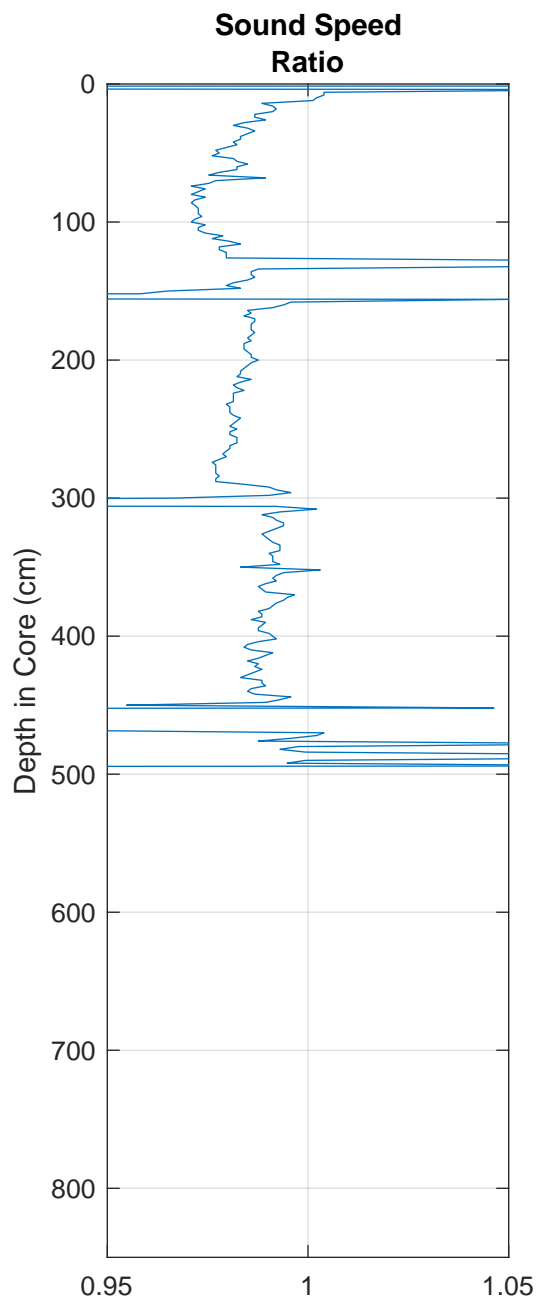
Core: 54PC_EN577_



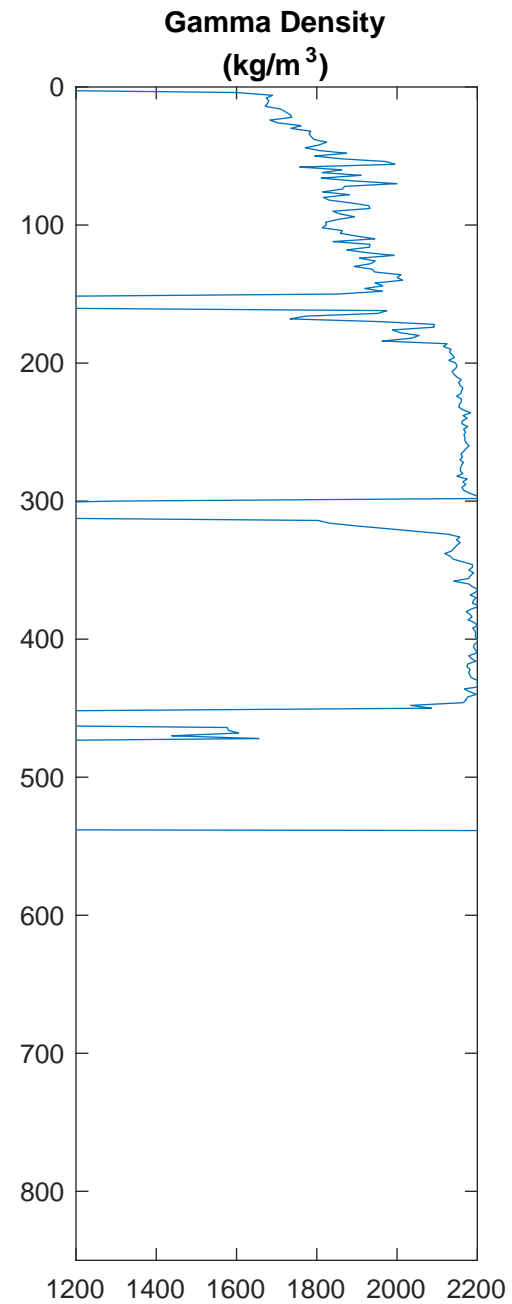
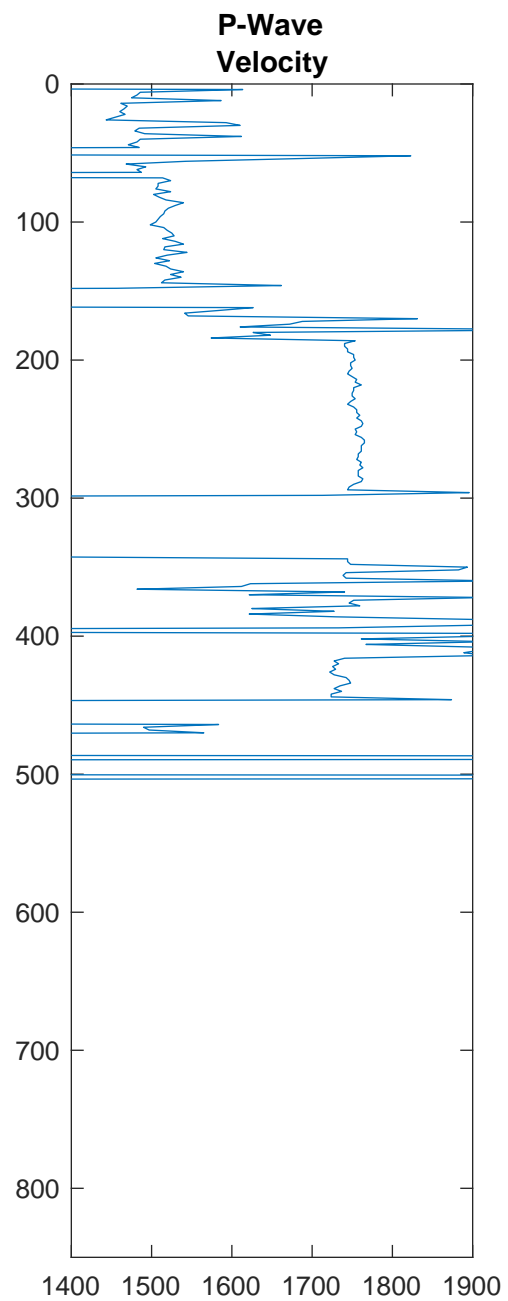
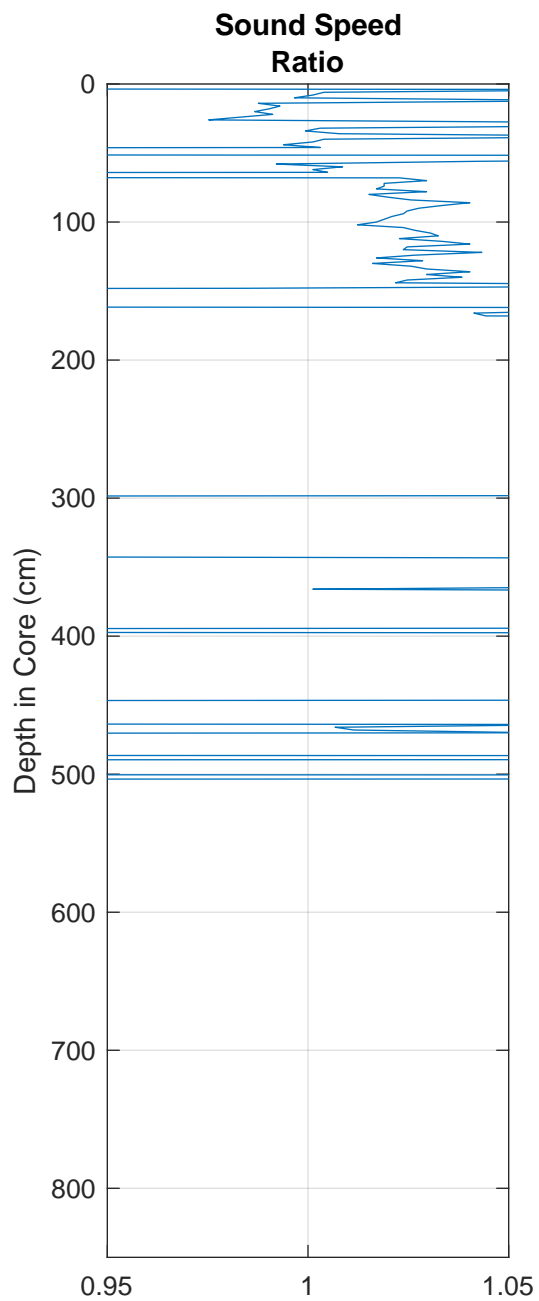
Core: 55PC_EN577_



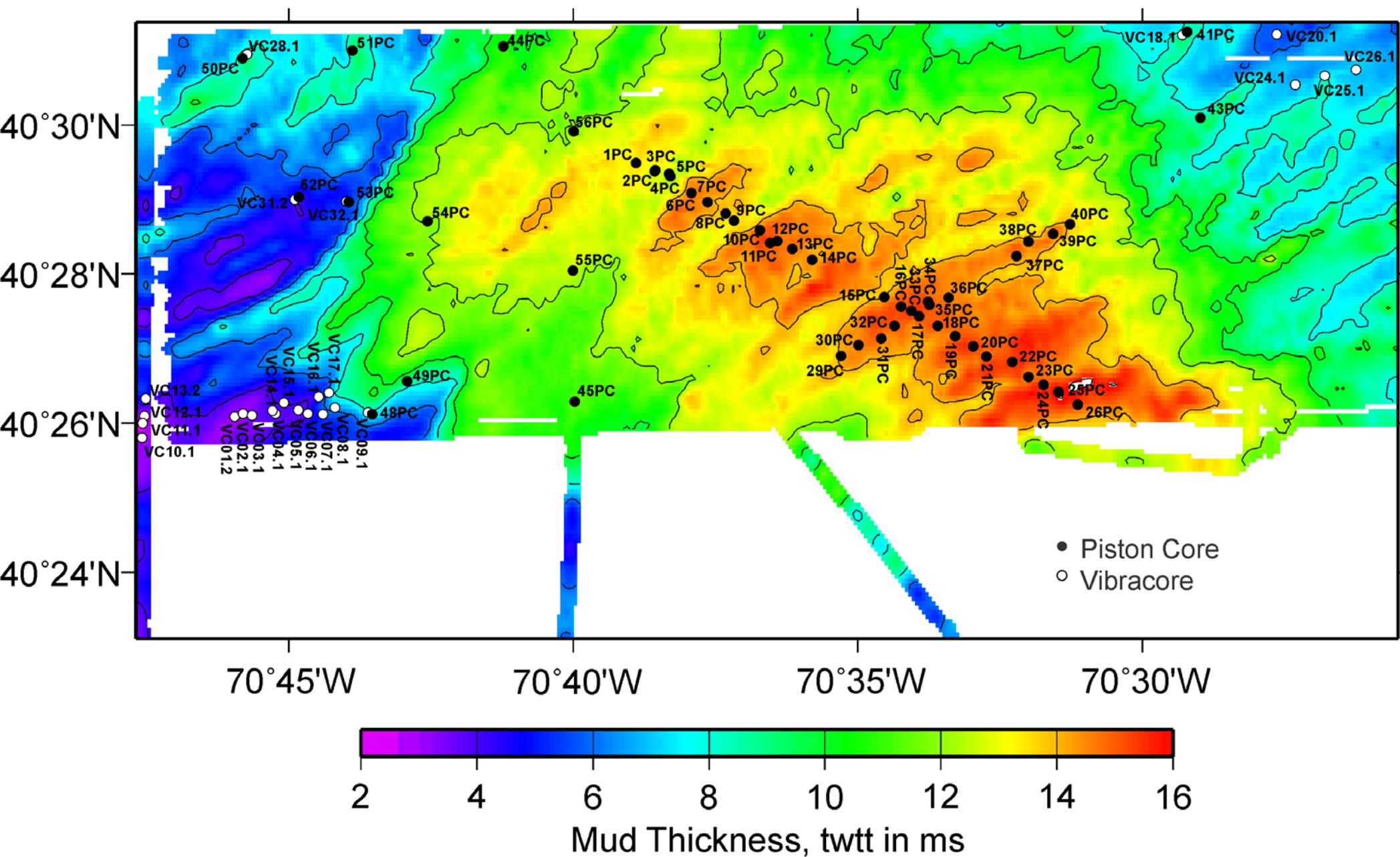
Core: 56PC_EN577_



Core: 57PC_EN577_



En577 Piston Core and Vibracore Locations



Vibracoring

New England Mud Patch 2016
ONR Acoustics Characterization
of Sediments – U. Texas with
NRL7430



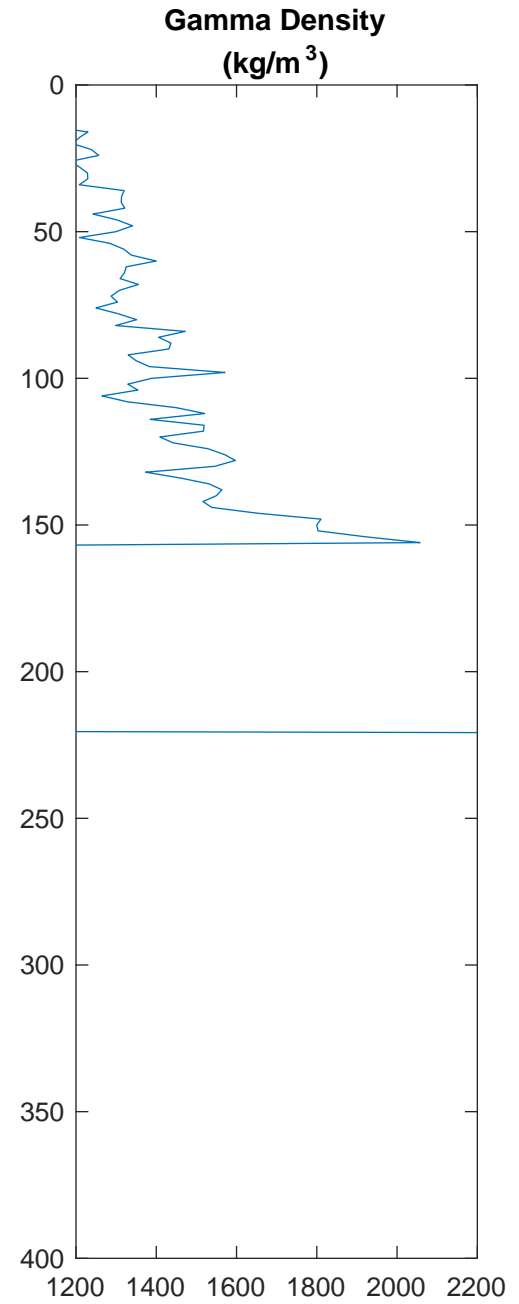
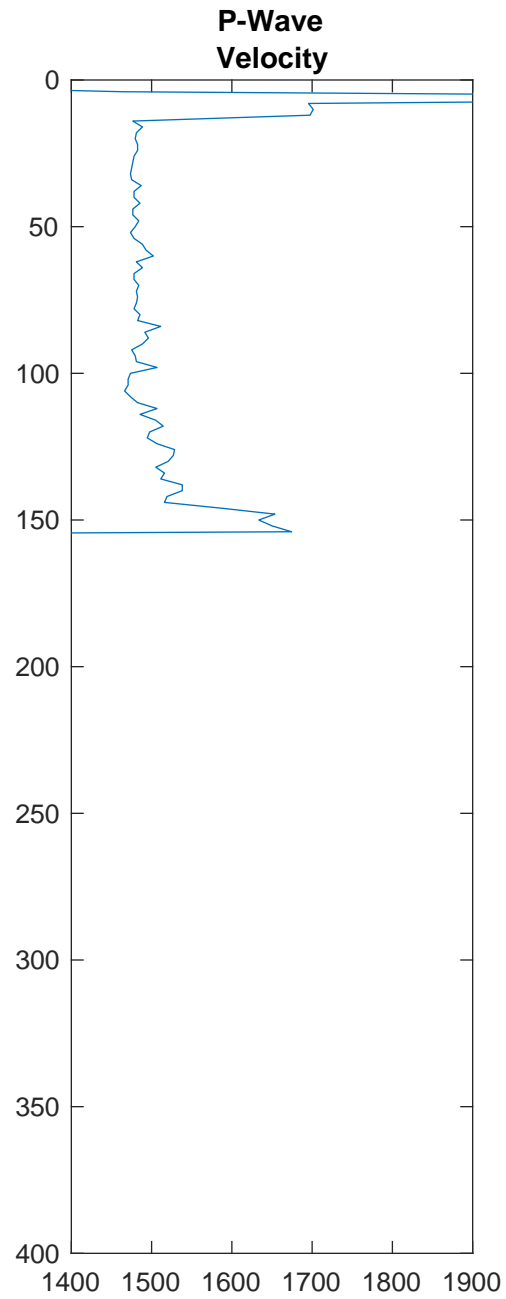
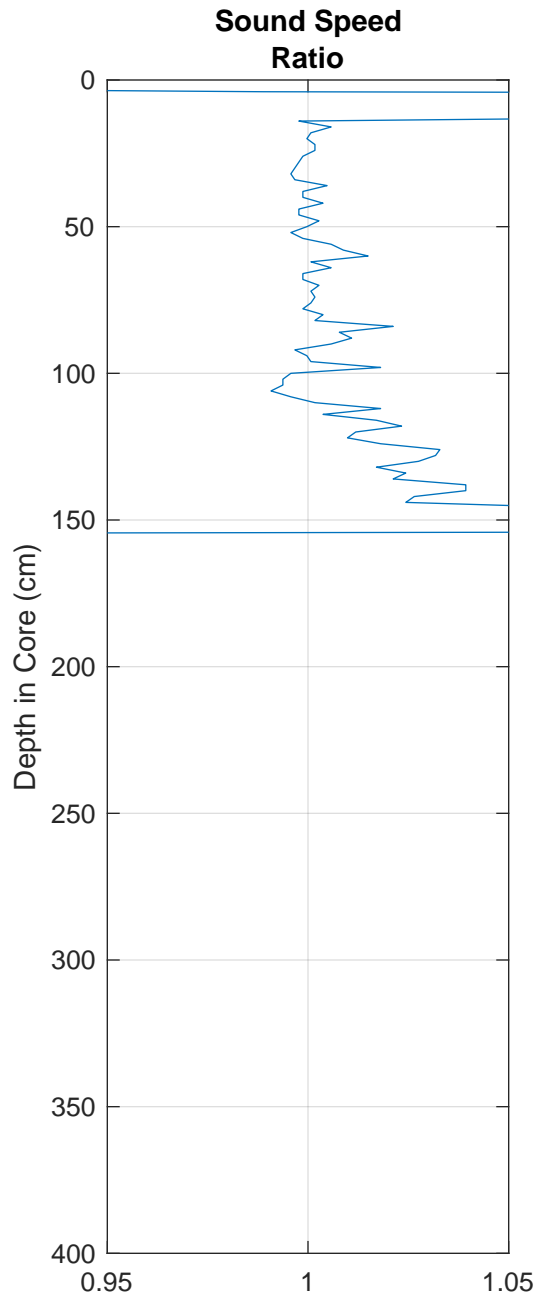
Leg II – Vibracoring and Acoustic Gravity
Coring (26 April – 2 May)

(120 meters of core collected and
logged [greater than 6 tons of
sediment])

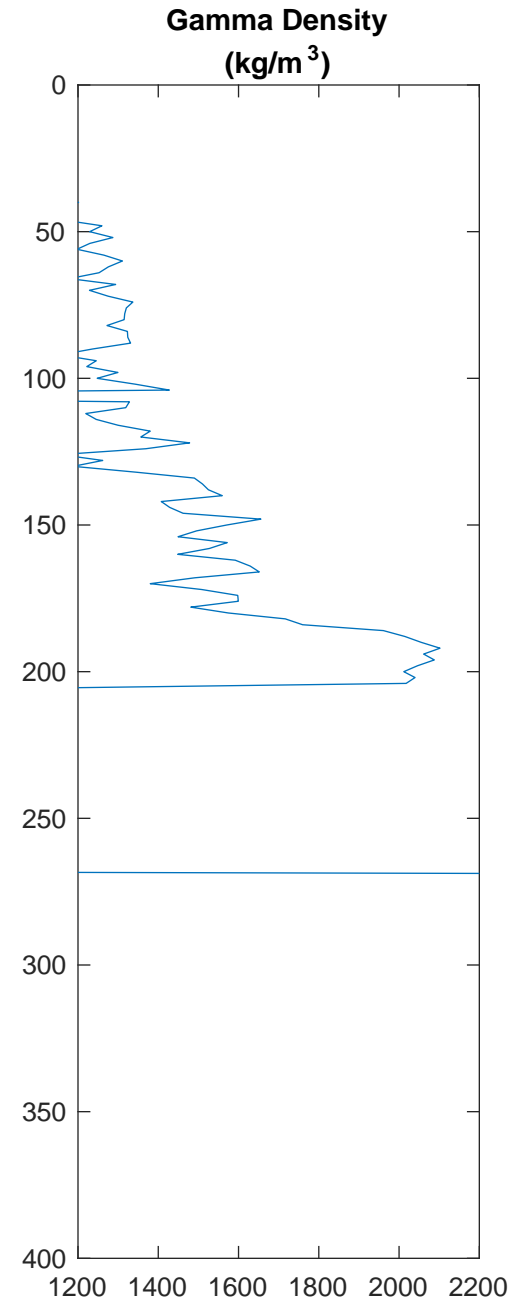
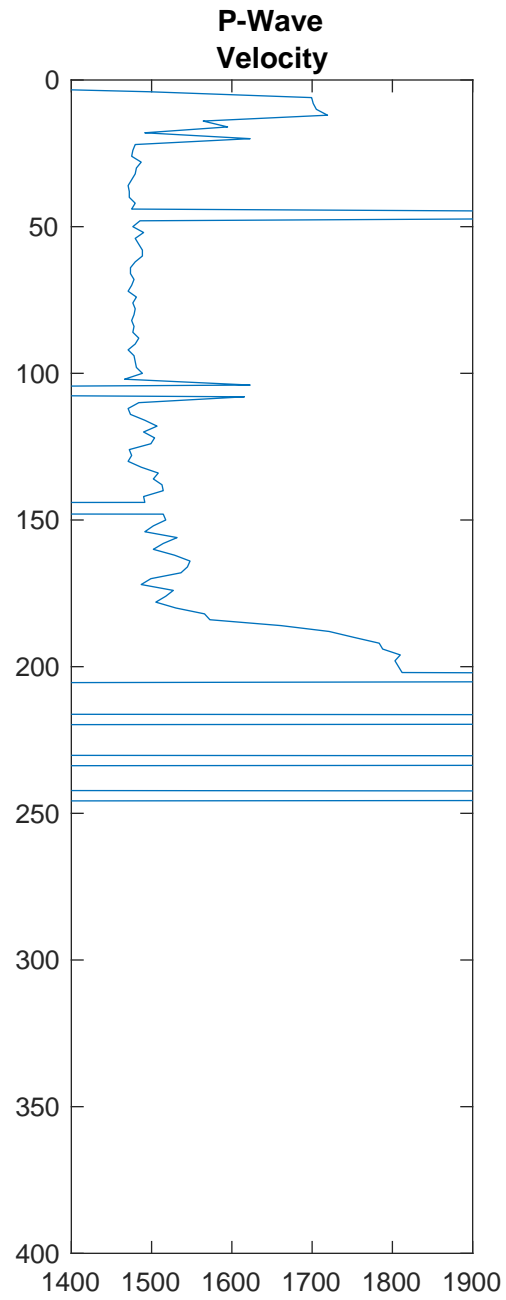
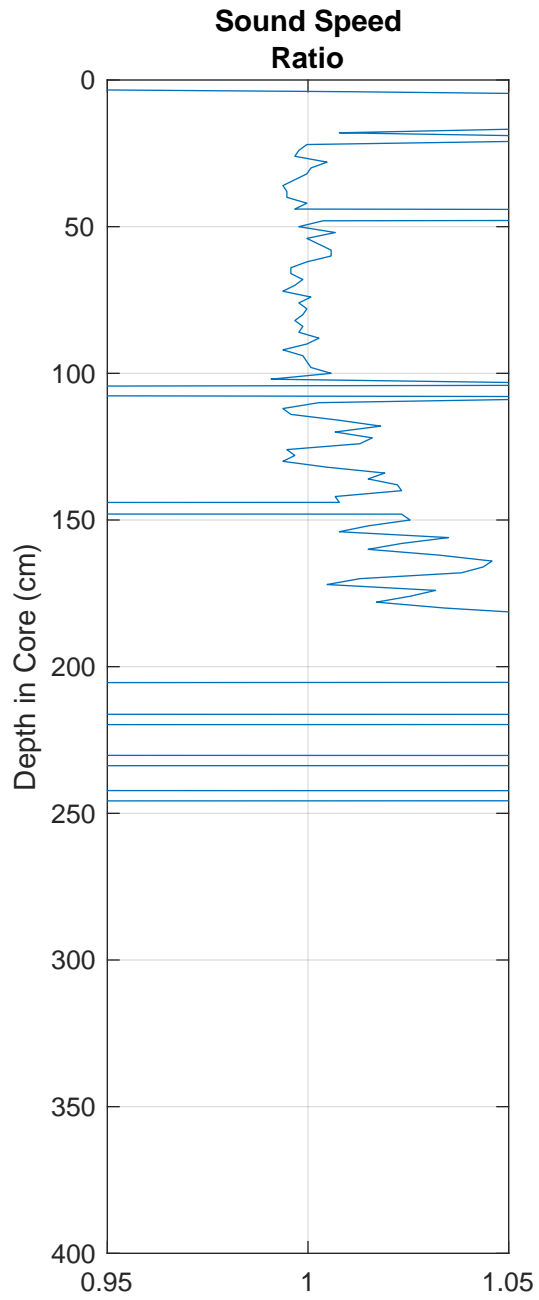


← Leg II –
U. Texas Institute of
Geophysics –
Vibracoring

Core: VC1_Hole2_EN577_

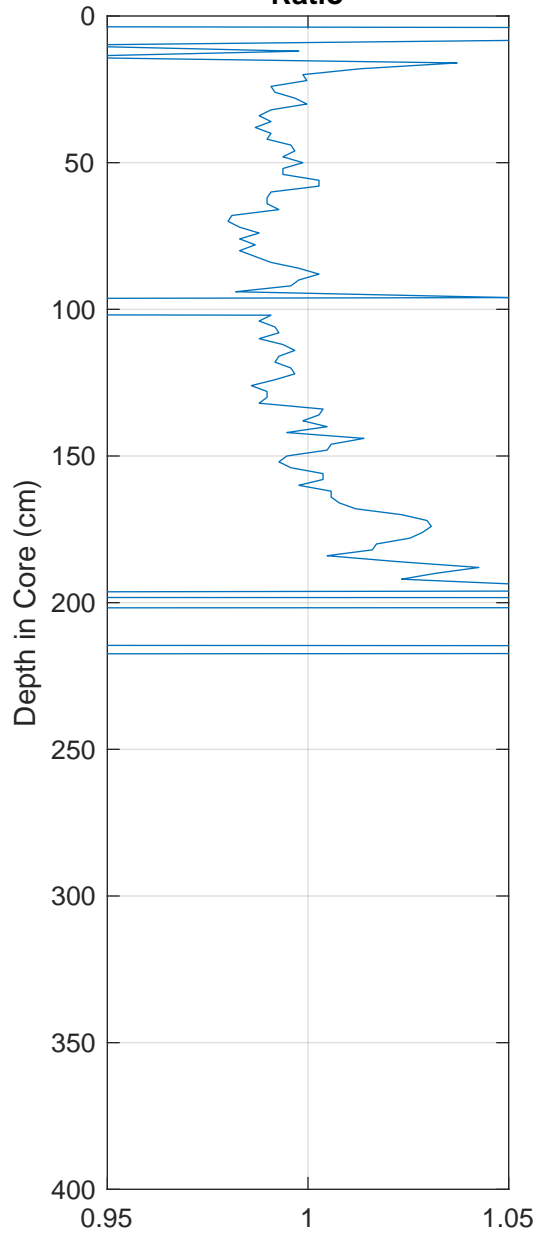


Core: VC2_Hole1_EN577_

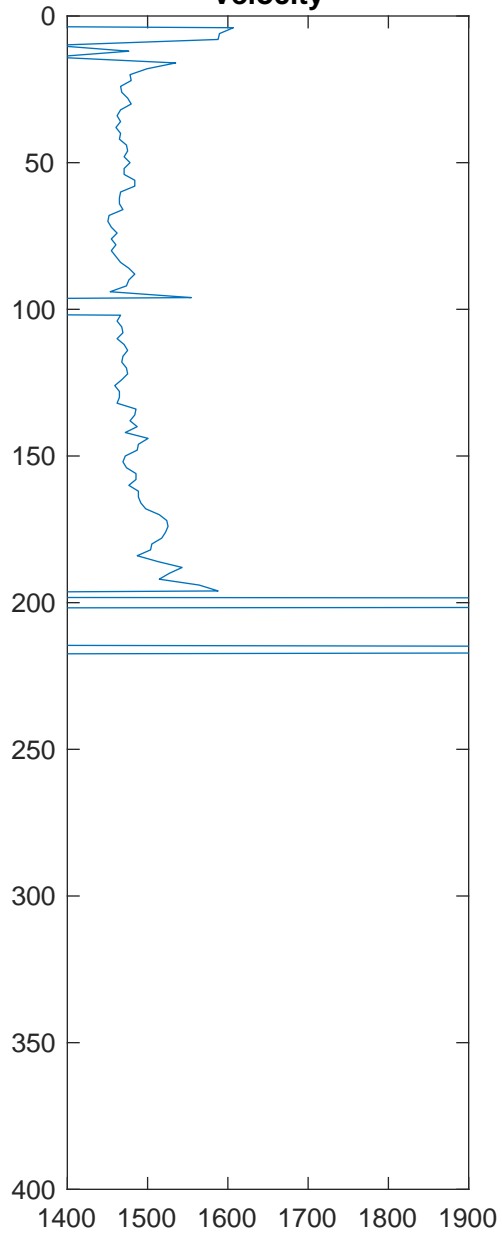


Core: VC3_Hole1_EN577_

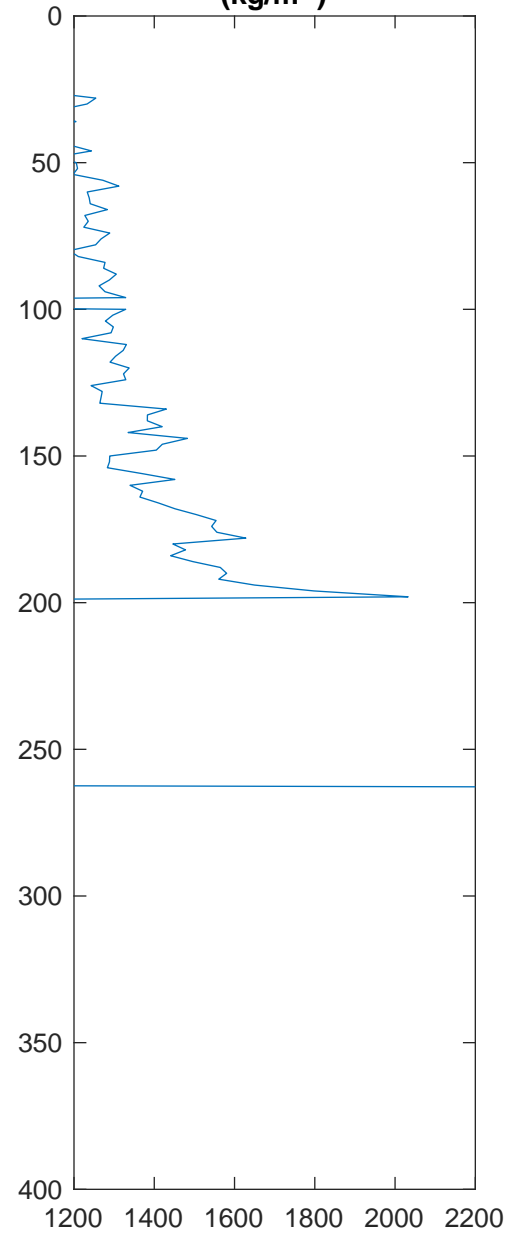
Sound Speed Ratio



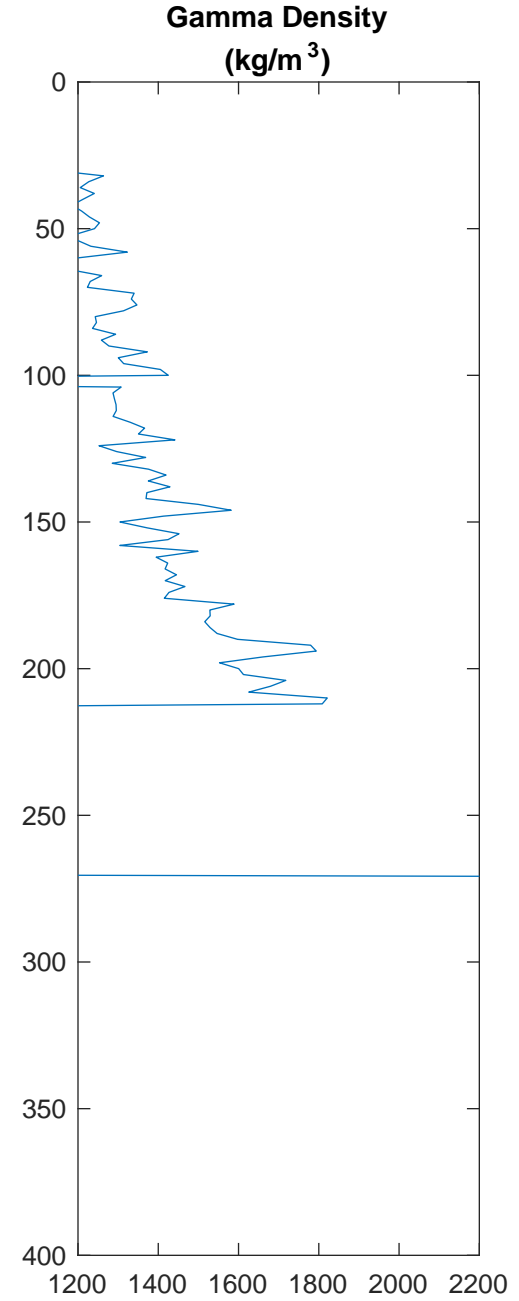
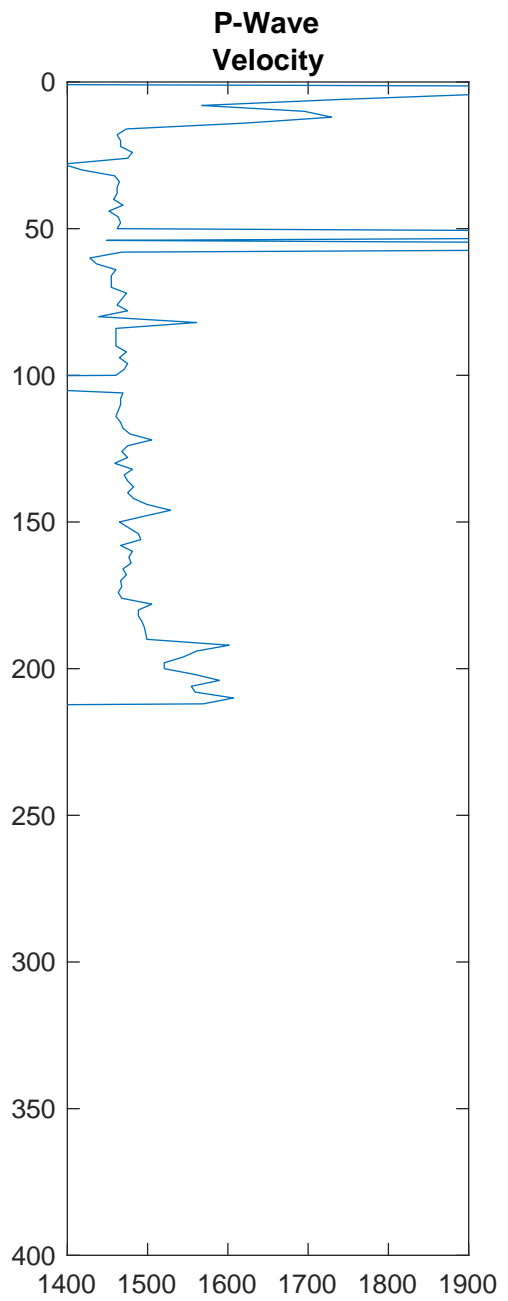
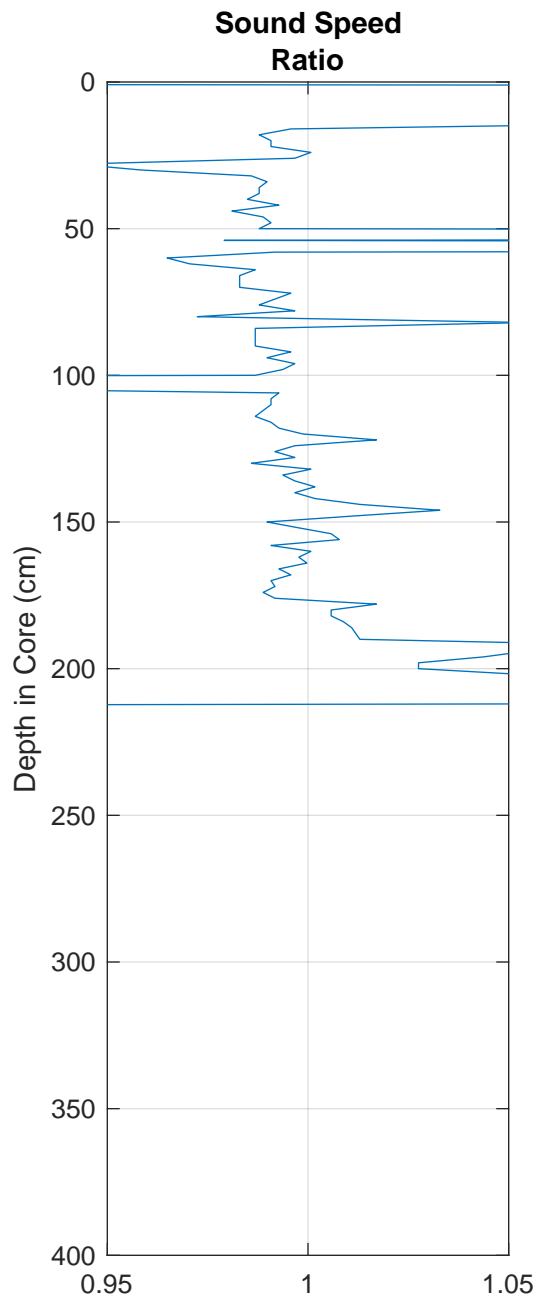
P-Wave Velocity



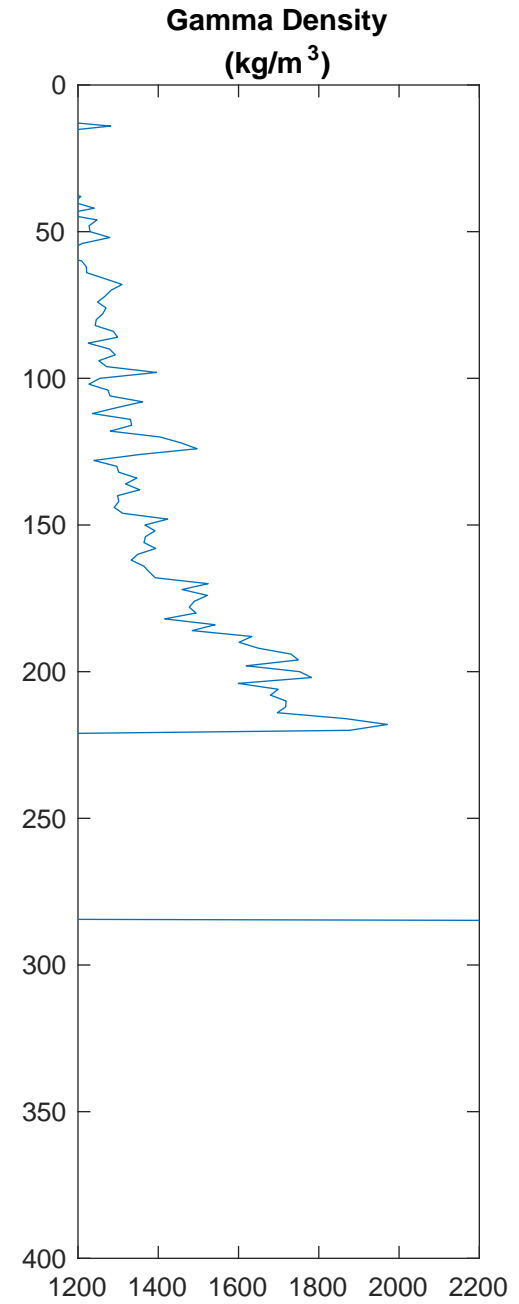
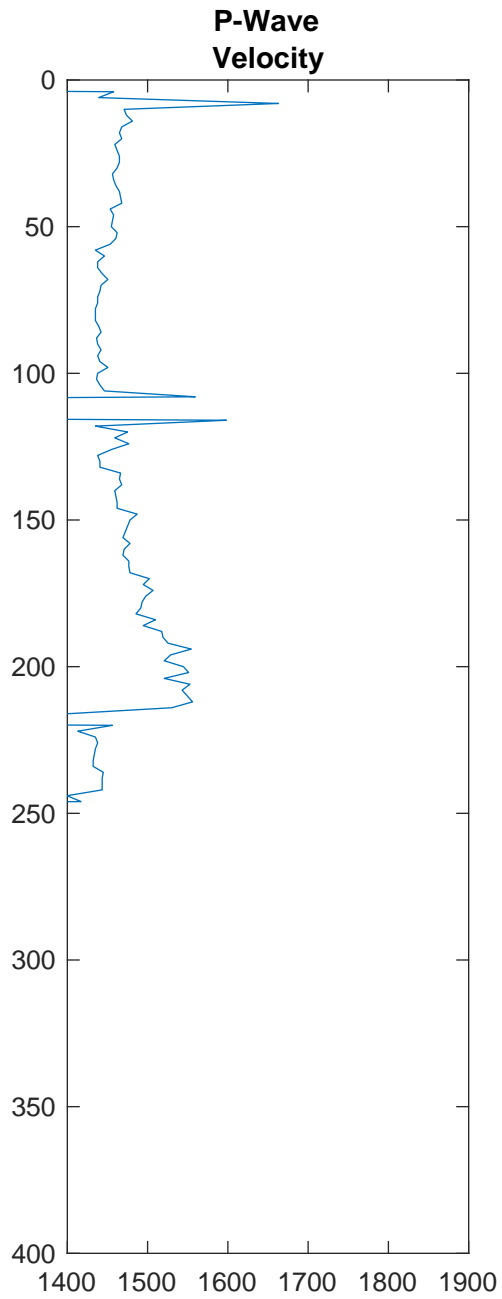
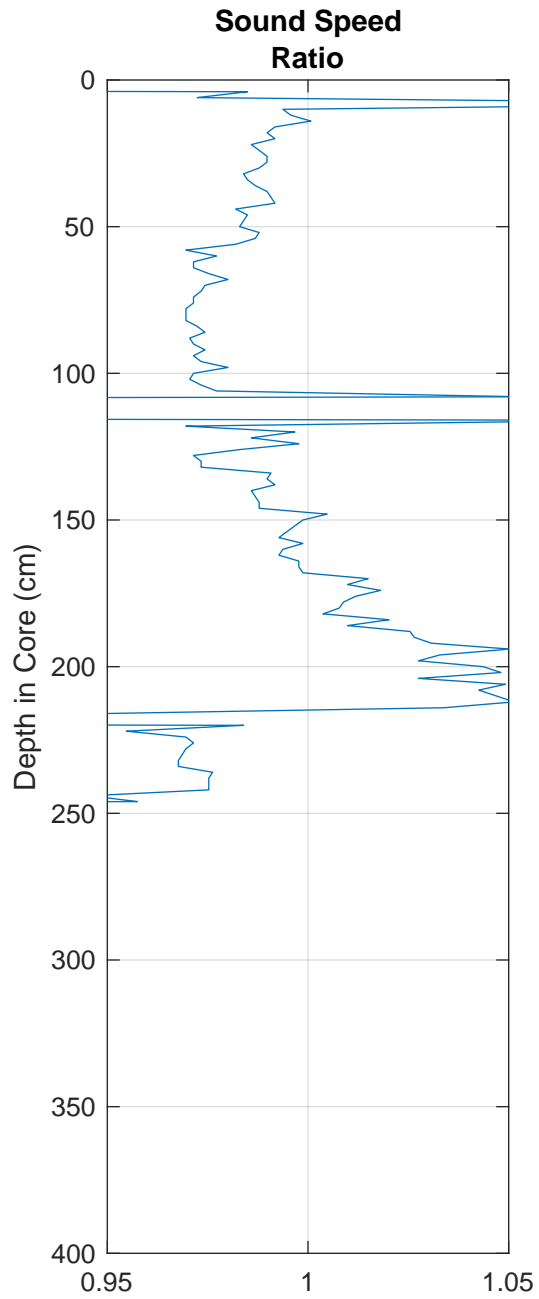
Gamma Density (kg/m³)



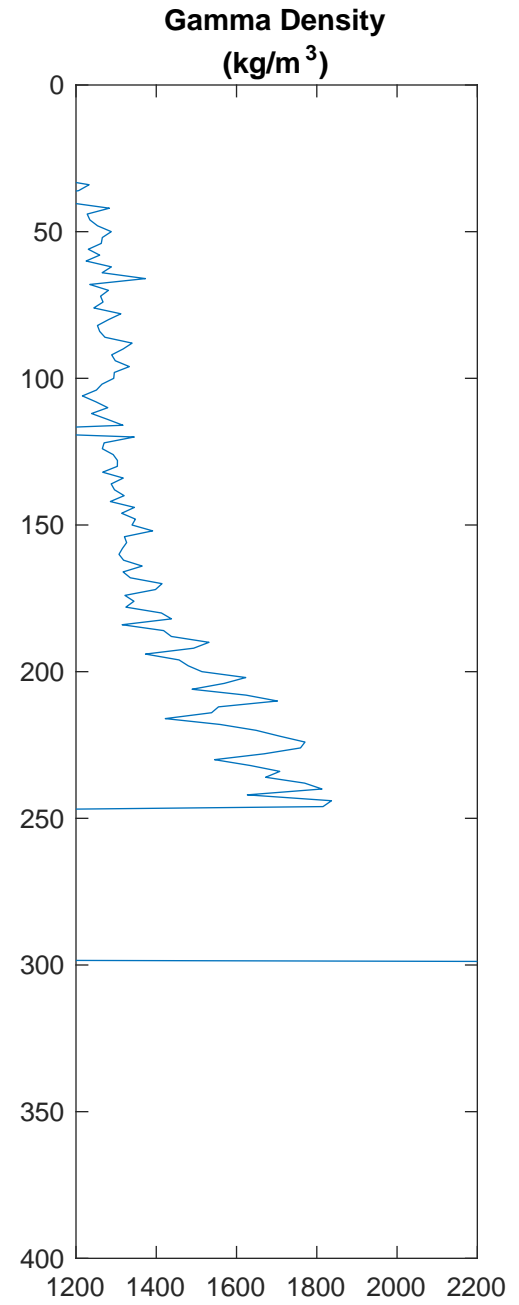
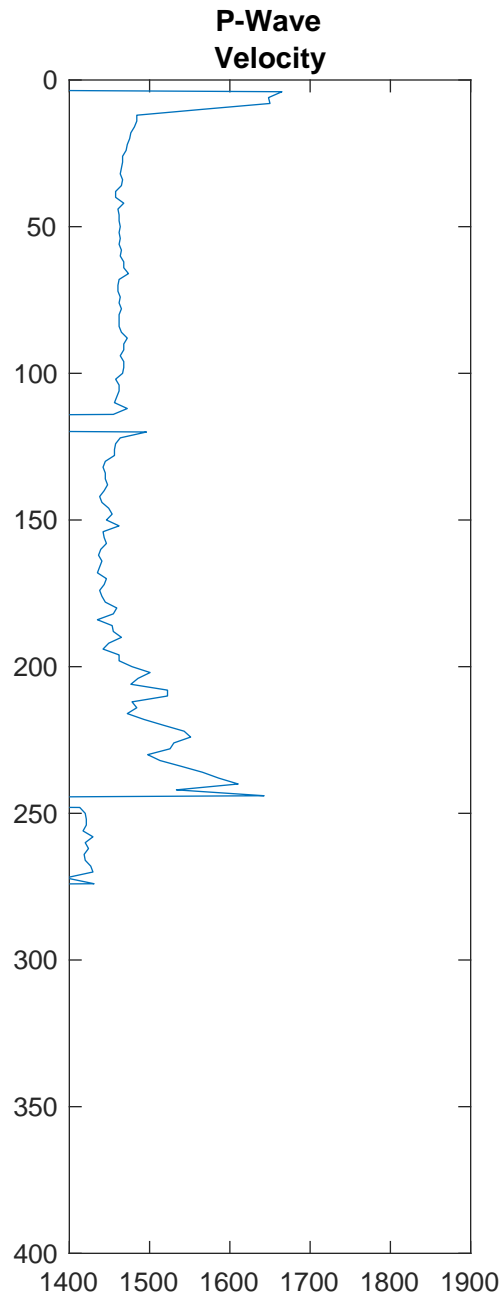
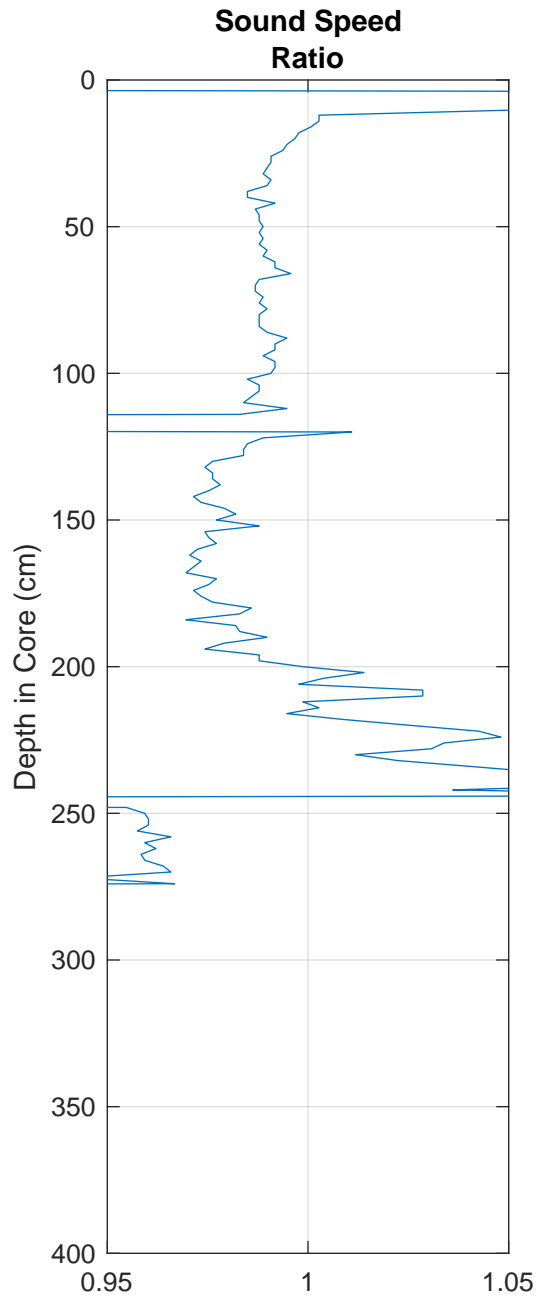
Core: VC4_Hole1_EN577_



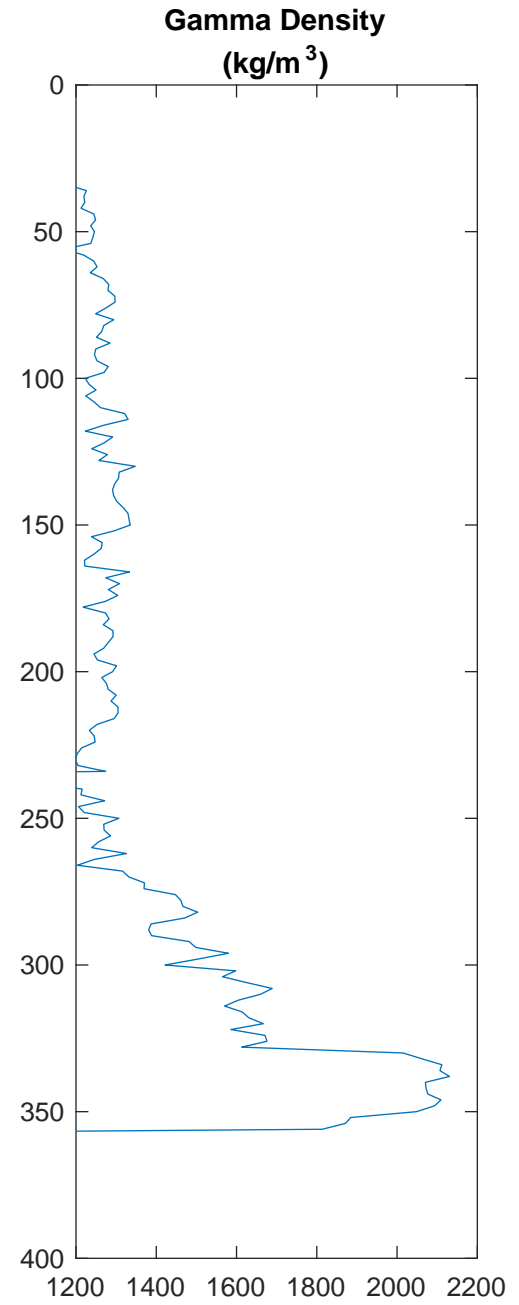
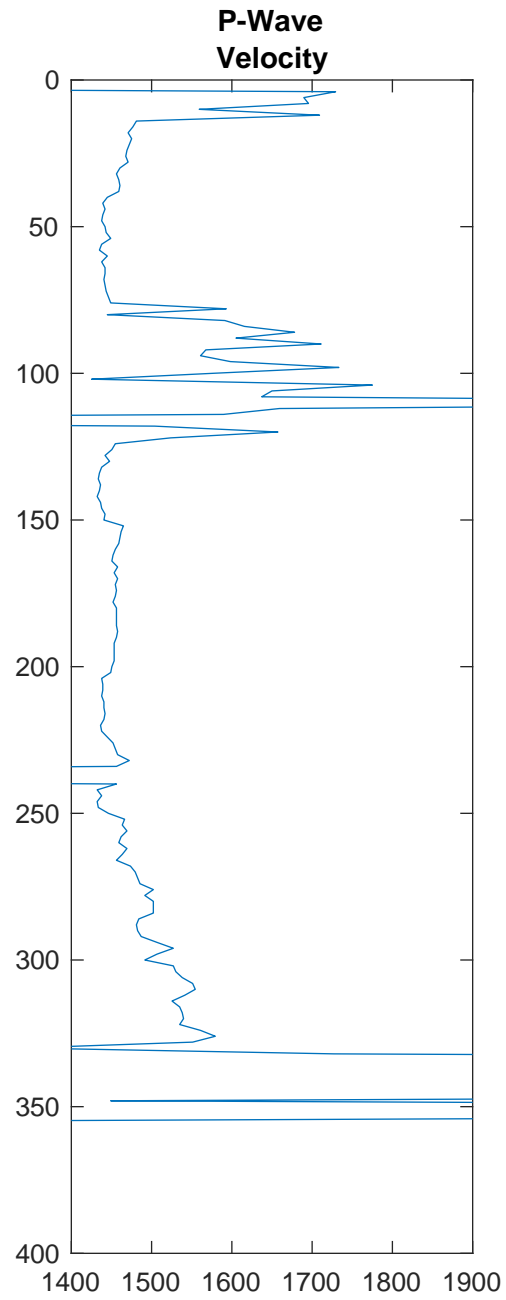
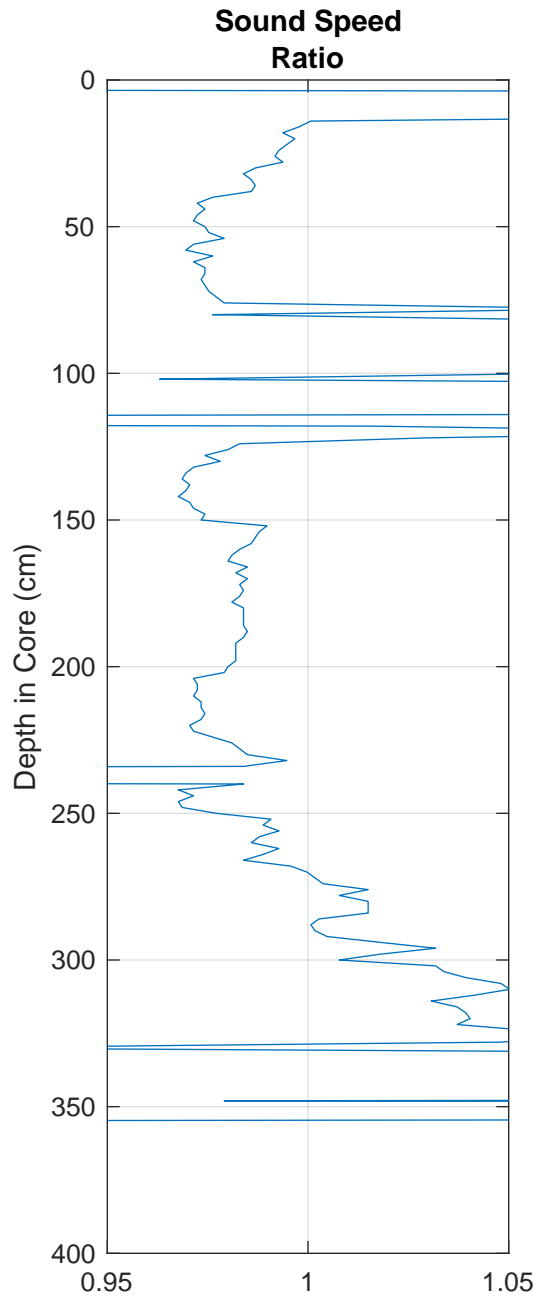
Core: VC5_Hole1_EN577_



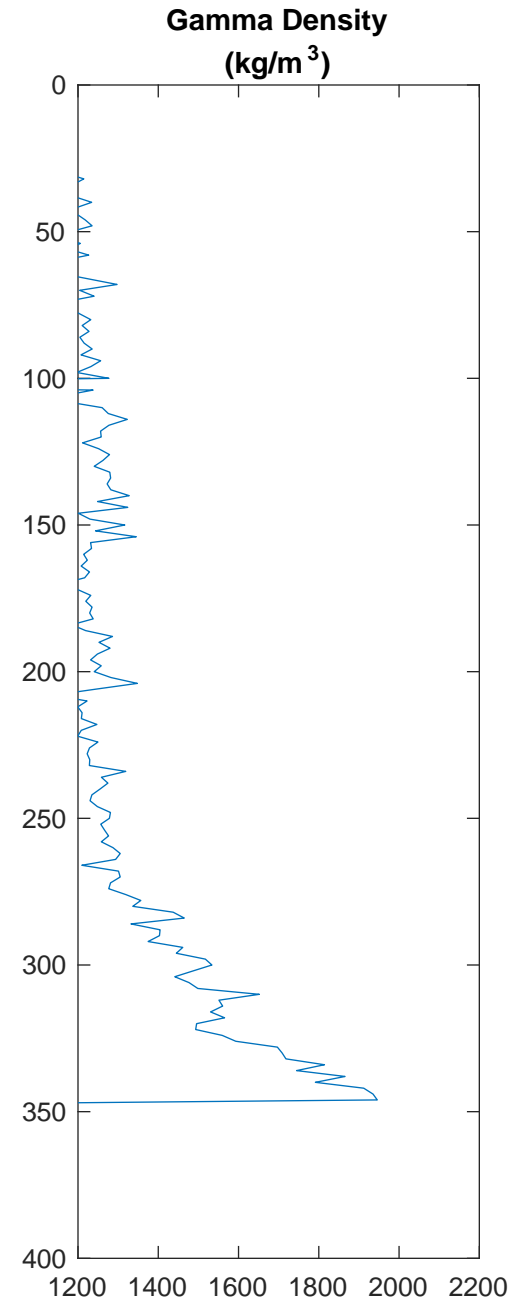
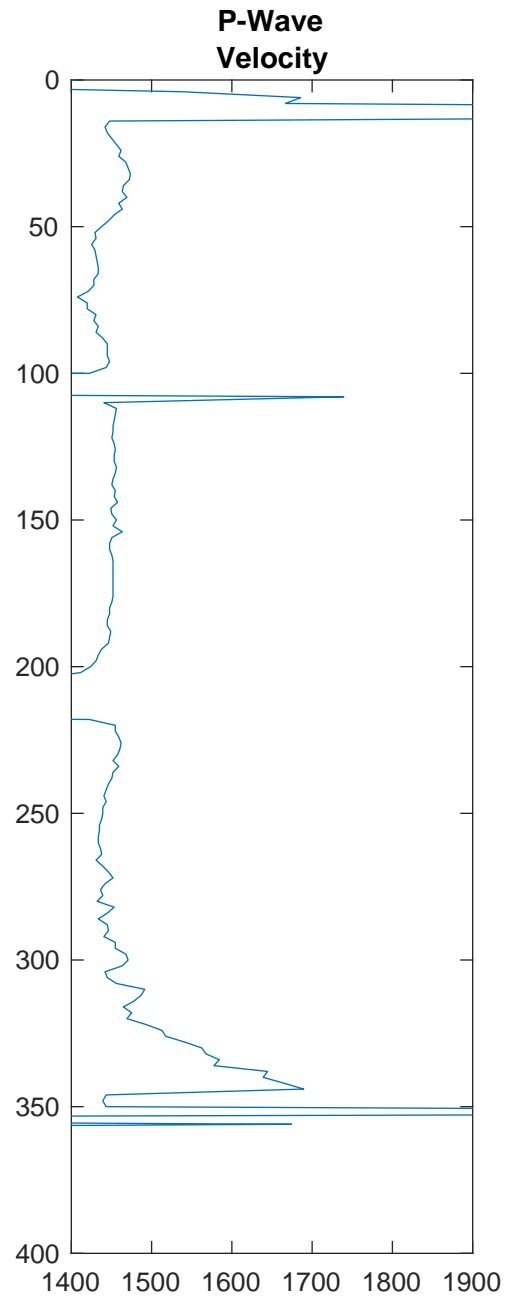
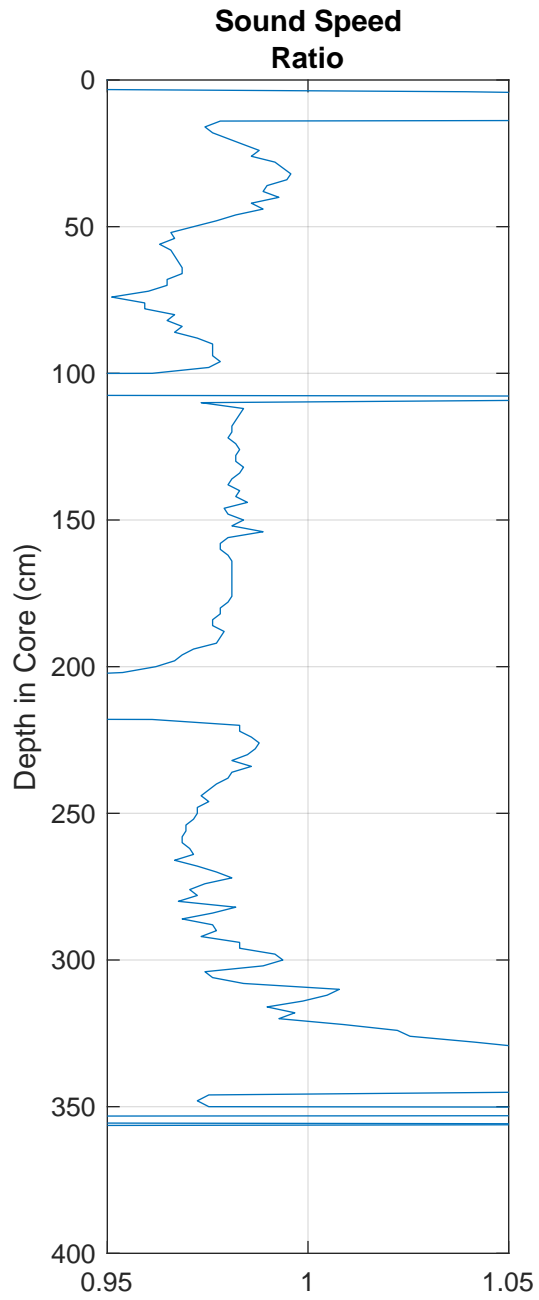
Core: VC6_Hole1_EN577_



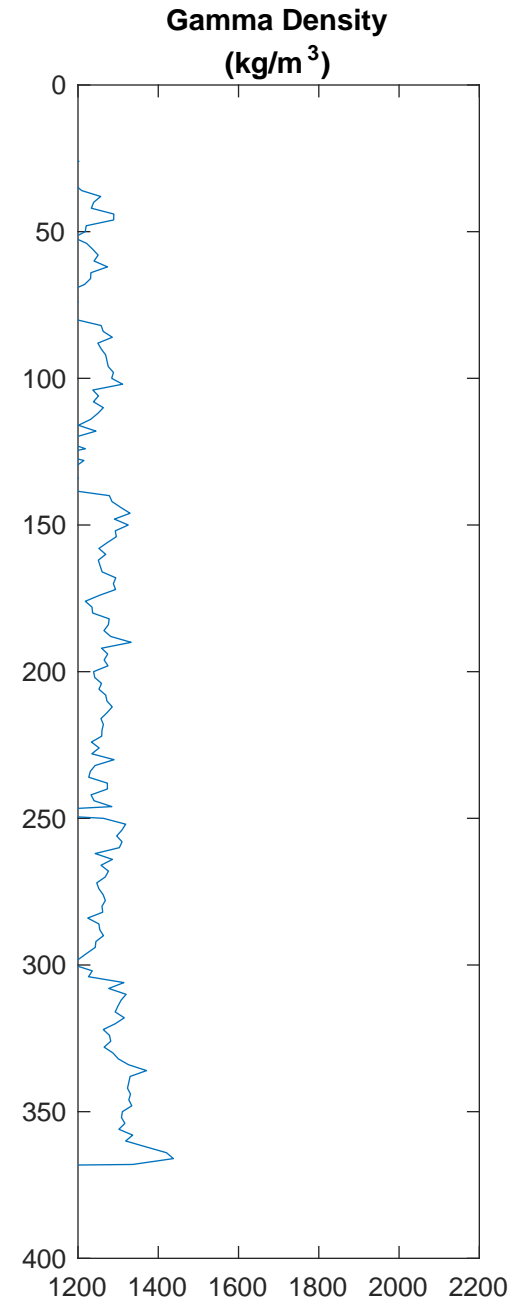
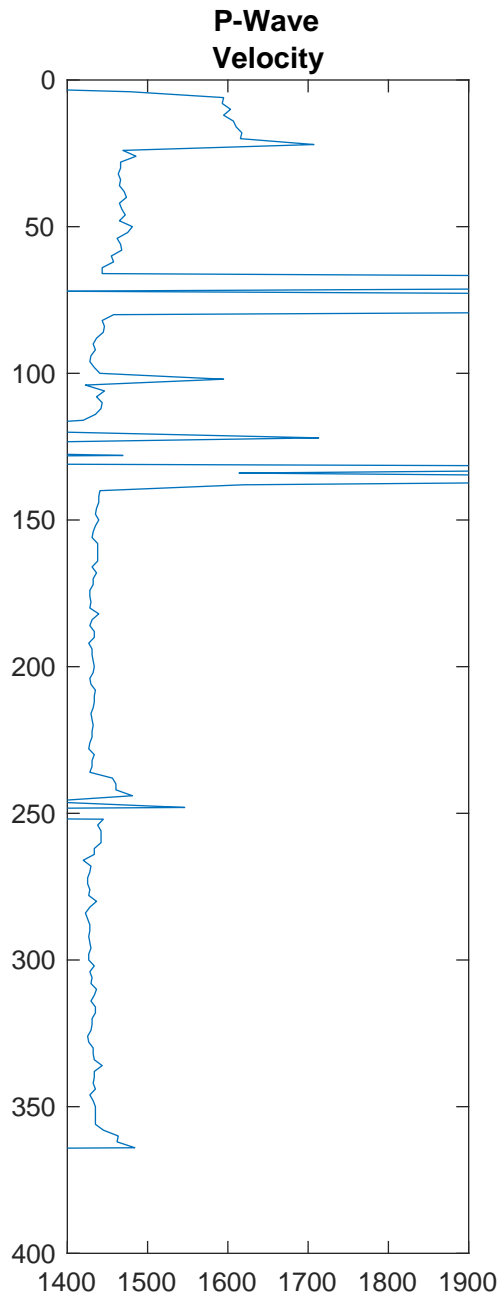
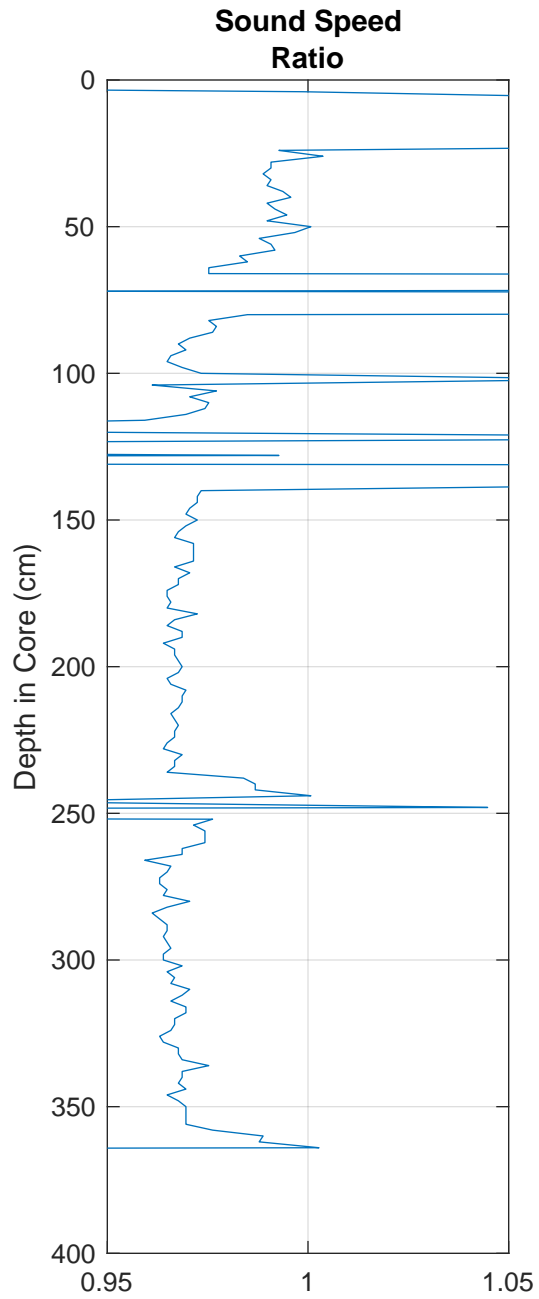
Core: VC7_Hole1_EN577_



Core: VC8_Hole1_EN577_

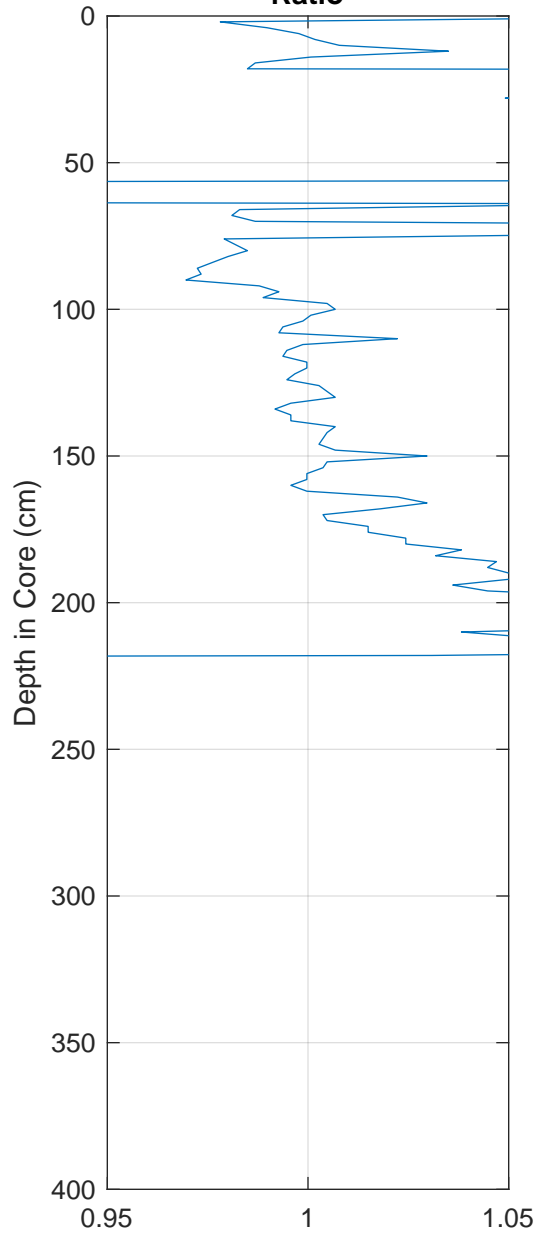


Core: VC9_Hole1_EN577_

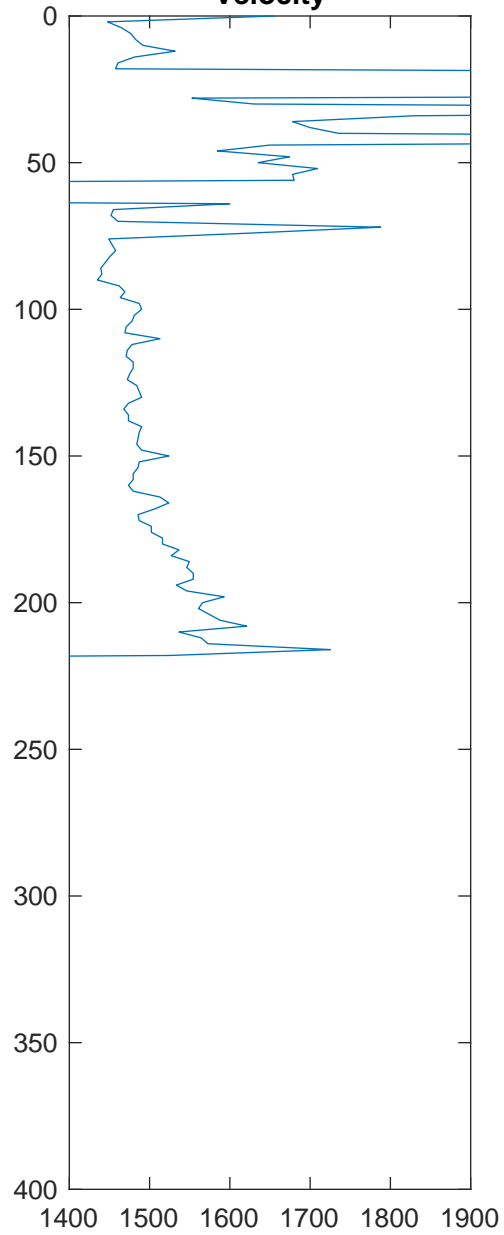


Core: VC10_Hole1_EN577_

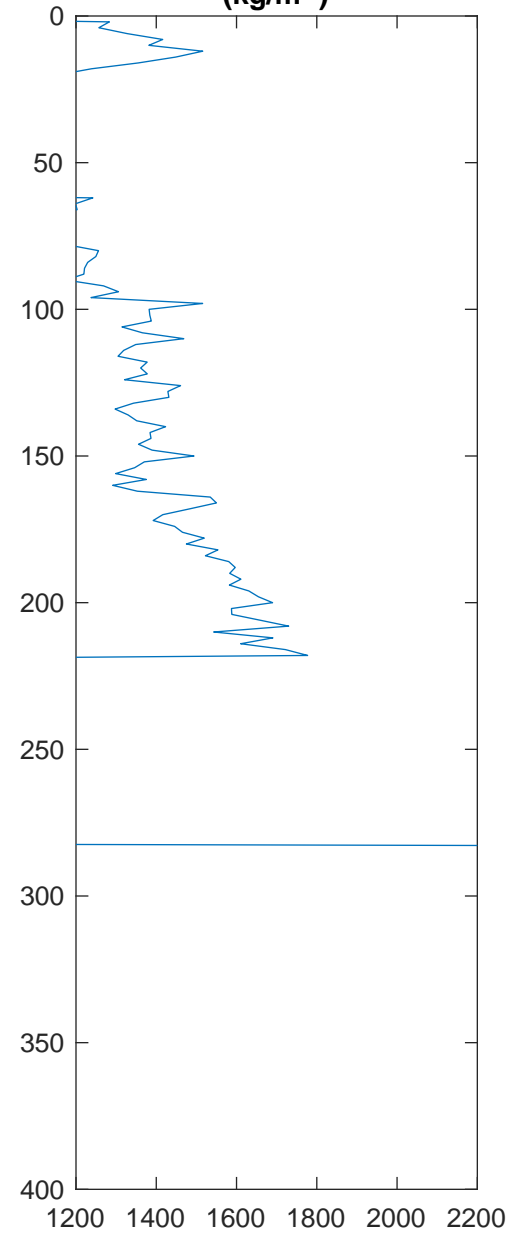
Sound Speed
Ratio



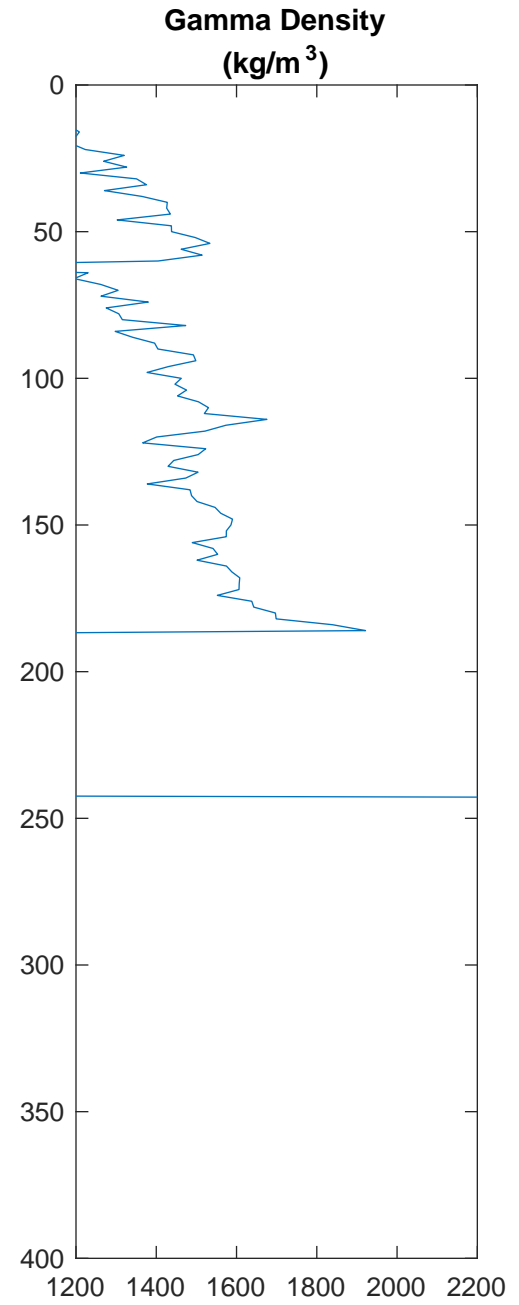
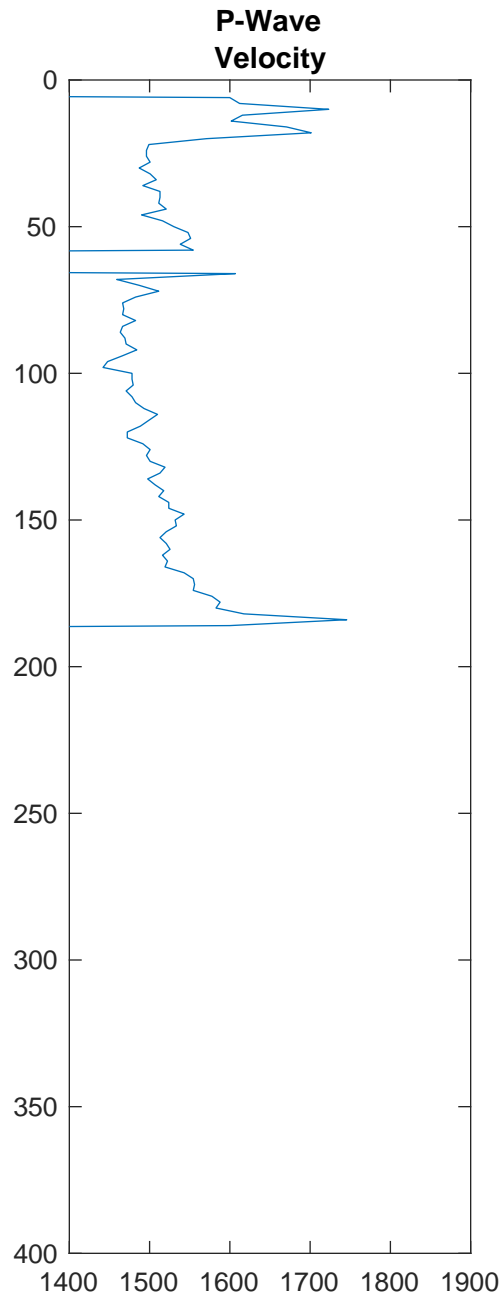
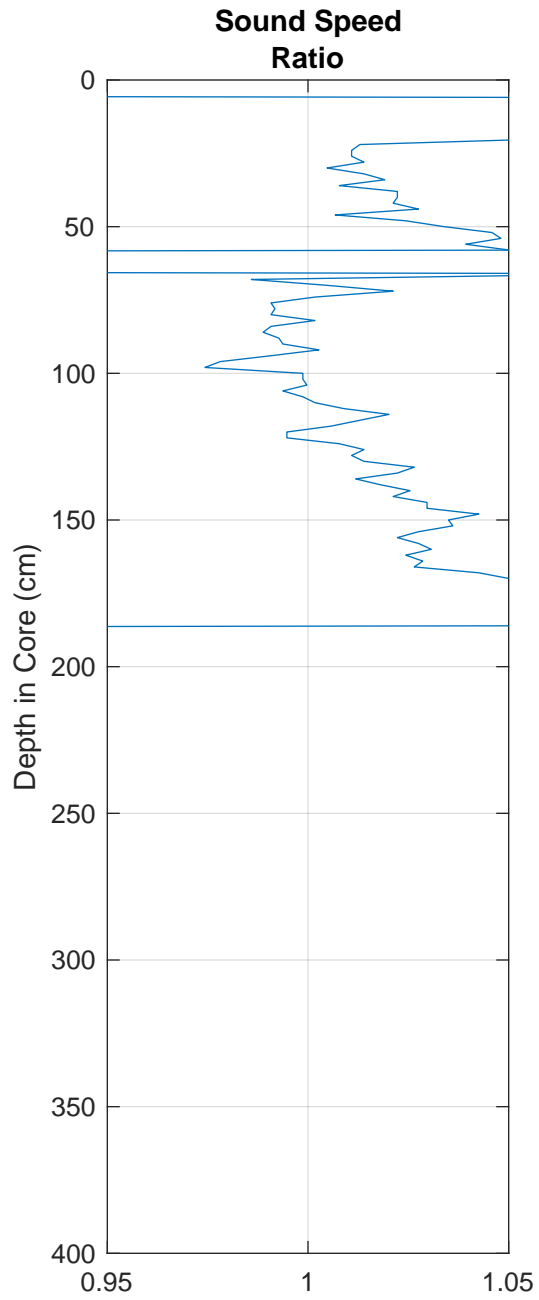
P-Wave
Velocity



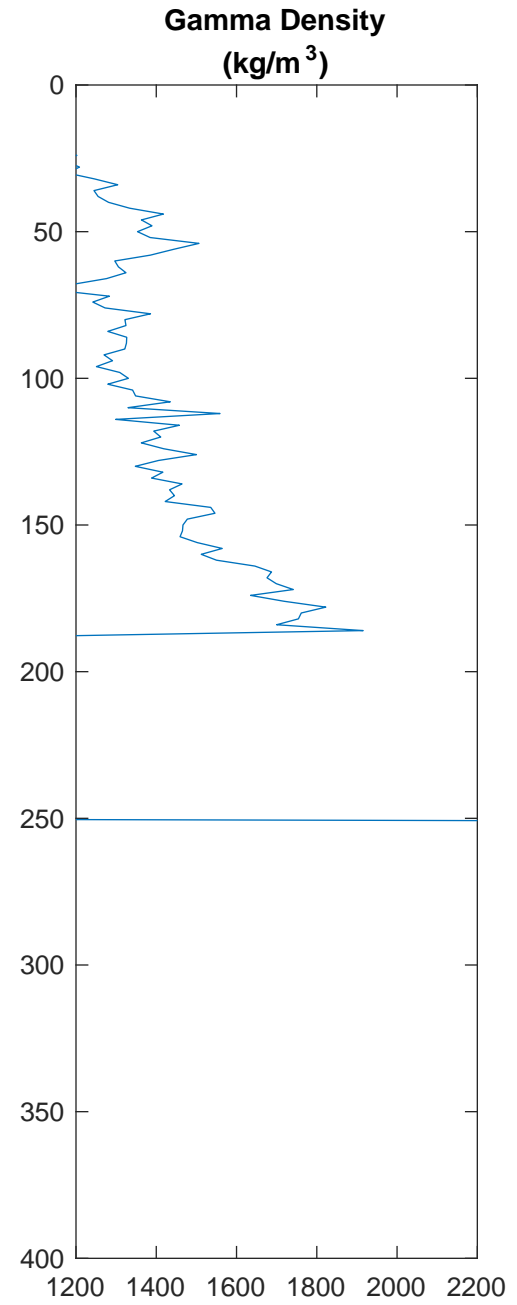
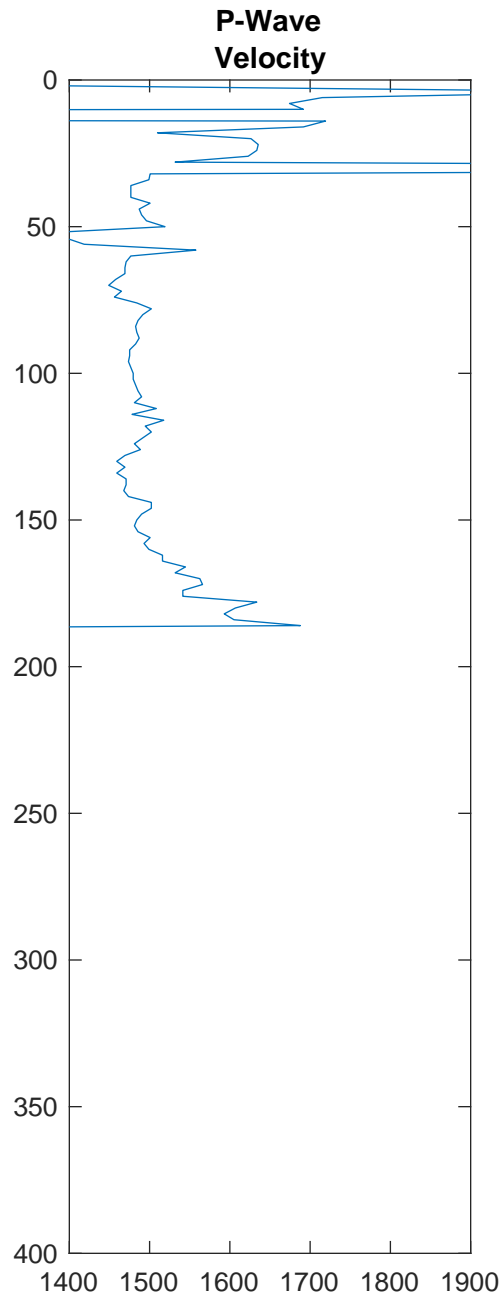
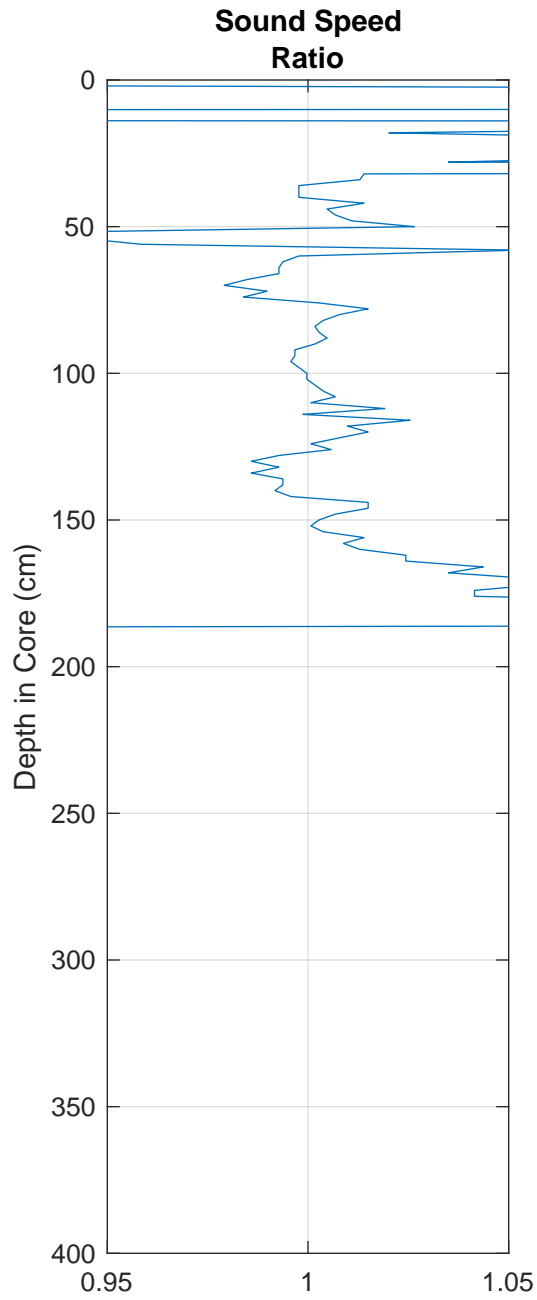
Gamma Density
(kg/m³)



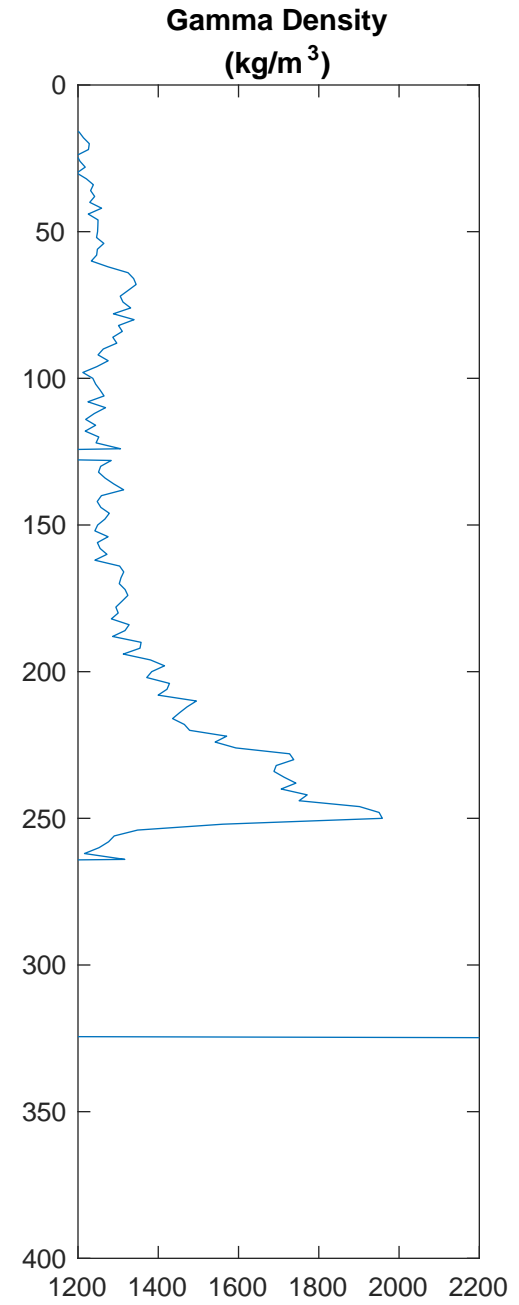
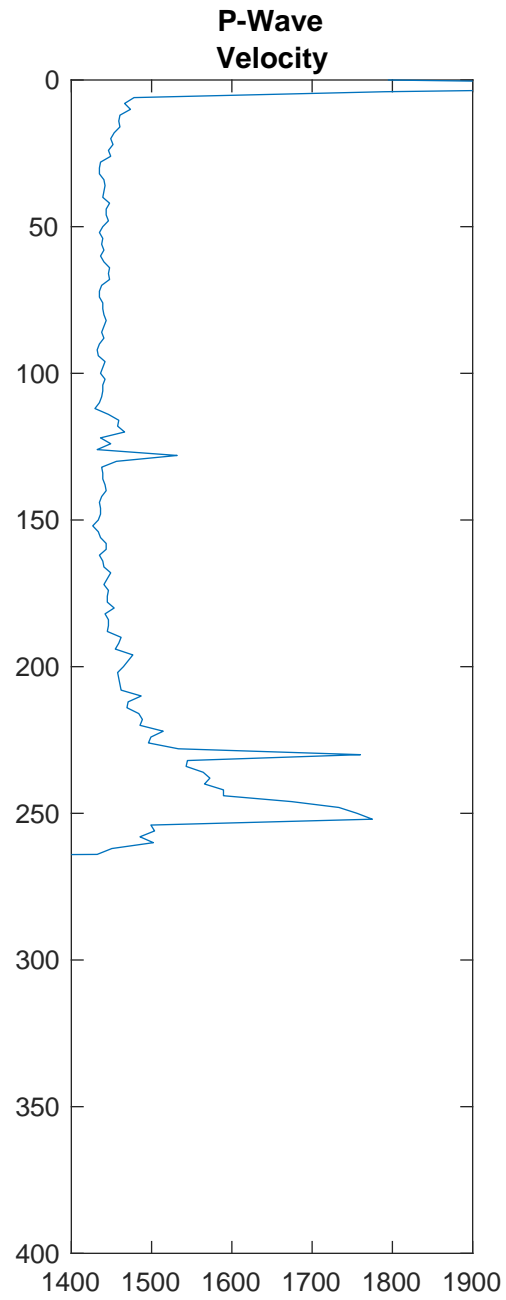
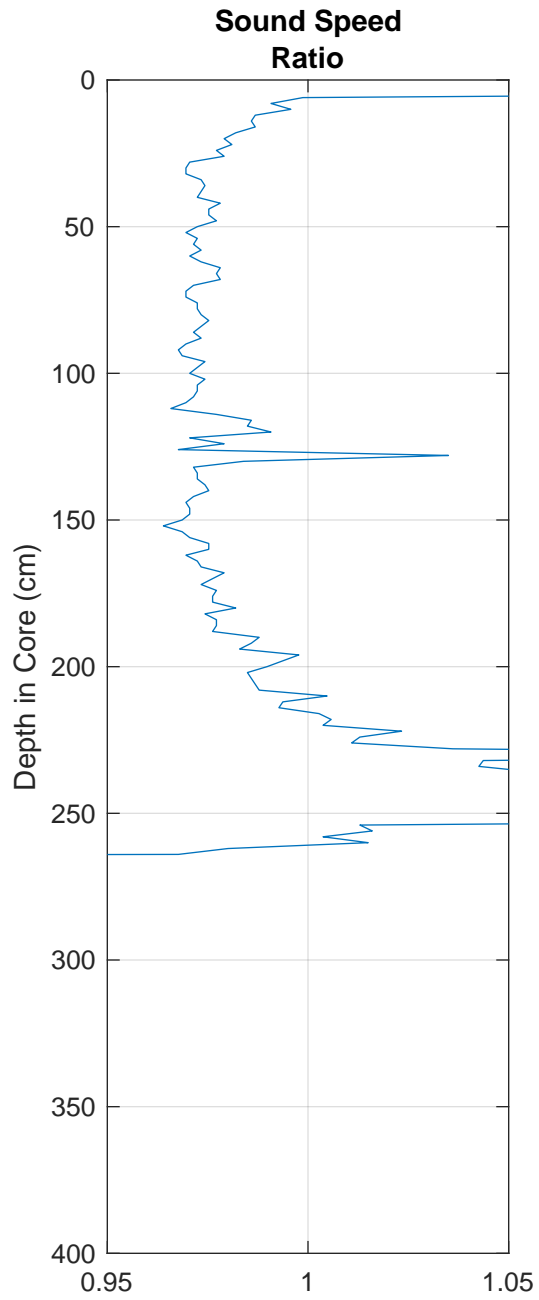
Core: VC11_Hole1_EN577_



Core: VC12_Hole1_EN577_

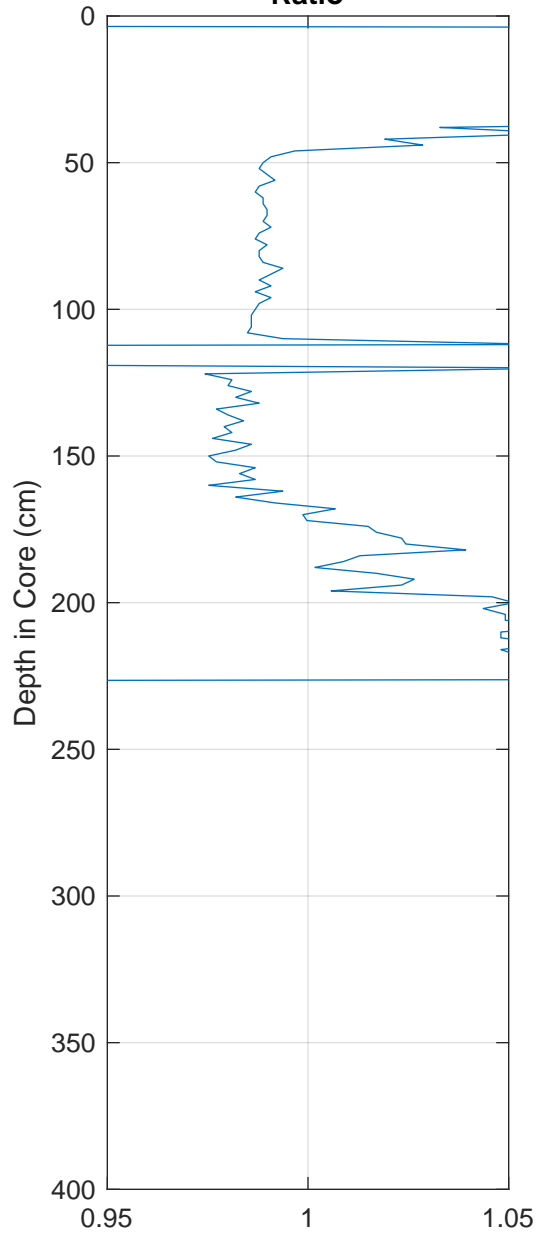


Core: VC13_Hole2_EN577_

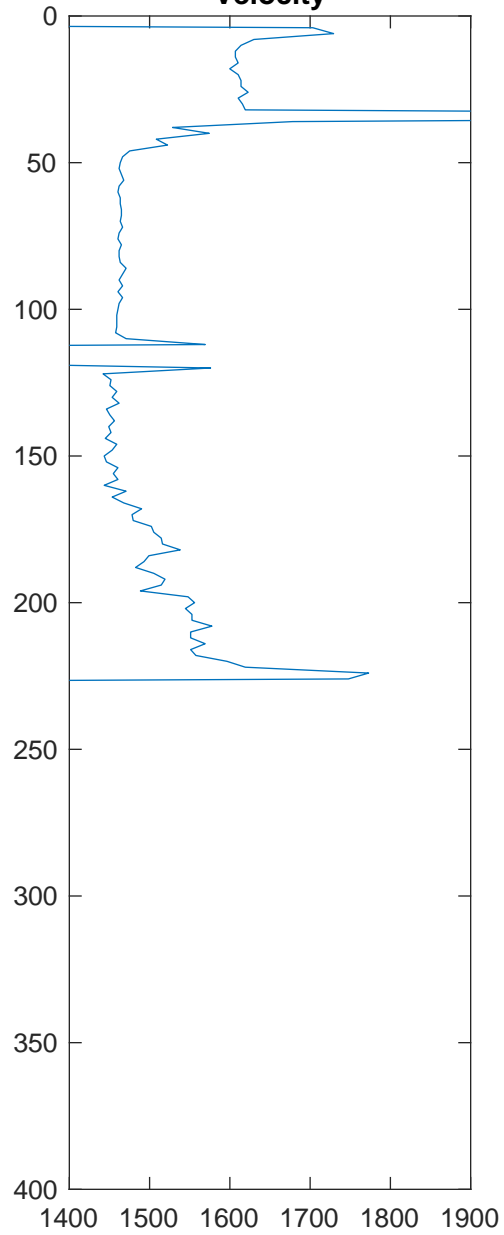


Core: VC14_Hole1_EN577_

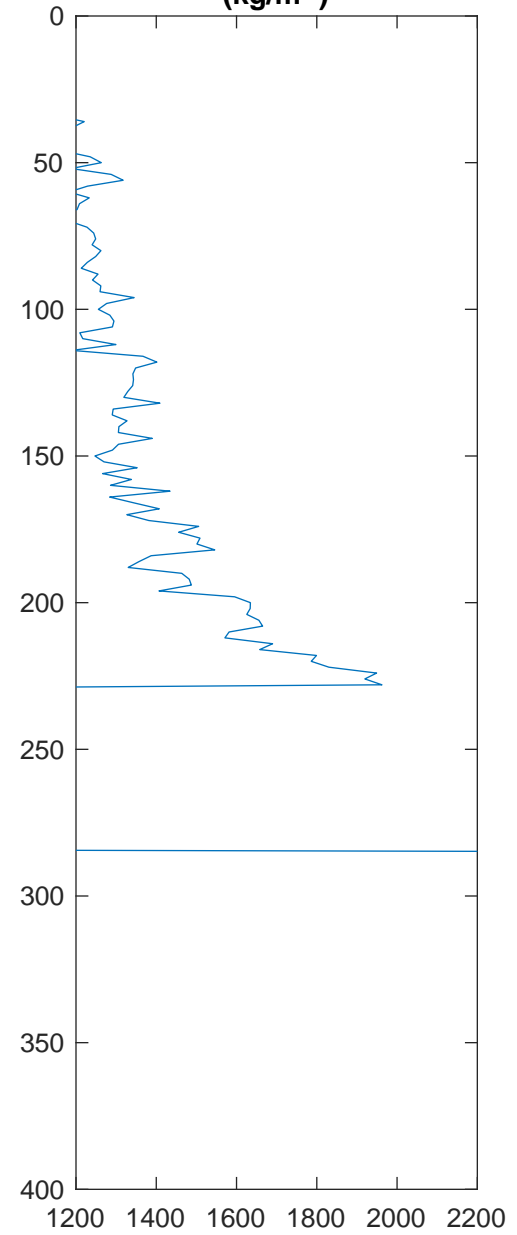
Sound Speed
Ratio



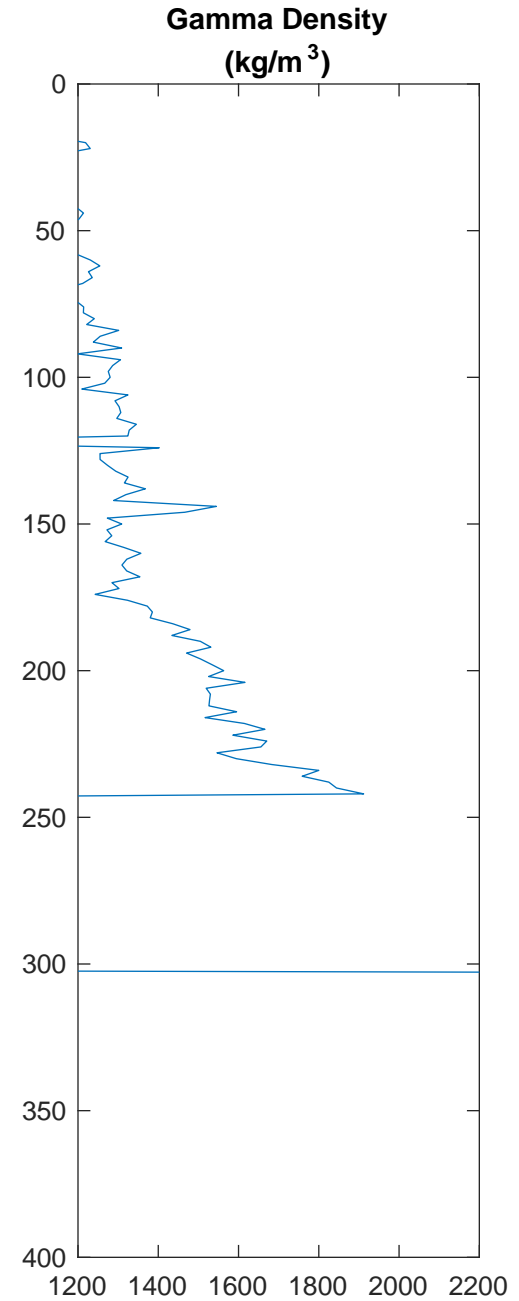
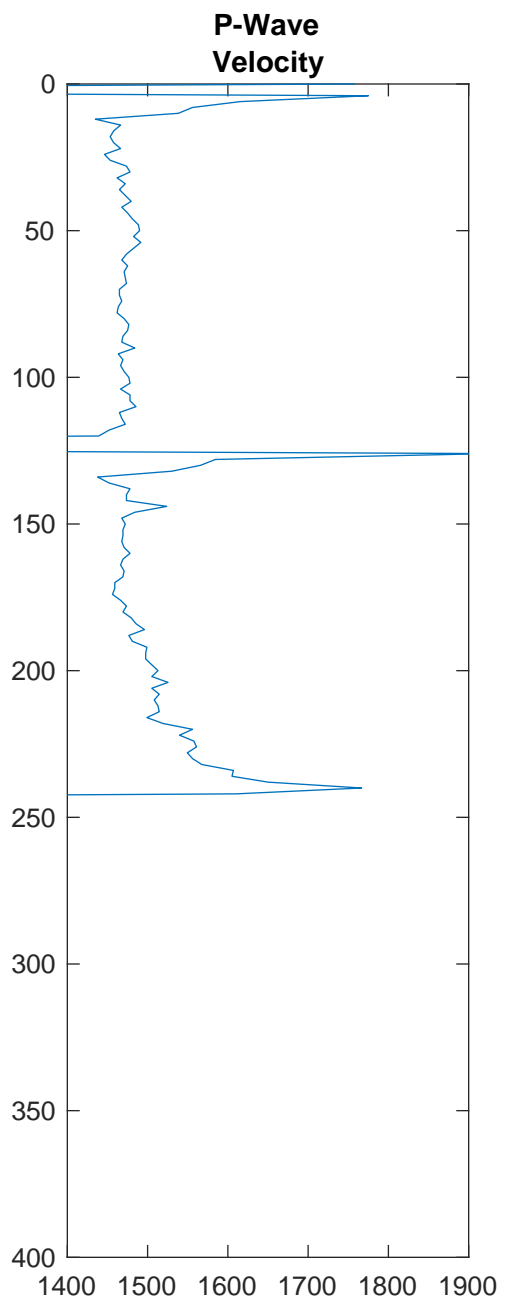
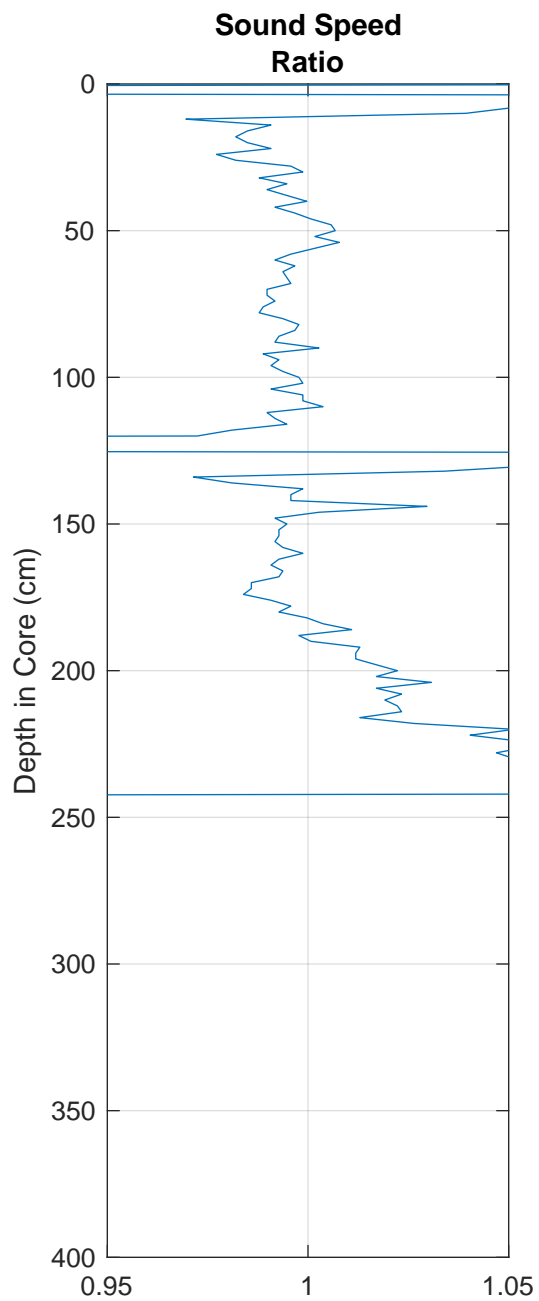
P-Wave
Velocity



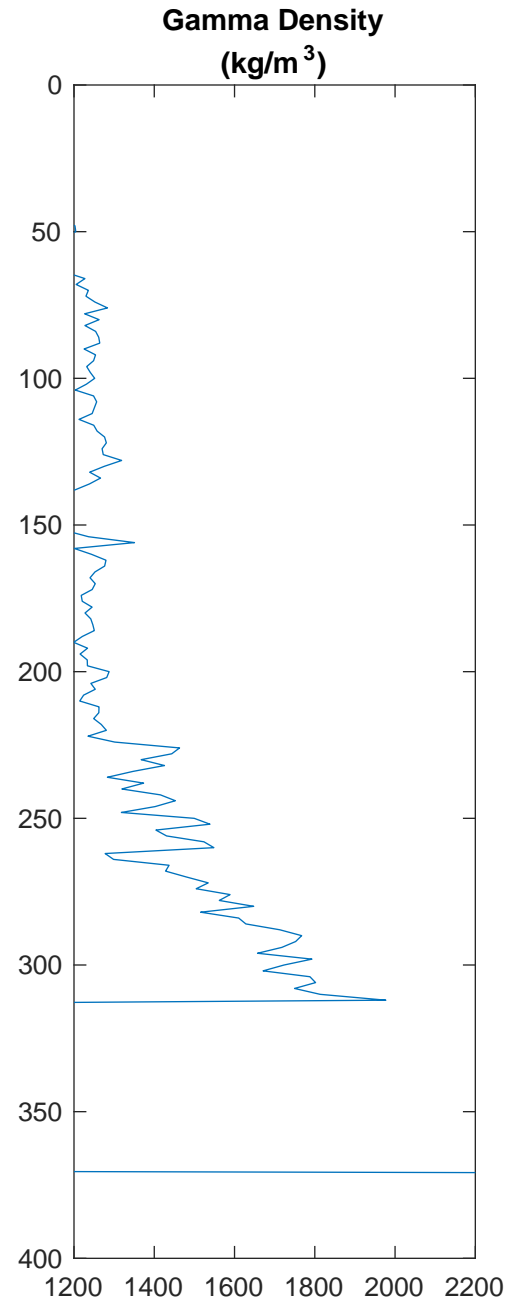
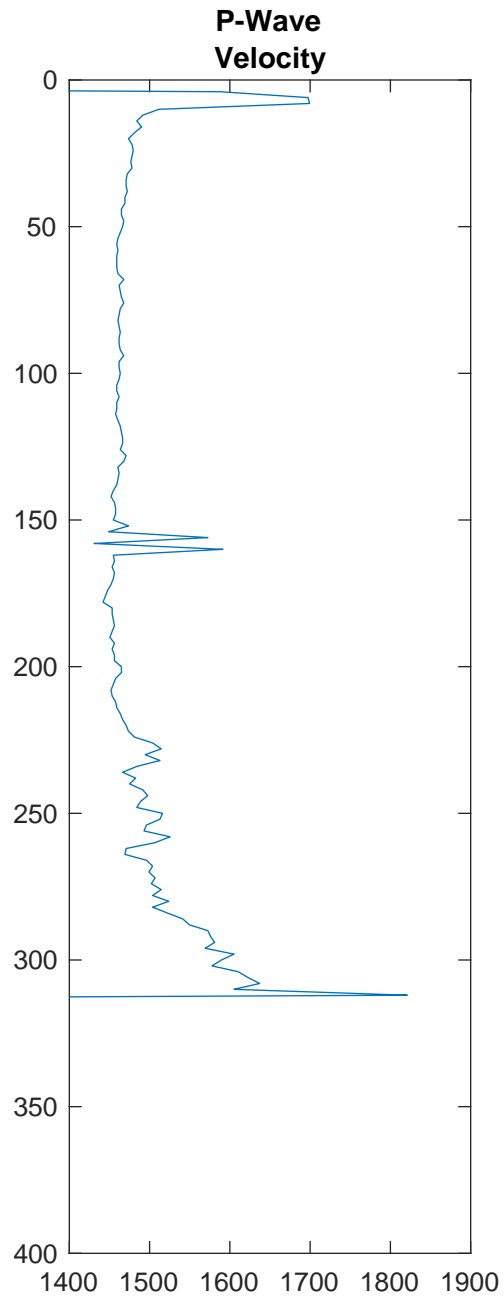
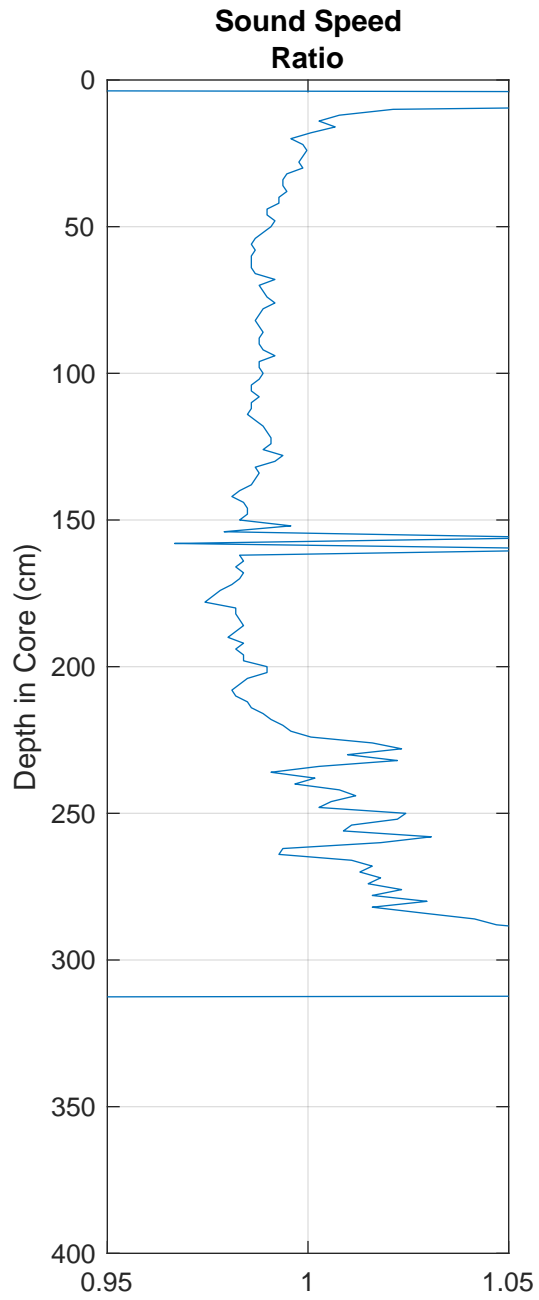
Gamma Density
(kg/m³)



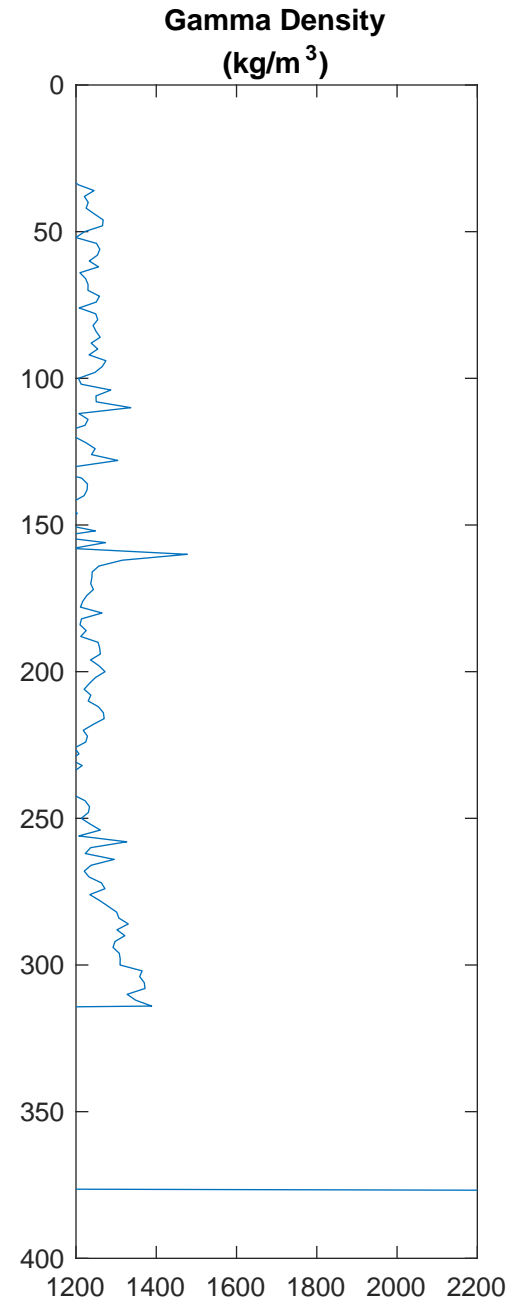
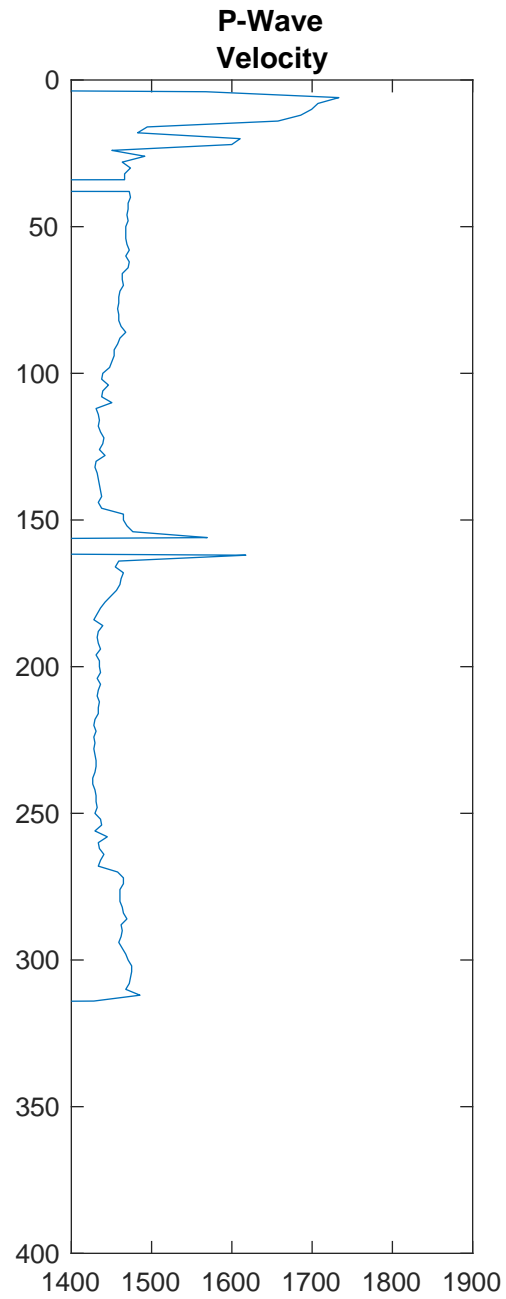
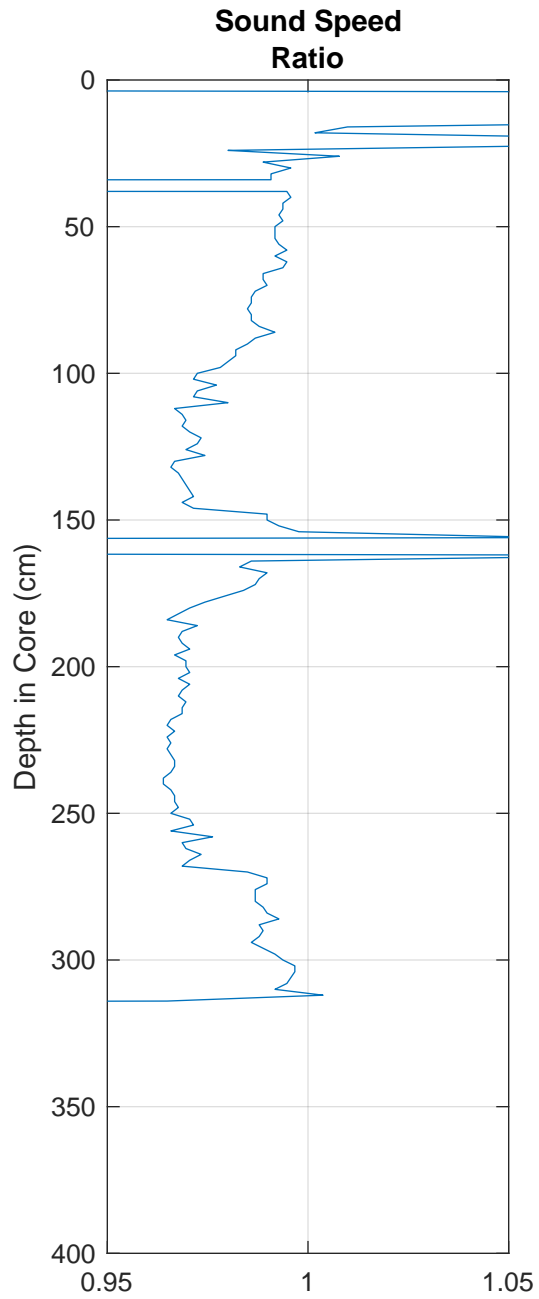
Core: VC15_Hole1_EN577_



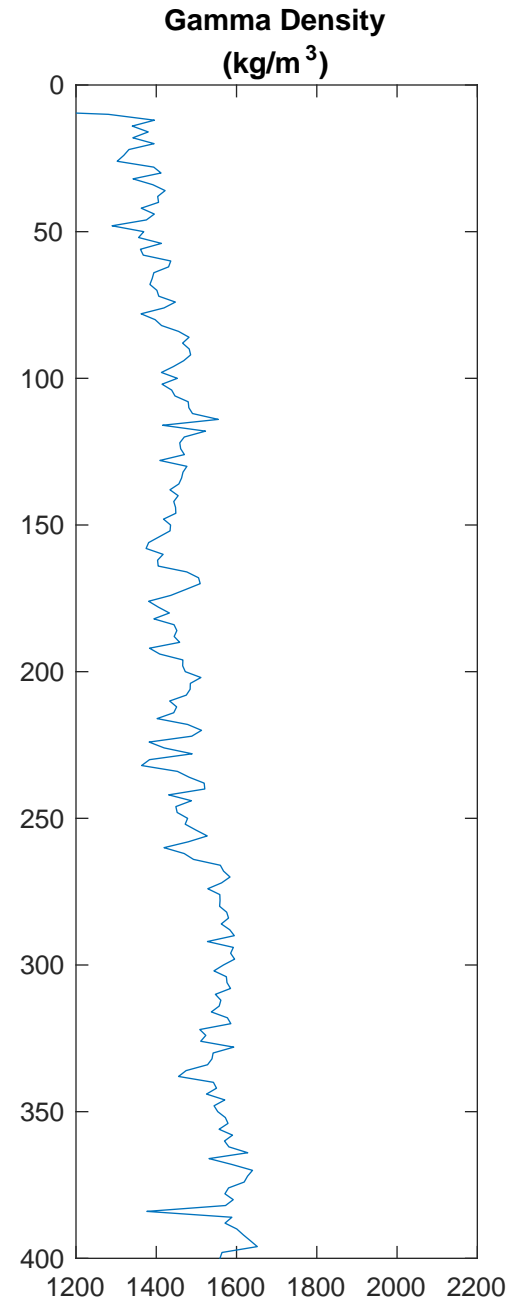
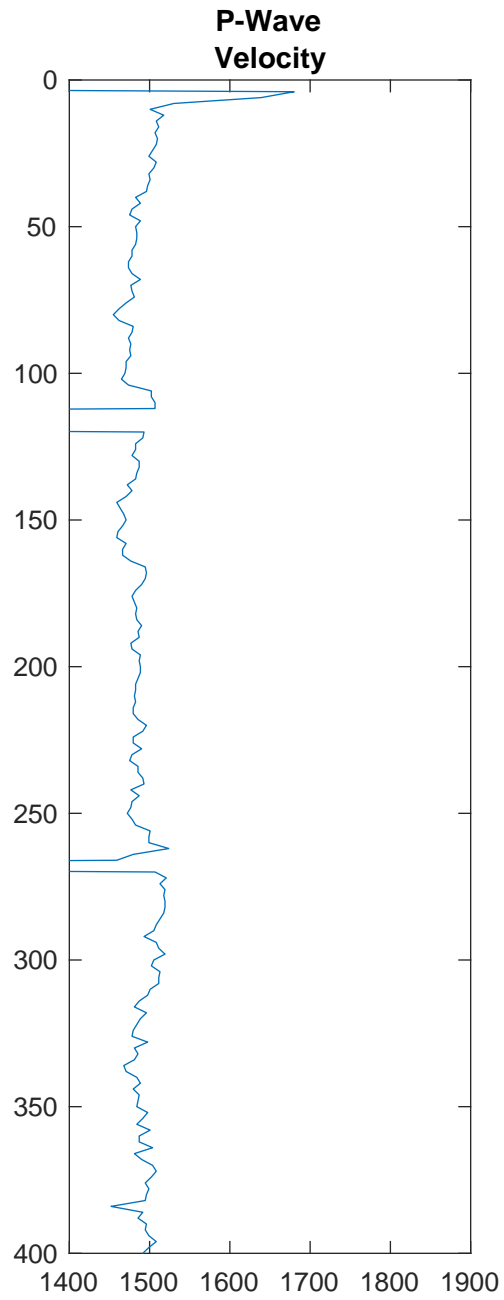
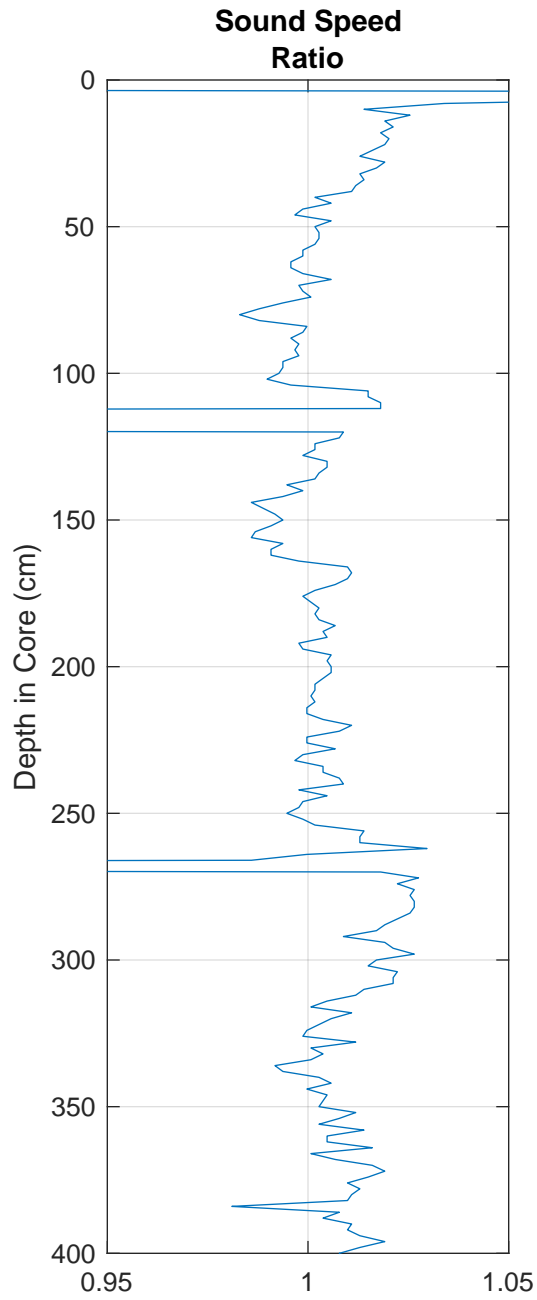
Core: VC16_Hole1_EN577_



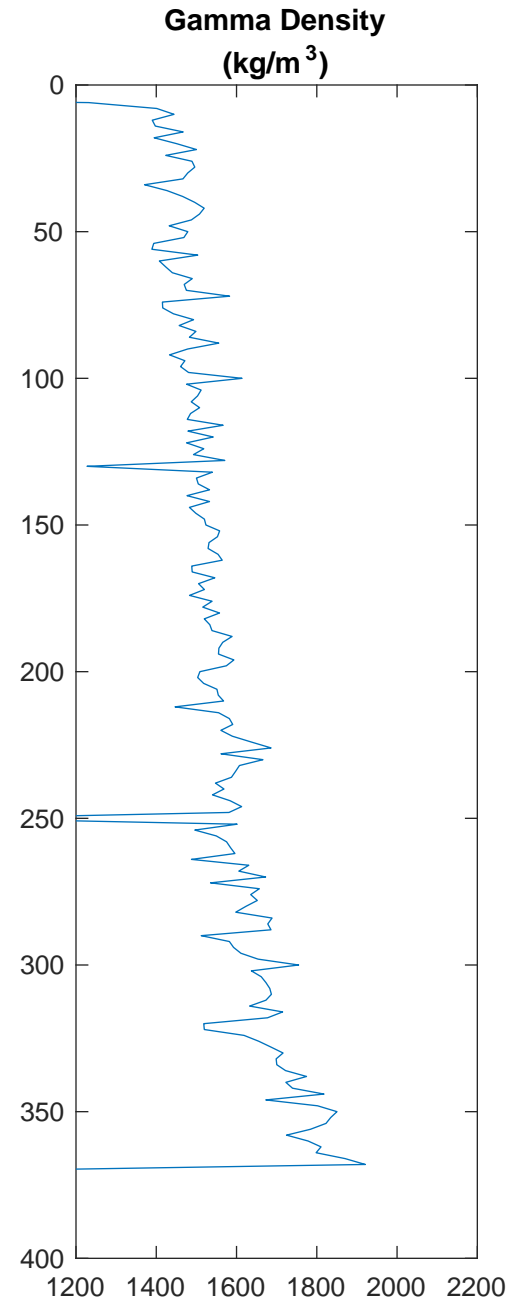
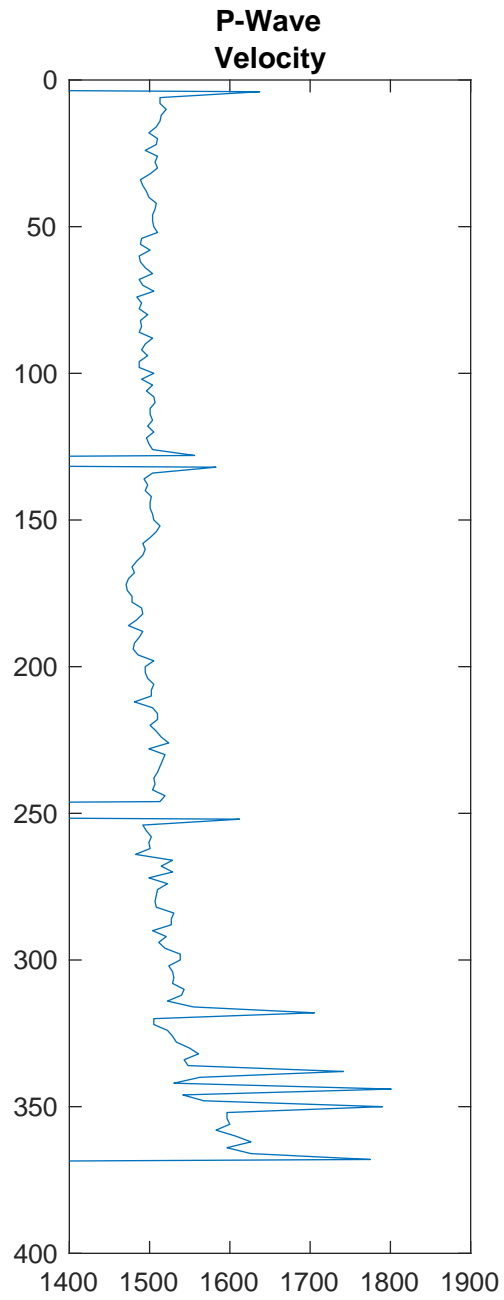
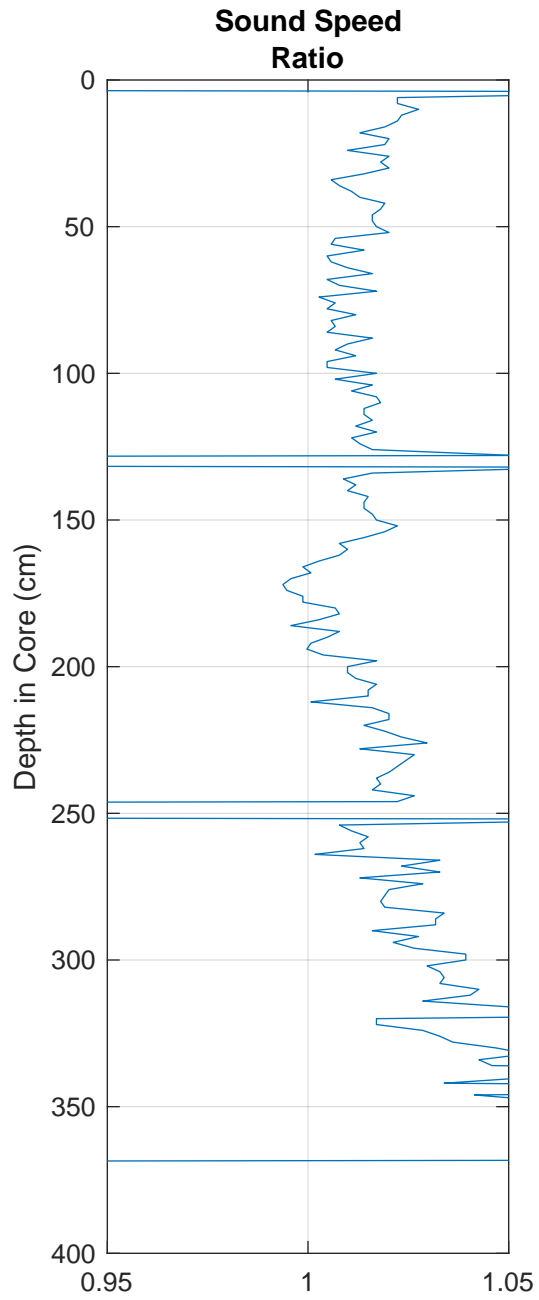
Core: VC17_Hole1_EN577_



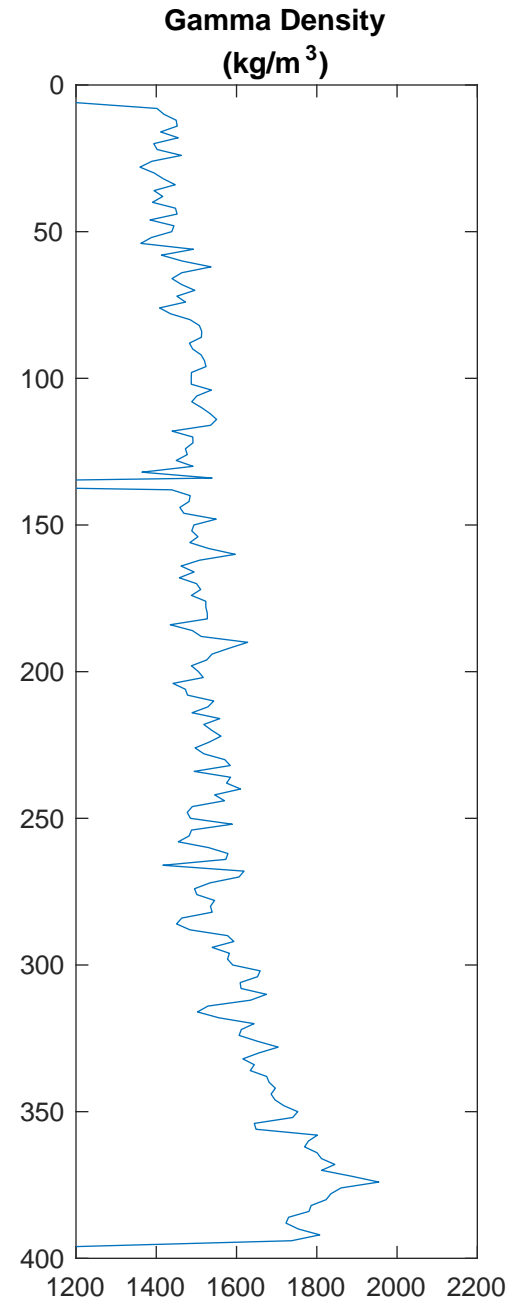
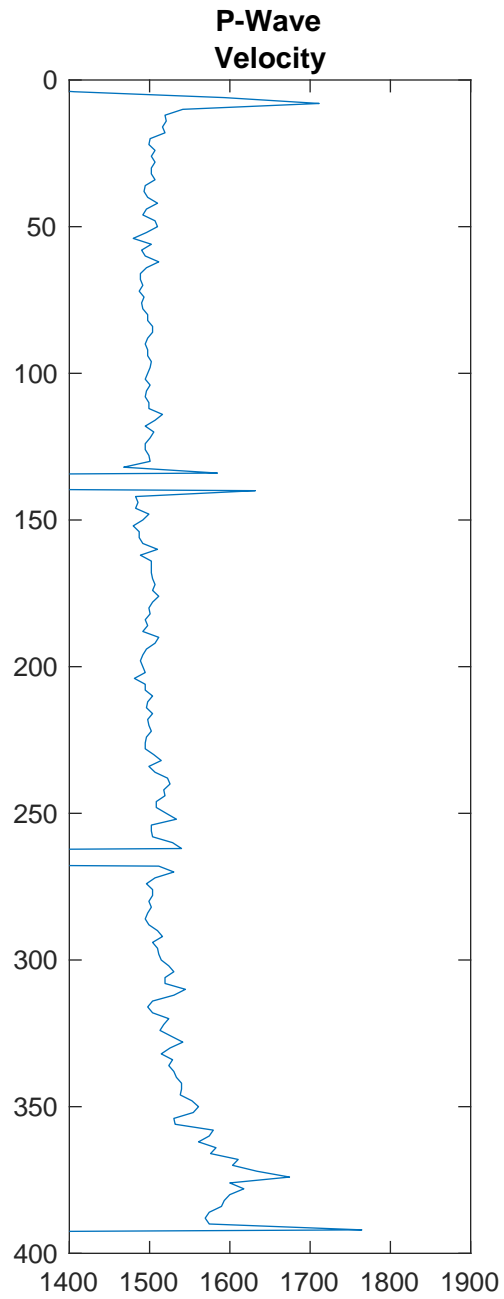
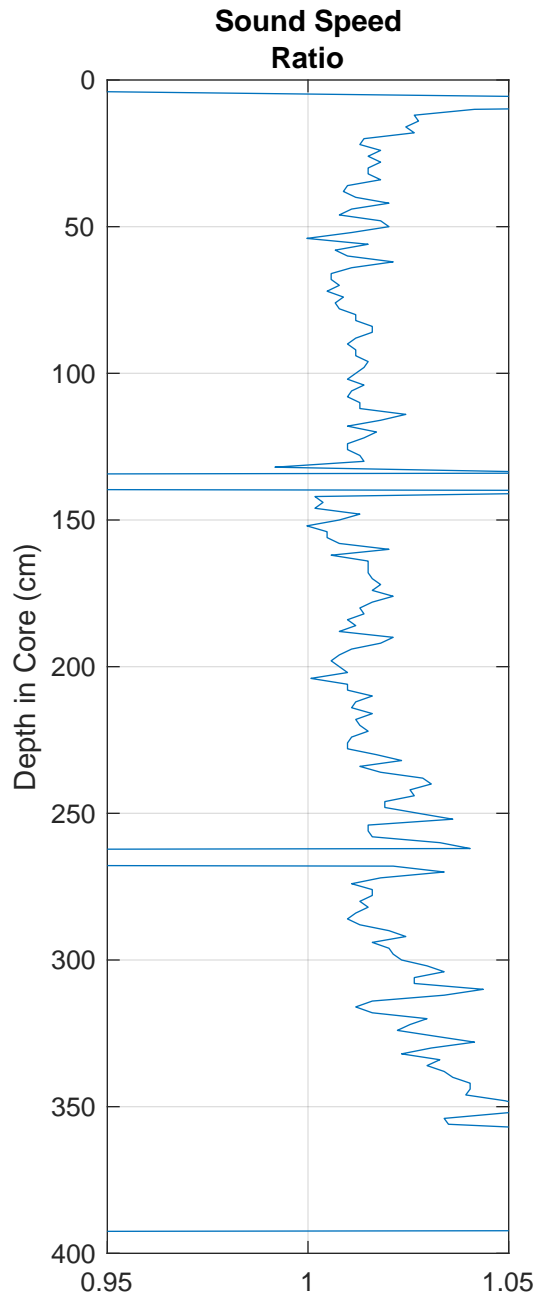
Core: VC18_Hole1_EN577_



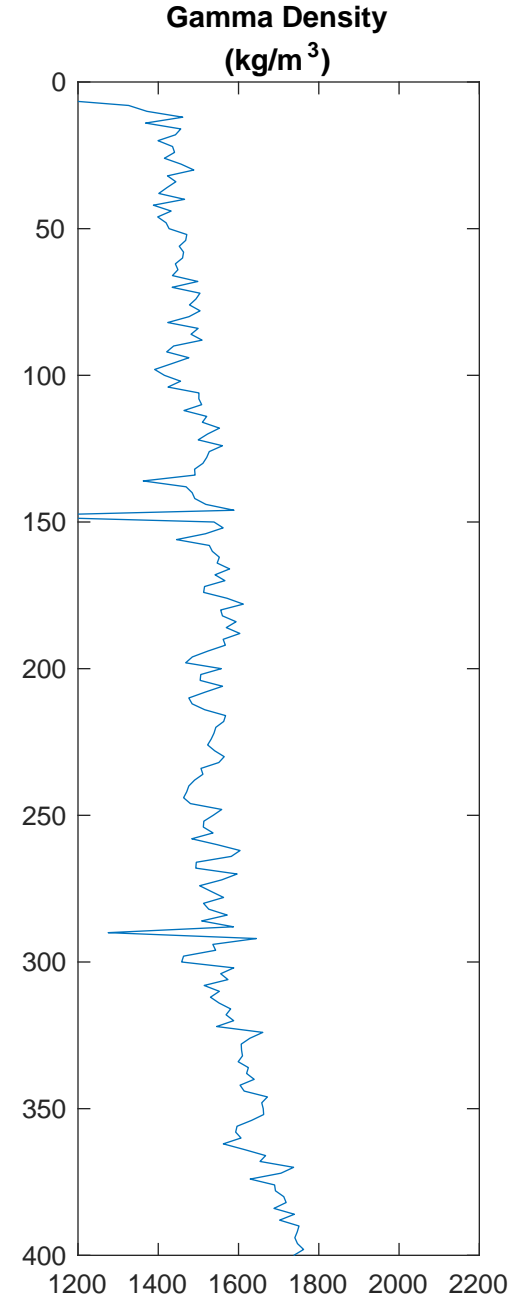
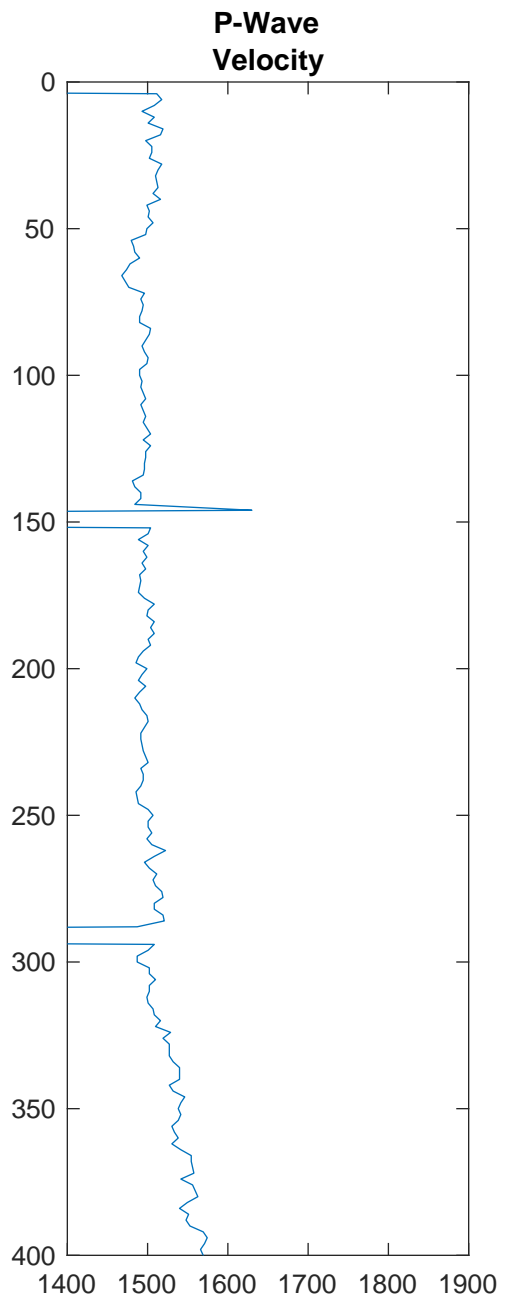
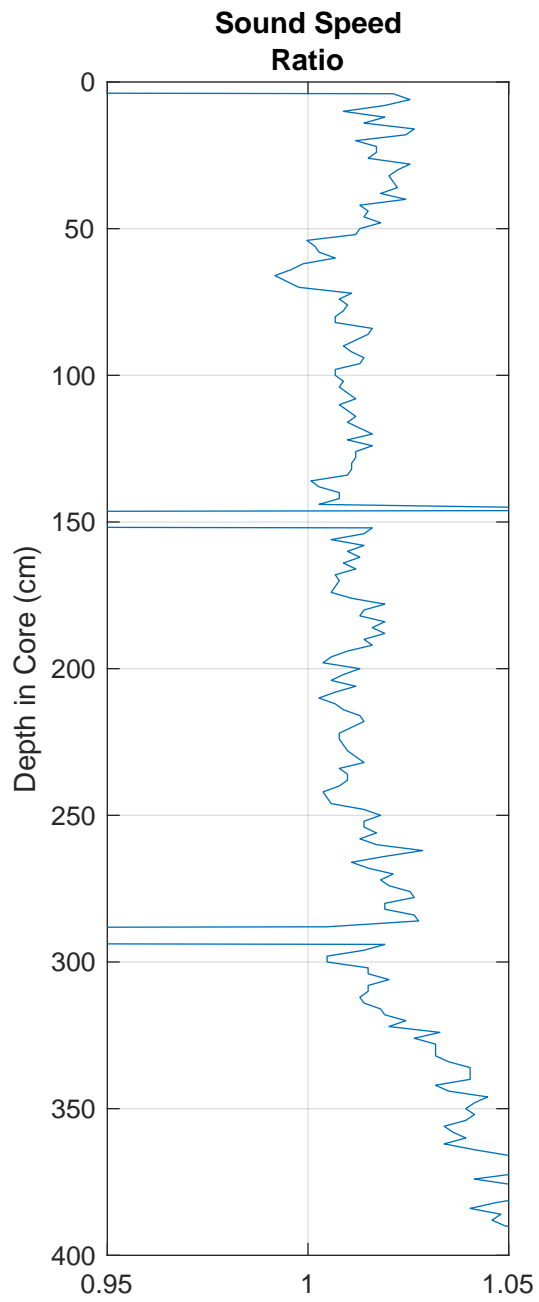
Core: VC20_Hole1_EN577_



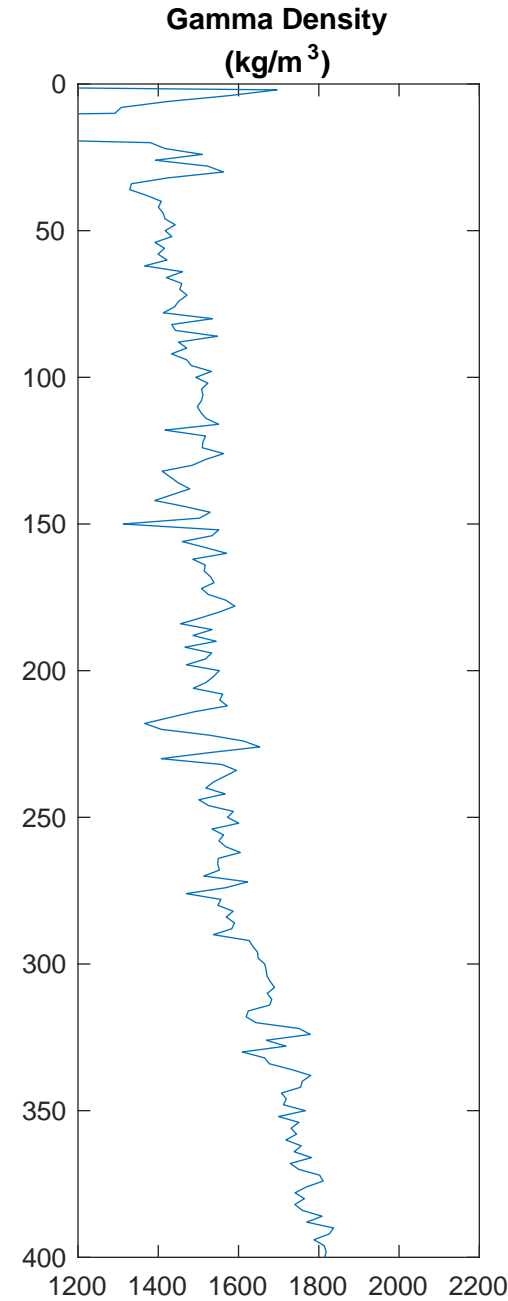
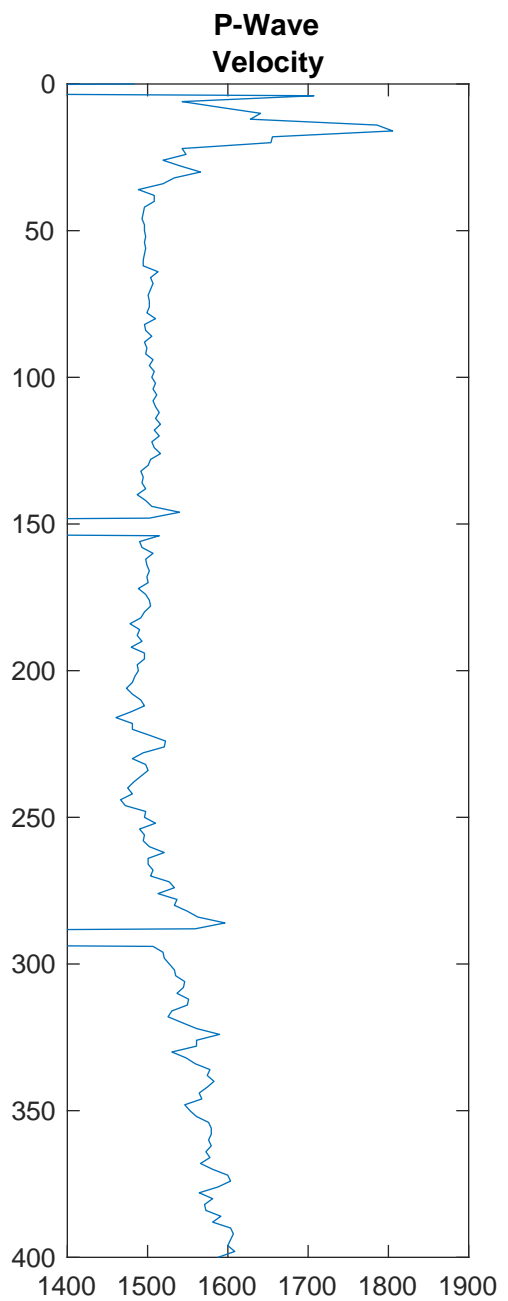
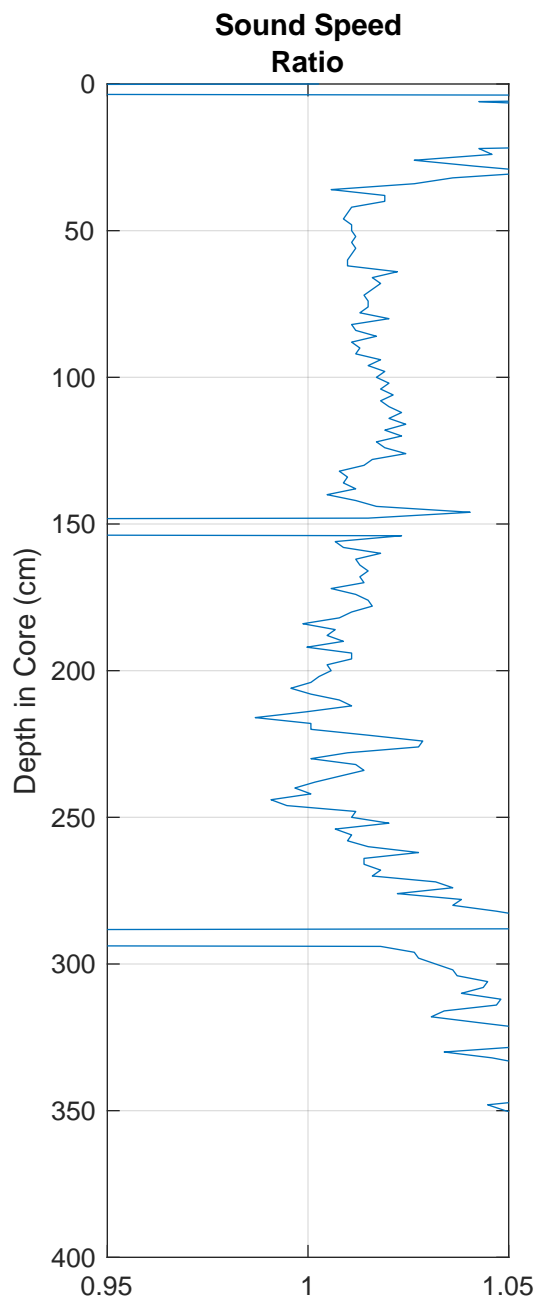
Core: VC24_Hole1_EN577_



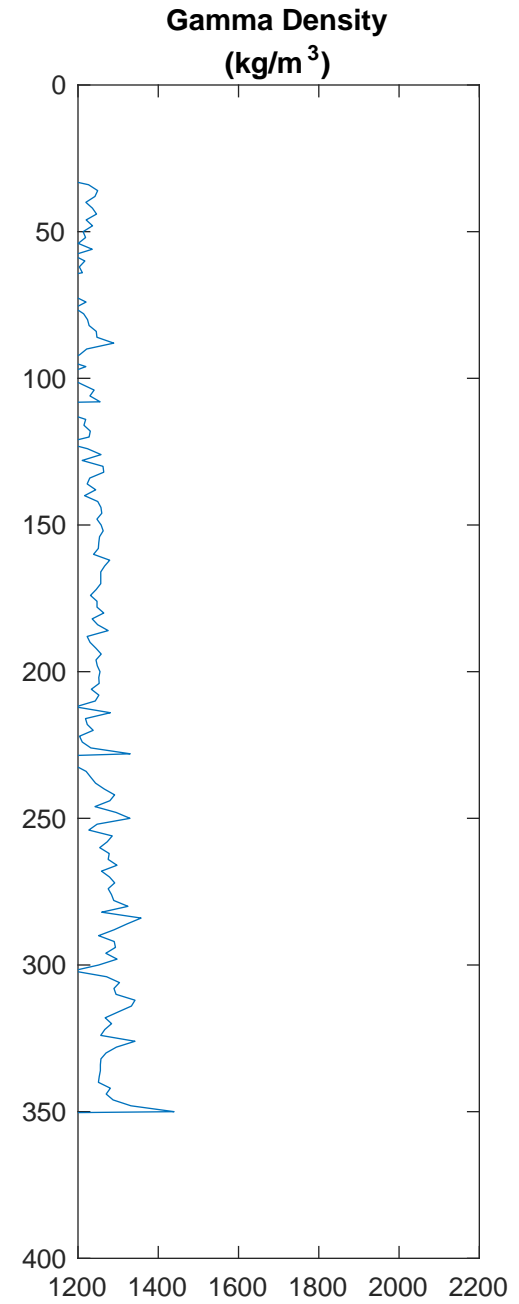
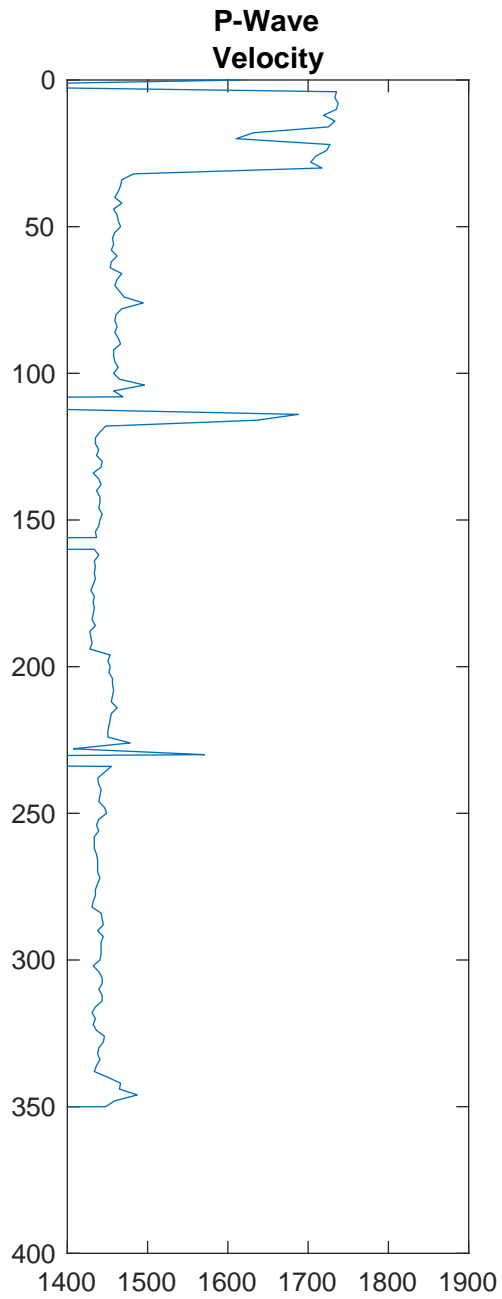
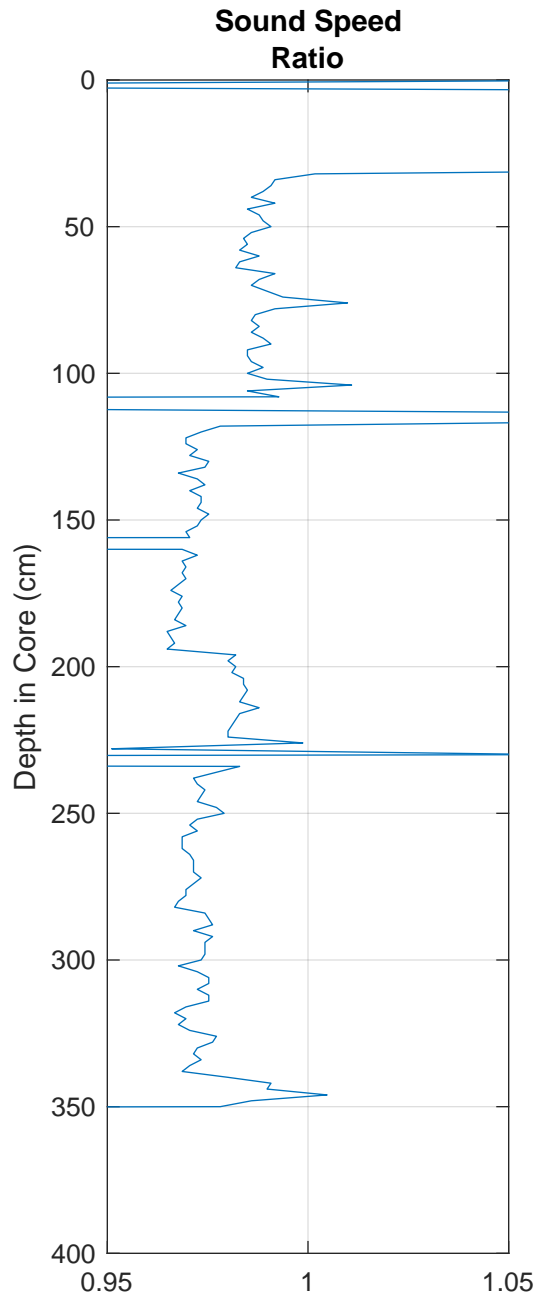
Core: VC25_Hole1_EN577_



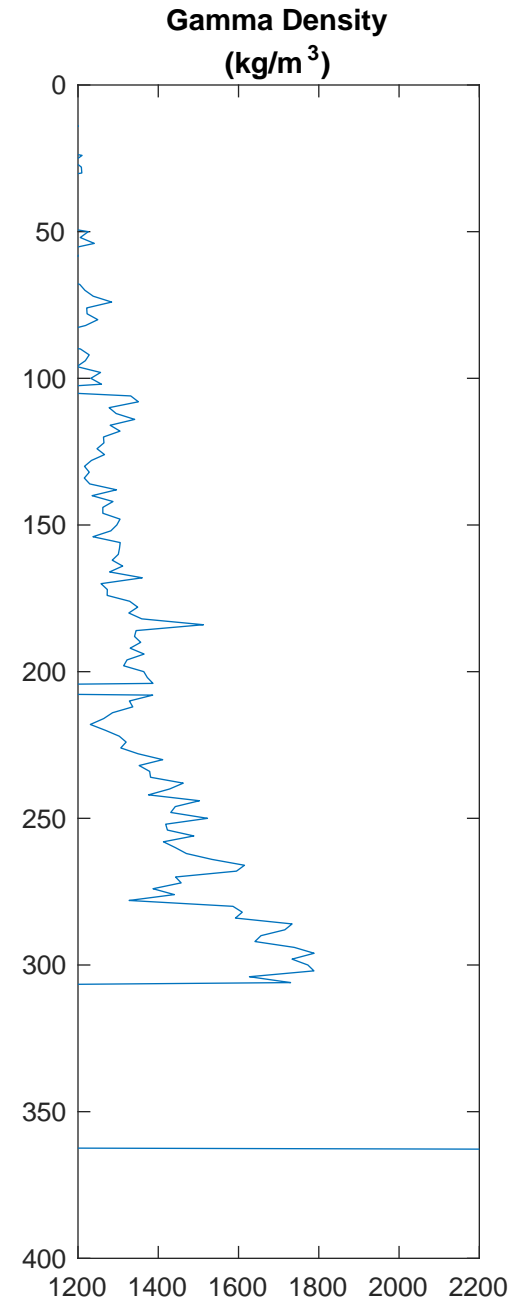
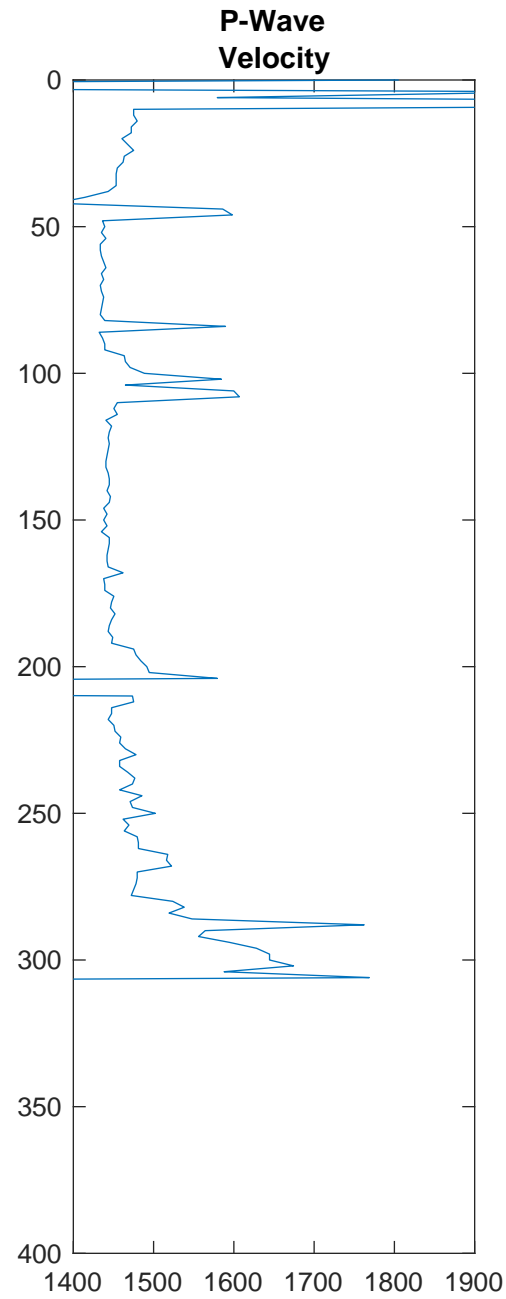
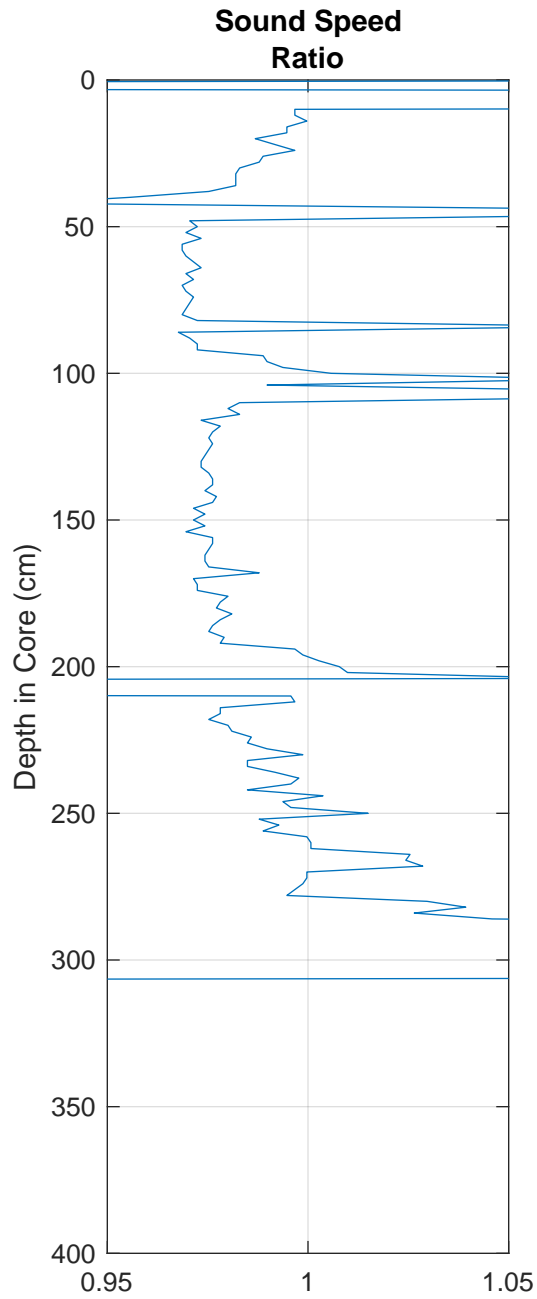
Core: VC26_Hole1_EN577_



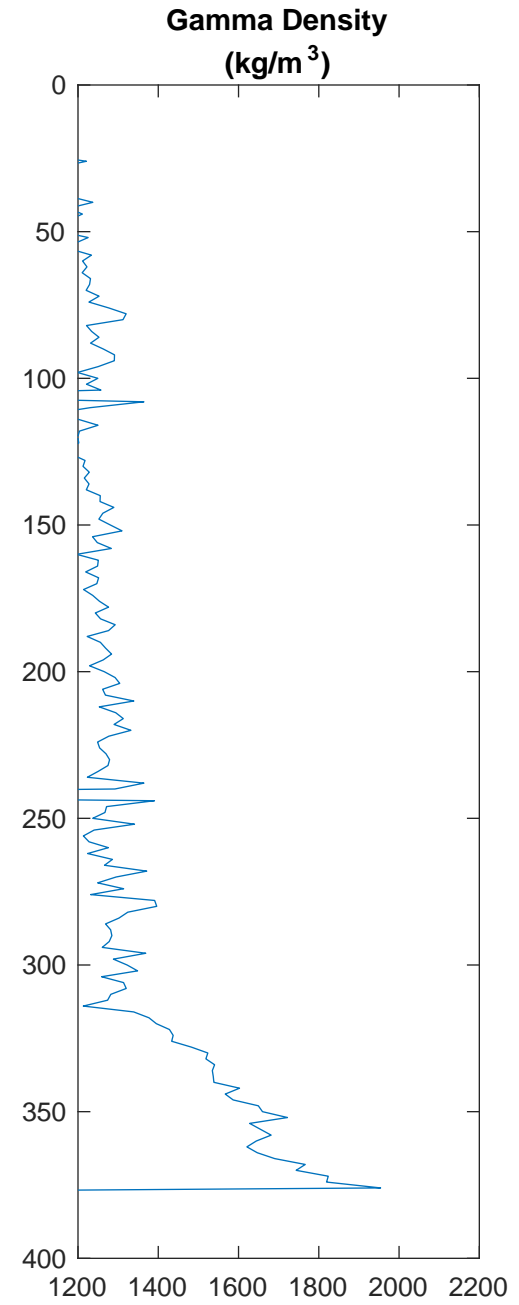
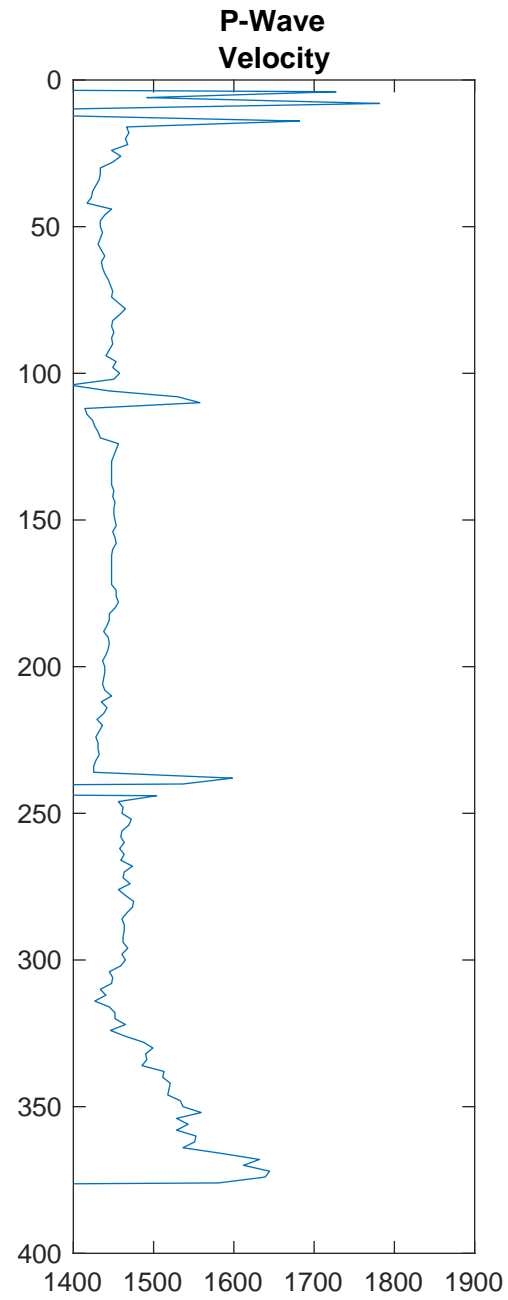
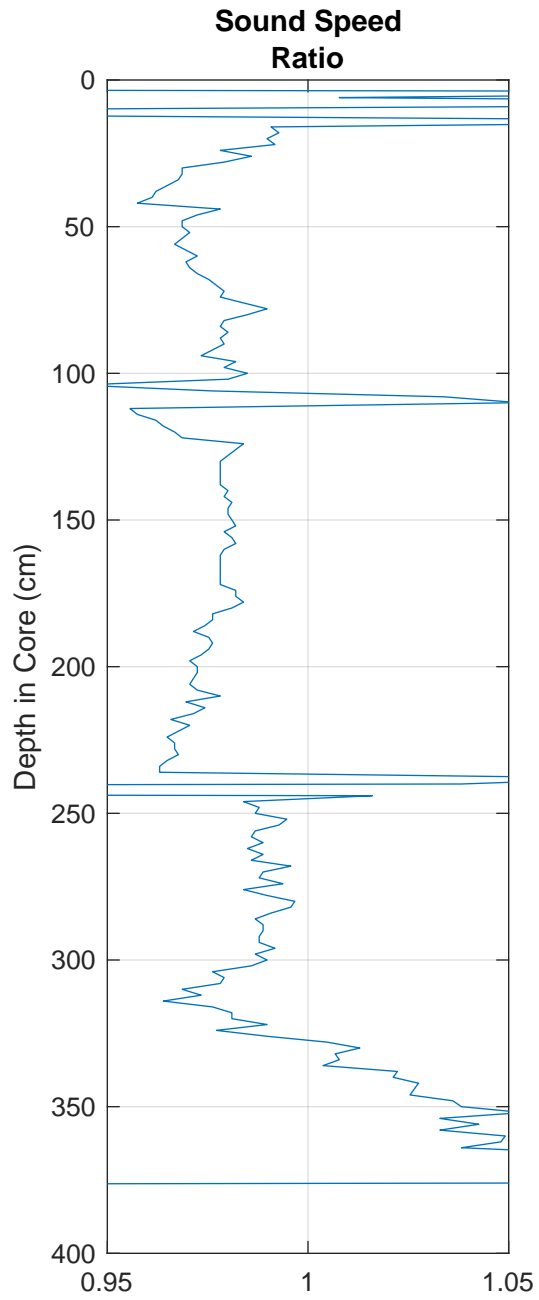
Core: VC28_Hole1_EN577_



Core: VC31_Hole2_EN577_



Core: VC32_Hole1_EN577_



Acoustic Core – Gravity Core



New England Mud Patch 2016
ONR Acoustics Characterization
of Sediments – U. Texas with
NRL7430



Leg II – Vibracoring and Acoustic Gravity
Coring (26 April – 2 May)

(120 meters of core collected and
logged)

← Leg II – UT-ARL Acoustic
Gravity Coring



New England Mud Patch 2016
ONR Acoustics Characterization
of Sediments - UTexas with
NRL7430

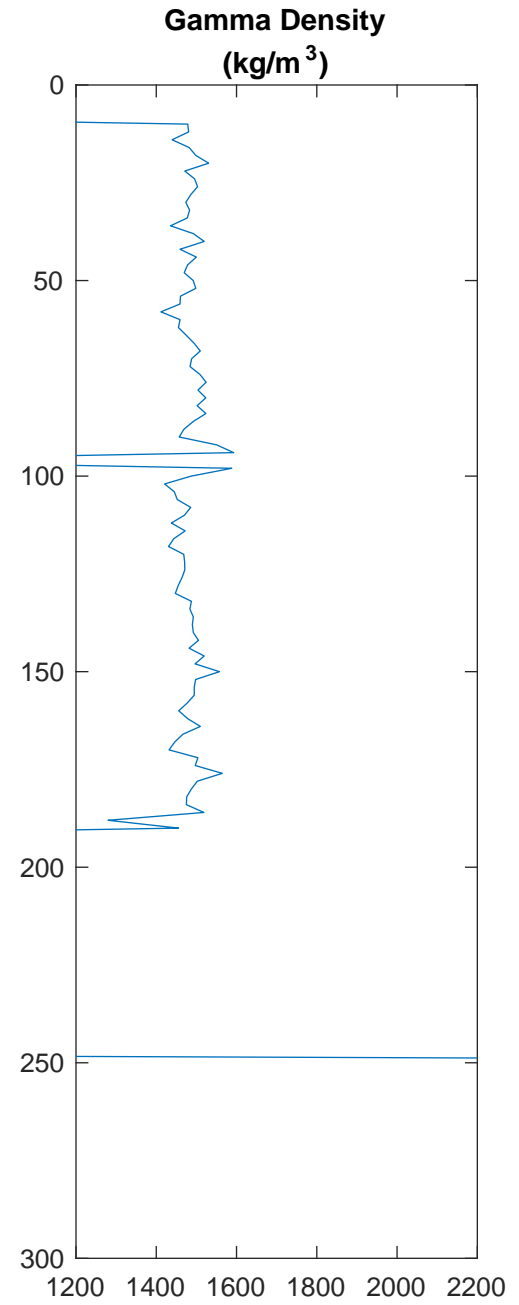
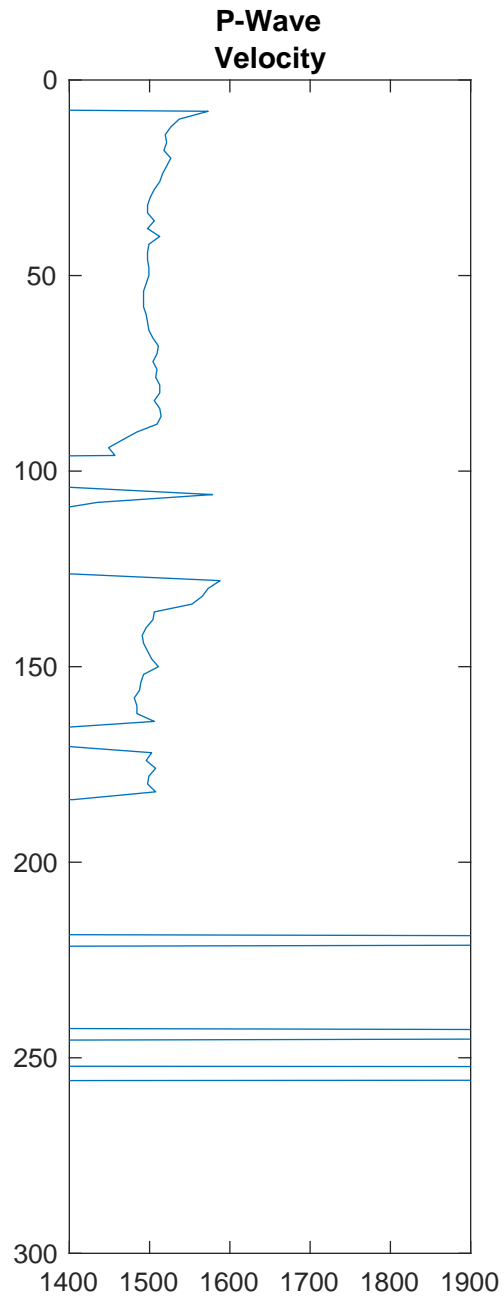
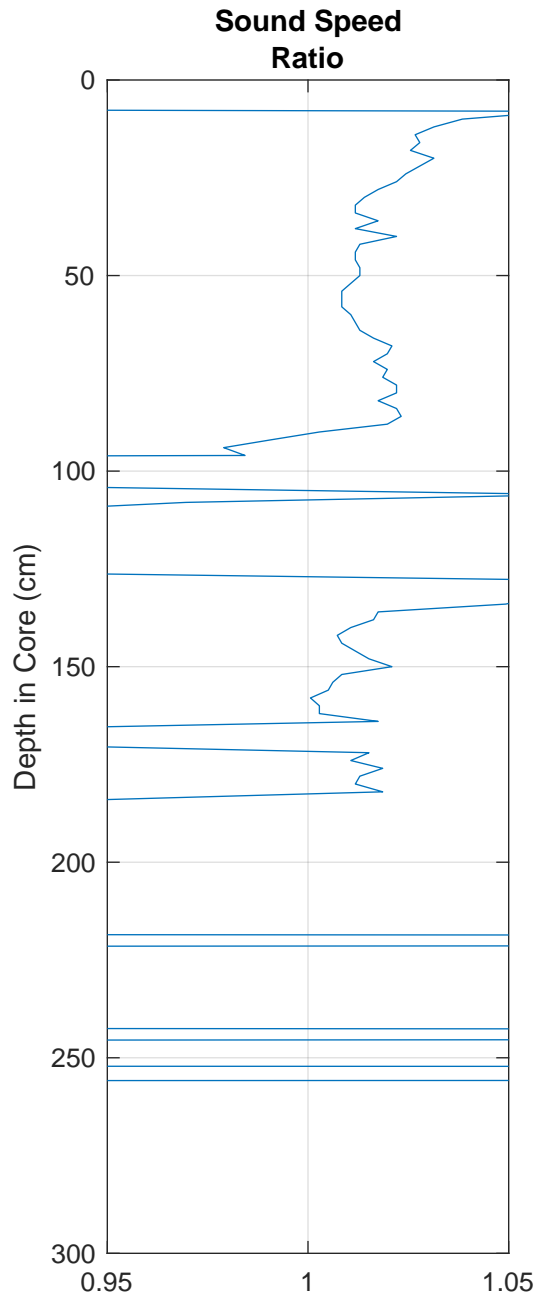
Leg II – Vibracoring and Acoustic Gravity
Coring (26 April – 2 May)

(120 meters of core collected and
logged)

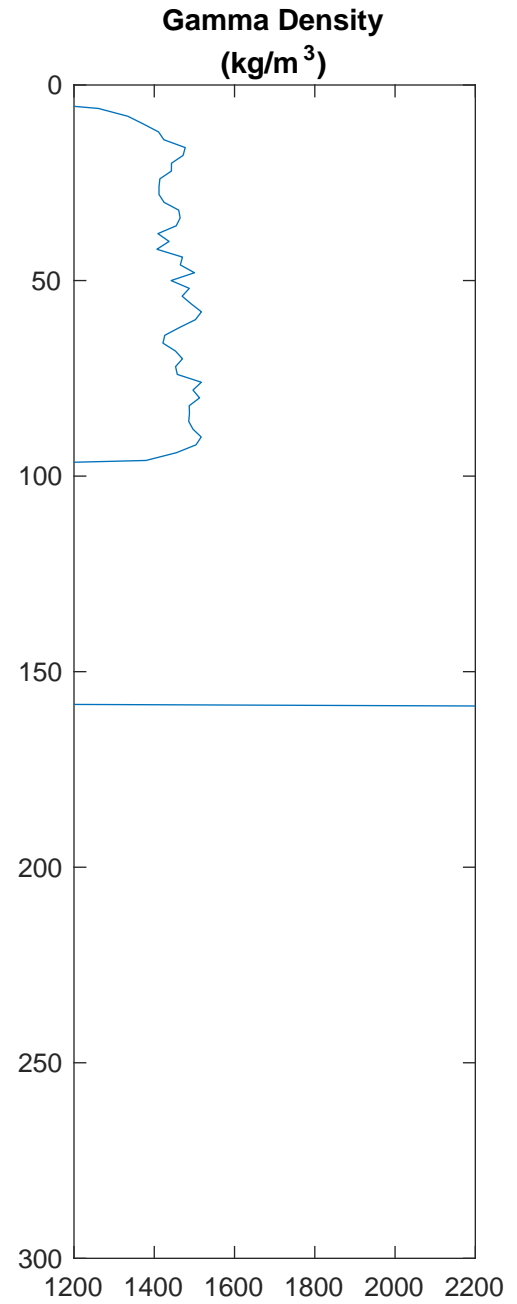
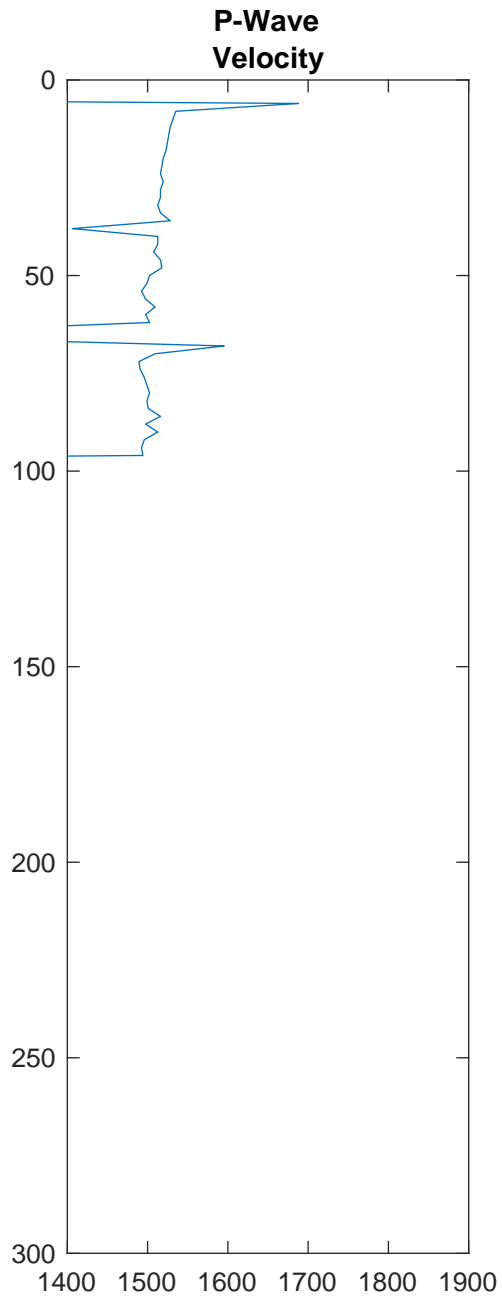
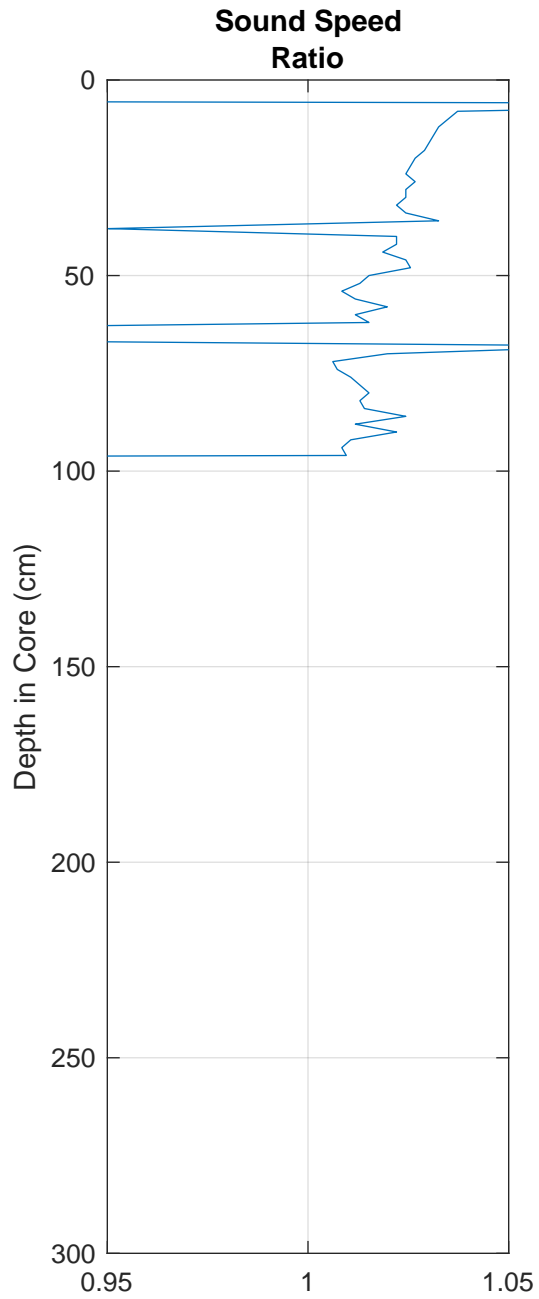


Leg II – UT-ARL Acoustic
Gravity Coring

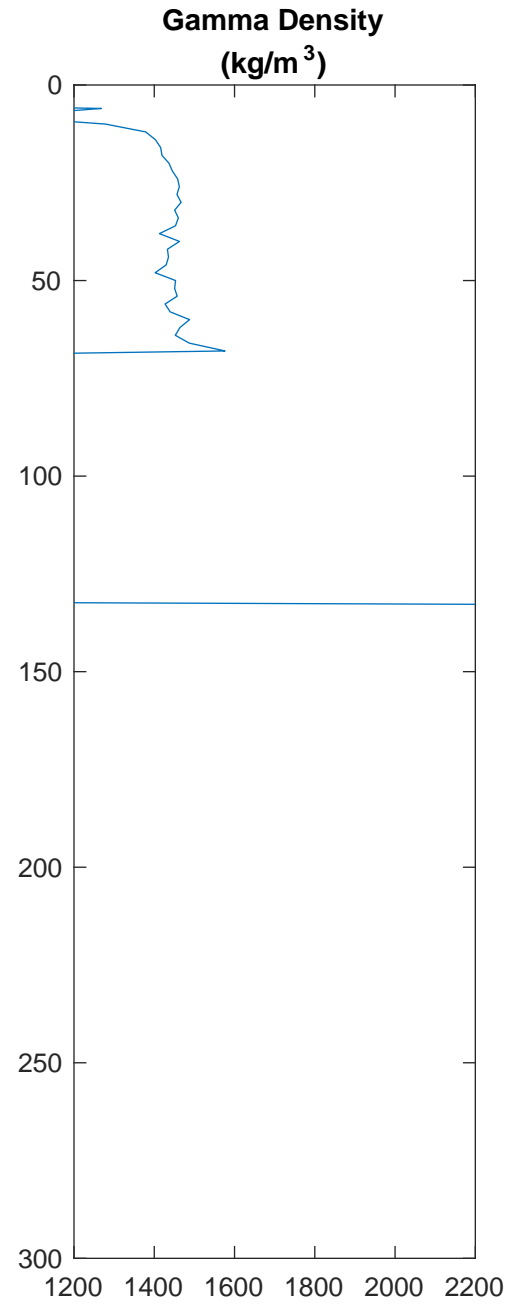
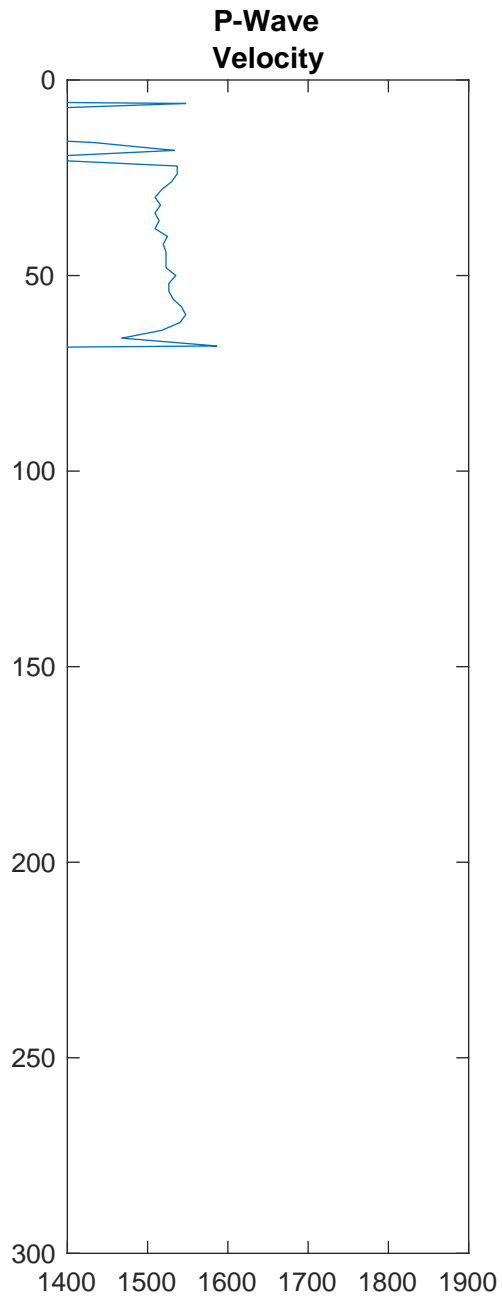
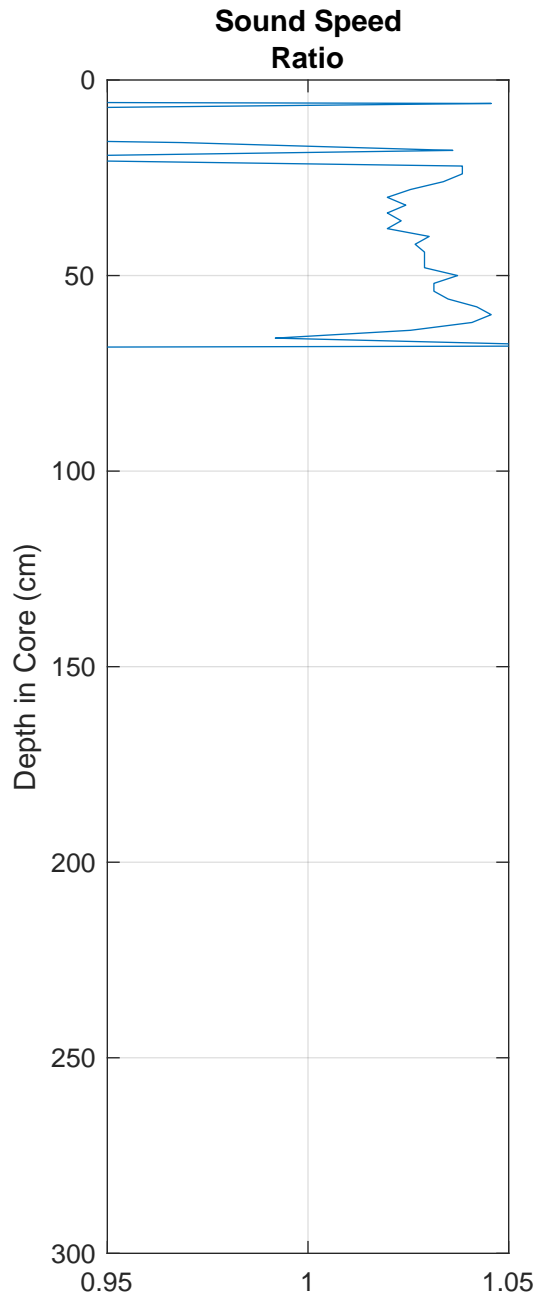
Core: GC_AC1_1_EN577_



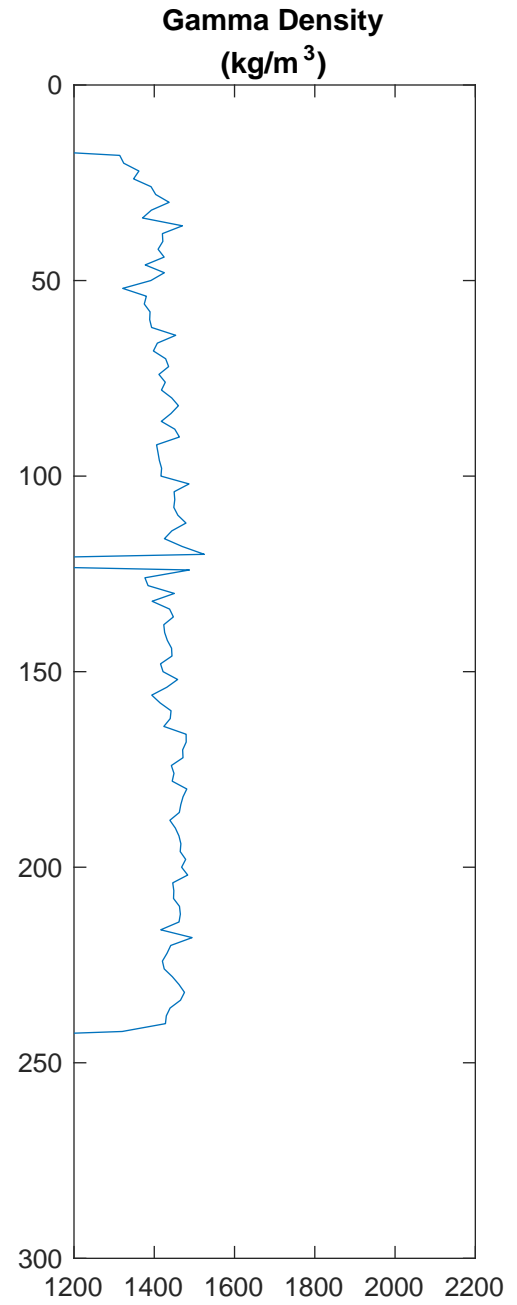
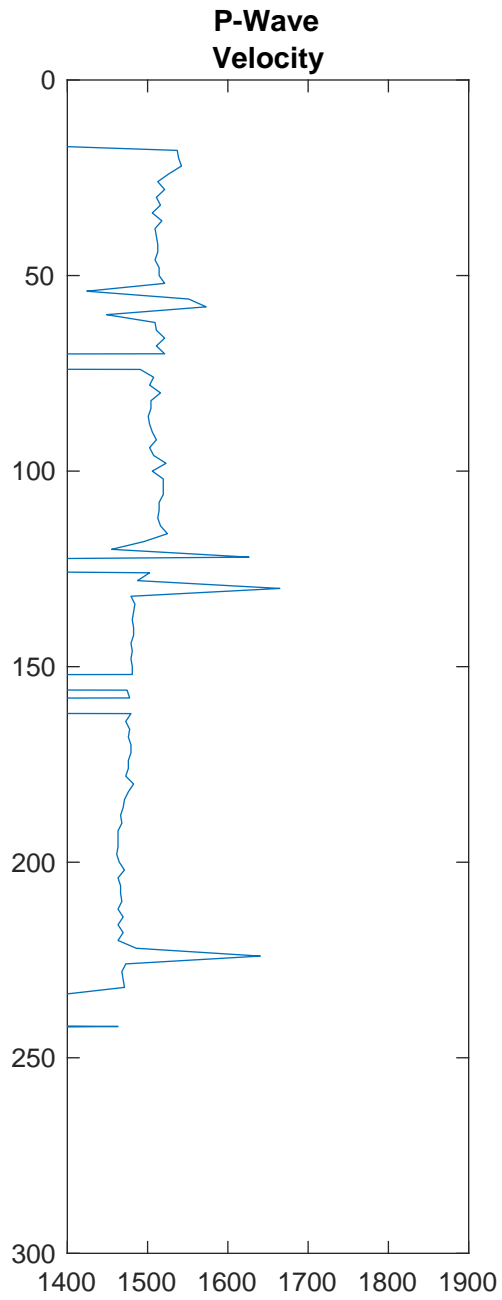
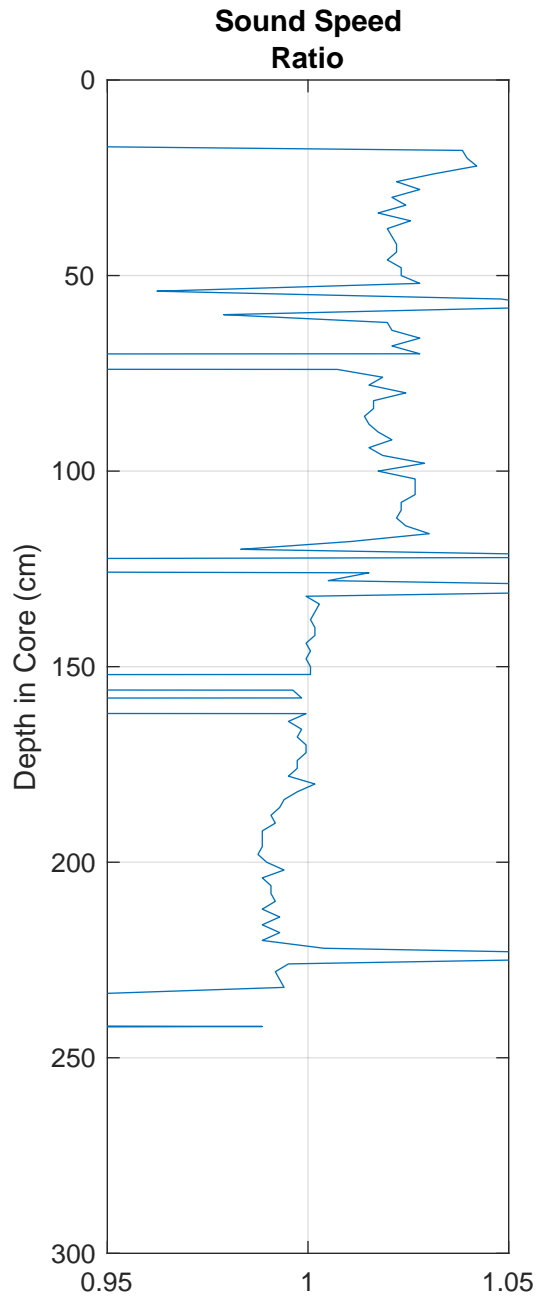
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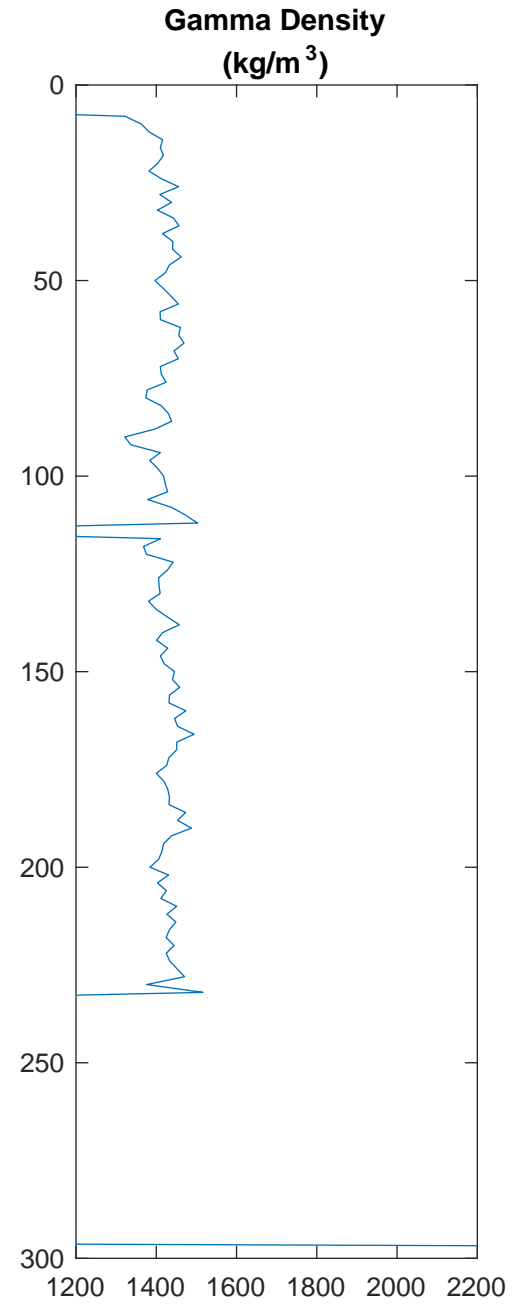
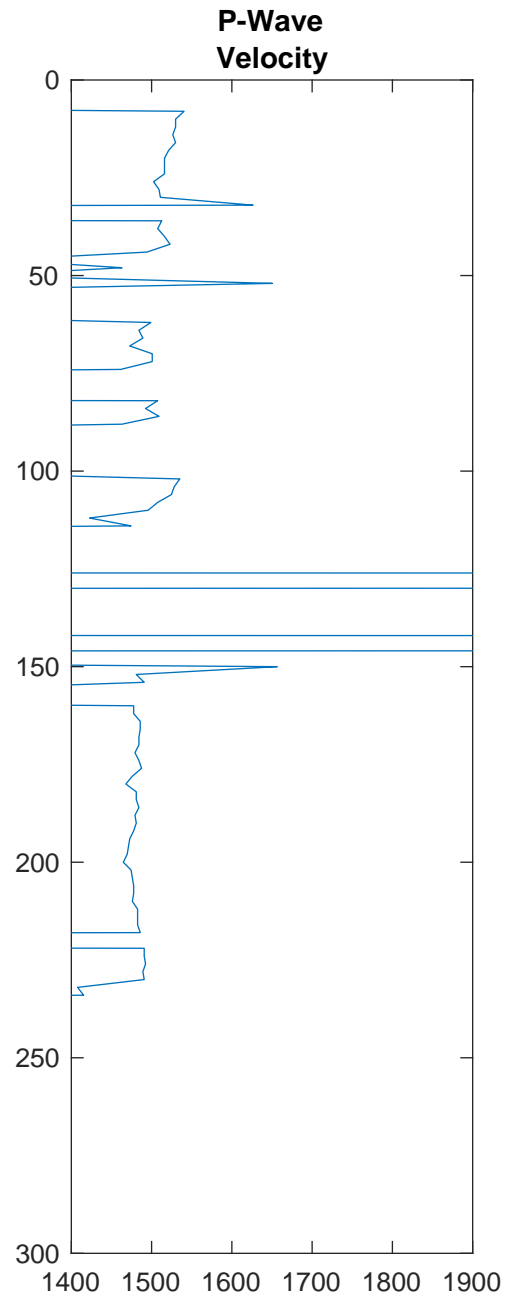
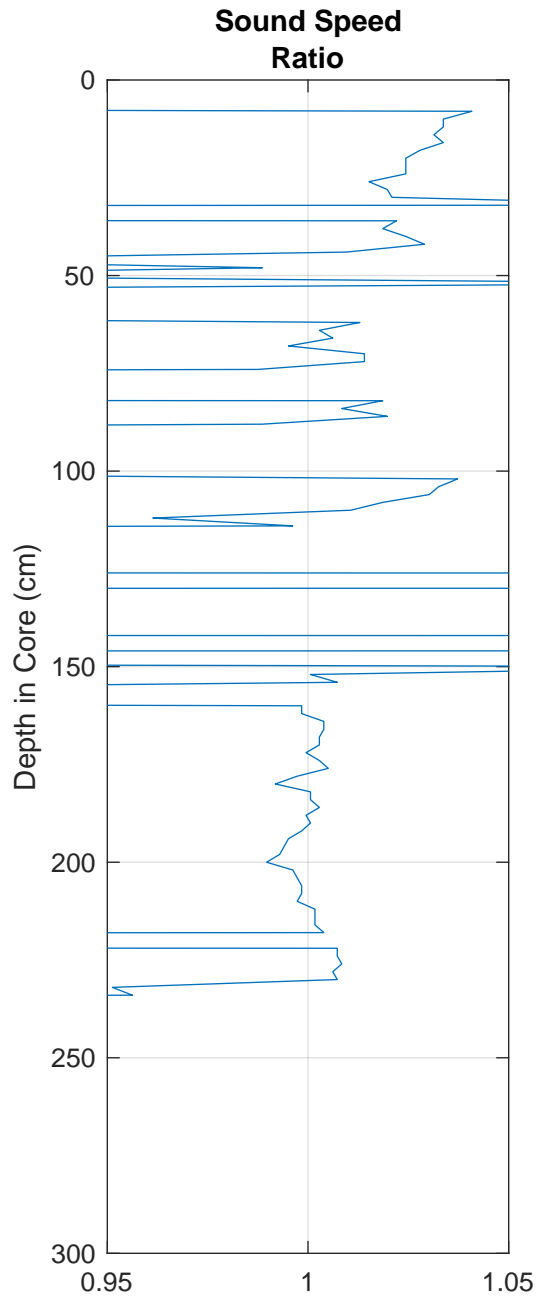
Core: GC_AC2_1_EN577_



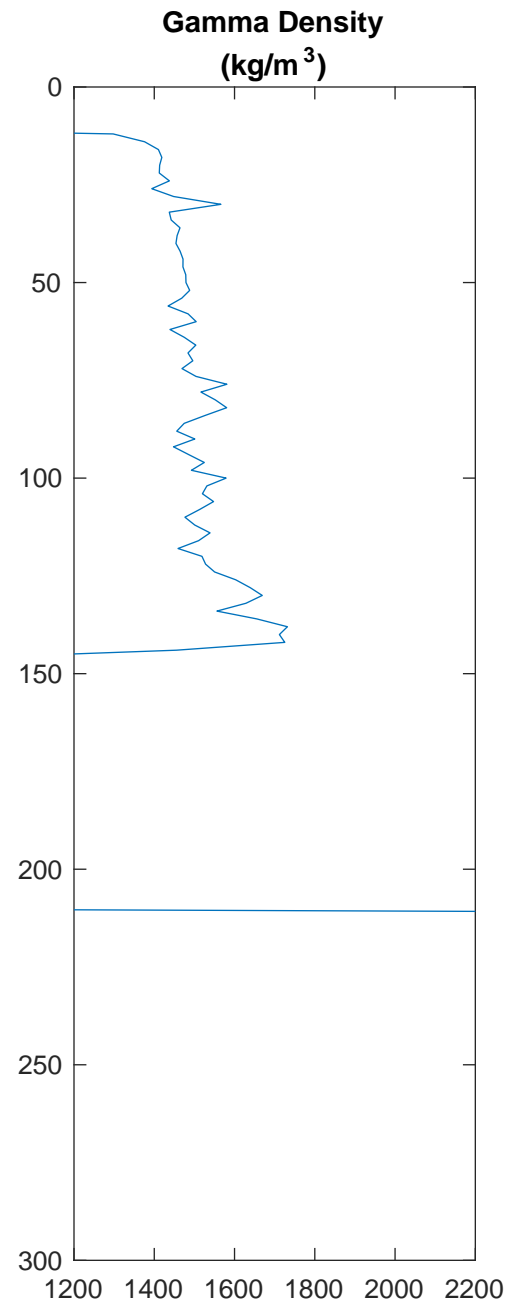
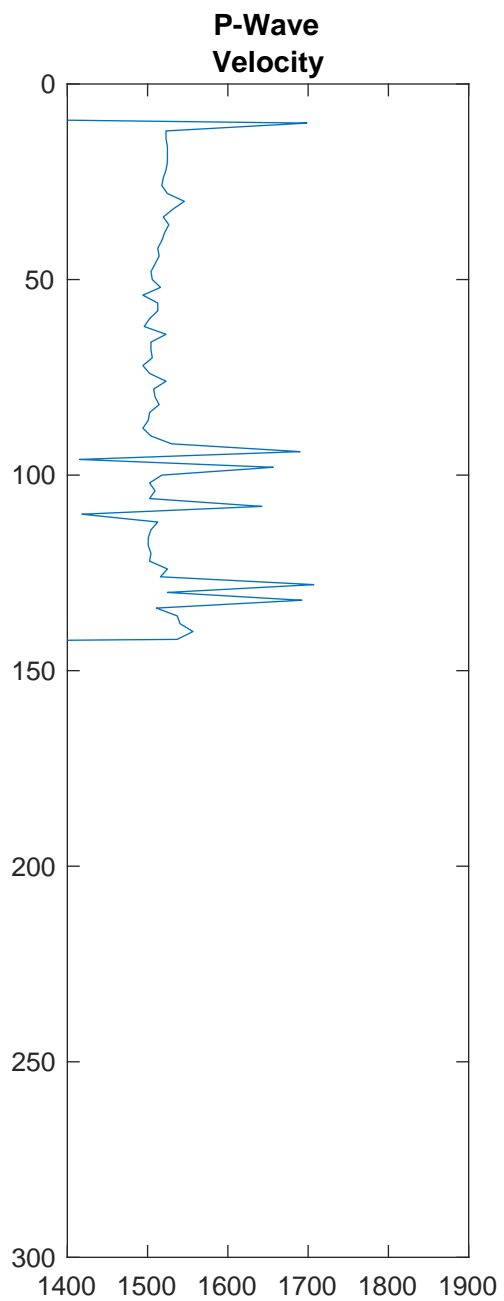
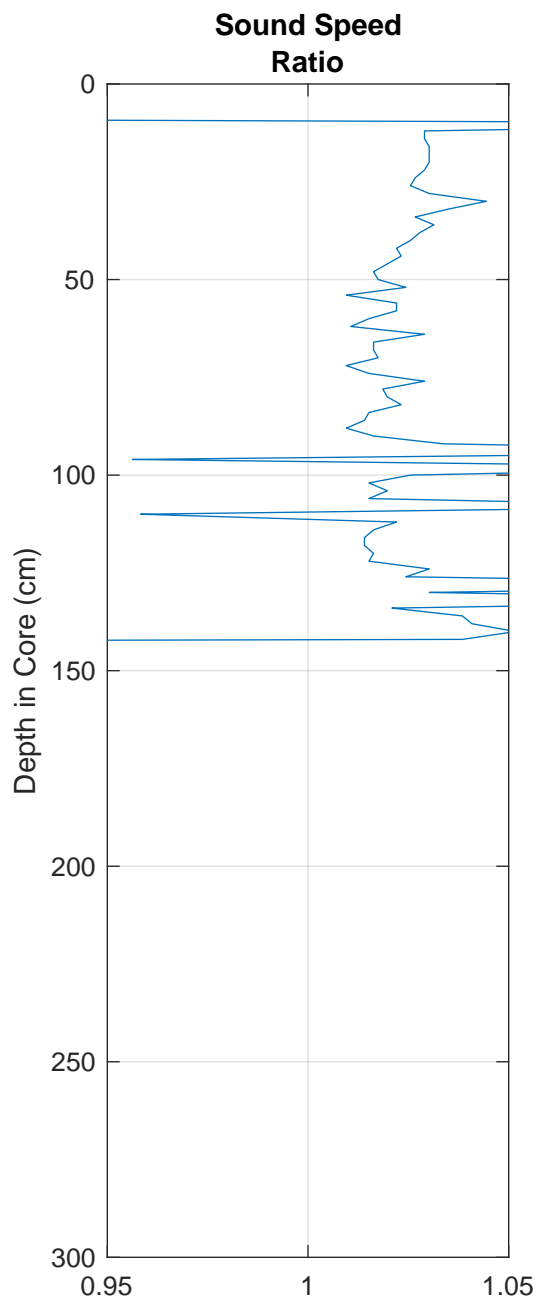
Core: GC_AC2_EN577_



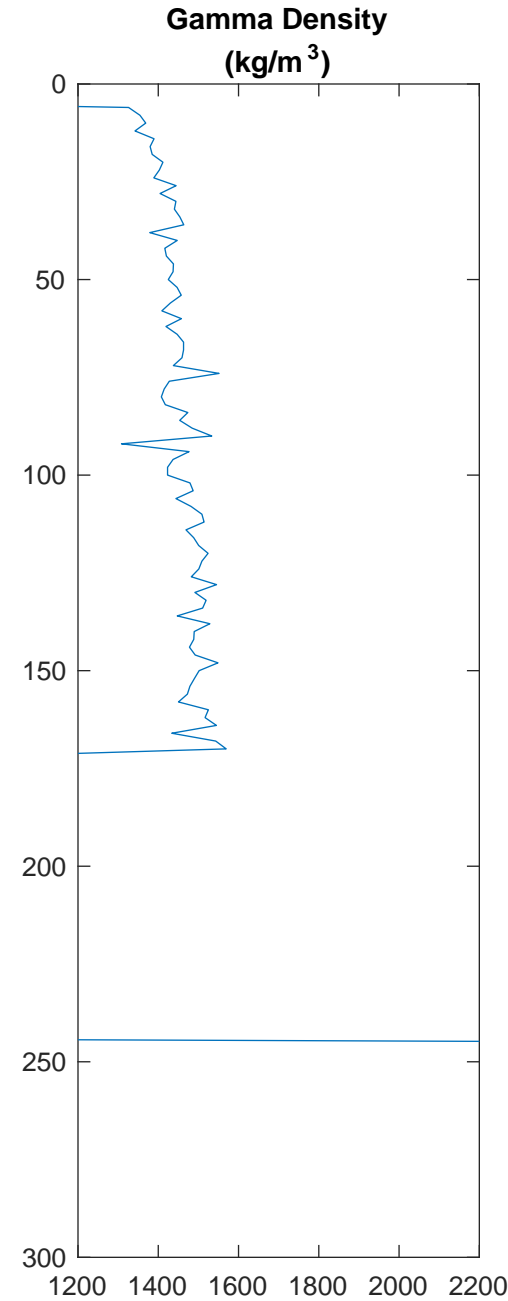
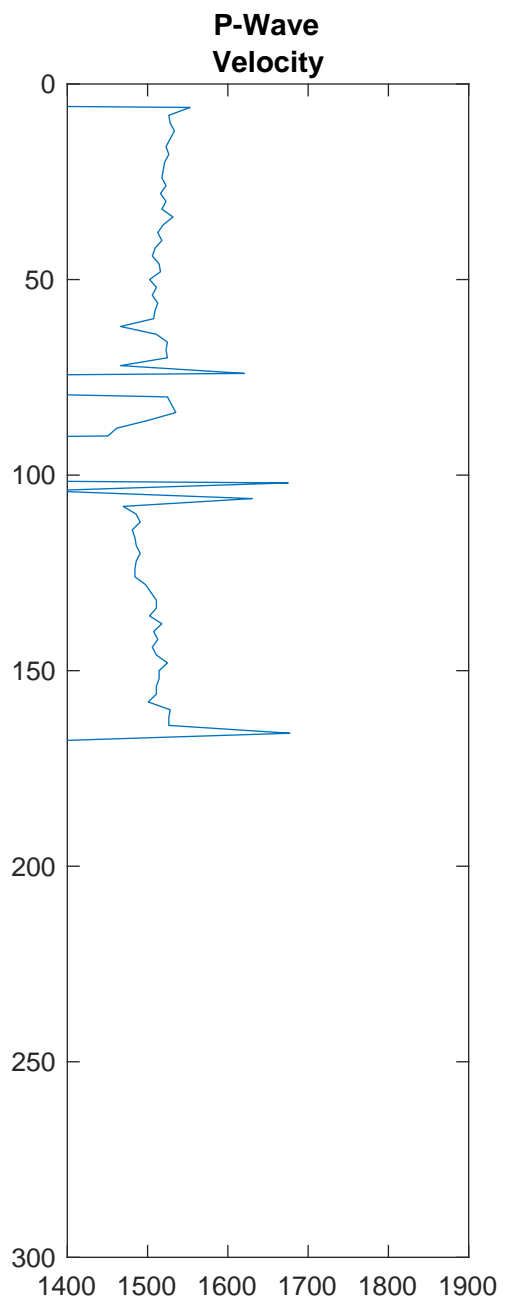
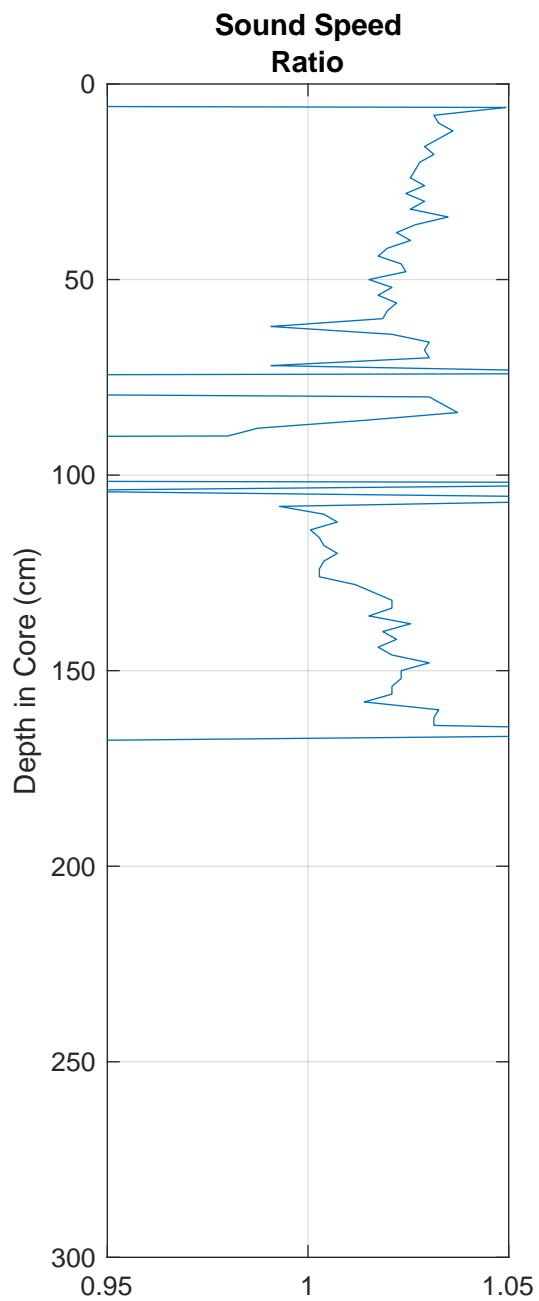
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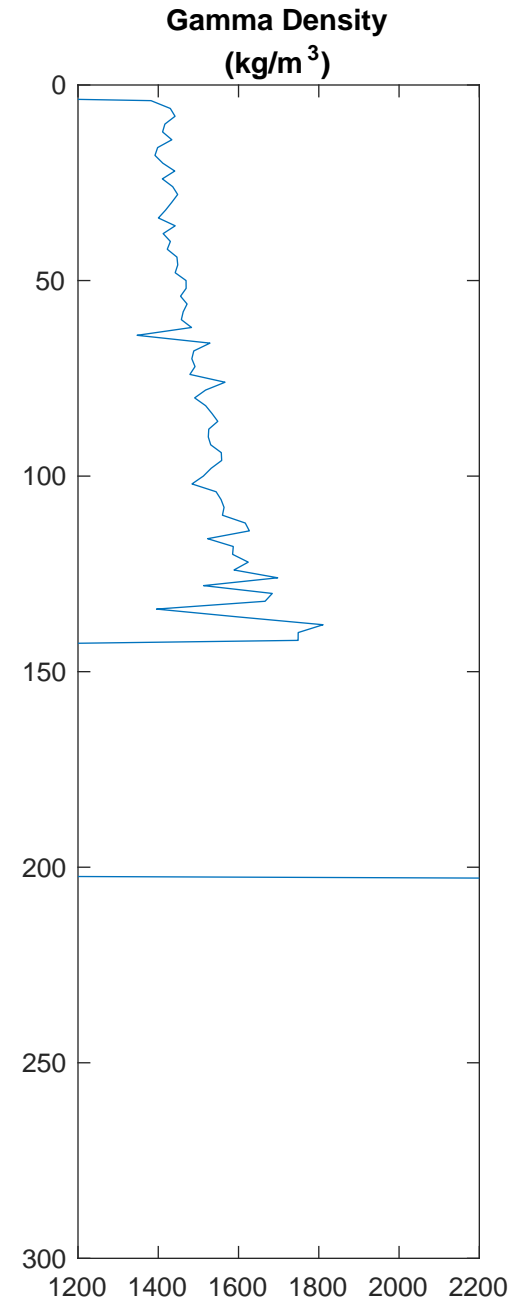
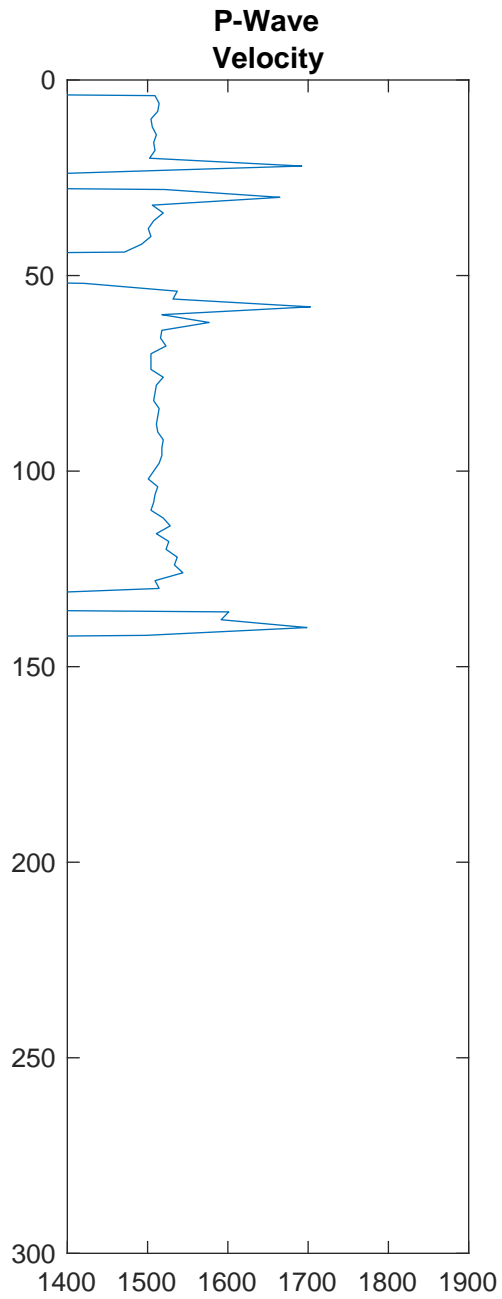
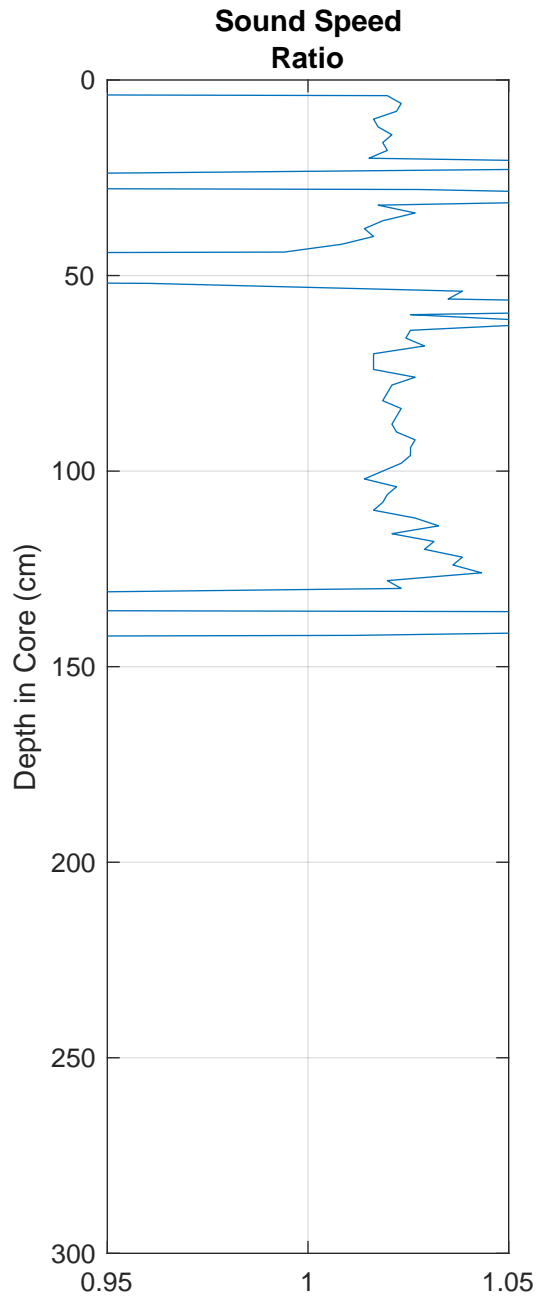
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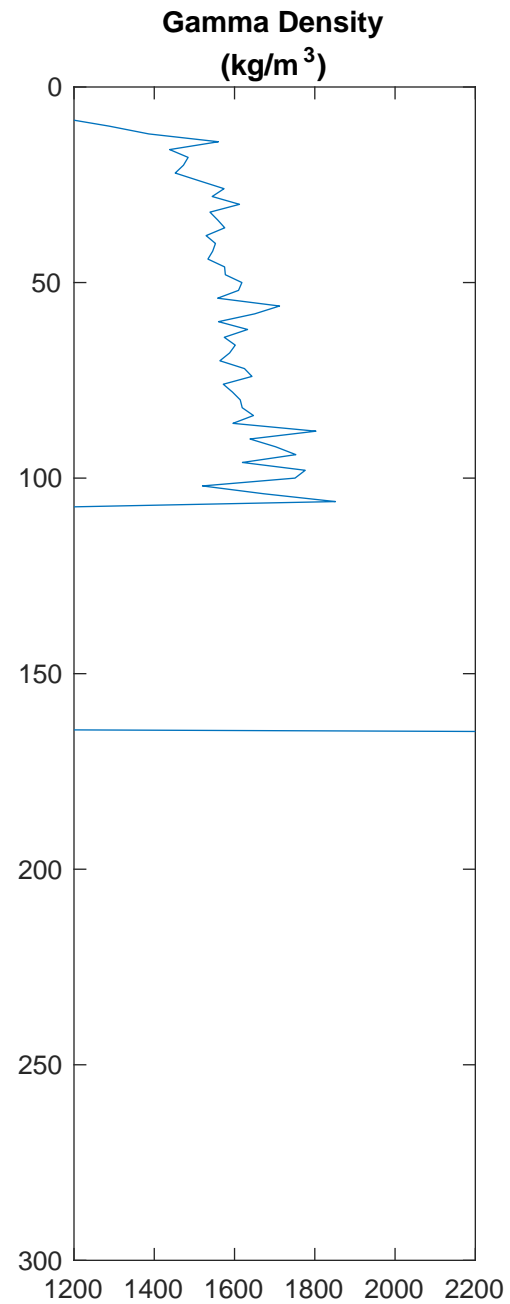
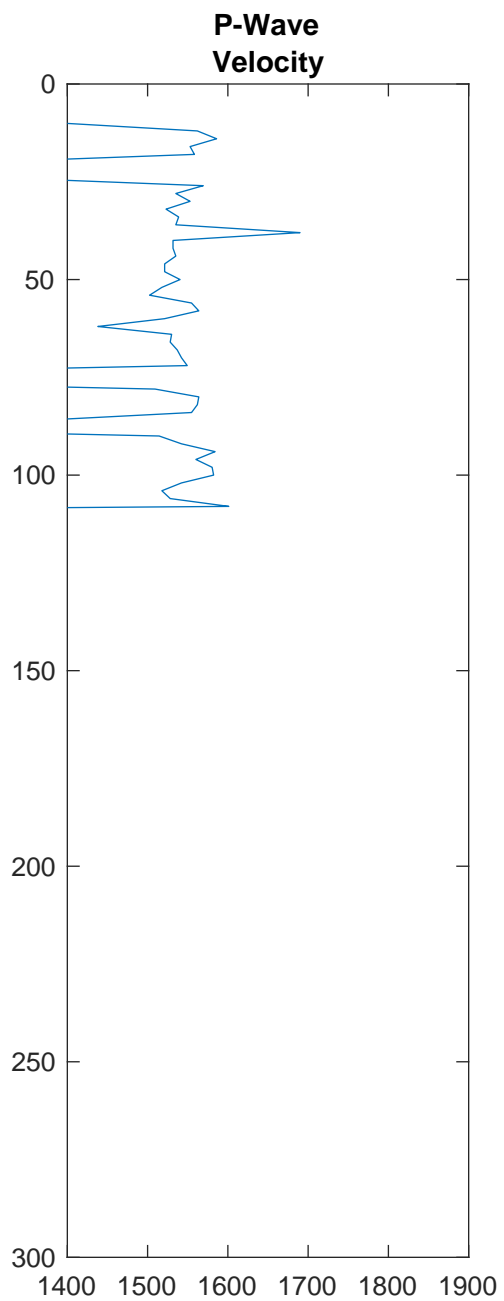
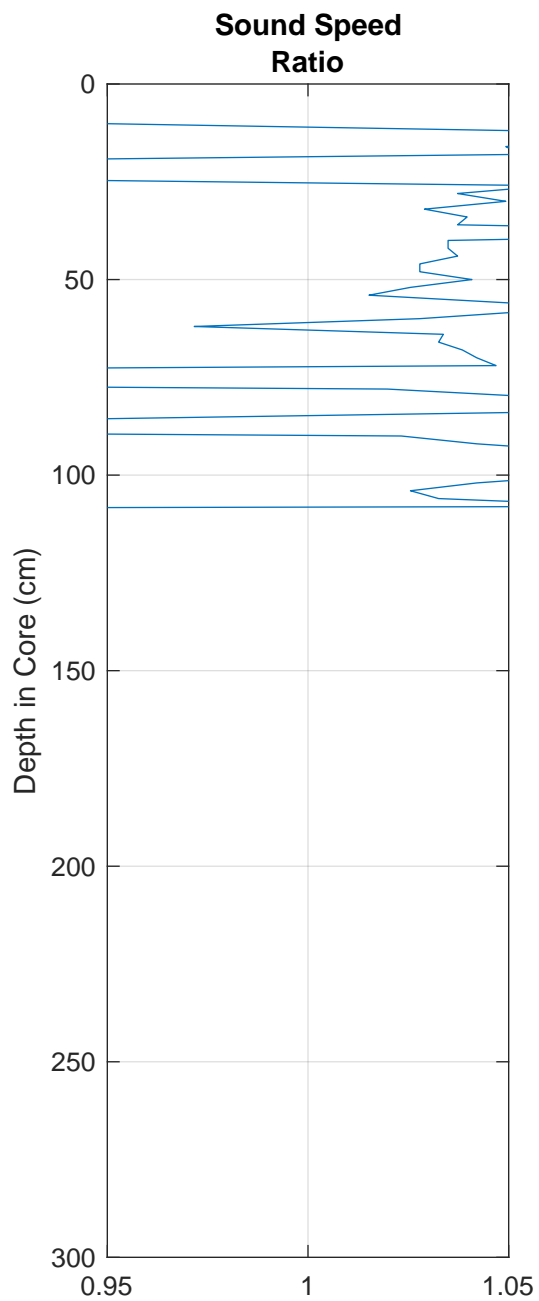
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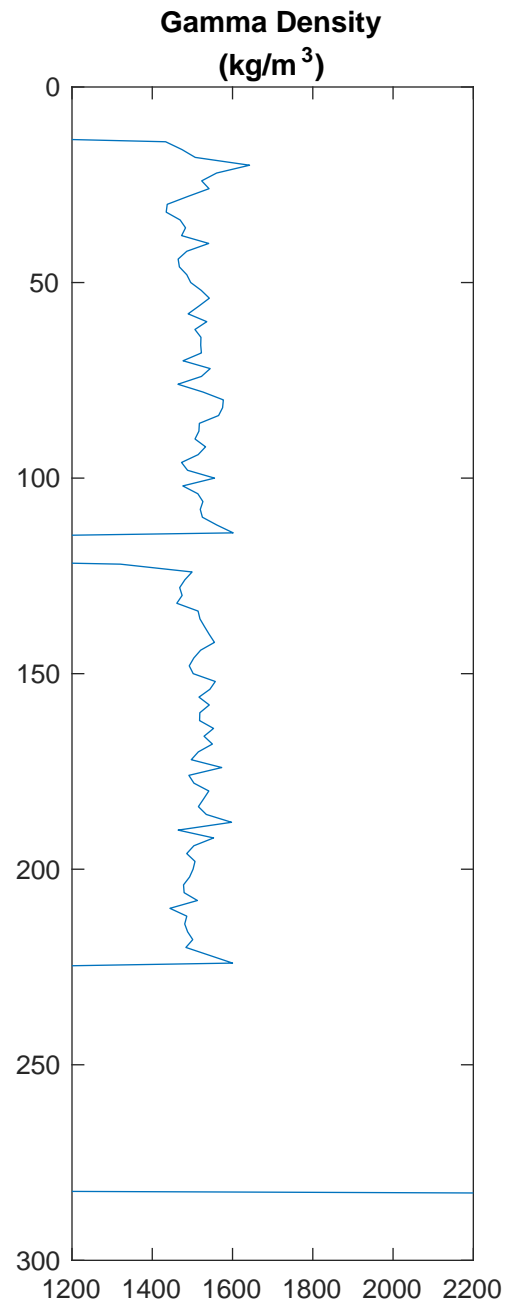
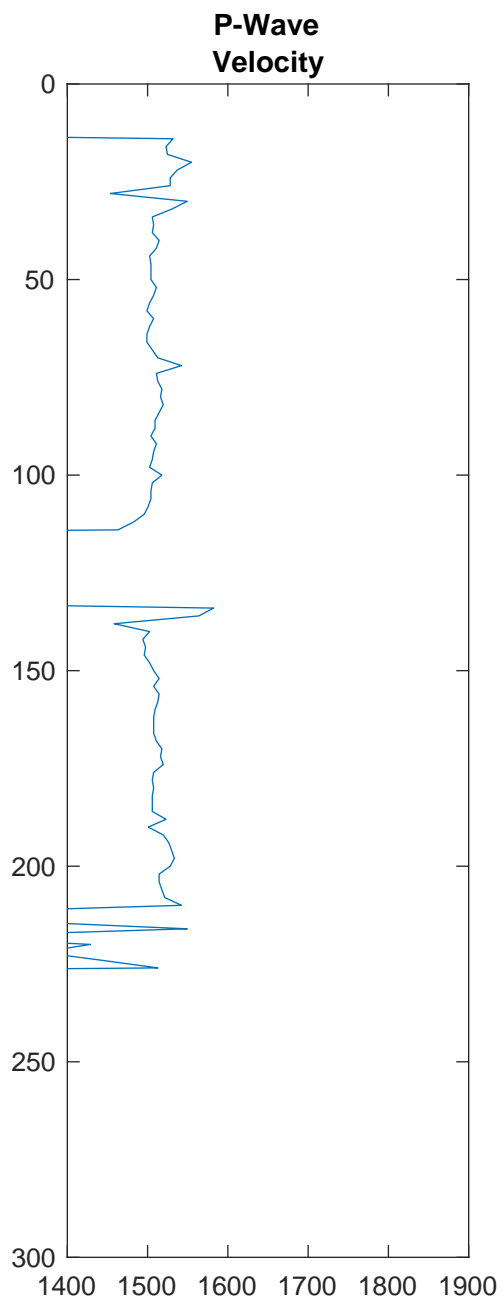
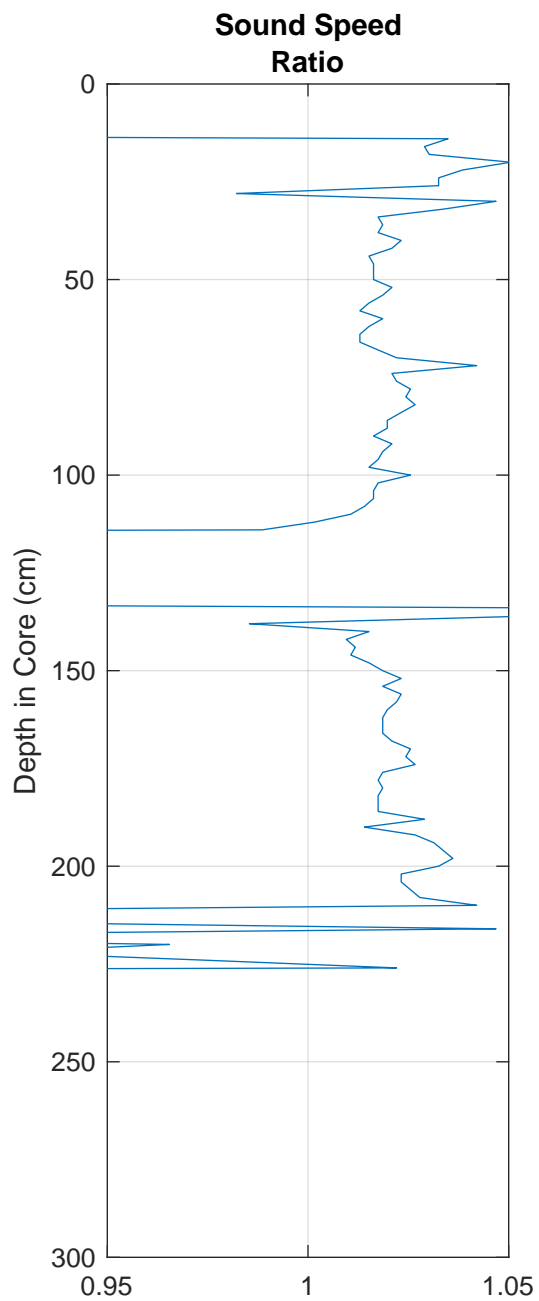
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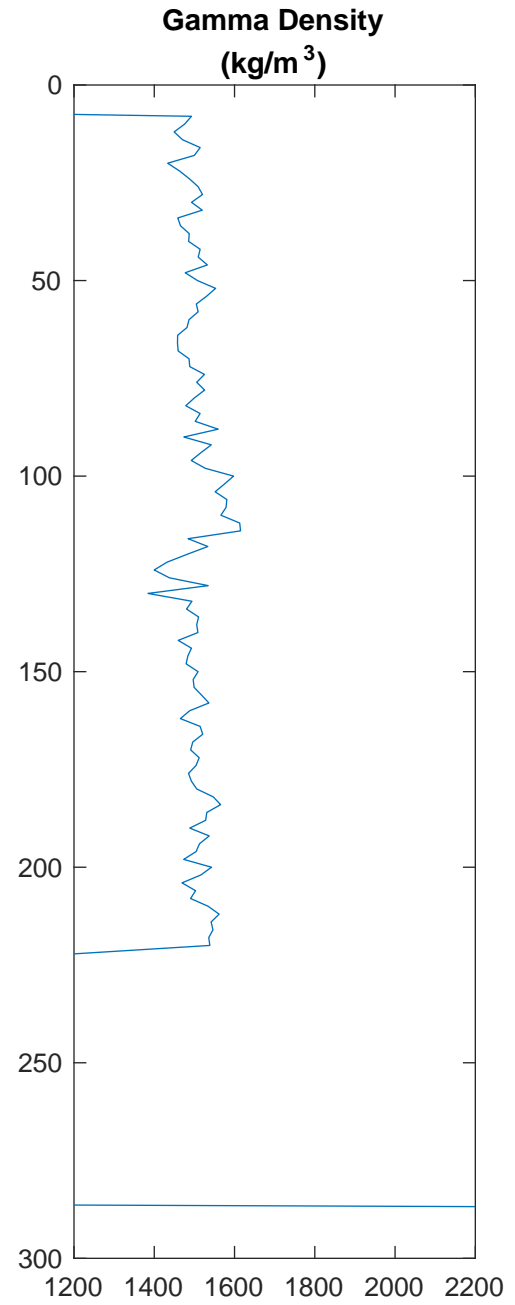
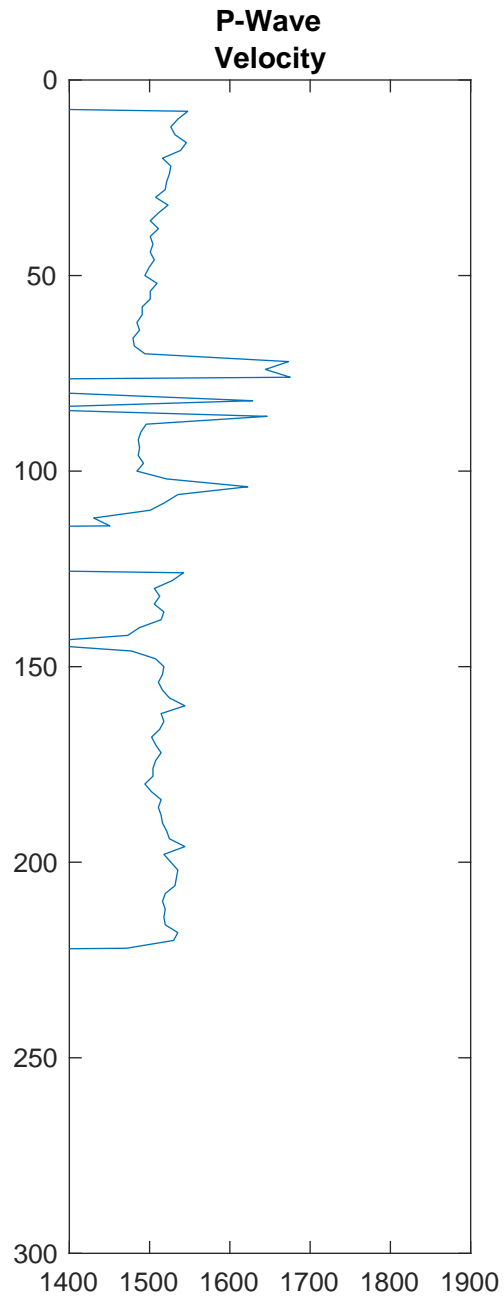
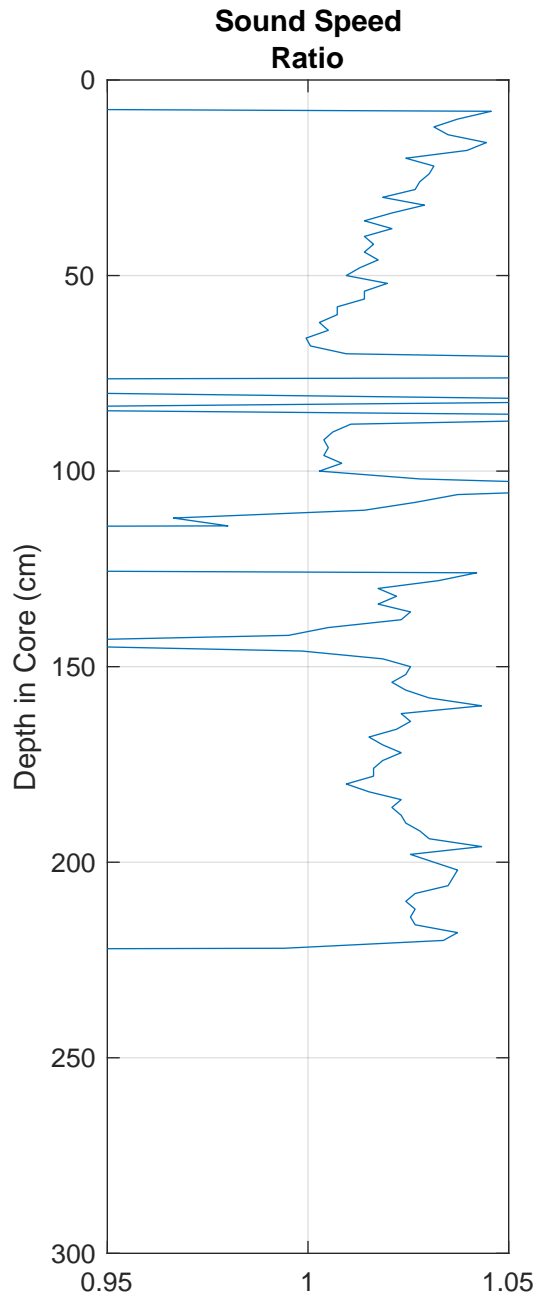
Core: GC_AC7_EN577_



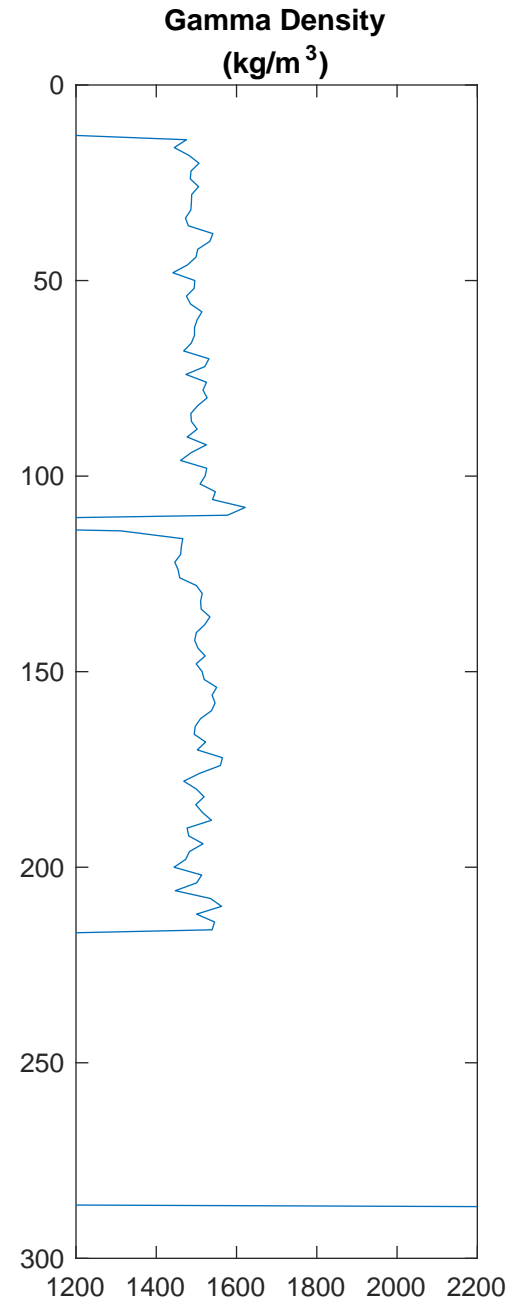
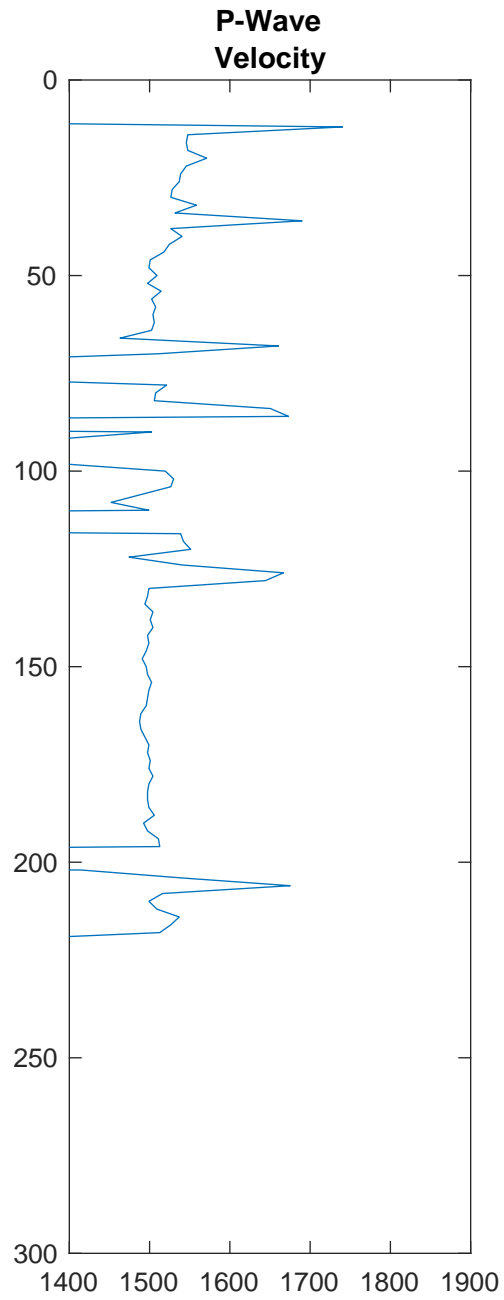
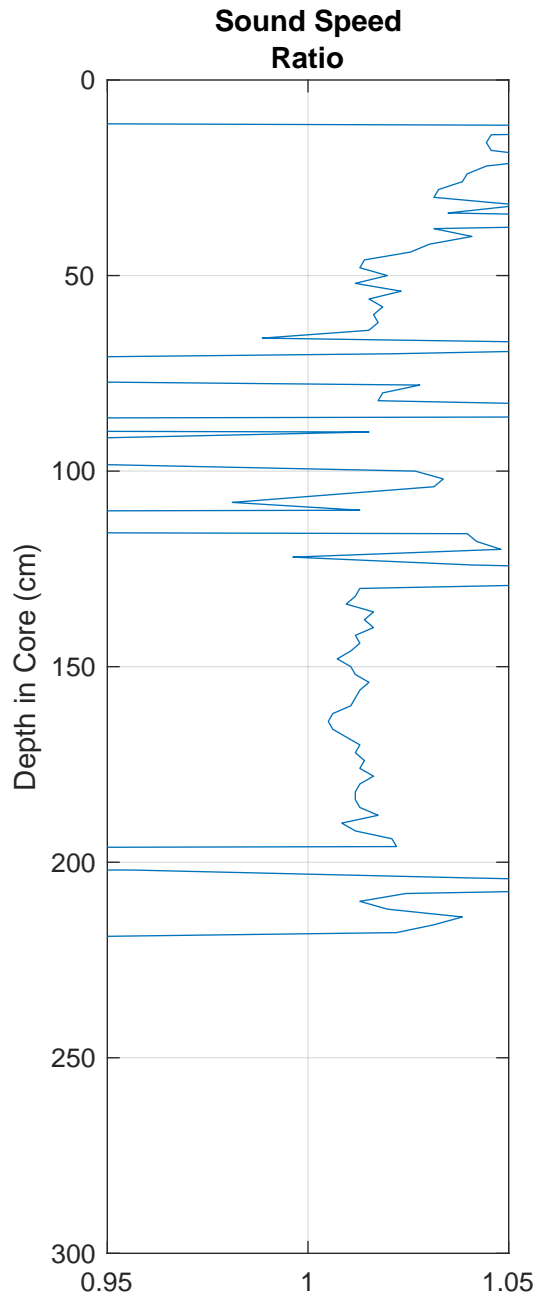
Core: GC_AC8_EN577_



Core: GC_AC9_1_EN577_



Core: GC_AC10_EN577_



There is a lot more to consider...



New England Mud Patch 2016
ONR Acoustics Characterization
of Sediments – USGS, UT-ARL
and U. Texas Institute of
Geophysics with NRL7430

Leg 1&II – Piston Coring, Vibracoring
and Acoustic Gravity Coring (18 April –
2 May)

(440 meters of core collected and
logged)

← Code 7430 Logging Cores
(Soundspeed, Density,
Resistivity and
Magnetic Susceptibility
Quantified)