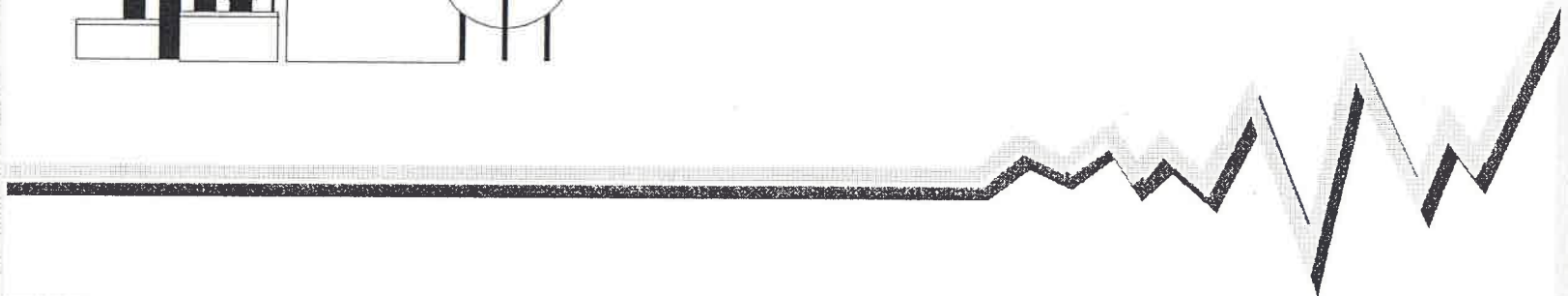
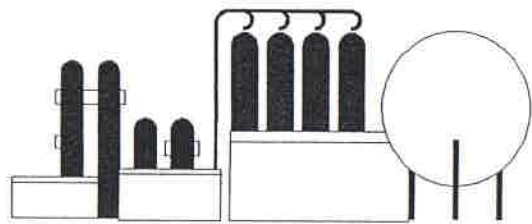


GMT Microelectronics Manufacturing Report

March 1998



MANUFACTURING REPORT FOR MARCH 1998

OPERATIONS

Total fab outs were 5324. Revenue outs were 5231 against a plan of 6000. Revenue outs for the quarter were 14832 vs 15500 (95.7%)

Major issues that negatively effected performance were:

- insufficient staffing. 2 operators terminated, 2 on LOA. Vacations and illness dropped effective number of operators in attendance each day to 55 or less.
- scrap at paratest for equipment/process issues (Nova 6, 350D2, and incomplete etch at Drytek)
- Drytek #2 unable to etch ANY second metal
- restrictions at metal dep due limited ability to move work to prevent Dryteks from running empty.
- A075's released from hold and added to March outs requirement. This negatively impacted WIP turns and thus cycle time.

Positive indications:

- Photo rework remained at 1.6%
- Misprocessing scrap again reduced to 31 wafers (.03/1000 moves)
- Operator productivity increased to 120 moves/dl hour
- 3rd shift ran relatively smoothly without supervision thanks to C. Olson and J. Sterner (lead operators)
- D. Moyer making improvements in operator training and re-certification, specs, and handling issues.
- Overall fab yield increased to 84%, though still lower than target
- Cycle time improvements made in February were maintained, though still above target.

EQUIPMENT MAINTENANCE

- Continued training of technicians to improve performance of equipment.
- Found a major problem with the 3180. Cooling water lines to guns were clogged with scaling and debris. These are being cleaned out and re-built in house as targets are changed. Additionally, cleaning of Ti target buildup when chamber opened for Al target change seems to have made an improvement in the quality of the Ti film. Engineering is evaluating.
- New EKC sink is still being installed. Several issues developed which delayed completion.
- RGA has started to be used to baseline metal systems and trouble-shoot problems.
- Began working with manufacturers rep for furnace upgrade checkout.

GMT MICROELECTRONICS												
1998 OPERATION STATISTICS												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
#DAYS	27	20	22	22								
OUTS												
PLAN												
SLM	875	920	1100	350								
DLM	1610	1610	2975	2500								
BCD 1&2	2938	1420	1900	1950								
ENG	43	50	25									
DISPLAYS												
OTHER	49	0	0	0								
TOTAL	5515	4000	6000	4800								
AVERAGE OUTS/DAY												
ACTUAL												
SLM	875	967	1174									
DLM	1610	1647	2496									
BCD 1&2	2938	1441	1518									
ENG	43	11	18									
DISPLAYS												
OTHER	49	20	25									
TOTAL	5515	4086	5231									
NON-REVENUE	66	36	93									
AVERAGE OUTS/DAY	207	206	242									
OUTS PERFORMANCE												
%TO PLAN	100.0	102.2	87.2									
% TO MIX	81.3	99.0	85.5									
MOVES												
ACTUAL												
SLM	193,532	163508	145335									
DLM	376,672	363014	650052									
BCD 1&2	691,739	361622	273989									
ENG												
DISPLAYS												
OTHER	14,920	23956	14211									
TOTAL	1,276,863	912,100	1,083,587									
ACTIVE WIP (MON END)												
	9550	6385	6373									
SCRAP												

[illegible]

1998 OPERATION STATISTICS	
1. Number of cases filed	1,234
2. Number of cases resolved	987
3. Number of cases pending	247
4. Number of cases dismissed	156
5. Number of cases appealed	89
6. Number of cases retried	34
7. Number of cases settled	567
8. Number of cases transferred	123
9. Number of cases closed	789
10. Number of cases reopened	45
11. Number of cases reviewed	678
12. Number of cases audited	234
13. Number of cases monitored	345
14. Number of cases evaluated	456
15. Number of cases analyzed	567
16. Number of cases investigated	678
17. Number of cases examined	789
18. Number of cases inspected	890
19. Number of cases tested	901
20. Number of cases verified	1,012
21. Number of cases confirmed	1,123
22. Number of cases validated	1,234
23. Number of cases authenticated	1,345
24. Number of cases authorized	1,456
25. Number of cases approved	1,567
26. Number of cases accepted	1,678
27. Number of cases agreed	1,789
28. Number of cases acknowledged	1,890
29. Number of cases admitted	1,901
30. Number of cases admitted	2,012
31. Number of cases admitted	2,123
32. Number of cases admitted	2,234
33. Number of cases admitted	2,345
34. Number of cases admitted	2,456
35. Number of cases admitted	2,567
36. Number of cases admitted	2,678
37. Number of cases admitted	2,789
38. Number of cases admitted	2,890
39. Number of cases admitted	2,901
40. Number of cases admitted	3,012
41. Number of cases admitted	3,123
42. Number of cases admitted	3,234
43. Number of cases admitted	3,345
44. Number of cases admitted	3,456
45. Number of cases admitted	3,567
46. Number of cases admitted	3,678
47. Number of cases admitted	3,789
48. Number of cases admitted	3,890
49. Number of cases admitted	3,901
50. Number of cases admitted	4,012
51. Number of cases admitted	4,123
52. Number of cases admitted	4,234
53. Number of cases admitted	4,345
54. Number of cases admitted	4,456
55. Number of cases admitted	4,567
56. Number of cases admitted	4,678
57. Number of cases admitted	4,789
58. Number of cases admitted	4,890
59. Number of cases admitted	4,901
60. Number of cases admitted	5,012
61. Number of cases admitted	5,123
62. Number of cases admitted	5,234
63. Number of cases admitted	5,345
64. Number of cases admitted	5,456
65. Number of cases admitted	5,567
66. Number of cases admitted	5,678
67. Number of cases admitted	5,789
68. Number of cases admitted	5,890
69. Number of cases admitted	5,901
70. Number of cases admitted	6,012
71. Number of cases admitted	6,123
72. Number of cases admitted	6,234
73. Number of cases admitted	6,345
74. Number of cases admitted	6,456
75. Number of cases admitted	6,567
76. Number of cases admitted	6,678
77. Number of cases admitted	6,789
78. Number of cases admitted	6,890
79. Number of cases admitted	6,901
80. Number of cases admitted	7,012
81. Number of cases admitted	7,123
82. Number of cases admitted	7,234
83. Number of cases admitted	7,345
84. Number of cases admitted	7,456
85. Number of cases admitted	7,567
86. Number of cases admitted	7,678
87. Number of cases admitted	7,789
88. Number of cases admitted	7,890
89. Number of cases admitted	7,901
90. Number of cases admitted	8,012
91. Number of cases admitted	8,123
92. Number of cases admitted	8,234
93. Number of cases admitted	8,345
94. Number of cases admitted	8,456
95. Number of cases admitted	8,567
96. Number of cases admitted	8,678
97. Number of cases admitted	8,789
98. Number of cases admitted	8,890
99. Number of cases admitted	8,901
100. Number of cases admitted	9,012
101. Number of cases admitted	9,123
102. Number of cases admitted	9,234
103. Number of cases admitted	9,345
104. Number of cases admitted	9,456
105. Number of cases admitted	9,567
106. Number of cases admitted	9,678
107. Number of cases admitted	9,789
108. Number of cases admitted	9,890
109. Number of cases admitted	9,901
110. Number of cases admitted	10,012
111. Number of cases admitted	10,123
112. Number of cases admitted	10,234
113. Number of cases admitted	10,345
114. Number of cases admitted	10,456
115. Number of cases admitted	10,567
116. Number of cases admitted	10,678
117. Number of cases admitted	10,789
118. Number of cases admitted	10,890
119. Number of cases admitted	10,901
120. Number of cases admitted	11,012
121. Number of cases admitted	11,123
122. Number of cases admitted	11,234
123. Number of cases admitted	11,345
124. Number of cases admitted	11,456
125. Number of cases admitted	11,567
126. Number of cases admitted	11,678
127. Number of cases admitted	11,789
128. Number of cases admitted	11,890
129. Number of cases admitted	11,901
130. Number of cases admitted	12,012
131. Number of cases admitted	12

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
--	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

[illegible][illegible][illegible][illegible][illegible][illegible][illegible]

EQUIPMENT

[illegible][illegible][illegible][illegible][illegible][illegible][illegible]

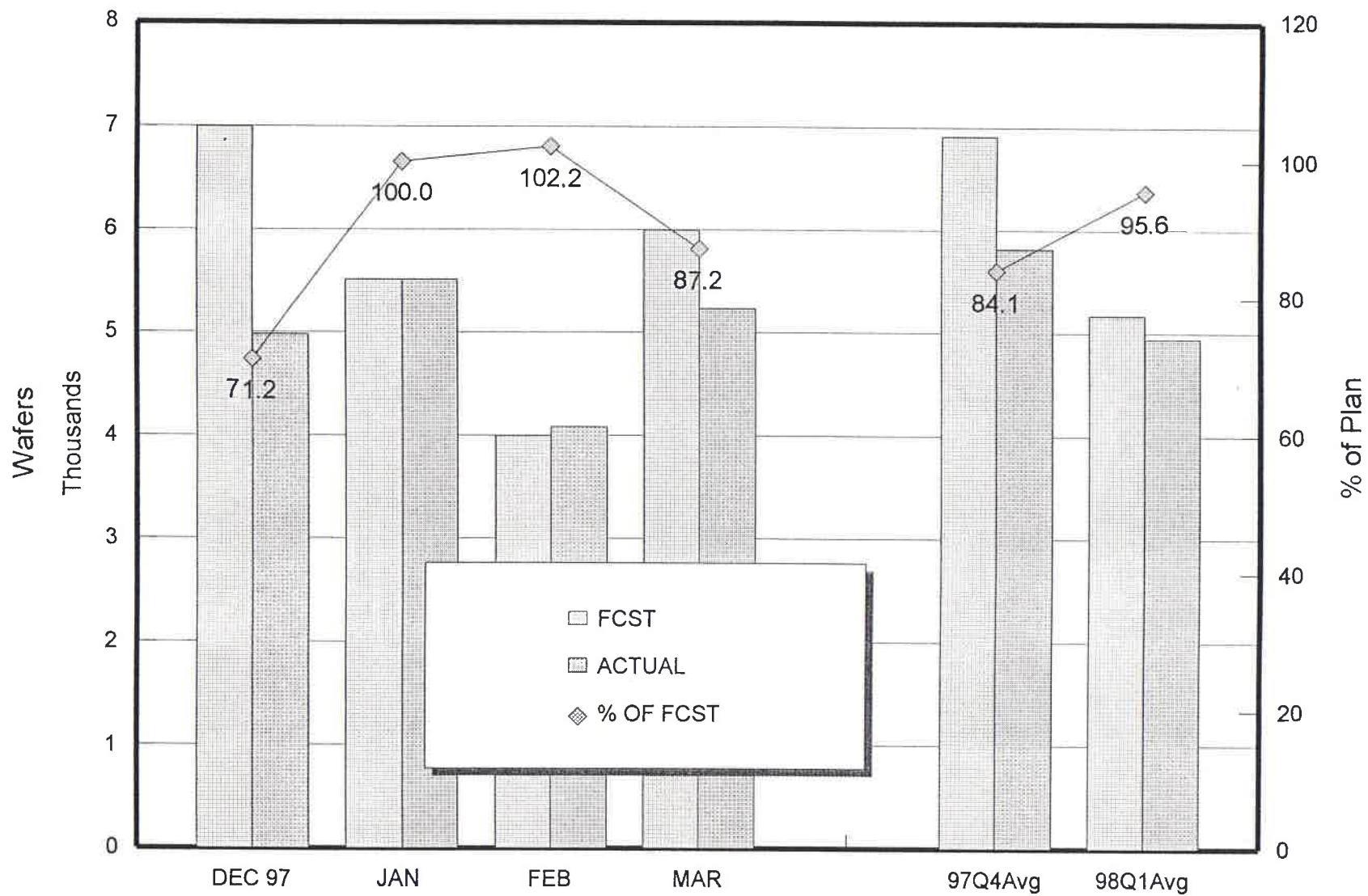
FAB YIELDS - 1998	
1	100%
2	100%
3	100%
4	100%
5	100%
6	100%
7	100%
8	100%
9	100%
10	100%
11	100%
12	100%
13	100%
14	100%
15	100%
16	100%
17	100%
18	100%
19	100%
20	100%
21	100%
22	100%
23	100%
24	100%
25	100%
26	100%
27	100%
28	100%
29	100%
30	100%
31	100%
32	100%
33	100%
34	100%
35	100%
36	100%
37	100%
38	100%
39	100%
40	100%
41	100%
42	100%
43	100%
44	100%
45	100%
46	100%
47	100%
48	100%
49	100%
50	100%
51	100%
52	100%
53	100%
54	100%
55	100%
56	100%
57	100%
58	100%
59	100%
60	100%
61	100%
62	100%
63	100%
64	100%
65	100%
66	100%
67	100%
68	100%
69	100%
70	100%
71	100%
72	100%
73	100%
74	100%
75	100%
76	100%
77	100%
78	100%
79	100%
80	100%
81	100%
82	100%
83	100%
84	100%
85	100%
86	100%
87	100%
88	100%
89	100%
90	100%
91	100%
92	100%
93	100%
94	100%
95	100%
96	100%
97	100%
98	100%
99	100%
100	100%

[illegible]

FAB YIELDS - 1998			JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
BCD2	AE	LINE	93.8	87.8	92.3									
		T.P.	85.1	70.9	95.8									
		TOTAL	79.8	62.2	88.3									
		MOVES	691,739	361,622	273,989									
OTHER	1A	LINE	100.0											
		T.P.	100.0											
		TOTAL	100.0											
		MOVES	255	1,349	0									
	7A	LINE	96.0											
		T.P.	100.0											
		TOTAL	96.0											
		MOVES	1,187	2,672	0									
	7B	LINE	100.0											
		T.P.	100.0											
		TOTAL	100.0											
		MOVES	2,699	713	25									
	5A	LINE	100.0											
		T.P.	100.0											
		TOTAL	100.0											
		MOVES	10,779	0	0									
	GL	LINE		100.0	89.7									
		T.P.		100.0	100.0									
		TOTAL		100.0	89.7									
		MOVES		714	14,186									
TOTAL ESTIMATED FAB YIELD (Weighted Avg)			84.2	78.9	88.7									

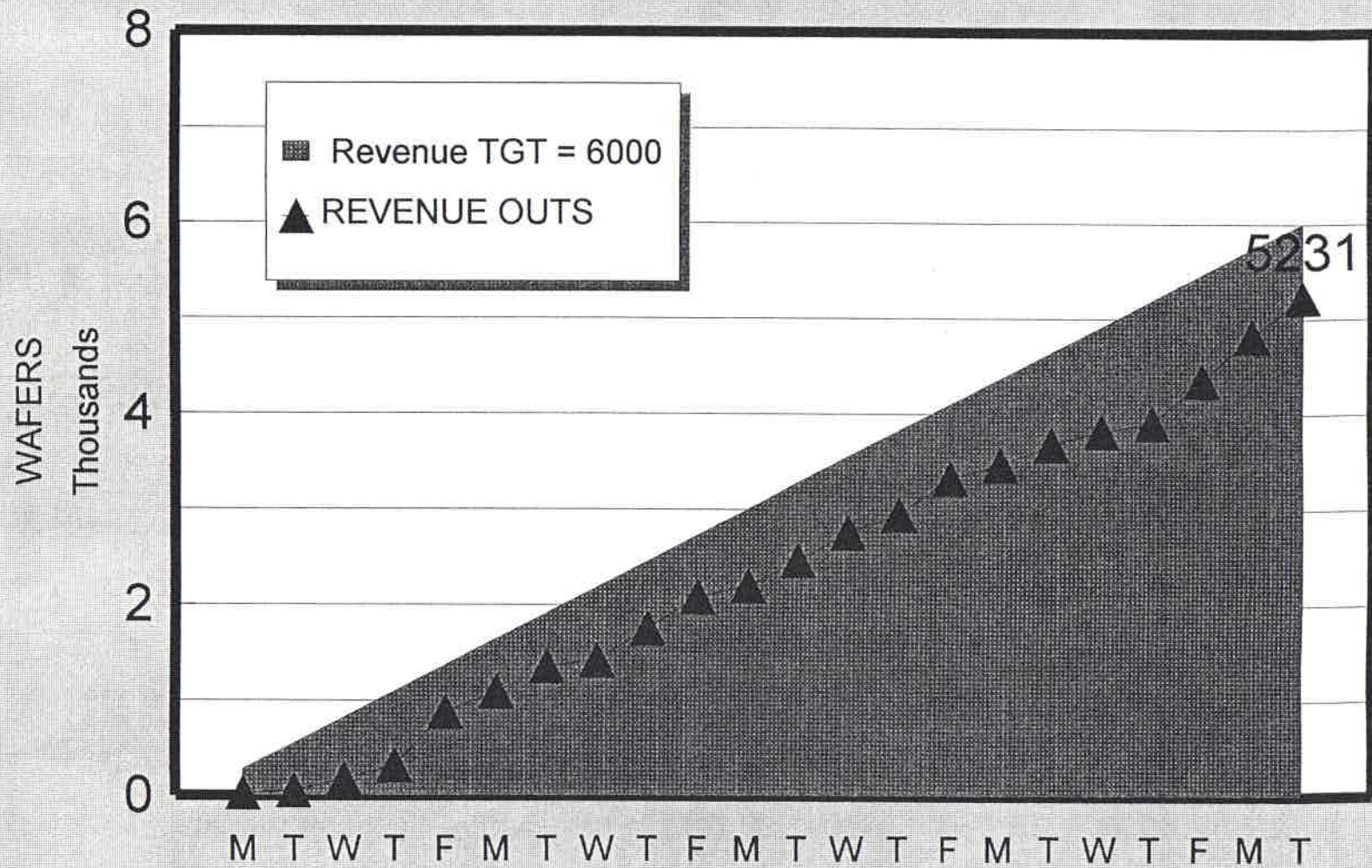
[illegible]

FAB OUTPUT 1998

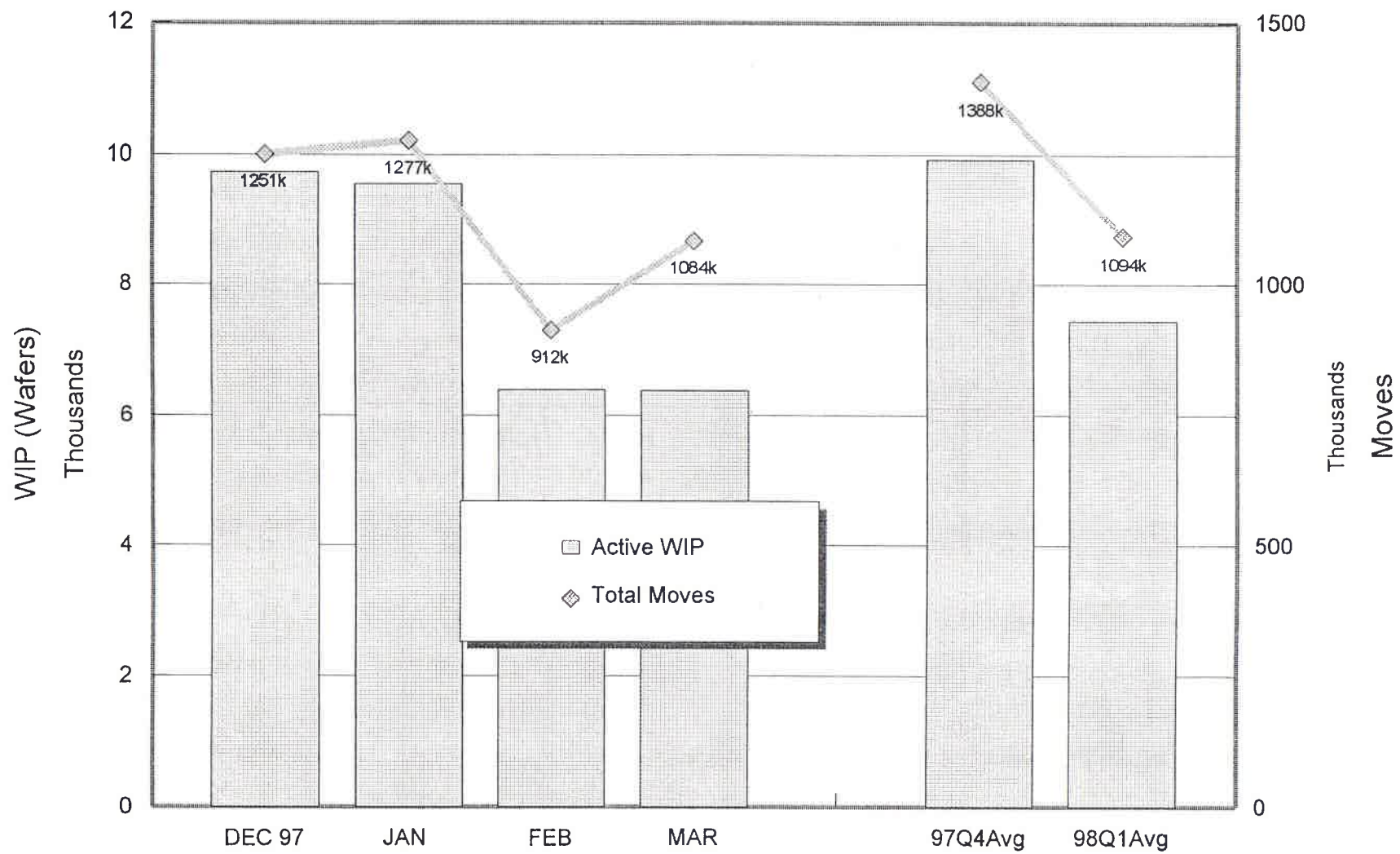


QUALITY FAB OUTS

MARCH 1998



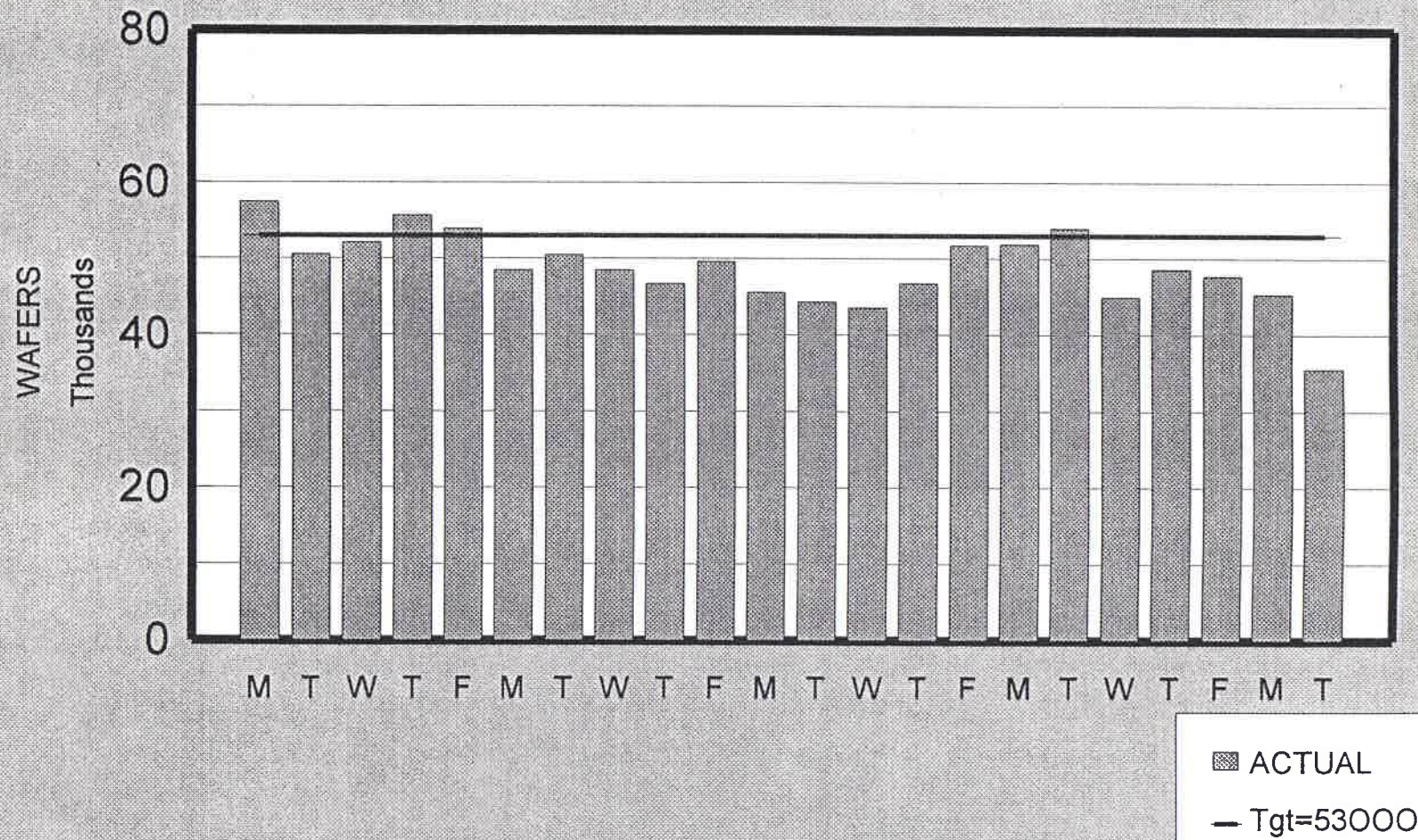
FAB ACTIVITY 1998



WIP at month end

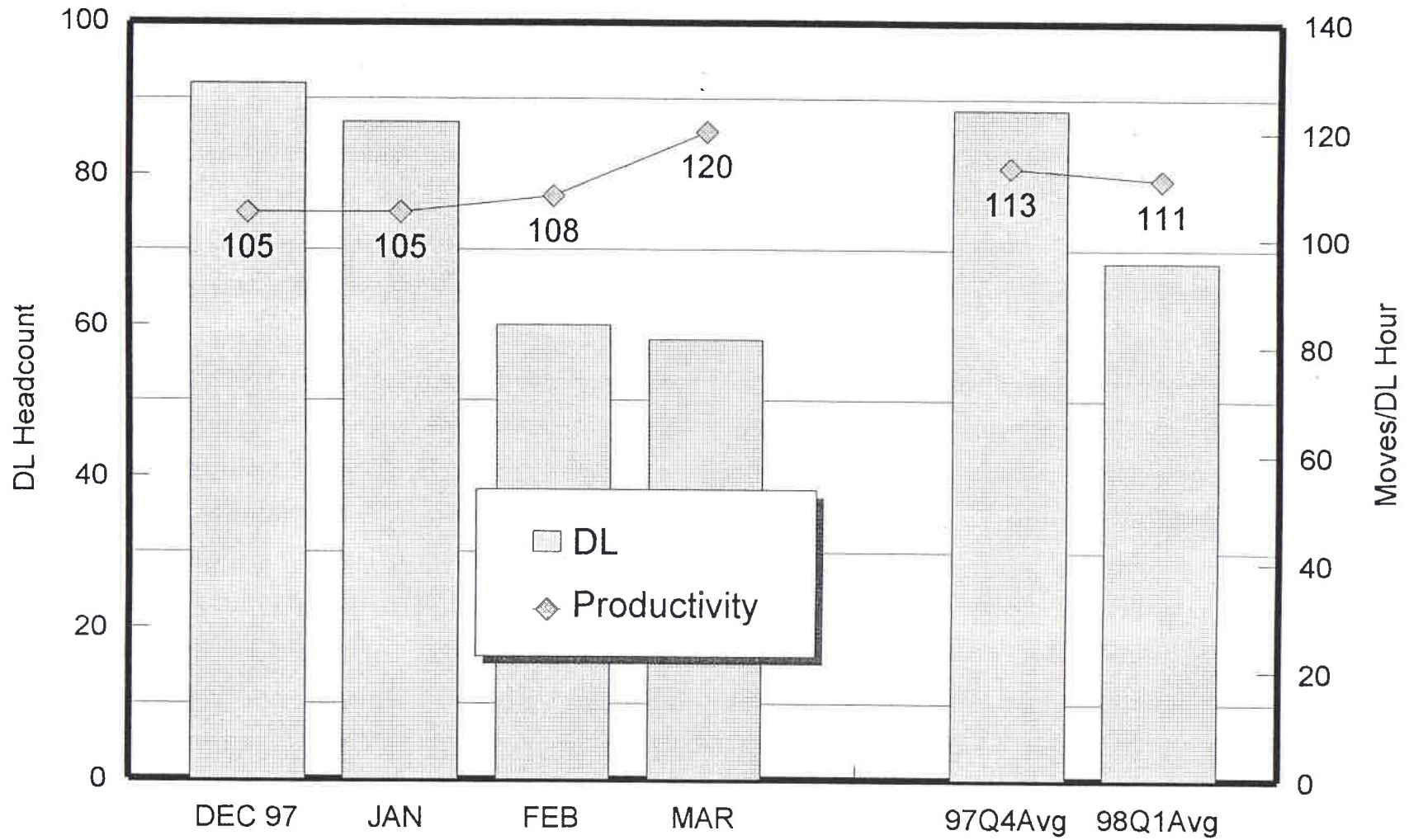
QUALITY FAB MOVES

MARCH 1998



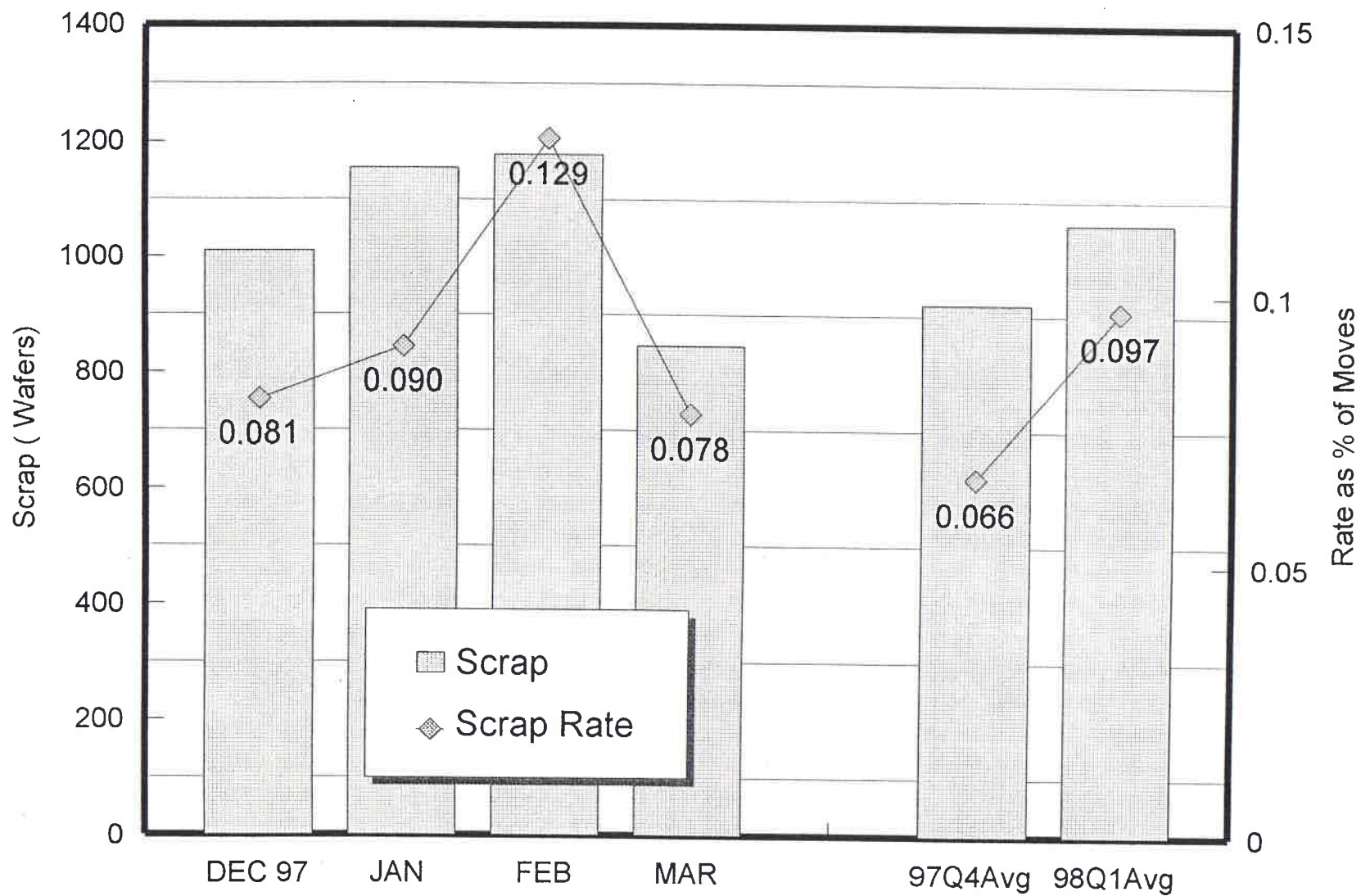
LABOR STATS

1998

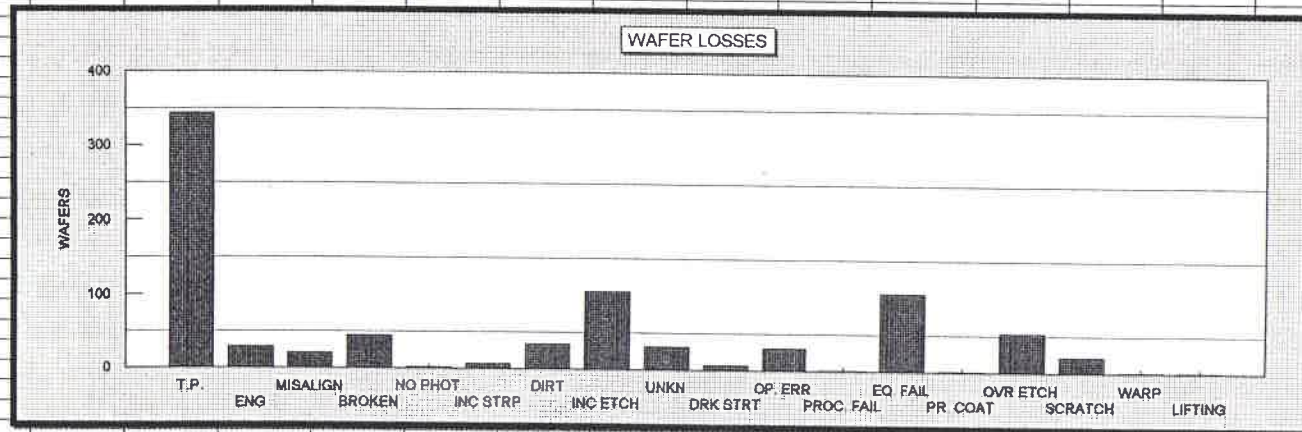


DL at month end

FAB SCRAP 1998

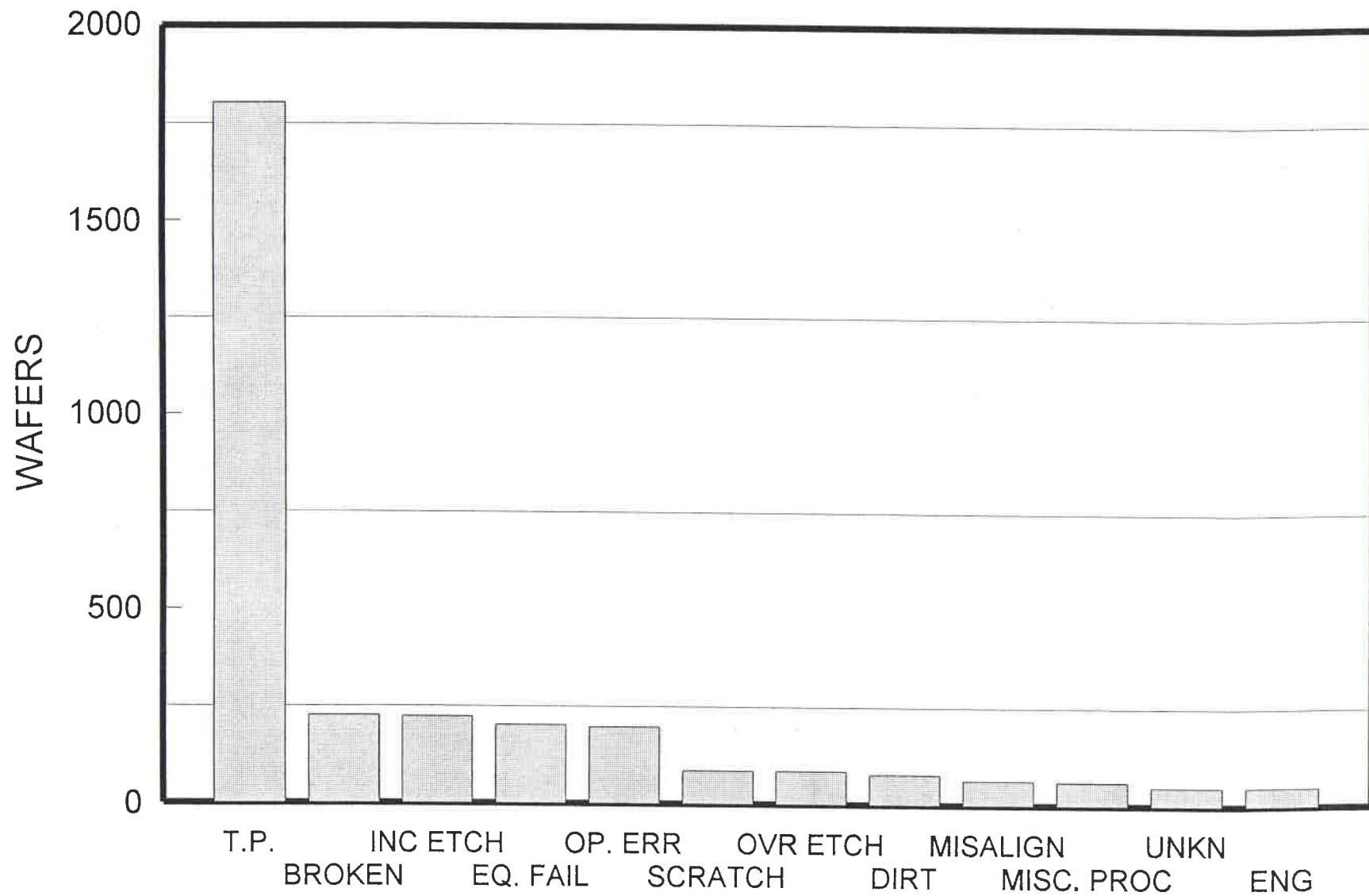


WAFER LOSSES MARCH 1998																			
DATE	T.P.	ENG	MISALIGN	BROKEN	NO PHOT	INC STRP	DIRT	INC ETCH	UNKN	DRK STRT	OP. ERR	PROC. FAIL	EQ. FAIL	PR. COAT	OVR ETCH	SCRATCH	WARP	LIFTING	TOTAL
1-2			3	1				3	2					1		1			11
3				3															3
4	7			7				1					25						28
5	15		1	2	1														15
6-8	6	1	1	1				4	1		20				1				40
9	63	1						4		4	10				12	1		1	38
10	5		6	1		6		4	1			1			3	2			78
11	7		1	4			26	2	19						2	1			26
12	4	4	4	2				2	1										59
13-15	10		2	3				28	1						1				18
16	9							10					1						45
17	58	10		2					2						16				35
18	76			2					1				1			2			75
19	6	1		1				1					60		3				142
20-22	30				1		2	1		2			3		2	1	1		10
23		6	1	3				8					14						43
24		3		3			1	10	1						3				35
25				2		1	1	3							3	3			24
26	35			1				7			1		1		1				8
27-29	10	2		7			2	8	1										45
30	3	1						1		1					1	6			37
31		1	2				3	9	2						6	1			7
															4				27
TOTAL	344	30	21	45	2	7	35	106	32	7	31	1	106	1	54	22	1	1	846

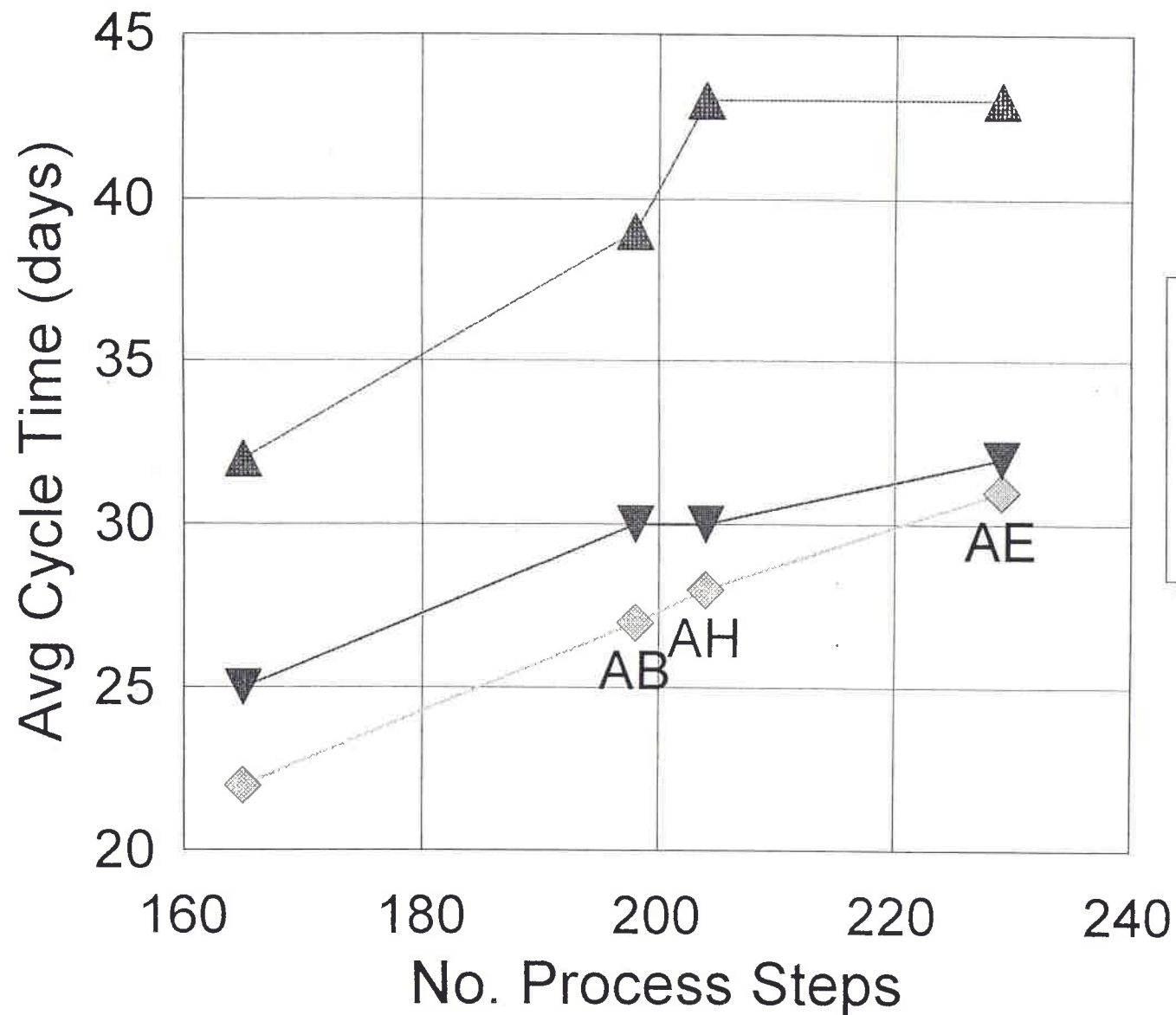


[illegible][illegible]

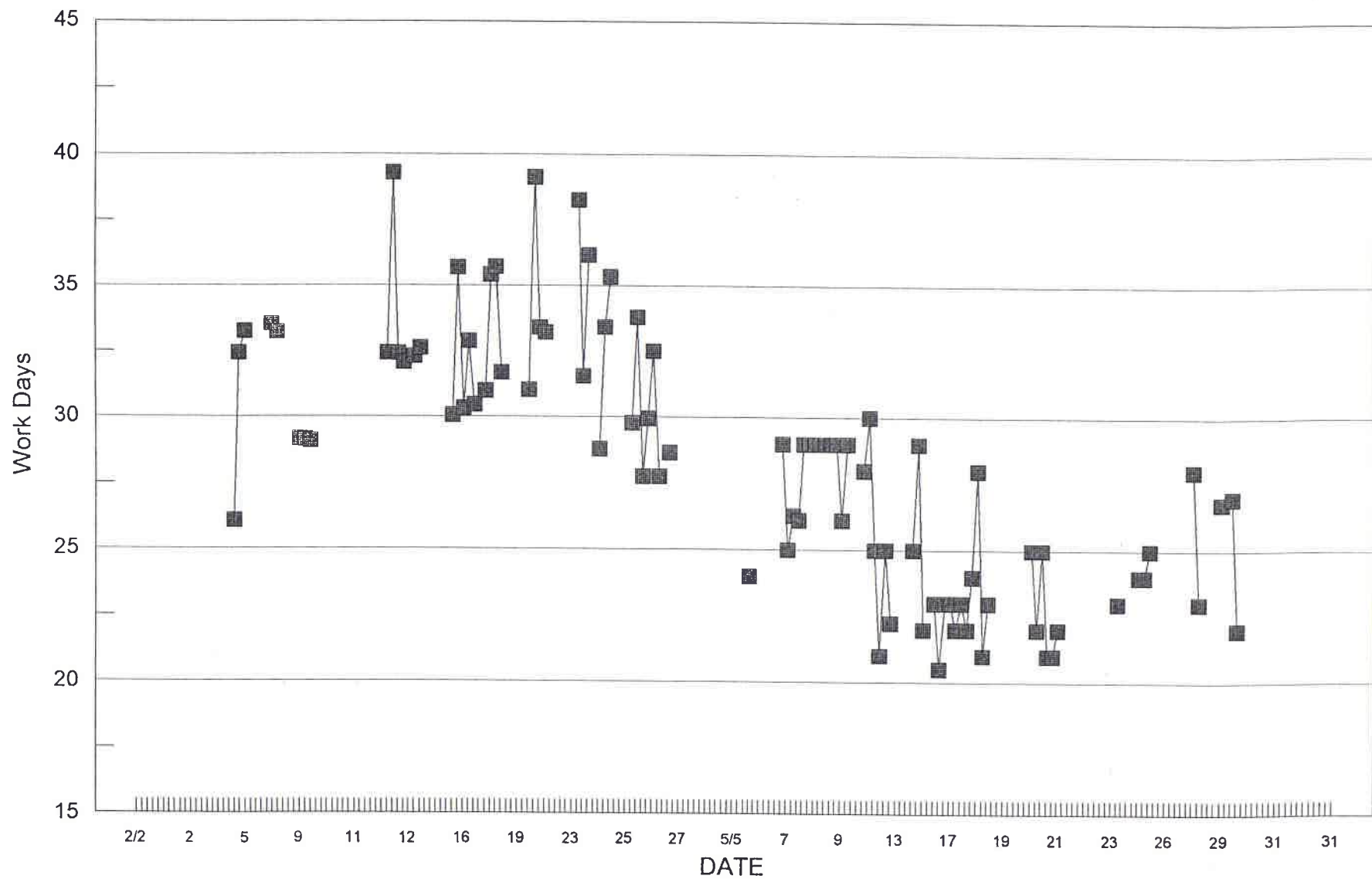
FAB SCRAP
1997 - YTD



Avg Cycle Time vs Process Length



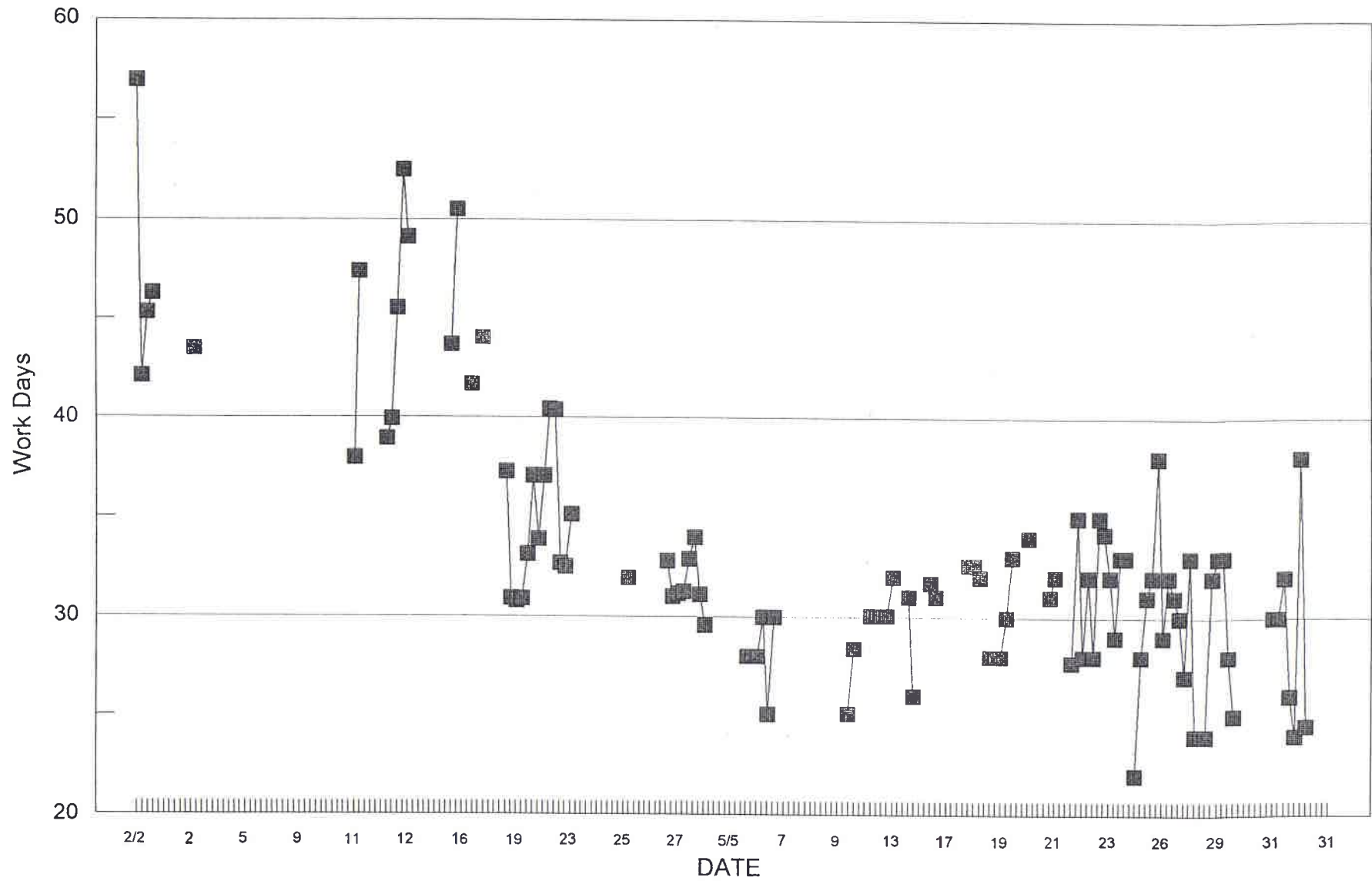
CYCLE TIME - AA PROCESS Q1 - 1998



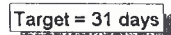
Target = 22 days

CYCLE TIME - AB PROCESS

Q1 - 1998

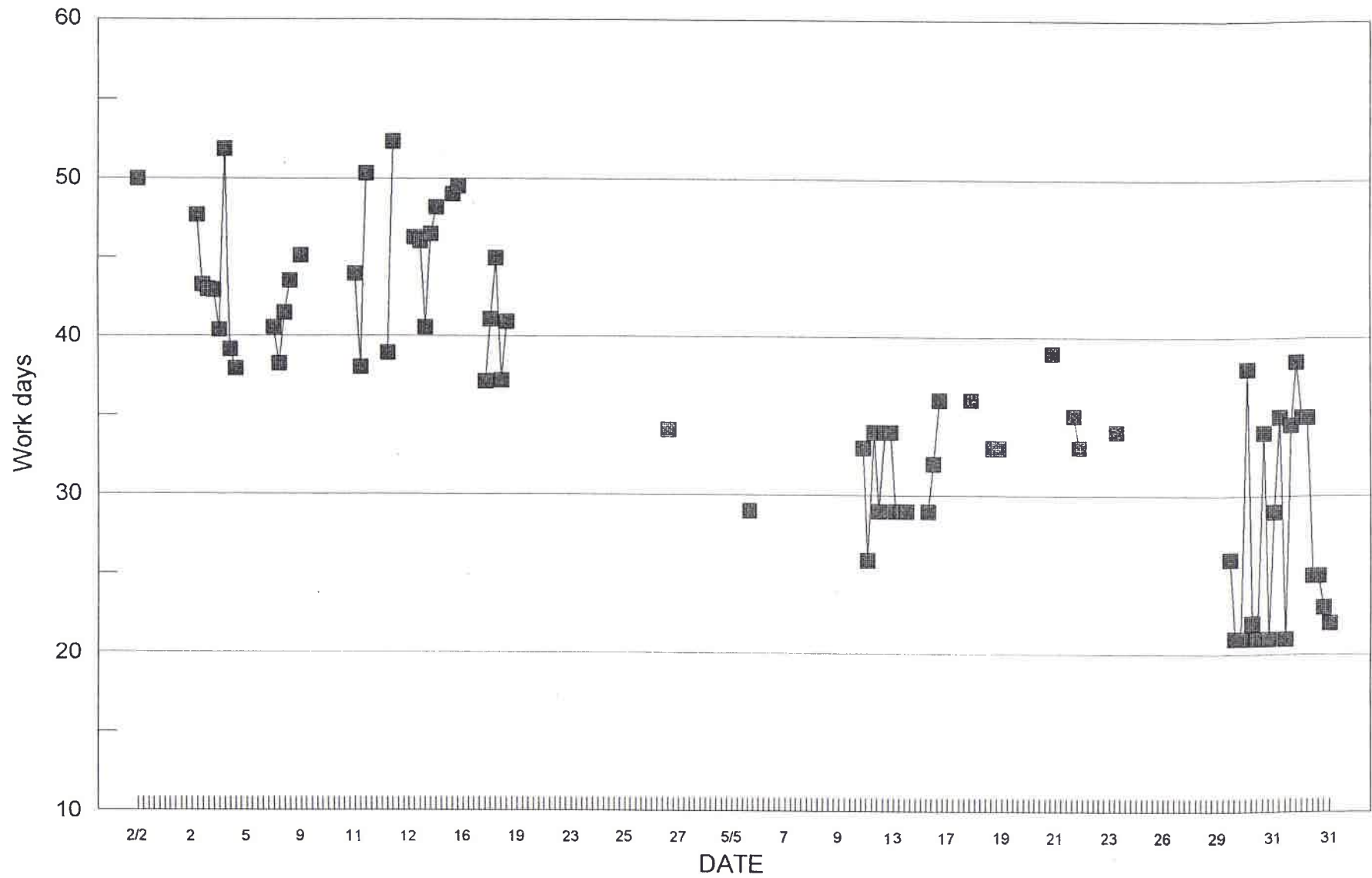


Q1 - 1998



CYCLE TIME - AH PROCESS

Q1 - 1998



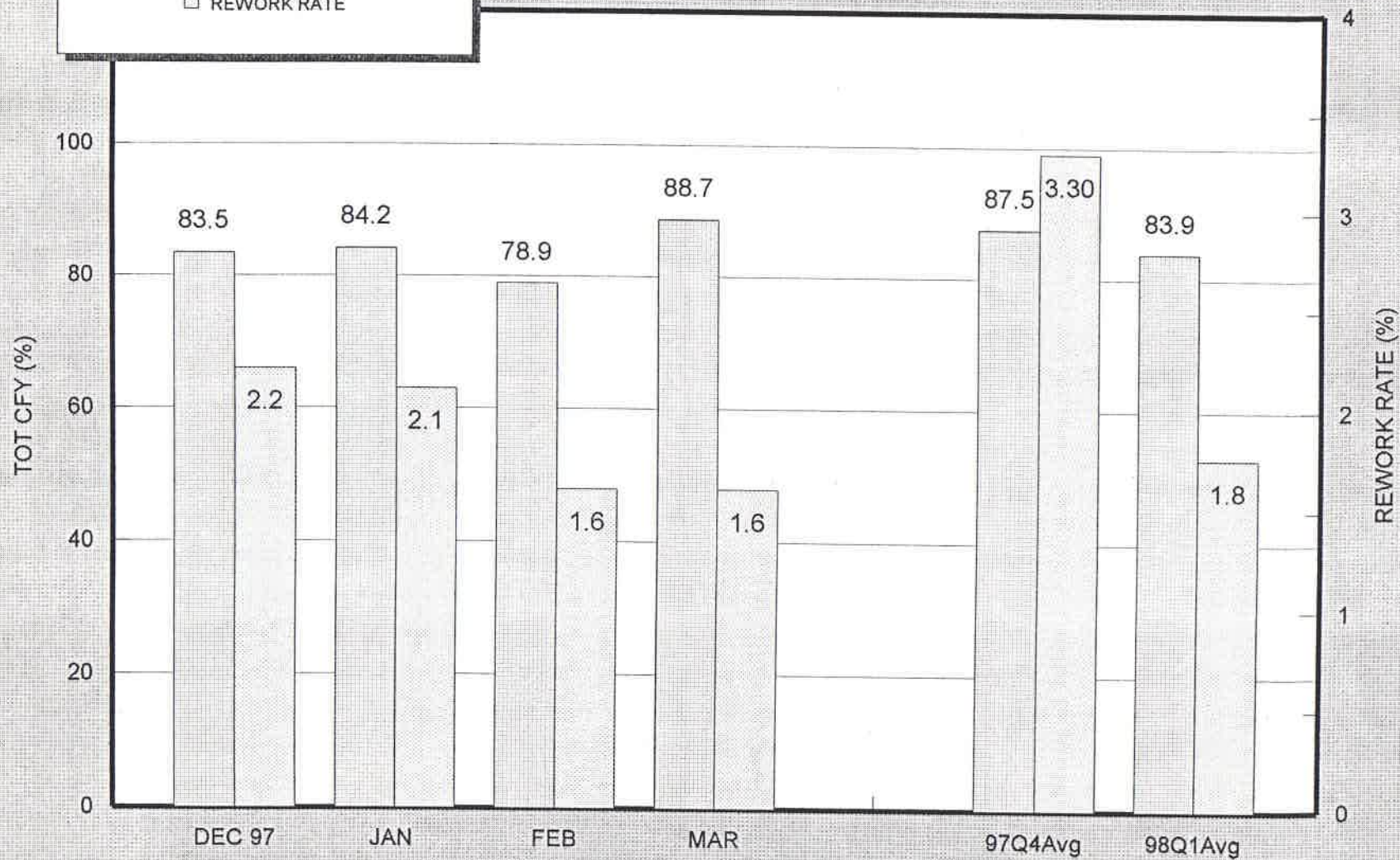
Target 28 days

FAB KEY INDICATORS

1998

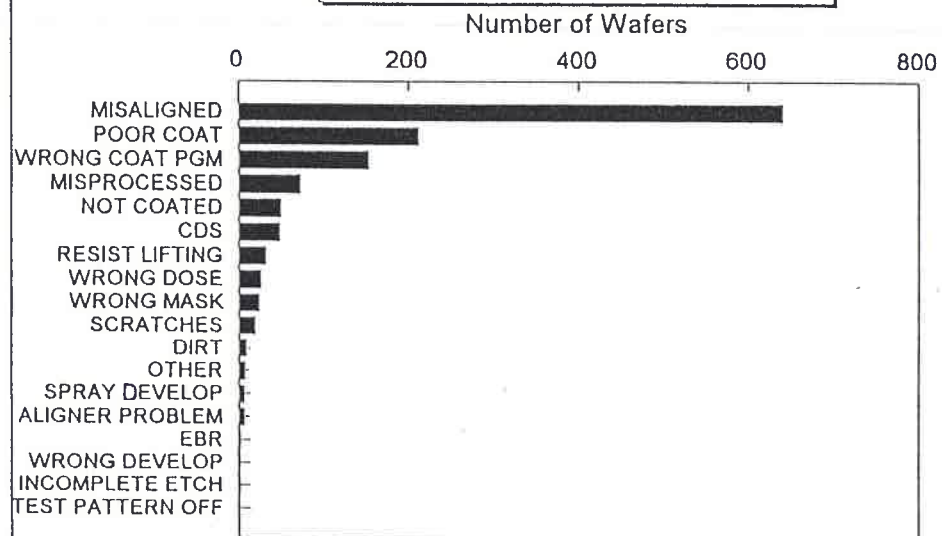
TOT CFY

REWORK RATE

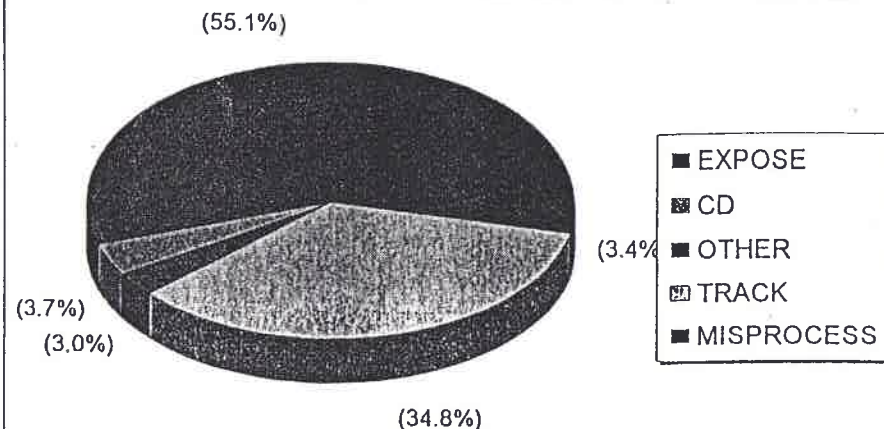


MARCH, 1998 PHOTO REWORK

Total=1.60%, PE=1.52%, Stepper=3.07%

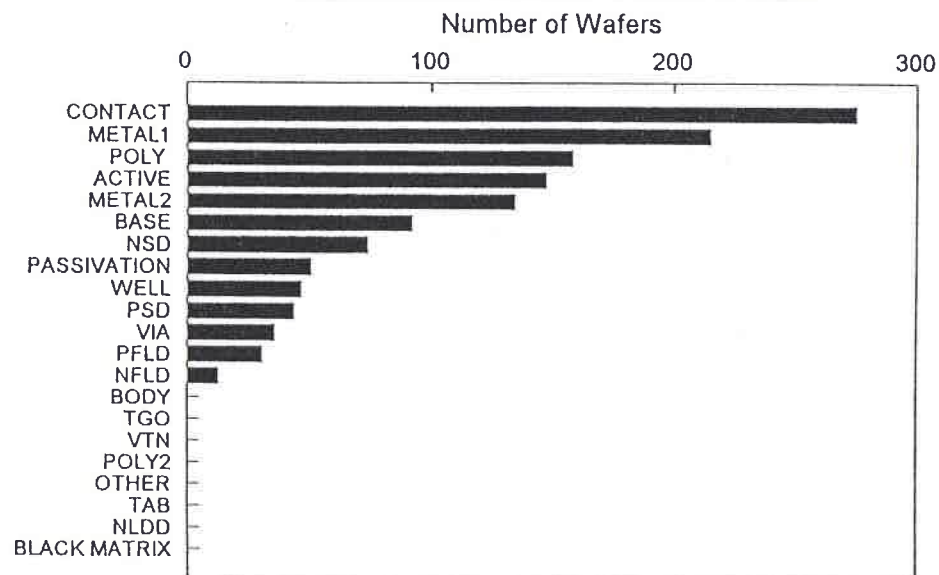


MARCH, 1998 PHOTO REWORK

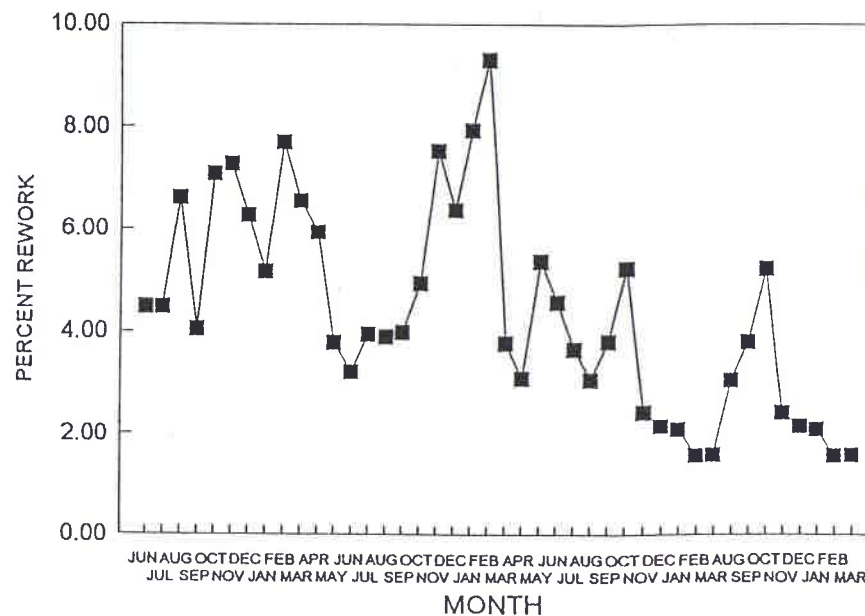


MARCH, 1998 PHOTO REWORK

Total=1.60% PE=1.52% Stepper=3.07%

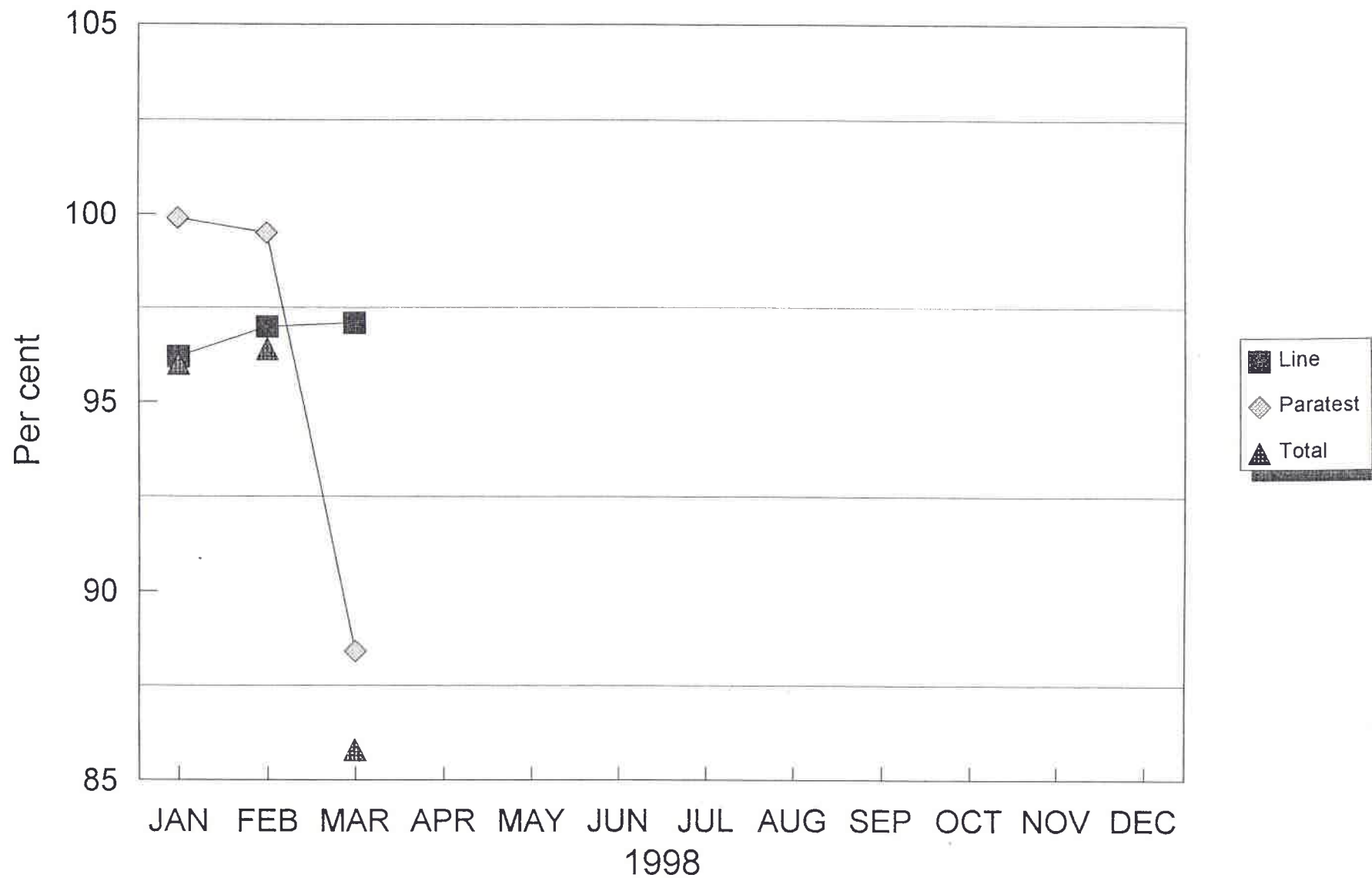


1995/96/97/98 PHOTO REWORK SUMMARY



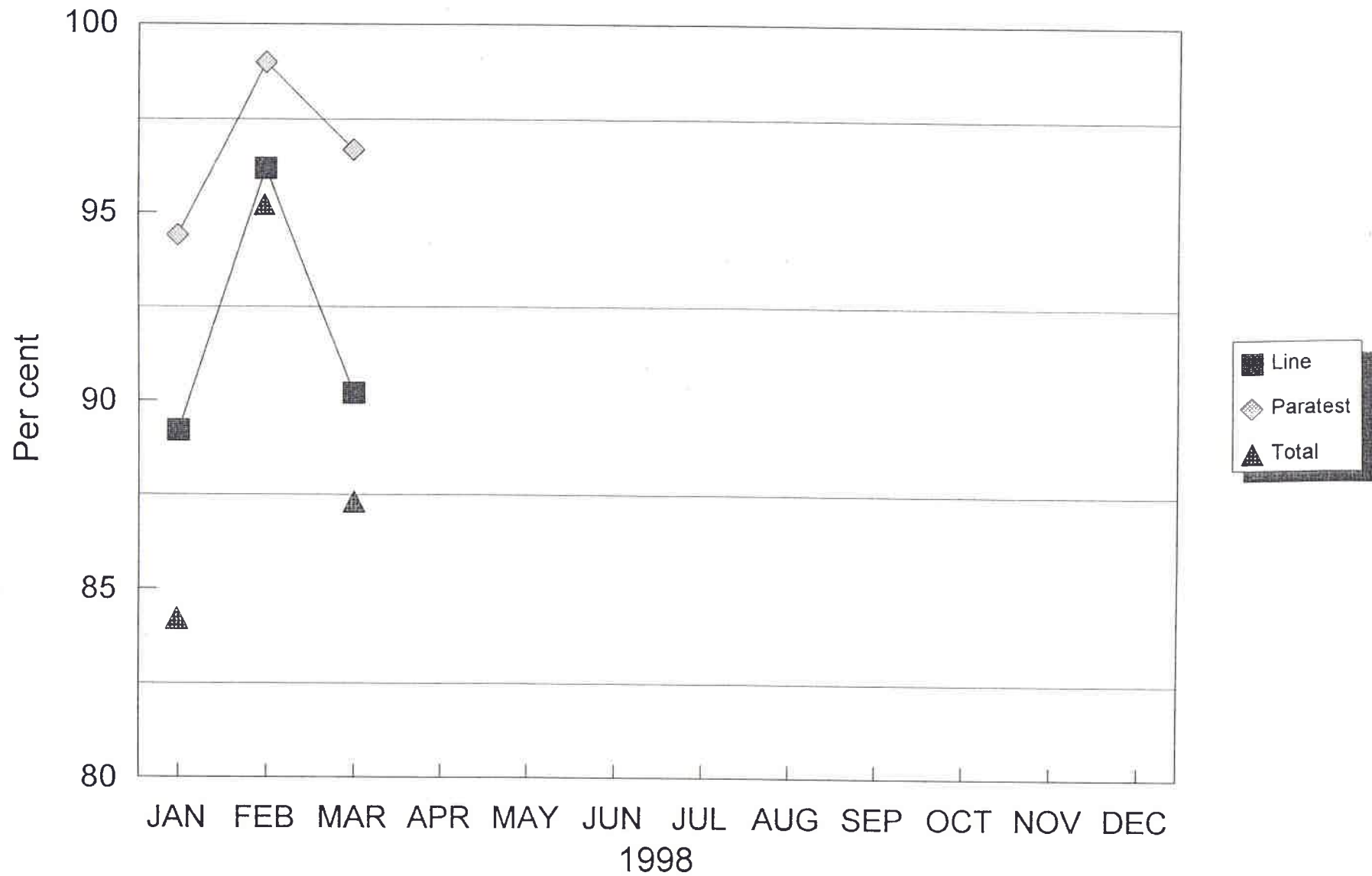
Cum Fab Yield

AA - BiCMOS SLM



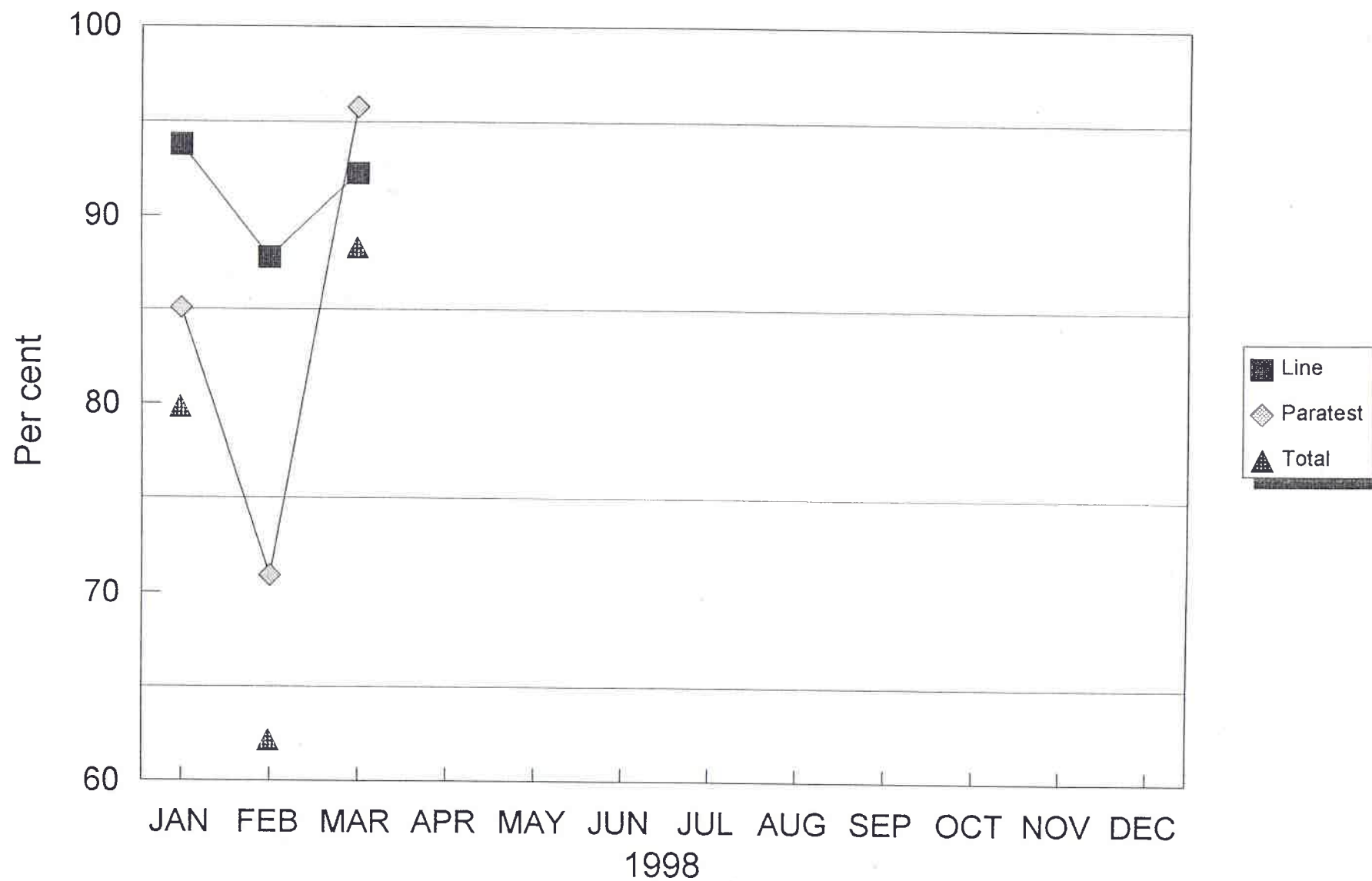
Cum fab Yield

AB - BiCMOS DLM



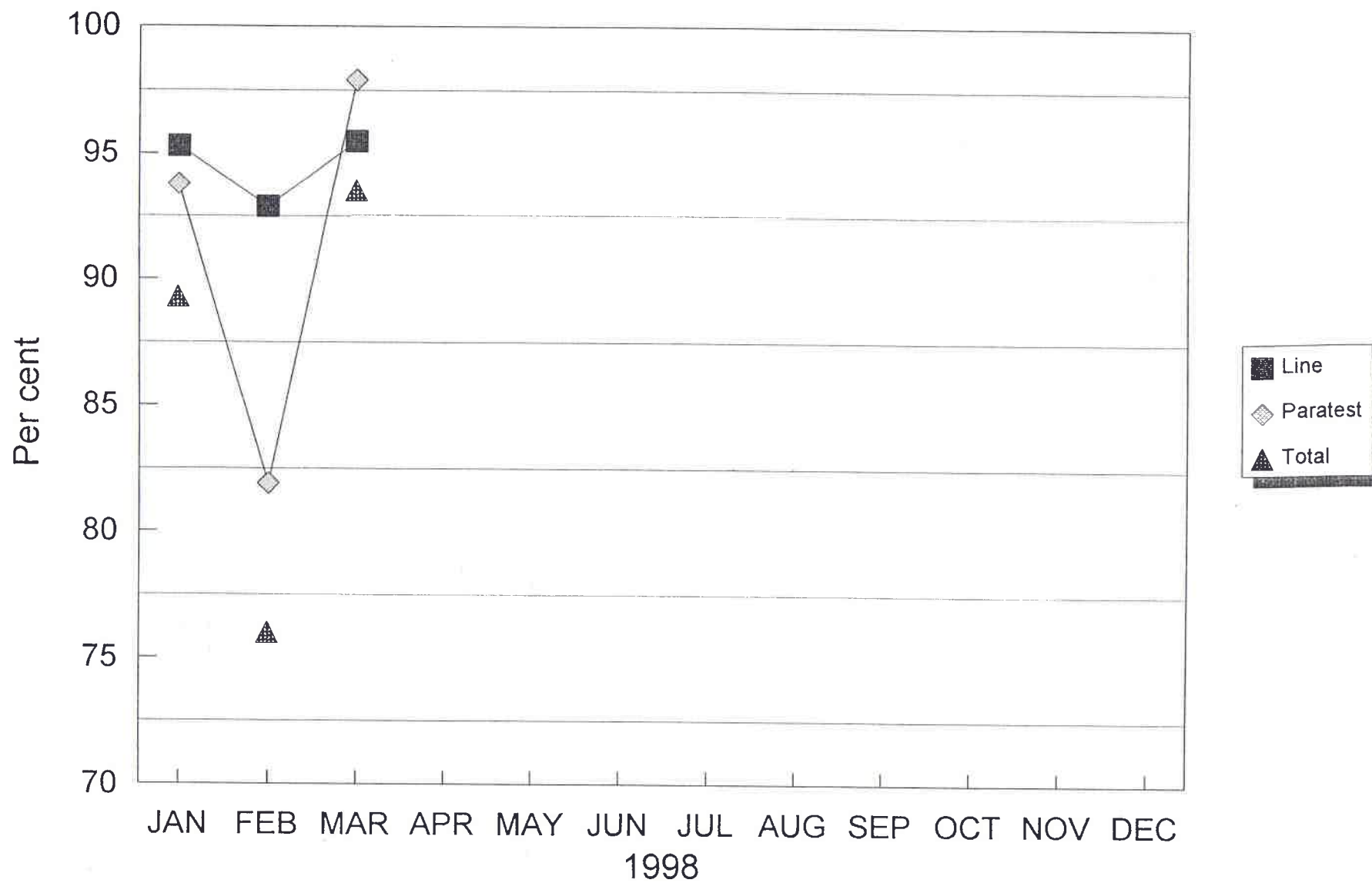
Cum Fab Yield

AE - BCDMOS DLM



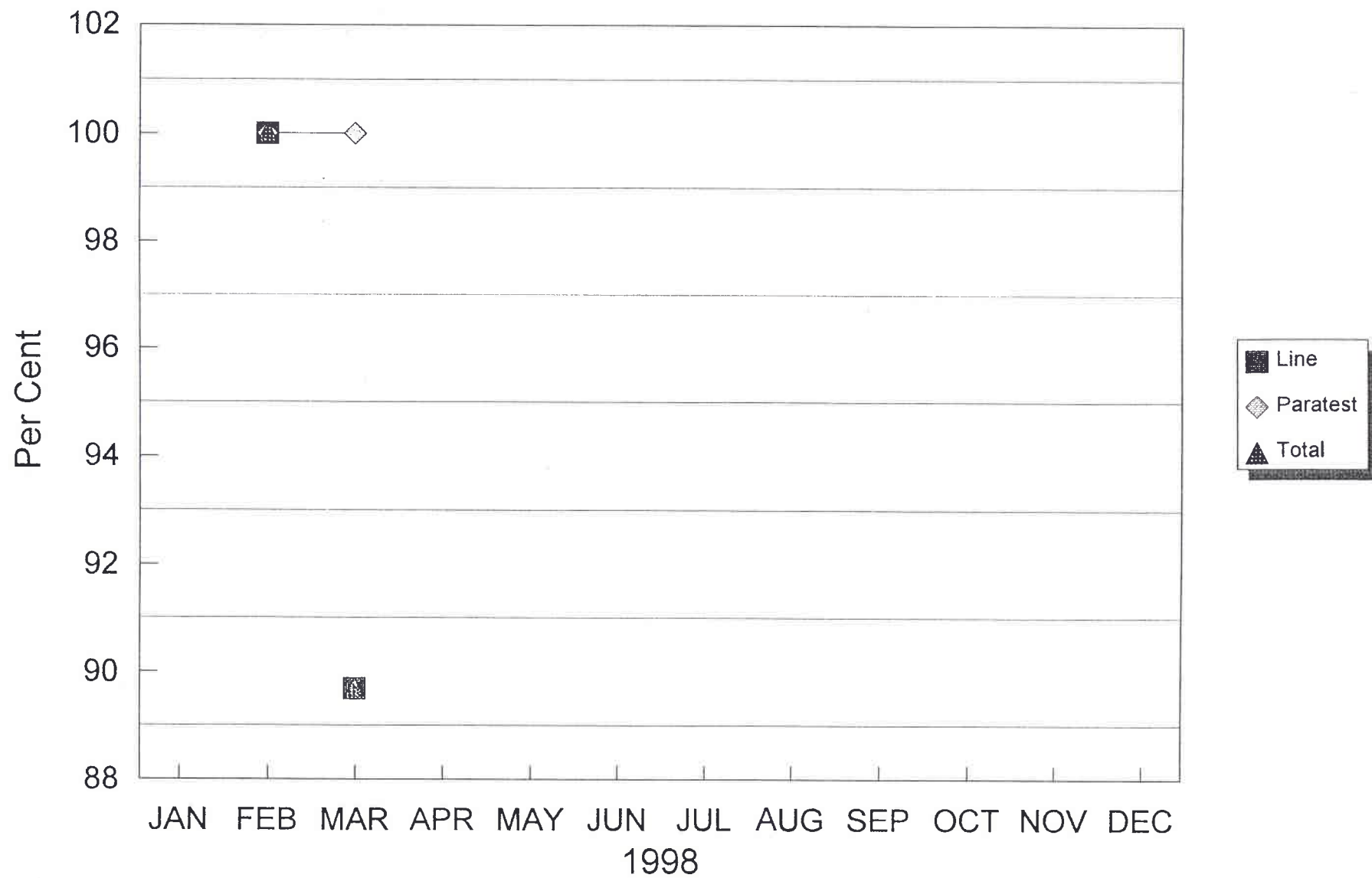
Cum Fab Yield

AH - BiCMOS DLM RP



Cum Fab Yield

GL



GENERAL REPORT FOR MARCH 1998

EQUIPMENT MAINTENANCE EXPENSES FOR MARCH 1998

FILTERS	1500	1853.4	
LAMPS	6500	25.2	
MASKS	1000	250 REPEL	
QUARTZ	13951	21121.5	
SUPPLIES	5782	5111.15	
FIELD SERVICE	7500	17615	
TOOLS	250		
EQUIPMENT REPAIR	21557	14971.88	
SPARE PARTS	9203	6012.43	
TOTALS	67243	66710.56 66961	
BUDGET	67243	72,243	(including Outside Services)
EXPENSES	66710.56	66961	
VARIANCE	- 532.44	5282	below budget.