APPENDIX D

GRL FINAL REPORT (SPT ENERGY MEASUREMENTS)

GRL engineers, inc.
Dynamic Measurements and Analyses

September 30, 2013
Revised: January 16, 2014

Erdem Onur Tastan, PhD, P.E. – Project Director
Paul C. Rizzo Associates, Inc.
500 Penn Center Boulevard, Suite 100
Pittsburgh, PA USA 15235

Re: Report of SPT Energy Measurements
Boring R-6-1b
Turkey Point Units 6 & 7 Site
Homestead, Florida
GRL Job No. 133134-1 Paul C. Rizzo Project No. 13-5054

Dr. Tastan:

This report presents the results of Standard Penetration Test (SPT) dynamic energy measurements performed on September 17, 2013 on one (1) SPT sampling system at the referenced project site. The objective of the testing was to obtain the SPT energy measurements for the purpose of documenting the hammer energy transfer efficiency. General information regarding the testing equipment and procedures is provided in Appendix A. Testing results are presented in Appendix B. Equipment calibration certificates are included in Appendix C.

DYNAMIC TESTING FIELD DETAILS

Instrumentation

All energy measuring and processing equipment were manufactured and prepared by Pile Dynamics, Inc. A calibrated SPT Analyzer® system was used to acquire and process the dynamic test data obtained through an instrumented drill rod section. Strain and acceleration signals were acquired by the SPT analyzer, were digitally conditioned and converted to forces and velocities, and then digitally stored by the SPT Analyzer for subsequent reference and reprocessing. Electronic signals were recorded at a frequency of 50 kHz over a total sample period of 81.92 ms. The SPT analyzer was operated, and energy measurements were taken, by Brian Mondello with GRL Engineers, Inc.

The SPT energy measurements were made using a $2^5/_8$-inch outer diameter, 2-foot long instrumented NW-J type rod segment inserted in the drill string immediately below the anvil of the hammer. The instrumented rod, identified as Serial No. 256NWJ, had a cross-sectional area of 1.42 in2 at the instrumented segment, a material unit weight of 0.492 kips/ft3, a

material elastic modulus of 30,000 ksi, and a measured material one-dimensional stresswave speed of 16,807 ft/s.

Dynamic strain signals were measured with two (2) foil strain gauges in a full bridge circuit positioned 10 inches from the tip of the instrumented rod. Dynamic acceleration signals were measured with two (2) piezoresistive accelerometers, bolted to the instrumented rod via threaded holes, and positioned 7 inches from the tip of the instrumented rod. Thus, all gauges were positioned more than 12 inches below the top of the instrumented subassembly, as required by ASTM D4633-10 (Section 5.1). Each strain gauge and accelerometer was positioned symmetrically at 180 degrees from the opposing gauge of the similar type to cancel any bending effects in the shaft. The strain gauges were identified by Serial Nos. 256NWJ Bridge 1 and Bridge 2, with calibrations of 217.73 and 217.43 με/V, respectively. The accelerometers were identified by Serial Nos. K2613, and K3299; with calibrations of 335 and 345 mV/5000g's, respectively.

For each hammer blow, the PDA provided the following quantities: maximum force (FMX), maximum average stress at the gauge location (CSX), maximum velocity (VMX), velocity at time T1 (VT1), maximum displacement (DMX), maximum transferred energy (EFV), energy transfer ratio (ETR), and hammer blow rate per minute (BPM). Force and velocity records from the SPT Analyzer were also viewed on a graphic LCD screen to assess data quality.

Drill Rig and SPT Hammer Details

Testing was conducted on an SPT drilling rig/hammer system that was identified to us as rig DR-16, a "Failing 1500" truck-mounted drilling rig. The hammer, identified as Serial No. 85133, was reported to have a 0.1406 kip ram weight. An ideal SPT hammer system consists of a 0.14 kip hammer weight with a 30-inch (2.5 feet) drop height, corresponding to a potential energy value of 0.35 kip-ft.

The SPT system utilized a cathead-rope safety type hammer. The rope was in new condition. The rotating cathead drum was in good operating condition. The hammer's guide rod measured 1.75 inches in diameter and was reported to be solid steel. The Huss Drilling field crew was identified as Eddie Palmer, Driller; and Steve Stains, Helper.

The engineer ensured that the drilling rig and rod were plumb during energy transfer measurements. No unusual hammer operating conditions occurred during the instrumented SPT testing. The SPT sampler had a reported overall length of 2.5 feet.

Test Sequence

Dynamic energy measurements were made at boring location Boring R-6-1b, with date and time information presented in Appendix B. SPT sampling and dynamic measurements were conducted between depths of 124 and 134 feet, and the reported SPT N values ranged between 16 and 32 blows/foot. Complete details can be found in Appendix B.

Energy Transfer Measurements

The SPT Analyzer interprets the measured dynamic data according to the Case Method equations. Appendix B contains the output quantities plotted and printed as functions of hammer blow number for each depth sequence.

The maximum transferred energy (EFV) was calculated by integrating the product of the force and velocity records over the time duration of each test record as follows:

$$EFV = \int F(t) \cdot V(t)\, dt$$

Where, F(t) and V(t) are the time records of force and velocity, respectively.

The Energy Transfer Ratio (ETR) was calculated as:

$$ETR = \frac{EFV}{PE}$$

Where, PE is the potential energy = 140 lbs. x 30 inches = 0.14 kips x 2.5 ft. = 0.350 kip-ft.

DYNAMIC TESTING ANALYSIS AND RESULTS

Complete testing and analyses results are presented in Appendix B. The testing results of **each recorded blow** as well as **only the blows from the final foot of the sample (used to determine N-value)** are included, and are presented for each sequence of boring tests (e.g., 124-126 ft., etc.). Plots of test records obtained under typical hammer blows from each test sequence are included with the data in Appendix B. The reported SPT N-values for each test sequence are included in the PDA test result tables.

Summary of Testing Results

EFV values ranged between 0.207 and 0.229 kip-ft with an average of 0.217 kips and a standard deviation of 0.011 kip-ft. The corresponding average ETR values generally ranged between 59.2% to 65.4%, with an overall average of 62.1% with a standard deviation of 3.0%. The

average hammer blow rate ranged between 14.3 and 32.6 blows/minute (BPM) with an overall average of 24.1 BPM and standard deviation of 7.3 BPM. Complete details are presented in Table 1 and Appendix B.

We appreciate the opportunity to be of assistance to you on this project. Please do not hesitate to contact us if you have any questions regarding this report, or if we may be of further service.

Very truly yours,
GRL Engineers, Inc.
FL Certificate of Authorization (No. 6102)

Brian Mondello, P.E. 62709
Project Engineer

Ryan Gissal, E.I.
GRL Engineer

Enclosed: Appendices A, B, and C.

GRL Engineers, Inc.
Dynamic Pile Testing
8000 South Orange Ave., #225
Orlando, Florida 32809 USA

Table 1: Summary of Results

Project: Turkey Point Units 6 & 7 Site | GRL Job No. 133134-1 | Paul C. Rizzo Project No. 13-5054
Rig: "DR-16," Failing 1500
Hammer Type: Safety Hammer w/Cathead & Rope, Serial No. 85133

Boring I.D.	Test Date	Rod [1] Length (ft)	Sample[2] Depths (ft)	Sample No.	Reported blows per 6 inches (blows/6")	Reported SPT blow count (blows/foot)	Blows Analyzed	Average Hammer Rate (bpm)	Avg. Max. Compressive Force (kips)	Average Maximum Velocity (ft/sec)	Average Transferred Energy (lb-ft)	Average[3] Transfer Ratio (%)
R-6-1b	17-Sep-2013	128.33	124-126	S-9	7-9-19-13	32	32	14.3	30.4	11.9	209	59.9
		128.33	126-128	S-10	10-5-9-7	16	16	21.6	30.6	12.0	212	60.6
		133.33	128-130	S-11	8-8-9-13	22	21	21.9	25.8	14.3	207	59.2
		133.33	130-132	S-12	4-5-10-15	25	25	30.1	30.4	14.3	228	65.3
		138.33	132-134	S-13	10-15-10-12	22	22	32.6	23.0	12.7	229	65.4
							Average:	24.1	28.0	13.0	217	**62.1**
							Standard Deviation:	7.3	3.5	1.2	10.7	**3.0**

Notes:
1 - Total rod length, including sampler, below gages
2 - Depths measured from below reference elevation
3 - Ratio of average transferred energy (EFV) to theoretical potential energy of 350 ft-lbs (140 lbs x 30 inch drop)

APPENDIX A
AN INTRODUCTION INTO SPT DYNAMIC PILE TESTING

1. BACKGROUND

The Standard Penetration Test is frequently conducted as an in-situ assessment of soil strength. This test requires that a 140 lb weight is dropped 30 inches onto a drive rod at whose bottom a sampler is usually installed. The sampler is driven for 18 inches; the number of blows required for the last 12 inches of driving is the so-called N-value. The N-value may be used as a strength indicator for foundation design or as a means of assessing the liquefaction potential of soils.

Obviously, the SPT hammer efficiency is an important consideration when using the N-values for design purposes. Measurements have indicated that the energy in the drive rod is sometimes only 30% and and may reach 90% of the potential or rated energy of the SPT hammer (E-rated = 0.35 kip-ft or 0.475 kJ). The type of hammer used to drive the rod is the main reason for these variations. On the average, the energy in the drive rod is 60% of the standard rated energy.

Because of the variability of energy, methods based on N-values are considered unreliable. However, measurements during SPT testing using the Case Method can be done on a routine basis and these measurements yield the transferred energy values. With measured energy, EMX, known, an adjustment of the measured N-value, N_m, can be made as follows.

$$N_{60} = N_m [E_m / (0.6E_r)] \qquad (1)$$

Thus, if the measured energy value is equal to the normally expected transferred energy of 60% of E-rated then the adjusted and measured N-values are identical. On the other hand, if the measured energy is only 30% then the adjusted blow count will be reduced by 50%.

2. DYNAMIC TESTING AND ANALYSIS METHODS APPLIED TO SPT

The Case Method of dynamic pile testing, named after the Case Institute of Technology where it was developed between 1964 and 1975, requires that a substantial ram mass (e.g. a pile driving hammer) impacts the pile top such that the pile undergoes at least a small permanent set. Thus, the method is also referred to as a "High Strain Method". The Case Method requires dynamic measurements on the pile or shaft under the ram impact and then a calculation of various quantities. Conveniently, for SPT applications, the measurements and analyses are done by a single piece of equipment: the SPT Analyzer. The Pile Driving Analyzer® (PDA) is also suitable to perform these measurements and data processing.

A related analysis method is the "Wave Equation Analysis" which calculates a relationship between bearing capacity, pile stresses, transferred energy and field blow count. The GRLWEAP™ program performs this analysis and provides a complete set of helpful information and input data. This program can be used very effectively to simulate the SPT driving process.

3. MEASUREMENTS

GRL uses equipment manufactured by Pile Dynamics, Inc. The system includes either an SPT-Analyzer™ (SPTA) or a Pile Driving Analyzer® (PDA), an instrumented rod section and two accelerometers. SPT energy testing is very closely related to and borrows procedures from dynamic pile testing. Those interested in the basis of the SPT energy testing method may obtain extensive literature on dynamic pile testing from GRL Engineers, Inc.

3.1 SPT Analyzer or Pile Driving Analyzer

The basis for the results calculated by the SPTA or PDA are strain and acceleration measured in an instrumented rod section. These signals are converted to rod top force, F(t), and rod top velocity, v(t). The SPTA or PDA conditions, calibrates and displays these signals and immediately computes average pile force and velocity thereby eliminating bending effects. The product of these two

measurements is then integrated over time which yields the energy transferred to the instrumented section as a function of time (see Section 4.1).

For convenience and accuracy, strain measurements are usually taken on an instrumented section of SPT drive rod. Ideally, the section properties of the instrumented rod and those of the drive rod are the same, however, using subs, other sections can also be utilized.

For the instrumented section, PDI provides a force calibration in such a way that the output of the instrumented rod is directly calculated without the need for an accurate elastic modulus or cross sectional area of the rod section.

The acceleration measurements are often demanding in the SPT environment, because of high frequency and high acceleration motion components. An experienced measurement engineer, therefore, has to evaluate the quality of this data before final conclusions are drawn from the numerical results calculated by SPTA or PDA.

SPTA or PDA records are taken while the standard N-value is acquired in the conventional manner. This then allows a direct correlation between N-value and average transferred energy.

3.2 HPA

The SPT hammer's ram velocity may be directly obtained using radar technology in the Hammer Performance Analyzer™. The impact velocity results can be automatically processed with a PC or recorded on a strip chart. HPA measurements yield a hammer kinetic energy, but not the energy transferred to the drive rod.

4 RECORD EVALUATION BY SPTA OR PDA

4.1 HAMMER PERFORMANCE

The PDA calculates the energy transferred to the pile top from:

$$E(t) = {}_0\int^t F(\tau)v(\tau)\, d\tau \qquad (2)$$

The maximum of the E(t) curve is often called **ENTHRU or EMX;** it is the most important quantity for an overall evaluation of the performance of a hammer and driving system. **EMX** allows for a classification of the hammer's performance when presented as, e_T, the rated transfer efficiency, also called energy transfer ratio (**ETR**) or global efficiency.

$$e_T = EMX/E_R \qquad (3)$$

where E_R is the hammer manufacturer's rated energy value or 0.35 kip-ft (0.475 kJ) in the case of the SPT hammer.

Often in the SPT literature one finds also reference to the EF2 energy. This evaluation is based on assumed proportionality between force and velocity (see also Section 5):

$$v(t) = F(t) / Z \qquad (4)$$

where Z = EA/c is the pile impedance, E is the elastic modulus, A is the cross sectional area and c is the speed of the stress wave in the pile material..

Combining equations 2 and 4 leads to

$$EF(t) = {}_0\int^t F(\tau)^2 / Z\, d\tau \qquad (5)$$

The EF2 transferred energy value is the EF-value at the time t = 2L/c, where L is the drive rod length and c is the stress wave speed in steel (16,800 ft/s or 5,124 m/s). Since the force is easier to measure than both force and velocity, Equation 5 is preferred by some test engineers. However, the EF method is fraught with errors and certain correction factors have to be applied to make it approximately correct. Among the error sources are the following:

- Proportionality is often violated prior to time 2L/c. The proportionality between force and velocity in a downward traveling wave only holds if the wave does not encounter a disturbance prior to reflecting off the pile toe. Such disturbances include a change in cross sectional area, an open or loose splice or joint, or resistance along the shaft.

- Using only one force measurement precludes a data quality check based on the proportionality between force and velocity. Thus, a force measurement that is for some reason in error may not be detectable, which will lead to errors in the EF2 value. Data quality checks will be discussed further in Section 5.

The use if EF2 is therefore not recommended but it is often included in result presentations for the sake of completeness.

4.2 STRESSES

During SPT monitoring, it is also of interest to monitor compressive stresses at both the top of the drive rod and at its bottom.

At the pile top (location of sensors) the maximum compression stress averaged over the rod's cross section, **CSX**, is directly obtained from the measurements. Note that this stress value refers to the instrumented section. If the rod has a different cross sectional area then the stress in the rod will be different from CSX.

The SPTA or PDA can also calculate, in an approximate manner, the force at the rod bottom, **CFB**. To obtain the corresponding stress, this force value should be divided by the appropriate cross sectional area, e.g. by the rod area just above the sampler or by the sampler area itself. Of course, non-uniform stress components as they might occur at the sampler tip due to a sloping rock are not considered in this calculation.

5. DATA QUALITY CHECKS

Quality data is the first and foremost requirement for accurate dynamic testing results. It is therefore important that the measurement engineer performing SPTA or PDA tests has the experience necessary to recognize measurement problems and take appropriate corrective action should problems develop. Fortunately, dynamic pile testing allows for certain data quality checks because two independent measurements are taken that have to conform to the so-called proportionality relationship.

As long as there is only a wave traveling in one direction, as is the case during impact when only a downward traveling wave exists in the rod, force and velocity measured at its top are proportional

$$F = v\,Z \qquad (5)$$

where Z is again the pile impedance, Z = EA/c. This relationship can also be expressed in terms of stress

$$\sigma = F/A = v\,(E/c) \qquad (6)$$

or strain

$$\epsilon = \sigma/E = v / c \qquad (7)$$

This means that the early portion of strain times wave speed must be equal to the velocity unless the proportionality is affected by high friction near the pile top or by a pile cross sectional change not far below the sensors. Checking the proportionality is an excellent means of assuring meaningful measurements but is only truly meaningful for perfectly uniform rods. Open or loose splices, for example, will lead to a non-proportionality. For SPT rods it is fortunate that usually no soil resistance acts along the shaft and for that reason, proportionality can exist until the stress wave returns from sampler top or rod bottom unless connectors are not sufficiently tightened or have a significant mass.

Velocity data quality can also be checked by looking at the final displacement, DFN, which is calculated from the acceleration by double integration. If the calculated final displacement is much higher or lower than indicated by the N-value, the accelerometer attachment may be loose or the sensor may be faulty. If major drift in the velocity is observed, the EMX value may be in error, even though proportionality from impact to time 2L/c exists. In this case, it may be useful to evaluate the energy transferred to the drill rod at time 2L/c, which is calculated by the PDA or SPTA as the E2E quantity.

Appendix B

Turkey Point Units 6 & 7 Site

"DR-16" Failing 1500 Drilling Rig with Cathead/Rope Safety Hammer

SPT Energy Measurement Testing Results

Boring R-6-1b

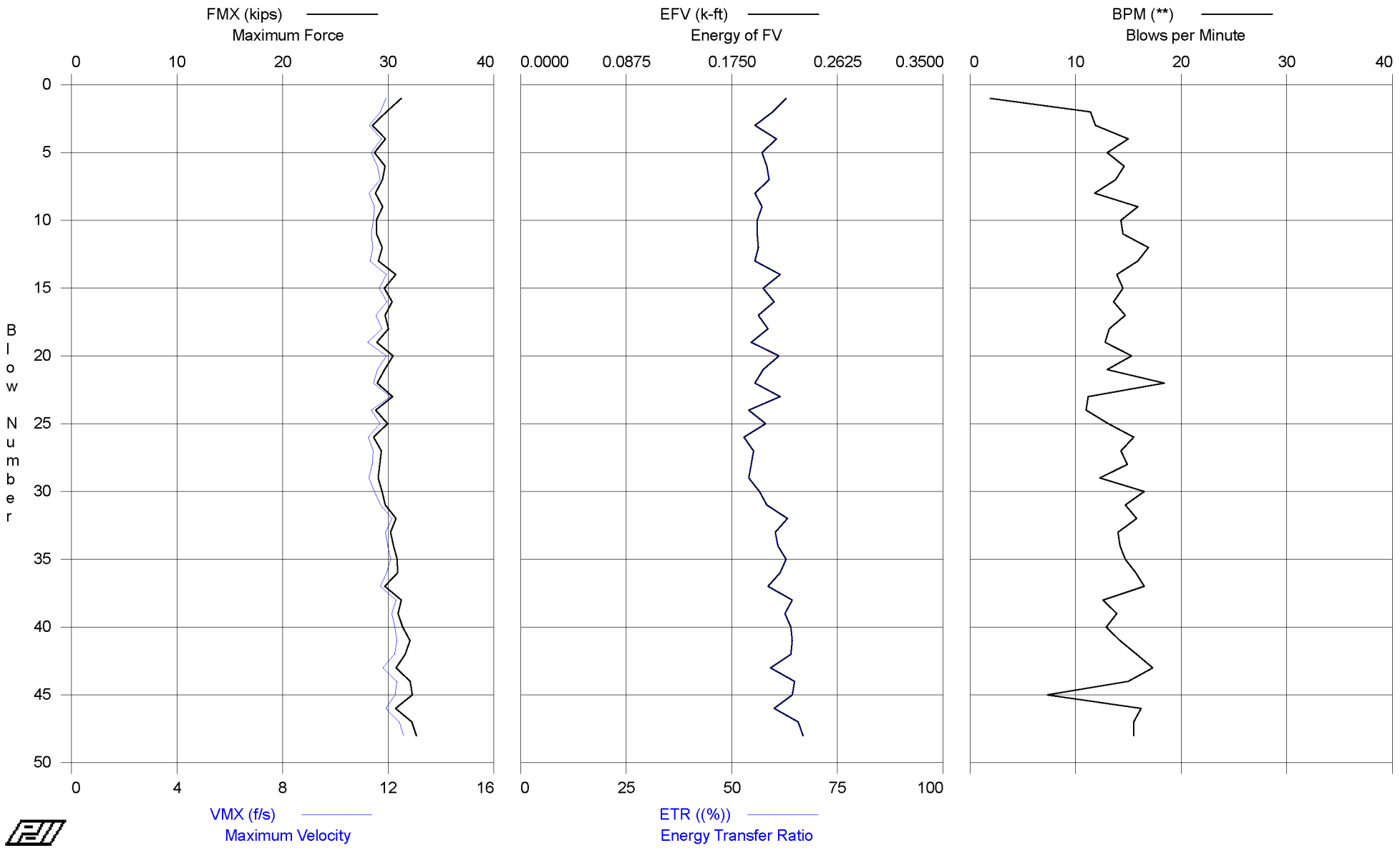
Sample Penetrations of 124 to 134 feet using NW-J Drilling Rods

GRL Engineers, Inc. - Case Method & iCAP® Results

PDIPLOT Ver. 2014.1 - Printed: 15-Jan-2014

Test date: 17-Sep-2013

Turket Point Units 6 & 7 Site - R-6-1B 124 TO 126 FT



GRL Engineers, Inc.
Case Method & iCAP® Results PDIPLOT Ver. 2014.1 - Printed: 15-Jan-2014

Turket Point Units 6 & 7 Site - R-6-1B 124 TO 126 FT RIG DR-16
OP: GRL Test date: 17-Sep-2013

AR: 1.42 in^2 SP: 0.492 k/ft3
LE: 128.33 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00

FMX: Maximum Force DMX: Maximum Displacement
CSX: Max Measured Compr. Stress EFV: Energy of FV
VMX: Maximum Velocity ETR: Energy Transfer Ratio
VT1: Velocity at Time 1 BPM: Blows per Minute

BL# end	TYPE	FMX kips	CSX ksi	VMX f/s	VT1 f/s	DMX in	EFV k-ft	ETR (%)	BPM **
1	AV1	31.2	22.0	11.9	11.9	0.75	0.220	62.9	1.9
2	AV1	29.8	21.0	11.7	11.7	0.82	0.209	59.7	11.4
3	AV1	28.5	20.1	11.3	11.3	0.60	0.194	55.5	11.9
4	AV1	29.8	21.0	11.7	11.7	0.62	0.212	60.5	15.0
5	AV1	28.7	20.2	11.4	11.4	0.64	0.200	57.2	13.0
6	AV1	29.7	20.9	11.6	11.6	0.78	0.204	58.4	14.6
7	AV1	29.5	20.8	11.7	11.7	0.54	0.206	58.8	13.8
8	AV1	28.8	20.3	11.3	11.3	0.83	0.194	55.4	11.8
9	AV1	29.5	20.8	11.5	11.5	0.81	0.200	57.1	15.9
10	AV1	28.9	20.3	11.4	11.4	0.70	0.196	56.0	14.3
11	AV1	28.9	20.3	11.4	11.4	0.57	0.196	55.9	14.5
12	AV1	29.4	20.7	11.4	11.4	0.83	0.197	56.3	16.9
13	AV1	29.1	20.5	11.3	11.3	0.79	0.194	55.3	15.9
14	AV1	30.7	21.6	11.9	11.9	0.37	0.215	61.4	13.9
15	AV1	29.6	20.9	11.7	11.7	0.32	0.201	57.6	14.5
16	AV1	30.4	21.4	12.0	12.0	0.37	0.210	60.1	13.6
17	AV1	29.7	20.9	11.5	11.5	0.39	0.197	56.4	14.7
18	AV1	30.0	21.1	11.8	11.8	0.43	0.205	58.7	13.2
19	AV1	28.9	20.4	11.2	11.2	0.48	0.191	54.7	12.8
20	AV1	30.5	21.5	11.9	11.9	0.65	0.214	61.2	15.3
21	AV1	29.7	20.9	11.6	11.6	0.55	0.201	57.5	13.0
22	AV1	29.0	20.4	11.5	11.5	0.62	0.194	55.5	18.4
23	AV1	30.4	21.4	12.1	12.1	0.65	0.215	61.3	11.2
24	AV1	28.8	20.3	11.4	11.4	0.66	0.189	54.1	11.0
25	AV1	29.9	21.1	11.7	11.7	0.38	0.203	57.9	13.1
26	AV1	28.6	20.2	11.2	11.2	0.28	0.185	52.8	15.5
27	AV1	29.3	20.7	11.4	11.4	0.38	0.193	55.2	14.3
28	AV1	29.2	20.6	11.4	11.4	0.34	0.191	54.6	14.9
29	AV1	29.0	20.5	11.3	11.3	0.32	0.189	54.0	12.3
30	AV1	29.4	20.7	11.5	11.5	0.37	0.198	56.7	16.5
31	AV1	29.7	20.9	11.7	11.7	0.37	0.204	58.4	14.7
32	AV1	30.7	21.7	12.2	12.2	0.41	0.221	63.1	15.8
33	AV1	30.2	21.3	11.9	11.9	0.38	0.211	60.2	14.0
34	AV1	30.5	21.5	12.0	12.0	0.38	0.213	60.8	14.2
35	AV1	30.9	21.7	12.1	12.1	0.43	0.220	62.7	14.7
36	AV1	30.9	21.8	11.9	11.9	0.44	0.215	61.5	15.7
37	AV1	29.7	20.9	11.7	11.7	0.59	0.205	58.6	16.5
38	AV1	31.2	22.0	12.3	12.3	0.57	0.225	64.2	12.6

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Case Method & iCAP® Results PDIPLOT Ver. 2014.1 - Printed: 15-Jan-2014

Turket Point Units 6 & 7 Site - R-6-1B 124 TO 126 FT RIG DR-16
OP: GRL Test date: 17-Sep-2013

BL# end	TYPE	FMX kips	CSX ksi	VMX f/s	VT1 f/s	DMX in	EFV k-ft	ETR (%)	BPM **
39	AV1	30.9	21.8	12.1	12.1	0.42	0.219	62.4	13.9
40	AV1	31.4	22.1	12.3	12.3	0.57	0.224	64.1	12.9
41	AV1	32.1	22.6	12.3	12.3	0.64	0.225	64.4	14.2
42	AV1	31.6	22.3	12.2	12.2	0.61	0.224	63.9	15.8
43	AV1	30.7	21.7	11.8	11.8	0.58	0.207	59.1	17.3
44	AV1	32.1	22.6	12.3	12.3	0.82	0.227	64.9	15.0
45	AV1	32.3	22.7	12.3	12.3	0.70	0.225	64.2	7.3
46	AV1	30.7	21.6	11.9	11.9	0.66	0.210	60.1	16.2
47	AV1	32.2	22.7	12.4	12.4	0.75	0.230	65.8	15.5
48	AV1	32.7	23.0	12.6	12.6	0.56	0.234	66.8	15.5
	Average	30.1	21.2	11.8	11.8	0.56	0.207	59.3	14.0
	Std. Dev.	1.1	0.8	0.4	0.4	0.16	0.012	3.5	2.6

Total number of blows analyzed: 48

BL#	Comments
48	7,9,19,13 BLOWS/6 INCHES

Time Summary

Drive	3 minutes 26 seconds	10:01:27 AM - 10:04:53 AM (9/17/2013) BN 1 - 48

GRL Engineers, Inc.
Case Method & iCAP® Results PDIPLOT Ver. 2014.1 - Printed: 15-Jan-2014

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OP: GRL Test date: 17-Sep-2013

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LE: 128.33 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00

FMX: Maximum Force DMX: Maximum Displacement
CSX: Max Measured Compr. Stress EFV: Energy of FV
VMX: Maximum Velocity ETR: Energy Transfer Ratio
VT1: Velocity at Time 1 BPM: Blows per Minute

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30	AV1	29.4	20.7	11.5	11.5	0.37	0.198	56.7	16.5
31	AV1	29.7	20.9	11.7	11.7	0.37	0.204	58.4	14.7
32	AV1	30.7	21.7	12.2	12.2	0.41	0.221	63.1	15.8
33	AV1	30.2	21.3	11.9	11.9	0.38	0.211	60.2	14.0
34	AV1	30.5	21.5	12.0	12.0	0.38	0.213	60.8	14.2
35	AV1	30.9	21.7	12.1	12.1	0.43	0.220	62.7	14.7
36	AV1	30.9	21.8	11.9	11.9	0.44	0.215	61.5	15.7
37	AV1	29.7	20.9	11.7	11.7	0.59	0.205	58.6	16.5
38	AV1	31.2	22.0	12.3	12.3	0.57	0.225	64.2	12.6
39	AV1	30.9	21.8	12.1	12.1	0.42	0.219	62.4	13.9
40	AV1	31.4	22.1	12.3	12.3	0.57	0.224	64.1	12.9
41	AV1	32.1	22.6	12.3	12.3	0.64	0.225	64.4	14.2
42	AV1	31.6	22.3	12.2	12.2	0.61	0.224	63.9	15.8
43	AV1	30.7	21.7	11.8	11.8	0.58	0.207	59.1	17.3
44	AV1	32.1	22.6	12.3	12.3	0.82	0.227	64.9	15.0
45	AV1	32.3	22.7	12.3	12.3	0.70	0.225	64.2	7.3
46	AV1	30.7	21.6	11.9	11.9	0.66	0.210	60.1	16.2
47	AV1	32.2	22.7	12.4	12.4	0.75	0.230	65.8	15.5
48	AV1	32.7	23.0	12.6	12.6	0.56	0.234	66.8	15.5
	Average	30.4	21.4	11.9	11.9	0.51	0.209	59.9	14.3
	Std. Dev.	1.1	0.8	0.4	0.4	0.14	0.014	3.9	2.1

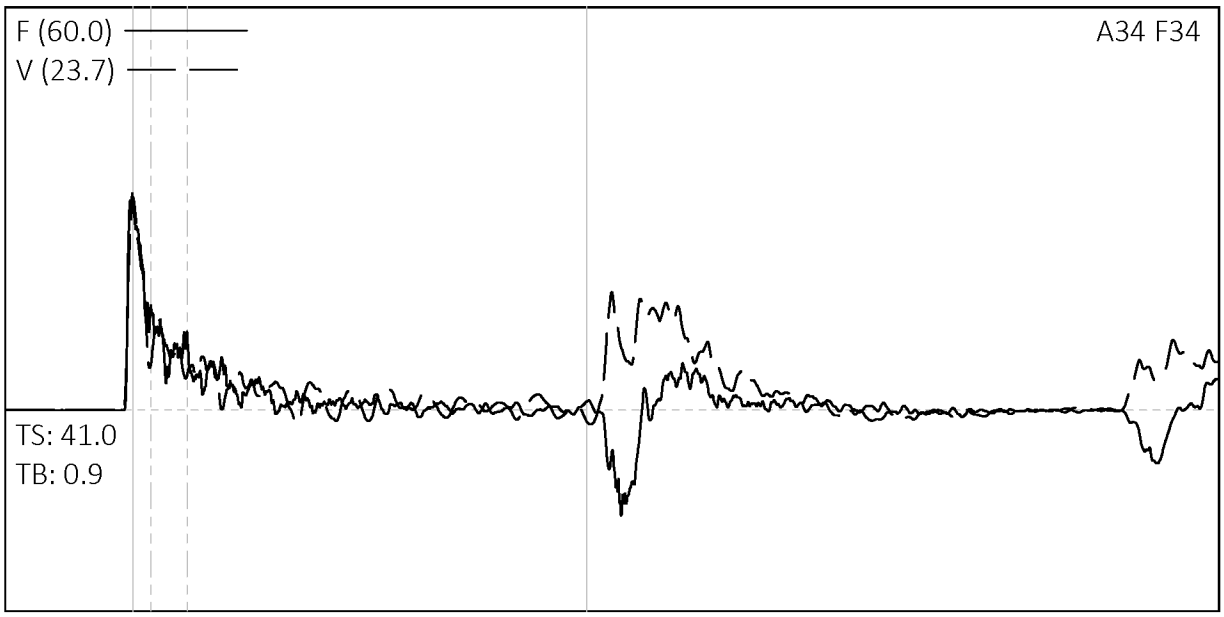
Total number of blows analyzed: 32

BL#	Comments
48	7,9,19,13 BLOWS/6 INCHES

Time Summary

Drive	3 minutes 26 seconds	10:01:27 AM - 10:04:53 AM (9/17/2013)	BN 1 - 48

Turkey Point Units 6 & 7 Site R-6-1B 124 TO 126 FT



Project Information

PROJECT: Turkey Point Units 6 & 7 Site
PILE NAME: R-6-1B 124 TO 126 FT
DESCR: RIG DR-16
OPERATOR: GRL
FILE: R-6-1B 124 TO 126 FT.W01
9/17/2013 10:04:48 AM
Blow Number 47

Pile Properties

LE	128.33	ft
AR	1.42	in^2
EM	30000	ksi
SP	0.492	k/ft3
WS	16807.9	f/s
EA/C	2.5	ksec/ft
2L/C	15.28	ms
JC		[]

Quantity Results

FMX	32.2	kips
CSX	22.7	ksi
VMX	12.4	f/s
VT1	12.4	f/s
DMX	0.75	in
EFV	0.230	k-ft
ETR	65.8	(%)
BPM	15.5	bpm
USR	0.00	[]

Sensors

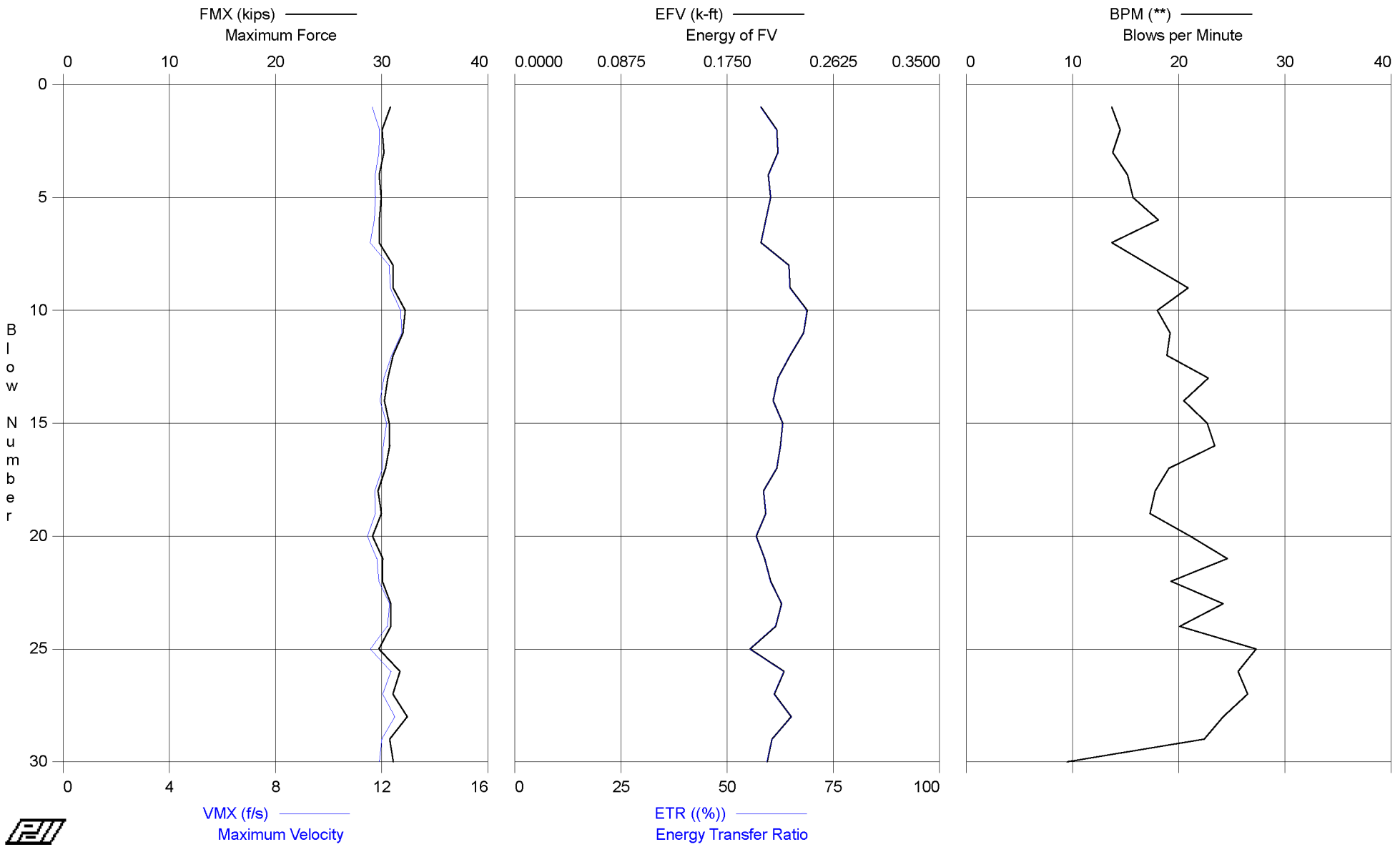
F3: [256 NWJ-1] 217.73 (1)
F4: [256 NWJ-2] 217.43 (1)
A3: [K2613] 335 mv/5000g's (1)
A4: [K3299] 345 mv/5000g's (1)
CLIP: OK

GRL Engineers, Inc. - Case Method & iCAP® Results

PDIPLOT Ver. 2014.1 - Printed: 15-Jan-2014

Test date: 17-Sep-2013

Turkey Point Units 6 & 7 Site - R-6-1B 126 TO 128 FT



GRL Engineers, Inc. Page 1 of 1
Case Method & iCAP® Results PDIPLOT Ver. 2014.1 - Printed: 16-Jan-2014

TURKEY CREEK - R-6-1B 126 TO 128 FT RIG DR-16
OP: GRL Test date: 17-Sep-2013

AR: 1.42 in^2 SP: 0.492 k/ft3
LE: 128.33 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00

FMX: Maximum Force DMX: Maximum Displacement
CSX: Max Measured Compr. Stress EFV: Energy of FV
VMX: Maximum Velocity ETR: Energy Transfer Ratio
VT1: Velocity at Time 1 BPM: Blows per Minute

BL# end	TYPE	FMX kips	CSX ksi	VMX f/s	VT1 f/s	DMX in	EFV k-ft	ETR (%)	BPM **
1	AV1	30.8	21.7	11.6	11.6	0.70	0.203	57.9	13.7
2	AV1	30.0	21.2	11.9	11.9	0.68	0.216	61.6	14.5
3	AV1	30.2	21.3	11.9	11.9	0.65	0.217	62.1	13.8
4	AV1	29.8	21.0	11.8	11.8	0.74	0.209	59.8	15.2
5	AV1	30.0	21.1	11.8	11.8	0.48	0.211	60.3	15.7
6	AV1	29.8	21.0	11.7	11.7	0.51	0.207	59.2	18.1
7	AV1	29.8	21.0	11.6	11.6	0.73	0.203	58.0	13.7
8	AV1	31.1	21.9	12.3	12.3	0.88	0.226	64.5	17.3
9	AV1	31.1	21.9	12.3	12.3	0.69	0.227	64.8	20.9
10	AV1	32.2	22.7	12.7	12.7	0.64	0.241	68.7	18.0
11	AV1	32.0	22.5	12.8	12.8	0.73	0.238	68.1	19.2
12	AV1	31.1	21.9	12.4	12.4	0.96	0.227	64.8	18.9
13	AV1	30.6	21.5	12.1	12.1	0.71	0.217	62.1	22.8
14	AV1	30.3	21.3	11.9	11.9	0.92	0.213	60.9	20.5
15	AV1	30.7	21.6	12.2	12.2	0.68	0.221	63.1	22.7
16	AV1	30.8	21.7	12.1	12.1	0.49	0.219	62.6	23.4
17	AV1	30.4	21.4	12.0	12.0	0.65	0.216	61.7	19.1
18	AV1	29.7	20.9	11.7	11.7	0.53	0.205	58.6	17.8
19	AV1	30.0	21.1	11.8	11.8	0.86	0.207	59.2	17.3
20	AV1	29.1	20.5	11.5	11.5	0.87	0.199	56.8	21.1
21	AV1	30.1	21.2	11.8	11.8	0.84	0.206	58.9	24.6
22	AV1	30.1	21.2	11.9	11.9	0.67	0.211	60.2	19.3
23	AV1	30.9	21.7	12.3	12.3	0.68	0.220	62.9	24.2
24	AV1	30.9	21.7	12.2	12.2	0.81	0.215	61.3	20.1
25	AV1	29.7	20.9	11.6	11.6	0.74	0.194	55.4	27.3
26	AV1	31.7	22.3	12.4	12.4	0.83	0.222	63.4	25.6
27	AV1	31.1	21.9	12.0	12.0	0.74	0.214	61.0	26.5
28	AV1	32.4	22.8	12.5	12.5	0.80	0.228	65.2	24.2
29	AV1	30.8	21.7	12.0	12.0	0.81	0.212	60.6	22.4
30	AV1	31.1	21.9	11.9	11.9	0.53	0.208	59.3	9.5
	Average	30.6	21.5	12.0	12.0	0.72	0.215	61.4	19.6
	Std. Dev.	0.8	0.6	0.3	0.3	0.13	0.011	3.0	4.3

Total number of blows analyzed: 30

BL#	Comments
30	10,5,9,7 BLOWS/6 INCHES

Time Summary

Drive 1 minute 32 seconds 10:29:41 AM - 10:31:13 AM (9/17/2013) BN 1 - 30

GRL Engineers, Inc.
Case Method & iCAP® Results PDIPLOT Ver. 2014.1 - Printed: 15-Jan-2014

Turkey Point Units 6 & 7 Site - R-6-1B 126 TO 128 FT RIG DR-16
OP: GRL Test date: 17-Sep-2013

AR: 1.42 in^2 SP: 0.492 k/ft3
LE: 128.33 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00

FMX: Maximum Force DMX: Maximum Displacement
CSX: Max Measured Compr. Stress EFV: Energy of FV
VMX: Maximum Velocity ETR: Energy Transfer Ratio
VT1: Velocity at Time 1 BPM: Blows per Minute

BL# end	TYPE	FMX kips	CSX ksi	VMX f/s	VT1 f/s	DMX in	EFV k-ft	ETR (%)	BPM **
15	AV1	30.7	21.6	12.2	12.2	0.68	0.221	63.1	22.7
16	AV1	30.8	21.7	12.1	12.1	0.49	0.219	62.6	23.4
17	AV1	30.4	21.4	12.0	12.0	0.65	0.216	61.7	19.1
18	AV1	29.7	20.9	11.7	11.7	0.53	0.205	58.6	17.8
19	AV1	30.0	21.1	11.8	11.8	0.86	0.207	59.2	17.3
20	AV1	29.1	20.5	11.5	11.5	0.87	0.199	56.8	21.1
21	AV1	30.1	21.2	11.8	11.8	0.84	0.206	58.9	24.6
22	AV1	30.1	21.2	11.9	11.9	0.67	0.211	60.2	19.3
23	AV1	30.9	21.7	12.3	12.3	0.68	0.220	62.9	24.2
24	AV1	30.9	21.7	12.2	12.2	0.81	0.215	61.3	20.1
25	AV1	29.7	20.9	11.6	11.6	0.74	0.194	55.4	27.3
26	AV1	31.7	22.3	12.4	12.4	0.83	0.222	63.4	25.6
27	AV1	31.1	21.9	12.0	12.0	0.74	0.214	61.0	26.5
28	AV1	32.4	22.8	12.5	12.5	0.80	0.228	65.2	24.2
29	AV1	30.8	21.7	12.0	12.0	0.81	0.212	60.6	22.4
30	AV1	31.1	21.9	11.9	11.9	0.53	0.208	59.3	9.5
	Average	30.6	21.5	12.0	12.0	0.72	0.212	60.6	21.6
	Std. Dev.	0.8	0.6	0.3	0.3	0.12	0.009	2.5	4.3

Total number of blows analyzed: 16

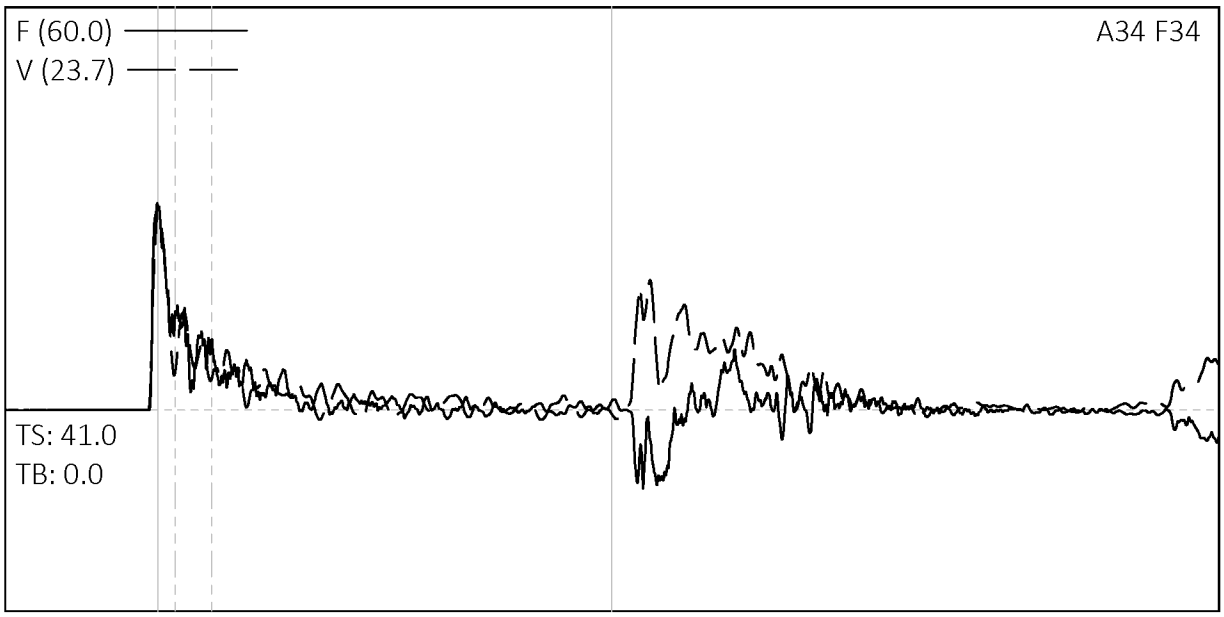
BL#	Comments
30	10,5,9,7 BLOWS/6 INCHES

Time Summary

Drive 1 minute 32 seconds 10:29:41 AM - 10:31:13 AM (9/17/2013) BN 1 - 30

A-1534

Turkey Point Units 6 & 7 Site R-6-1B 126 TO 128 FT



Project Information

PROJECT: Turkey Point Units 6 & 7 Site
PILE NAME: R-6-1B 126 TO 128 FT
DESCR: RIG DR-16
OPERATOR: GRL
FILE: R-6-1B 126 TO 128 FT.W01
9/17/2013 10:31:07 AM
Blow Number 29

Pile Properties

LE	128.33	ft
AR	1.42	in^2
EM	30000	ksi
SP	0.492	k/ft3
WS	16807.9	f/s
EA/C	2.5	ksec/ft
2L/C	15.28	ms
JC		[]

Quantity Results

FMX	30.8	kips
CSX	21.7	ksi
VMX	12.0	f/s
VT1	12.0	f/s
DMX	0.81	in
EFV	0.212	k-ft
ETR	60.6	(%)
BPM	22.4	bpm
USR	0.00	[]

Sensors

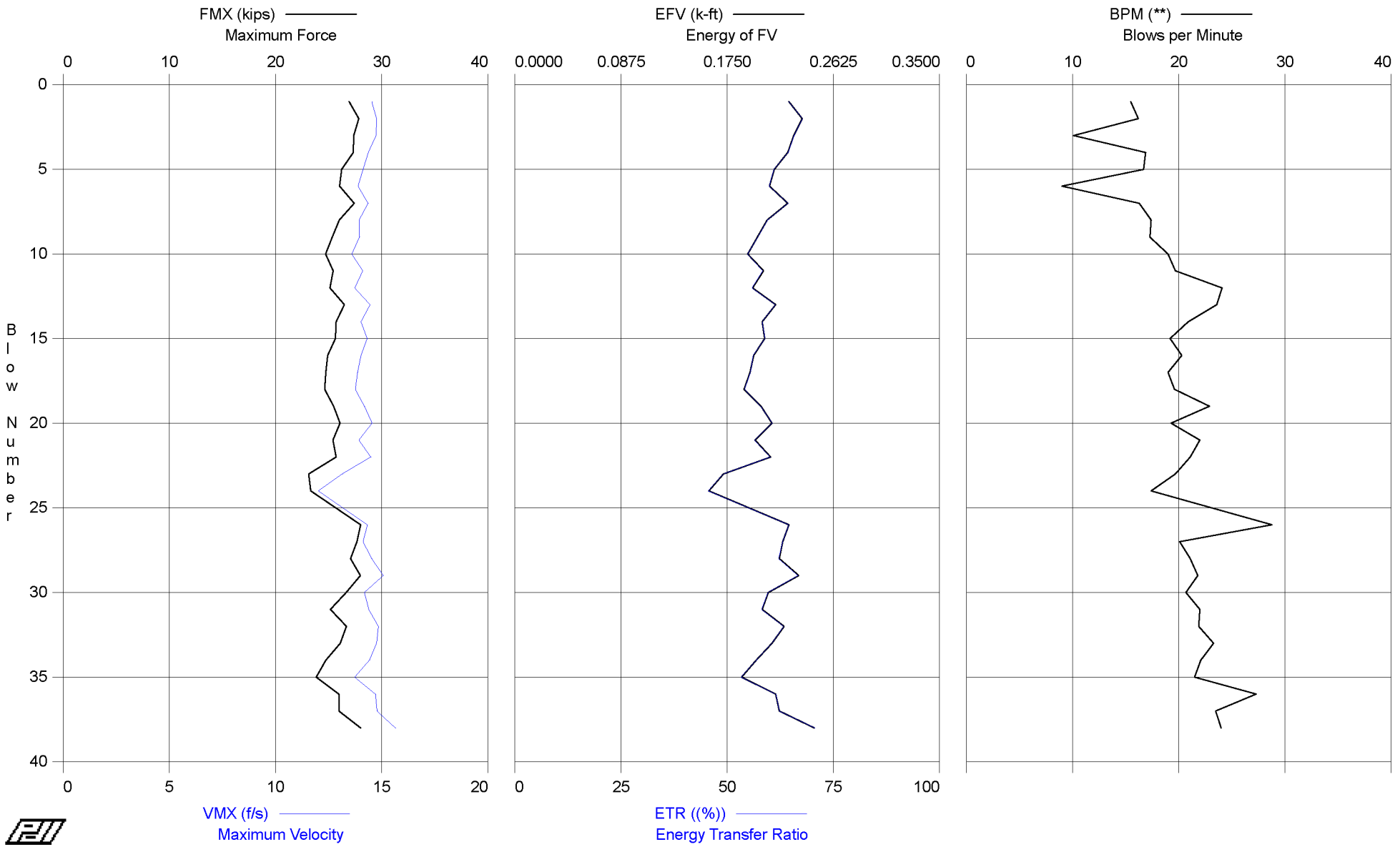
F3: [256 NWJ-1] 217.73 (1)
F4: [256 NWJ-2] 217.43 (1)
A3: [K2613] 335 mv/5000g's (1)
A4: [K3299] 345 mv/5000g's (1)
CLIP: OK

GRL Engineers, Inc. - Case Method & iCAP® Results

PDIPLOT Ver. 2014.1 - Printed: 15-Jan-2014

Test date: 17-Sep-2013

Turkey Point Units 6 & 7 Site - R-6-1B 128 TO 130 FT



GRL Engineers, Inc.
Case Method & iCAP® Results PDIPLOT Ver. 2014.1 - Printed: 16-Jan-2014

Turkey Point Units 6 & 7 Site - R-6-1B 128 TO 130 FT RIG DR-16
OP: GRL Test date: 17-Sep-2013

AR: 1.42 in^2 SP: 0.492 k/ft3
LE: 133.33 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00

FMX: Maximum Force DMX: Maximum Displacement
CSX: Max Measured Compr. Stress EFV: Energy of FV
VMX: Maximum Velocity ETR: Energy Transfer Ratio
VT1: Velocity at Time 1 BPM: Blows per Minute

BL# end	TYPE	FMX kips	CSX ksi	VMX f/s	VT1 f/s	DMX in	EFV k-ft	ETR (%)	BPM **
1	AV1	26.9	19.0	14.5	14.5	1.01	0.226	64.5	15.5
2	AV1	27.9	19.6	14.8	14.8	0.84	0.237	67.8	16.2
3	AV1	27.4	19.3	14.7	14.7	0.69	0.230	65.8	10.1
4	AV1	27.3	19.2	14.4	14.4	0.74	0.225	64.4	16.9
5	AV1	26.2	18.5	14.1	14.1	0.77	0.214	61.0	16.7
6	AV1	26.0	18.3	13.9	13.9	0.84	0.210	59.9	9.0
7	AV1	27.4	19.3	14.4	14.4	0.83	0.225	64.4	16.3
8	AV1	26.0	18.3	13.9	13.9	0.88	0.208	59.5	17.4
9	AV1	25.3	17.8	14.0	14.0	0.90	0.200	57.3	17.3
10	AV1	24.7	17.4	13.6	13.6	0.96	0.192	54.9	19.0
11	AV1	25.4	17.9	14.1	14.1	0.82	0.205	58.4	19.7
12	AV1	25.1	17.7	13.7	13.7	0.64	0.196	55.9	24.1
13	AV1	26.5	18.7	14.5	14.5	0.75	0.215	61.5	23.6
14	AV1	25.7	18.1	14.0	14.0	0.90	0.204	58.3	20.9
15	AV1	25.6	18.0	14.3	14.3	0.95	0.206	59.0	19.2
16	AV1	24.9	17.5	14.0	14.0	0.77	0.197	56.2	20.3
17	AV1	24.7	17.4	13.9	13.9	0.64	0.194	55.5	19.0
18	AV1	24.6	17.3	13.8	13.8	0.79	0.189	54.1	19.6
19	AV1	25.5	17.9	14.2	14.2	0.89	0.203	57.9	22.9
20	AV1	26.1	18.4	14.6	14.6	0.76	0.212	60.7	19.3
21	AV1	25.4	17.9	13.9	13.9	0.64	0.198	56.5	22.0
22	AV1	25.7	18.1	14.5	14.5	0.55	0.211	60.2	21.1
23	AV1	23.1	16.3	13.1	13.1	0.50	0.172	49.2	19.7
24	AV1	23.3	16.4	12.0	12.0	0.55	0.160	45.6	17.4
25	AV1	0.1	0.0	0.0	0.0	0.02	0.000	0.0	18.9
26	AV1	28.0	19.7	14.3	14.3	0.72	0.226	64.6	28.8
27	AV1	27.7	19.5	14.1	14.1	0.65	0.221	63.1	20.1
28	AV1	27.1	19.1	14.5	14.5	0.64	0.218	62.1	21.1
29	AV1	28.0	19.7	15.1	15.1	0.64	0.234	66.7	21.8
30	AV1	26.7	18.8	14.2	14.2	0.57	0.209	59.7	20.7
31	AV1	25.2	17.7	14.4	14.4	0.53	0.204	58.2	22.0
32	AV1	26.7	18.8	14.8	14.8	0.62	0.222	63.4	21.9
33	AV1	26.1	18.4	14.8	14.8	0.59	0.212	60.6	23.3
34	AV1	24.7	17.4	14.4	14.4	0.54	0.199	56.9	22.1
35	AV1	23.8	16.8	13.7	13.7	0.47	0.187	53.3	21.5
36	AV1	26.0	18.3	14.7	14.7	0.44	0.215	61.5	27.3
37	AV1	26.0	18.3	14.8	14.8	0.44	0.218	62.3	23.5
38	AV1	28.0	19.7	15.7	15.7	0.54	0.247	70.7	24.0

Turkey Point Units 6 & 7 Site - R-6-1B 128 TO 130 FT RIG DR-16
OP: GRL Test date: 17-Sep-2013

BL#	Comments
38	8,8,9,13 BLOWS/6 INCHES

Time Summary

Drive	1 minute 56 seconds	10:54:46 AM - 10:56:42 AM (9/17/2013)	BN 1 - 38

GRL Engineers, Inc.
Case Method & iCAP® Results PDIPLOT Ver. 2014.1 - Printed: 16-Jan-2014

Turkey Point Units 6 & 7 Site - R-6-1B 128 TO 130 FT RIG DR-16
OP: GRL Test date: 17-Sep-2013

AR: 1.42 in^2 SP: 0.492 k/ft3
LE: 133.33 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00

FMX: Maximum Force DMX: Maximum Displacement
CSX: Max Measured Compr. Stress EFV: Energy of FV
VMX: Maximum Velocity ETR: Energy Transfer Ratio
VT1: Velocity at Time 1 BPM: Blows per Minute

BL# end	TYPE	FMX kips	CSX ksi	VMX f/s	VT1 f/s	DMX in	EFV k-ft	ETR (%)	BPM **
1	AV1	26.9	19.0	14.5	14.5	1.01	0.226	64.5	15.5
2	AV1	27.9	19.6	14.8	14.8	0.84	0.237	67.8	16.2
3	AV1	27.4	19.3	14.7	14.7	0.69	0.230	65.8	10.1
4	AV1	27.3	19.2	14.4	14.4	0.74	0.225	64.4	16.9
5	AV1	26.2	18.5	14.1	14.1	0.77	0.214	61.0	16.7
6	AV1	26.0	18.3	13.9	13.9	0.84	0.210	59.9	9.0
7	AV1	27.4	19.3	14.4	14.4	0.83	0.225	64.4	16.3
8	AV1	26.0	18.3	13.9	13.9	0.88	0.208	59.5	17.4
9	AV1	25.3	17.8	14.0	14.0	0.90	0.200	57.3	17.3
10	AV1	24.7	17.4	13.6	13.6	0.96	0.192	54.9	19.0
11	AV1	25.4	17.9	14.1	14.1	0.82	0.205	58.4	19.7
12	AV1	25.1	17.7	13.7	13.7	0.64	0.196	55.9	24.1
13	AV1	26.5	18.7	14.5	14.5	0.75	0.215	61.5	23.6
14	AV1	25.7	18.1	14.0	14.0	0.90	0.204	58.3	20.9
15	AV1	25.6	18.0	14.3	14.3	0.95	0.206	59.0	19.2
16	AV1	24.9	17.5	14.0	14.0	0.77	0.197	56.2	20.3
17	AV1	24.7	17.4	13.9	13.9	0.64	0.194	55.5	19.0
18	AV1	24.6	17.3	13.8	13.8	0.79	0.189	54.1	19.6
19	AV1	25.5	17.9	14.2	14.2	0.89	0.203	57.9	22.9
20	AV1	26.1	18.4	14.6	14.6	0.76	0.212	60.7	19.3
21	AV1	25.4	17.9	13.9	13.9	0.64	0.198	56.5	22.0
22	AV1	25.7	18.1	14.5	14.5	0.55	0.211	60.2	21.1
23	AV1	23.1	16.3	13.1	13.1	0.50	0.172	49.2	19.7
24	AV1	23.3	16.4	12.0	12.0	0.55	0.160	45.6	17.4
26	AV1	28.0	19.7	14.3	14.3	0.72	0.226	64.6	28.8
27	AV1	27.7	19.5	14.1	14.1	0.65	0.221	63.1	20.1
28	AV1	27.1	19.1	14.5	14.5	0.64	0.218	62.1	21.1
29	AV1	28.0	19.7	15.1	15.1	0.64	0.234	66.7	21.8
30	AV1	26.7	18.8	14.2	14.2	0.57	0.209	59.7	20.7
31	AV1	25.2	17.7	14.4	14.4	0.53	0.204	58.2	22.0
32	AV1	26.7	18.8	14.8	14.8	0.62	0.222	63.4	21.9
33	AV1	26.1	18.4	14.8	14.8	0.59	0.212	60.6	23.3
34	AV1	24.7	17.4	14.4	14.4	0.54	0.199	56.9	22.1
35	AV1	23.8	16.8	13.7	13.7	0.47	0.187	53.3	21.5
36	AV1	26.0	18.3	14.7	14.7	0.44	0.215	61.5	27.3
37	AV1	26.0	18.3	14.8	14.8	0.44	0.218	62.3	23.5
38	AV1	28.0	19.7	15.7	15.7	0.54	0.247	70.7	24.0

Turkey Point Units 6 & 7 Site - R-6-1B 128 TO 130 FT RIG DR-16
OP: GRL Test date: 17-Sep-2013

	FMX	CSX	VMX	VT1	DMX	EFV	ETR	BPM
	kips	ksi	f/s	f/s	in	k-ft	(%)	**
Average	26.0	18.3	14.2	14.2	0.70	0.209	59.8	20.0
Std. Dev.	1.3	0.9	0.6	0.6	0.15	0.017	4.9	3.8

Total number of blows analyzed: 37

BL#	Comments
38	8,8,9,13 BLOWS/6 INCHES

Time Summary

Drive	1 minute 56 seconds	10:54:46 AM - 10:56:42 AM (9/17/2013) BN 1 - 38

GRL Engineers, Inc. Page 1 of 1
Case Method & iCAP® Results PDIPLOT Ver. 2014.1 - Printed: 15-Jan-2014

Turkey Point Units 6 & 7 Site - R-6-1B 128 TO 130 FT RIG DR-16
OP: GRL Test date: 17-Sep-2013

AR: 1.42 in^2 SP: 0.492 k/ft3
LE: 133.33 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00

FMX: Maximum Force DMX: Maximum Displacement
CSX: Max Measured Compr. Stress EFV: Energy of FV
VMX: Maximum Velocity ETR: Energy Transfer Ratio
VT1: Velocity at Time 1 BPM: Blows per Minute

BL# end	TYPE	FMX kips	CSX ksi	VMX f/s	VT1 f/s	DMX in	EFV k-ft	ETR (%)	BPM **
17	AV1	24.7	17.4	13.9	13.9	0.64	0.194	55.5	19.0
18	AV1	24.6	17.3	13.8	13.8	0.79	0.189	54.1	19.6
19	AV1	25.5	17.9	14.2	14.2	0.89	0.203	57.9	22.9
20	AV1	26.1	18.4	14.6	14.6	0.76	0.212	60.7	19.3
21	AV1	25.4	17.9	13.9	13.9	0.64	0.198	56.5	22.0
22	AV1	25.7	18.1	14.5	14.5	0.55	0.211	60.2	21.1
23	AV1	23.1	16.3	13.1	13.1	0.50	0.172	49.2	19.7
24	AV1	23.3	16.4	12.0	12.0	0.55	0.160	45.6	17.4
26	AV1	28.0	19.7	14.3	14.3	0.72	0.226	64.6	28.8
27	AV1	27.7	19.5	14.1	14.1	0.65	0.221	63.1	20.1
28	AV1	27.1	19.1	14.5	14.5	0.64	0.218	62.1	21.1
29	AV1	28.0	19.7	15.1	15.1	0.64	0.234	66.7	21.8
30	AV1	26.7	18.8	14.2	14.2	0.57	0.209	59.7	20.7
31	AV1	25.2	17.7	14.4	14.4	0.53	0.204	58.2	22.0
32	AV1	26.7	18.8	14.8	14.8	0.62	0.222	63.4	21.9
33	AV1	26.1	18.4	14.8	14.8	0.59	0.212	60.6	23.3
34	AV1	24.7	17.4	14.4	14.4	0.54	0.199	56.9	22.1
35	AV1	23.8	16.8	13.7	13.7	0.47	0.187	53.3	21.5
36	AV1	26.0	18.3	14.7	14.7	0.44	0.215	61.5	27.3
37	AV1	26.0	18.3	14.8	14.8	0.44	0.218	62.3	23.5
38	AV1	28.0	19.7	15.7	15.7	0.54	0.247	70.7	24.0
	Average	25.8	18.2	14.3	14.3	0.61	0.207	59.2	21.9
	Std. Dev.	1.4	1.0	0.7	0.7	0.11	0.019	5.6	2.6

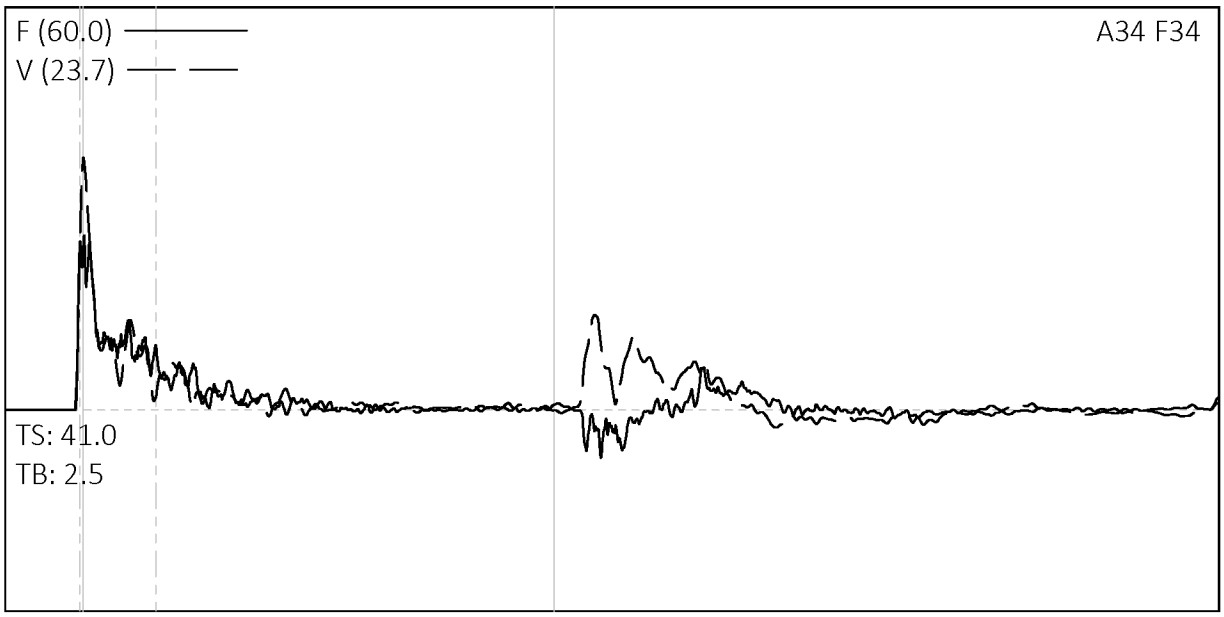
Total number of blows analyzed: 21

BL#	Comments
38	8,8,9,13 BLOWS/6 INCHES

Time Summary

Drive 1 minute 56 seconds 10:54:46 AM - 10:56:42 AM (9/17/2013) BN 1 - 38

Turkey Point Units 6 & 7 Site R-6-1B 128 TO 130 FT



Project Information

PROJECT: Turkey Point Units 6 & 7 Site
PILE NAME: R-6-1B 128 TO 130 FT
DESCR: RIG DR-16
OPERATOR: GRL
FILE: R-6-1B 128 TO 130 FT.W01
9/17/2013 10:56:39 AM
Blow Number 37

Pile Properties

LE	133.33	ft
AR	1.42	in^2
EM	30000	ksi
SP	0.492	k/ft3
WS	16807.9	f/s
EA/C	2.5	ksec/ft
2L/C	15.86	ms
JC		[]

Quantity Results

FMX	26.0	kips
CSX	18.3	ksi
VMX	14.8	f/s
VT1	14.8	f/s
DMX	0.44	in
EFV	0.218	k-ft
ETR	62.3	(%)
BPM	23.5	bpm
USR	0.00	[]

Sensors

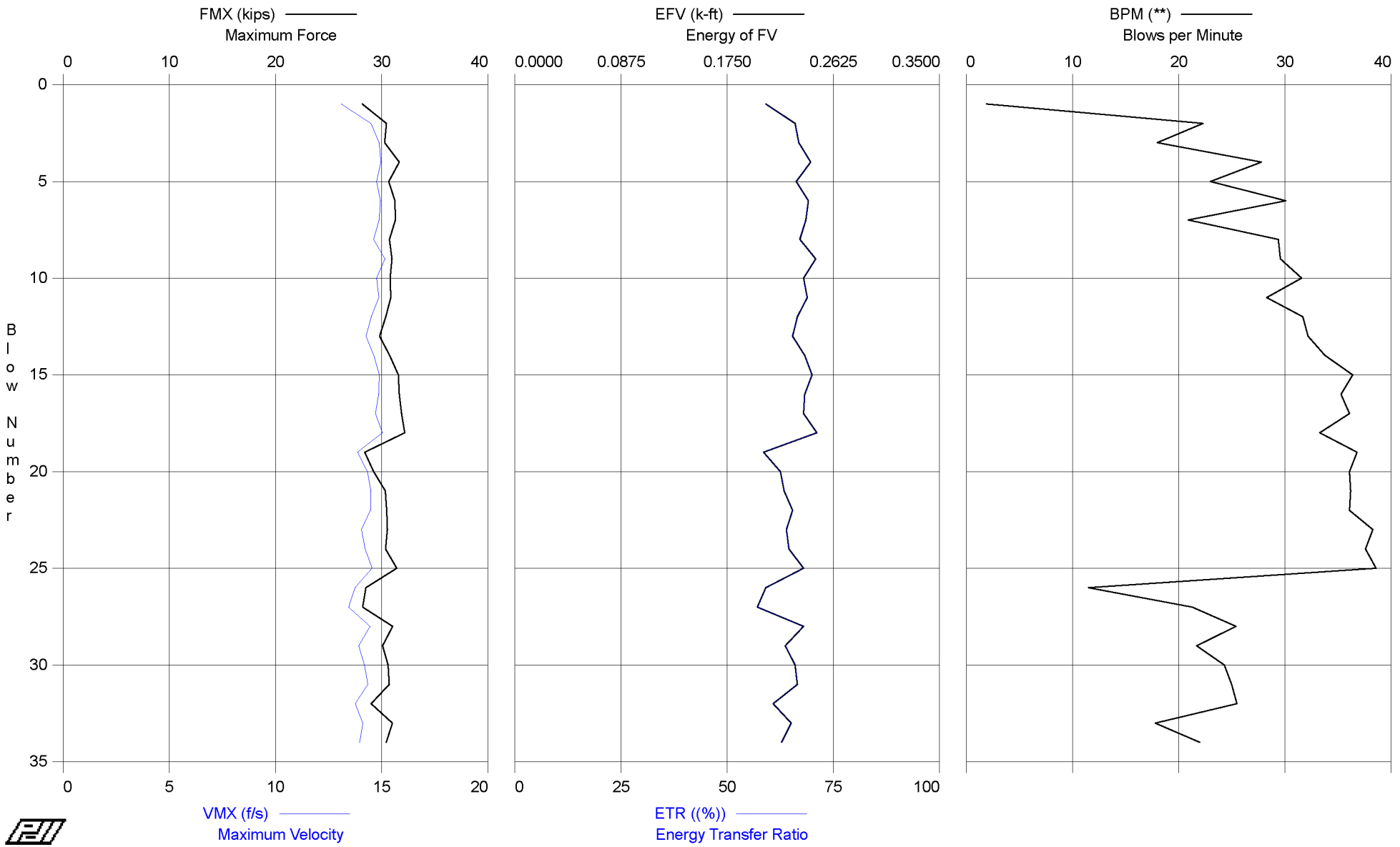
F3: [256 NWJ-1] 217.73 (1)
F4: [256 NWJ-2] 217.43 (1)
A3: [K2613] 335 mv/5000g's (1)
A4: [K3299] 345 mv/5000g's (1)
CLIP: OK

GRL Engineers, Inc. - Case Method & iCAP® Results

PDIPLOT Ver. 2014.1 - Printed: 15-Jan-2014

Test date: 17-Sep-2013

Turkey Point Units 6 & 7 Site - R-6-1B 130 TO 132 FT



GRL Engineers, Inc. Page 1 of 2
Case Method & iCAP® Results PDIPLOT Ver. 2014.1 - Printed: 16-Jan-2014

Turkey Point Units 6 & 7 Site - R-6-1B 130 TO 132 FT RIG DR-16
OP: GRL Test date: 17-Sep-2013

AR: 1.42 in^2 SP: 0.492 k/ft3
LE: 133.33 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00

FMX: Maximum Force DMX: Maximum Displacement
CSX: Max Measured Compr. Stress EFV: Energy of FV
VMX: Maximum Velocity ETR: Energy Transfer Ratio
VT1: Velocity at Time 1 BPM: Blows per Minute

BL# end	TYPE	FMX kips	CSX ksi	VMX f/s	VT1 f/s	DMX in	EFV k-ft	ETR (%)	BPM **
1	AV1	28.2	19.8	13.1	13.1	1.87	0.207	59.1	1.9
2	AV1	30.5	21.4	14.5	14.5	1.56	0.231	66.1	22.3
3	AV1	30.3	21.3	14.9	14.9	1.61	0.234	66.8	18.0
4	AV1	31.7	22.3	15.0	15.0	1.61	0.244	69.6	27.8
5	AV1	30.7	21.6	14.8	14.8	1.63	0.232	66.4	23.0
6	AV1	31.2	22.0	14.9	14.9	1.35	0.242	69.0	30.1
7	AV1	31.3	22.0	14.9	14.9	1.37	0.240	68.4	20.9
8	AV1	30.7	21.6	14.6	14.6	1.31	0.235	67.0	29.4
9	AV1	31.0	21.8	15.2	15.2	1.24	0.248	71.0	29.6
10	AV1	30.8	21.7	14.8	14.8	0.84	0.238	67.9	31.6
11	AV1	30.9	21.7	14.9	14.9	0.52	0.241	68.8	28.3
12	AV1	30.4	21.4	14.5	14.5	0.51	0.233	66.7	31.7
13	AV1	29.8	21.0	14.3	14.3	0.51	0.229	65.3	32.2
14	AV1	30.8	21.7	14.6	14.6	0.51	0.239	68.4	33.8
15	AV1	31.6	22.2	14.9	14.9	0.64	0.245	70.0	36.4
16	AV1	31.7	22.3	14.9	14.9	0.72	0.239	68.4	35.3
17	AV1	31.9	22.4	14.7	14.7	0.72	0.238	68.0	36.1
18	AV1	32.2	22.7	15.0	15.0	0.74	0.249	71.2	33.3
19	AV1	28.4	20.0	13.9	13.9	0.70	0.205	58.5	36.8
20	AV1	29.2	20.6	14.3	14.3	0.74	0.219	62.7	36.1
21	AV1	30.3	21.4	14.5	14.5	0.73	0.222	63.5	36.2
22	AV1	30.5	21.5	14.5	14.5	0.71	0.229	65.5	36.1
23	AV1	30.5	21.5	14.1	14.1	0.66	0.224	63.9	38.3
24	AV1	30.4	21.4	14.2	14.2	0.66	0.226	64.5	37.6
25	AV1	31.4	22.1	14.6	14.6	0.73	0.238	68.1	38.6
26	AV1	28.5	20.1	13.7	13.7	0.70	0.207	59.2	11.5
27	AV1	28.2	19.9	13.5	13.5	0.56	0.200	57.2	21.3
28	AV1	31.0	21.8	14.5	14.5	0.63	0.238	68.0	25.4
29	AV1	30.1	21.2	13.9	13.9	0.56	0.223	63.8	21.7
30	AV1	30.6	21.5	14.2	14.2	0.52	0.231	66.1	24.3
31	AV1	30.7	21.6	14.4	14.4	0.36	0.233	66.7	25.0
32	AV1	29.0	20.4	13.8	13.8	0.35	0.213	60.9	25.5
33	AV1	31.0	21.8	14.1	14.1	0.34	0.228	65.2	17.8
34	AV1	30.4	21.4	14.0	14.0	0.35	0.220	62.8	22.0
	Average	30.5	21.5	14.4	14.4	0.84	0.230	65.7	28.1
	Std. Dev.	1.0	0.7	0.5	0.5	0.43	0.012	3.5	8.2

Total number of blows analyzed: 34

Turkey Point Units 6 & 7 Site - R-6-1B 130 TO 132 FT RIG DR-16
OP: GRL Test date: 17-Sep-2013

BL#	Comments
34	4,5,10,15 BLOWS/6 INCHES

Time Summary

Drive	1 minute 19 seconds	11:20:06 AM - 11:21:25 AM (9/17/2013)	BN 1 - 34

GRL Engineers, Inc. Page 1 of 1
Case Method & iCAP® Results PDIPLOT Ver. 2014.1 - Printed: 15-Jan-2014

Turkey Point Units 6 & 7 Site - R-6-1B 130 TO 132 FT RIG DR-16
OP: GRL Test date: 17-Sep-2013

AR: 1.42 in^2 SP: 0.492 k/ft3
LE: 133.33 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00

FMX: Maximum Force DMX: Maximum Displacement
CSX: Max Measured Compr. Stress EFV: Energy of FV
VMX: Maximum Velocity ETR: Energy Transfer Ratio
VT1: Velocity at Time 1 BPM: Blows per Minute

BL# end	TYPE	FMX kips	CSX ksi	VMX f/s	VT1 f/s	DMX in	EFV k-ft	ETR (%)	BPM **
10	AV1	30.8	21.7	14.8	14.8	0.84	0.238	67.9	31.6
11	AV1	30.9	21.7	14.9	14.9	0.52	0.241	68.8	28.3
12	AV1	30.4	21.4	14.5	14.5	0.51	0.233	66.7	31.7
13	AV1	29.8	21.0	14.3	14.3	0.51	0.229	65.3	32.2
14	AV1	30.8	21.7	14.6	14.6	0.51	0.239	68.4	33.8
15	AV1	31.6	22.2	14.9	14.9	0.64	0.245	70.0	36.4
16	AV1	31.7	22.3	14.9	14.9	0.72	0.239	68.4	35.3
17	AV1	31.9	22.4	14.7	14.7	0.72	0.238	68.0	36.1
18	AV1	32.2	22.7	15.0	15.0	0.74	0.249	71.2	33.3
19	AV1	28.4	20.0	13.9	13.9	0.70	0.205	58.5	36.8
20	AV1	29.2	20.6	14.3	14.3	0.74	0.219	62.7	36.1
21	AV1	30.3	21.4	14.5	14.5	0.73	0.222	63.5	36.2
22	AV1	30.5	21.5	14.5	14.5	0.71	0.229	65.5	36.1
23	AV1	30.5	21.5	14.1	14.1	0.66	0.224	63.9	38.3
24	AV1	30.4	21.4	14.2	14.2	0.66	0.226	64.5	37.6
25	AV1	31.4	22.1	14.6	14.6	0.73	0.238	68.1	38.6
26	AV1	28.5	20.1	13.7	13.7	0.70	0.207	59.2	11.5
27	AV1	28.2	19.9	13.5	13.5	0.56	0.200	57.2	21.3
28	AV1	31.0	21.8	14.5	14.5	0.63	0.238	68.0	25.4
29	AV1	30.1	21.2	13.9	13.9	0.56	0.223	63.8	21.7
30	AV1	30.6	21.5	14.2	14.2	0.52	0.231	66.1	24.3
31	AV1	30.7	21.6	14.4	14.4	0.36	0.233	66.7	25.0
32	AV1	29.0	20.4	13.8	13.8	0.35	0.213	60.9	25.5
33	AV1	31.0	21.8	14.1	14.1	0.34	0.228	65.2	17.8
34	AV1	30.4	21.4	14.0	14.0	0.35	0.220	62.8	22.0
	Average	30.4	21.4	14.3	14.3	0.60	0.228	65.3	30.1
	Std. Dev.	1.0	0.7	0.4	0.4	0.14	0.012	3.5	7.2

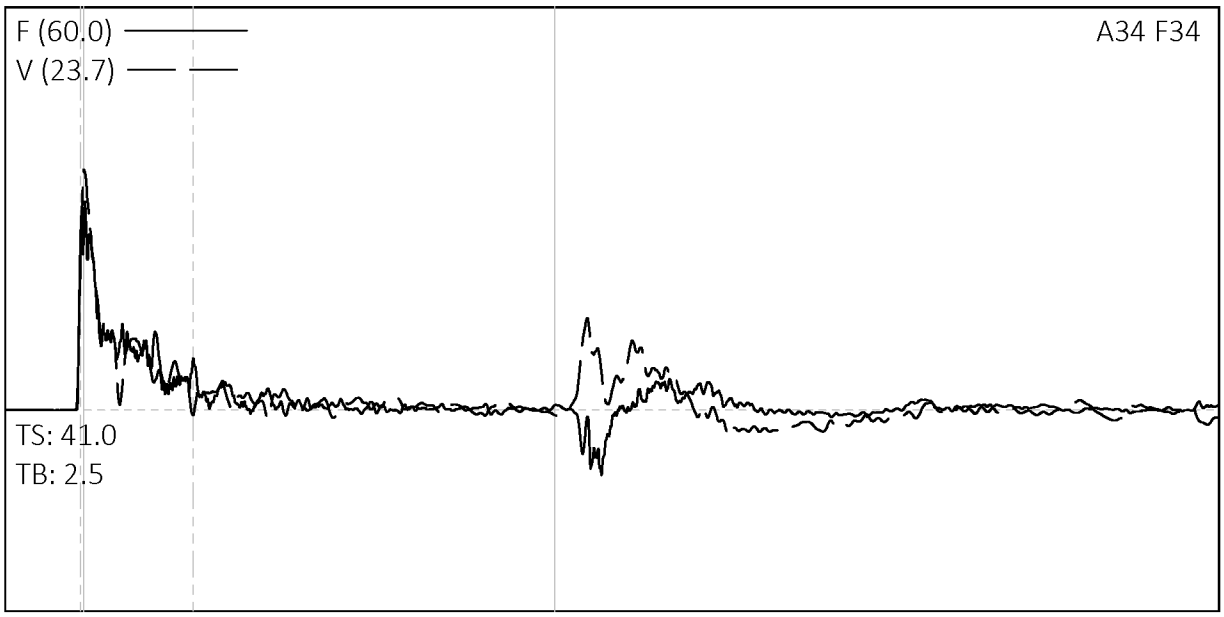
Total number of blows analyzed: 25

BL#	Comments
34	4,5,10,15 BLOWS/6 INCHES

Time Summary

Drive 1 minute 19 seconds 11:20:06 AM - 11:21:25 AM (9/17/2013) BN 1 - 34

Turkey Point Units 6 & 7 Site R-6-1B 130 TO 132 FT



Project Information

PROJECT: Turkey Point Units 6 & 7 Site
PILE NAME: R-6-1B 130 TO 132 FT
DESCR: RIG DR-16
OPERATOR: GRL
FILE: R-6-1B 130 TO 132 FT.W01
9/17/2013 11:21:22 AM
Blow Number 33

Pile Properties

LE	133.33	ft
AR	1.42	in^2
EM	30000	ksi
SP	0.492	k/ft3
WS	16807.9	f/s
EA/C	2.5	ksec/ft
2L/C	15.86	ms
JC		[]

Quantity Results

FMX	31.0	kips
CSX	21.8	ksi
VMX	14.1	f/s
VT1	14.1	f/s
DMX	0.34	in
EFV	0.236	k-ft
ETR	67.5	(%)
BPM	17.8	bpm
USR	0.00	[]

Sensors

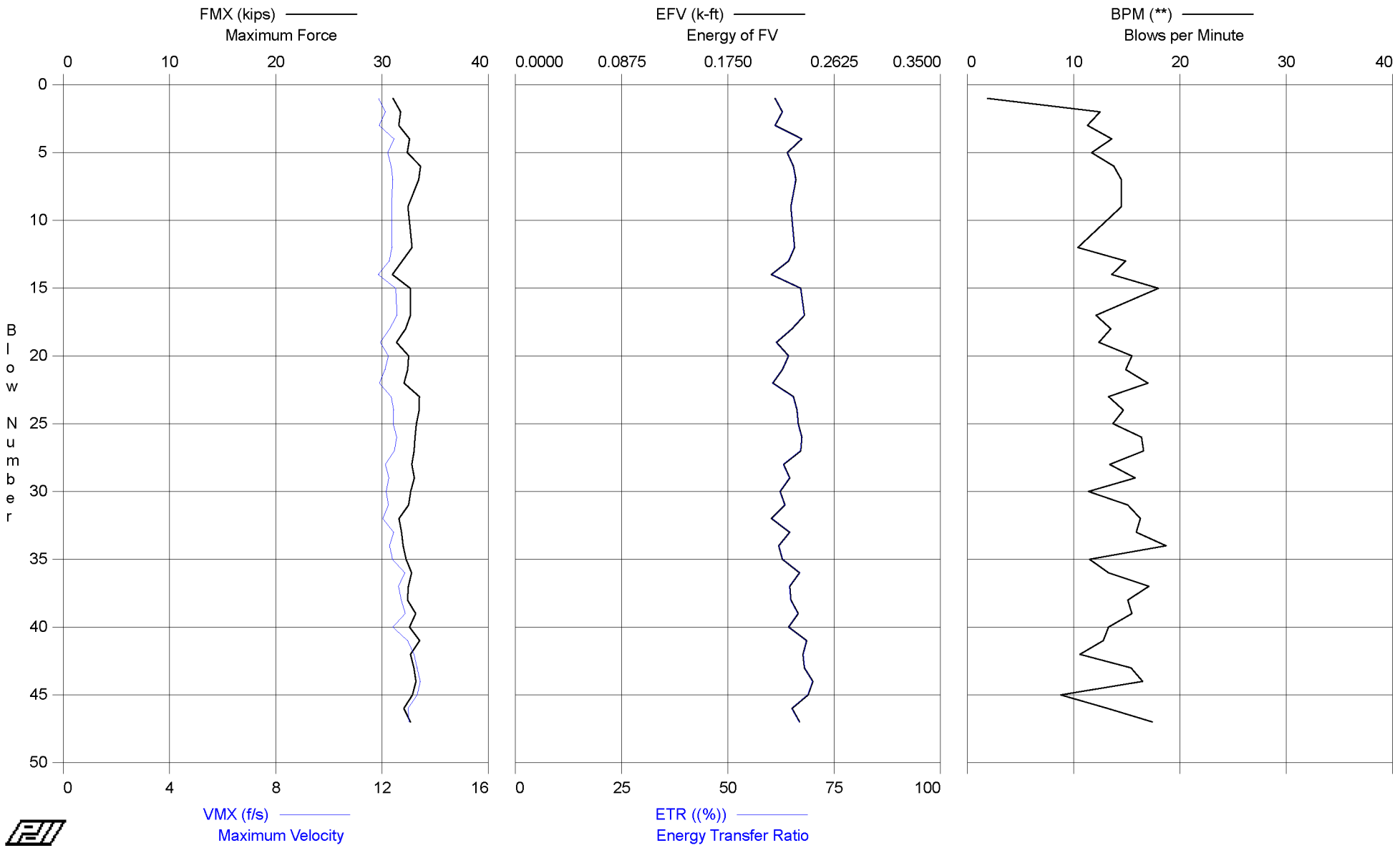
F3: [256 NWJ-1] 217.73 (1)
F4: [256 NWJ-2] 217.43 (1)
A3: [K2613] 335 mv/5000g's (1)
A4: [K3299] 345 mv/5000g's (1)
CLIP: OK

GRL Engineers, Inc. - Case Method & iCAP® Results

PDIPLOT Ver. 2014.1 - Printed: 15-Jan-2014

Test date: 17-Sep-2013

Turkey Point Units 6 & 7 Site - R-6-1B 132 TO 134 FT



GRL Engineers, Inc.
Case Method & iCAP® Results PDIPLOT Ver. 2014.1 - Printed: 16-Jan-2014

TURKEY CREEK - R-6-1B 132 TO 134 FT RIG DR-16
OP: GRL Test date: 17-Sep-2013

AR: 1.42 in^2 SP: 0.492 k/ft3
LE: 138.33 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00

FMX: Maximum Force DMX: Maximum Displacement
CSX: Max Measured Compr. Stress EFV: Energy of FV
VMX: Maximum Velocity ETR: Energy Transfer Ratio
VT1: Velocity at Time 1 BPM: Blows per Minute

BL# end	TYPE	FMX kips	CSX ksi	VMX f/s	VT1 f/s	DMX in	EFV k-ft	ETR (%)	BPM **
1	AV1	31.0	21.9	11.9	11.9	1.00	0.214	61.2	1.9
2	AV1	31.7	22.4	12.1	12.1	0.68	0.220	62.9	12.5
3	AV1	31.6	22.2	11.9	11.9	0.68	0.214	61.1	11.3
4	AV1	32.6	22.9	12.5	12.5	0.60	0.236	67.4	13.6
5	AV1	32.4	22.8	12.2	12.2	0.63	0.224	64.0	11.7
6	AV1	33.6	23.7	12.3	12.3	0.59	0.229	65.4	13.8
7	AV1	33.4	23.6	12.4	12.4	0.60	0.231	65.9	14.5
8	AV1	0.1	0.1	0.1	0.1	0.00	0.000	0.0	15.3
9	AV1	32.4	22.8	12.4	12.4	0.53	0.227	64.9	14.5
10	AV1	0.1	0.1	0.0	0.0	0.00	0.000	0.0	15.6
11	AV1	0.1	0.0	0.0	0.0	0.00	0.000	0.0	15.5
12	AV1	32.8	23.1	12.4	12.4	0.49	0.230	65.6	10.4
13	AV1	31.9	22.5	12.3	12.3	0.54	0.225	64.2	14.9
14	AV1	31.0	21.8	11.9	11.9	0.47	0.211	60.4	13.6
15	AV1	32.6	23.0	12.5	12.5	0.48	0.235	67.1	18.0
16	AV1	0.1	0.1	0.0	0.0	0.03	0.000	0.0	18.9
17	AV1	32.7	23.0	12.6	12.6	0.47	0.238	67.9	12.1
18	AV1	32.2	22.7	12.3	12.3	0.46	0.228	65.1	13.5
19	AV1	31.4	22.1	11.9	11.9	0.49	0.215	61.4	12.4
20	AV1	32.5	22.9	12.2	12.2	0.51	0.225	64.3	15.5
21	AV1	32.4	22.8	12.1	12.1	0.48	0.220	62.9	14.9
22	AV1	32.1	22.6	11.9	11.9	0.51	0.212	60.5	17.0
23	AV1	33.5	23.6	12.3	12.3	0.58	0.229	65.3	13.3
24	AV1	33.5	23.6	12.4	12.4	0.59	0.232	66.3	14.7
25	AV1	33.2	23.4	12.4	12.4	0.57	0.233	66.5	13.7
26	AV1	33.1	23.3	12.6	12.6	0.64	0.236	67.4	16.4
27	AV1	33.0	23.2	12.5	12.5	0.74	0.235	67.1	16.6
28	AV1	32.8	23.1	12.1	12.1	0.67	0.221	63.0	13.4
29	AV1	33.0	23.3	12.3	12.3	0.68	0.226	64.5	15.8
30	AV1	32.7	23.0	12.2	12.2	0.71	0.218	62.2	11.4
31	AV1	32.5	22.9	12.2	12.2	0.77	0.222	63.5	15.1
32	AV1	31.6	22.3	12.0	12.0	0.71	0.211	60.4	16.3
33	AV1	31.8	22.4	12.4	12.4	0.74	0.226	64.7	15.9
34	AV1	32.0	22.5	12.3	12.3	0.74	0.217	62.0	18.7
35	AV1	32.3	22.7	12.4	12.4	0.71	0.220	63.0	11.5
36	AV1	32.8	23.1	12.9	12.9	0.60	0.234	67.0	13.3
37	AV1	32.5	22.9	12.6	12.6	0.62	0.226	64.5	17.1
38	AV1	32.4	22.8	12.7	12.7	0.60	0.227	64.7	15.1

TURKEY CREEK - R-6-1B 132 TO 134 FT RIG DR-16
OP: GRL Test date: 17-Sep-2013

BL# end	TYPE	FMX kips	CSX ksi	VMX f/s	VT1 f/s	DMX in	EFV k-ft	ETR (%)	BPM **
39	AV1	33.2	23.4	12.9	12.9	0.63	0.233	66.5	15.5
40	AV1	32.6	22.9	12.4	12.4	0.67	0.225	64.4	13.3
41	AV1	33.5	23.6	13.0	13.0	0.68	0.240	68.5	12.8
42	AV1	32.7	23.0	13.2	13.2	0.65	0.237	67.8	10.6
43	AV1	33.0	23.2	13.3	13.3	0.71	0.238	68.1	15.4
44	AV1	33.2	23.4	13.4	13.4	0.71	0.245	69.9	16.5
45	AV1	32.9	23.2	13.3	13.3	0.64	0.241	68.8	8.8
46	AV1	32.0	22.6	13.0	13.0	0.67	0.228	65.1	13.2
47	AV1	32.7	23.0	13.0	13.0	0.70	0.234	66.8	17.4

BL#	Comments
47	10,15,10,12 BLOWS/6 INCHES

Time Summary

Drive	3 minutes 16 seconds	11:44:06 AM - 11:47:22 AM (9/17/2013) BN 1 - 47

GRL Engineers, Inc.
Case Method & iCAP® Results PDIPLOT Ver. 2014.1 - Printed: 16-Jan-2014

TURKEY CREEK - R-6-1B 132 TO 134 FT RIG DR-16
OP: GRL Test date: 17-Sep-2013

AR: 1.42 in^2 SP: 0.492 k/ft3
LE: 138.33 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00

FMX: Maximum Force DMX: Maximum Displacement
CSX: Max Measured Compr. Stress EFV: Energy of FV
VMX: Maximum Velocity ETR: Energy Transfer Ratio
VT1: Velocity at Time 1 BPM: Blows per Minute

BL# end	TYPE	FMX kips	CSX ksi	VMX f/s	VT1 f/s	DMX in	EFV k-ft	ETR (%)	BPM **
1	AV1	31.0	21.9	11.9	11.9	1.00	0.214	61.2	1.9
2	AV1	31.7	22.4	12.1	12.1	0.68	0.220	62.9	12.5
3	AV1	31.6	22.2	11.9	11.9	0.68	0.214	61.1	11.3
4	AV1	32.6	22.9	12.5	12.5	0.60	0.236	67.4	13.6
5	AV1	32.4	22.8	12.2	12.2	0.63	0.224	64.0	11.7
6	AV1	33.6	23.7	12.3	12.3	0.59	0.229	65.4	13.8
7	AV1	33.4	23.6	12.4	12.4	0.60	0.231	65.9	14.5
9	AV1	32.4	22.8	12.4	12.4	0.53	0.227	64.9	14.5
12	AV1	32.8	23.1	12.4	12.4	0.49	0.230	65.6	10.4
13	AV1	31.9	22.5	12.3	12.3	0.54	0.225	64.2	14.9
14	AV1	31.0	21.8	11.9	11.9	0.47	0.211	60.4	13.6
15	AV1	32.6	23.0	12.5	12.5	0.48	0.235	67.1	18.0
17	AV1	32.7	23.0	12.6	12.6	0.47	0.238	67.9	12.1
18	AV1	32.2	22.7	12.3	12.3	0.46	0.228	65.1	13.5
19	AV1	31.4	22.1	11.9	11.9	0.49	0.215	61.4	12.4
20	AV1	32.5	22.9	12.2	12.2	0.51	0.225	64.3	15.5
21	AV1	32.4	22.8	12.1	12.1	0.48	0.220	62.9	14.9
22	AV1	32.1	22.6	11.9	11.9	0.51	0.212	60.5	17.0
23	AV1	33.5	23.6	12.3	12.3	0.58	0.229	65.3	13.3
24	AV1	33.5	23.6	12.4	12.4	0.59	0.232	66.3	14.7
25	AV1	33.2	23.4	12.4	12.4	0.57	0.233	66.5	13.7
26	AV1	33.1	23.3	12.6	12.6	0.64	0.236	67.4	16.4
27	AV1	33.0	23.2	12.5	12.5	0.74	0.235	67.1	16.6
28	AV1	32.8	23.1	12.1	12.1	0.67	0.221	63.0	13.4
29	AV1	33.0	23.3	12.3	12.3	0.68	0.226	64.5	15.8
30	AV1	32.7	23.0	12.2	12.2	0.71	0.218	62.2	11.4
31	AV1	32.5	22.9	12.2	12.2	0.77	0.222	63.5	15.1
32	AV1	31.6	22.3	12.0	12.0	0.71	0.211	60.4	16.3
33	AV1	31.8	22.4	12.4	12.4	0.74	0.226	64.7	15.9
34	AV1	32.0	22.5	12.3	12.3	0.74	0.217	62.0	18.7
35	AV1	32.3	22.7	12.4	12.4	0.71	0.220	63.0	11.5
36	AV1	32.8	23.1	12.9	12.9	0.60	0.234	67.0	13.3
37	AV1	32.5	22.9	12.6	12.6	0.62	0.226	64.5	17.1
38	AV1	32.4	22.8	12.7	12.7	0.60	0.227	64.7	15.1
39	AV1	33.2	23.4	12.9	12.9	0.63	0.233	66.5	15.5
40	AV1	32.6	22.9	12.4	12.4	0.67	0.225	64.4	13.3
41	AV1	33.5	23.6	13.0	13.0	0.68	0.240	68.5	12.8
42	AV1	32.7	23.0	13.2	13.2	0.65	0.237	67.8	10.6

TURKEY CREEK - R-6-1B 132 TO 134 FT RIG DR-16
OP: GRL Test date: 17-Sep-2013

BL# end	TYPE	FMX kips	CSX ksi	VMX f/s	VT1 f/s	DMX in	EFV k-ft	ETR (%)	BPM **
43	AV1	33.0	23.2	13.3	13.3	0.71	0.238	68.1	15.4
44	AV1	33.2	23.4	13.4	13.4	0.71	0.245	69.9	16.5
45	AV1	32.9	23.2	13.3	13.3	0.64	0.241	68.8	8.8
46	AV1	32.0	22.6	13.0	13.0	0.67	0.228	65.1	13.2
47	AV1	32.7	23.0	13.0	13.0	0.70	0.234	66.8	17.4
	Average	32.5	22.9	12.5	12.5	0.63	0.227	64.9	13.9
	Std. Dev.	0.6	0.5	0.4	0.4	0.10	0.009	2.4	2.8

Total number of blows analyzed: 43

BL#	Comments
47	10,15,10,12 BLOWS/6 INCHES

Time Summary

Drive	3 minutes 16 seconds	11:44:06 AM - 11:47:22 AM (9/17/2013) BN 1 - 47

GRL Engineers, Inc.
Case Method & iCAP® Results PDIPLOT Ver. 2014.1 - Printed: 15-Jan-2014

Turkey Point Units 6 & 7 Site - R-6-1B 132 TO 134 FT RIG DR-16
OP: GRL Test date: 17-Sep-2013

AR: 1.42 in^2 SP: 0.492 k/ft3
LE: 138.33 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00

FMX: Maximum Force DMX: Maximum Displacement
CSX: Max Measured Compr. Stress EFV: Energy of FV
VMX: Maximum Velocity ETR: Energy Transfer Ratio
VT1: Velocity at Time 1 BPM: Blows per Minute

BL# end	TYPE	FMX kips	CSX ksi	VMX f/s	VT1 f/s	DMX in	EFV k-ft	ETR (%)	BPM **
26	AV1	33.1	23.3	12.6	12.6	0.64	0.236	67.4	16.4
27	AV1	33.0	23.2	12.5	12.5	0.74	0.235	67.1	16.6
28	AV1	32.8	23.1	12.1	12.1	0.67	0.221	63.0	13.4
29	AV1	33.0	23.3	12.3	12.3	0.68	0.226	64.5	15.8
30	AV1	32.7	23.0	12.2	12.2	0.71	0.218	62.2	11.4
31	AV1	32.5	22.9	12.2	12.2	0.77	0.222	63.5	15.1
32	AV1	31.6	22.3	12.0	12.0	0.71	0.211	60.4	16.3
33	AV1	31.8	22.4	12.4	12.4	0.74	0.226	64.7	15.9
34	AV1	32.0	22.5	12.3	12.3	0.74	0.217	62.0	18.7
35	AV1	32.3	22.7	12.4	12.4	0.71	0.220	63.0	11.5
36	AV1	32.8	23.1	12.9	12.9	0.60	0.234	67.0	13.3
37	AV1	32.5	22.9	12.6	12.6	0.62	0.226	64.5	17.1
38	AV1	32.4	22.8	12.7	12.7	0.60	0.227	64.7	15.1
39	AV1	33.2	23.4	12.9	12.9	0.63	0.233	66.5	15.5
40	AV1	32.6	22.9	12.4	12.4	0.67	0.225	64.4	13.3
41	AV1	33.5	23.6	13.0	13.0	0.68	0.240	68.5	12.8
42	AV1	32.7	23.0	13.2	13.2	0.65	0.237	67.8	10.6
43	AV1	33.0	23.2	13.3	13.3	0.71	0.238	68.1	15.4
44	AV1	33.2	23.4	13.4	13.4	0.71	0.245	69.9	16.5
45	AV1	32.9	23.2	13.3	13.3	0.64	0.241	68.8	8.8
46	AV1	32.0	22.6	13.0	13.0	0.67	0.228	65.1	13.2
47	AV1	32.7	23.0	13.0	13.0	0.70	0.234	66.8	17.4
	Average	32.6	23.0	12.7	12.7	0.68	0.229	65.4	14.6
	Std. Dev.	0.5	0.3	0.4	0.4	0.05	0.009	2.4	2.4

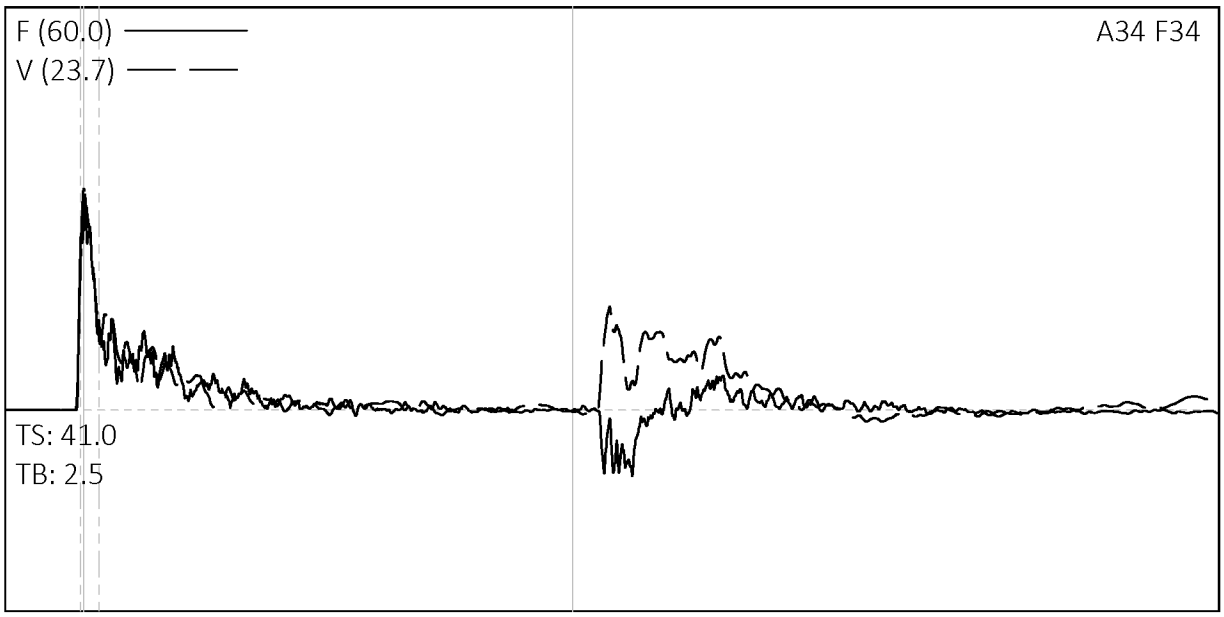
Total number of blows analyzed: 22

BL#	Comments
47	10,15,10,12 BLOWS/6 INCHES

Time Summary

Drive 3 minutes 16 seconds 11:44:06 AM - 11:47:22 AM (9/17/2013) BN 1 - 47

Turkey Point Units 6 & 7 Site R-6-1B 132 TO 134 FT



Project Information

PROJECT: Turkey Point Units 6 & 7 Site
PILE NAME: R-6-1B 132 TO 134 FT
DESCR: RIG DR-16
OPERATOR: GRL
FILE: R-6-1B 132 TO 134 FT.W01
9/17/2013 11:47:18 AM
Blow Number 46

Pile Properties

LE	138.33	ft
AR	1.42	in^2
EM	30000	ksi
SP	0.492	k/ft3
WS	16807.9	f/s
EA/C	2.5	ksec/ft
2L/C	16.46	ms
JC		[]

Quantity Results

FMX	32.0	kips
CSX	22.6	ksi
VMX	13.0	f/s
VT1	13.0	f/s
DMX	0.67	in
EFV	0.228	k-ft
ETR	65.1	(%)
BPM	13.2	bpm
USR	0.00	[]

Sensors

F3: [256 NWJ-1] 217.73 (1)
F4: [256 NWJ-2] 217.43 (1)
A3: [K2613] 335 mv/5000g's (1)
A4: [K3299] 345 mv/5000g's (1)
CLIP: OK

Appendix C

Turkey Point Units 6 & 7 Site

"DR-16" Failing 1500 Drilling Rig with Cathead/Rope Safety Hammer

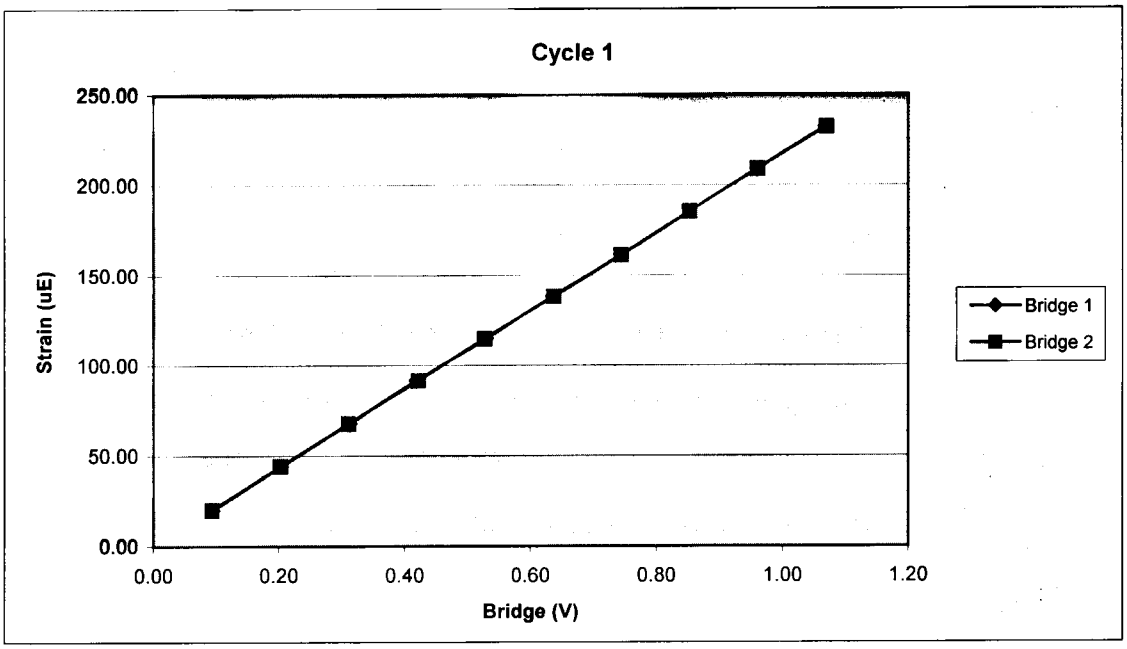
Boring R-6-1b

SPT Measurement Equipment Calibrations

256NWJ		Cycle 1		
Sample	**Force (lb)**	**Strain (μE)**	**Bridge 1 (V)**	**Bridge 2 (V)**
1	0.00	0.00	0.00	0.00
2	877.75	20.10	0.09	0.09
3	1885.38	44.11	0.20	0.20
4	2882.39	67.58	0.31	0.31
5	3883.14	91.30	0.42	0.42
6	4884.29	114.81	0.53	0.53
7	5880.11	138.17	0.64	0.64
8	6879.09	161.43	0.74	0.74
9	7882.20	185.29	0.85	0.85
10	8888.66	208.76	0.96	0.96
11	9890.98	232.08	1.07	1.07

Bridge 1		**Bridge 2**	
Force Calibration (lb/V)	**9251.11**	**Force Calibration (lb/V)**	**9234.53**
Offset	0.00	Offset	9.02
Correlation	0.999998	Correlation	0.999996
Strain Calibration (μE/V)	**217.53**	**Strain Calibration (μE/V)**	**217.14**
Offset	-0.22	Offset	-0.01
Correlation	0.999997	Correlation	0.999996

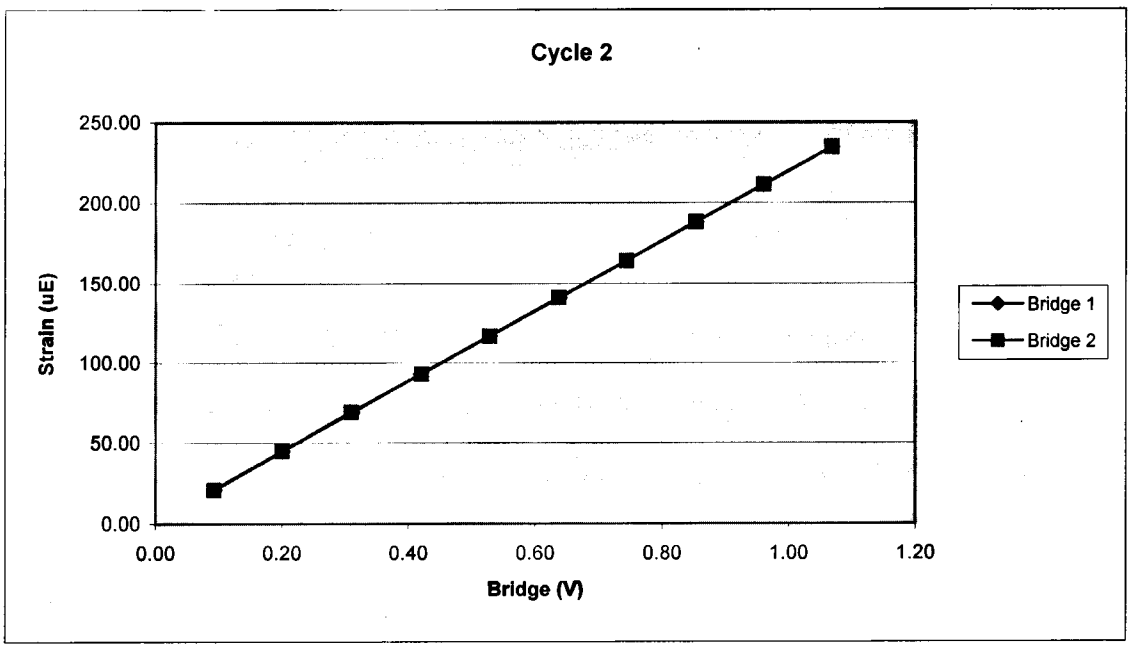
Force Strain Calibration	
EA (Kips)	**42527.91**
Offset	9.38
Correlation	0.999997



256NWJ		Cycle 2		
Sample	**Force (lb)**	**Strain (μE)**	**Bridge 1 (V)**	**Bridge 2 (V)**
1	0.00	0.00	0.00	0.00
2	854.52	21.12	0.09	0.09
3	1853.70	45.01	0.20	0.20
4	2858.97	69.28	0.31	0.31
5	3866.61	92.98	0.42	0.42
6	4855.75	116.84	0.53	0.53
7	5871.26	140.74	0.64	0.64
8	6857.25	164.06	0.74	0.74
9	7883.19	188.01	0.85	0.85
10	8857.96	210.98	0.96	0.96
11	9862.64	234.44	1.07	1.07

Bridge 1		**Bridge 2**	
Force Calibration (lb/V)	**9245.49**	**Force Calibration (lb/V)**	**9235.93**
Offset	**-16.90**	Offset	**-6.17**
Correlation	**0.999997**	Correlation	**0.999996**
Strain Calibration (μE/V)	**218.95**	**Strain Calibration (μE/V)**	**218.72**
Offset	**0.96**	Offset	**1.21**
Correlation	**0.999994**	Correlation	**0.999994**

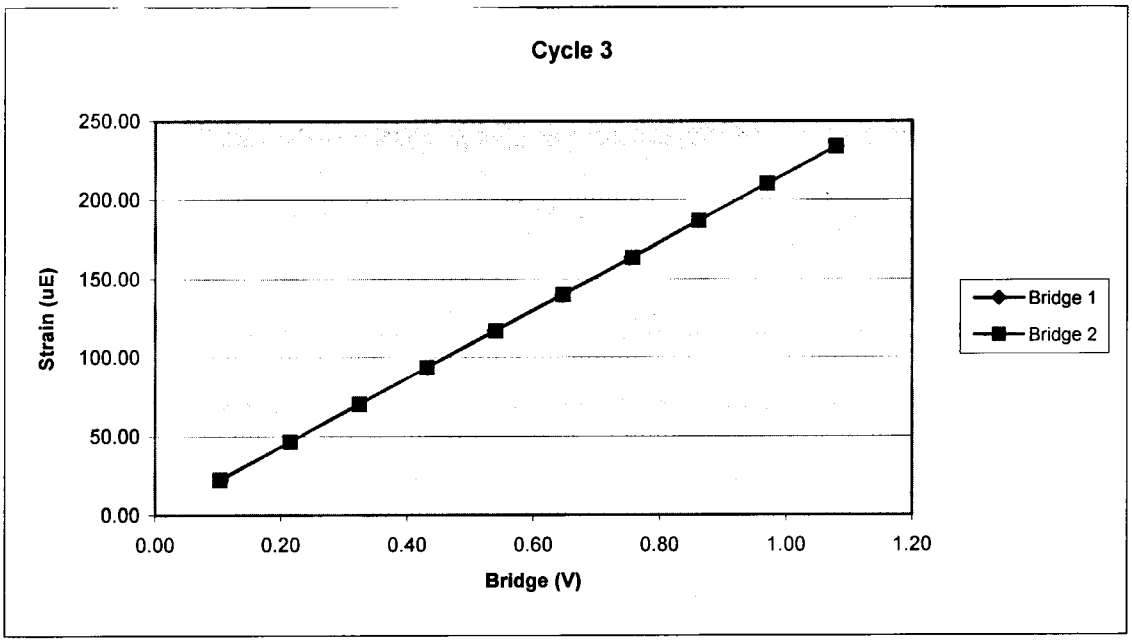
Force Strain Calibration	
EA (Kips)	**42226.31**
Offset	**-57.39**
Correlation	**0.999989**



256NWJ		Cycle 3		
Sample	**Force (lb)**	**Strain (μE)**	**Bridge 1 (V)**	**Bridge 2 (V)**
1	0.00	0.00	0.00	0.00
2	967.10	22.55	0.10	0.10
3	1972.37	46.53	0.21	0.21
4	2978.24	70.37	0.32	0.32
5	3981.74	93.54	0.43	0.43
6	4978.36	116.91	0.54	0.54
7	5967.10	139.83	0.65	0.65
8	6970.02	163.42	0.75	0.76
9	7965.45	186.72	0.86	0.86
10	8971.71	210.21	0.97	0.97
11	9993.32	233.80	1.08	1.08

Bridge 1		**Bridge 2**	
Force Calibration (lb/V)	**9266.99**	**Force Calibration (lb/V)**	**9255.24**
Offset	**-16.24**	Offset	**-15.24**
Correlation	**0.999998**	Correlation	**0.999990**
Strain Calibration (μE/V)	**216.71**	**Strain Calibration (μE/V)**	**216.43**
Offset	**-0.01**	Offset	**0.01**
Correlation	**0.999998**	Correlation	**0.999996**

Force Strain Calibration	
EA (Kips)	**42762.78**
Offset	**-15.69**
Correlation	**0.999995**



Bridge Excitation (V) 5
Shunt Resitor (ohm) 60.4k

Calibration Factors	256NWJ		
Bridge 1 (µE/V)	217.73	Bridge 2 (µE/V)	217.43
EA Factor (Kips)	42505.67	Area (in^2)	1.42

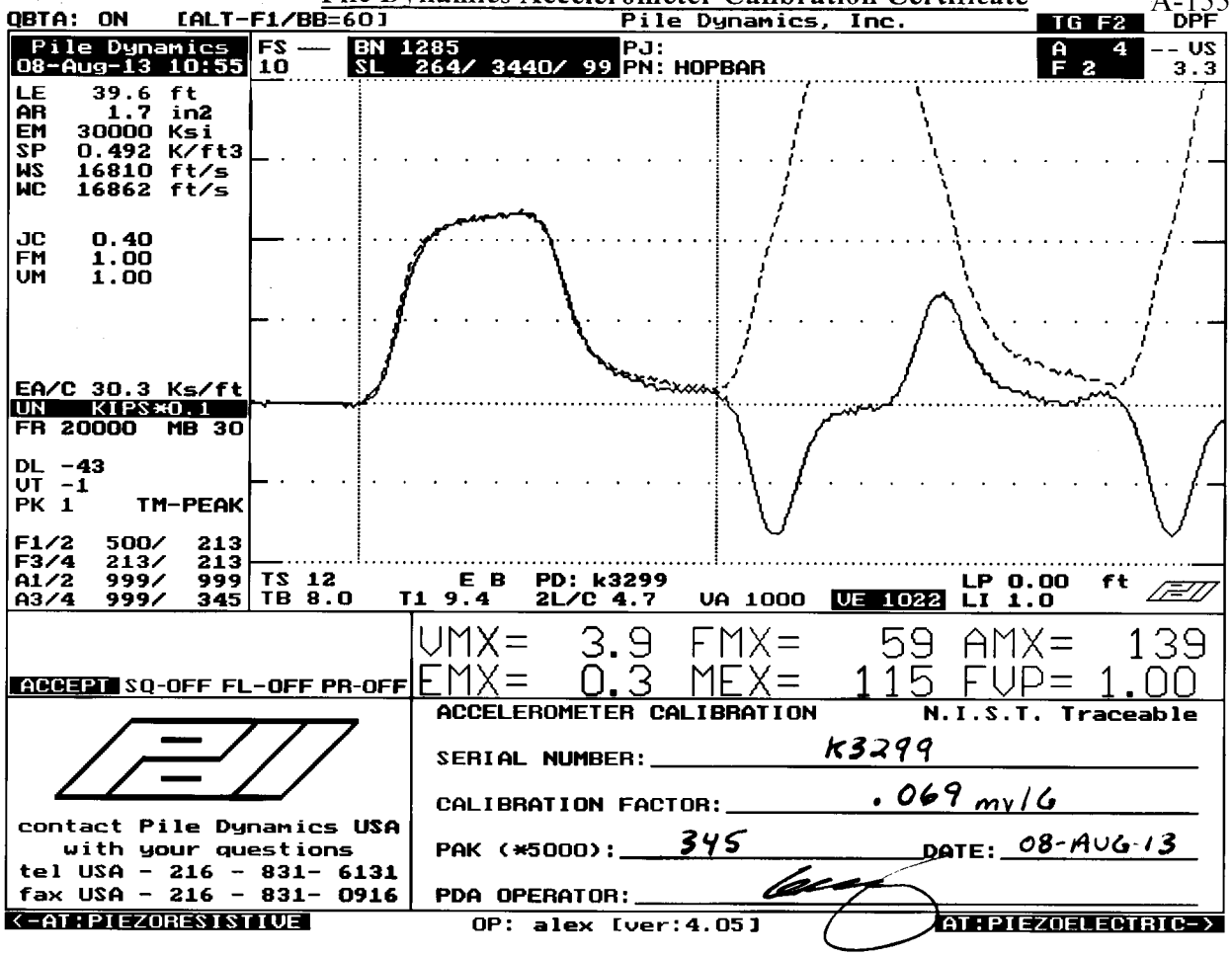
Calibrated by: _____
Calibrated Date: 8/8/2013

Pile Dynamics Inc
30725 Aurora Rd
Solon, OH 44139

Traceable to N.I.S.T.

Pile Dynamics Accelerometer Calibration Certificate

A-1559



Calibration Due Date: 08-AUG-15

Temperature: 72°F Humidity: 63%

Calibration performed in accordance with PDI Accelerometer Calibration Procedure dated 12/1/10

Calibration As Found: 335 As Left: 345 Within Tolerance: (Y) / N

Reference Standard: Golden Accelerometer Serial Number: 44738

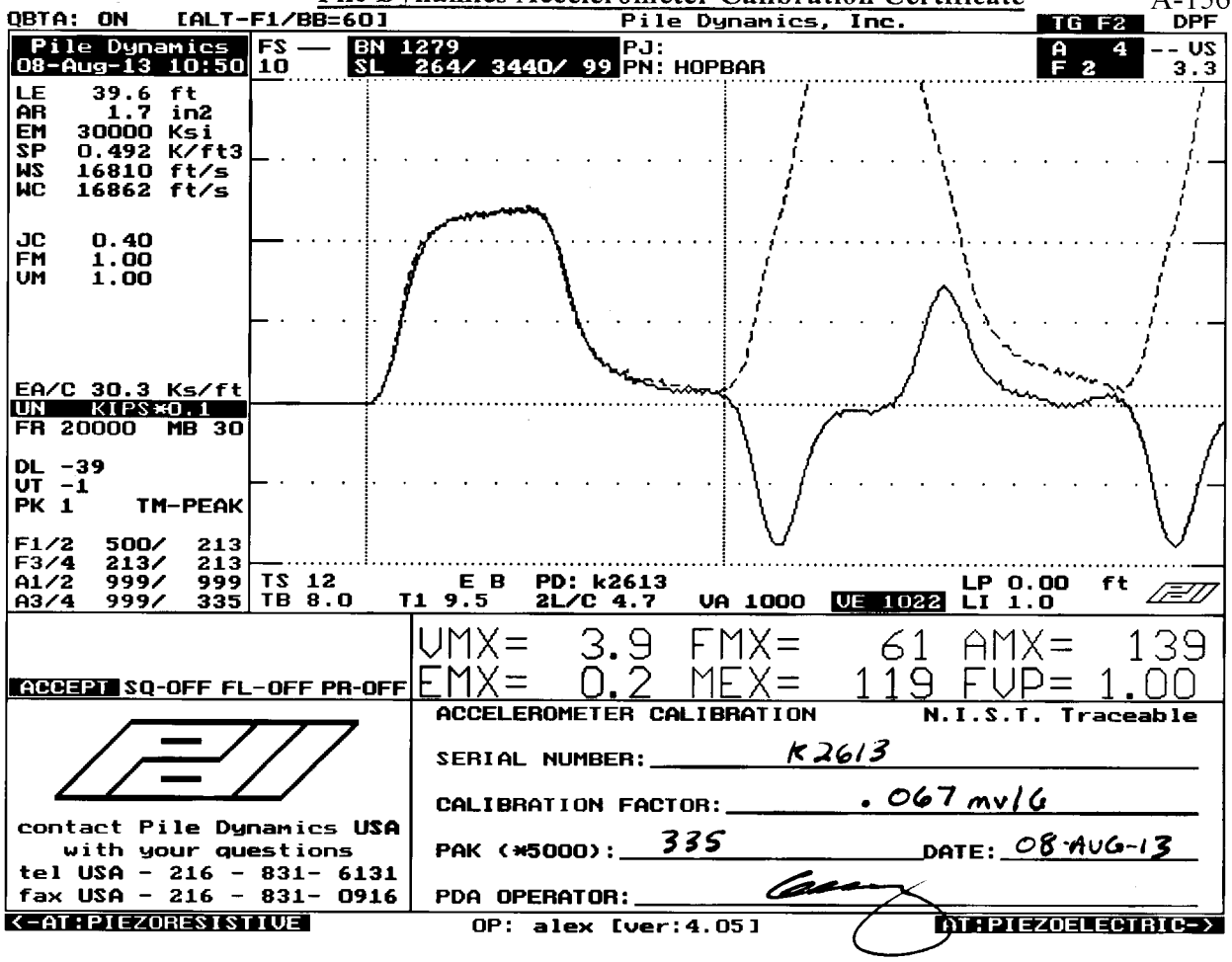
using Hopkinson Bar F2 Calibration Verification Procedure on 24-JULY-13

by AM

Pile Dynamics, Inc.
30725 Aurora Road, Cleveland, Ohio, 44139, USA
www.pile.com info@pile.com 216 831 6131

Pile Dynamics Accelerometer Calibration Certificate

A-1560



Calibration Due Date: 08-AUG-15

Temperature: 72°F Humidity: 63%

Calibration performed in accordance with PDI Accelerometer Calibration Procedure dated 12/1/10

Calibration As Found: 305 As Left: 335 Within Tolerance (Y)/ N

Reference Standard: Golden Accelerometer Serial Number: 44738

using Hopkinson Bar F2 Calibration Verification Procedure on 24-JULY-13

by AM

30725 Aurora Road, Cleveland, Ohio, 44139, USA
www.pile.com info@pile.com 216 831 6131

Pile Dynamics, Inc.

APPENDIX E

CONETEC FINAL REPORT (CPTu)

PRESENTATION OF IN SITU TESTING PROGRAM RESULTS

Turkey Point Units 6 & 7 Site
Job # 13-54054
Homestead, FL
August 19th through 22nd, 2013

Revision 2

Prepared for:

Paul C. Rizzo Associates

Prepared by:

ConeTec Inc.
Charles City, Virginia

January 20, 2014

FIGURES

APPENDICES

1.0 INTRODUCTION

This report presents the results of our cone penetrometer testing (CPTu) program performed for the Turkey Point Units 6 & 7 Site in Homestead, FL. The work was performed under subcontract to Paul C. Rizzo Associates. The in situ testing program took place on August 19th through August 22nd, 2013.

Two (2) cone penetration test (CPTu) soundings were conducted at select locations. The sounding locations were selected and numbered under the direction of Paul C. Rizzo Associates personnel. This report presents the findings of our exploration.

2.0 FIELD EQUIPMENT AND PROCEDURES

2.1 CONE PENETRATION TESTING

The cone penetrometer tests were carried out using an integrated electronic seismic piezocone. The piezocone used was a compression model cone penetrometer with a 15 cm^2 tip and a 225 cm^2 friction sleeve. The cone is designed with an equal end area friction sleeve and a tip end area ratio of 0.80. The piezocone dimensions and the operating procedure were in accordance with ASTM Standard D-5778-12. A diagram of the cone penetrometer used for this project is shown as Figure 1.

Porous filter elements, made of porous plastic, were saturated under a vacuum using silicone oil as the saturating fluid. The porous filter element was six millimeters thick and was located immediately behind the tip (the U_2 location) for all soundings.

The cone was advanced using a 25-ton truck cone penetration rig. The following data were recorded every five centimeters (approximately every 2 inches) as the cone was advanced into the ground:

- Tip Resistance (qc)
- Sleeve Friction (fs)
- Dynamic Pore Pressure (U)

Before each sounding a complete set of analog baseline readings are taken with an integrated multi-meter and compared with the digitized value on the computer screen. This provides a check on the analog to digital conversion board.

Evaluation of the analog baselines is key to consistent readings. The baseline data should be stable and should not wander excessively during the course of a sounding. Baseline data can be used to apply corrections to the cone data where necessary. For this project, the baseline shift from sounding to sounding was small, typically less than 0.1% of full scale, and no data corrections were applied.

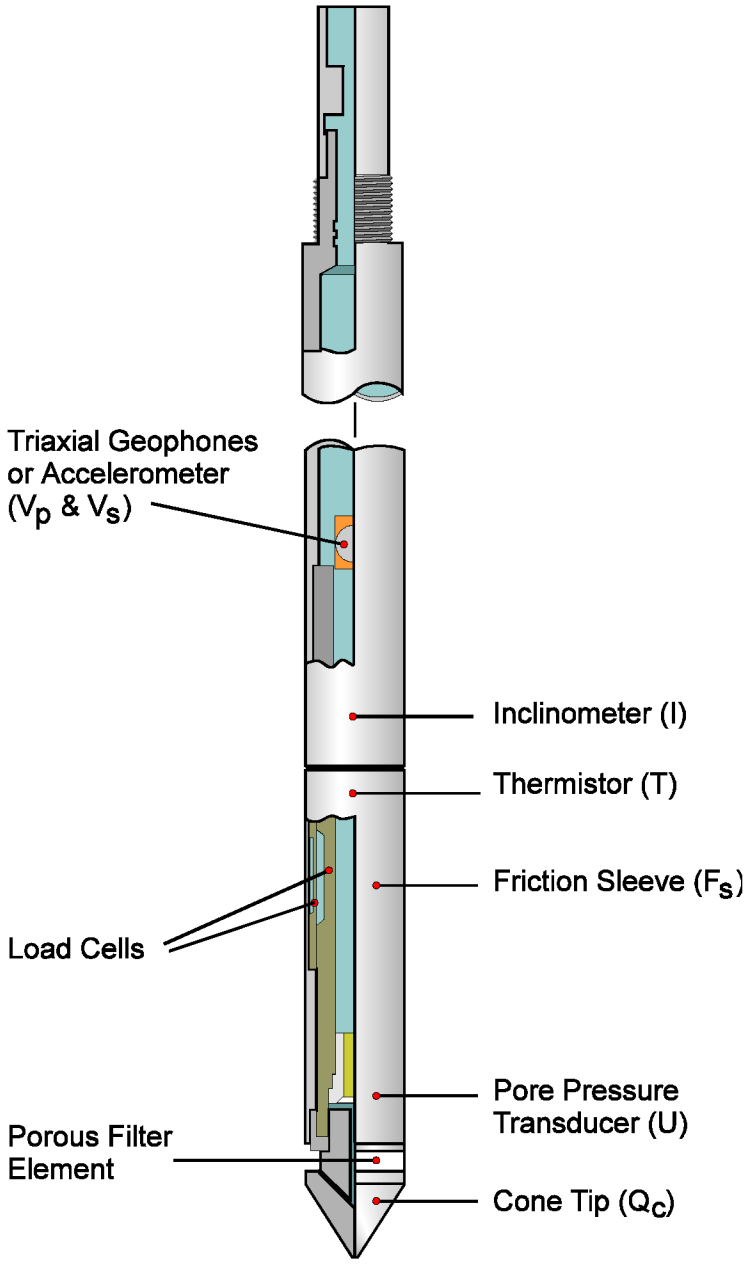


FIGURE 1 - TYPICAL CONE PENETROMETER

2.2 PORE PRESSURE DISSIPATION TESTS

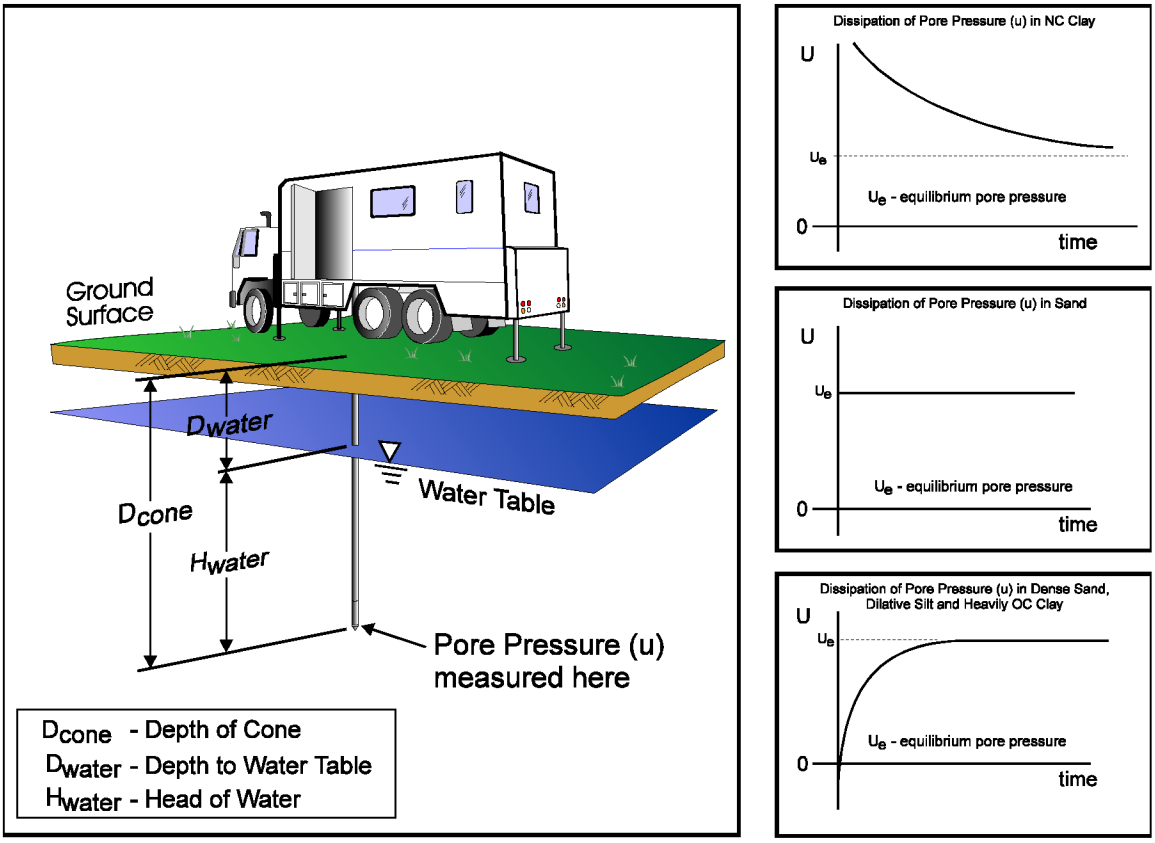
When cone penetration is stopped, the piezocone essentially becomes a piezometer. While stopped, pore water pressures are automatically recorded at five-second intervals and the readings are stored in a dissipation file. Dissipation data can then be plotted onto a dissipation curve consisting of pore water pressure (U) verses time (t). The shapes of dissipation curves are very useful in evaluating soil type, drainage and in situ static water level.

A flat curve that stabilizes quickly (i.e. less than 30 seconds) is typical of a freely draining sand. In this case, the final measured pore water pressure is the static in situ water pressure.

Soils that generate excess dynamic pore water pressure during penetration will dissipate this excess pressure when penetration stops. The shape of the dissipation curve and the time of dissipation can be used to estimate c_h, the coefficient of consolidation that can in turn be used to calculate K_h, the horizontal permeability.

Figure 2 shows some idealized shapes of various pore water pressure dissipation curves.

Estimation of Ground Water Table from CPT Dissipation Tests



Water Table Calculation

$$D_{water} = D_{cone} - H_{water}$$

where $H_{water} = U_e$ (depth units)

Useful Conversion Factors: 1psi = 0.704m = 2.31 feet (water)
1tsf = 0.958 bar = 13.9 psi
1m = 3.28 feet

FIGURE 2 - TYPICAL DISSIPATION TESTS

3.0 CONE PENETRATION TEST DATA AND INTERPRETATION

3.1 ANALYSIS OF PIEZOCONE DATA - GENERAL

A total of two (2) CPTu locations were completed to depths of approximately 288 ft to 289 ft below existing grade. The soundings were predrilled by others to depths of 125ft and 130ft prior to the initial advancement of the cone penetrometer. The soundings were halted when refusal conditions were met. The soundings were resumed past the first refusal depth after a drillout was performed and casing reset. Sounding R-7-3 was resumed past the second refusal depth with another drillout and having the casing reset. The data collected for the separate pushes for the sounding locations were merged into one file, for each sounding, for data processing purposes.

The interpretation of cone data is based on the relationship between cone bearing, qc, sleeve friction, fs, and penetration pore water pressure, U. The friction ratio, Rf , (sleeve friction divided by cone bearing) is a calculated parameter which is used to infer soil behavior type. Generally, saturated cohesive soils have low tip resistance, high friction ratios and generate large excess pore water pressures. Cohesionless soils have higher tip resistances, lower friction ratios and do not generate significant excess pore water pressure.

The interpretation of soils encountered on this project was carried out using established correlations presented in Appendix B. It should be noted that it is not always possible to clearly identify a soil type based on qc, fs and U. Occasionally soils will fall within different soil categories on the classification charts. In these situations, experience and judgment and an assessment of the pore pressure dissipation data should be used to infer the soil behavior type.

Each of the parameters measured in the sounding is discussed briefly below. A detailed explanation of CPTu testing and interpretation of the results can be found in Robertson et. al. 1992.

TIP RESISTANCE (q_c): The resistance to penetration, measured at the cone tip, provides an accurate profile of subsurface strata. The recorded tip resistance is a composite of the penetration resistance of the soils located five to ten cone diameters (8 to 18 inches) in front of and behind the tip. The actual resistance "sensed" by the tip depends on the soil properties and on the relative stiffness of the layers encountered. Tip resistance is often corrected for pore pressure effects when testing in soft saturated cohesive soils.

For this project the correction was made and the tip resistance shown, q_t is the corrected tip resistance.

The correction used is: $q_t = q_c + (1-a)U$

Where: q_t = corrected tip resistance
q_c = measured tip resistance
a = net area ratio for cone (0.80 for this project)
U = dynamic pore water pressure measured behind tip

SLEEVE FRICTION (f_s) The resistance recorded on the friction sleeve, is a measure of the remolded strength of the soil. Values of sleeve friction in very soft soils (such as peat) may fluctuate due to the measured force being small relative to the capacity of the measuring load cell.

FRICTION RATIO (R_f) The ratio of sleeve friction to tip resistance expressed as a percentage, is an indicator of soil type. Cohesive soils generally have friction ratios that are greater than two, while sands and non-plastic silts have friction ratios that are lower than two.

PORE PRESSURE (U) Dynamic pore water pressure is measured during penetration. Static pore water pressure is measured when cone penetration is stopped. The measured dynamic pore water pressure changes with the location of the porous filter and negative readings are possible when the filter is located behind the tip.

It is important to note that the CPT classifies soil by physical behavior, not by grain size; therefore, the CPT classification should be verified against samples obtained from a conventional drilling program. While the CPT soil classification may not always be accurate in terms of the actual label it applies to a particular soil, it is very accurate in grouping soils with similar mechanical properties.

Table 1 in Appendix A presents a summary of the CPT soundings, including sounding depth and test type.

3.2 CONE PLOTS

The data from the soundings was plotted using the computer program ScreenZW. The CPT plots are included in Appendix A. ScreenZW was developed by ConeTec Inc. and it incorporates soil behavior type (SBT) classification as part of the plot. The soil classification is based on the classification chart reproduced in Appendix B.

3.3 PORE PRESSURE DISSIPATION TEST RESULTS

When conducting CPT investigations, pore water pressure dissipations are automatically recorded during pauses in penetration. The pore water pressure data is recorded at five second intervals. The water table depths used in the data interpretation are derived from the pore water pressure dissipation tests below the water table.

3.4 CPT DATA PROCESSING

The electronic data files were processed using the program ScreenZW. ScreenZW is a program developed by ConeTec to calculate common engineering parameters from CPT data. The calculations used are summarized in the table in Appendix B. Each calculation is derived according to the referenced article.

For this project, the piezometric surface depths used in the data interpretation calculations are given in Appendix A on Table 1.

4.0 REFERENCES

Houlsby, G.T. and Teh, C.I., 1988, ISPOPT-1, Volume 2 pp 777-784

Lunne, T., Robertson, P.K., and Powell, J.J.M., 1997, *Cone penetration Testing in Geotechnical Practice*, Spon Press. NY

Mayne, P.W., 1995,"Profiling Yield Stresses in Clays by In Situ Tests", TRR No. 1479. National Academy Press, Washington D.C.

Mayne, P.W., 1995, CPT determinations of overconsolidation ratio and lateral stresses in clean quartz sands, *Proceedings*, International Symposium on Cone Penetration Testing (CPT '95), Vol. 2, Swedish Geotechnical Society Report No. 3:95, Linkoping, pp. 215-220.

Mayne, P.W., Christopher, B. R., DeJong, J., (2001), Manual on Subsurface Exploration, National Highway Institute Publication # FHWA NHI-01-031, Washington D.C.

Robertson, P.K., 1989, "Soil Classification using the Cone Penetration Test", Canadian Geotechnical Journal, vol. 27, pages 151-158.

Robertson, P.K., Sully, J., Woeller, D.G., Lunne, T., Powell, J.M., and Gillespie, D.J., 1992, "Estimating Coefficient of Consolidation from Piezocone Tests", Canadian Geotechnical Journal, vol. 29, pages 539-550.

APPENDIX A

Turkey Point Units 6 & 7 Site

August 19th through 22nd, 2013
13-54054

Table 1: Sounding Information Table

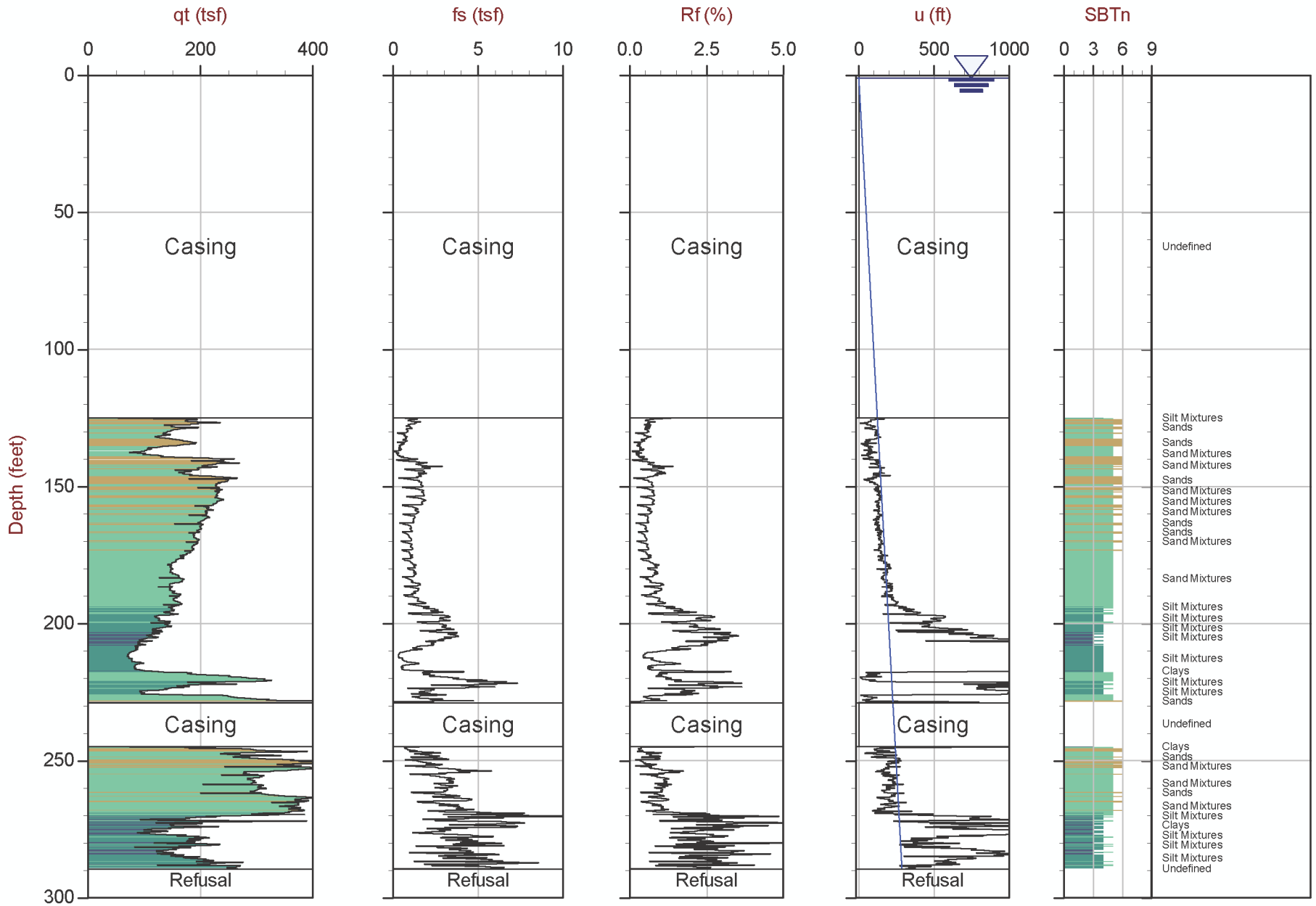
Test Type	Sounding Number	Filename	Depth (ft)	Estimated GWT (ft)	Comments
CPTu	R-6-3	13-54054_SP_R-6-3-comb	289.7	1	Refusal/Drillout
CPTu	R-7-3	13-54054_SP_R-7-3-comb	288.2	1	Refusal/Drillout

CONETEC

Paul C. Rizzo & Assoc.

Job No: 13-54054
Date: 08:20:13 13:48
Site: Turkey Point Units 6 & 7 Site

Sounding: R-6-3
Cone: 367:T1500F15U500



Max Depth: 88.300 m / 289.69 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: Every Point

File: 13-54054_SP_R-6-3-COMB.COR
Unit Wt: SBT Chart Soil Zones

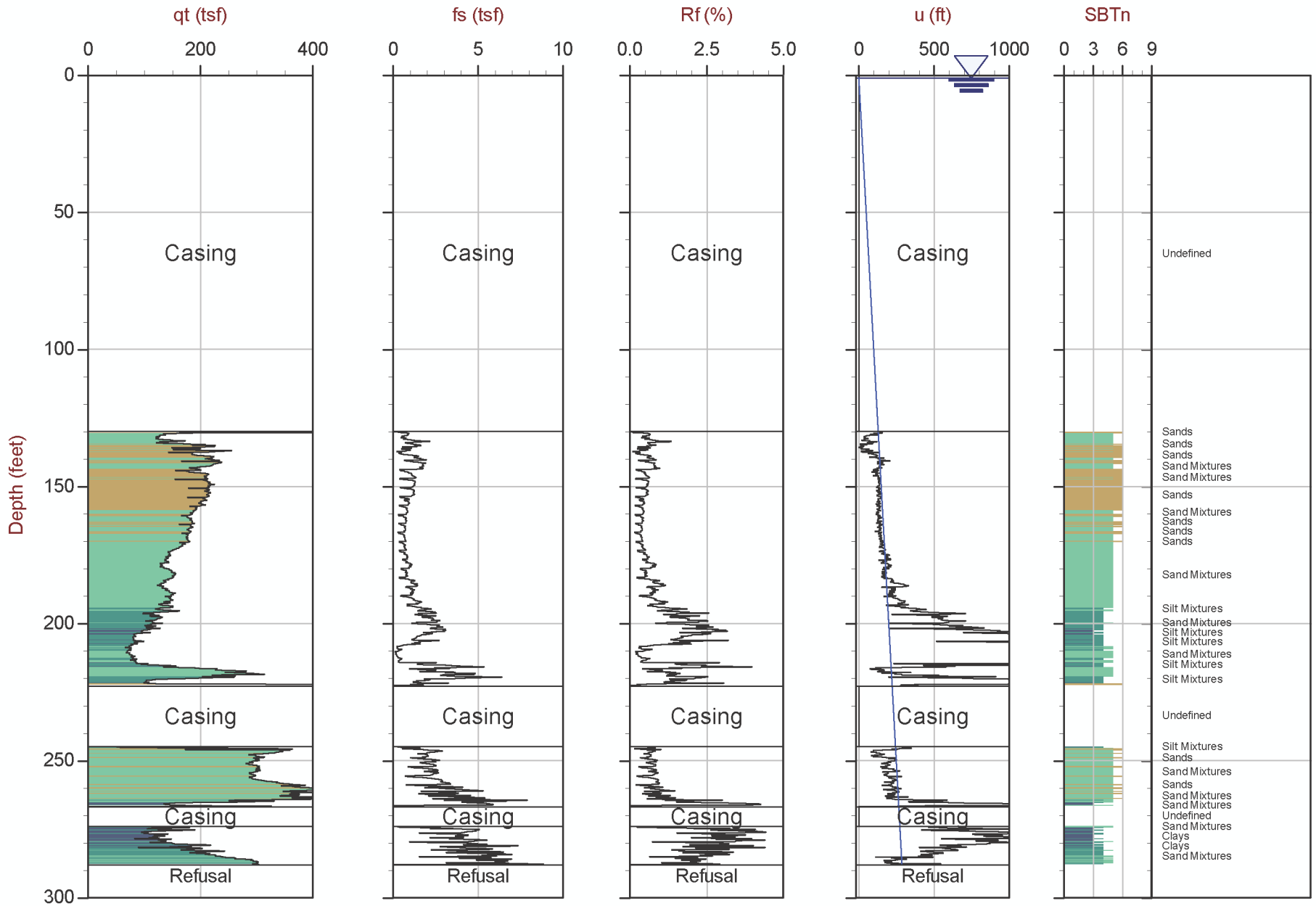
SBT: Lunne, Robertson and Powell, 1997

CONETEC

Paul C. Rizzo & Assoc.

Job No: 13-54054
Date: 08:20:13 09:25
Site: Turkey Point Units 6 & 7 Site

Sounding: R-7-3
Cone: 367:T1500F15U500



Max Depth: 87.850 m / 288.22 ft
Depth Inc: 0.050 m / 0.164 ft
Avg Int: Every Point

File: 13-54054_SP_R-7-3-COMB.COR
Unit Wt: SBT Chart Soil Zones

SBT: Lunne, Robertson and Powell, 1997
Page No: 1 of 1

APPENDIX B

CONETEC INTERPRETATION METHODS

A Detailed Description of the Methods Used in ConeTec's CPT Interpretation and Plotting Software

Revision SZW-Rev 05B

Revised April 25, 2013

Prepared by Jim Greig

CONETEC

ConeTec Interpretations as of April 25, 2013

ConeTec's interpretation routine provides a tabular output of geotechnical parameters based on current published CPT correlations and is subject to change to reflect the current state of practice. The interpreted values are not considered valid for all soil types. The interpretations are presented only as a guide for geotechnical use and should be carefully scrutinized for consideration in any geotechnical design. Reference to current literature is strongly recommended. ConeTec does not warranty the correctness or the applicability of any of the geotechnical parameters interpreted by the program and does not assume liability for any use of the results in any design or review. Representative hand calculations should be made for any parameter that is critical for design purposes. The end user of the interpreted output should also be fully aware of the techniques and the limitations of any method used in this program. The purpose of this document is to inform the user as to which methods were used and what the appropriate papers and/or publications are for further reference.

The CPT interpretations are based on values of tip, sleeve friction and pore pressure averaged over a user specified interval (e.g. 0.20m). Note that q_t is the tip resistance corrected for pore pressure effects and q_c is the recorded tip resistance. Since all ConeTec cones have equal end area friction sleeves, pore pressure corrections to sleeve friction, f_s, are not required.

The tip correction is: $q_t = q_c + (1-a) \cdot u_2$

where: q_t is the corrected tip resistance
q_c is the recorded tip resistance
u_2 is the recorded dynamic pore pressure behind the tip (u_2 position)
a is the Net Area Ratio for the cone (typically 0.80 for ConeTec cones)

The total stress calculations are based on soil unit weights that have been assigned to the Soil Behavior Type zones, from a user defined unit weight profile or by using a single value throughout the profile.

Effective vertical overburden stresses are calculated based on a hydrostatic distribution of equilibrium pore pressures below the water table or from a user defined equilibrium pore pressure profile (this can be obtained from CPT dissipation tests). For over water projects the effects of the column of water have been taken into account as has the appropriate unit weight of water. How this is done depends on where the instruments were zeroed (i.e. on deck or at mud line).

Details regarding the interpretation methods for all of the interpreted parameters are provided in Table 1. The appropriate references cited in Table 1 are listed in Table 2. Where methods are based on charts or techniques that are too complex to describe in this summary the user should refer to the cited material.

The Soil Behavior Type classification charts (normalized and non-normalized) shown in Figures 1 and 2 are based on the charts developed by Dr. Robertson and Dr. Campanella at the University of British Columbia. These charts appear in many publications, most notably: Robertson, Campanella, Gillespie and Greig (1986); Robertson (1990) and Lunne, Robertson and Powell (1997). The Bq classification charts shown in Figures 3a and 3b are based on those described in Robertson (1990) and Lunne, Robertson and Powell (1997). The Jefferies and Davies SBT chart shown in Figure 3c is based on that discussed in Jefferies and Davies, 1993.

Where the results of a calculation/interpretation are declared *'invalid'* the value will be represented by the text strings "-9999" or "-9999.0". In some cases the value 0 will be used. Invalid results will occur because of (and not limited to) one or a combination of:

1. Invalid or undefined CPT data (e.g. drilled out section or data gap).

2. Where the interpretation method is inappropriate, for example, drained parameters in an undrained material (and vice versa).

3. Where interpretation input values are beyond the range of the referenced charts or specified limitations of the interpretation method.

4. Where pre-requisite or intermediate interpretation calculations are invalid.

The parameters selected for output from the program are often specific to a particular project. As such, not all of the interpreted parameters listed in Table 1 may be included in the output files delivered with this report.

The output files are provided in Microsoft Excel XLS format. The ConeTec software has several options for output depending on the number or types of interpreted parameters desired. Each output file will be named using the original COR file basename followed by a three or four letter indicator of the interpretation set selected (e.g. BSC, TBL, NLI or IFI) and possibly followed by an operator selected suffix identifying the characteristics of the particular interpretation run.

Table 1
CPT Interpretation Methods

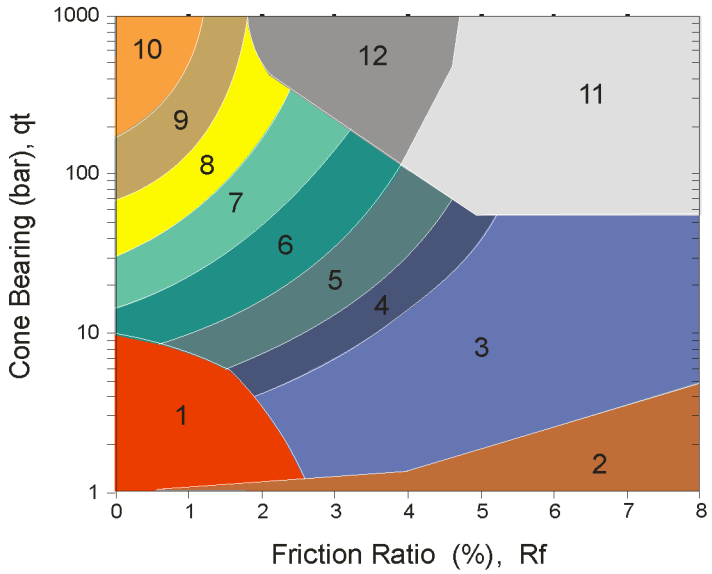
Interpreted Parameter	Description	Equation	Ref
Depth	Mid Layer Depth *(where interpretations are done at each point then Mid Layer Depth = Recorded Depth)*	*Depth (Layer Top) + Depth (Layer Bottom) / 2.0*	
Elevation	Elevation of Mid Layer based on sounding collar elevation supplied by client	Elevation = Collar Elevation - Depth	
Avgqc	Averaged recorded tip value (q_c)	$Avgqc = \frac{1}{n}\sum_{i=1}^{n} q_c$ *n=1 when interpretations are done at each point*	
Avgqt	Averaged corrected tip (q_t) where: $q_t = q_c + (1-a) \bullet u$	$Avgqt = \frac{1}{n}\sum_{i=1}^{n} q_t$ *n=1 when interpretations are done at each point*	
Avgfs	Averaged sleeve friction (f_s)	$Avgfs = \frac{1}{n}\sum_{i=1}^{n} fs$ *n=1 when interpretations are done at each point*	
AvgRf	Averaged friction ratio (Rf) where friction ratio is defined as: $Rf = 100\% \bullet \frac{fs}{qt}$	$AvgRf = 100\% \cdot \frac{Avgfs}{Avgqt}$ *n=1 when interpretations are done at each point*	
Avgu	Averaged dynamic pore pressure *(u)*	$Avgu = \frac{1}{n}\sum_{i=1}^{n} u_i$ *n=1 when interpretations are done at each point*	
AvgRes	Averaged Resistivity (this data is not always available since it is a specialized test requiring an additional module)	$Avgu = \frac{1}{n}\sum_{i=1}^{n} RESISTIVITY_i$ *n=1 when interpretations are done at each point*	
AvgUVIF	Averaged UVIF ultra-violet induced fluorescence (this data is not always available since it is a specialized test requiring an additional module)	$Avgu = \frac{1}{n}\sum_{i=1}^{n} UVIF_i$ *n=1 when interpretations are done at each point*	
AvgTemp	Averaged Temperature (this data is not always available since it is a specialized test)	$Avgu = \frac{1}{n}\sum_{i=1}^{n} TEMPERATURE_i$ *n=1 when interpretations are done at each point*	

Interpreted Parameter	Description	Equation	Ref
AvgGamma	Averaged Gamma Counts (this data is not always available since it is a specialized test requiring an additional module)	$Avgu = \frac{1}{n}\sum_{i=1}^{n} GAMMA_i$ *n=1 when interpretations are done at each point*	
SBT	Soil Behavior Type as defined by Robertson and Campanella	See Figure 1	2, 5
U.Wt.	Unit Weight of soil determined from one of the following user selectable options: 1) uniform value 2) value assigned to each SBT zone 3) user supplied unit weight profile	See references	5
T. Stress σ_v	Total vertical overburden stress at Mid Layer Depth. *A layer is defined as the averaging interval specified by the user. For data interpreted at each point the Mid Layer Depth is the same as the recorded depth.*	$TStress = \sum_{i=1}^{n} \gamma_i h_i$ *where* γ_i is layer unit weight h_i is layer thickness	
E. Stress σ_v'	Effective vertical overburden stress at Mid Layer Depth	*Estress = Tstress - u_{eq}*	
Ueq	Equilibrium pore pressure determined from one of the following user selectable options: 1) hydrostatic from water table depth 2) user supplied profile	For hydrostatic option: $u_{eq} = \gamma_w \cdot (D - D_{wt})$ where u_{eq} is equilibrium pore pressure γ_w is unit weight of water D is the current depth D_{wt} is the depth to the water table	
Cn	SPT N_{60} overburden correction factor	*$Cn=(\sigma_v')^{-0.5}$* where *σ_v' is in tsf* *$0.5 < C_n < 2.0$*	
N_{60}	SPT N value at 60% energy calculated from qt/N ratios assigned to each SBT zone. This method has abrupt N value changes at zone boundaries.	*See Figure 1*	4, 5
$(N_1)_{60}$	SPT N_{60} value corrected for overburden pressure	*$(N_1)_{60} = Cn \cdot N_{60}$*	4
$N_{60}I_c$	SPT N_{60} values based on the Ic parameter	$(qt/pa)/ N_{60} = 8.5 (1 – Ic/4.6)$	5
$(N_1)_{60}Ic$	SPT N_{60} value corrected for overburden pressure (using N_{60} I_c). User has 2 options.	*1) $(N_1)_{60}Ic= Cn \cdot (N_{60} Ic)$* 2) $q_{c1n}/ (N_1)_{60}Ic = 8.5 (1 – Ic/4.6)$	4 5
$(N_1)_{60cs}Ic$	Clean sand equivalent SPT $(N_1)_{60}Ic$. User has 3 options.	1) $(N_1)_{60cs}Ic = \alpha + \beta((N_1)_{60}Ic)$ 2) $(N_1)_{60cs}Ic = K_{SPT} * ((N_1)_{60}Ic)$ 3) $q_{c1ncs})/ (N_1)_{60cs}Ic = 8.5 (1 – Ic/4.6)$ FC ≤ 5%: α = 0, β=1.0 FC ≥ 35% α = 5.0, β=1.2 5% < FC < 35% $\alpha = \exp[1.76 – (190/FC^2)]$ $\beta = [0.99 + (FC^{1.5}/1000)]$	10 10 5
Su	Undrained shear strength based on q_t Su factor N_{kt} is user selectable	$Su = \frac{qt - \sigma_v}{N_{kt}}$	1, 5
Su	Undrained shear strength based on pore pressure Su factor $N_{\Delta u}$ is user selectable	$Su = \frac{u_2 - u_{eq}}{N_{\Delta u}}$	1, 5
k	Coefficient of permeability (assigned to each SBT zone)		5

Interpreted Parameter	Description	Equation	Ref
Bq	Pore pressure parameter	$Bq = \frac{\Delta u}{qt - \sigma_v}$ *where:* $\Delta u = u - u_{eq}$ *and u = dynamic pore pressure* *u_{eq} = equilibrium pore pressure*	1, 5
Q_t	Normalized q_t for Soil Behavior Type classification as defined by Robertson, 1990	$Qt = \frac{qt - \sigma_v}{\sigma'_v}$	2, 5
F_r	Normalized Friction Ratio for Soil Behavior Type classification as defined by Robertson, 1990	$Fr = 100\% \cdot \frac{fs}{qt - \sigma_v}$	2, 5
Net qt	Net tip resistance	$qt - \sigma_v$	
qe	Effective tip resistance	$qt - u_2$	
qeNorm	Normalized effective tip resistance	$\frac{qt - u_2}{\sigma'_v}$	
SBTn	Normalized Soil Behavior Type as defined by Robertson and Campanella	See Figure 2	2, 5
SBT-BQ	Non-normalized Soil Behavior type based on the Bq parameter	See Figure 3	2, 5
SBT-BQn	Normalized Soil Behavior based on the Bq parameter	See Figure 3	2, 5
SBT-JandD	Soil Behaviour Type as defined by Jeffries and Davies	See Figure 3	7
SBT-BQn	Normalized Soil Behavior base on the Bq parameter	See Figure 3	2, 5
I_c	Soil index for estimating grain characteristics	$Ic = [(3.47 - \log_{10}Q)^2 + (\log_{10} Fr + 1.22)^2]^{0.5}$ *Where:* $Q = \left(\frac{qt - \sigma_v}{P_{a2}}\right)\left(\frac{P_a}{\sigma'_v}\right)^n$ *And Fr is in percent* *P_a = atmospheric pressure* *P_{a2} = atmospheric pressure* *n varies from 0.5 to 1.0 and is selected in an iterative manner based on the resulting I_c*	3, 8
FC	Apparent fines content (%)	*FC=1.75($Ic^{3.25}$) - 3.7* *FC=100 for Ic > 3.5* *FC=0 for Ic < 1.26* *FC = 5% if 1.64 < Ic < 2.6 AND F_r<0.5*	3
Ic Zone	This parameter is the Soil Behavior Type zone based on the Ic parameter (valid for zones 2 through 7 on SBTn chart)	Ic < 1.31 Zone = 7 1.31 < Ic < 2.05 Zone = 6 2.05 < Ic < 2.60 Zone = 5 2.60 < Ic < 2.95 Zone = 4 2.95 < Ic < 3.60 Zone = 3 Ic > 3.60 Zone = 2	3
PHI ϕ	Friction Angle determined from one of the following user selectable options: a) Campanella and Robertson b) Durgunoglu and Mitchel c) Janbu d) Kulhawy and Mayne	See reference	5 5 5 11

Interpreted Parameter	Description	Equation	Ref
Dr	Relative Density determined from one of the following user selectable options: a) Ticino Sand b) Hokksund Sand c) Schmertmann 1976 d) Jamiolkowski - All Sands	See reference	5
OCR	Over Consolidation Ratio	a) Based on Schmertmann's method involving a plot of $S_u/\sigma_v' / (S_u/\sigma_v')_{NC}$ and OCR where the Su/p' ratio for NC clay is user selectable	9
State Parameter	The state parameter is used to describe whether a soil is contractive (SP is positive) or dilative (SP is negative) at large strains based on the work by Been and Jefferies	See reference	8, 6, 5
Es/qt	Intermediate parameter for calculating Young's Modulus, E, in sands. It is the Y axis of the reference chart.	Based on Figure 5.59 in the reference	5
Young's Modulus E	Young's Modulus based on the work done in Italy. There are three types of sands considered in this technique. The user selects the appropriate type for the site from: a) OC Sands b) Aged NC Sands c) Recent NC Sands Each sand type has a family of curves that depend on mean normal stress. The program calculates mean normal stress and linearly interpolates between the two extremes provided in the Es/qt chart.	Mean normal stress is evaluated from: $\sigma_m' = \frac{1}{3}\left(\sigma_v' + \sigma_h' + \sigma_h'\right)^3$ where σ_v'= vertical effective stress σ_h'= horizontal effective stress and $\sigma_h = K_o \cdot \sigma_v'$ with Ko assumed to be 0.5	5
q_{c1}	q_t normalized for overburden stress used for seismic analysis	$q_{c1} = q_t \cdot (Pa/\sigma_v')^{0.5}$ where: Pa = atm. Pressure q_t is in MPa	3
q_{c1n}	q_{c1} in dimensionless form used for seismic analysis	$q_{c1n} = (q_{c1} / Pa)(Pa/\sigma_v')^n$ where: Pa = atm. Pressure and n ranges from 0.5 to 1.0 based on Ic.	3
K_{SPT}	Equivalent clean sand factor for $(N_1)60$	$K_{SPT} = 1 + ((0.75/30) \cdot (FC - 5))$	10
K_{CPT}	Equivalent clean sand correction for q_{c1N}	$K_{cpt} = 1.0$ for $I_c \leq 1.64$ $K_{cpt} = f(I_c)$ for $I_c > 1.64$ (see reference)	10
q_{c1ncs}	Clean sand equivalent q_{c1n}	$q_{c1ncs} = q_{c1n} \cdot K_{cpt}$	3
CRR	Cyclic Resistance Ratio (for Magnitude 7.5)	$q_{c1ncs} < 50$: $CRR_{7.5} = 0.833\ [(q_{c1ncs}/1000] + 0.05$ $50 \leq q_{c1ncs} < 160$: $CRR_{7.5} = 93\ [(q_{c1ncs}/1000]^3 + 0.08$	10

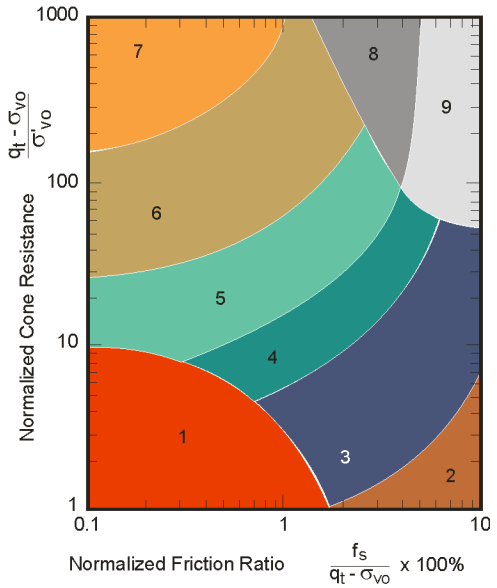
Interpreted Parameter	Description	Equation	Ref
CSR	Cyclic Stress Ratio	$CSR = (\tau_{av}/\sigma_v') = 0.65\ (a_{max} / g)\ (\sigma_v/ \sigma_v')\ r_d$ $r_d = 1.0 - 0.00765\ z$ $\quad z \leq 9.15m$ $r_d = 1.174 - 0.0267\ z$ $\quad 9.15 < z \leq 23m$ $r_d = 0.744 - 0.008\ z$ $\quad 23 < z \leq 30m$ $r_d = 0.50$ $\quad z > 30m$	10
MSF	Magnitude Scaling Factor	See Reference	10
FofS	Factor of Safety against Liquefaction	$FS = (CRR_{7.5} / CSR)\ MSF$	10
Liquefaction Status	Statement indicating possible liquefaction	Takes into account FofS and limitations based on I_c and q_{c1ncs}.	10
Cont/Dilat Tip	Contractive / Dilative qc1 Boundary based on $(N_1)_{60}$	$(\sigma_v')_{boundary} = 9.58 \times 10^{-4}\ [(N_1)_{60}]^{4.79}$ qc1 is calculated from specified qt(MPa)/N ratio	13
Cq	Normalizing Factor	$Cq = 1.8 / (0.8 + ((\sigma_v'/Pa))$	12
qc1 (Cq)	Normalized tip resistance based on Cq	$q_{c1} = C_q * q_t$ (some papers use q_c)	12
Su(Liq)/s'v	Liquefied Shear Strength Ratio	$\frac{Su(Liq)}{\sigma_v'} = 0.03 + 0.0143(q_{c1})$	13



Zone	qt / N	Soil Behavior Type
1	2	sensitive fine grained
2	1	organic material
3	1	clay
4	1.5	silty clay to clay
5	2	clayey silt to silty clay
6	2.5	sandy silt to clayey silt
7	3	silty sand to sandy silt
8	4	sand to silty sand
9	5	sand
10	6	gravelly sand to sand
11	1	very stiff fine grained *
12	2	sand to clayey sand *

* overconsolidated or cemented

Figure 1 Non-Normalized Behavior Type Classification Chart



Zone	Normalized Soil Behavior Type
1	sensitive fine grained
2	organic material
3	clay to silty clay
4	clayey silt to silty clay
5	silty sand to sandy silt
6	clean sands to silty sands
7	gravelly sand to sand
8	very stiff sand to clayey sand
9	very stiff fine grained

Figure 2 Normalized Behavior Type Classification Chart

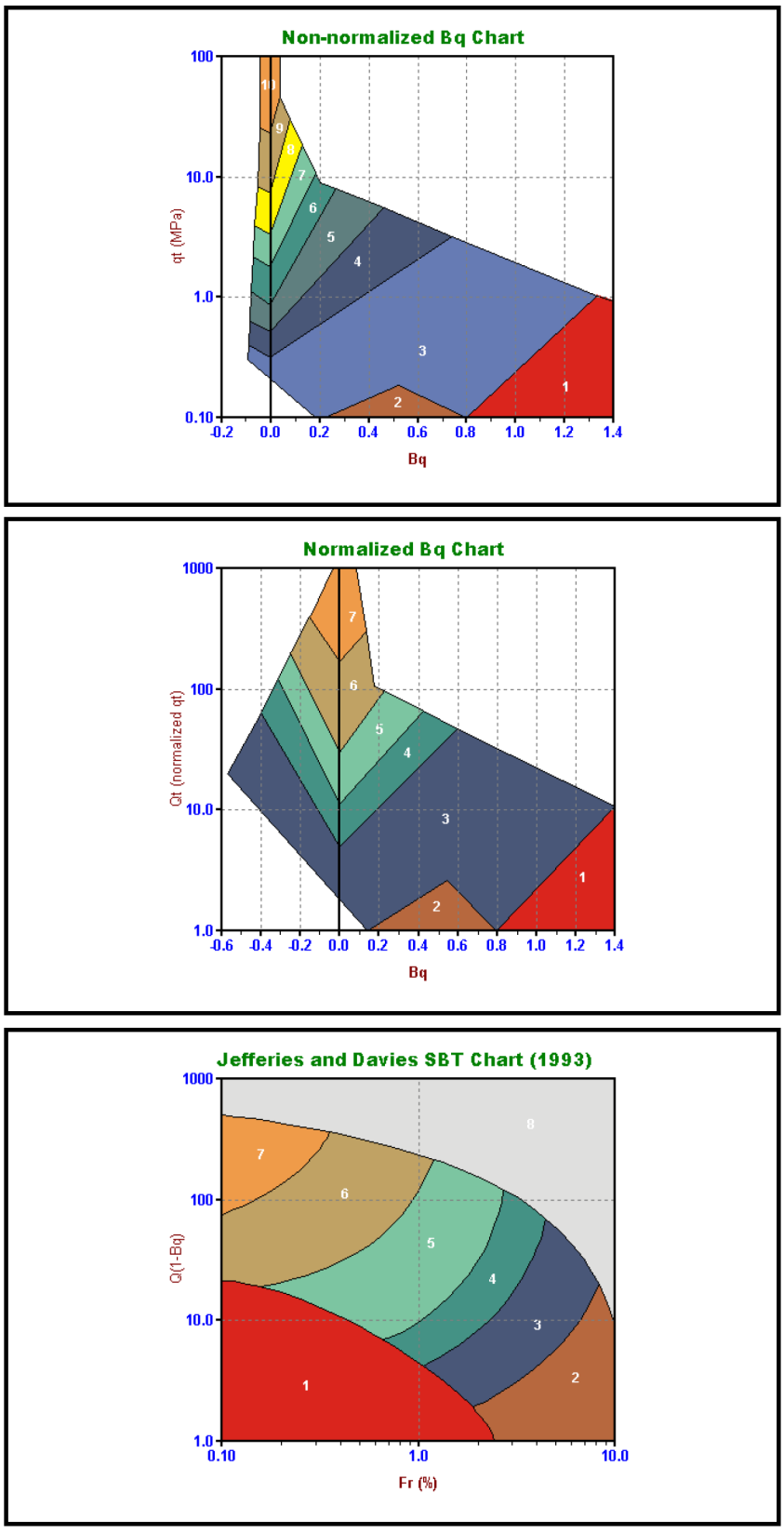


Figure 3 – Alternate Soil Behaviour Type Charts

Table 2 References

No.	References
1	Robertson, P.K., Campanella, R.G., Gillespie, D. and Greig, J., 1986, "Use of Piezometer Cone Data", Proceedings of InSitu 86, ASCE Specialty Conference, Blacksburg, Virginia.
2	Robertson, P.K., 1990, "Soil Classification Using the Cone Penetration Test", Canadian Geotechnical Journal, Volume 27.
3	Robertson, P.K. and Fear, C.E., 1998, "Evaluating cyclic liquefaction potential using the cone penetration test", Canadian Geotechnical Journal, 35: 442-459.
4	Robertson, P.K. and Wride, C.E., 1998, "Cyclic Liquefaction and its Evaluation Based on SPT and CPT", NCEER Workshop Paper, January 22, 1997
5	Lunne, T., Robertson, P.K. and Powell, J. J. M., 1997, " Cone Penetration Testing in Geotechnical Practice," Blackie Academic and Professional.
6	Plewes, H.D., Davies, M.P. and Jefferies, M.G., 1992, "CPT Based Screening Procedure for Evaluating Liquefaction Susceptibility", 45th Canadian Geotechnical Conference, Toronto, Ontario, October 1992.
7	Jefferies, M.G. and Davies, M.P., 1993. "Use of CPTu to Estimate equivalent N_{60}", Geotechnical Testing Journal, 16(4): 458-467.
8	Been, K. and Jefferies, M.P., 1985, "A state parameter for sands", Geotechnique, 35(2), 99-112.
9	Schmertmann, 1977, "Guidelines for Cone Penetration Test Performance and Design", Federal Highway Administration Report FHWA-TS-78-209, U.S. Department of Transportation
10	Proceedings of theNCEER Workshop on Evaluation of Liquefaction Resistance of Soils, Salt LakeCity, 1996. Chaired by Leslie Youd. 11
11	Kulhawy, F.H. and Mayne, P.W. ,1990, "Manual on Estimating Soil Properties for Foundation Design, *Report No. EL-6800*", Electric Power Research Institute, Palo Alto, CA, August 1990, 306 p.
12	Olson, S.M. and Stark, T.D., 2002, "Liquefied strength ratio from liquefied flow filaure case histories", Canadian Geotechnical Journal, 39: 951-966.
13	Oslon, Scott M. and Stark, Timothy D., 2003, "Yield Strength Ratio and Liquefaction Analysis of Slopes and Embankments", Journal of Geotechnical and Geoenvironmental Engineering, ASCE, August 2003.

APPENDIX E-1

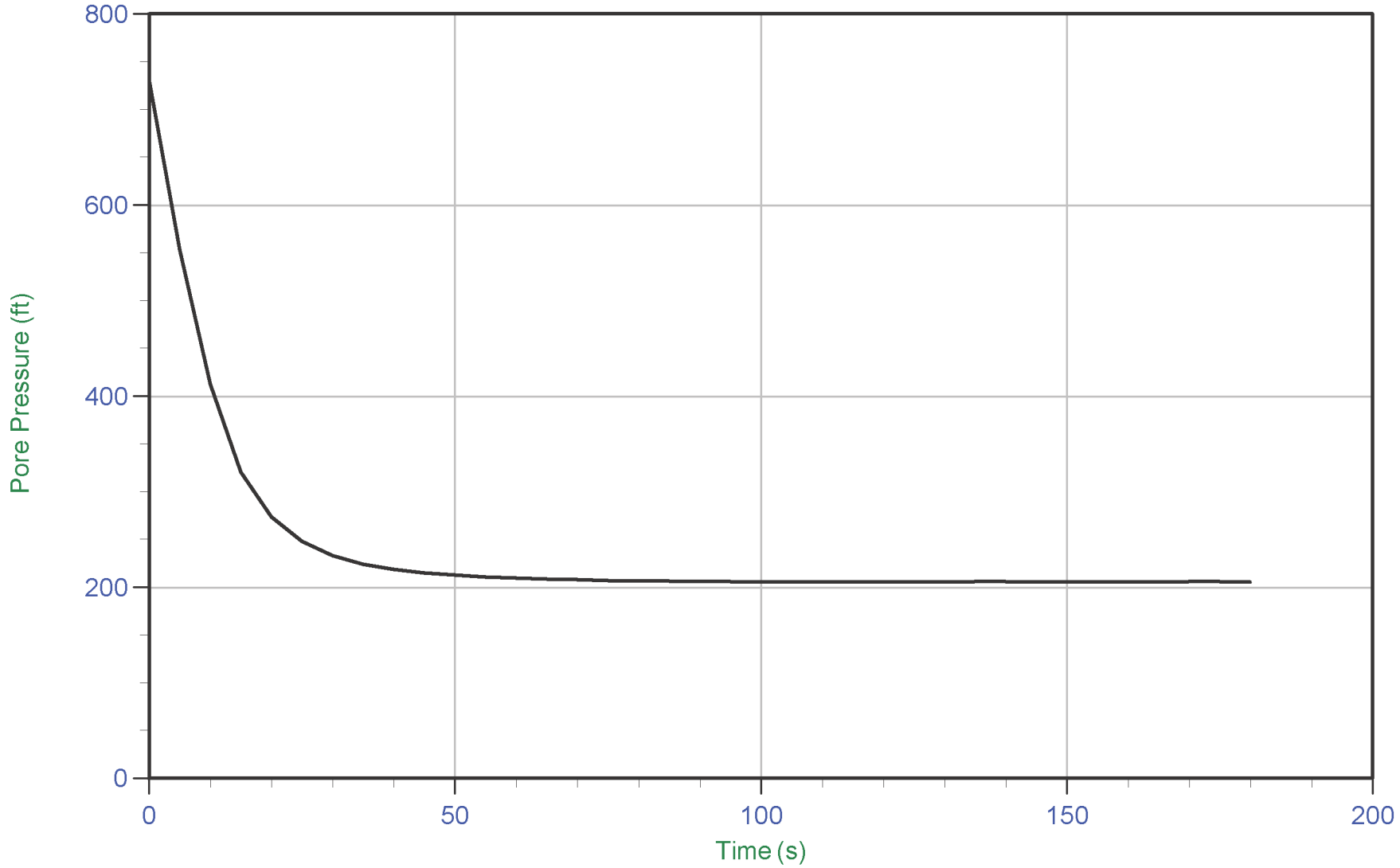
CONETEC PORE PRESSURE DISSIPATION TEST RESULTS

CONETEC

Paul C. Rizzo Assoc.

Job No: 13-54054
Date: 08/20/2013 13:48
Site: Turkey Point NP

Sounding: R-6-3
Cone: 367:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-54054_SP_R-6-3.PPD
Depth: 61.700 m / 202.425 ft
Duration: 180.0 s

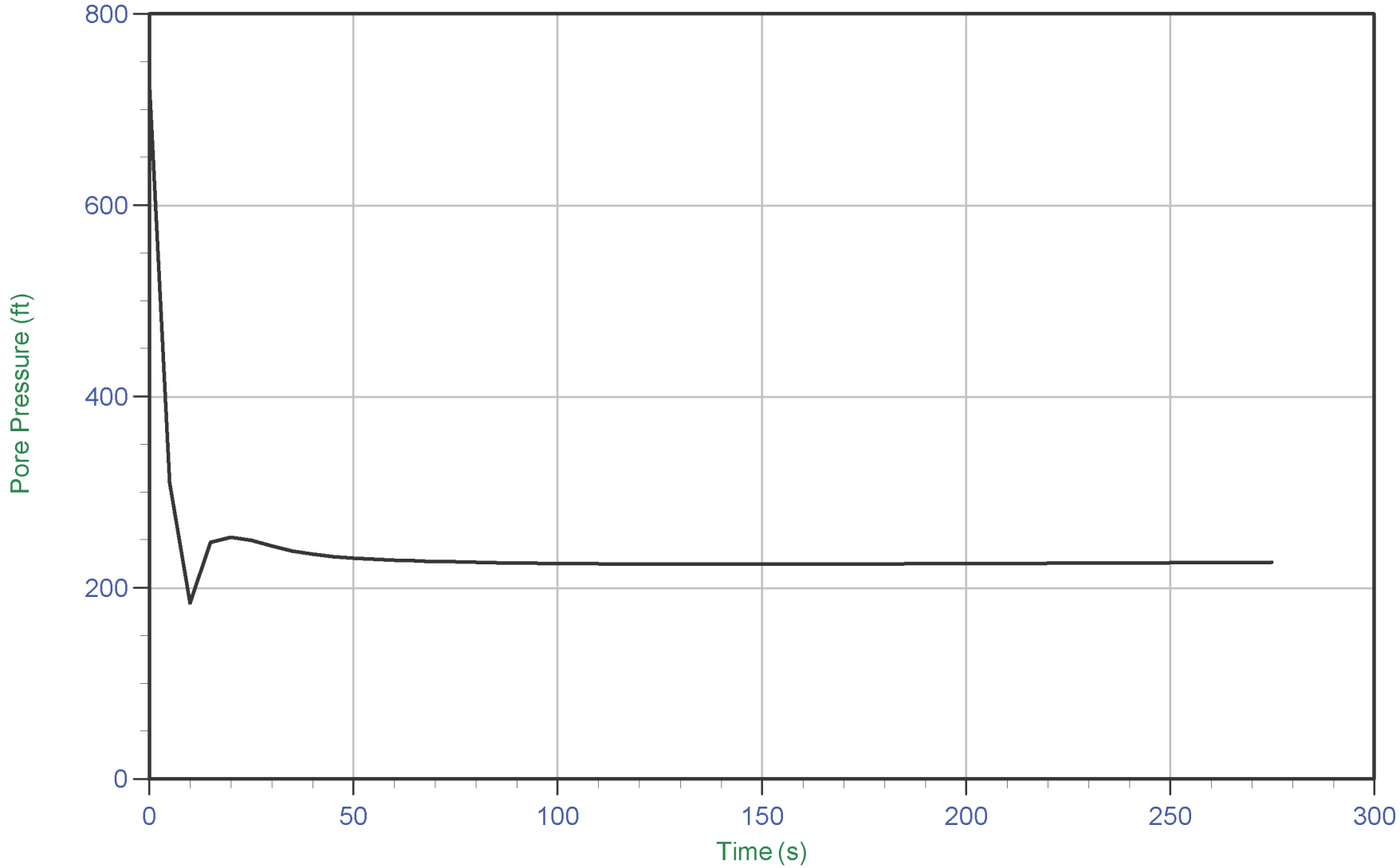
U Min: 205.4 ft
U Max: 731.3 ft

CONETEC

Paul C. Rizzo Assoc.

Job No: 13-54054
Date: 08/20/2013 13:48
Site: Turkey Point NP

Sounding: R-6-3
Cone: 367:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-54054_SP_R-6-3.PPD
Depth: 69.750 m / 228.836 ft
Duration: 275.0 s

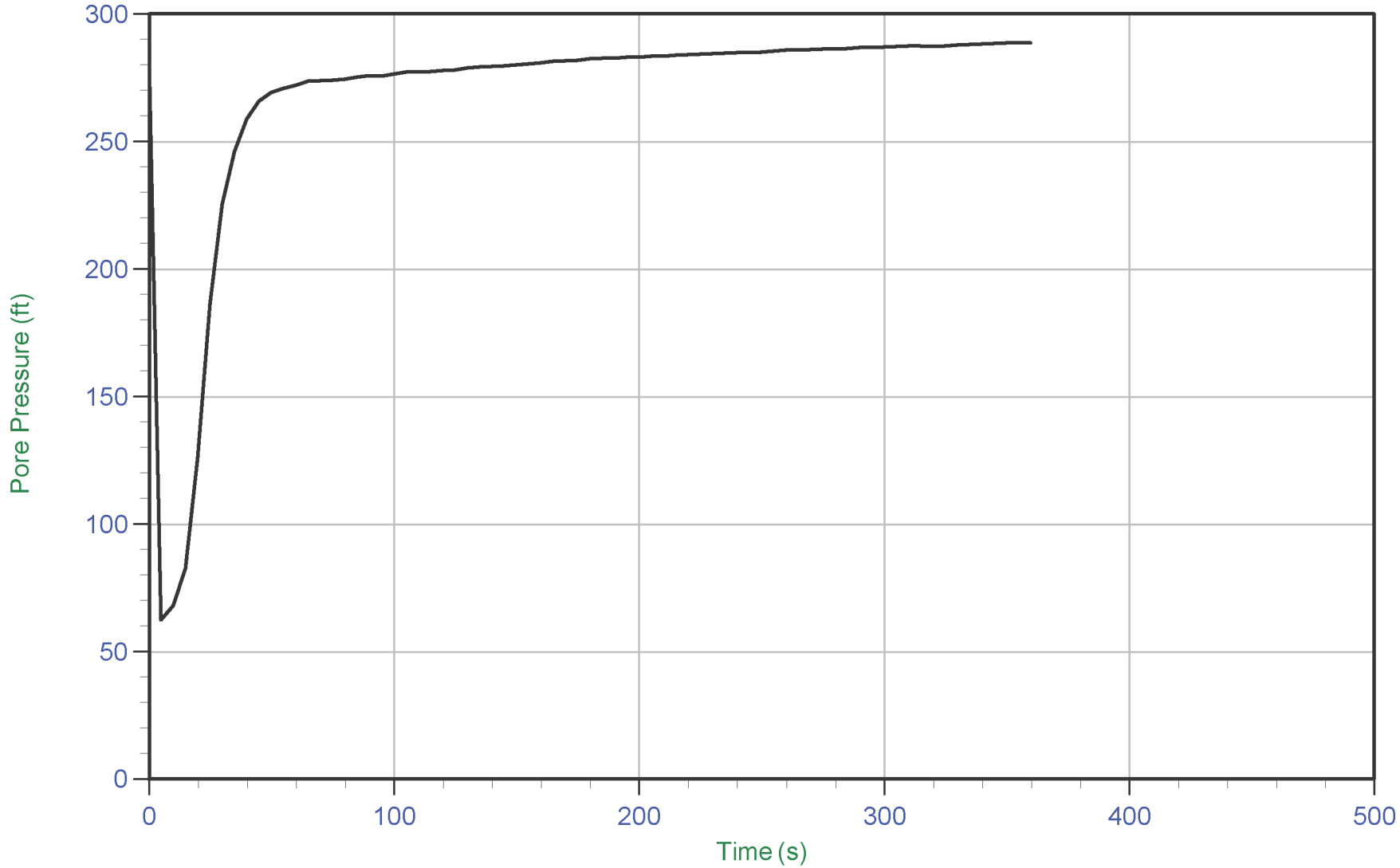
U Min: 184.3 ft
U Max: 730.7 ft

CONETEC

Paul C. Rizzo Assoc.

Job No: 13-54054
Date: 08/21/2013 15:33
Site: Turkey Point NP

Sounding: R-6-3
Cone: 367:T1500F15U500
Cone Area: 15 sq cm



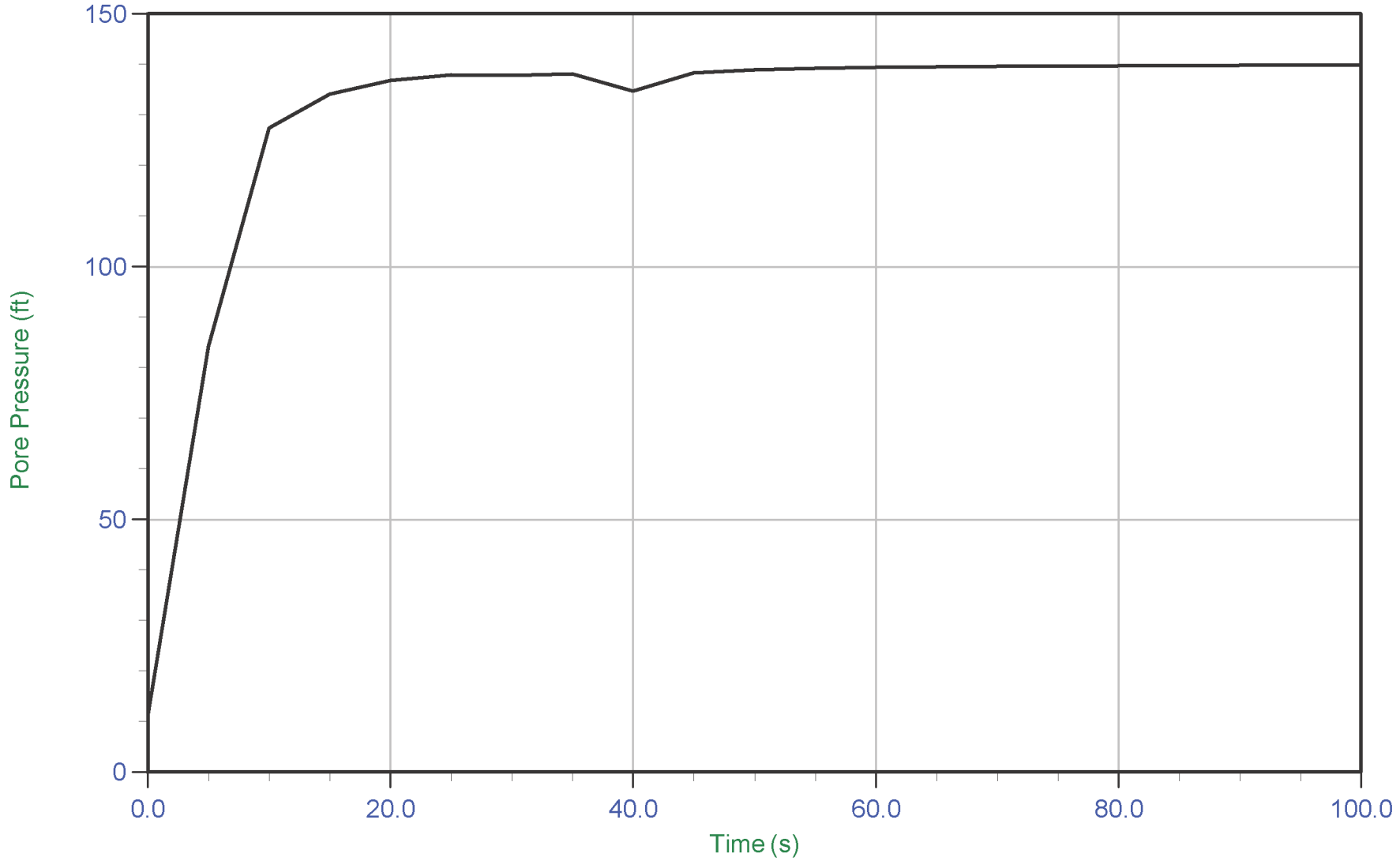
Trace Summary:
Filename: 13-54054_SP_R-6-3a.EPM
Depth: 88.300 m / 289.695 ft
Duration: 360.0 s
U Min: 62.5 ft
U Max: 288.8 ft

CONETEC

Paul C. Rizzo Assoc.

Job No: 13-54054
Date: 08/20/2013 09:25
Site: Turkey Point NP

Sounding: R-7-3
Cone: 367:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-54054_SP_R-7-3a.EPM
Depth: 41.900 m / 137.466 ft
Duration: 100.0 s

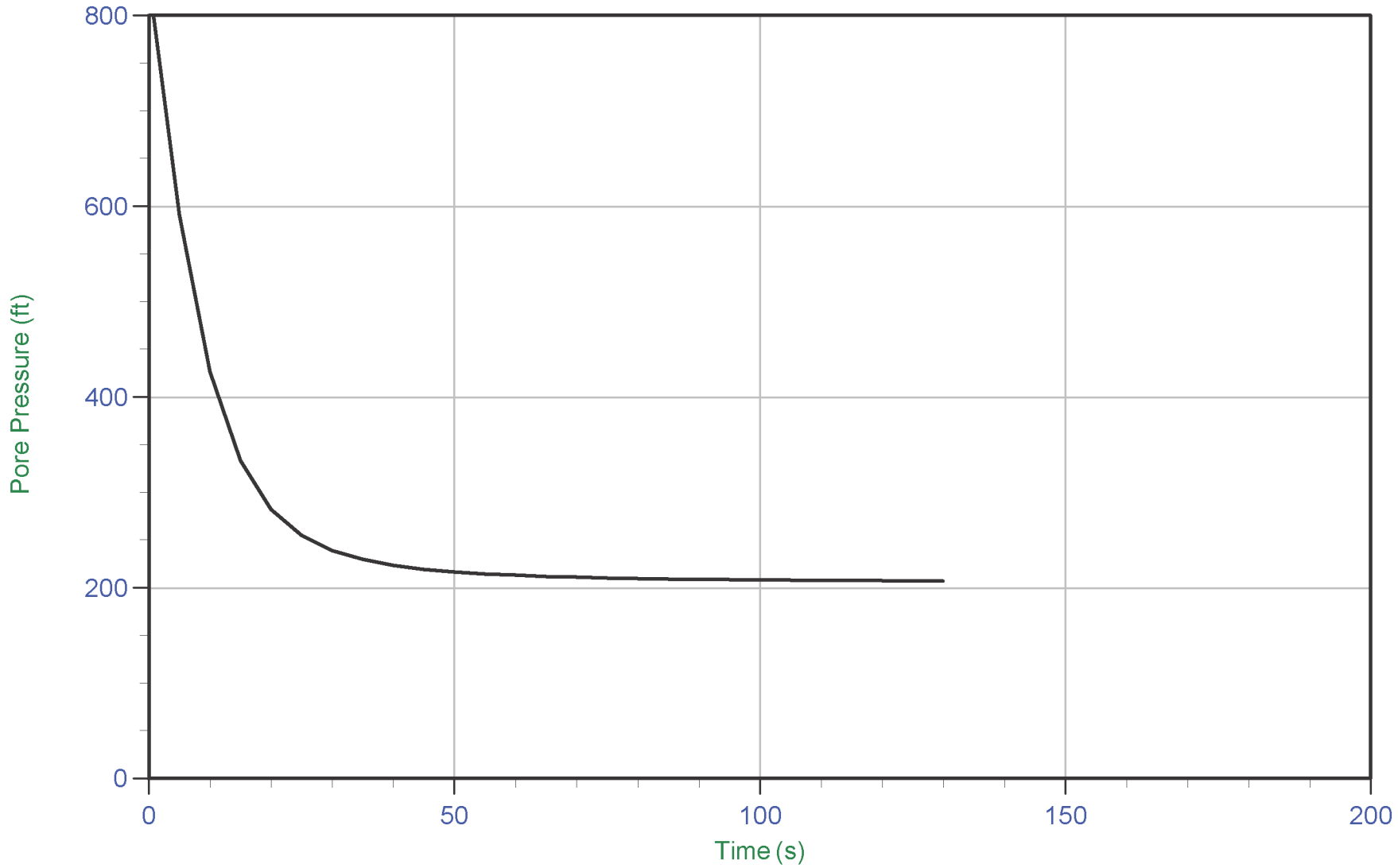
U Min: 11.1 ft
U Max: 139.9 ft

CONETEC

Paul C. Rizzo Assoc.

Job No: 13-54054
Date: 08/20/2013 09:25
Site: Turkey Point NP

Sounding: R-7-3
Cone: 367:T1500F15U500
Cone Area: 15 sq cm



Trace Summary:

Filename: 13-54054_SP_R-7-3a.EPM
Depth: 61.450 m / 201.605 ft
Duration: 130.0 s

U Min: 207.4 ft
U Max: 837.6 ft

APPENDIX F

IN-SITU FINAL REPORT (PRESSUREMETER TESTING)

Report of In Situ Pressuremeter Testing
Turkey Point Units 6 & 7 Site
Miami-Dade County, Florida

Submitted to:

Paul Rizzo & Associates, Inc.
Pittsburgh, PA
Project Number: 13-5054/12

In Situ Engineering Project Number: 1158
January 14, 2014

Testing conducted and report prepared by:

In Situ Engineering

6232 195th Avenue SE
Snohomish, WA 98290 360-568-2807

prepared by: Charles Gerdes CG
reviewed by: Keith Brown KRB

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1.0 INTRODUCTION

This report contains the test results for electronic pressuremeter testing (PMT) performed near the City of Homestead in Miami-Dade County, Florida at the Turkey Point Units 6 & 7 Site. The PMT program was completed under the direction of Paul Rizzo & Associates and in accordance with their nuclear Quality Assurance Project Plan. The PMT program was to obtain shear modulus values for sub-surface materials.

The drilling on this project was performed by Huss Drilling of Dade City, Florida using a truck mounted Failing mud rotary drilling rig. Both mud rotary and coring were used. The instrument used for this investigation is a Cambridge style pre-bored high pressure pressuremeter (PBPM). The borehole name(s), test file names, test depths and formations are presented in Table 1. The field work was carried out on August 12, 2013 to September 23, 2013.

1.1 Quality Assurance and Project Submittals

The work was performed under contract to Paul C. Rizzo Associates, Inc., Pittsburgh, PA and authorized by Purchase Order #11057, Revision 1. The work was performed under Paul Rizzo Associates, Inc. documents as follows:

- Quality Assurance Project Plan: Supplemental Geological, Geotechnical, and Geophysical Field Investigation Program, Turkey Point Nuclear Power Plant Units 6 and 7, Revision 1, August 9, 2013.
- Work Plan: Supplemental Geological, Geotechnical, and Geophysical Field Investigation Program, Turkey Point Nuclear Power Plant Units 6 and 7, Revision 3, September 10, 2013.
- Health, Safety, and Environmental Plan: Supplemental Geological, Geotechnical, and Geophysical Field Investigation Report, Turkey Point Nuclear Power Plant Units 6 and 7, Revision 5, September 17, 2013.
- ASTM D-4719 is not applicable to our instrument or testing in rock.

In Situ Engineering's Technical Procedures regarding pressuremeter testing were also used including:

- Technical Procedure TP-01, Collection of Borehole Pressuremeter Data in Soil and Rock, Version TP-01-06, August 20, 2013
- Technical Procedure TP-02, Standard Technical Procedure for Correcting Pressuremeter Data for Membrane Effects, Version TP-02-03, August 20, 2013
- Technical Procedure TP-03, Standard Technical Procedure for Calibrating Electronic Pressuremeter Instruments Manufactured by In Situ Engineering, Version TP-03-02, August 20, 2013

Qualifications submittals also included resumes of key personnel, Material Safety Data Sheets and calibration certificates for the instrumentation used.

Calibration prior to performing field work was conducted by Cascade Engineering Services, Inc., Kirkland, WA and TMI Calibration Laboratories, Ft. Lauderdale, FL. The two firms are accredited by the A2LA and have NIST traceable standards which were used in calibrating the instruments.

2.0 PURPOSE

The purpose of this study was to evaluate the *in-situ* shear modulus of the Key Largo and Fort Thompson formations which are generally limestone rock and the Upper Tamiami, Lower Tamiami, and Peace River formations which are generally unconsolidated sand. The formation names are based upon information provided in the work plan.

3.0 PRESSUREMETER TESTING

A total of 96 pressuremeter tests were attempted in 3 boreholes. A total of 9 membranes ruptured and 9 protective shields were damaged during testing. Approximately 1/3 of the test attempts did not produce useful data because of an oversized test pocket (6.35mm radial displacement range), material disturbed, or membrane ruptured. Membrane rupture in the limestone was common due to the numerous vugs. The details of the pressuremeter testing and interpretation are included in the following sections.

3.1 Instrumentation

The pressuremeter used for this geotechnical investigation was a pre-bored monocell pressuremeter. The instrument has a testing range of 2000 psi and 18% strain. It has 3 electronic displacement sensors, spaced 120 degrees apart and located at the center of the flexible membrane, and a pressure cell. The flexible membrane is placed over the sensors, clamped at each end. The membrane is covered by a protective sheet of stainless steel strips. The unit is pressurized using compressed air to expand the membrane and deform the adjacent material. The electronic signals from displacement sensors and the pressure sensor are transmitted by cable to the surface. During the test, the average expansion versus pressure is displayed on a computer screen. The pressuremeter is expanded by regulating the flow of compressed air to the unit. Figure 1, shown below, is a detailed schematic of the instrument.

The following tests had an issue with Arm 1: Turkey–044, Turkey–045, Turkey–046, Turkey–047, and Turkey–048. Arm 1 was stuck in the down position for those tests. It was not determined until after Turkey–048 was completed and the membrane removed. All the test pockets were oversized and not valid for analysis except for Turkey-047. The issue was corrected after test Turkey-048. The tests were analyzed with Arm 2 and Arm 3.

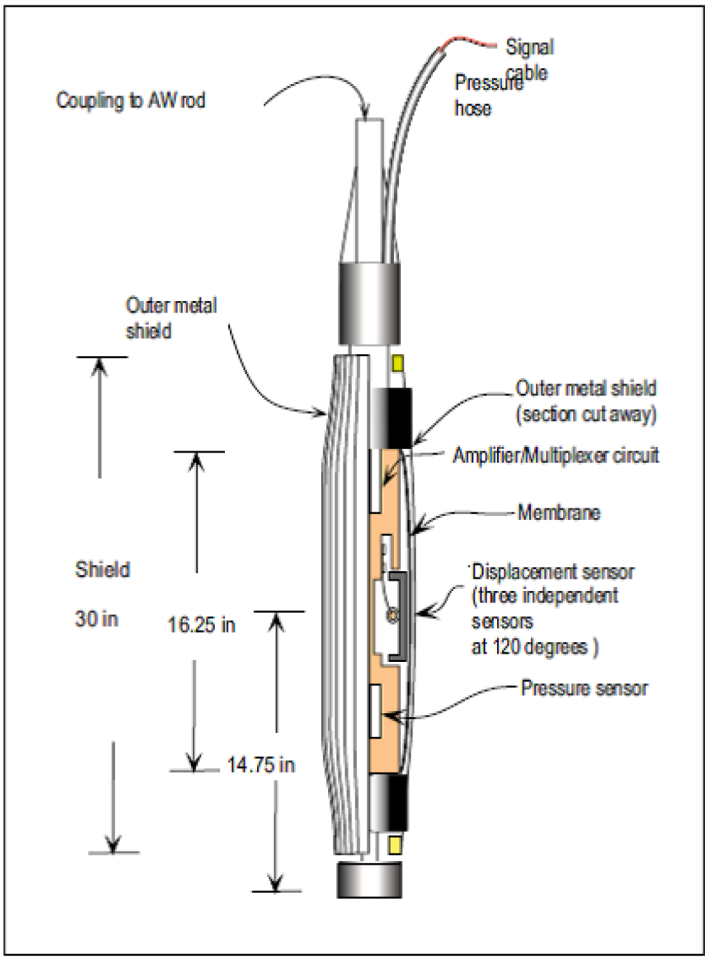


Figure 1 Schematic Details of the Pressuremeter

3.2 Hole Formation

In general there were two techniques used which were successful in creating the test pockets for the different formations which are outlined below. The quality of the test pocket is most important in the PMT program. Finding out what drilling techniques work best for different materials is key to maximize the quality of data. One example of this was advancing casing to stabilize the hole and prevent caving. Another example was increasing the bentonite content in the drilling mud to increase the overall weight.

For the most successful Key Largo and Fort Thompson tests, the drillers used an oversized 4 inch diameter tricone bit to advance the hole from the surface to the top of the first test pocket and then to advance the hole between test pockets. An NWD4 sized core barrel was used to create a 5 foot long test pocket into which the pressuremeter instrument was inserted.

For Upper Tamiami, Lower Tamiami, and Peace River formations only mud rotary drilling techniques were used. The hole was advanced with the 4 inch tricone bit and the test pockets were drilled using a 2-$^{15}/_{16}$ inch diameter tricone bit.

After the NWD4 or 2-$^{15}/_{16}$ bit was removed from the hole, the instrument was lowered into the pocket for testing. After the testing was complete, the instrument was removed and the hole was advanced to the top of the next test pocket with the larger diameter technique.

3.3 Test Procedure

The membrane is expanded by controlling the flow of compressed gas into the pressuremeter, increasing the pressure smoothly until the membrane starts to expand against the borehole wall. Once the instrument has deformed the borehole sidewall and the response curve appears to be deforming intact material, the pressure is reduced to no more than 40% of the highest applied pressure, then increased again to form an unload-reload loop. The point at which an unload-reload loop is initiated is an operator judgment based upon test response and the goal of performing a series of equally spaced unload-reload loops within the strain and or pressure range limits expected.

The resulting unload-reload loop can be used to evaluate the elastic behavior of the material. In materials which behave in a plastic manner such as clay, the loops will exhibit a hysteretic behavior. That is, the unloading path will follow the "mirror" image of the reloading path. In more linear materials such as sands, and especially rock, the loops will be very tight exhibiting little hysteretic behavior. The pressure is then increased for a second unload-reload cycle.

Figure 2, shown below, is an example PMT curve in the sand formations. The curve shown is Turkey–080. This test was completed in borehole R–7–2, at a depth of 166ft in Lower Tamiami. The unload-reload loops were completed 240, 360, and 410 psi. The instrument total expansion was 11.6% and reached a maximum stress of 450 psi.

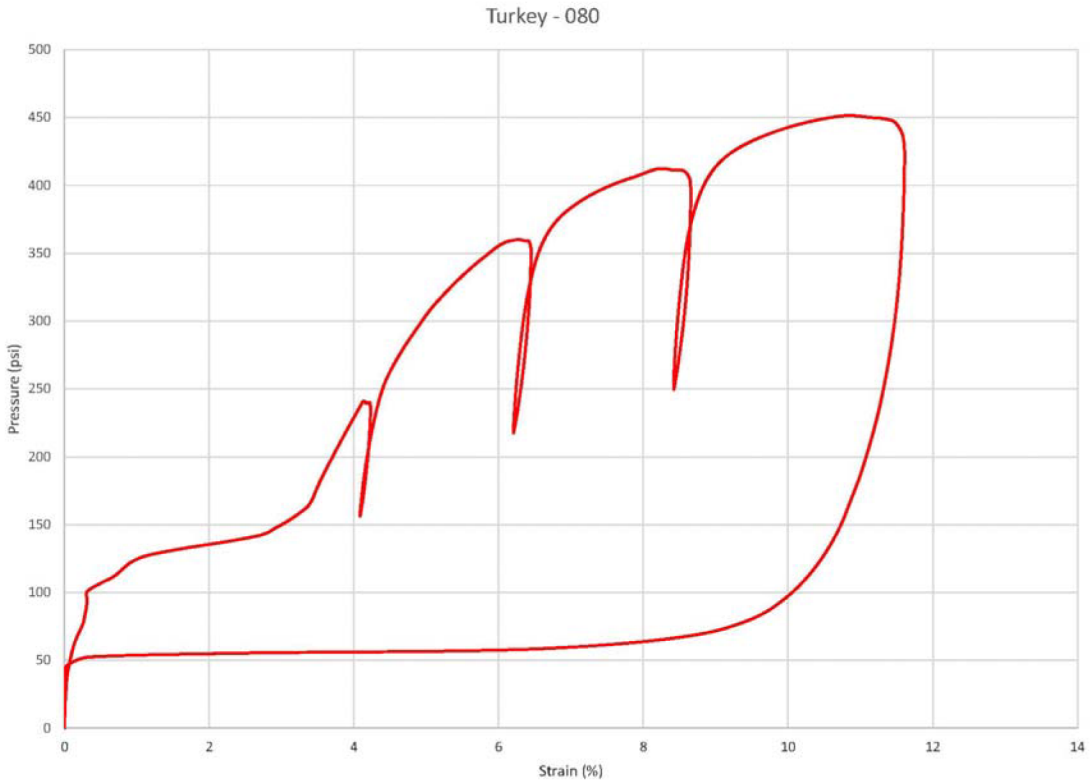


Figure 2 Example Sand Curve, Turkey - 080

After the strain exceeds about 14% or the stress reaches the 2000 psi limit of the pressure source, the pressure is reduced to zero. The exact maximum stress or strain at which the pressure is reduced is in general a judgment call from the operator based on the behavior of the three arms, instrument response and other limiting conditions. Tests may be terminated before the failure of the material if either the limit of any one strain arm is reached, or if the maximum pressure of the pressure bottle is reached. If it is suspected that the membrane is likely to rupture then the test can be terminated.

Figure 3, shown below, is an example curve in the Limestone formations. The curve shown is Turkey–050. This test was completed in borehole R–7–2, at a depth of 30.5 feet in the Key Largo Formation. The unload-reload loops were completed 280 psi and 580 psi. The instrument total expansion was 9.0% and reached a maximum stress of 880 psi.

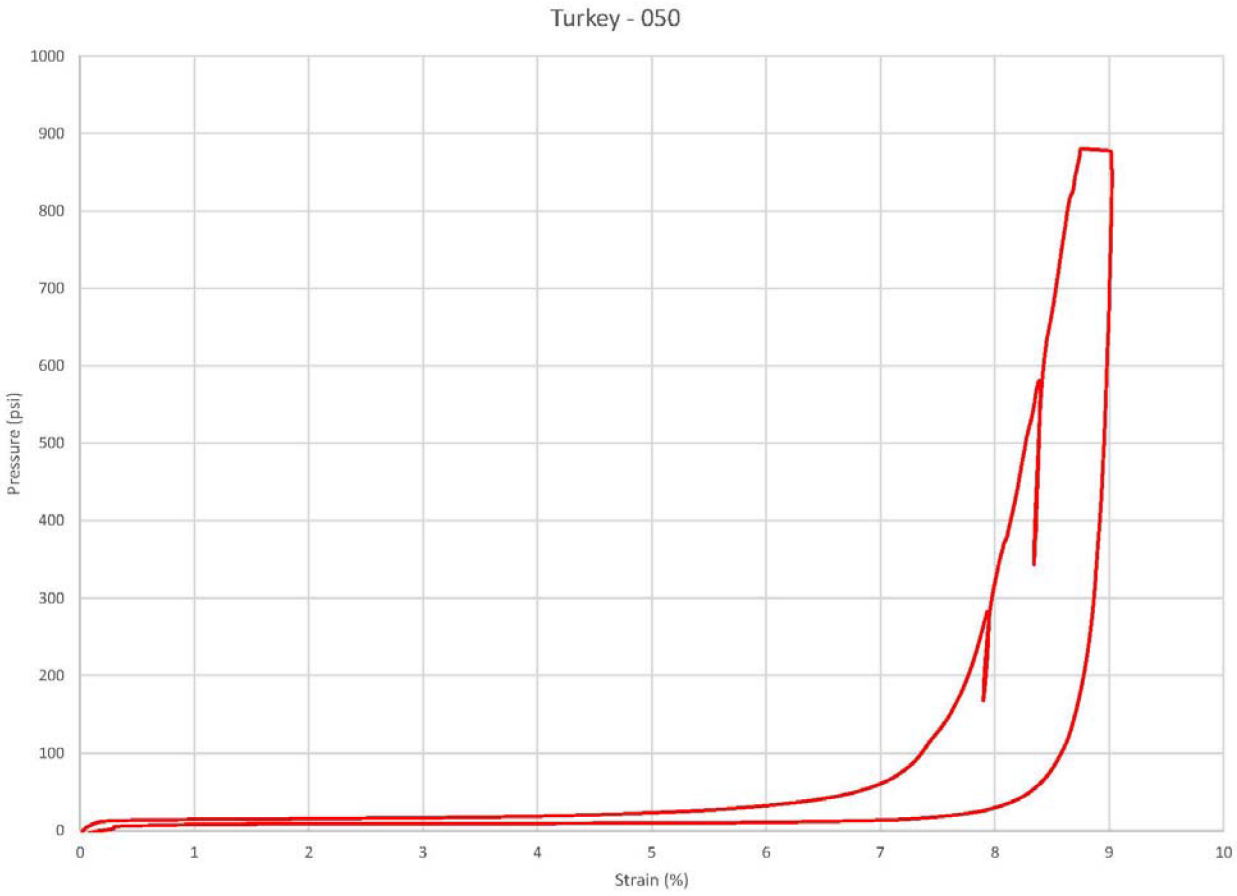


Figure 3 Example Limestone Curve, Turkey - 050

3.4 Standard Method of Analysis of the Shear Modulus

Following below, is the mathematical explanation from the reference cited at the end of the report. If the material surrounding the pressuremeter is assumed to extend to infinity, and assumed to behave as an idealized linear elastic, homogeneous material, which does not fail under shear or tension, then the displacement on the boundary of the pressuremeter, u_a, for a given pressure, P, is given by:

$$u_a = P(a)\,(1+\mu) / E \qquad 1)$$

where "E" is the Young's Modulus, "a" the radius of the pressuremeter cavity, and "μ" the Poisson's ratio. As the shear modulus, "G", and the Young's modulus, "E", are related by the following relationship:

$$E=2(G)(1+\mu) \qquad 2)$$

Equation 1 reduces to:

$$u_a = 0.5P(a) / G \qquad 3)$$

Hence, the shear modulus G is given by:

$$G = 0.5 * \Delta \text{ Pressure} / \Delta(\text{radial displacement/radius}) \qquad 4)$$

The modulus for the average slope of the initial part of the pressuremeter curve expressed as a Young's modulus (assuming a Poisson's ratio of 0.33) is the same as the "pressuremeter modulus" defined in the American Society for Testing and Materials (ASTM) D4719, Section 10.5. In many tests a straight section in this part of the curve is not well-defined to enable the modulus to be determined.

The shear modulus determined from the unload-reload loops, which is often higher than the initial loading shear modulus, is more accurately defined and is more representative of the shear modulus for the *in-situ* material. Figure 4, shown below, is Turkey-080 at a depth of 166.0 feet in borehole R–7–2. The moduli values are as follows: 5175 psi for an initial shear modulus and 20,740, 23,600, and 26,665 psi for unload-reload loop shear modulus. This data is summarized in Table 2 at the end of the report.

File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 080	Lower Tamiami	5175	20740	23600	26665		

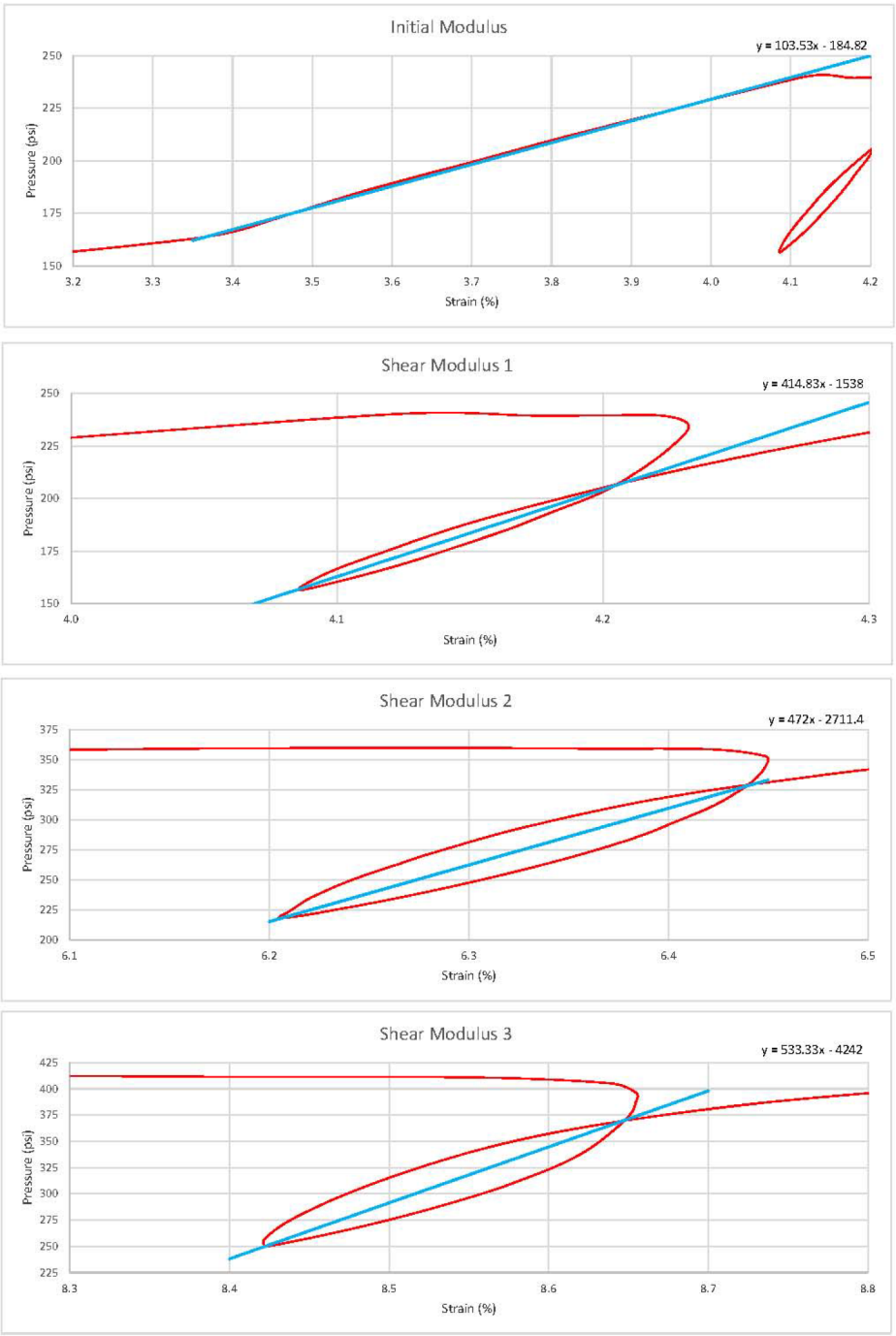


Figure 4 Shear Modulus, Turkey - 080

5.0 CONCLUSIONS

In conclusion, the testing program was successful with approximately 2/3 of the pressuremeter test attempts able to be analyzed, for a total of 23 tests in the limestone (Key Largo, and Fort Thompson) and 34 tests in the sand layers (Upper Tamiami, Lower Tamiami, and Peace River). Where the quality of the test pocket was high, useful and representative results were obtained.

6.0 REFERENCES

Mair, R.J. and Wood, D.M. 1987. Pressuremeter testing: methods and interpretation. CIRIA Ground Engineering Report. Butterworths, London.

ASTM D4719. 2007. Standard tests method for pressuremeter testing in soils.

Appendix I Pressuremeter Data Tables

Table 1 – Test Depths and Material Description

Test:	Bore Hole:	Test Depth (ft):	Formation:	Air Correction:	Tube Correction:
Turkey – 001	R – 6 – 2	028.9	Key Largo	M5A0813A	M5T0813A
Turkey – 002	R – 6 – 2	034.0	Key Largo	M5A0813A	M5T0813A
Turkey – 003	R – 6 – 2	032.5	Key Largo	M5A0813A	M5T0813A
Turkey – 004	R – 6 – 2	041.0	Key Largo	M5A0813A	M5T0813A
Turkey – 005	R – 6 – 2	046.0	Key Largo	M5A0826A	M5T0826A
Turkey – 006	R – 6 – 2	044.5	Key Largo	M5A0826A	M5T0826A
Turkey – 007	R – 6 – 2	050.5	Fort Thompson	M5A0826A	M5T0826A
Turkey – 008	R – 6 – 2	049.0	Fort Thompson	M5A0826A	M5T0826A
Turkey – 009	R – 6 – 2	056.0	Fort Thompson	M5A0826A	M5T0826A
Turkey – 010	R – 6 – 2	054.0	Fort Thompson	M5A0826A	M5T0826A
Turkey – 011	R – 6 – 2	060.5	Fort Thompson	M5A0827A	M5T0827A
Turkey – 012	R – 6 – 2	066.0	Fort Thompson	M5A0827A	M5T0827A
Turkey – 013	R – 6 – 2	064.0	Fort Thompson	M5A0827A	M5T0827A
Turkey – 014	R – 6 – 2	074.2	Fort Thompson	M5A0827A	M5T0827A
Turkey – 015	R – 6 – 2	084.5	Fort Thompson	M5A0827B	M5T0827B
Turkey – 016	R – 6 – 2	083.0	Fort Thompson	M5A0827B	M5T0827B
Turkey – 017	R – 6 – 2	093.6	Fort Thompson	M5A0827B	M5T0827B
Turkey – 018	R – 6 – 2	094.5	Fort Thompson	M4A0828A	M4T0828A
Turkey – 019	R – 6 – 2	097.6	Fort Thompson	M4A0828A	M4T0828A
Turkey – 020	R – 6 – 2	096.1	Fort Thompson	M4A0828A	M4T0828A
Turkey – 021	R – 6 – 2	105.5	Fort Thompson	M4A0829A	M4T0829A
Turkey – 022	R – 6 – 2	126.7	Upper Tamiami	M4A0829A	M4T0829A
Turkey – 023	R – 6 – 2	124.7	Upper Tamiami	M4A0829A	M4T0829A
Turkey – 024	R – 6 – 2	131.0	Upper Tamiami	M4A0829A	M4T0829A
Turkey – 025	R – 6 – 2	134.5	Upper Tamiami	M4A0829A	M4T0829A
Turkey – 026	R – 6 – 2	143.7	Upper Tamiami	M4A0829A	M4T0829A
Turkey – 027	R – 6 – 2	142.2	Upper Tamiami	M4A0829A	M4T0829A
Turkey – 028	R – 6 – 2	162.0	Lower Tamiami	M4A0829A	M4T0829A
Turkey – 029	R – 6 – 2	170.0	Lower Tamiami	M4A0829A	M4T0829A
Turkey – 030	R – 6 – 2	168.5	Lower Tamiami	M4A0829A	M4T0829A
Turkey – 031	R – 6 – 2	178.0	Lower Tamiami	M4A0829A	M4T0829A
Turkey – 032	R – 6 – 2	183.0	Lower Tamiami	M4A0829A	M4T0829A
Turkey – 033	R – 6 – 2	181.5	Lower Tamiami	M4A0829A	M4T0829A
Turkey – 034	R – 6 – 2	192.0	Lower Tamiami	M4A0829A	M4T0829A
Turkey – 035	R – 6 – 2	190.0	Lower Tamiami	M4A0829A	M4T0829A
Turkey – 036	R – 6 – 2	195.0	Lower Tamiami	M5A0827B	M5T0827B

Turkey – 037	R – 6 – 2	204.0	Lower Tamiami	M5A0827B	M5T0827B
Turkey – 038	R – 6 – 2	212.0	Lower Tamiami	M5A0827B	M5T0827B
Turkey – 039	R – 6 – 2	226.0	Peace River	M5A0827B	M5T0827B
Turkey – 040	R – 6 – 2	231.3	Peace River	M5A0827B	M5T0827B
Turkey – 041	R – 6 – 2	269.2	Peace River	M5A0905A	M5T0905A
Turkey – 042	R – 6 – 2	279.0	Peace River	M5A0905A	M5T0905A
Turkey – 043	R – 6 – 2	276.0	Peace River	M5A0905A	M5T0905A
Turkey – 044	R – 6 – 2	316.0	Peace River	M5A0905A	M5T0905A
Turkey – 045	R – 6 – 2	314.0	Peace River	M5A0905A	M5T0905A
Turkey – 046	R – 6 – 2	316.0	Peace River	M5A0905A	M5T0905A
Turkey – 047	R – 6 – 2	327.7	Peace River	M5A0905A	M5T0905A
Turkey – 048	R – 6 – 2	325.7	Peace River	M5A0905A	M5T0905A
Turkey – 049	R – 7 – 2	031.8	Key Largo	M5A0905A	M5T0905A
Turkey – 050	R – 7 – 2	030.5	Key Largo	M5A0911A	M5T0911A
Turkey – 051	R – 7 – 2	034.5	Key Largo	M5A0911A	M5T0911A
Turkey – 052	R – 7 – 2	041.1	Key Largo	M5A0911A	M5T0911A
Turkey – 053	R – 7 – 2	039.6	Key Largo	M5A0911A	M5T0911A
Turkey – 054	R – 6 – 1b	035.0	Key Largo	M5A0911A	M5T0911A
Turkey – 055	R – 6 – 1b	033.5	Key Largo	M5A0911A	M5T0911A
Turkey – 056	R – 7 – 2	048.0	Fort Thompson	M5A0911A	M5T0911A
Turkey – 057	R – 7 – 2	046.5	Fort Thompson	M5A0911A	M5T0911A
Turkey – 058	R – 6 – 1b	044.5	Key Largo	M5A0911A	M5T0911A
Turkey – 059	R – 7 – 2	051.6	Fort Thompson	M5A0912A	M5T0912A
Turkey – 060	R – 7 – 2	056.7	Fort Thompson	M5A0912A	M5T0912A
Turkey – 061	R – 7 – 2	069.0	Fort Thompson	M6A0913A	M6T0913A
Turkey – 062	R – 7 – 2	072.0	Fort Thompson	M6A0913A	M6T0913A
Turkey – 063	R – 7 – 2	072.0	Fort Thompson	M6A0913A	M6T0913A
Turkey – 064	R – 7 – 2	078.0	Fort Thompson	M6A0913A	M6T0913A
Turkey – 065	R – 7 – 2	076.5	Fort Thompson	M6A0913A	M6T0913A
Turkey – 066	R – 7 – 2	094.0	Fort Thompson	M6A0913A	M6T0913A
Turkey – 067	R – 7 – 2	128.0	Upper Tamiami	M6A0916A	M6T0916A
Turkey – 068	R – 7 – 2	126.0	Upper Tamiami	M6A0916A	M6T0916A
Turkey – 069	R – 7 – 2	124.0	Upper Tamiami	M6A0916A	M6T0916A
Turkey – 070	R – 7 – 2	134.5	Upper Tamiami	M6A0916A	M6T0916A
Turkey – 071	R – 7 – 2	132.5	Upper Tamiami	M6A0916A	M6T0916A
Turkey – 072	R – 7 – 2	141.5	Upper Tamiami	M6A0916A	M6T0916A
Turkey – 073	R – 7 – 2	139.5	Upper Tamiami	M6A0916A	M6T0916A
Turkey – 074	R – 6 – 1b	139.5	Upper Tamiami	M6A0916A	M6T0916A
Turkey – 075	R – 7 – 2	144.0	Upper Tamiami	M6A0916A	M6T0916A
Turkey – 076	R – 6 – 1b	156.3	Upper Tamiami	M6A0916A	M6T0916A
Turkey – 077	R – 6 – 1b	154.8	Upper Tamiami	M6A0916A	M6T0916A
Turkey – 078	R – 7 – 2	156.5	Upper Tamiami	M6A0916A	M6T0916A
Turkey – 079	R – 7 – 2	154.5	Upper Tamiami	M6A0916A	M6T0916A
Turkey – 080	R – 7 – 2	166.0	Lower Tamiami	M6A0916A	M6T0916A

Turkey – 081	R – 7 – 2	164.0	Lower Tamiami	M6A0916A	M6T0916A
Turkey – 082	R – 7 – 2	174.5	Lower Tamiami	M6A0916A	M6T0916A
Turkey – 083	R – 7 – 2	172.5	Lower Tamiami	M6A0916A	M6T0916A
Turkey – 084	R – 7 – 2	182.5	Lower Tamiami	M6A0916A	M6T0916A
Turkey – 085	R – 7 – 2	180.5	Lower Tamiami	M6A0916A	M6T0916A
Turkey – 086	R – 7 – 2	190.0	Lower Tamiami	M6A0916A	M6T0916A
Turkey – 087	R – 7 – 2	188.0	Lower Tamiami	M6A0916A	M6T0916A
Turkey – 088	R – 7 – 2	199.0	Lower Tamiami	M6A0916A	M6T0916A
Turkey – 089	R – 7 – 2	197.0	Lower Tamiami	M6A0916A	M6T0916A
Turkey – 090	R – 7 – 2	210.0	Lower Tamiami	M6A0916A	M6T0916A
Turkey – 091	R – 7 – 2	208.0	Lower Tamiami	M6A0916A	M6T0916A
Turkey – 092	R – 7 – 2	229.9	Peace River	M6A0916A	M6T0916A
Turkey – 093	R – 7 – 2	227.9	Peace River	M6A0916A	M6T0916A
Turkey – 094	R – 7 – 2	276.0	Peace River	M6A0916A	M6T0916A
Turkey – 095	R – 7 – 2	274.5	Peace River	M6A0916A	M6T0916A
Turkey – 096	R – 7 – 2	304.0	Peace River	M6A0916A	M6T0916A

- Formation names are based on the Work Plan provide at the time of testing.

Table 2 – Shear Moduli Values

		Shear Modulus (psi)					
Test	Formation	Initial	Loop1	Loop2	Loop3	Loop4	Loop5
Turkey – 001	KL	Oversize hole					
Turkey – 002	KL	Oversize hole					
Turkey – 003	KL	Oversize hole					
Turkey – 004	KL	94,285	108,335	312,500	-	-	-
Turkey – 005	KL	40,000	67,855	-	-	-	-
Turkey – 006	KL	Oversize hole					
Turkey – 007	FT	85,290	163,590	349,725	540,900	-	-
Turkey – 008	FT	Oversize hole					
Turkey – 009	FT	29,663	195,740	-	-	-	-
Turkey – 010	FT	181,250	-	-	-	302,525	554,000
Turkey – 011	FT	Oversize hole					
Turkey – 012	FT	5,479	45,993	92,230	-	-	-
Turkey – 013	FT	11,976	-	50,820	97,370	-	-
Turkey – 014	FT	12,250	55,000	96,665	-	-	-
Turkey – 015	FT	1,441	4,250	Oversized Hole – Probably not representative			
Turkey – 016	FT	2,711	Oversized Hole – Probably not representative				
Turkey – 017	FT	Oversize hole					
Turkey – 018	FT	Oversize hole					
Turkey – 019	FT	21,700	56,875	223,950	368,650	418,750	-
Turkey – 020	FT	20,390	-	-	86,875	-	-
Turkey – 021	FT	9,067	-	56,665	153,000	-	-
Turkey – 022	UT	Oversize hole					
Turkey – 023	UT	Oversize hole					
Turkey – 024	UT	Oversize hole					
Turkey – 025	UT	631	722	Oversized Hole – Probably not representative			
Turkey – 026	UT	1,552	-	7,909	14,022	-	-
Turkey – 027	UT	1,626	-	3,212	-	-	-
Turkey – 028	LT	Oversize hole					
Turkey – 029	LT	2,854	12,500	21,674	-	-	-
Turkey – 030	LT	3,012	17,500	20,800	-	-	-
Turkey – 031	LT	Oversize hole					
Turkey – 032	LT	4,690	11,477	27,175	38,585	-	-
Turkey – 033	LT	550	1,791	Oversize Hole – Probably not representative			
Turkey – 034	LT	5,110	12,614	25,809	29,621	-	-
Turkey – 035	LT	2,881	13,254	21,506	22,660	-	-
Turkey – 036	LT	2,395	7,525	21,000	-	-	-
Turkey – 037	LT	Oversize hole					
Turkey – 038	LT	Oversize hole					
Turkey – 039	PR	Oversize hole					

Turkey – 040	PR	35,850	110,000	187,500	161,110	-	-
Turkey – 041	PR	Oversize hole					
Turkey – 042	PR	Oversize hole					
Turkey – 043	PR	2,571	2,871	Oversized Hole – Probably no representative			
Turkey – 044*	PR	Oversize hole					
Turkey – 045*	PR	Oversize hole					
Turkey – 046*	PR	Oversize hole					
Turkey – 047*	PR	5,750	6,650	7,450	7,000	-	-
Turkey – 048*	PR	Oversize hole					
Turkey – 049	KL	76,055	-	162,550	418,740	739,450	-
Turkey – 050	KL	30,652	107,500	186,205	-	-	-
Turkey – 051	KL	26,755	54,050	-	-	-	-
Turkey – 052	KL	21,945	75,500	-	-	-	-
Turkey – 053	KL	28,182	95,250	-	-	-	-
Turkey – 054	KL	1,505	-	12,889	-	-	-
Turkey – 055	KL	Oversize hole					
Turkey – 056	FT	16,250	20,375	107,335	-	-	-
Turkey – 057	FT	Oversize hole					
Turkey – 058	KL	113,335	-	143,335	205,000	-	-
Turkey – 059	FT	160,000	-	-	177,500	-	-
Turkey – 060	FT	83,335	-	115,000	170,000	-	-
Turkey – 061	FT	3,500	23,250	Oversized Hole – Probably not representative			
Turkey – 062	FT	Oversize hole					
Turkey – 063	FT	Oversize hole					
Turkey – 064	FT	30,000	45,250	134,250	-	-	-
Turkey – 065	FT	Oversize hole					
Turkey – 066	FT	18,635	46,000	105,000	-	-	-
Turkey – 067	UT	680	1,625	3,540	-	-	-
Turkey – 068	UT	815	3,350	-	-	-	-
Turkey – 069	UT	Oversize hole					
Turkey – 070	UT	Oversize hole					
Turkey – 071	UT	Oversize hole					
Turkey – 072	UT	7,690	-	10,600	14,500	-	-
Turkey – 073	UT	1,280	6,150	17,300	15,815	-	-
Turkey – 074	UT	610	3,400	Values may not be representative			
Turkey – 075	UT	Oversize hole					
Turkey – 076	UT	1,690	6,500	14,125	-	-	-
Turkey – 077	UT	1,065	4,870	-	-	-	-
Turkey – 078	UT	2,070	-	7,500	-	-	-
Turkey – 079	UT	3,500	13,125	-	-	-	-
Turkey – 080	LT	5,175	20,740	23,600	26,665	-	-
Turkey – 081	LT	Oversize hole					
Turkey – 082	LT	14,475	20,000	19,700	-	-	-
Turkey – 083	LT	4,290	16,110	26,400	27,000	-	-

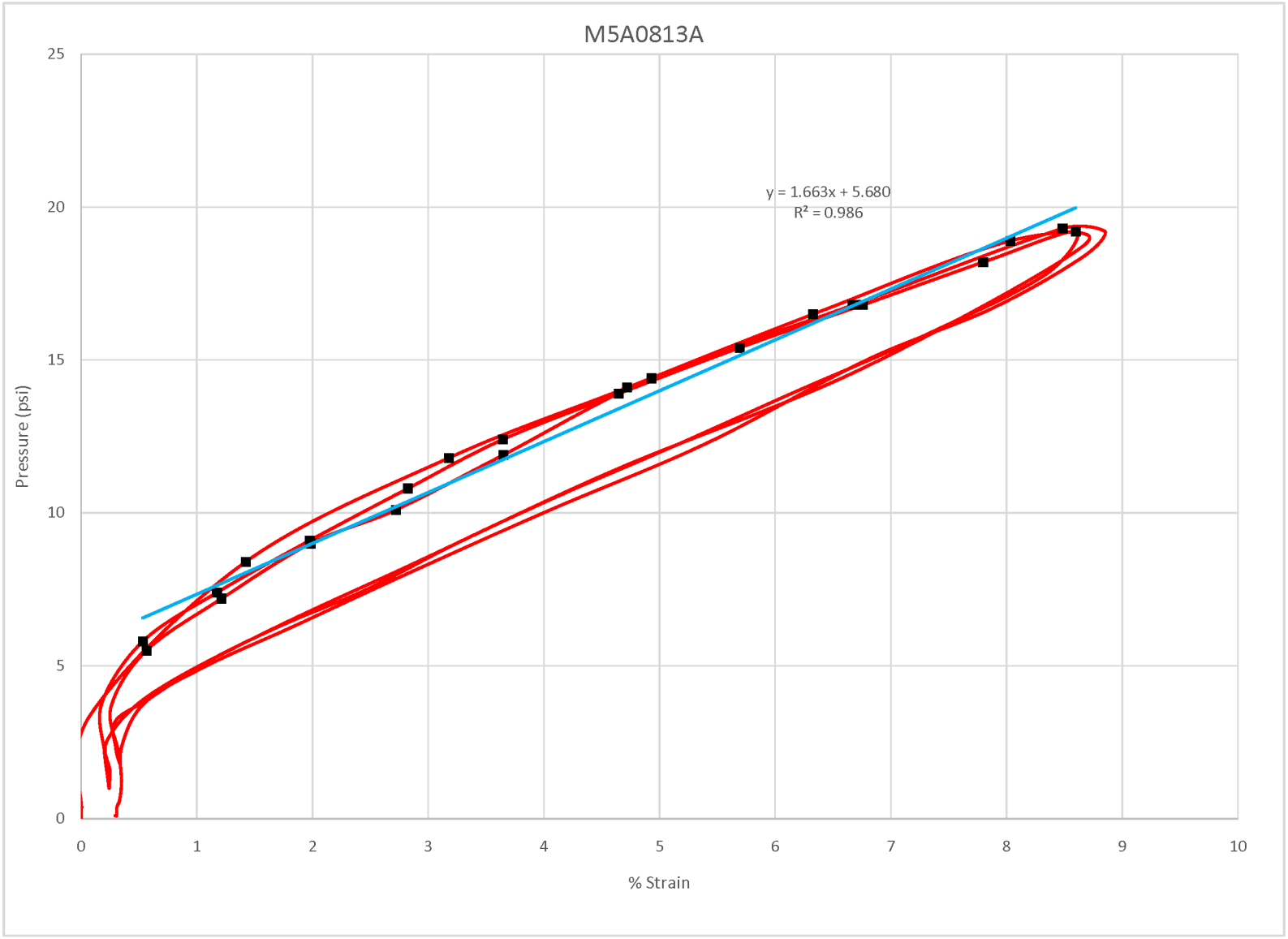
Turkey – 084	LT	6,000	28,000	29,090	30,385	-	-
Turkey – 085	LT	2,965	17,500	25,000	-	-	-
Turkey – 086	LT	4,000	19,000	23,835	27,000	-	-
Turkey – 087	LT	3,450	14,790	25,000	26,830	-	-
Turkey – 088	LT	3,550	19,750	-	-	-	-
Turkey – 089	LT	3,350	21,300	-	-	-	-
Turkey – 090	LT	5,455	30,000	44,100	-	-	-
Turkey – 091	LT	4,318	32,000	-	-	-	-
Turkey – 092	PR	10,313	35,278	65,360	-	-	-
Turkey – 093	PR	Oversize hole					
Turkey – 094	PR	11,325	18,428	29,481	29,759	-	-
Turkey – 095	PR	3,796	26,857	-	-	-	-
Turkey – 096	PR	2,625	9,863	15,125	19,500	-	-

Key:
KL = Key Largo
FT = Fort Thompson
LT = Lower Tamiami
UT = Upper Tamiami
PR = Peace River

* PMT curves are calculated with Arm2 and Arm3 ONLY

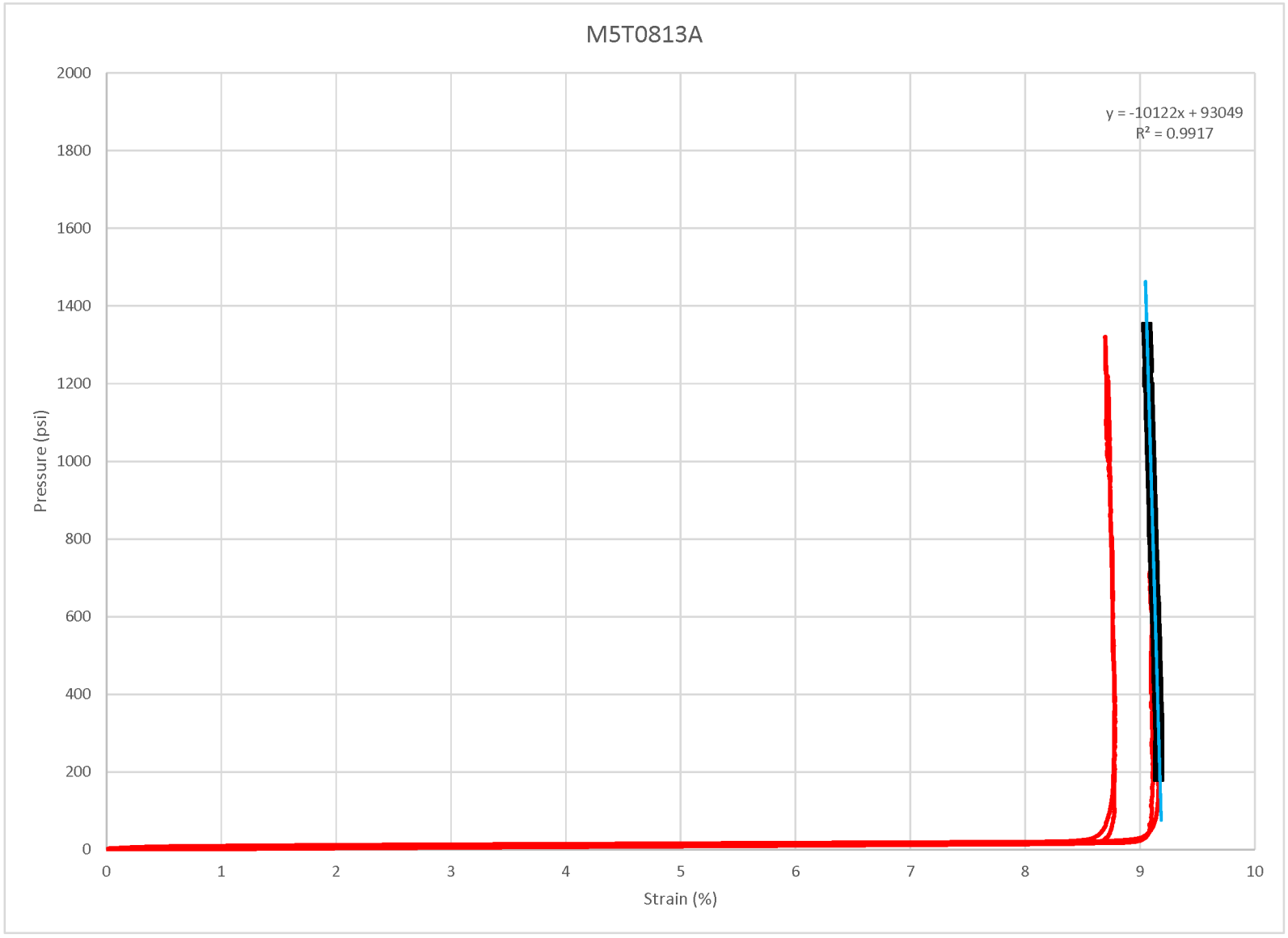
Appendix II Membrane Corrections

Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	M5A0813A.imp	Air	0ft



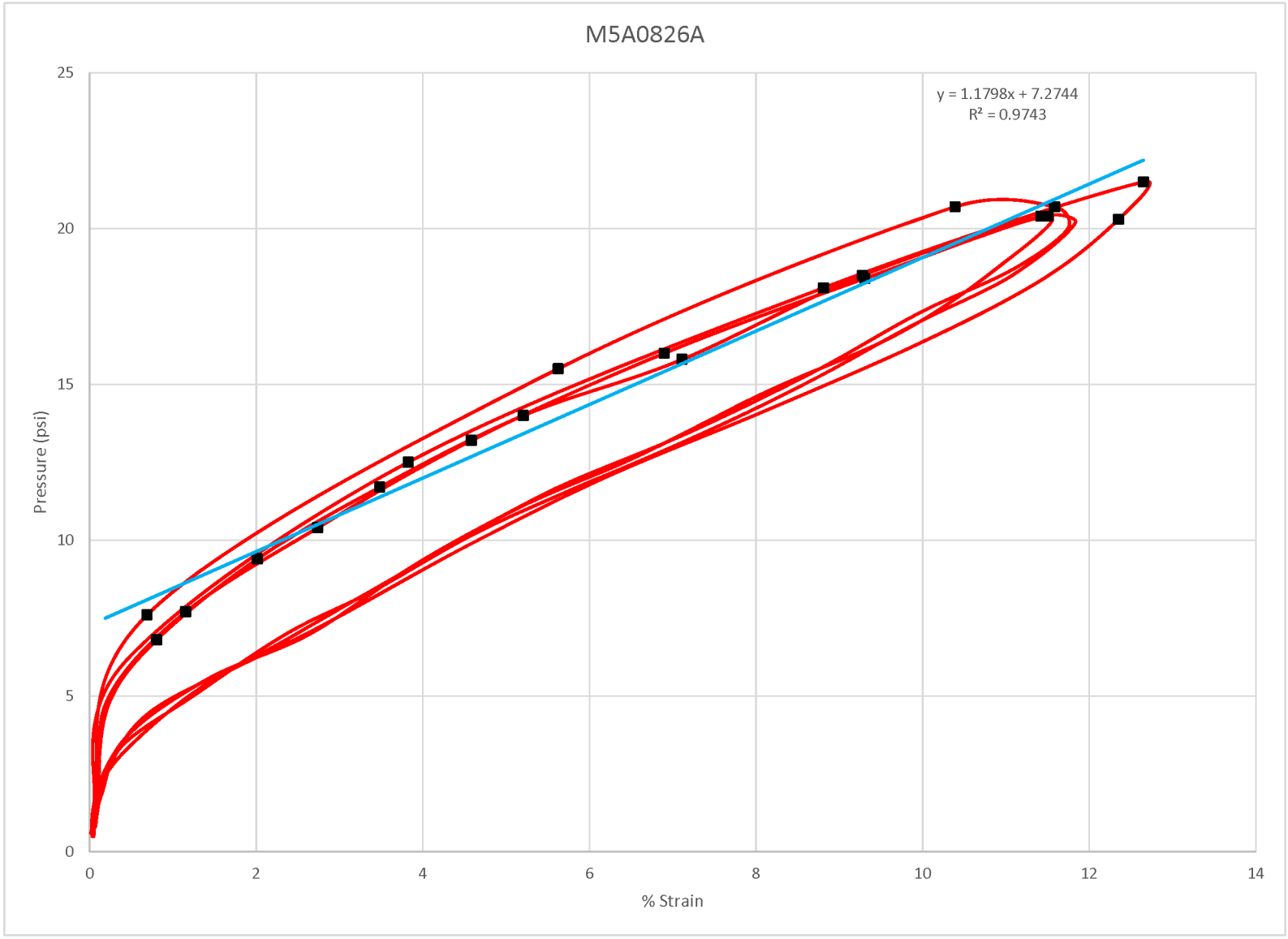
* Trend Line is base on the loading points indicated by the black squares.

Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	M5T0813A.imp	Tube	0ft



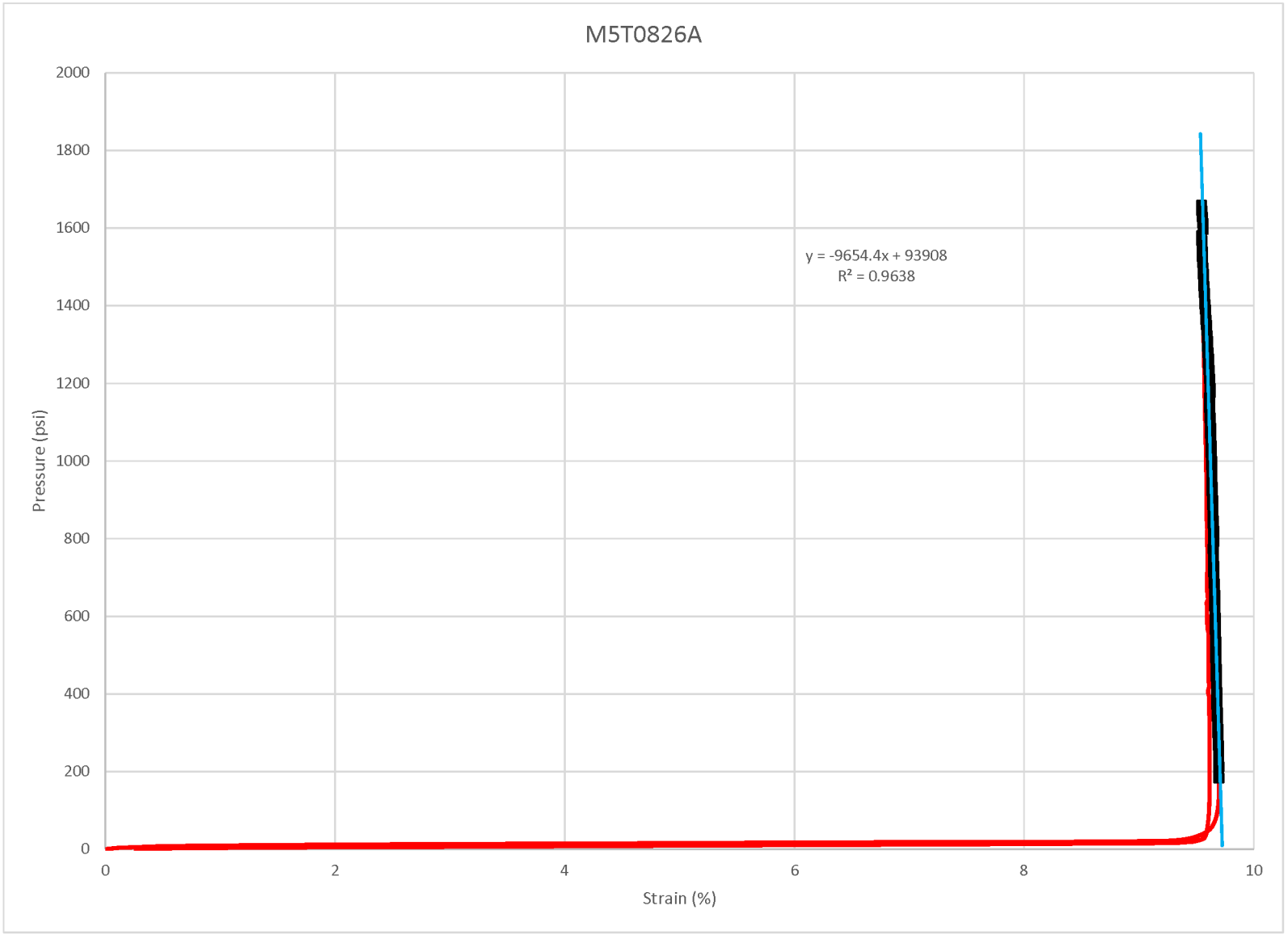
*Trend line based on loading points indicated by the black squares

Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	M5A0826A.imp	Air	0ft



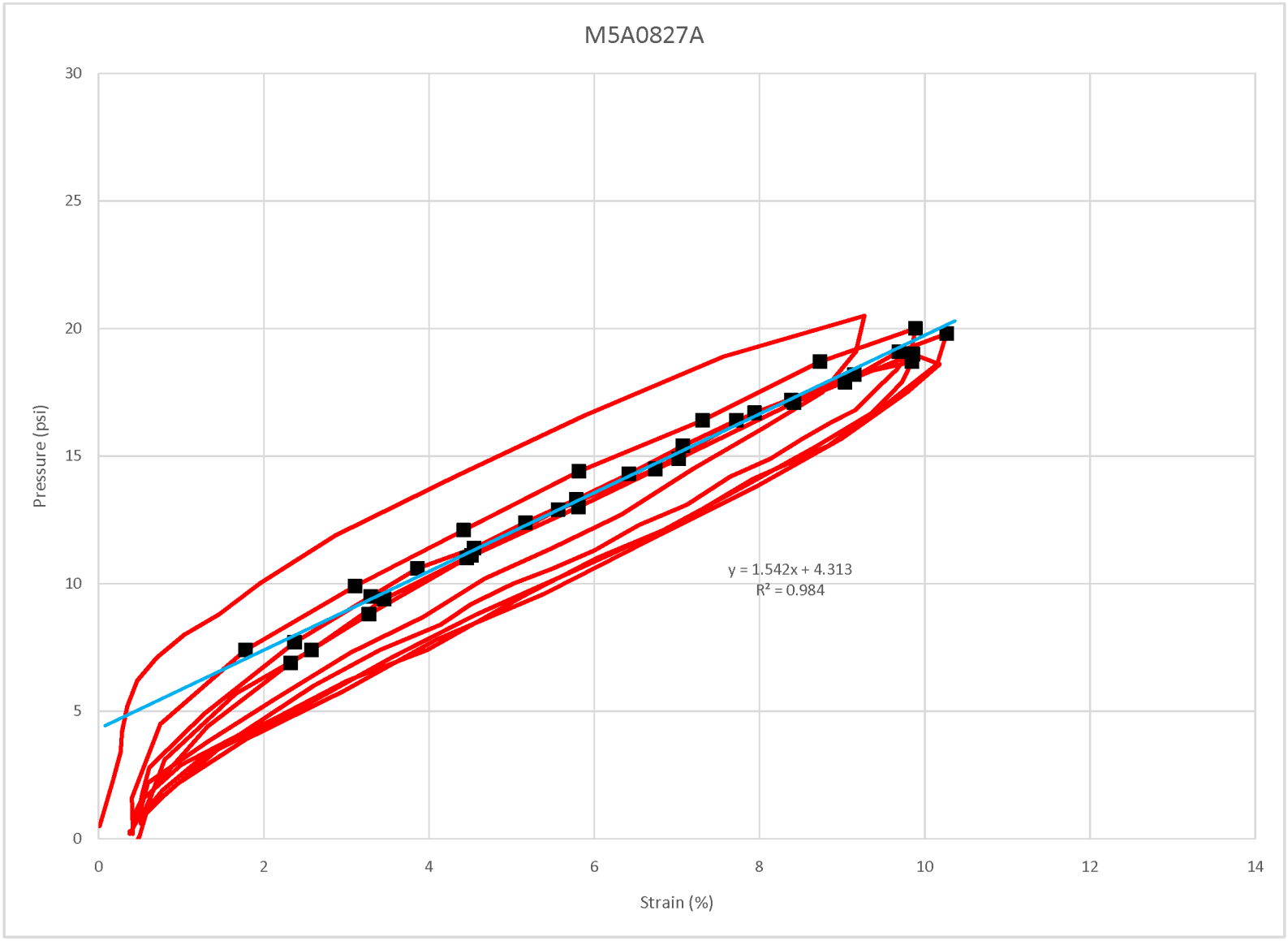
* Trend line is based on loading points indected by the black squares

Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	M5T0826A.imp	Tube	0ft



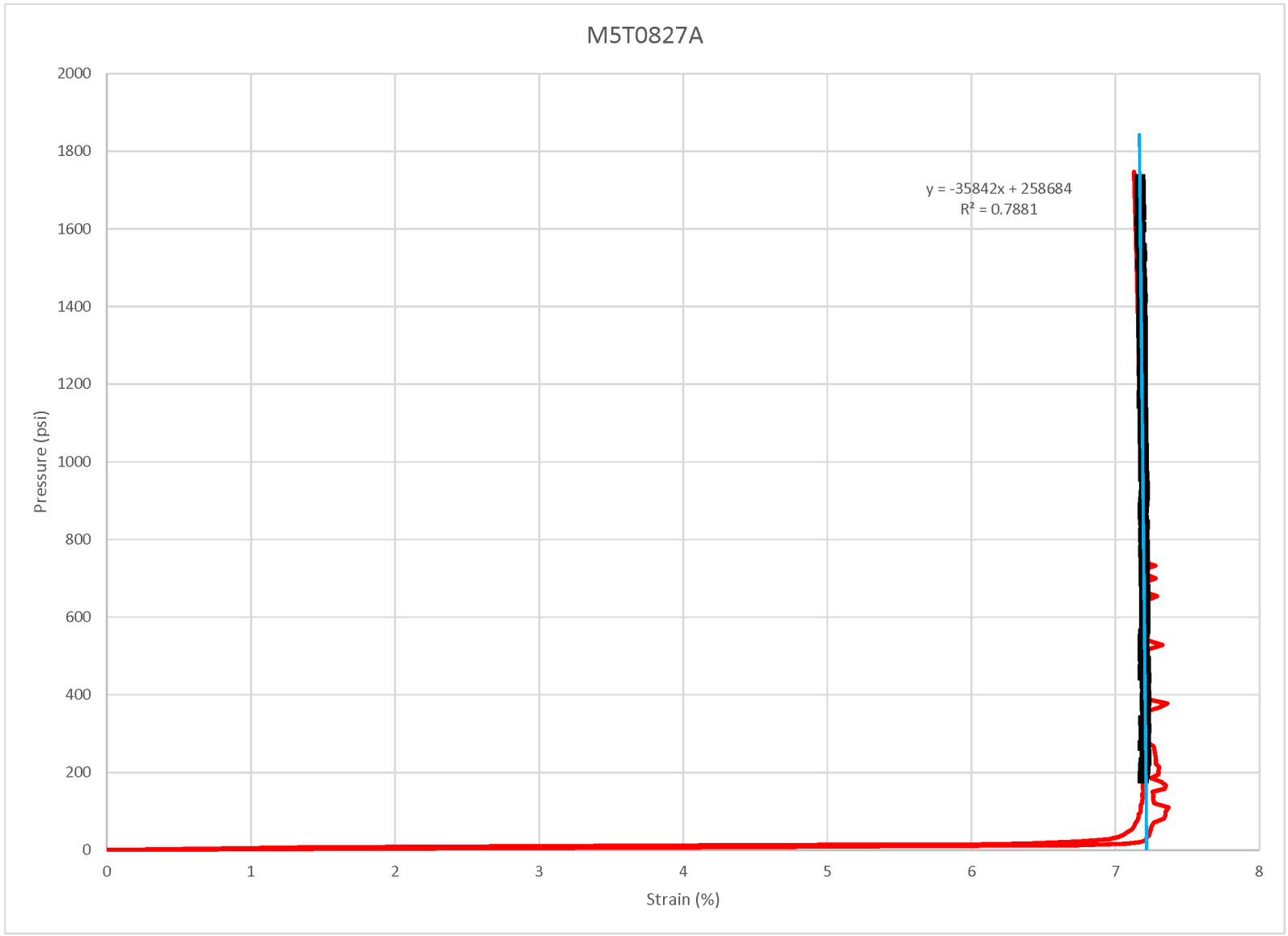
*Trend line based on loading points indicated by the black squares

Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	M5A0827A.imp	Air	0ft



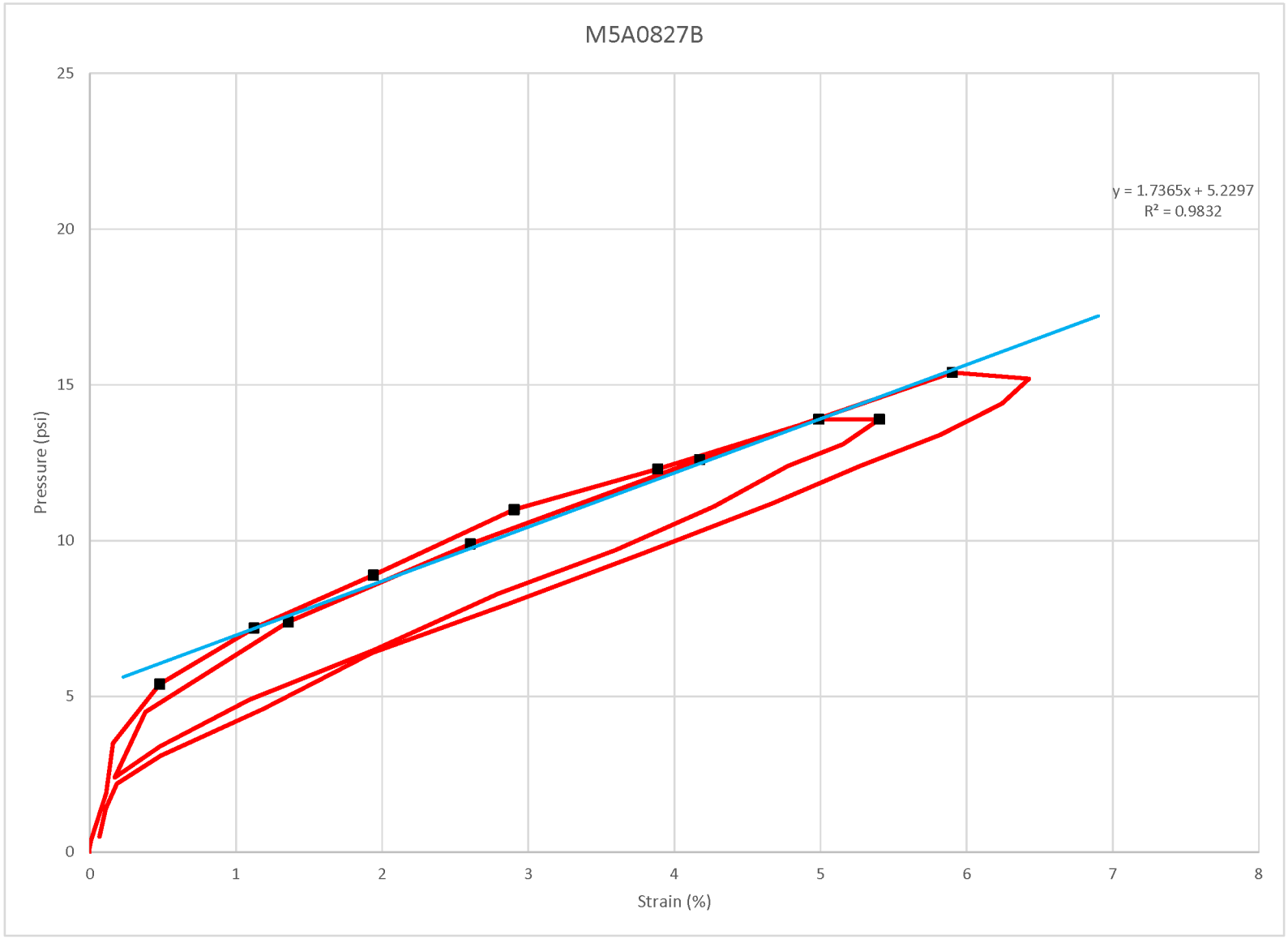
*Trendline is based on loading points indicated by the black squares.

Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	M5T0827A.imp	Tube	0ft



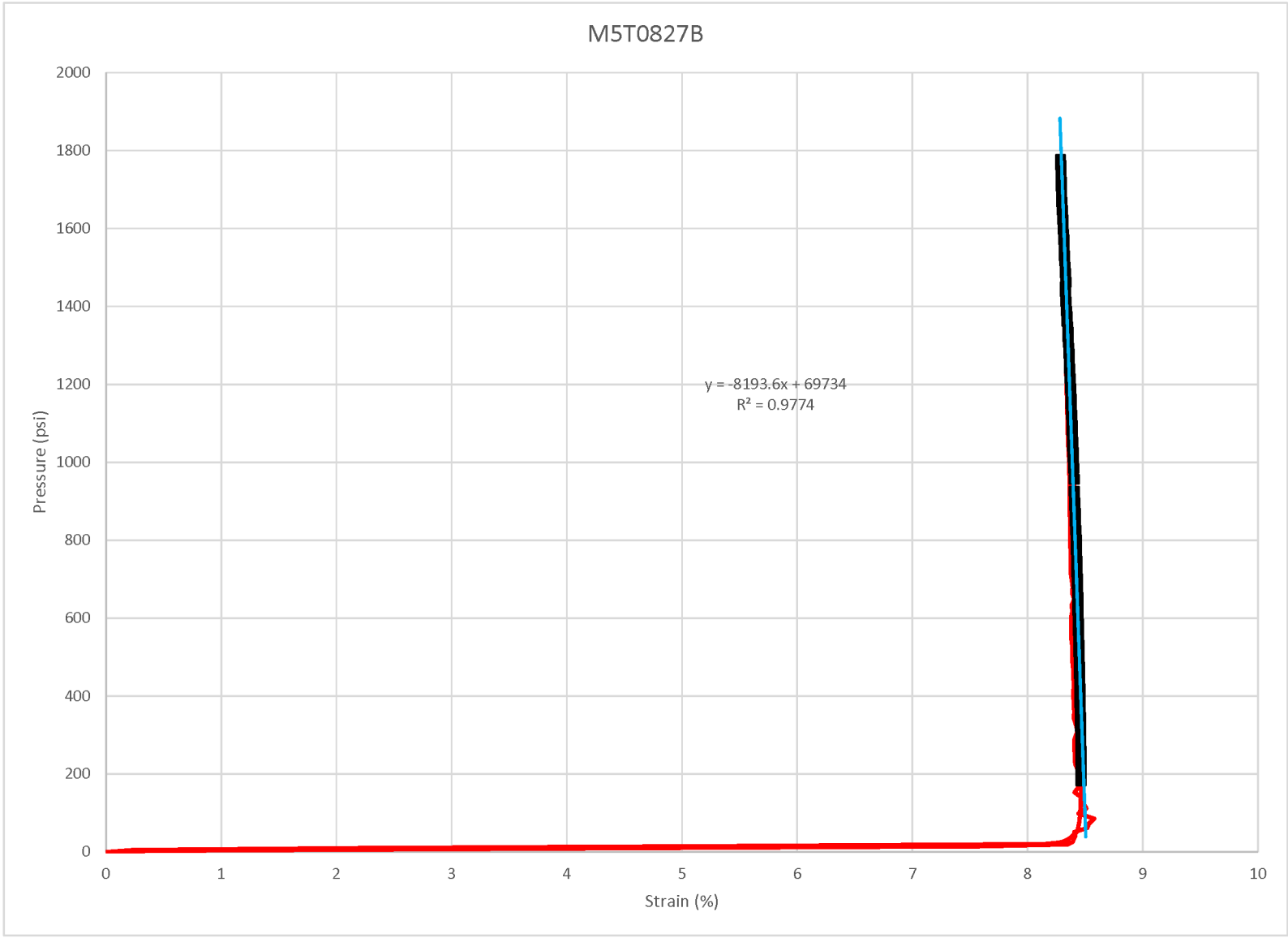
*Trend line based on loading points indicated by the black squares

Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	M5A0827B.imp	Air	0ft



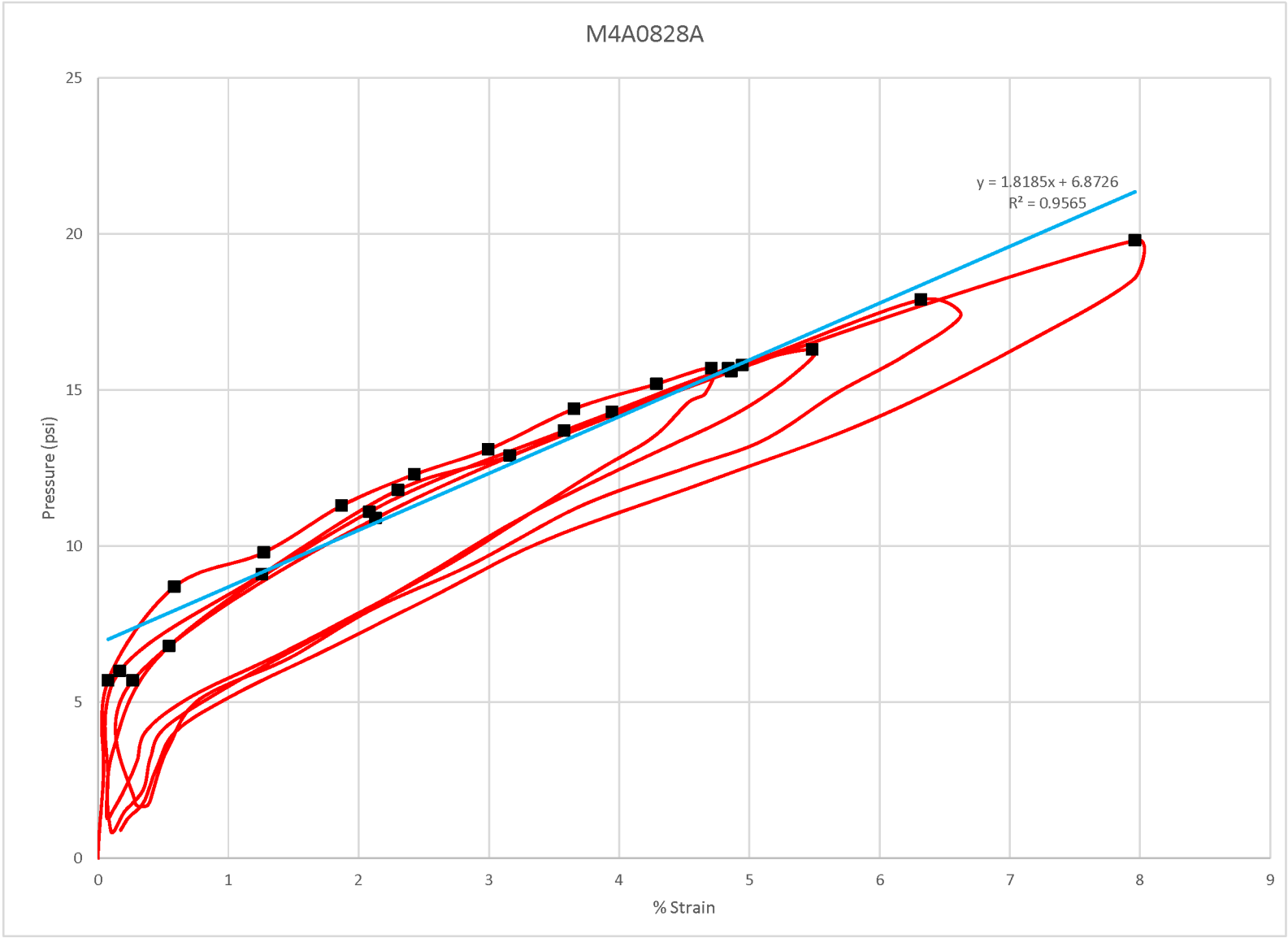
*Trend line based on loading points indicated by the black squares

Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	M5T0827B.imp	Tube	0ft



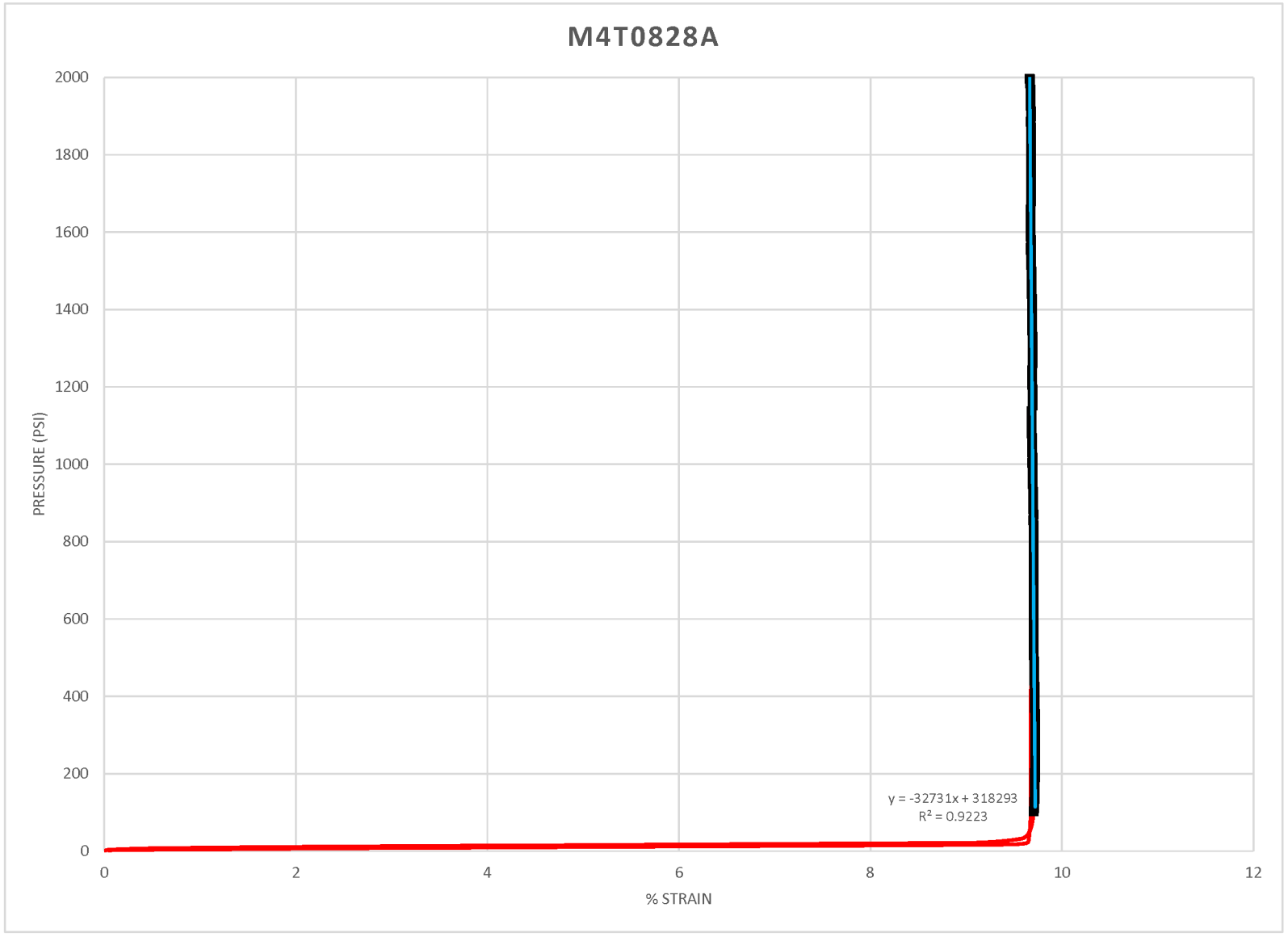
*Trend line based on loading points indicated by the black squares

Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth
Gerdes	4	1158	Turkey Point Nuclear	Paul Rizzo & Associates	M4A0828A.imp	Air	0ft



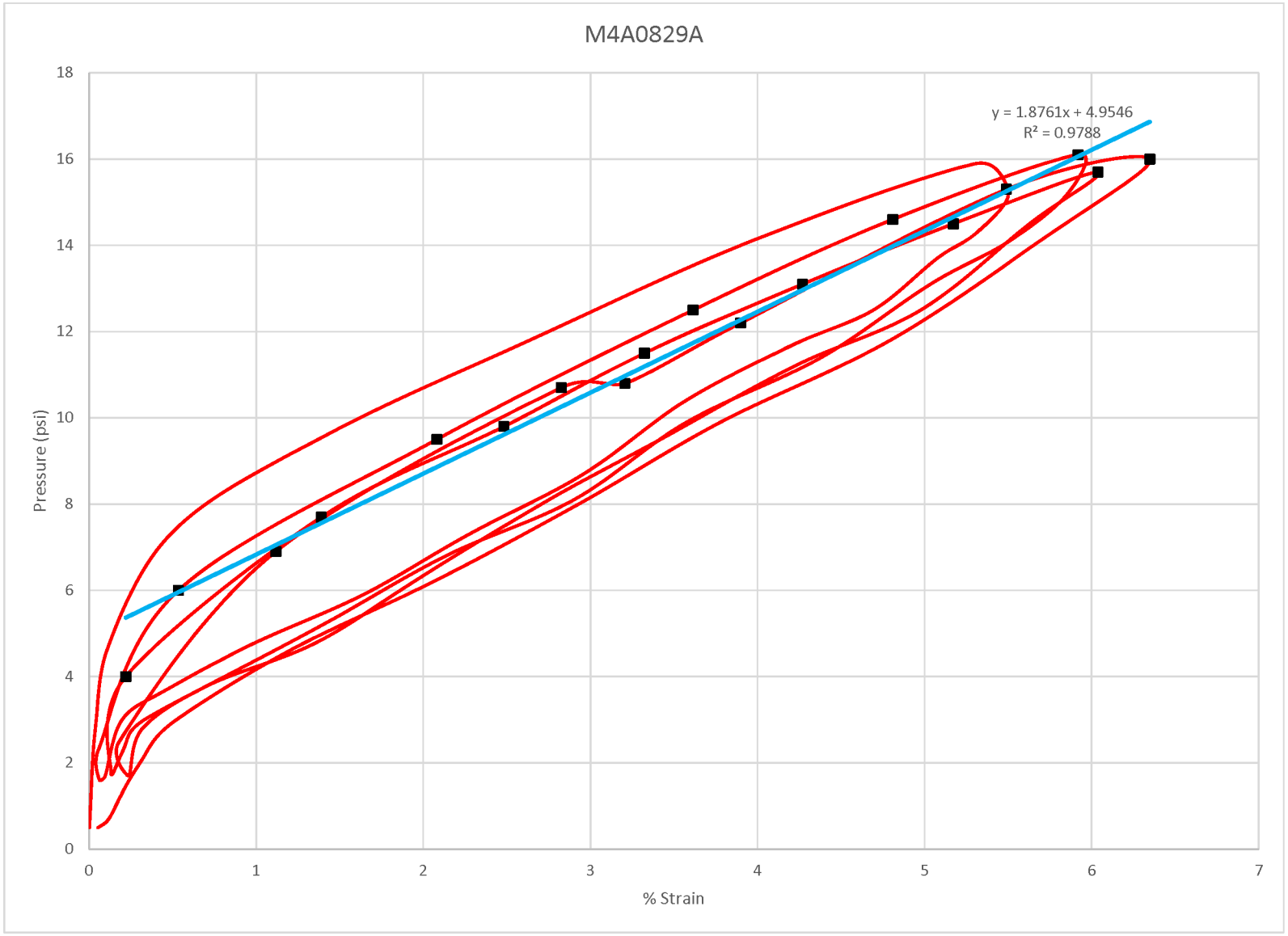
* Trend Line is base on the loading points indicated by the black squares.

Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth
Gerdes	4	1158	Turkey Point Nuclear	Paul Rizzo & Associates	M4T0828A.imp	Tube	0ft



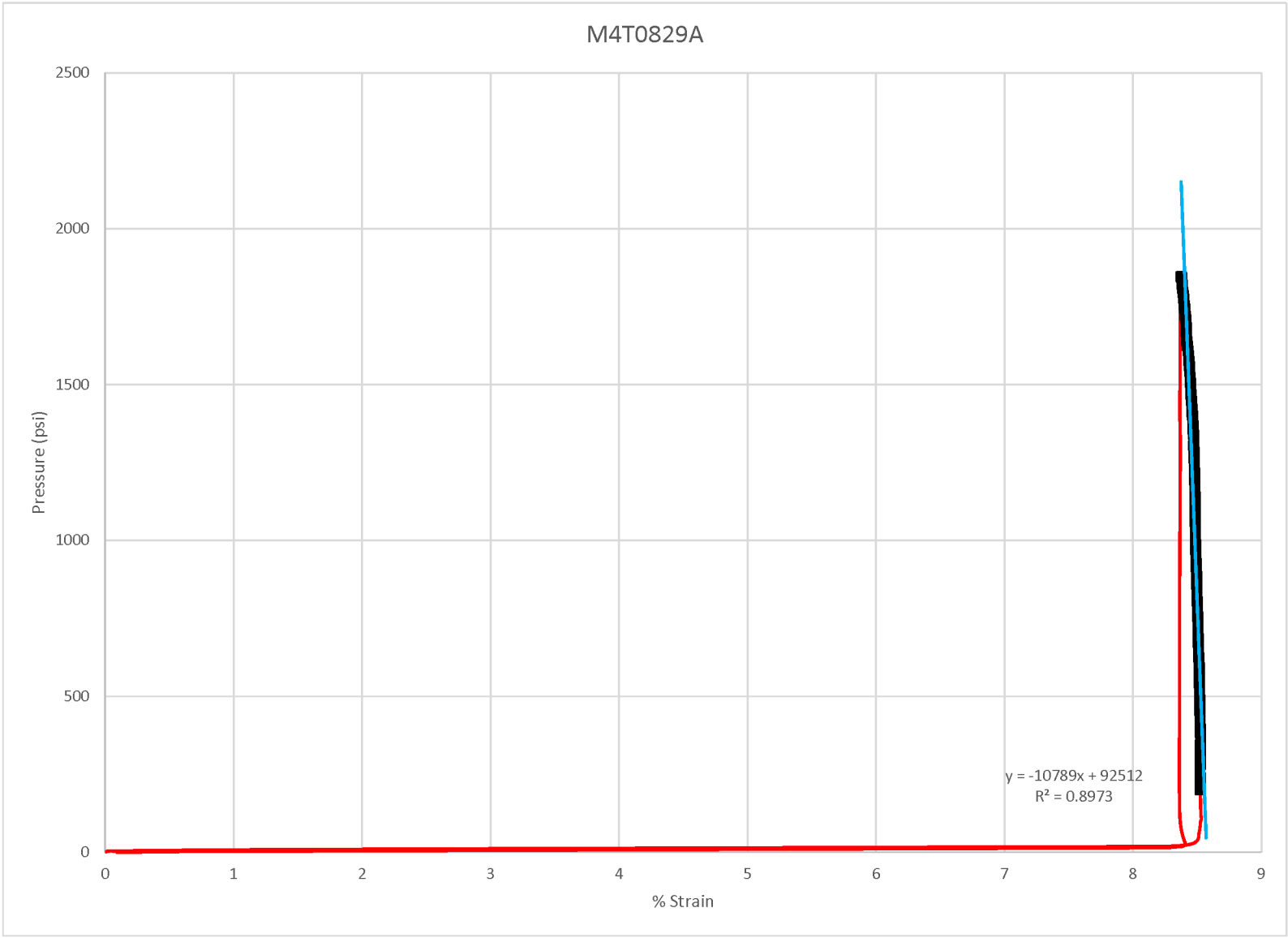
* Trend Line is base on the loading points indicated by the black squares.

Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth
Gerdes	4	1158	Turkey Point Nuclear	Paul Rizzo & Associates	M4A0829A.imp	Air	0ft



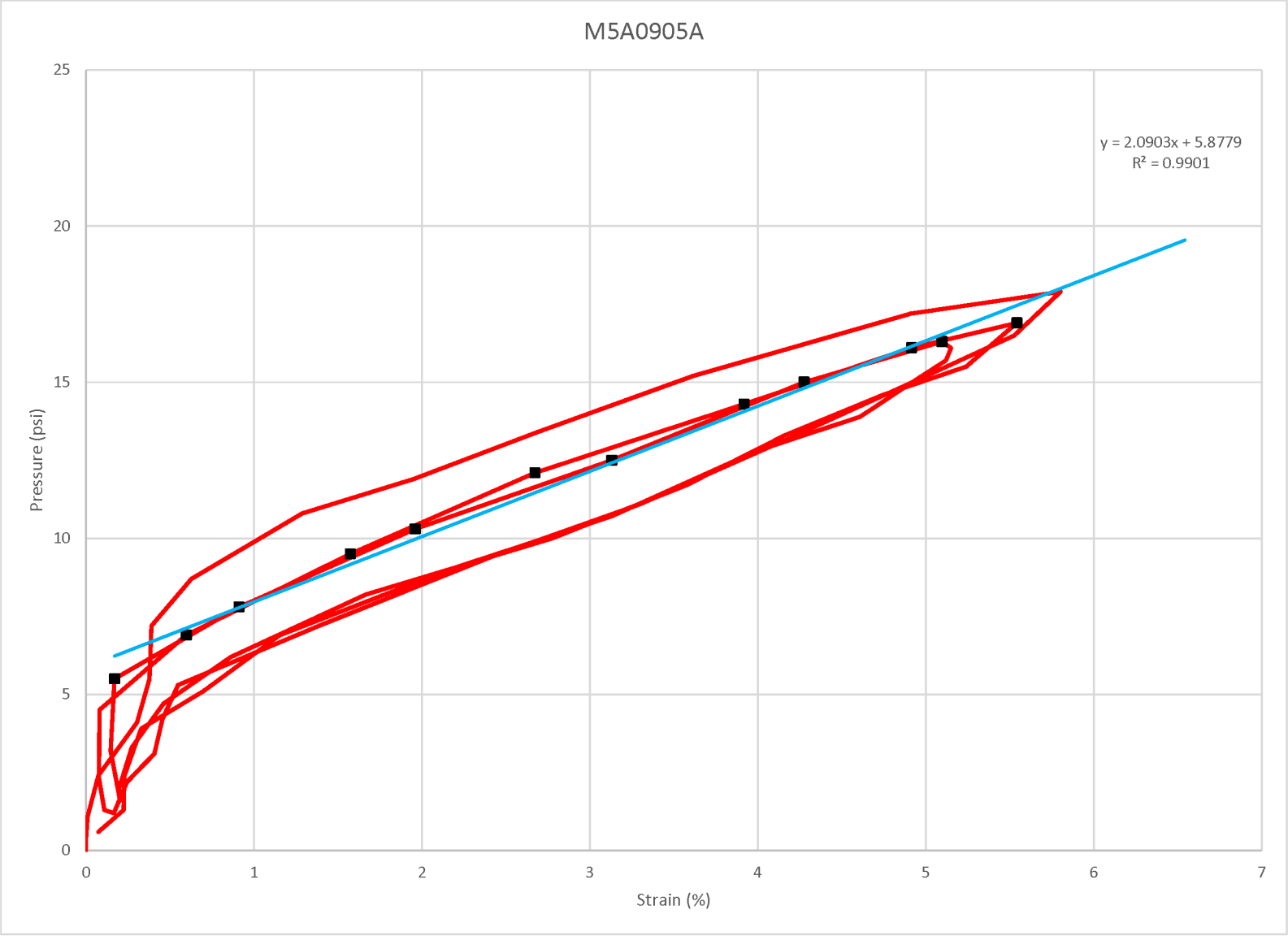
* Trend Line is base on the loading points indicated by the black squares.

Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth
Gerdes	4	1158	Turkey Point Nuclear	Paul Rizzo & Associates	M4T0829A.imp	Tube	0ft



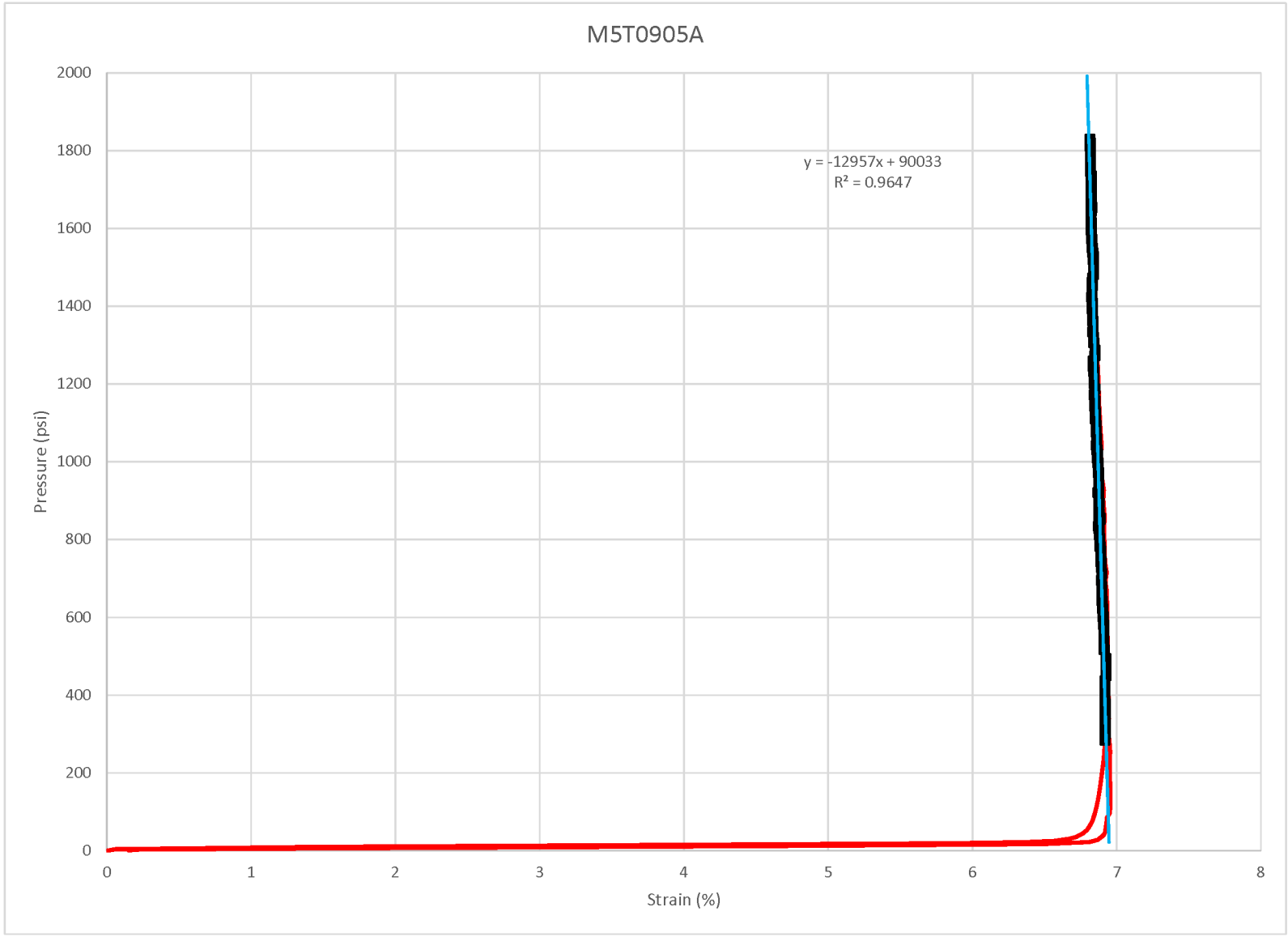
* Trend Line is base on the loading points indicated by the black squares.

Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	M5A0905A.imp	Tube	0ft



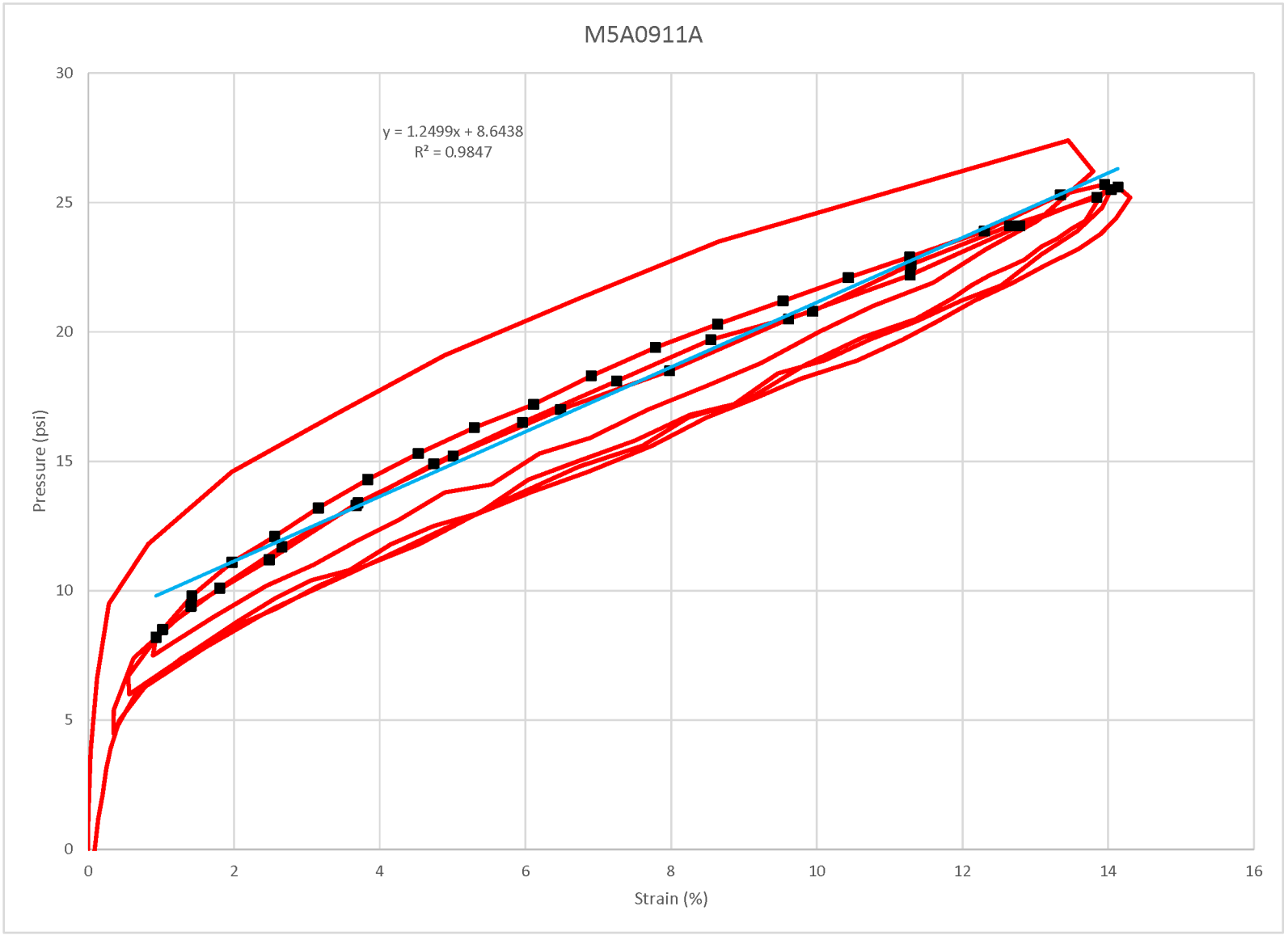
*Trend line based on loading points indicated by the black squares

Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	M5T0905A.imp	Tube	0ft



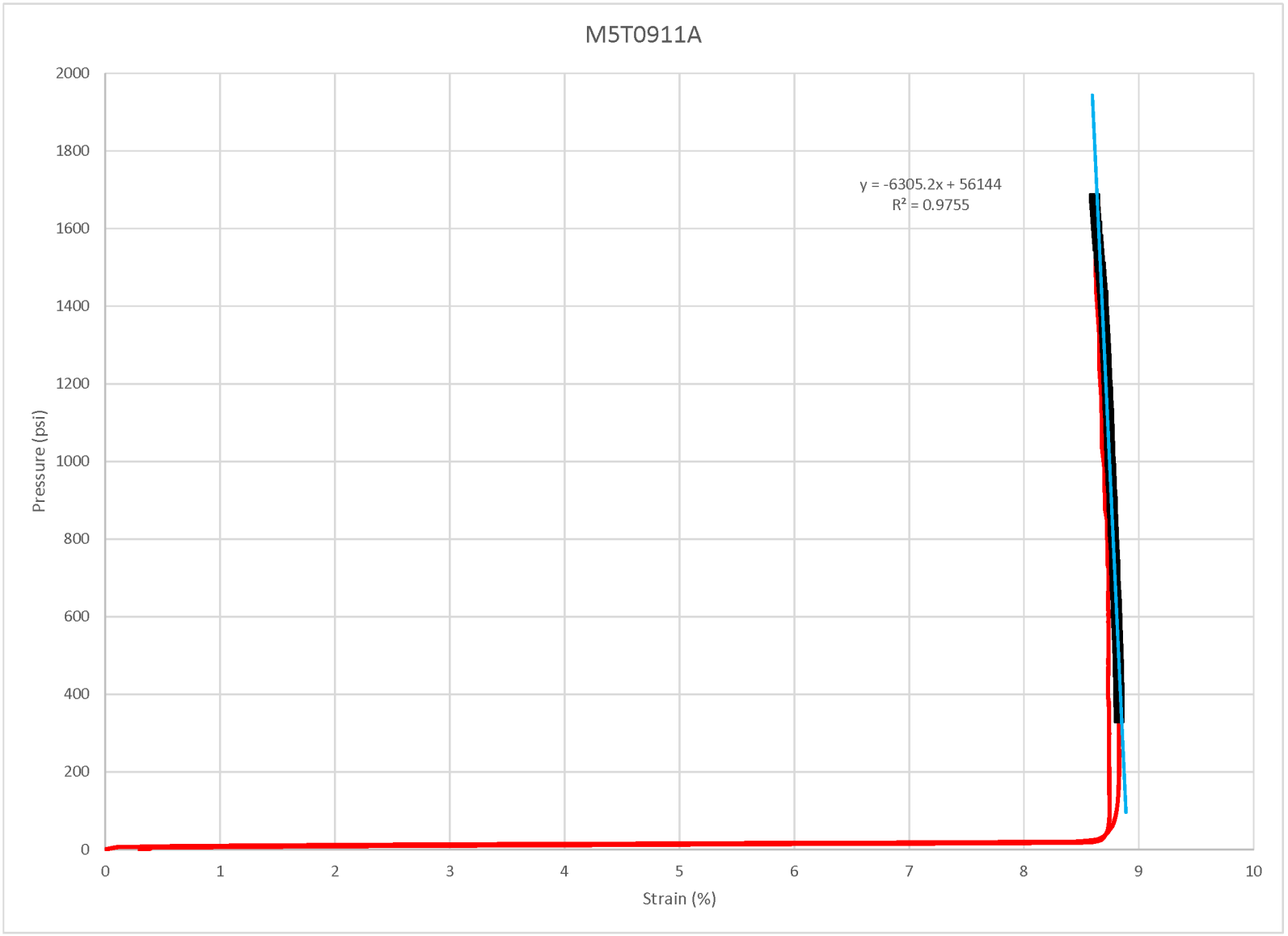
*Trend line based on loading points indicated by the black squares

Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	M5A0911A.imp	Tube	0ft



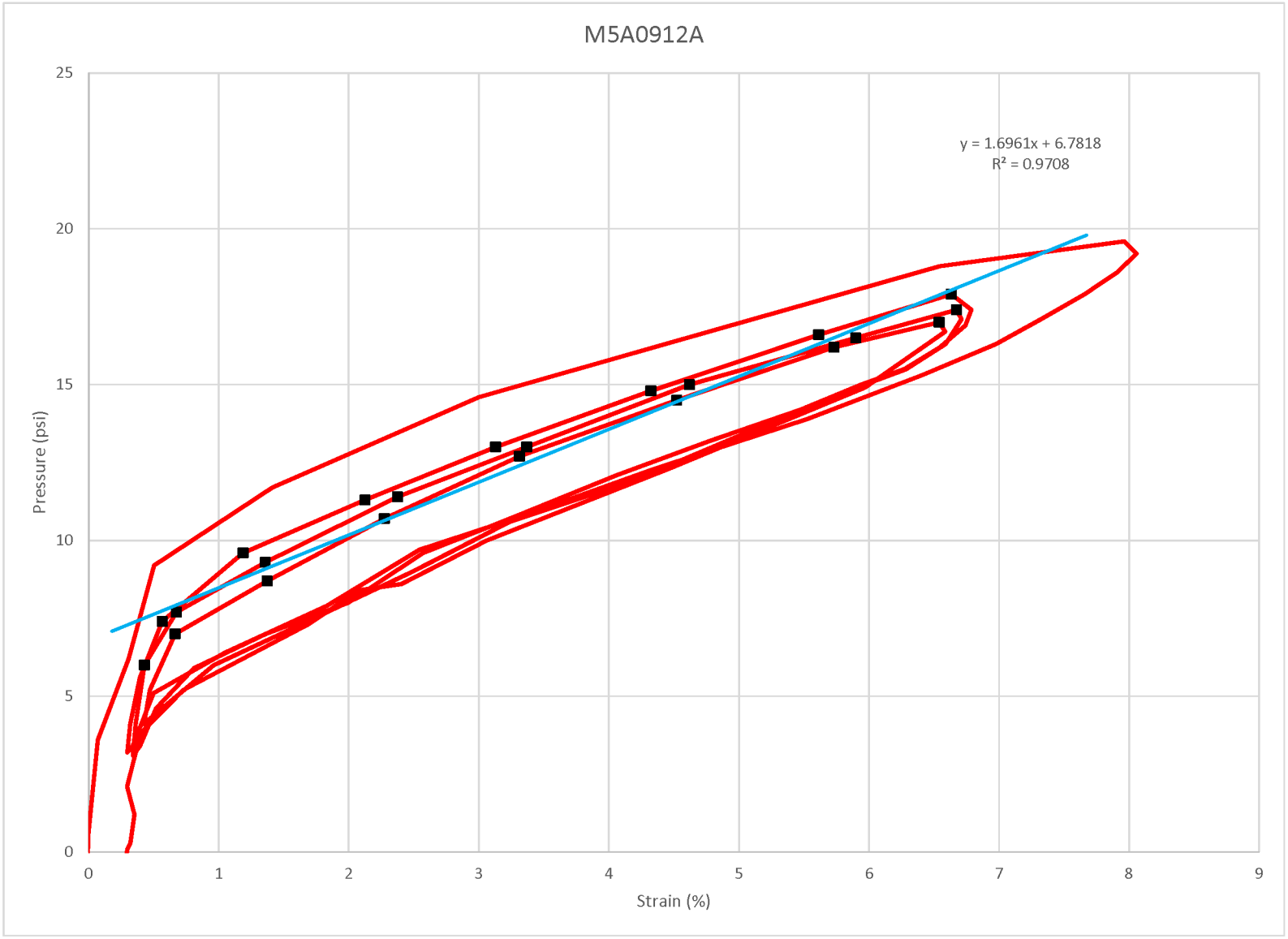
*Trend line based on loading points indicated by the black squares

Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	M5T0911A.imp	Tube	0ft



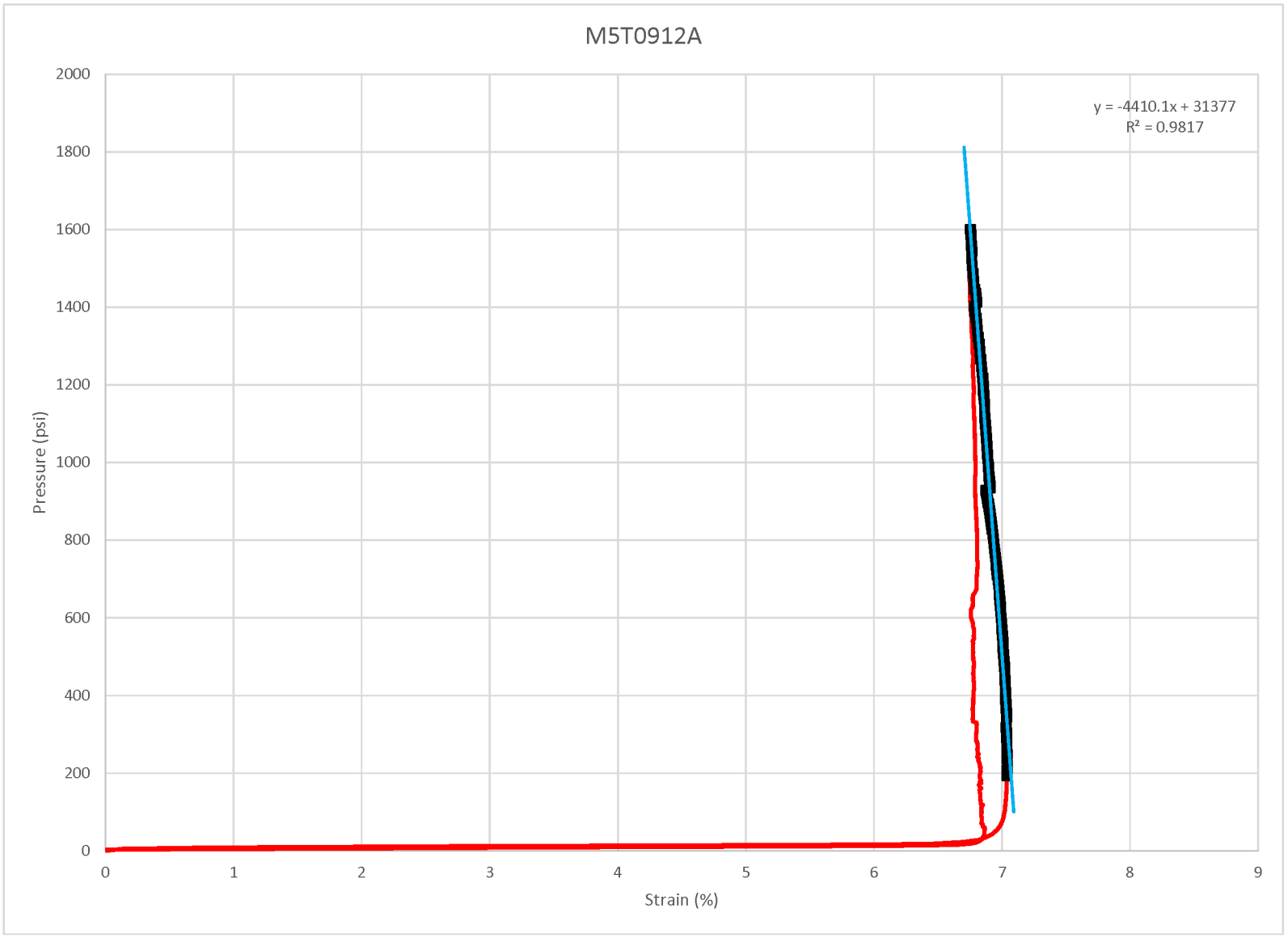
*Trend line based on loading points indicated by the black squares

Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	M5A0912A.imp	Air	0ft



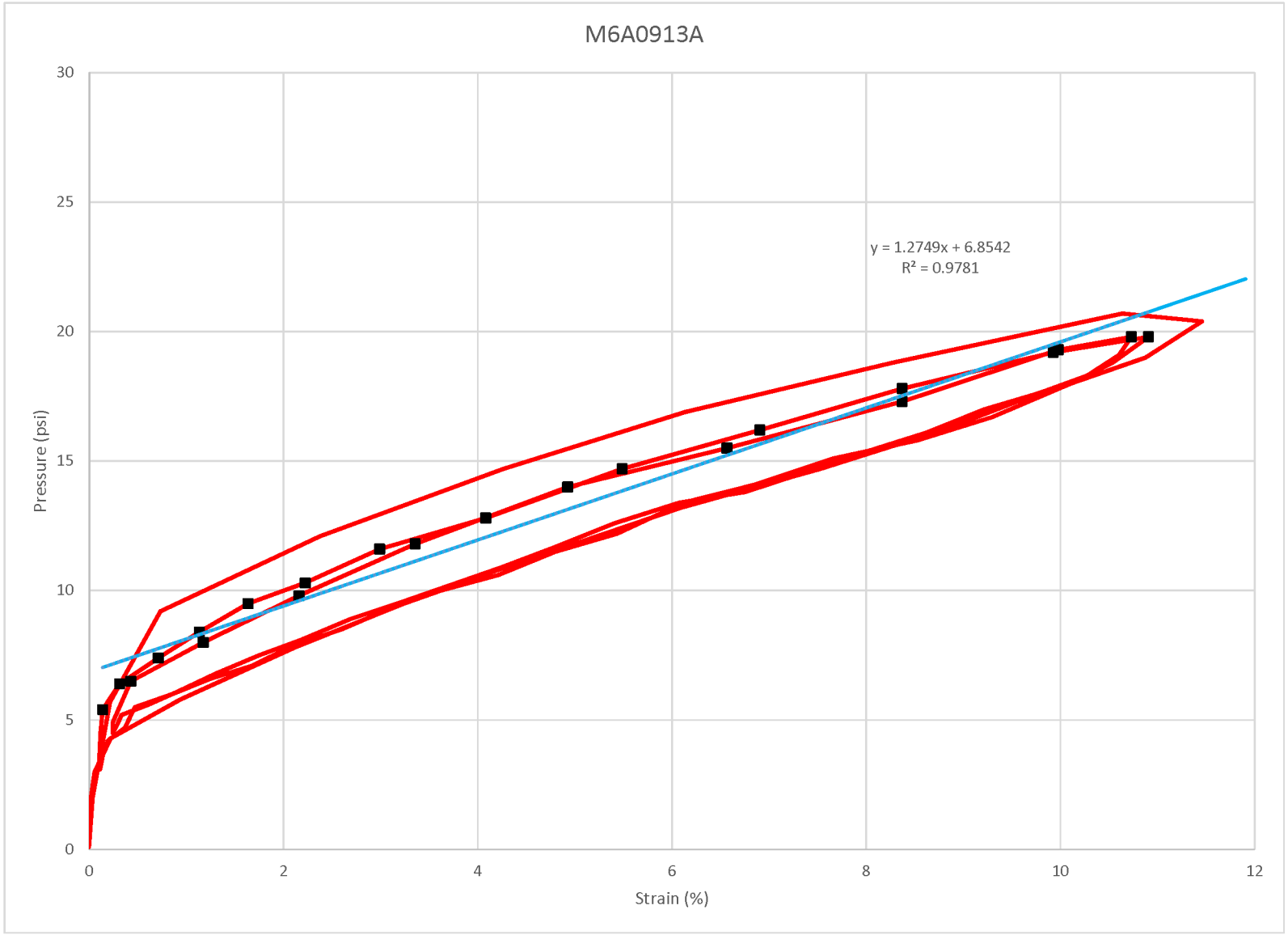
*Trend line based on loading points indicated by the black squares

Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	M5T0912A	Tube	0ft



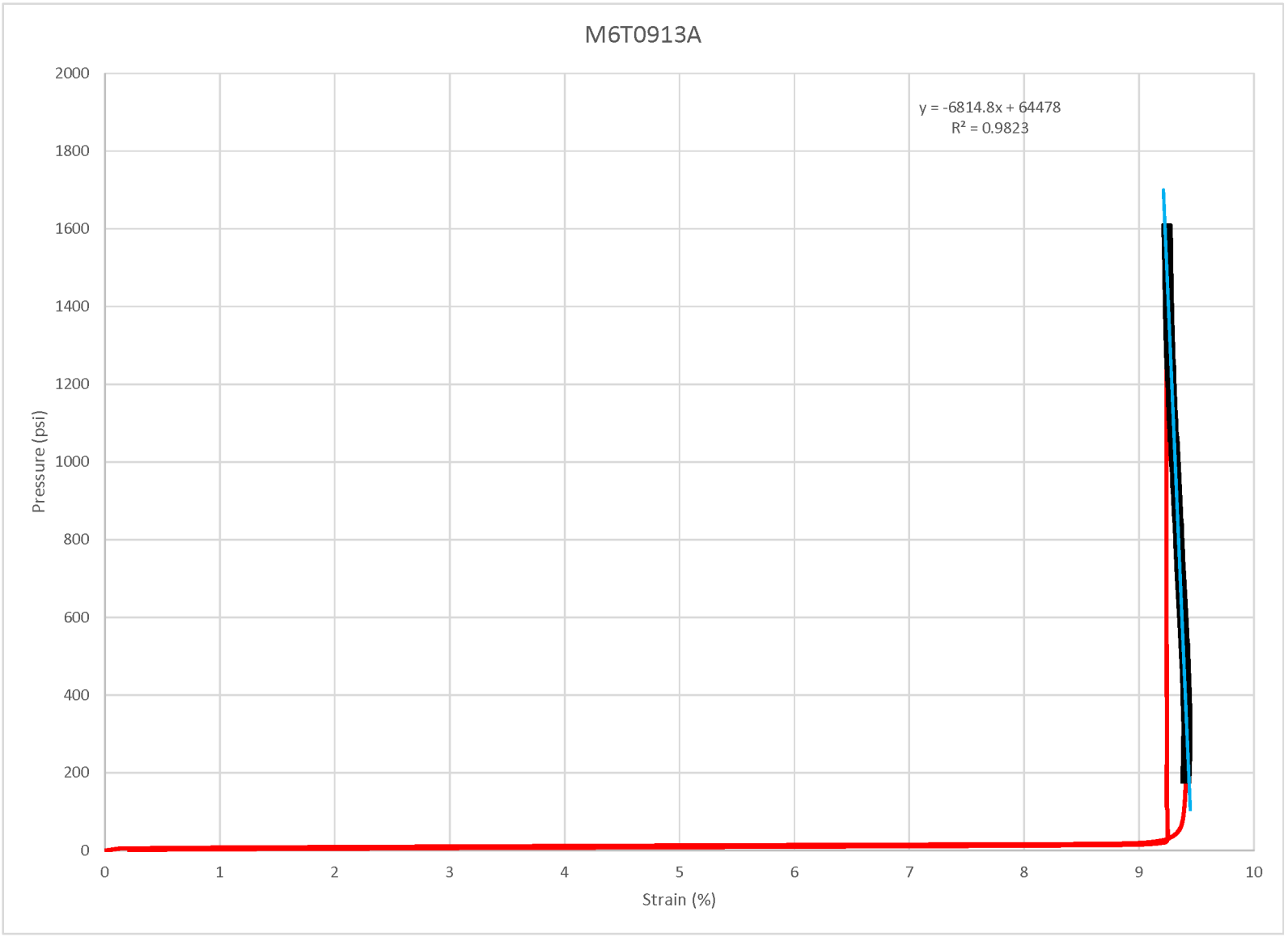
*Trend line based on loading points indicated by the black squares

Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	M6A0913A.imp	Air	0ft



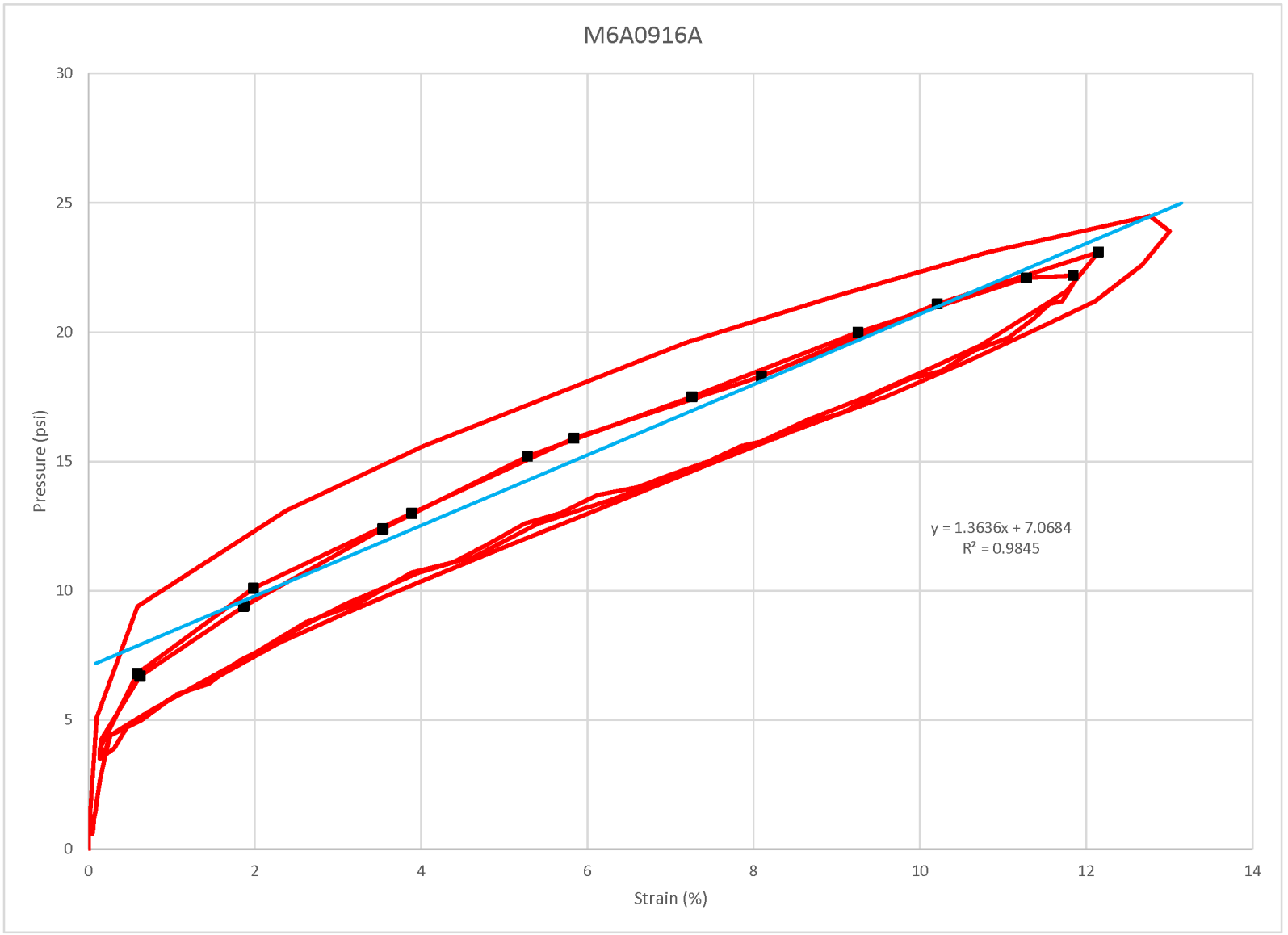
*Trend line based on loading points indicated by the black squares

Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	M6T0913A.imp	Tube	0ft



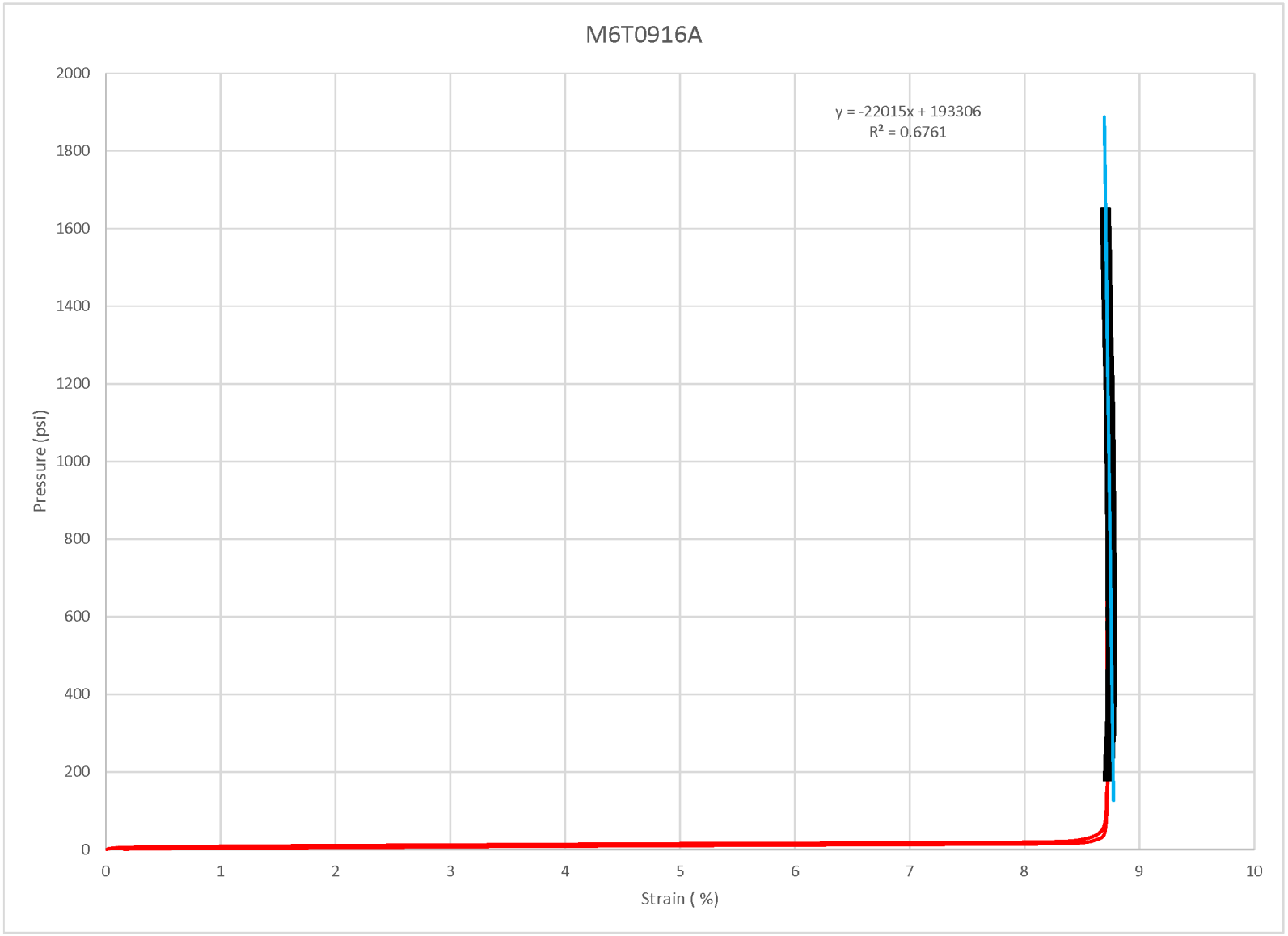
*Trend line based on loading points indicated by the black squares

Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	M6A0916A.imp	Air	0ft



*Trend line based on loading points indicated by the black squares

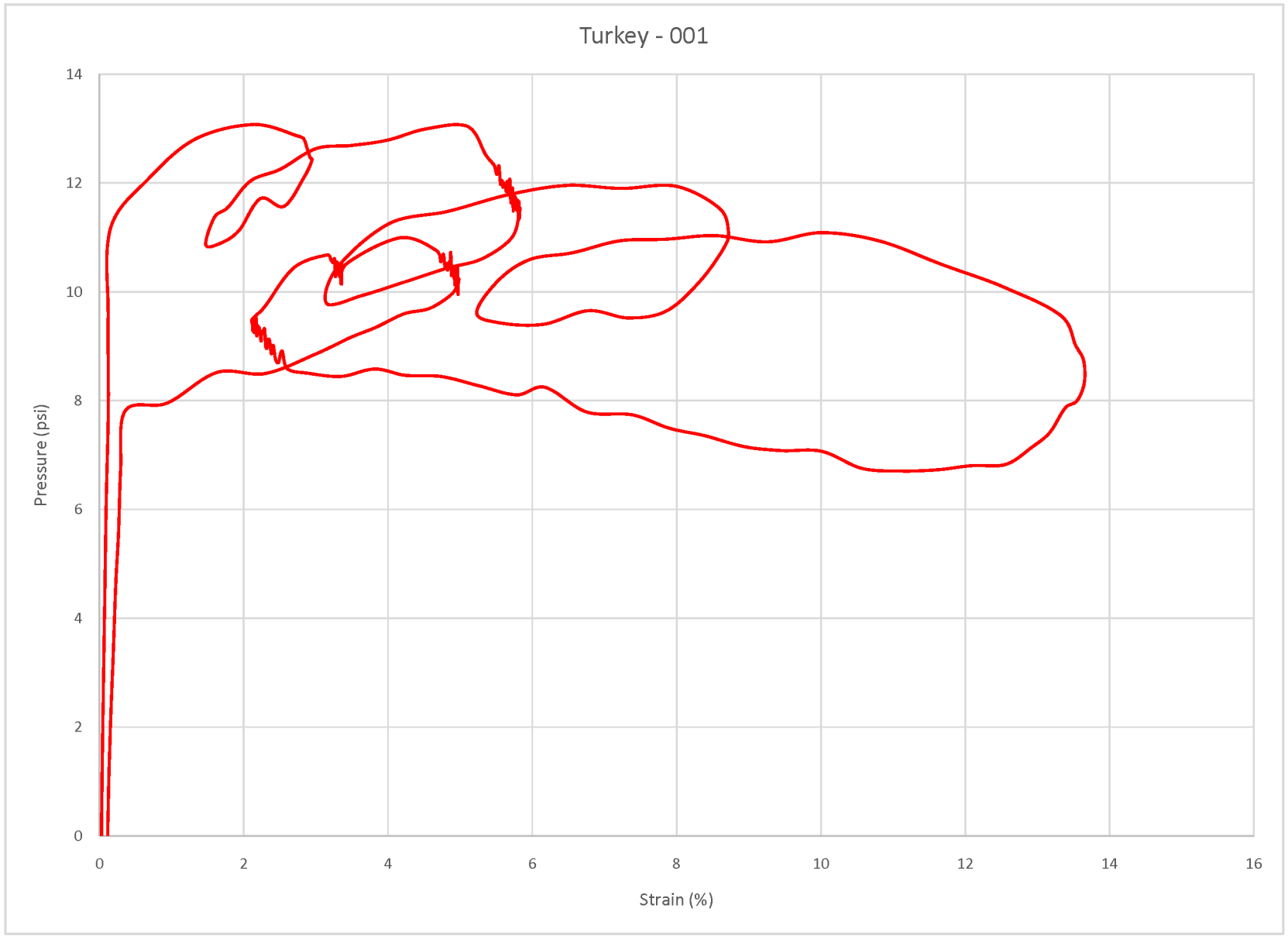
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	M6T0916A.imp	Tube	0ft



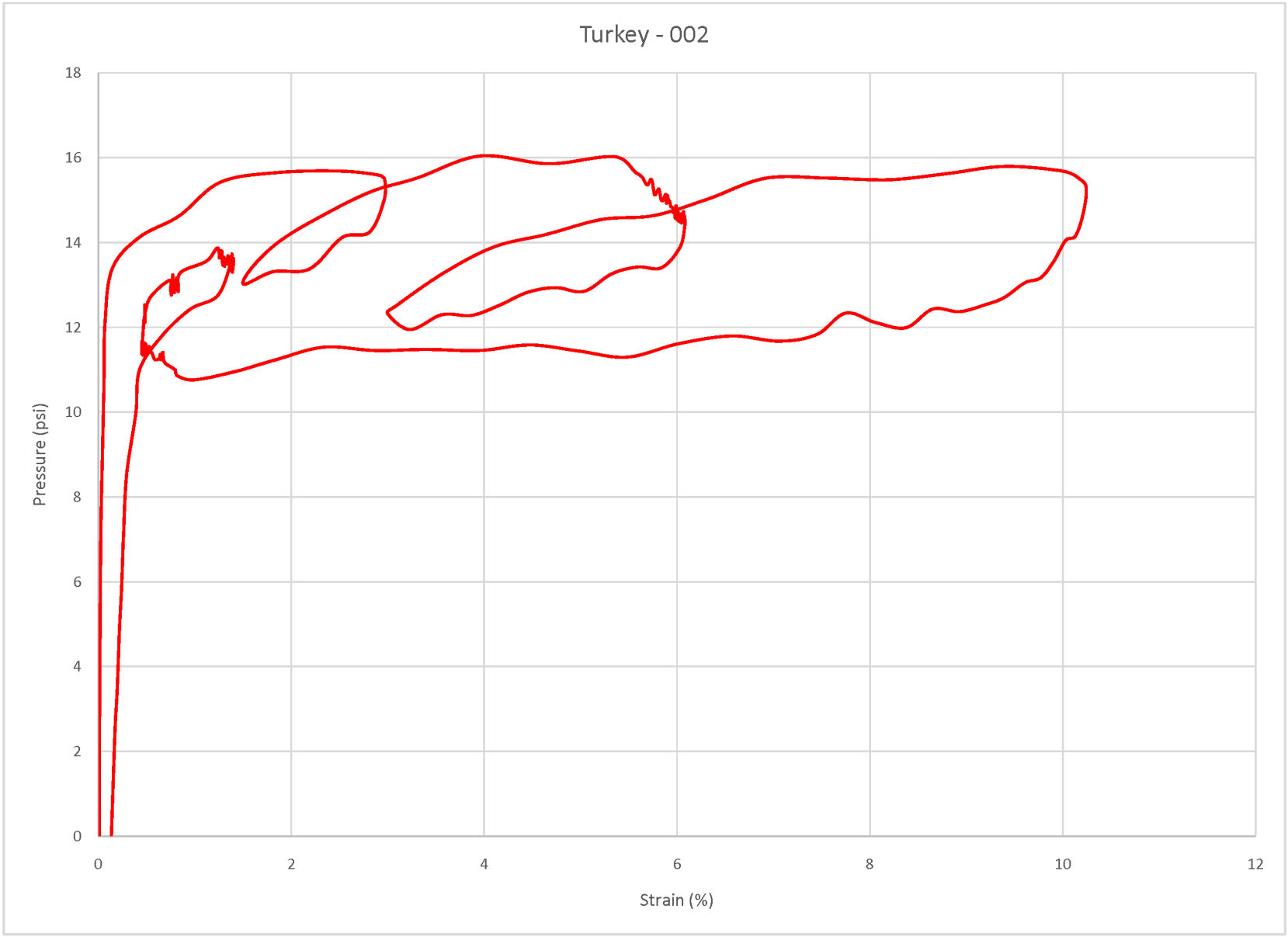
*Trend line based on loading points indicated by the black squares

Appendix III Pressuremeter Data

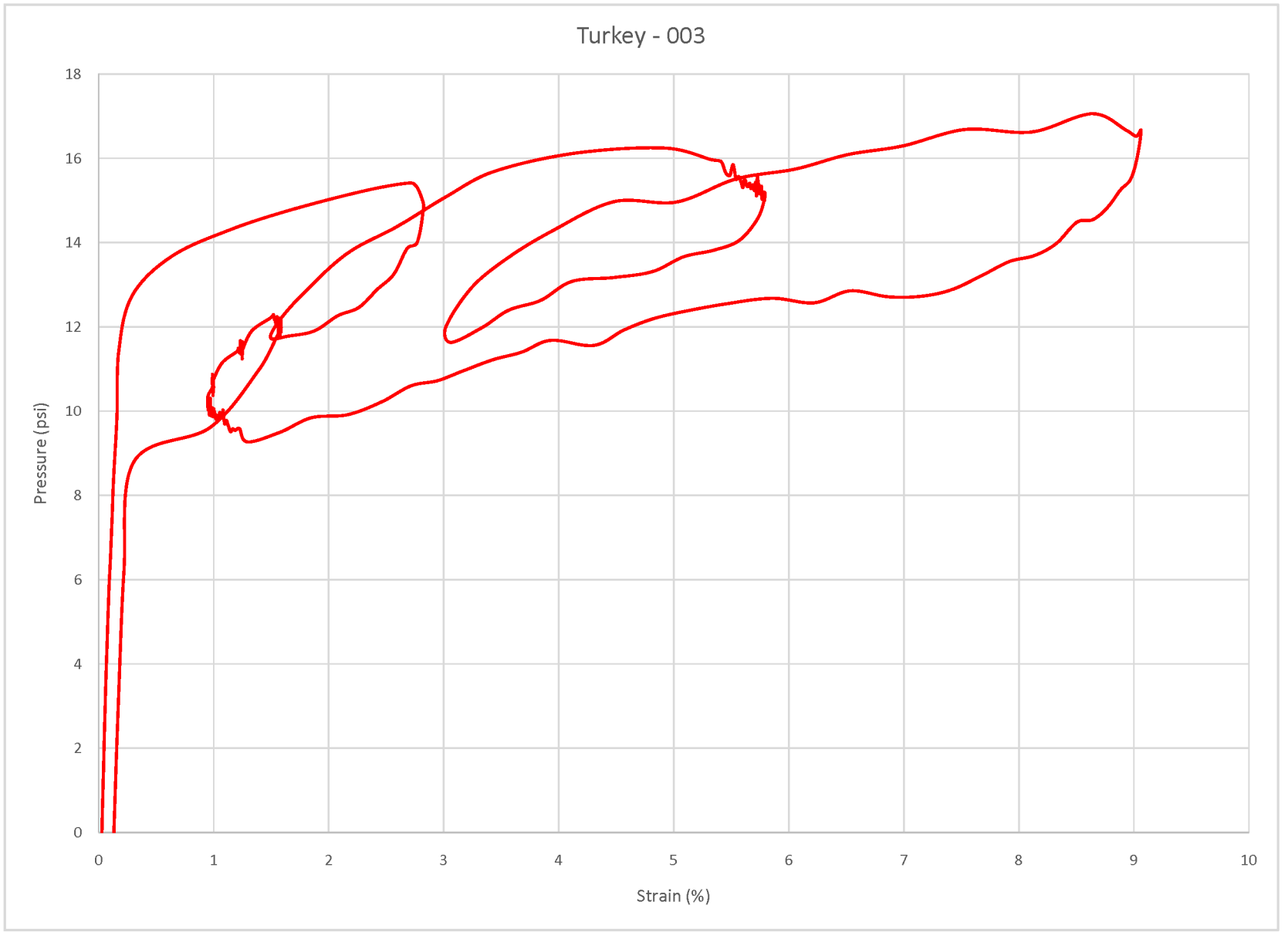
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 001.imp	R-6-2	28.9	Key Largo



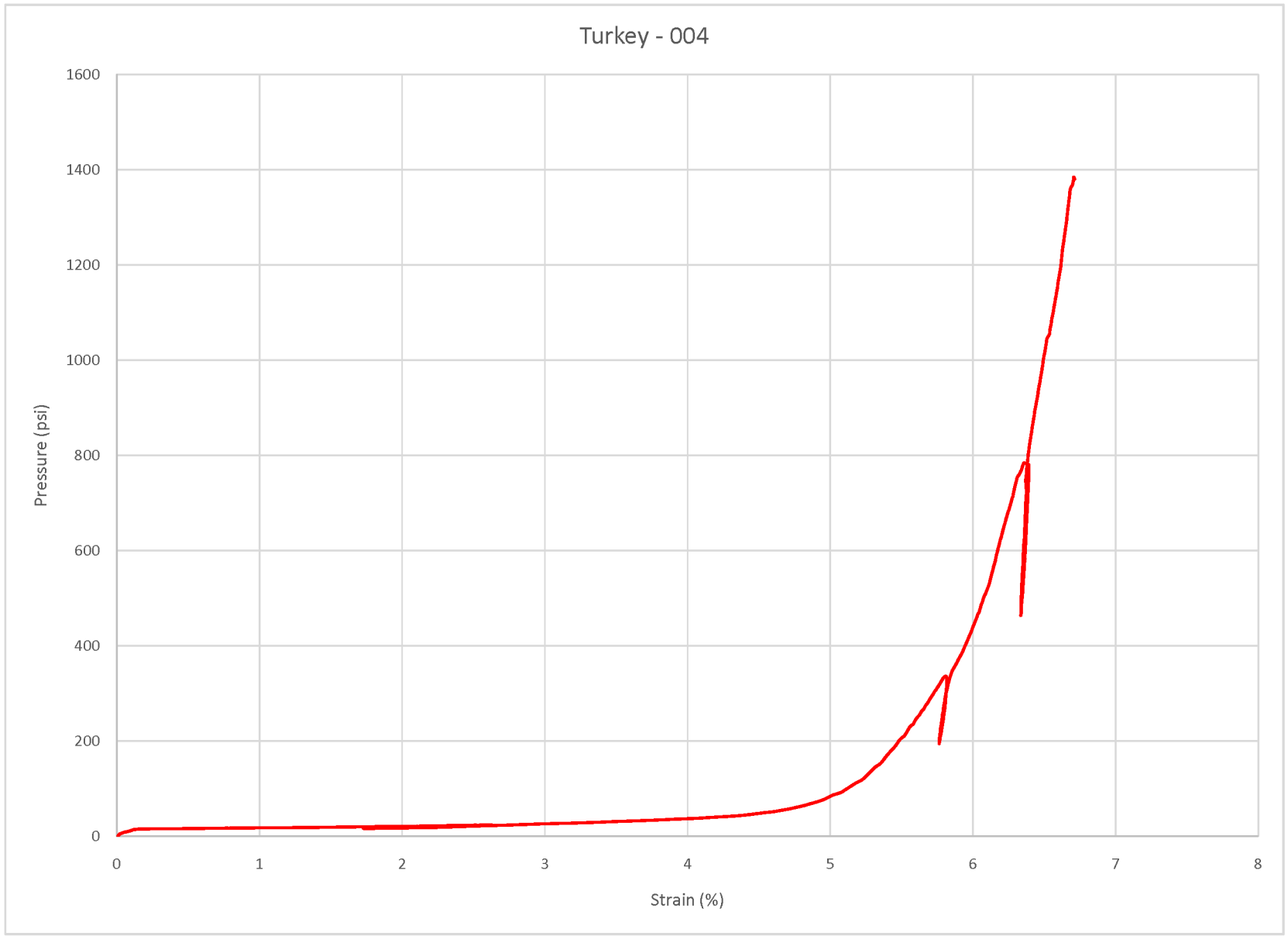
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 002.imp	R-6-2	34	Key Largo



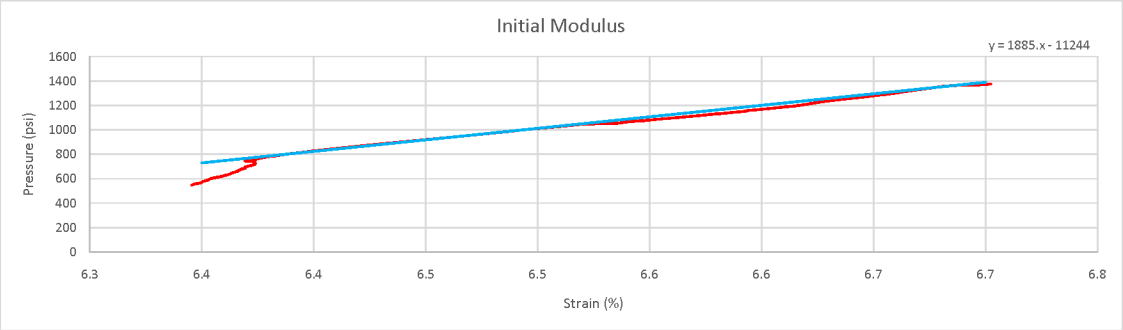
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 003.imp	R-6-2	32.5	Key Largo

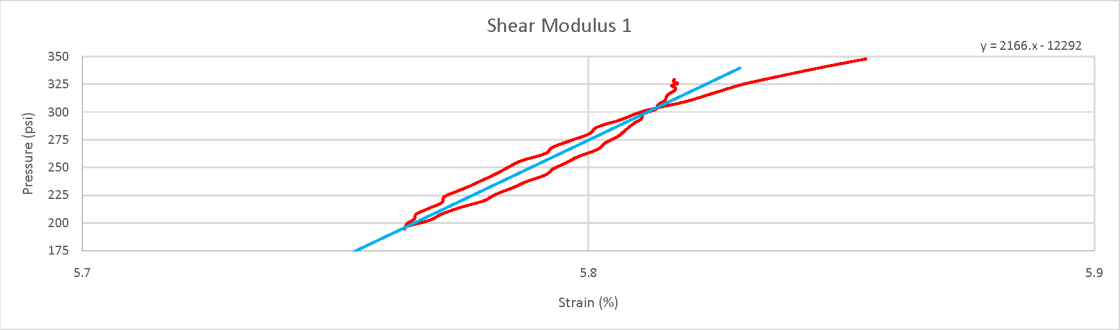


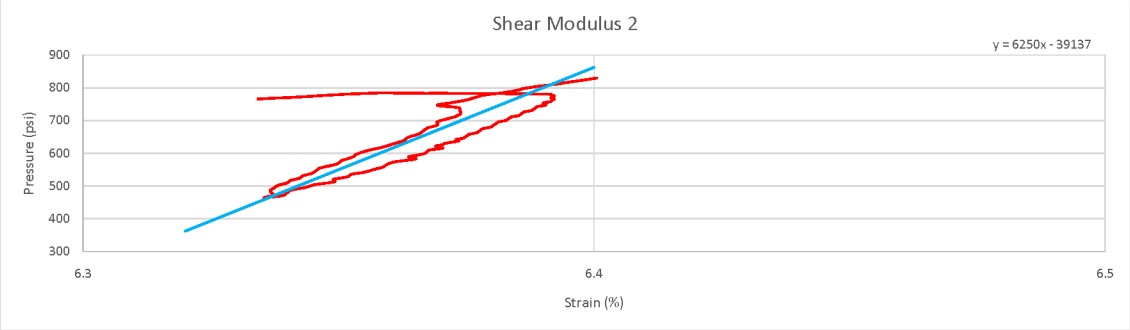
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 004.imp	R-6-2	41	Key Largo



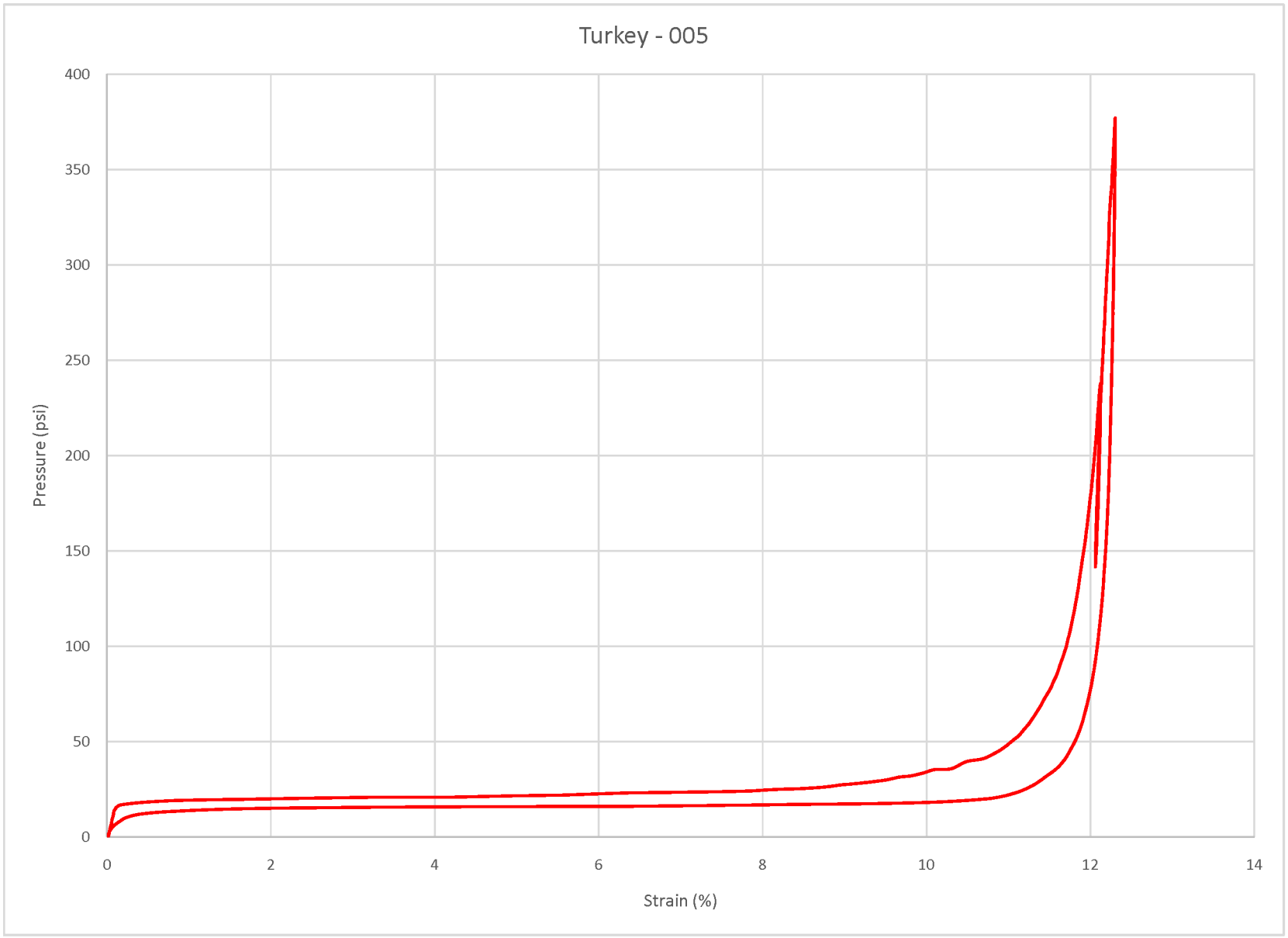
File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 004	Key Largo	94285	108335	312500			



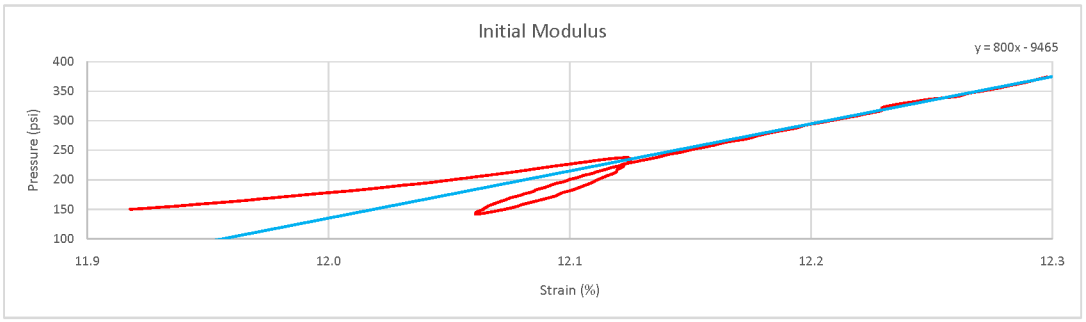


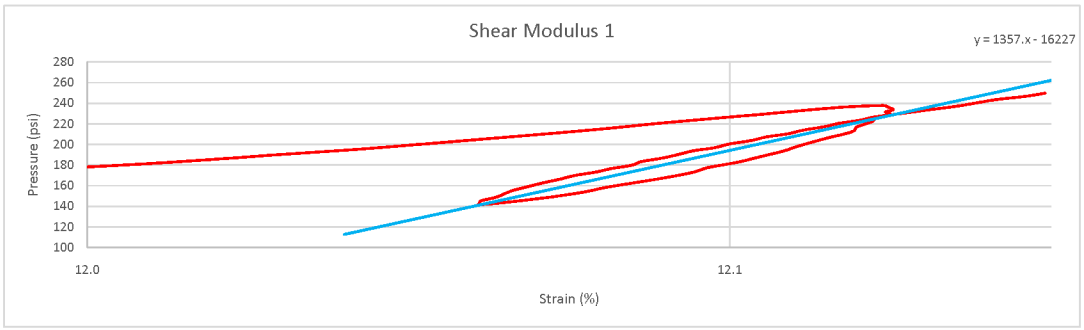


Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 005.imp	R-6-2	46	Key Largo

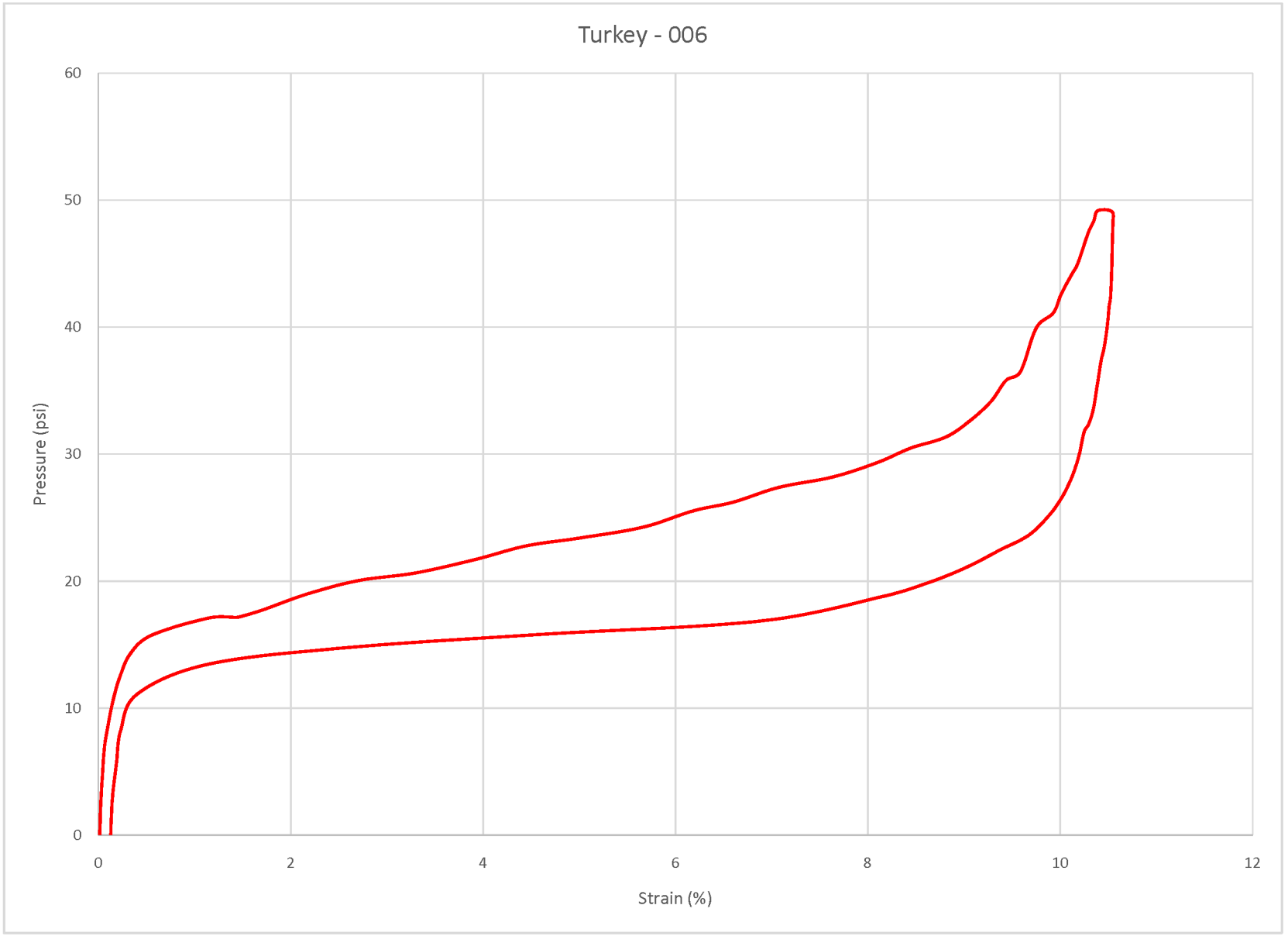


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 005	Key Largo	40000	67855				

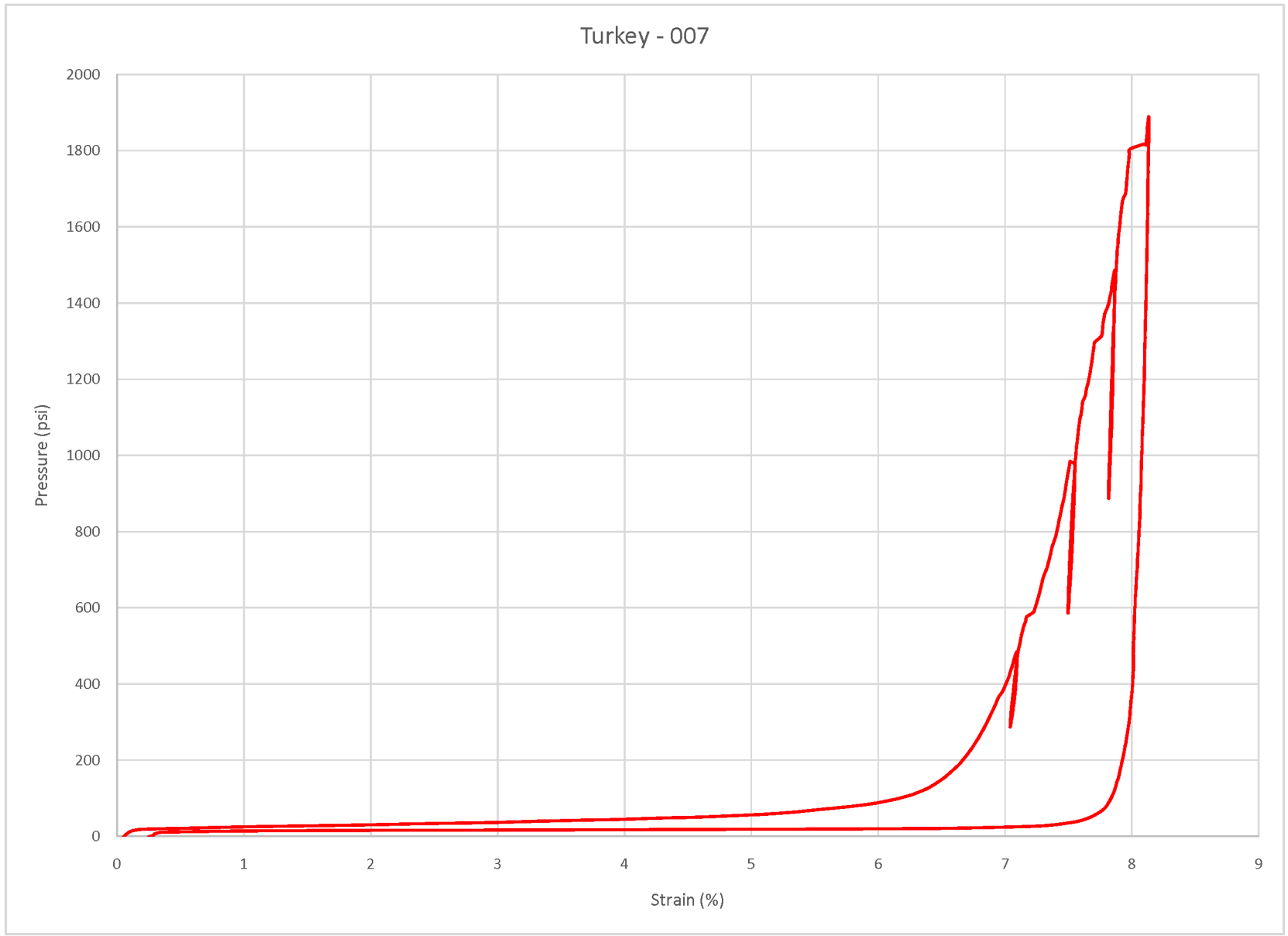




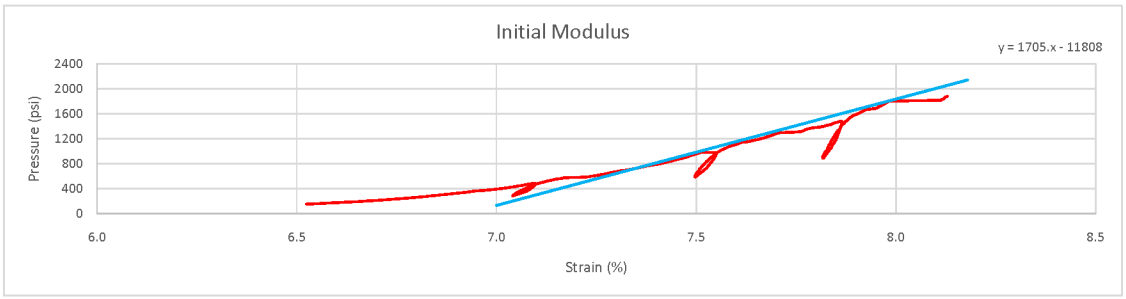
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 006.imp	R-6-2	44.5	Key Largo

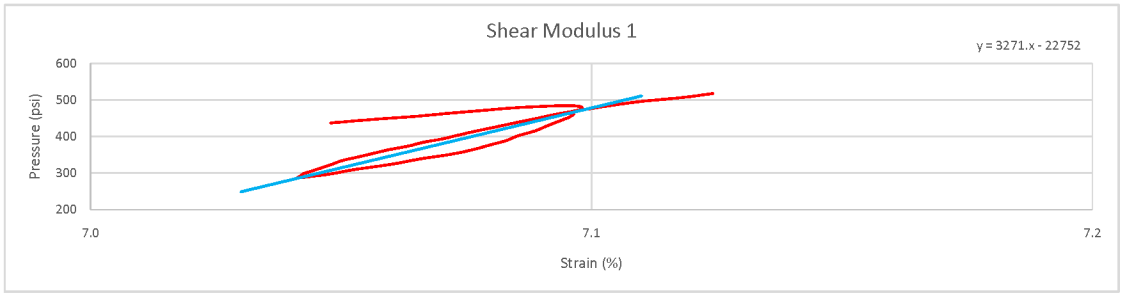


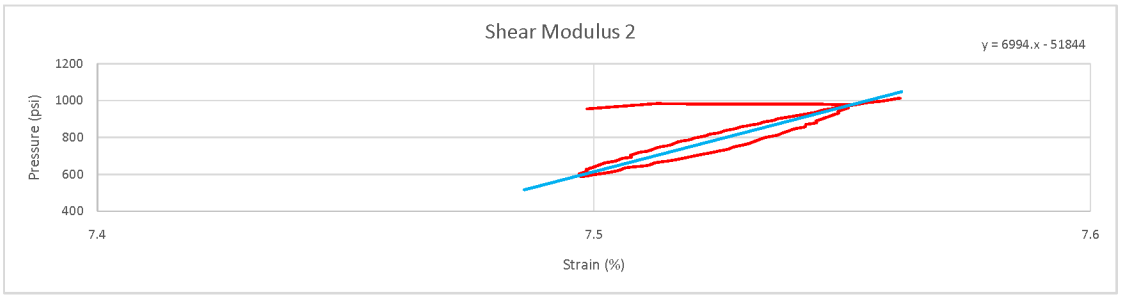
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 007.imp	R-6-2	50.5	Fort Thompson

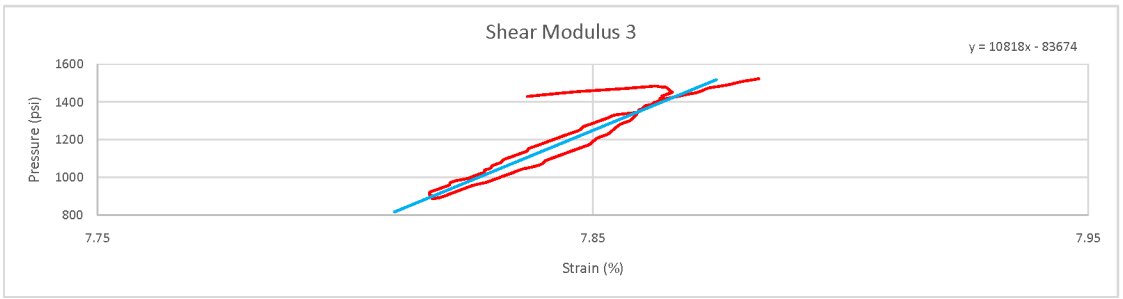


File Name	Formation	Initial Shear Modulus	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 007	Key Largo	85290	163590	349725	540900		

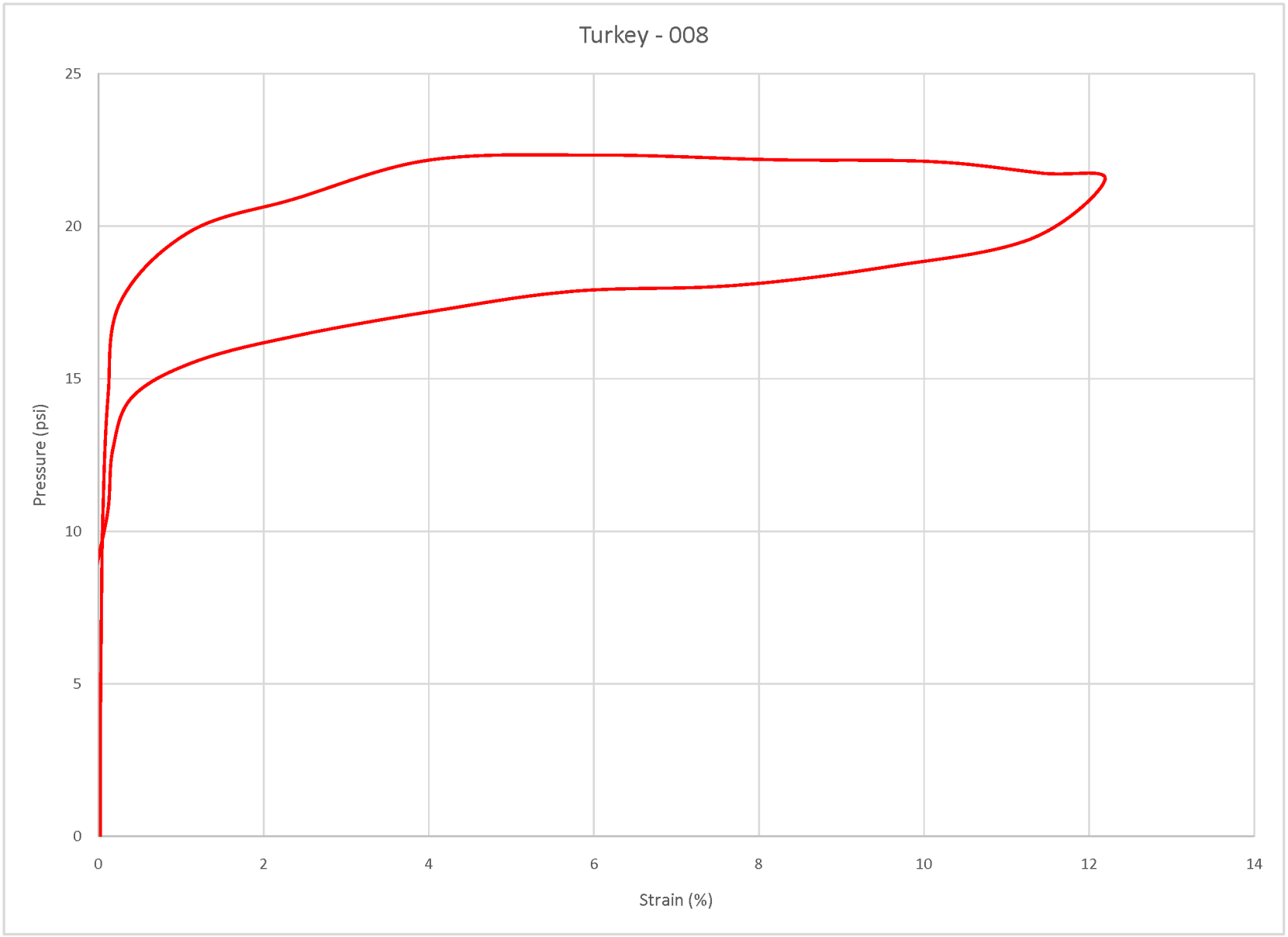




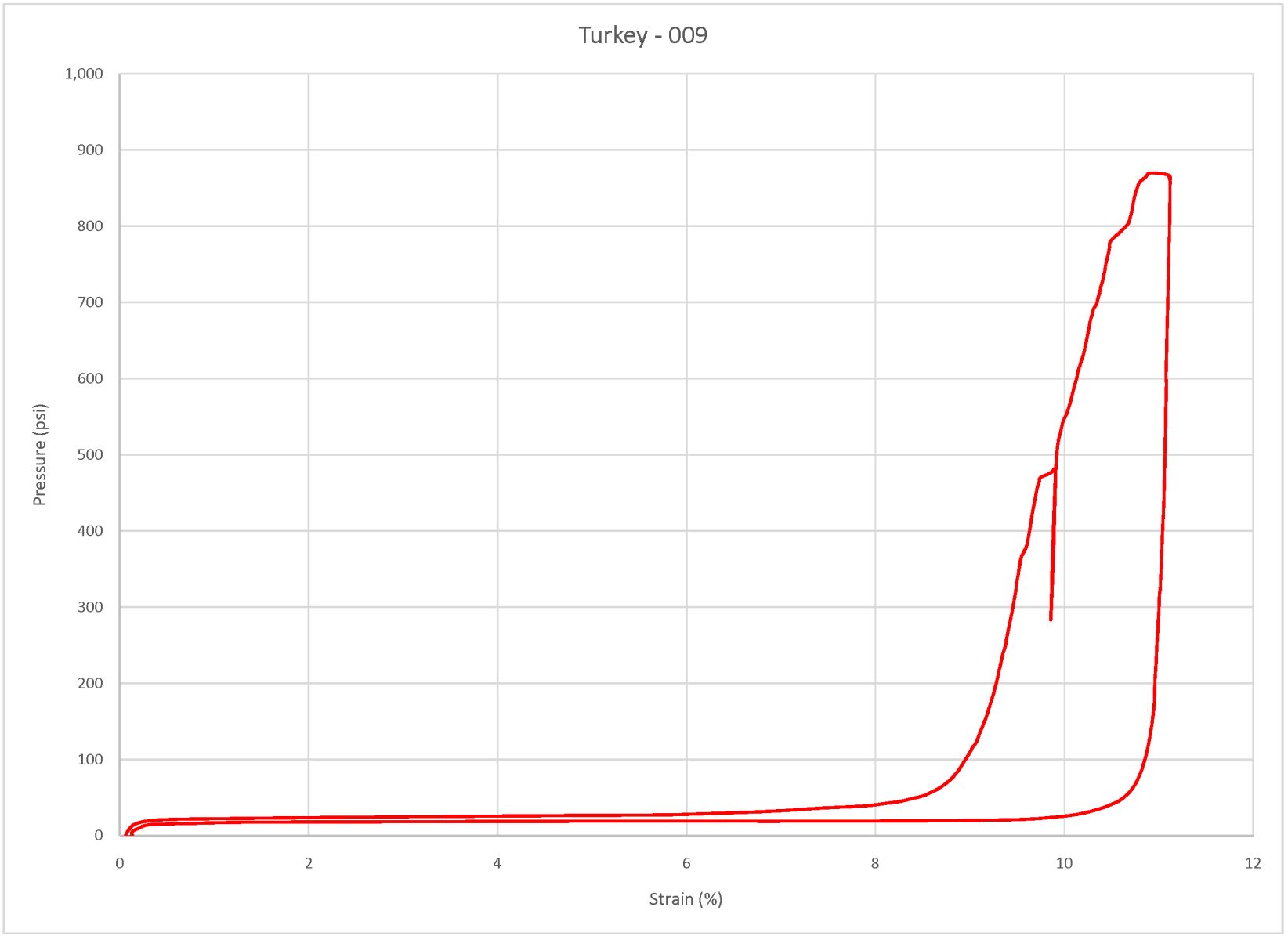




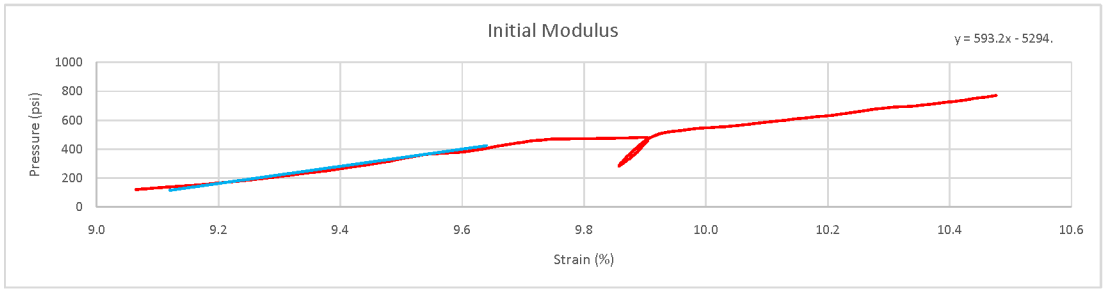
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 008.imp	R-6-2	49	Fort Thompson

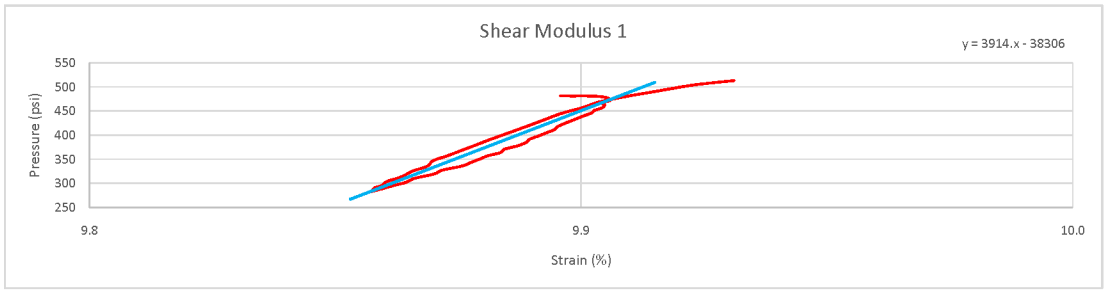


Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 009.imp	R-6-2	56	Fort Thompson

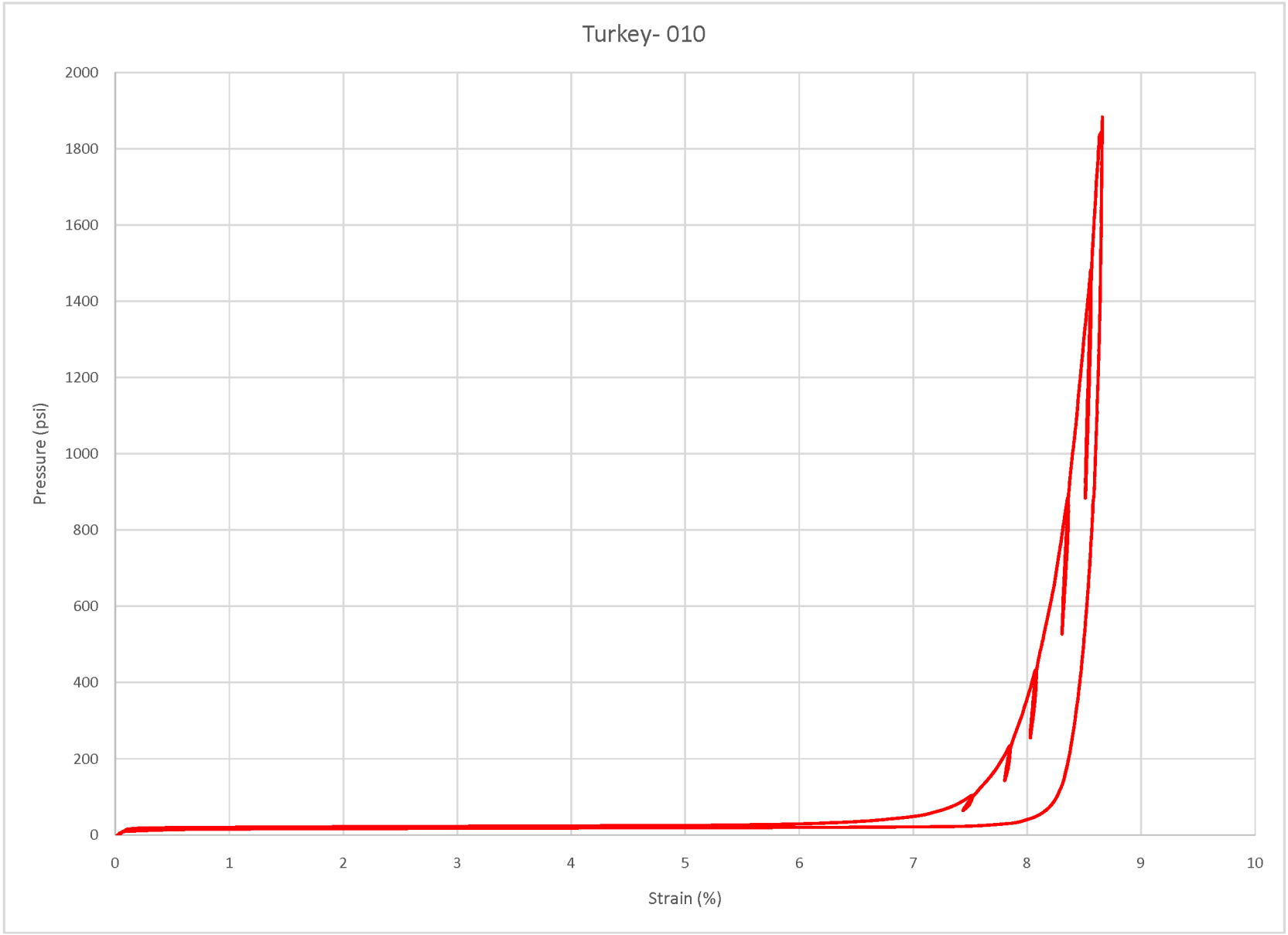


File Name	Formation	Initial Shear Modulus	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 009	Fort Thompson	29663	195740				

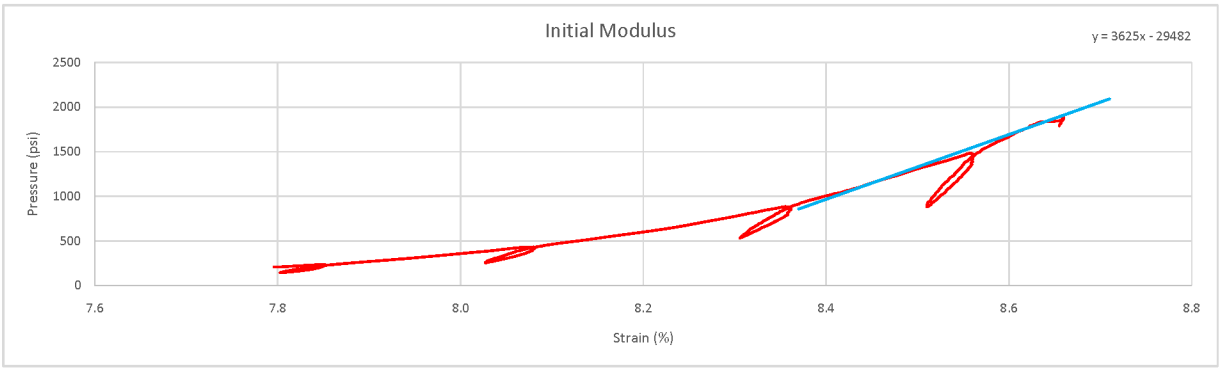


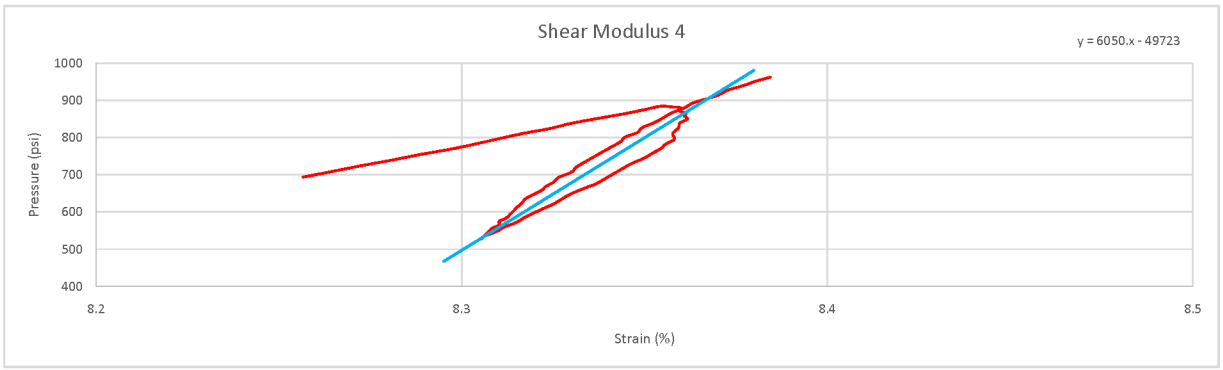


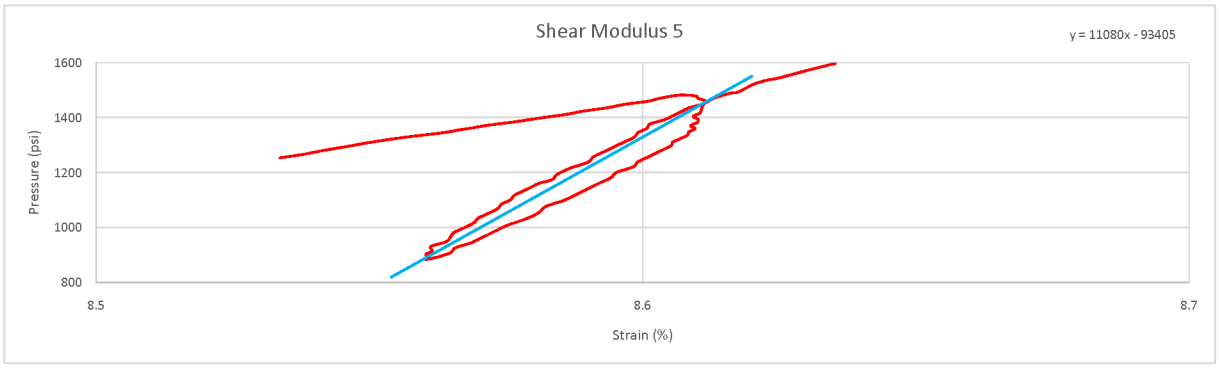
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 010.imp	R-6-2	54	Fort Thompson



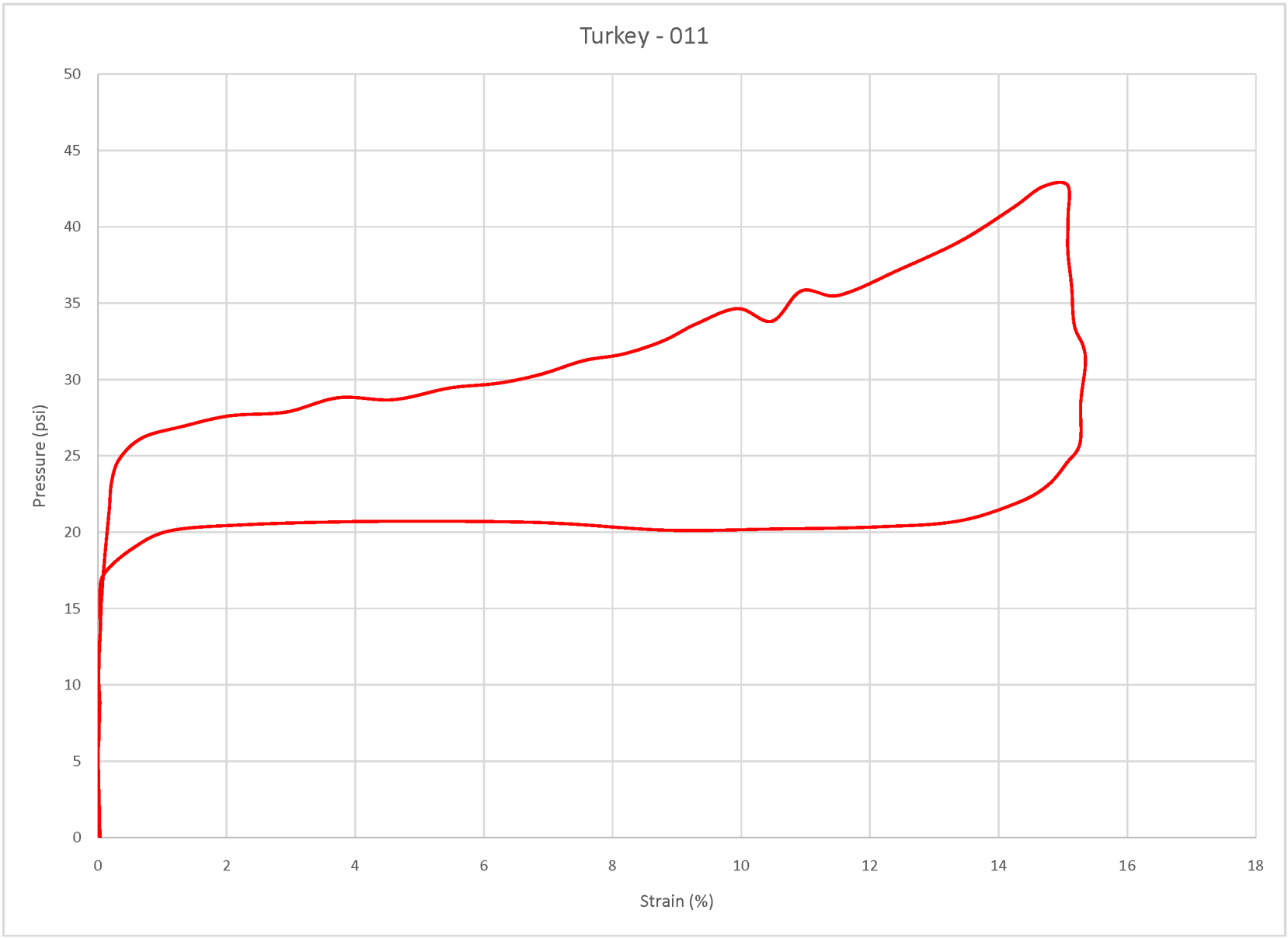
File Name	Formation	Initial Shear Modulus	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 010	Fort Thompson	181250				302525	554000



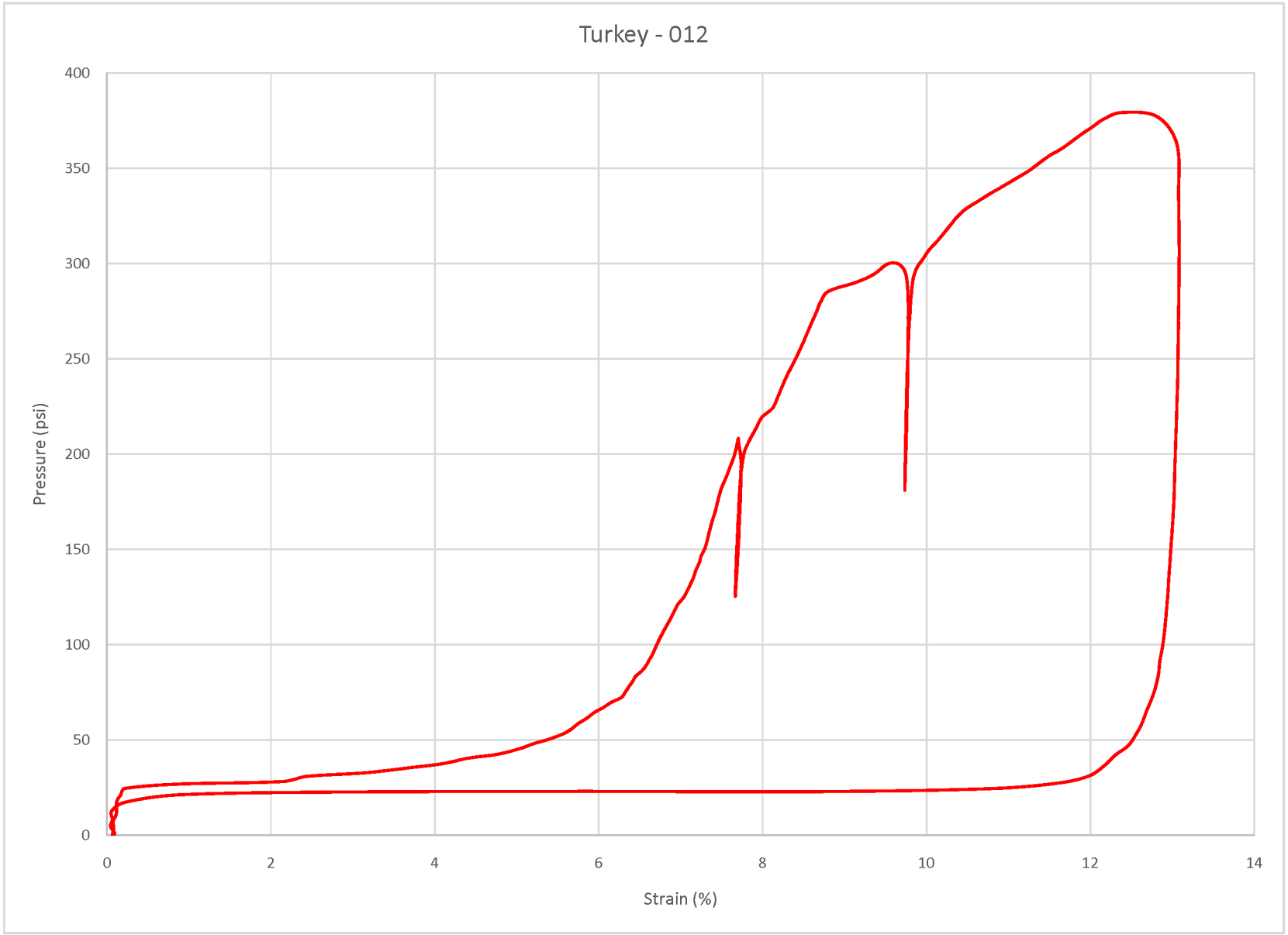




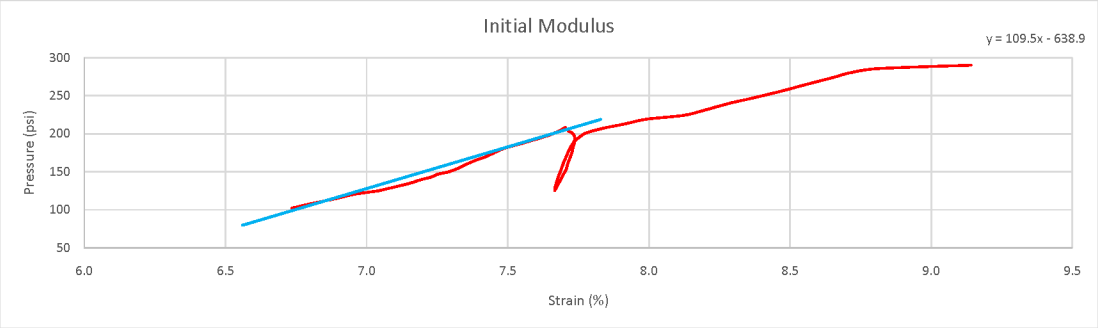
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 011.imp	R-6-2	60.5	Fort Thompson

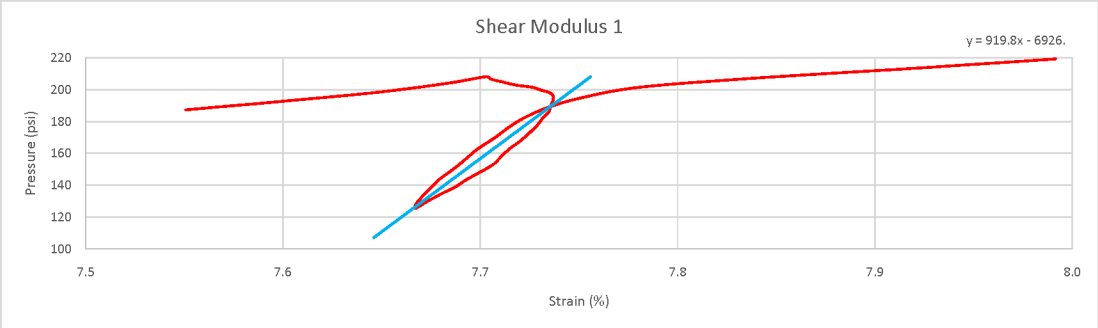


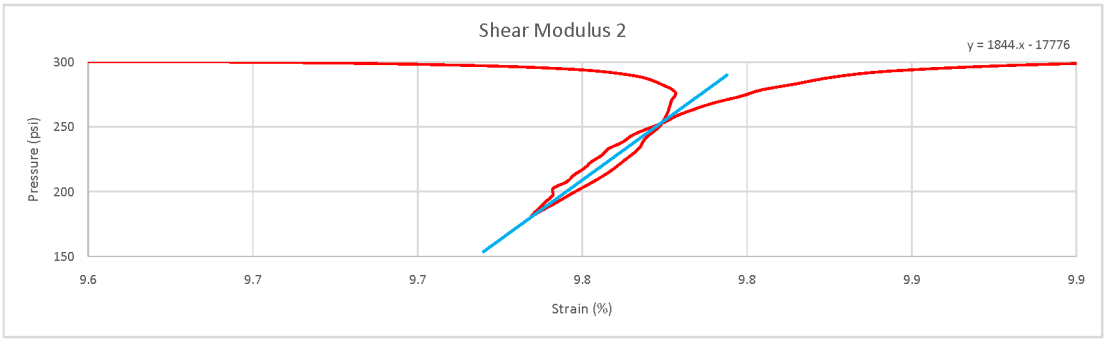
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 012.imp	R-6-2	66	Fort Thompson



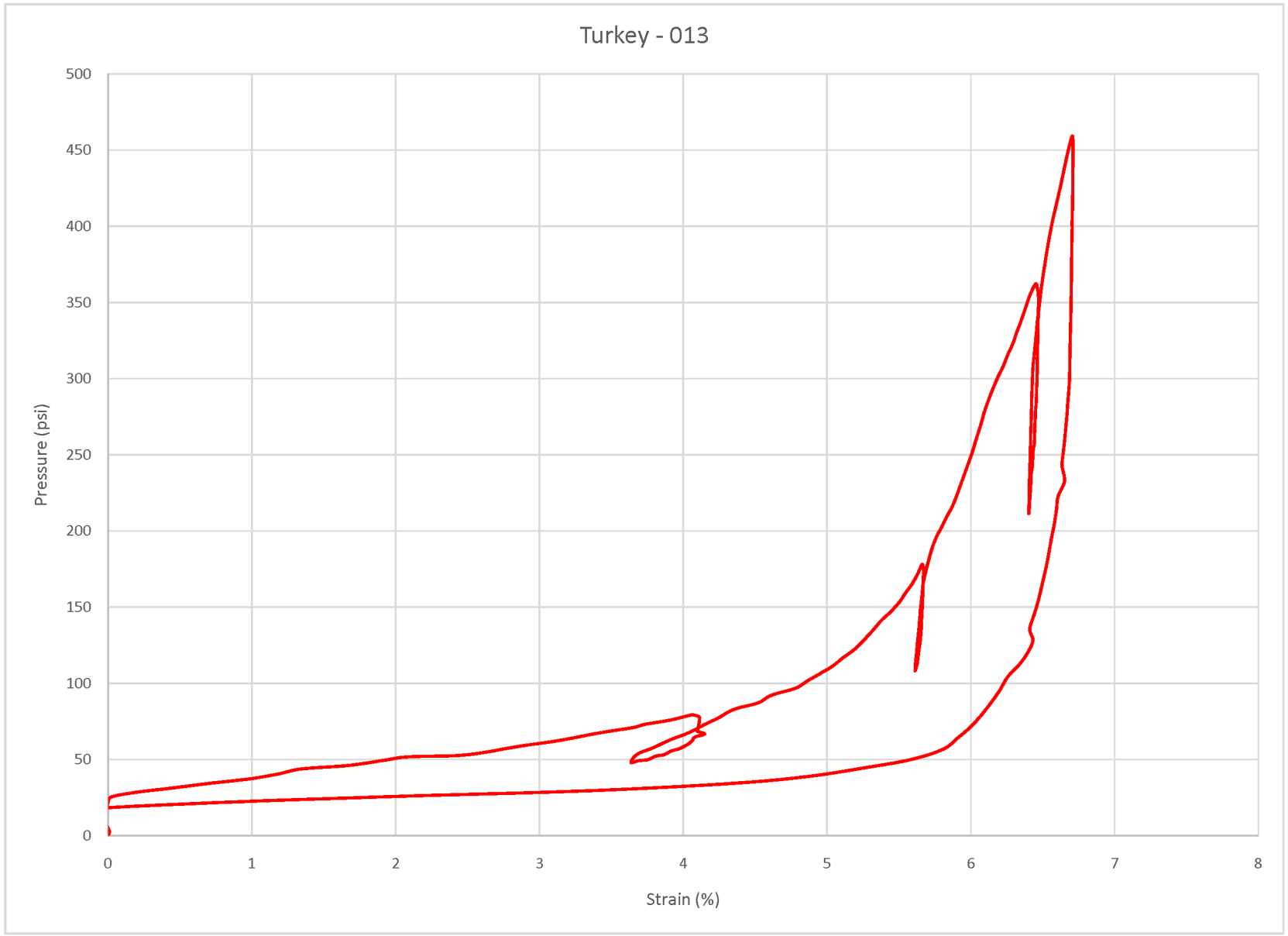
File Name	Formation	Initial Shear Modulus	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 012	Fort Thompson	5479	45993	92230			



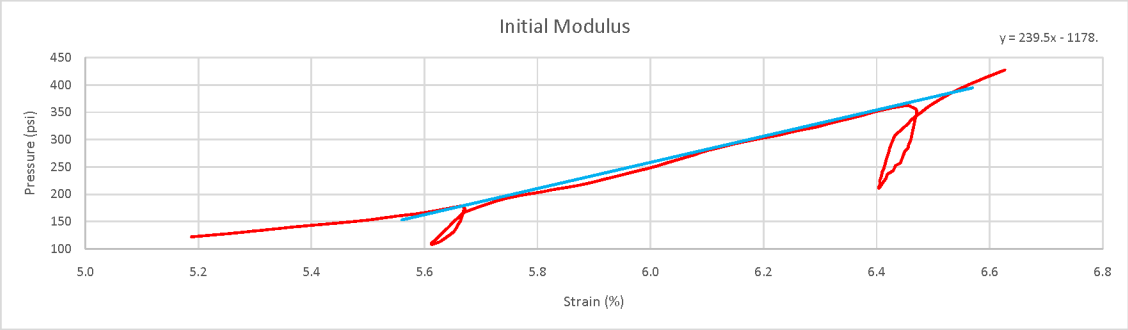


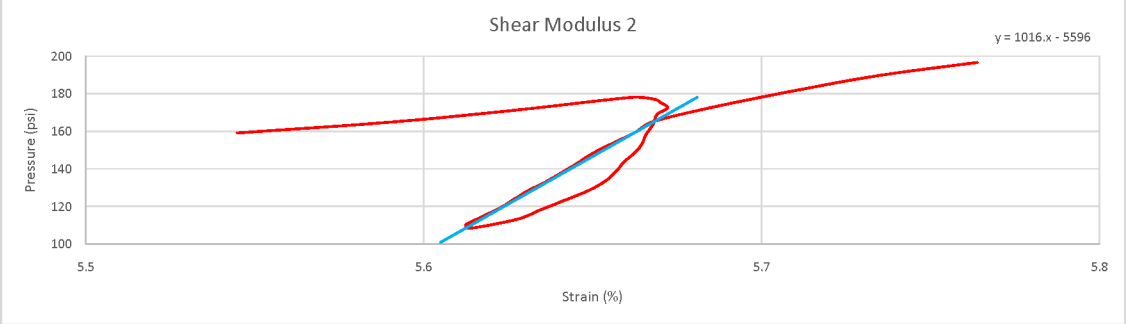


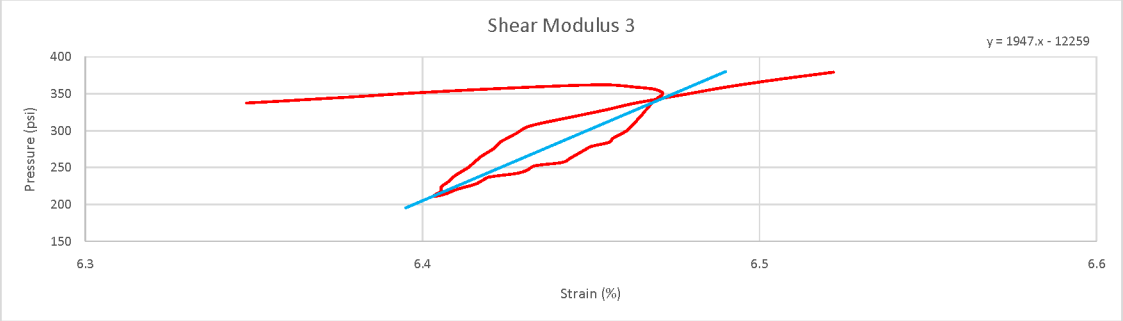
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 013.imp	R-6-2	64	Fort Thompson



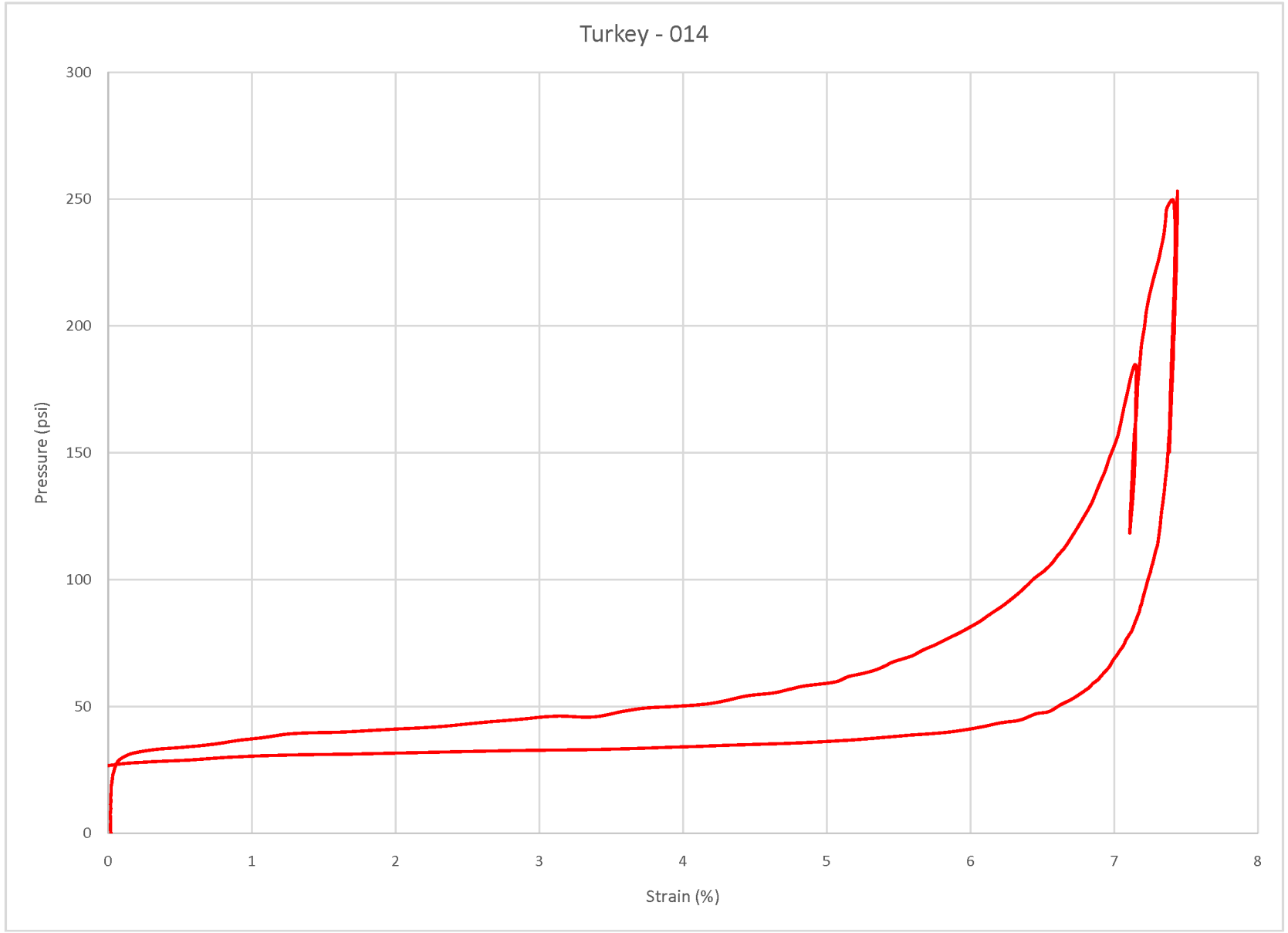
File Name	Formation	Initial Shear Modulus	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 013	Fort Thompson	11976		50820	97370		



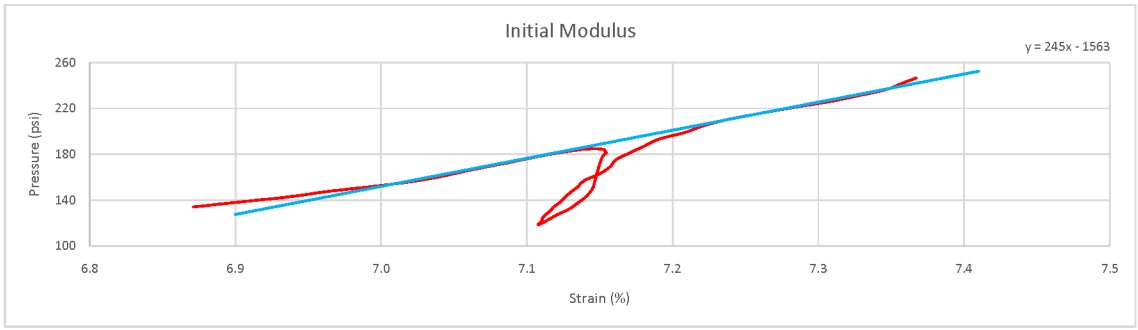


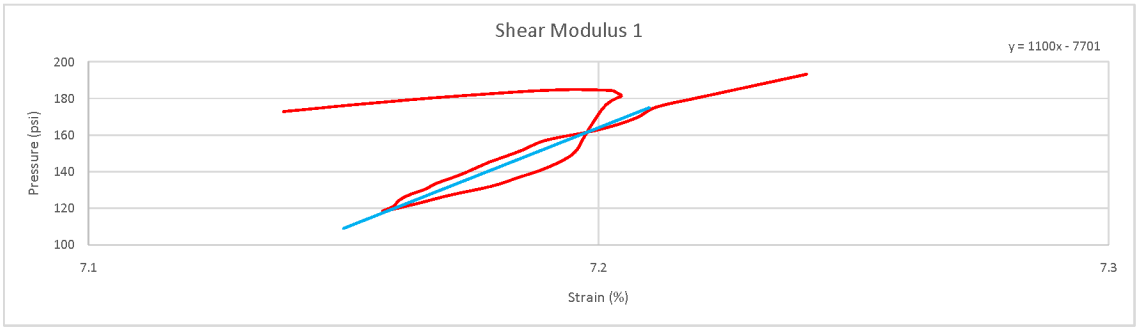


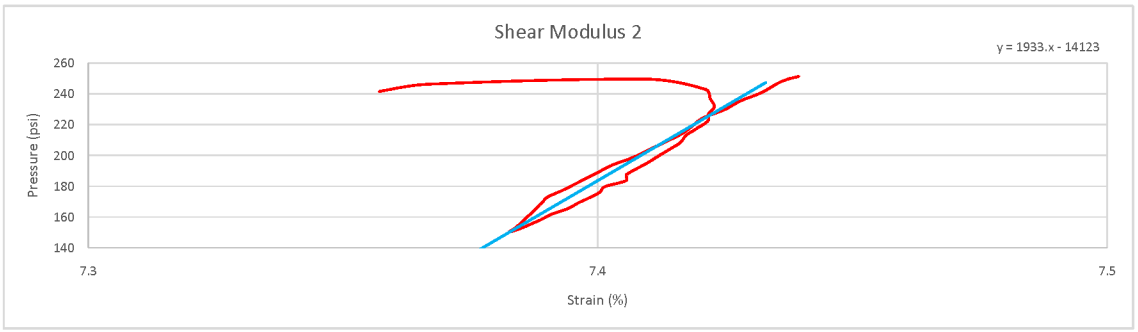
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 014.imp	R-6-2	74.2	Fort Thompson



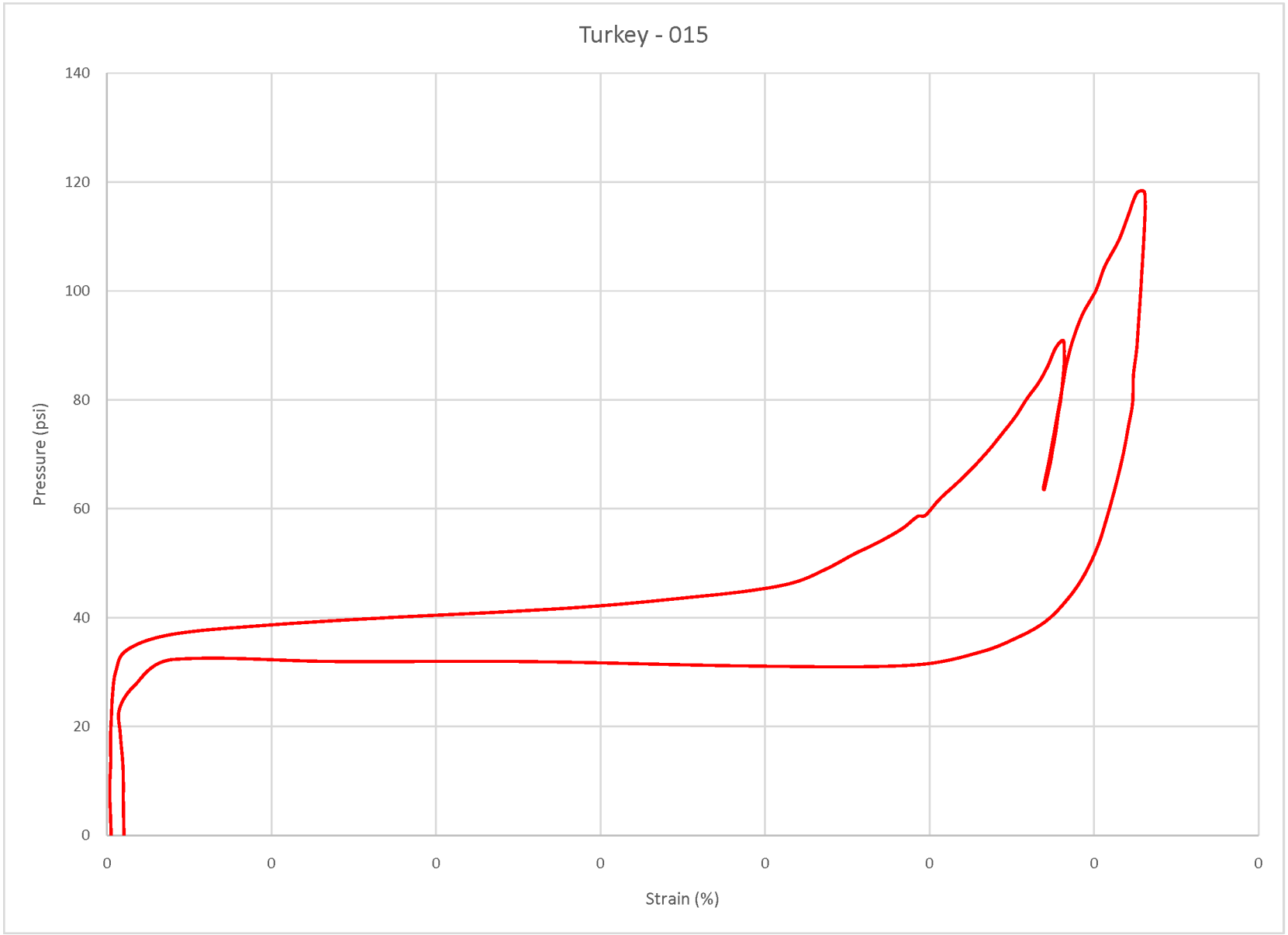
File Name	Formation	Initial Shear Modulus	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 014	Fort Thompson	12250	55000	96665			



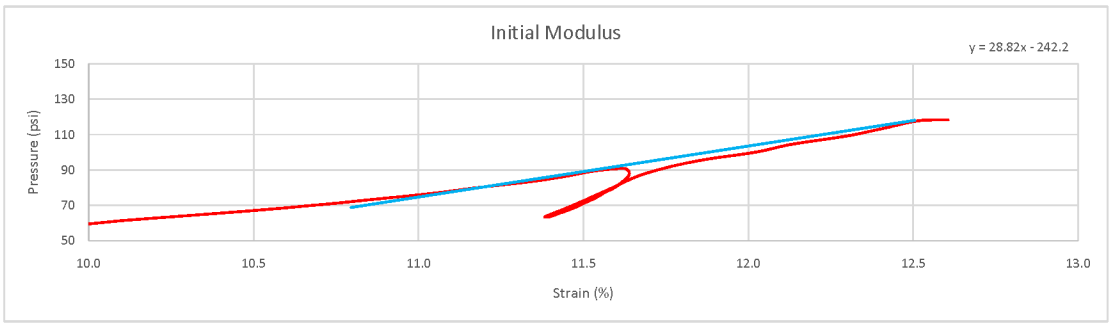


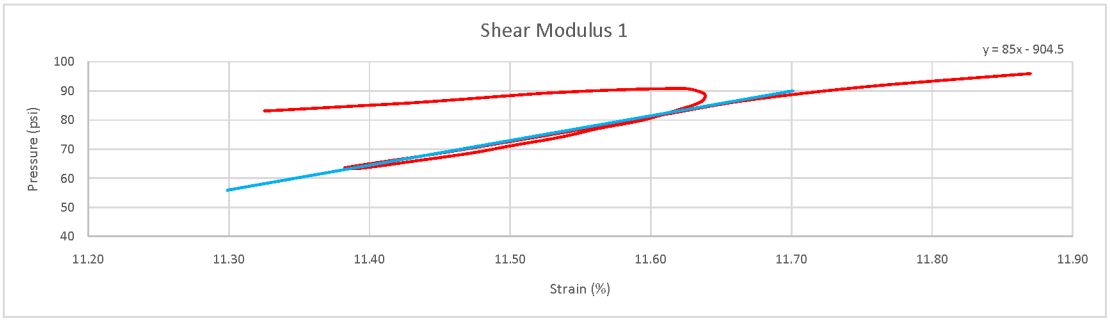


Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 015.imp	R-6-2	84.5	Fort Thompson

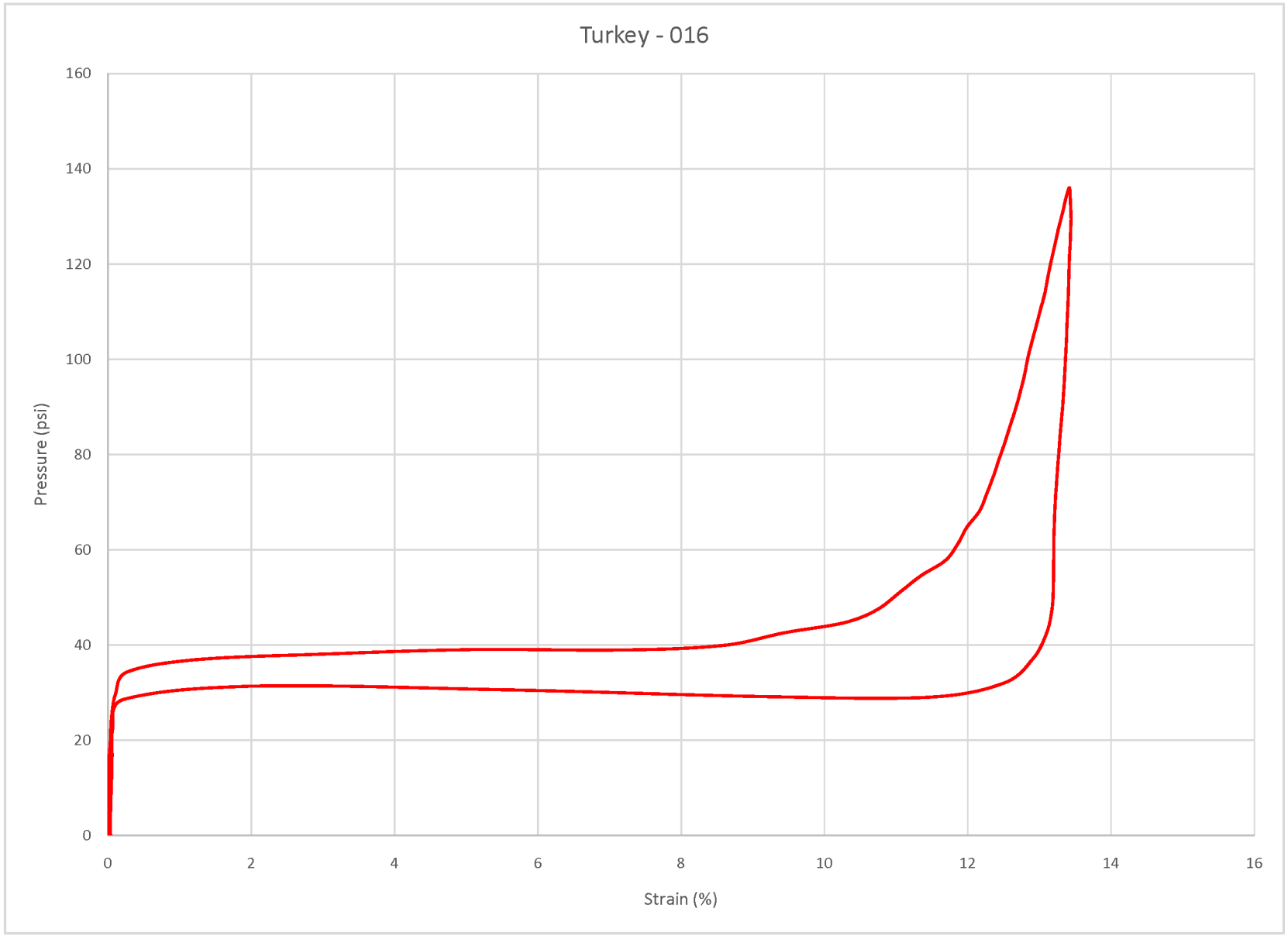


File Name	Formation	Initial Shear Modulus	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 015	Fort Thompson	1441	4250				

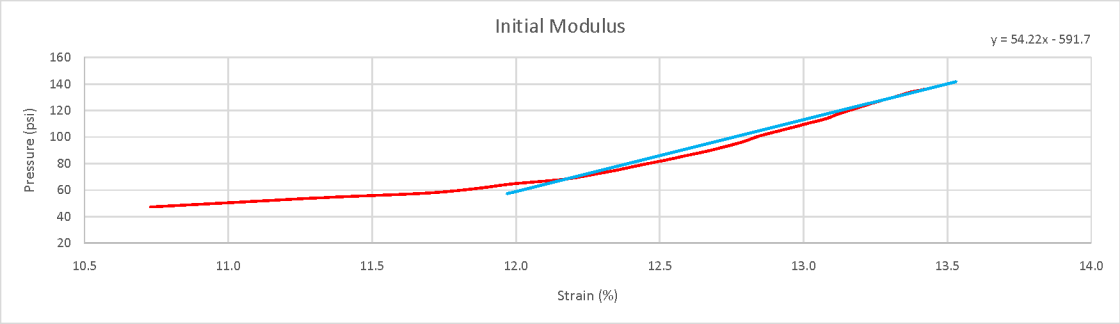




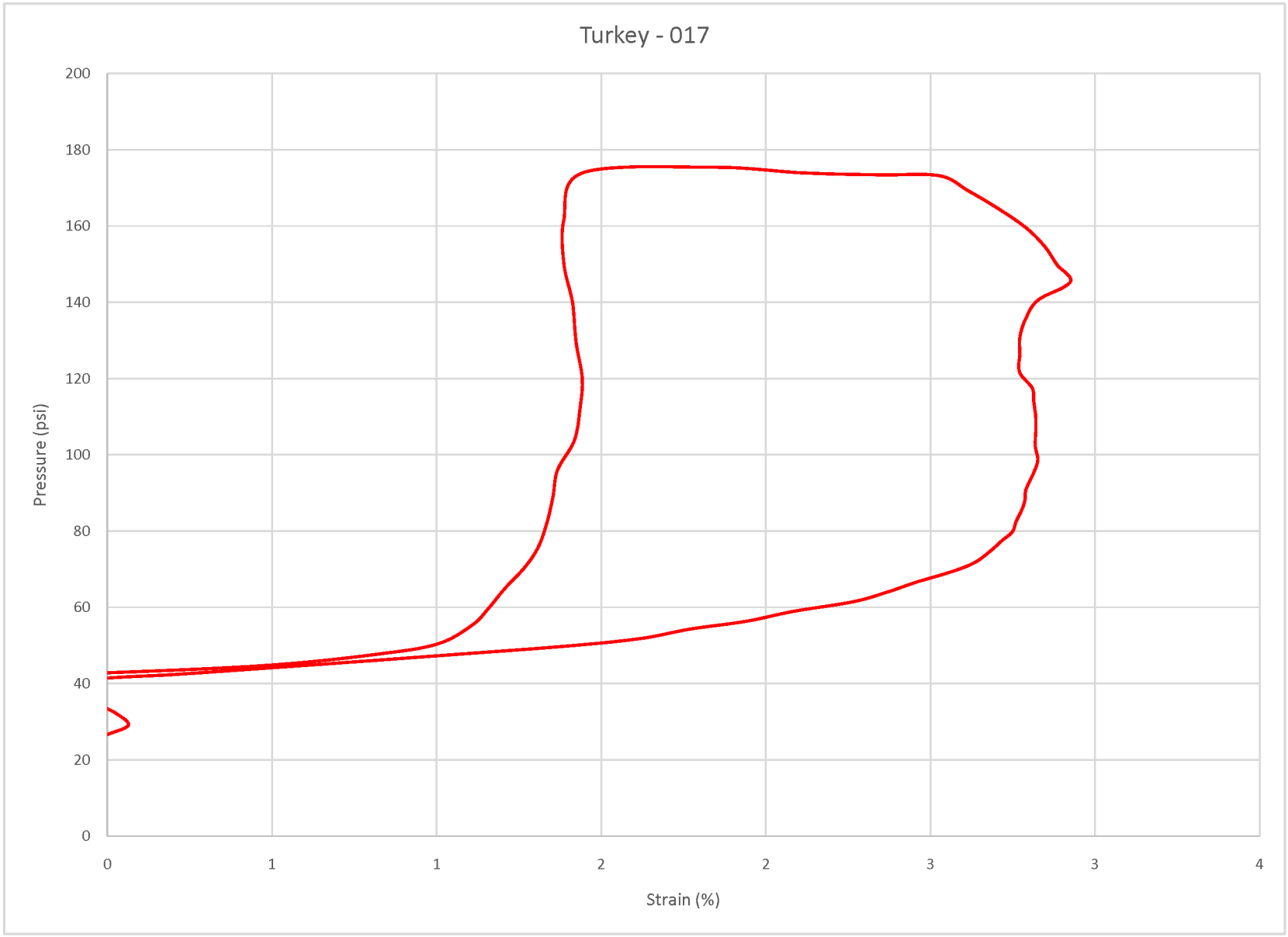
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 016.imp	R-6-2	83	Fort Thompson



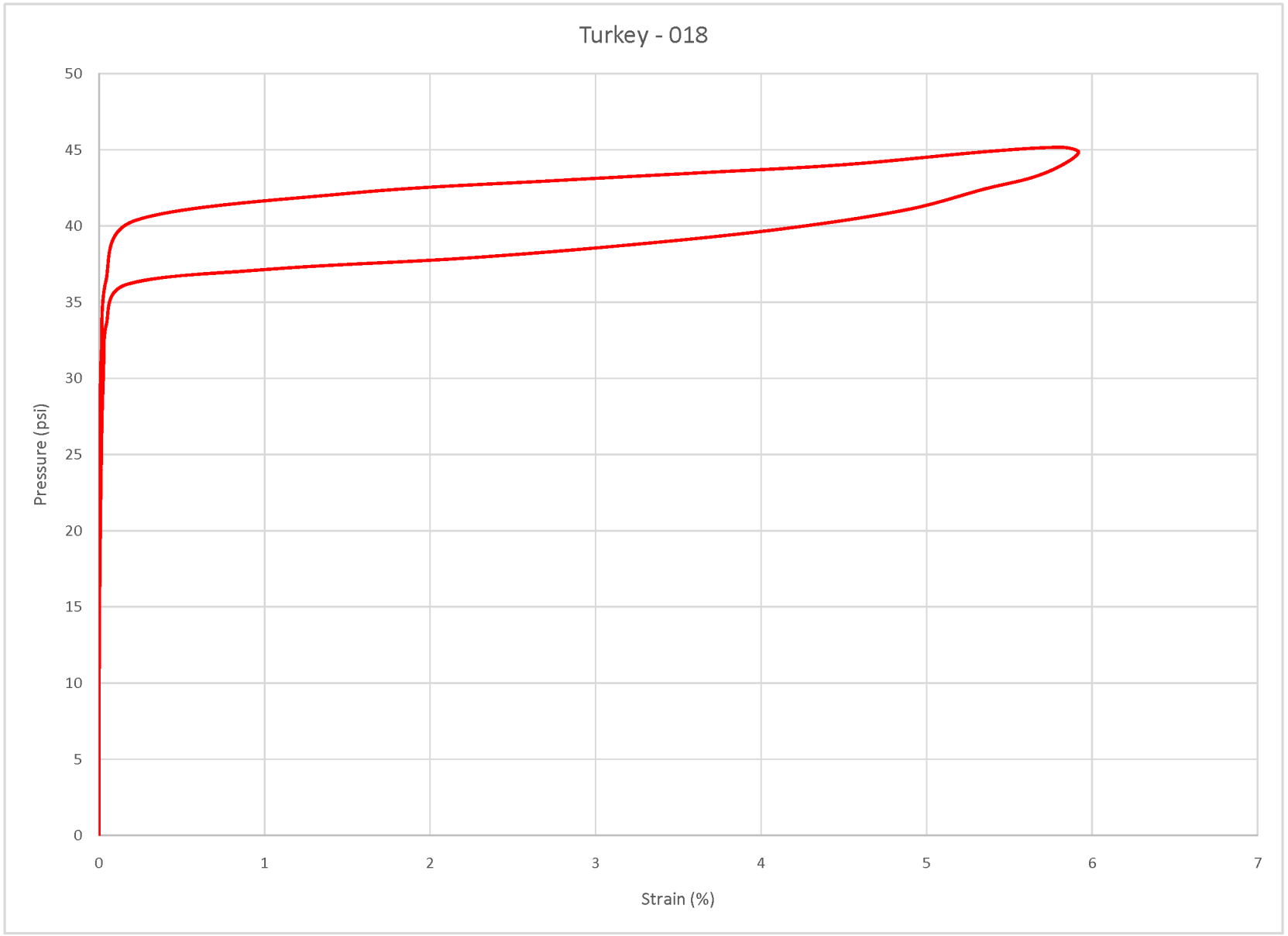
File Name	Formation	Initial Shear Modulus	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 016	Fort Thompson	2711					



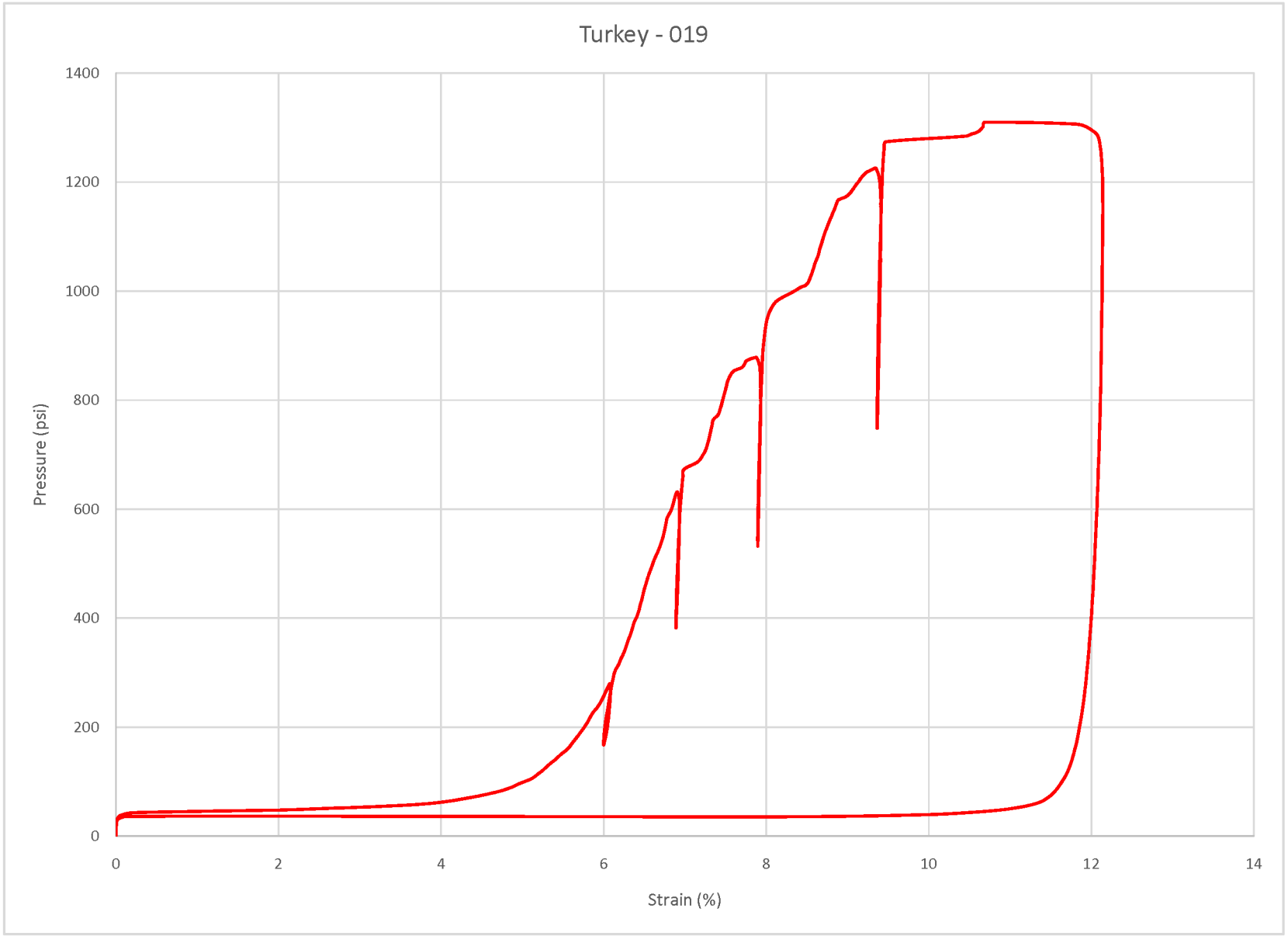
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 017.imp	R-6-2	93.6	Fort Thompson



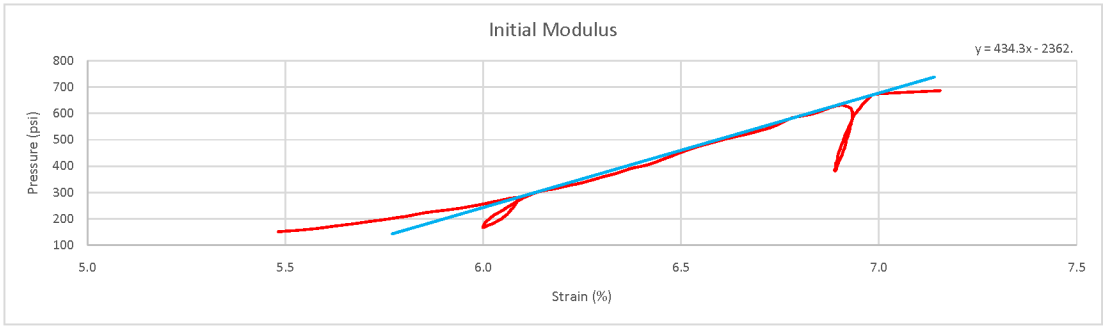
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	4	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 018.imp	R-6-2	94.5	Fort Thompson

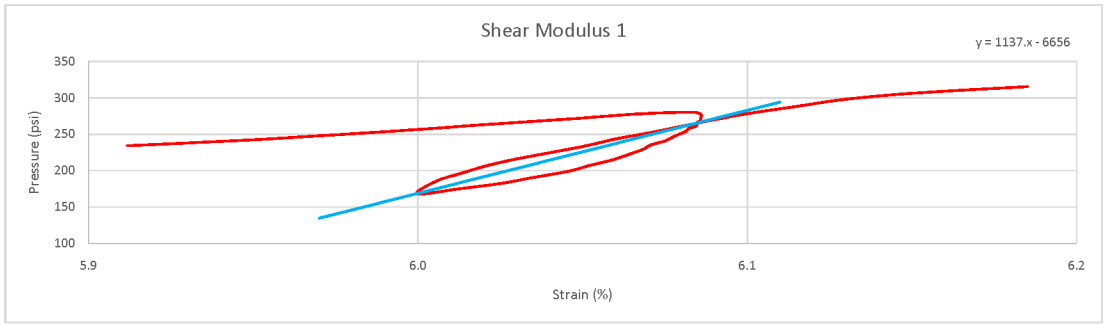


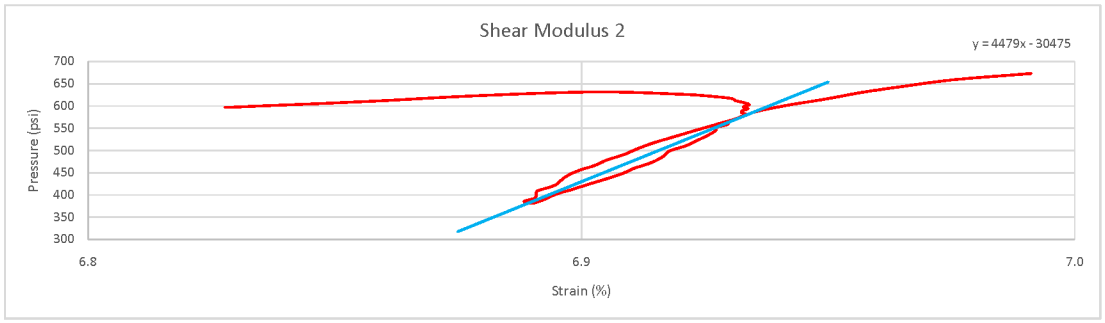
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	4	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 019.imp	R-6-2	97.6	Fort Thompson

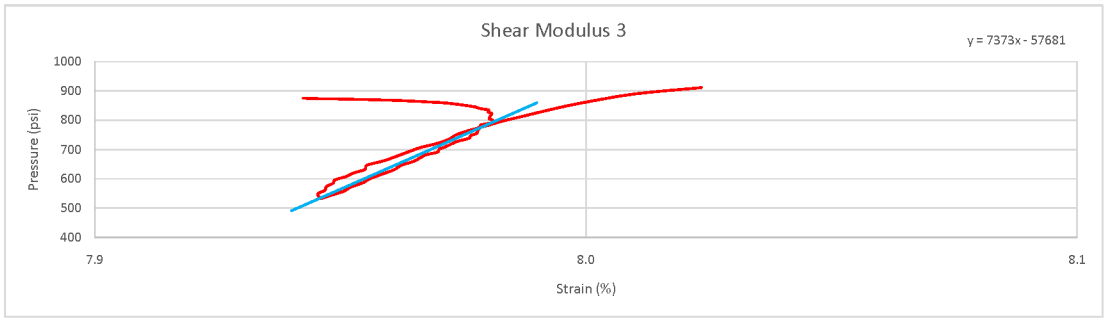


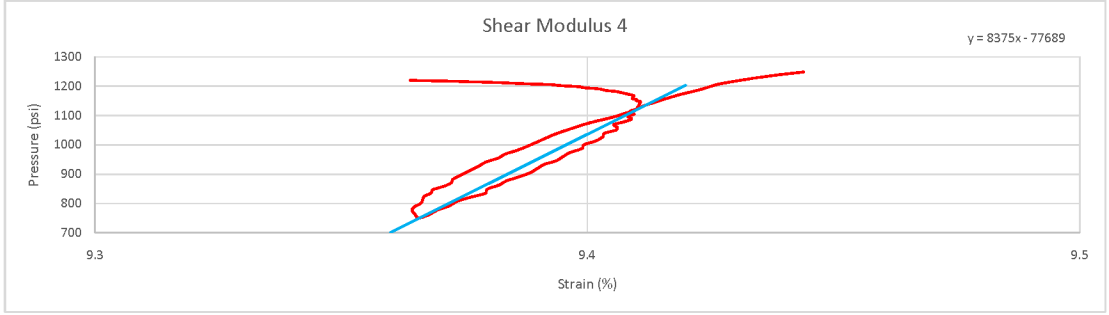
File Name	Formation	Initial Shear Modulus	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 019	Fort Thompson	21700	56875	223950	368650	418750	



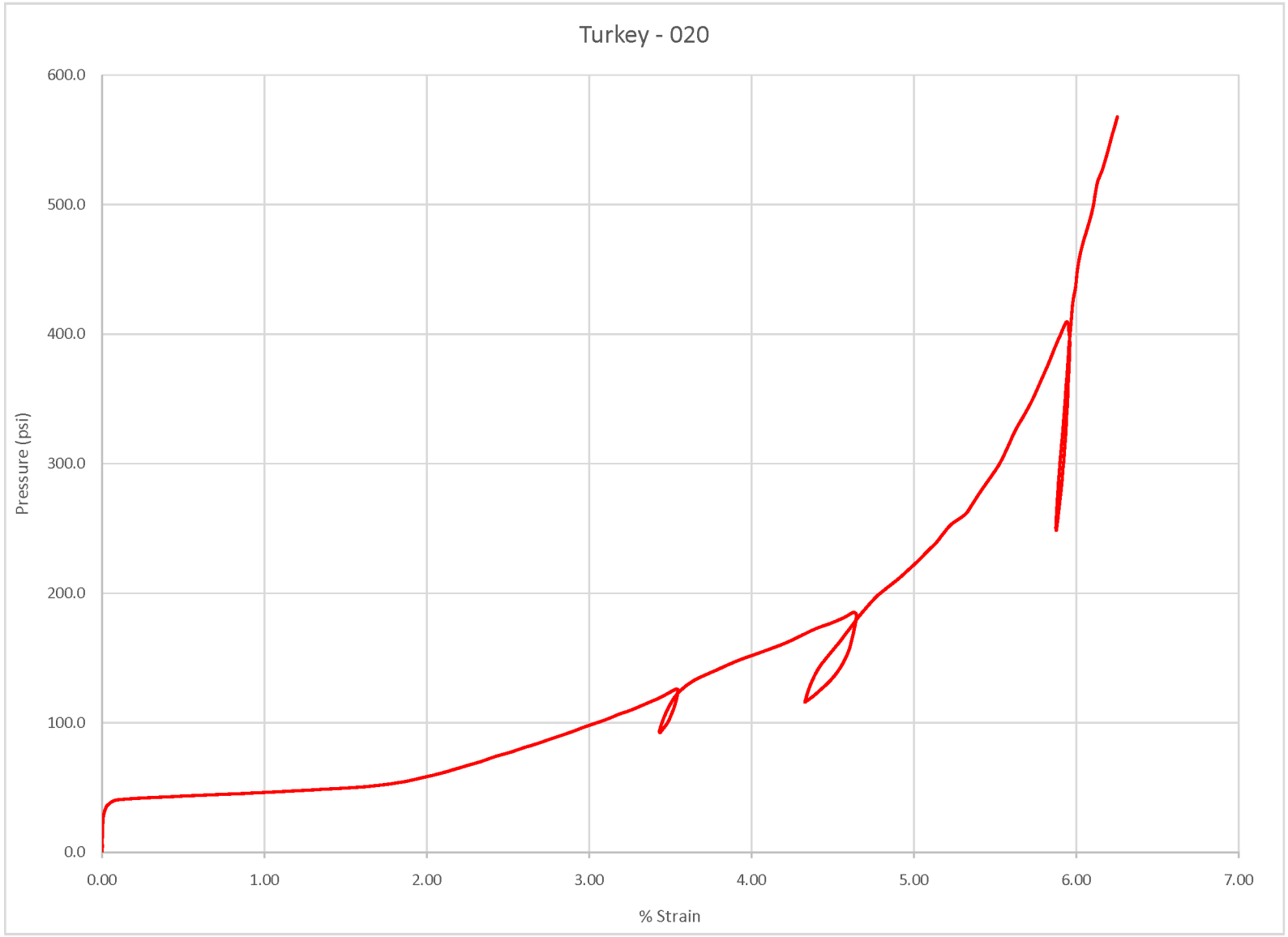






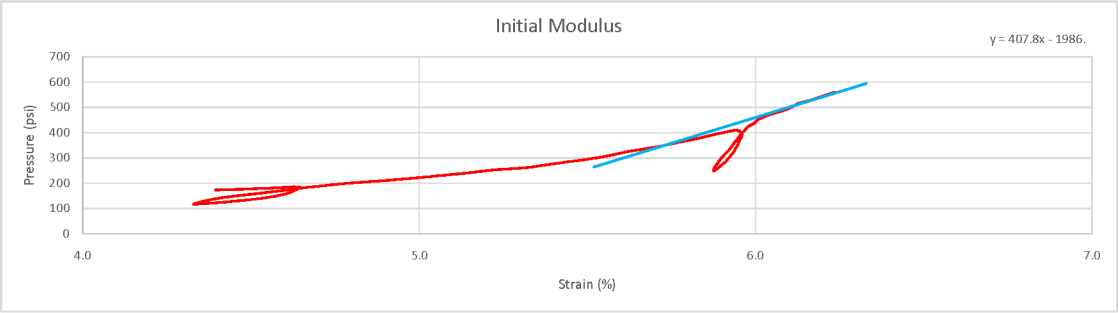


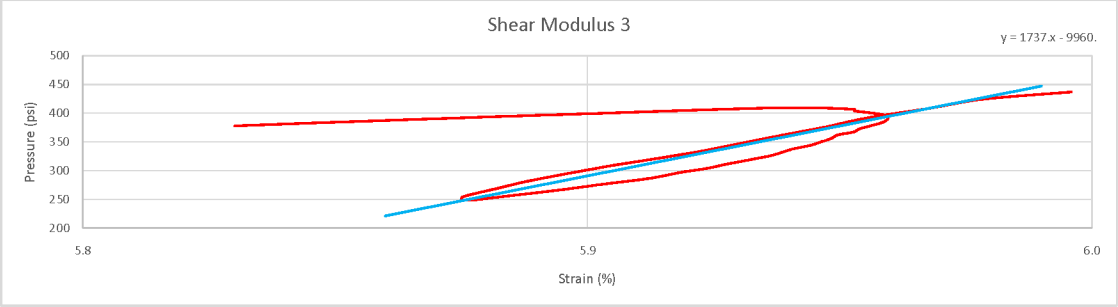
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	4	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 020.imp	R-6-2	96.1	Fort Thompson



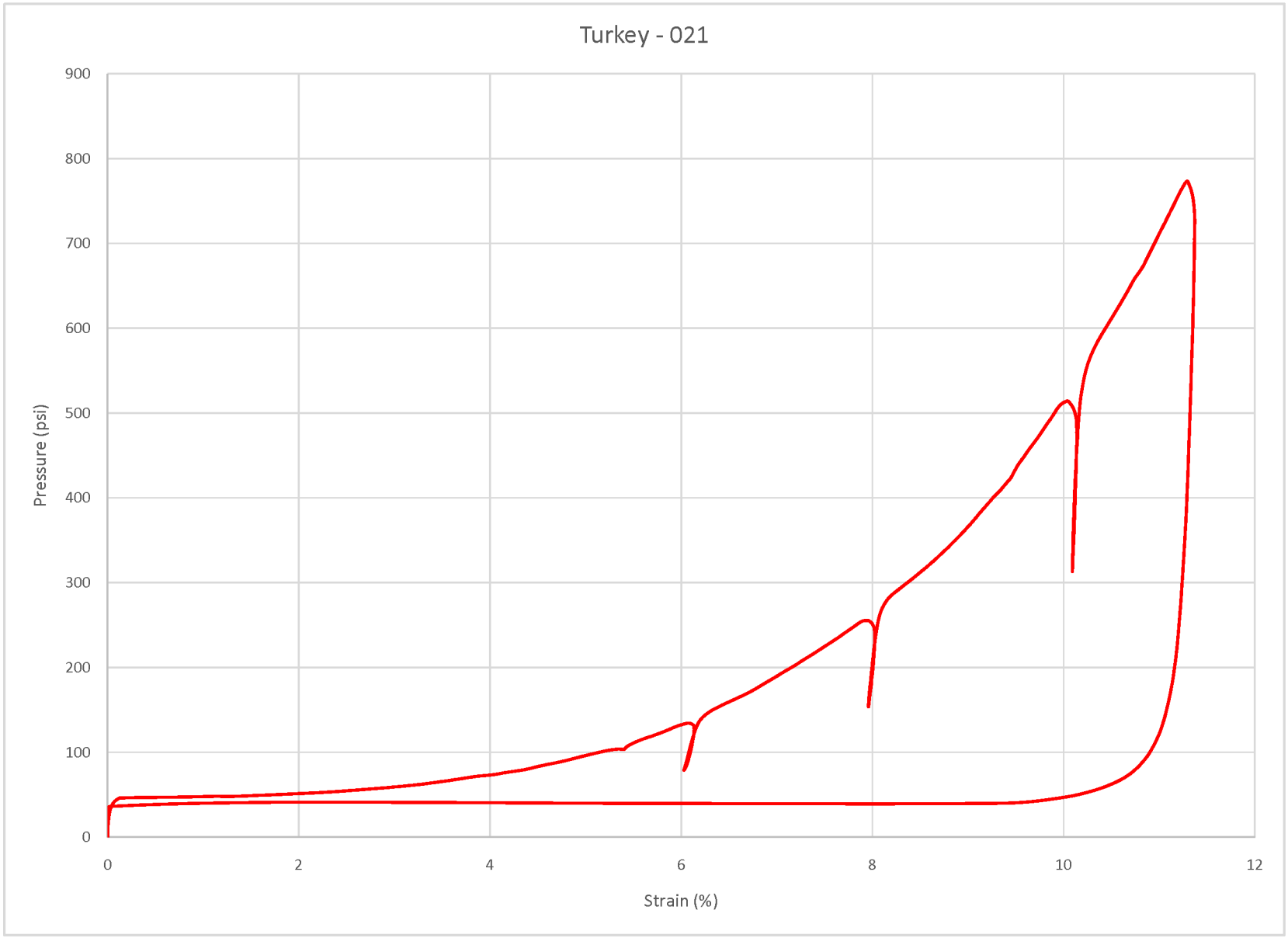
* Membrane Rupture

File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 020	Fort Thompson	20390			86875		

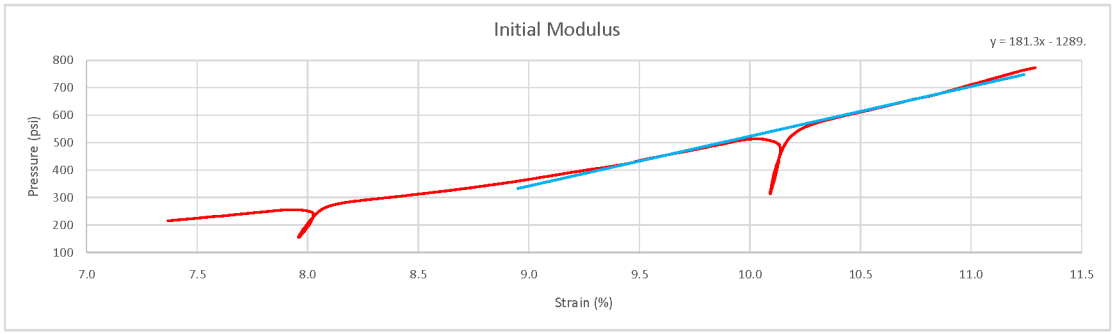


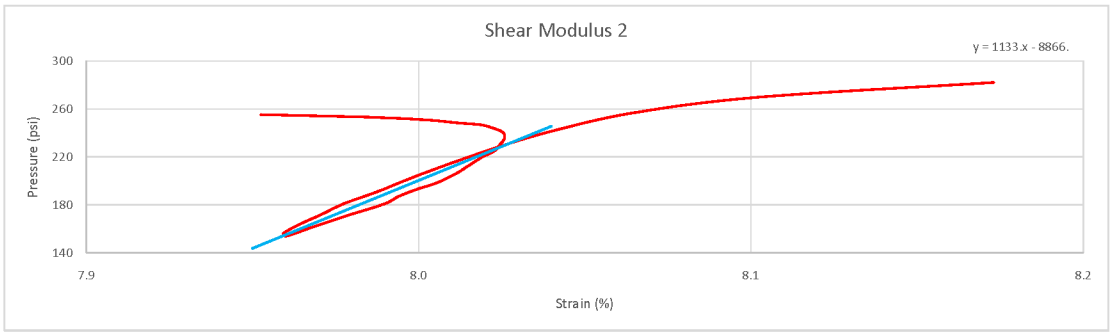


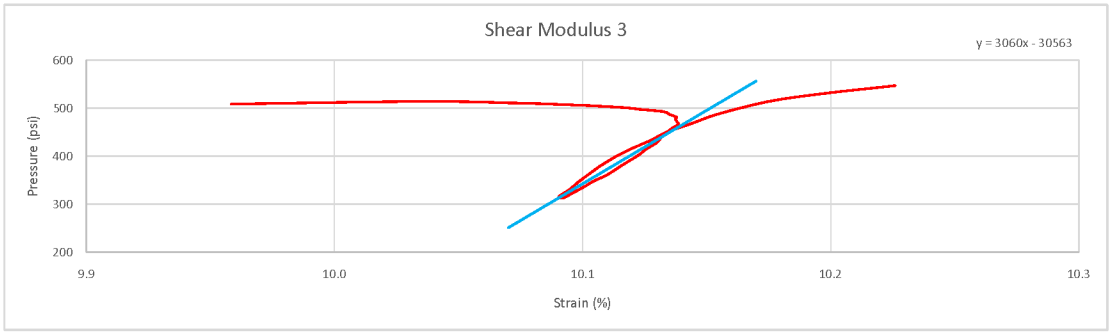
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	4	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 019.imp	R-6-2	105.5	Fort Thompson



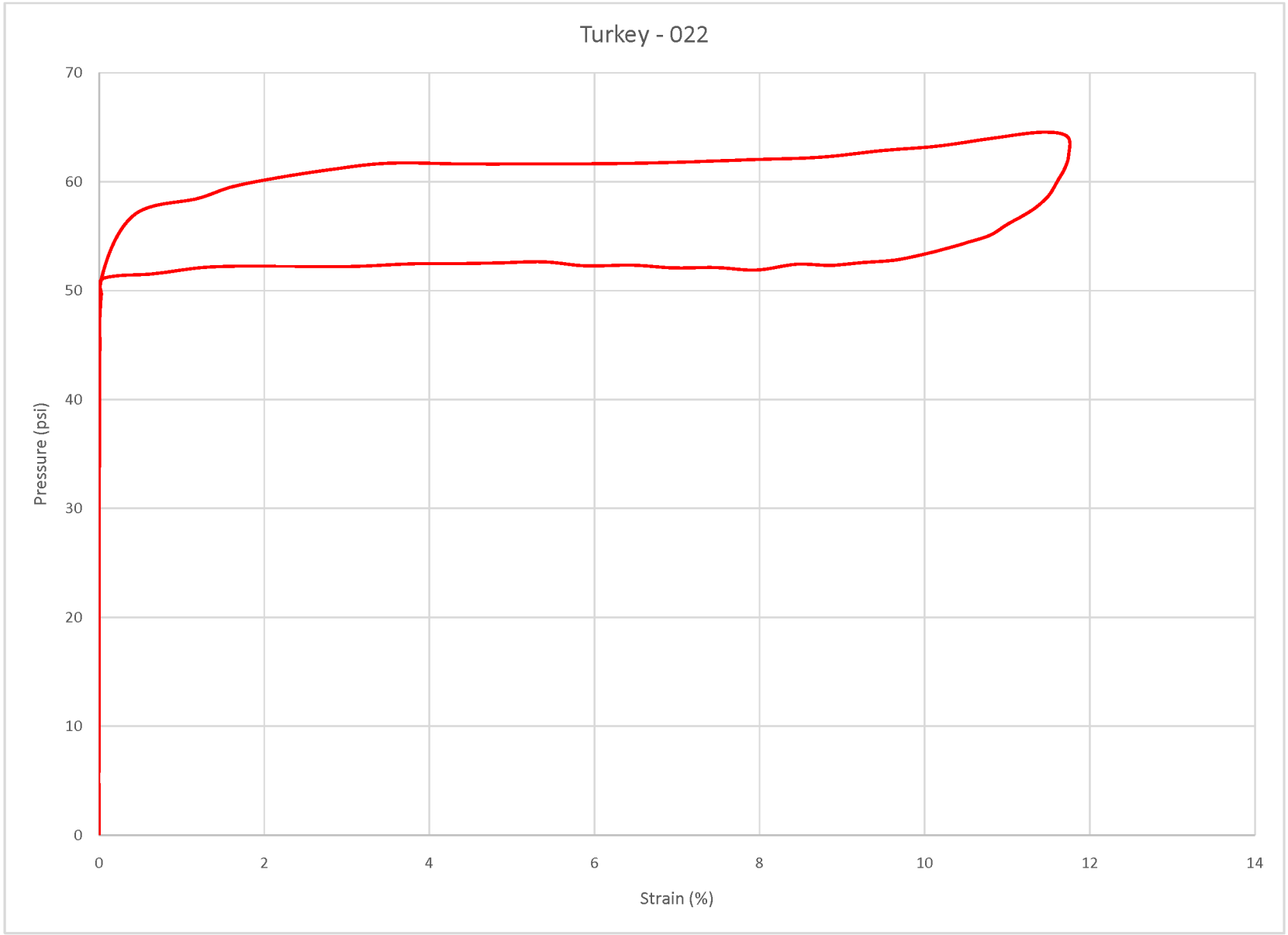
File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 021	Fort Thompson	9067		56665	153000		



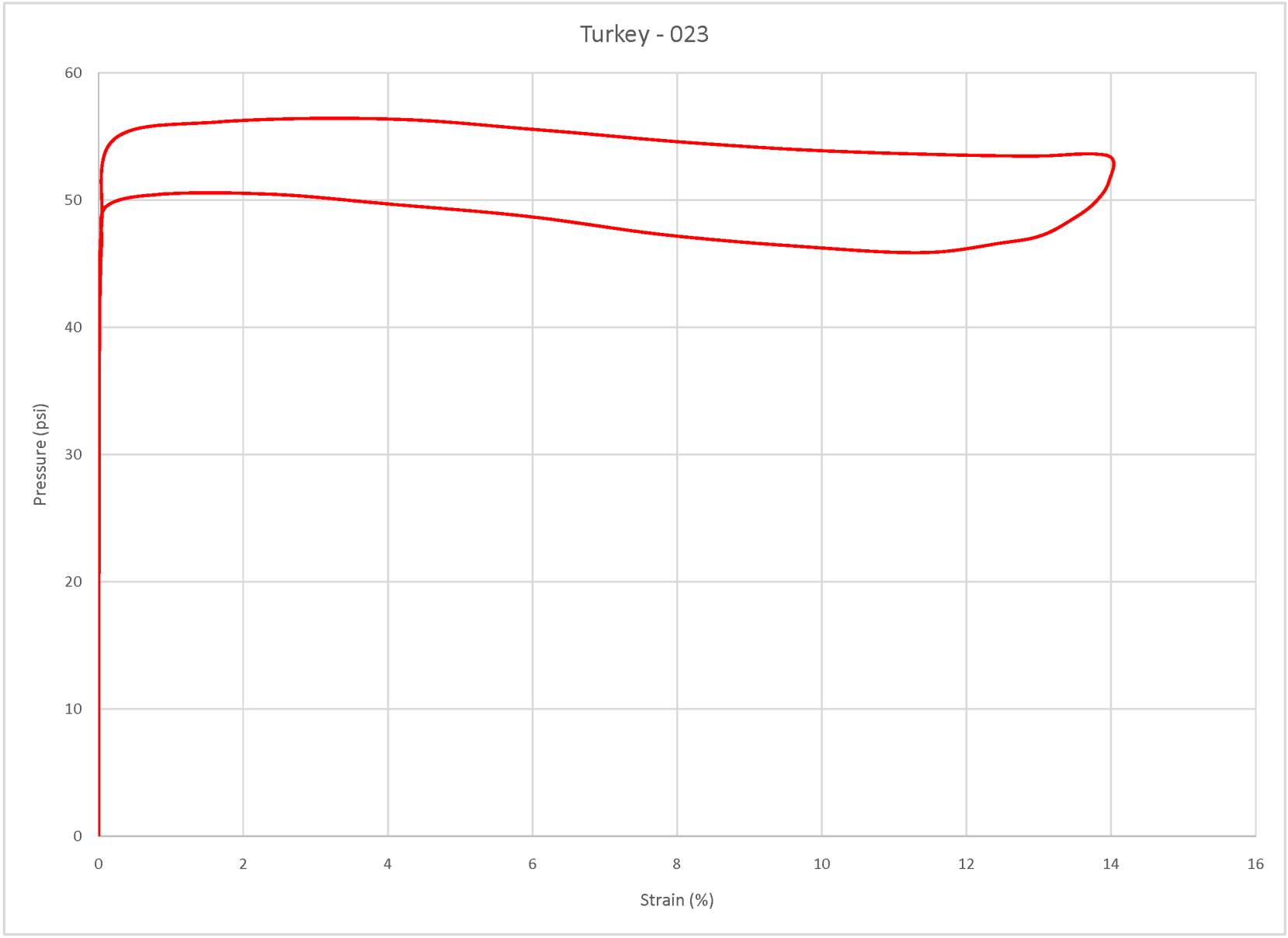




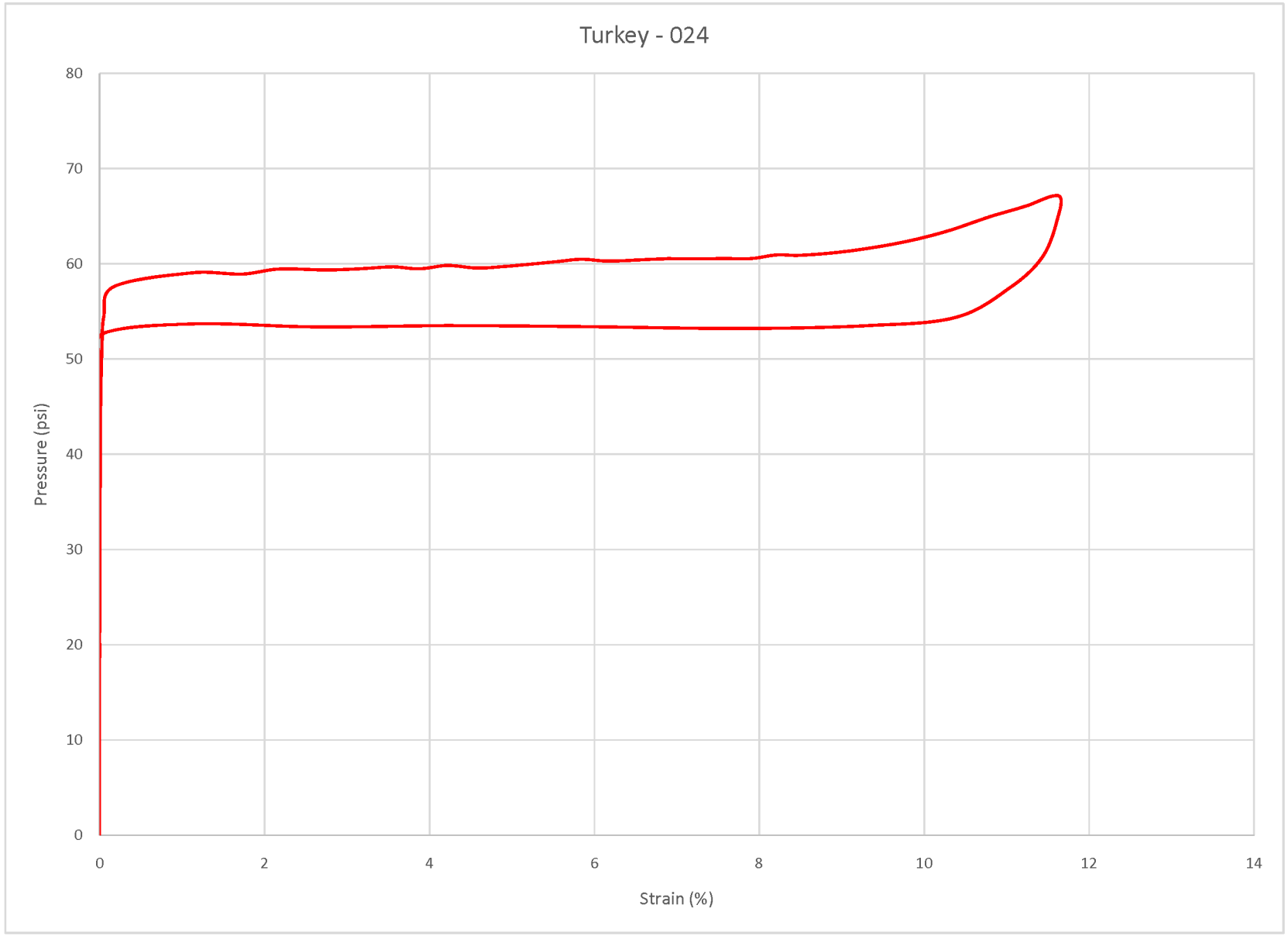
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	4	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 022.imp	R-6-2	126.7	Upper Tamiami



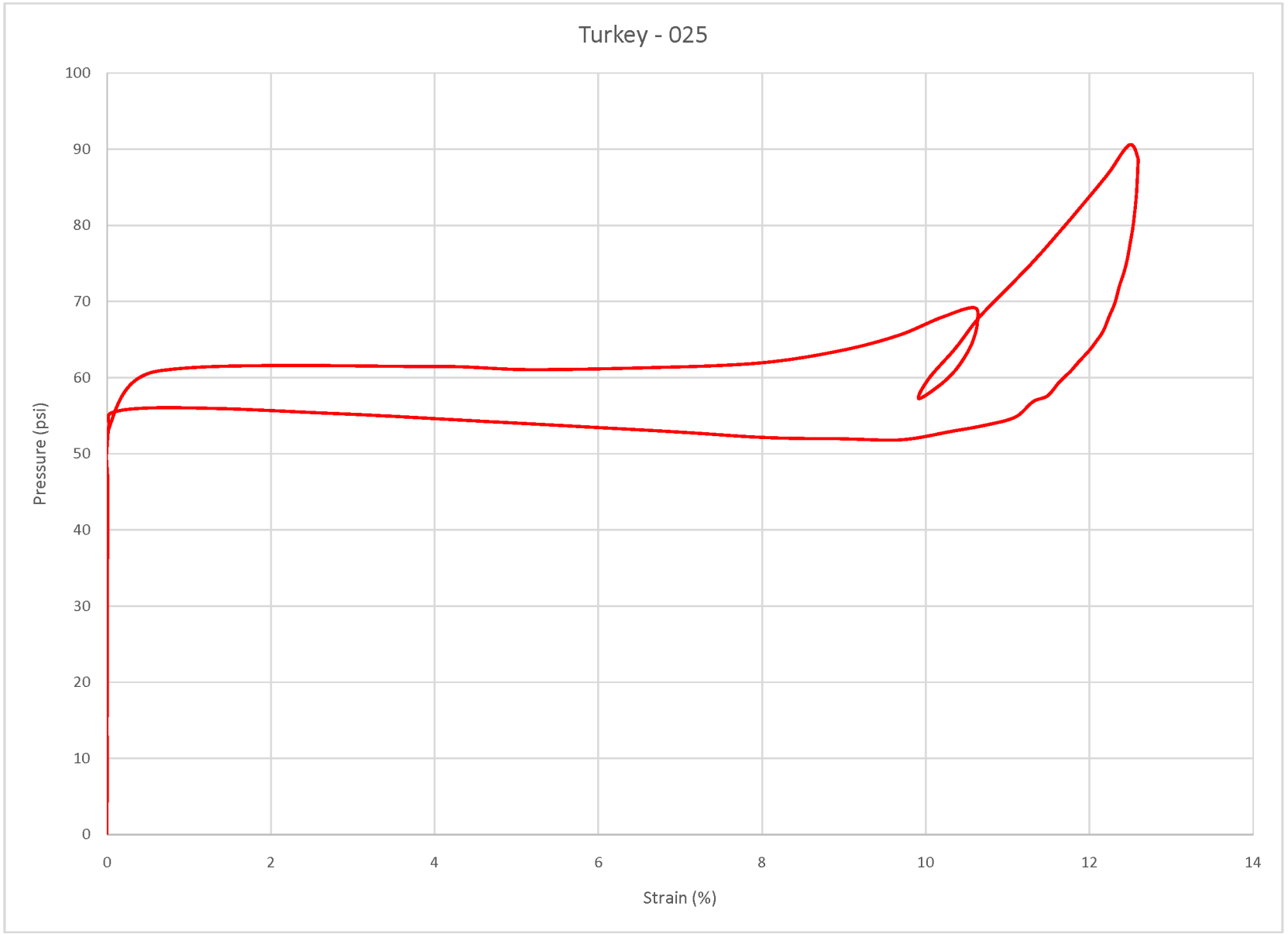
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	4	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 023.imp	R-6-2	124.7	Upper Tamiami



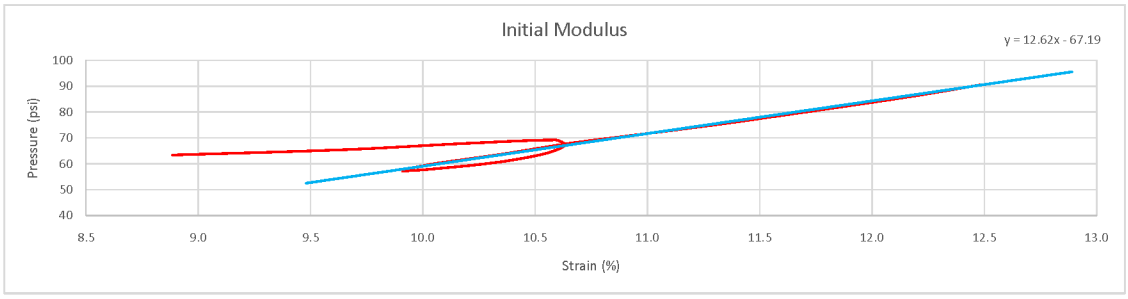
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	4	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 024.imp	R-6-2	131	Upper Tamiami

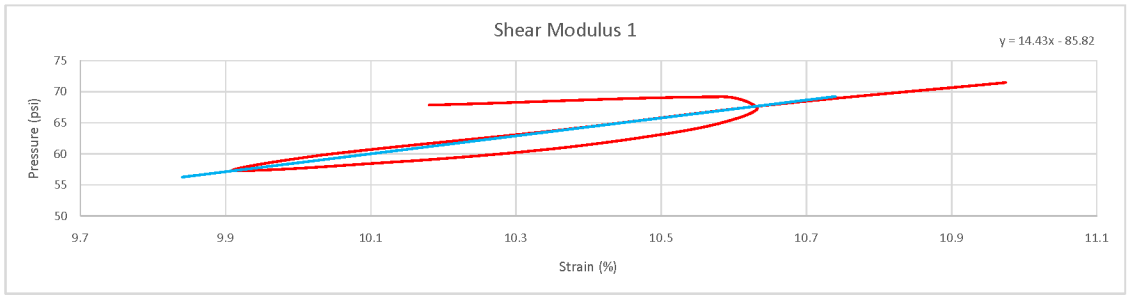


Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	4	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 025.imp	R-6-2	134.5	Upper Tamiami

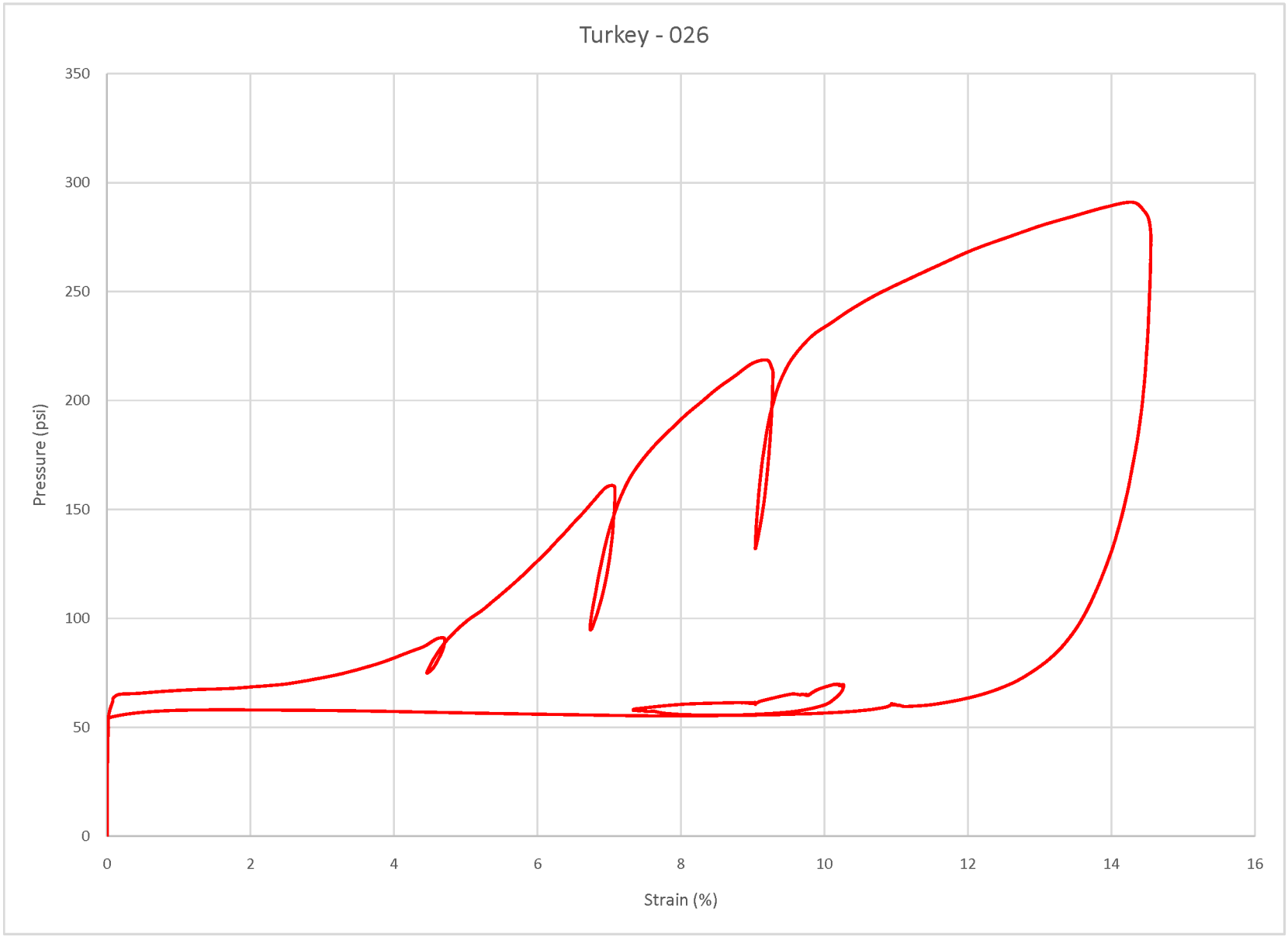


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 025	Upper Tamiami	631	722				

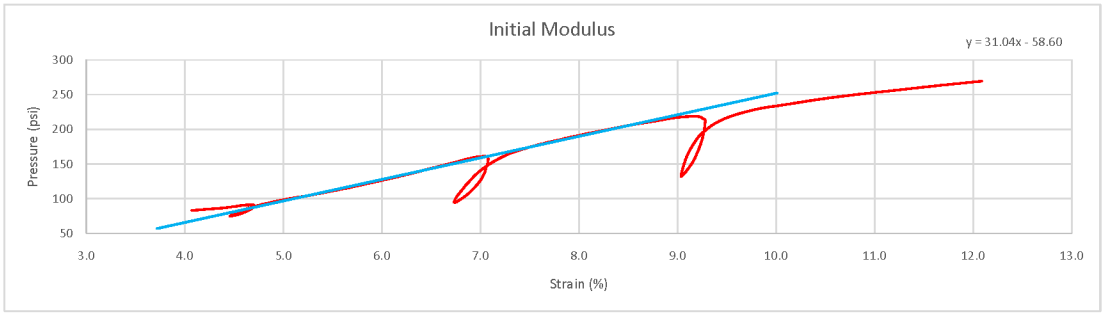


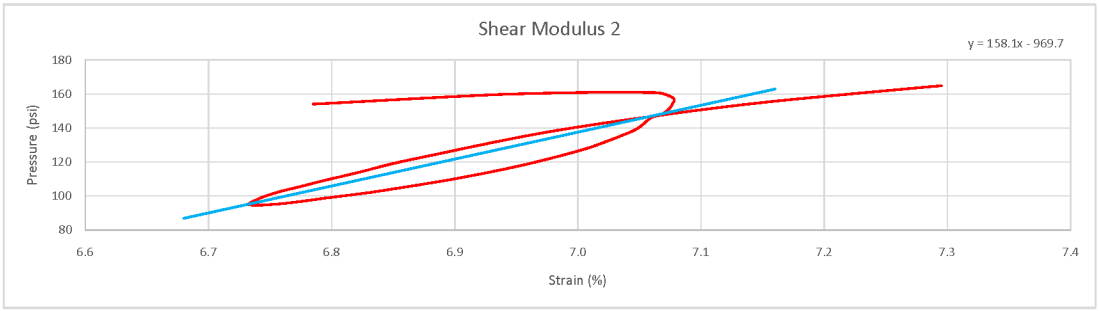


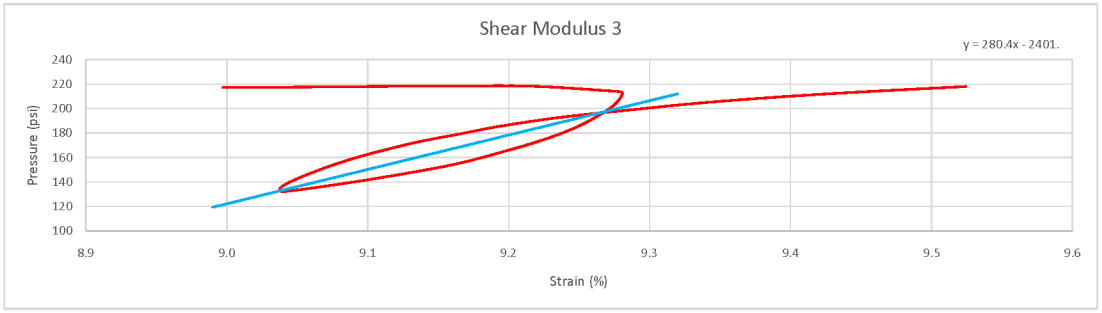
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	4	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 026.imp	R-6-2	143.7	Upper Tamiami



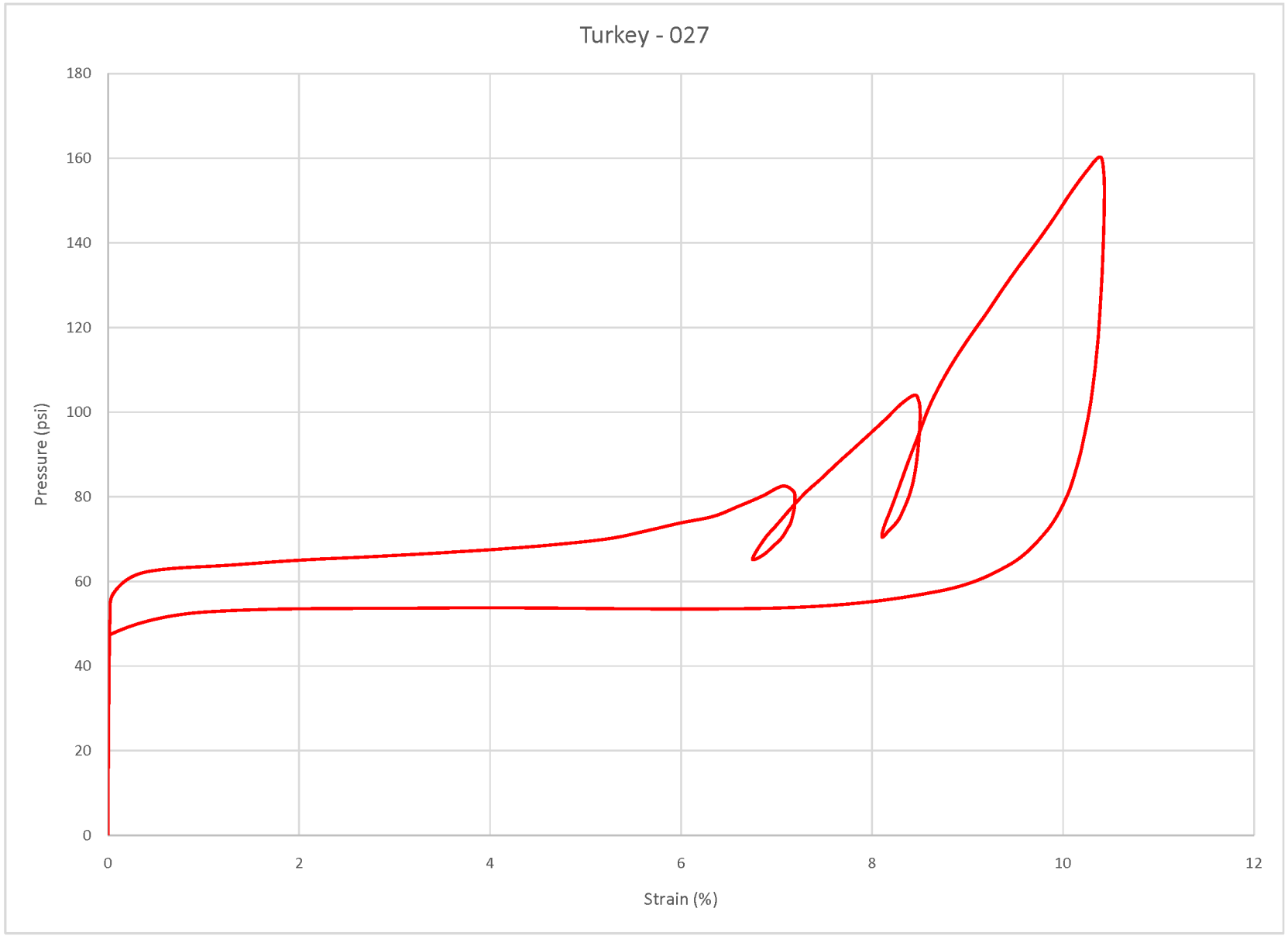
File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 026	Upper Tamiami	1552		7909	14022		



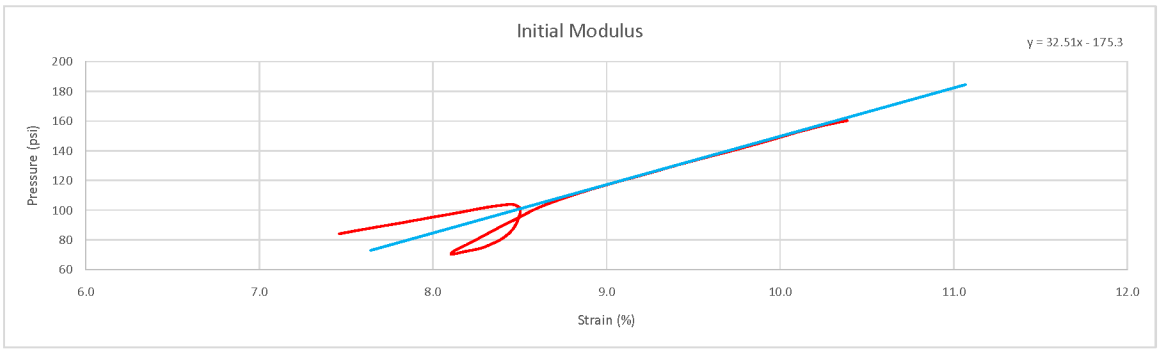


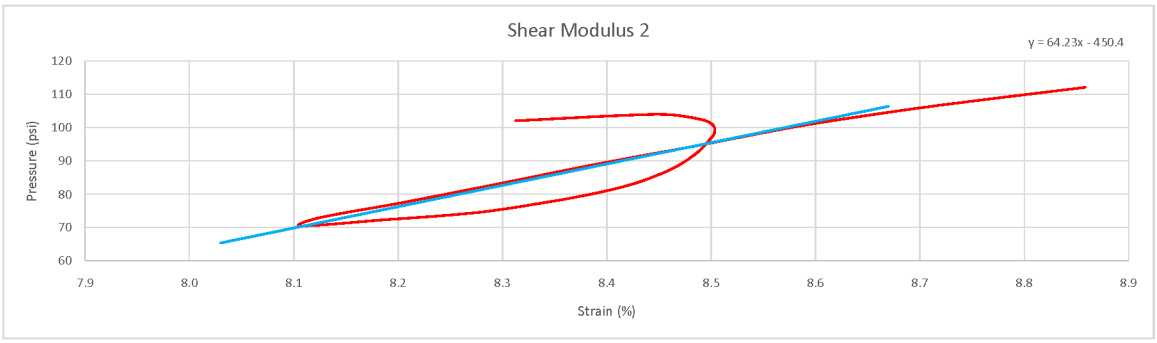


Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	4	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 027.imp	R-6-2	142.2	Upper Tamiami

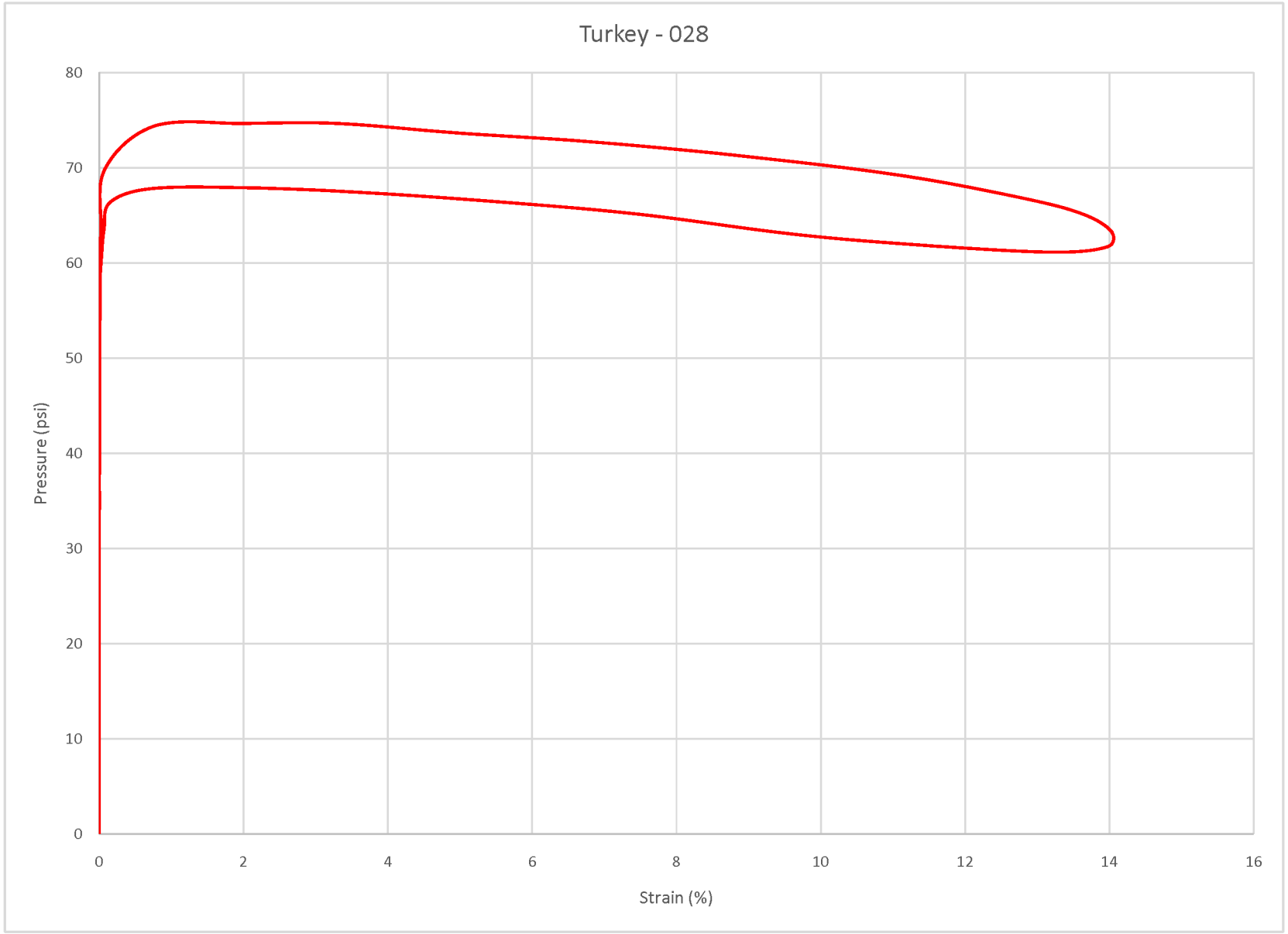


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 027	Upper Tamiami	1626		3212			

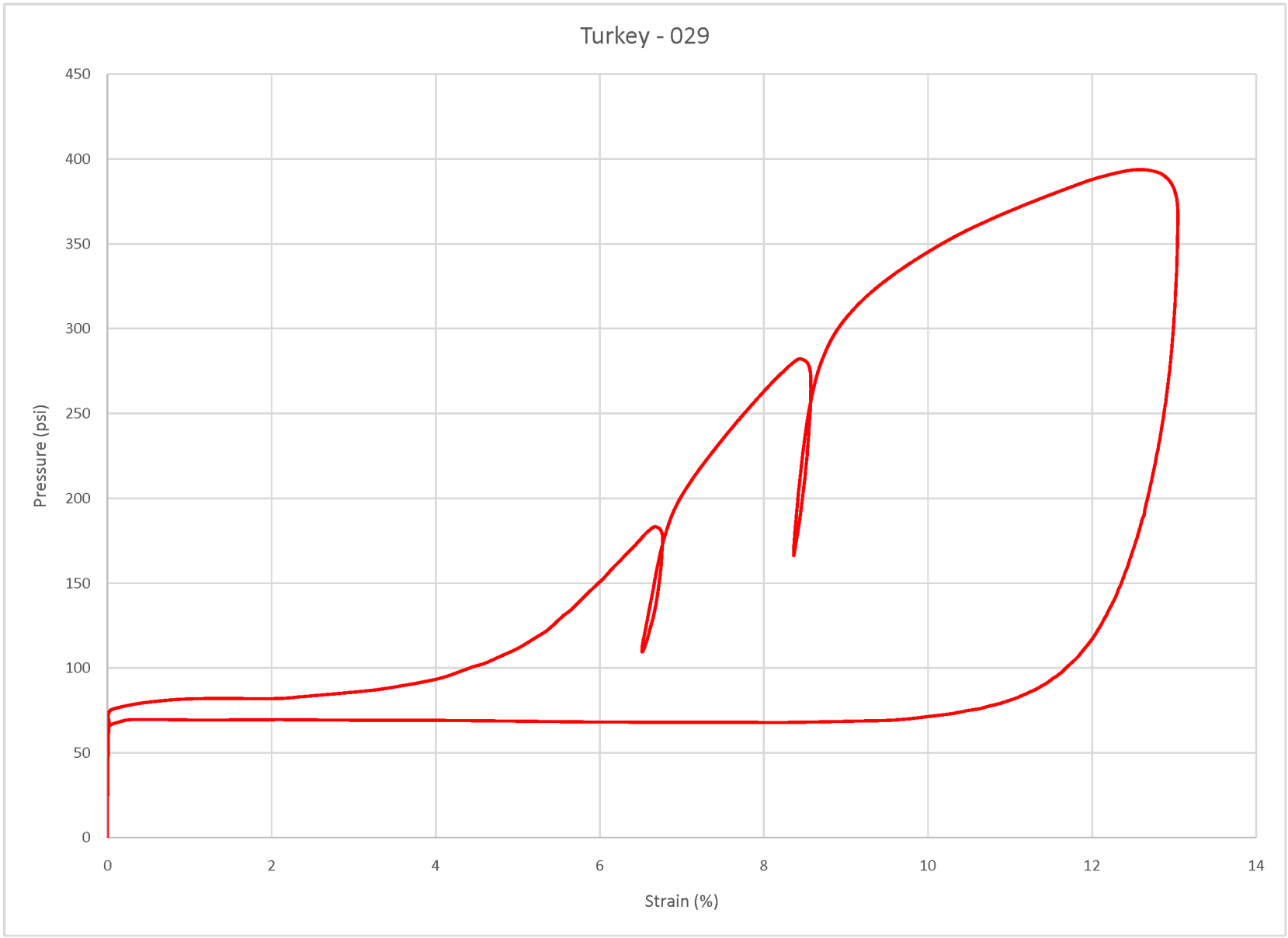




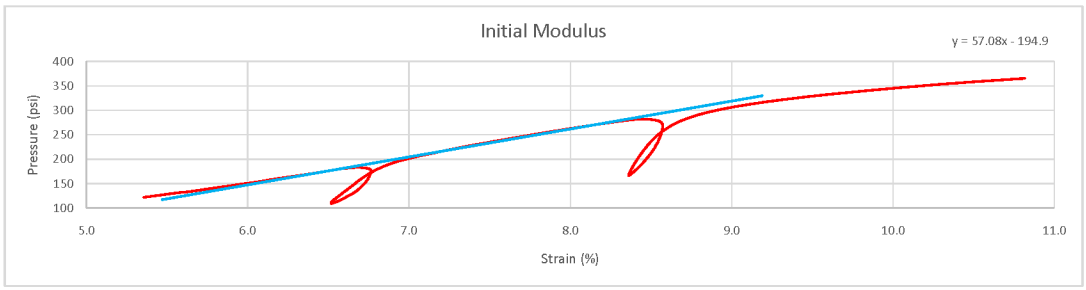
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	4	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 028.imp	R-6-2	162	Lower Tamiami

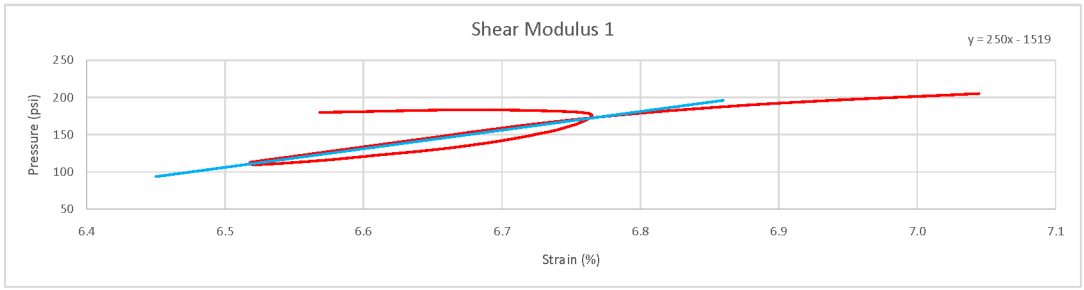


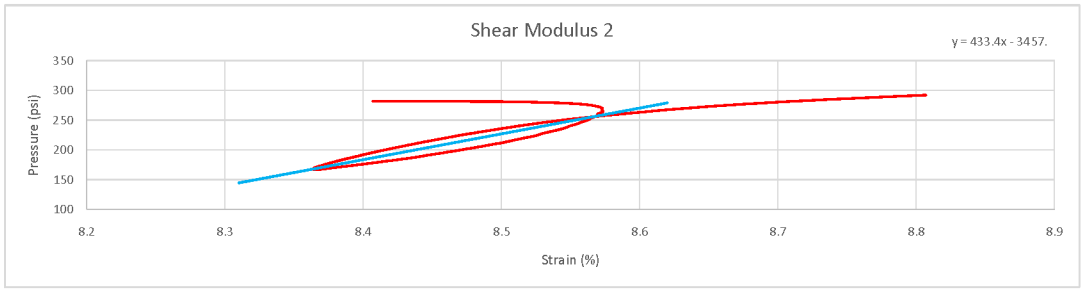
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	4	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 029.imp	R-6-2	170	Lower Tamiami



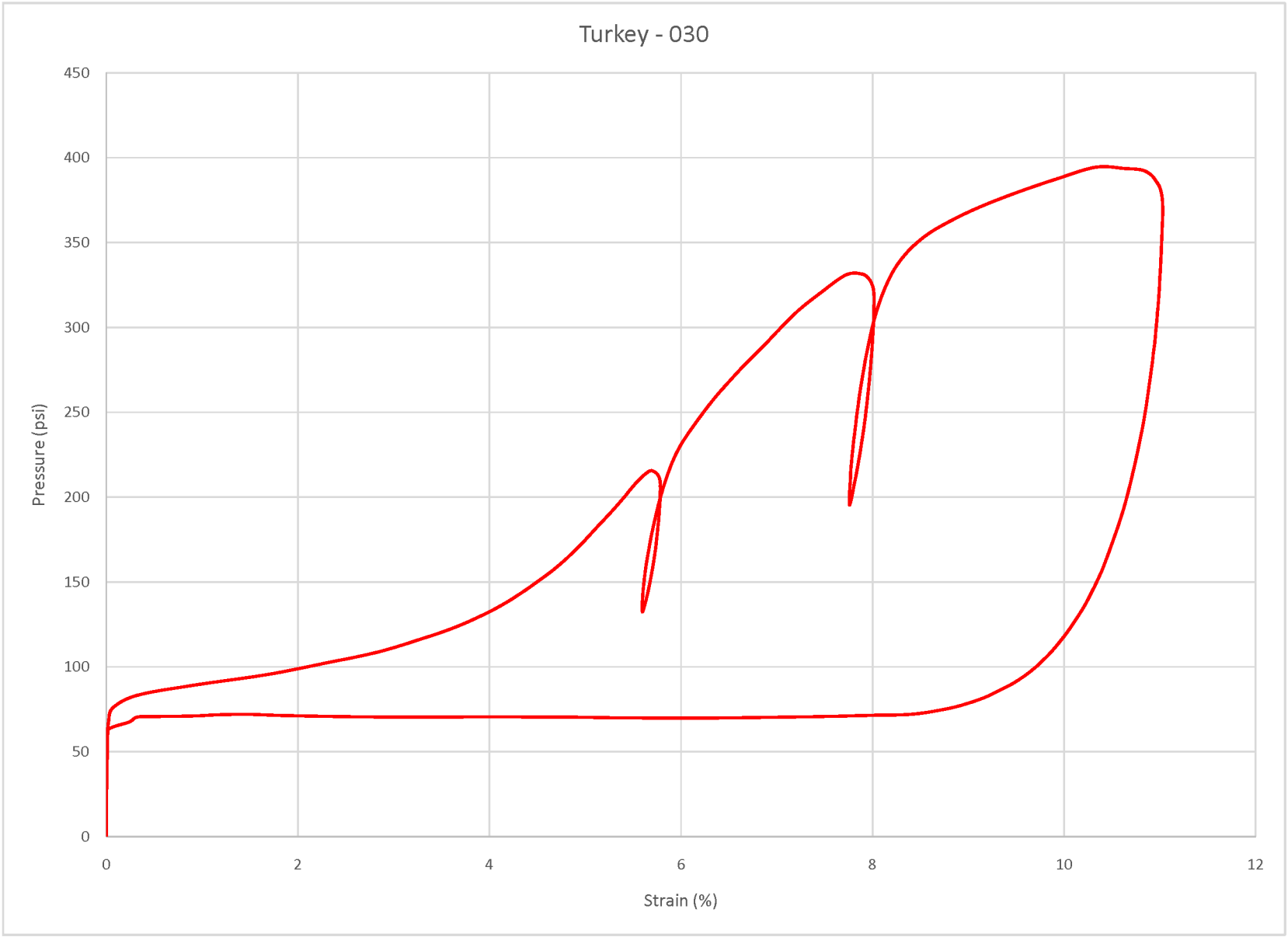
File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 029	Lower Tamiami	2854	12500	21674			



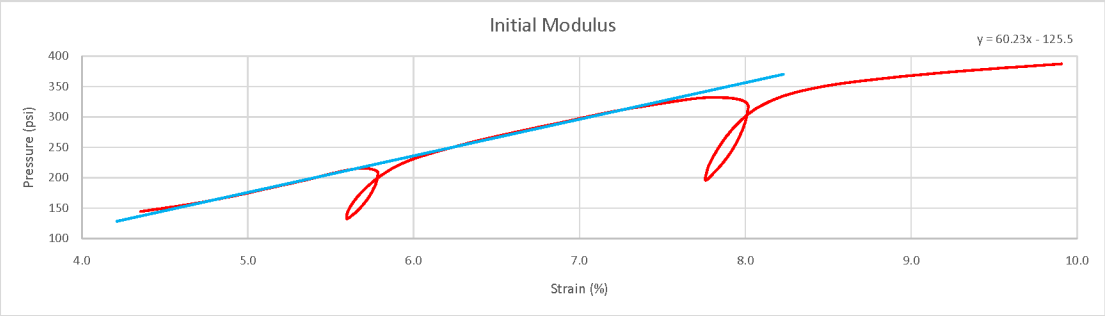


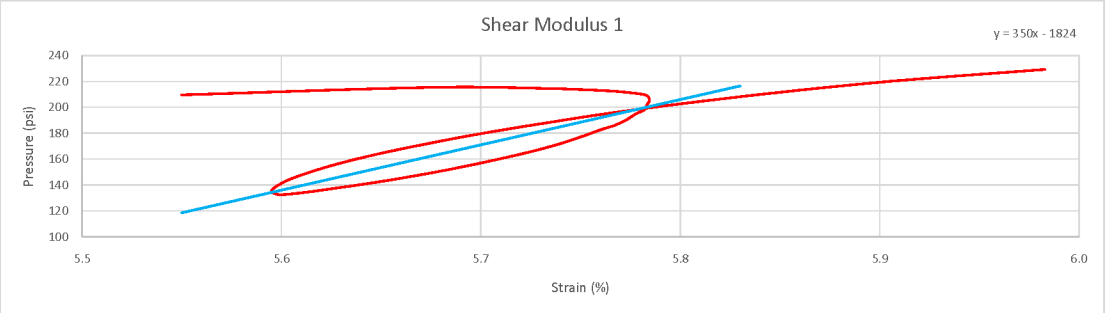


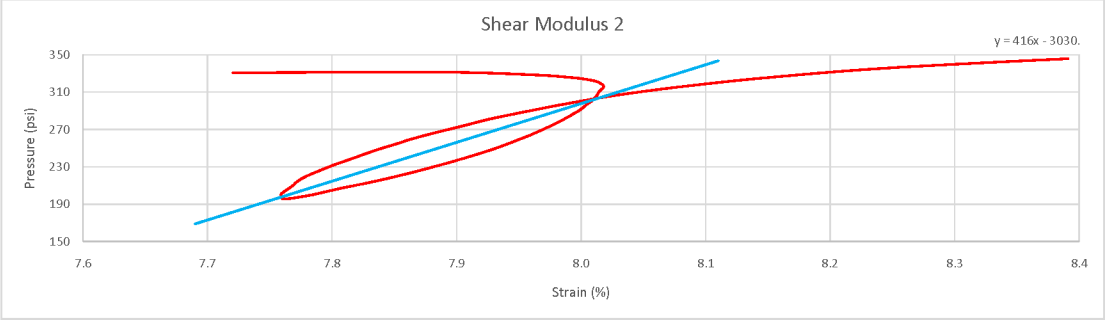
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	4	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 030.imp	R-6-2	168.5	Lower Tamiami



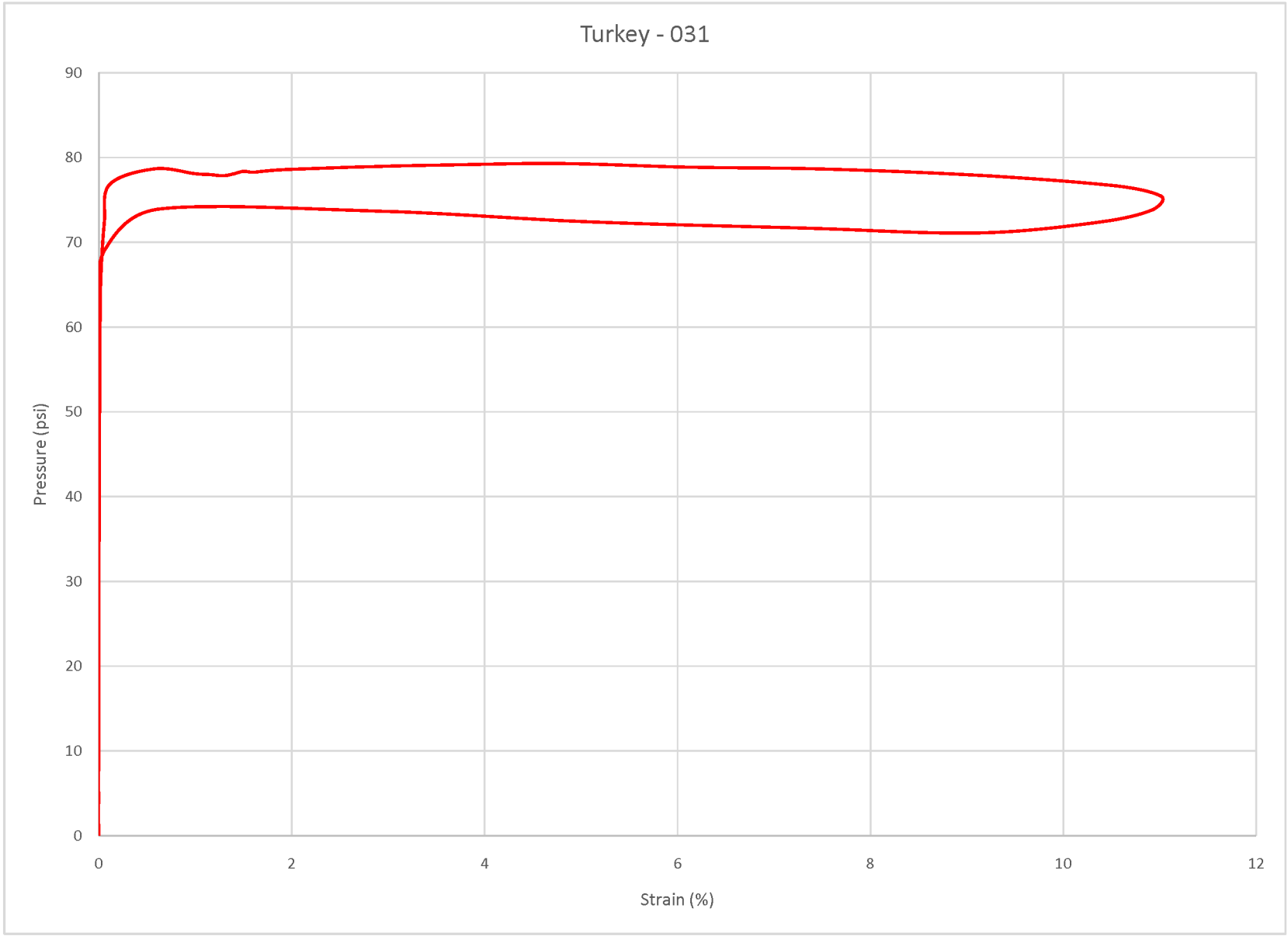
File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 030	Lower Tamiami	3012	17500	20800			



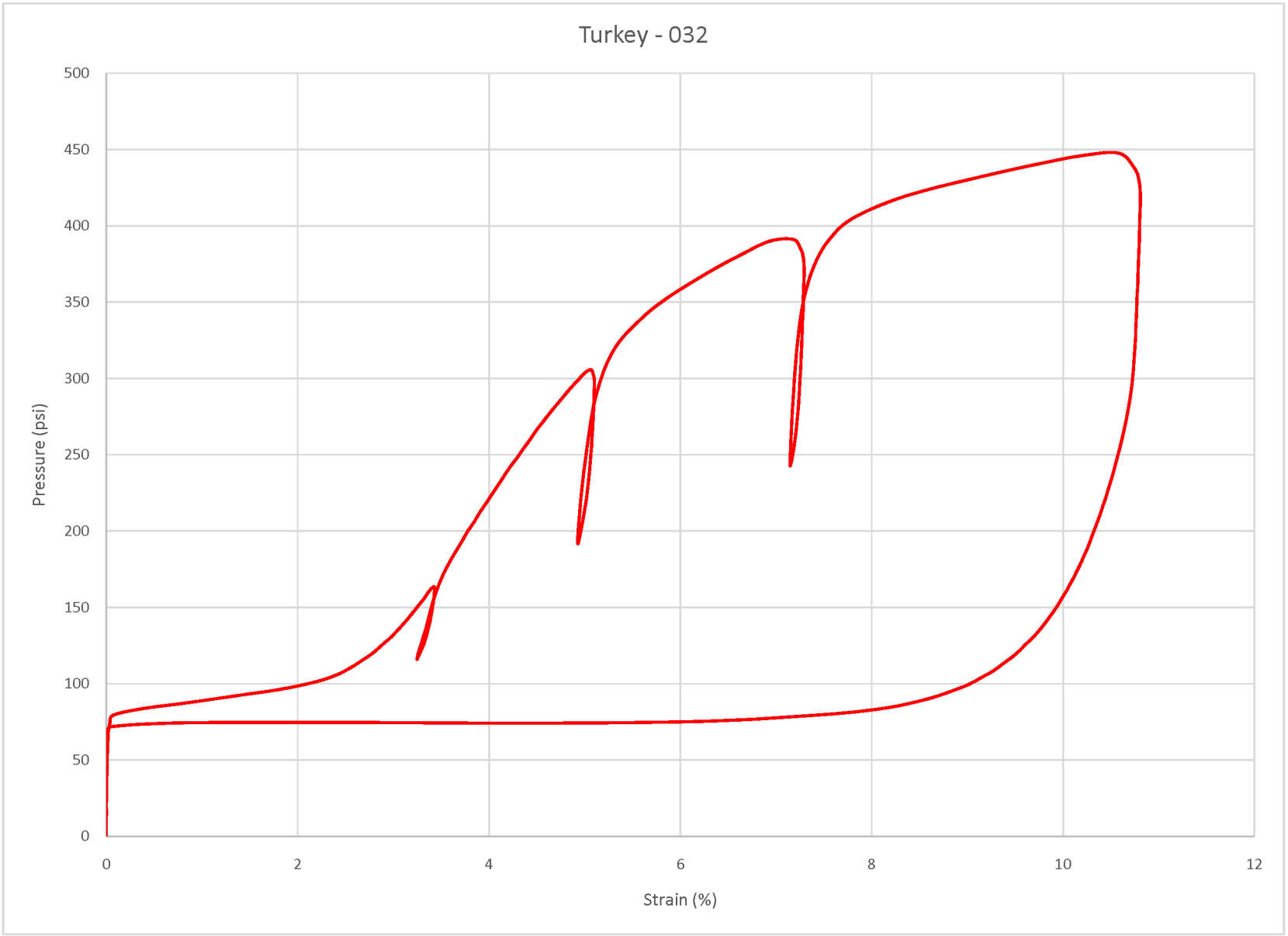




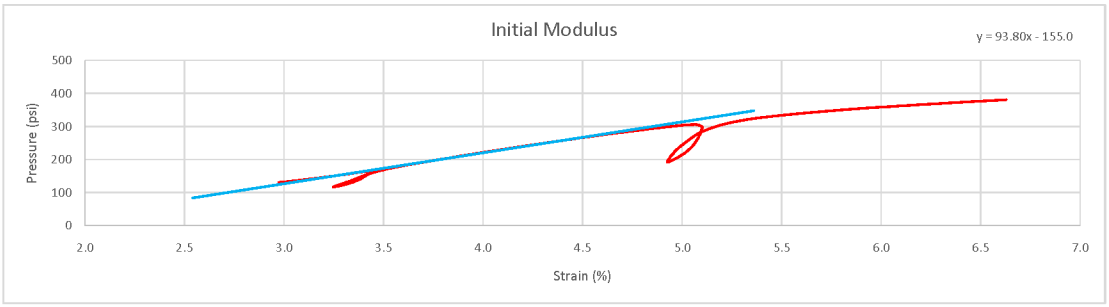
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	4	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 031.imp	R-6-2	178	Lower Tamiami

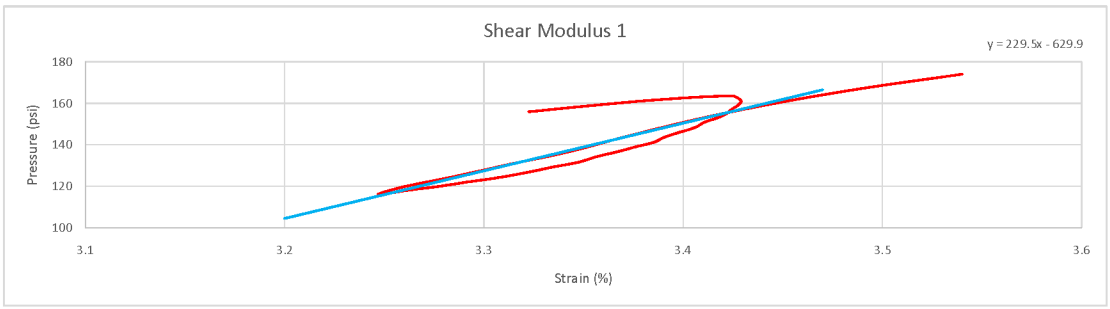


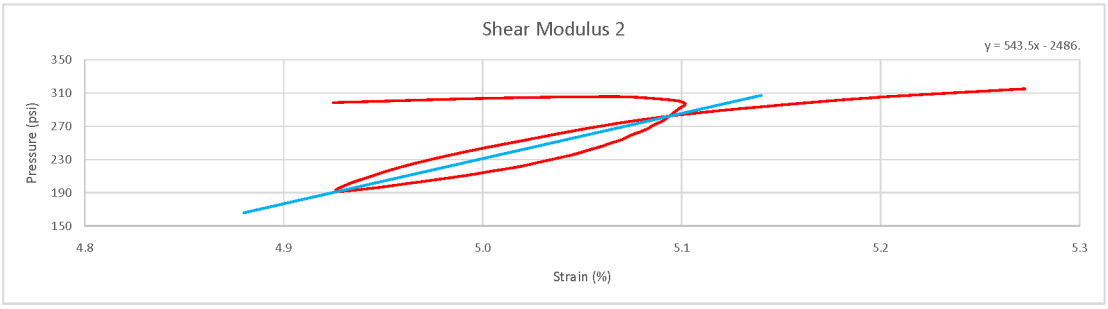
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	4	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 032.imp	R-6-2	183	Lower Tamiami

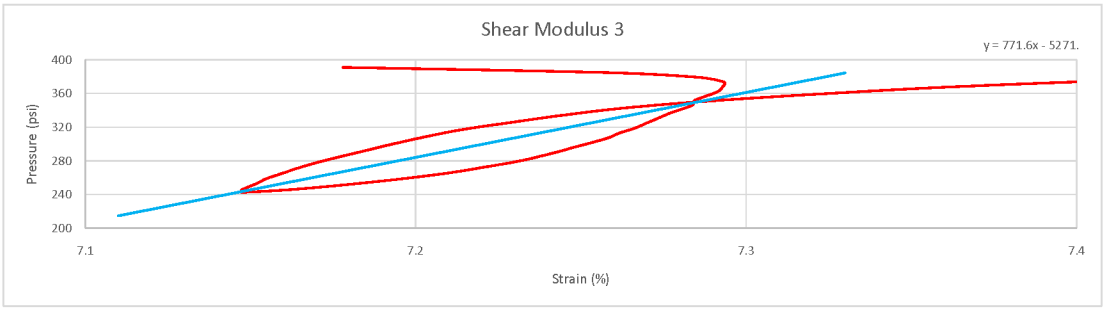


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 032	Lower Tamiami	4690	11477	27175	38585		

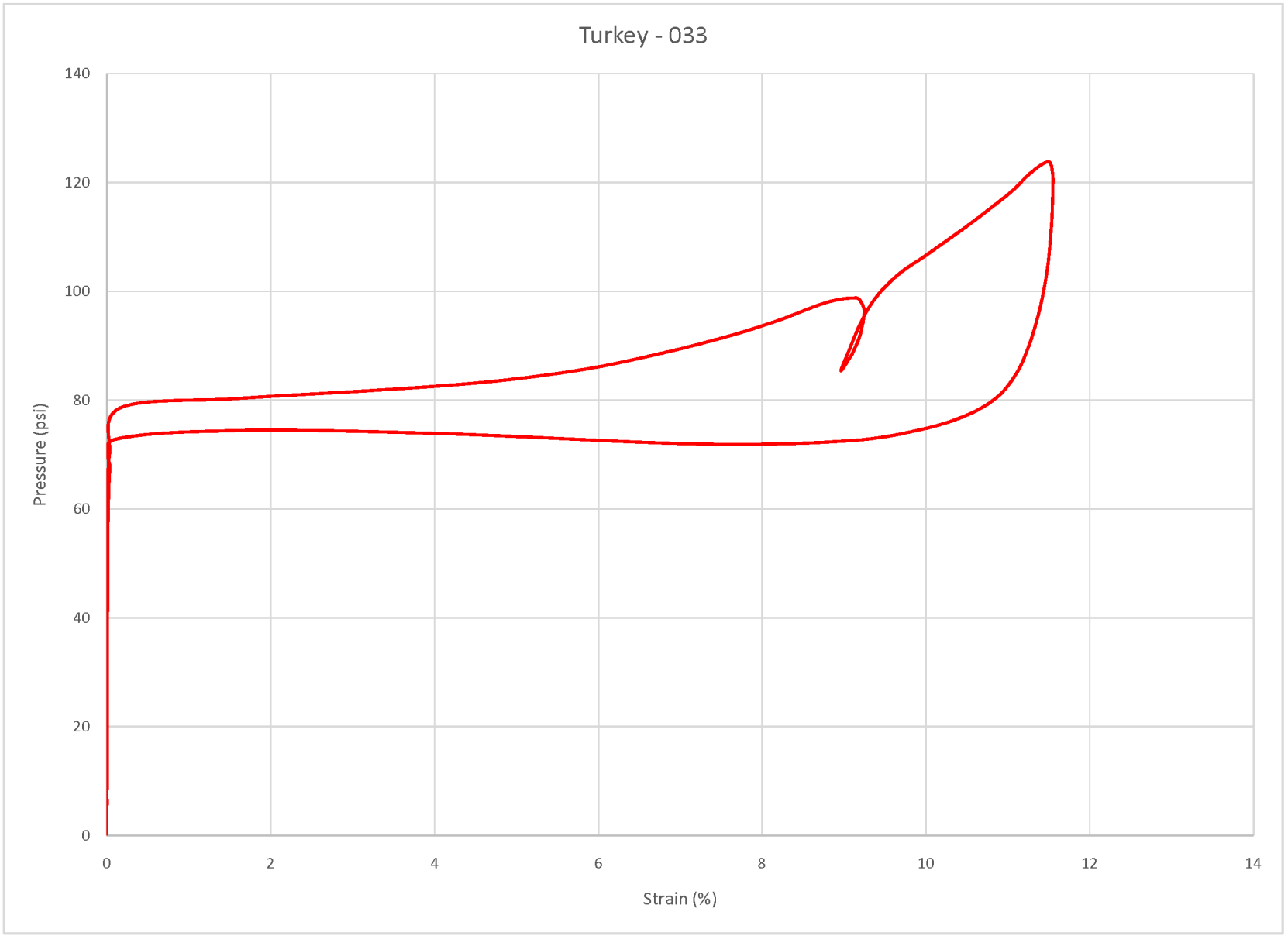




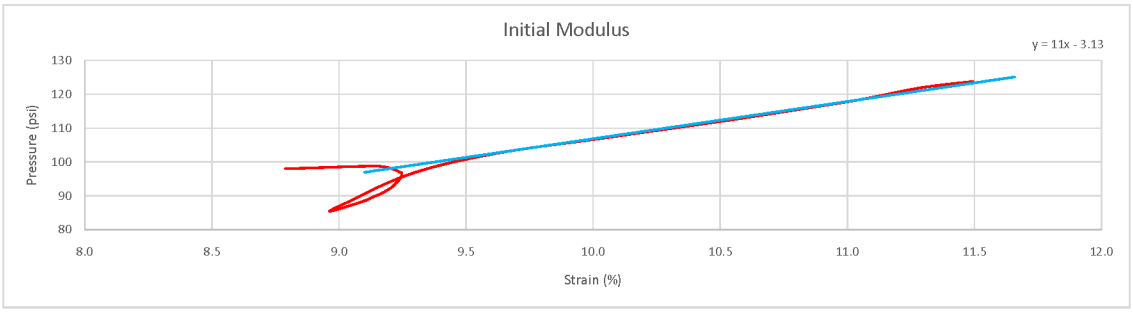


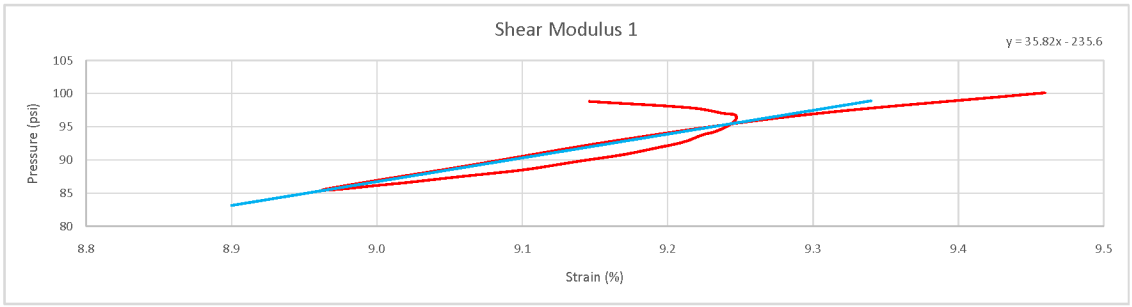


Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	4	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 033.imp	R-6-2	181.5	Lower Tamiami

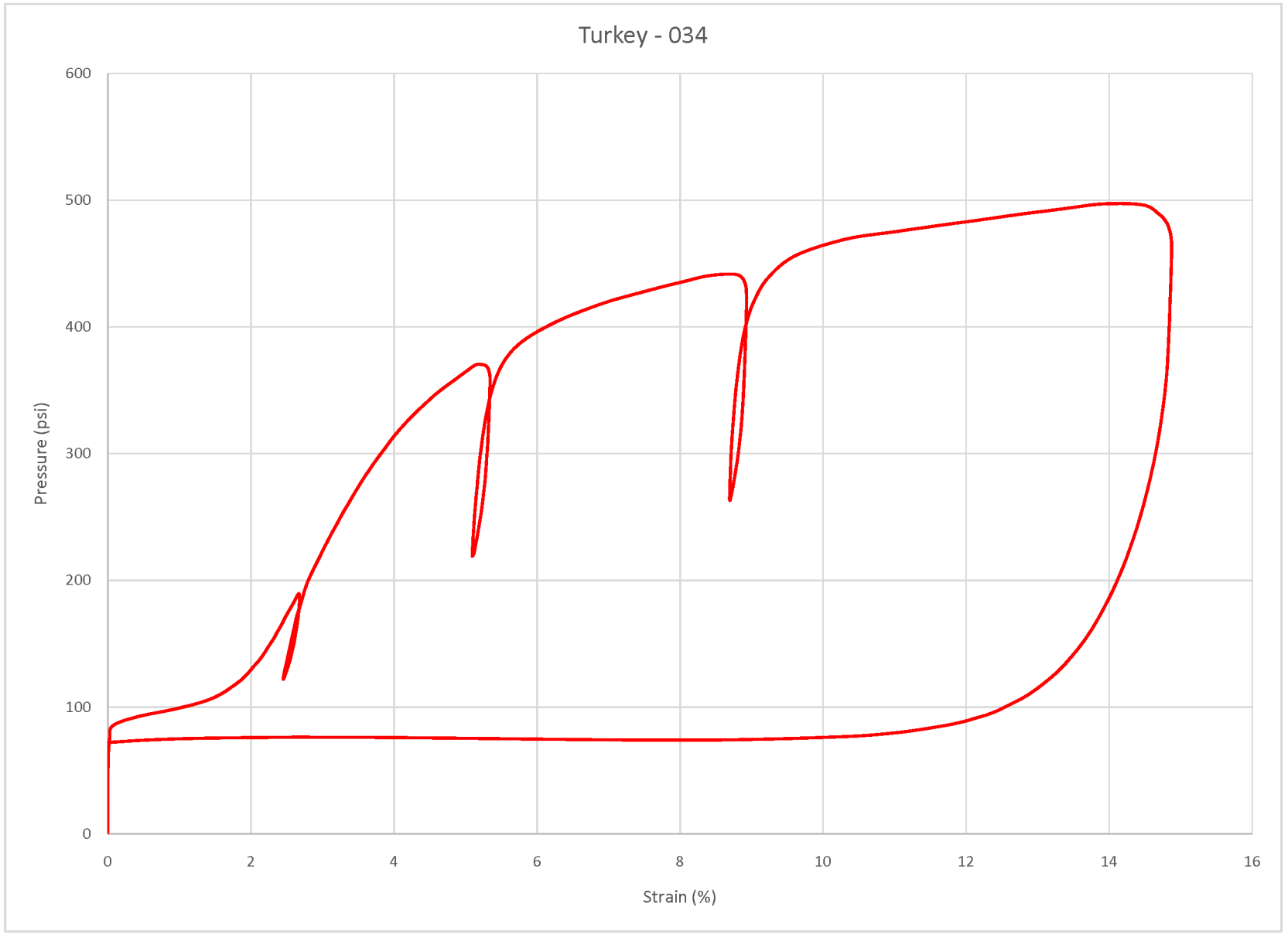


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 033	Lower Tamiami	550	1791				

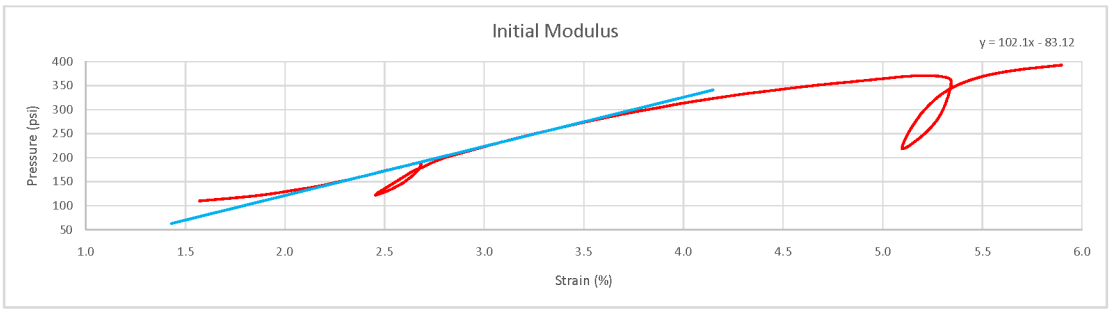


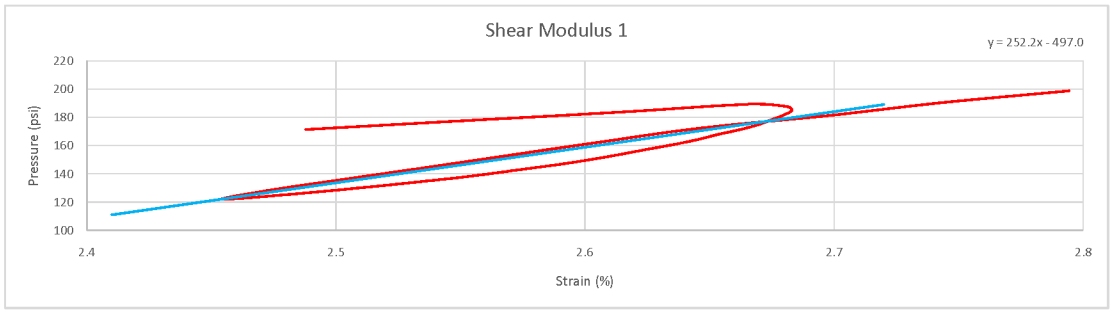


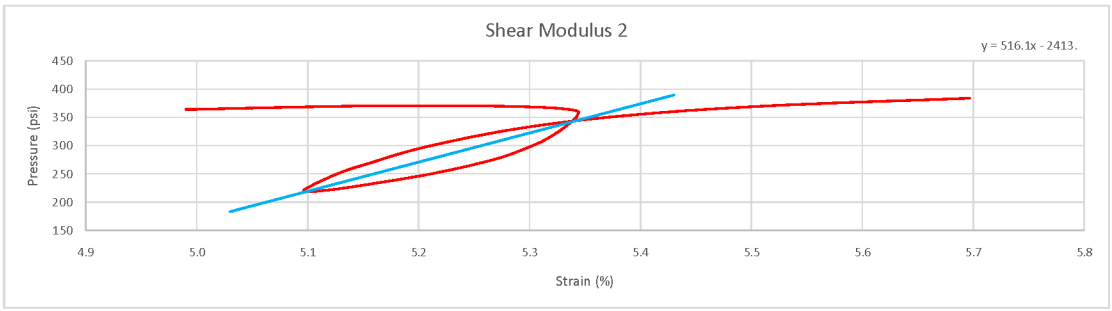
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	4	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 034.imp	R-6-2	192	Lower Tamiami

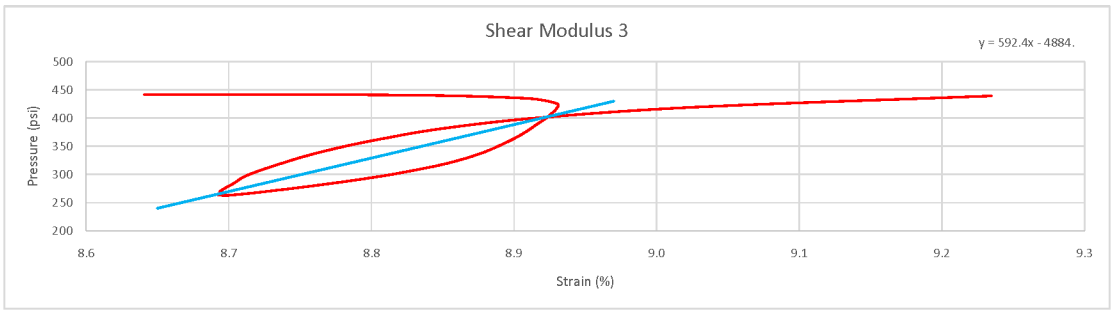


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 034	Lower Tamiami	5110	12614	25809	29621		

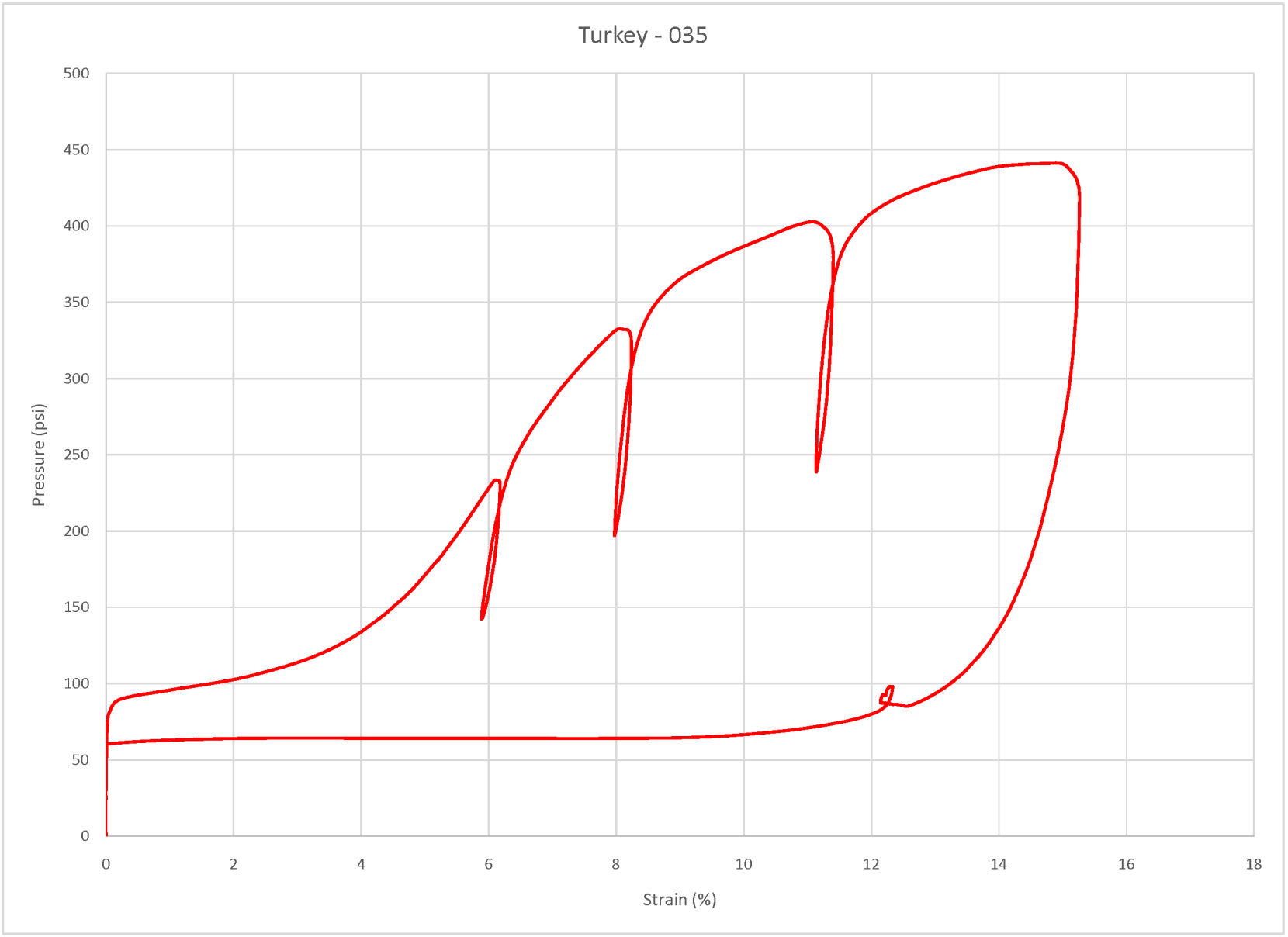




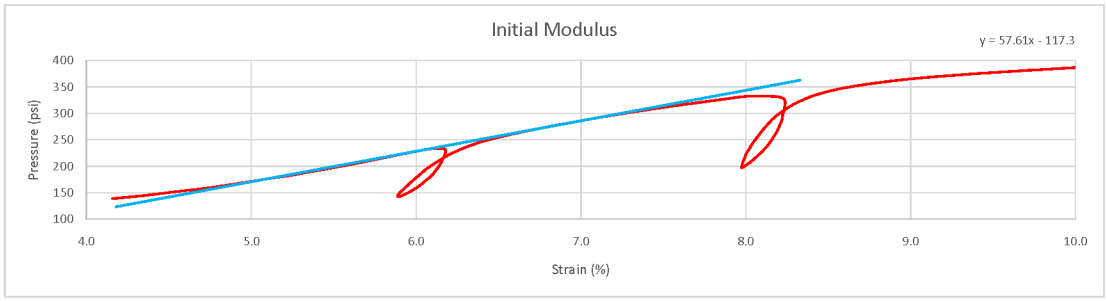


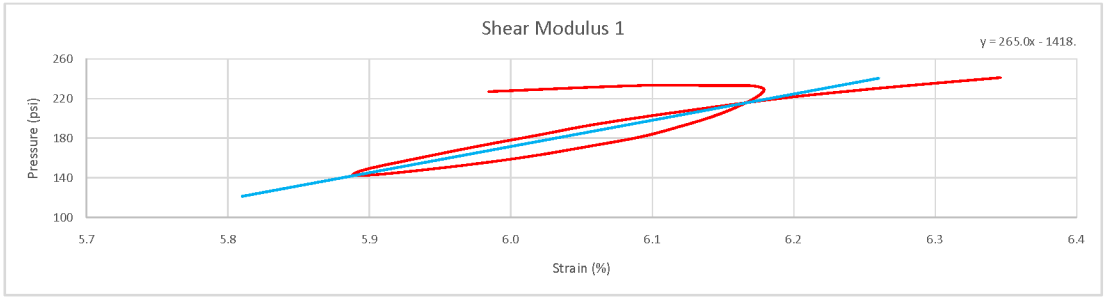


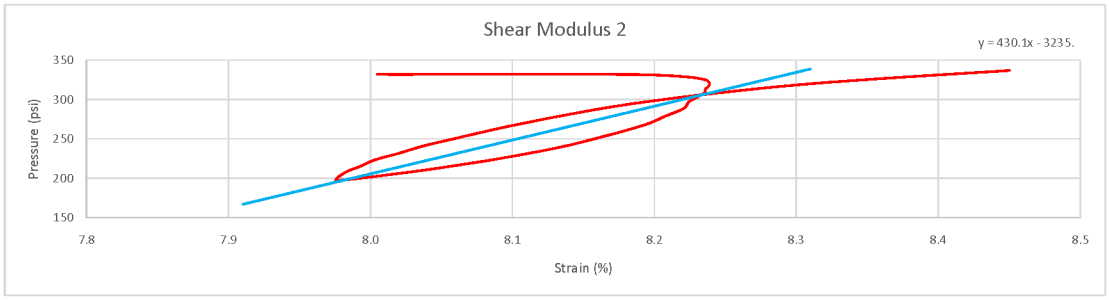
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	4	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 035.imp	R-6-2	190	Lower Tamiami

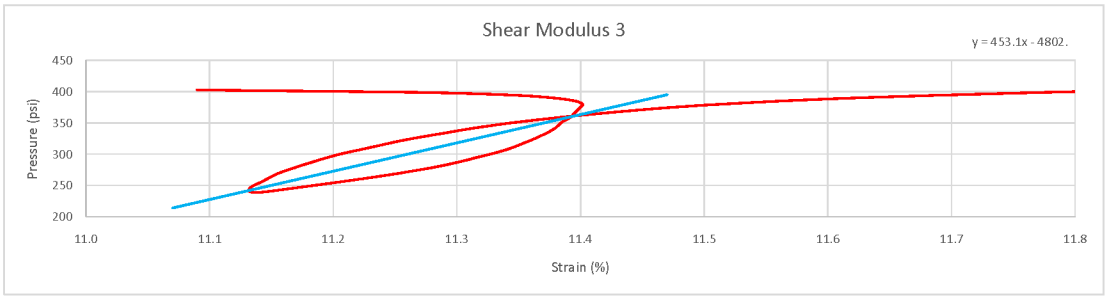


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 035	Lower Tamiami	2881	13254	21506	22660		

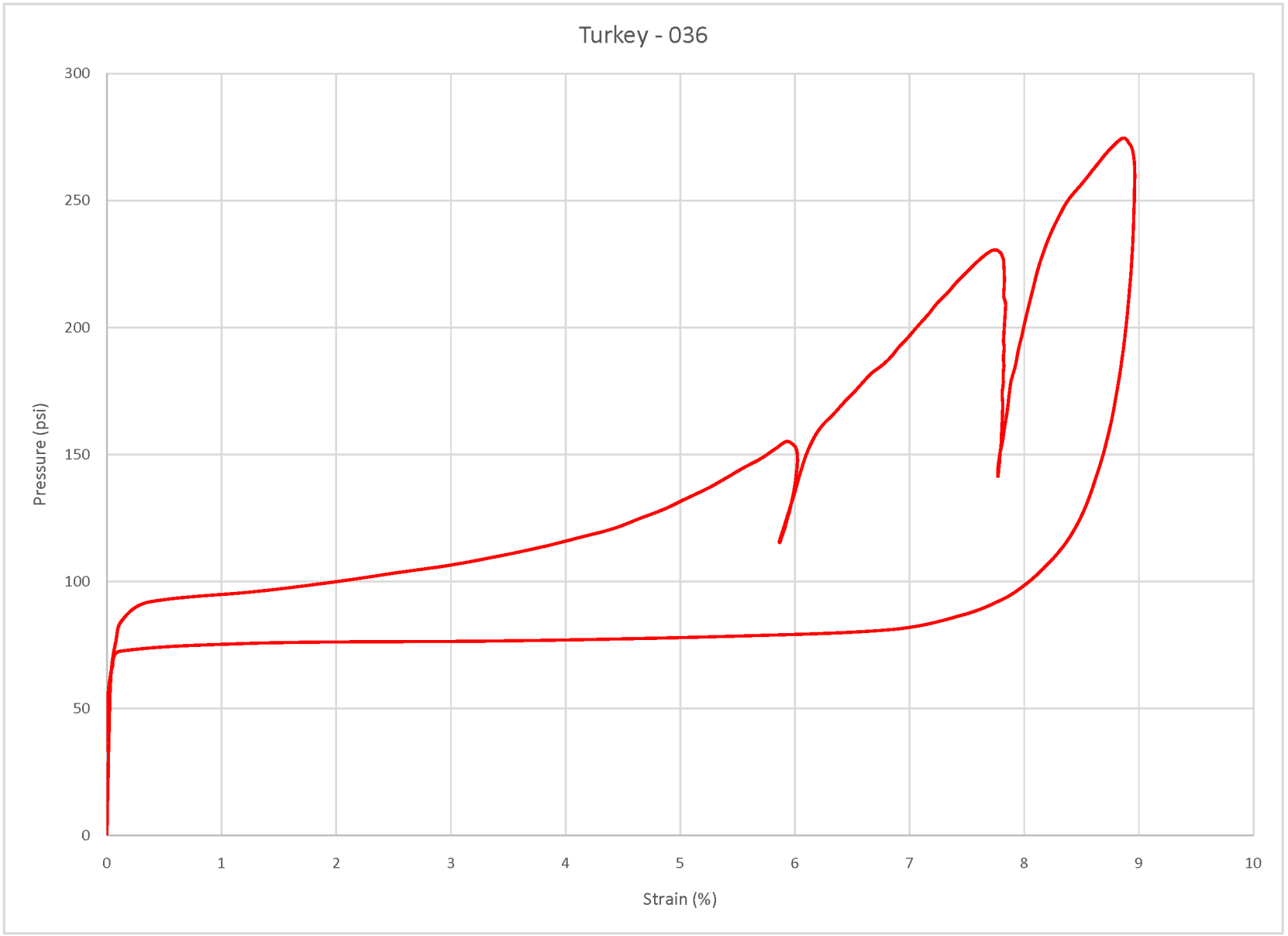




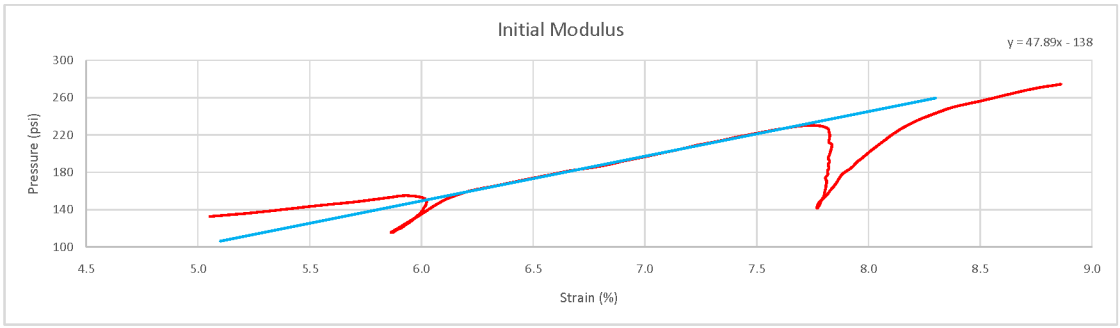


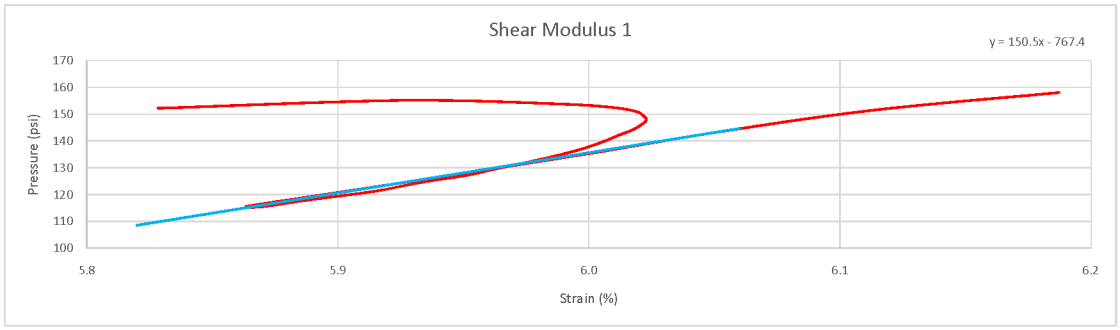


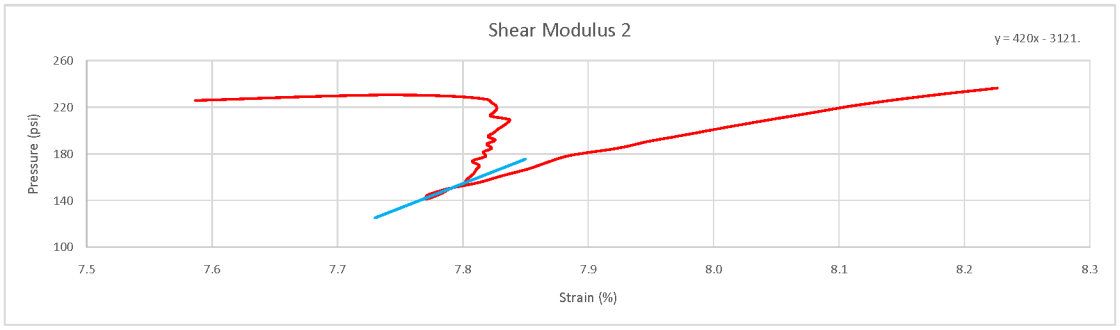
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 036.imp	R-6-2	195	Lower Tamiami



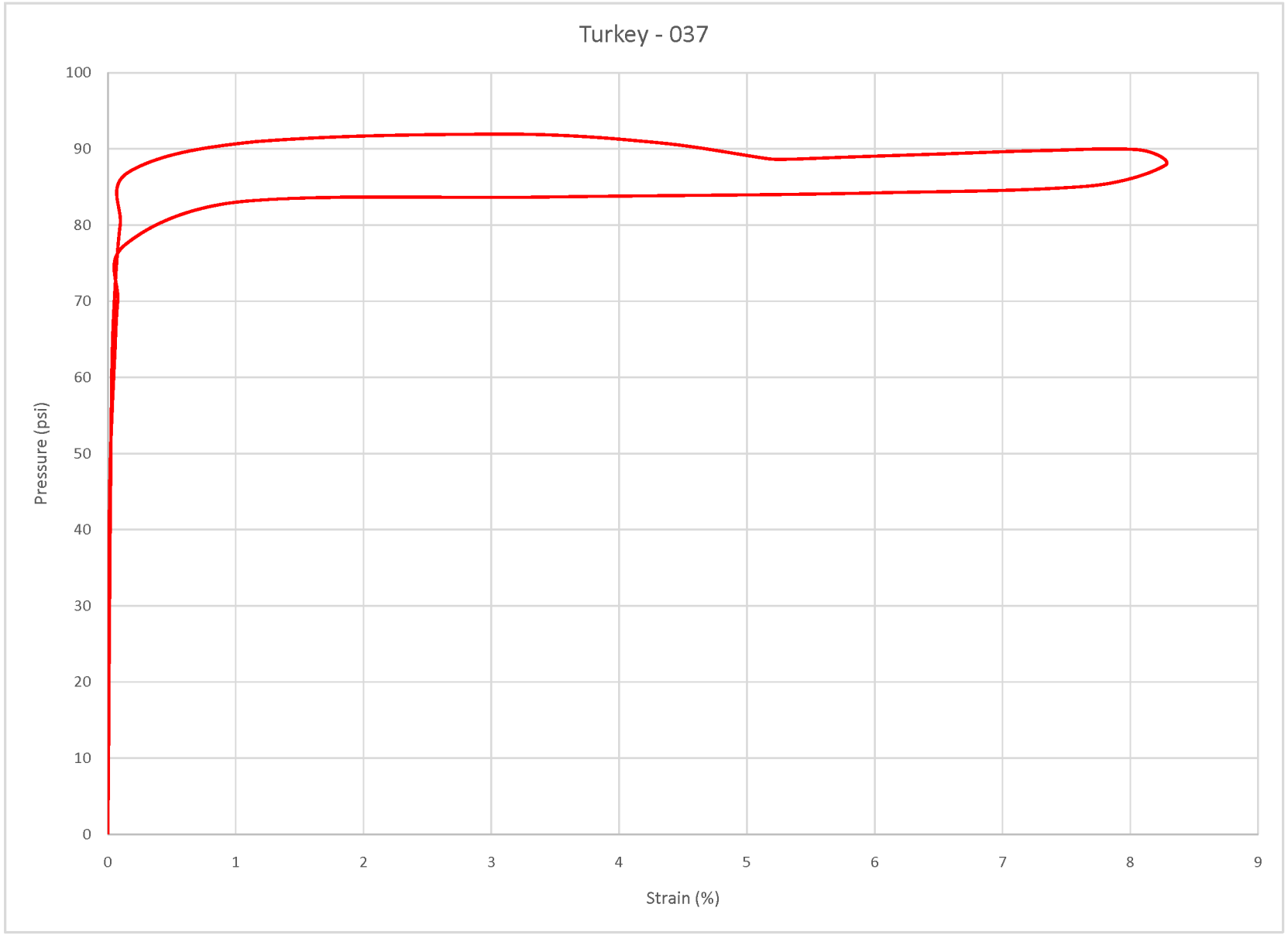
File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 036	Lower Tamiami	2395	7525	21000			



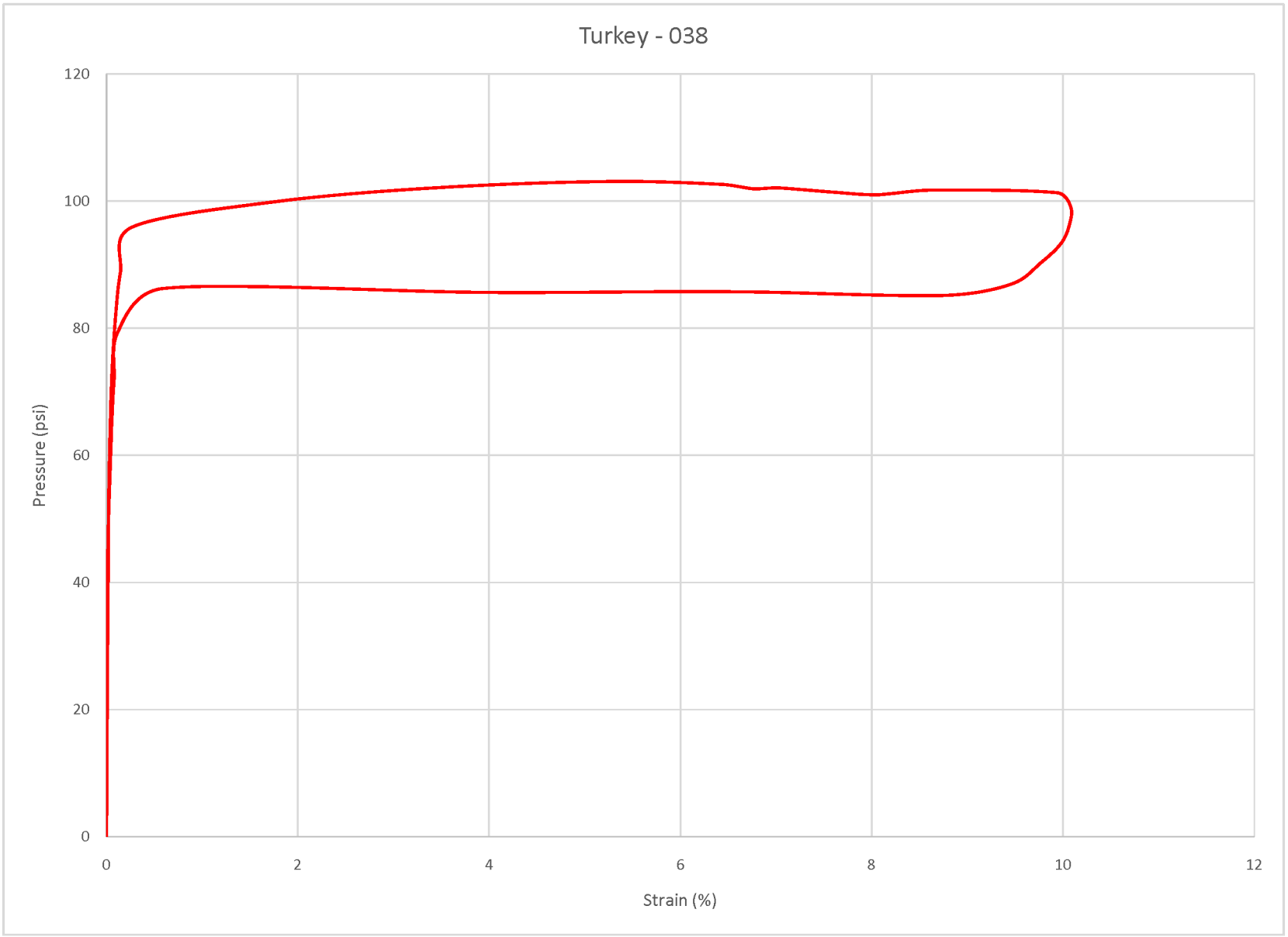




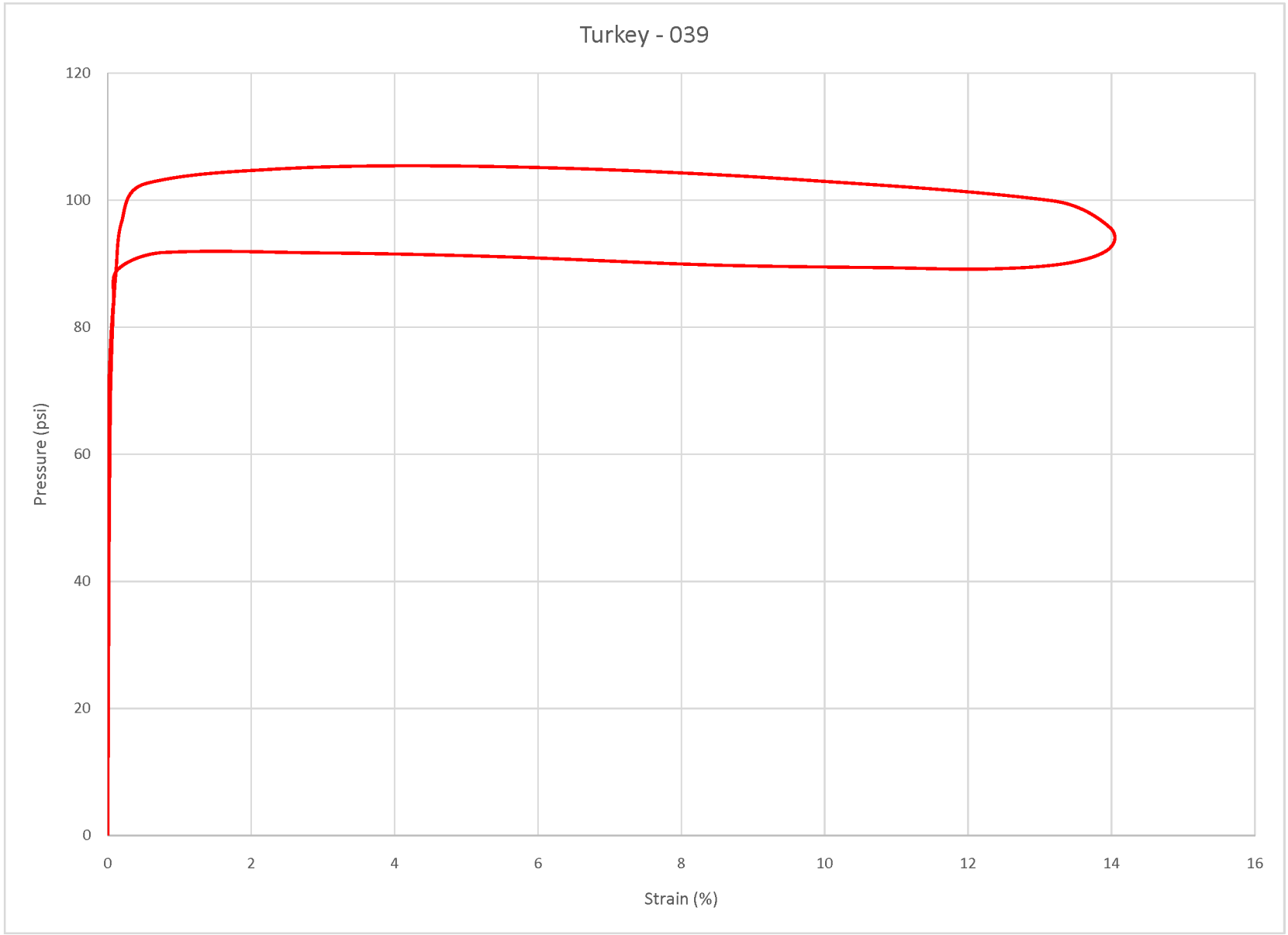
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 037.imp	R-6-2	204	Lower Tamiami



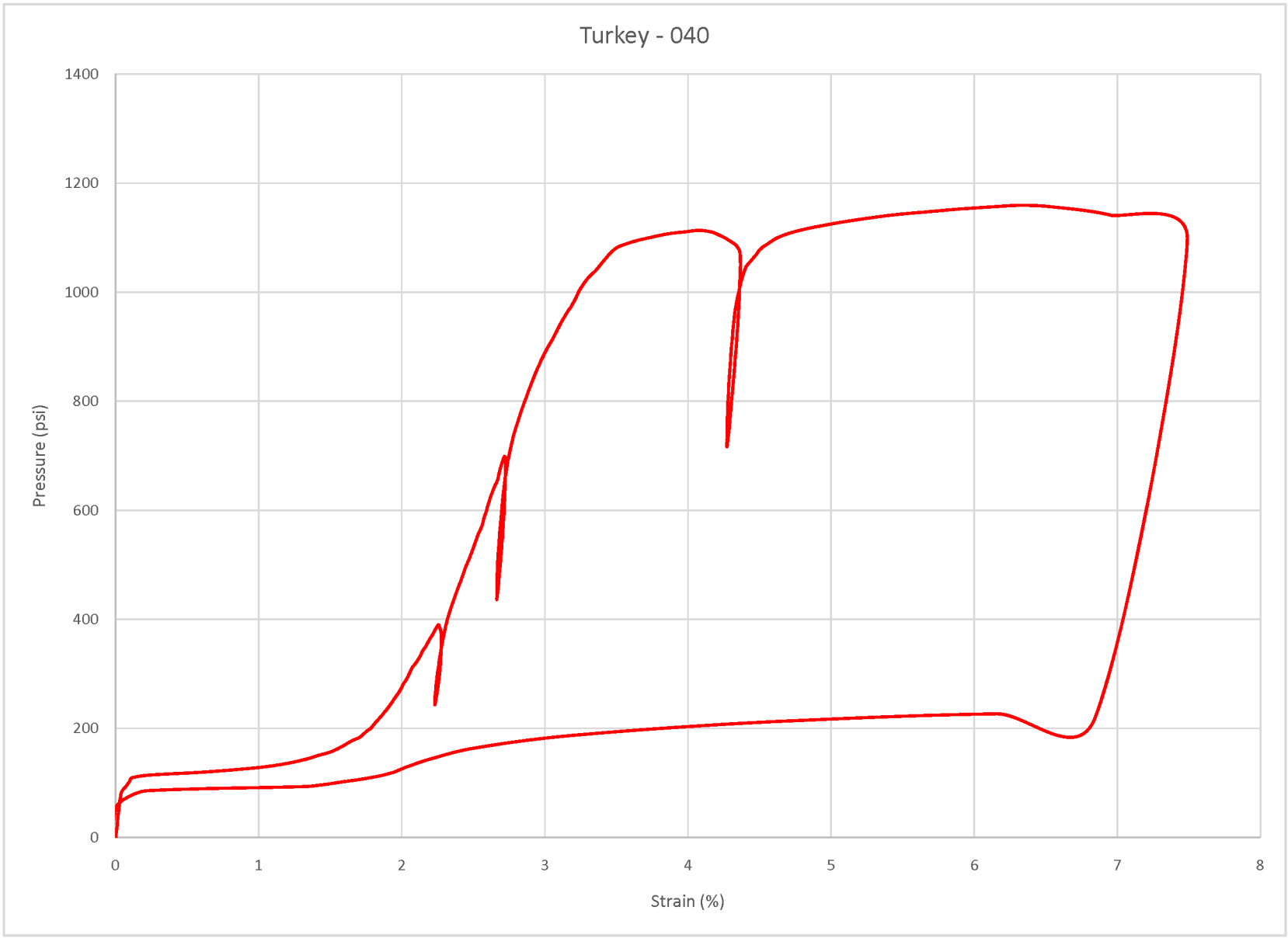
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 038.imp	R-6-2	212	Lower Tamiami



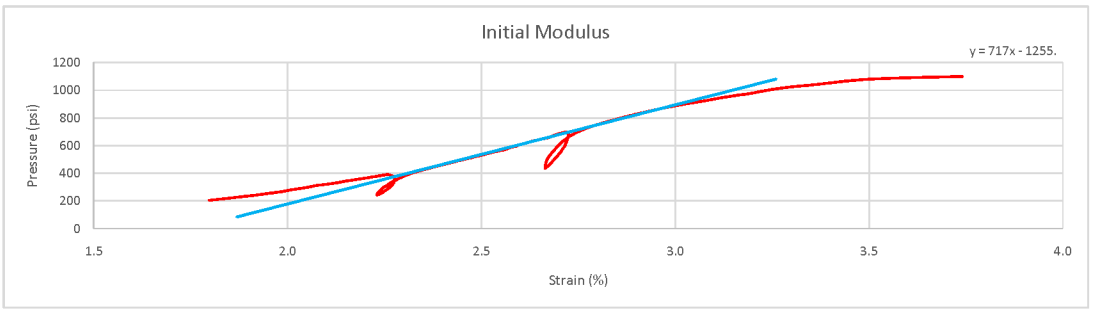
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 039.imp	R-6-2	226	Peace River

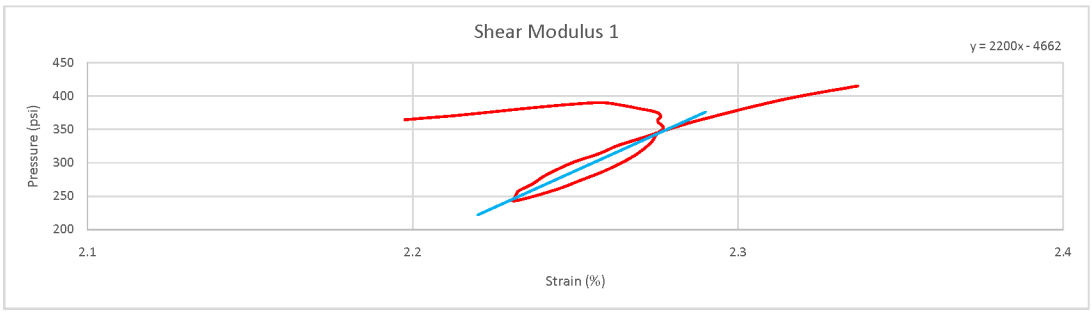


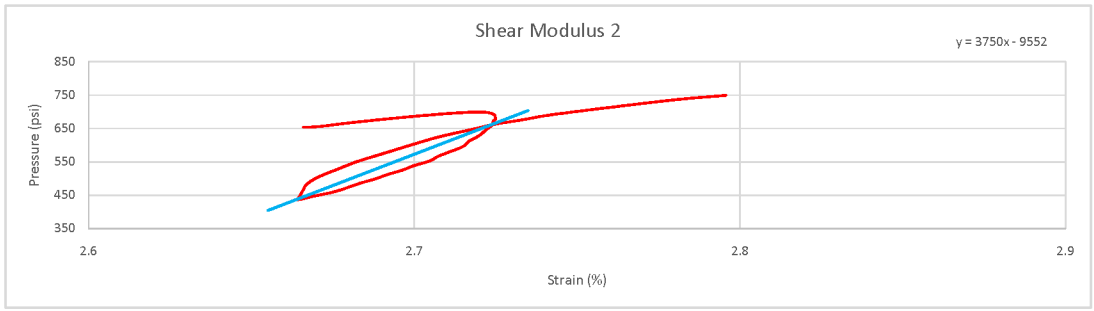
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 040.imp	R-6-2	231.3	Peace River

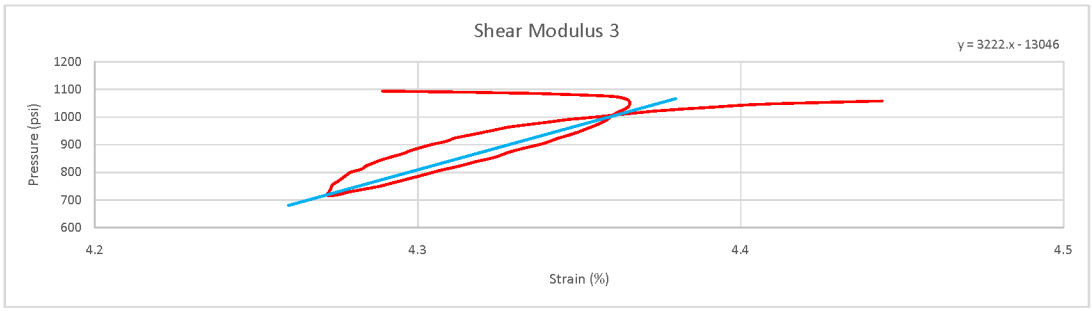


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 040	Peace River	35850	110000	187500	161110		

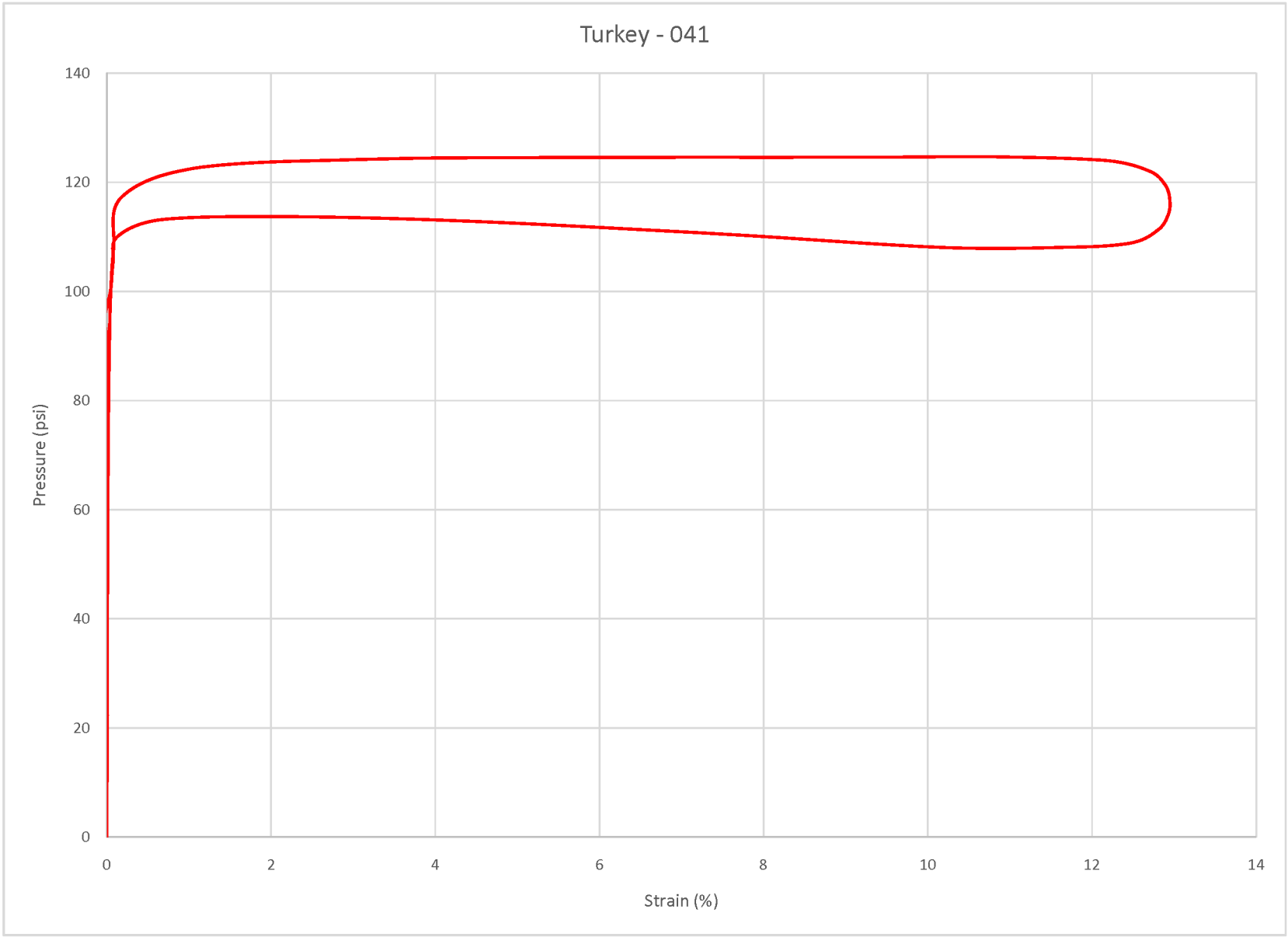




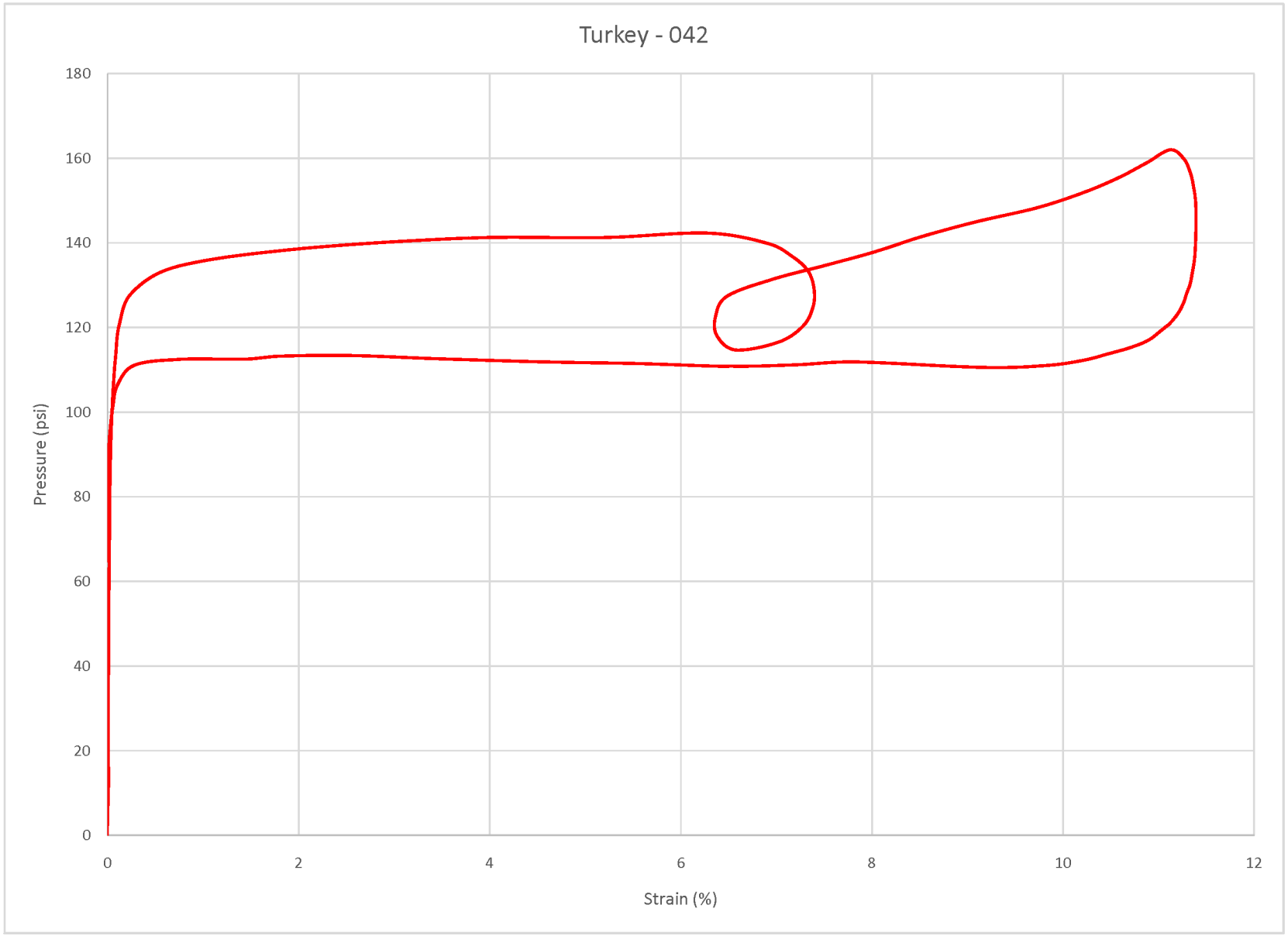




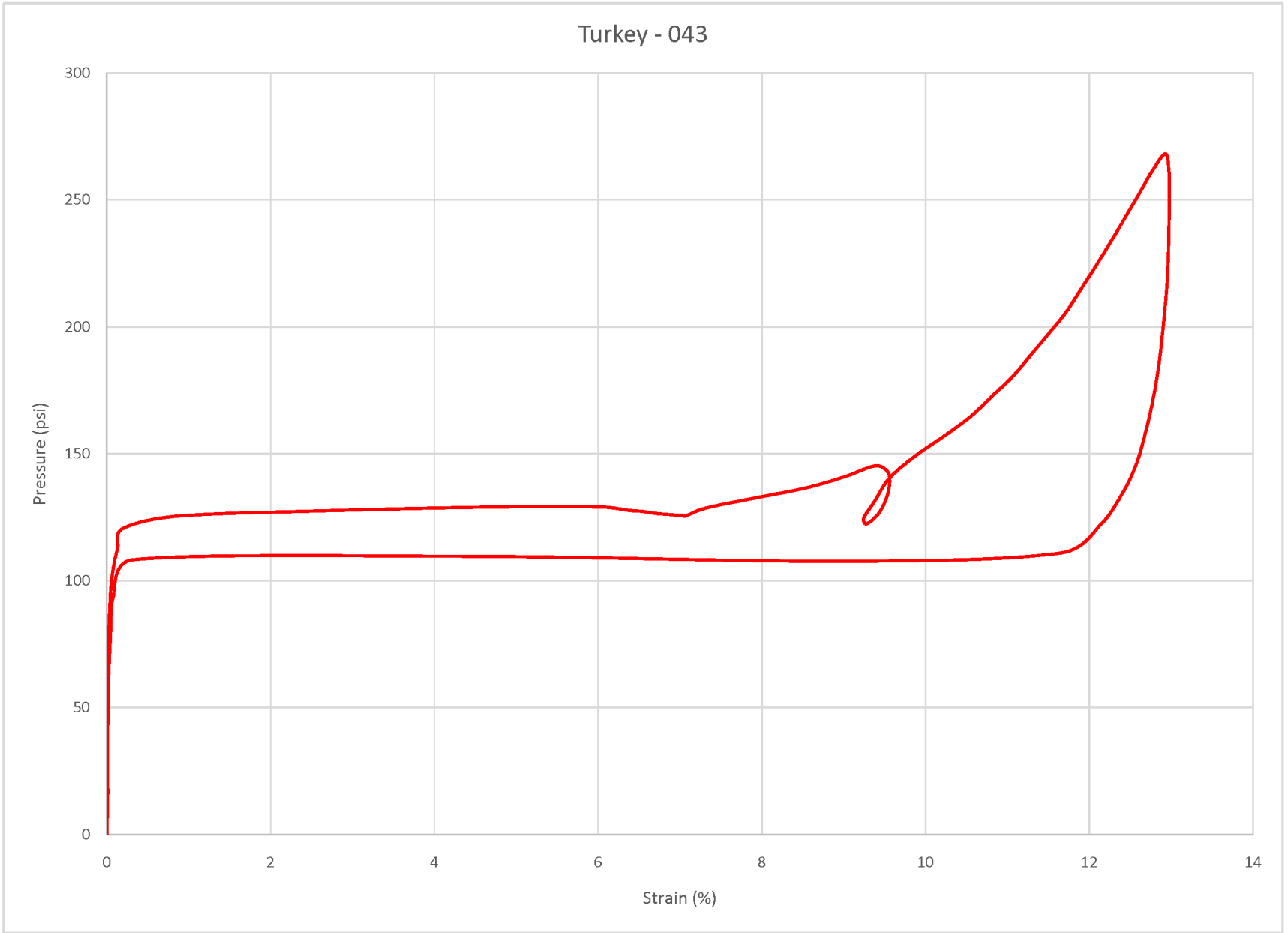
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 041.imp	R-6-2	269.2	Peace River



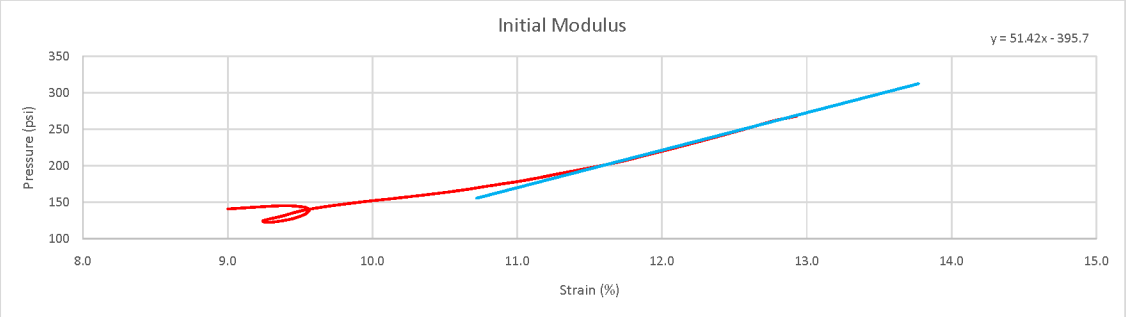
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 042.imp	R-6-2	279	Peace River

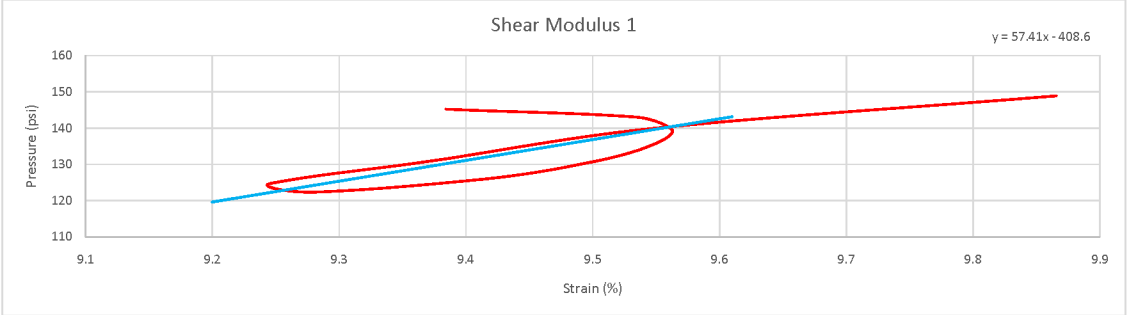


Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 043.imp	R-6-2	276	Peace River

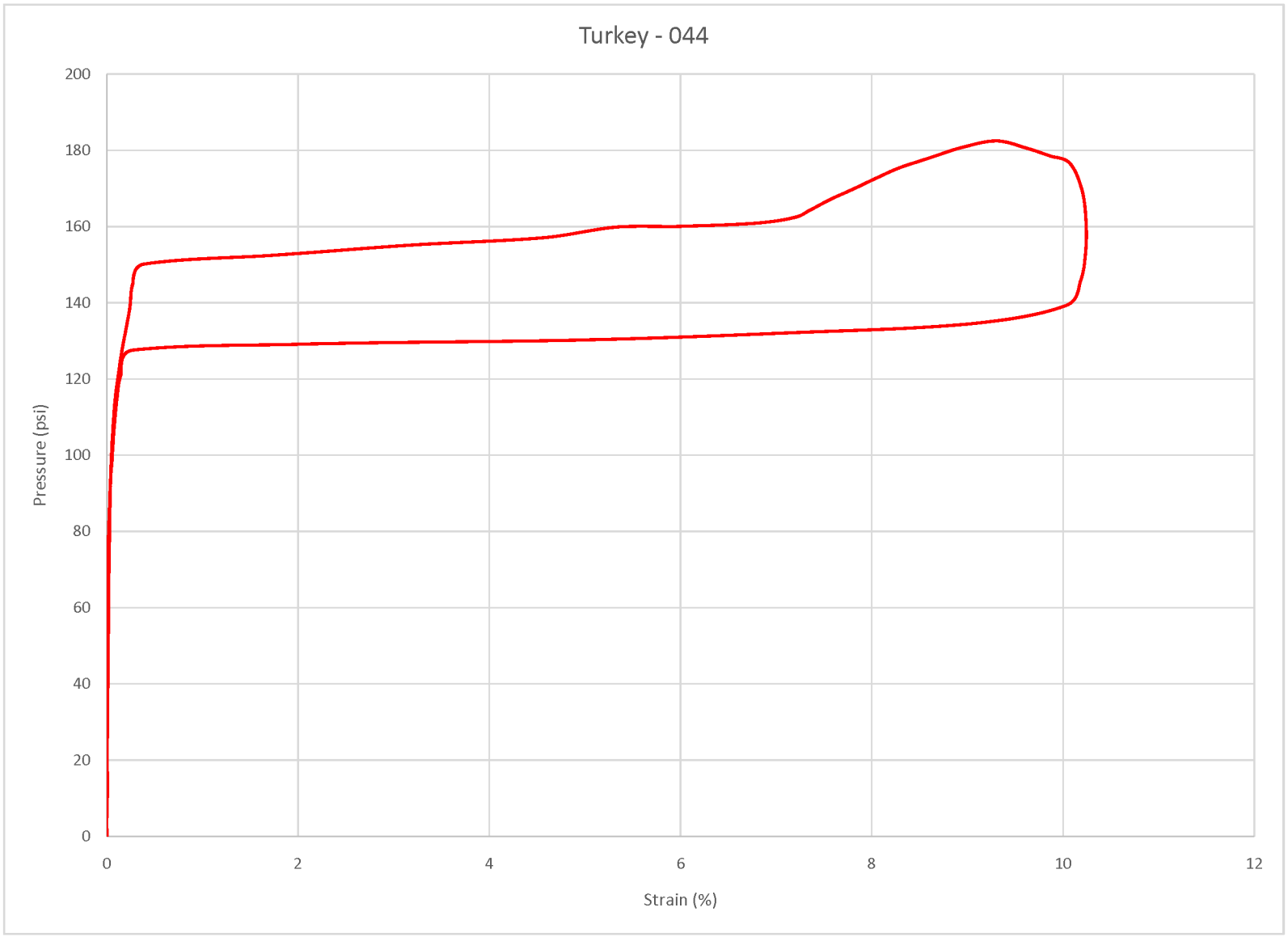


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 043	Peace River	2571	2871				



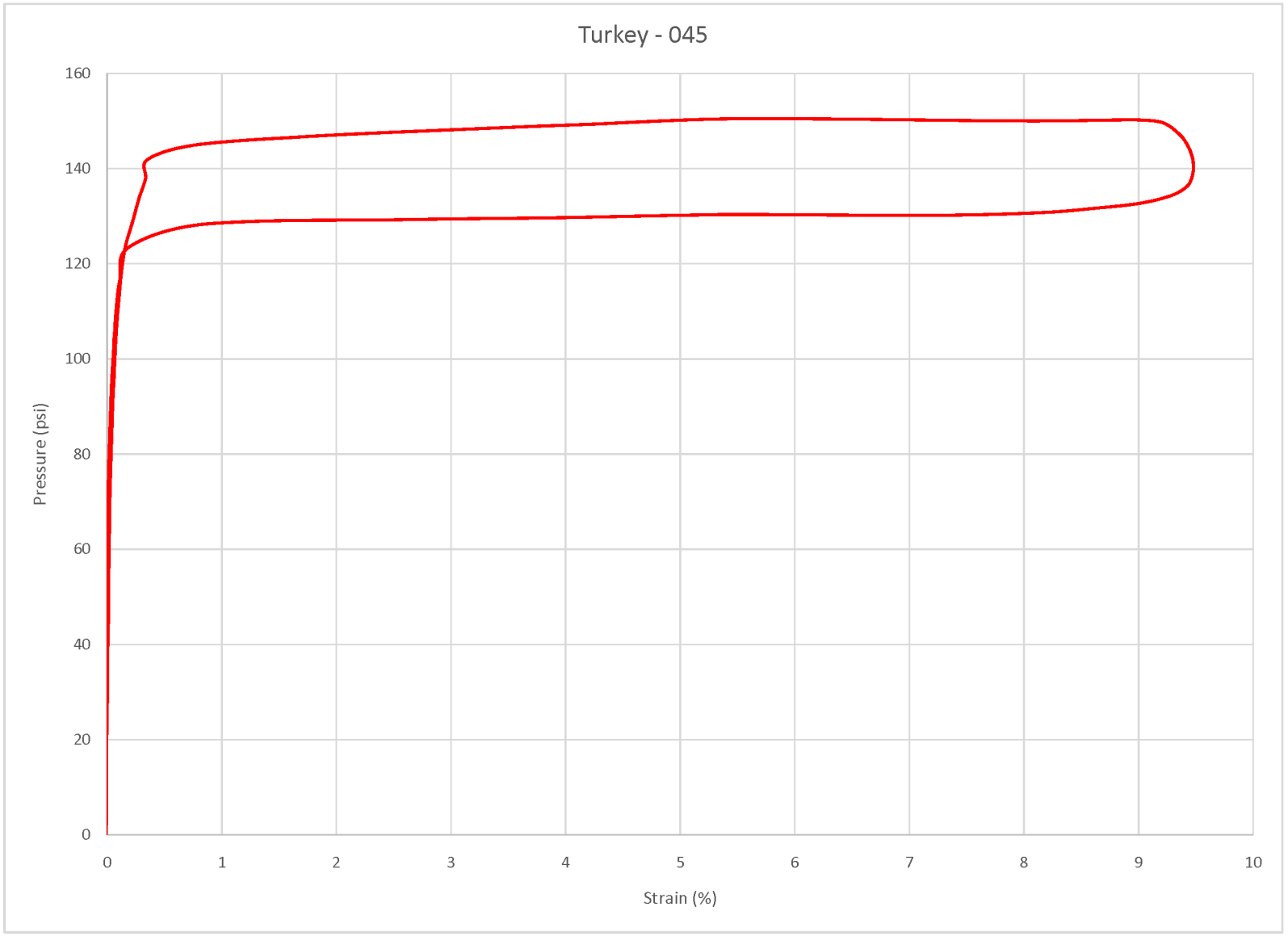


Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 044.imp	R-6-2	316	Peace River



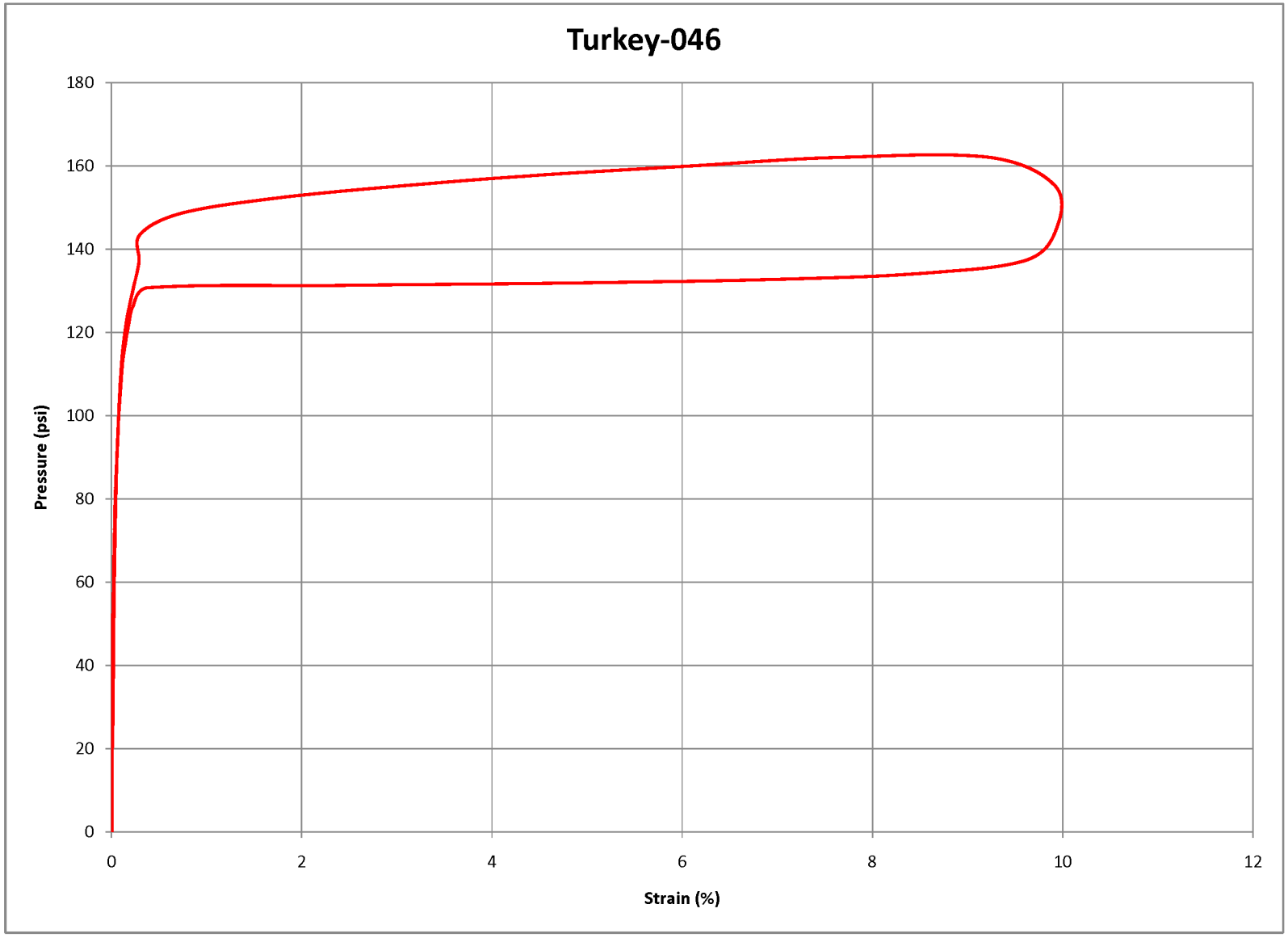
* Calculated from Arm 2 and Arm 3

Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 045.imp	R-6-2	314	Peace River



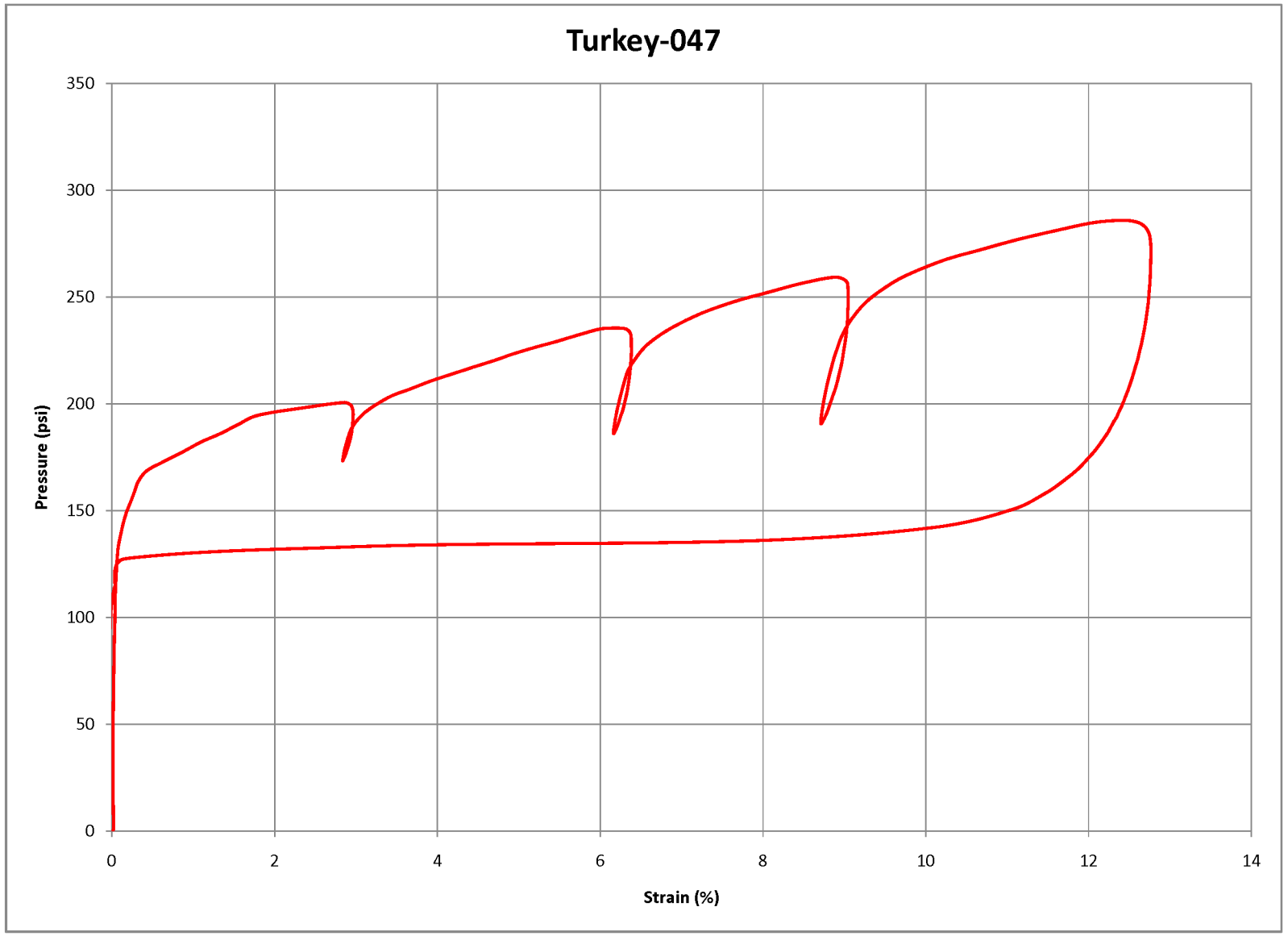
*Calculated from Arm 2 and Arm 3

Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 046.imp	R - 6 - 2	316	Peace River



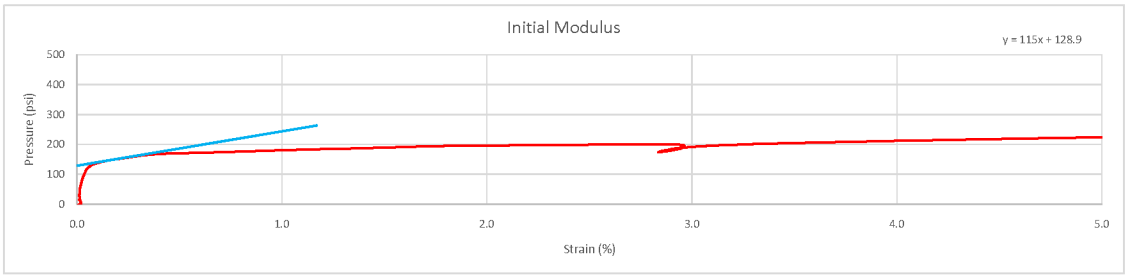
*Calculated from Arm 2 and Arm 3

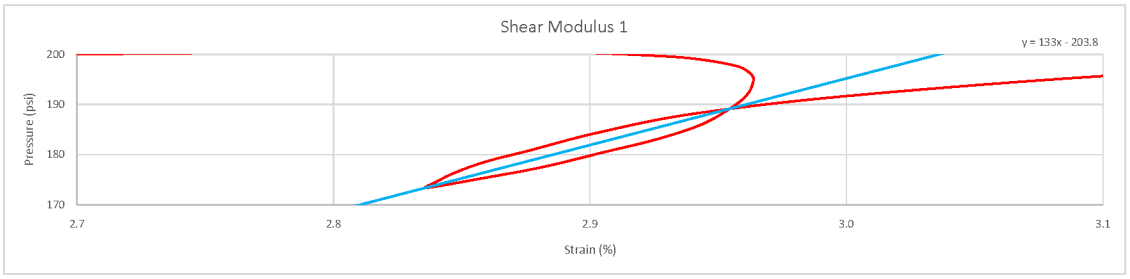
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 047.imp	R - 6 - 2	327.7	Peace River

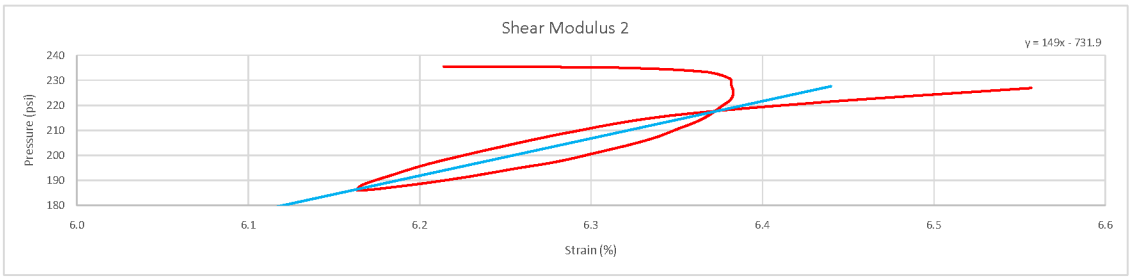


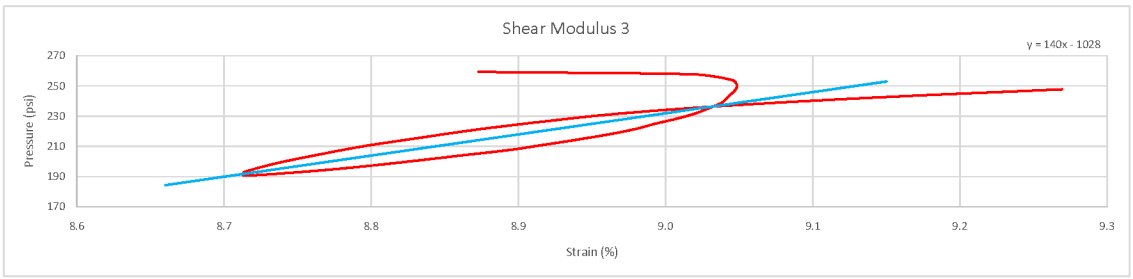
*Calculated from Arm 2 and Arm 3

File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 047	Peace River	5750	6650	7450	7000		



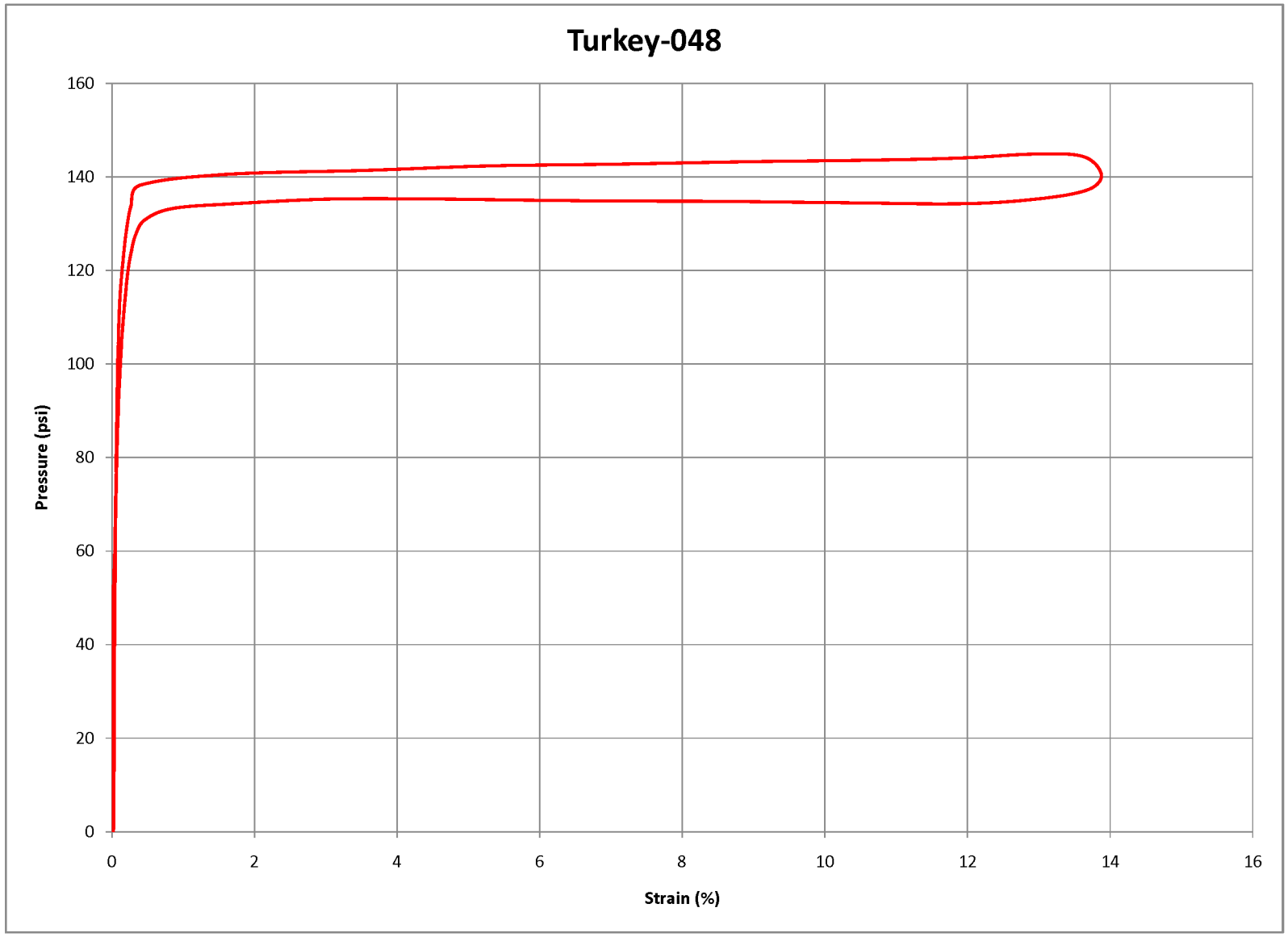






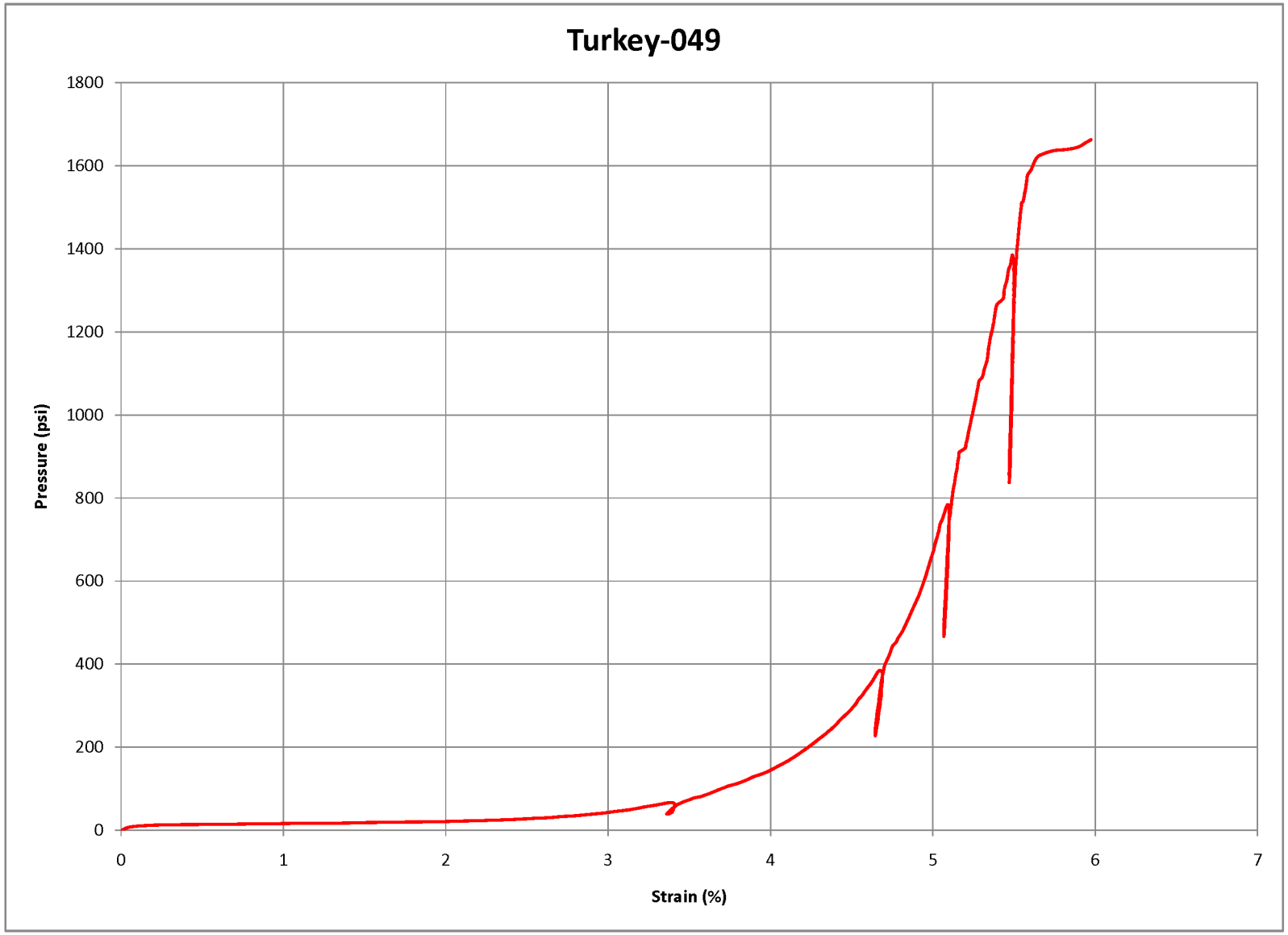
*Calculated from Arm 2 and Arm 3

Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 048.imp	R - 6 - 2	325.7	Peace River



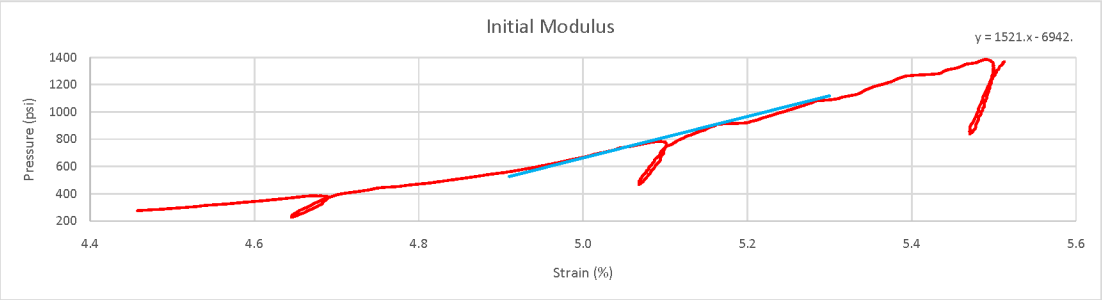
*Calculated from Arm 2 and Arm 3

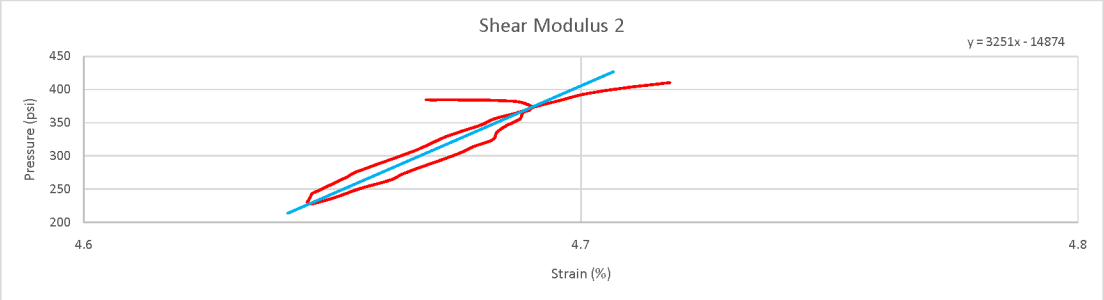
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 049.imp	R - 7 - 2	31.8	Key Largo

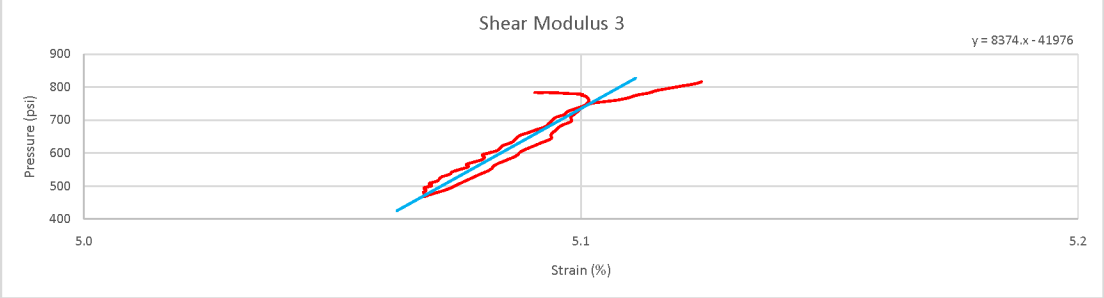


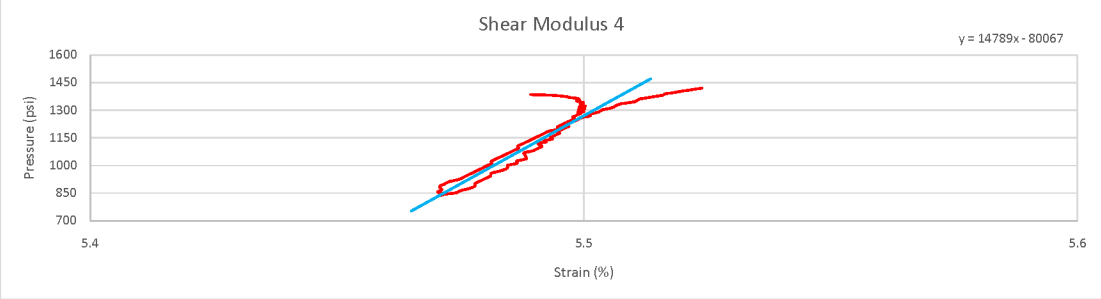
*Ruptured Membrane

File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 049	Key Largo	76055		162550	418740	739450	

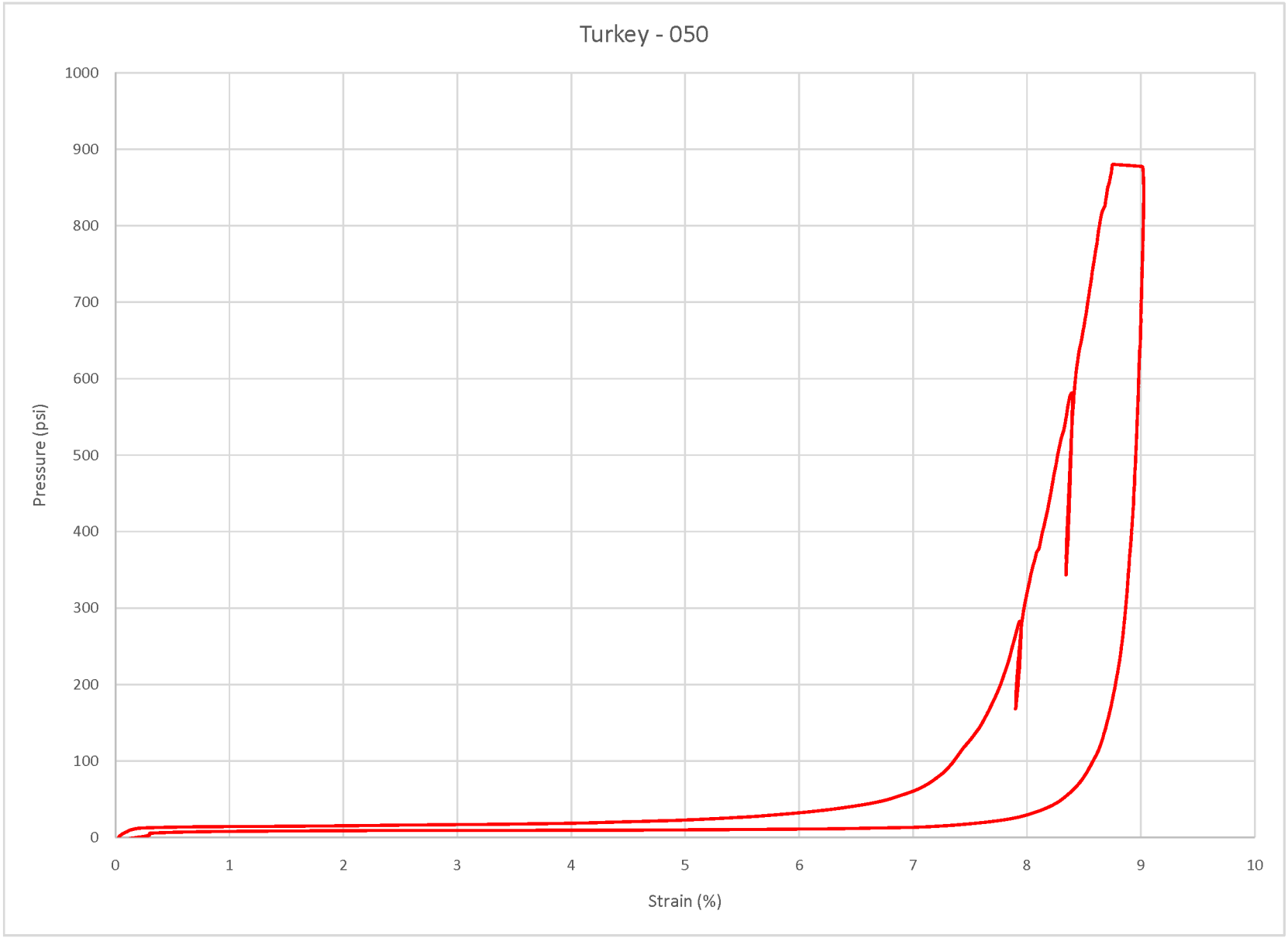




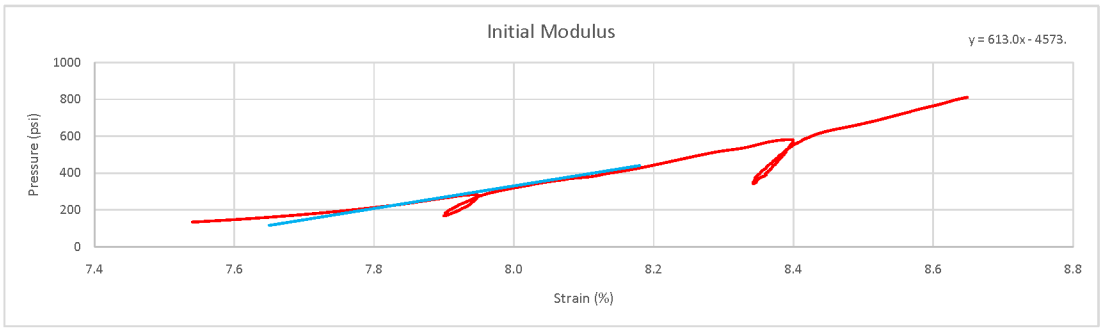


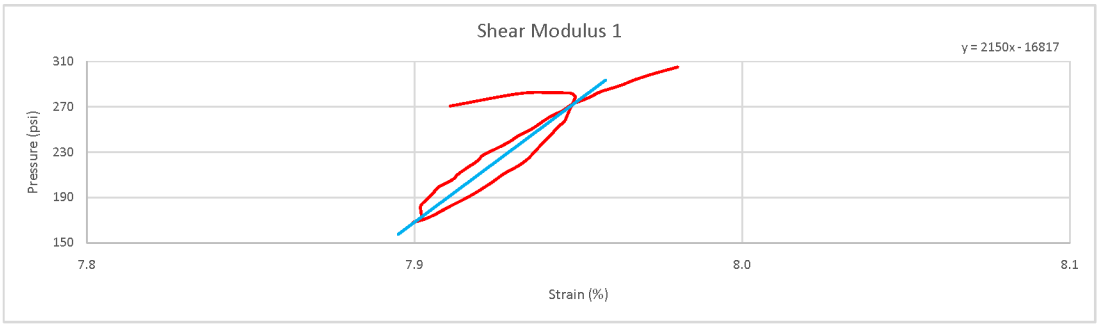


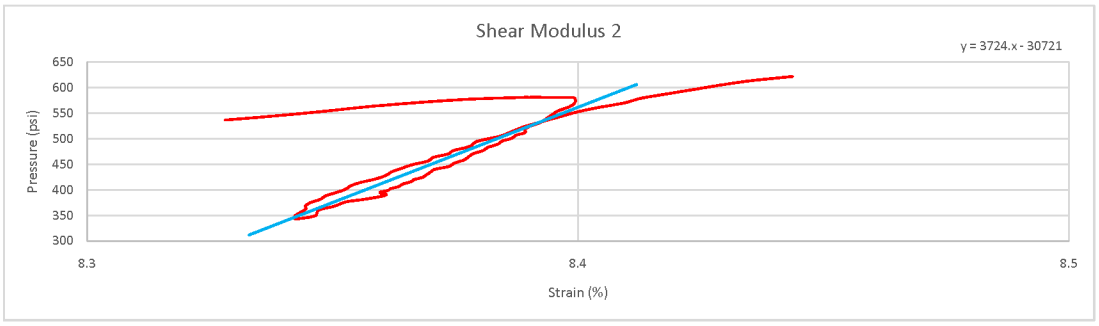
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 050.imp	R - 7 - 2	30.5	Key Largo



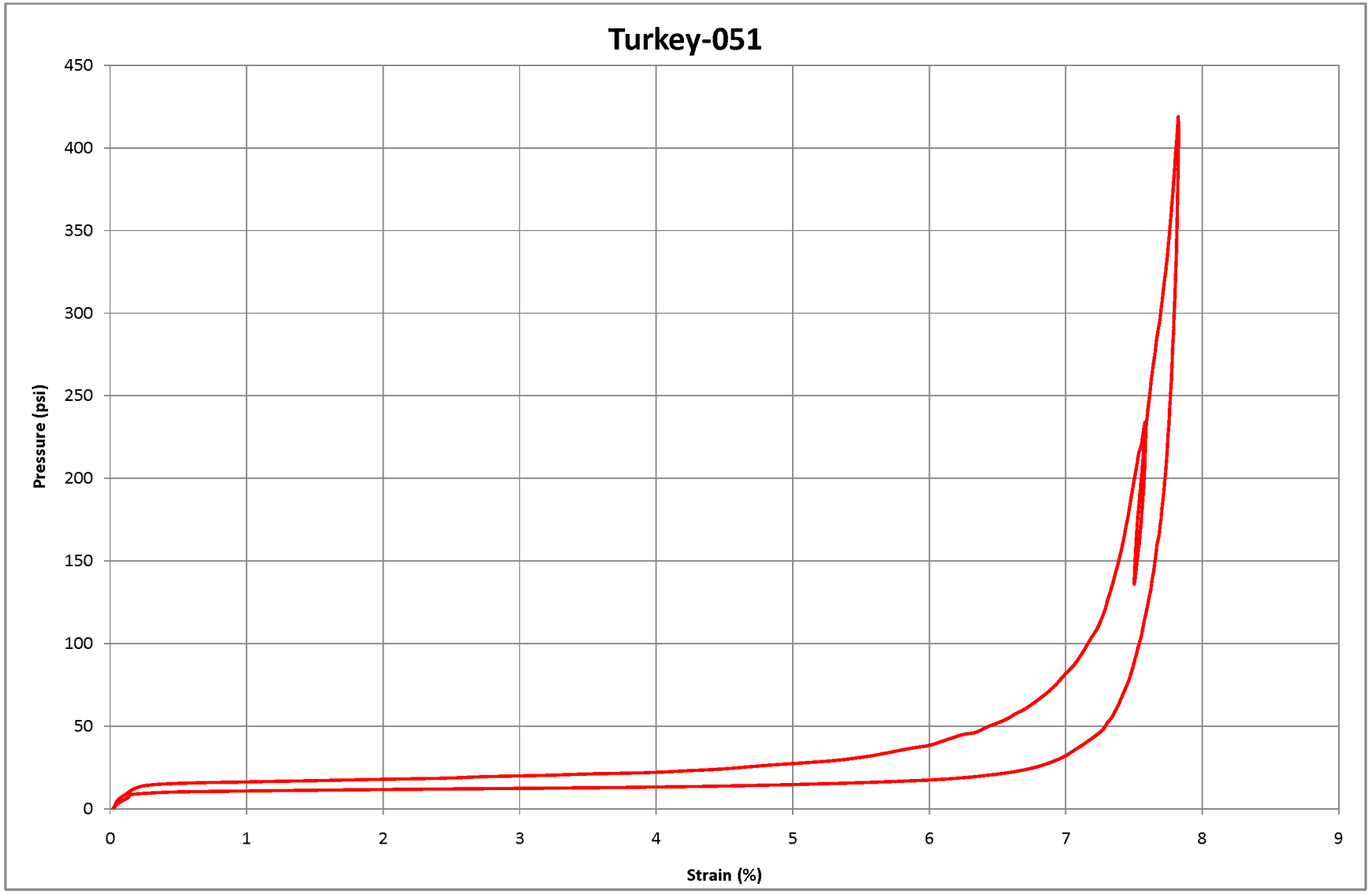
File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 050	Key Largo	30652	107500	186205			



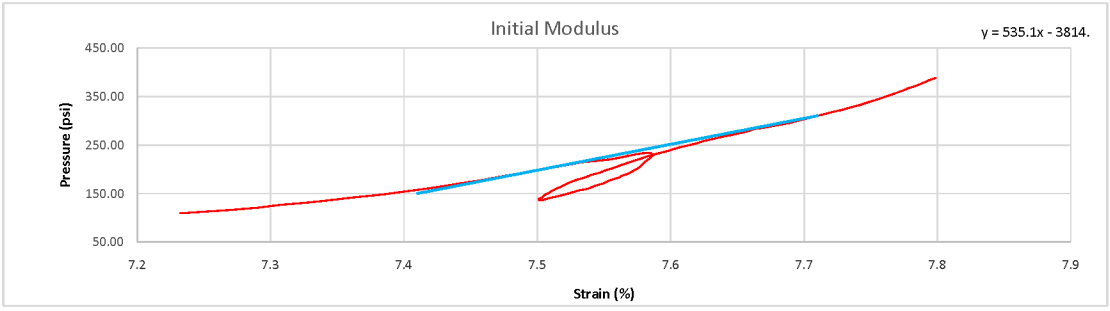


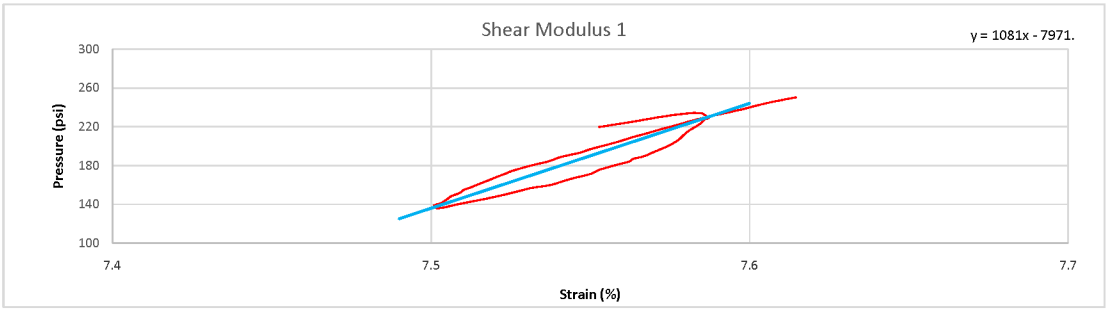


Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 051.imp	R-7-2	34.5	Key Largo

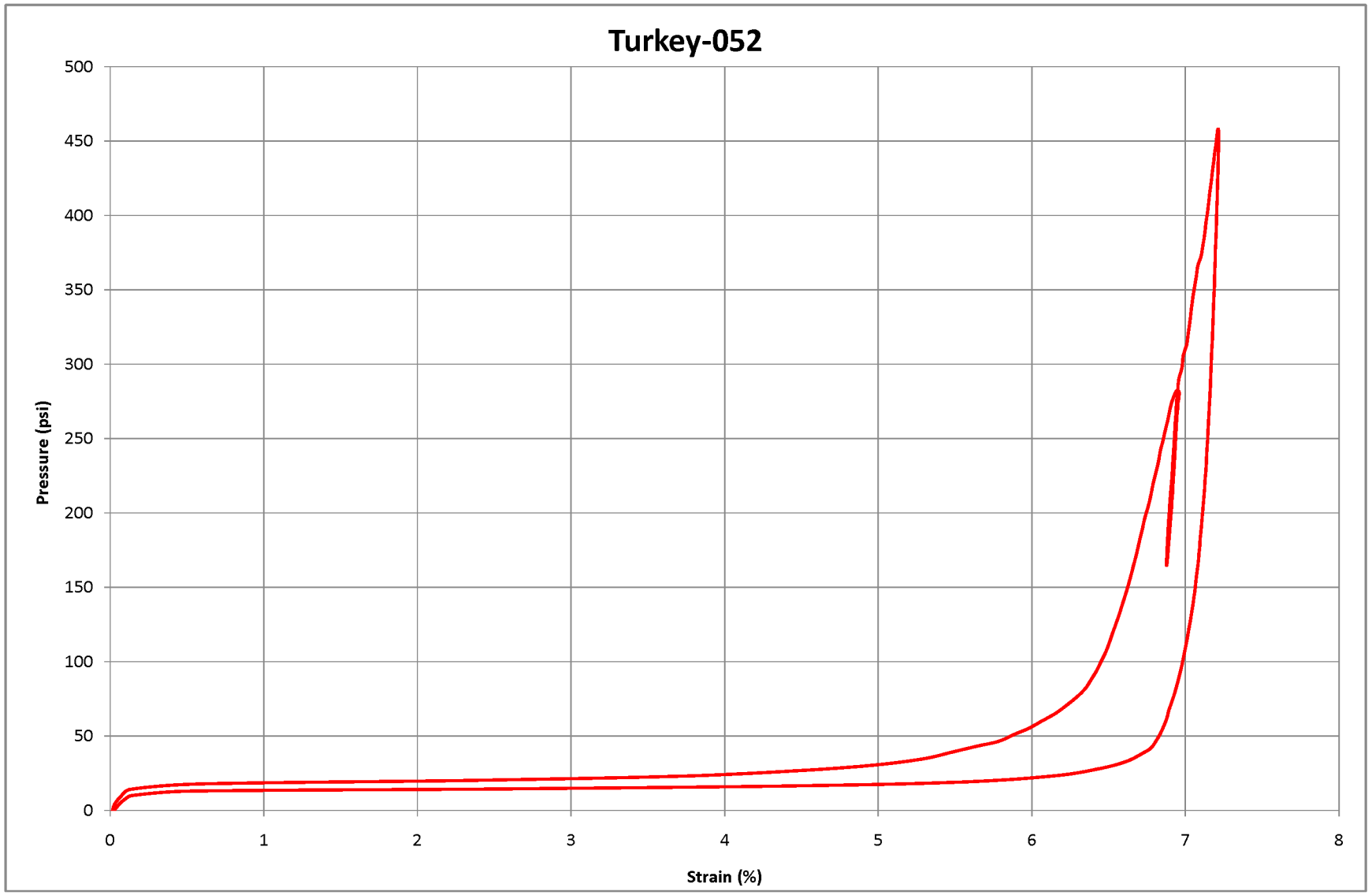


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 051	Key Largo	26755	54050				

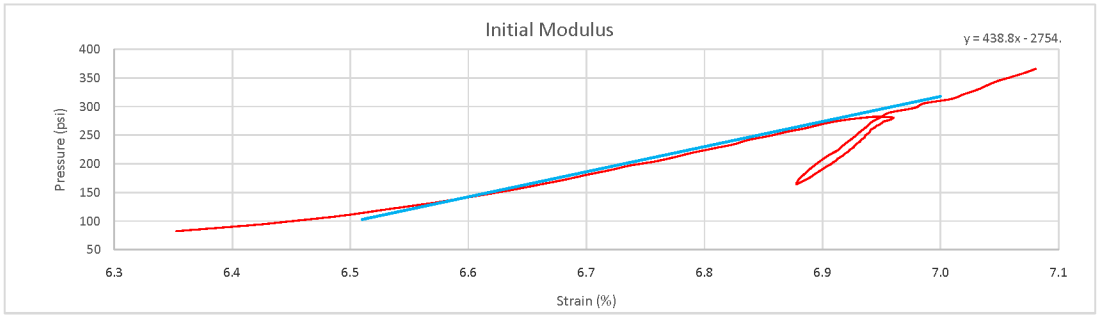


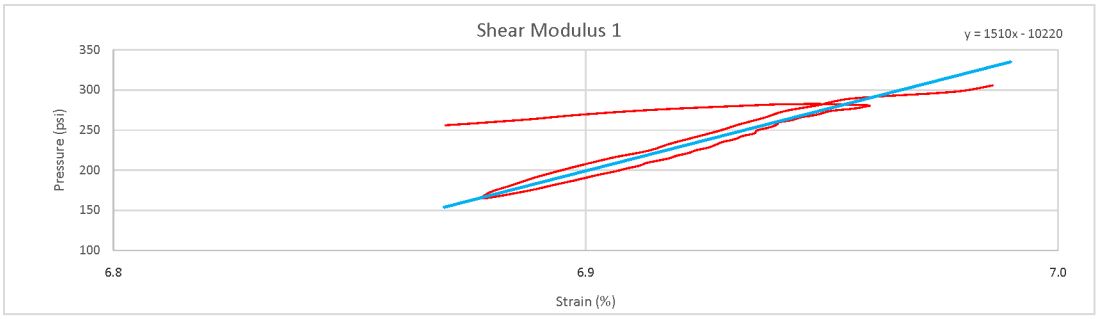


Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 052.imp	R-7-2	41.1	Key Largo

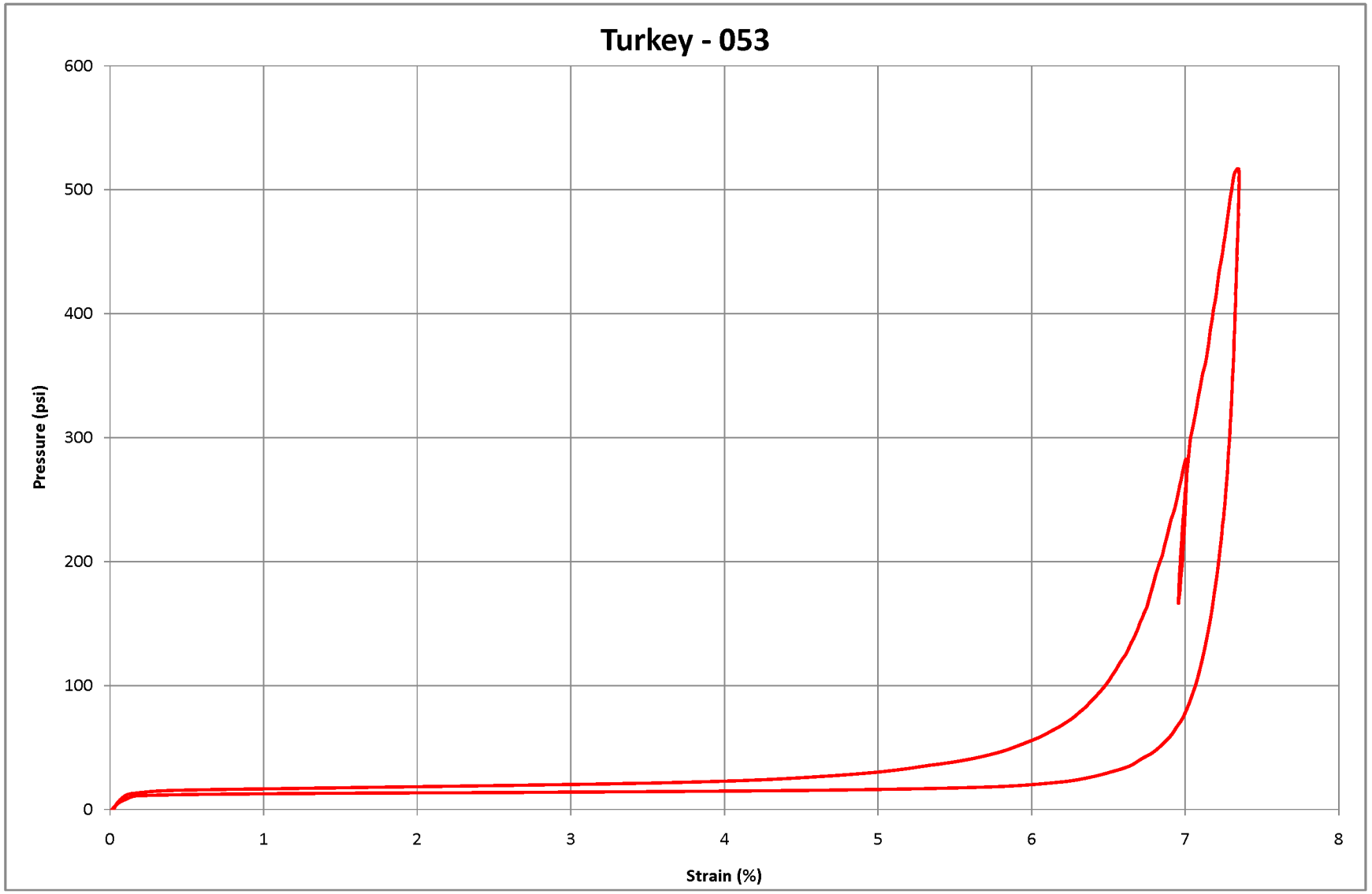


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 052	Key Largo	21945	75500				

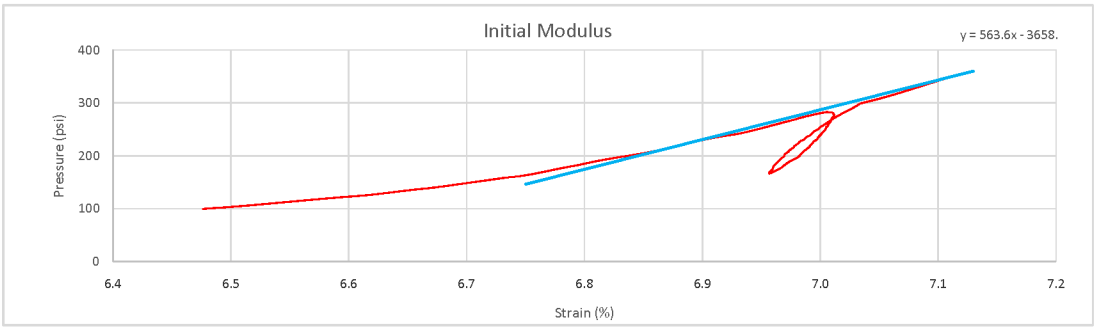


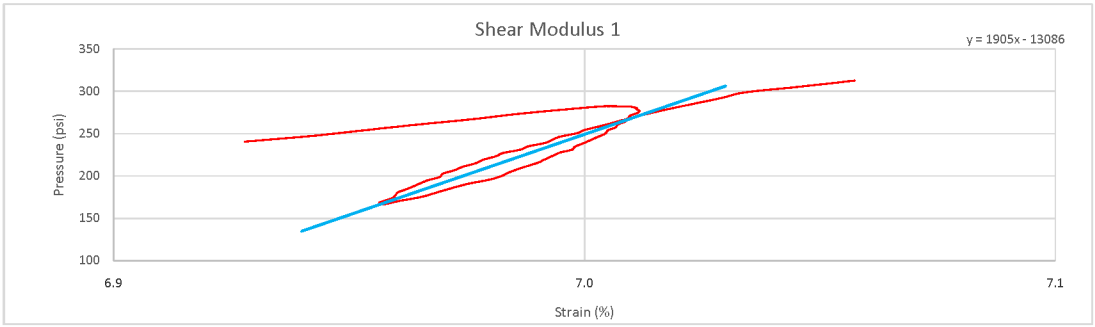


Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 053.imp	R-7-2	39.6	Key Largo

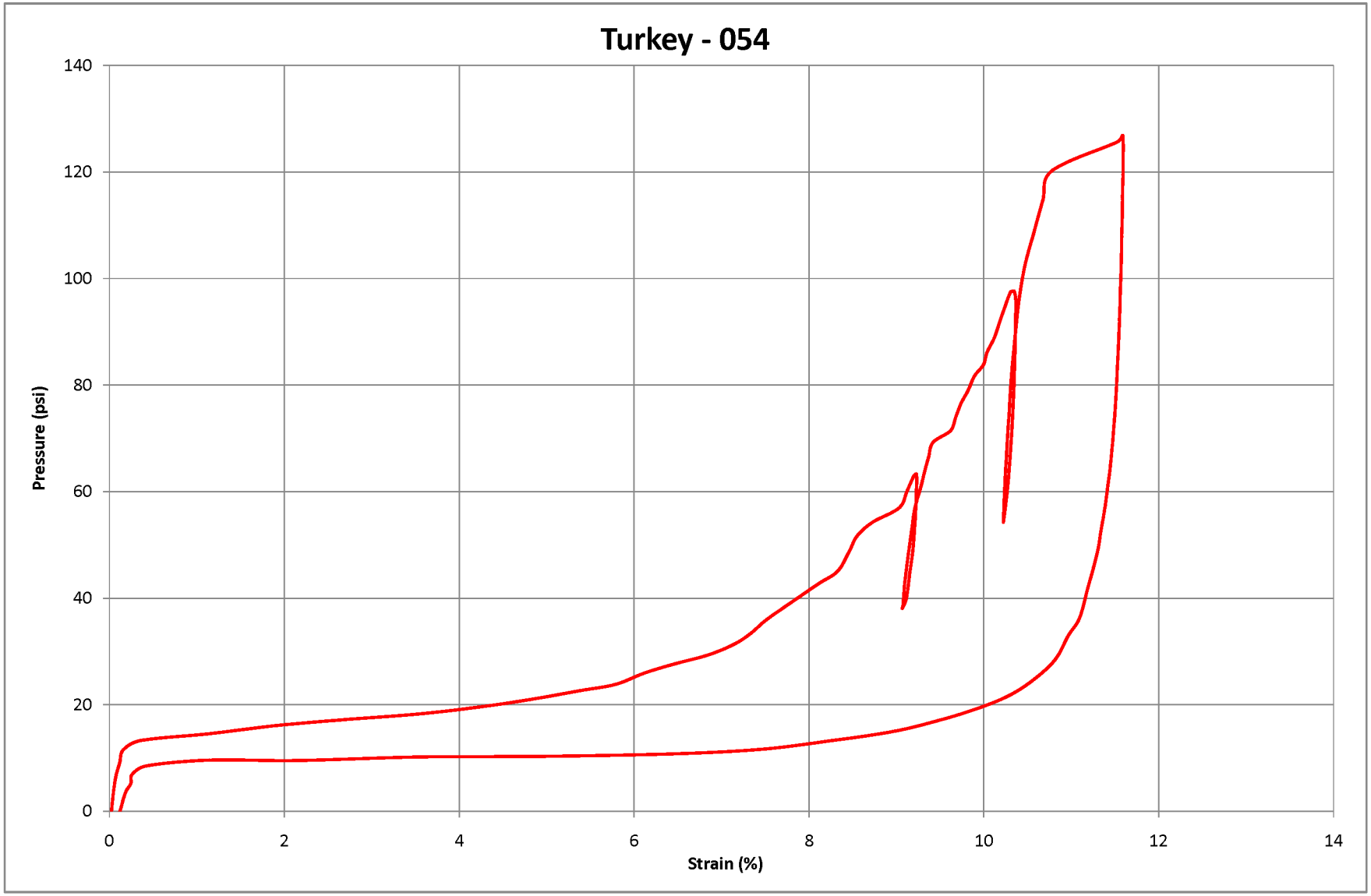


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 053	Key Largo	28182	95250				

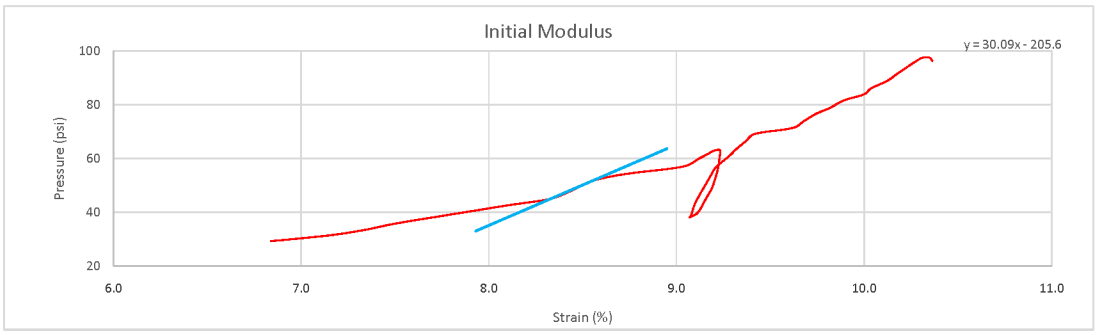


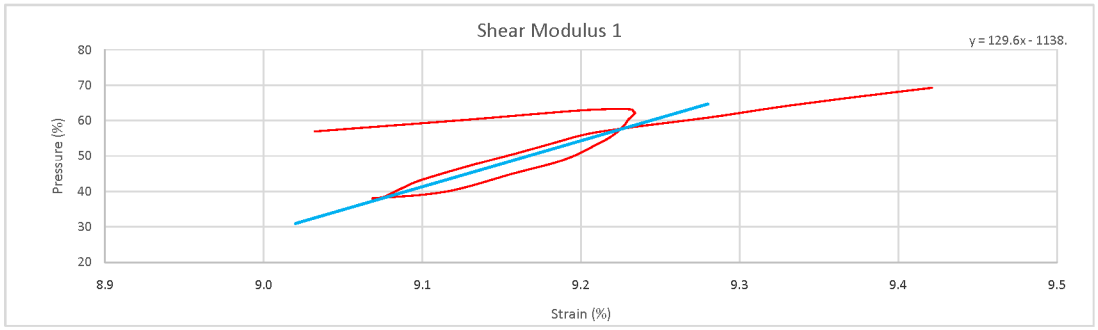


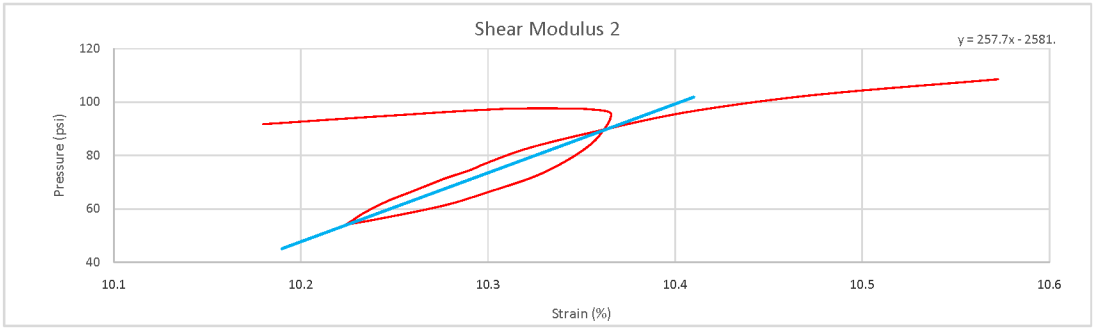
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 054.imp	R - 6 - 1b	35	Key Largo



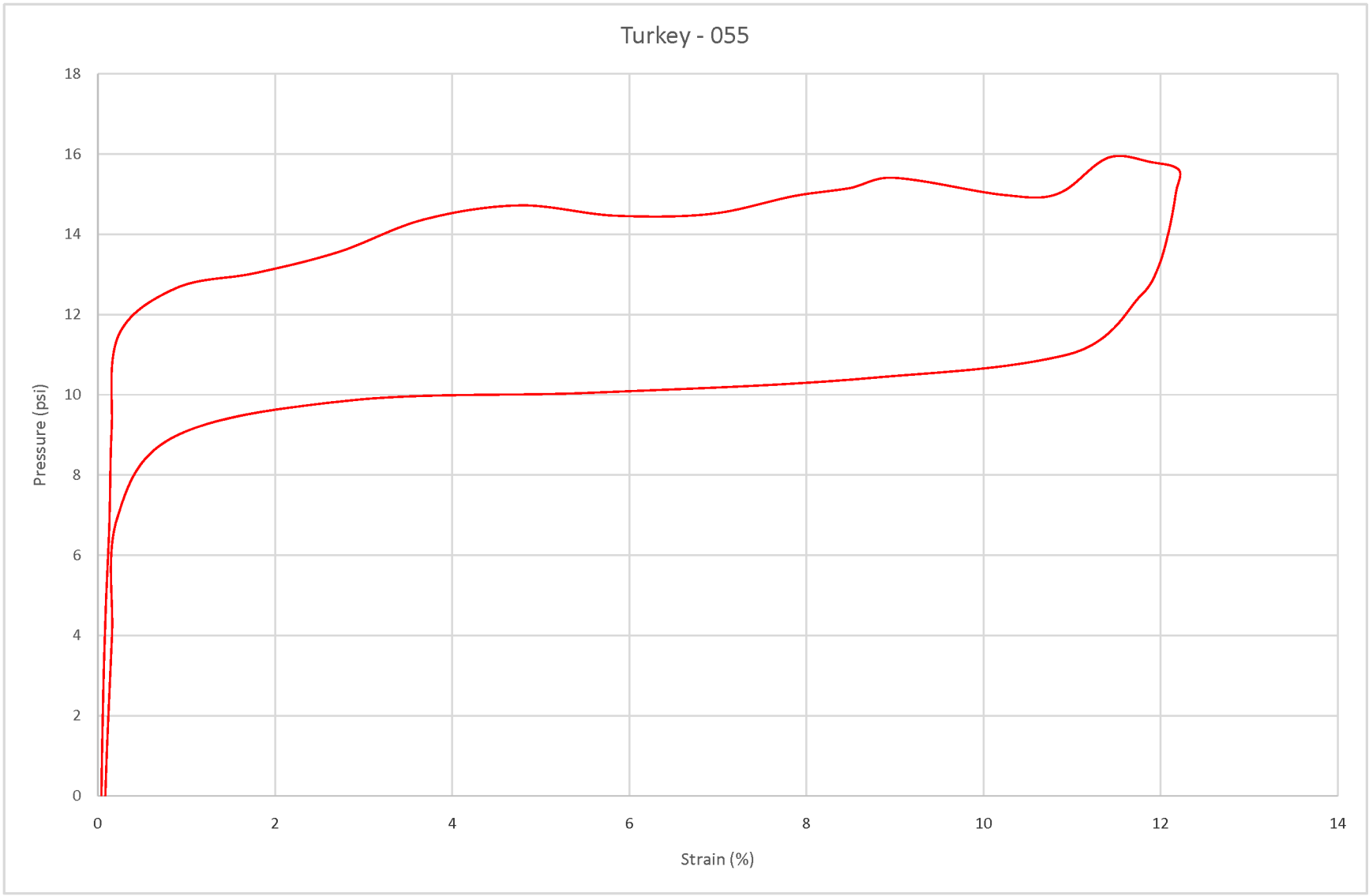
File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 054	Key Largo	1505	6482	12889			



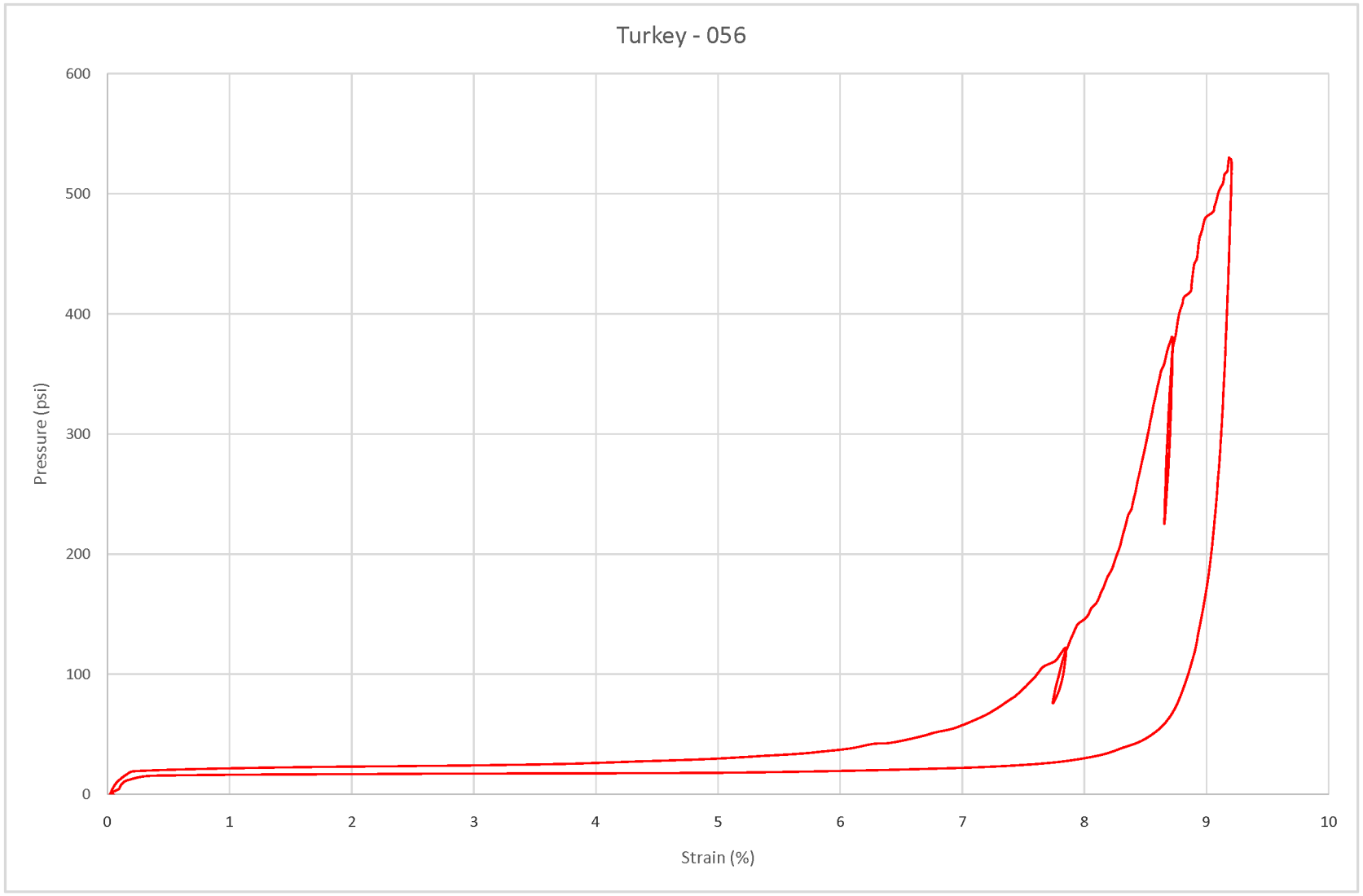




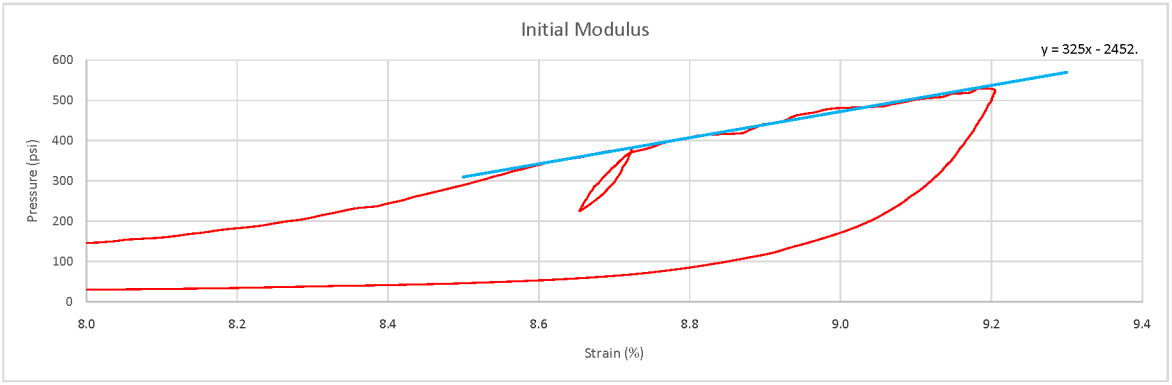
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 055.imp	R - 6 - 1b	33.5	Key Largo

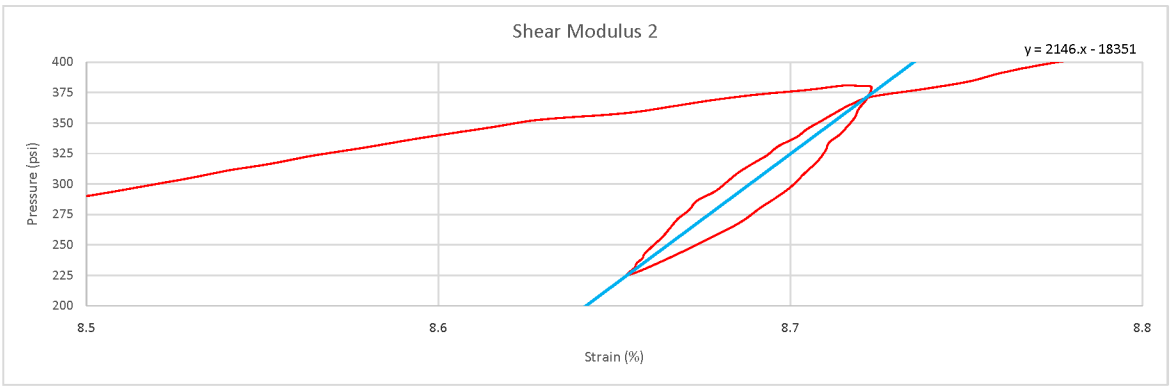


Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 056.imp	R - 7 - 2	48	Key Largo

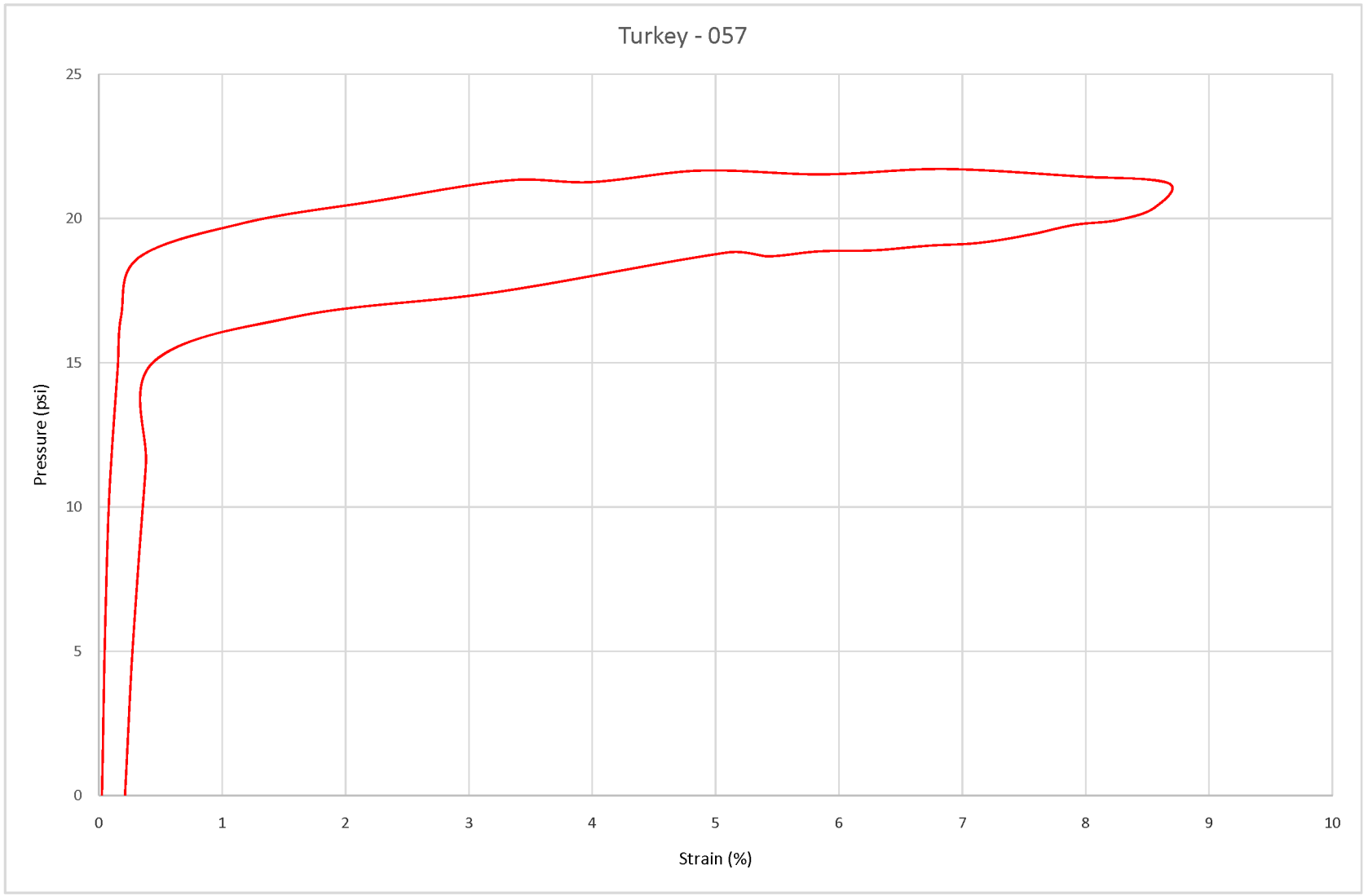


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 056	Key Largo	16250		107335			

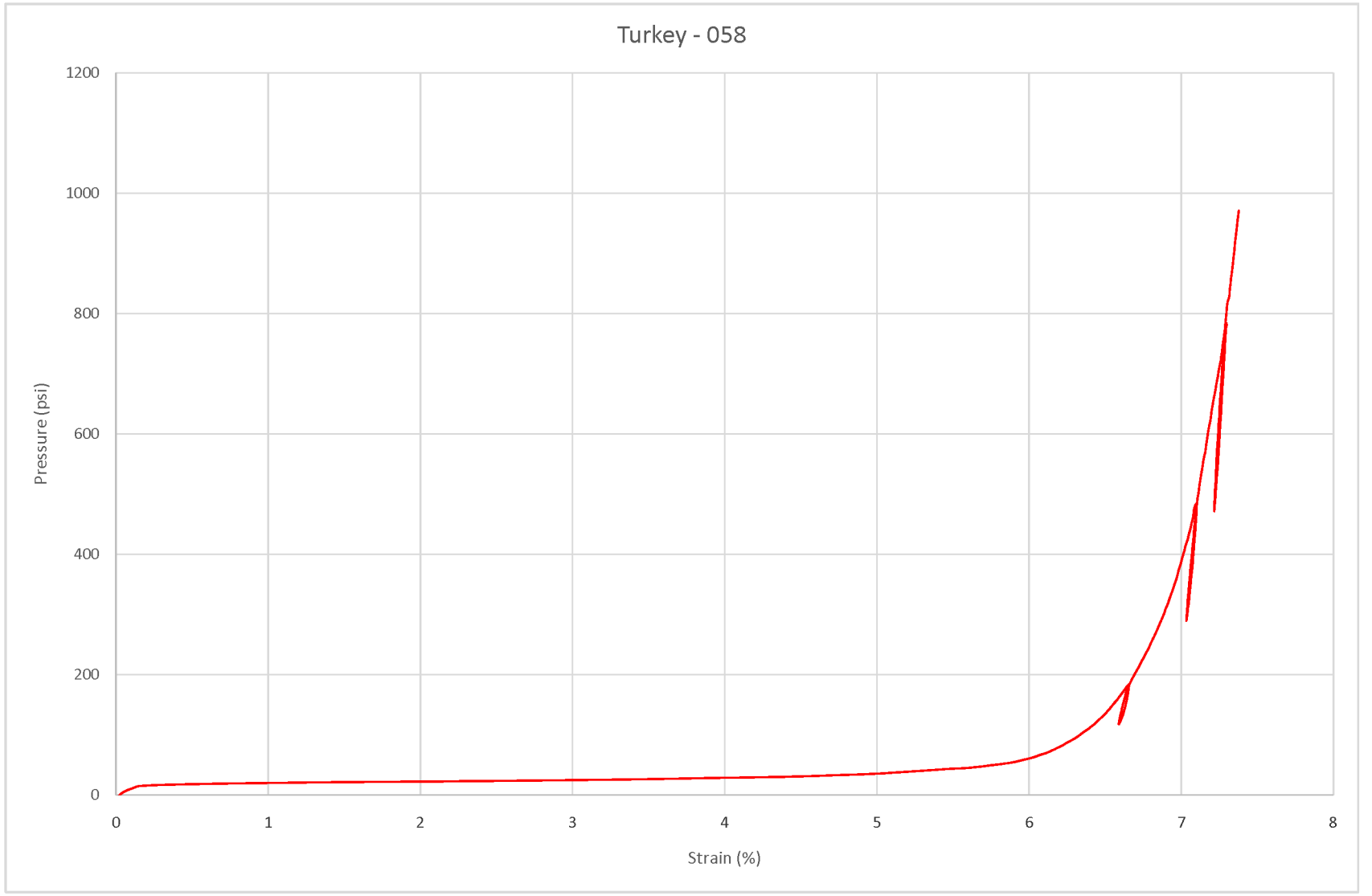




Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 057.imp	R - 7 - 2	46	Fort Thompson

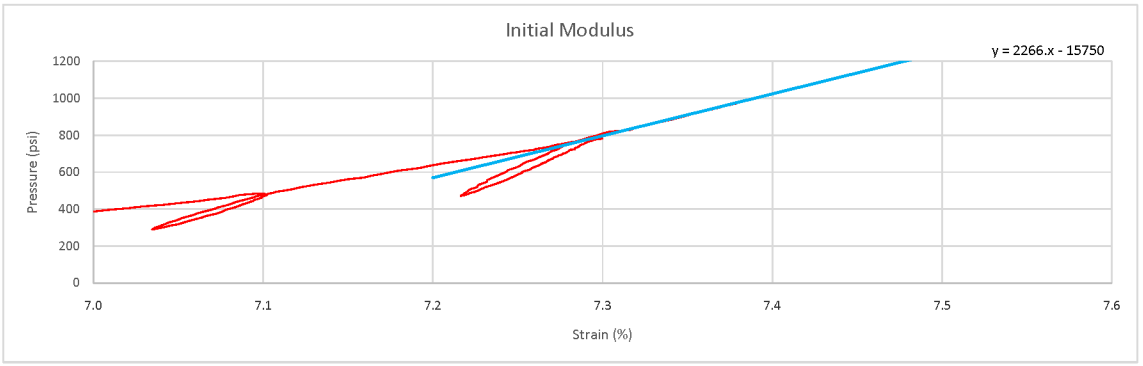


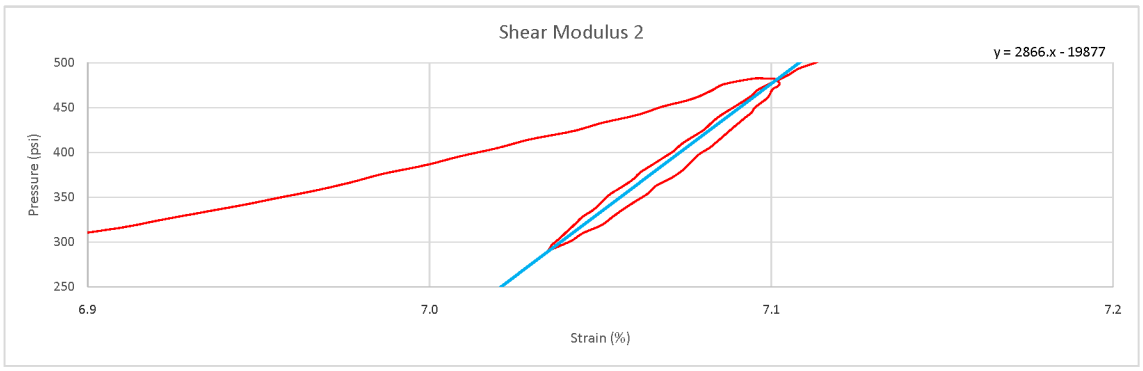
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 058.imp	R - 6 - 1b	44.5	Key Largo

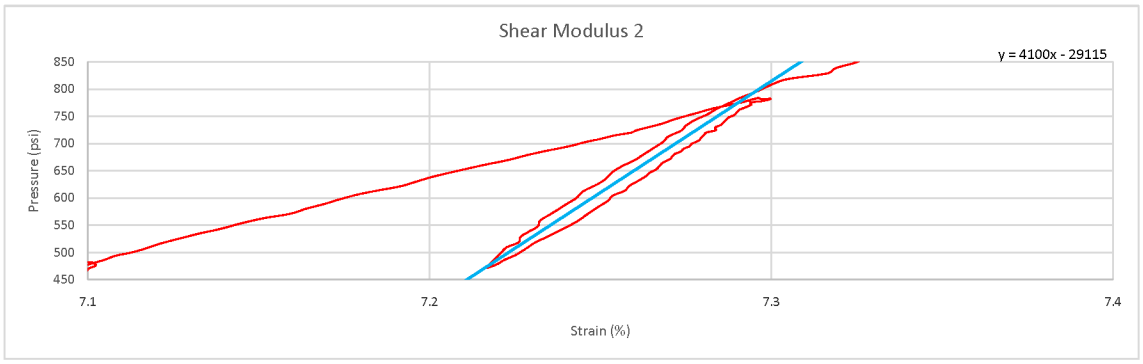


* Ruptured Membrane

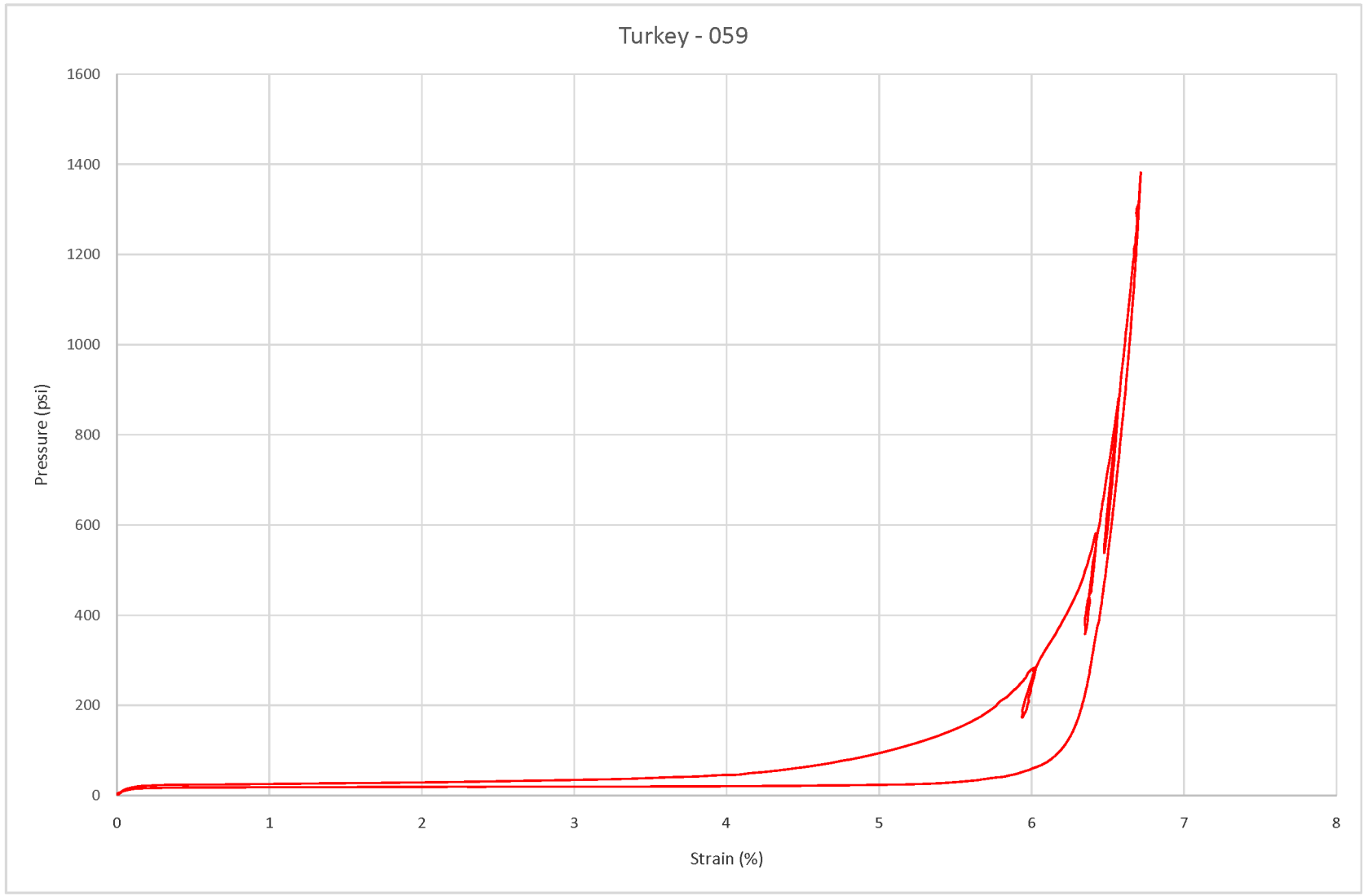
File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 058	Key Largo	113335		143335	205000		



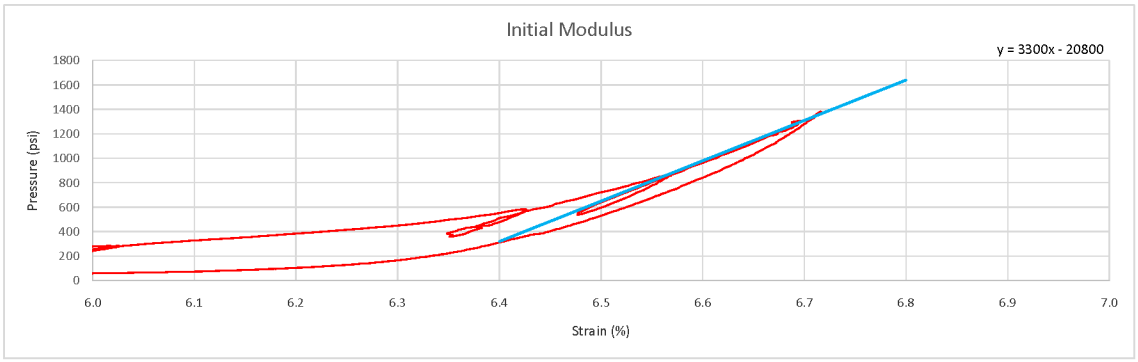


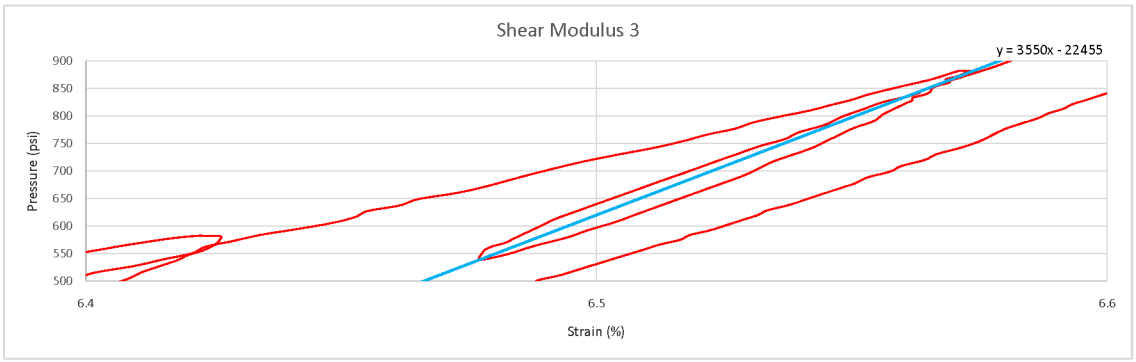


Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 059.imp	R - 7 - 2	51.6	Fort Thompson

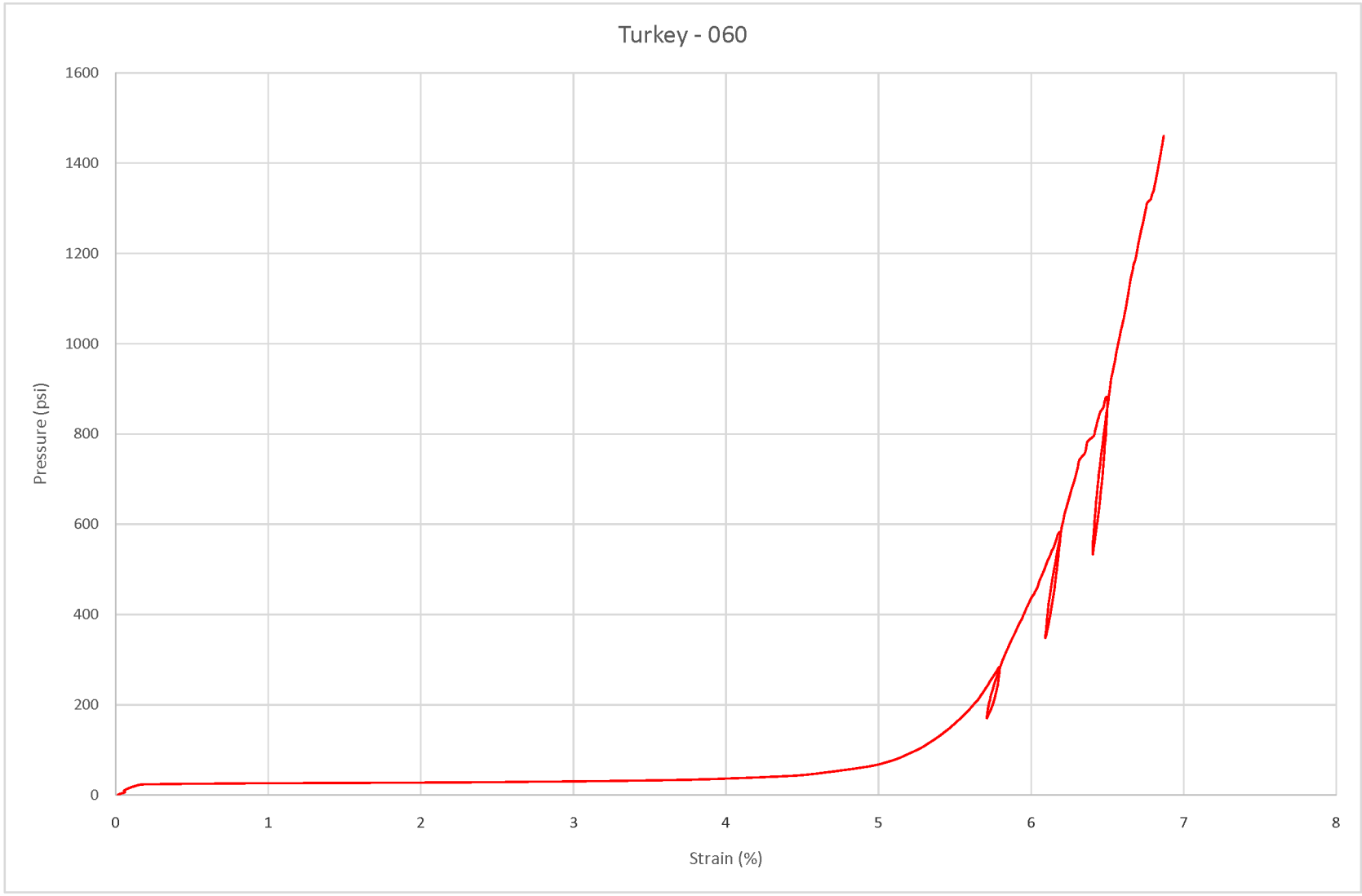


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 059	Fort Thompson	160000			177500		



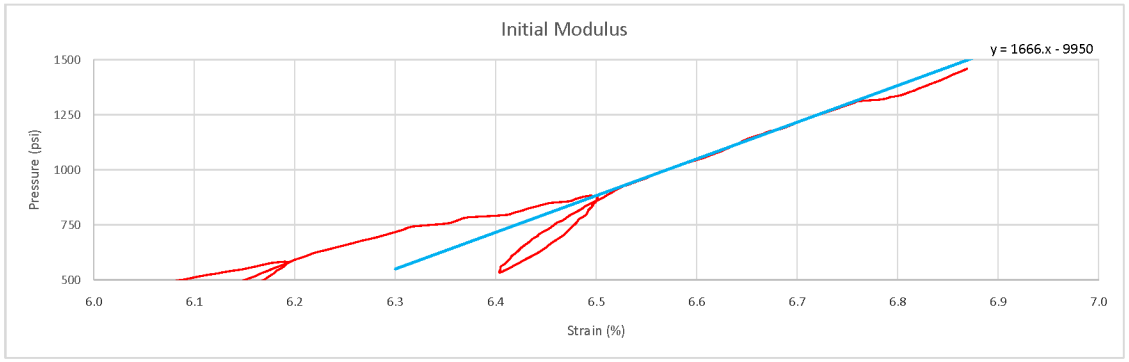


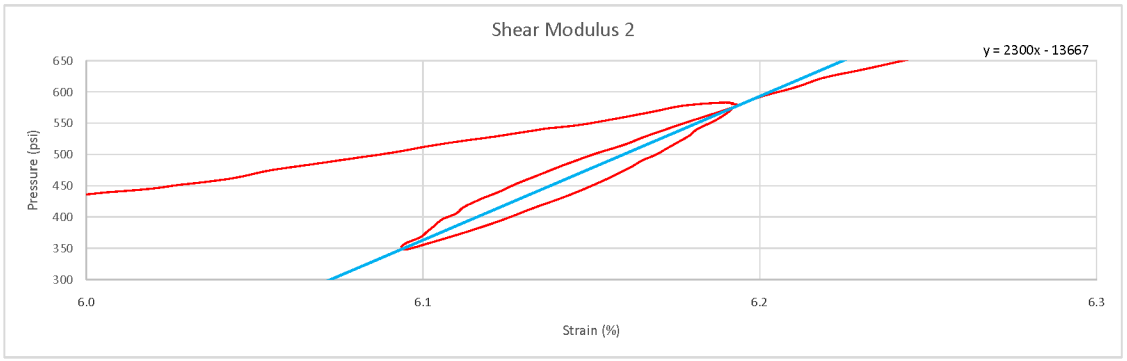
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	5	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 060.imp	R - 7 - 2	56.7	Fort Thompson

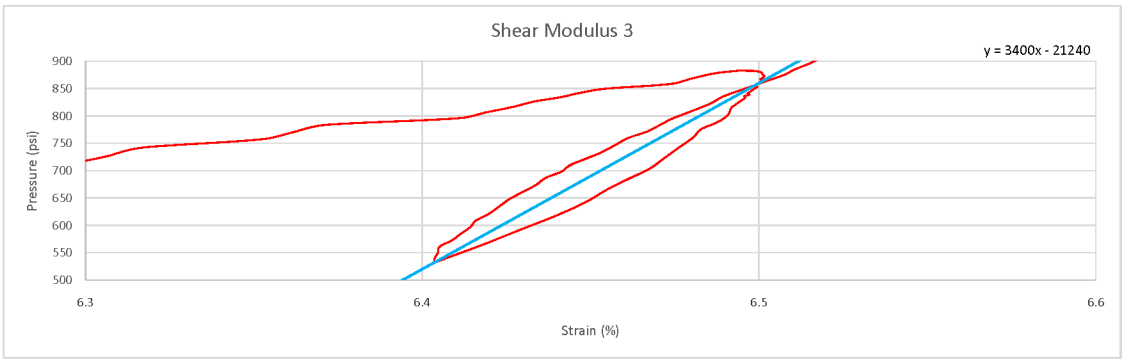


*Ruptured Membrane

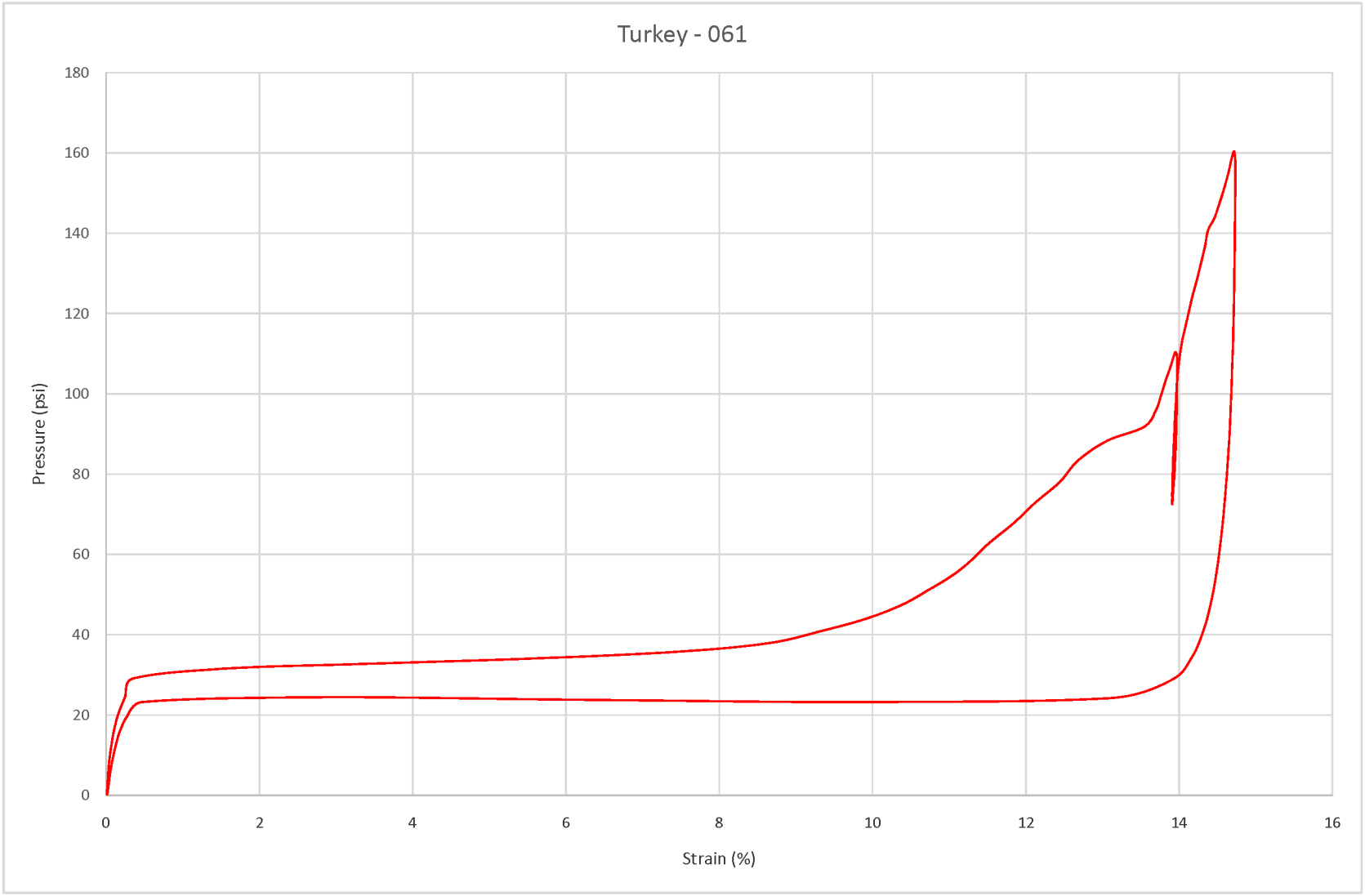
File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 060	Fort Thompson	83335		115000	170000		



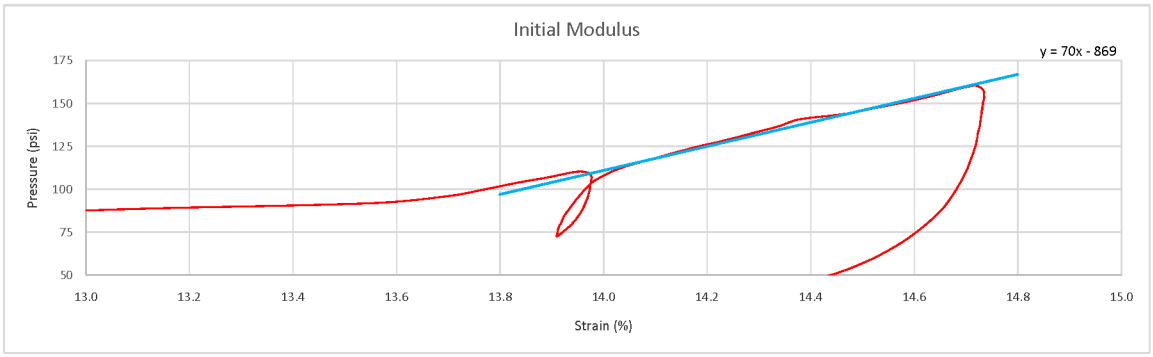


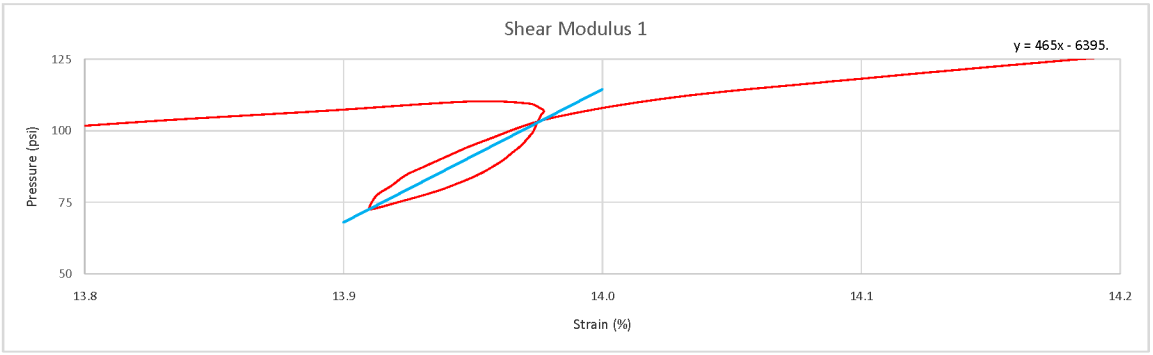


Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 061.imp	R - 7 - 2	69	Fort Thompson

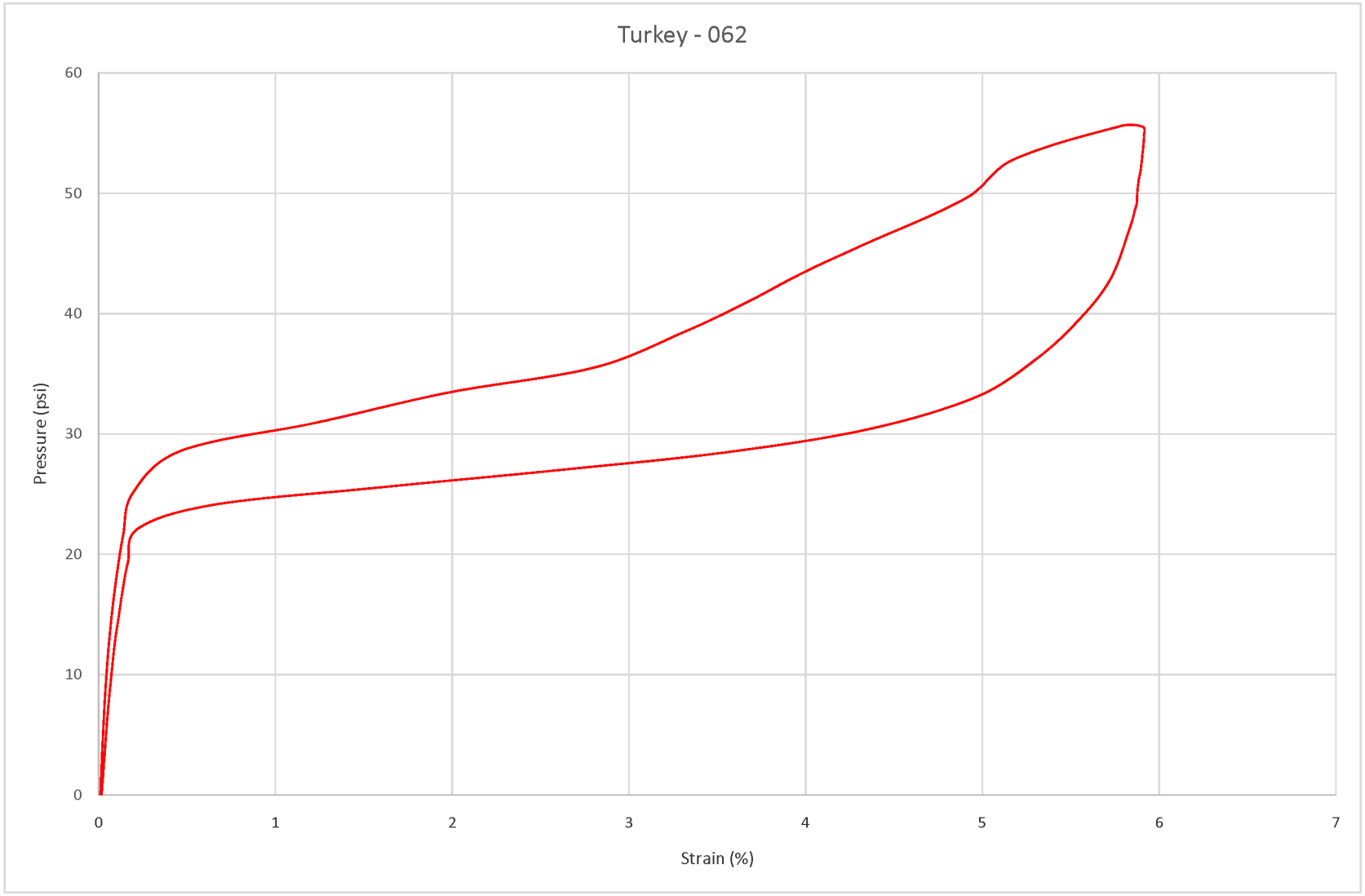


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 061	Fort Thompson	3500	23250				

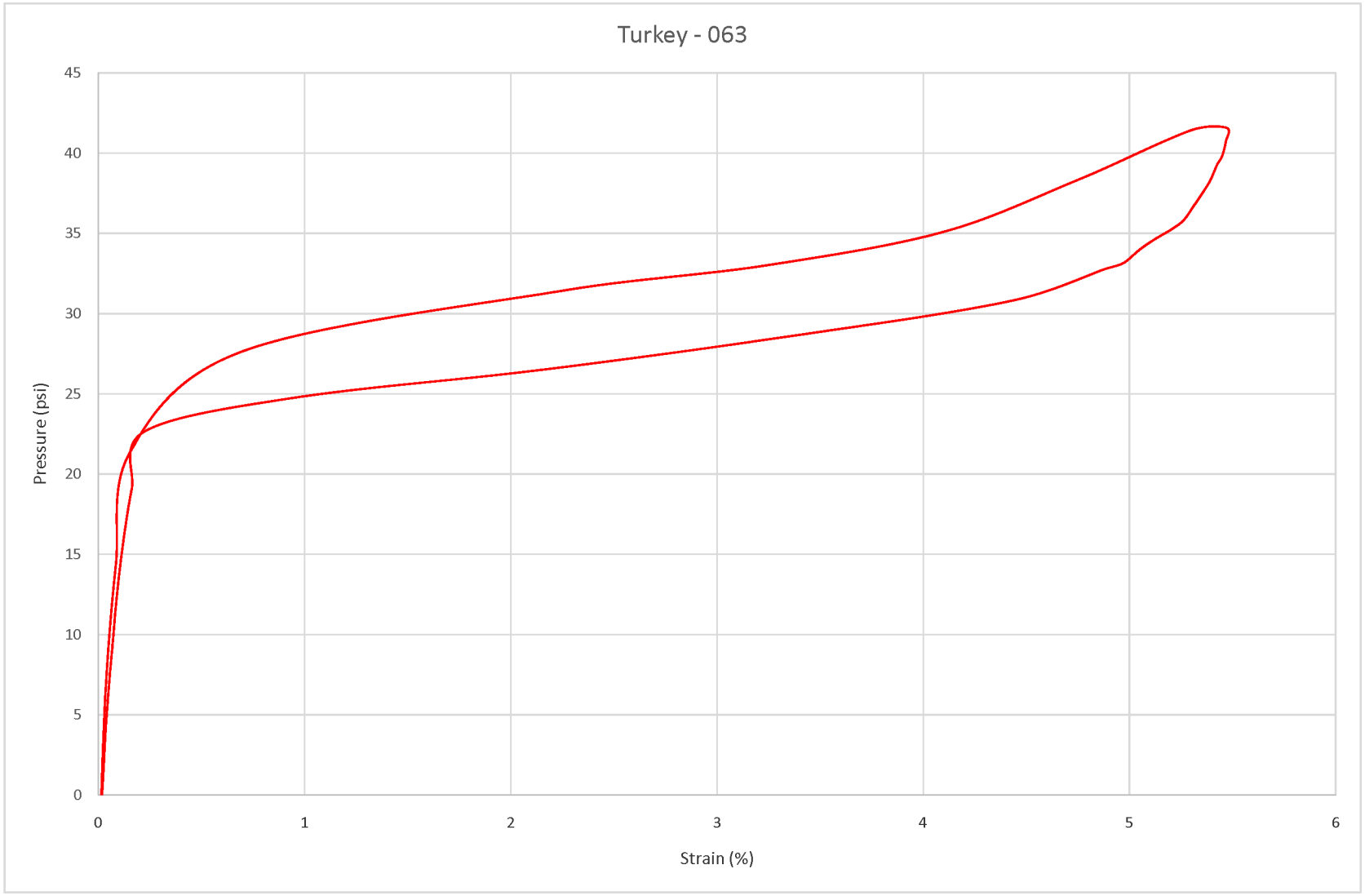




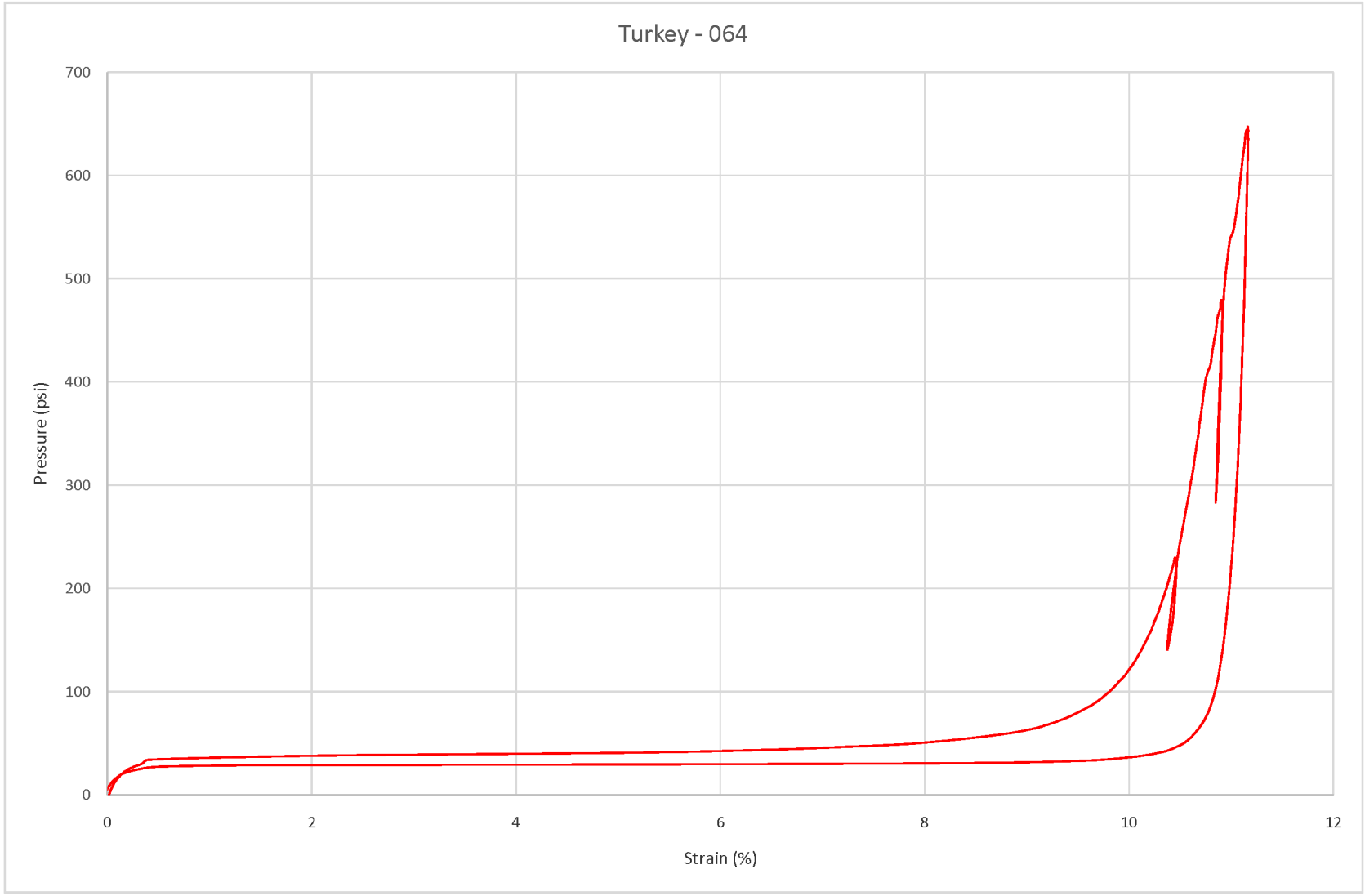
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 062.imp	R - 7 - 2	72	Fort Thompson



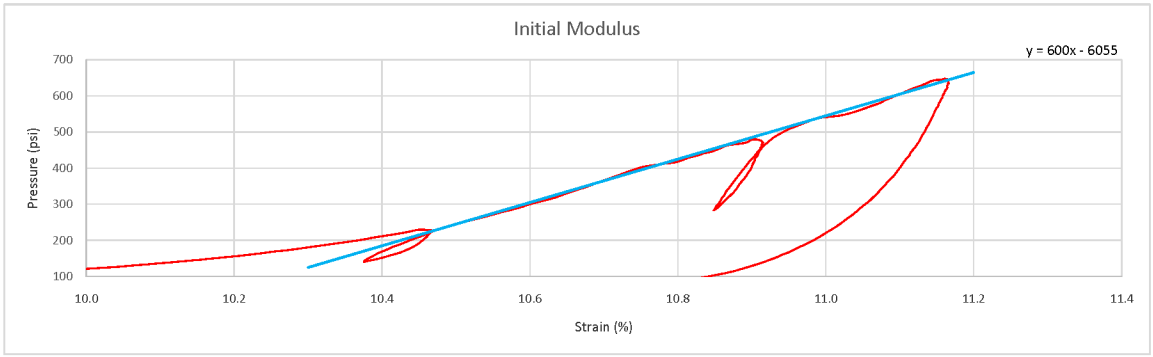
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 063.imp	R - 7 - 2	72	Fort Thompson

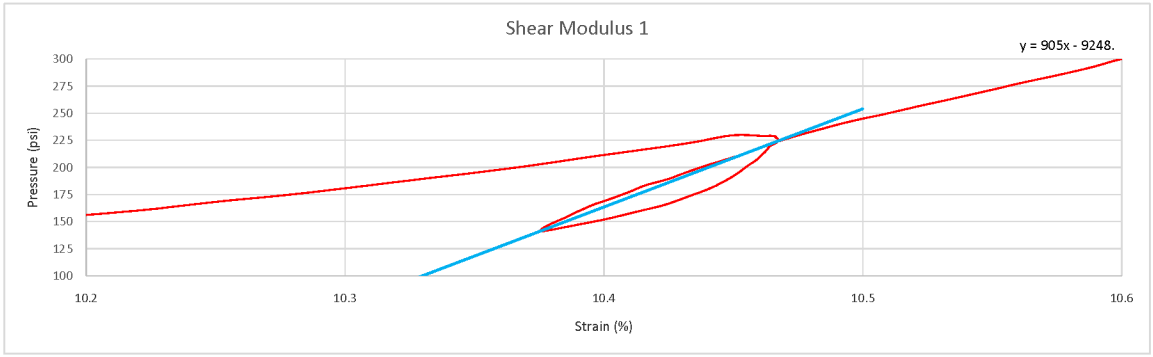


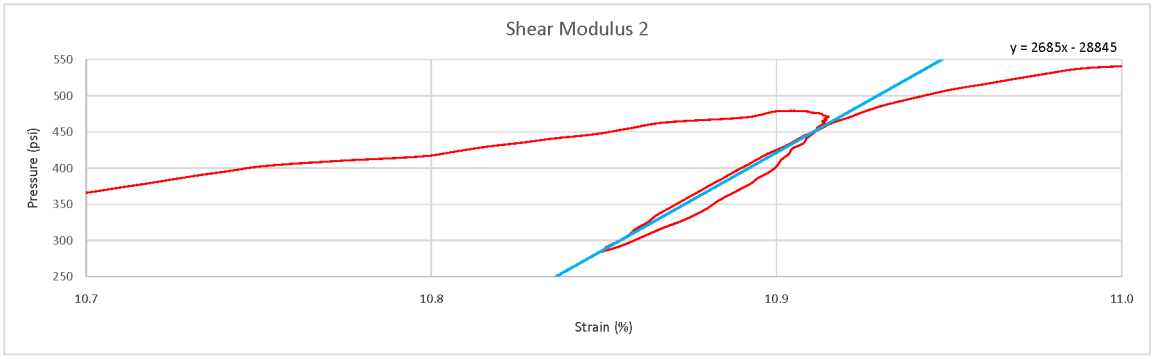
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 064.imp	R - 7 - 2	78	Fort Thompson



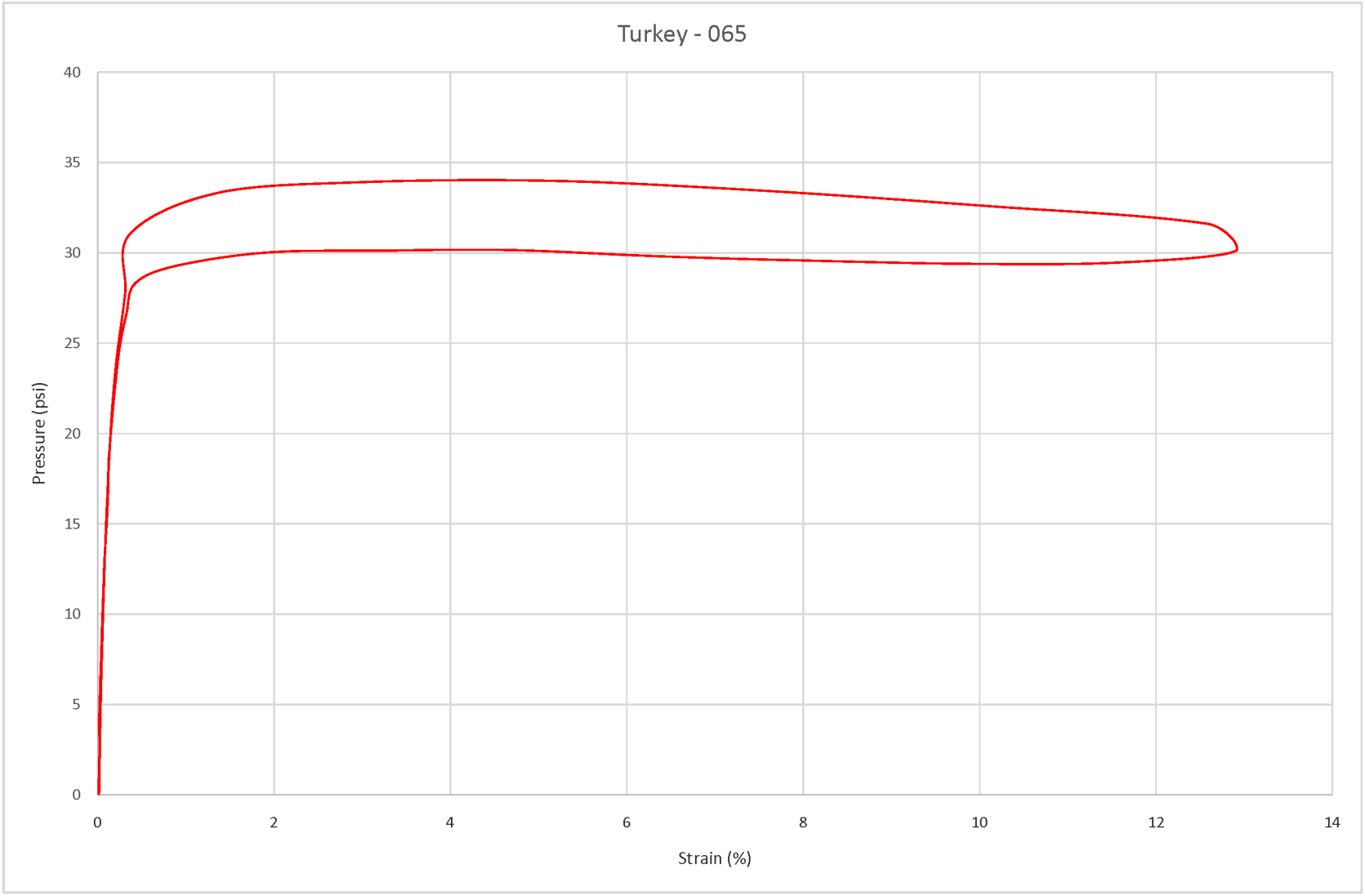
File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 064	Fort Thompson	30000	45250	134250			



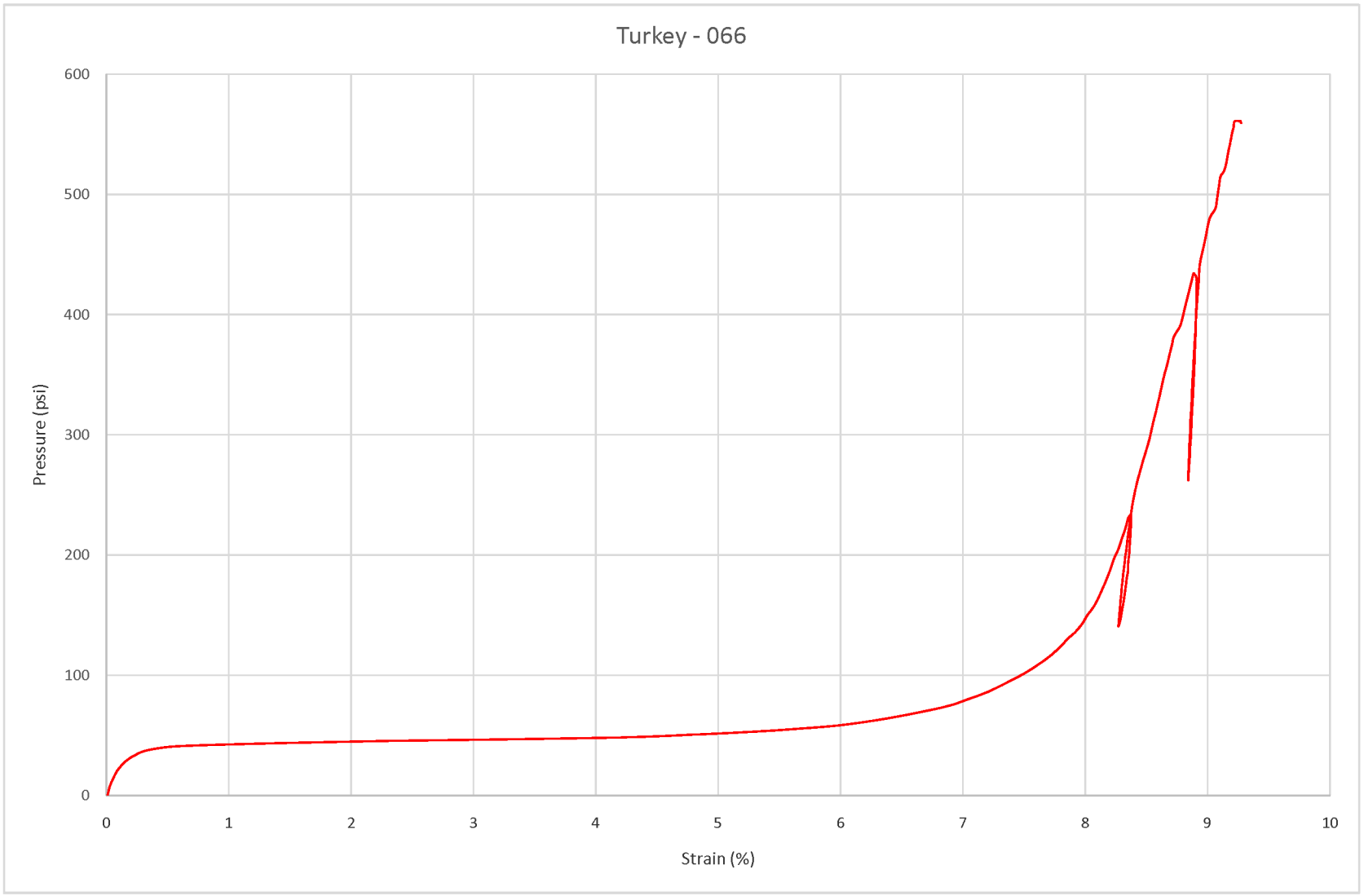




Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 065.imp	R - 7 - 2	76.5	Fort Thompson

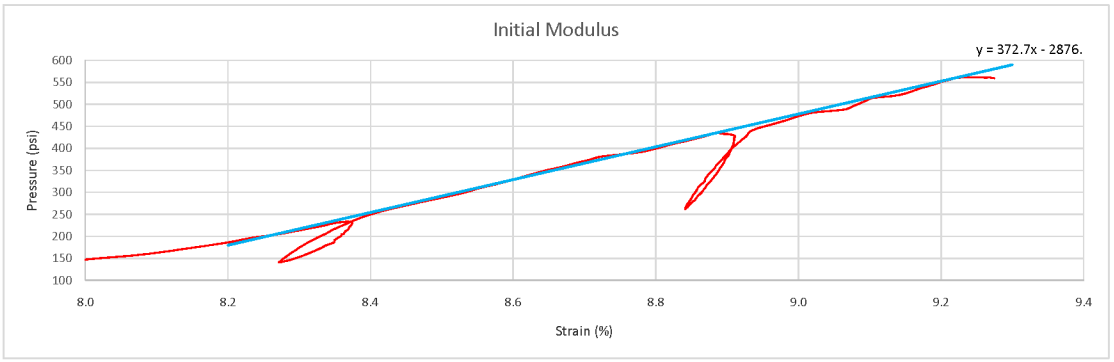


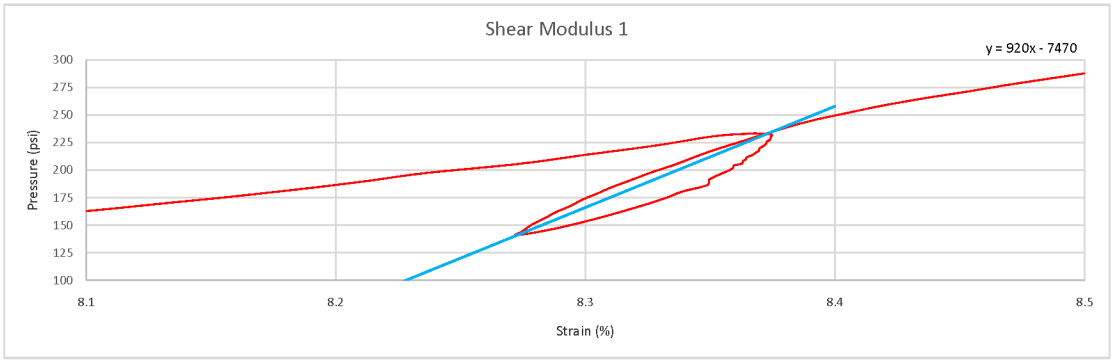
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 066.imp	R - 7 - 2	94	Fort Thompson

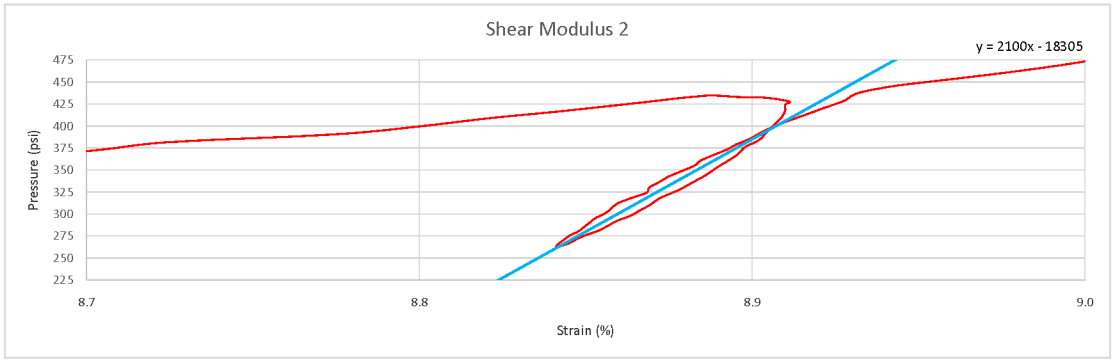


*Ruptured Membrane

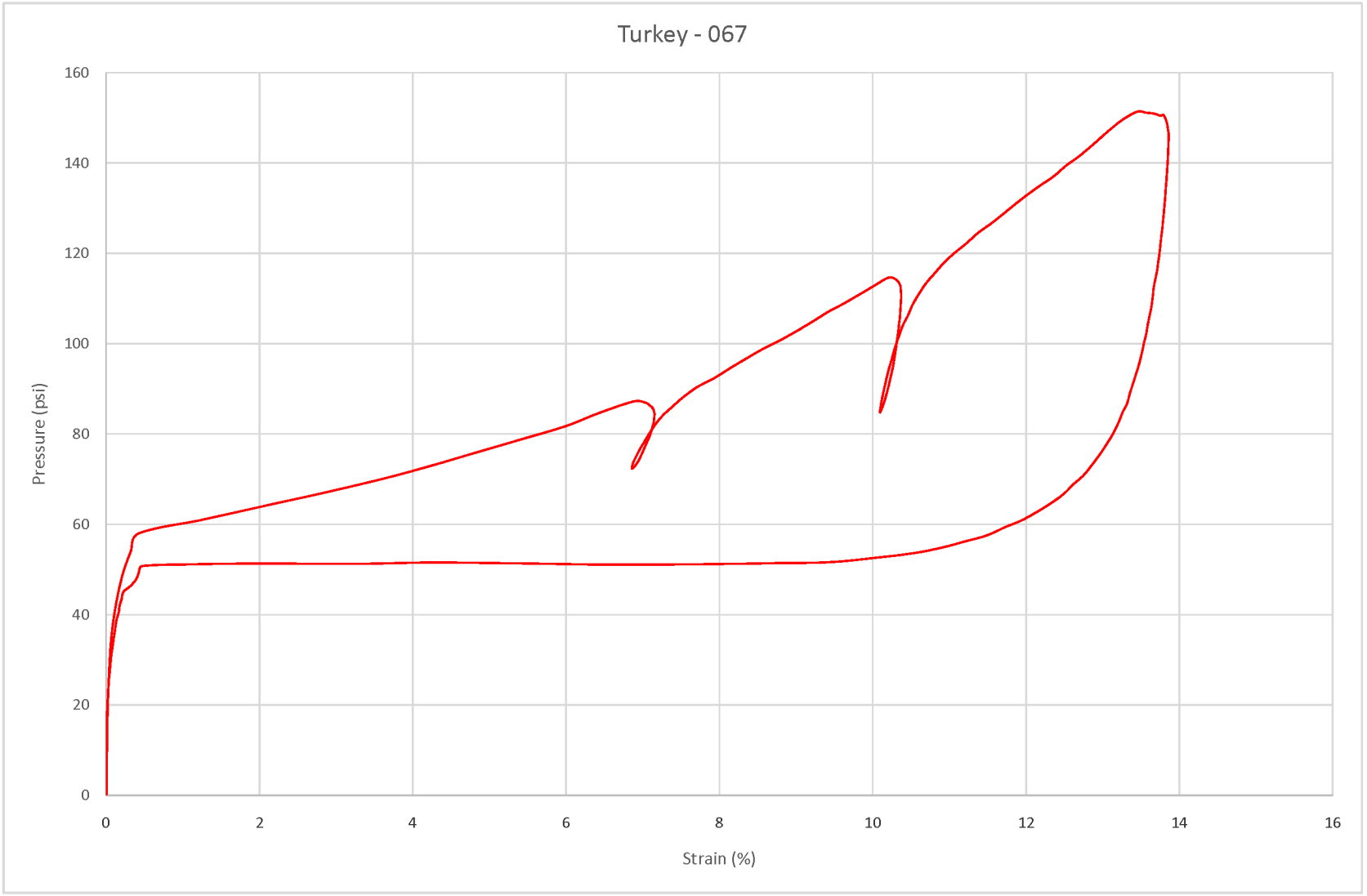
File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 066	Fort Thompson	18635	46000	105000			



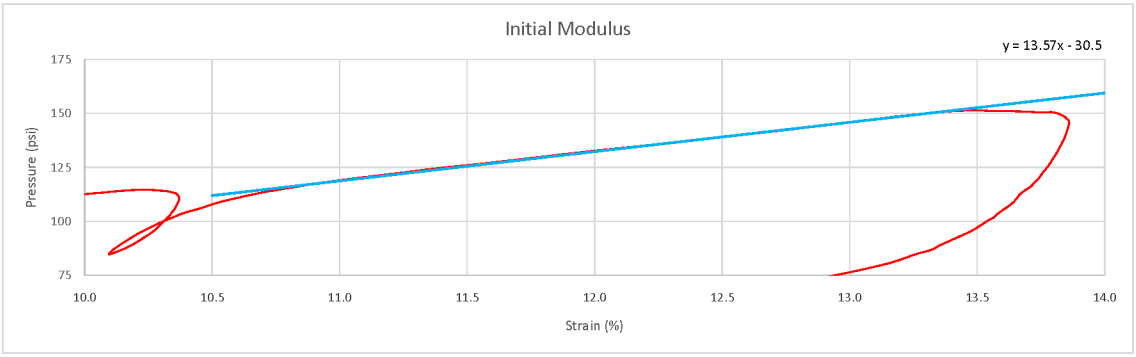


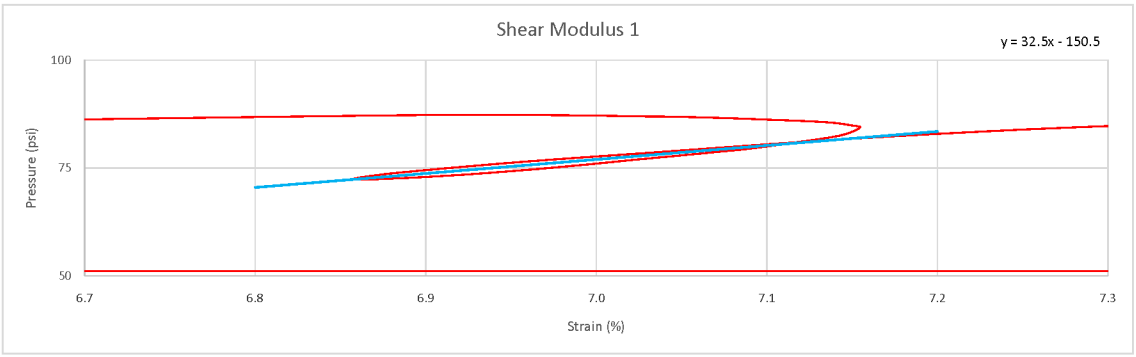


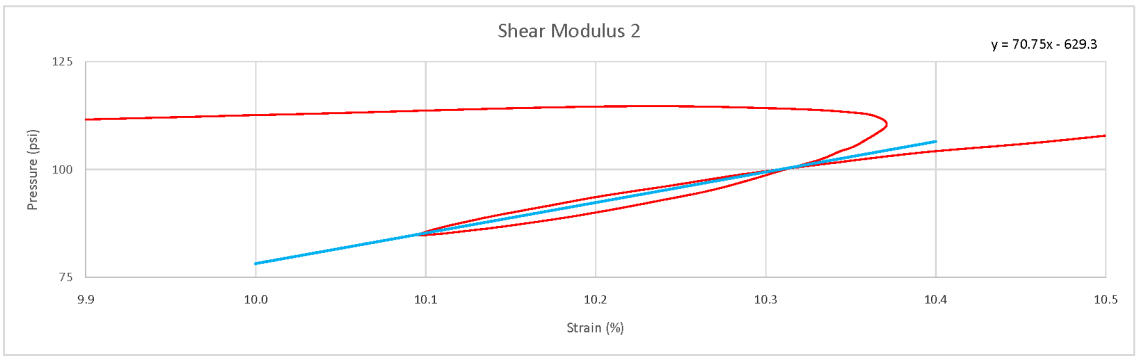
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 067.imp	R - 7 - 2	128	Upper Tamiami



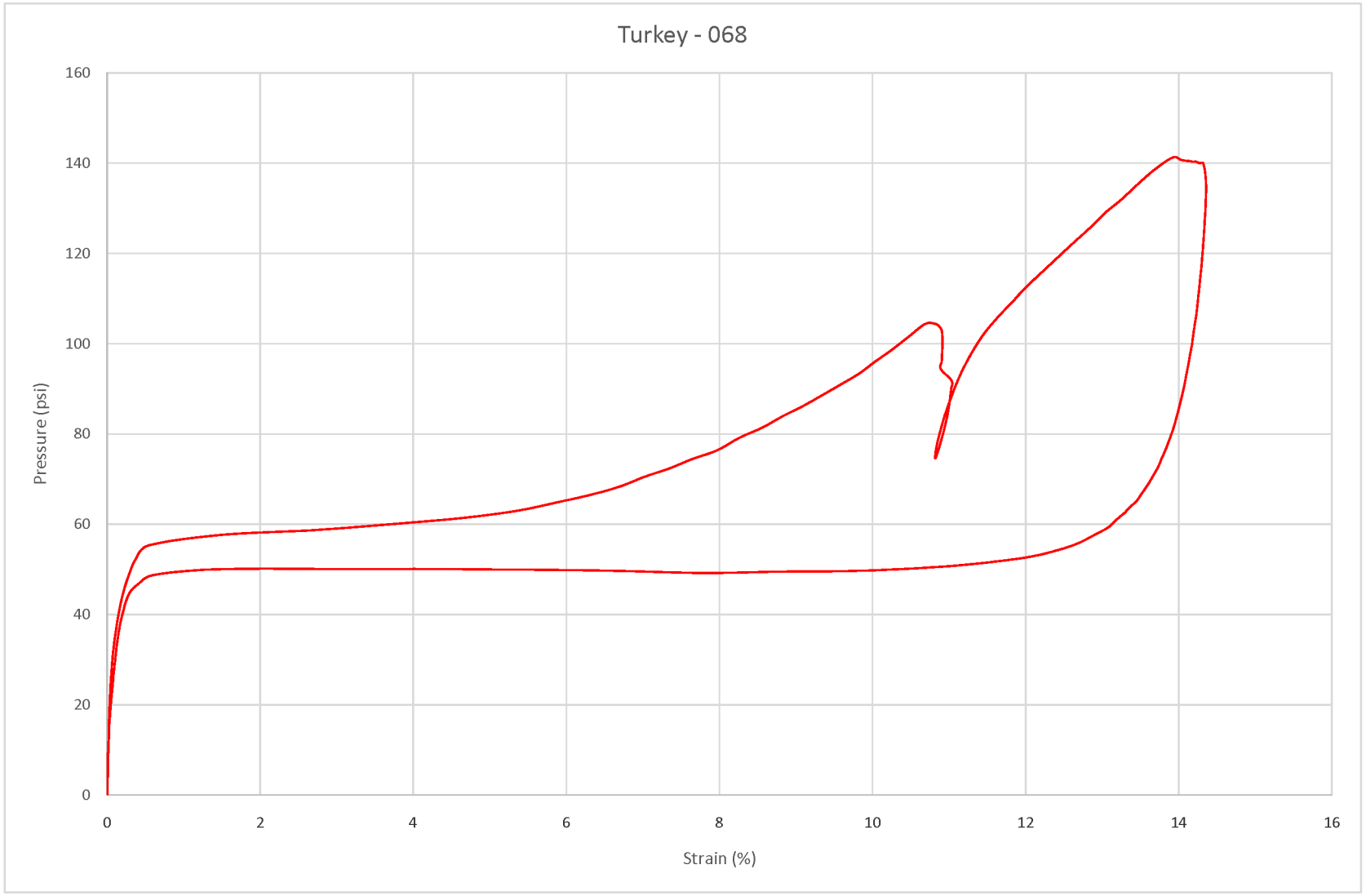
File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 067	Upper Tamiami	680	1625	3540			



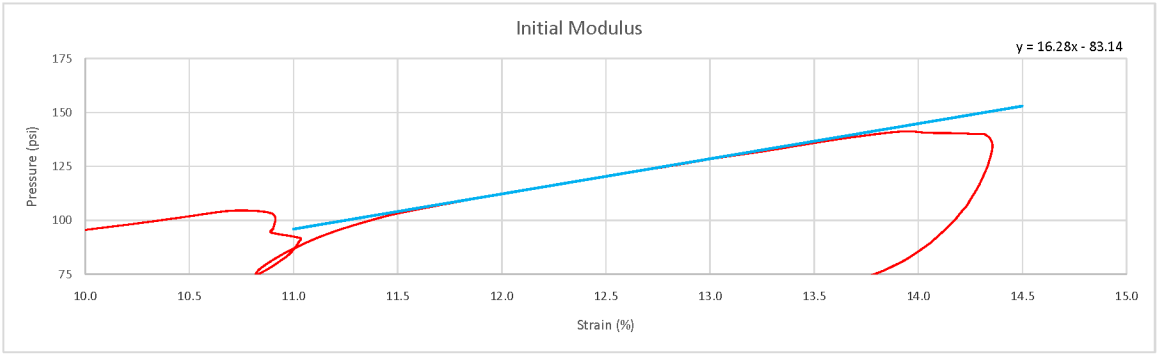


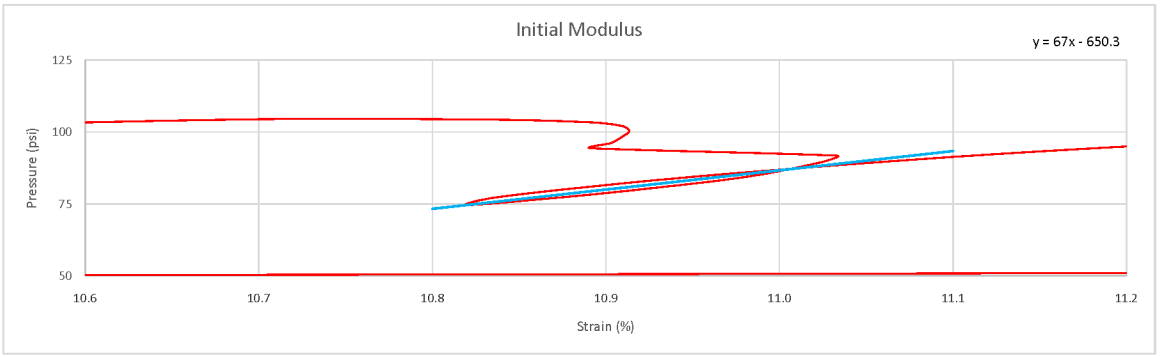


Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 068.imp	R - 7 - 2	126	Upper Tamiami

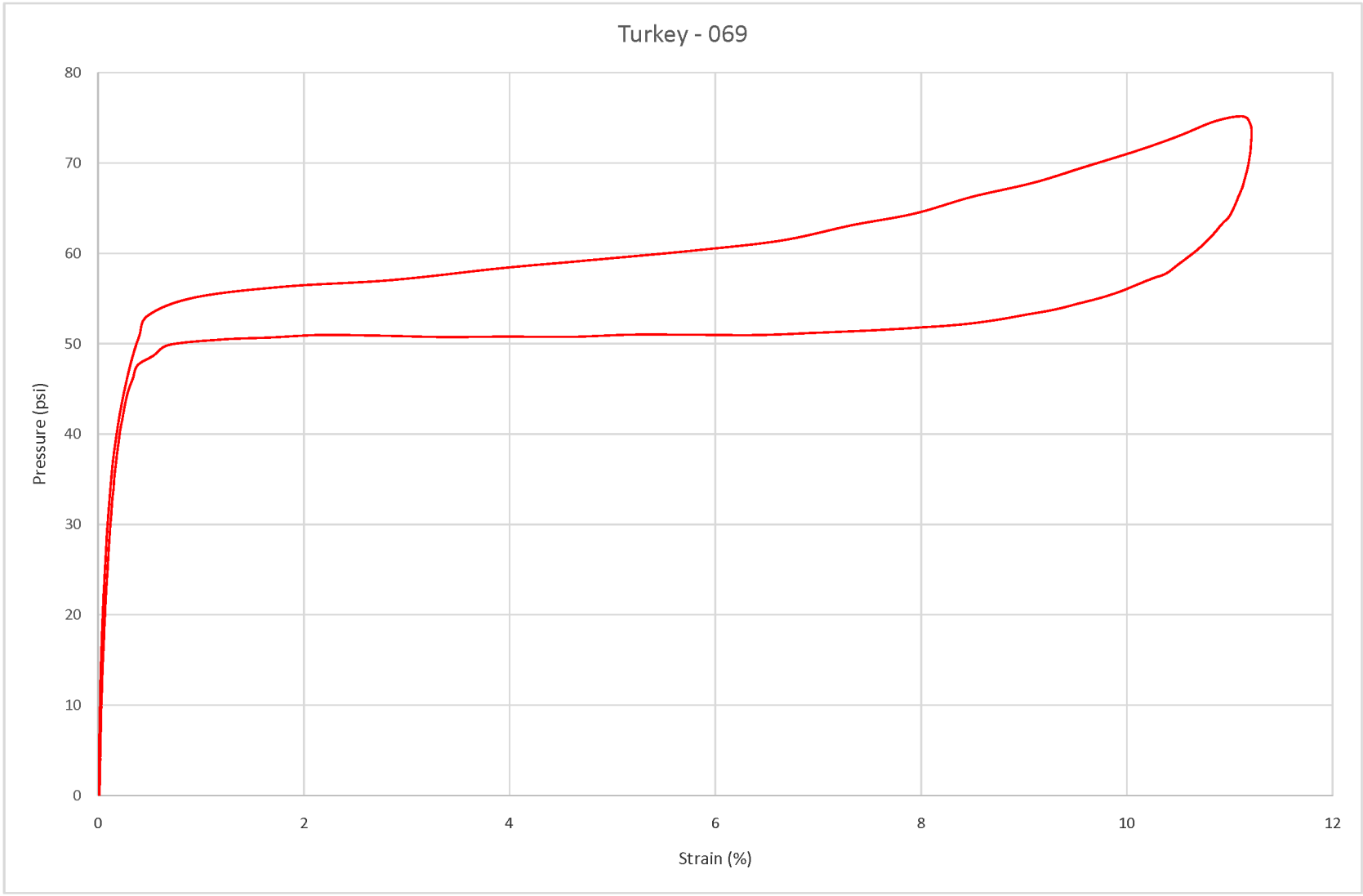


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 068	Upper Tamiami	815	3350				

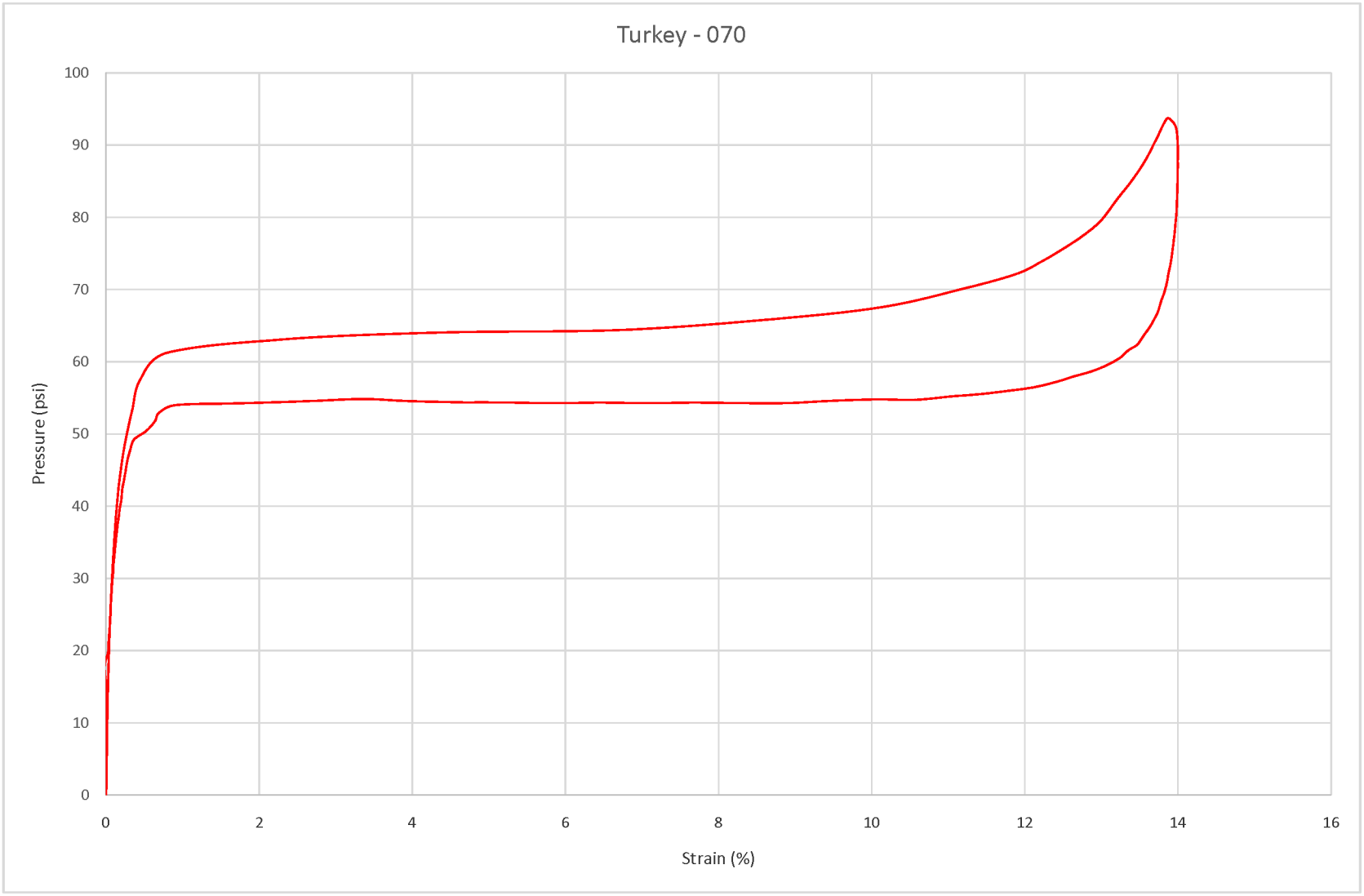




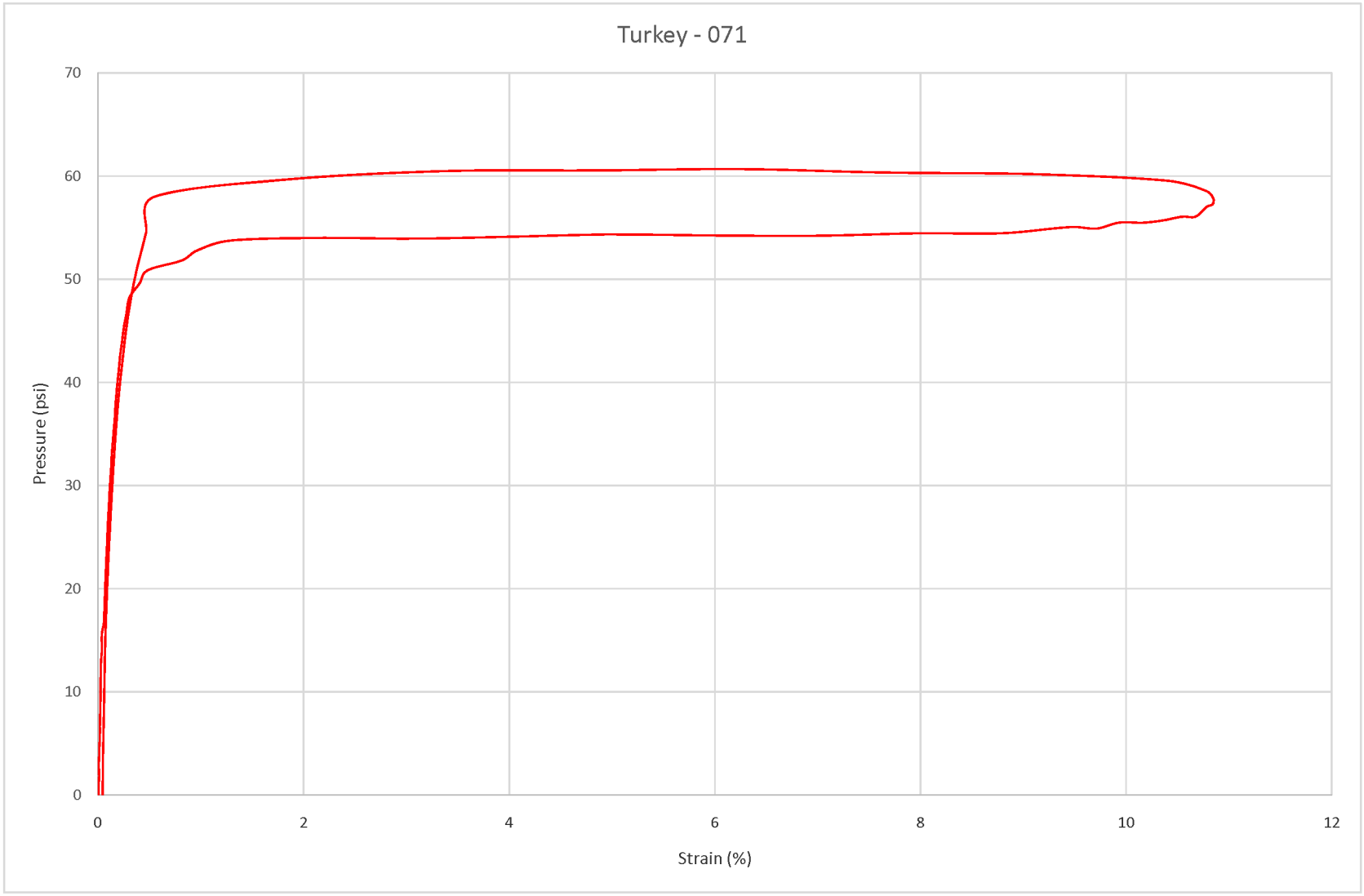
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 069.imp	R - 7 - 2	124	Upper Tamiami



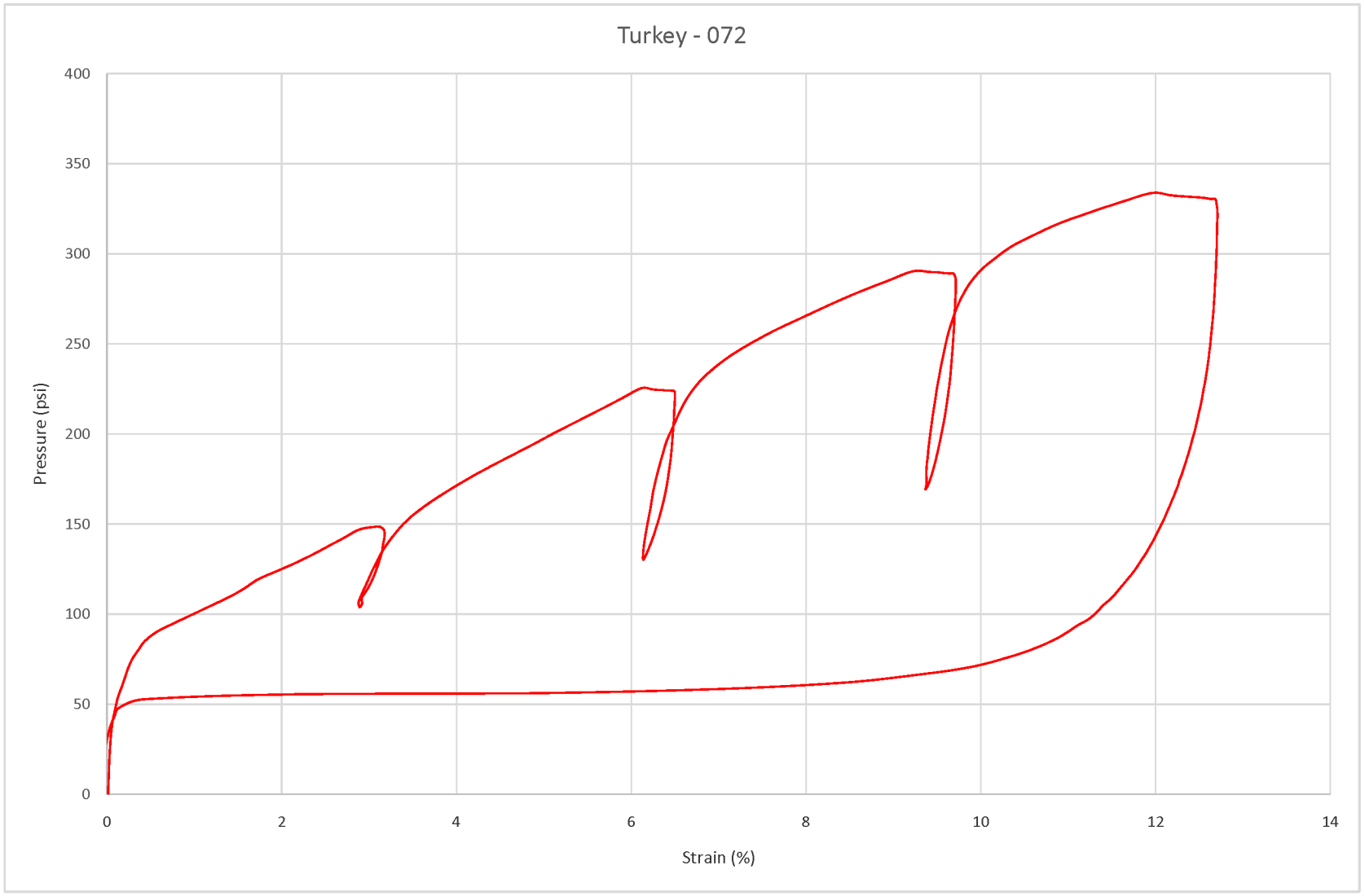
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 070.imp	R - 7 - 2	134.5	Upper Tamiami



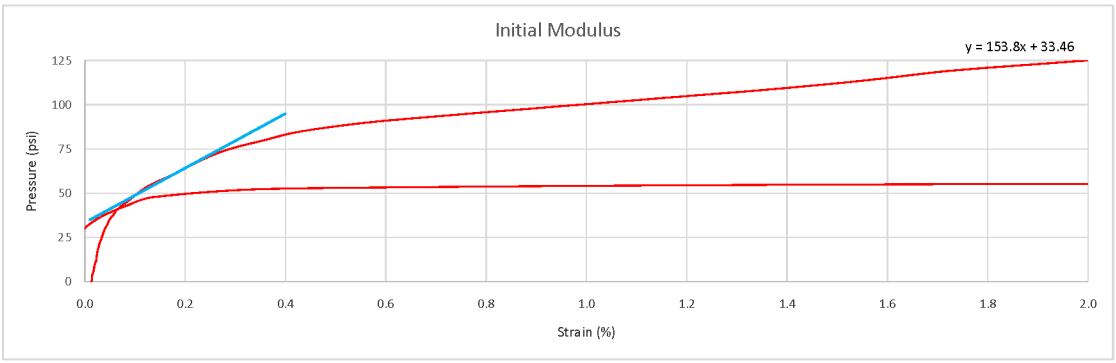
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 071.imp	R - 7 - 2	132.5	Upper Tamiami

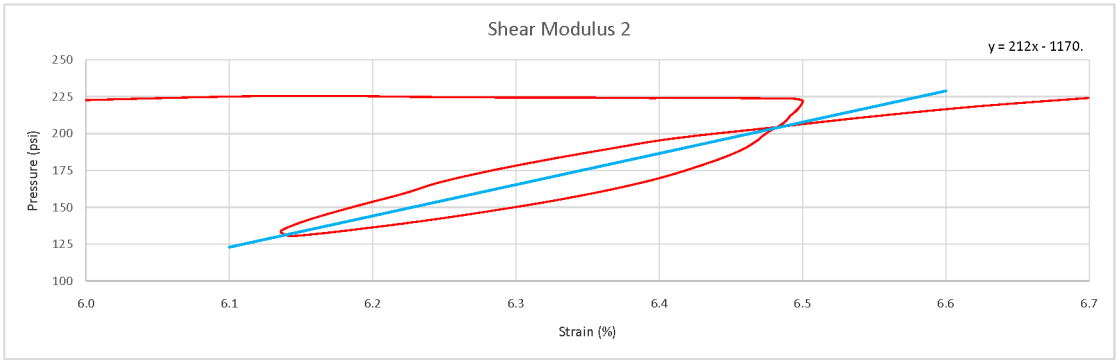


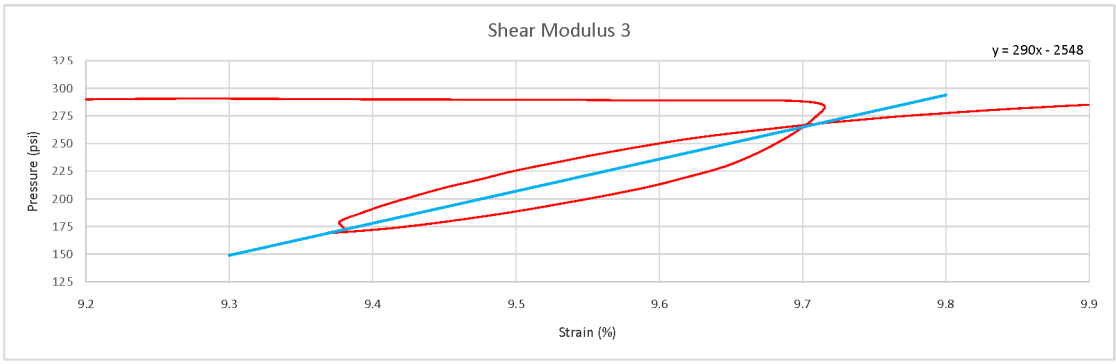
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 072.imp	R - 7 - 2	141.5	Upper Tamiami



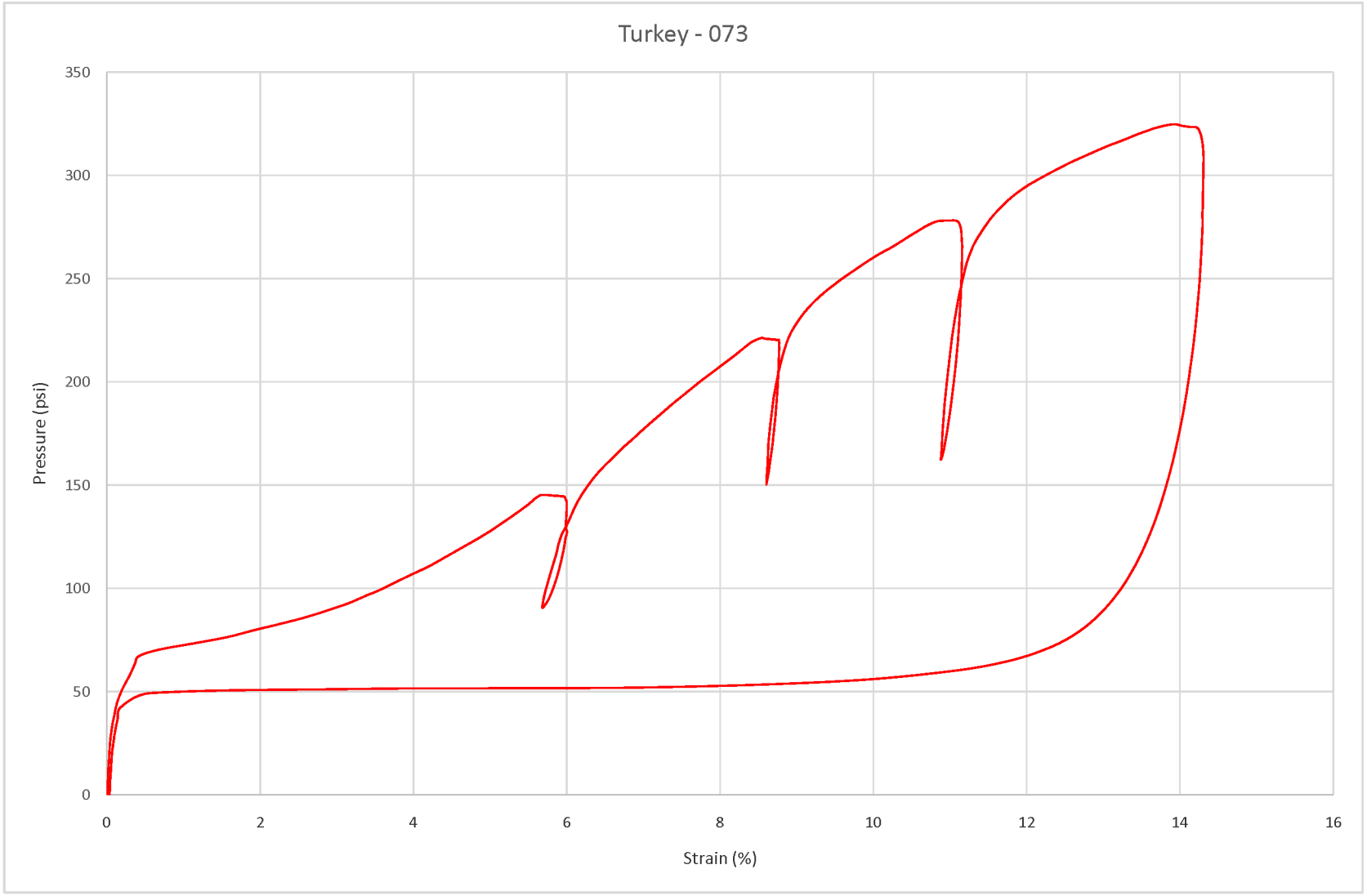
File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 072	Upper Tamiami	7690		10600	14500		



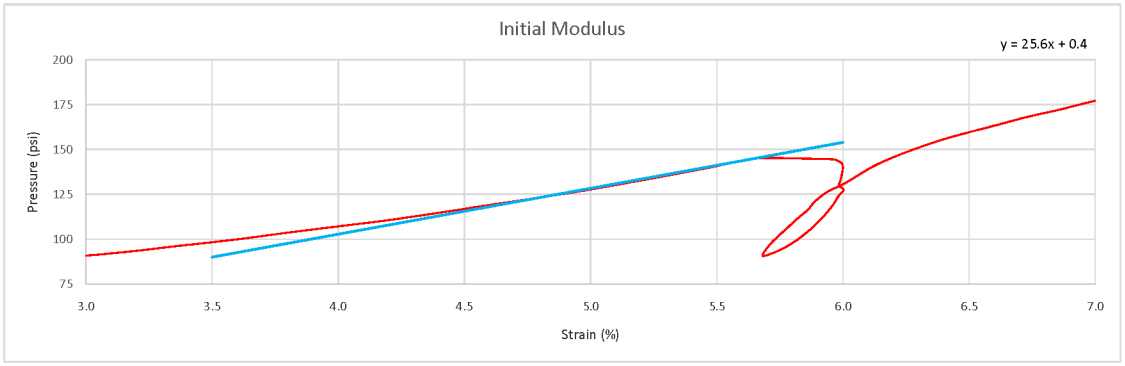


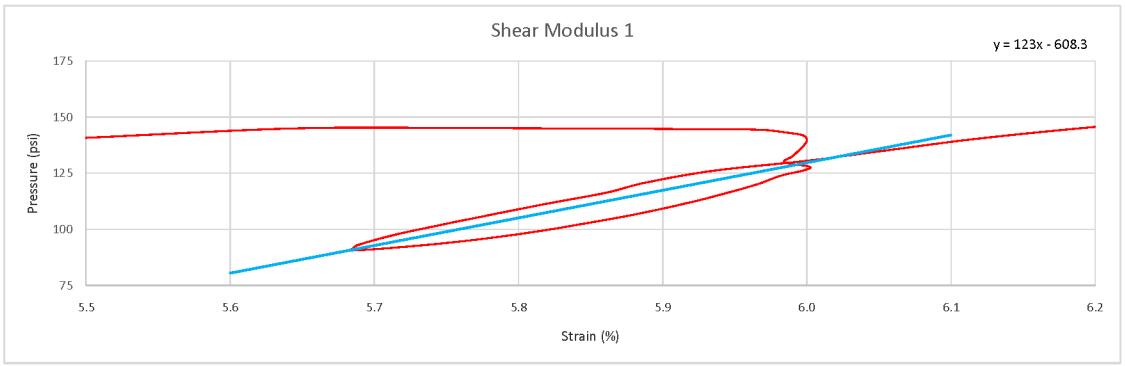


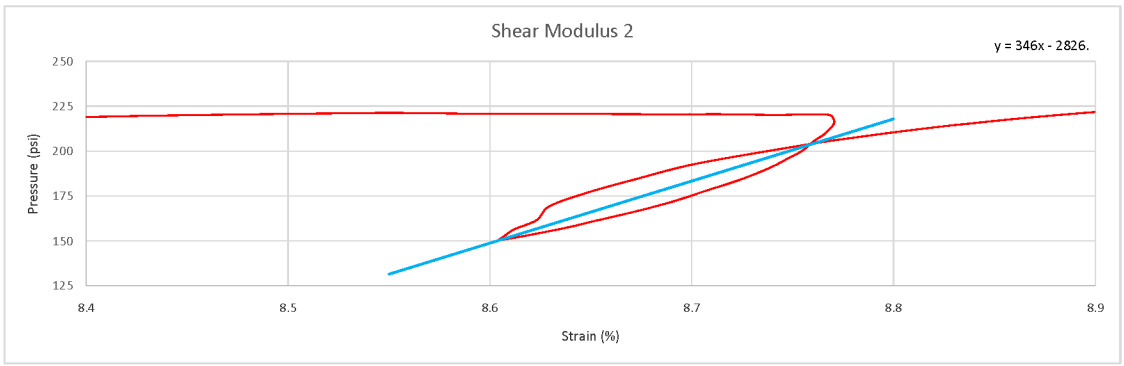
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 073.imp	R - 7 - 2	139.5	Upper Tamiami

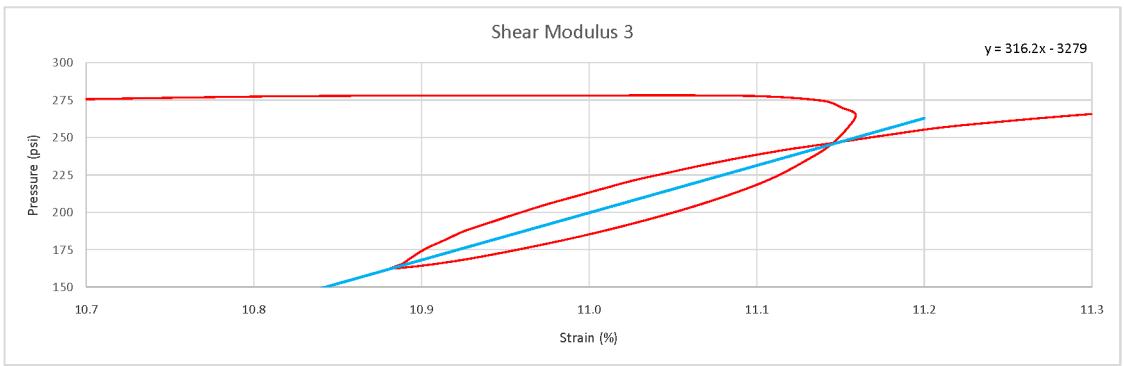


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 073	Upper Tamiami	1280	6150	17300	15815		

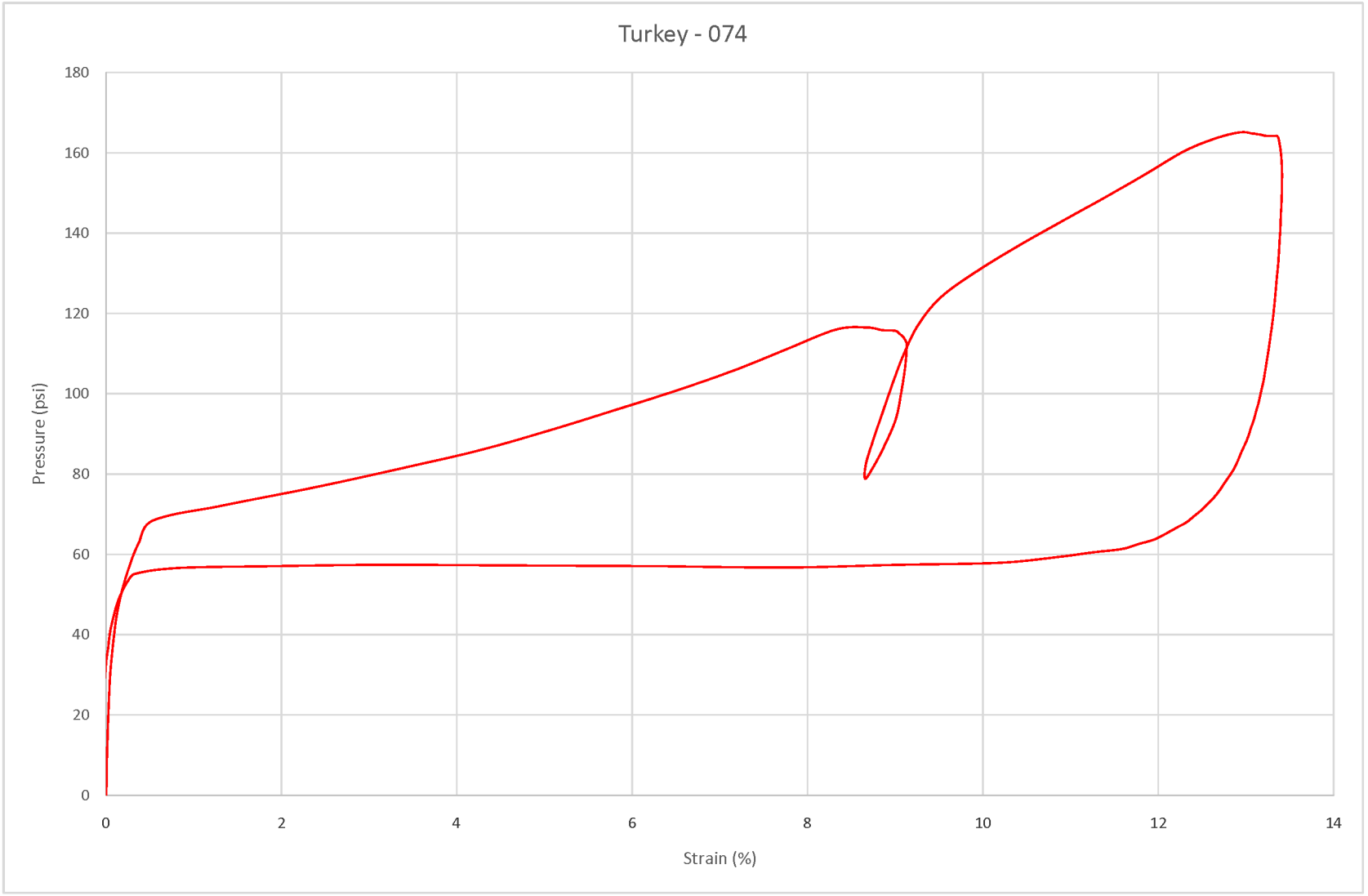




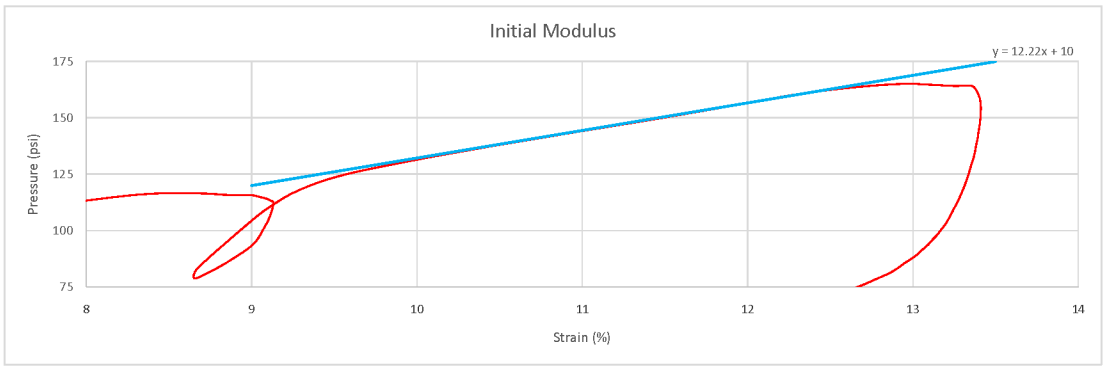


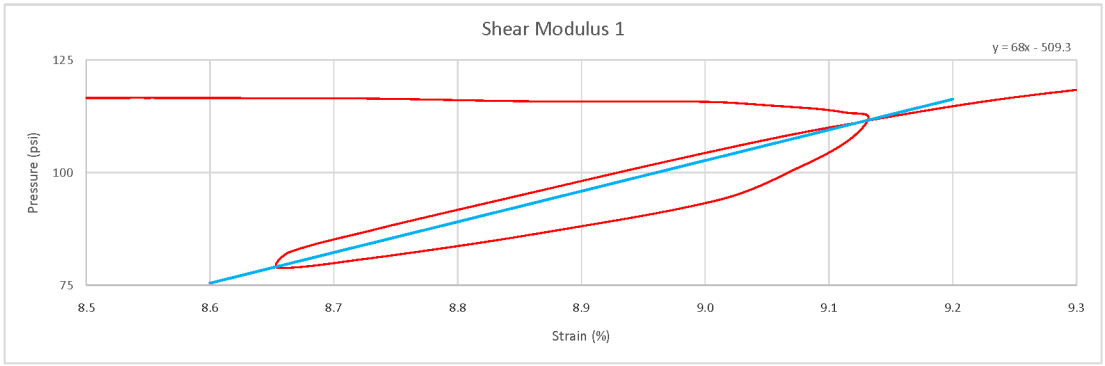


Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 074.imp	R - 6 - 1b	139.5	Upper Tamiami

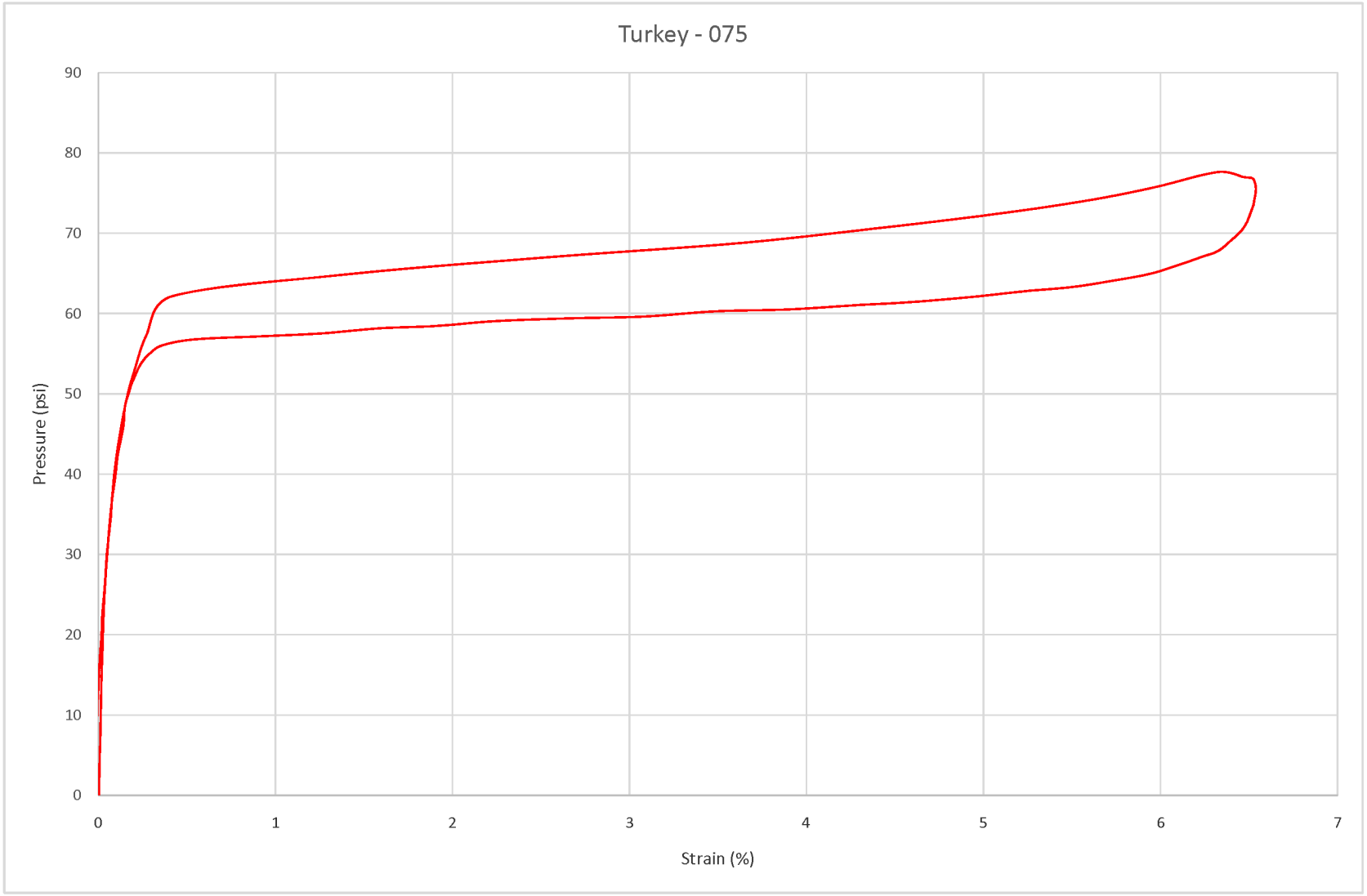


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 074	Upper Tamiami	610	3400				

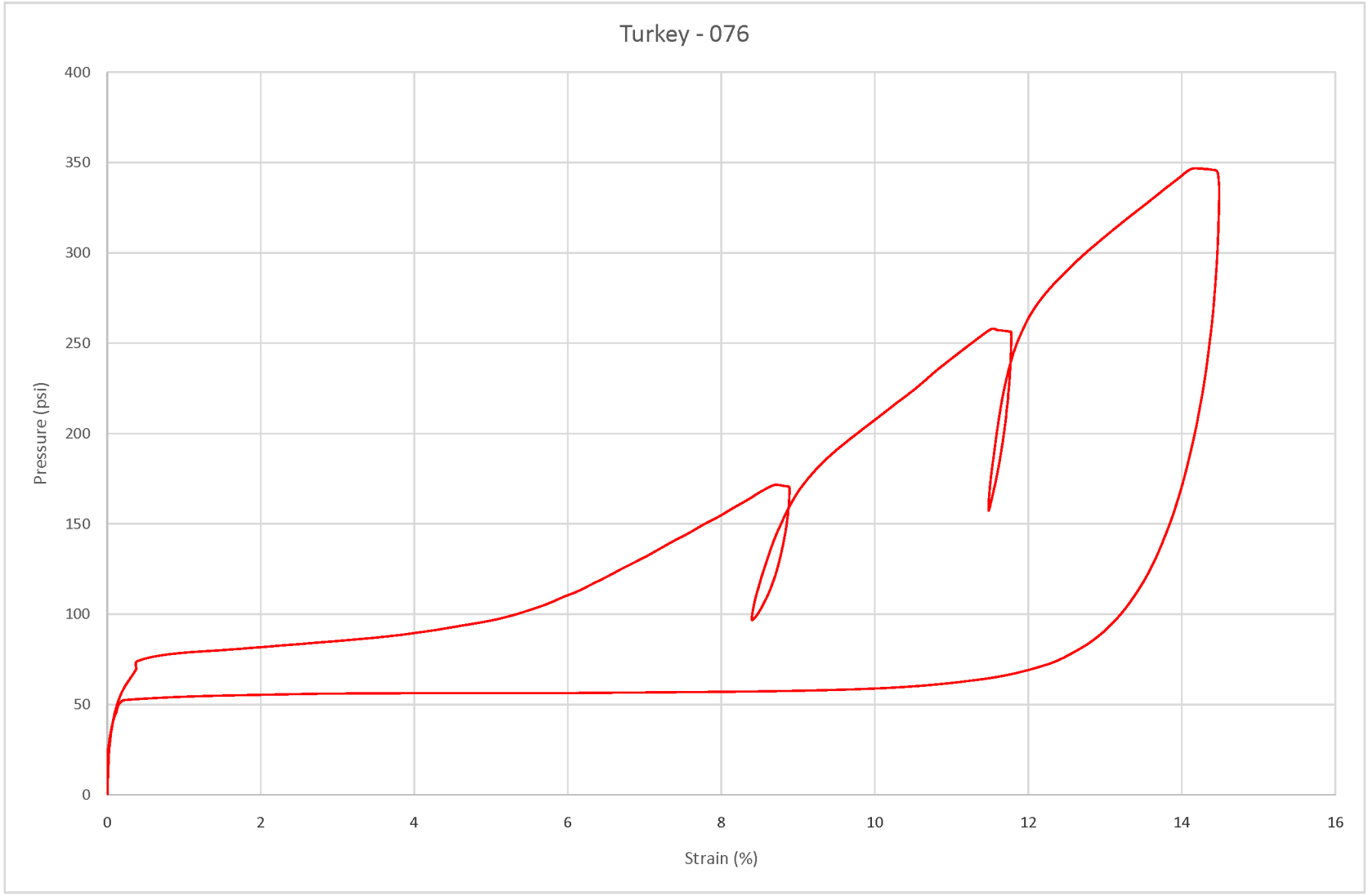




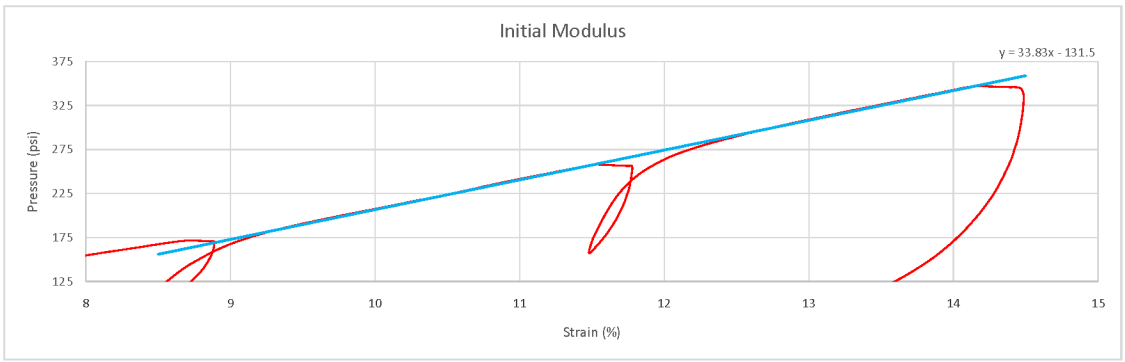
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 075.imp	R - 7 - 2	144	Upper Tamiami

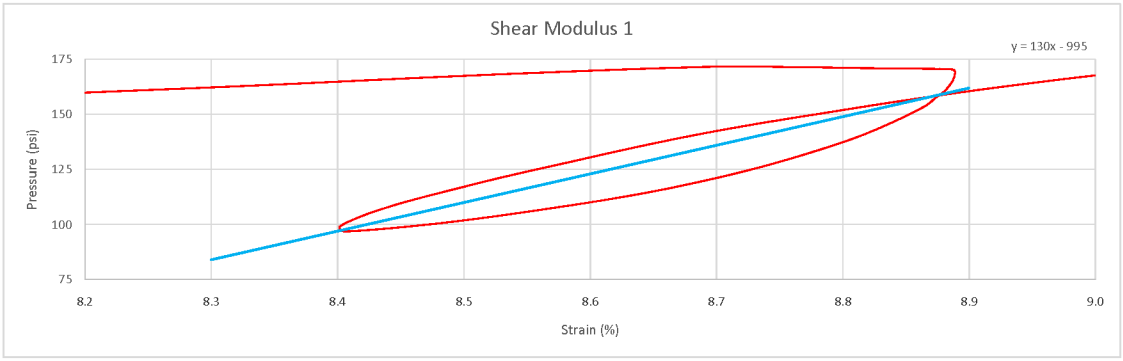


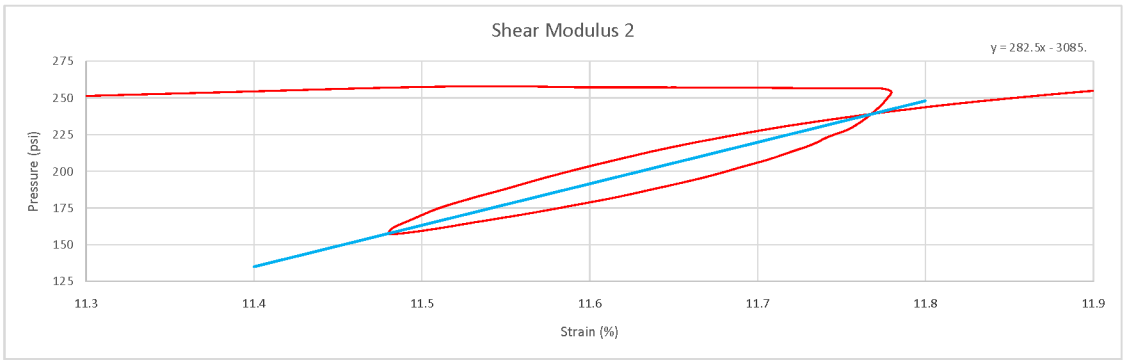
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 076.imp	R - 6 - 1b	156.3	Upper Tamiami



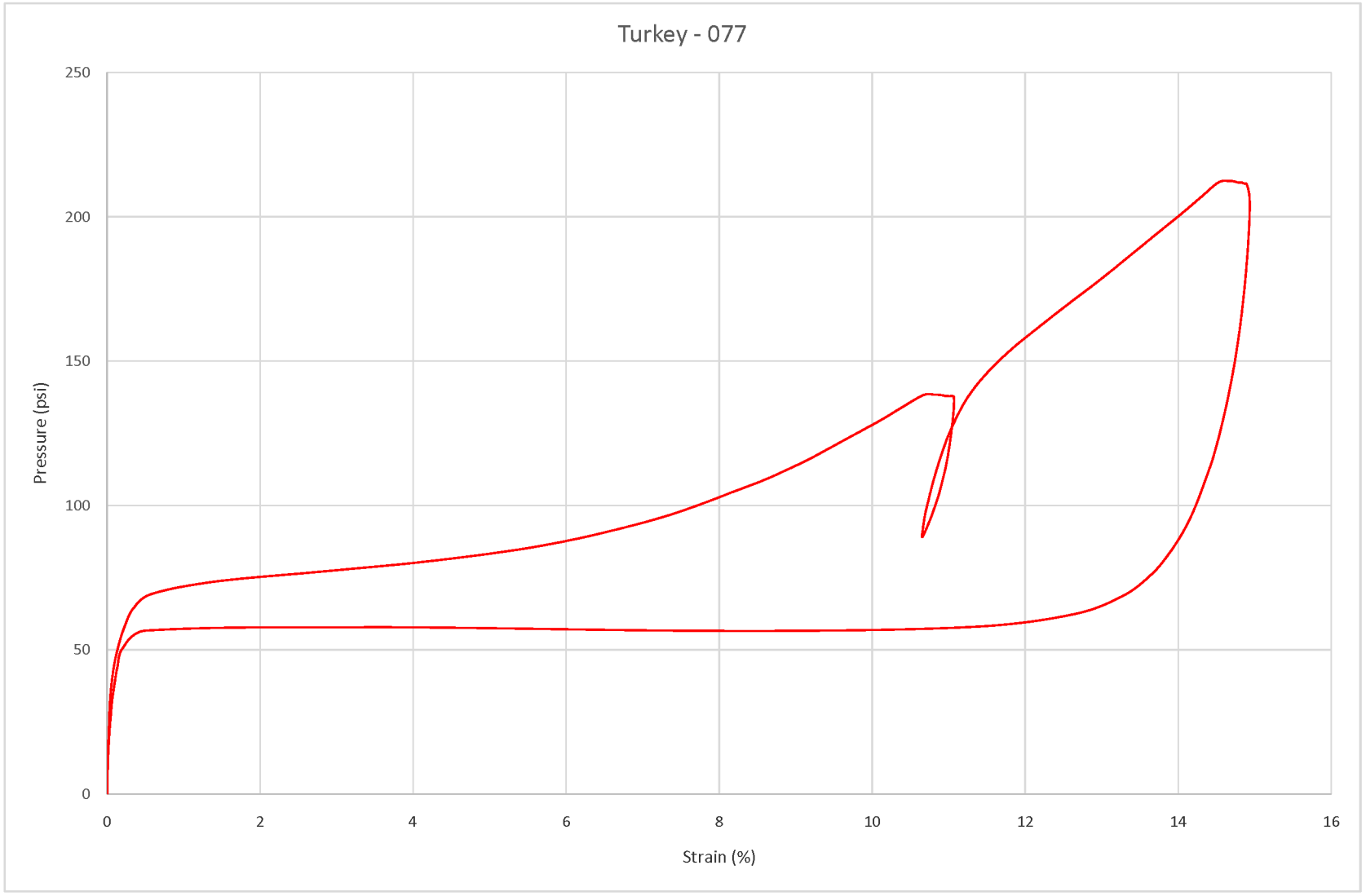
File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 076	Upper Tamiami	1690	6500	14125			



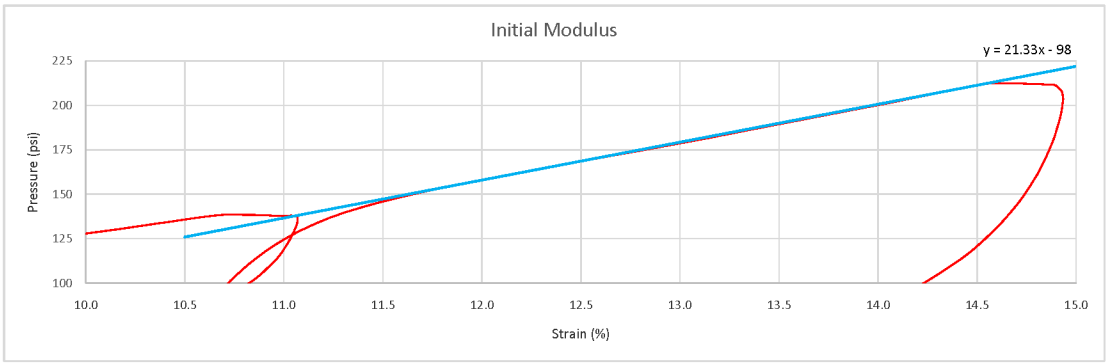


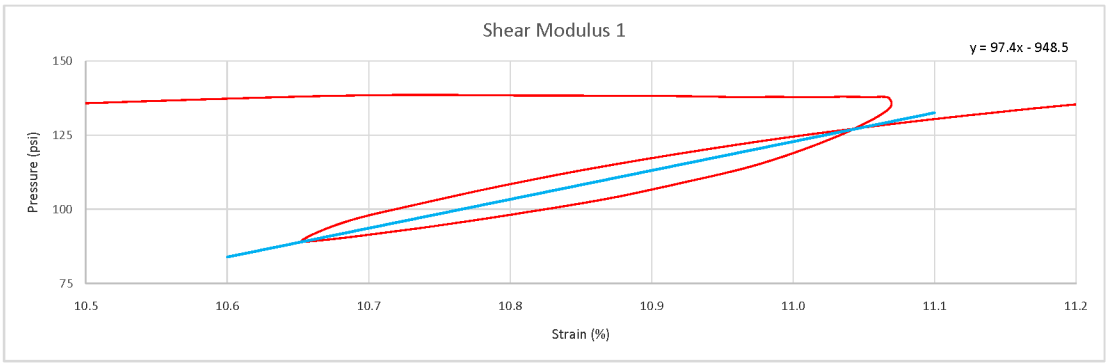


Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 077.imp	R - 6 - 1b	154.8	Upper Tamiami

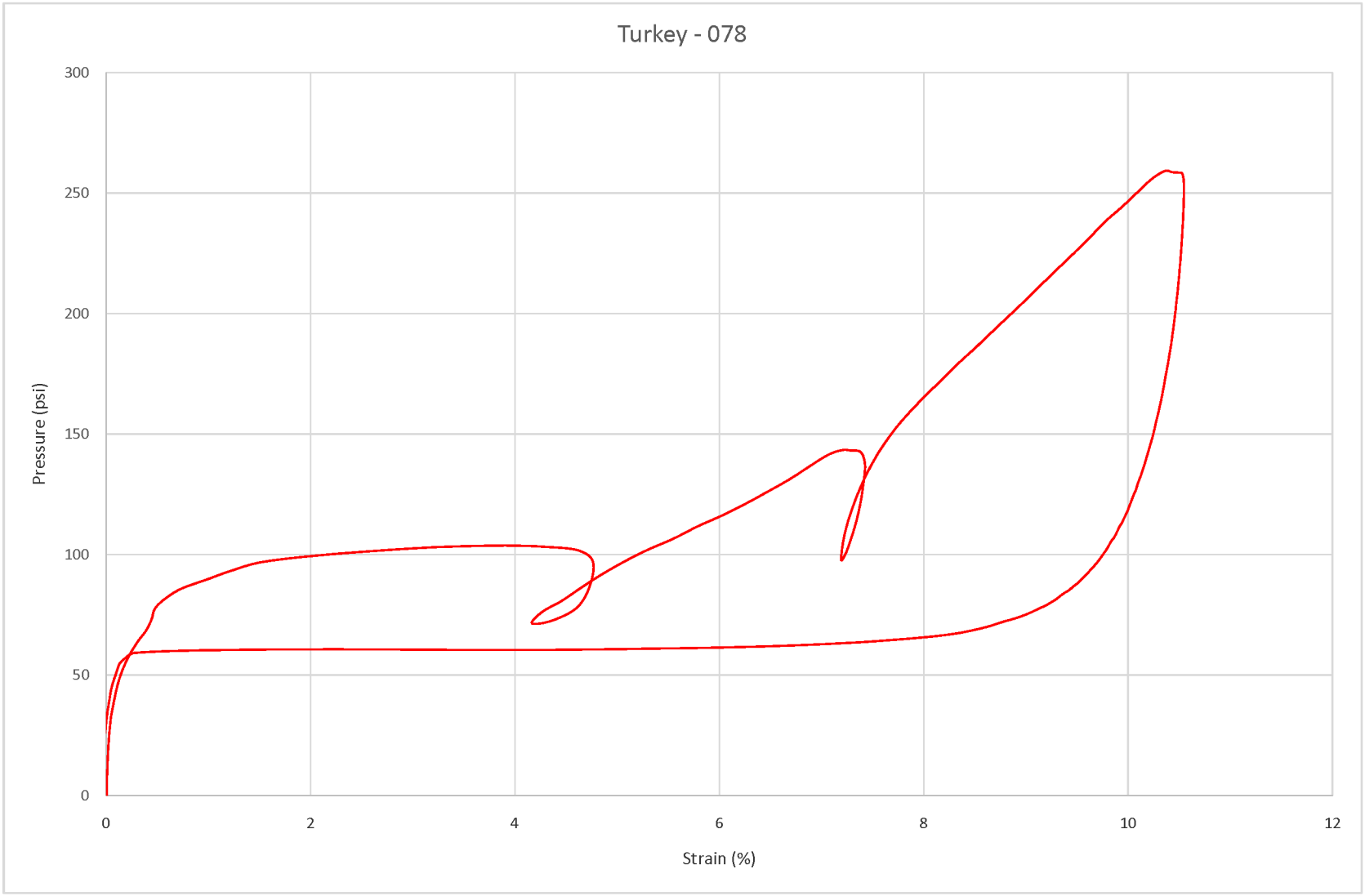


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 077	Upper Tamiami	1065	4870				

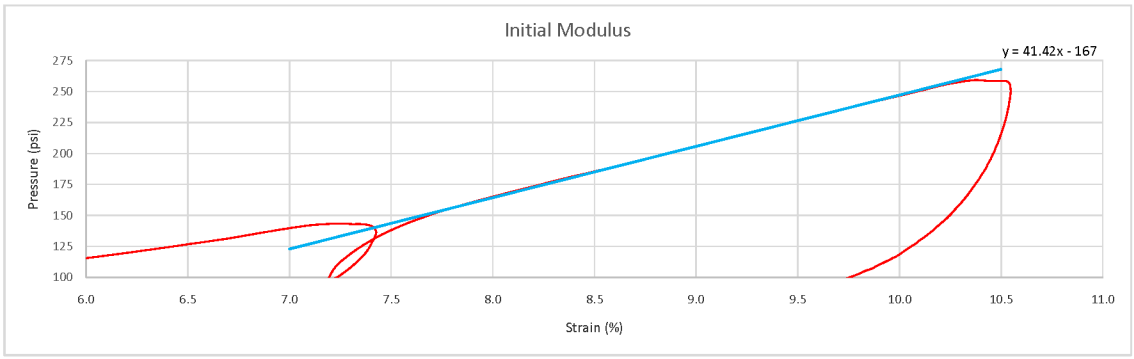


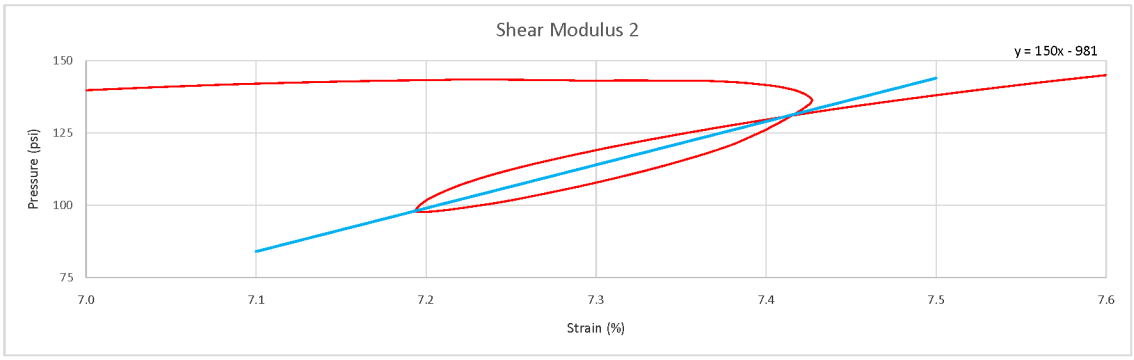


Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 078.imp	R - 7 - 2	156.5	Upper Tamiami

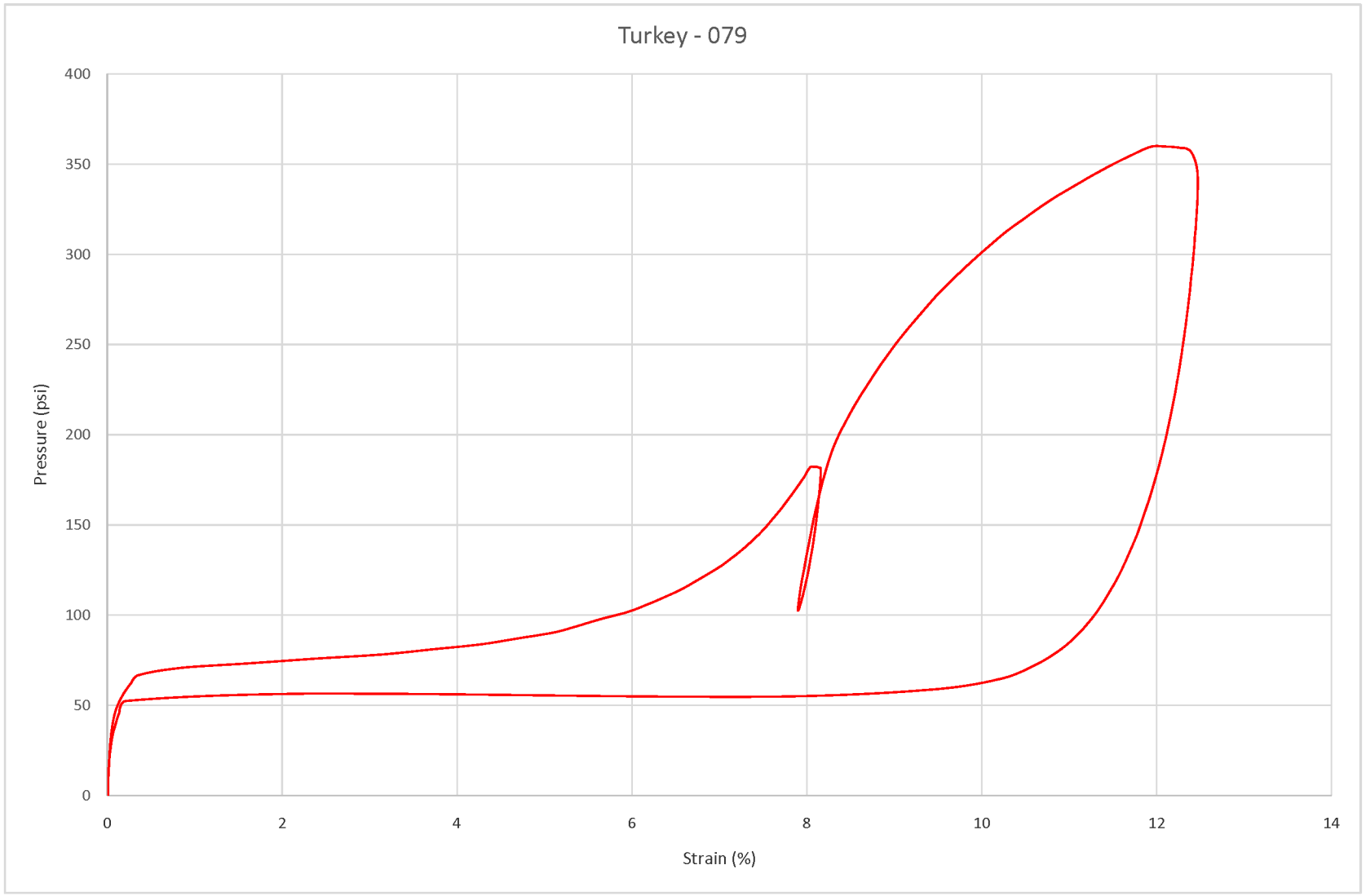


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 078	Upper Tamiami	2070		7500			

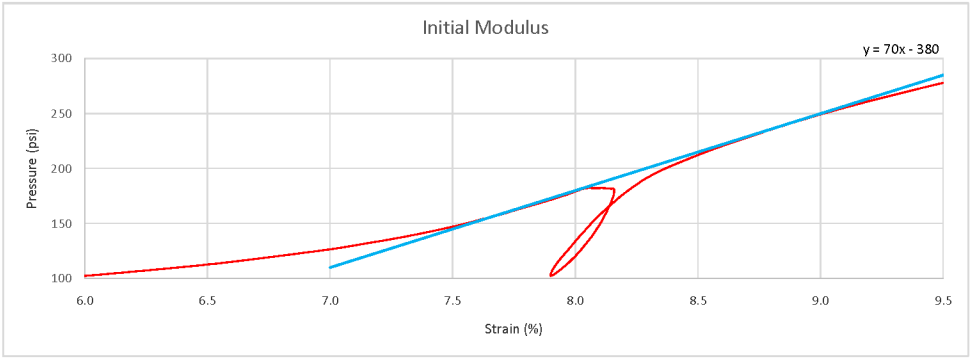


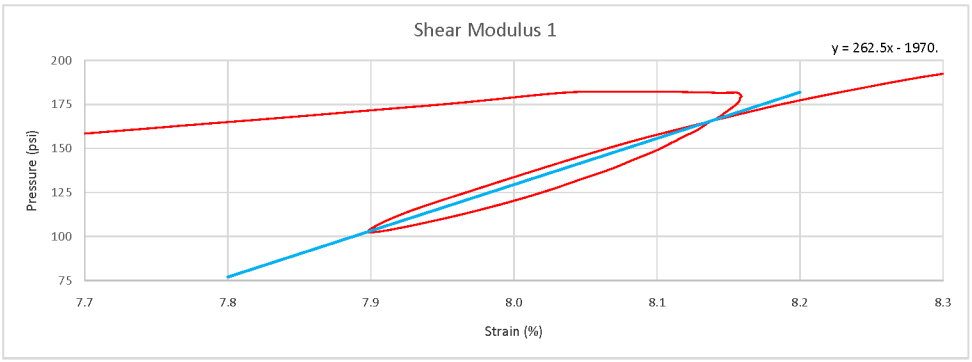


Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 079.imp	R - 7 - 2	154.5	Upper Tamiami

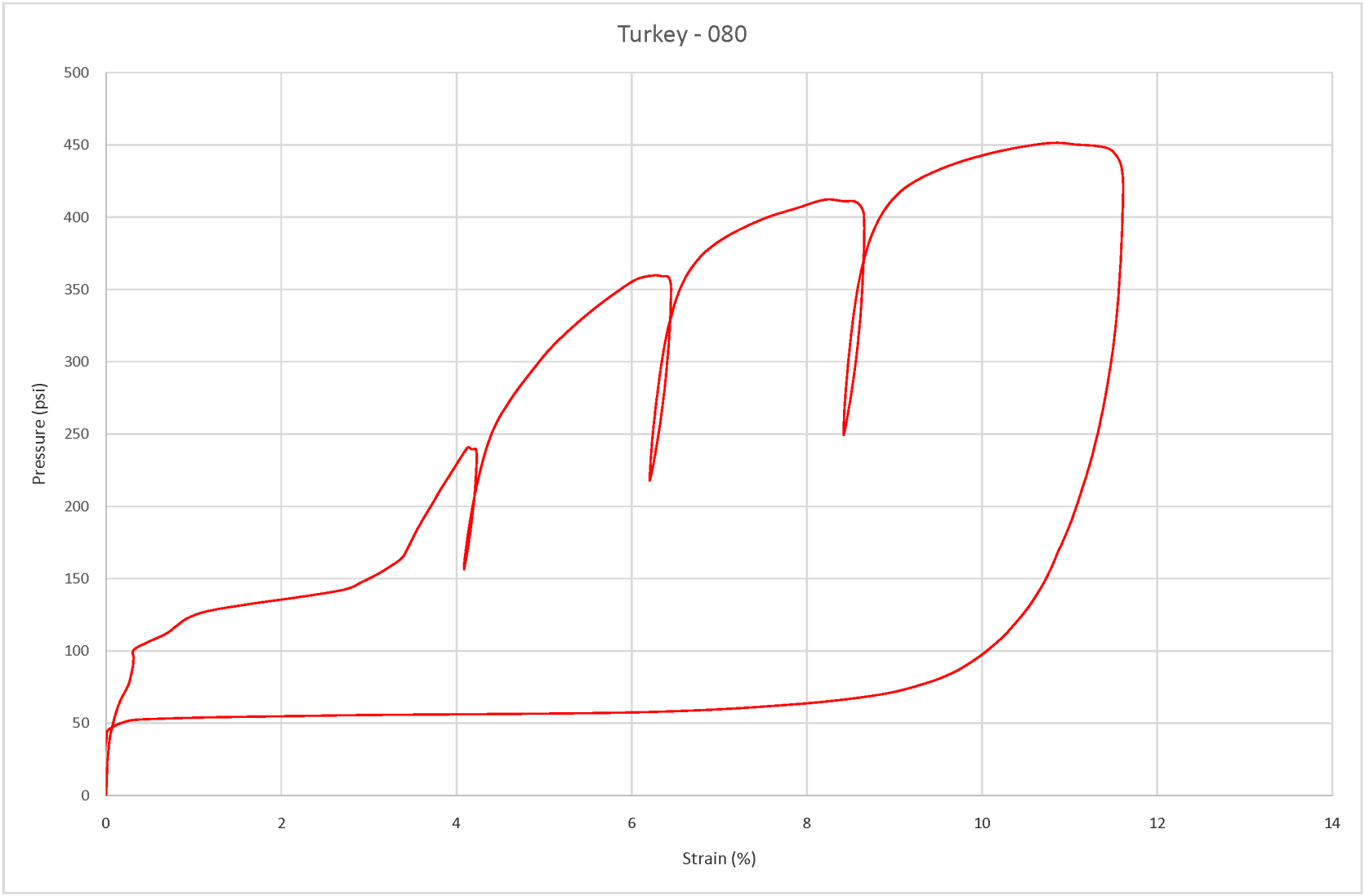


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 079	Upper Tamiami	3500	13125				

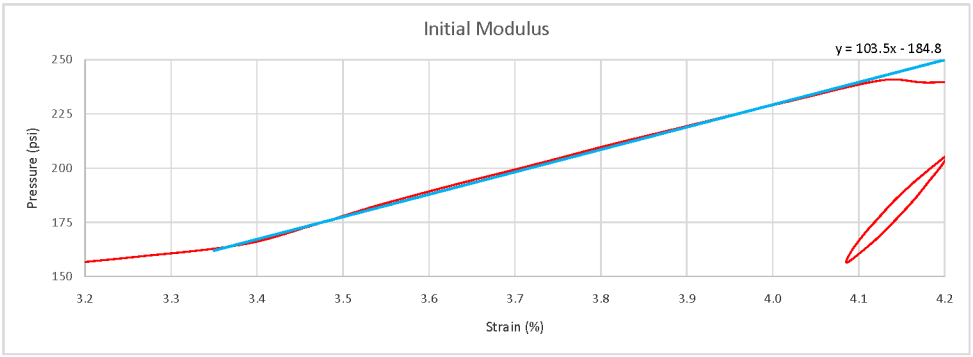


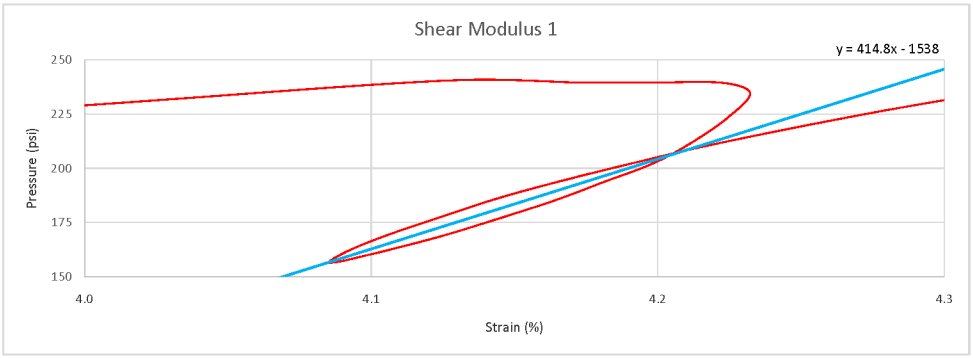


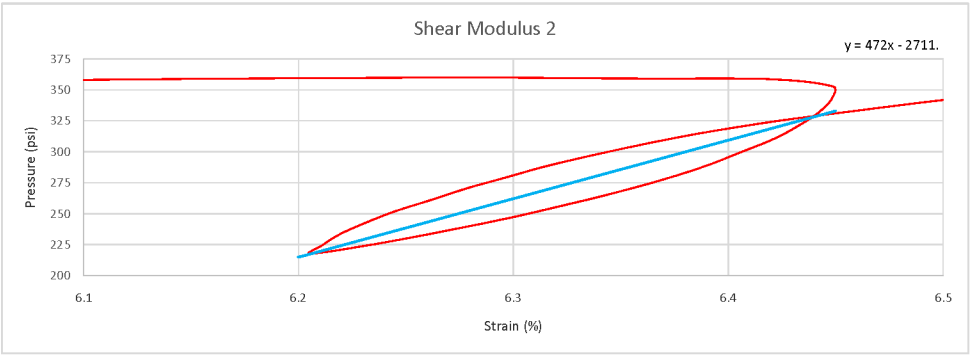
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 080.imp	R - 7 - 2	166	Lower Tamiami

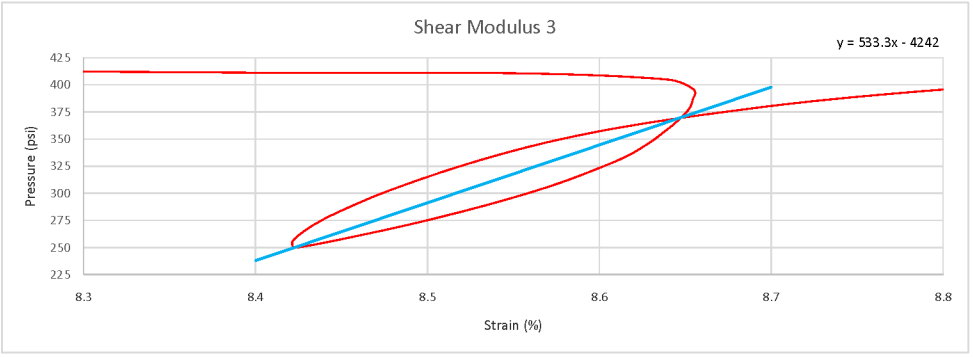


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 080	Lower Tamiami	5175	20740	23600	26665		

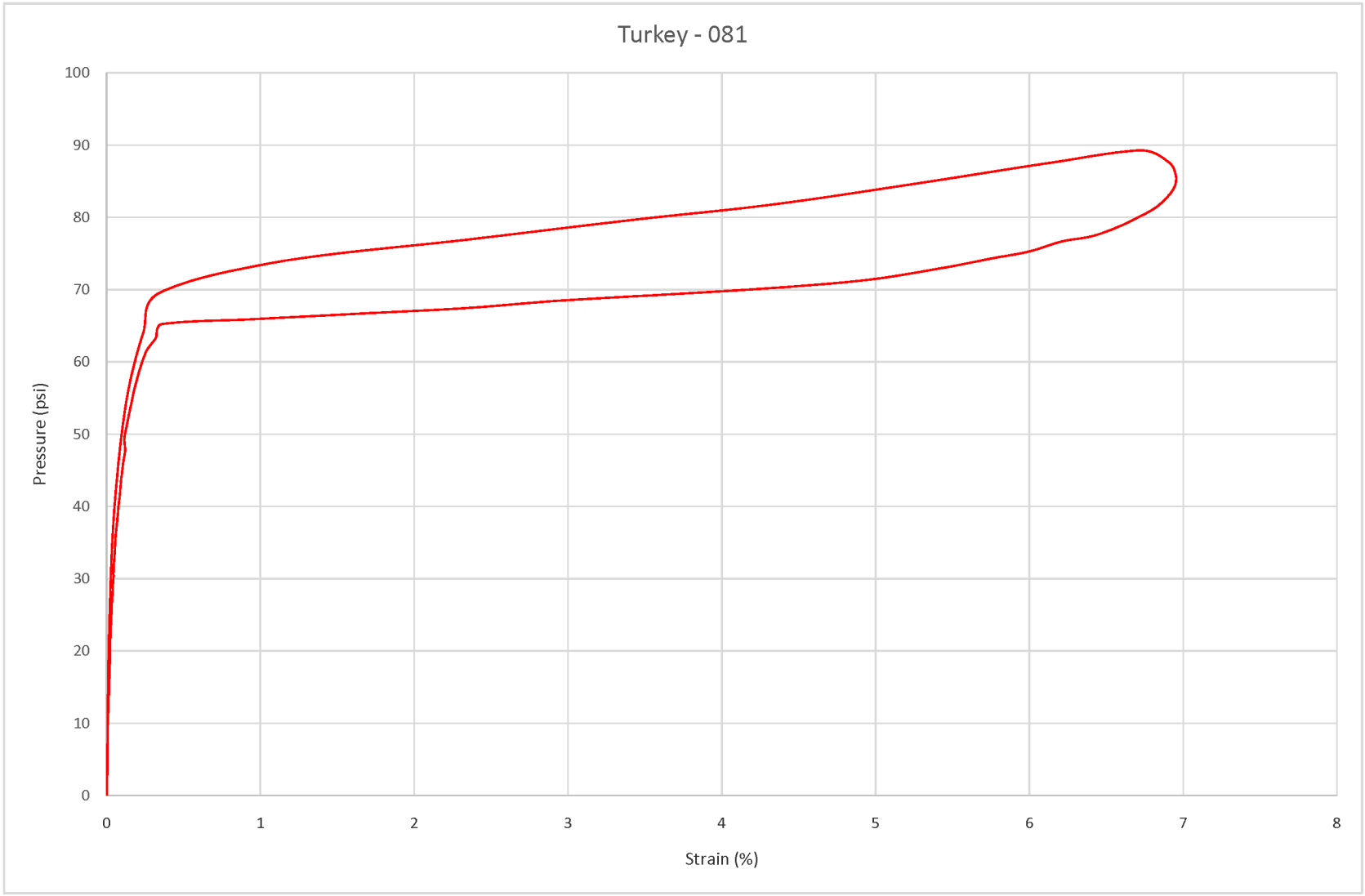




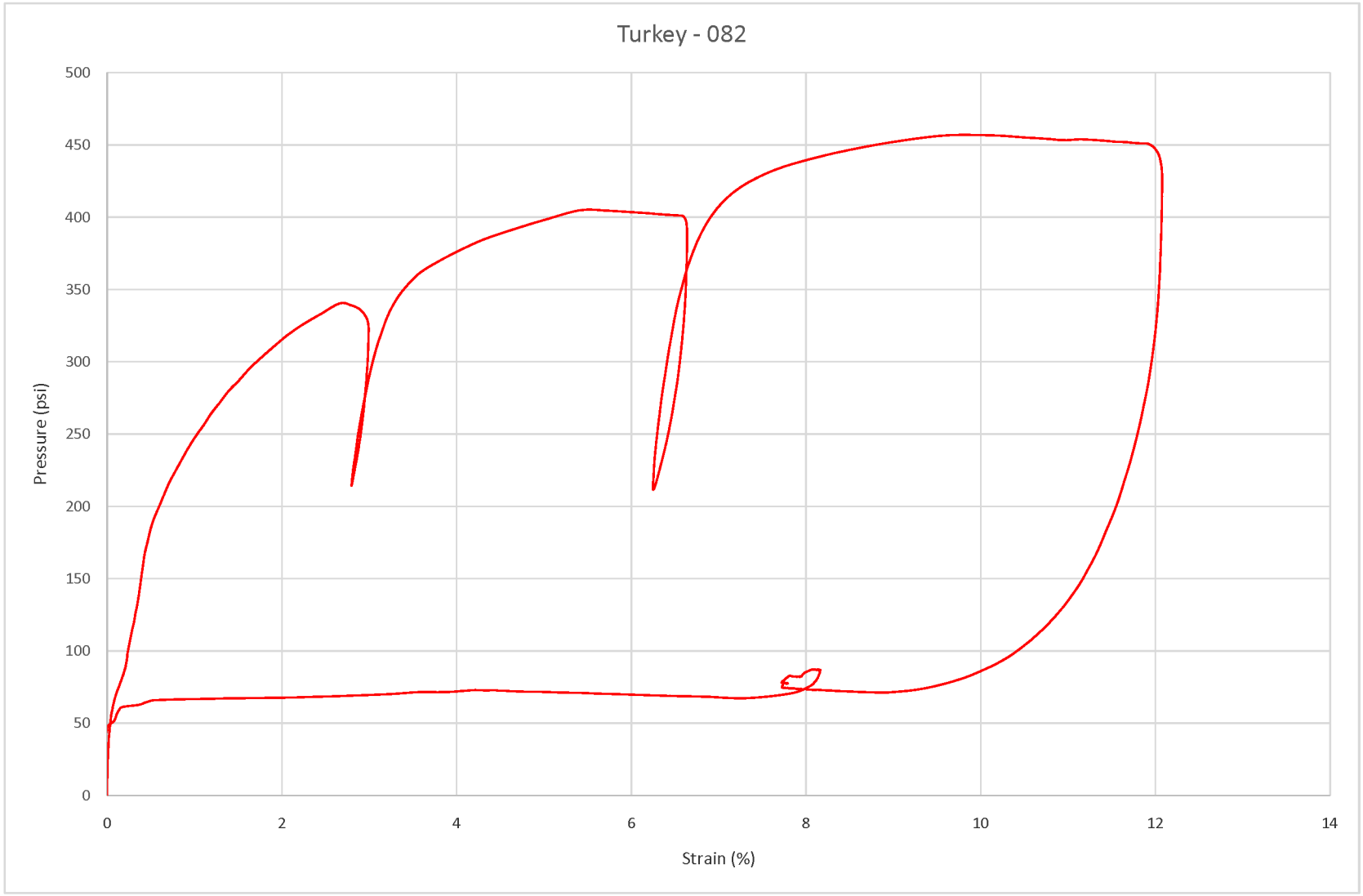




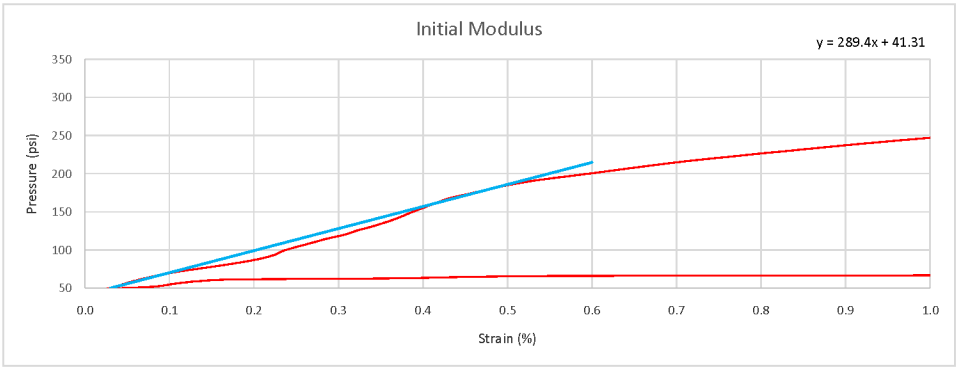
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 081.imp	R - 7 - 2	164	Lower Tamiami

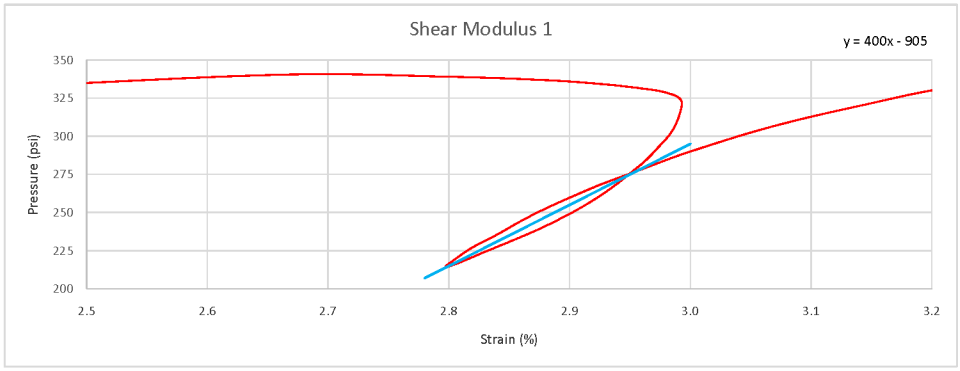


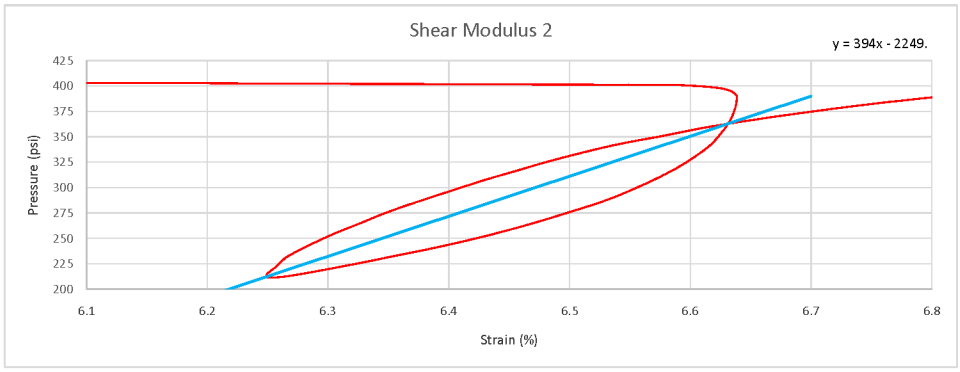
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 082.imp	R - 7 - 2	174.5	Lower Tamiami



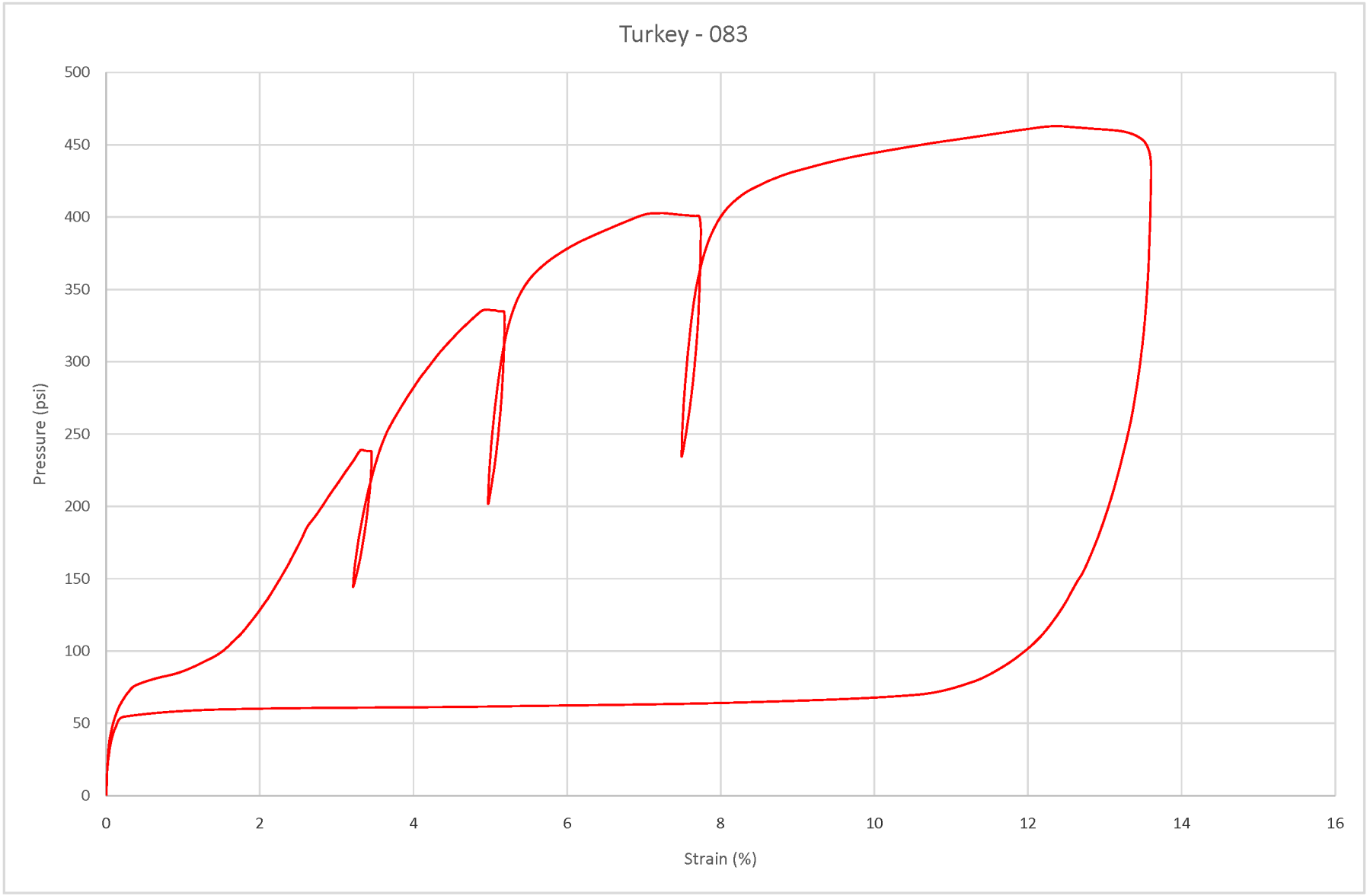
File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 082	Lower Tamiami	14475	20000	19700			



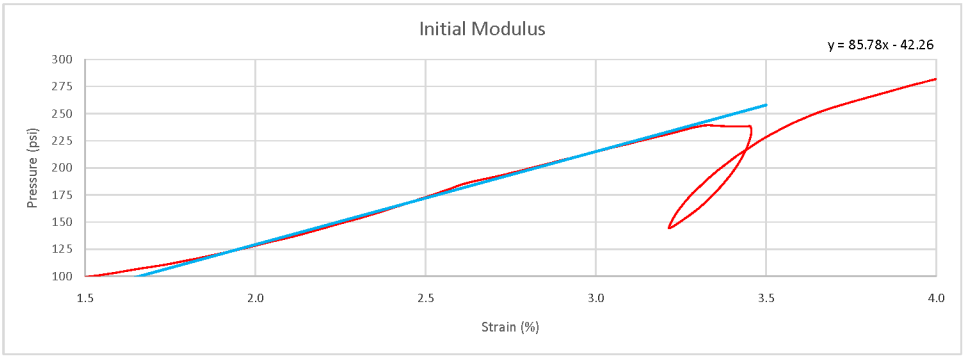


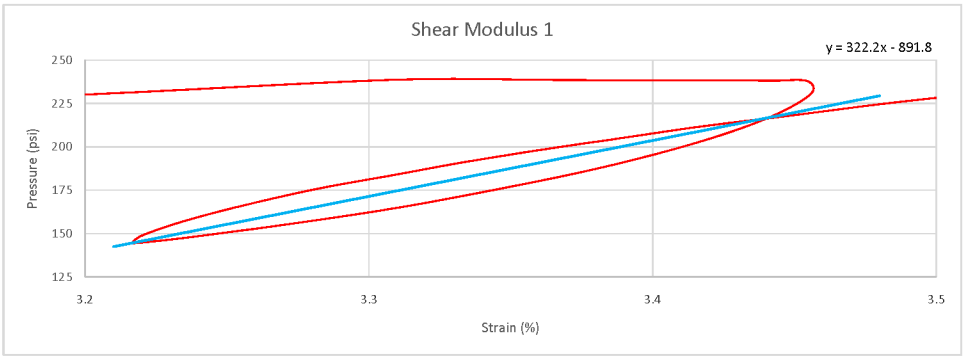


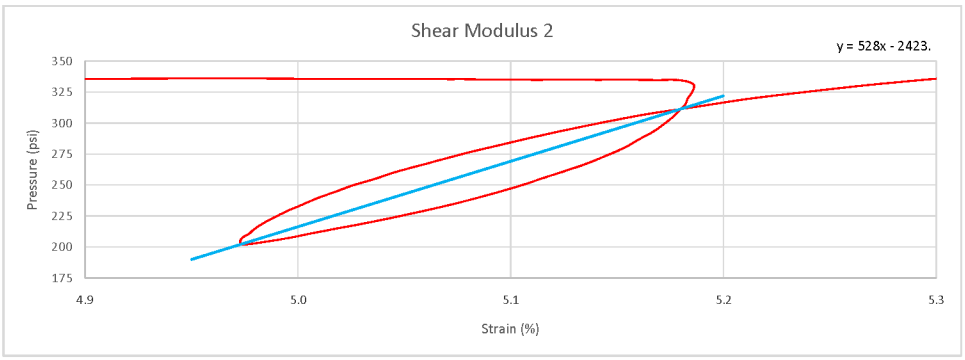
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 083.imp	R - 7 - 2	172.5	Lower Tamiami

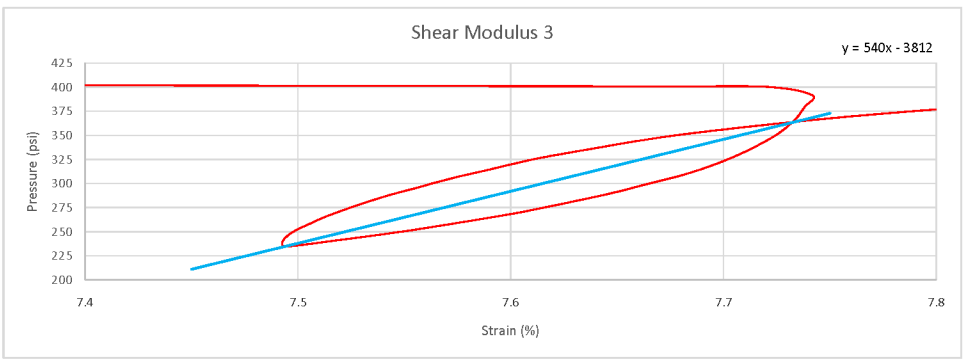


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 083	Lower Tamiami	4290	16110	26400	27000		

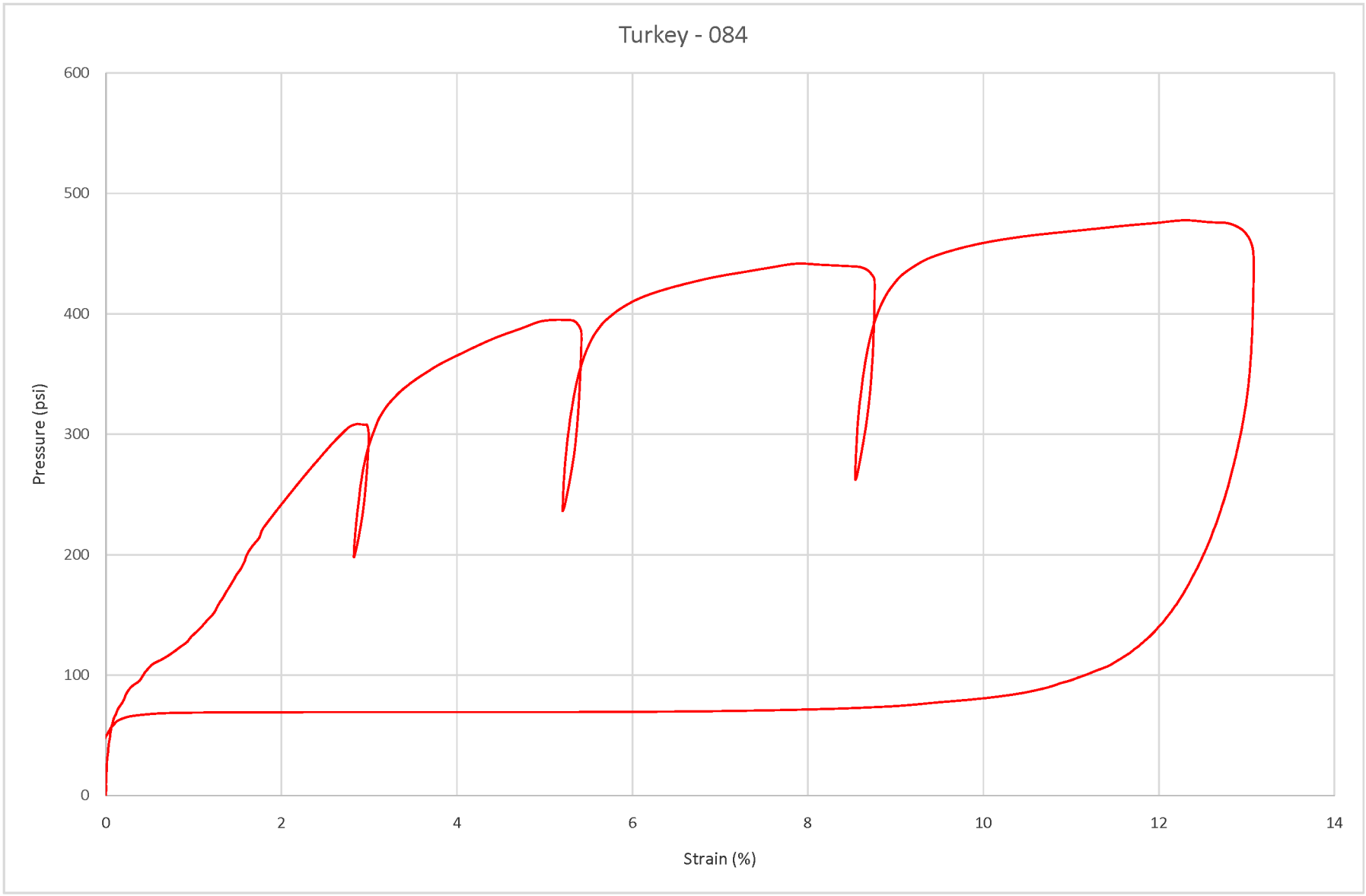




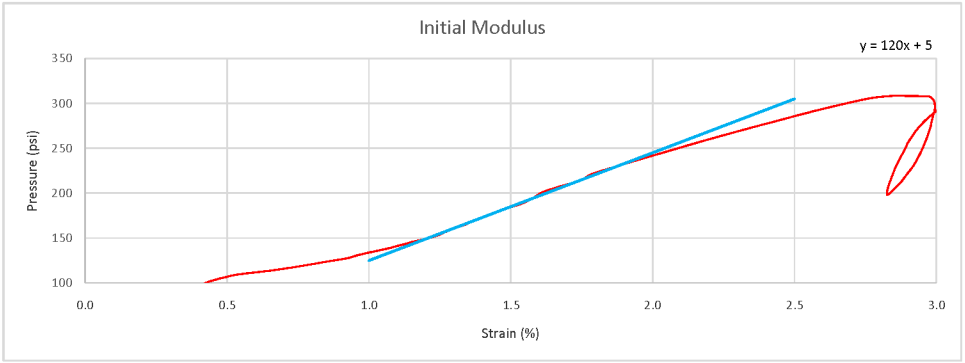


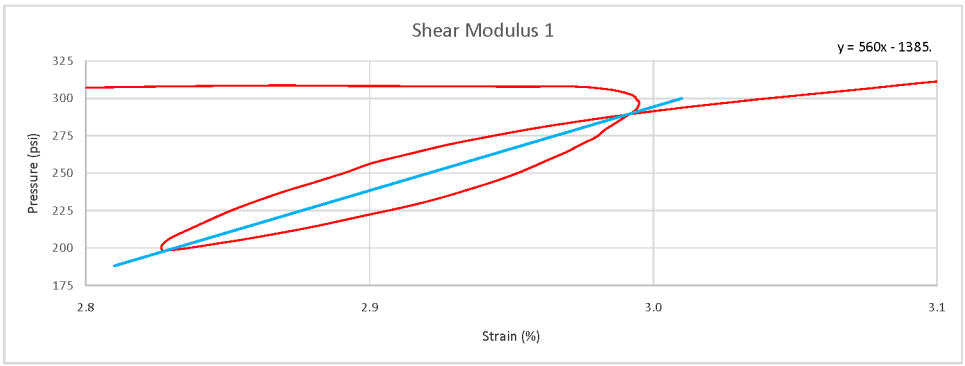


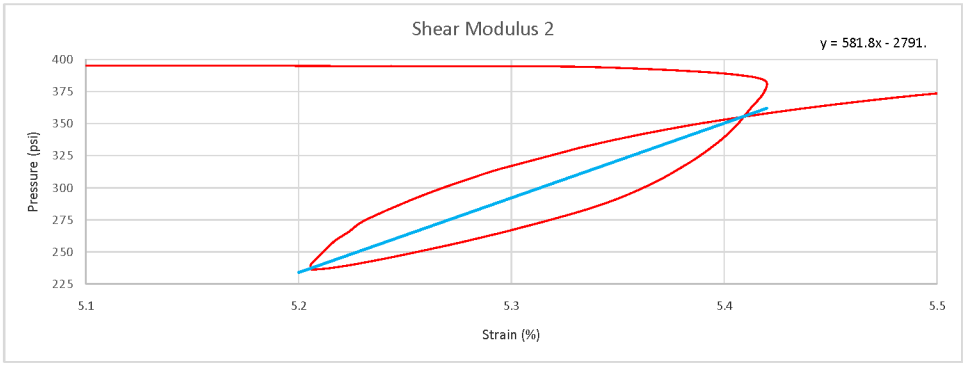
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 084.imp	R - 7 - 2	182.5	Lower Tamiami

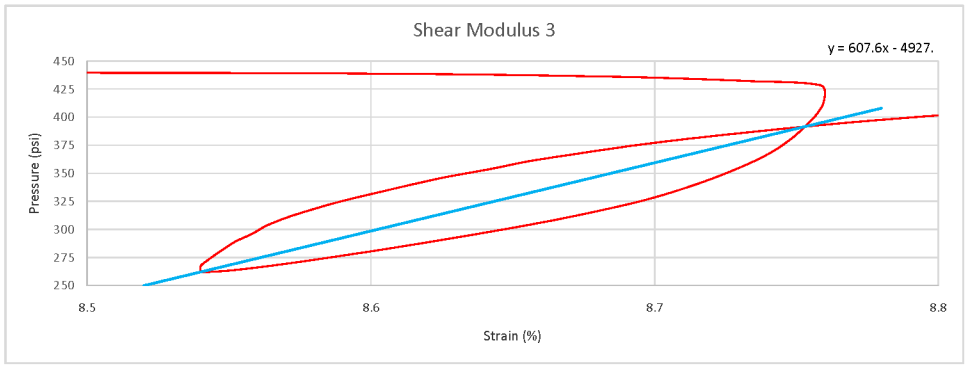


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 084	Lower Tamiami	6000	28000	29090	30385		

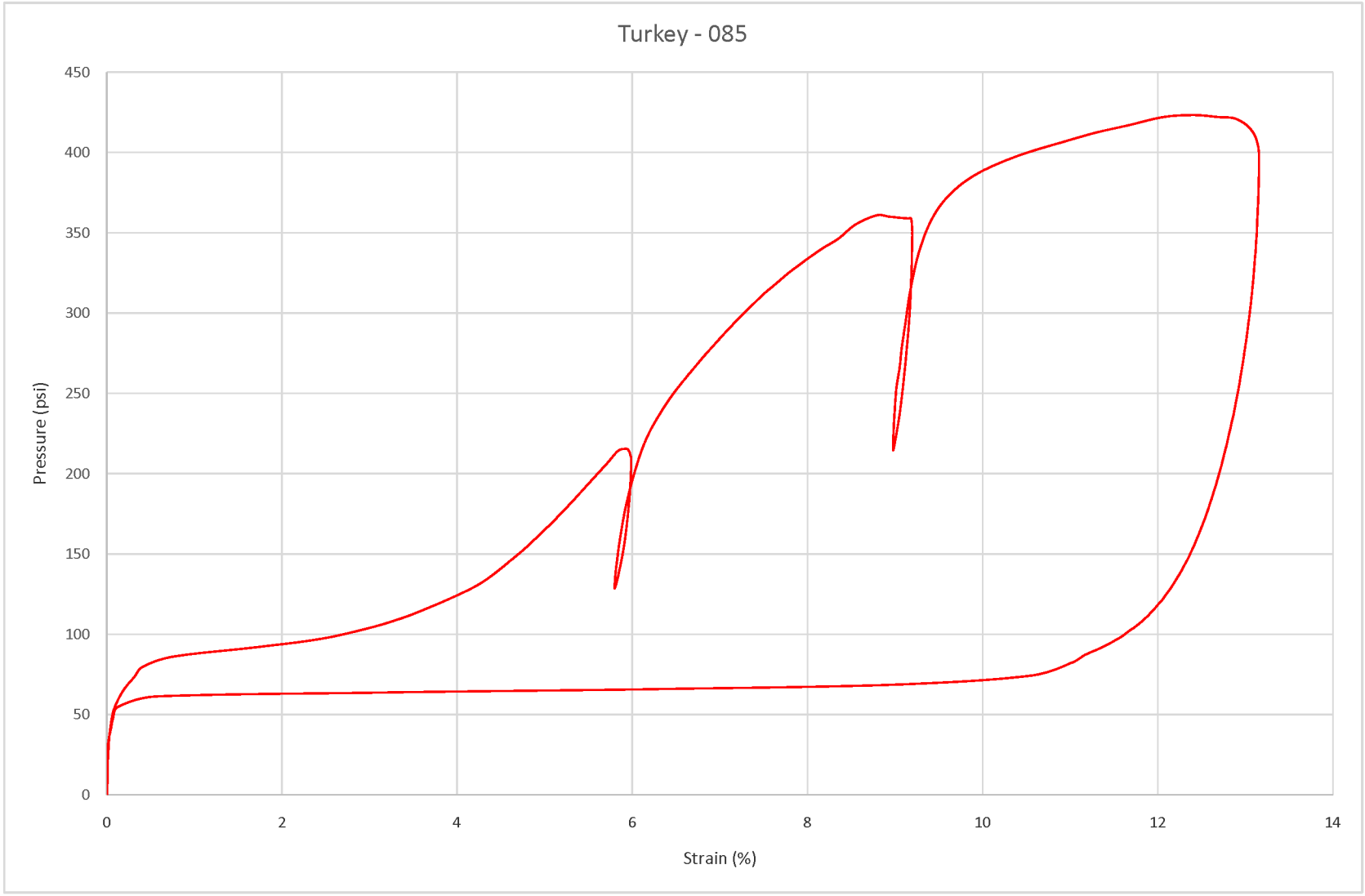




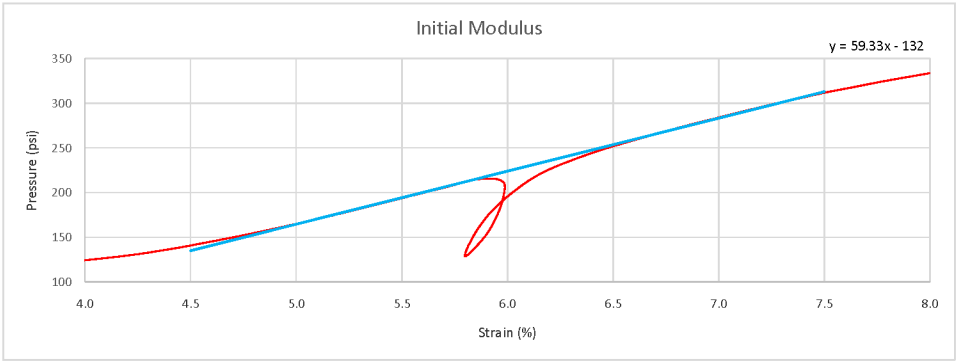


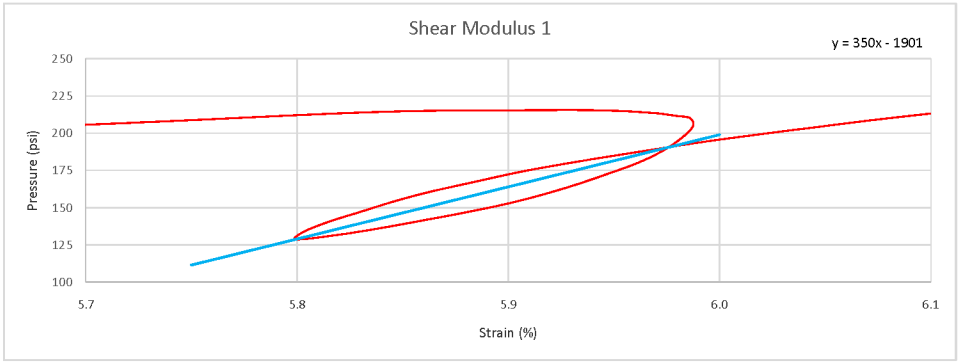


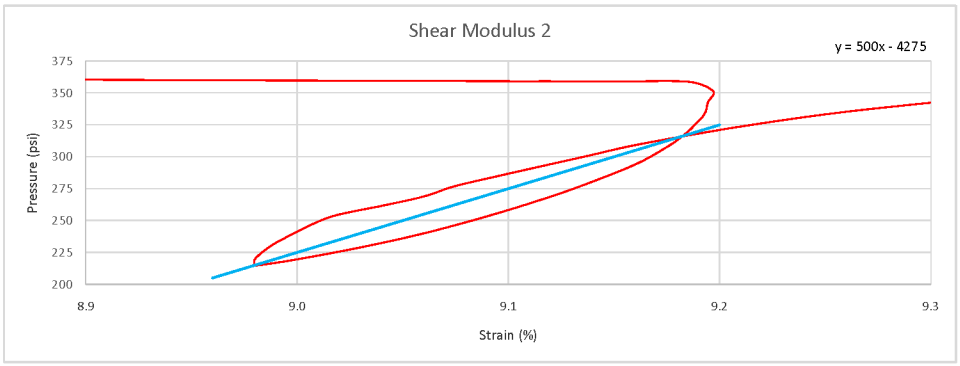
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 085.imp	R - 7 - 2	180.5	Lower Tamiami



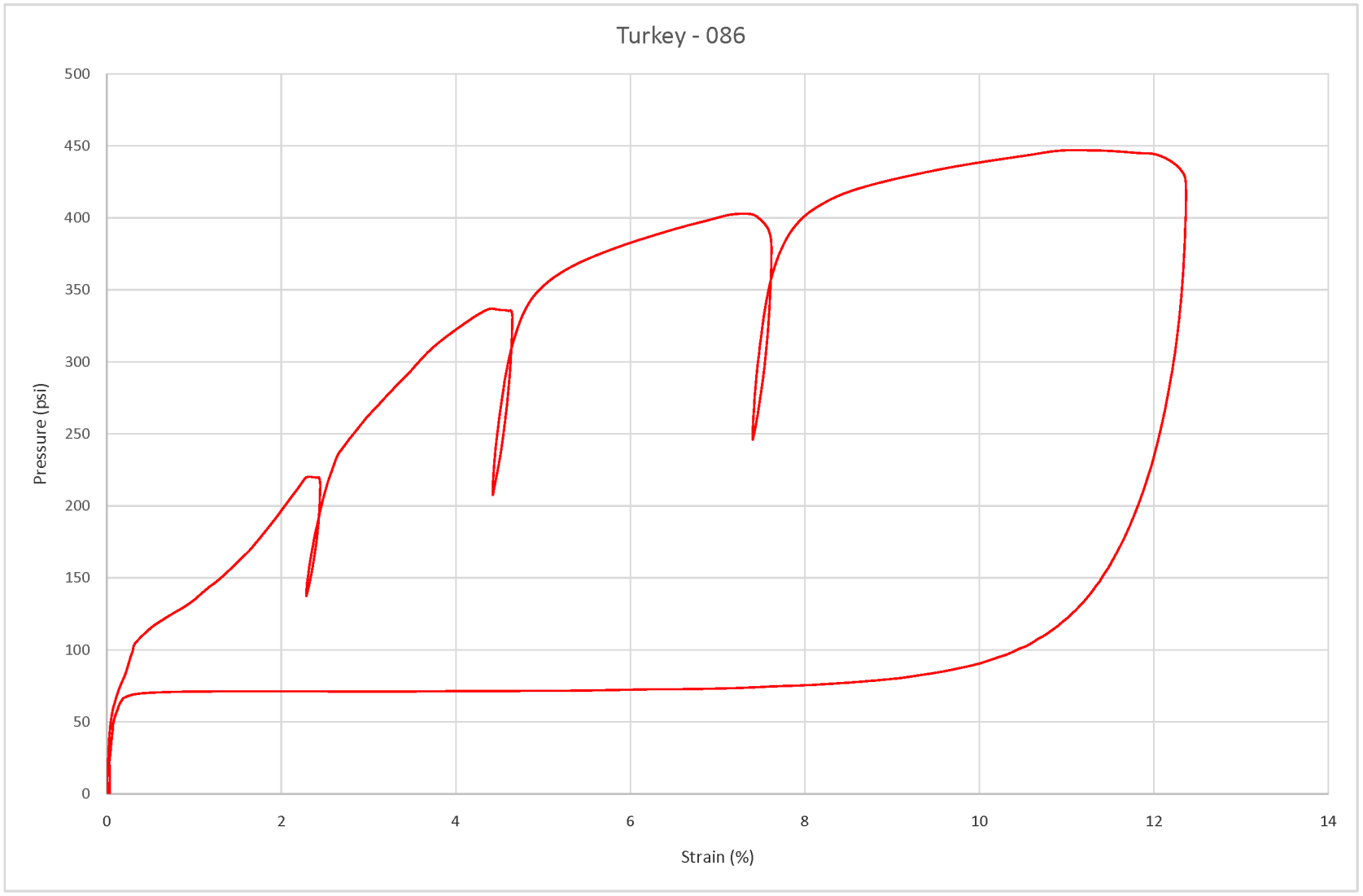
File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 085	Lower Tamiami	2965	17500	25000			



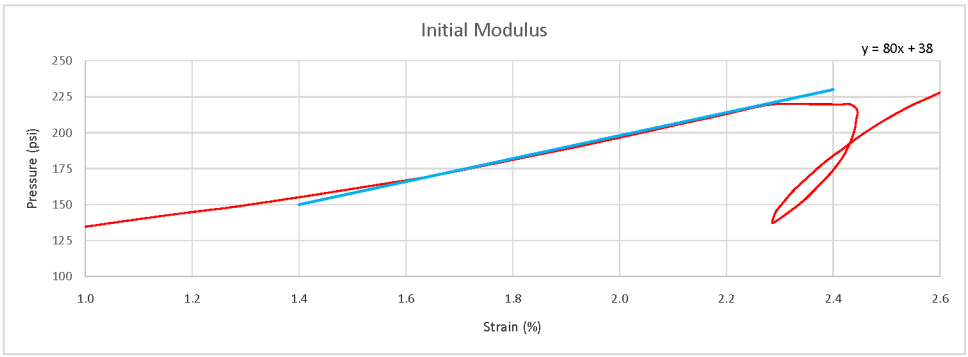


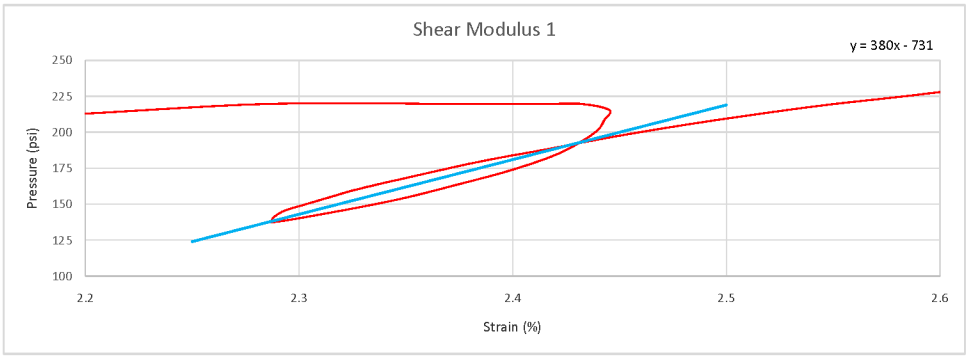


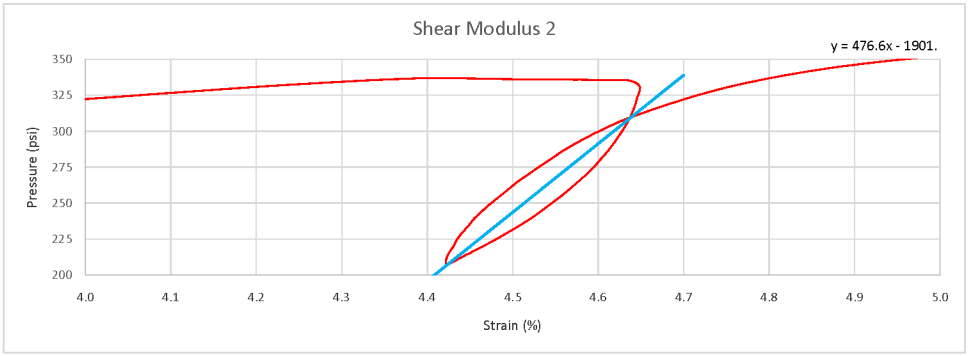
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 086.imp	R - 7 - 2	190	Lower Tamiami

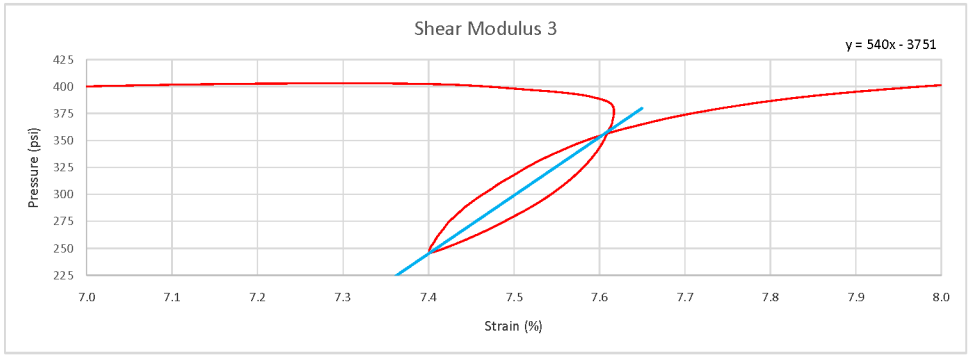


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 086	Lower Tamiami	4000	19000	23835	27000		

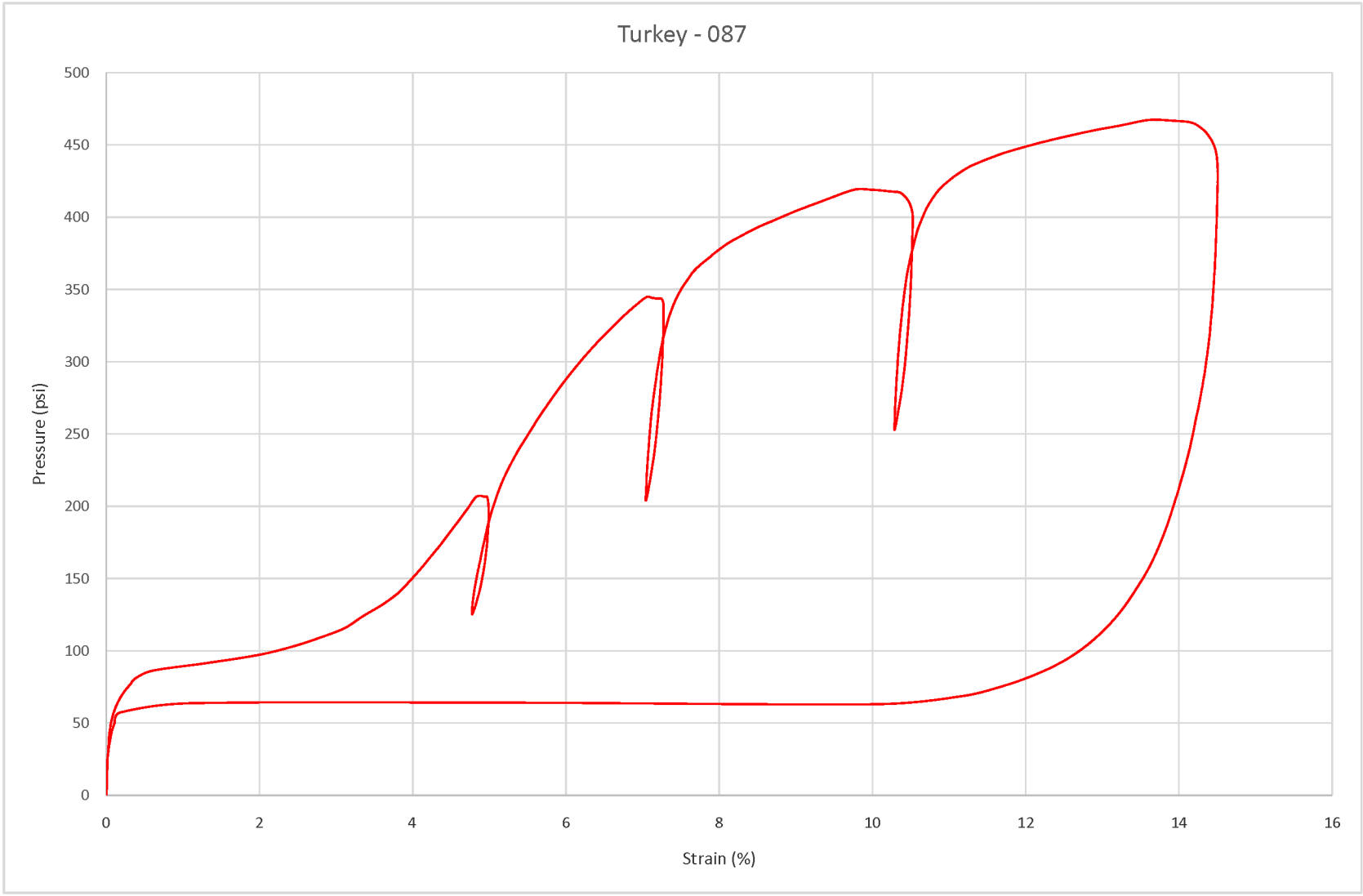




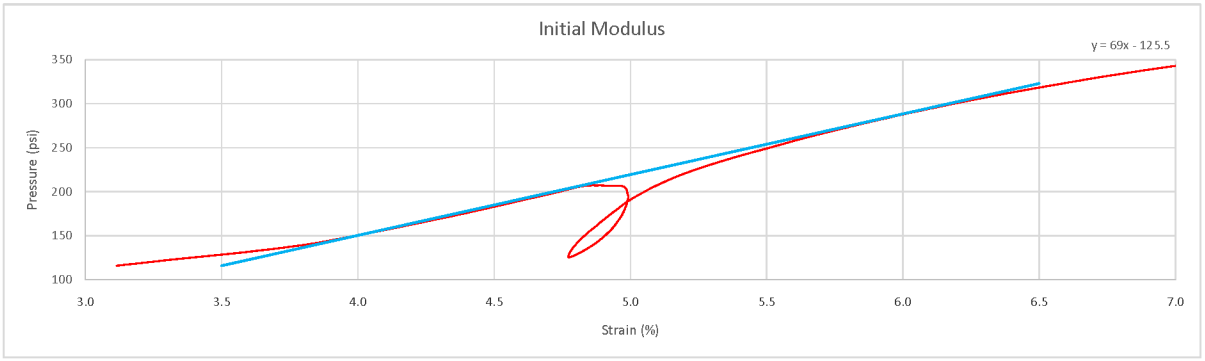


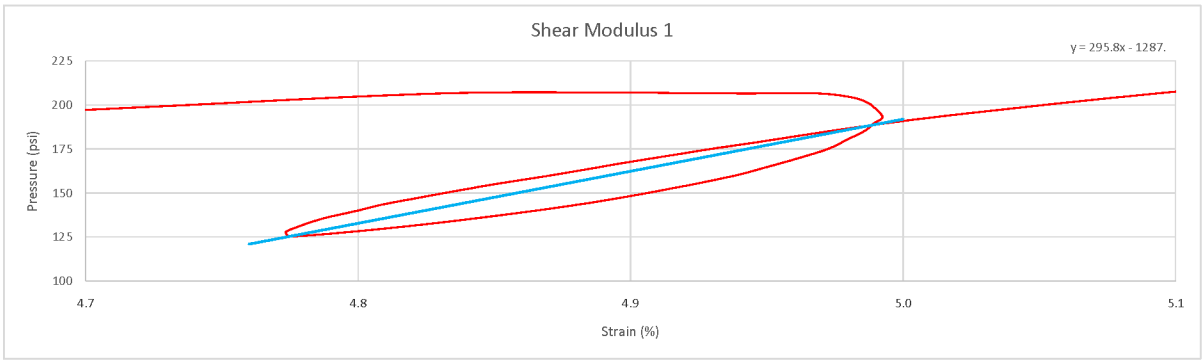


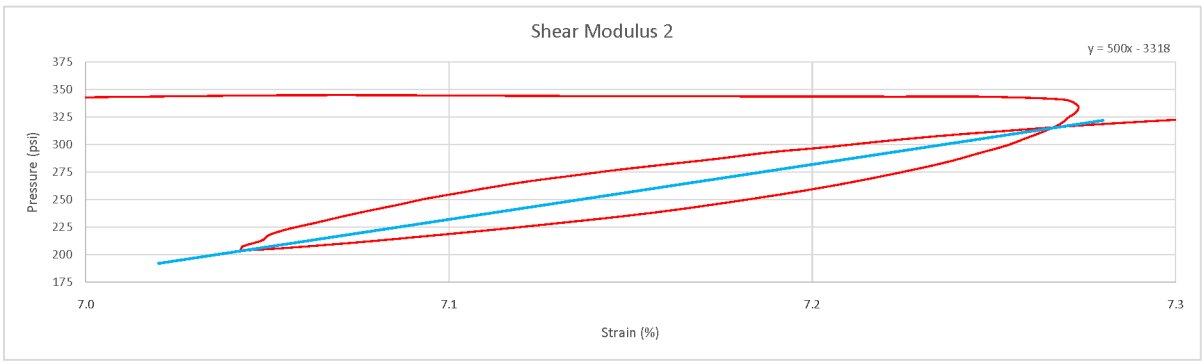
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 087.imp	R - 7 - 2	188	Lower Tamiami

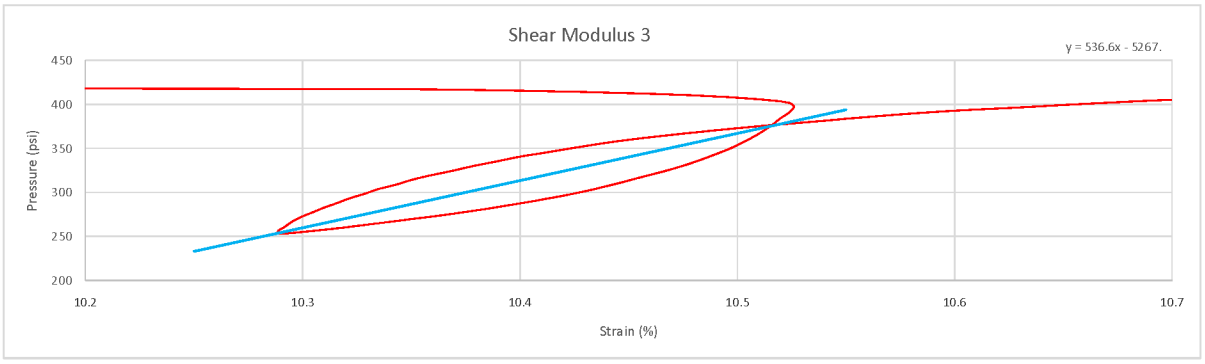


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 087	Lower Tamiami	3450	14790	25000	26830		

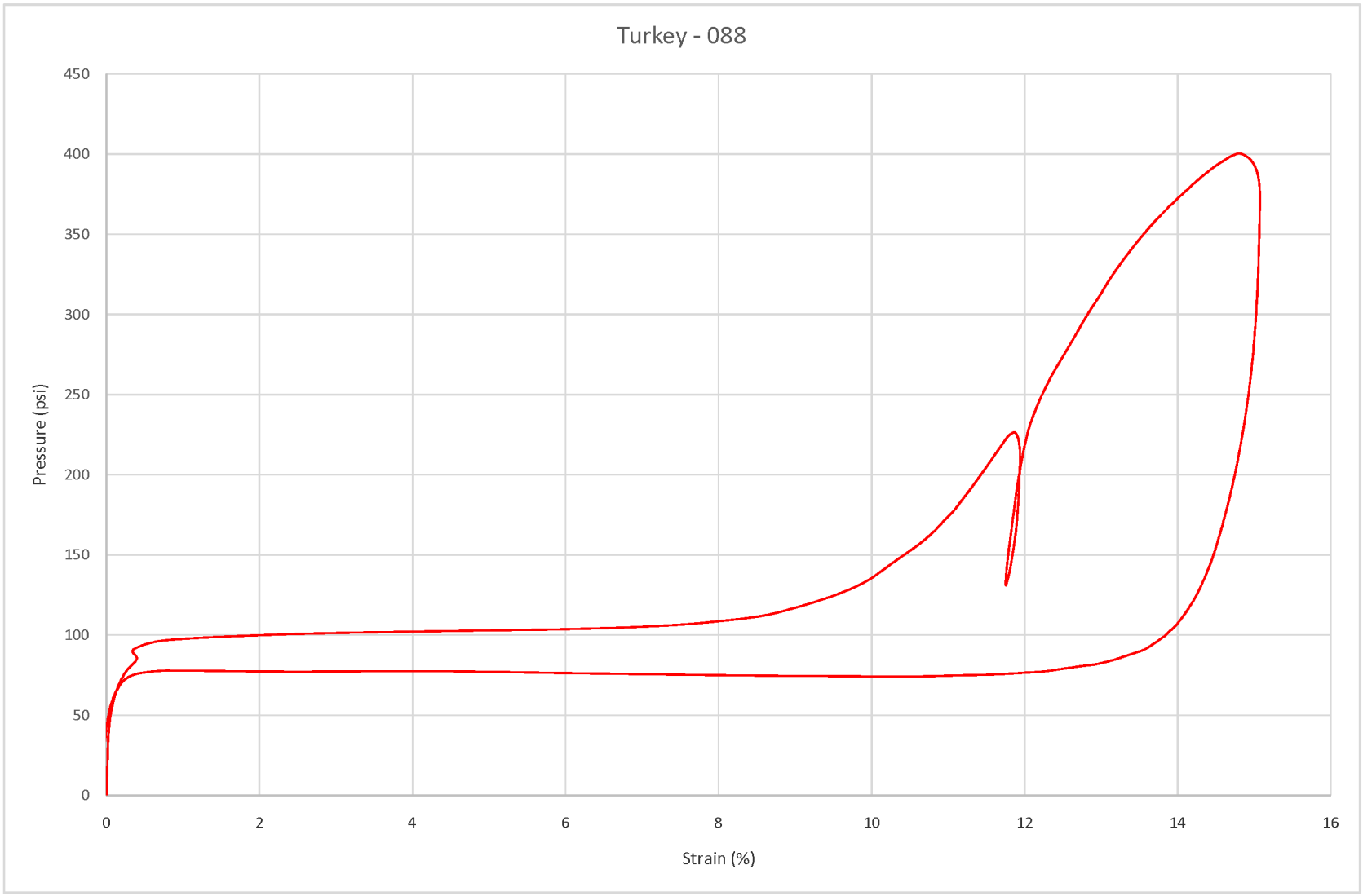




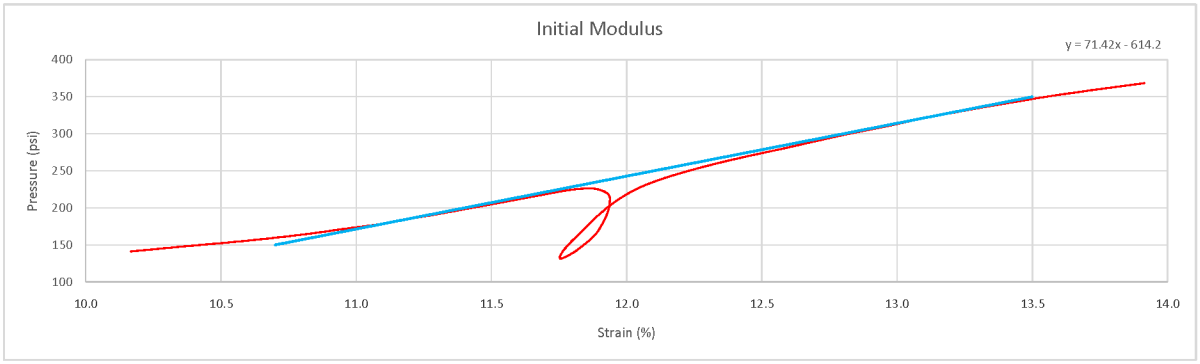


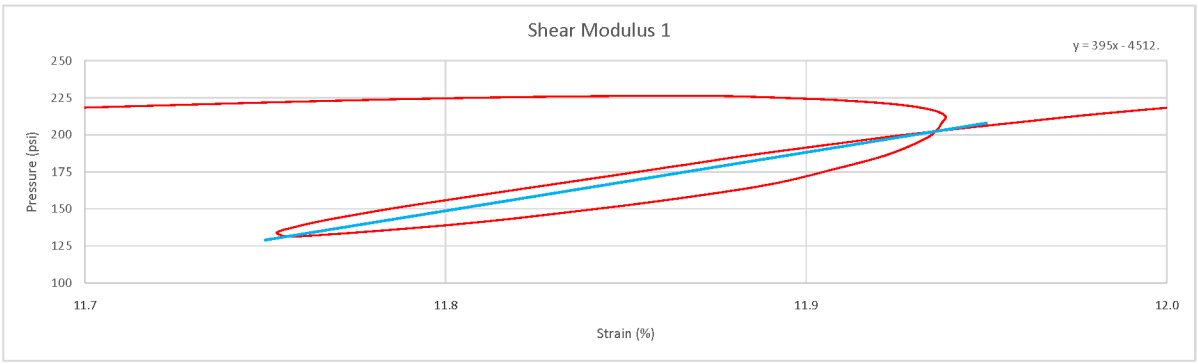


Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 088.imp	R - 7 - 2	199	Lower Tamiami

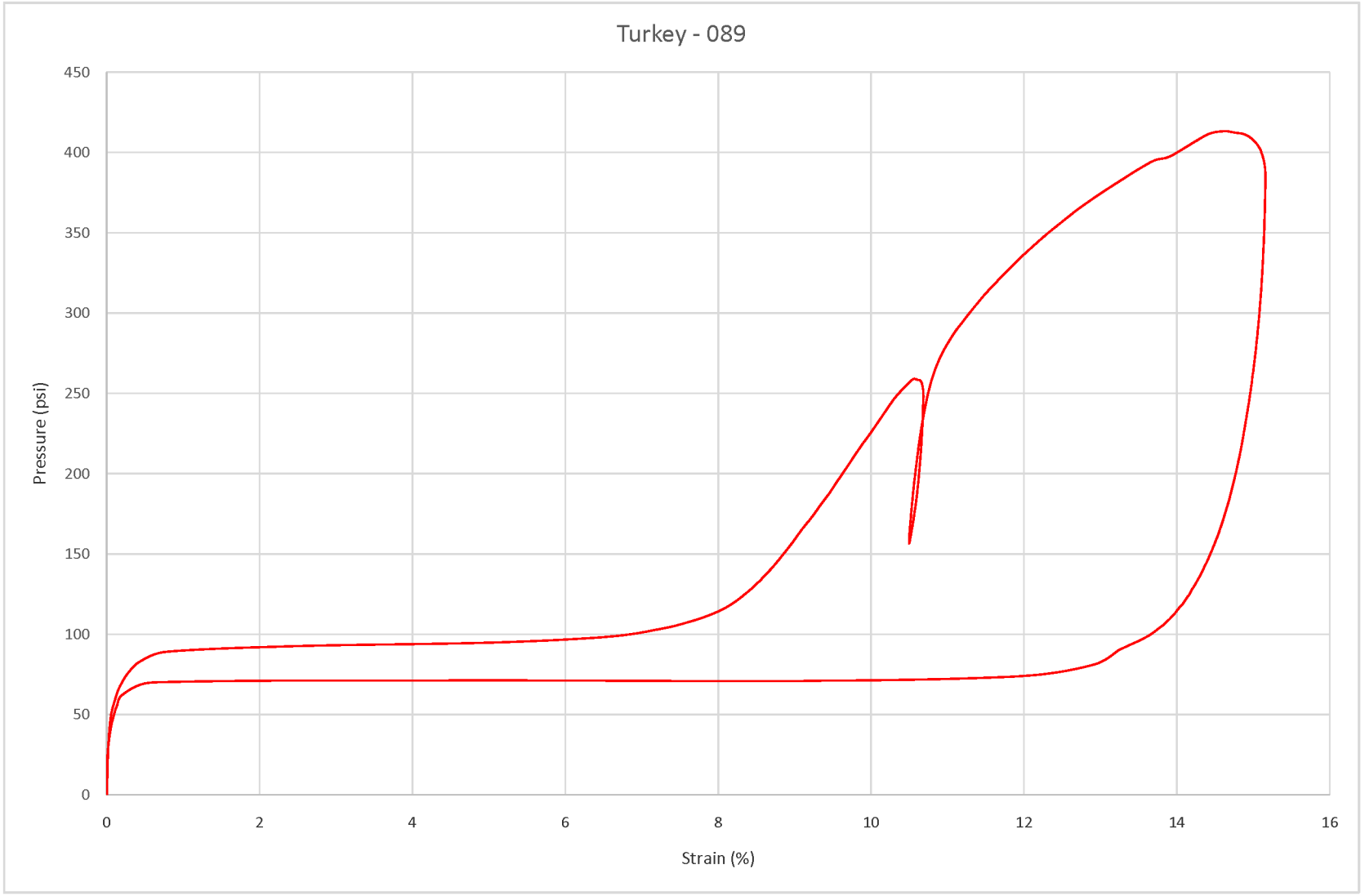


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 088	Lower Tamiami	3550	19750				

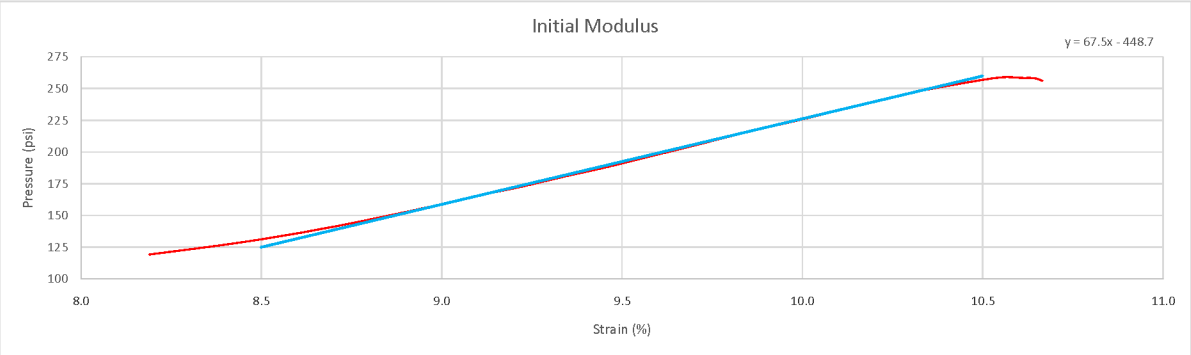


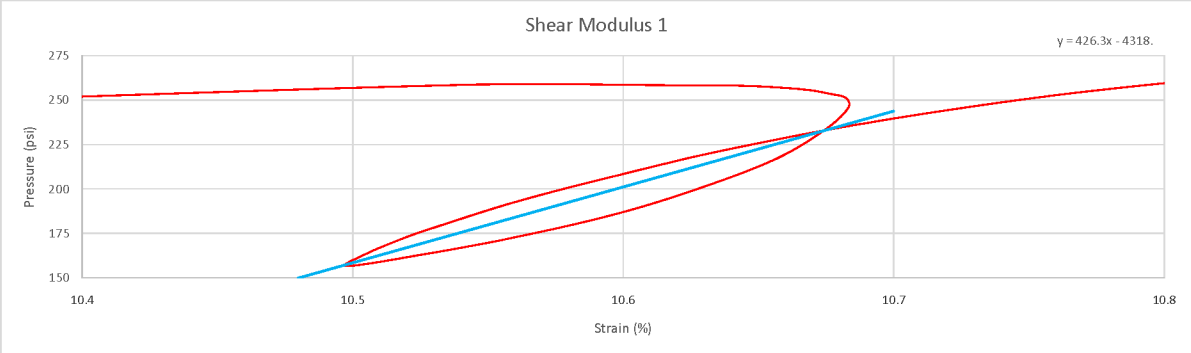


Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 089.imp	R - 7 - 2	197	Lower Tamiami

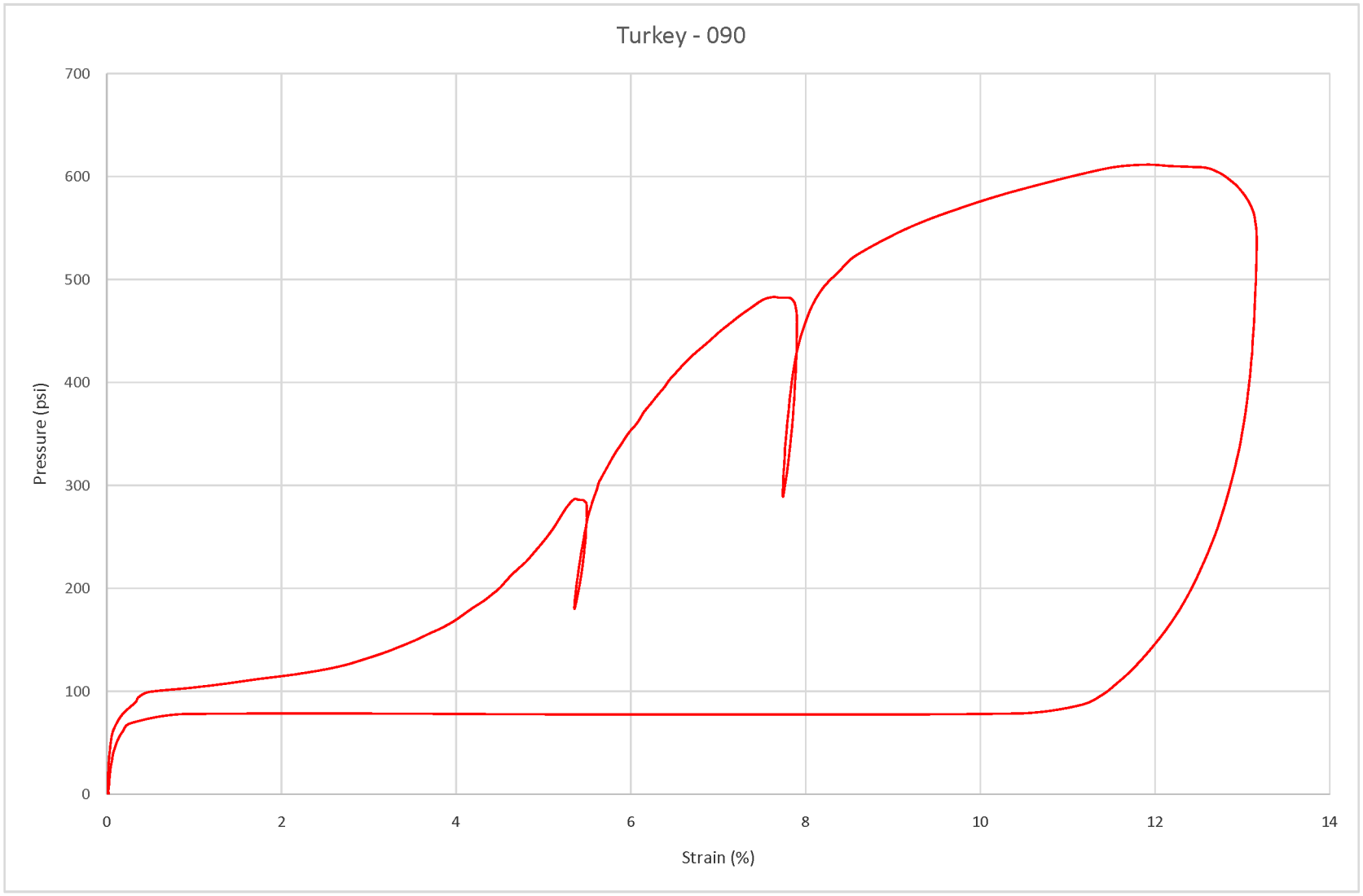


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 089	Lower Tamiami	3350	21300				

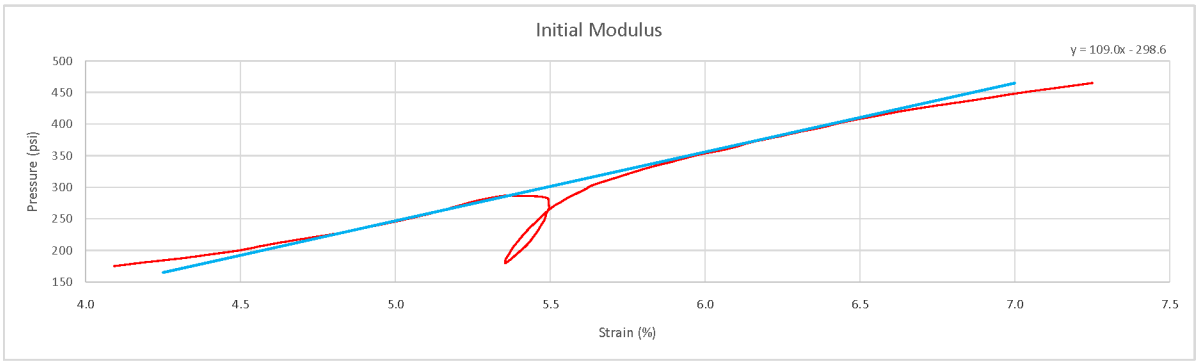


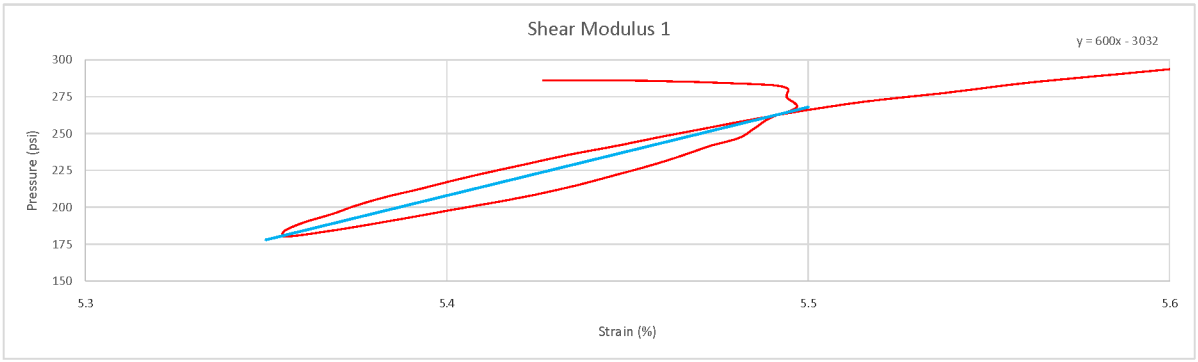


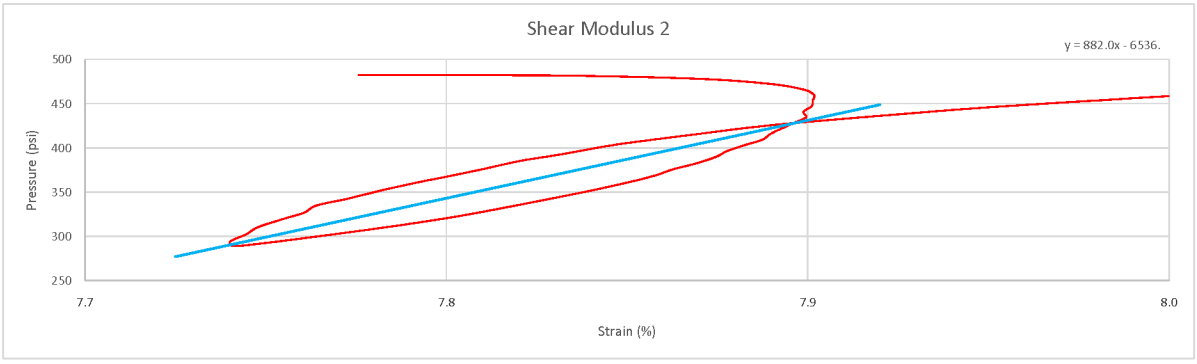
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 090.imp	R - 7 - 2	210	Lower Tamiami



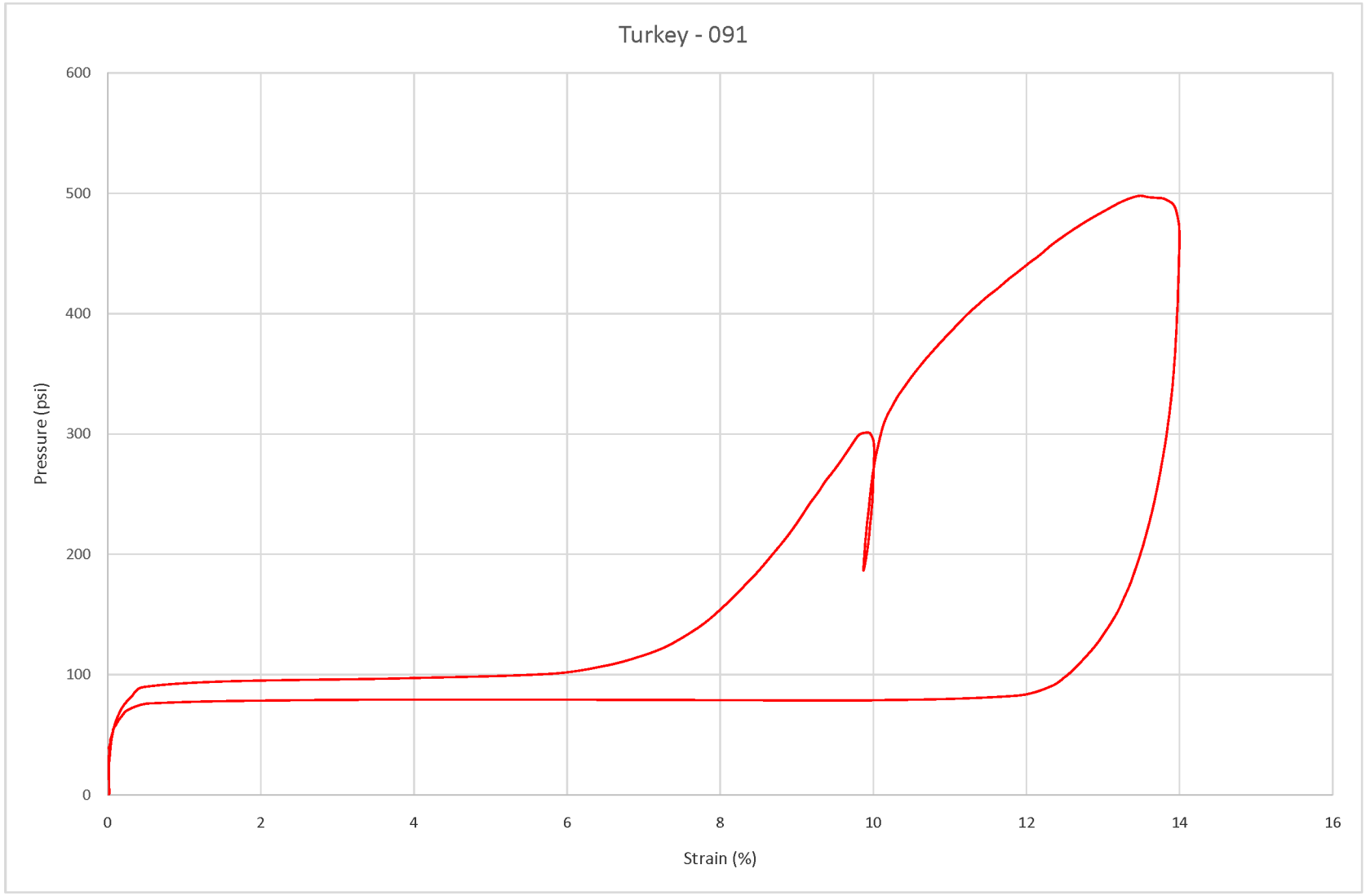
File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 090	Lower Tamiami	5455	30000	44100			



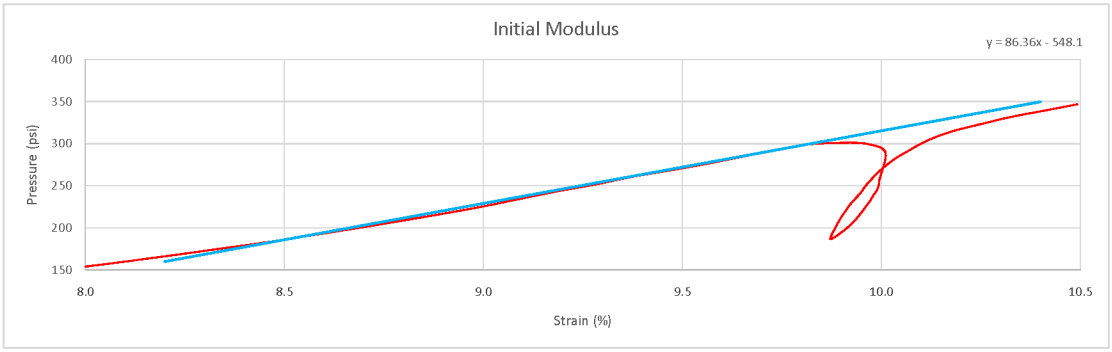


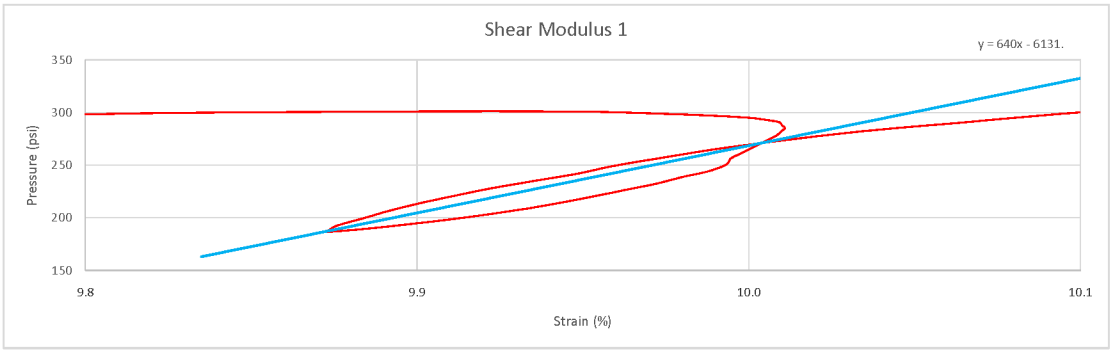


Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 091.imp	R - 7 - 2	208	Lower Tamiami

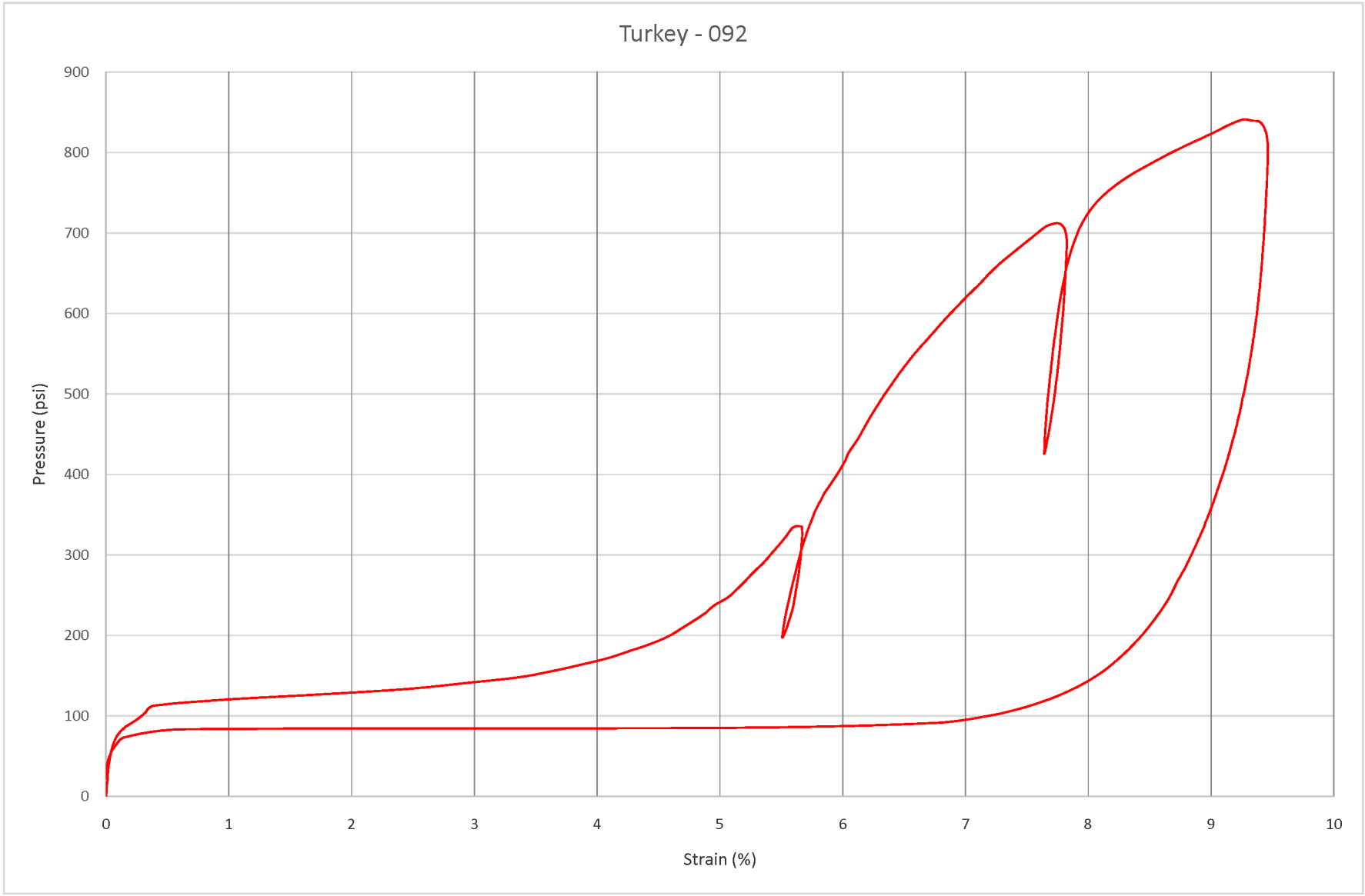


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 091	Lower Tamiami	4318	32000				

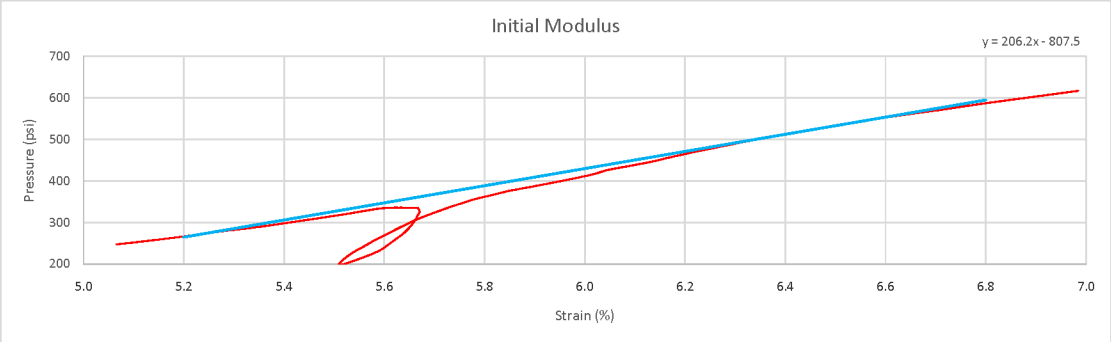


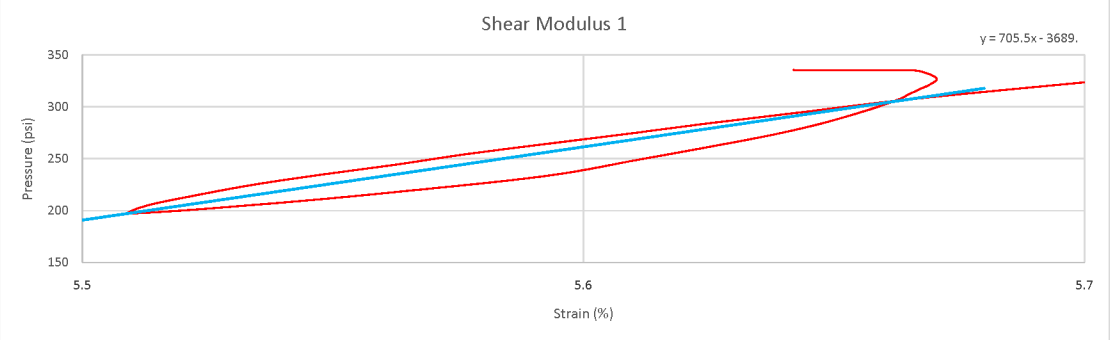


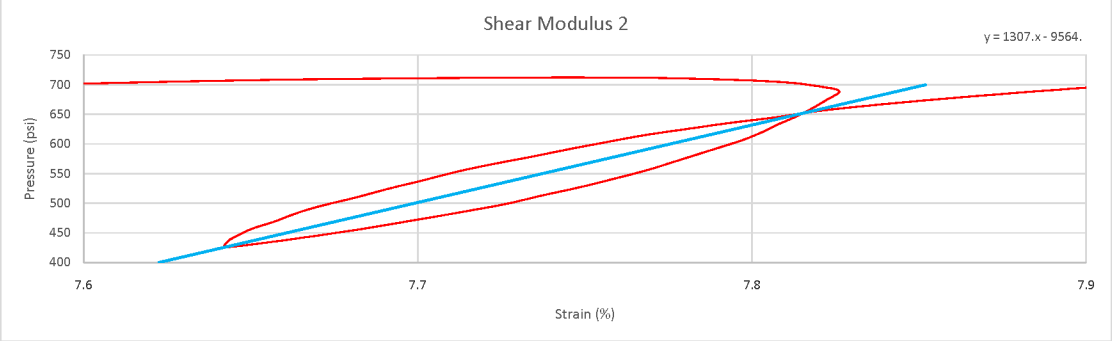
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 092	R - 7 - 2	229.9	Peace River



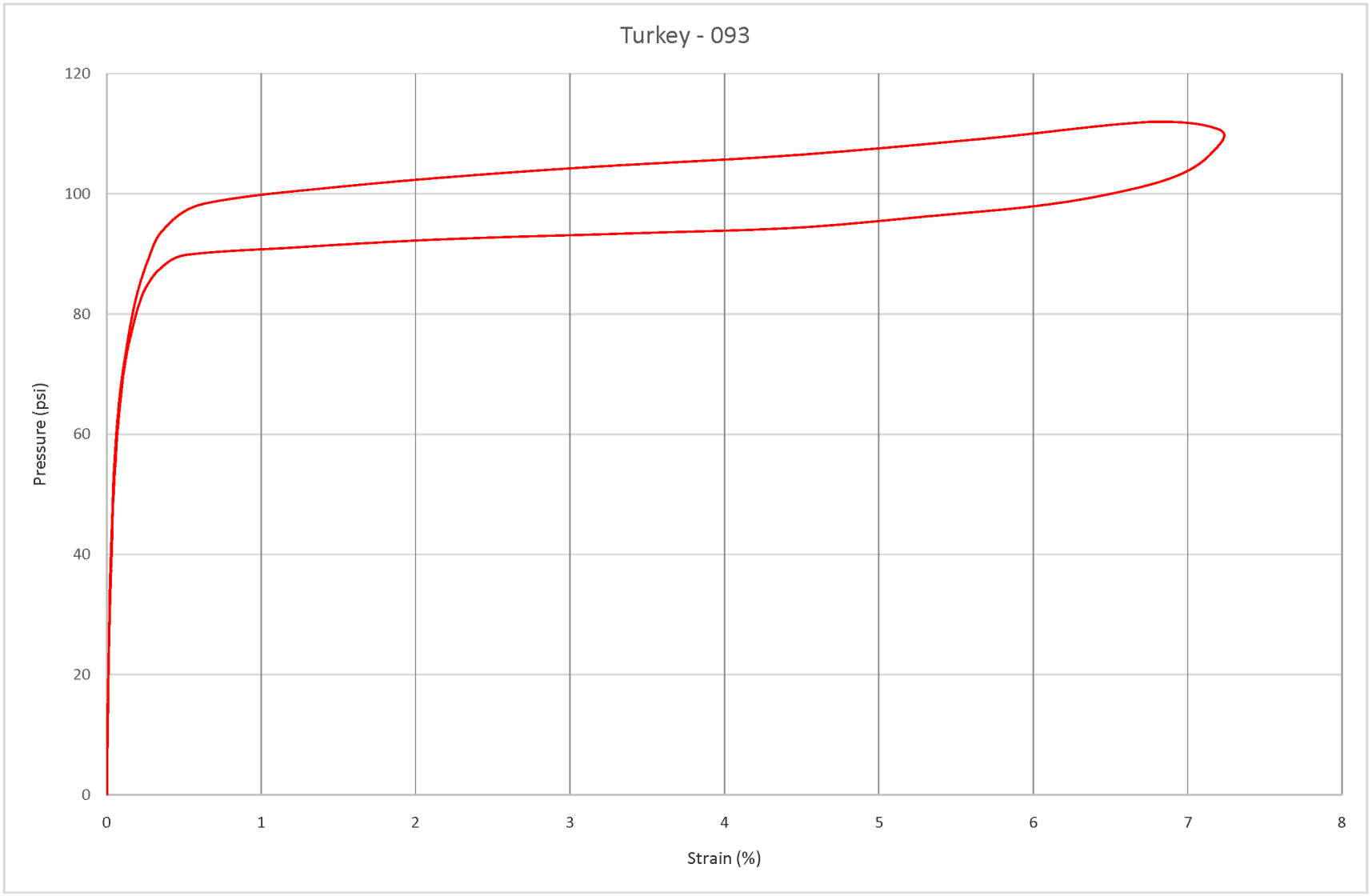
File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 092	Peace River	10313	35278	65360			



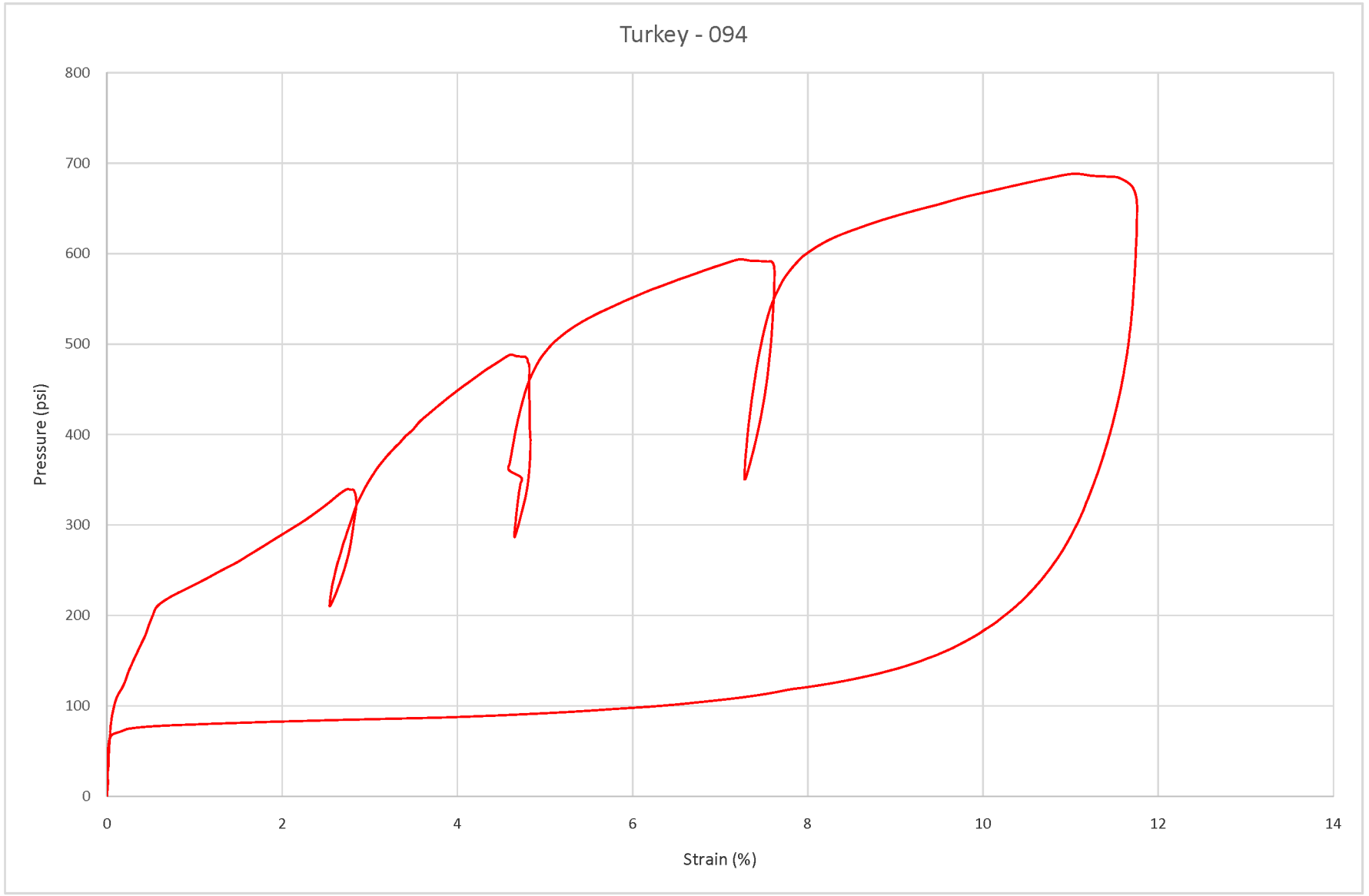




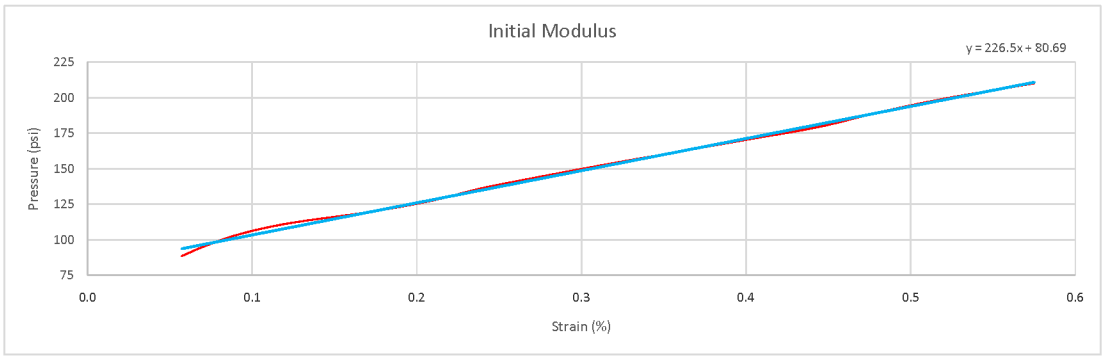
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 093.imp	R - 7 - 2	227.5	Peace River

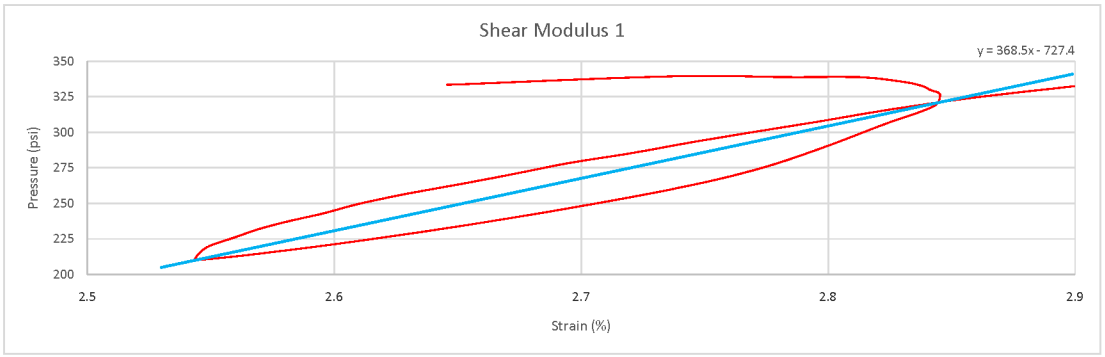


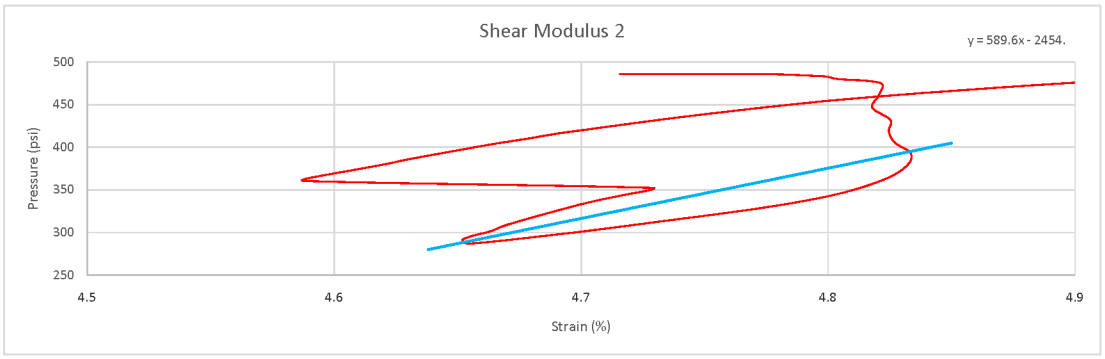
Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 094	R - 7 - 2	276	Peace River

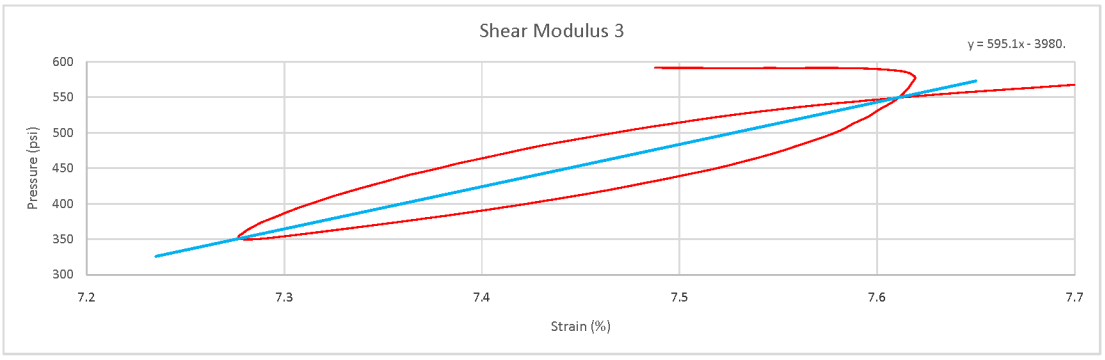


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 094	Peace River	11325	18428	29481	29759		

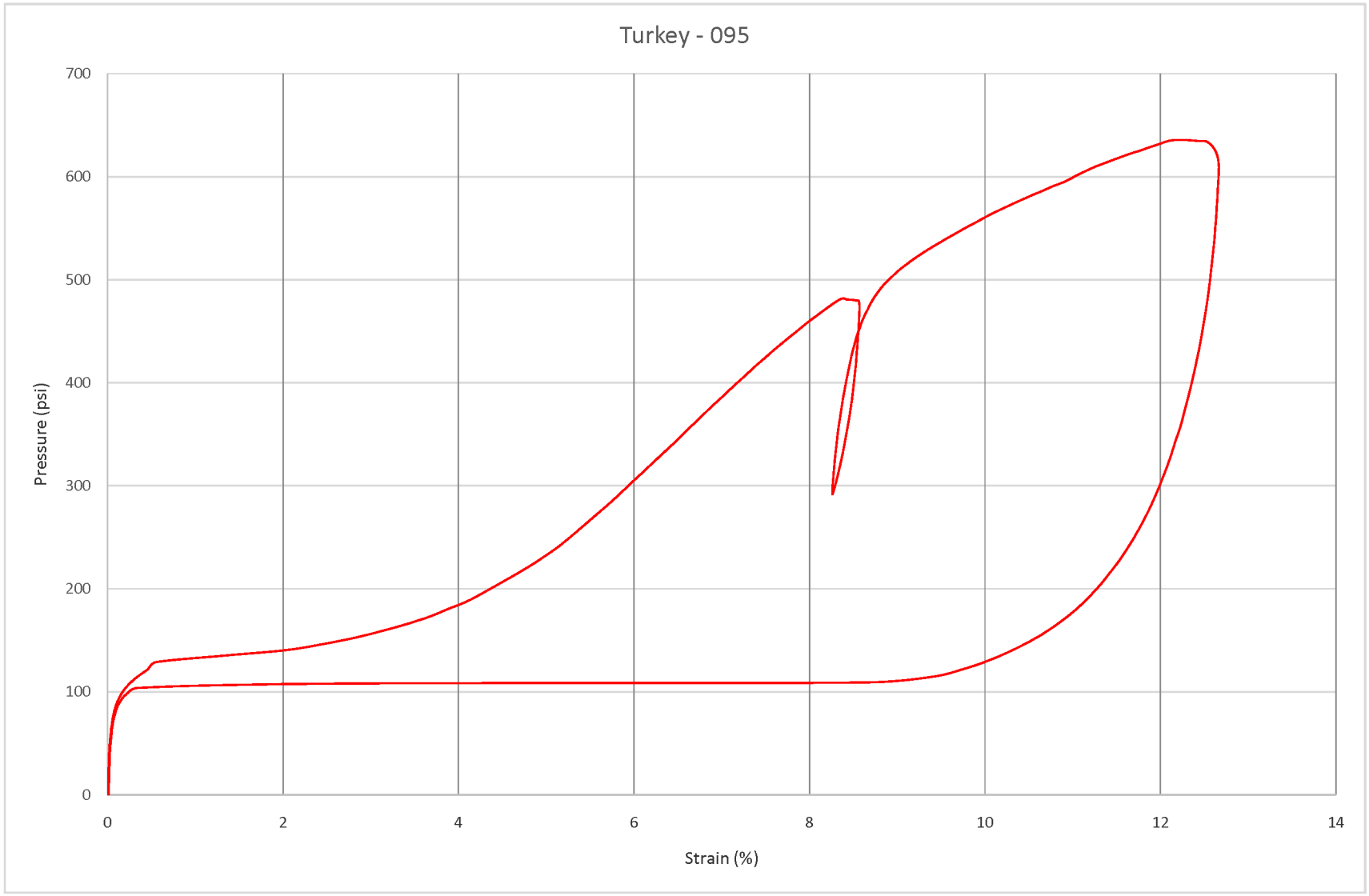




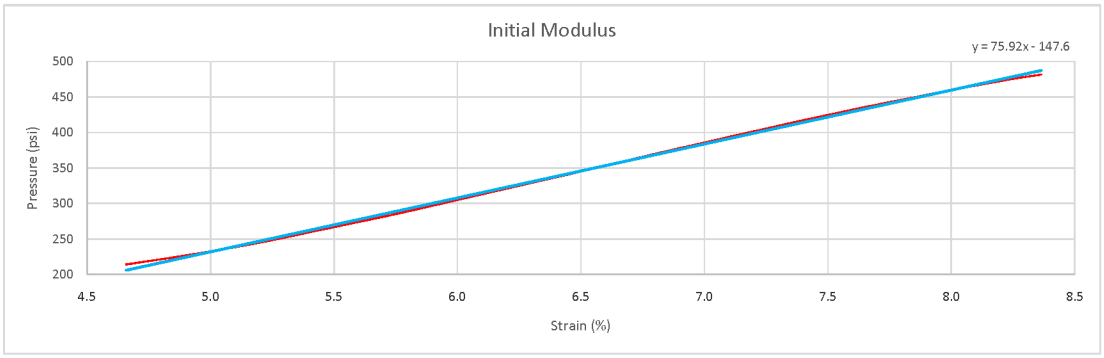


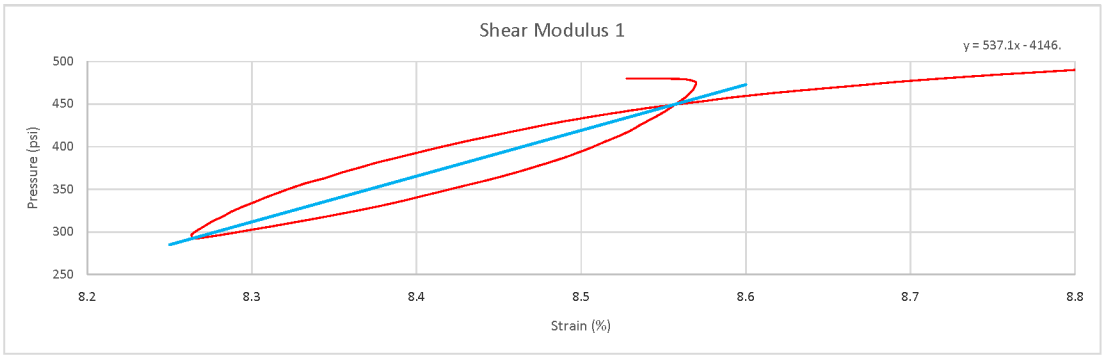


Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 095.imp	R - 7 - 2	274.5	Peace River

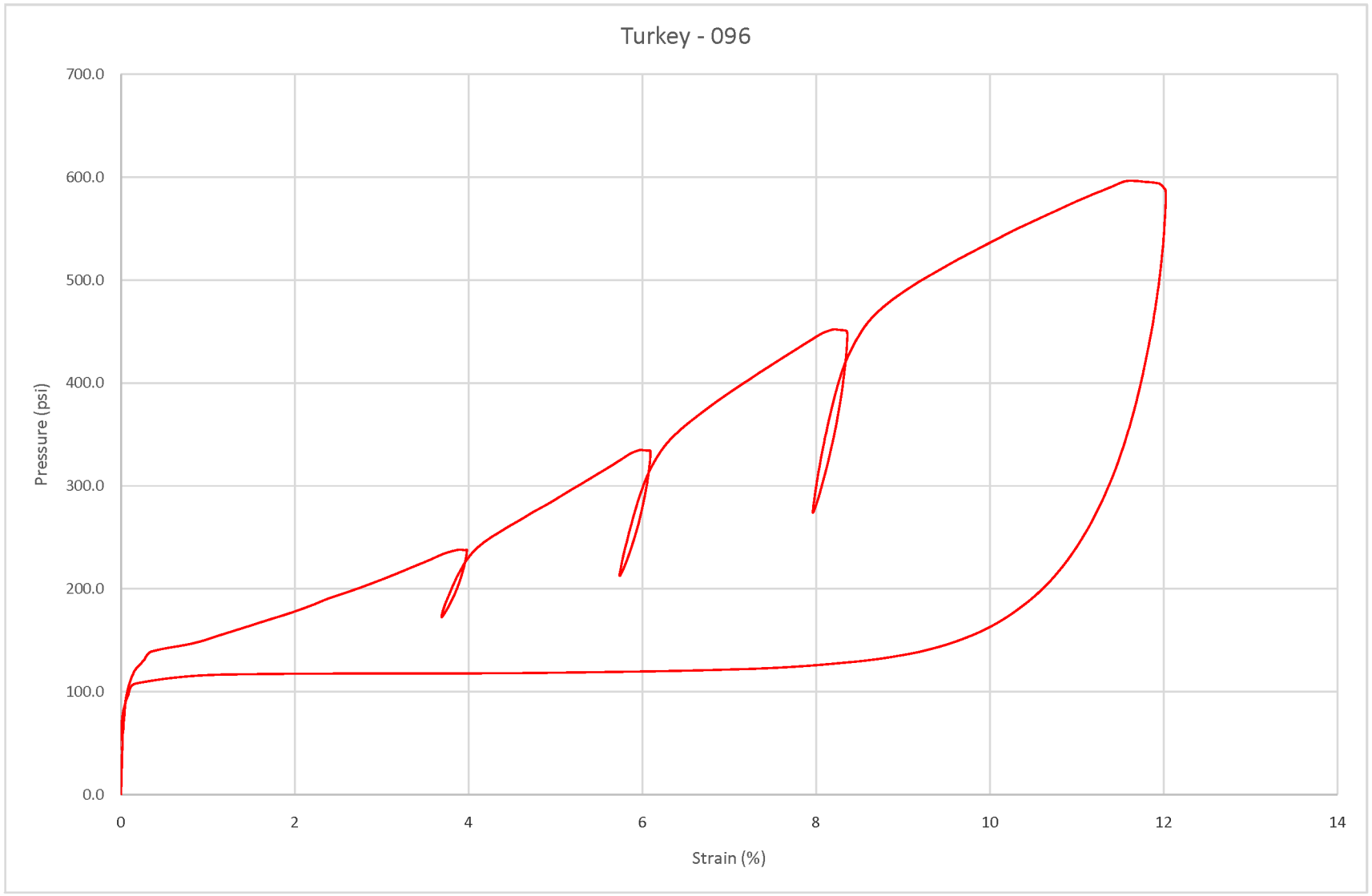


File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 095	Peace River	3796	26857				





Operator	Instrument	Job Number	Project Name	Client	File Name	Hole Name	Depth (ft)	Formation
Gerdes	6	1158	Turkey Point Nuclear	Paul Rizzo & Associates	Turkey - 096.imp	R - 7 - 2	304	Peace River



File Name	Formation	Initial Shear Modulus (psi)	Shear Modulus 1 (psi)	Shear Modulus 2 (psi)	Shear Modulus 3 (psi)	Shear Modulus 4 (psi)	Shear Modulus 5 (psi)
Turkey - 096	Peace River	2625	9863	15125	19500