



GL04379  
FILE\_CAB20DRAWER\_

GEYSERS  
CORING  
PROJECT

INITIAL FRACTURE  
LOG

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
<p>0</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p>		<p>Rubble, includes milled fragments, ang. "wedges" mostly</p> <p>almost certainly all these frx are thermally induced artifact</p> <p>VALUES REFER TO FRACTURE APERTURES IN mm</p>	<p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p>		<p>SB-15</p> <p>RED = NEW FRACT OPENED SINCE INITIAL EXAM</p> <p>slix, dip slip, 10° rake</p> <p>rubble</p> <p>EOR (END OF RUN)</p>

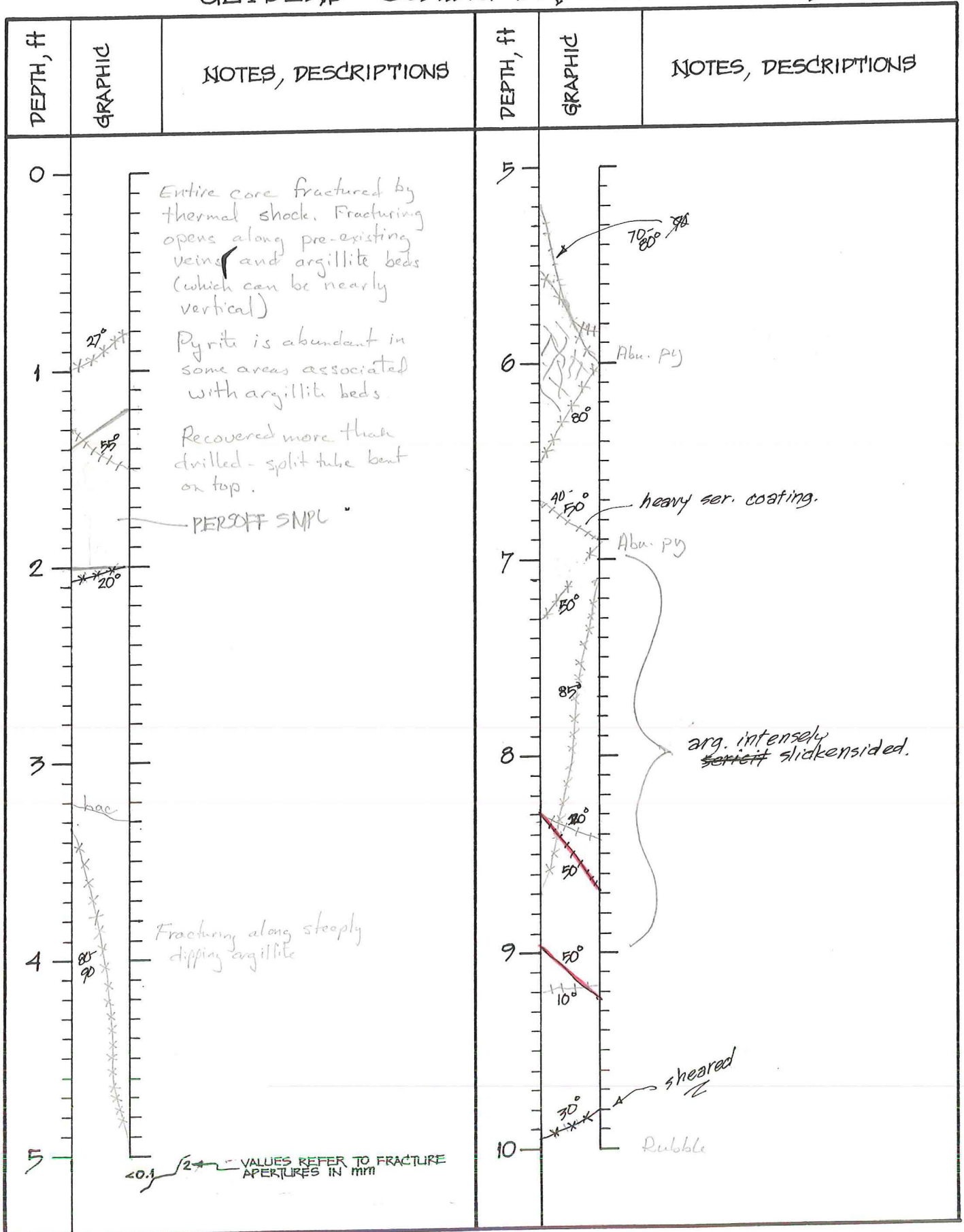
INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 1 Depth Interval 825' - 834' Rec'd 7.5' Date 9-17-94

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
<p>0</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p>		<p>Locking Ring abrades core</p> <p>&lt;0.1 mm</p> <p>&lt;0.1 mm</p> <p>nac, art?</p> <p>Rubble</p> <p>VALUES REFER TO FRACTURE APERTURES IN mm</p>	<p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p>		<p>NOTES, DESCRIPTIONS</p>

INITIAL FRACTURE LOG (undisturbed, in split liner)

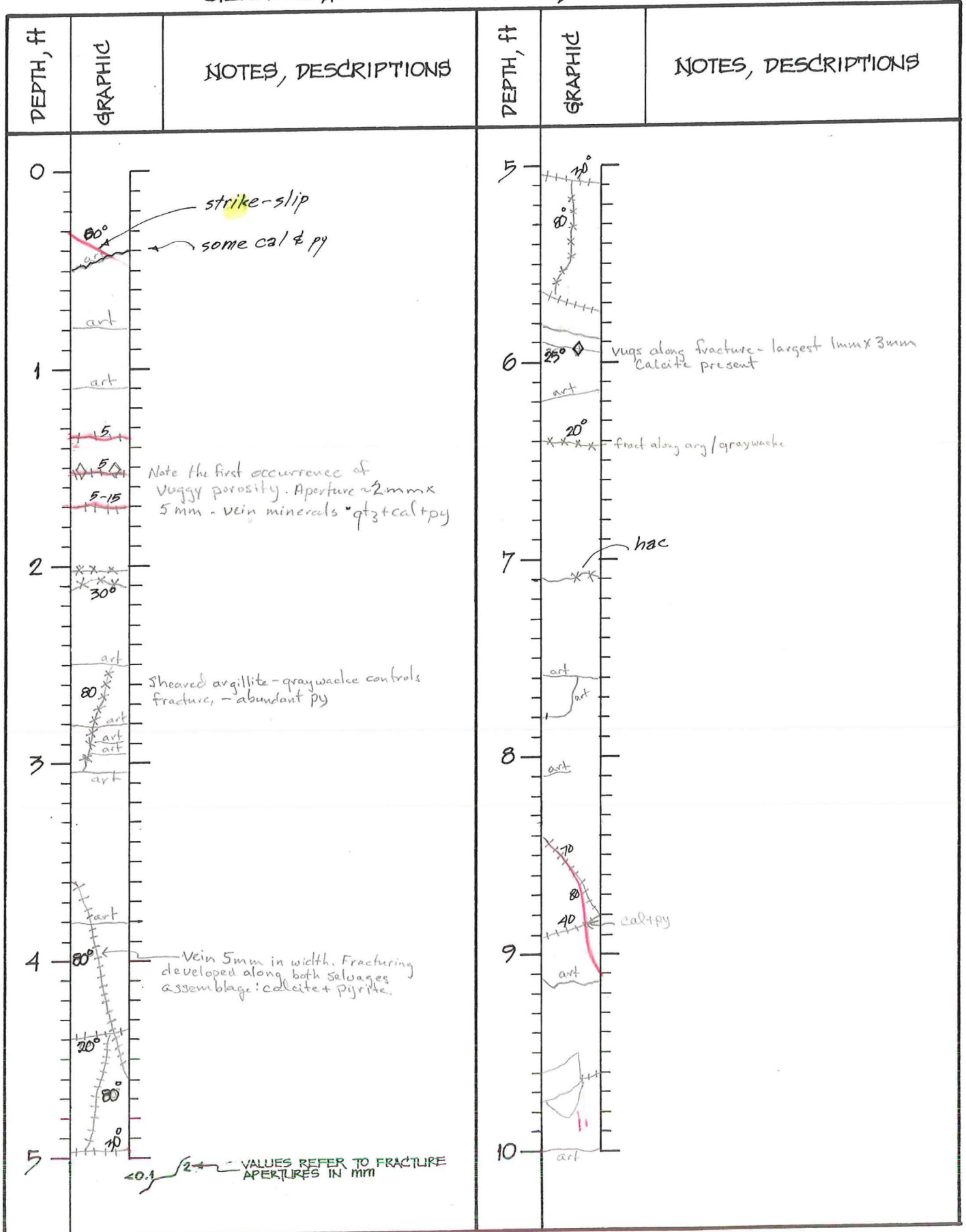
RUN NO. 2 Depth Interval 834-836' Date 09/17/94



INITIAL FRACTURE LOG (undisturbed, in split liner)

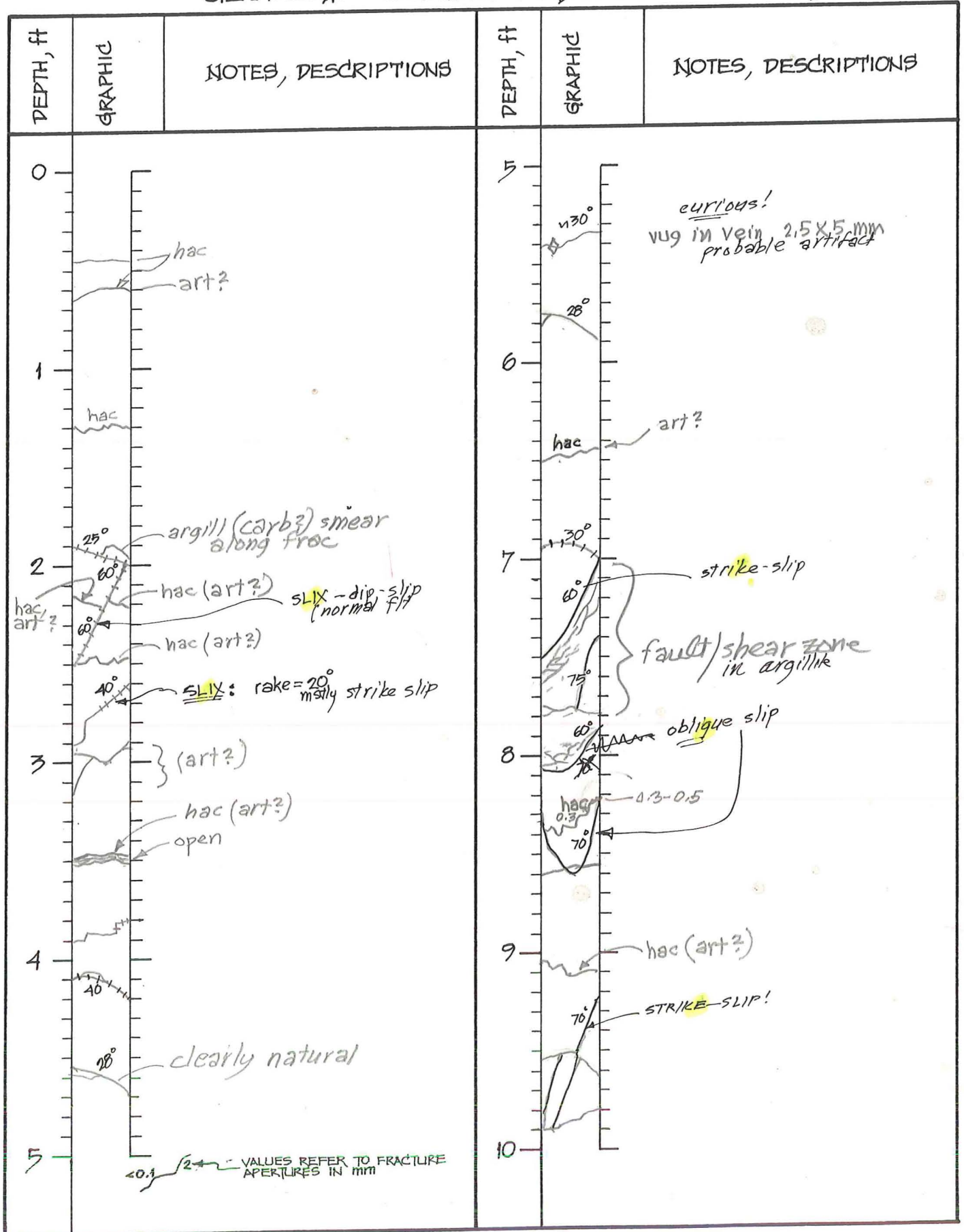
RUN NO. 3 Depth Interval 836-845.5 Date 9/18/94

Recovered 10' DLN



## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 4 Depth Interval 845.5 - 855.5 Date 9/18/94  
 Recorder DLA



## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 5 Depth Interval 855.5' - 865.7' Date 9-18-94

JH

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0		<p>Williams spacer</p> <p>Hackly (art.)</p> <p>also **** along arg. contact</p> <p>10°</p> <p>Shear zone</p> <p>Abd Po</p> <p>30°</p> <p>30°</p> <p>30°</p> <p>smooth</p> <p>art. rubble</p> <p>fault breccia</p> <p>35</p> <p>hag art.</p> <p>shear</p> <p>35</p> <p>35</p> <p>90</p> <p>60°</p> <p>Vugs w/calcite</p> <p>rake = 60°</p> <p>partial stockwork</p> <p>Vug w/calcite</p>	5		<p>has voids 1mm wide in calcite/pyr vein</p> <p>55-60°</p> <p>30°</p> <p>50°</p> <p>Brecciated</p> <p>CORE GRAZES FAULT ZONE</p> <p>60°</p> <p>Po + Arg clasts</p> <p>v thin, hairline frac</p> <p>50°</p> <p>smooth along vein</p> <p>Thin (&lt; .1mm)</p> <p>Thick (±1.5mm)</p> <p>SLIP DIP-SLIP: RAKE 80° (in ARG.)</p> <p>possible shear zone</p> <p>v. irreg. sheared, slicken-sided frx. smeared v. thinly w/ pyrite</p> <p>hackly end of core</p> <p>end piece (base)</p> <p>catcher rubble</p>
5		<p>VALUES REFER TO FRACTURE APERTURES IN mm</p>	10		<p>void by separation</p>

INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 6 Depth Interval 865.7 - 875.9 Date 9/18/94

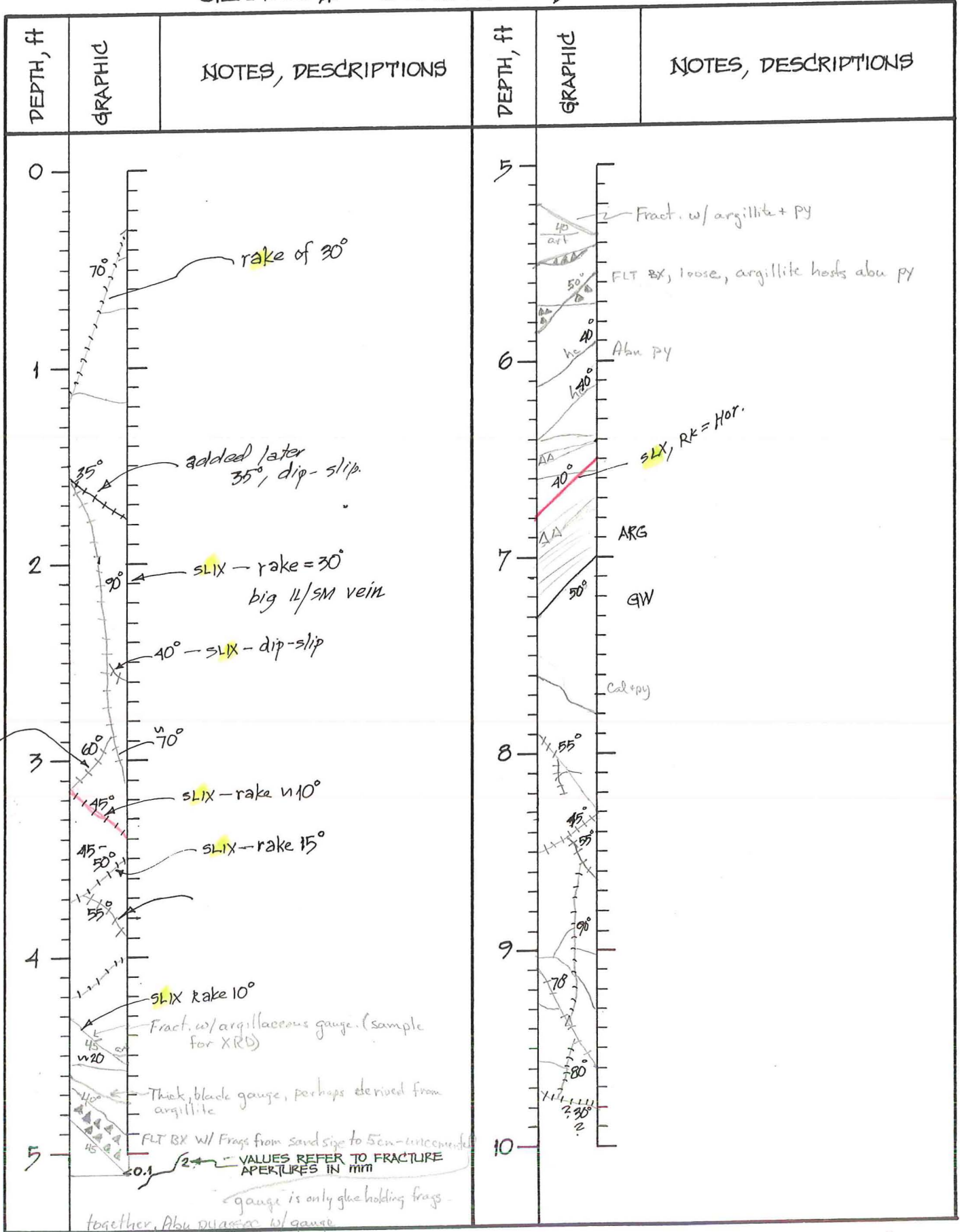
RD

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
<p>0</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p>		<p style="text-align: center;"><i>sealed smpl. for Brian Bonner, LLL</i></p>	<p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p>		
		<p><math>&lt; 0.1</math>   <math>2</math>   <math>\rightarrow</math> VALUES REFER TO FRACTURE APERTURES IN mm</p>			

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 7 Depth Interval ~~865.7-875.9'~~ Date 09/18  
875.9-880.6'





## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 8 Depth Interval 880.6 - 890.2 Date 09/18/94  
 DLW

added 12/01/94

# GEYSERS CORING PROJECT

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0			5		
1			6		
2			7		
3			8		
4			9		
5			10		

VALUES REFER TO FRACTURE APERTURES IN mm

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 9 Depth Interval 890.2 - 898.6 Date 09/18/94

added 12/01/94

# GEYSERS CORING PROJECT

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
<p>0</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p>		<p>All fractures in this run appear to result from stress release and are probably not contributing to permeability <u>in situ</u>.</p> <p>SLIX: Rake = 10°</p>	<p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p>		

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 10 Depth Interval 898.6 - 908.6 Date 9/13/94  
 DLW.

added 12/01/94

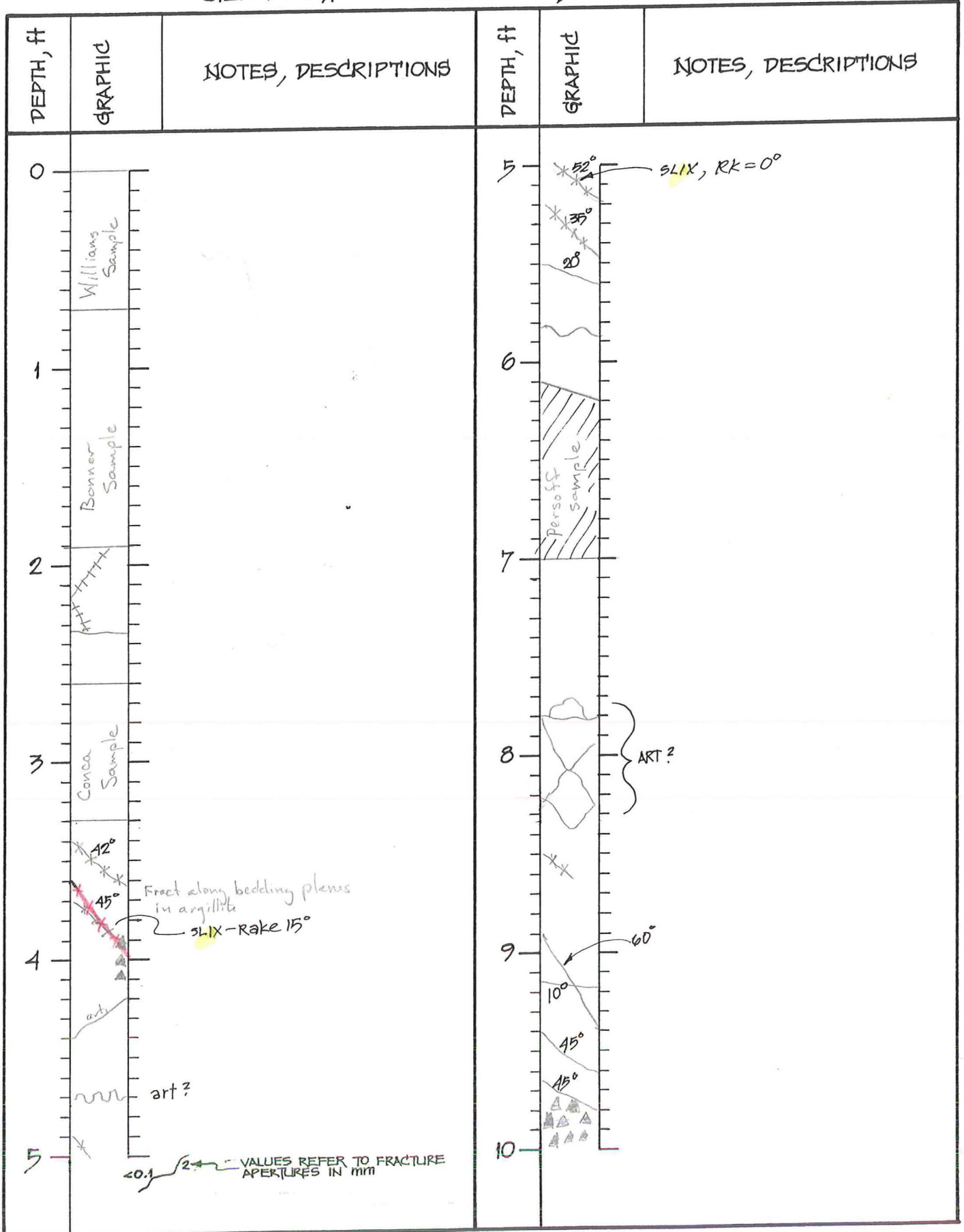
# GEYSERS CORING PROJECT

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0		Fract follows vein for short dist. $\diamond$ Cal, bladed (IN ARGILLITE ZONE SLIX, RAKE = 15°) Vug w/in old qtz+cal concentration - minor py Vug = 1cm x 2mm ; 5mm x 5mm	5		Broken along (F) vein Fractures largely induced by stress release through interval. Vug porosity perhaps important for storage.
1			6		
2			7		
3			8		Bx developed in argillite, bx frags can supported (not cemented) as seen in Run 8
4			9		
5			10		

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 11 Depth Interval 908.6 - 918.3 Date 9/19/94

DLN



## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 12 Depth Interval 918.3 - 928.3 Date 9/19/94

DLN

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0			5		
			6		
1					
			7		
2					
			8		
3					
			9		
			10		
4					
5					

artificial  
fractures

bladed cal+py <sup>2</sup> prob. <sup>3</sup> franc vein

Fracs between graywacke and black carbonaceous sh. w/ abundant py. Sh gets smeared by drilling. Wash out by mud yields unsupported graywacke clasts that we have been previously calling bx.

artif.

This fract. shows washout in process w/ part held together by blk carbonaceous sh. and bx frags that have been exposed by washout

avg n 30°, but extremely irregular partially minrlzd. frx

VALUES REFER TO FRACTURE APERTURES IN mm

## INITIAL FRACTURE LOG (undisturbed, in split liner)

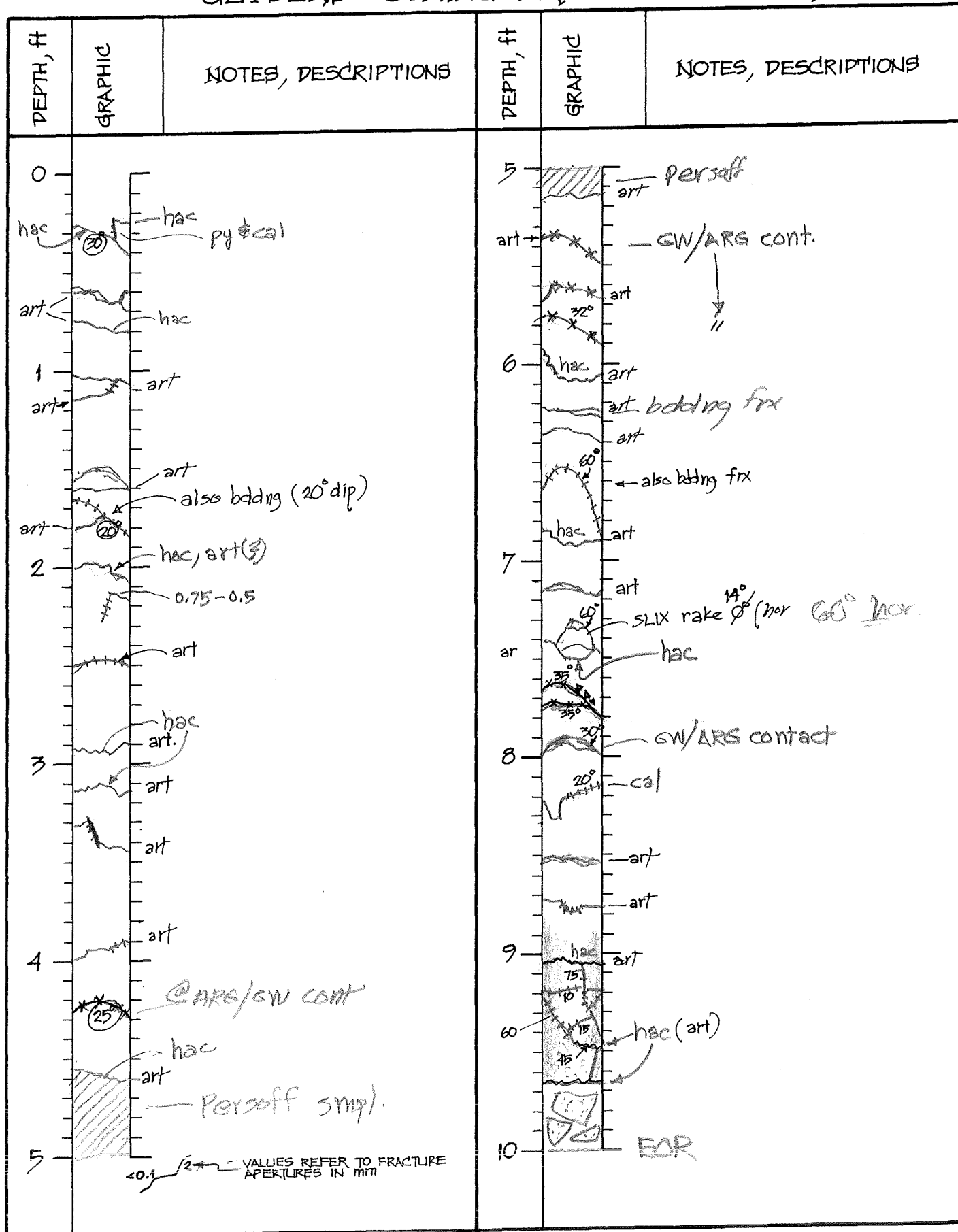
RUN NO. 13 Depth Interval 928.3 - 938 Date 9/19/94

DNL

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0			5		

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 14 Depth Interval 938 - 948 Date 9/19/94  
DLN



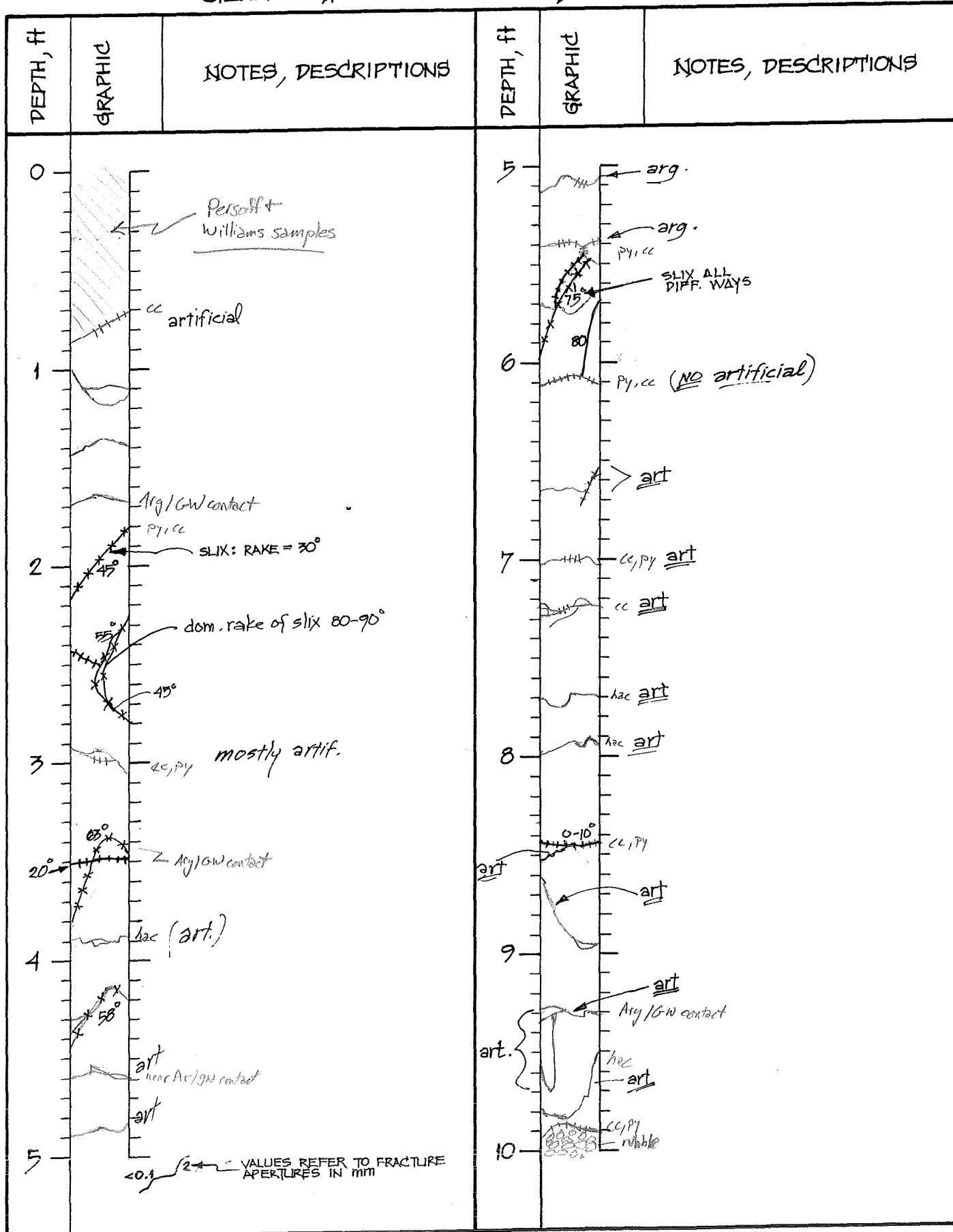
INITIAL FRACTURE LOG (undisturbed, in split liner)  
RUN NO. 15 Depth Interval 948 - 957.7 Date 9/19/94  
Dobson, Hulen



DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0		<p style="font-size: 2em;">}</p> <p>all art</p>	5		<p>Along SW/NEq contact</p> <p>art, but bedding-plane frx</p> <p>art</p> <p>pytc</p> <p>25°</p> <p>all art</p> <p>hac</p> <p>hac</p> <p>veinlet prob. open (extensively frxd.)</p> <p>50°</p> <p>open vein w/ black carbon, unbedded gte (growing into cavity) + more massive calc py</p> <p>art</p> <p>art.</p>
1			6		
2			7		
3			8		
4			9		
5		10			

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 16 Depth Interval 957.7' - 965.7' Date 9/19/74



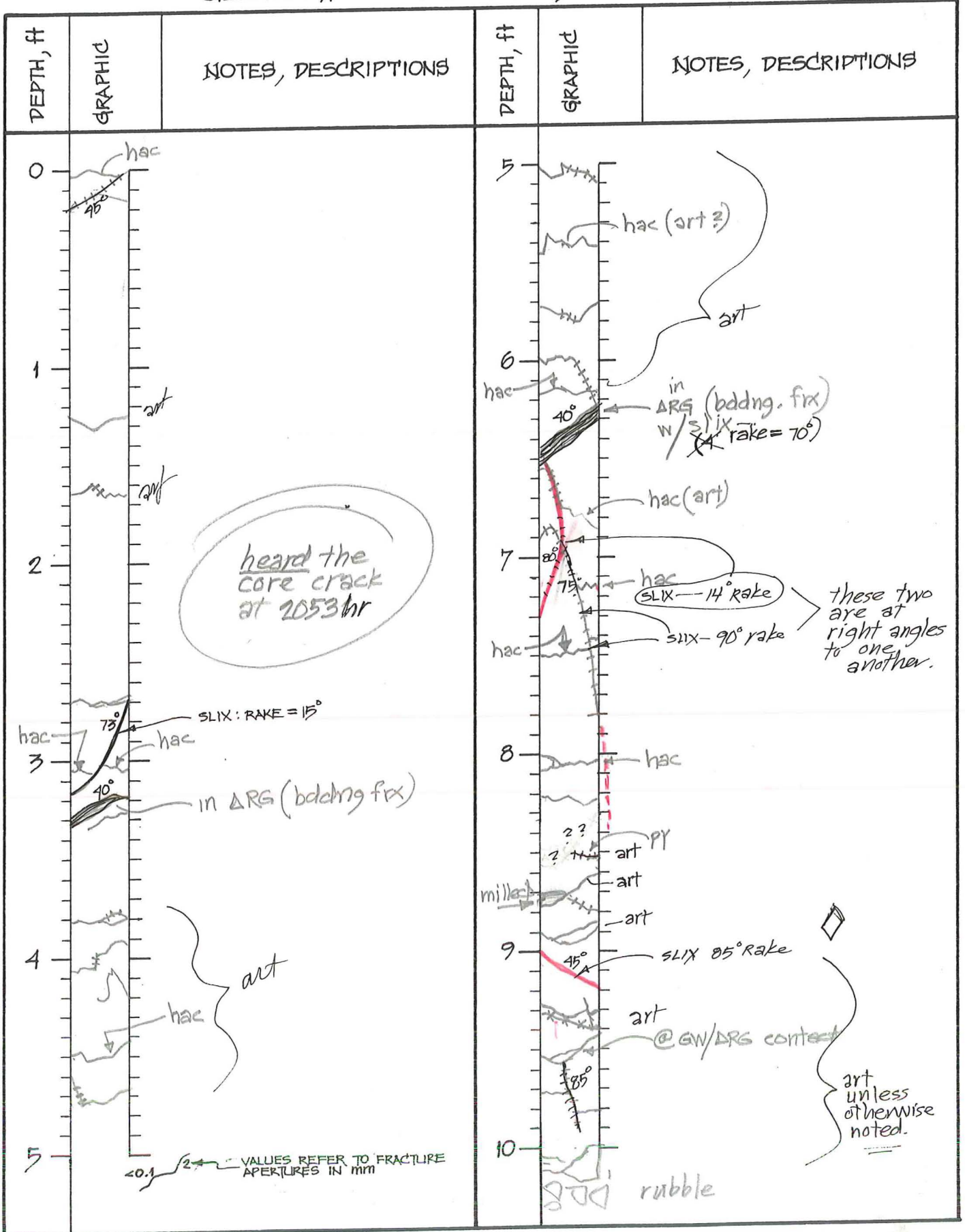
## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 17 Depth Interval 965.7 - 975.6 Date 9/19/94

PFD

# GEYSERS CORING PROJECT

— added 12/07/94  
page \_\_\_ of \_\_\_

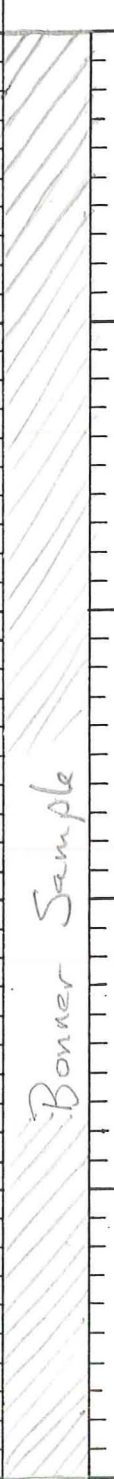



## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 18 Depth Interval 975.6 - 985.6 Date 09/19/94

JBH

# GEYSERS CORING PROJECT

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
<p>0</p>  <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p>	<p>Bonner Sample</p>		<p>5</p>  <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p>		
		<p><math>&lt;0.1 \sqrt{2}</math> VALUES REFER TO FRACTURE APERTURES IN mm</p>			

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 19 Depth Interval 985.6 - 990.6 Date 9/19

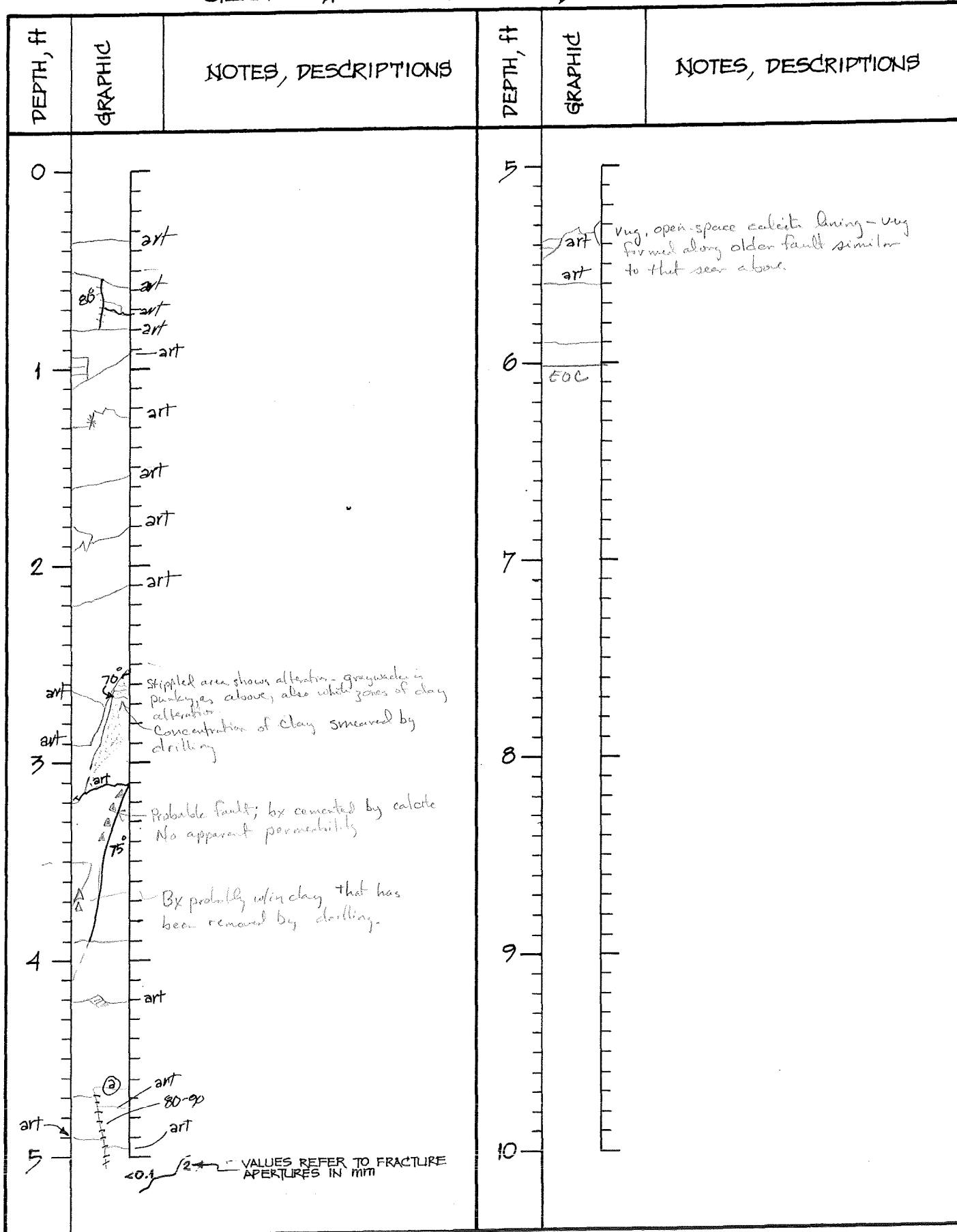
DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0		<p>25° Py on surfaces</p> <p>25° Bedding plane fract. in sandstone-sh py on fract surfaces</p> <p>35° v. irreg. Py and drilling mud on surfaces</p> <p>20° Py on surface</p> <p>40° Frac. w/ piece missing</p> <p>25°</p>	5		<p>30° art</p> <p>dom. art.</p> <p>65°</p> <p>75°</p> <p>Frac through argillite section. Py common along surfaces.</p>
1		<p>35° Py and drilling mud on surfaces</p> <p>20° Py on surface</p> <p>40° Frac. w/ piece missing</p> <p>25°</p>	6		<p>30° art</p> <p>68°</p> <p>SLIX, RAKE = 80°</p> <p>30° cal, abu. py</p> <p>68° art</p>
2		<p>35° Parting along old fract plane frac w/ cpy</p> <p>10° Py</p> <p>25°</p>	7		<p>30° art</p> <p>68° cal, abu. py</p> <p>68° art</p>
3		<p>40° SLIX, RAKE = 90° Carb sh w/ abu py</p> <p>25°</p>	8		<p>30° art</p> <p>25°</p>
4		<p>41° Vug in Franciscan vein Frac surrounded by 1-2cm zone of very friable gray wacke - clean, bladed cal on fract surface + py</p> <p>30° Frac w/ friable graywacke zone as above Vugs 1cm x .5cm; 5mm x 2mm</p> <p>Note: Run 19, 5' sealed barrel had graywacke similar to this in end. Also drilled quickly - zones are wet, have taken fluid - abu cal.</p>	9		<p>50° art</p> <p>50°</p> <p>Rubble @ bottom</p>
5		<p>25°</p> <p>VALUES REFER TO FRACTURE APERTURES IN mm</p>	10		<p>50° art</p>

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 20 Depth Interval 990.6 - 1000.6 Date 9/19/94

DLN

# GEYSERS CORING PROJECT

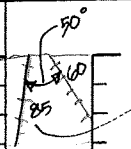
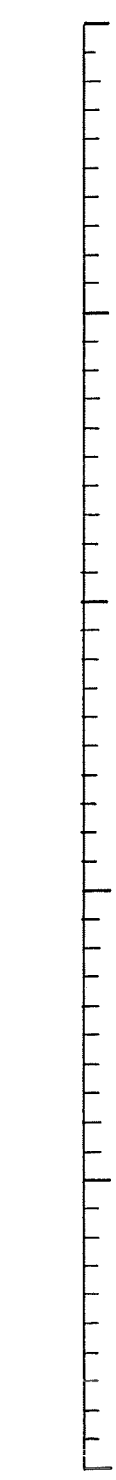


**INITIAL FRACTURE LOG** (undisturbed, in split liner)

RUN NO. 21      Depth Interval 1000.6 - 1006.6      Date 9/20/94

*DLH*

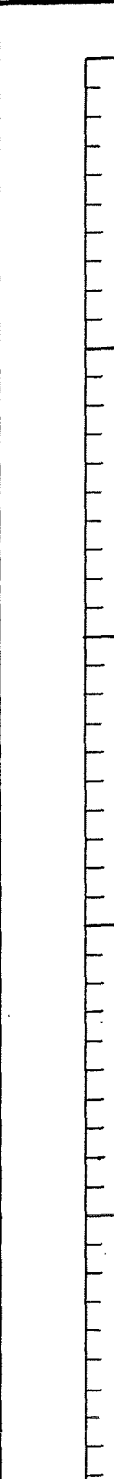
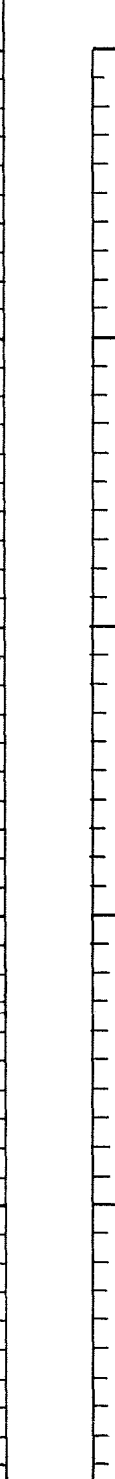
# GEYSERS CORING PROJECT

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
<p>0</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p>		<p>SLIX, RACE 60°</p>	<p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p>		
		<p>VALUES REFER TO FRACTURE APERTURES IN mm</p>			

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 22 Depth Interval 1006.6 - 1006.9 Date 12/9/94

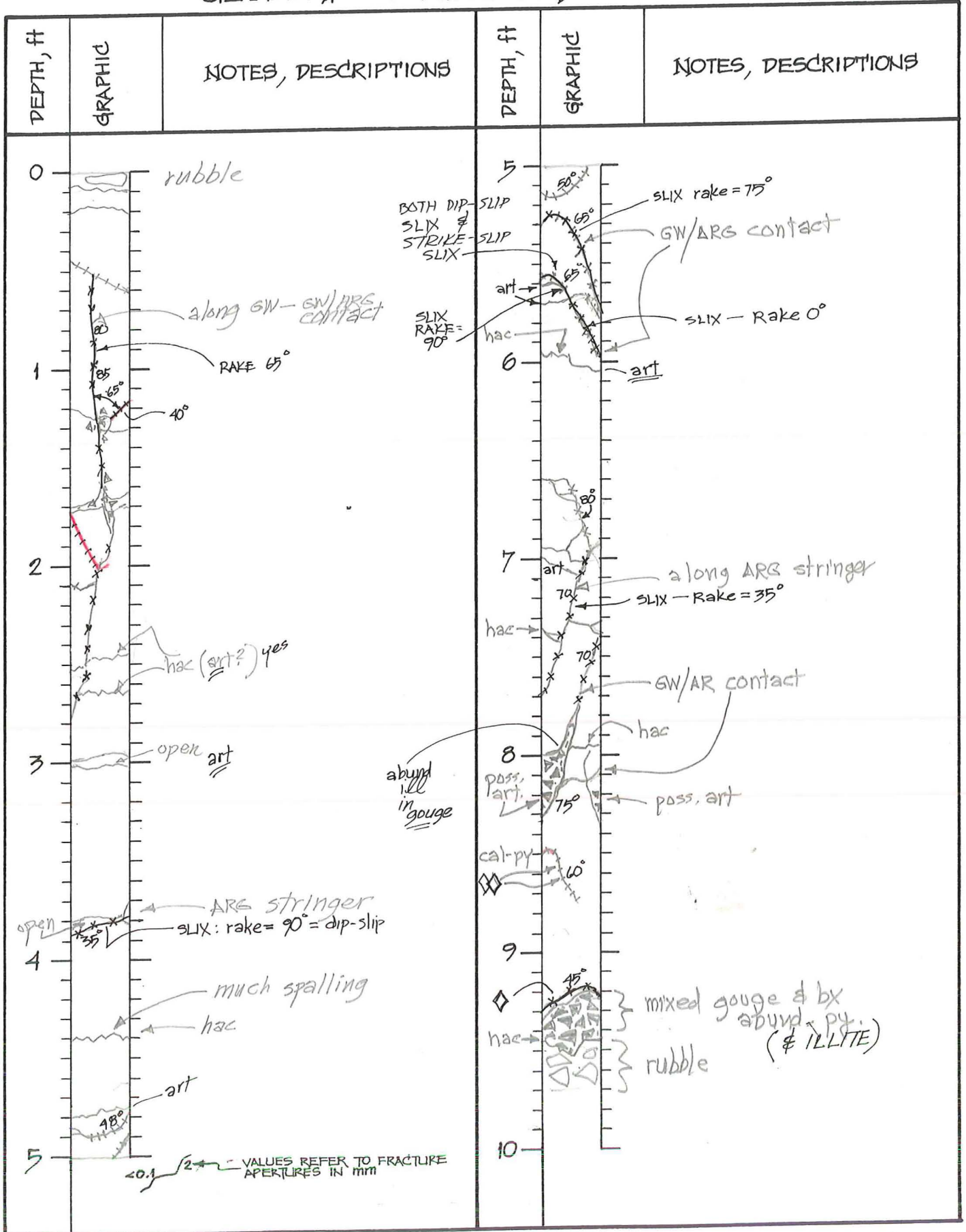
# GEYSERS CORING PROJECT

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
<p>0</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p>		<p>had to trip for bit change.</p> <p><u>no core recovered.</u></p>	<p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p>		
		<p><u>&lt;0.1</u> <u>2</u> — VALUES REFER TO FRACTURE APERTURES IN mm</p>			

INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 22 Depth Interval 1006.6 - 1006.7' Date 09/20/91





VALUES REFER TO FRACTURE APERTURES IN mm

**INITIAL FRACTURE LOG (undisturbed, in split liner)**

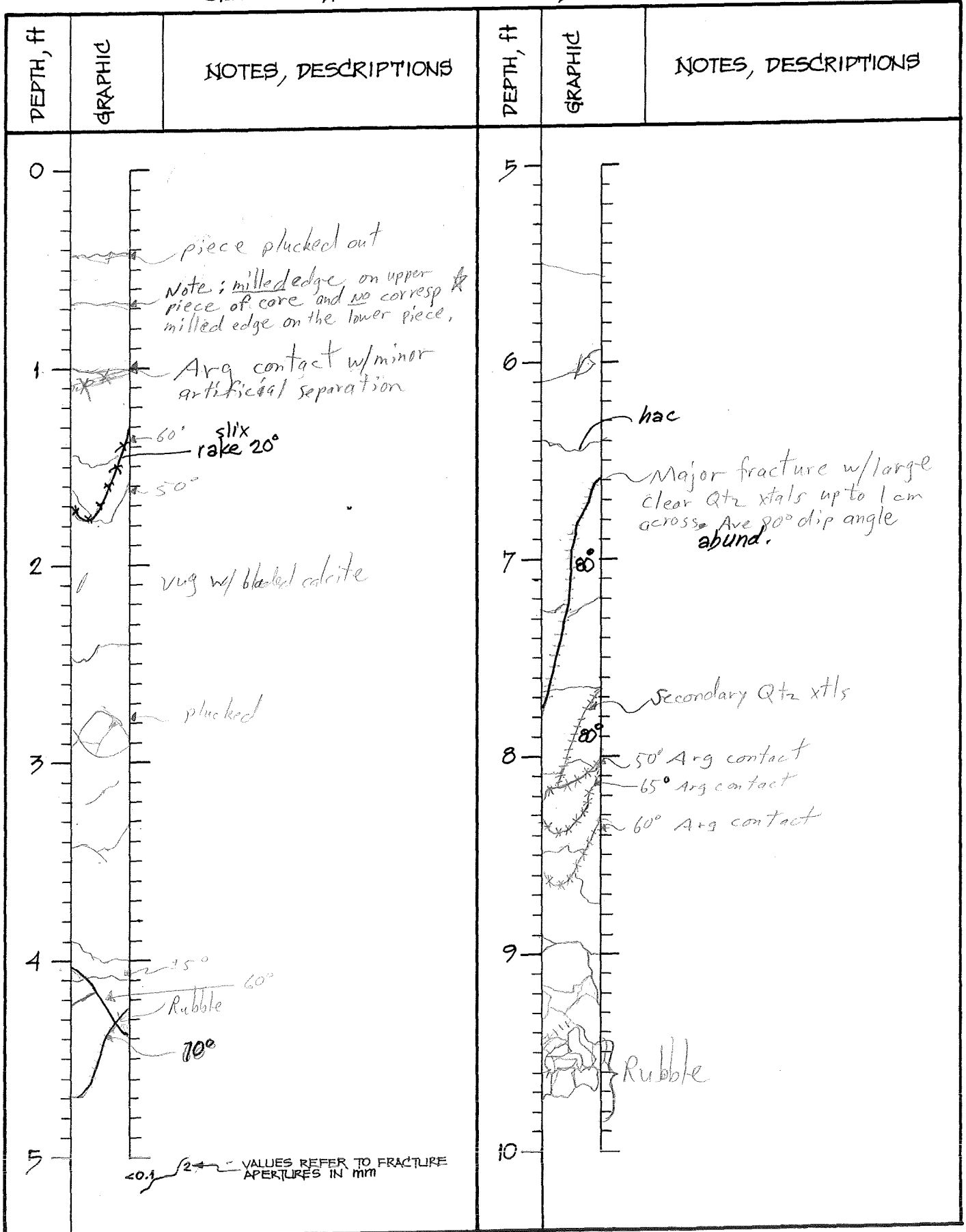
RUN NO. 23 Depth Interval 1006.9 - 1016.7 Date 9/20/94

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0		<p>aug dip <math>65^\circ</math>, SLIX rake = <math>15^\circ</math></p> <p>large vein w/ calcite qtz, + pyrite xls</p> <p>40° art</p> <p>30° SLIX rake = <math>75^\circ</math></p> <p>Williams Sample</p>	5		veined Arg/GW contact
1		<p>5-10° art</p> <p>art</p> <p>art</p> <p>art</p>	<p>hac</p> <p>cc</p> <p>Arg/GW contact</p> <p>veined Arg/GW contact</p>		
2		<p>30°</p> <p>Williams Sample</p> <p>Bonner Sample</p>	<p>7</p> <p>Conca Sample</p>		
3		<p>art</p>	<p>8</p> <p>hac</p> <p>Arg lens</p>		
4		<p>45°</p> <p>SLIX RAKE = <math>70^\circ</math></p> <p>art</p> <p>art</p> <p>75°</p> <p>SLIX RAKE = <math>0^\circ</math></p> <p>ar</p> <p>art</p>	<p>9</p> <p>hac</p> <p>Pisoff Sample</p>		
5	<p>art</p> <p>art</p> <p>VALUES REFER TO FRACTURE APERTURES IN mm</p> <p><math>&lt;0.1 \sqrt{2}</math></p>	<p>10</p> <p>Sample</p>			

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 24 Depth Interval 1016.7 - 1026.2 Date 7/20/94

PFD



## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 25 Depth Interval 1026.2 - 1036.4 Date 9/20/94

# GEYSERS CORING PROJECT

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0			5		
1			6		
2			7		
3			8		
4			9		
5			10		

## INITIAL FRACTURE LOG (undisturbed, in split liner)

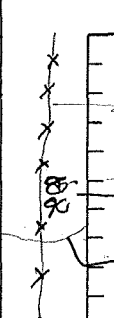
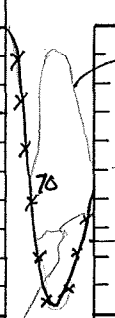
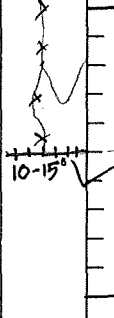
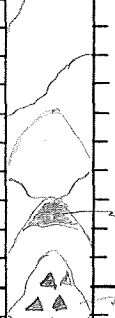
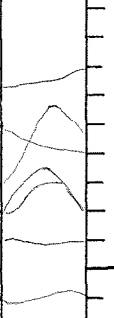
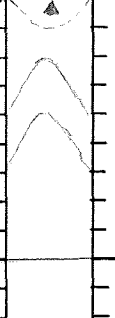

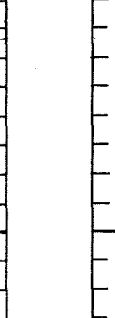
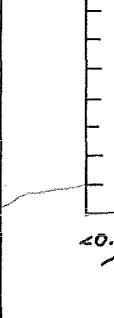

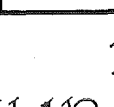
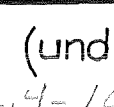
RUN NO. 26 Depth Interval 1036.4 - 1046.4 Date 09/20/99

JHulen

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0			5		
		Chloritic / carbonaceous fract surface w/ slickensides, Py abou.			
1		Mineralogy as above. Py veins cut rock as well as along frac surfaces Qtz, cal, py	6		Healed frac
2			7		Vug along older qtz + cal vein.
3		Rubble w/ drusy qtz	8		20° qtz + cal + py Dip-slip slickensides Dip = 60°      10° RAKE = 10      10
		Rock through interval bleached. Drusy qtz + py on fracture surfaces. No calcite through interval Possible fault zone. Best estimate of dip 40-50°			
4		80° Crushed zone, sand-size rock frags + py cubes slip rake 30°	9		py + carbonaceous material. pseudo-bldng fix
		Carbonaceous material + py on frac. dip-slickensides are dip-slip VALUES REFER TO FRACTURE APERATURES IN mm w/ rake of 30°	10		
5					

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 27 Depth Interval 10464 - 10564 Date 9/20/94  
DLN

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0		<p>Fault w/ well developed slickensides on carbonaceous material + chltin py</p> <p>slix rake 60°</p> <p>art</p>	5		<p>art</p> <p>Frac assoc. w/ steep strike-slip fault</p> <p>70°</p> <p>rate 50°</p>
1		<p>10-15°</p> <p>art</p>	6		<p>Blade, carbonaceous clay</p>
2		<p>jumble</p>	7		<p>8x w/ matrix of black carbonaceous clay</p>
3		<p>art</p> <p>Calc + py</p> <p>5cm long calc. probably assoc. w/ steep strike-slip fault that appears thru this run.</p> <p>During boring, core from 4-6' displayed near vert frac w/ slickensides.</p>	8		<p>Rubble w/ bladed calcite</p> <p>EOS.</p>
4		<p>art</p>	9		
5		<p>VALUES REFER TO FRACTURE APERTURES IN mm</p>	10		

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 28 Depth Interval 1056.4 - 1064.4 Date 9/21/94

DLN

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0			5		
1			6		
2			7		
3			8		
4			9		
5			10		

VALUES REFER TO FRACTURE APERTURES IN mm

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 29      Depth Interval 1064.4 - 1069.6      Date 9/21/94

DLN

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0 1 2 3 4 5		<p>Cal, py Rate 20 cal, py carbonaceous, py, cal Rate 70 carbonaceous, py</p> <p>VALUES REFER TO FRACTURE APERATURES IN MM</p>	5 6 7 8 9 10		<p>py, cal. Slickensides w/ dip-slip movement - totally fractured argillite - probable fault cal. Bx w/ carb sh matrix cal, py EOS</p> <p>Note: split tube pieces were not matched. When core was pumped from the inner liner, the tube separated and the core was pumped into the trough. Core is much more disrupted than usual. Also frag. of graywacke below black sh lodged in shoe and broke off a piece that was left in the hole.</p> <p>* New explanation is helper didn't install donut in end prior to pumping.</p>

INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 30 Depth Interval 1069.6 - 1077.6 Date 9/21/94

DLN



DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0		Rubble from Top	5		same as Bottom Left column Pyr Vein - more/less vertical Hackly ARG beddy frac @ 70° 60° Pyr vein
1		Hackly Pyr Vein ARG contact ~70°	6		End Rubble
2		Vertical ARG/GW Hackly Rubble	7		
3		45-50° Calc vein 45° Pyr vein Rubble	8		
4		~15° GW/ARG contact 15° Arg/GW contact	9		
5		Hackly Pyr Vein Frac VALUES REFER TO FRACTURE APERTURES IN MM	10		

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 31 Depth Interval 1077.57 - 1084.04 Date 9/21/94

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0		rubble	5		hackly
		separated ~.03', appears twisted (art.) off			hackly
		rubble zone			.01' separation argillite bedding
1		Williams Escarpment	6		argillite bedding
2		hackly 60°	7		art
		hackly			art
3		hackly crushed argillite bedding plane 55° dip, 90° rake	8		greywacke argillite
		hackly			
4		hackly 55° dip argillite	9		Persoff sample
		fractured along bedding			.01' separation at edges
		rubble 40° dip greywacke	10		hackly, in argillite
5		VALUES REFER TO FRACTURE APERTURES IN mm			hackly

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 32 Depth Interval 1084 - 1094' Date 9/21/94

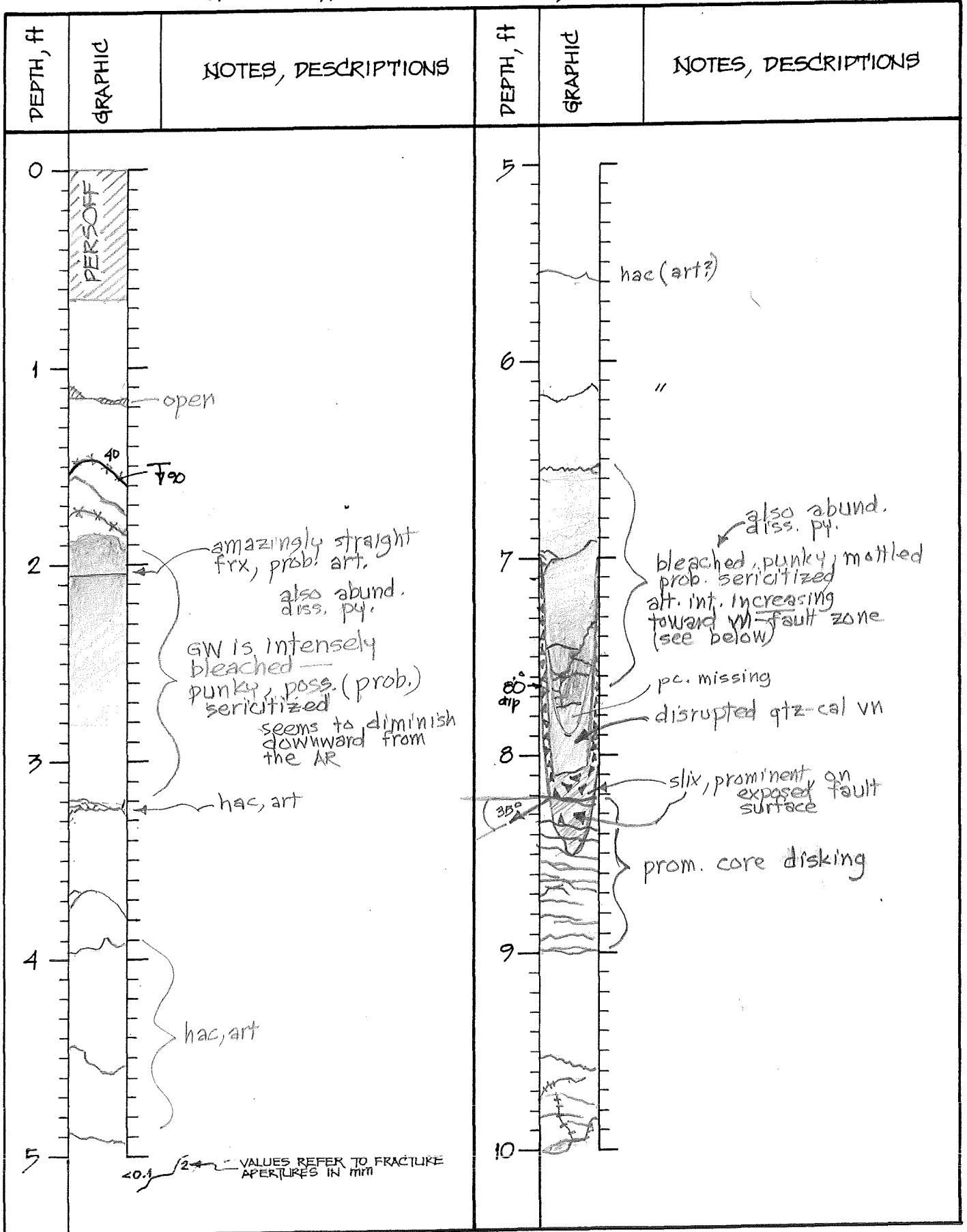
T. Powell

# GEYSERS CORING PROJECT

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
<p>0</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p>		<p>sample sealed at drill rig-in seamless At tubing capped w/O-ring seals — w/O-ring for Brian Bonner, LLL</p> <p>VALUES REFER TO FRACTURE APERTURES IN mm</p>	<p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p>		<p style="color: red; font-size: 1.2em;">1094° 7° S 40° W</p>

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 33 Depth Interval 1094-1099 Date 09/21



INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 34 Depth Interval 1099 - 1109 Date 09/21/94

# GEYSERS CORING PROJECT

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0			5		
1			6		
2			7		
3			8		
4			9		
5		10			

VALUES REFER TO FRACTURE APERTURES IN mm

**INITIAL FRACTURE LOG (undisturbed, in split liner)**  
 RUN NO. 35 Depth Interval 1109-1115.2' Date 09/21/94

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0		Rubble hackly, artificial? Rubble hackly, artificial hackly	5		hackly, artificial rake 90 minor shatters acqillite OPEN ZONE w/ open fractures mineralized w pyrite & Calcite, Refractories during drilling
1		hackly, artificial hackly, artificial hackly, artificial hackly, artificial	6		hackly, artificial
2		Rubble below sample CORE II frac Artificial CORE frac part. Rubolized, shatters dissem. pyrite mineralization on old (?) frac frac	7		hackly, artificial micro veinlets below 7'
3		hackly EN ECHELON VEINS & VEINLETS VUG IN VEIN	8		Rubble below sample OPEN CONTORTED thinly laminated Acqillite
4		hackly artificial	9		Rubble
5	<p>VALUES REFER TO FRACTURE APERTURES IN mm</p> <p>0.1 2 80</p>		10		Rubble

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 36 Depth Interval 1115.22 - 1125.22 Date 9.22.99

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0		OPEN DISSEM. PYRITE MINERALIZATION ALONG FRACTURE SURFACE	5		Hackly, Artificial
1		(downplay)	6		Hackly, Artificial minor dissem pyrite mineralization (art)
2			7		Common dissem pyrite on open fracture face. Well framed cubes, pyritiferous
3		Hackly, Artificial OPEN NO APPARENT MINERALIZATION poss. art	8		Hackly, Artificial
4		art Healed olive facies mineralized w/ CaCO3, dissem pyrite OPEN NO APPARENT MINERALIZATION art	9		Disseminated pyrite mineralization Common calcite/pyrite mineralization on fracture face.
5		VALUES REFER TO FRACTURE APERTURES IN mm	10		

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 37 Depth Interval 1125.22' - 1135.22' Date 9-22-94

# GEYSERS CORING PROJECT

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0		<p>Calcite w/ trace pyrite Hackly, artificial</p> <p>MASSIVE CALSITE VEIN COMMON PYRITE AS FINE DISSON XLS</p>	5		<p>Hackly, artificial</p> <p>Hackly, artificial</p> <p>Common calcite w/ disson pyrite mineralization in vein rubble zone</p>
1		<p>Hackly, artificial RUBBLE BURDENS sample</p> <p>WILLIAMS</p> <p>Hackly, artificial</p>	6		
2		<p>Hackly, artificial</p> <p>Hackly Artificial</p>	7		
3		<p>REFRACTURED VEIN 25 mm wide filled w/ calcite evidence of brecciation w/in vein mt.</p> <p>Hackly, artificial REFRACTURED VEIN 15-20 mm wide filled w/ calcite</p>	8		
4			9		<p>Common calcite filling on very hi angle refractured vein rubble</p>
5		<p>VALUES REFER TO FRACTURE APERTURES IN mm</p>	10		

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 38 Depth Interval 1134.9' - 1144.9' Date 9/22/94



DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0	BONNER SAMPLE		5	65°	Thin fractures hackly, artificial
1	<1		6	82°	Hackly, artificial
2	82°	cmn. calcite filled & milky	7	45°	Fracture w/in argillite bed
3	11 ART	Hackly, artificial	8	80°	Hackly, artificial
4	78°	Relatively flat fracture @ CONTACT BTWN gw (above) & argillite (below) & w/in argillite bed	9	38°	
5	34°	Hackly, artificial	10	60°	Robble
5	ART	Hackly, artificial, partially follows hi angle vein filled fracture			
	ART	Hackly ART			
	ART				

VALUES REFER TO FRACTURE APERTURES IN mm

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 39 Depth Interval 1144.9' - 1154.9' Date 9/22/94

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0			5		Breccia zone, Alt to kaolinite sericite, calcite w/ accessory pyrite, marcasite & galena (?) Calcite blebed and amorphous
1		Hackly, Artificial	6		
2		Hackly, Artificial	7		
3		Hackly	8		
4		Side of core brecciation vertical w/ calcite	9		
5		Hackly, Artificial	10		
		Hackly, Artificial			

VALUES REFER TO FRACTURE APERATURES IN mm

INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 40 Depth Interval 1154.58 - 1162.58 Date 9/22/94

# GEYSERS CORING PROJECT

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0		<p>vert</p> <p>hac 10</p> <p>85</p> <p>15</p> <p>70</p> <p>open</p> <p>same frac rotated in tube</p> <p>vein dips will be reversed below</p>	5		<p>along bedding?</p> <p>55</p> <p>art</p> <p>25</p> <p>25</p> <p>25</p>
3		<p>35</p> <p>18</p> <p>26</p> <p>50</p> <p>50</p> <p>10</p>	8		<p>hac, art</p> <p>along Franc. vein</p> <p>40</p> <p>hac, art</p>
5	<p>&lt;0.1</p> <p>VALUES REFER TO FRACTURE APERTURES IN mm</p>		10	<p>slip rake 10°</p> <p>40</p> <p>hac, art</p>	

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 41 Depth Interval 1162.6 - 1172.3 Date 09/22

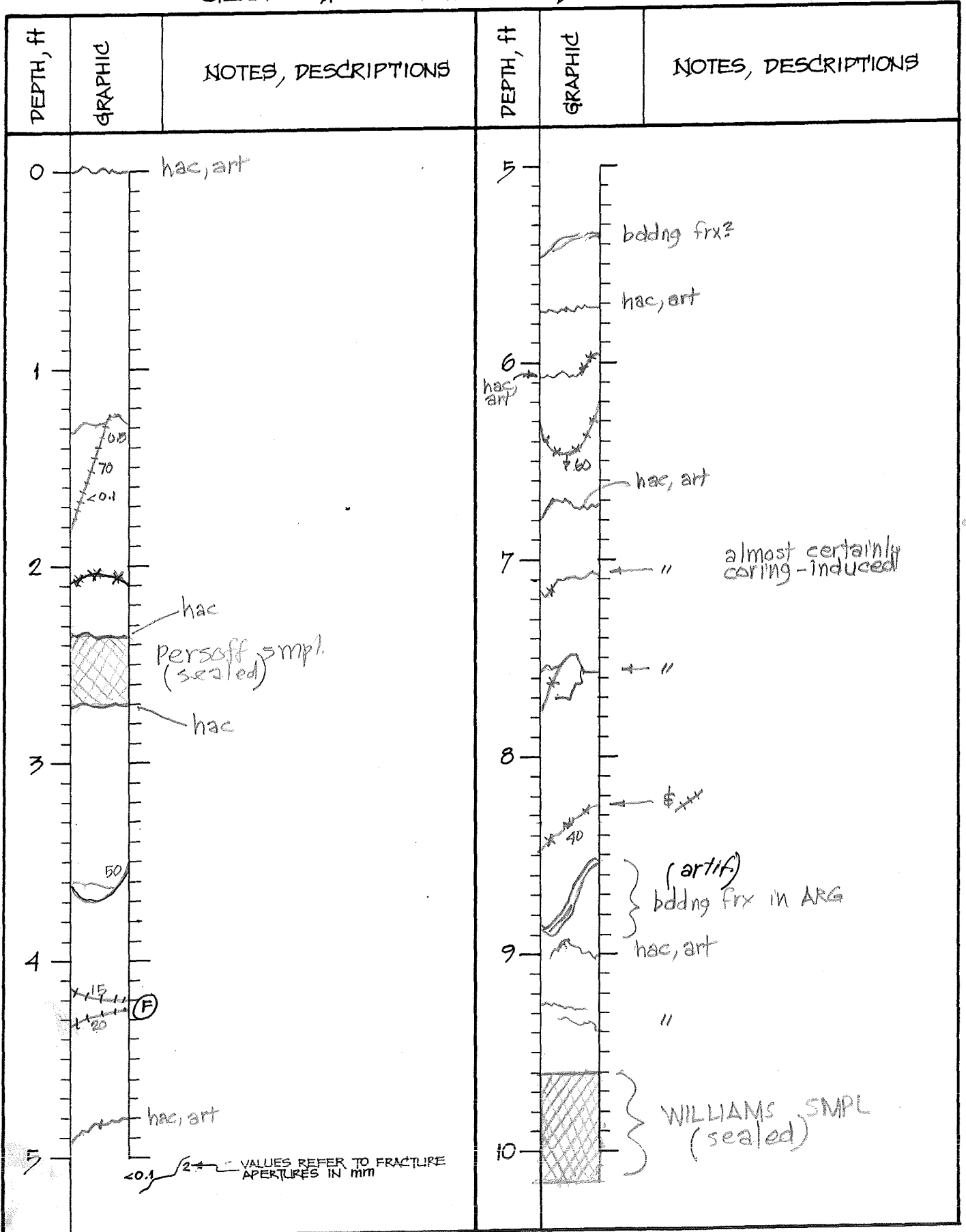
DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0  1  2  3  4  5			5  6  7  8  9  10		
		<p>VALUES REFER TO FRACTURE APERTURES IN mm</p>			

INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 42 Depth Interval 1172.3-1182.6' Date 7/22/74

PFD, RD, JH

# GEYSERS CORING PROJECT



## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 43 Depth Interval 1182.6 - 1192.7 ft Date 09/22/94

JH, RD

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0		Top Rubble	5		-hackly
1		<p>Note: most all fractures are hackly + probably thermal artifacts, they generally cut across beddy + veins or just GW w/o follow beddy or vein trends.</p>	6		-hackly
2		<p>Calc vein</p> <p>calc vein w/o frac</p> <p>bottom frac on calc vein above</p>	7		gen hackly - cuts across rock
3		stock work	8		beddy plane (Arg)
4		hackly, art	9		follows vein partially then beams hackly across bed,
5		hackly, art	10		CORE End
		VALUES REFER TO FRACTURE APERTURES IN mm			
		<0.1    2			

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 44 Depth Interval 1192.7 - 1206.6 Date 9/22/99

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0		Hackly, Artificial	5		High Angle fracture following exclusive vein let of CaCO <sub>3</sub>
1		Hackly, Artificial, open Artificial	6		High angle fracture partially following CaCO <sub>3</sub> veinlet ending in hackly induced face ⊥ to core axis
2		Hackly, Artificial Fracture following vein in part ending in hackly face ⊥ to core axis Hackly, Artificial	7		Fracture following exclusive vein hackly, artificial, open
3		Artificial?	8		hackly Artificial
4		Fracture partially following exclusive vein	9		OPW, Artificial
5			10		

VALUES REFER TO FRACTURE APERTURES IN mm

INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 45 Depth Interval 1202.62 - 1212.62 Date 9/22/94

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0			5		
1		Fracture follows earlier CaCO <sub>3</sub> veinlet	6		hackly, artificial
2			7		hackly, artificial
3		open, hackly, artificial fracture	8		High angle (°) fracture follows corner btwn gw (above) and veins argillite (below) hackly, c
4		Fracture follow corner btwn Argillite (below) & gw (above)	9		hackly, artificial
5		hackly, artificial	10		High angle (70°) frac following CaCO <sub>3</sub> vein (previously marked fracture) hackly, artificial
<p>VALUES REFER TO FRACTURE APERTURES IN mm</p> <p>20.1    2</p>					

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 47 Depth Interval 1217.6 - 1227.6 Date 7/23/94



DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0		Fractures on either side of earliest $CaCO_3$ veins) interior of vein cl. calcite EVIDENCE of 2 episodes of fracturing	5		Fractures along earliest $CaCO_3$ vein
1		Hackly, artificial (?) small fractures on left towards early $CaCO_3$ vein	6		Hackly, artificial
2		<div style="border: 1px solid black; border-radius: 50%; padding: 10px; width: fit-content; margin: auto;"> <p style="font-size: 1.2em;">note: henceforth, in relogging, no longer fix developed along hydroth. veinlets</p> </div>	7		Fractures primarily or completely    to earliest $CaCO_3$ vein
3		CONCA SAMPLE	8		Fractures ⊥ to core axis Hackly, artificial
4		Fractures on earliest $CaCO_3$ vein	9		Conjugate (?) fracture set along earliest $CaCO_3$ veins
5		VALUES REFER TO FRACTURE APERTURES IN $\mu m$	10		Conjugate (?) fracture set along earliest $CaCO_3$ veins

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 48 Depth Interval 1227.6 - 1237.6 Date 9/23/94

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
<p>0</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p>		<p>hac, art</p> <p>h, art</p> <p>h, art</p> <p>h, art</p> <p>h, art</p>	<p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p>		<p>h, art</p> <p>hac, art</p> <p>Persoff smpl. (Waxed)</p>

VALUES REFER TO FRACTURE APERTURES IN mm

INITIAL FRACTURE LOG (undisturbed, in split liner)  
 RUN NO. 49 Depth Interval 12376 - 12482 Date 09/23/94

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0	Top of Core		5	<div style="border: 1px solid black; padding: 2px; display: inline-block;">slit rate = 0°</div> 	
1	↑	WILLIAMS SAMPLE	6		
2	↓	25°	7		
3	↑	Hac, Art	8		
4	↓	vein in part Hac 65° Calc vein frac 40°	9		
5	↓	40° Hac/Art	10		
		<math>0.1 \sqrt{2}</math> VALUES REFER TO FRACTURE APERTURES IN mm			

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 50 Depth Interval 1247.8 - 1257.8 Date 9/23/94

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
<p>0</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p>	<p>20° Art</p> <p>24°</p> <p>10° each side, hash marks show voids, core rotated in sleeve at some points, prob while coring</p> <p>slit hack</p> <p>Rubble at ARG (normal to bedding) Face of core at 30°</p> <p>20.1</p> <p>2</p> <p>VALUES REFER TO FRACTURE APERTURES IN mm</p>	<p>Art?</p> <p>30° Art?</p> <p>Art</p> <p>75° Calc, Qtz v. vein</p> <p>35°</p> <p>35° Art?</p> <p>40° Art? (no vein)</p> <p>Calc/Qtz vein ~ 75°</p> <p>35°</p> <p>50°</p> <p>Rubble from removing catcher</p>			

INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 51 Depth Interval 1257.8 - 1267.8 Date 9/23/94

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
<p>0</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p>	<p>70°</p> <p>ARG Bedding</p> <p>gap in rubble inside</p> <p>70</p> <p>50</p> <p>45 Vein</p> <p>Art</p> <p>3 Vein</p> <p>Art</p> <p>35</p> <p>45</p> <p>110°</p> <p>38° Mont veins</p> <p>45° Vein frac</p> <p>20.1</p>	<p>VALUES REFER TO FRACTURE APERATURES IN mm</p>	<p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p>	<p>Plucked piece</p> <p>Art</p> <p>~ 85° Vein frac</p> <p>Hac, Art</p> <p>partially follows vein then cross cuts</p> <p>55°</p> <p>Art</p> <p>Art</p> <p>Art</p> <p>Arg face - core end</p>	

INITIAL FRACTURE LOG (undisturbed, in split liner)

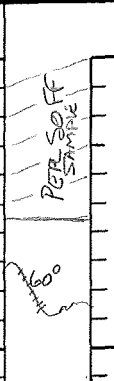
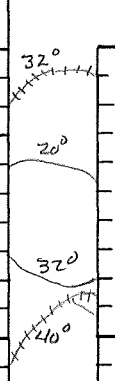
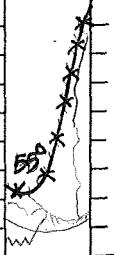
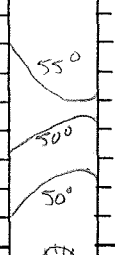
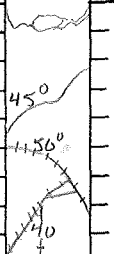
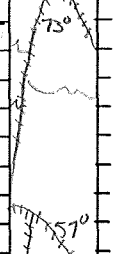
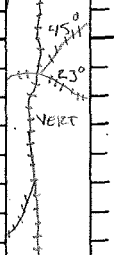
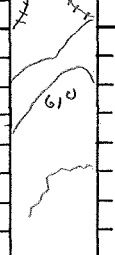
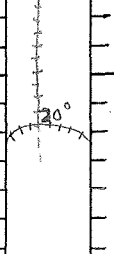
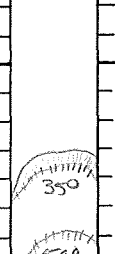
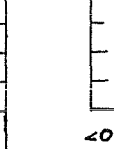
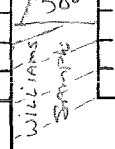
RUN NO. 52 Depth Interval 1267.8 - 1277.8 Date 9-23-94

# GEYSERS CORING PROJECT

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0		dip 70°, slick rake 0° Rubble, prob f/core, turning core tube end	5		2 sets slick earlier: <del>75°</del> rake 0° younger: rake 25° (opposite dir.)
1		Black hole s	6		slick rake 10° hackly, vein frac in part
2		Range s ff 20-30° along contact	7		mineral H; Art
3		Bonner	8		Hack, Art (cross cut) vein vein
4			9		40° 40°
5		Hack, Art VALUES REFER TO FRACTURE APERTURES IN mm	10		Blk Arg face of core Rubble to 10.1'

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 53 Depth Interval 1277.8 - 1287.9 Date 9-23-94

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
<p>1287.9'</p> <p>0</p> 		<p>Fracture partially follows vein Hackly, Artificial on right side of core</p>	<p>5</p> 		<p>U. Fr Fracture roughly L to core axis, Artificial</p> <p>Artificial</p>
<p>1</p> 		<p>Fracture follows <math>CaCO_3</math> vein along gw (below) / Argillite (above) contact. Hackly, fractures, L to core axis partially Artificial</p>	<p>6</p> 		<p>Fracture follows <math>CaCO_3</math> vein</p>
<p>2</p> 		<p>Breccia zone w/ Eutectic Qtz (Qtz-2). Hackly, Artificial</p>	<p>7</p> 		<p>Fracture follows fracture <math>CaCO_3</math> vein</p> <p>Hackly, Artificial</p>
<p>3</p> 		<p>Vertical fracture breaks both sides of fracture <math>CaCO_3</math> vein running 3.1' along core axis</p>	<p>8</p> 		<p>Hackly, Artificial</p>
<p>4</p> 		<p>Fracture along <math>CaCO_3</math> vein</p>	<p>9</p> 		<p>Fracture along fracture <math>CaCO_3</math> vein changes position disc of vein mt</p>
<p>5</p> 		<p>VALUES REFER TO FRACTURE APERTURES IN mm</p>	<p>1298.4</p> <p>10</p> 		

SLIX  
RAKE  
20°

## INITIAL FRACTURE LOG (undisturbed, in split liner)


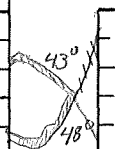
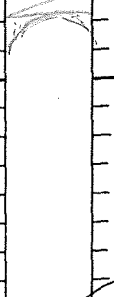

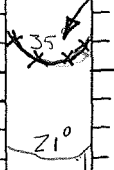



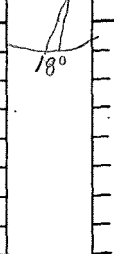

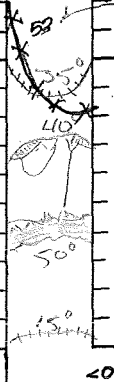

RUN NO. 54 Depth Interval 1287.9' - 1298.4' Date 9/23/94

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0		Rubble	5		
1		Hackly, Artificial Fracture follows fracture CaCO <sub>3</sub> vein	6		
2		SLIX RAKE = 0 CaCO <sub>3</sub> vein along part of fracture surface	7		
3		Hackly, ⊥ to core Axis Artificial	8		Hackly, Artificial where fracture does not follow CaCO <sub>3</sub> vein
4		Hackly, Artificial ⊥ to Core Axis	9		
5		Fractures along CaCO <sub>3</sub> veins	10		Hackly, Artificial
		VALUES REFER TO FRACTURE APERTURES IN MM			

INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 55 Depth Interval 1298.4 - 1308.0' Date 7/24/84



DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0		<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> <p>NOTE: 5-FT. BONNER SMPL RUN 56 (1308-1313 ft) (LLL)</p> </div>	5		<p>CONJUGATE fracture zone in massive gw, f</p>
1		<p>SLIX RAKE = 20°</p> <p>Fracture along contact between massive greywacke (above) and thinly laminated Argillite breccia (below)</p> <p>Fracture along trace of CaCO<sub>3</sub> mineralized zone in Arg breccia</p>	6		<p>Highly open fracture Artificial?</p>
2		<p>Fracture along contact between massive gw (above) and thinly laminated Arg below</p>	7		<p>Highly Artificial</p>
3		<p>Fracture follows CaCO<sub>3</sub>- giz vein in brecciated Argillite. Bladed calcite comm.</p>	8		<p>Vertical fracture - displaced core piece exposing face mineralized w/ Calcite, gtz Pyrite MARCASITE</p>
4		<p>SLIX RAKE 0°</p> <p>Fault gouge zone - Sheared brecciated Argillite</p>	9		<p>Highly Artificial</p> <p>Highly Fault gouge zone w/ prominent to angle slix in separation core sections</p>
5		<p>VALUES REFER TO FRACTURE APERTURES IN mm</p>	10		

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 57 Depth Interval 1313.0 - 1323.0 Date 9/24/94

# GEYSERS CORING PROJECT

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0			5		Irregular, Artificial
1		Irregular, Artificial	6		Fracture @ top of 12mm CaCO3 vein Irregular, Artificial
2		Fracture follows CaCO3 vein w/ disseminated pyrite (pyrochotik?)	7		Irregular, Artificial
3		Irregular, Artificial?	8		Irregular, Artificial
4		Fracture @ top of 15-25mm Calcite vein	9		
5		Irregular, Artificial	10		

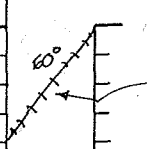
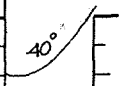
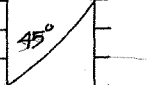
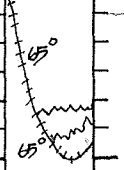
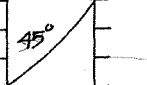

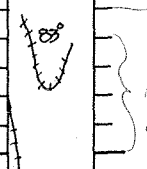
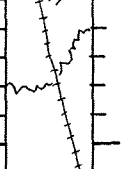
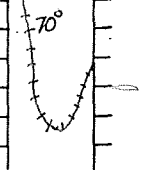
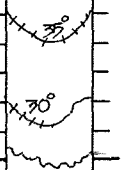
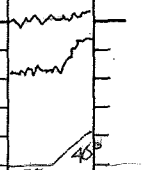
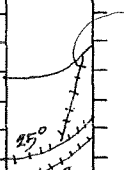
(ON-SITE) INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 58 Depth Interval 1323.0 - 1331.56' Date 9/24/94

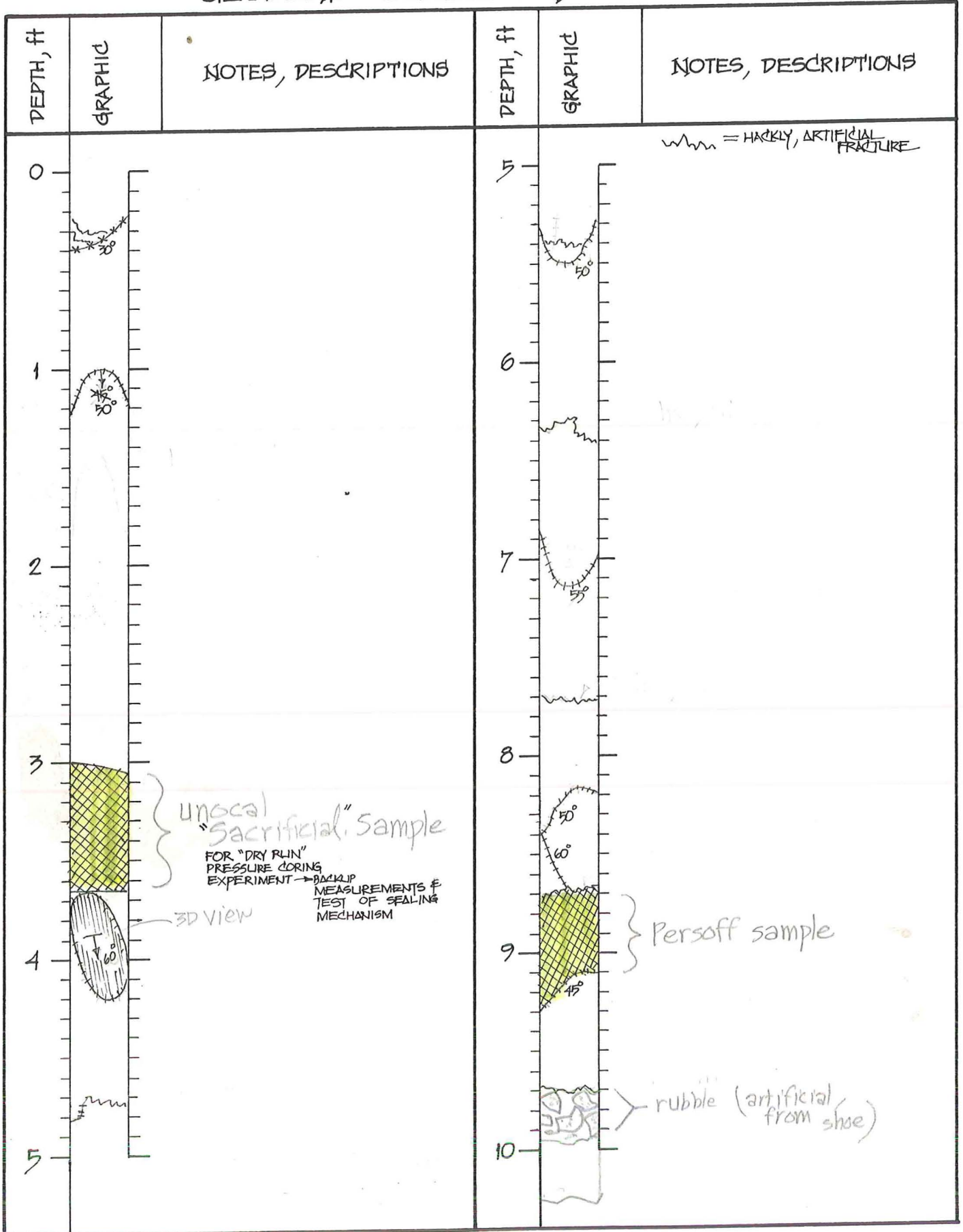
# GEYSERS CORING PROJECT

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0		RUBBLE	5		wavy = hackly, artificial fracture
1		PERSOFF SAMPLE WILLIAMS SAMPLE	6		"hairline" units
2			7		-do-
3			8		-do-
4		20° poss. art	9		
5			10		

(ON-SITE) INITIAL FRACTURE LOG (undisturbed, in split liner)  
 RUN NO. 59 Depth Interval 1331.56 - 1341.6' Date 9-24-94

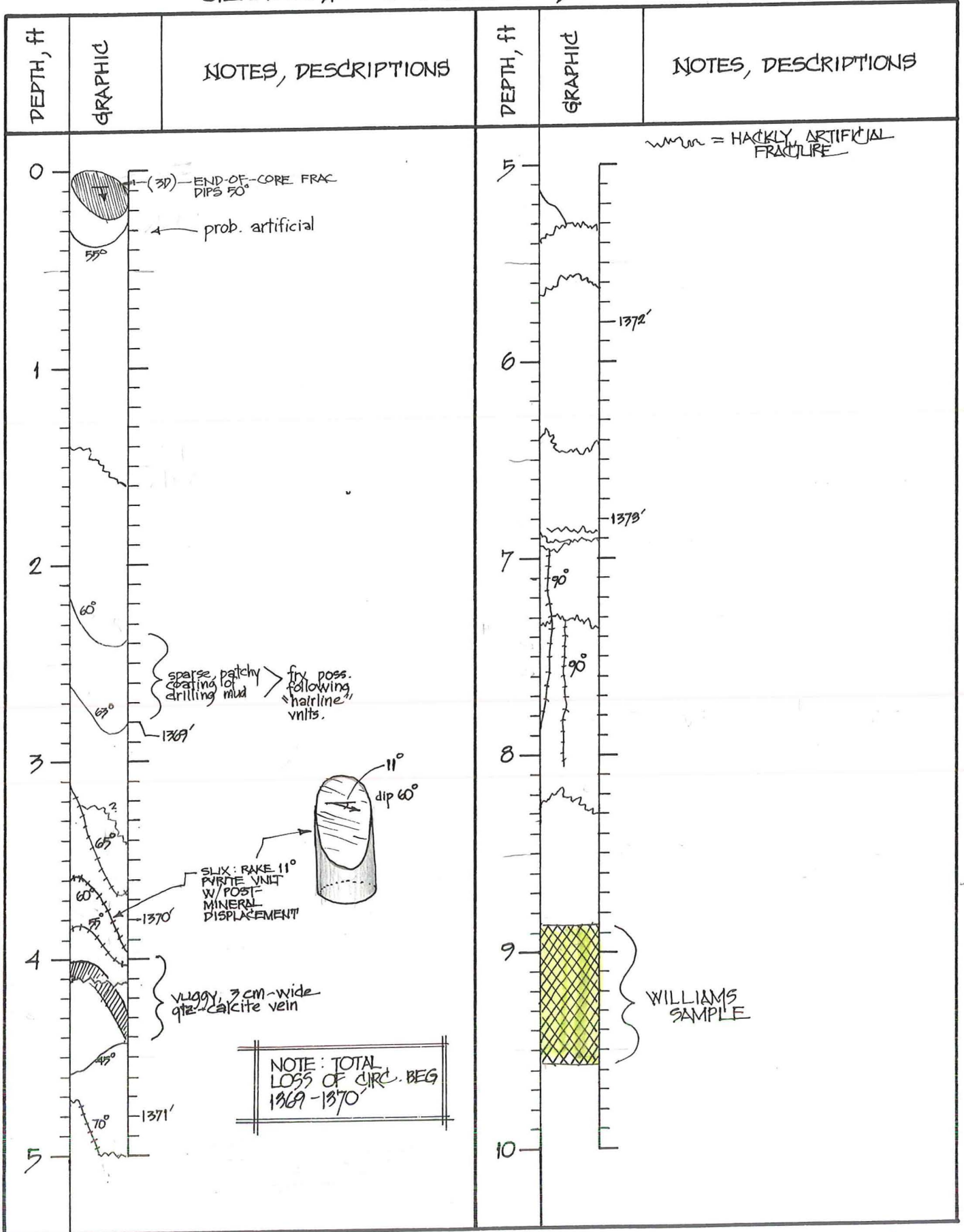
DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0			5		~~~~~ = HACKLY, ARTIFICIAL FRACTURE
1			6		
2			7		
3			8		
4			9		
5			10		

(ON-SITE) INITIAL FRACTURE LOG (undisturbed, in split liner)  
 RUN NO. 60 Depth Interval 1341.6 - 1351.6 Date 9/24/94

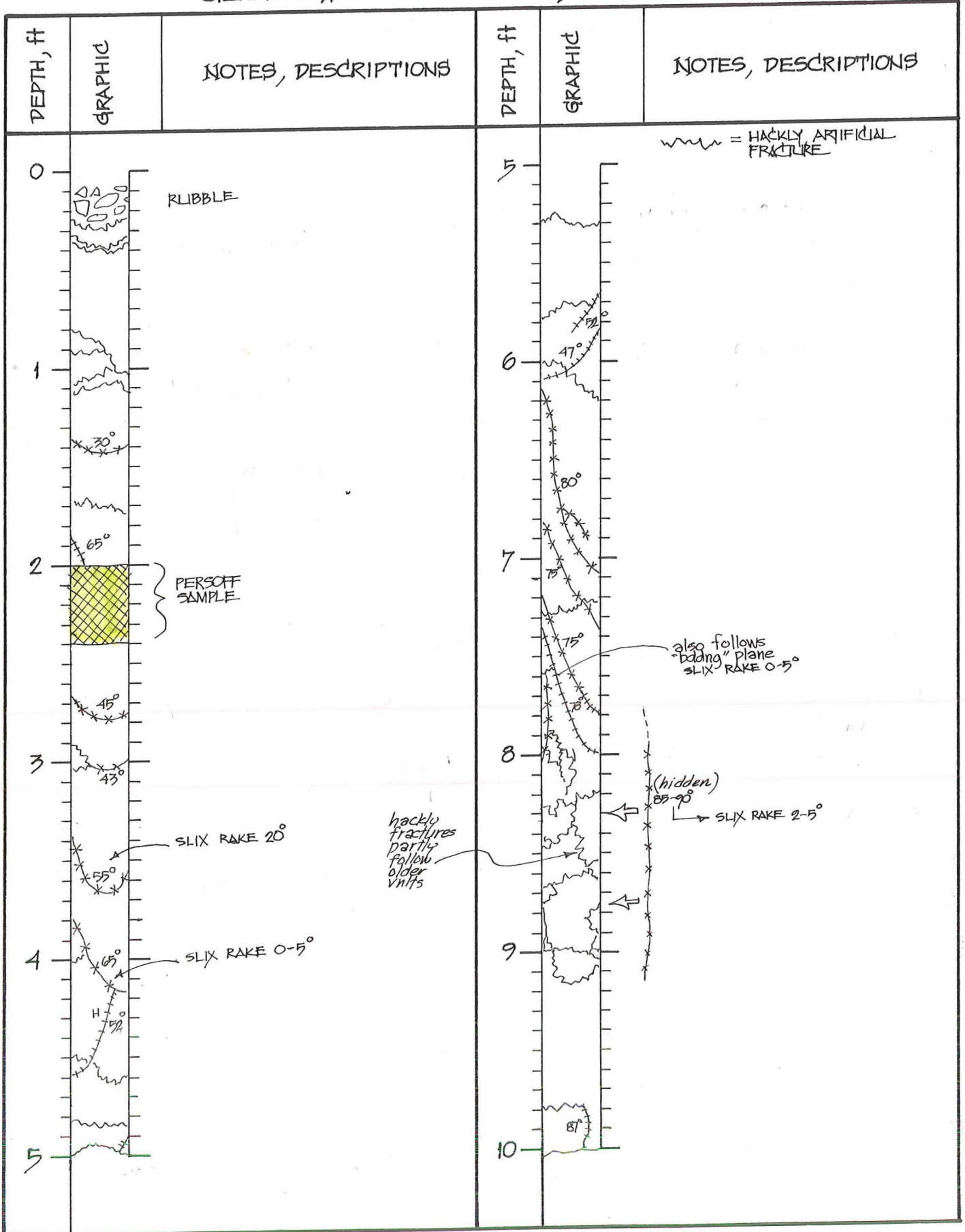


(ON-SITE) INITIAL FRACTURE LOG (undisturbed, in split liner)  
 RUN NO. 61 Depth Interval 1351.2 - 1361.2' Date 09/24/94

# GEYSERS CORING PROJECT



(ON-SITE) INITIAL FRACTURE LOG (undisturbed, in split liner)  
 RUN NO. 63 Depth Interval 1366.2 - 1375.2 Date 9/24/94



(ON-SITE) INITIAL FRACTURE LOG (undisturbed, in split liner)  
 RUN NO. 64 Depth Interval 1375.2 - 1385.2 Date 9/25/94

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0		Hackly fractures 75° side of core Artificial Fractures on the follows CaCO <sub>3</sub> vein	5		wavy line = hackly, artificial fracture Hackly Artificial fractures ⊥ to core axis
1		Hackly, Artificial	6		Hackly, artificial fractures ⊥ to core axis
2		Hackly, Artificial follows CaCO <sub>3</sub> vein in part Fracture follows vein's contour between massive gw (above) and argillite below.	7		SLIX RAKE 10° Fracture follows distinct contour between laminated Arg (above) and massive veins gw (below)
3		Hackly, Artificial follows CaCO <sub>3</sub> on fault side of core.	8		Hackly Artificial fractures follows vein NR core center ALSO AN ARGILLACEOUS PARTING Hackly, Artificial
4		Fracture follows thin veinlet Hackly to angle fractures x cut argillite bedding typical mineralization in Arg @ 4.6'	9		Fracture follows CaCO <sub>3</sub> vein along core axis Fracture @ top of CaCO <sub>3</sub> vein w/ (clay?) alt gw vein w/ form bldd calcite
5			10		Hackly fractures along showed Arg zone thin massive gw sections to arg slix through arg Hackly fractures in part following CaCO <sub>3</sub> veins

(ON-SITE) INITIAL FRACTURE LOG (undisturbed, in split liner)  
 RUN NO. 65 Depth Interval 1385.2 - 1395.40' Date 9/25/94



DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0		Persoff sample	5		Frank. v.ilt Vertical fracture follows earlier healed fracture along core axis
1		Hackly, artificial	6		Fractures follow earlier $CaCO_3$ veined fractures @ hi angles to core axis
2		Fracture follows earlier $CaCO_3$ vein	7		Hackly, Artificial
3		Hackly, Artificial L to core axis	8		Hackly, Artificial
4		Fractures follows finely blocked $CaCO_3$ veins	9		Fracture follows earlier $CaCO_3$ healed fracture surface Artificial (?)
5			10		END FRAC. IN 3-D

(ON-SITE) INITIAL FRACTURE LOG (undisturbed, in split liner)  
 RUN NO. 66 Depth Interval 1395.48 - 1405.48 Date 9/25/94

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0		<p>steeply dipping vein frac w/ local Hac frags</p>	5		<p>1 1/2 x w/ 3 cm opening w/ xtl rubble, it is either a large rug or the void filling xtls have been plucked out during coring or transport of core. atl xtls, poss wincite, calc.</p> <p>Nearly <math>\perp</math> vein frac</p>
1		<p>Semi hackly, vein followed partially</p> <p>Full 1/8 to 1/4" separation of core w/ bits of rubble holding frac open</p> <p>Nearly <math>\perp</math> contact frac</p> <p>H.A</p>	6		<p>partially follows vein</p>
2		<p>30° frac on thinly interbedded ARG w/ GW</p>	7		<p>Combination vein frac w/ convoluted Arg bedding contact</p>
3		<p>Hac, frac Art</p>	8		<p>Rubble at base of core</p>
4		<p>VALUES REFER TO FRACTURE APERTURES IN mm</p>	9		<p>VALUES REFER TO FRACTURE APERTURES IN mm</p>

INITIAL FRACTURE LOG (undisturbed, in split liner)



RUN NO. 67 Depth Interval 1405.5 - 1415.5 Date 9/25/94

# GEYSERS CORING PROJECT

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
<p>0</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p>		<p>5' Bonner sample (sealed in Al tube)</p>	<p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p>		

INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 68 Depth Interval 1418.5 - 1420.5 Date 09/25/94

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
<p>0</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p>		<p>NO "IFL" —                      core frozen in                      dry ice, trans-                      ferred to                      core boxes immediately                      (w/consequent                      disruption)</p> <p><i>&lt;0.1</i> <i>2</i> — VALUES REFER TO FRACTURE                      APERTURES IN mm</p>	<p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p>		<p>60° — SLIX RAKE 0°</p> <p>80° 90° — SLIX RAKE 50°</p>

INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 69 Depth Interval 1420.5 - 1429.9' Date 09/25

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
<p>0</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p>		<p>hac, art</p> <p>open, art</p> <p>***</p> <p>hac, art</p> <p>3-D view, hac, art</p> <p><u>FIRST EPIDOTE!</u></p> <p>shoe rubble</p> <p><math>&lt;0.1 / 2</math> - VALUES REFER TO FRACTURE APERATURES IN mm</p>	<p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p>		

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 70 Depth Interval 1429.9 - 1432.9 Date 09/26/94

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0		Rubble Hackly fractures follows Enriched Bladed calcite - $qtz$ - pure vein Hackly fractures $\perp$ to core axis - artificial Fractures along hi angle calcite - $qtz$ vein a/a Hackly, artificial Hackly artificial partially follows enriched $CaCO_3$ vein filled fracture Hackly, artificial a/a a/a partially follows Enriched Calcite vein Percolation Sample VALUES REFER TO FRACTURE APERTURES IN mm	5		Hackly, artificial Clean fracture x body plane Hackly artificial fracture cutting epidote vein Hackly, artificial a/a Hackly artificial fracture follows enriched $CaCO_3$ vein Hackly artificial Hackly artificial Hackly artificial vein crossing silicified vein Aquilite zone Rubble 700 @ EOR.

INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 71 Depth Interval 1432.9 - 1442.9 Date 9/26/94

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
<p>0</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p>		<p>Hackly, Artificial PART of fracture set follows CMC VEIN FORMER ALONG EARLIER fracture</p> <p>FRACTURE DIRECTION &amp; PARTIALLY following DIAGONAL VEIN</p> <p>Hackly, Artificial VALUES REFER TO FRACTURE APERTURES IN MM</p>	<p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p>		<p>Hackly, Artificial <math>\perp</math> to CORES AXIS</p> <p>Hackly Artificial 30°</p> <p>END OF RUN</p>

INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 72 Depth Interval 1442.9 - 1449.64' Date 9/27/94

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0 1 2 3 4 5		<p>Hackly, Artificial</p> <p>Hackly, Artificial L to core AXIS</p> <p>Fracture partially along Calc/pyr mineralized fracture.</p> <p>Fractures w/in Calc/pyr mineralized fractures</p> <p>Fractures in Calc/pyr/grt vein</p> <p>VALUES REFER TO FRACTURE APERATURES IN mm</p>	5 6 7 8 9 10		<p>Fracture along Calc/pyr VEIN</p> <p>Hackly, Artificial fracture</p> <p>END OF VEIN</p>

INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 73 Depth Interval 1449.6' - 1456.32' Date 9/27/94



DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
<p>0</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p>		<p>milled Rubble</p> <p>crackle zone adjacent to vein/frx</p> <p>Rubble</p> <p>*'s are dips, not mm</p> <p>VALUES REFER TO FRACTURE APERATURES IN mm</p>	<p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p>		<p>ap &lt; 0.3</p> <p>rubble to right of frx prob. art</p> <p>45°</p> <p>85°</p> <p>Bonner</p> <p>Persoff</p> <p>open</p> <p>15°</p> <p>(3-D)</p>

INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 74 Depth Interval 1456.3-1466.3 Date 09/27/94  
 J. Hulén

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
<p>0</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p>		<p>separation of piece from main core, (maybe happened from unscrewing tubing swivel)</p> <p>Art?</p> <p>Smooth frac in mass GW</p> <p>Removable pc on steep vein frac Gen Hac, frac's</p> <p>Rubblized vein face</p> <p>VALUES REFER TO FRACTURE APERTURES IN MM</p>	<p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p>		<p>40° Vein frac</p> <p>Half vein, half beddy frac @ 30°</p> <p>Hak, Art in crumpled zone of ARG, veins + GW</p> <p>Art, Hak</p> <p>35° Frac along thin Arg bed in surrounding GW.</p> <p>End piece</p>

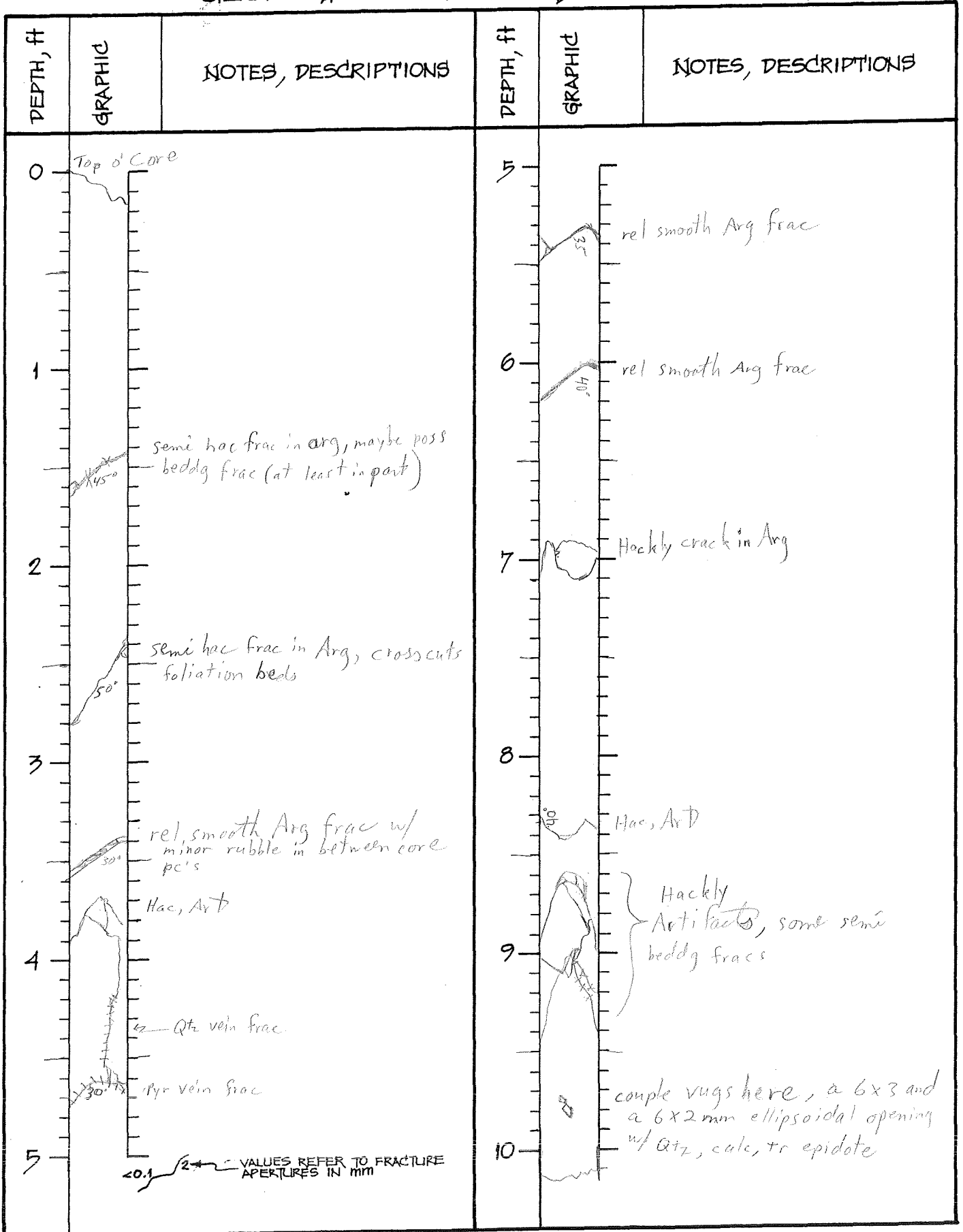
INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 75 Depth Interval 1466.3 - 1476.3 Date 9-27-94

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0 1 2 3 4 5		<p>~50°, partially along beddy but intermixed</p> <p>Not developed along a vein, but is a large, steep angled frac, right 80°</p> <p>network of frac's w/ steep dips, but not necessarily continuous on a beddy or vein contact.</p> <p>stock work</p> <p>VALUES REFER TO FRACTURE APERTURES IN mm</p> <p>0.1 2</p>	5 6 7 8 9 10		<p>empty piece plucked out</p> <p>Roughly along beddy contact at 30°</p> <p>Removed perov sample</p> <p>SLX - RAKE 0°</p> <p>large Qtz, calc, pyr vein frac @ 50°</p> <p>Brecciated end</p>

INITIAL FRACTURE LOG (undisturbed, in split liner)  
 RUN NO. 76 Depth Interval 1476.3 - 1486.5 Date 9-27-94

# GEYSERS CORING PROJECT



## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 77 Depth Interval 1486.5 - 1496.5 Date 9-27-94

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0		<p>Hackly, Artificial</p> <p>Hackly fractures <math>\perp</math> to core axis - Artificial</p> <p>Vertical fractures pervasively in vacted w/ polymer mud</p>	5		
1		<p>Fractures partially follows Qtz/calc vein</p>	6		<p>Hackly Artificial fractures</p>
2		<p>Hackly fractures <math>\perp</math> to core axis Artificial</p>	7		<p>Hydrothermal breccia zone Rt mtx intensely alt to clay disson pyrite; Qtz veining common</p>
3		<p>Hydrothermal breccia zone Rt mtx alt to clay tr comm PYRITE MINERALIZATION Hackly, Artificial</p>	8		<p>Artificial (?) Fracs in competent gw below hydrothermal zone. Comm disson pyrite comm. gw comp porous and riddled w/ open holes filled w/ xln pyrite</p>
4		<p>Hackly Artificial</p>	9		
5		<p>Hackly Artificial fractures Along earlier Qtz-calc vein</p>	10		<p>Hackly Artificial Fracs generally <math>\perp</math> to core axis</p>

VALUES REFER TO FRACTURE APERTURES IN mm

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 78 Depth Interval 1496.6 - 1506.70' Date 9/27/94

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0		10-20cm Blocks of Rubble fm vein of qtz-calcite AND ARG	5		
1		10mm open fracture ⊥ to core axis (Artificially enhanced separation) due to transport? Fracture/Breccia zone (?) 5-30mm separation btwn core pieces	6		Highly Artificial
2		Highly open fracture ⊥ to core axis 3-4m separation btwn pieces. Fracture(s) follow massive qtz-calc vein vertically penetrating core 5-30mm separa	7		a/a
3		Highly artificial hairline fractures ⊥ to core axis	8		Highly, Artificial
4			9		Discontinuous highly artificial fracture
5		VALUES REFER TO FRACTURE APERTURES IN mm	10		Slits in flow angle flr 30 NE in Arg

INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 79 Depth Interval 1506.78' - 1516.78' Date 9/28/94

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0		Hackly, Artificial	5		Hackly, Artificial a/a
1			6		Fracture follows calc-EP vein along core axis
2		Artificial fracture follows EACtion Calc - gtz view	7		Fracture follows EACtion Calc-EP - gtz (?) - PYR vein. Well developed. Shaded calc on open surface of fracture
3		Hackly, artificial fracture @ hi angle to	8		Fractures partially hackly may be induced by coring - NO APPARENT mineralization INVASION of mud evident
4		Fracture 22mm for bedding contact w/ gw (carbon) & Argillite below	9		Fracture 220mm for gw - Arg carbon - exposes mineralized area partial showing through Arg
5		VALUES REFER TO FRACTURE APERTURES IN mm	10		ENDS OF RUN

INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 80 Depth Interval 1516.70' - 1527.0 Date 9/20/94

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0		<p>Top core</p> <p>Art</p> <p>pretty broken up, thick lines reflect slight separation of pc's.</p> <p>Art</p> <p>HAC, Art</p> <p>Art along vein</p> <p>Art</p> <p>vein brecciated by fault</p> <p>HAC, Art</p> <p>VALUES REFER TO FRACTURE APERATURES IN mm</p>	5		<p>43° frac along Qtz, calcite vein</p> <p>frac formed at a rough GW/Arg contact (slightly below actual contact in a silicified interval)</p> <p>Art</p> <p>frac along gently dipping Qtz, calc vein</p> <p>Art</p> <p>frac partially follows Qtz/calcite vein which dips about 20°</p> <p>3D vein of end, "v" marks represent a fat Qtz, calcite vein</p>

INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 82 Depth Interval 1532-1542 Date 9-28-94

Run # 81 is 5' Bonner



DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
<p>0</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p>		<p>No Fracs zone</p> <p>35° calc, Qtz vein frac</p> <p>40° cross cut frac in Graywacke</p> <p>H, A in GW</p> <p>VALUES REFER TO FRACTURE APERTURES IN mm</p>	<p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p>		<p>30 face</p> <p>45° Nearly conjugate to beddng contact of Arg + GW</p> <p>75°</p> <p>separated core pc's</p> <p>End of core</p>

INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 83 Depth Interval 1542-1552 Date 9-28-94

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0		Top core	5		Soft clayey gouge zone
0.5		45° frac on Qtz/calc vein	5.5		Partially follows vein
1		Hac, Art crosscutting GW and lobate Arg tongue	6		
1.5		Hac, Art Art(?)	7		Art in GW
2		fracs in Arg	7.5		Beddy contact GW to Arg at 25°
3		sli hackly	8		Hac (sli), roughly on beddy of Arg
3.5		crosscuts GW	8.5		Art
4		15°	9		3d face (Arg) at 50° 3d face (GW) rake 60° pulled apart
4.5		v fine frac	9.5		End of core
5		VALUES REFER TO FRACTURE APERTURES IN mm	10		Rubble at base of core

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 84 Depth Interval 1552-1562 Date 9/28/94

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0		Hydrothermal leucite zone Clay fill gw - leucite clasts slit thru w/ micro veins of PYRITE gw. soft & porous	5		Hackly artificial fractures connected by REACTIVATION to angle fractures along 90° calc veins
1			6		
2		Hackly artificial fracture L to core axis Rotable - gw does NOT appear to be attached	7		Hackly artificial
3		Hackly, artificial	8		Hackly artificial fractures along core axis & L to core axis
4		Hackly artificial	9		
5		Lowest fracture follows calcite filled core line nearby fracture	10		END of RUN

VALUES REFER TO FRACTURE  
APERTURES IN mm

INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 85 Depth Interval 1562.0 - 1572.0 Date 7/28/94

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0		<p>Fractures commonly follow earlier veins of gtz-calc</p>	5		<p>Lower fracture follows calc horned reaction zone</p>
1		<p>Hackly, artificial</p>	6		<p>Hackly, artificial</p>
2		<p>Hackly, artificial</p>	7		<p>Hackly, artificial</p>
3		<p>Fracture along earlier thin bedded calc vein</p>	8		<p>Hackly, artificial</p>
4		<p>Fracture follows earlier thin bedded calc and fersussar</p>	9		<p>Exposed fine faceted bed calc</p>
5		<p>VALUES REFER TO FRACTURE APERATURES IN mm</p>	10		<p>Hackly, artificial</p>

~~1526-~~  
~~1573.1~~  
 1580.6-  
 1581.6/1

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 86 Depth Interval 15720-15820 Date 9/29/94

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
0  1  2  3  4  5		<p>Fracture partially follows micro veinlet - invaded by polymer mud</p> <p>Low angle hackly artificial fracture follows earlier Calc healed fracture ⊥ to core axis</p> <p>Fracture primarily follows calc vein healing earlier high angle frac</p> <p>VALUES REFER TO FRACTURE APERTURES IN mm</p>	5  6  7  8  9  10		<p>Core section has a series of close spaced fractures along earlier high angle Calc healed fractures</p> <p style="color: red;">survey 1582' 7 1/2° S40°W</p> <p>Rubble</p> <p>END of RUN</p>

INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 07 Depth Interval 1582 - 1592 Date 9/29/94

DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS	DEPTH, ft	GRAPHIC	NOTES, DESCRIPTIONS
<p>0</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p>		<p>55° Beddg/Vein frac</p> <p>pc's plucked out ← nearly vertical frac in Gw</p> <p>Unfinished because core already boxed and lack of time RD</p> <p>VALUES REFER TO FRACTURE APERTURES IN mm</p>	<p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p>		

## INITIAL FRACTURE LOG (undisturbed, in split liner)

RUN NO. 88 Depth Interval 1592 - 1602 Date 9-29-94