

January 1986

A.E. FILE COPY

A. E. Ext. 86-8

**EXAMPLES TO ACCOMPANY
WORKSHEETS FOR CALCULATING BREAKEVEN BIDS
FOR THE
MILK PRODUCTION TERMINATION PROGRAM**

by
George L. Casler
Wayne A. Knoblauch

**Supplement to
Part Va of Materials Prepared by the
National Dairy Herd Buyout Extension Program Committee**

Department of Agricultural Economics
New York State College of Agriculture and Life Sciences
A Statutory College of the State University
Cornell University, Ithaca, New York 14853

National Dairy Herd Buyout Extension Program Committee

In November, 1985 a group of agricultural economists representing six land-grant universities informally organized the National Dairy Herd Buyout Extension Program Committee. The milk production termination program, as the buyout program is formally called, became official policy when the President signed the Food Security Act of 1985 on December 21.

The purpose of this ad hoc committee effort is to formulate materials that could be widely used in cooperative extension programs designed to help dairy farmers, lenders, and other industry groups to better understand and make decisions relative to the new milk production termination program. The individuals and institutions who have contributed to this effort are listed below.

CORNELL UNIVERSITY

Andrew Novakovic	Wayne Knoblauch
George Casler	Harry Kaiser
Eddy LaDue	Stuart Smith

MICHIGAN STATE UNIVERSITY

Larry Hamm
Sherill Nott

NORTH CAROLINA STATE UNIVERSITY

Geoffrey Benson

OHIO STATE UNIVERSITY

Robert Jacobson
Bernard Erven
Cameron Thraen

TEXAS A&M UNIVERSITY

Robert Schwart
James Richardson
Clair Nixon

UNIVERSITY OF WISCONSIN

Robert Cropp
Edward Jesse

Funding for this project has been provided in part by the Farm Foundation and the Cooperative Extension Services of the respective universities.

It is the policy of Cornell University actively to support equality of educational and employment opportunity. No person shall be denied admission to any educational program or activity or be denied employment on the basis of any legally prohibited discrimination involving, but not limited to, such factors as race, color, creed, religion, national or ethnic origin, sex, age or handicap. The University is committed to the maintenance of affirmative action programs which will assure the continuation of such equality of opportunity.

INTRODUCTION

The purpose of this bulletin is to provide an example of how to use the worksheets described in A.E. Ext. 86-6 "Worksheets for Calculating Breakeven Bids for the Milk Production Termination Program". Farm information for I. May Bidd is on the next page. A breakeven bid is calculated for each of the three situations, described in detail in the aforementioned bulletin. Briefly, the three situations differ with respect to whether the dairy farmer plans to leave dairy production soon regardless of MPTP and whether or not he plans to return to milk production at the end of MPTP. The same basic data will be used for all three situations but we have changed I. May Bidd's name to fit the situation.

You will find two page numbers on each worksheet. The number in the middle of the page is the number used in the worksheet publication and the number in the upper right corner is the page number in this publication.

SITUATION 1: SELLEM ANYWAY: WORKSHEETS 4, 5 AND 6

In this situation the dairyman plans to discontinue milk production in the near future even if he does not join the MPTP. Therefore, the breakeven bid is based only on the reduction in worth due to complying with the provisions of MPTP.

Sellem Anyway is in Situation 1. He plans to sell his cattle, machinery and real estate soon even if he does not participate in MPTP.

The reduction in net worth due to selling the cattle for beef rather than dairy is \$54,000 as shown in Worksheet 4. The reduction in net worth due to selling the real estate without milk production rights rather than as a dairy farm is \$44,000 as shown in Worksheet 5.

The machinery and feed and supplies would also be sold but there would be no loss in net worth due to sales of these items.

If the total reduction in net worth of \$98,000 is amortized over 5 years at 9%, the annual after tax amount needed to breakeven is \$25,186 (Worksheet 6). Assuming a 15 percent average tax rate on the buyout payments, the before-tax payment needed is \$29,631. With a base milk sales of 14,449 cwt., the breakeven bid is \$2.05 per cwt. per year or a total bid of \$10.25 per cwt.

Analysis 2. This is a second analysis which Sellem is using to look at an alternative assumption on the value of the real estate without milk production rights. Suppose the loss of milk production rights reduces the value of the real estate only by a net amount of \$14,000 rather than \$44,000. The loss in net worth, amortized over 5 years at 9% would be \$17,476 (Worksheet 6). If the tax rate on the buyout payments is 12%, the breakeven bid is \$1.37 per cwt. per year for a total breakeven bid of \$6.85 per cwt.

I. May Bidd Farm Data, 1985
Example for use with MPTP Worksheets

<u>Market Value of Assets</u>		<u>1985 Receipts (Cash)</u>	
Real Estate	\$210,000	Milk Sales	\$187,997
Machinery	91,000	Dairy Cattle	10,908
Livestock	120,000	Dairy calves	2,529
Feed and supplies	20,000	Corn grain	3,387
		Government payments	990
		Other	2,356
		Custom work	363
		Total cash receipts	\$208,530
<u>1985 Expenses (Cash)</u>		<u>Receipt Adjustments</u>	
Hired Labor	\$ 24,448	Cattle sales	\$10,908
Dairy grain & concentrate	37,306	Increase in cattle inventory	900
Dairy roughage	2,978	Accrual cattle income	\$11,808
Other livestock	0	Corn grain sales	3,387
Machine hire, rent & lease	1,849	Increase in inventory	1,200
Machinery repairs & parts	10,358	Accrual corn income	4,587
Auto expense (farm share)	476	Net adjustments	+ 2,100
Fuel, oil & grease	7,242	1985 TOTAL FARM RECEIPTS	\$210,630
Purchased livestock	1,601	1985 NET FARM INCOME	\$ 19,078
Breeding	3,158		
Veterinary & medicine	4,408		
Milk marketing	10,229		
Cattle lease	0		
Other livestock expense	8,227		
Fertilizer & lime	11,193		
Seeds & plants	3,276		
Spray, other crop expense	3,097		
Land, building, fence repair	2,535		
Taxes	4,463		
Insurance	2,879		
Rent & lease	1,880		
Telephone (farm share)	612		
Electricity (farm share)	4,786		
Interest paid	18,924		
Miscellaneous	2,474		
Total Cash Expenses	\$168,399		
Machinery depreciation	15,345		
Building depreciation	7,308		
Total expenses	\$191,052		
<u>Expense Adjustments</u>		<u>Other Information</u>	
Cash feed expense	\$37,306	Number of cows	94
Increase in accounts payable	2,500	Milk sold per cow	15,686
Accrual feed expense	\$39,806	Tillable acres owned	190
Cash fertilizer expense	\$ 11,193	Tillable acres rented	95
Increase in inventory	2,000	1985 milk sales	14,745 cwt.
Accrual fertilizer expense	9,193	July 1984- June 1985	
Net Adjustments	+ 500	milk sales	14,449 cwt.
1985 TOTAL FARM EXPENSES	\$191,552		

Note: The receipt and expense adjustments are included as examples of the kind of adjustments that should be made for changes in inventory and accounts receivable and payable if 1985 data are to be used as a basis for projections for future operation of the dairy farm.

WORKSHEET 4

CALCULATION OF DECREASE IN NET WORTH AS A RESULT OF SALE OF DAIRY ANIMALS TO
ENTER MPTP

(Complete this Worksheet only if you are in Situation 1 or 2)

1. Value if sold as dairy animals (Worksheet 1, line 3a)	<u>\$120,000</u>	
2. Less: Commission and other sale expenses	<u>6,000</u>	
3. Income tax on gain	<u>24,000</u>	
4. Net proceeds from sale as dairy animals		<u>\$90,000 (E)</u>
5. Value if sold for beef (Worksheet 1, line 3b)	<u>48,000</u>	
6. Less: Commission and other sale expenses	<u>3,400</u>	
7. Income tax on gain	<u>9,600</u>	
8. Net proceeds from sale as beef		<u>\$36,000 (F)</u>
9. Difference in net proceeds* (E) minus (F)		<u>\$54,000</u>

*This is the reduction in net worth as a result of selling dairy cattle for beef rather than dairy. Transfer this number to Worksheet 6, line 7, for Situation 1 and Worksheet 7, line 9, for Situation 2.

WORKSHEET 5

CALCULATION OF DECREASE IN NET WORTH AS A RESULT OF SELLING REAL
ESTATE WITHOUT DAIRY PRODUCTION RIGHTS

(Complete this worksheet only if you are in Situation 1 or 2 and the real estate will be sold when the MPTP is entered or soon thereafter)

1. Value if sold as dairy farm	<u>\$210,000</u>	
2. Less: Commission and other sale expenses	<u>16,000</u>	
3. Income tax on gain	<u>20,000</u>	
4. Net proceeds from sale as a dairy farm		<u>\$174,000 (G)</u>
5. Value if sold without milk production rights	<u>150,000</u>	
6. Less: Commission and other sale expenses	<u>12,000</u>	
7. Income tax on gain	<u>8,000</u>	
8. Net proceeds from sale without milk production rights		<u>\$130,000 (H)</u>
9. Difference in net proceeds* (G) minus (H)		<u>\$44,000</u>

*This is the reduction in net worth if the farm is sold to enter the MPTP. Transfer this number to Worksheet 6, line 7, for Situation 1 and Worksheet 7, line 9, for Situation 2.

Worksheet 6

CALCULATION OF BREAKEVEN BID

(Complete this worksheet if you are in Situation 1)

<u>Part 1.</u>	<u>Analysis</u> <u>1</u>	<u>Analysis</u> <u>2</u>	<u>Analysis</u> <u>3</u>
1. Annual amount needed to cover loss in Net Worth, from Part 2, line 11 (This is the after tax annual payment needed from MPTP payments)	<u>25,186</u>	<u>17,476</u>	_____
2. Divided by: One minus the expected tax rate (in decimal form) on buyout payments*	<u>.85</u>	<u>.88</u>	_____
3. Equals: Annual MPTP payment needed to break even	<u>29,631</u>	<u>19,859</u>	_____
4. Divided by: Base period production in cwt.	<u>14,449</u>	<u>14,449</u>	_____
5. Equals: Annual Breakeven bid in \$ per cwt.	<u>2.05</u>	<u>1.37</u>	_____
6. Times: 5 years = Breakeven bid in \$ per cwt.	<u>10.25</u>	<u>6.85</u>	_____
<u>Part 2.</u>			
7. Loss in Net Worth, from Worksheet 4, line 9	<u>54,000</u>	<u>54,000</u>	_____
8. Loss in Net Worth, from Worksheet 5, line 9	<u>44,000</u>	<u>14,000</u>	_____
9. Total Loss in Net Worth	<u>98,000</u>	<u>68,000</u>	_____
10. Multiply by: Factor for 5 years and <u>9</u> % from Table 1**	<u>.257</u>	<u>.257</u>	_____
11. Equals: Loss in Net Worth, amortized over MPTP period of 5 years	<u>25,186</u>	<u>17,476</u>	_____

*For example, if the expected tax rate is 25%, the entry on line 2 is
 $1 - .25 = .75$. See page 11 for explanation.

**Use an after-tax interest rate. The rate you would pay on remaining debt,
adjusted for tax savings due to the deductibility of interest is a good
approximation.

Table 1. Amortization Table to Retire a Lump Sum with Annual Payments over
Five Years

Years	Percent Interest								
	6	7	8	9	10	11	12	13	14
5	.237	.244	.250	.257	.264	.271	.277	.284	.293

SITUATION 2: WILLNOT RETURN: WORKSHEETS 1, 2, 3, 4, 5 AND 7

In Situation 2, the dairyman does not plan to return to milk production if he participates in MPTP. The breakeven bid is based on reduction in net worth from complying with the MPTP provisions and the reduction in net income from participating in MPTP, before including the buyout payments.

Willnot Return is in Situation 2. He would continue milk production in the foreseeable future if he does not join the MPTP but does not plan to return to milk production if he participates in the MPTP. He plans to sell the cattle, machinery and feed and supplies, rent out the land and tenant house and find an off-farm job. Remaining liabilities after the sale of assets and applying the after-tax proceeds to his debts are \$48,950 (Worksheet 1). Interest on remaining liabilities at 12% is \$5,874.

Projected receipts and expenses from continued milk production during the MPTP period are shown in Worksheets 2A and 3. Willnot has projected an average milk price over the MPTP period \$.25 cwt. below the 1985 average price. Other receipts and expenses are his projections of what is most likely to occur during the MPTP period. Projected Net Income After Taxes is \$16,108 per year.

If Willnot participates in MPTP, he will continue to have cash expenses for taxes, insurance and repairs on buildings, land rental (for which he has a five year contract) and interest. There will continue to be building depreciation.

There will be income from land rent, house rental and work off the farm for a total of \$16,275. Net Income, after deducting farm expenses but before MPTP payments is projected to be \$-4,842 per year.

Decrease in Net Income, After Taxes on line 1 of Worksheet 7 is projected to be \$20,950. Loss in net worth from the sale of cattle for beef rather than dairy of \$54,000 (Worksheet 4, page 4) is shown on line 9 of Worksheet 7. Amortized over 5 years at 9%, this amounts to \$13,878 per year. The after-tax payment needed from MPTP is $\$20,950 + 13,878 = \$34,828$. Assuming a 20% tax rate on buyout payments, the annual buyout payment needed to break even is \$43,535 per year or \$3.01 per cwt. The total payment needed to break even is \$15.05 per cwt. of base.

Analysis 2: Willnot has made a second analysis in which the projected milk price for the 5-year MPTP period is \$.50 cwt. below his original projection, which would reduce the net income from milk production by an average of \$.50 x 15,168 cwt. = \$7,584 per year. Therefore the decrease in net income on line 1 of Worksheet 7 would be \$13,366 rather than \$20,950, assuming no changes in receipts and expenses other than the lower projected milk price. The breakeven bid would be \$11.80 per cwt. as shown on line 8. (The tax rate on buyout payments might change and affect the breakeven bid but that has not been included in the calculation.)

Analysis 3: In this analysis, Willnot has projected an average milk price over the MPTP period \$.50 higher than his original projection, which would make the decrease in net income on line 1 of Worksheet 7, \$28,534, assuming no changes in other receipt and expense items. The breakeven bid under these conditions would be \$18.35 per cwt.

WORKSHEET 1
CALCULATION OF SALE PROCEEDS, REMAINING LIABILITIES, AND
INTEREST ON REMAINING LIABILITIES
(Read the text before completing this worksheet)

Item	Market Value of Assets to be Sold	Value if Sold under MPTP Provisions
<u>Assets Owned That Will Be Sold</u>		
1. Real Estate	a. \$ _____	b. \$ _____
2. Machinery and Equipment*	a. <u>91,000</u>	b. <u>91,000</u>
3. Livestock	a. <u>120,000</u>	b. <u>48,000</u>
4. Feed and supplies*	a. <u>20,000</u>	b. <u>20,000</u>
5. Total	a. \$ <u>231,000</u>	b. \$ <u>159,000</u>
6. Less: Commissions and other sale expenses		- <u>7950</u>
7. Net received after commissions and other sale expenses		\$ <u>151,050</u>
8. Plus: Accounts receivable minus accounts payable (If A/P exceed A/R, subtract rather than add)		+ or - <u>10,000</u>
9. Less: Estimated Income Taxes resulting from sale**		- <u>20,000</u>
10. Net proceeds from sale		<u>141,050</u>
11. <u>All liabilities</u> before sale of assets, (except accounts payable)		<u>190,000</u>
12. Remaining liabilities = line 11 minus line 10		\$ <u>48,950</u>
<u>If line 12 is positive:</u>		
13. Interest on remaining liabilities line multiplied by <u>12</u> % interest***		\$ <u>5874</u> ****
<u>If line 12 is negative:</u>		
14. Excess of sale proceeds over liabilities		\$ _____
15. Interest earned on excess @ ____ %		\$ _____ #

*Usually the value in the two columns will be the same for these items.

**Includes tax on ordinary gain, capital gain, alternative minimum tax and investment credit recapture. See your tax advisor for help in estimating income taxes.

***Estimated weighted average interest rate on remaining liabilities in decimal form.

****Transfer to Worksheet 2, "Interest Paid With Participation".

The amount on line 15 should be included in interest income on Worksheet 3.

WORKSHEET 2A

IMPACT OF PARTICIPATION IN DAIRY PRODUCTION TERMINATION PROGRAM ON EXPENSES
(Use this worksheet if your list of expenses is similar to the list in the
Cornell Dairy Farm Business Summary)

Item	1985*	5 year Average Without MPTP Participation**	5 year Average With MPTP Participation**
1. Average Number of Cows	<u>94</u>	<u>94</u>	<u>xxxxxxxx</u>
2. Hired Labor	<u>\$24,448</u>	<u>\$26,893</u>	<u>\$</u>
Feed			
3. Dairy grain & concentrate	<u>39,806</u>	<u>37,816</u>	<u>?</u>
4. Dairy roughage	<u>2,978</u>	<u>2,978</u>	<u>?</u>
5. Other livestock	<u>0</u>	<u>0</u>	
Machinery			
6. Machine hire, rent & lease	<u>1,849</u>	<u>2,034</u>	
7. Machinery repairs & parts	<u>10,358</u>	<u>11,394</u>	
8. Auto expense (farm share)	<u>476</u>	<u>523</u>	
9. Fuel, oil & grease	<u>7,242</u>	<u>7,242</u>	
Livestock			
10. Purchased livestock	<u>1,601</u>	<u>1,601</u>	
11. Breeding	<u>3,158</u>	<u>3,316</u>	
12. Veterinary & medicine	<u>4,408</u>	<u>4,628</u>	
13. Milk marketing	<u>10,229</u>	<u>9,195</u>	<u>xxxxxxxx</u>
14. Cattle lease	<u>0</u>	<u>0</u>	
15. Other livestock expense	<u>8,227</u>	<u>8,638</u>	
Crops			
16. Fertilizer & lime	<u>9,193</u>	<u>9,377</u>	
17. Seeds & plants	<u>3,276</u>	<u>3,276</u>	
18. Spray, other crop expense	<u>3,097</u>	<u>3,221</u>	
Real Estate			
19. Land, building, fence repair	<u>2,535</u>	<u>2,662</u>	<u>600</u>
20. Taxes	<u>4,463</u>	<u>4,686</u>	<u>4,686</u>
21. Insurance	<u>2,879</u>	<u>3,023</u>	<u>1,077</u>
22. Rent & lease	<u>1,880</u>	<u>1,880</u>	<u>1,880</u>
Other			
23. Telephone (farm share)	<u>612</u>	<u>643</u>	
24. Electricity (farm share)	<u>4,786</u>	<u>5,026</u>	
25. Interest paid	<u>18,924</u>	<u>18,924</u>	<u>5,874</u> ***
26. Miscellaneous	<u>2,474</u>	<u>2,474</u>	
Depreciation			
27. Machinery	<u>15,345</u>	<u>16,000</u>	
28. Buildings	<u>7,308</u>	<u>7,000</u>	<u>7,000</u>
29. TOTAL EXPENSES	<u>\$191,552</u>	<u>\$194,450</u> (A)	<u>\$21,117</u> (B)

*Adjust expenses to include changes in accounts payable and inventory so as to represent expenses incurred in producing 1985 receipts.

**Project an average expected year during the MPTP period. Include consideration of both price and cost changes as well as physical size changes.

***From Worksheet 1. If your debt principal will be reduced during the MPTP period, this number should be adjusted.

WORKSHEET 3
IMPACT OF PARTICIPATION IN MPTP ON RECEIPTS AND NET INCOME

Item	1985*	5 year Average Without MPTP Participation**	5 year Average With MPTP Participation**
1. Number of Cows	<u>94</u>	<u>94</u>	xxxxxxxx
2. Milk sold per cow (lbs.)	<u>15686</u>	<u>16136</u>	xxxxxxxx
3. Total milk sold (cwt.)	<u>14745</u>	<u>15168</u>	xxxxxxxx
4. Price per cwt.	<u>12.75</u>	<u>12.50</u>	xxxxxxxx
5. Milk sales	<u>\$187,997</u>	<u>\$189,600</u>	xxxxxxxx
6. Dairy cattle	<u>11,808</u>	<u>11,808</u>	xxxxxxxx
7. Dairy calves	<u>2529</u>	<u>2529</u>	\$?
8. Other livestock	_____	_____	_____
9. Corn grain	<u>4587</u>	<u>4312</u>	_____
10. Corn silage	_____	_____	_____
11. Hay	_____	_____	_____
12. Wheat	_____	_____	_____
13. Oats <i>Gov payments</i>	<u>990</u>	<u>990</u>	_____
14. Other _____	<u>2356</u>	<u>2356</u>	_____
15. Land rented to others	_____	_____	<u>4275</u>
16. House rental	_____	_____	<u>3000</u>
17. Custom work	<u>363</u>	<u>363</u>	_____
<u>Nonfarm income***:</u>			
18. Salaries & wages	_____	_____	<u>9000</u>
19. Retirement income	_____	_____	_____
20. Interest income	_____	_____	_____ #
21. Income from investments	_____	_____	_____
22. Other _____	_____	_____	_____
23. TOTAL FARM & NONFARM RECEIPTS	<u>\$210,630</u>	<u>\$211,958</u>	<u>\$16275</u>
24. Less: Total Expenses (from Worksheet 2A or 2B)	<u>191,552</u>	<u>194,450</u>	<u>21,117</u>
25. Equals: Net Income	<u>19078</u>	<u>17508</u>	<u>-4842</u>
26. Less: Income taxes	<u>1500</u>	<u>1400</u>	<u>0</u>
27. Equals: NET INCOME AFTER TAXES	<u>\$17578</u>	<u>\$16108 (C)</u>	<u>\$-4842 (D)</u>

*Adjust receipts to include changes in accounts receivable and inventory so as to represent the production which occurred during 1985.

**Project an average expected year during the MPTP period. Include

consideration of both price and cost changes as well as physical size changes.

***Net of any expenses incurred to earn nonfarm income. Do not include buyout payments.

#Include interest from Worksheet 1, line 20.

WORKSHEET 7

CALCULATION OF BREAKEVEN BID
 (Complete this worksheet if you are in Situation 2)

<u>Part 1.</u>	<u>Analysis</u> <u>1</u>	<u>Analysis</u> <u>2</u>	<u>Analysis</u> <u>3</u>
1. Decrease in Net Income, after taxes, Worksheet 3, (C) minus (D)	\$20,950	\$13,366	\$28,534
2. Plus: Annual amount needed to cover loss in Net Worth, from Part 2, line 13	13,878	13,878	13,878
3. Equals: After tax annual payment needed from MPTP payments	34,828	27,244	42,412
4. Divided by: One minus the expected tax rate (in decimal form) on buyout payments*	.80	.80	.80
5. Equals: Annual buyout payment needed to break even	43,535	34,055	53,015
6. Divided by: Base period production in cwt.	14,449	14,449	14,449
7. Equals: Annual Breakeven Bid in \$ per cwt.	3.01	2.36	3.67
8. Times: 5 years = Breakeven Bid in \$ per cwt.	15.05	11.80	18.35
<u>Part 2.</u>			
9. Loss in Net Worth, from Worksheet 4, line 9	\$54,000	54,000	54,000
10. Loss in Net Worth, from Worksheet 5, line 9	-	-	-
11. Total Loss in Net Worth	\$54,000	54,000	54,000
12. Multiply by: Factor for 5 years and <u>9</u> % from Table 2**	.257	.257	.257
13. Equals: Loss in Net Worth, amortized over MPTP period of 5 years	\$13,878	13,878	13,878

*For example, if the expected tax rate is 25%, the entry on line 2 is

1 - .25 = .75. See page 15 for explanation.

**Use an after-tax interest rate. The rate you would pay on remaining debt, adjusted for tax savings due to the deductibility of interest is a good approximation.

Table 2. Amortization Table to Retire a Lump Sum with Annual Payments Over Five Years

Years	Percent Interest								
	6	7	8	9	10	11	12	13	14
5	.237	.244	.250	.257	.264	.271	.277	.284	.293

SITUATION 3: I. SHALL RETURN: WORKSHEETS 1, 2, 3 AND 8

In Situation 3, the dairyman intends to return to milk production at the end of MPTP. The payments must cover net income lost during MPTP and money to cover the loss on assets disposed of to join MPTP but which must be replaced to re-enter milk production.

I. Shall Return is in Situation 3. He plans to sell his dairy cattle, machinery and feed and supplies and re-purchase similar assets at the end of MPTP. During MPTP, he plans to rent out his land and tenant house and find an off-farm job. Remaining liabilities after the sale of assets and applying the after-tax proceeds to his debts are \$48,950 (Worksheet 1, page 6). Interest on remaining liabilities at 12% is \$5,874.

Projected receipts and expenses from continued milk production during the MPTP period are shown in Worksheets 2A and 3 (pages 7 and 8). Projected Net Income After Taxes is \$16,108 per year. I. Shall has projected an average milk price over the MPTP period \$.25 per cwt. below the 1985 average price. Other receipts and expenses are his projections of what is most likely to occur during the MPTP period.

If Shall participates in MPTP, he will continue to have cash expenses for taxes, insurance and repairs on buildings, land rental (for which he has a five year contract) and interest. There will continue to be building depreciation.

There will be income from land rent, house rental and work off the farm for a total of \$16,275. Net Income, after deducting farm expenses but before MPTP payments is projected to be \$-4,842 per year.

Decrease in Net Income, After Taxes on line 1 of Worksheet 8 (page 11) is projected to be \$20,950. The amount needed to help cover the cost of re-entry (equal to the money lost on sale of assets to join the buyout or line 5a minus line 10 on Worksheet 1) is $\$231,000 - \$141,050 = \$89,950$. Amortized over 5 years at 9%, this is \$15,022 per year. When this is added to the reduction in annual net income from joining MPTP, the annual after tax amount needed from buyout payments is $\$20,950 + \$15,022 = \$35,972$. Assuming a tax rate of 25% on the buyout payments, the before-tax payment needed to breakeven is \$47,963 or \$3.32 per cwt. of base. The total breakeven amount needed per cwt. of base is \$16.60.

Analysis 2: Shall is concerned that it might cost as much as \$25,000 more to replace the cattle and machinery he would sell to join MPTP with similar quality assets than the current market value. In addition, startup costs due to items such as lower milk production in the re-entry year could be as much as \$10,000. Therefore he has added \$35,000 to re-entry costs on line 9 of Worksheet 8, raising the annual amount needed to cover re-entry costs to \$20,850. With no other changes in assumptions except for a two-point increase in the tax rate on buyout payments, the breakeven bid per cwt. would be \$19.80 per cwt.

WORKSHEET 8
CALCULATION OF BREAKEVEN BID FOR SITUATION 3
(Complete this worksheet if you plan to return to milk production)

Part 1.	Analysis 1	Analysis 2	Analysis 3
1. Decrease in Net Income, after taxes, Worksheet 3, (C) minus (D)	<u>20,950</u>	<u>20,950</u>	_____
2. Plus: Annual amount needed to cover re-entry costs at end of MPTP, from Part 2, line 11	<u>15,022</u>	<u>20,850</u>	_____
3. Equals: After-tax annual amount needed from MPTP payments	<u>35,972</u>	<u>41,800</u>	_____
4. Divided by: One minus the expected tax rate on buyout payments*	<u>.75</u>	<u>.73</u>	_____
5. Equals: Annual MPTP payment needed to break even	<u>47,962</u>	<u>57,260</u>	_____
6. Divided by: Base period production in cwt.	<u>14,449</u>	<u>14,449</u>	_____
7. Equals: Annual Breakeven bid in \$ per cwt.	<u>3.32</u>	<u>3.96</u>	_____
8. Times: 5 years = Breakeven bid in \$ per cwt.	<u>16.60</u>	<u>19.80</u>	_____

Part 2.

9. Amount needed to re-enter production, at end of MPTP, (Worksheet 1, line 5a minus line 10)**	<u>89,850</u>	<u>124,850</u>	_____
10. Multiply by: Factor from Table 3, <u>9</u> %, 5 years***	<u>.167</u>	<u>.167</u>	_____
11. Equals: Annual amount needed to cover re-entry costs at end of MPTP	<u>15,022</u>	<u>20,850</u>	_____

*For example, if the expected tax rate is 25%, the entry on line 2 is
1 - .25 = .75. See page 19 for explanation.

**See fourth paragraph on page 18.

***Use an after-tax rate of return that could be earned if the money was invested for the number of years in the MPTP contract. The tax on the buyout payments is accounted for in line 4 but the tax on the interest earned on the money being accumulated for re-entry must be accounted for here.

Table 3. Annuity Table for Accumulating a Future Amount with Annual Payments

Years	Percent Interest								
	6	7	8	9	10	11	12	13	14
5	.177	.174	.170	.167	.164	.161	.157	.154	.151