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WORKSHEETS FOR CALCULATING BREAKEVEN BIDS FOR THE MILK PRODUCTION TERMINATION PROGRAM

by

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

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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.

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Materials Provided by the
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Part Ia
Detailed Summary of the Dairy Provisions of the Food Security Act of 1985, Andrew Novakovic, Cornell University

Part Ib
"Update of ASCS Rules Concerning the MPTP," Andrew Novakovic, Cornell University

Part II
Dairy Outlook: 1986 Through 1990, Alternatives, Prices, Expenses, Receipts, R. Jacobson, C. Thraen, E. Jesse, R. Schwart, L. Hamm, and R. Cropp, Ohio State University

Part III
Making Big Decisions, Bernard Erven, Ohio State University

Part IV
Your Buyout Bid: Factors to Consider, Sherill Nott, Wayne Knoblauch, and George Casler, Michigan State University and Cornell University

Part Va
Worksheets for Calculating Breakeven Bids for the Milk Production Termination Program, George Casler and Wayne Knoblauch, Cornell University

Part Vb
User's Guide to Buyout Program Decision Aid (BOPDA) and accompanying BOPDA microcomputer software, Harry Kaiser, Cornell University

Part VI
Federal Income Tax Considerations for Dairy Bidout, Clair Nixon and James Richardson, Texas A&M University

Tax Planning in the Dairy Herd Buyout, Stuart Smith, Cornell University

Part VII
Formulating a Bidding Strategy for the Milk Production Termination Program, Eddy LaDue, Cornell University

Part VIII
"Buyout Decisions and Decision-Aids," a Cornell videotape

Liability Disclaimer

These worksheets are based on information which was available in mid-January before the final Milk Production Termination Program rules were released. Neither Cornell University, the authors nor the Cooperative Extension Service assume responsibility for the accuracy of bids calculated by using these worksheets, regardless of whether bids are accepted by the USDA. It is the sole responsibility of each farmer to formulate his bid. Although these worksheets have been tested and reviewed, the authors, Cornell University, and the Cooperative Extension Service make no warranty or representation, either express or implied, with respect to these worksheets, their quality, performance, merchantablity, or fitness for a particular purpose. As a result these worksheets are licensed "as is", and you the licensee are assuming the entire risk as to their quality and performance.

INTRODUCTION

Determining whether or not to submit a bid for the Milk Production Termination Program (MPTP) is a complex decision process that warrants careful study by the dairy farmer and the family. Unlike the Milk Diversion Program (MDP), a decision to participate means that no dairy production can occur in that farm's facilities for five years. In return, the dairy farmer will receive payments over part or all of the MPTP period based on base period production and a bid price per hundredweight of milk. Also, unlike the MDP, the bid procedure means one is not certain his bid will be accepted and therefore increased attention on a bid strategy is required. Participation, by having one's bid accepted, will have an impact on the income, cash flow, and net worth position of the farmer and family.

A dairy farmer who is contemplating participating in the MPTP has several alternative uses for the resources no longer needed for milk production. Land, labor, buildings and machinery could be used for other livestock or crop production. Proceeds from the sale of farm assets could be applied to existing debts, used to change enterprises, or for nonfarm investments. Alternative uses of operator and family labor also need to be considered when formulating a plan for the future

The major questions confronting a farmer considering participation in the DPTP in regard to capital resources are:

(1) What are the net proceeds from the sale of assets likely to be,
(2) What are the alternative uses of resources, and
(3) What are the likely returns from these alternative resource uses?

The major questions confronting a farmer in regard to labor are:

(1) What job skills do I have that are needed by the job market,
(2) Would I enjoy doing the jobs available to me, and
(3) What income could I expect to receive?

The major business organization alternatives to be studied by a farmer considering participating in the MPTP are:

A. Sell all farm assets.
B. Sell all dairy cattle and machinery and rent out the land.
C. Sell dairy cattle and machinery not needed for crop production and produce crops for cash sale.

D. Similar to C, but switch to production of another type of livestock.

Each of these alternatives could be combined with either retirement, or part-time or full-time work off the farm by the operator, spouse or both.

Anyone considering the MPTP should first specify the most likely alternative(s) for the use of resources if a bid is accepted. Each alternative plan will likely result in different amounts of annual net income earned from the resources and therefore affect the bid. In some cases the operator may want to consider several alternative plans for resource use, with each of these plans evaluated separately.

Once an alternative plan has been selected, the details should be specified to help in estimating the receipts and expenses likely to occur during the contract period. The alternative selected will also affect the assets to be sold, the amount of income to be received from the assets, the amount of debt paydown from the sale, interest and principal payments on the remaining debt and/or interest income from the excess of sale income over debts.

Anyone considering the MPTP should also consider whether it might be better to sell assets in a normal sale rather than one tied to the program. In a normal sale, the dairy cattle could be sold for dairy purposes rather than for beef and the farm could be sold as a dairy farm. It is possible that the net result could be superior to joining the program. This is particularly relevant for those in Situation 1 discussed in the next section.

DETERMINING YOUR SITUATION RELATIVE TO MPTP

If you are a potential participant in the MPTP, you need to decide which of the following situations most closely corresponds to your future plans. The worksheets are set up to enable you to calculate an annual breakeven bid under the first three of the four situations:

<u>Situation 1</u>. You are planning to discontinue milk production in the near future even if you do not participate in the MPTP.

In this situation, the breakeven bid calculated accounts for only the reduction in net worth resulting from compliance with provisions of the MPTP.

<u>Situation 2</u>. You <u>do not</u> plan to return to milk production at the end of the MPTP period.

In this situation, where a dairy farmer does not intend to return to milk production at the end of the buyout, the breakeven bid is calculated by accounting for the loss in net worth for compliance with the MPTP provisions at the beginning of the contract period and the income needed to make the farmer's income equal to what it would have been had he/she continued dairying during the MPTP period. The former dairy farmer will be entirely dependent on off-farm income, land rental income or cash crop or other livestock income at the end of the contract period. Those not planning to return to dairying at the end of the buyout should take advantage of this time to enable a less stressful transition to other employment or other types of farming. The worksheets for this Situation assume that net income without milk production after the end of MPTP will be the same as net income from producing milk after the MPTP period would have been if you had continued milk production. If this is not the case, adjustments in the bid may be required.

Situation 3. You do plan to return to milk production at the end of MPTP.

In this situation, your breakeven bid needs to account for the amount of money you will need to accumulate from MPTP payments over the contract period to cover net income lost during the MPTP period and to purchase assets necessary to restart dairying. The worksheets assume you will restart with the same quality assets.

Situation 4. You plan to quit producing milk sometime during the MPTP period by selling your cows and other farm assets even if you do not join MPTP.

In this case your projected income from not joining the MPTP would include some years with milk production and some years without it. If you have plans to discontinue milk production sometime during the MPTP period, your situation should produce breakeven bids somewhat higher than Situation 1 (which will result in some of the lower bids) and somewhat lower than those calculated under Situation 2. The closer to the end of the MPTP contract period you planned to discontinue, the smaller the reduction in your breakeven bid from those calculated under Situation 2. There are no worksheets specifically for Situation 4.

WORKSHEETS

If you are in Situation 1, complete worksheets 4, 5, and 6. If you are in Situation 2, complete worksheets 1, 2, 3, 4, 5, and 7. If you are in Situation 3, complete worksheets 1, 2, 3, and 8. Regardless of which Situation you are in, the objective in completing these worksheets is to calculate a bid which would make you equally well off with MPTP as without MPTP. Worksheet 9 is used for projections of cash flow during the MPTP period.

NOTE: The breakeven bids calculated in Worksheets 6, 7 and 8 assume that the MPTP payments would be made in equal annual installments over the MPTP period. Under the MPTP rules, this is Option 1. There are three other options for receiving the payments, two of which allow the MPTP participant to receive a major portion of the payment early in the MPTP period which, ignoring income taxes, should increase the value of the payments due to the time value of money. However, large payments in a single year, particularly if gains on the sale of assets were received in the same year, could put the participant in a high tax bracket. The worksheets do not address the issue of receiving the payments under options other than Option 1.

INCOME FROM ASSETS TO BE SOLD

After an alternative farm plan has been selected for further evaluation, you need to estimate the proceeds to be received from sale of assets, considering commissions and income taxes likely to be paid. Income taxes on sale of assets could be substantial in some situations and in all situations will likely have a major impact on the bid. Estimate income tax liability from ordinary gain and capital gain, as well as from alternative minimum tax and investment credit recapture. For more information on income tax implications, see the publication by S.F. Smith or the publication by C.J. Nixon and J. Richardson listed at the front of this publication.

Worksheet 1 provides the framework to estimate remaining debt and interest on remaining debt after sale of assets. If you are in Situation 1, Worksheet 1 is not needed and you should proceed to Worksheet 4 and the discussion on page 10. Only assets that will be sold as a result of entering MPTP should be included in Worksheet 1. In addition to calculating proceeds from sale of assets, remaining debt, and interest on remaining debt, data from Worksheet 1 will be used in later calculations for both those who plan to return to production (Situation 3) and those who do not (Situation 2).

In some cases, the proceeds from the sale of assets will not cover the debt on those assets. This could be particularly true with the dairy cattle which must be sold for beef rather than dairy purposes under the MPTP. In such cases, the farm operator will need to work with his creditors on arrangements for release of the assets and for payments on remaining debt.

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. _________	b. __________
3. Livestock	a. _________	b. __________
4. Feed and supplies*	a. _________	b. __________
5. Total	a. $_________	b. $__________
6. Less: Commissions and other sale expenses		- __________
7. Net received after commissions and other sale expenses		$__________
8. Plus: Accounts receivable minus accounts payable (If A/P exceed A/R, subtract rather than add)		+ or - __________
9. Less: Estimated Income Taxes resulting from sale**		- __________
10. Net proceeds from sale		__________
11. <u>All liabilities</u> before sale of assets, (except accounts payable)		__________
12. Remaining liabilities = line 11 minus line 10		$__________
<u>If line 12 is positive</u>:		
13. Interest on remaining liabilities line multiplied by _____% interest***		$__________****
<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.

IMPACT ON FARM AND NONFARM EXPENSES AND RECEIPTS

Worksheets 2 and 3 provide the framework to allow calculation of the impact of participation in the MPTP on farm and nonfarm income, before including MPTP payments. If your future plans correspond to Situation 1 described on page 3, go directly to Worksheet 4 and the discussion on page 10.

If your future plans correspond to Situation 2 or 3, complete Worksheets 2 and 3. The goal of these worksheets is to project (1) total annual receipts and expenses if you continued milk production and (2) if you participated in MPTP. If you have previously projected total receipts and total expenses for milk and no milk production during the MPTP period, you may enter only the totals and not the detail on Worksheets 2 and 3. The "1985" column is not used directly in the bid calculation but is a base from which to project future receipts and expenses.

Consider alternatives carefully and budget as accurately as possible, relying on your farm accounting data. If you are considering changing enterprises, published budgets from your Extension Service will be helpful. Worksheet 2 is for recording and projecting expenses. Use 2A if your list of expenses is similar to the list in 2A which is a management oriented list. Use 2B if your list of expenses is consistent with income tax Schedule F. Worksheet 3 is for recording receipts and computing net income.

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	________	________	xxxxxxxx
2. Hired Labor	$________	$________	$________
Feed			
3. Dairy grain & concentrate	________	________	?
4. Dairy roughage	________	________	?
5. Other livestock	________	________	________
Machinery			
6. Machine hire, rent & lease	________	________	________
7. Machinery repairs & parts	________	________	________
8. Auto expense (farm share)	________	________	________
9. Fuel, oil & grease	________	________	________
Livestock			
10. Purchased livestock	________	________	________
11. Breeding	________	________	________
12. Veterinary & medicine	________	________	________
13. Milk marketing	________	________	xxxxxxxx
14. Cattle lease	________	________	________
15. Other livestock expense	________	________	________
Crops			
16. Fertilizer & lime	________	________	________
17. Seeds & plants	________	________	________
18. Spray, other crop expense	________	________	________
Real Estate			
19. Land, building, fence repair	________	________	________
20. Taxes	________	________	________
21. Insurance	________	________	________
22. Rent & lease	________	________	________
Other			
23. Telephone (farm share)	________	________	________
24. Electricity (farm share)	________	________	________
25. Interest paid	________	________	________***
26. Miscellaneous	________	________	________
Depreciation			
27. Machinery	________	________	________
28. Buildings	________	________	________
29. TOTAL EXPENSES	$________	$________ (A)	$________ (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 2B
IMPACT OF PARTICIPATION IN DAIRY PRODUCTION TERMINATION PROGRAM ON EXPENSES
(Use this worksheet if your list of expenses is consistent with Schedule F)

Item	1985*	5 year Average Without MPTP Participation**	5 year Average With MPTP Participation**
Average Number of Cows	________	________	xxxxxxxx
1985 Schedule F line no.			
13. Breeding	________	$________	$________
14. Chemicals	________	________	________
15. Conservation expenses	________	________	________
16. Depreciation	________	________	________
a. Machinery	________	________	________
b. Buildings	________	________	________
c. Livestock	________	________	________
17. Employee benefit program	________	________	________
18. Feed purchased	________	________	________
19. Fertilizers & lime	________	________	________
20. Freight and trucking	________	________	________
21. Gasoline, Fuel & oil	________	________	________
22. Insurance	________	________	________
23. Hired Labor	________	________	________
24. Land clearing	________	________	________
25. Machine hire	________	________	________
26. Mortgage interest	________	________	xxxxxxxx
27. Other interest	________	________	________***
28. Pension and Profit sharing	________	________	________
29. Rent of farm, pasture	________	________	________
30. Repairs, maintenance	________	________	________
31. Seeds, plants	________	________	________
32. Storage, warehousing	________	________	________
33. Supplies purchased	________	________	________
34. Taxes	________	________	________
35. Utilities	________	________	________
36. Veterinary fees, medicine	________	________	________
37. Other expenses (specify)	________	________	________
a. ____________	________	________	________
b. ____________	________	________	________
c. ____________	________	________	________
d. ____________	________	________	________
TOTAL EXPENSES	________	________(A)	________(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.

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	________	________	xxxxxxxx
2. Milk sold per cow (lbs.)	________	________	xxxxxxxx
3. Total milk sold (cwt.)	________	________	xxxxxxxx
4. Price per cwt.	________	________	xxxxxxxx
5. Milk sales	$________	$________	xxxxxxxx
6. Dairy cattle	________	________	xxxxxxxx
7. Dairy calves	________	________	$___?____
8. Other livestock	________	________	________
9. Corn grain	________	________	________
10. Corn silage	________	________	________
11. Hay	________	________	________
12. Wheat	________	________	________
13. Oats	________	________	________
14. Other ________________	________	________	________
15. Land rented to others	________	________	________
16. House rental	________	________	________
17. Custom work	________	________	________
<u>Nonfarm income</u>***:			
18. Salaries & wages	________	________	________
19. Retirement income	________	________	________
20. Interest income	________	________	________#
21. Income from investments	________	________	________
22. Other ________________	________	________	________
23. TOTAL FARM & NONFARM RECEIPTS	$________	$________	$________
24. Less: Total Expenses (from Worksheet 2A or 2B)	________	________	________
25. Equals: Net Income	________	________	________
26. Less: Income taxes	________	________	________
27. Equals: NET INCOME AFTER TAXES	$________	$________(C)	$________(D)

*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.

CALCULATION OF BREAKEVEN BID FOR SITUATION 1

Use Worksheets 4, 5 and 6 if you are planning to discontinue milk production soon regardless of whether you participate in MPTP. The breakeven bid is calculated based on the loss in net worth from selling your dairy herd for beef rather than dairy purposes and the loss in net worth from selling your real estate without milk production rights versus selling it as a dairy farm. Worksheets 4 and 5 allow for the calculation of loss in net worth and must be completed before Worksheet 6 can be completed. At the time this was written, it was not known whether participating in MPTP would prevent a dairy farmer from selling dairy-related items such as milking equipment and bulk tanks. Any decrease in net worth due to such a provision should be accounted for by including it in line 8 of Worksheet 6 along with loss in net worth on real estate.

Worksheet 4

Worksheet 4 is used to calculate the loss in net worth due to selling dairy animals for beef rather than dairy. If the animals were sold for dairy purposes, taxes and sale commissions are contingent liabilities and should enter into net worth calculations. Therefore, we are interested in actual loss in net worth, considering taxes and sale commissions on both a sale as dairy animals and a sale for beef. Following the procedure in Worksheet 4 will result in the loss in net worth to be included in line 7 of Worksheet 6.

Worksheet 5

Worksheet 5 is used to calculate loss in net worth due to selling the real estate without dairy production rights as compared to selling it as a dairy farm. The difference in net proceeds, as calculated in Worksheet 5 should be entered on line 8 of Worksheet 6.

Worksheet 6

Loss in net worth due to entering the MPTP is the amount on line 9, Part 2 of Worksheet 6. It might be helpful to think of this as a loan you are making to ASCS and that they are paying you back, with interest, over the MPTP period. The payments that would be necessary to amortize the loan, on an annual basis, may be calculated by applying the amortization factor from Table 1, for the appropriate interest rate.[1]

The loss in net worth, amortized over the MPTP period, is entered on line 1 of Worksheet 6. This is the after-tax payment needed from participating in the MPTP. This amount should be adjusted for the expected federal and state income

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[1] Example. Suppose the loss in net worth is $40,000 and the appropriate rate is 9%. The annual payment would be $40,000 x .257 = $10,280.

tax and Social Security tax to be paid on the buyout payments.[2] This is done by estimating the likely tax rate (in decimal form) to be paid on the buyout payments, subtracting this from 1.0 and dividing the remainder into the amount on line 1. (The purpose of this step is to convert an after amount to a before tax amount.) The amount on line 3 is the annual MPTP payment needed to be as well off with MPTP as with discontinuing milk production by joining MPTP. Your annual breakeven bid per cwt. on line 5 is calculated by dividing by your base period production on line 4. The total breakeven bid per cwt. on line 6 is the amount on line 5 mulitplied by five. The bid is based on assumptions that you made about the value of assets, sale commissions and income taxes. If you are unsure about some of these assumptions, you are encouraged to complete more than one analysis, using alternative assumptions.

The breakeven bid you just calculated is a bid amount that would make you as well off if you participate in MPTP as if you did not participate. The next step in formulating an actual bid to USDA is to determine how much of a premium, if any, you wish to add so as to make you better off than if you did not participate. See the publication by E.L. LaDue listed at the front of this publication for additional thoughts on this step.

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[2] The MPTP payments would be considered farm income and therefore could affect self-employment taxes as well as Federal and State income taxes. Taxes on additional income might be reduced by depositing money in an IRA or Keogh plan or by using carryforward of unused investment credit or net operating losses. While any increase in self employment taxes would decrease cash flow, the increased coverage could be an advantage, particularly to those nearing retirement age.

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)	$________		
2. Less: Commission and other sale expenses	________		
3. Income tax on gain	________		
4. Net proceeds from sale as dairy animals		$________	(E)
5. Value if sold for beef (Worksheet 1, line 3b)	________		
6. Less: Commission and other sale expenses	________		
7. Income tax on gain	________		
8. Net proceeds from sale as beef		$________	(F)
9. Difference in net proceeds* (E) minus (F)		$________	

*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	$________		
2. Less: Commission and other sale expenses	________		
3. Income tax on gain	________		
4. Net proceeds from sale as a dairy farm		$________	(G)
5. Value if sold without milk production rights	________		
6. Less: Commission and other sale expenses	________		
7. Income tax on gain	________		
8. Net proceeds from sale without milk production rights		$________	(H)
9. Difference in net proceeds* (G) minus (H)		$________	

*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)

Part 1.	Analysis 1	Analysis 2	Analysis 3
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)	______	______	______
2. Divided by: One minus the expected tax rate (in decimal form) on buyout payments*	______	______	______
3. Equals: Annual MPTP payment needed to break even	______	______	______
4. Divided by: Base period production in cwt.	______	______	______
5. Equals: Annual Breakeven bid in $ per cwt.	______	______	______
6. Times: 5 years = Breakeven bid in $ per cwt.	______	______	______
Part 2.			
7. Loss in Net Worth, from Worksheet 4, line 9	______	______	______
8. Loss in Net Worth, from Worksheet 5, line 9	______	______	______
9. Total Loss in Net Worth	______	______	______
10. Multiply by: Factor for 5 years and _____% from Table 1**	______	______	______
11. Equals: Loss in Net Worth, amortized over MPTP period of 5 years	______	______	______

*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

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

CALCULATION OF BREAKEVEN BID FOR SITUATION 2

Use Worksheet 7 if you <u>do not</u> plan to return to milk production after the end of the MPTP period. This Worksheet is used to calculate the breakeven bid which would make you as well off to participate in MPTP as to continuing to produce milk.[3] The loss in net worth due to selling the dairy herd for beef rather than dairy, adjusted for the difference in taxes, must enter into your calculations (see Worksheet 4). In addition, if you plan to sell the real estate when or soon after you enter the MPTP, any loss in value of the real estate due to the restrictions on milk production should be included in the bid calculation because such loss will affect your net worth (Worksheet 5). At the time this was written, it was not known whether participating in MPTP would prevent a dairy farmer from selling dairy-related items such as milking equipment and bulk tanks. Any decrease in net worth due to such a provision should be accounted for by including it in line 10 of Worksheet 7 along with loss in net worth on real estate.

Enter the projected change in net income from Worksheet 3, (C) minus (D) on line 1 of Worksheet 7. This is the difference between the expected net income from continuing to produce milk and the net income without milk production, <u>before</u> considering the buyout payments.

NOTE: Usually (C) will be greater than (D). That is, the net income after taxes from continued milk production during the MPTP period will be greater than the net income after taxes from participating in MPTP (before MPTP payments) and the number entered on line 1 will be positive. In some cases, the opposite will be true and (D) will be greater than (C). In cases where this occurs, the number on line 1 will be negative rather than positive. Unless the number on line 2 more than offsets the negative number on line 1, the breakeven bid will be negative suggesting that the farmer should pay the government to be allowed to quit producing milk.

It is not appropriate to make your MPTP decision based on the change in annual net income after taxes on line 1.[4] You should consider the loss in net worth due to selling cows for beef rather than dairy and any loss in net worth due to selling the real estate without milk production rights compared to selling it as a dairy farm. Worksheets 4 and 5 may be used to calculate net worth loss and must be completed before finishing Worksheet 7.

<u>Worksheet 4</u>

Worksheet 4 is used to calculate the loss in net worth due to selling dairy animals for beef rather than dairy. If the animals were sold for dairy purposes, taxes and sale commissions are contingent liabilities and should enter into net

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[3] The calculations make some assumptions about income after the MPTP period. See discussion on page 3 under Situation 2.

[4] The MPTP payments would be considered farm income and therefore could affect self-employment taxes as well as Federal and State income taxes. Taxes on additional income might be reduced by depositing money in an IRA or Keogh plan or by using carryforward of unused investment credit. While any increase in self employment taxes would decrease cash flow, the increased coverage could be an advantage, particularly to those nearing retirement age.

worth calculations. Therefore, we are interested in actual loss in net worth, considering taxes and sale commissions on both a sale as dairy animals and a sale for beef. Following the procedure in Worksheet 4 will result in the loss in net worth to be included in line 9 of Worksheet 7.

Worksheet 5

Worksheet 5 is used to calculate loss in net worth due to selling the real estate without dairy production rights as compared to selling it as a dairy farm. The difference in net proceeds, as calculated in Worksheet 5 should be entered on line 10 of Worksheet 7.

Worksheet 7

Loss in net worth due to entering the MPTP is the amount on line 11, Part 2 of Worksheet 7. It might be helpful to think of this as a loan you are making to ASCS and that they are paying you back, with interest, over the MPTP period. The payments that would be necessary to amortize the loan, on an annual basis, may be calculated by applying the amortization factor from Table 2, for the appropriate interest rate.[5]

The loss in net worth, amortized over the MPTP period, is entered on line 2 of Worksheet 7 and added to line 1 to find the after-tax payment needed from participating in the MPTP. This amount should be adjusted for the expected federal and state income tax and Social security tax to be paid on the buyout payments.[6] This is done by estimating the likely tax rate (in decimal form) to be paid on the buyout payments, subtracting this from 1.0 and dividing the remainder into the amount on line 3. (The purpose of this step is to convert an after amount to a before tax amount. Remember that you will not pay tax on the entire buyout payments because of farm expenses, personal exemptions and items discussed in footnote 6.) The amount on line 5 is the annual MPTP payment needed to be as well off with MPTP as with continuing to produce milk. Your breakeven bid per cwt. on line 7 is calculated by dividing by your base period production on line 6. The total bid on line 8 is the amount on line 7 multiplied by five.

<u>The calculations assume that if you join MPTP your net income after taxes for the time beyond the MPTP period will be the same as your net income after taxes from producing milk after the MPTP period would have been if you had continued milk production.</u> Therefore, you should think of the MPTP period as one of transition to other farm enterprises, non-farm work or retirement.

The breakeven bid is highly dependent on the data you have used for sale of assets and projections of receipts and expenses for both continued milk

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[5] Example. Suppose the loss in net worth is $40,000 and the appropriate rate is 9%. The annual payment would be $40,000 x .257 = $10,280.

[6] The MPTP payments would be considered farm income and therefore could affect self-employment taxes as well as Federal and State income taxes. Taxes on additional income might be reduced by depositing money in an IRA or Keogh plan or by using carryforward of unused investment credit. While any increase in self employment taxes would decrease cash flow, the increased coverage could be an advantage, particularly to those nearing retirement age.

production and no milk production during the MPTP period. Therefore, you should not necessarily enter a bid based on the breakeven bid calculated here. Additional computations should be made based on variability that might be expected in items such as the expected price of milk and the price of feed and other input items during the MPTP period. It is suggested that you make at least the following adjusted analyses: (1) \$.50 per cwt. higher and lower than your initial milk price projection and (2) total annual expenses for milk production 5 percent higher and lower than your original projections. This could give you as many as nine breakeven prices if you used all possible combinations of milk prices and expenses suggested above. If you do only two adjusted analyses, pick a combination of prices and costs that results in an optimistic and a pessimistic projection of future net income with continued milk production.

The breakeven bid you just calculated is a bid amount that would make you as well off if you participate in MPTP or if you did not participate. The next step in formulating an actual bid to USDA is to determine how much of a premium, if any, you wish to add so as to make you better off than if you did not participate.

In addition to calculating bids, you need to consider your bid strategy. Regardless of the breakeven bid calculated, you should consider the strength of your desire to discontinue milk production and your beliefs about the level of bids that other farmers might submit. If you have a strong desire to leave milk production, you might want to bid at the low end of the range of calculated breakeven bids. If you don't mind producing milk or would like to continue production, you may want to bid at the high end of the range or even higher.

We suggest that you read "Bidding Strategy", by Eddy L. LaDue, which is listed at the front of this publication.

WORKSHEET 7

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

Part 1.	Analysis 1	Analysis 2	Analysis 3
1. Decrease in Net Income, after taxes, Worksheet 3, (C) minus (D)	$______	$______	$______
2. Plus: Annual amount needed to cover loss in Net Worth, from Part 2, line 13	______	______	______
3. Equals: After tax annual payment needed from MPTP payments	______	______	______
4. Divided by: One minus the expected tax rate (in decimal form) on buyout payments*	______	______	______
5. Equals: Annual buyout payment needed to break even	______	______	______
6. Divided by: Base period production in cwt.	______	______	______
7. Equals: Annual Breakeven Bid in $ per cwt.	______	______	______
8. Times: 5 years = Breakeven Bid in $ per cwt.	______	______	______
Part 2.			
9. Loss in Net Worth, from Worksheet 4, line 9	$______	______	______
10. Loss in Net Worth, from Worksheet 5, line 9	______	______	______
11. Total Loss in Net Worth	$______	______	______
12. Multiply by: Factor for 5 years and _____% from Table 2**	______	______	______
13. Equals: Loss in Net Worth, amortized over MPTP period of 5 years	$______	______	______

*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

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

CALCULATION OF BREAKEVEN BID FOR SITUATION 3

Worksheet 8 is used to to calculate the breakeven bid if you intend to return to milk production at the end of the MPTP. This is the bid which would make you as well off to join MPTP as to continue to produce milk. The bid is based on projections that you will make about receipts, expenses and sale of assets. You are encouraged to complete more than one analysis, using alternative assumptions about prices and costs because the bid is sensitive to these assumptions.

If you have not already completed Worksheets 2 and 3, do so now. The change in net income after taxes, which is the difference between (C) and (D) on Worksheet 3 is entered on line 1. This is the difference between the expected net income from continuing to produce milk and the net income without milk production, before considering the buyout payments.

NOTE: Usually (C) will be greater than (D). That is, the net income after taxes from continued milk production during the MPTP period will be greater than the net income after taxes from participating in MPTP (before MPTP payments) and the number entered on line 1 will be positive. In some cases, the opposite will be true and (D) will be greater than (C). In cases where this occurs, the number on line 1 will be negative rather than positive. Unless the number on line 2 more than offsets the negative number on line 1, the breakeven bid will be negative suggesting that the farmer should pay the government to be allowed to quit producing milk.

It is not appropriate to make your MPTP decision based on the change in annual net income after taxes on line 1. If re-entry is planned, the investment required must be considered. This results from the requirement of purchasing cattle, equipment, feed and supplies at the end of the period to restart dairying. The difference between that amount and the amount received from the sale to enter the program after deducting commissions and income tax liabilities needs to be considered. Assuming that cows, equipment and feed and supplies comparable to those items sold to enter MPTP could be purchased at the end of MPTP for the amounts you entered in the first column of Worksheet 1 (market value of assets to be sold), the amount to be reserved to help cover the cost of re-entry may be calculated by starting with the market value of assets to be sold (line 5a from Worksheet 1) and subtracting the net proceeds from the sale (line 10 from Worksheet 1). The result is entered on line 9 of Worksheet 8, Part 2. This is a lump sum that would be needed at the end of the MPTP period. If you expect that it would cost more or less to replace these items than today's market value, the amount on line 9 should be adjusted. Other "start up" costs should also be included here. The annual amount that would be needed to accumulate this amount at the end of MPTP can be calculated by using the factor for the appropriate interest rate from Table 3.[7] You should use an interest rate that you could earn, after income taxes, from investing the money. The rate on tax-exempt bonds may be a good approximation.

The amount on line 11 is placed on line 2 and added to the amount on line 1. The result on line 3 is the after tax amount needed from MPTP payments. This amount should be adjusted for the expected federal and state income tax and

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[7] Example: If the amount on line 9 of Worksheet 8 is $60,000 and the interest rate you could expect to earn is 8%, the number entered on line 11 is $60,000 x .170 = $10,200.

Social Security tax to be paid on the buyout payments.[8] This is done by estimating the likely tax rate (in decimal form) to be paid on the buyout payments, subtracting this from 1.0 and dividing the remainder into the amount on line 3. (The purpose of this step is to convert an after amount to a before tax amount. Remember that you will not pay tax on the entire buyout payments because of farm expenses, personal exemptions and items discussed in footnote 6.) The amount on line 5 is the annual MPTP payment needed to be as well off with MPTP as with continuing to produce milk. Your annual breakeven bid per cwt. per year on line 7 may be determined by dividing line 5 by your base period production on line 6. The total breakeven bid per cwt. on line 8 is the amount on line 7 multiplied by five.

The breakeven bid is highly dependent on the data you have used for projections of receipts and expenses for both continued milk production and no milk production during the MPTP period. Therefore, you should not necessarily enter a bid based on the breakeven bid calculated here. Additional computations should be made based on variability that might be expected in items such as the expected price of milk and the price of feed and other input items during the MPTP period. It is suggested that you make at least the following adjusted analyses: (1) $.50 per cwt. higher and lower than your initial milk price projection and (2) total annual expenses for milk production 5 percent higher and lower than your original projections. This could give you as many as nine breakeven prices if you used all possible combinations of milk prices and expenses suggested above. If you do only two adjusted analyses, pick a combination of prices and costs that results in an optimistic and a pessimistic projection of future net income from milk production.

The breakeven bid you just calculated is a bid amount that would make you as well off if you participate in MPTP as if you did not participate. The next step in formulating an actual bid to USDA is to determine how much of a premium, if any, you wish to add so as to make you better off than if you did not participate.

In addition to calculating bids, you need to consider your bid strategy. Regardless of the breakeven bid calculated, you should consider the strength of your desire to discontinue milk production and your beliefs about the level of bids that other farmers might submit. If you have a strong desire to leave milk production, you might want to bid at the low end of the range of calculated breakeven bids. If you don't mind producing milk or prefer to continue, you may want to bid at the high end of the range or even higher.

We suggest that you read "Bidding Strategy", by Eddy L. LaDue, which is listed at the front of this publication.

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[8] The MPTP payments would be considered farm income and therefore could affect self-employment taxes as well as Federal and State income taxes. Taxes on additional income might be reduced by depositing money in an IRA or Keogh plan or by using carryforward of unused investment credit. While any increase in self employment taxes would decrease cash flow, the increased coverage could be an advantage, particularly to those nearing retirement age.

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)	______	______	______
2. Plus: Annual amount needed to cover re-entry costs at end of MPTP, from Part 2, line 11	______	______	______
3. Equals: After-tax annual amount needed from MPTP payments	______	______	______
4. Divided by: One minus the expected tax rate on buyout payments*	______	______	______
5. Equals: Annual MPTP payment needed to break even	______	______	______
6. Divided by: Base period production in cwt.	______	______	______
7. Equals: Annual Breakeven bid in $ per cwt.	______	______	______
8. Times: 5 years = Breakeven bid in $ per cwt.	______	______	______
Part 2.			
9. Amount needed to re-enter production, at end of MPTP, (Worksheet 1, line 5a minus line 10)**	______	______	______
10. Multiply by: Factor from Table 3, ______%, 5 years***	______	______	______
11. Equals: Annual amount needed to cover re-entry costs at end of MPTP	______	______	______

*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

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

IMPACT ON FARM AND NONFARM CASH FLOW

An important consideration when selling assets, adjusting repayment schedules, and changing the farm plan is the effect on cash flow available to make payments on remaining debt and meet family living requirements. Worksheet 9 is provided for that purpose. Carefully calculate the cash flow for 1985 and project an average year during the MPTP period for both participation and non-participation.[9] From these calculations, a determination can be made of whether participation plans will provide the necessary cash flow or at least make you no worse off than you would be without MPTP. Before making a determination of whether to bid, review with your creditors the impact on future payments of application of sale proceeds to the outstanding balance on loans.

The last column is for a cash flow projection for an average year after the MPTP ends. This column will be particularly useful to those who do not intend to return to milk production at the end of the MPTP period.

[9] The cash flow and debt repayment resulting from sale of assets to enter MPTP should not be included in the projections if you are doing an average for the period. You may want to do separate projections for each year in the MPTP period.

WORKSHEET 9
ANNUAL CASH FLOW COMPARISONS

	1985	Projected Annual Average: Without Participation	Projected Annual Average: With Participation	Projected After MPTP With Participation
Cash Inflows				
1. Beginning farm cash, checking & savings	$______	$______	$______	$______
2. Cash farm receipts	______	______	______	______
3. Buyout payments	xxxxxxxx	xxxxxxxx	______*	xxxxxxxx
4. Sale of assets: a. Machinery	______	______	______	______
b. Real Estate	______	______	______	______
5. Money borrowed (intermediate & long-term)	______	______	______	______
6. Money borrowed (short-term)	______	______	______	______
7. Increase in operating debt	______	______	______	______
8. Nonfarm income[a]	______	______	______	______
9. Money borrowed - nonfarm	______	______	______	______
10. TOTAL	$______	$______	$______	$______
Cash Outflows				
11. Cash farm expenses, except interest on debt payments	$______	$______	$______	$______
12. Capital purchases: a. Expansion livestock	______	______	xxxxxxxx	______
b. Machinery	______	______	______	______
c. Real Estate	______	______	______	______
13. Debt payments (intermediate & long-term)	______	______	______	______
14. Debt payments (short-term)	______	______	______	______
15. Decrease in operating debt	______	______	______	______
16. Nonfarm debt payments	______	______	______	______
17. Personal withdrawals & family exp.[b]	______	______	______	______
18. Ending farm cash, checking & savings	______	______	______	______
19. TOTAL	$______	$______	$______	$______
20. Imbalance (error) line 10 - line 19	$______	$______	$______	$______

[a]Includes retirement income.
[b]Includes income taxes and social security taxes on farm and nonfarm income.

*If you plan to re-enter milk production, the amount needed for re-entry (Worksheet 8, line 10) should be excluded. You should be accumulating this portion of the MPTP payment to help pay re-entry costs.