

**SUMATRAN RHINO CONSERVATION CENTRE
DEPARTMENT OF WILDLIFE AND NATIONAL PARKS
SUNGAI DUSUN, SELANGOR
MALAYSIA**

MONTHLY REPORT

OCTOBER 2000

BY

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&

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INTRODUCTION

A few breeding took place throughout the month. The first breeding was recorded between Ara and Rima on 5/10/00, followed by another breeding between Ara and Panjang on 14/10/00. The third breeding was observed on 19/10/00 between Ara and Seputeh. However, the blood result for Rima on 28/10/00 showed that she is not pregnant and she was mixed again with Ara on the following day (29/10/00) and was bred. As for Mas Merah and Minah, they were mixed with Shah and Ara respectively but no mating was recorded.

The bleeding procedure is still carried out twice weekly on the females, which is not bred for progesterone analysis. As for the bred females, they were only bleed on the 18th day post breeding to confirm pregnancy. If the result showed that they were not pregnant, mixing will be carried out on the 21st day. Other than that, the fecal collection was continued from all females.

The latest blood results for progesterone analysis was received on 30/10/00 and is attached in the report.

RHINO HUSBANDRY

a) Daily Introduction

The females were only mixed when they were expected in estrus based on the blood result. However, based on the limited blood result (the last one is on 4/9/00), they were mixed 3 days before and after their estrus period. The breeding behavior was recorded during the pairing period as a tool to assess the estrus period. Any positive responds either from the male or female will determine whether to prolong or stop the mising procedure.

Rima was expected coming into estrus from 5/10/00 to 9/10/00. She was mixed with Ara on 5/10/00 and was bred. Blood analysis on 28/10/00 showed that she was not pregnant and she was paired again with Ara on 30/10/00 and bred. Panjang was expected coming into estrus from 8/10/00 to 12/10/00. She was mixed with Shah during this period but no breeding occurred. However, she showed positive signs at the end of the period and it was decided to lengthen the pairing procedure. On 14/10/00 she was mixed with Shah and breeding behavior was observed but the male failed to breed. Therefore, Ara was used and she was bred.

As for Seputeh, she was expected coming into heat between 18/10/00 to 21/10/00. However, based on the blood result received on 16/10/00, her estrus period should be over. Therefore, no pairing was done on 18/10/00 and 19/10/00 morning. However, Dr. Zainal decided to mix her with Ara on 19/10/00 afternoon after restudied the blood profile and Ara bred her.

b) Blood Collection

The bleeding was still carried out twice weekly. As for the Rima, Panjang and Seputeh, the blood will be collected on the 18th day after breeding and if they are not pregnant, they will be mixed with the male on the 21st day. Apart from that, blood was taken from Mas Merah and Shah for DNA work. Blood sample from Shah was also sent to MARDI for testosterone analysis. The blood procedure was summarized in Table 2.

c) Blood Results

a) Progesterone Hormone Profile

The latest blood result was received on 30/10/00 and it is attached in the report. Based on the result, Rima is not pregnant since her progesterone level is low, 0.16ng/ml on 26/10/00 and dropped to 0.04 ng/ml on 27/10/00. She was mixed again with Ara on 29/10/00 and was bred. As for Panjang and Seputeh, the blood will be collected on 1/11/00 and 6/11/00 respectively for pregnancy confirmation.

As for Mas Merah, she was expected coming into estrus between 21/9/00 to 25/9/00. This was based on the breeding behavior observed between 2/9/00 to 4/9/00. However no breeding was recorded during the period and this was revealed in the blood result. Based on the result, her progesterone level was 0.85ng/ml on 21/9/00 and increased to 1.09ng/ml on 25/9/00. The level supposed to be dropped to the basal by 25/9/00 but it keeps increasing until the highest peak, 3.15ng/ml on 5/10/00. Her progesterone level was high for about a month from 21/9/00 to 26/10/00. The result was very confusing and her estrus period is difficult to predict. However, she will be mixed with the male starting from 1/11/00.

Minah's profile is irregular. She recorded the highest peak, 1.34ng/ml on 21/9/00 after four months of blood collection. She was expected to be in estrus between 11/9/00 to 14/9/00 but no breeding was recorded after mixing her with Ara. Based on her blood profile, the progesterone level was low 0.07ng/ml, 0.09ng/ml and 0.48ng/ml respectively during the period. Her progesterone level remains low for about a month from 29/9/00 to 26/10/00. Therefore, it is difficult to predict her estrus cycle.

d) Fecal and Vaginal Cytology

The fecal collection is still continued and the samples were being pooled before sending them to UPM. As for the cytology work, the sample collection will be stopped by end of the month.

Table 1: The Pairing Program of the Males and Females at SRCC, October 2000

Date	Remarks
5/10/00	Rima was mixed with Ara today and was bred.
8/10/00	Panjang was mixed with Shah today. She went straight to the feeding area where Shah was. No response from Shah although both rhinos were side by side. He was busy eating. Shah sniffed Panjang but continue to eat.
9/10/00	Shah was busy eating when approached by Panjang. Shah sniffed Panjang but no further response. Both rhinos were busy eating side by side. Panjang try to chase away Shah and he looked annoyed. Separate before the fights begin.
10/10/00	Panjang approached the feeding area when released into paddock 1. Shah was busy eating and ignored Panjang. Shah sniffed Panjang but no further response. Both rhinos were busy eating side by side.
11/10//00	Panjang was released into paddock 1 from the gate in paddock 2. No response from both rhinos when they notice each other. Shah kept eating while Panjang went for food. Both rhinos were eating side by side.
12/10/00	Panjang went straight to the feeding area when released. No response from Shah when Panjang approached. Both rhinos were side by side eating.
13/10/00	Panjang went straight to the feeding area where Shah was busy eating. Shah sniffed for a while when she was near him but continue eating. Head butting was observed and both rhinos were separated to avoid fighting.
14/10/00	Mixed Panjang with Shah in the morning. Estrus behavior was observed but the Shah failed to breed. Panjang was then mixed with Ara in the afternoon ans was bred.
19/10/00	Seputeh was paired with Ara in the afternoon and she was bred.
27/10/00	Minah was mixed with Ara. No positive responds observed from both rhinos. Separate the rhinos after 20 minutes of mixing.
29/10//00	Rima was mixed with Ara and she was bred.

Table 2: Blood Collection from the Rhinos, October 2000

Date	Rhino ID	Area taken	Remarks
2/10/00	Minah Mas Merah Minah Rima Seputih	Tail Tail Tail Tail Tail	Dr. Zainal took the blood from all females through the tail.
5/10/00	Rima Panjang Mas Merah Minah Seputih	Tail Tail Tail Tail Tail	Get blood samples from all females. The rhinos seem very cooperative.
9/10/00	Minah Mas Merah Seputeh Panjang	Tail Tail Tail	Get blood samples from all females from the tail.
13/10/00	Panjang Seputih Minah Mas Merah	Tail Tail	
16/10/00	Panjang Mas Merah Minah Seputeh	Tail Tail Tail	
19/10/00	Panjang Minah Mas Merah	Tail Tail Tail	
23/10/00	Minah Mas Merah Rima	Tail Tail Tail	Get blood from all females. Sent to UPM for P4 analysis.

Date	Rhino ID	Area taken	Remarks
26/10/00	Mas Merah Minah	Tail Tail	Managed to get samples from Mas Merah but not Minah.
27/10/00	Rima Minah	Tail Tail	Get blood samples from both females.
30/10/00	Mas Merah Shah	Tail Tail	Get blood samples from both Mas and Shah. Tried on Minah but failed.
31/10/00	Minah	Tail	Try to get samples from Minah but failed.

Breeding Observation in Sumatran Rhino Conservation Center, Sg. Dusun, October 2000

Introduction

A breeding program has been set up in this center to facilitate the breeding. This program includes the establishment of the bleeding collection from the females, the daily introduction of the male and female and also the analysis of the blood progesterone for estrus prediction. The first breeding behavior was observed after about three months of daily introduction between Mas Merah and Shah from 2/9/00 to 4/9/00. This was followed by the similar situation between Panjang and Shah from 18/9/00 to 21/9/00. On both occasions, the male failed to breed. On 5/10/00, the first mating occurred between Rima and Ara, which took about 46 minutes. Another breeding was observed after mixing Panjang and Ara and this took about 35 minutes. In this occasion, Ara was used after Shah failed to breed the female. The latest breeding took place on 19/10/00 between Seputeh and Ara. The last minute decision of mixing the rhinos resulted in breeding for about 30 minutes. These females will be bled to confirm their pregnancy on the 18th day post breeding.

Breeding of Ara and Rima (5/10/00)

Rima was predicted to be in estrus between 5/10/00 to 9/10/00. She was mixed with Ara on 5/10/00 around 8.00 a.m. in the quarter acre natural enclosure. Ara showed some interests on Rima and kept following her but Rima is not ready. She moved away from Ara and vocalized a lot. The rhinos were separated after 30 minutes of mixing. Around noon, the keeper noticed that Rima is restless and vocalized a lot. She spent her time more at the gate between the old paddock and the quarter acre. Ara was brought into the quarter acre and the rangers noted that both rhinos spent their time at the gate and Rima was very eager to enter the enclosure, vocalizing a lot.

Around 3.00 p.m., both rhinos were mixed. Ara started to follow Rima and mounted her after five minutes of pairing. He trailed Rima very closely and his nose was always at Rima's genital (anopereneal contact). Twelve mountings were recorded during the procedure and the penis was observed in all occasions. In the ninth mounting, erection was noted and Ara try to penetrate but Rima moved away. No aggression occurred. On the tenth and eleventh mounting, Ara had a full erection and he was trying to position himself to penetrate but failed. Lastly, intromission occurred on the twelfth mounting and last for about 46 minutes. About 32 thrusts were recorded during the first 20 minutes of the courtship.

Breeding of Ara and Panjang (14/10/00)

Dr. Zainal predicted that Panjang was expected to be in estrus between 8/10/00 to 12/10/00. This is based on the P4 data received until 4/9/00 and also her behavioral estrus between 18/9/00 to 21/9/00. However, Panjang did not show any signs of heat during that period but positive behavior was observed towards the end of the period and it is decided to prolong the procedure. She was paired with Shah from 8/10/00 to 14/10/00. On the 14/10/00 morning, Panjang showed signs of estrus by presenting herself to be mounted but Shah failed to breed. Therefore, Ara is put on trial.

Panjang was washed thoroughly before mixing her with Ara. She was then released into the quarter acre after releasing Ara but looked very restless and attempted to get out from the enclosure. Based on these, it was decided to mix the rhinos in the paddock. Ara was called into the night stall followed by Panjang. Then the rhinos were released into the breeding paddock. The food was provided and all personnel were on standby in case of any aggression. The procedure started at 11.30 a.m. and lasted until 4.55 p.m. Twenty-nine mountings were recorded with 15 erections and Ara was observed searching for vulva. Dr. Zainal assisted the intromission during the last mounting and it lasted for about 35 minutes. Fifteen thrusts were recorded during the procedure.

Breeding of Ara and Seputeh (19/10/00)

Seputeh was supposed to be in estrus between 18/10/00 to 21/10/00. However, based on the result received on 16/10/00, her estrus period should be over. Therefore, no mixing was done on 18/10/00 and 19/10/00 morning. Dr. Zainal decided to mix the rhinos on 19/10/00 afternoon after restudied the P4 profile up to 2/10/00. Around 2.30 p.m., she was introduced in the quarter acre and Ara showed some positive responds. However, some aggression were observed but under controlled. Ara mounted Seputeh after 10 minutes of mixing. The first three mountings were observed without erection, followed by the another six mountings with erection. Three intromissions were noted and the first, second and third intromission lasted for about two, one and 35 minutes respectively. Twenty-five thrust were recorded during the last mounting.



RIA DATA REDUCTION USING LOGIT-LOG TRANSFORMATION
(Computer Generated)

Date : 19-Oct-00 Assay #: P11/2000 ng/ml cv
Hormone : Progesterone Expt #: Dr. Zainal & Khor QC-L= Nil UB0%= 76.5
Label : 125-I TC (cpm)= 42174 QC-M= 4.51 3.5 NSB%= 1.4
Sample : Sumatran Rhino BO (cpm)= 32271 QC-H= 8.55 5.2 CBo%= 75.2
& KK Cattle NSB (cpm)= 574

Tube#	Sample	CPM	%B	Logit	LOG conc
1	TC	43995			
2	TC	40352			
3	NSB	568			
4	NSB	580			
5	BO	33840.0			
6	BO	30701.0			
7	BO	33840.0			
8	BO	30701.0			
9	0.1	28460.0	86.4	1.8500	-1.0000
10	0.1	29131.0	88.5	2.0399	-1.0000
11	0.5	21709.0	65.5	0.6408	-0.3010
12	0.5	21058.0	63.5	0.5527	-0.3010
13	2	14057.0	41.8	-0.3318	0.3010
14	2	14491.0	43.1	-0.2767	0.3010
15	10	6743.0	19.1	-1.4425	1.0000
16	10	6337.0	17.9	-1.5260	1.0000
17	20	4446.0	12.0	-1.9926	1.3010
18	20	4449.0	12.0	-1.9917	1.3010
19	40	3078.0	7.8	-2.4755	1.6021
20	40	2861.0	7.1	-2.5734	1.6021

Mean 0 = 32270.5
cv % = 4.9
SD = 1569.5

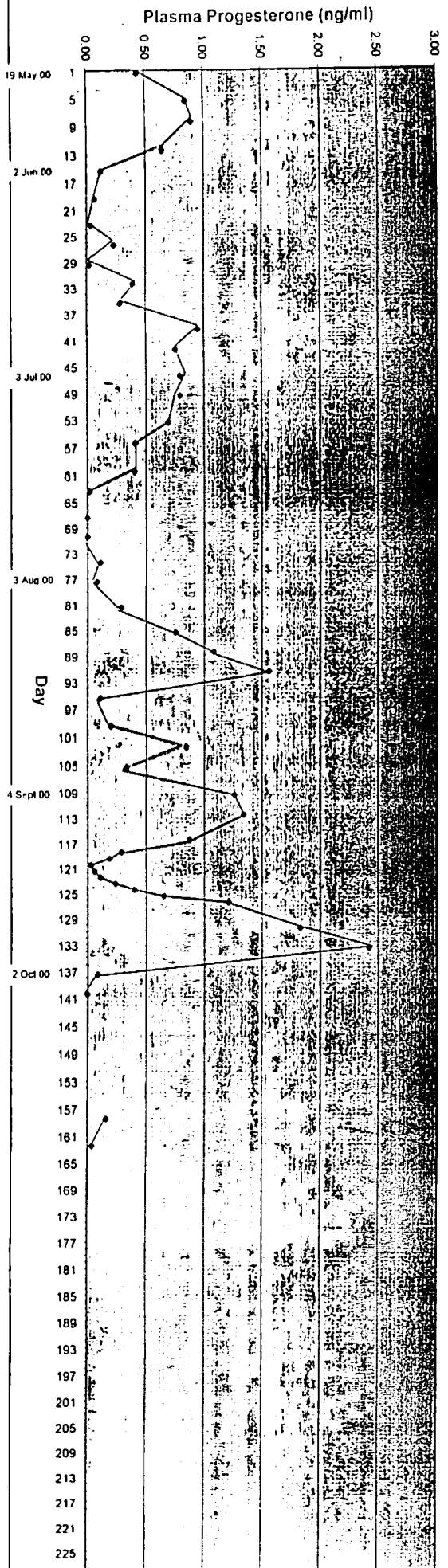
Regression Output: X on Y
Constant 0.1137401
Std Err of Y Est 0.0467061
R Squared 0.9978341
No. of Observations 12
Degrees of Freedom 10
X Coefficient(s) -0.59008
Std Err of Coef. 0.008694

Tube#	Sample	CPM	%B	Logit	LOG conc	ng/ml	mean	cv
	Sensitivity		90.3	2.2279	-1.2009	0.06		
	20%		20.0	-1.3863	0.9318	8.55		
	50%		50.0	0.0000	0.1137	1.30		
	80%		80.0	1.3863	-0.7043	0.20		
21	QC-L Nil							
22	Nil							
23	QC-M	10121.0	29.6	-0.8672	0.6254	4.22	4.35	3.01
24		9826.0	28.7	-0.9115	0.6516	4.48		
25	QC-H	7463.0	21.3	-1.3041	0.8833	7.64	8.11	5.71
26		7018.0	20.0	-1.3883	0.9329	8.57		
27	05/10/00 - M Merah	11633.0	34.3	-0.6513	0.4981	3.15		
28	09/10/00	14639.0	43.6	-0.2580	0.2660	1.85		
29	13/10/00	13340.0	39.6	-0.4239	0.3639	2.31		
30	16/10/00	14160.0	42.1	-0.3187	0.3018	2.00		
31	17/10/00	15728.0	47.0	-0.1218	0.1856	1.53		
32	23/10/00	16411.0	49.1	-0.0370	0.1356	1.37		
33	26/10/00	19429.0	58.4	0.3404	-0.0871	0.82		
34	05/10/00 - Minah	28326.0	86.0	1.8151	-0.9573	0.11		
35	09/10/00	30257.0	92.0	2.4399	-1.3260	0.05		
36	09/10/00	30598.0	93.0	2.5926	-1.4161	0.04		
37	13/10/00	31993.0	97.4	3.6082	-2.0154	0.01		
38	16/10/00	31047.0	94.4	2.8304	-1.5565	0.03		
39	19/10/00	29473.0	89.6	2.1484	-1.1540	0.07		
40	23/10/00	26084.0	79.1	1.3280	-0.6699	0.21		
41	27/10/00	26807.0	81.3	1.4690	-0.7531	0.18		
42	05/10/00 - Panjang	15840.0	47.3	-0.1078	0.1774	1.50		
43	13/10/00	32489.0	98.9	4.4973	-2.5400	0.00		
44	05/10/00 - Rima	32704.0	99.6	5.4323	-3.0918	0.00		
45	23/10/00	27202.0	82.5	1.5516	-0.8019	0.16		
46	27/10/00	30567.0	92.9	2.5779	-1.4074	0.04		
47	05/10/00 - Seputih	17020.0	51.0	0.0385	0.0910	1.23		
48	09/10/00	27322.0	82.9	1.5776	-0.8172	0.15		
49	13/10/00	31187.0	94.9	2.9161	-1.6070	0.02		

Tube#	Sample	CPM	%B	Logit	Log conc.	ng/ml	mean	cv
50	16/10/00 - Seputih	29804	90.6	2.2632	-1.2217	0.06		
51	18/10/00	30129	91.6	2.3873	-1.2949	0.05		
52	19/10/00	27838	84.5	1.6948	-0.8863	0.13		
53	#19 - 29/08/2000	26270.0	79.6	1.3631	-0.6906	0.20		
54	#19 - 01/07/2000	8957.0	26.0	-1.0471	0.7316	5.39		
55	#19 - 04/07/2000	7129.0	20.3	-1.3669	0.9203	8.32		
56	#19 - 08/07/2000	10093.0	29.5	-0.8713	0.6279	4.25		
57	#19 - 11/07/2000	10981.0	32.2	-0.7423	0.5518	3.56		
58	#19 - 12/07/2000	24058.0	72.8	0.9831	-0.4664	0.34		
59	#19 - 13/07/2000	29552.0	89.8	2.1749	-1.1696	0.07		
60	#19 - 14/07/2000	32690.0	99.5	5.3369	-3.0355	0.00		
61	#19 - 15/07/2000	29446.0	89.5	2.1395	-1.1488	0.07		
62	#19 - 24/07/2000	7781.0	22.3	-1.2464	0.8492	7.07		
63	#19 - 02/08/2000	24205.0	73.2	1.0062	-0.4800	0.33		
64	#19 - 15/08/2000	21219.0	64.0	0.5743	-0.2251	0.60		
65	#19 - 23/08/2000	21757.0	65.6	0.6474	-0.2683	0.54		
66	#20 - 29/06/2000	5749.0	16.0	-1.6555	1.0906	12.32		
67	#20 - 01/07/2000	7722.0	22.2	-1.2569	0.8554	7.17		
68	#20 - 04/07/2000	9945.0	29.0	-0.8935	0.6410	4.37		
69	#20 - 08/07/2000	11365.0	33.4	-0.6884	0.5199	3.31		
70	#20 - 11/07/2000	11312.0	33.3	-0.6958	0.5243	3.34		
71	#20 - 12/07/2000	26767.0	81.2	1.4609	-0.7483	0.18		
72	#20 - 13/07/2000	26876.0	81.5	1.4831	-0.7614	0.17		
73	#20 - 14/07/2000	31835.0	96.9	3.4329	-1.9120	0.01		
74	#20 - 15/07/2000	25443.0	77.1	1.2119	-0.6014	0.25		
75	#20 - 24/07/2000	6611.0	18.7	-1.4691	0.9806	9.56		
76	#20 - 02/08/2000	7847.0	22.5	-1.2346	0.8423	6.95		
77	#20 - 15/08/2000	8419.0	24.3	-1.1358	0.7839	6.08		
78	#20 - 23/08/2000	6816.0	19.3	-1.4279	0.9563	9.04		
79	#21 - 29/06/2000	11779.0	34.7	-0.6313	0.4862	3.06		
80	#21 - 01/07/2000	7814.0	22.4	-1.2405	0.8457	7.01		
81	#21 - 04/07/2000	8574.0	24.8	-1.1098	0.7686	5.87		
82	#21 - 08/07/2000	7409.0	21.2	-1.3141	0.8892	7.75		
83	#21 - 11/07/2000	11342.0	33.4	-0.6916	0.5218	3.33		
84	#21 - 12/07/2000	17360.0	52.0	0.0807	0.0661	1.16		
85	#21 - 13/07/2000	22450.0	67.8	0.7441	-0.3253	0.47		
86	#21 - 14/07/2000	23896.0	72.3	0.9579	-0.4515	0.35		
87	#21 - 15/07/2000	27443.0	83.3	1.6043	-0.8329	0.15		
88	#21 - 24/07/2000	12740.0	37.7	-0.5023	0.4101	2.57		
89	#21 - 02/08/2000	26431.0	80.1	1.3942	-0.7089	0.20		
90	#21 - 15/08/2000	5537.0	15.4	-1.7052	1.1199	13.18		
91	#21 - 23/08/2000	27095.0	82.2	1.5288	-0.7884	0.16		
92	#22 - 29/06/2000	21007.0	63.3	0.5459	-0.2084	0.62		
93	#22 - 01/07/2000	10215.0	29.9	-0.8532	0.6172	4.14		
94	#22 - 04/07/2000	7707.0	22.1	-1.2596	0.8570	7.19		
95	#22 - 08/07/2000	10652.0	31.2	-0.7894	0.5795	3.80		
96	#22 - 11/07/2000	12695.0	37.6	-0.5032	0.4136	2.59		
97	#22 - 12/07/2000	24955.0	75.6	1.1283	-0.5520	0.28		
98	#22 - 13/07/2000	24201.0	73.2	1.0056	-0.4796	0.33		
99	#22 - 14/07/2000	27421.0	83.2	1.5994	-0.8300	0.15		
100	#22 - 15/07/2000	25777.0	78.1	1.2715	-0.6365	0.23		
101	#22 - 24/07/2000	8059.0	23.2	-1.1974	0.8203	6.61		
102	#22 - 02/08/2000	26435.0	80.1	1.3950	-0.7094	0.20		
103	#22 - 15/08/2000	23496.0	71.0	0.8969	-0.4155	0.38		
104	#22 - 23/08/2000	26056.0	79.0	1.3227	-0.6668	0.22		
105	#23 - 29/06/2000	23389.0	70.7	0.8808	-0.4060	0.39		
106	#23 - 01/07/2000	9983.0	29.2	-0.8878	0.6376	4.34		
107	#23 - 04/07/2000	5686.0	15.8	-1.6701	1.0992	12.57		
108	#23 - 08/07/2000	10656.0	31.2	-0.7888	0.5792	3.79		
109	#23 - 11/07/2000	13304.0	39.4	-0.4285	0.3666	2.33		
110	#23 - 12/07/2000	23847.0	72.1	0.9503	-0.4470	0.36		
111	#23 - 13/07/2000	29487.0	89.6	2.1531	-1.1568	0.07		
112	#23 - 14/07/2000	29616.0	90.0	2.1967	-1.1825	0.07		
113	#23 - 15/07/2000	30367.0	92.3	2.4870	-1.3538	0.04		
114	#23 - 24/07/2000	24889.0	75.3	1.1172	-0.5455	0.28		
115	#23 - 02/08/2000	8722.0	25.2	-1.0854	0.7542	5.68		
116	#23 - 15/08/2000	26534.0	80.4	1.4143	-0.7208	0.19		
117	#23 - 23/08/2000	10377.0	30.4	-0.8294	0.6031	4.01		

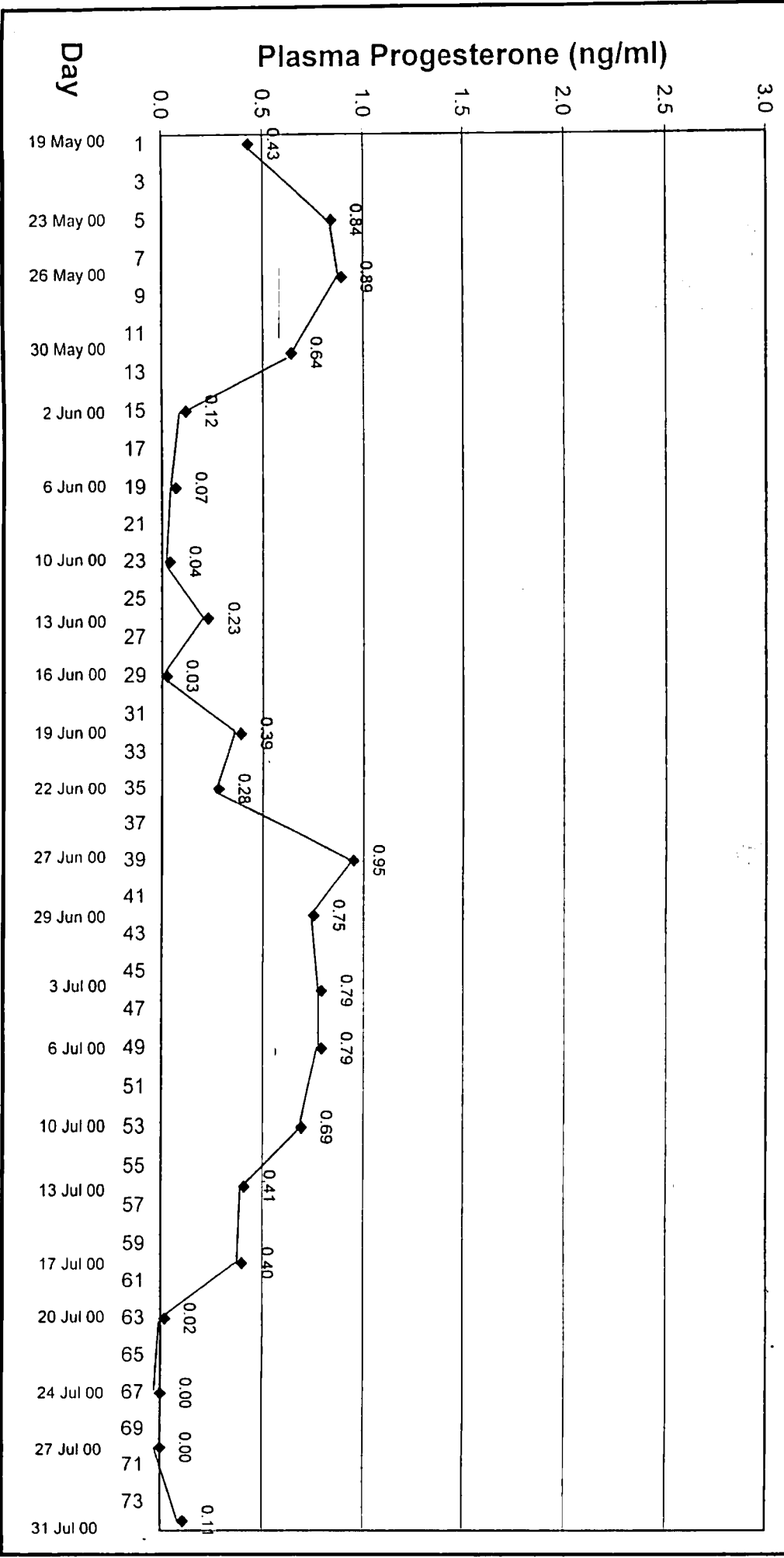
'Tube#	Sample	%B	Logit	Log conc.	ng/ml	mean	cv
118	#25 - 29/06/2000	8297	23.9	-1.1564	0.7961	6.25	
119	#25 - 01/07/2000	7458	21.3	-1.3050	0.8838	7.65	
120	#25 - 04/07/2000	8830	25.6	-1.0677	0.7438	5.54	
121	#25 - 08/07/2000	9396	27.3	-0.9776	0.6906	4.90	
122	#25 - 11/07/2000	11792.0	34.8	-0.6295	0.4852	3.06	
123	#25 - 12/07/2000	24564	74.3	1.0637	-0.5139	0.31	
124	#25 - 13/07/2000	28840	87.6	1.9542	-1.0394	0.09	
125	#25 - 14/07/2000	26428	80.1	1.3936	-0.7086	0.20	
126	#25 - 15/07/2000	28173	85.5	1.7763	-0.9344	0.12	
127	#25 - 24/07/2000	15174	45.2	-0.1909	0.2264	1.68	
128	#25 - 02/08/2000	14808	44.1	-0.2368	0.2535	1.79	
129	#25 - 15/08/2000	26098.0	79.1	1.3306	-0.6714	0.21	
130	#25 - 23/08/2000	9416.0	27.4	-0.9744	0.6887	4.88	
131	QC-L Nil						
132	Nil						
133	QC-M 9862.0	28.8	-0.9060	0.6484	4.45	4.67	4.66
134	9415.0	27.4	-0.9746	0.6888	4.88		
135	QC-H 7328.0	20.9	-1.3292	0.8981	7.91	9.00	12.12
136	6420.0	18.1	-1.5085	1.0039	10.09		

SUMATRAN RHINO - RUMAH Plasma Progesterone Profile



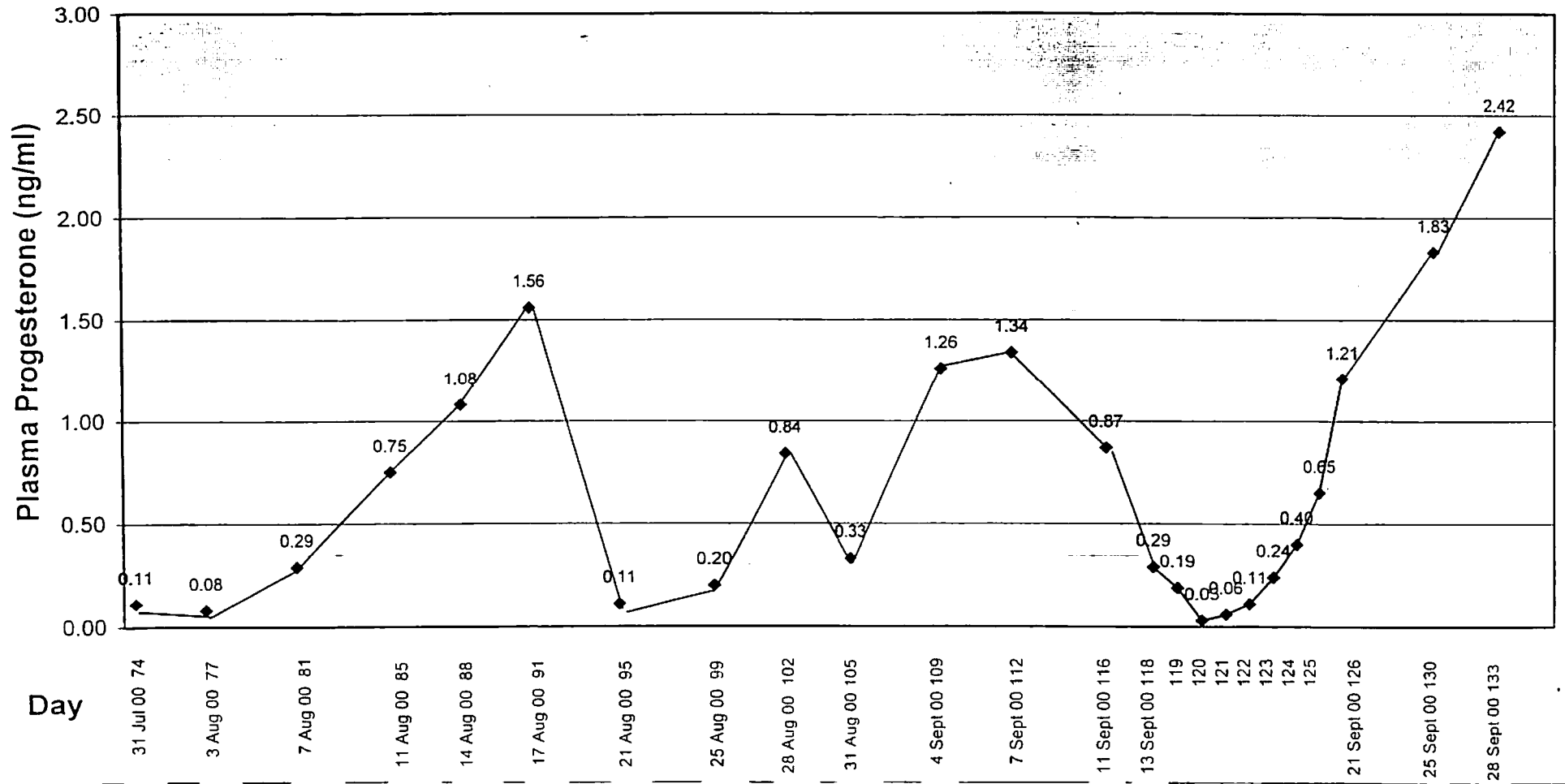
SUMATRAN RHINO

Rima Plasma Progesterone Profile 1



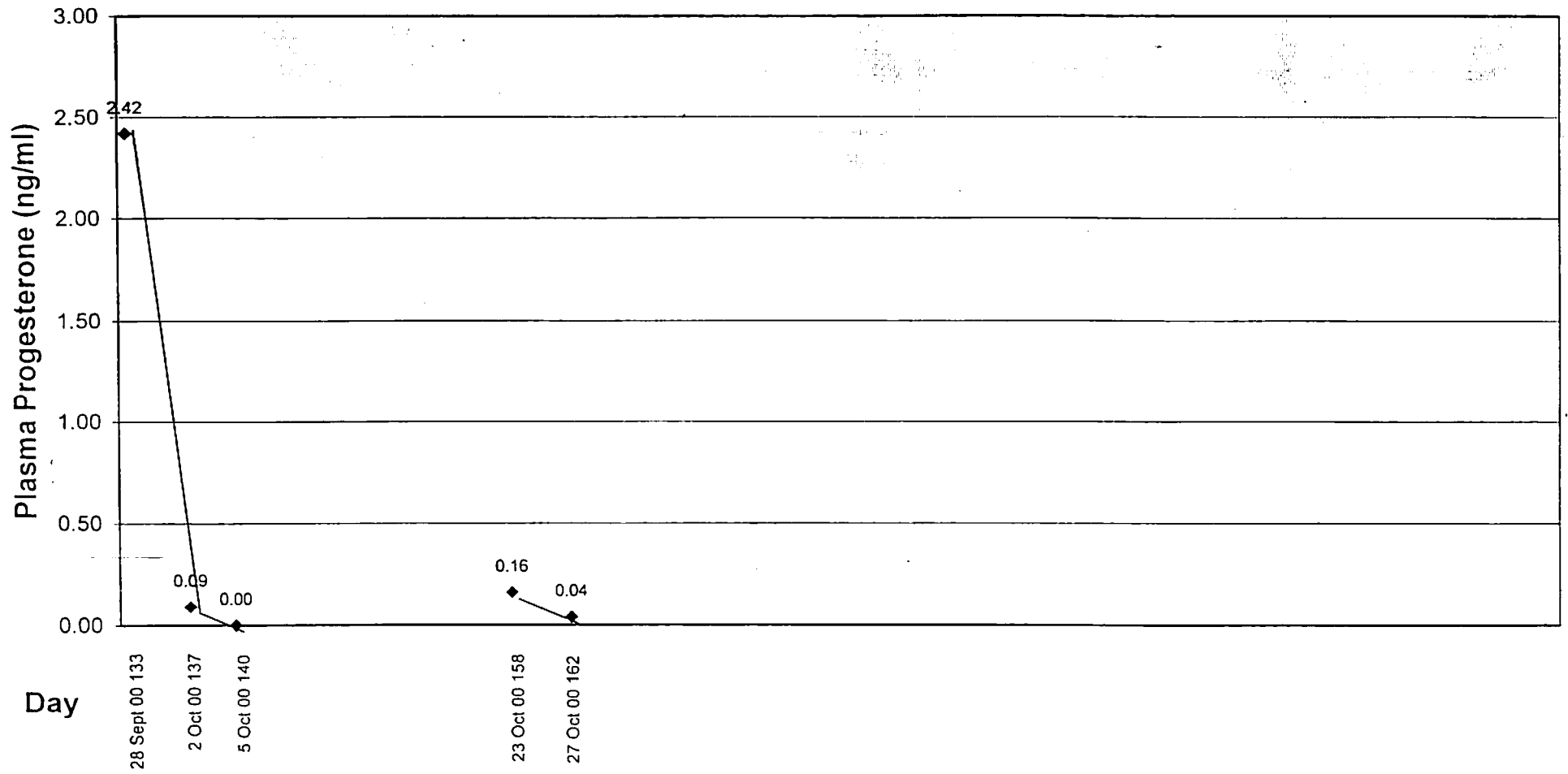
SUMATRAN RHINO

Rima Plasma Progesterone Profile 2

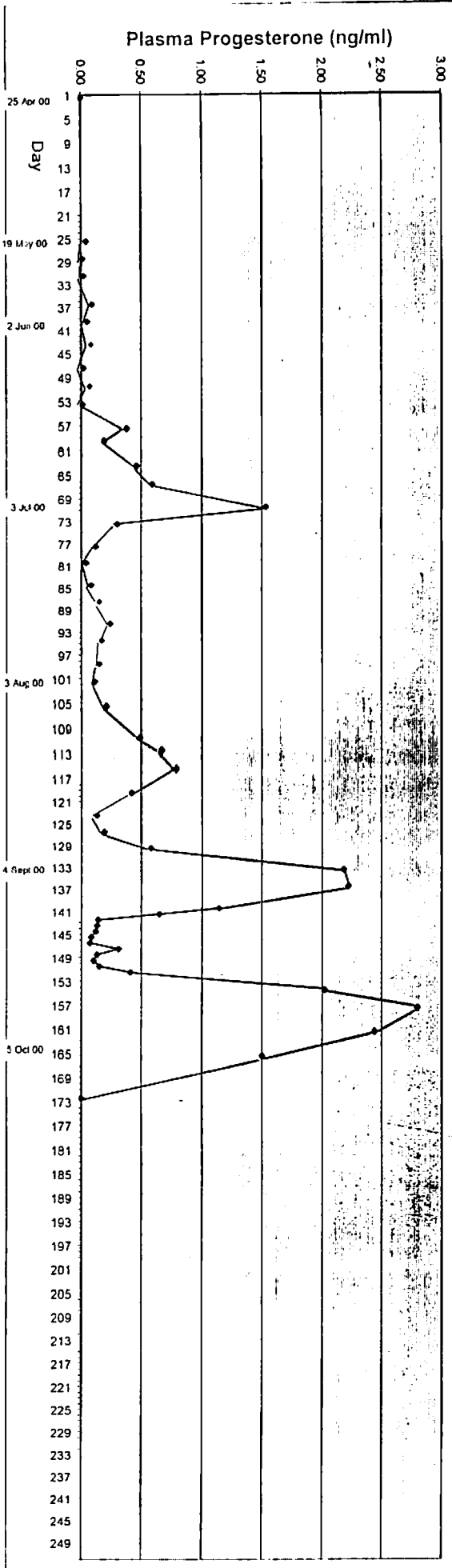


SUMATRAN RHINO

Rima Plasma Progesterone Profile 3

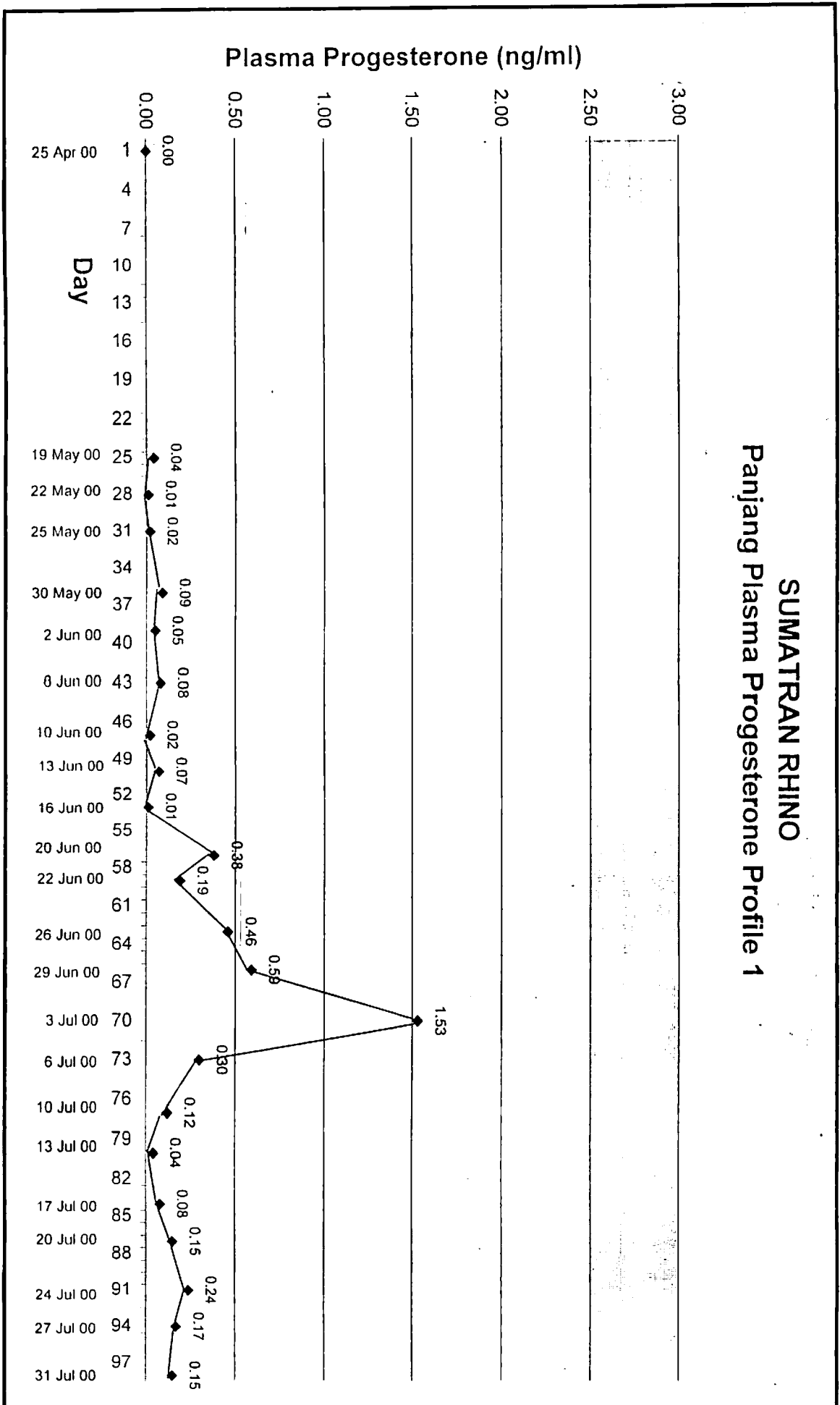


SUMATRAN RHINO - PANLIANG Plasma Progesterone Profile



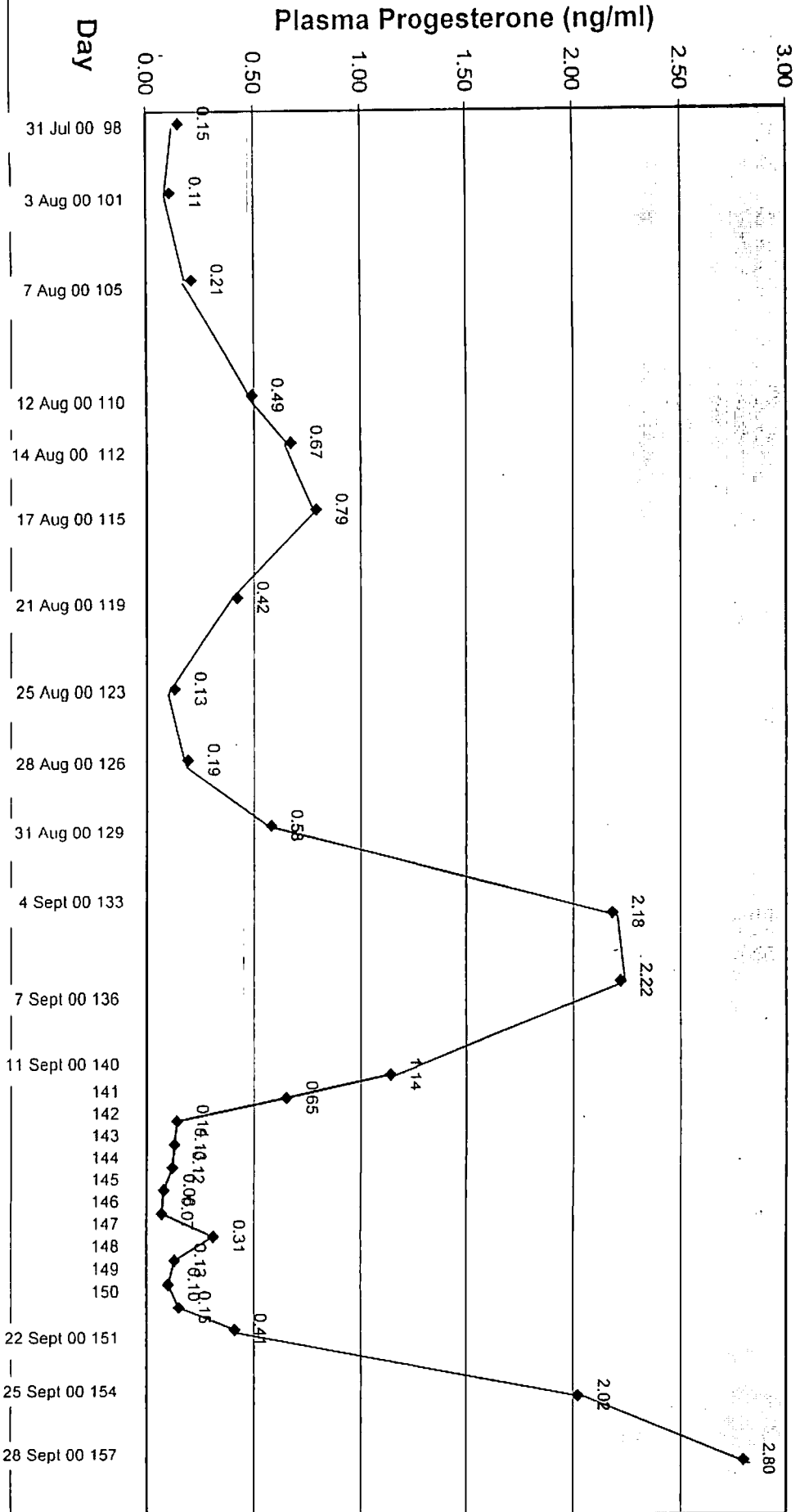
SUMATRAN RHINO

Panjang Plasma Progesterone Profile 1

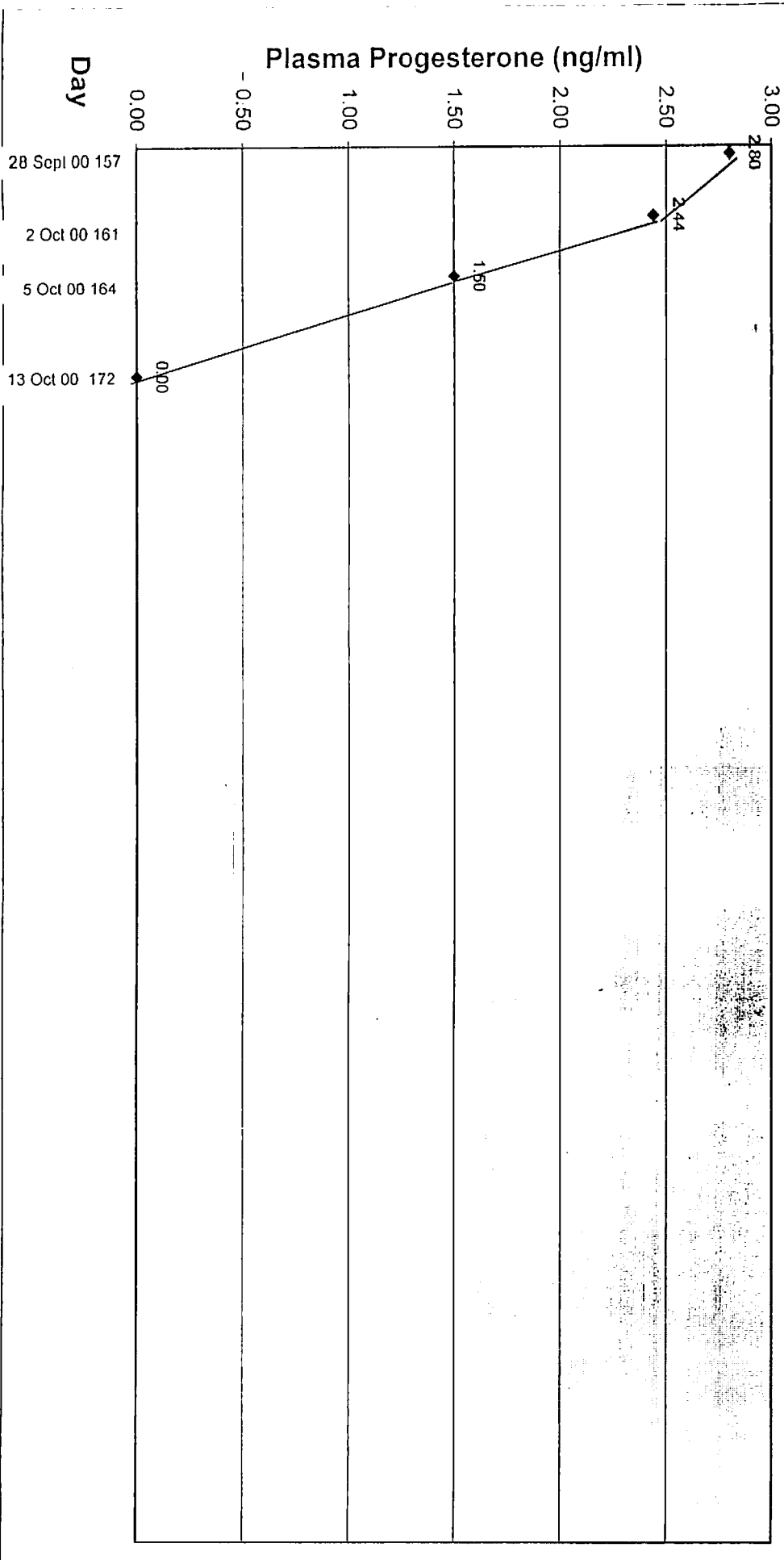


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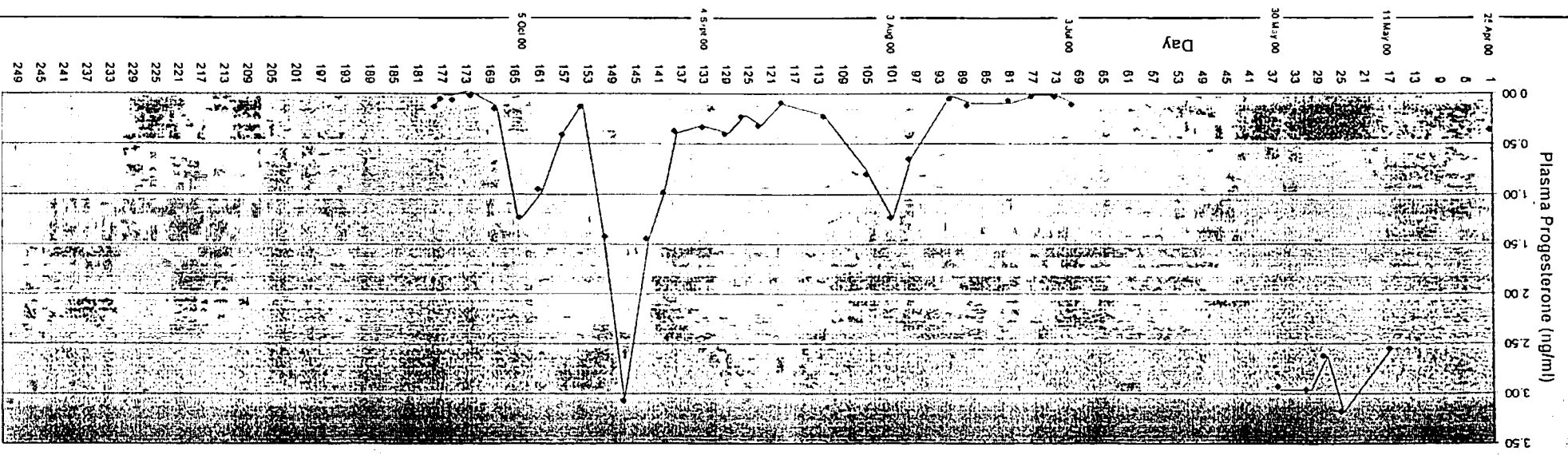
Panjang Plasma Progesterone Profile 2



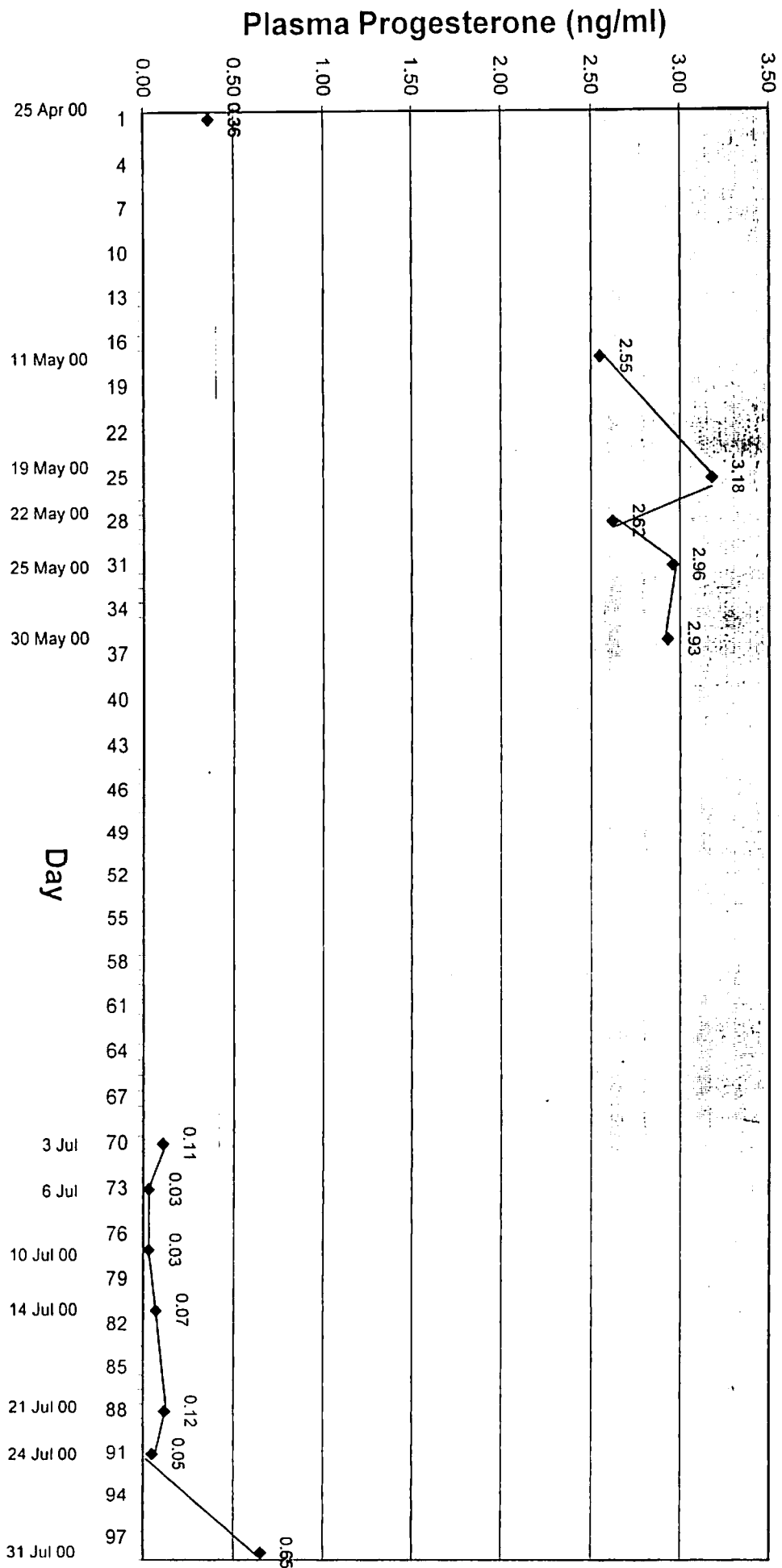
SUMATRAN RHINO
Panjang Plasma Progesterone Profile 3



SUMATRAN RHINO - SEPUTIH Plasma Progesterone Profile

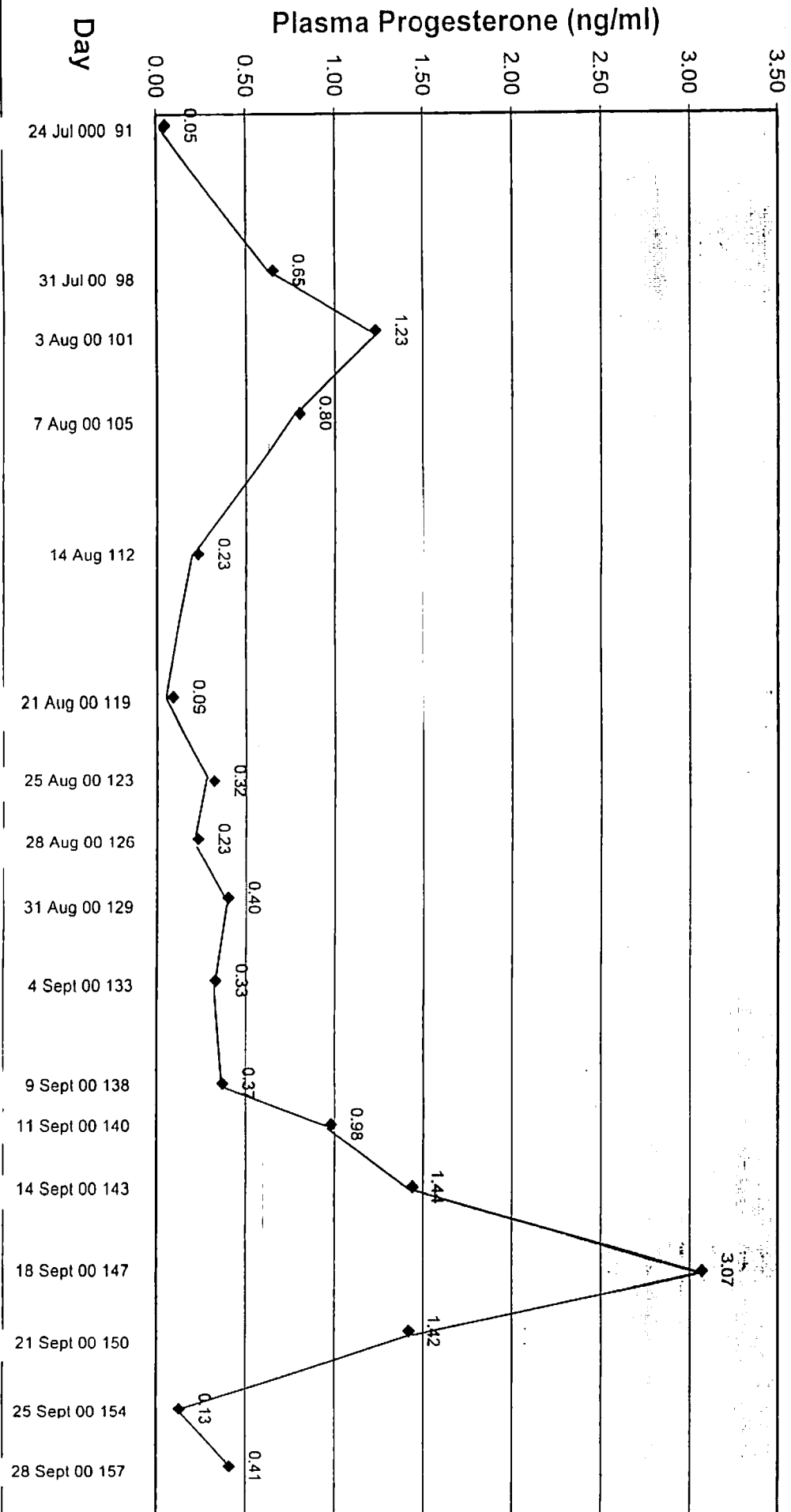


SUMATRAN RHINO
Septith Plasma Progesterone Profile 1

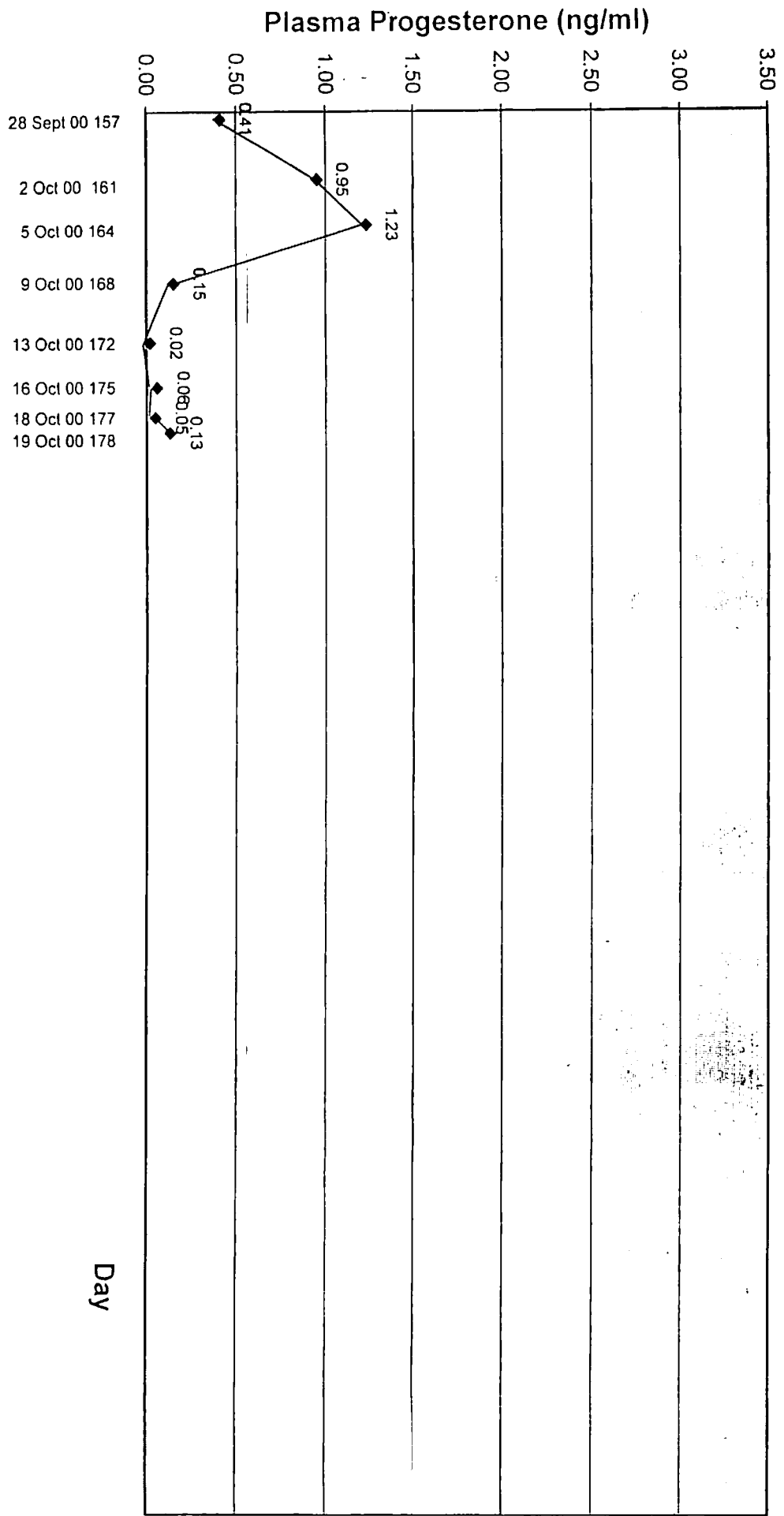


SUMATRAN RHINO

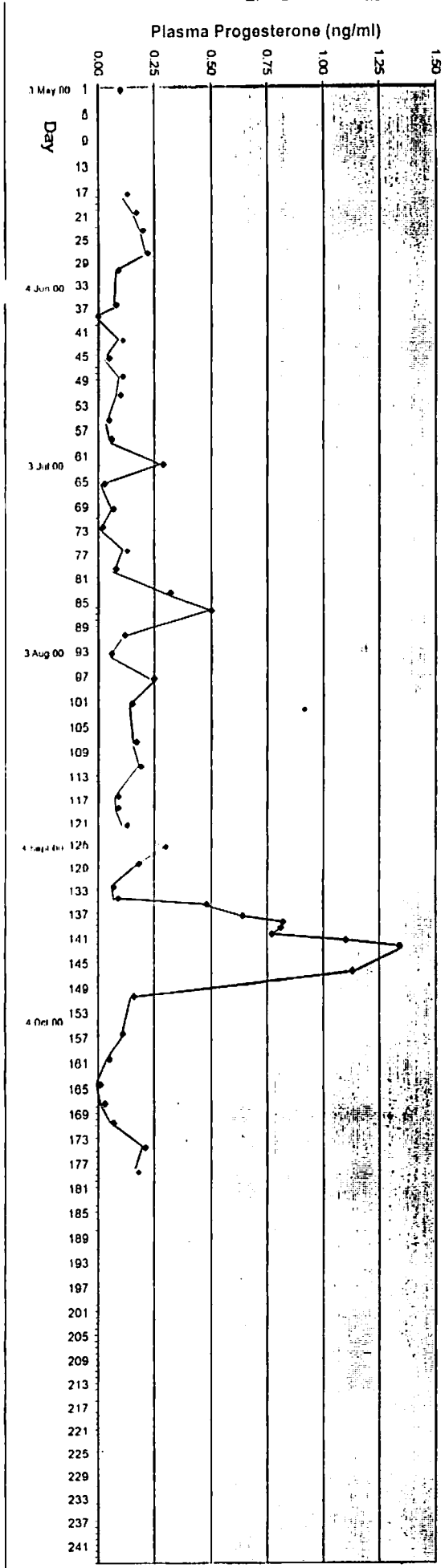
Seputih Plasma Progesterone Profile 2



SUMATRAN RHINO
Seputih Plasma Progesterone Profile 3

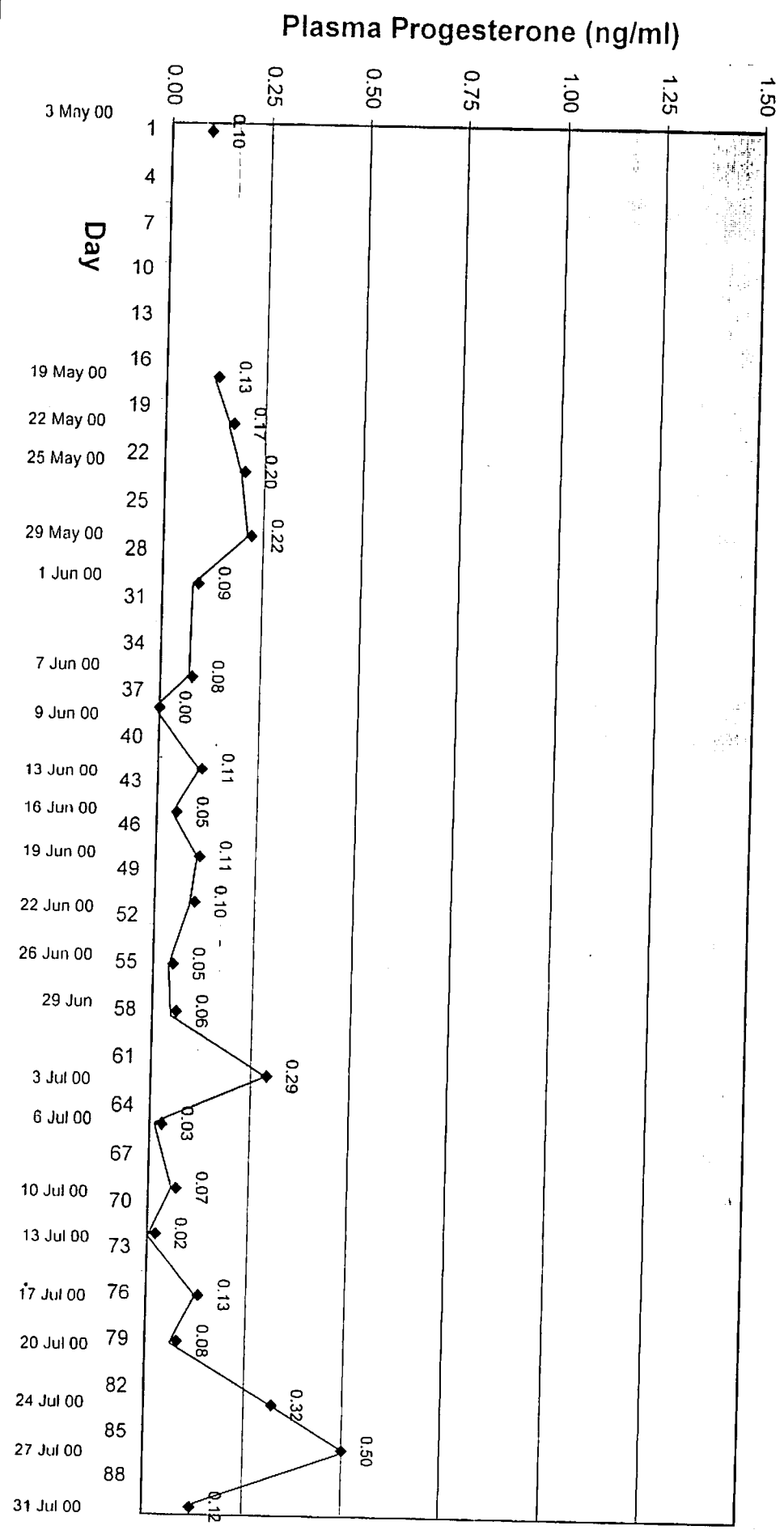


SUMATRAN RHINO - MINAH Plasma Progesterone Profile



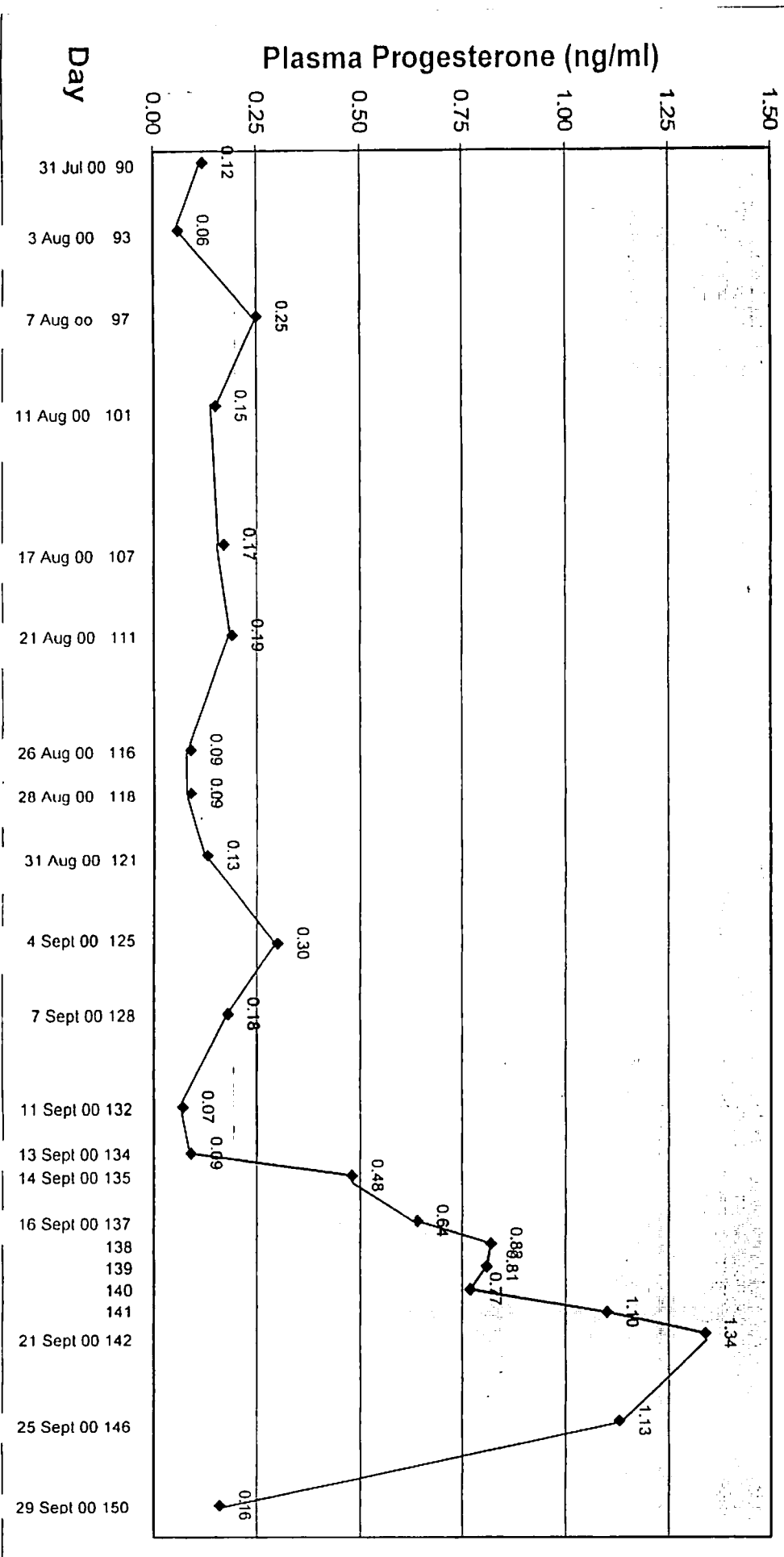
SUMATRAN RHINO

Minah Plasma Progesterone Profile 1



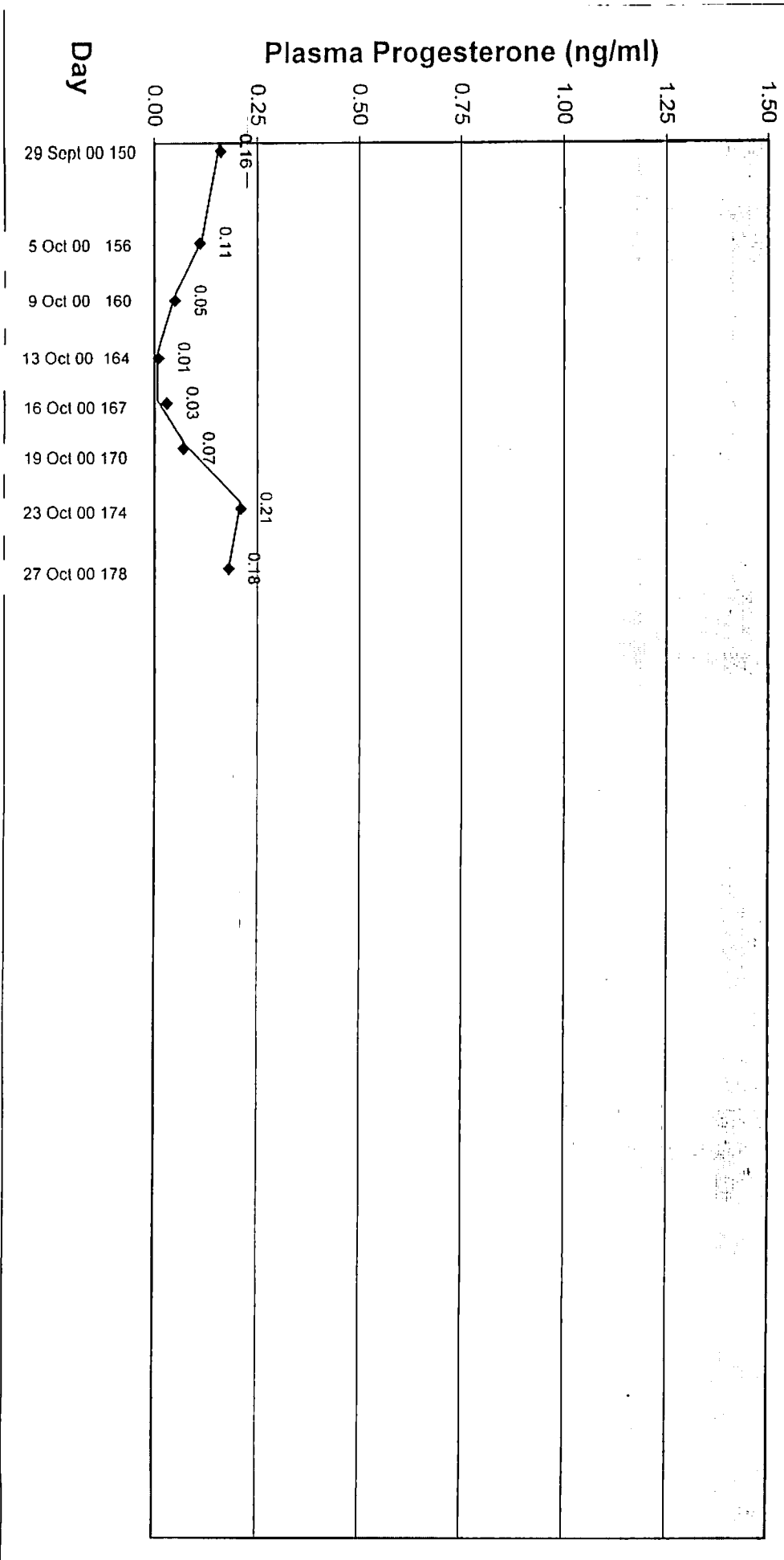
SUMATRAN RHINO

Minah Plasma Progesterone Profile 2

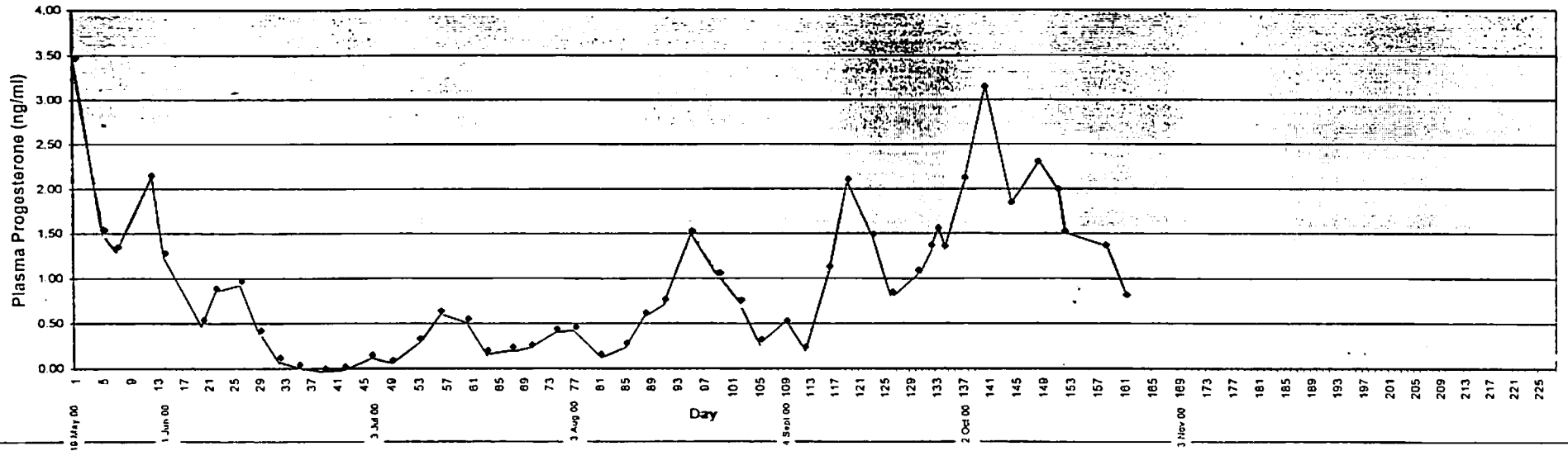


SUMATRAN RHINO

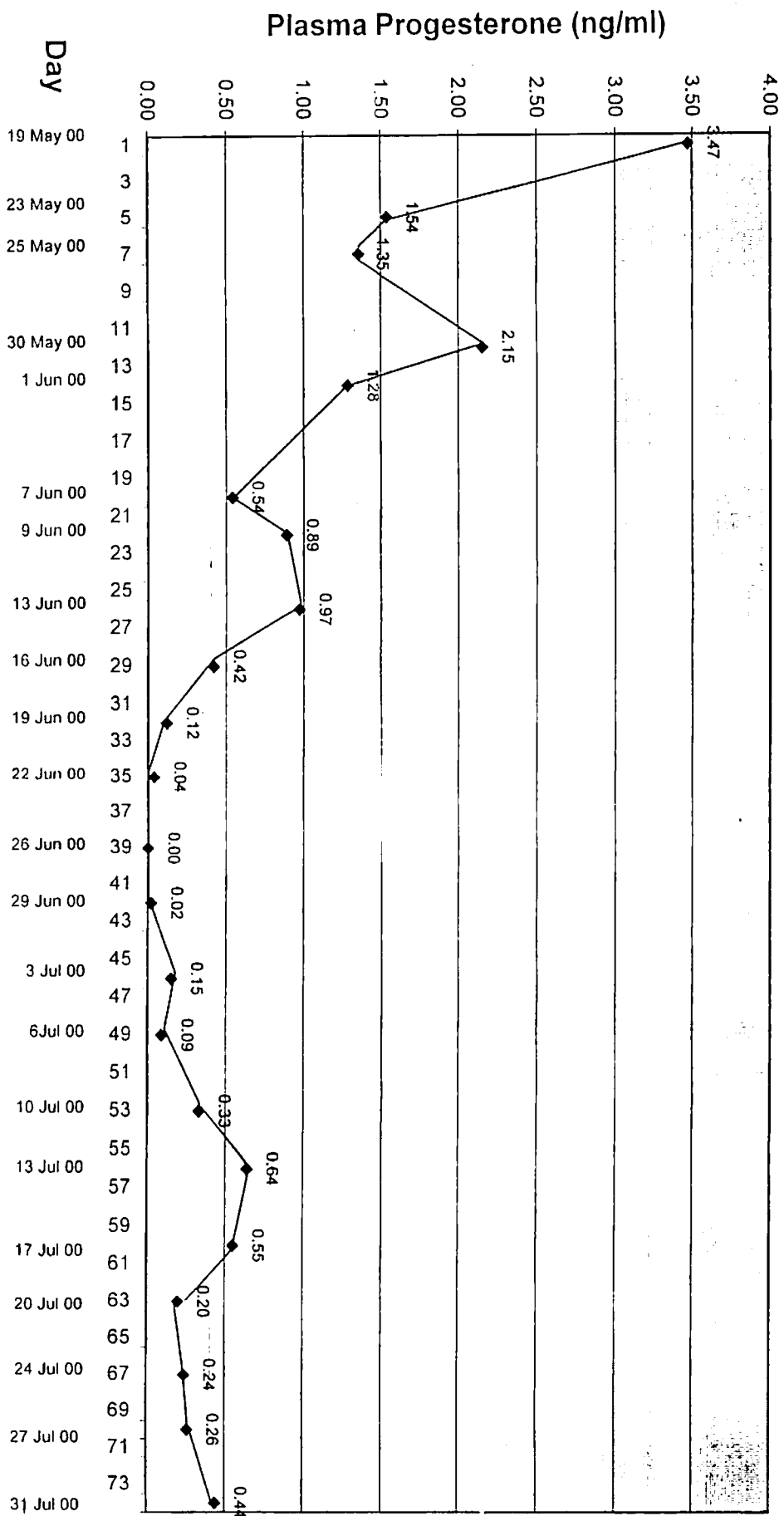
Minah Plasma Progesterone Profile 3



SUMATRAN RHINO - MAS MERAH Plasma Progesterone Profile

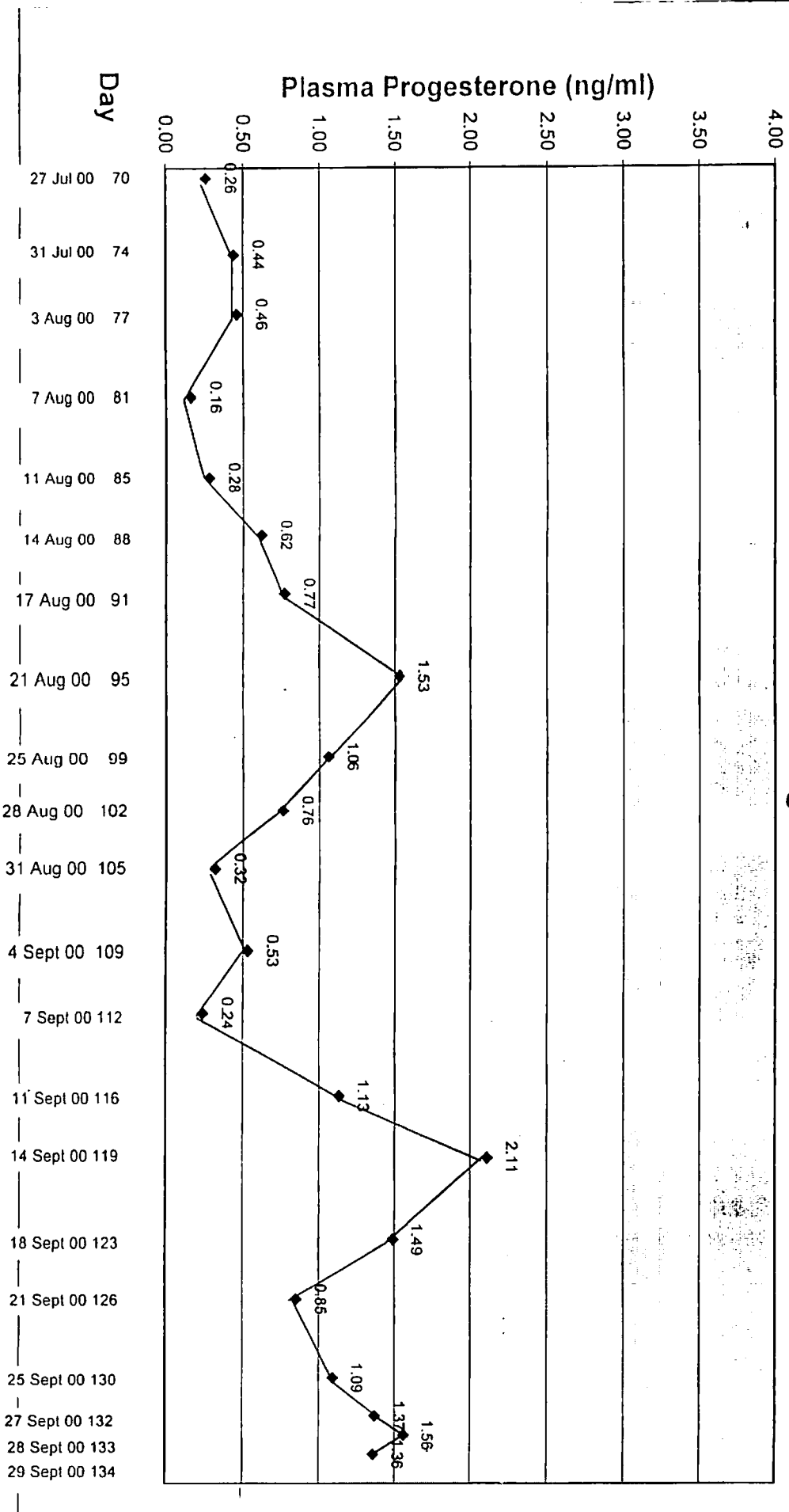


SUMATRAN RHINO
Mas Merah Plasma Progesterone Profile 1



SUMATRAN RHINO

Mas Merah Plasma Progesterone Profile 2



SUMATRAN RHINO
Mas Merah Plasma Progesterone Profile 3

