HR Vertilog

Magnetic Flux Leakage Inspection

Company	Southern California Gas Company
Well	Fernando Fee 32A
Field	Aliso Canyon
County	Los Angeles
State	California
Location:	

Section 27	Township 3N	Range 16W	

Date	Mar. 31, 2016
Service Order	U106646J
Recorded by	T. Englehart
Witnessed by	T. McMahon
API Serial No.	04-037-21872

Permanent Datum:	G.L.	Elevation:	1995.000 ft.	Depth	7500.000
Log Measured From:	K.B.	18.900	ft. above Perm. Datum	Btm. Log Interval	7065.770
Drilling Measured From:	K.B.	18.900	ft. above Perm. Datum	Top Log Interval	6552.530
				Fluid Type	KCL

Casing Data

Size	Weight	Grade	From	To	Length
13 3/8 inch	54.5 lb/ft	K-55	Surface	990	990.0
8 5/8 inch	36 lb/ft	K-55	Surface	3438	3438.0
8 5/8 inch	36 lb/ft	N-80	3438	7022	3584.0
7 inch	26 lb/ft	N-80	6566	7250	684.0
4 1/2 inch	11.6 lb/ft	N/A	7113	7479	366.0

Software Version 6.0.0.0

Equipment Data

Run	Trip	Tool Type	Tool Series	Serial Number	Position
1	1	HRVRT MFL	4997	PB11708273	LOWER
1	1	HRVRT MFL	4997	QB11708275	UPPER
1	1	HRVRT TELEM	4993		

Calibration Data

Calibration File Name	4997-7-001-PB11708273-QB11708275.CAL

Date of Calibration	04/11/2014 00:52
Calibration Identifier	FBA03101-073C-4D00-98AB-0E6B0E2842D6
Tool Number	4997-00
Calibrator Number	4997-7-001
Calibrator Size	(7 In - 178 mm)
Calibration Source File	20140411_094120_MEM.MVL
Calibration Software Rev	Microvision 32-bit 7.0.1.0
Comment	RMA1001

In making interpretations of logs our employees will give customer the benefit of their best judgment. But since all interpretations are opinions based on inferences from electrical or other measurements, we cannot, and we do not guarantee the accuracy or correctness of any interpretation. We shall not be liable or responsible for any loss, cost, damages, or expenses whatsoever incurred or sustained by the customer resulting from any interpretation made by any of our employees.

Remarks

Well Records: Max hole angle 24 deg inclination at 5789'.
Liner top at 6566' hole angle is 23 deg inclination

HRVRT encountered a high stick and pull through out the logged section.

Interpretation

HRVRT analysis was depth correlated to BHI Caliper Logged 01 Apr 2016

The top joint is a short joint.

6552.53 ft Top of 7" Liner.
6555.80 ft Metal Object - External Casing Collar.
6577.38 ft Hardware - Possibly a Scratcher
6596.43 ft Hardware - Possibly a Scratcher
6628.45 ft Metal Object - External Casing Collar.
6670.66 ft Metal Object - External Casing Collar.
6711.22 ft Metal Object - External Casing Collar.
6754.05 ft Metal Object - External Casing Collar.
6796.17 ft Metal Object - External Casing Collar.
6954.04 ft Metal Object - External Casing Collar.
6996.84 ft Metal Object - External Casing Collar.
7023.04 ft Hardware - Bottom of the 8 5/8" External Casing.

Joint Interpretation Summary

Joint	From	To	Length	Class	Max Depth	Position	Type	ID/OD
1	6552.53	6554.14	1.61	Class 1	-	-	-	-
2	6554.14	6598.26	44.12	Class 1	-	-	-	-
3	6598.26	6643.36	45.10	Class 1	-	-	-	-
4	6643.36	6687.64	44.28	Class 1	-	-	-	-
5	6687.64	6732.18	44.54	Class 1	-	-	-	-
6	6732.18	6777.63	45.45	Class 1	-	-	-	-
7	6777.63	6823.43	45.80	Class 1	-	-	-	-
8	6823.43	6869.23	45.80	Class 1	-	-	-	-
9	6869.23	6915.22	45.99	Class 1	-	-	-	-
10	6915.22	6961.11	45.89	Class 1	-	-	-	-
11	6961.11	7006.91	44.90	Class 1				

11	6961.11	7006.01	44.90	Class	1	-	-	-	-
12	7006.01	7051.71	45.70	Class	1	19.0%	7008.21	ISO	ID
13	7051.71	7065.77	14.06	Class	1	-	-	-	-

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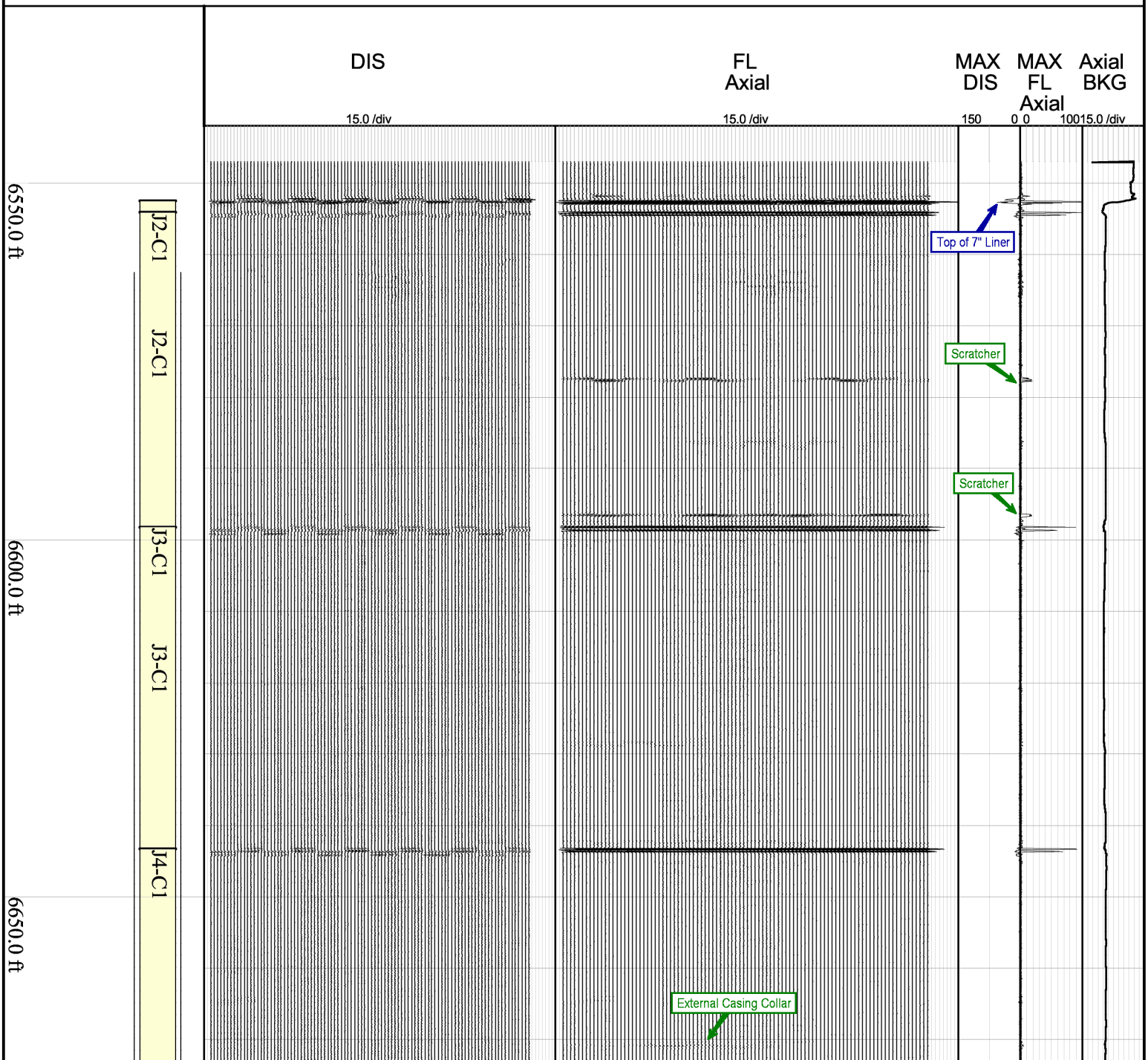
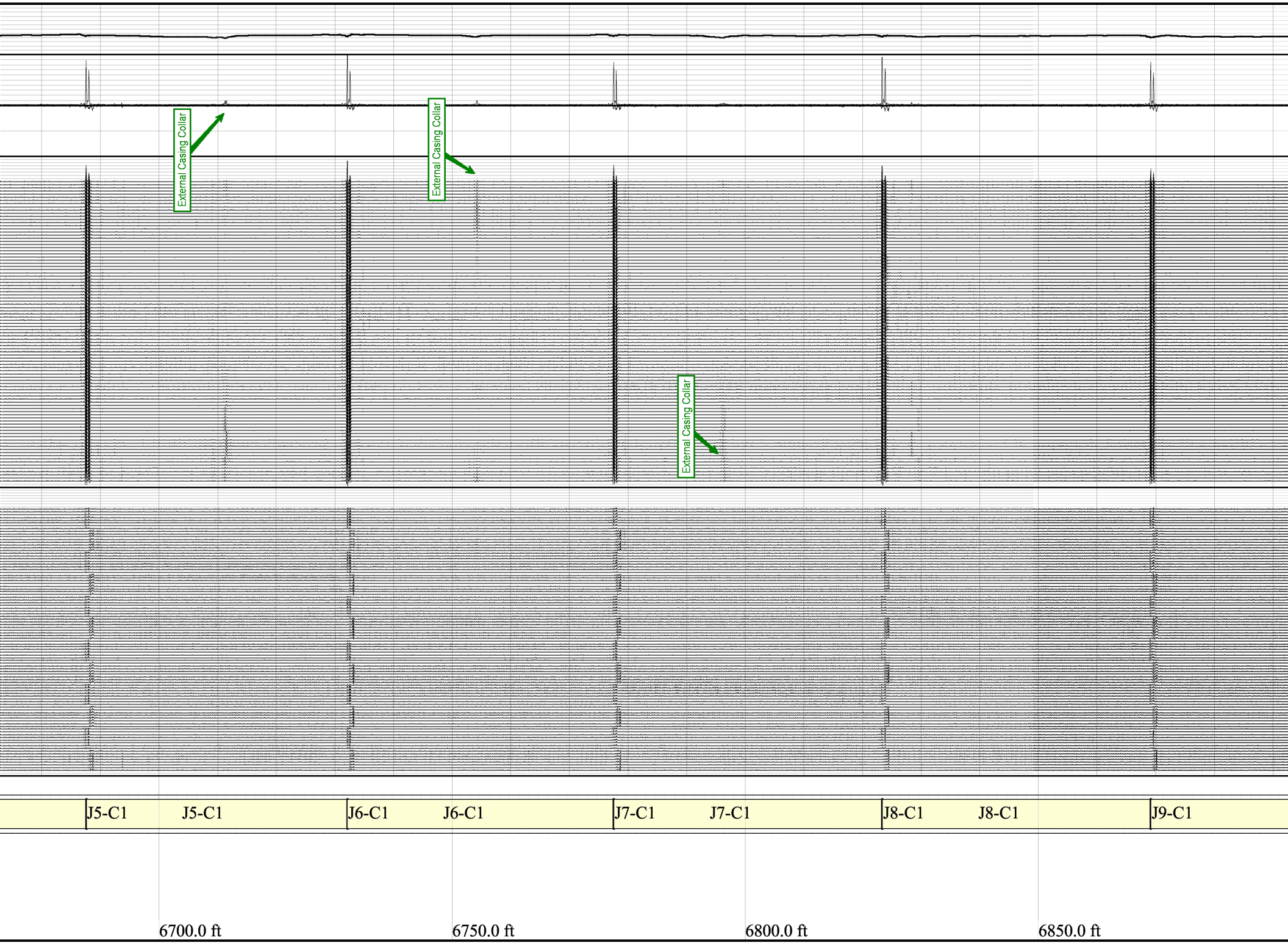
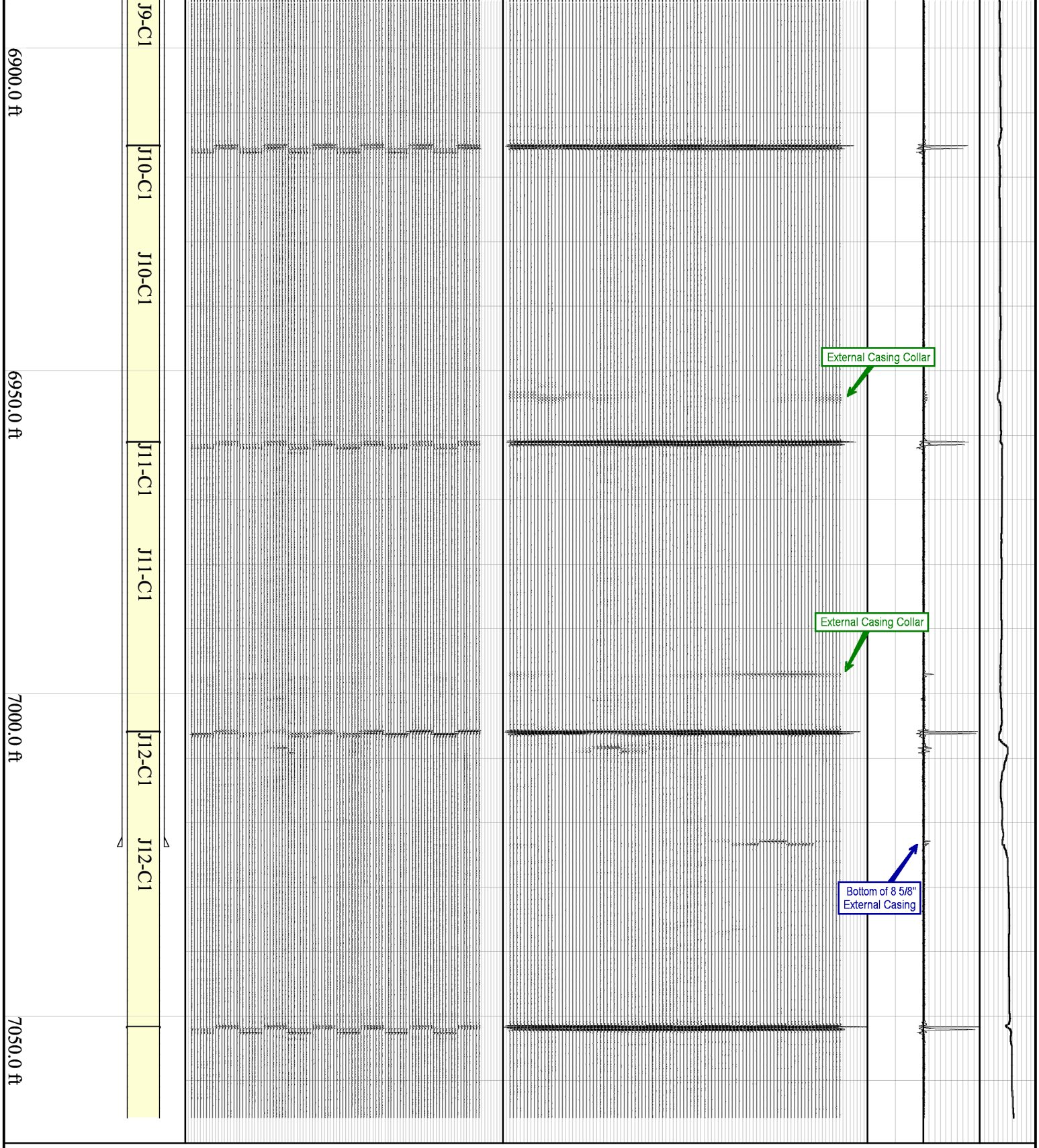
File 20160331_13423A_RSP_0_0_0_0_0.mvl

Main Pass
5" / 100'

Class 1	Class 2	Class 3	Class 4
0 - 20%	20 - 40%	40 - 60%	60 - 100%




External Casing Collar
External Casing Collar
External Casing Collar
J5-C1
J5-C1
J6-C1
J6-C1
J7-C1
J7-C1
J8-C1
J8-C1
J9-C1
6700.0 ft
6750.0 ft
6800.0 ft
6850.0 ft



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Identifier	Start Log Depth	Joint Length	Diameter	Wall Thickness	Weight	Max ML Depth	Max ML Position	Min Burst Pressure	Joint Depth Class
	ft	ft	in	in	lb/ft	%	ft	psi	
JT-1	6552.53	1.61	7.000	0.362	26.0	0			1
JT-2	6554.14	44.12	7.000	0.362	26.0	0			1
JT-3	6598.26	45.10	7.000	0.362	26.0	0			1
JT-4	6643.36	44.28	7.000	0.362	26.0	0			1
JT-5	6687.64	44.54	7.000	0.362	26.0	0			1
JT-6	6732.18	45.44	7.000	0.362	26.0	0			1
JT-7	6777.63	45.80	7.000	0.362	26.0	0			1
JT-8	6823.43	45.81	7.000	0.362	26.0	0			1
JT-9	6869.23	45.98	7.000	0.362	26.0	0			1
JT-10	6915.22	45.89	7.000	0.362	26.0	0			1
JT-11	6961.11	44.90	7.000	0.362	26.0	0			1
JT-12	7006.01	45.70	7.000	0.362	26.0	19	7008.21	8514	1
JT-13	7051.71	14.06	7.000	0.362	26.0	0			1

Inspection Date: 03-31-2016
Report Date: 04-01-2016