

US EPA ARCHIVE DOCUMENT

Quarterly Report 11 - Covering the first quarter of calendar 2008 (January through March)

I. PHASE I PROGRESS

Ongoing tasks for Phase 1 (evaluation of third-party assessments) include:

- Further analysis of data from Minnesota Milk Producers Association (MMPA) technicians on findings of Certification Walkthroughs and Final Project Assessments at volunteer farms;
- Collecting data from County Feedlot Officers (CFOs) on their final inspections of volunteers during Certification Walkthroughs or Final Project Assessments;
- Working with MMPA's Environmental Quality Assurance program coordinator on further refinement of EQA tools, and extending them to cattle operations.

Tasks completed during the reporting period:

- Initial analysis of data from MMPA technicians, summarized here:
 - 29 Stearns County + 11 Winona County farms = 40 total
 - 15 Certification Walkthroughs (received certification to Five Star status)
 - 22 Final FERP Assessments (no certification yet)
 - 3 farms got Initial Assessments only (2 No longer milking; 1 Low priority)
 - 10 received slightly decreased scores (3 >0.10 decrease)
 - 22 received increased scores (17 >0.10 increase)
 - 316.22 hours of assistance provided by technicians to the participating farms
 - 10 Certification Walkthroughs and 9 Final FERP Assessments were done by technicians with no County Feedlot Officer (CFO) – all 37 completed farms need follow-up with CFOs for their data; 18 are currently assumed to have been found compliant by the CFO
 - \$30,162 paid to technicians by MMPA
 - More summary data is provided at the end of this report.
- Meet on and provide review and comment on MMPA's effort to extend the Dairy EQA program to Beef Cattle;
- Meet on and discuss with MMPA and MPCA Feedlot Program Management about EQA (third-party) and initial self-assessment findings and discuss future implementation options for the two tools.

II. PHASE 2 PROGRESS

Following is a summary of progress on Phase 2 (the self-assessment pilot) deliverables.

1. After some deliberation on the pros and cons of doing so, revised the Self-Assessment Workbook (separate attachment to transmitting e-mail) to be a more fully self-contained resource, to reword some questions or reorient some lines of questioning, to consistently present the negative (not desired) response be the "no" option, to reduce the number of times "don't know" was offered as a check-off, and to more strongly direct respondents to complete Return-to-Compliance plans where necessary (only 9% of required Return-to-Compliance plans were submitted last year);
2. Revised the Response Form (also attached to transmitting e-mail) to encompass responses to questions, return-to-compliance plans, and the certification statement, for the purposes of reducing the number of different documents for respondents to deal with, and to encourage more submittals of Return-to-Compliance plans;
3. On April 22 (after the reporting period), the Workbooks and Response Forms went out to all who completed them last year plus those who initially volunteered but did not ultimately submit the Response Form last year;
4. Through the work of Crow Environmental and subcontracting statisticians, and in consultation with Region 5's Art Lubin, completed analysis of baseline year data (a summary page appears later this document);
5. After consultation with Crow Environmental and Art Lubin, determined to continue as planned for 2008 by conducting inspections of all controls and volunteers who were inspected last year, plus (time permitting) any new volunteers who submit Response Forms (therefore no formal revision of QAPP needed);
6. Completed about half of the MinnFarm feedlot runoff model calculations from 2007 farms (volunteers and controls) – these will be complete in May;
7. Presented 2007 progress and findings to MPCA's feedlot leadership (and will continue to), and are beginning work on a sample form demonstrating integration of about 12 key FERP questions into the 4-year feedlot registration requirement – this form and necessary authorizations will also be considered by program management;
8. Developed and submitted an amendment to MPCA's Cooperative Agreement with EPA NCEI adding \$10,000 in salary and fringe to take our project staff through June 30 (awarded May 2) – extended that staff's end date to match;
9. Developed and submitted an internal budget request for the additional salary and fringe necessary to carry project staff from July 1 to September 30, 2008 – once approved, will again extend that staff's end date to match.

Phase 2 2007 Lessons Learned (presented to Feedlot Management)Higher-level trends:

Control farms were analyzed as a “stratified sample” separated into two groups: a 4-county group which also encompassed the volunteers, and a 5-county group. Our design aimed for a “simple sample” (all 9 counties pooled and then random selections) but realities of staffing availability and location dictated otherwise. This could be overcome in the future.

We see an overall trend of better performance in the 4 county groups (led by volunteers and then controls) than the 5-county group. This could be explained by topographical differences, smaller farms, and/or awareness of the project in the 4-county group.

HOWEVER, control farms sometimes performed better than volunteers on certain questions.

Overall facility scores for the volunteer and control groups showed statistically-significant differences between volunteers and controls in all question types (compliance, beyond-compliance, key metric, and overall) EXCEPT for compliance score comparisons between the volunteers and the 4-county control group.

The two county groups showed only one statistically significant difference between each other, in beyond-compliance questions where the 5-county group scored lower.

In general, overall scores on compliance questions were highest, followed by key metric questions (a mix of compliance and beyond-compliance), then all questions, then beyond-compliance questions.

In general, compliance scores appear to correlate with herd size (higher scores for larger herds).

The overall rate at which volunteers’ self-assessment responses matched our inspectors’ assessments on compliance questions was 69%, which compares favorably with other states’ first-year ERP self-assessments. We could set incremental goals for increasing this, and target education accordingly.

In other states using ERP in non-agricultural sectors, the submittal of return-to-compliance (RTC) plans is an indicator of engagement, and inspectors’ on-site review of implementation is also key. For a number of possible reasons, our RTC completeness (applies only to volunteers) rate was dismal (~17%). We’re trying streamlining and placement fixes to the self-assessment to see if we can boost that return rate, but checking implementation will remain a challenge.

Inspectors gathered data on demographics, generational turnover and potential for animal agriculture continuing at sites, but haven’t yet compiled and analyzed it. This may be used as an overlay to prioritize assistance and funding fixes, or for making sure farm closure is complete and proper.

EPA/ERP folks were dismayed at how much we relied on self-reported data in Year 1 (2007). Since we’re returning to the same farms in 2008, we might be able to spend more time this year on direct observation by the inspectors in priority areas (e.g. vegetative treatment areas, septic, manure management BMPs).

We tried to gather more data in the field on impacts, but this was for the most part, too difficult. We’ll try to hone in on some key metrics and get more data in 2008.

Content-specific:

Most are observing 25’ warm weather and 300’ on frozen soil manure application setbacks.

Difficult for even MPCA to determine “shoreland” – much better and simpler resources, education and communication needed.

Education and communication on vegetative treatment areas (VTAs, including buffers and filter strips) should be consolidated (for lots, milkhouse waste, and crop field edge) simplified; maintenance of VTAs should be stressed.

Short-term stockpile recordkeeping was virtually nonexistent; permanent stockpile (larger farmers) was somewhat better.

Manure (pile) management – testing, spreader calibration, nutrient calculation and per-acre application measurement should be stressed. Instead of stressing all recordkeeping, place more emphasis on the one or two things which will reduce overapplication most effectively.

Some counties have lost rendering and collection services. We need policy, education, and possibly partnerships to reestablish service in these areas. In addition, we need to clarify messages on burying and composting carcasses, and decide which method we want to steer small farmers to.

It would be ideal to establish a unified and simple expectation for setbacks from water for manure application and cropping, e.g. 25' minimum on low slope, 50' minimum on higher slopes, 300' on frozen soil. Then a means of measuring use and implementation of these standards would be helpful for the overall effort. FERP is testing this but it needs more clarity and support.

Finding only 1 out of 67 farms to have a septic straight-pipe is good news, but we need more direct verification this year, particularly in some counties such as Pine (ISTS program could help us target).

We should find simpler means of tracking use, types, and acres of crop rotation so we can help understand trends in this area.

There is confusion and difficulty with direct or post-septic discharge of milkhouse waste, but the good news is that this is limited to a small number (5 to 10) number of farms in each group.

Other poor performers needing improvement: burn barrels, agricultural plastic (will be adding question and education this year), septic pumping, soil sampling, crop residue, and manure incorporation.

Final thoughts:

Regarding integration of ERP into the 4-year registration requirement – other states have used existing authority to collect data relating to compliance to mandate submittal of ERP assessment forms (not requiring new rulemaking). We should consult with the Attorney General's Office to explore this possibility. This would work best if we were able to hone down the registration submittal to no more than 20 key metric, indicator, or practice questions. The 4-year cycle would stretch out the verification inspections (helping with resources) and allow us to emphasize education and assistance. If program management can provide a clear direction for the next 5-10 years on performance or compliance goals (and the relative emphasis on enforcement) for small animal operations, that would be helpful.

III. LEVEL OF EXPENDITURES

FINANCIAL INFORMATION REMOVED BY EPA AS CONFIDENTIAL INFORMATION

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Phase 1 data

FARM ID	Last Contact	Water Quality	Odor & Air	Soil Qlty /Nutrient	Habitat Quality	Cmnty Image	OVERALL	Technician	Last contact Date	Assist hours	Certification Walkthrough	Person Who Observed	AMT.PD.
Stearns County													
3032	Final FERP Assessment (FA)	0.18	0.43	0.40	0.25	-0.11	0.23	Mark Lefebvre	07/13/07	15	07/13/07	Richard Gruenes (Cty)	1020
3043	Final FERP Assessment (FA)	0.03	-0.09	0.13	1.25	0.07	0.28	Mark Lefebvre	08/28/07	15		Richard Gruenes (Cty)	950
3044	Final Assessment + CW	0.74	0.21	0.06	0.10	0.13	0.25	Jeremy Lanctot	08/30/07	9.5	08/30/07	CW?	880
3045	Final FERP Assessment (FA)	-0.24	0.03	0.63	1.00	-0.21	0.24	Jeremy Lanctot	08/28/07	13.5		?	1040
3046	Certification Walkthrough (CW)	0.01	0.05	0.32	0.00	0.28	-0.05	Jeremy Lanctot	08/28/06	6	08/21/06	?M Schroeder (MMPA)	730
3049		No final	No	longer	milking	-	-	Mark Lefebvre	09/17/07	20			1170
3056	Final FERP Assessment (FA)	-0.21	0.28	-0.30	0.15	-0.05	-0.03	Mark Lefebvre	08/27/07	0		Richard Gruenes (Cty)	500
3057	Certification Walkthrough (CW)	0.07	0.00	0.00	0.00	0.00	0.01	Jared Anez		1	08/21/06	CW?	540
3058	Final FERP Assessment (FA)	0.03	0.14	0.41	-1.92	0.35	-0.20	Mark Lefebvre	08/20/07	0		Richard Gruenes (Cty)	500
3059	Final Assessment + CW	-0.24	0.20	-0.07	0.00	0.15	0.01	Mark Lefebvre	08/20/07	0	08/20/07	Richard Gruenes (Cty)	500
3060	Final FERP Assessment (FA)	0.25	-0.20	0.42	-0.75	0.00	-0.05	Mark Lefebvre	08/21/07	0		Richard Gruenes (Cty)	500
3061	Final FERP Assessment (FA)	-0.05	-0.05	-0.16	-0.17	-0.38	-0.16	Mark Lefebvre	09/26/07	0		Richard Gruenes (Cty)	570
3062	Initial Assessment (IA)	No final	"Low	priority"				Mark Lefebvre	08/02/06	0			320
3063	Final FERP Assessment (FA)	-0.15	0.20	-0.17	-0.75	0.28	-0.12	Mark Lefebvre	09/20/07	0		Richard Gruenes (Cty)	500
3064	Certification Walkthrough (CW)	-0.08	0.00	0.00	0.00	0.00	-0.02	Jared Anez		3	08/21/06	CW?	690
3065	Final Assessment + CW	0.12	-0.05	0.31	1.00	0.13	0.30	Mark Lefebvre	05/09/07	20	05/09/07	Richard Gruenes (Cty)	1160
3066	Certification Walkthrough (CW)	0.00	0.00	0.72	0.08	0.03	0.17	Rick Olson		15.5	08/25/06	CW?	955
3067	Final FERP Assessment (FA)	0.22	-0.18	0.40	0.17	0.17	0.16	Mark Lefebvre	08/23/07	20		Richard Gruenes (Cty)	1300
3068	Final FERP Assessment (FA)	0.04	0.15	0.74	0.50	-0.11	0.26	Mark Lefebvre	07/11/07	15		?	1020
3069	Final Assessment + CW	0.08	0.15	0.08	0.50	0.00	0.16	Mark Lefebvre	08/21/07	15	08/21/07	Richard Gruenes (Cty)	950
3070	Final FERP Assessment (FA)	0.05	-0.03	0.52	0.50	0.41	0.29	Mark Lefebvre	08/28/07	15		Richard Gruenes (Cty)	950
3071	Final Assessment + CW	0.67	-0.14	0.90	0.30	-0.25	0.29	Mark Lefebvre	08/24/07	15	08/24/07	Richard Gruenes (Cty)	950
3072	Final FERP Assessment (FA)	-0.13	0.28	0.30	-0.50	-0.13	-0.04	Mark Lefebvre	09/20/07	15		Richard Gruenes (Cty)	950

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FARM ID	Last Contact	Water Quality	Odor & Air	Soil Qlty /Nutrient	Habitat Quality	Cmnty Image	OVERALL	Technician	Last contact Date	Assist hours	Certification Walkthrough	Person Who Observed	AMT.PD.
Stearns County													
3073	Final FERP Assessment (FA)	0.12	0.33	0.79	-1.83	0.28	-0.06	Mark Lefebvre	07/11/07	11		?	900
3074	Final FERP Assessment (FA)	0.05	0.38	0.47	0.83	0.00	0.35	Mark Lefebvre	07/12/07	15		Richard Gruenes (Cty)	1020
3075	Final Assessment + CW	0.14	-0.02	0.74	1.00	-0.13	0.35	Mark Lefebvre	07/12/07	15	07/12/07	Richard Gruenes (Cty)	1020
3076	Final FERP Assessment (FA)	-0.03	0.24	0.40	-0.25	-0.50	-0.03	Mark Lefebvre	07/13/07	15		Richard Gruenes (Cty)	1020
3077		No final	No	longer	milking			Mark Lefebvre	09/17/07	15			950
3079	Final FERP Assessment (FA)	0.36	0.02	0.99	0.50	-0.32	0.31	Mark Lefebvre	08/23/07	15		Richard Gruenes (Cty)	950
Winona County													
6027	Final FERP Assessment (FA)	0.15	-0.03	0.36	0.33	0.33	0.23	Charles Meyer	08/21/07	1.25		?	550
6029	Initial Assessment (IA) + CW							Charles Meyer	08/16/05	0	08/16/05	CW?	250
6030	Certification Walkthrough (CW)	0.19	0.40	0.66	0.00	0.00	0.25	Charles Meyer		0.75	07/20/06	CW?	520
6031	Final FERP Assessment (FA)	0.15	-0.25	0.21	0.60	0.20	0.18	Charles Meyer	08/22/07	1.22		?	567
6032	Certification Walkthrough (CW)	Same	as	IA				Charles Meyer	09/15/05	0	05/10/06	CW?	490
6033	Certification Walkthrough (CW)	0.00	0.47	0.00	0.00	0.00	0.09	Charles Meyer	08/16/06	0.75	08/16/06	CW?	520
6034	Final FERP Assessment (FA)	0.10	-0.08	0.09	0.00	0.00	0.02	Charles Meyer	09/18/07	0.75		?	530
6035	Final FERP Assessment (FA)	-0.11	0.60	-0.11	0.00	0.00	0.08	Charles Meyer	08/27/07	4.5		?	665
6036	Initial Assessment (IA) + CW							Charles Meyer	08/15/05	3	08/15/05	CW?	400
6037	Final FERP Assessment (FA)	1.07	0.60	0.67	0.33	0.00	0.53	Charles Meyer	08/16/07	4.5		?	665
6039	Final FERP Assessment (FA)	0.20	0.33	-0.03	1.00	0.40	0.38	Charles Meyer	08/31/07			?	500
	<ul style="list-style-type: none"> • 29 Stearns + 11 Winona = 40 total • 15 Certification Walkthroughs • 22 Final FERP Assessments • 2 No longer milking • 1 Low priority 						<ul style="list-style-type: none"> • 3 Initial Assessments only • 10 decreasing scores • 3 >0.10 decrease • 22 increasing • 17 >0.10 increase 			316.22 hours		<ul style="list-style-type: none"> • 10 Certification Walkthroughs with no County Feedlot Officer (CFO) • 9 Final Assessments with no CFO 	\$30,162

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Phase 2 KEY METRICS	Volunteers Inspections (23)						Controls 4-county (21)				Sig Diff	Controls 5-county (23)				Sig Diff
Overall performance score - mean		70.0%					65.3%				Y	59.7%				Y
Overall compliance score - mean		78.8%	100% max	62% min			76.7%	89.2% max	57.5% min			73.4%	87.9% max	51.5% min		Y
Compliance <100 AU		77.0%					73.6%					74.4%				
Compliance 100-299 AU		80.4%					77.2%					69.8%				
Compliance 300+ AU		93.5%					86.1%					82.4%				
Overall beyond-compliance score		59.7%					53.6%				YY	44.9%				YY
Overall key metric score		74.2%					68.9%				Y	64.7%				Y
Overall match rate for SA/inspection		69%					NA					NA				
Return-to-compliance plans complete		16.70%					NA					NA				
Acres in crop rotation		18 farms	8,865 total	493 average			18 farms	6,978 total	388 average			20 farms	6,995 total	350 average		
Manure cows>1000 (AU; X 7143=cows)		# reporting	Totals	Average			# reporting	Totals	Average			# reporting	Totals	Average		
Total AU		21	2532.6	120.6			19	1625.2	85.5			14	1153.6	82.4		
Total AU		23	3495.8	152.0			21	2381.8	113.4			23	2362.8	102.7		
Manure produced (100lbs/day/cow X 1000 X 1.5 for other animals)			49,500 T/yr	2,357 T/yr				31,800 T/yr	1,674 T/yr				22,500 T/yr	1,600 T/yr		
Calculated application rate (need acres where manure applied)			Not yet known					Not yet known					Not yet known			
Herd size trend		9% even	26% increase	65% decrease				Not yet known					Not yet known			
PhinnFarm (lot run-off model) result			Not yet calculated					Not yet calculated					Not yet calculated			
Question content	Compliance issue?		Positive	Negative (incl DK)	Positive/# applicable (percent)	Match between SA and inspector		Positive	Negative (incl DK)	Positive/# applicable (percent)	Sig Diff		Positive	Negative (incl DK)	Positive/# applicable (percent)	Sig Diff
Septic, septic or manure app in shoreland			16	7	69.57%			14	7	66.67%			22	1	95.65%	Y
Runoff to surf water	Y		22	1	95.65%	95.65%		19	2	90.48%			20	3	86.96%	
Runoff through sufficient buffer	Y		13	6	68.42%	78.95%		12	7	63.16%			14	9	60.87%	
LMSA approved	Y		9	5	64.29%	71.43%		6	2	75.00%			4	1	80.00%	
LMSA operated with 1' of freeboard	Y		13	1	92.86%	78.57%		7	0	100.00%			5	0	100.00%	
Short-term pile: date land-applied	Y		4	7	36.36%	27.27%		3	10	23.08%			0	10	0.00%	Y
HW flows through an adequate buffer before reaching surface water	Y		1	1	50.00%	0.00%		4	2	66.67%			6	0	100.00%	Y
HW surfaces after septic, but flows through adequate buffer before water	Y		4	4	50.00%	50.00%		2	3	40.00%			0	2	0.00%	
Composting carcasses, is finished product free of tissue	Y		1	1	50.00%	0.00%		2	0	100.00%			2	2	50.00%	
Burying carcasses, away from water	Y		12	1	92.31%	46.15%		7	0	100.00%			8	0	100.00%	

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Phase 2 KEY METRICS		Volunteers Inspections (23)					Controls 4-county (21)					Controls 5-county (23)				
Question content	Compliance issue?	Positive	Negative (incl DK)	Positive/# applicable (percent)	Rate of match between SA and inspector	Positive	Negative (incl DK)	Positive/# applicable (percent)	Sig Diff	Positive	Negative (incl DK)	Positive/# applicable (percent)	Sig Diff			
All first-year available Nitrogen ± 20% M recommendations	Y	11	12	47.83%	21.74%	8	13	38.10%		8	15	34.78%				
Apply manure within 25' of water	Y	17	4	80.95%	85.71%	14	0	100.00%		11	1	91.67%				
Apply manure within 300' of water on frozen ground	Y	20	3	86.96%	91.30%	21	0	100.00%		20	3	86.96%				
Do you apply within 50' of sensitive features	Y	7	0	100.00%	71.43%	5	0	100.00%		5	0	100.00%				
For farms 100-299 AU- are manure application records current	Y	5	7	41.67%	58.33%	1	7	12.50%		2	6	25.00%				
For farms >300 AU – are application records maintained for 3 years (6 yrs if w/ surface water)	Y	2	0	100.00%	100.00%	1	0	100.00%		2	0	100.00%				
Are any sewage straight-piped to surface water	Y	23	0	100.00%	95.65%	21	0	100.00%		22	1	95.65%	Y			
Does any sewage seep to ground surface	Y	19	4	82.61%	86.96%	20	1	95.24%		20	3	86.96%				
Are wells upslope or protected from pollutants	Y	23	0	100.00%	100.00%	21	0	100.00%		22	1	95.65%	Y			
Are antbackflow devices used on faucets with hoses	Y	23	0	100.00%	82.61%	19	2	90.48%	Y	18	2	90.00%	Y			
Don't hire pesticide applicator, keep records of all applications	Y	10	1	90.91%	72.73%	5	1	83.33%		9	0	100.00%				
Do any USTs >1100 gallons		22	1	95.65%		21	0	100.00%		22	1	95.65%				
Is a burn barrel used routinely	Y	5 NC (Otter Tail)	16	7	69.57%	82.61%	7 NC (Otter Tail)	12	9	57.14%	6 NC (Wabasha)	5	18	21.74%	Y	
Is a 50-100' buffer maintained around surface water		11	11	50.00%		5	15	25.00%	Y	2	20	9.09%	Y			
Do rotate 2+ crop/3 yr OR perennial forage 50% of rotation		21	1	95.45%		19	1	95.00%		18	5	78.26%	Y			
Do target nutrients, is soil sampling used		19	4	82.61%		15	6	71.43%		14	9	60.87%	Y			
Do there 30% residue left OR use strip tillage on 2/3 of rotation		17	5	77.27%		10	9	52.63%	Y	14	9	60.87%				
Do house septic pumped once every 3 years	Y	8	15	34.78%	54.55%	4	17	19.05%		4	19	17.39%				
Do you inject or incorporate manure within 24 hours on all lands		3	20	13.04%		2	19	9.52%		2	21	8.70%				