

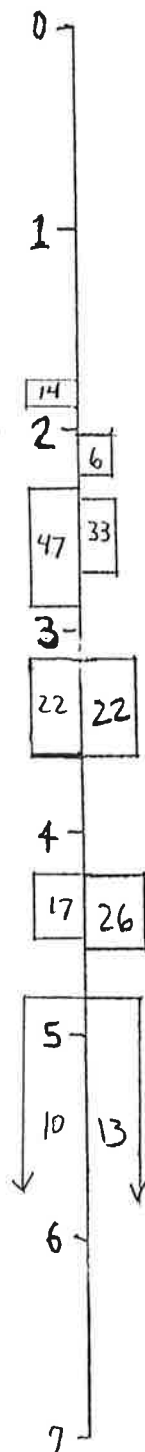
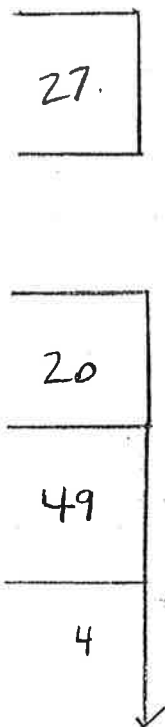
# RHSU 14-2 SPINNER RESULTS

10/9/89

NOT CORRECTED  
FOR HOLE SIZE

CORRECTED FOR HOLE  
SIZE

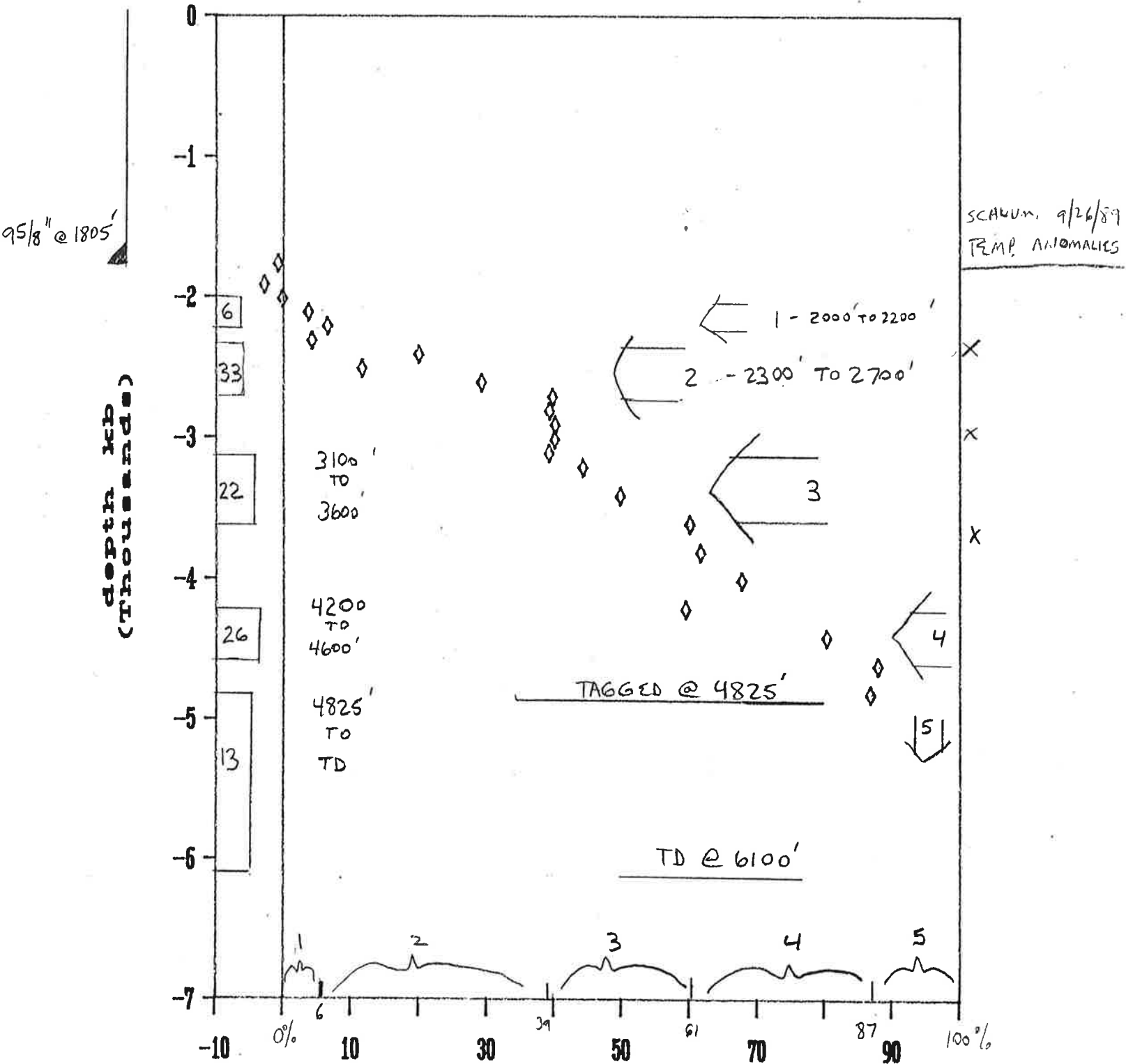
1985 SPINNER/CALIPER  
MASSAGED RESULTS (SUSPECT),  
FOR COMPARISON SAKE.



← MOST CORRECT, BASICALLY  
FLUID IS BEING INJECTED  
INTO VARIOUS INTERVALS  
SPREAD THROUGH OUT THE  
OPEN HOLE, RJD 5/90

# RHSU 14-2 SPINNER RESULTS 10/9/89

results corrected for hole size



% INJ.

DEPTH INTERVAL

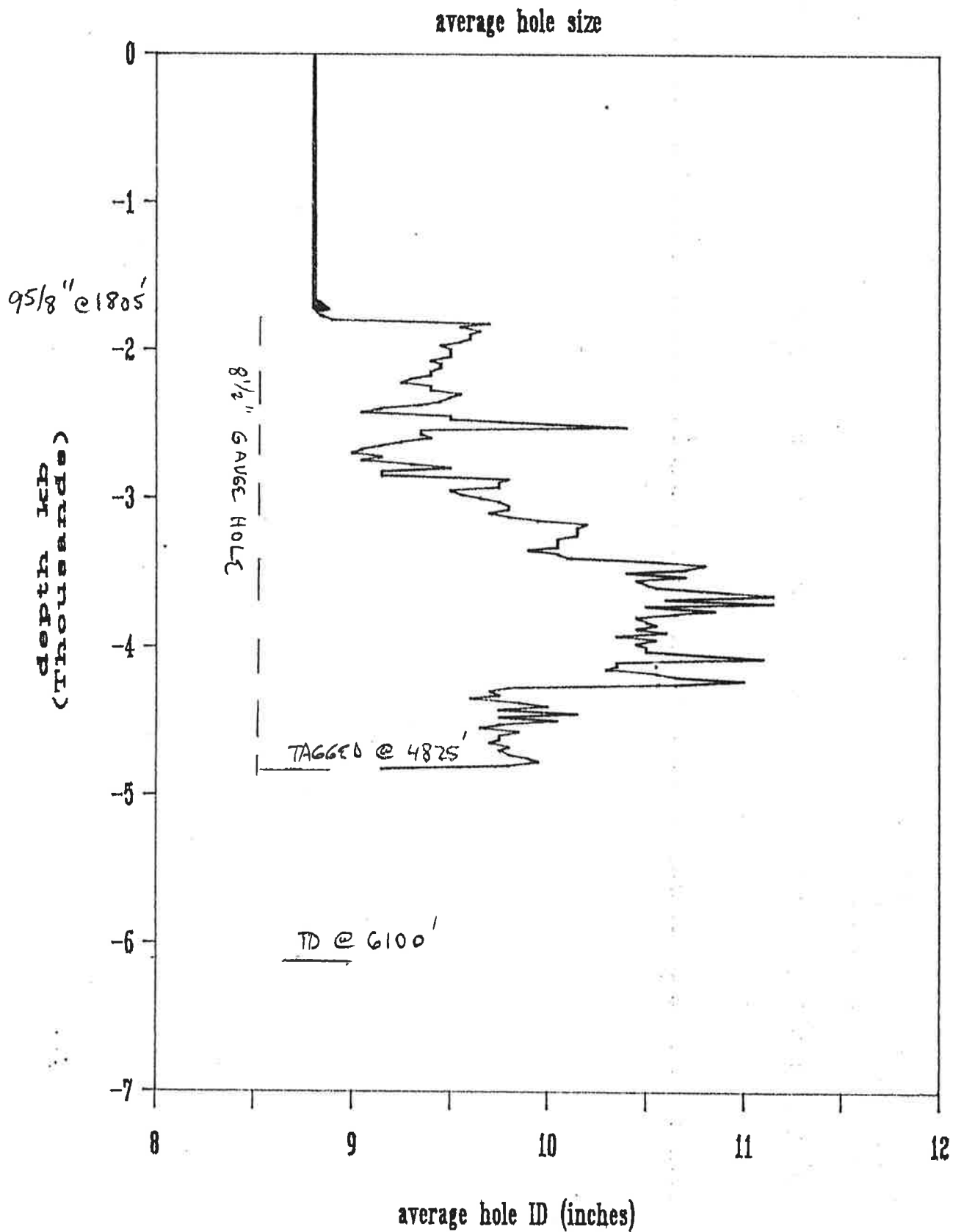
#-INTERVAL

# - % INJECTED

INJECTION IS ALL OVER THE OPEN HOLE

RJD  
5/90

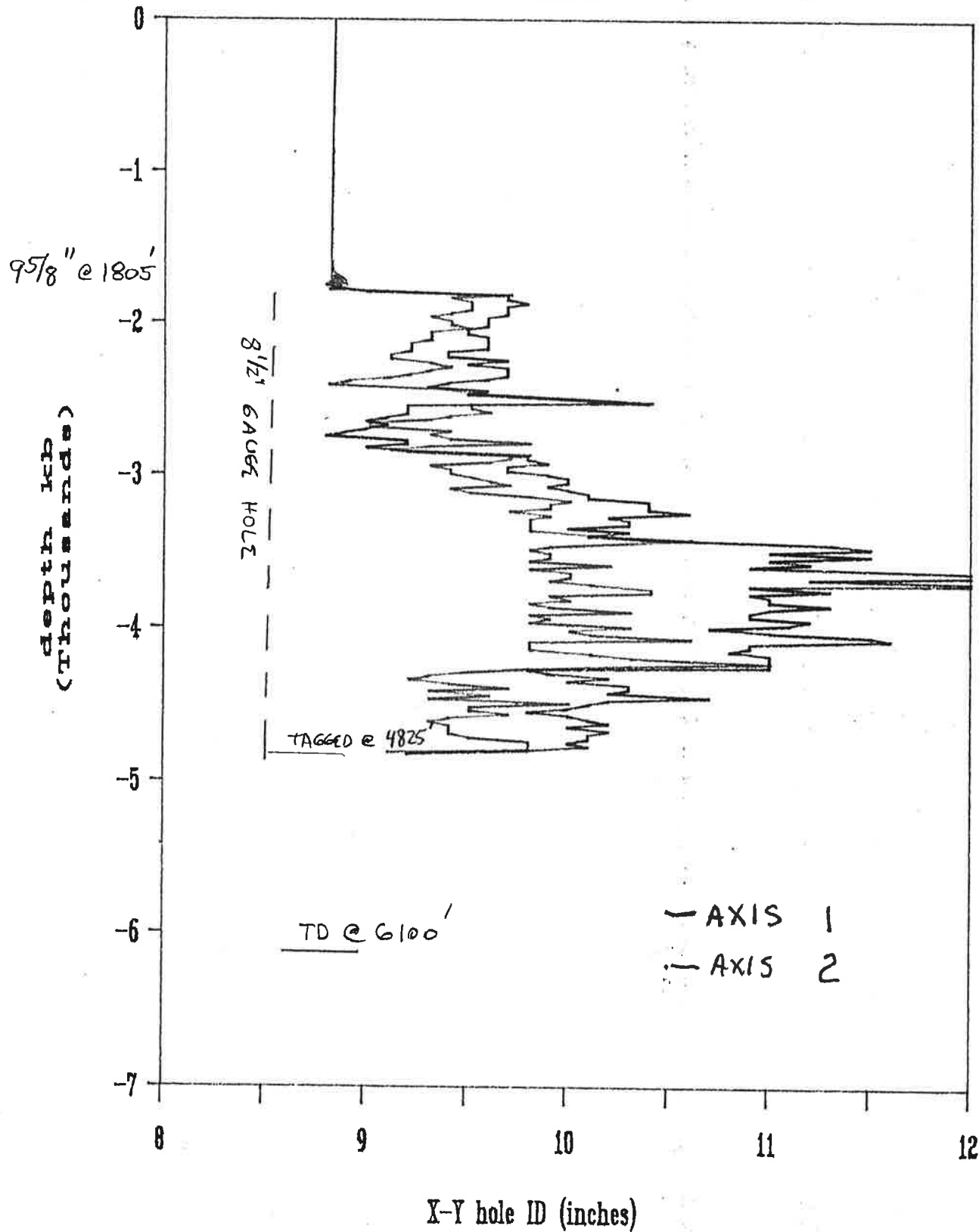
# RHSU 14-2 X-Y CALIPER RESULTS - 9/26/89



RJD 5/90

# RHSU 14-2 X-Y CALIPER RESULTS - 9/26/89

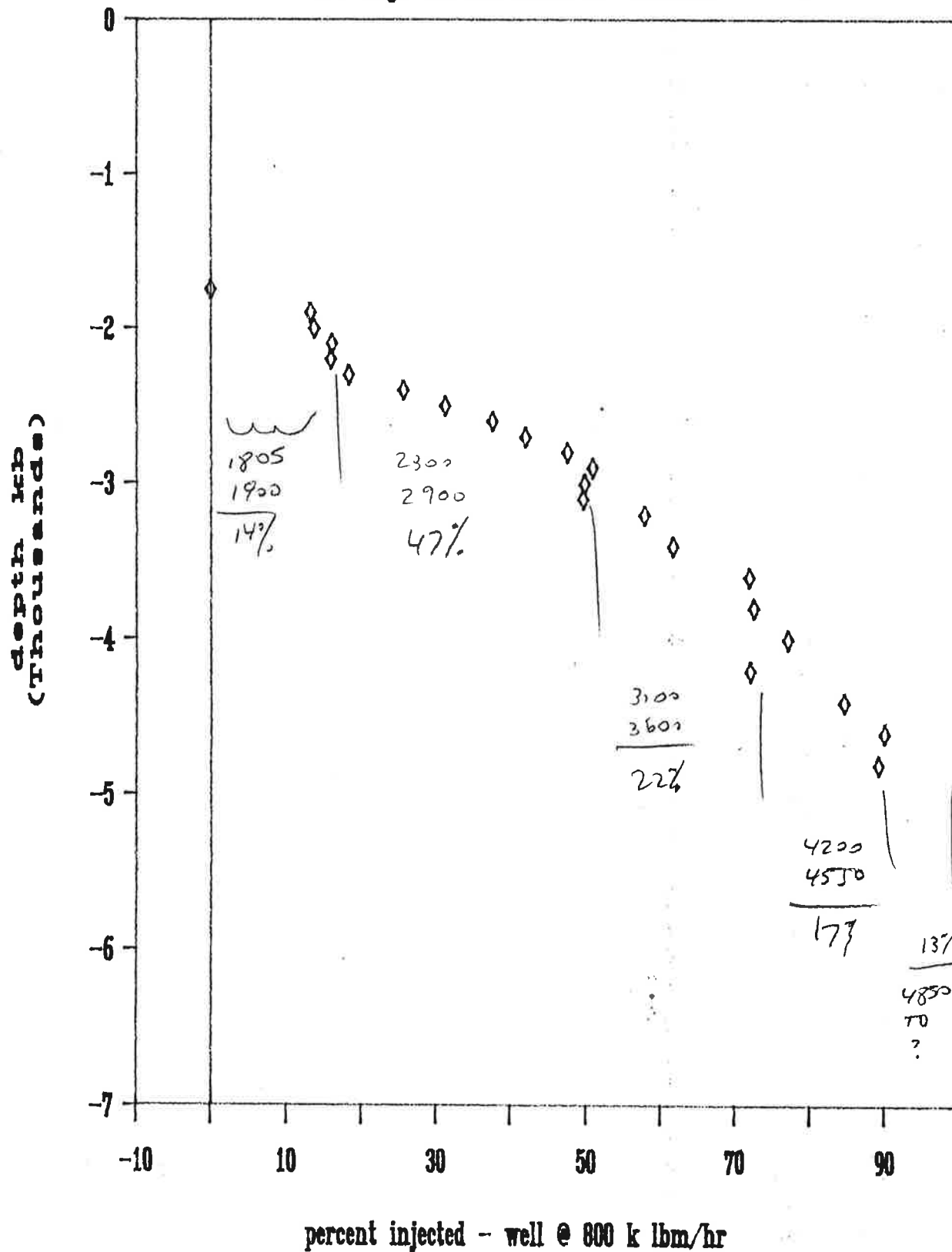
X-Y results



RJD 5/90

# RHSU 14-2 SPINNER RESULTS 10/9/89

raw rdgs. not corrected for hole size



# LOTUS FILE - WORKSHEETS, FORMULAS, KEY PUNCH, PLOTS

C: \ 142457 AY, ... BM 140

$$1.) \frac{\text{FLOWRATE}}{\text{AREA}} = \text{SPINNER OBSERVED VELOCITY}$$

NORMALIZING FOR

100% SPINNER  
(VELOCITY RDG)

$\Delta$  AREA

eg.

AREA OF 100% FLOW IS IN CASING. 2 CHANGE IN CROSS SECTIONAL AREA FROM THIS READING WILL NEED TO HAVE OBSERVED VELOCITY RDG CORRECTED TO AN ACTUAL FLOWRATE.

SPINNER VELOCITY RDG = FLOWRATE W/

FROM BASE CASE ACCOUNTED FOR.

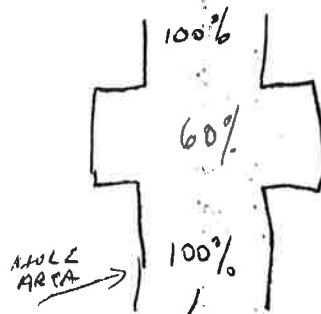
DATA FROM BASE AREA NORMALIZATION

1.0 ID = 8.81"

1.67 ID = 11.39"

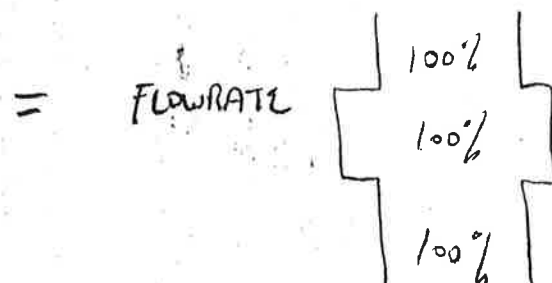
AREA INCREASED BY 67%

1.0 ID = 8.81"



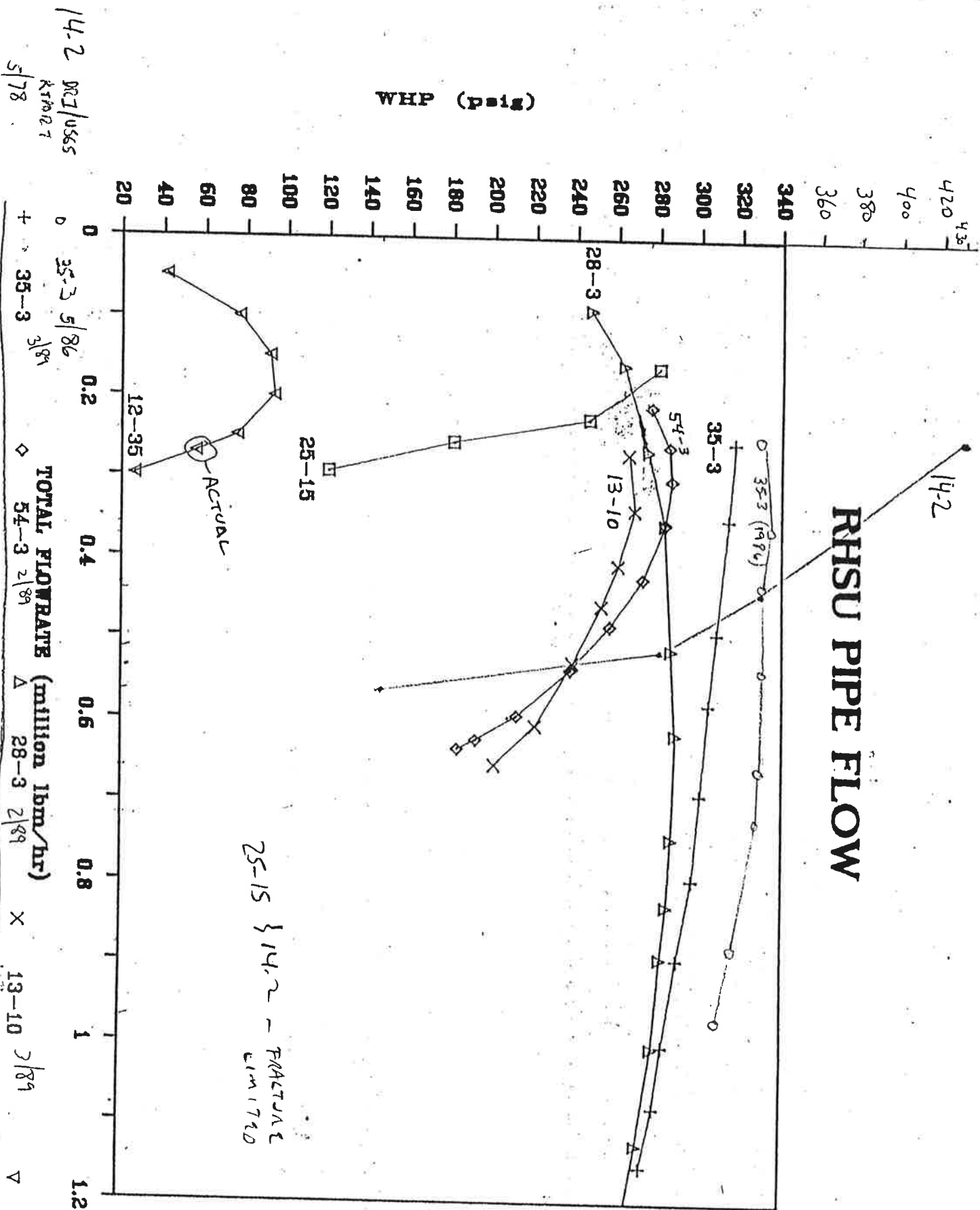
[X]

RAW VELOCITY READINGS (SPINNER)



$$\text{FLOWRATE} = \frac{\text{OBSERVED VELOCITY}}{\text{[FINAL RDG SPINNER]}} \times \frac{\% \text{ CHANGE IN AREA FROM BASE CASE}}{\text{[RAW SPINNER RDG]}}$$

# RHSU PIPE FLOW



RHSU 14-2 PIPE FLOW EXPERIMENT OF 5/12-13/78 WITH DRI/USGS

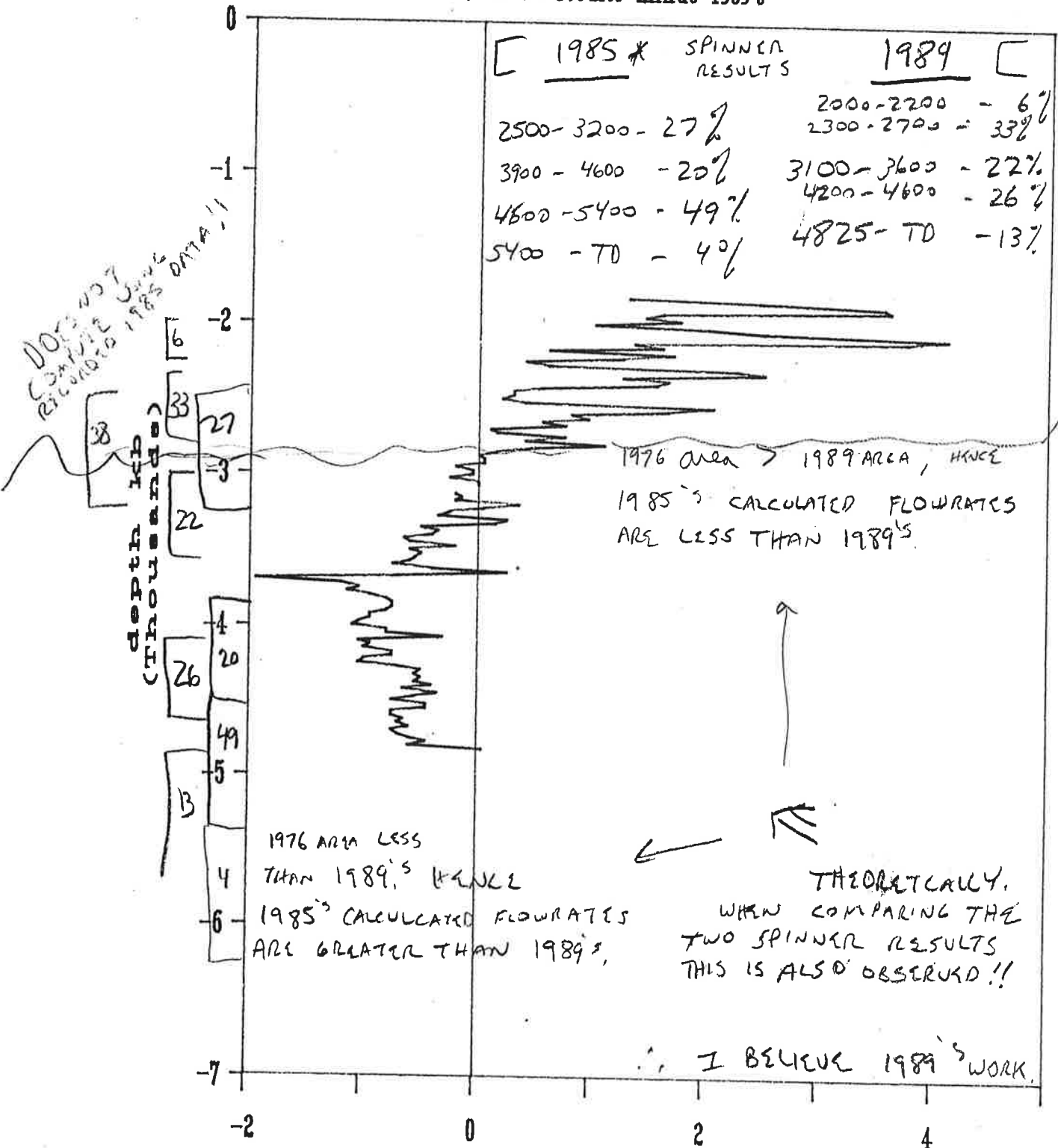
FLASH DEPTH	WHP	TOTAL FLOW		DHP	DHP AT 3000 FT TOTAL FLOW	
1850	700	0		1290		830 ? RECORDED
2450	430	255	‡	1063	255	
2350	375	355	‡	892	357	
	390	370		890	368.8	
	330	445		710	447.5	
	275	515				
	145	570				

‡ PROJECTED AT .32  
Pi @ 3000 = 1290 PSIG



# RHSU 14-2 X-Y CALIPER VARIANCE

. 1976's results minus 1989's



NOTE: 1976 WAS A difference (inches)  
BASIC ONE ARM CALIPER. 1989'S  
WAS A X-Y CALIPER WITH THE  
AVERAGE USED IN THIS COMPARISON. 1989 CALIPER  
DATA IS PROBABLY MORE ACCURATE. 1989 CALIPERS WERE RAW

\* 1985 SPINNER USED 1976'S CALIPER  
RESULTS, 1989'S USES 1989'S

RJD 5/90

# RHSU PIPE FLOW

