



PUMP-IN
TRACER

Company		HOLLY FRONTIER - NAVAJO REFINING	
Well		WDW - 4	
Field		ARTESIA PLANT	
County		EDDY	
State		NM	
Location:		API # : 30-015-44677	
LAT: 32.816014 N		LONG: 104.249946 W	
LOT N 1217' FROM SOUTH LINE			
AND 2443' FROM WEST LINE			
SEC		TWP	
RGE		Other Services	
Permanent Datum		GROUND LEVEL	
Log Measured From		20' KB	
Drilling Measured From		KELLY BUSHING	
Elevation		3564.9'	
K.B. 3584.9'		D.F. 3583.9'	
G.L. 3564.9'			
Date		AUGUST 14, 2014	
Run Number		ONE	
Depth Driller		10,700'	
Depth Logger		10,333'	
Bottom Logged Interval		10,332'	
Top Log Interval		10,050'	
Open Hole Size		N/A	
Type Fluid		H2O	
Density / Viscosity		N/A	
Max. Recorded Temp.		159 DEG F	
Estimated Cement Top		N/A	
Time Well Ready		TOA	
Time Logger on Bottom		10:00 AM	
Equipment Number		TRK #48	
Location		LEVELLAND	
Recorded By		CHANCE JORDAN	
Witnessed By		WES ROMERO	
Borehole Record		Tubing Record	
Run Number		Bit	
From		To	
Size		Weight	
7"		26#	
From		To	
10,264'			
Casing Record		Size	
Surface String		13.375"	
Prot. String		9.625"	
Production String		47#	
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 correctness 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, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

THIS LOG IS SET TO REPORTED CASING SHOE DEPTH.

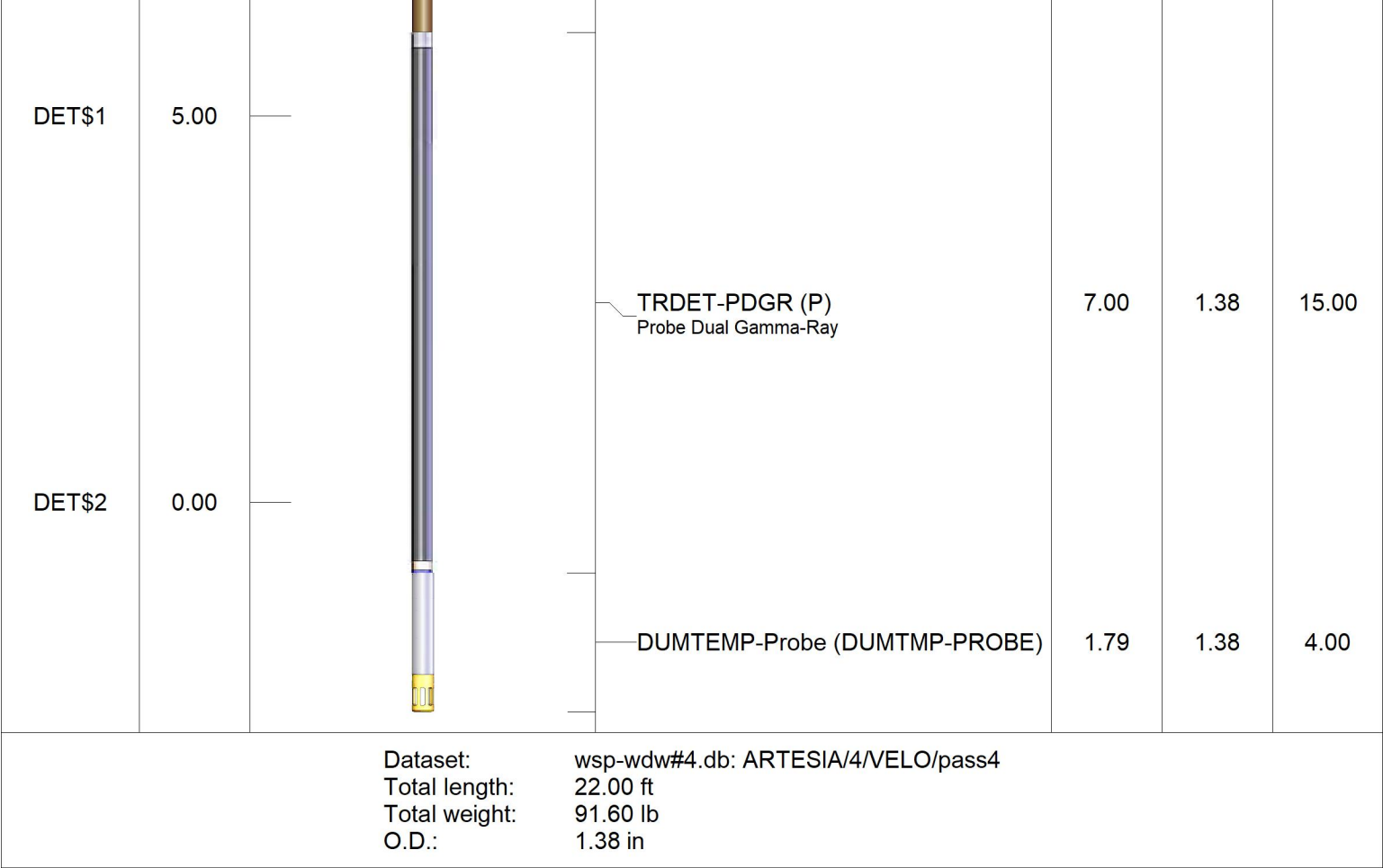
PERFORATIONS

OPEN HOLE: 10,322'-10,700'

INJECTION WELL :

INJECTION WELL:	SHUT-IN DATE	N/A	HOUR	N/A	TOTAL S.I. TIME	N/A	S.I. PRESS	N/A
	METERED INJ. RATE	2-8 BPM	PRESSURE	0-183 PSI	TEMP	N/A	FLUID TYPE	H2O
	TOTAL VOLUME TO DATE		FLUID LEVEL	TUBING				
PRODUCER:	FLOWING	PUMPING	CHOKE SETTING	HOURS PROD.				
	FLUID LEVEL CSG.	TBG.	RATE	B/W	B/O			
	FLUID TYPE							
FRAC OR ACID WELLS:	TIME FINISHED FRAC OR ACID	ACID	FLUID - GALS	SAND #				
	RATE - BPM	PRESSURE						
CONCLUSIONS								
THIS SURVEY WAS RAN TO DETERMINE THE ZONES OF INJECTION FOR A WASTE DISPOSAL WELL. NO CHANNEL UP OR PACKER LEAK DETECETED BY RA. LOGGER TAGGED @ 10,333'. NOTIFIED COMPANY REPRESENTATIVE AND WAS INSTRUCTED TO PERFORM STATIONARY PRESSURE TEST @ 10,327'. TOTAL BBL PUMPED = 493 BBLs NOTE: 0 PSI WHILE PUMPING @ 2 BPM. 183 PSI WHILE PUMPING @ 8 BPM.								

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
CCL	6.67		CHD-1.375CHD 1.375" Cable Head	1.03	1.38	3.60
			7' 1.375" Sinker Bar-1_375 Sinker bar Tun 7' Tungsten Weight Bar	7.00	1.38	54.00
			TREJCT-PROBE (PROBE_1) 1 3/8" Probe 30cc Ejector	3.08	1.38	10.00
			CCL-Probe (Probe_1) 1 3/8" Probe Logging CCL	2.10	1.38	5.00



Company:
Well:
File: C:\Users\Renegade\Desktop\wsp-wdw#4.db
Dataset: ARTESIA/4/TRACER1/_tracer/_shottabl_/1
Reference Rate: 2997.1 b/d

TRACER RESULTS

#	Depth (ft)	Time	Integration	Flow (%)	Delta (%)	Comment
14	10064.00	21:19:37	293442.00	100.00		
15	10082.00	21:20:08	293442.00	100.00	0.00	
16	10108.00	21:20:33	293442.00	100.00	0.00	
17	10135.00	21:20:53	293442.00	100.00	0.00	
18	10161.00	21:21:14	293442.00	100.00	0.00	
19	10187.00	21:21:32	293442.00	100.00	0.00	
20	10216.00	21:21:55	293442.00	100.00	0.00	
21	10245.00	21:22:12	293442.00	100.00	0.00	
22	10284.00	21:22:34	293442.00	100.00	0.00	
23	10313.00	21:22:52	293442.00	100.00	0.00	
24	10331.00	21:23:08	195124.00	66.49	33.51	
25	10332.00	21:23:28	9246.24			

VELOCITY FROM TRACER

#	Depth (ft)	Time	D Space (ft)	D Time (sec)	Flow (b/d)	Flow (%)	Delta (b/d)	Delta (%)
27	10082	21:20:08	19.50	20.42	2997.99	100.00		
28	10108	21:20:33	25.75	26.97	2997.82	100.00	0.17	0.00
29	10135	21:20:53	27.00	28.28	2997.67	100.00	0.15	0.00

29	10189	21:20:55	27.00	28.25	2997.07	100.00	0.10	0.00
30	10161	21:21:14	26.00	27.24	2997.57	100.00	0.10	0.00
31	10187	21:21:32	27.75	29.07	2997.51	100.00	0.06	0.00
32	10216	21:21:55	29.00	30.38	2997.50	100.00	0.01	0.00
33	10245	21:22:12	27.75	29.07	2997.32	100.00	0.17	0.00
34	10284	21:22:34	38.75	31.97	2997.23	100.00	0.10	0.00
35	10313	21:22:52	27.75	30.35	2997.08	100.00	0.14	0.00
37	10331	21:23:08	16.00	41.84	1992.77	66.49	1004.31	33.51
38	10332	21:23:28	0.00	0.00				
36	10332	21:23:52	0.00	0.00				

Company:

Well:

File: C:\Users\Renegade\Desktop\wsp-wdw#4.db

Dataset: ARTESIA/4/TRACER2/_tracer/_shottabl_/1

Reference Rate: 2987.2 b/d

TRACER RESULTS

#	Depth (ft)	Time	Integration	Flow (%)	Delta (%)	Comment
14	10063.00	08:58:34	269521.00	100.00		
15	10083.00	08:58:55	269521.00	100.00	0.00	
16	10109.00	08:59:16	269521.00	100.00	0.00	
17	10135.00	08:59:47	269521.00	100.00	0.00	
18	10162.00	09:00:08	269521.00	100.00	0.00	
19	10191.00	09:00:29	269521.00	100.00	0.00	
20	10215.00	09:00:49	269521.00	100.00	0.00	
21	10243.00	09:01:18	269521.00	100.00	0.00	
22	10284.00	09:01:35	269521.00	100.00	0.00	
23	10313.00	09:01:55	269521.00	100.00	0.00	
24	10329.00	09:02:13	190491.00	70.68	29.32	
25	10331.00	09:08:52	11622.50			
26	10332.00	09:09:19	3572.47			

VELOCITY FROM TRACER

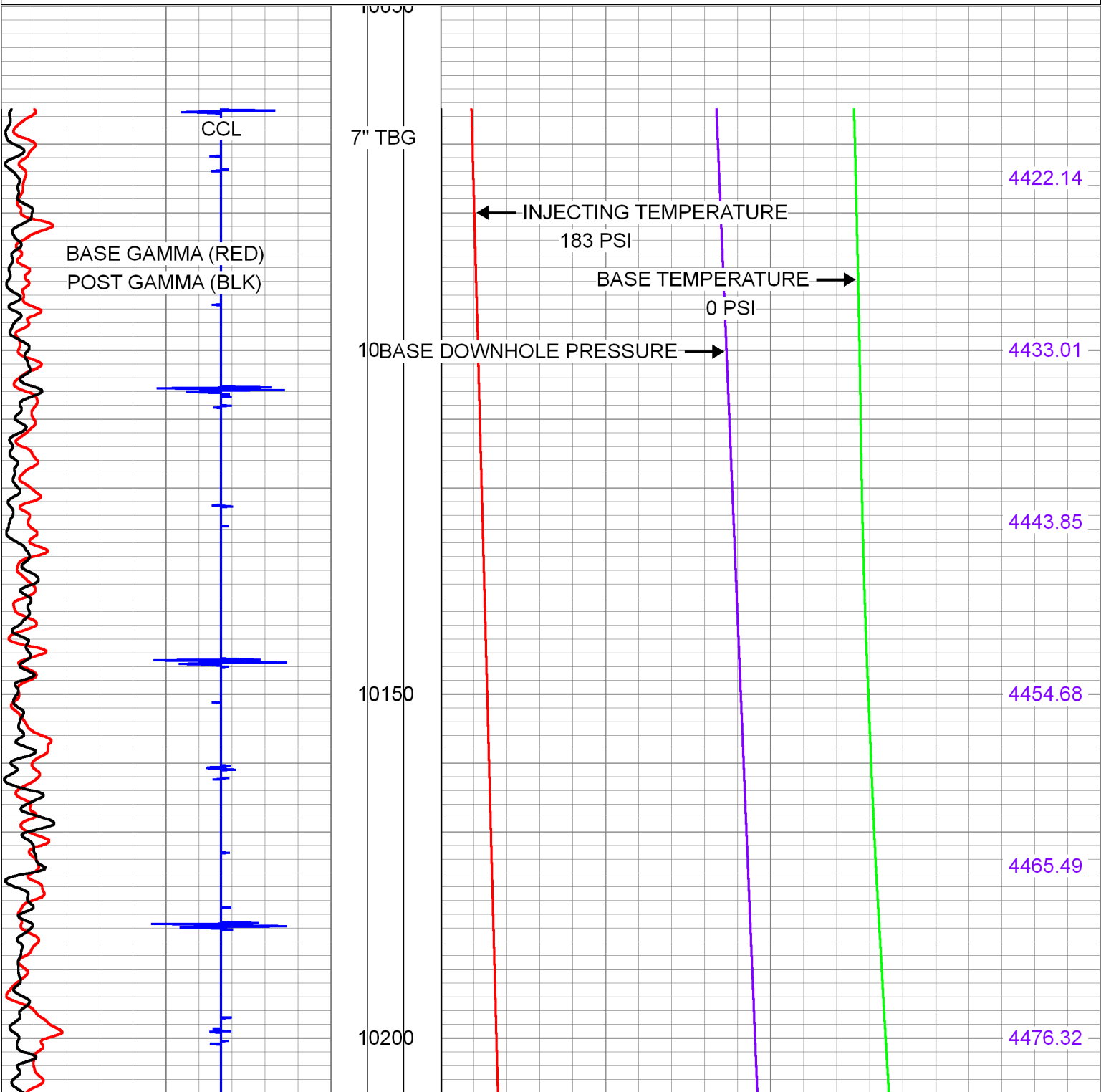
#	Depth (ft)	Time	D Space (ft)	D Time (sec)	Flow (b/d)	Flow (%)	Delta (b/d)	Delta (%)
27	10083	08:58:55	19.75	20.76	2987.80	100.00		
28	10109	08:59:16	26.75	26.53	2987.70	100.00	0.10	0.00
29	10135	08:59:47	24.75	26.01	2987.69	100.00	0.01	0.00
30	10162	09:00:08	27.25	28.64	2987.65	100.00	0.04	0.00
31	10191	09:00:29	28.00	29.43	2987.50	100.00	0.16	0.00
32	10215	09:00:49	24.50	25.75	2987.49	100.00	0.01	0.00
33	10243	09:01:18	29.50	31.01	2987.30	100.00	0.19	0.00
34	10284	09:01:35	40.00	33.43	2987.23	100.00	0.07	0.00
35	10313	09:01:55	27.00	28.38	2987.23	100.00	0.01	0.00
37	10329	09:02:13	12.00	33.56	2111.35	70.68	875.88	29.32
38	10331	09:08:52	0.00	0.00				
36	10332	09:09:19	0.00	0.00				

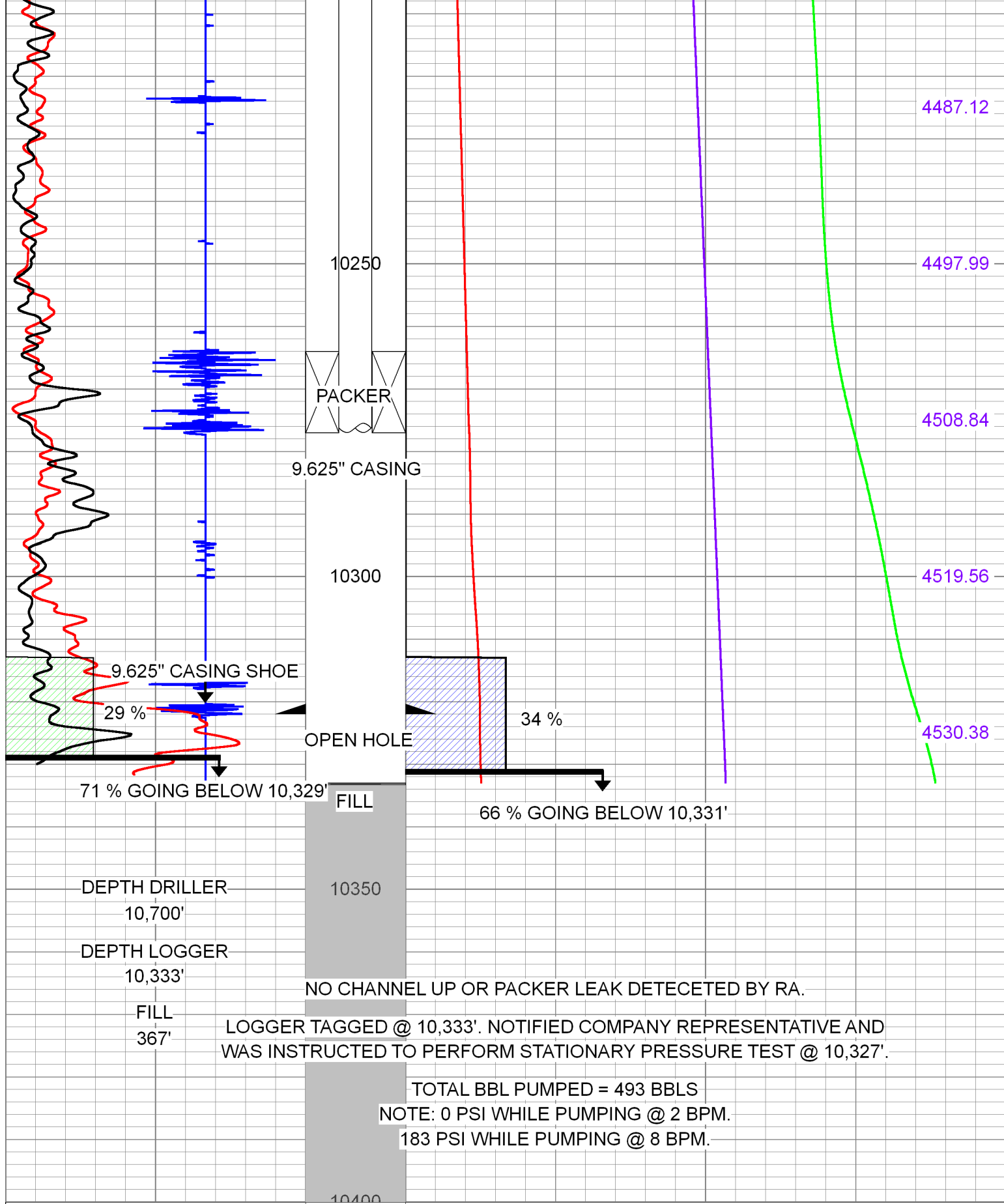


COMPOSITE

Database File	c:\users\renegade\desktop\wsp-wdw#4.db
Dataset Pathname	ARTESIA/4/TRACER1/_compos1.1_
Presentation Format	trccomp1
Dataset Creation	Wed Aug 15 14:40:56 2018
Charted by	Depth in Feet scaled 1:240

-16	CCL	8	129	INJECTING TEMPERATURE (degF)	164
BASE GAMMA			129	BASE TEMPERATURE (degF)	164
0	(GAPI)	150	4000	PRES (psi)	5000
POST SURVEY GAMMA			TRACER #1 INTENSITY LOSS		
0	(GAPI)	150	0	(%)	100
TRACER #2 INTENSITY LOSS			PRES		
0	(%)	100	(psi)		





-16	CCL	8	129	INJECTING TEMPERATURE (degF)		164
BASE GAMMA			129	BASE TEMPERATURE (degF)		164
			4000	PRES (psi)		5000
0	(GAPI)	150	TRACER #1 INTENSITY LOSS			PRES
POST SURVEY GAMMA			0	(%)	100	(psi)
0	(GAPI)	150				



TRACER # 1

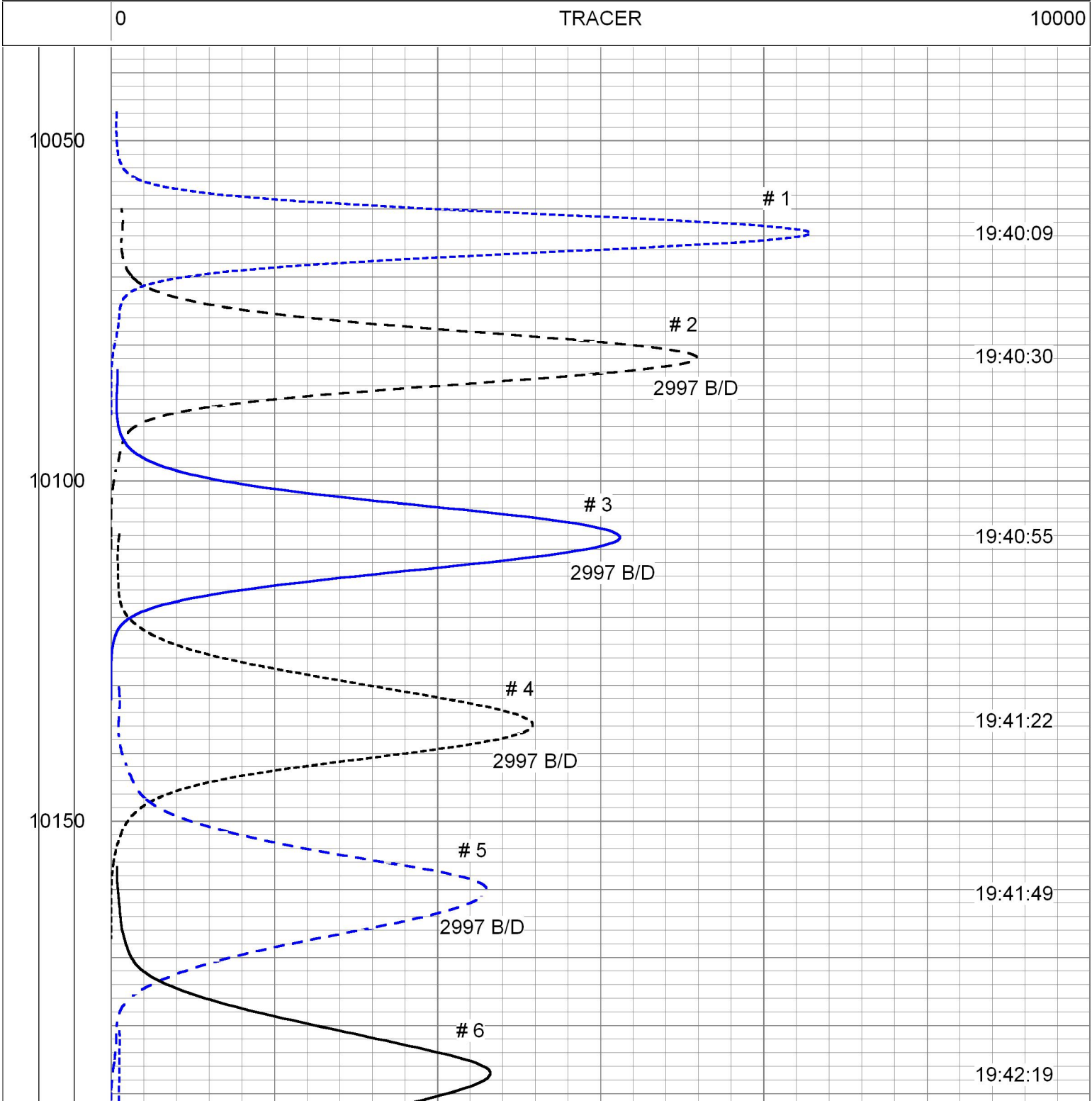
Database Filec:\users\renegade\desktop\wsp-wdw#4.db

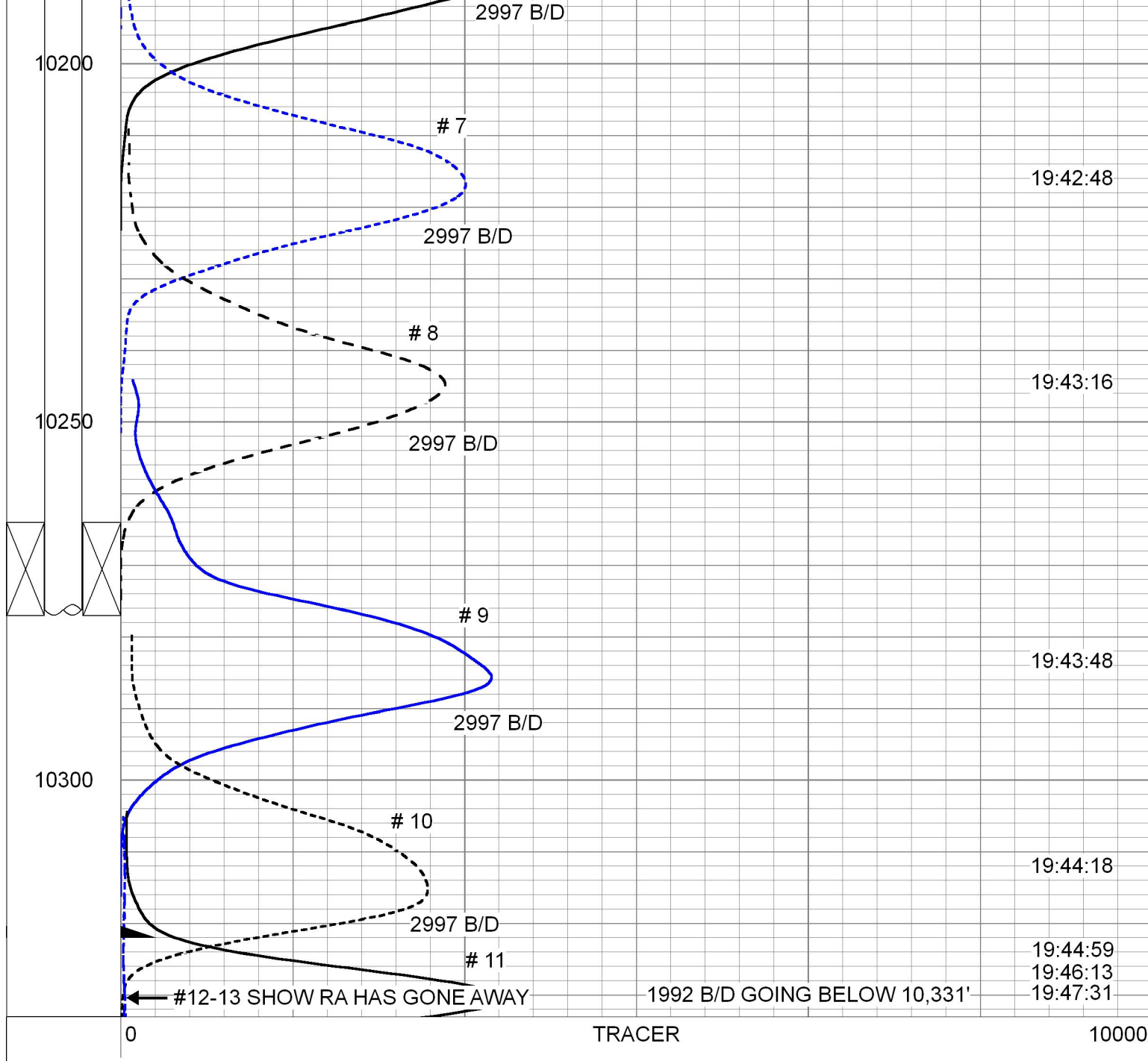
Dataset PathnameARTESIA/4/TRACER1/_profile1_

Presentation Formattrcprof

Dataset CreationWed Aug 15 09:29:53 2018

Charted byDepth in Feet scaled 1:240





TRACER # 2

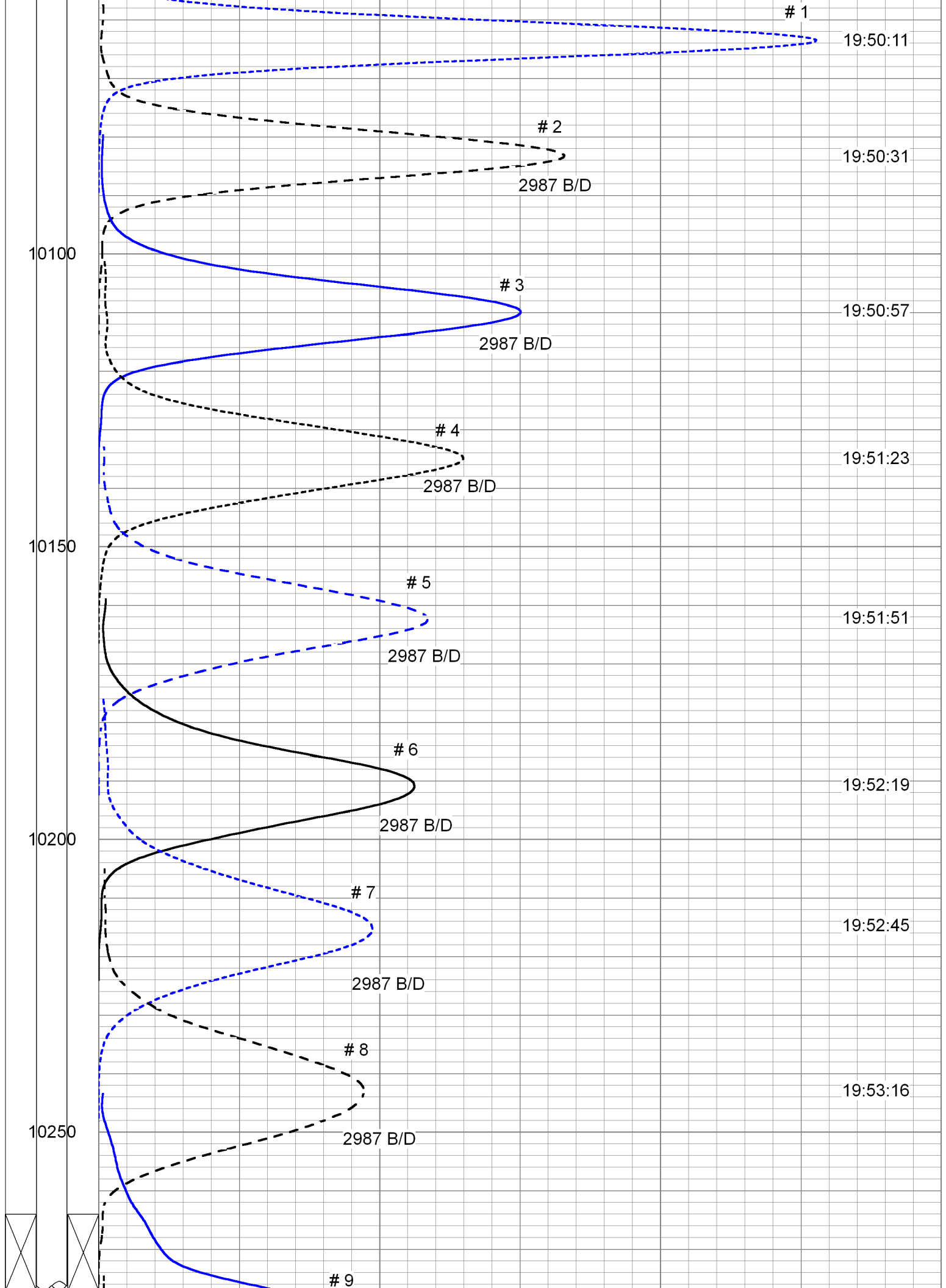
Database File c:\users\renegade\desktop\wsp-wdw#4.db
 Dataset Pathname ARTESIA/4/TRACER2/_profile1_
 Presentation Format trcprof
 Dataset Creation Wed Aug 15 09:34:43 2018
 Charted by Depth in Feet scaled 1:240

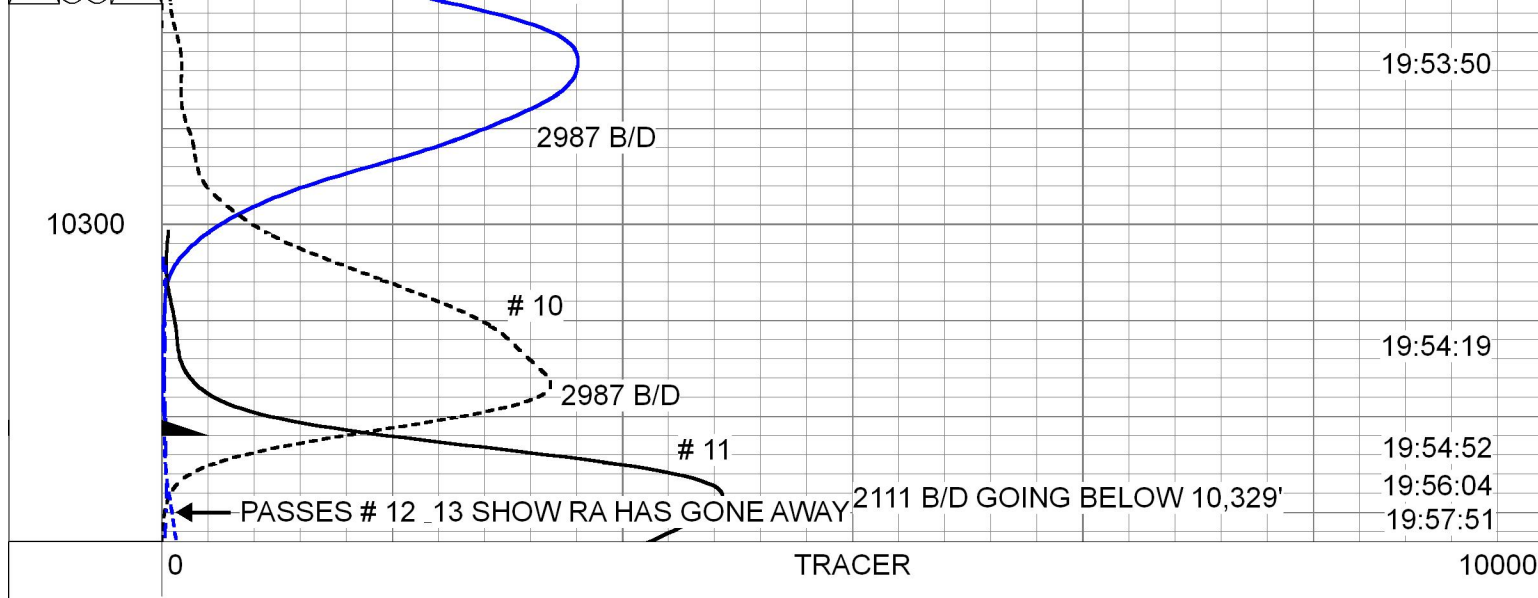
0

TRACER

10000

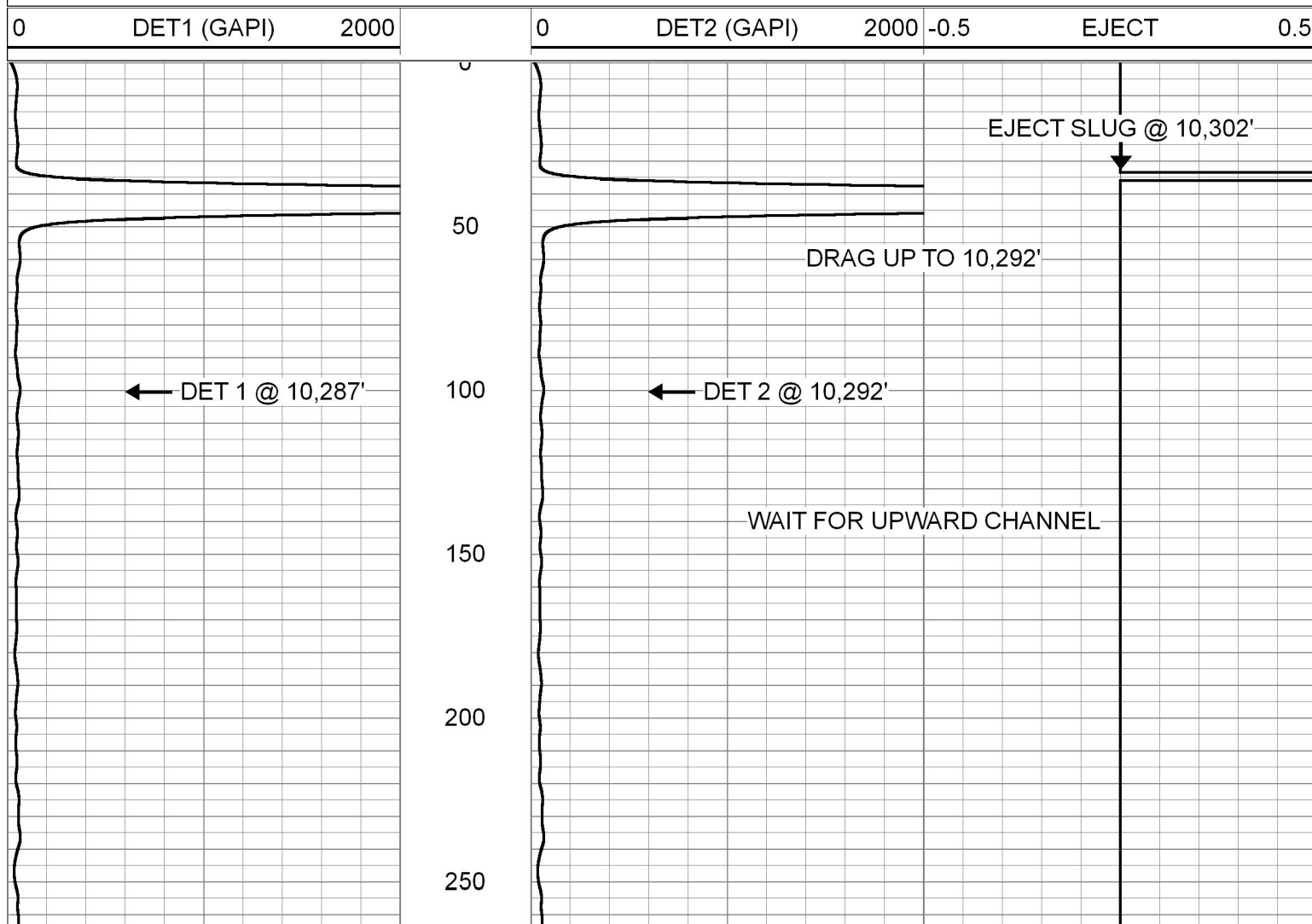
10050

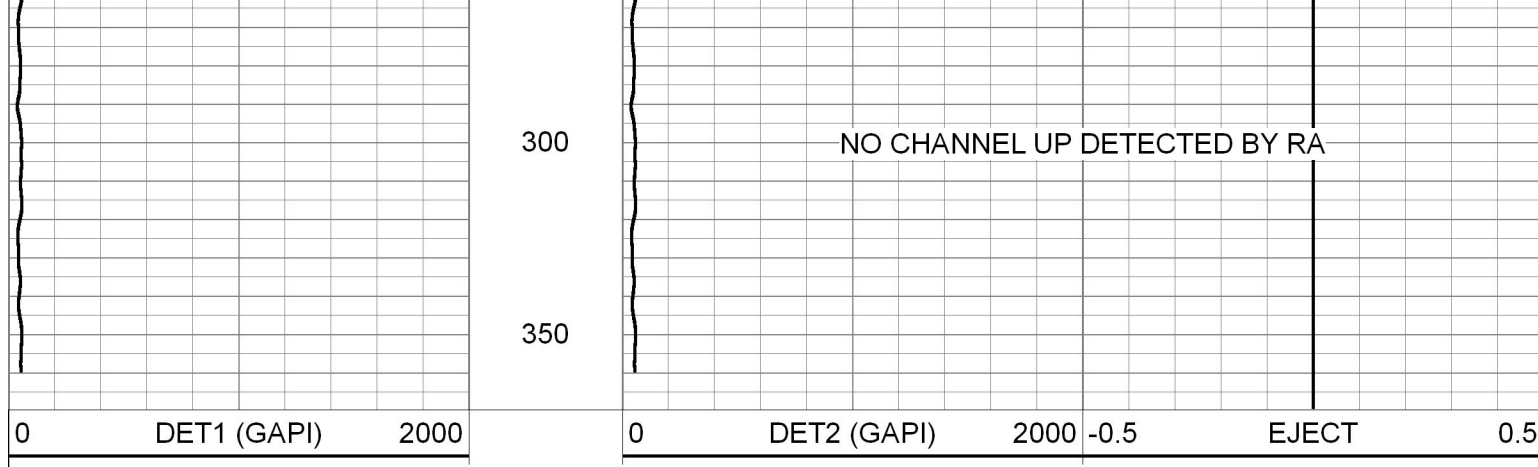




2 BPM CHANNEL CHECK

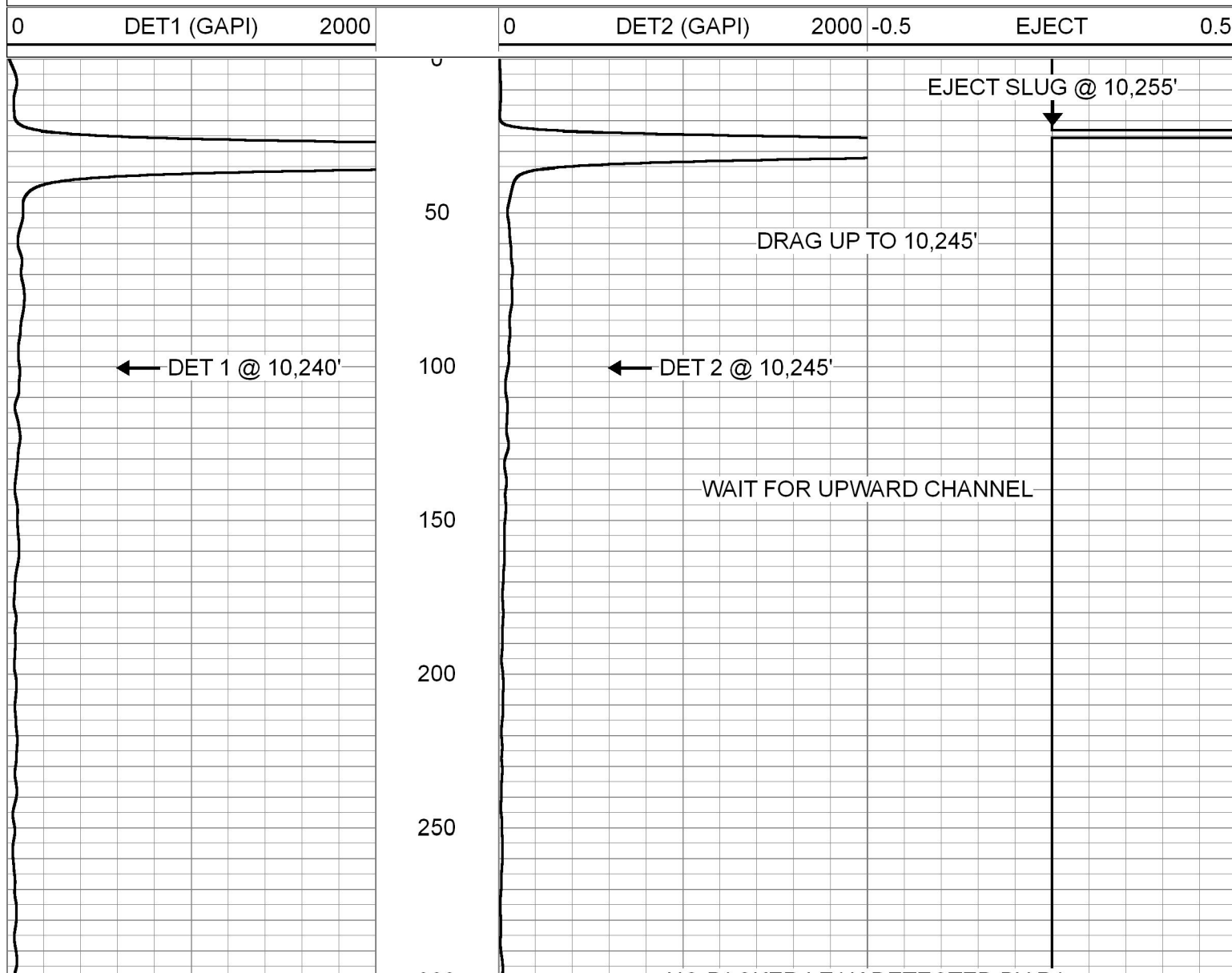
Database File c:\users\renegade\desktop\wsp-wdw#4.db
 Dataset Pathname ARTESIA/4/VELO/pass1
 Presentation Format tracer
 Dataset Creation Tue Aug 14 19:20:14 2018
 Charted by Time scaled 72/hour

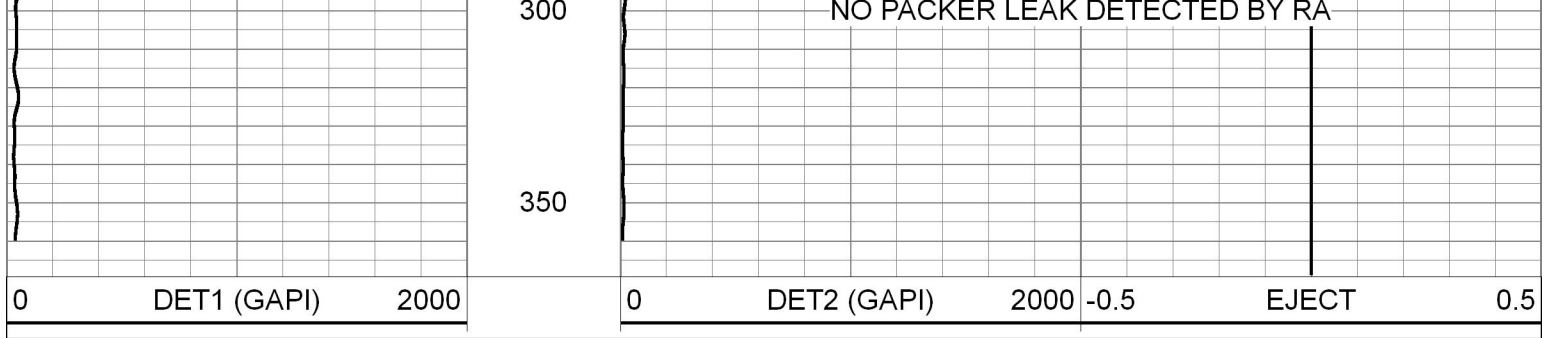




PACKER CHECK

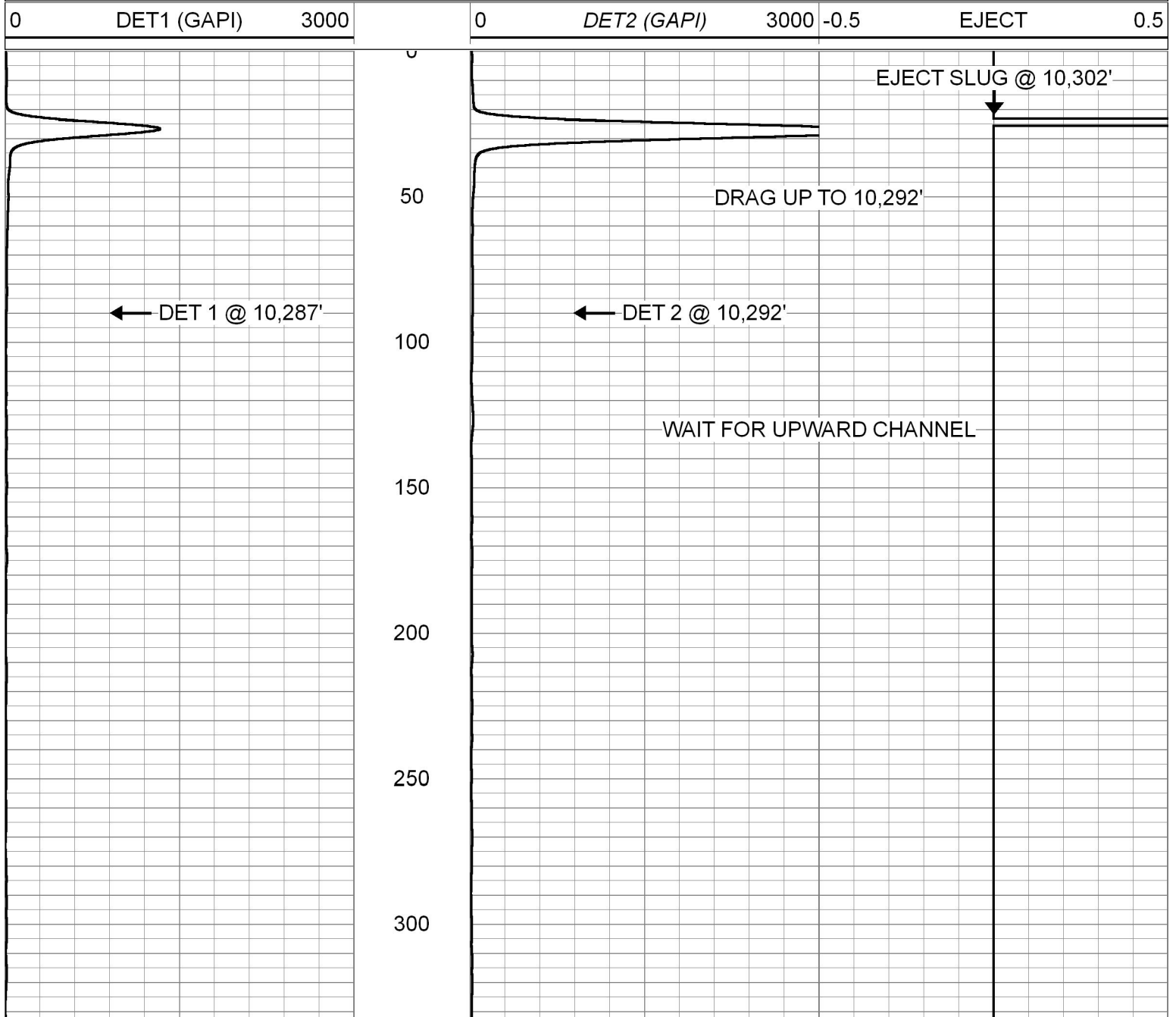
Database File c:\users\renegade\desktop\wsp-wdw#4.db
Dataset Pathname ARTESIA/4/VELO/pass2
Presentation Format tracer
Dataset Creation Tue Aug 14 19:29:57 2018
Charted by Time scaled 72/hour





8 BPM CHANNEL CHECK #1

Database File c:\users\renegade\desktop\wsp-wdw#4.db
Dataset Pathname ARTESIA/4/VELO/pass4
Presentation Format tracer
Dataset Creation Tue Aug 14 20:06:12 2018
Charted by Time scaled 72/hour



350

400

450

500

550

600

650

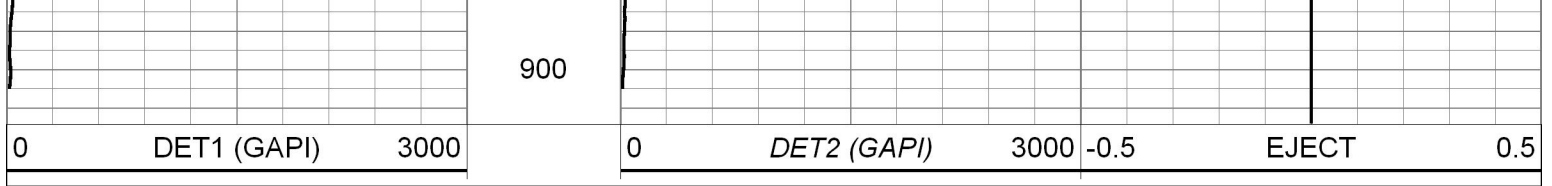
700

750

800

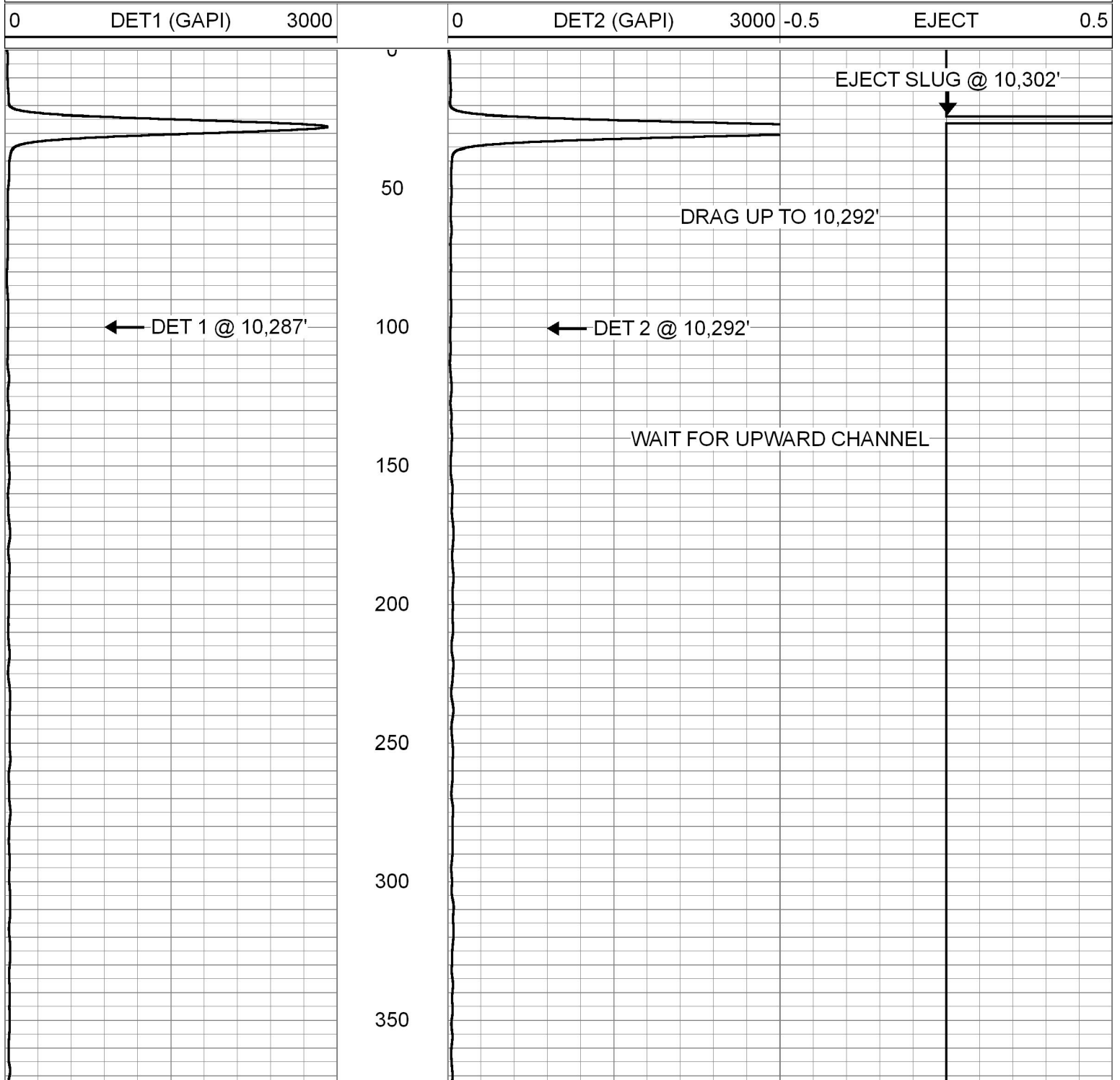
NO CHANNEL UP DETECTED BY RA

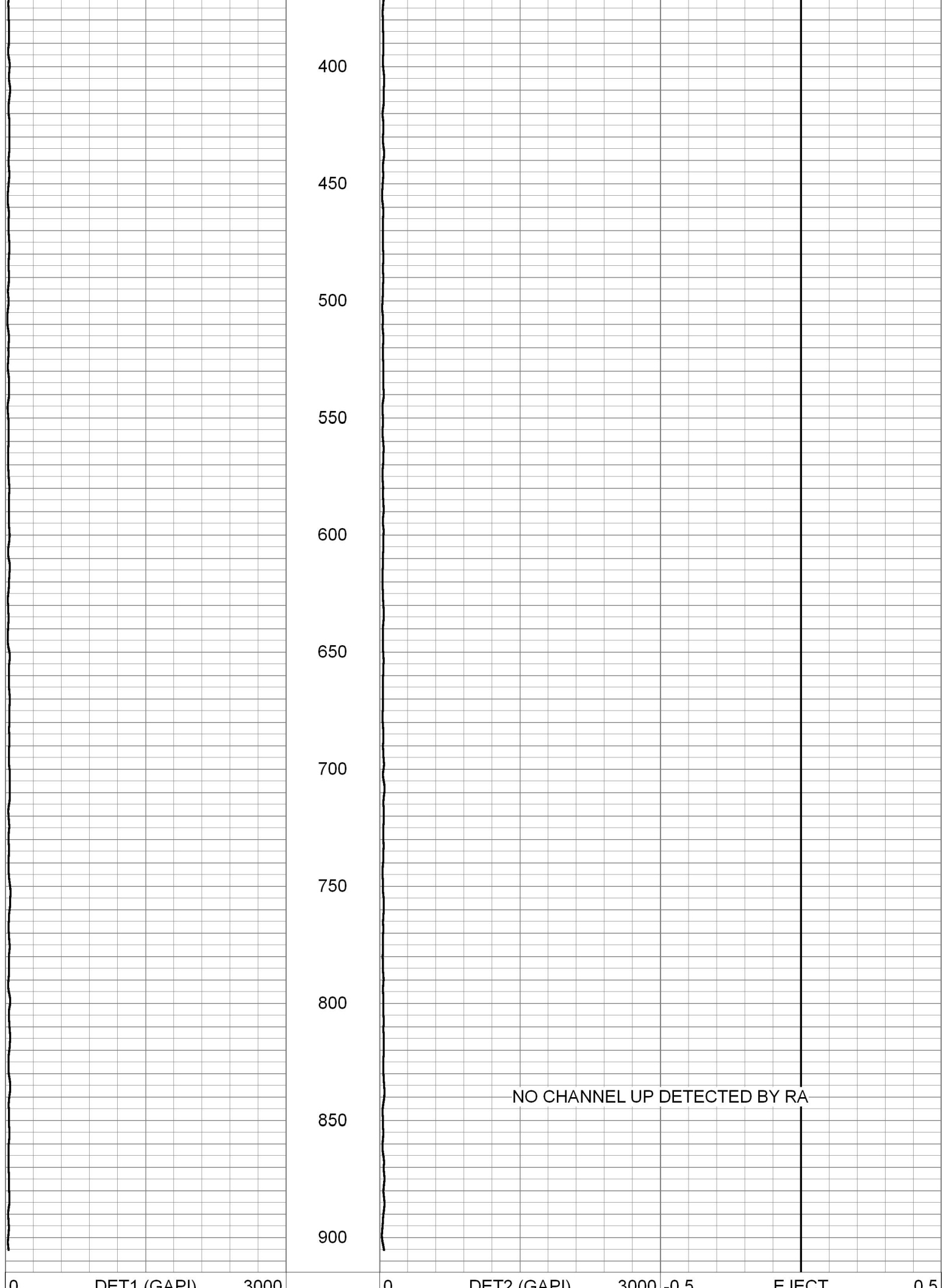
850



8 BPM CHANNEL CHECK #2

Database File c:\users\renegade\desktop\wsp-wdw#4.db
Dataset Pathname ARTESIA/4/VELO/pass5
Presentation Format tracer
Dataset Creation Tue Aug 14 20:22:29 2018
Charted by Time scaled 72/hour





0	DET1 (GAT)	5000	0	DET2 (GAT)	5000	-0.9	ELECT	0.9
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Company	HOLLY FRONTIER - NAVAJO REFINING				
Well	WDW - 4				
Field	ARTESIA PLANT				
County	EDDY		State	NM	
			PUMP-IN TRACER		