GW-19

LEONARD No. 3

Loco Hills GSF

JB Smith
575.626.1719

Mitch Johnson, Managing Partner
158 Deer Creek Drive
Aledo, TX, 76008

State minerals lease BL-635

• Leonard State #1
API 30-015-06192
ULSTR L-22-17S-29E
Completed 5/1/52 w/ TD of 658 ft by Sacra Brothers Co.. Top of salt 350 ft bgs. Casing shoe 439 w/ 7" casing in 8-5/8" bore
Change ownership from Sacra Brothers to Arrow Gas Co. on 12/7/59
Change ownership from Columbia Propane, LP to AmerGas Eagle Propane, LP on 8/21/01
Change ownership from AmeriGas Eagle Propane LP to Loco Hills GSF Ltd. on 7/15/02
Remove and replace tubing on 1/16/03
Open hole nitrogen test on 1/24/03
NOI to P&A if MIT fails filed on 6/14/03
March 2004 Set CIBP at 517', spotted cement on top of plug, run 4" to 514', circulate cement between 4" and 5.5" (where did that come from), drilled out bridge plug and ran 2-3/8" tubing to 630'.
Last sonar log 6/3/09 w/ cavern volume of 77,436 bbls

• Leonard State #2
API 30-015-06193
Completed 10/23/52 w/ TD of 663 by Sacra Brothers Co. Top of salt 260 ft bgs. Casing shoe 507 w/ 7" casing in 8-5/8" bore. 8-5/8" surface casing set at 130'
Change ownership from Sacra Brothers to Arrow Gas Co. on 12/7/59
Change ownership from Columbia Propane, LP to AmerGas Eagle Propane, LP on 8/21/01
Change ownership from AmeriGas Eagle Propane LP to Loco Hills GSF Ltd. on 7/15/02
NOI on 2/9/05 to pull tubing, sonar, and CBL on 5.5" (again, where did that come from?)
Ran sonar on 6/29/05
Last sonar 3/29/10 w/ cavern volume 135.864 bbls.

• Leonard State #3
API 30-015-06194
Completed 10/31/53 w/ TD of 680 ft by Sacra Brothers Co. Top of salt 265 ft bgs. Casing shoe 506 w/ 7" casing in 8-5/8" bore. 8-5/8" surface casing set at 131'.
Change ownership from Sacra Brothers to Arrow Gas Co. on 12/7/59
Change ownership from Columbia Propane, LP to AmerGas Eagle Propane, LP on 8/21/01
Change ownership from AmeriGas Eagle Propane LP to Loco Hills GSF Ltd. on 7/15/02
Ran sonar on 2/15/06 w/ cavern volume of 125,731 bbls
Last sonar 6/22/10 w/ cavern volume of 129,353 bbls (3% increase in 4 years)
Run borehole imaging/caliper log on 6/22/10 and find bottom 90 ft of 5.5" casing is gone (starting 390 to 410 ft.).
Run Gamma, CCL, CBL log on 6/23/10

Caruthers Consulting Inc

Well & Field
Drilling • Completion • Workover & Op
Engineering • Design • Rig
(Oil, G SWD) Facility Con ction & Automation

Leonard State #3

Smitty Propane Injection Well
Casing Repair Proposal

Completion Procedures are as follows:

(.01) Move in rig up pulling unit.

(.02) Blow down well nipple up BOP.

(.03) Locate and spot 4" FJ and lift subs, clean and inspect threads dope and prepare to trip in hole.

(.04) Pick up bottom hole assembly and prepare to trip in hole.

(.05) BHA as follows:

(a) 1- full joint 4" FJ Casing open ended
(b) 1- 4" FJ x 3.5 8rd CO Swedge w/ Collars
(c) 1- 3.5 inflatable packer w 7" bladder
(d) 1- 3.5 BO Tool
(e) 1 profile nipple
(f) 1-3.5 DV Tool
(g) 1-3.5 FC & Profile Nipple
(h) (483') FJ Casing

(.06) Trip in hole to measured depth @ 493' packer set depth. As close to 500' as possible

(.07) Circulate hole w KCL to surface if will not circulate, drop plug for Packer set.

(.08) Pressure set Plug and Pressure set Packer. Pressure test tubing to 1000 PSIG.

(.09) Allow to set 20 minutes, test for pressure drop, if held prepare to open DV Tool.

(.10) Drop plug to open DV Tool. Nipple Down BOP, NU KOA Valve in 4" FJ.

(.11) Nipple up Pump Truck establish circulation to surface until clean water circulates.

(.12) Move in Rising Star Cementers and Nipple Up to 4"FJ.

817-781-8999 ph
Mailing
PO Box 121608
Fort Worth, TX 76121-1608
Headquarters
FORT WORTH,
TEXAS

Caruthers Consulting Inc

Well & Field Ar
Drilling • Completion • Workover & Op
Engineering • Design • Rig
Oil Gas & SWD Facility Construction & Automation

Smitty Propane Injection Well
Casing Repair Proposal

Completion Procedures Continued:

(.13) Circulate 50 sks Class "C" Cement with additives, drop plug and displace with fresh water until bump plug. Monitor returns for clean cement insuring cement to surface. Take surface samples of cement, allow to cure.

(.14) Nipple Down Rising Star Cementers and Send to Yard. Shut Down for Full 24 Hours.

(.15) Check 4" FJ for fluid loss, check annulus for cement loss between 4" and 5.5 casing string.

(.16) Nipple up wellhead for 4" and 5.5 casings. Install valves to check for pressure MIT Tests.

(.17) Nipple up Tubing Head for 4" FJ to 2 3/8" tubing.

(.18) Trip in hole drill out cement plug, knock out plug and packer knock out plug, look for fluid loss.

(.19) Pull out of hole with tubing and bit, lay down change over sub and bit.

(.20) Pick up (1) joint 2 3/8" Muleshoe ended mud joint (est. 30').

(.21) Pick up 4" x 2 3/8" Packer and Trip in hole with Packer to 480'.

(.22) Load hole with packer fluid and set packer to mfg's specs.

(.23) load hole to surface with packer fluid, set slips pack off head.

(.24) Pressure test tubing annulus to 500 PSIG for 30 minutes for MIT, if holds notify New Mexico Oil and Gas Commission to witness MIT for approval.

(.25) Rig Down Pulling Unit Send to Yard, Clean up Location. Shut Down

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FORT WORTH,
TEXAS

Salt Dome Formation
Propane Injection Repair Proposal

CARUTHERS CONSULTING ,INC.

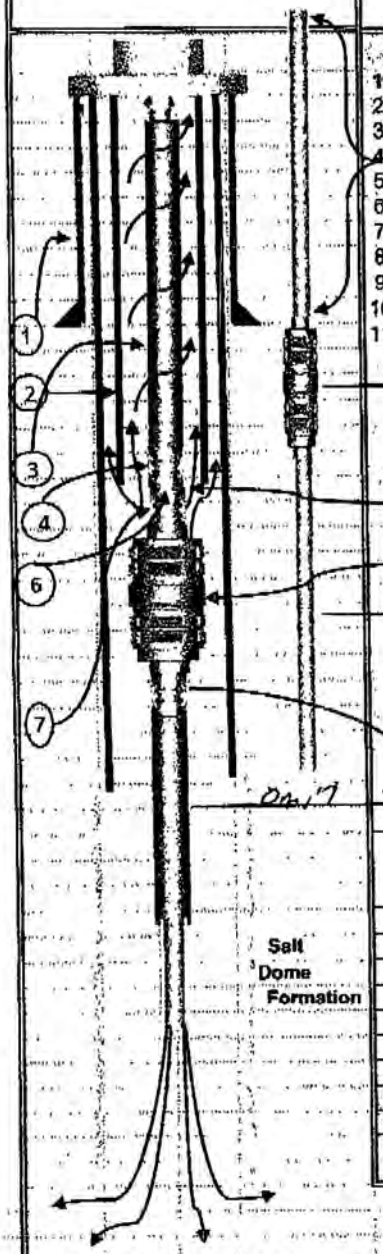
Smitty Propane Injection

Artesia, New Mexico

Commercial Propane Injector Storage

WELL BORE TUBULARS

	SIZE	WT.	GRADE	THREAD
TBG.	4		FJ	CS HYD.
CSG.	7		N-80	LT&C
Surf	8 5/8		N-80	LT&C



	ITEM DESCRIPTION	OD	ID		LENGTH	DEPTH
1	7" 20# surface casing	7	6.456		608	608
2	5 1/2 15.5# long string	5,5	4.59		410	410
3	4" FJ Liner	4	3.476		500	483
4	3.5"" Float Collar w/ Profile nipple				2.8'	483'
5	3.5""DV Tool				2.1'	486'
6	3.5" back off tool				1.8'	488'
7	3.5" profile nipple				1.3'	490'
8	3.5" Inflatable Paker				3'	493
9	3.5" profile nipple W/ 4" FJ Tailpipe		1.66		1.2'	515'
10	2 1/16 Hydrill Tubing Injection String				480'	480'
11	3.5 x 2 1/16 Production Packer				2'	482'
	2 1/16 Hydrill Tubing Tailpipe				128'	610

Direction of travel of cement at DV Tool

Class "H" Cmt Volume between 4" &"5.5"	37.4 sks
Class "H" Cmt Volume between 4" &"7"	23.5 sks
Total Cement with excess	80 sks

GENERAL INFO

TBG. LANDED @ 8K COMP.
B/S TESTED, 1500 PSI

RETRIEVING METHOD(S)	TUBING	ACTION REQUIRED

RADIAL CEMENT BOND GAMMA RAY/ CCL LOG

RECEIVED
JUL 19 2010
NMOCD ARTESIA

Company LOCO HILLS GSF LTD.

Well LEONARD STATE #3

Field LEONARD

County EDDY State NEW MEXICO

Location: API # :

1975' FSL & 560' FWL
SEC. 22, TOWNSHIP 17.5, RANGE 29 E

Other Services
CASING INSPECTION

	SEC	TWP	RGE
Permanent Datum		GROUND LEVEL	
Log Measured From		GROUND LEVEL	
Drilling Measured From		KELLY BUSHING	

Elevation: Elevation N/A
K.B. N/A
D.F. N/A
G.L. N/A

Company LOCO HILLS GSF LTD
Well LEONARD STATE #3
Field LEONARD
County EDDY
State NEW MEXICO

Date	JUNE 23, 2010		
Run Number	ONE		
Depth Driller	602'		
Depth Logger	438'		
Bottom Logged Interval	435'		
Top Log Interval	SURFACE		
Open Hole Size	N/A		
Type Fluid	PRODUCE		
Density / Viscosity	N/A		
Max. Recorded Temp	N/A		
Estimated Cement Top	SURFACE		
Time Well Ready	ROA		
Time Logger on Bottom	9.45 A.M.		
Equipment Number	TRUCK #25		
Location	ANDREWS, TX		
Recorded By	L. DE LEON		
Witnessed By	J.B SMITH		

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To
N/A	N/A	N/A	N/A				

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	N/A	N/A	N/A	N/A
Prot. String				
Production String	5.5"	15.5#	SURFACE	500'
Liner				

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Comments

LOG RECORDED USING GRAY WIRELINE DEPTH
PROPANE STORAGE WELL USED BRINE TO KEEP GAS DOWN

Fold Here >>>

Comments

LOG RECORDED USING GRAY WIRELINE DEPTH
PROPANE STORAGE WELL USED BRINE TO KEEP GAS DOWN

GRAY WIRELINE

MAIN PASS

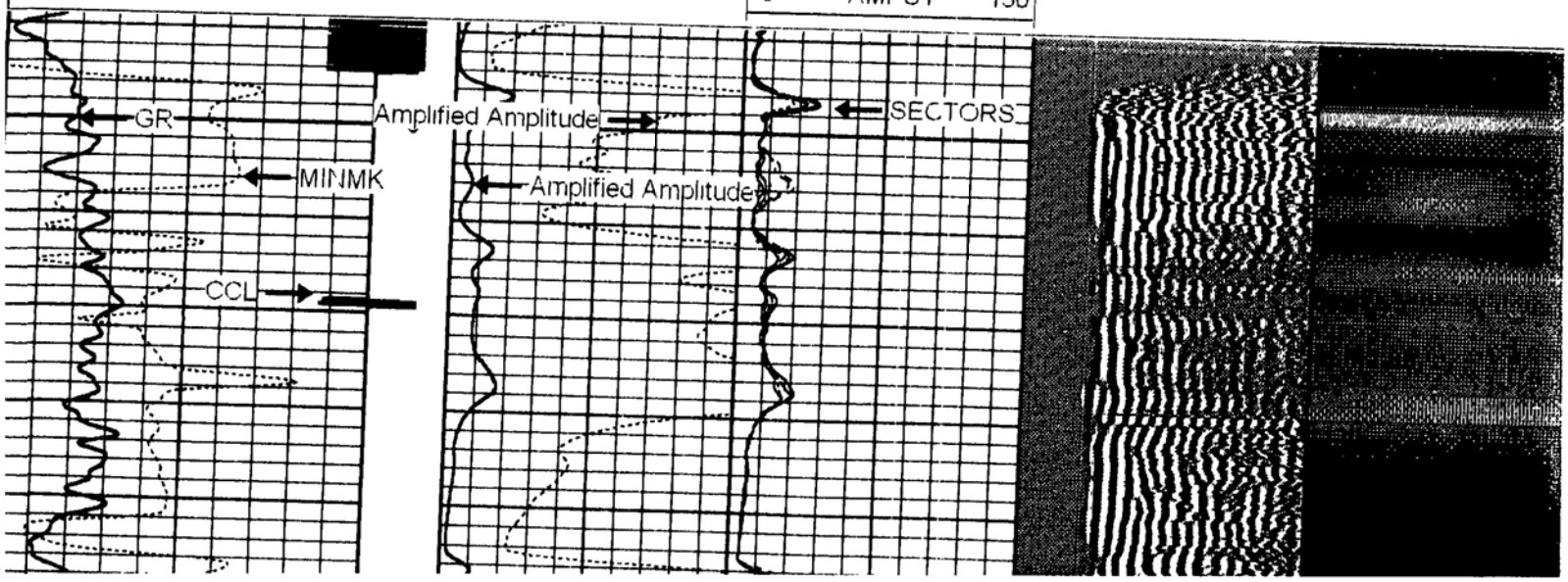
Database File: locohillsgsfpw3.db
Dataset Pathname: pass15
Presentation Format: r169_55s
Dataset Creation: Sun Jun 06 09:49 28 2010 by Log Std Casedhole 07122
Charted by: Depth in Feet scaled 1 240

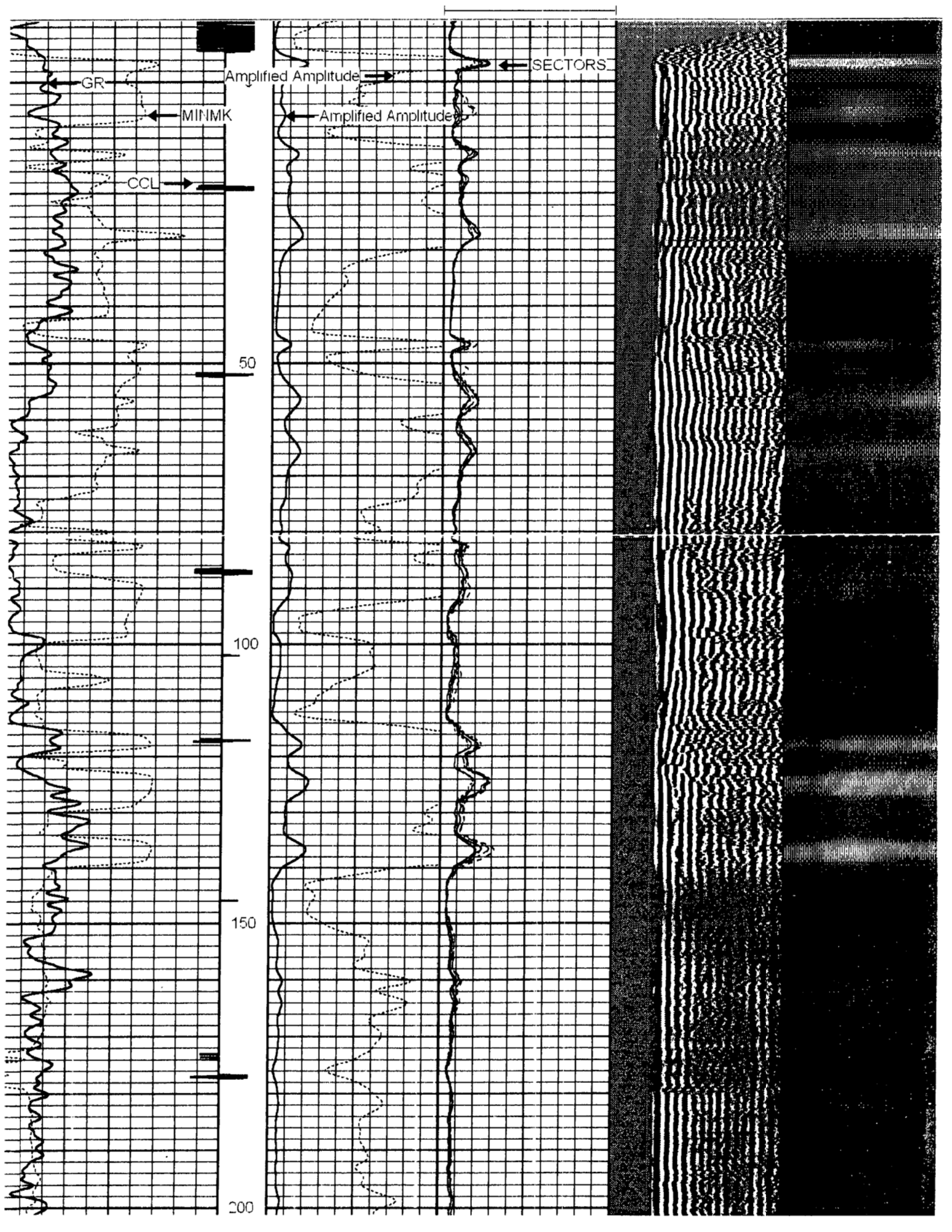
357	TT (usec)	257
0	GR (GAPI)	150
0	LTEN (lb)	4000
	CCL	

0	Amplitude (mV)	100
	Amplified Amplitude	
0	(mV)	10

-5	AMPS2	150
-5	AMPS3	150
-5	AMPS4	150
-5	AMPS5	150
-5	AMPS6	150
-5	AMPS1	150

200	VDL	1200
1	Cement Map	
1		

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MINMK
CCL
Amplified Amplitude
Amplified Amplitude
SECTORS
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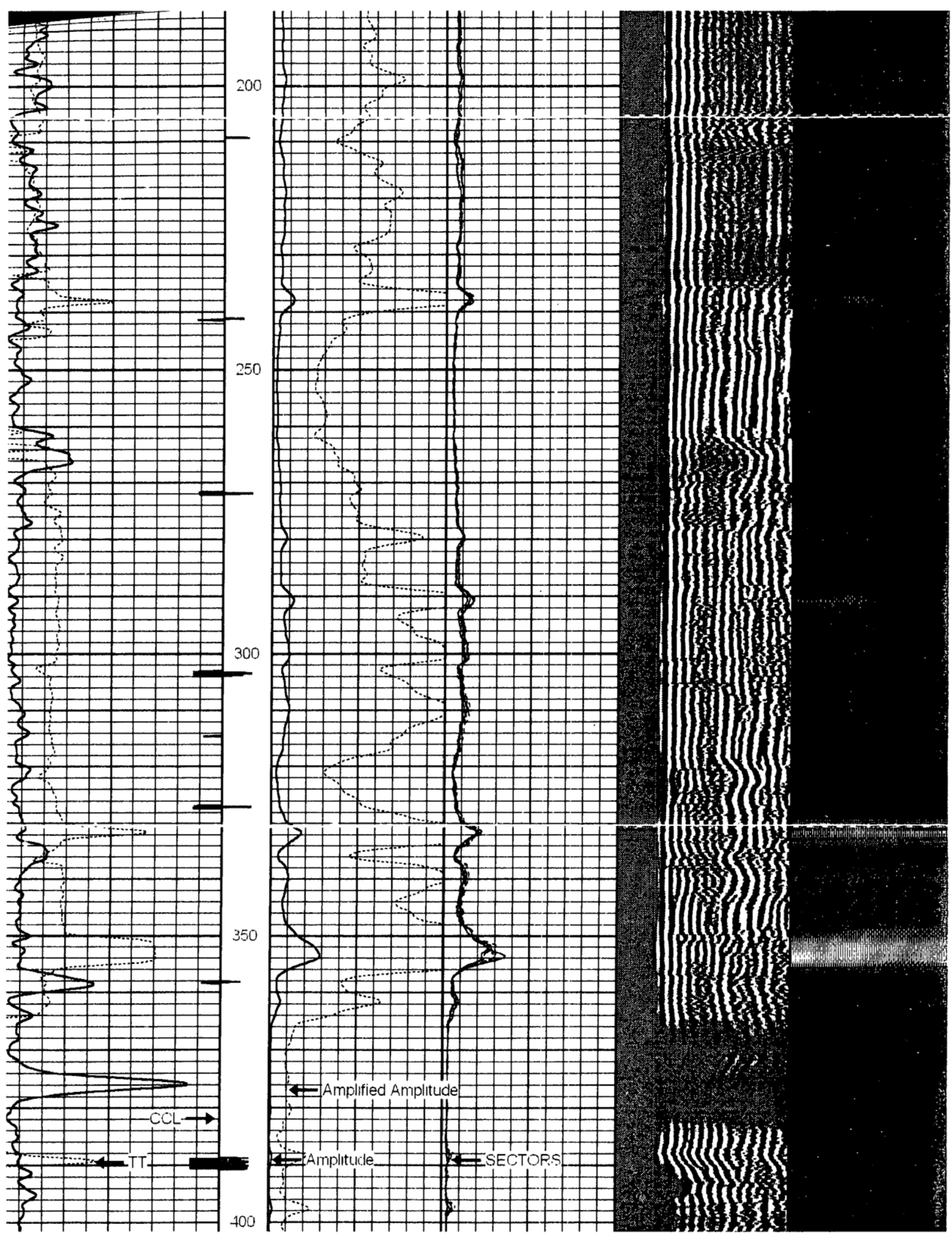
150
200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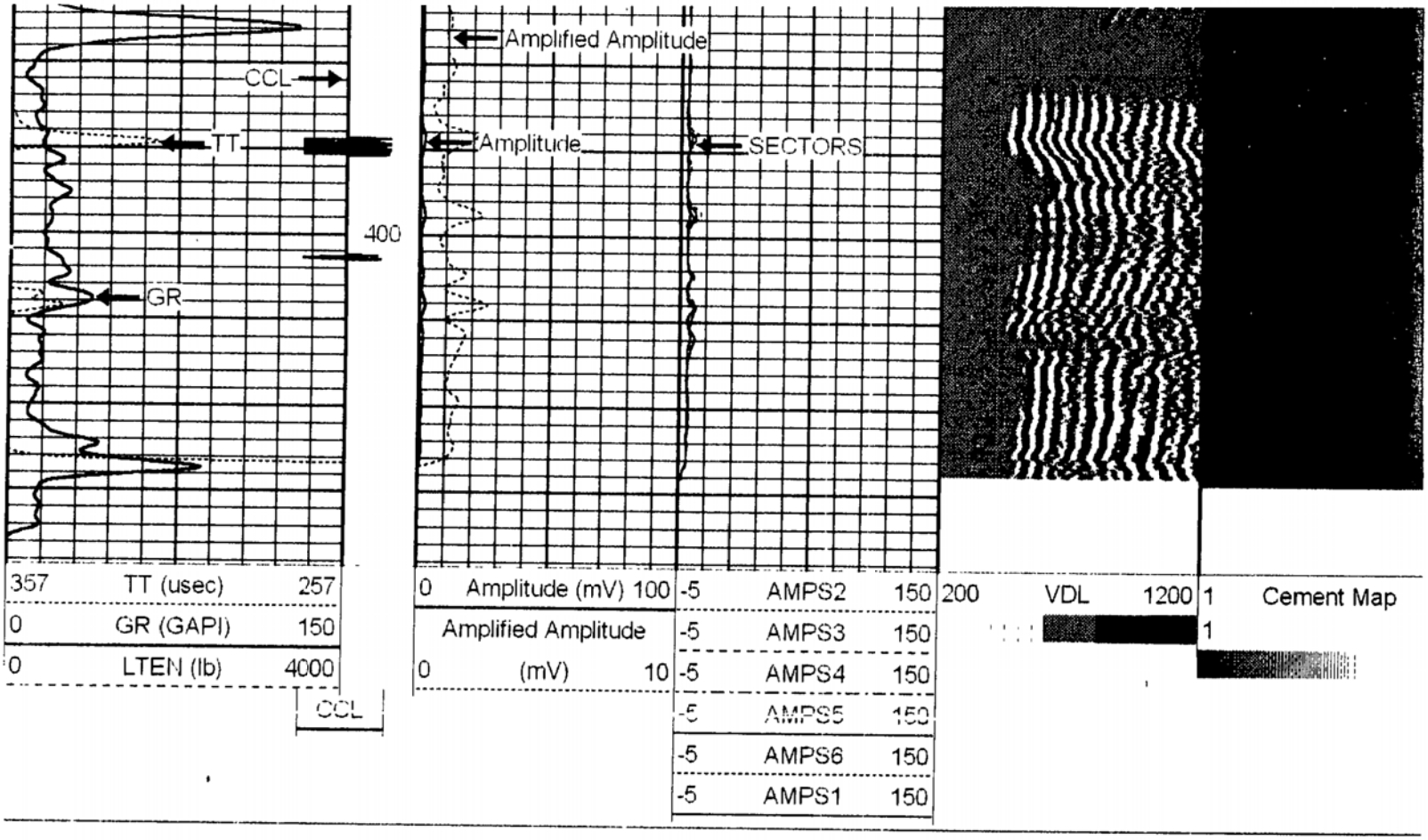
CCL
TT
Amplified Amplitude
Amplitude
SECTORS



Log Variables

Database.C \Warrior\Data\locohillsgsfpw3 db
Dataset: field/well/run1/pass15

Top - Bottom

CASEWGHT lb/ft	PPT usec	MAXAMPL mV	MINAMPL mV	MINATTN db/ft	CASEID in	CASEOD in	PERFS
11 5	0	0	1	0.8	5.012	5.5	0

TDEPTH ft	BOTTEMP degF	BOREID in
0	100	7.875

Calibration Report

Database File: locohillsgsfpw3 db
Dataset Pathname: pass15
Dataset Creation: Sun Jun 06 09:49.28 2010 by Log Std Casedhole 07122

Gamma Ray Calibration Report

Serial Number:	030606	
Tool Model:	Probe275	
Performed:	Tue Jul 08 11 08:48 2008	
Calibrator Value:	1 0	GAPI
Background Reading:	0 0	cps
Calibrator Reading:	1 0	cps
Sensitivity:	1 2500	GAPI/cps

Segmented Cement Bond Log Calibration Report

Segmented Cement Bond Log Calibration Report

Serial Number	5 5040913	
Tool Model:	Probe	
Calibration Casing Diameter.	5.500	in
Calibration Depth:	34 192	ft

Master Calibration, performed Sun Jun 06 09 24 13 2010:

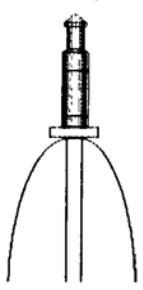
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.012	0 502	1 000	71.921	144.542	-0.689
CAL	0 012	0 498				
5'	0.015	0.485	1 000	71 921	150 995	-1.262
SUM						
S1	0.012	0 497	0 000	100 000	206 384	-2.570
S2	0 012	0.490	0 000	100.000	209.402	-2.536
S3	0.012	0.494	0.000	100.000	207.319	-2.465
S4	0.012	0 498	0 000	100 000	205 628	-2 485
S5	0.012	0.500	0.000	100.000	205.303	-2 559
S6	0.013	0.510	0 000	100 000	201 129	-2.585
S7	0 012	0.515	0 000	100.000	198.883	-2 459
S8	0 012	0.506	0.000	100.000	202 202	-2.402

Internal Reference Calibration, performed Wed Dec 09 14 07 44 2009:

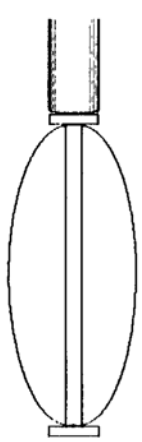
	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0 000	0 012	0.498	1.000	0.000

Air Zero Calibration, performed Sun Jun 06 09 24 36 2010.

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	0.012	0 000	-0 000
5'	0 015	0.000	-0.000
SUM			
S1	0.012	0 000	0.000
S2	0.012	0 000	-0 000
S3	0.012	0.000	-0 000
S4	0 012	0.000	-0 000
S5	0.013	0.000	-0 000
S6	0 012	0.000	0 000
S7	0 013	0.000	-0.000
S8	0 012	0.000	-0 001

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
			chd1 4375 Titan Cable Head 1 7/16	1.00	1 44	10.00
				0 38	2 75	20 00

		chd1 4375 Titan Cable Head 1 7/16			
		Probe Probe 2 3/4 Centralizer	2 88	2 75	20.00
WVF3FT	11 81	RBT-Probe (5 5040913) Probe Radii Bond Tool with Digital Telemetry	8 33	2 75	90.00
WVFCAL	11 81				
WVFS1	11.81				
WVFS2	11 81				
WVFS3	11.81				
WVFS4	11.81				
WVFS5	11.81				
WVFS6	11 81				
WVFS7	11.81				
WVFS8	11.81				
WVF5FT	10.81				
CCL	6.50	GR-Probe275 (030606) Probe 2 3/4" Gamma CCL	4.75	2.75	57.00
GR	3.71				
		Probe	2 88	2 75	20 00



Probe Probe 2 3/4 Centralizer	2.88	2.75	20.00

Dataset	locohillsgsfpw3 db. field/well/run1/pass15
Total Length	19.83 ft
Total Weight	197.00 lb
O.D.	2.75 in

Company LOCO HILLS GSF LTD.

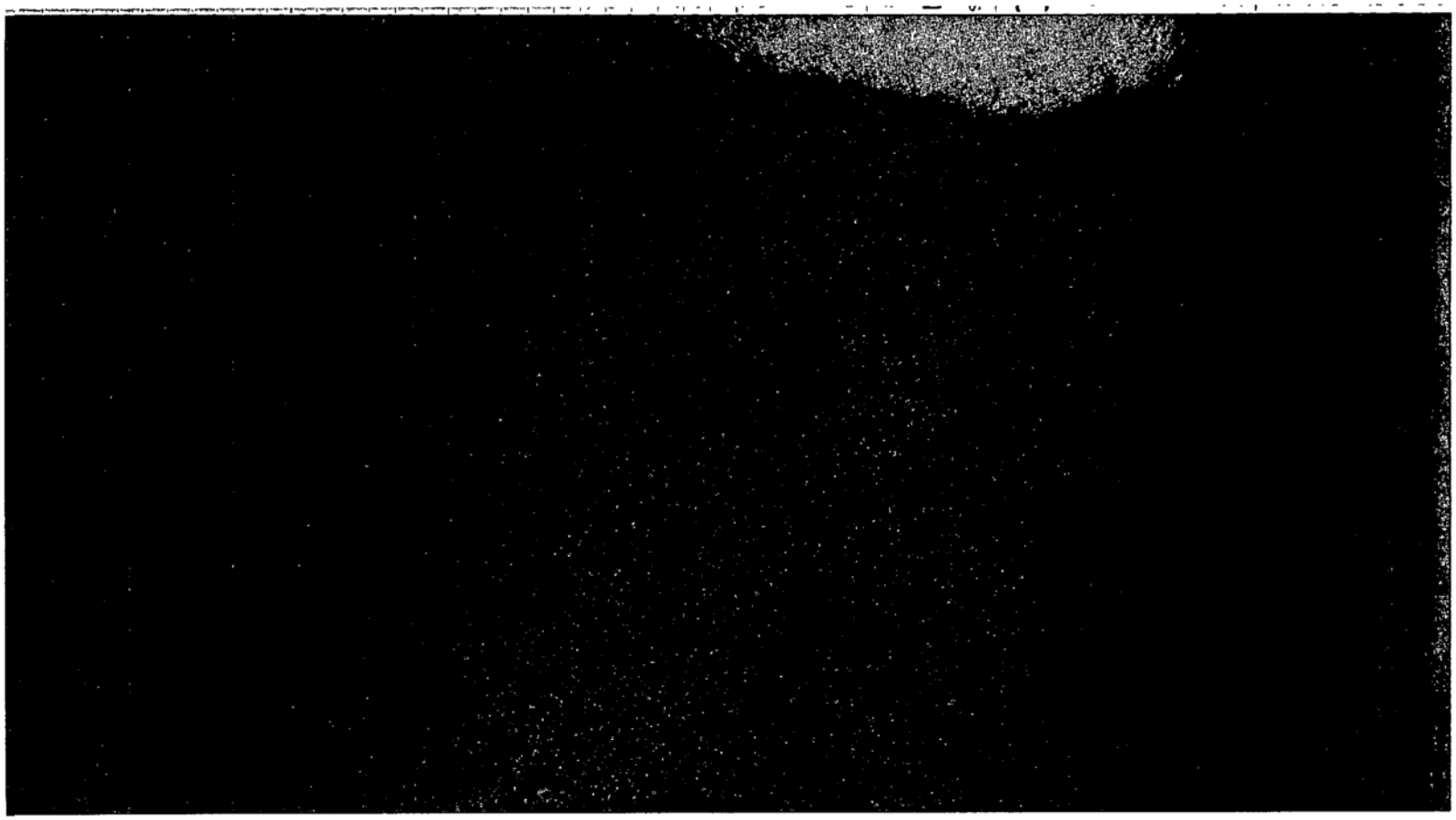
Well LEONARD STATE #3

Field LEONARD

County EDDY State NEW MEXICO

GRAY WIRELINE

RADIAL CEMENT BOND
GAMMA RAY/ CCL
LOG



GRAY WIRELINE

BOREHOLE IMAGING CASING ANALYSIS LOG

Company LOCO HILLS GSF LTD
Well LEONARD STATE #3
Field LEONARD
County EDDY State NEW MEXICO

Company LOCO HILLS GSF LTD
Well LEONARD STATE #3
Field LEONARD
County EDDY
State NEW MEXICO

Location: API # :

1975' FSL & 560' FWL
SEC. 22, TOWNSHIP 17.5, RANGE 29 E

SEC TWP RGE

Other Services: SONAR

Permanent Datum	GROUND LEVEL	Elevation	N/A
Log Measured From	GROUND LEVEL		
Drilling Measured From	KELLY BUSHING		

Elevation
K.B N/A
D.F. N/A
G.L. N/A

Date	JUNE 22, 2010		
Run Number	ONE		
Depth Driller	602'		
Depth Logger	504'		
Bottom Logged Interval	500'		
Top Log Interval	SURFACE		
Open Hole Size	N/A		
Type Fluid	PRODUCE		
Density / Viscosity	N/A		
Max. Recorded Temp.	N/A		
Estimated Cement Top	N/A		
Time Well Ready	12:00 P.M.		
Time Logger on Bottom	3.25 P.M.		
Equipment Number	TRUCK #25		
Location	ANDREWS, TX		
Recorded By	L. DE LEON		
Witnessed By	J.B. SMITH		

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To
N/A	N/A	N/A	N/A				

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	N/A	N/A	N/A	N/A
Prot. String				
Production String	5.5"	15.5#	SURFACE	500'
Liner				

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctn of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations ar also subject to our general terms and conditions set out in our current Price Schedule.

Comments

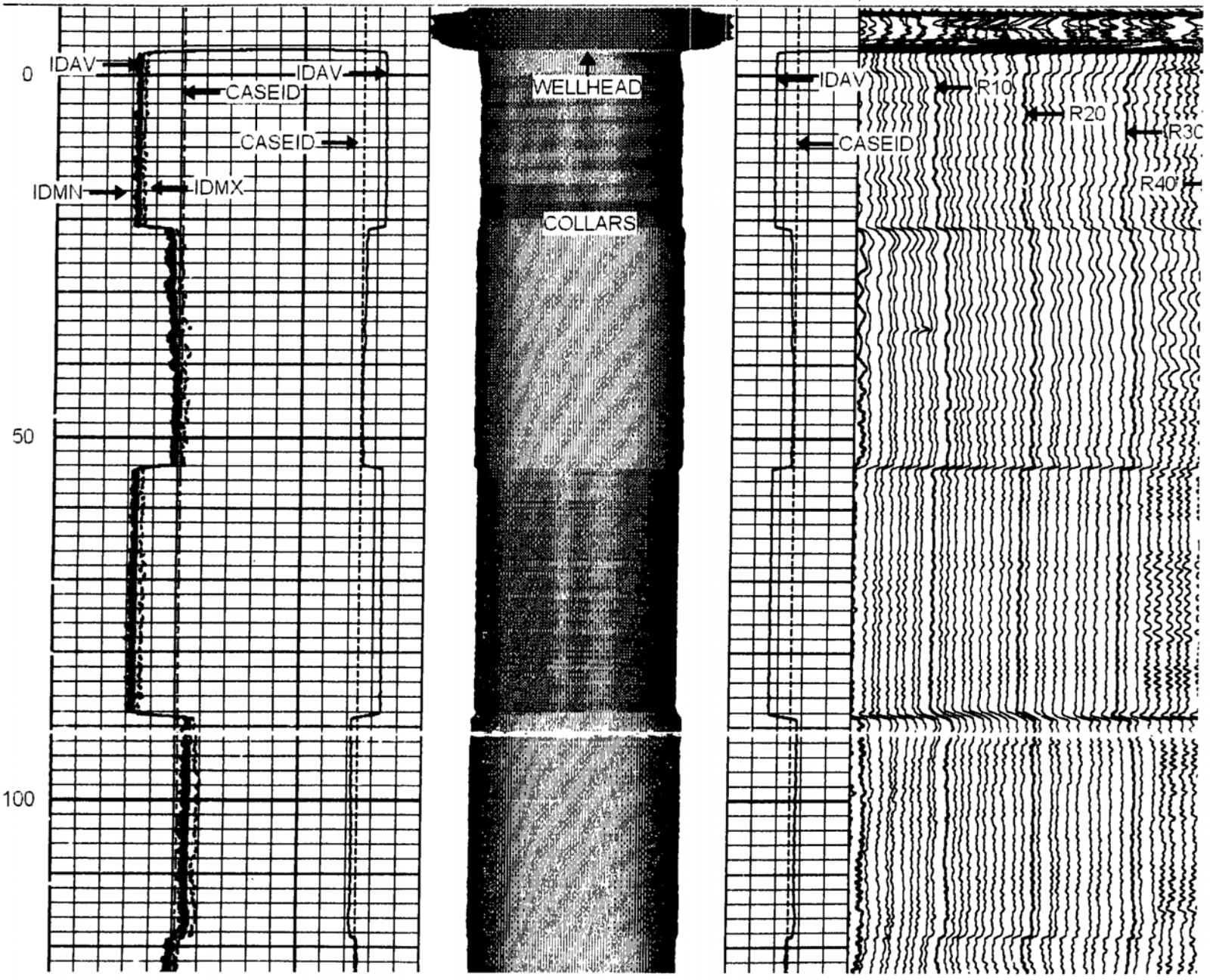
LOG RECORDED USING GRAY WIRELINE DEPTH

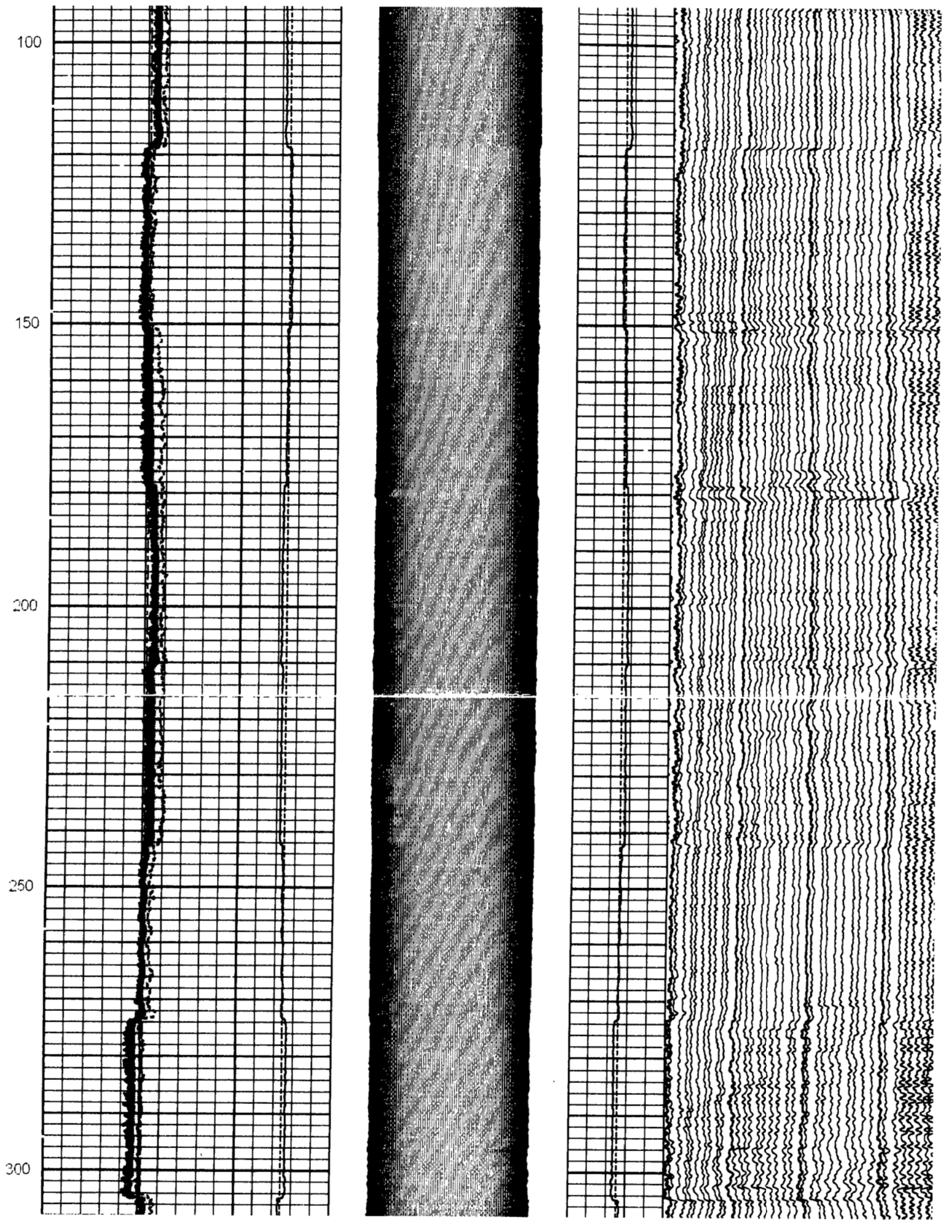
GRAY WIRELINE

MAIN PASS

Database File: locohillsgsfpw3 db
Dataset Pathname: pass6.1
Presentation Format: pr40im55
Dataset Creation: Sat Jun 05 16 17.27 2010 by Calc Std Casedhole 07122
Charted by: Depth in Feet scaled 1 240

4 5	IDAV (in)	5.5	CASEID	Borehole Image	CASEID	1.875	R10 (in)	4.3
4.5	IDMN (in)	5.5	5.5 (in) 4.5	4 524 5.5	4.5 (in) 5.5	1.25	R20 (in)	3.
4.5	IDMX (in)	5 5	IDAV		IDAV	0.625	R30 (in)	3.1
4 5	CASEID (in)	5.5	5.5 (in) 4.5		4 5 (in) 5 5	0	R40 (in)	

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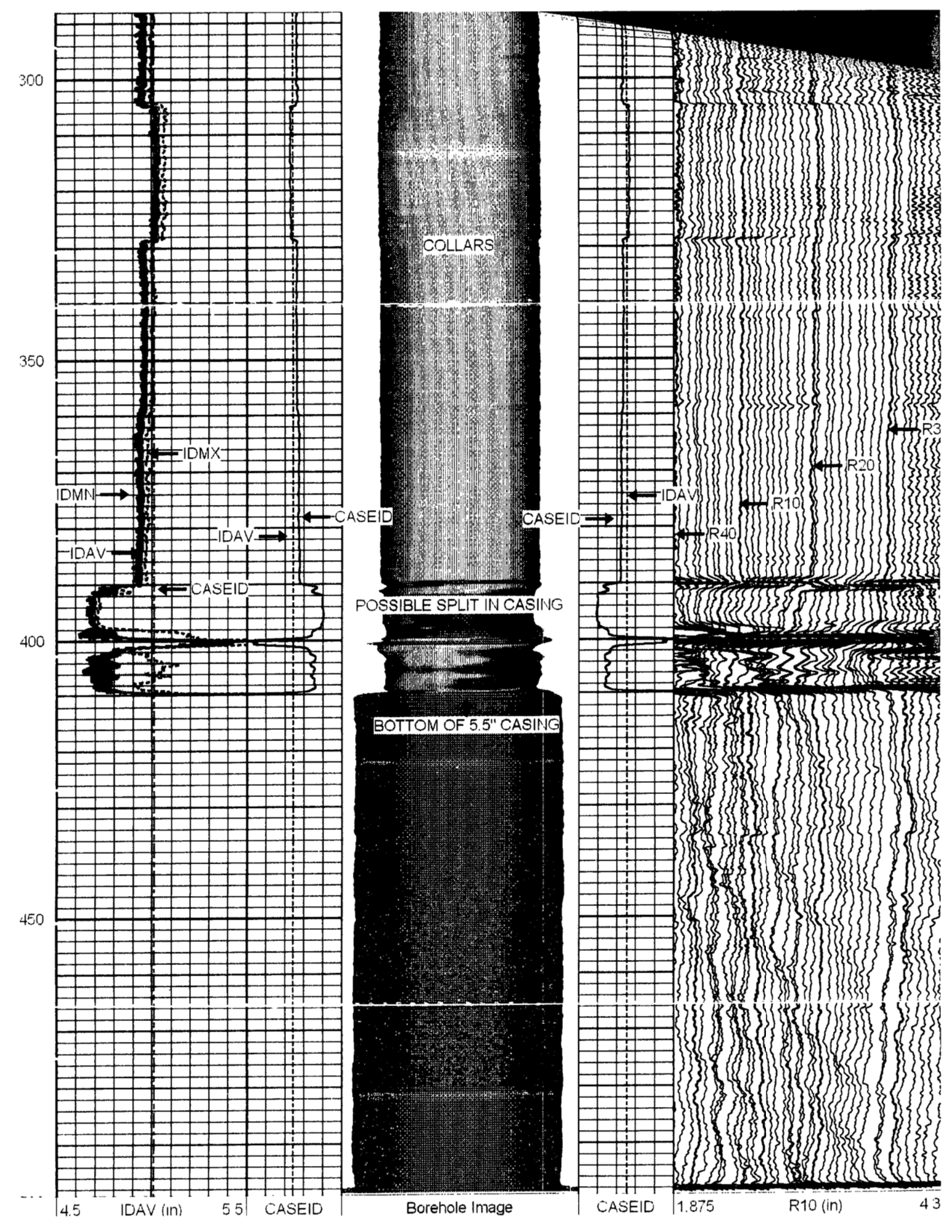
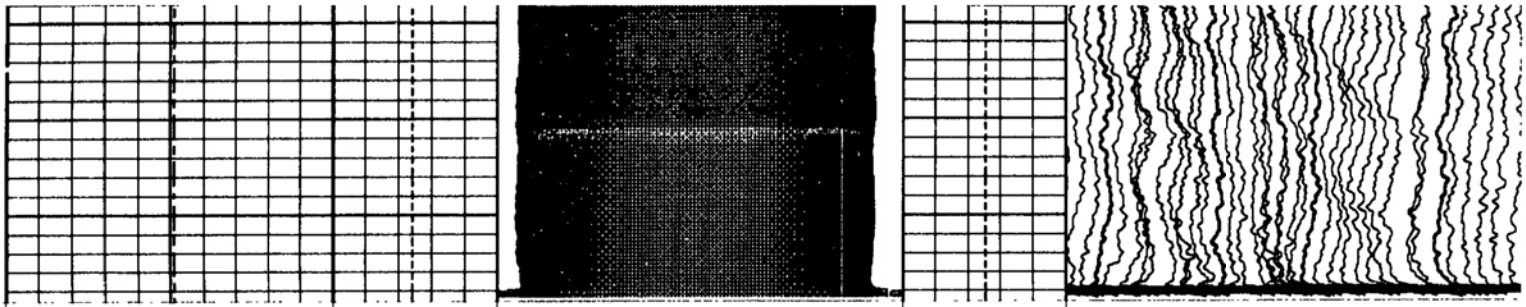
200
250
300


300
350
400
450
IDMX
IDMN
IDAV
CASEID
IDAV
CASEID
COLLARS
CASEID
IDAV
POSSIBLE SPLIT IN CASING
BOTTOM OF 5.5" CASING
R3
R20
R10
R40
4.5
IDAV (in)
5 5
CASEID
Borehole Image
CASEID
1.875
R10 (in)
4 3



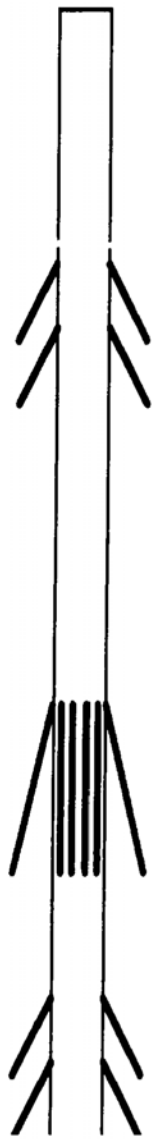
4.5	IDAV (in)	5 5	CASEID	Borehole Image	CASEID	1.875	R10 (in)	4 3
4.5	IDMN (in)	5 5	5 5 (in) 4.5	4.524 5.5	4.5 (in) 5 5	1.25	R20 (in)	3
4.5	IDMX (in)	5.5	IDAV		IDAV	0.625	R30 (in)	3 1
4 5	CASEID (in)	5.5	5 5 (in) 4.5		4.5 (in) 5.5	0	R40 (in)	

Log Variables

Database:C \Warrior\Data\locohillsgsfpw3 db
Dataset: field/well/run1/pass6.1

Top - Bottom

CASEID in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in
5 012	5.5	0	0	100	7.875

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb
			Probe_MFCAL-40 (40-001) Probe 40 Arm Caliper	6.67	2 81	

Probe_MFCAL-40 (40-001)
Probe 40 Arm Caliper

6.67

2.81

Meas 1.00

Dataset	locohillsgsfpw3.db: field/well/run1/pass6.1
Total Length	6.67 ft
Total Weight	lb
O.D.	2.81 in

Company LOCO HILLS GSF LTD.

Well LEONARD STATE #3

Field LEONARD

County EDDY State NEW MEXICO

GRAY WIRELINE

BOREHOLE IMAGING
CASING ANALYSIS
LOG