

Appendix C

Case Study 3: Dairy 2

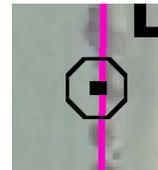
- a: Elements of the Figures**
- I: Two Week Passive Project Results, Complete**
- II: Passive Results, August 26 – September 3, 2010**
- III: Passive Results, September 3 – September 10, 2010**
- IV: Active Sampling Site Locations**
- V: Active Sampling Results, August 31, 2010**
- VI: Active Sampling Results, September 9, 2010**

Elements of the Figures

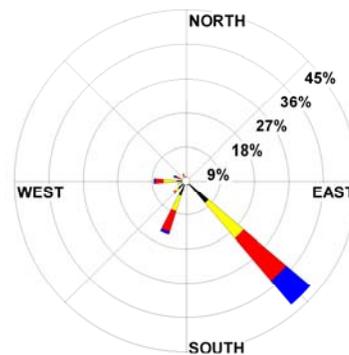
Proportional bars represent weekly passive ammonia concentrations in the summary figure, as well as the short term active ammonia (green) and hydrogen sulfide (pink) concentrations. The pink line in all of the figures represent the study boundary, which in most cases should be the property boundary of the farms.



Proportional symbols represent passive ammonia concentrations in the weekly figures. Each case study has its own concentration scale and can not be directly compared with other farms. Actual concentrations associated with the symbols are shown in the tables on each figure page.



Wind roses are a device to illustrate the direction and speed of the wind. The direction of the bar indicates where the wind is blowing **from**, with the colors indicating the speed of the wind and the length of the bar showing what percentage of the time the wind was coming from that direction. In the figure to the right, wind was coming from the southeast close to 45% of the time, with a wind speed of 11 – 17 knots about 9% of the time, a speed of 7 – 11 knots about 15% of the time, a speed of 4 – 7 knots about 11% of the time, and 1 – 4 knots about 8% of the time. In addition, winds were from the west 9% of the time, and from the southwest about 15% of the time. At the bottom of the wind speed scale to the right, the percentage of the time that the wind was calm is recorded, in this case, 16.67% of the time.

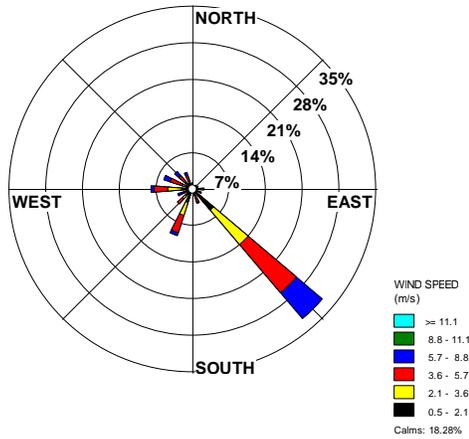
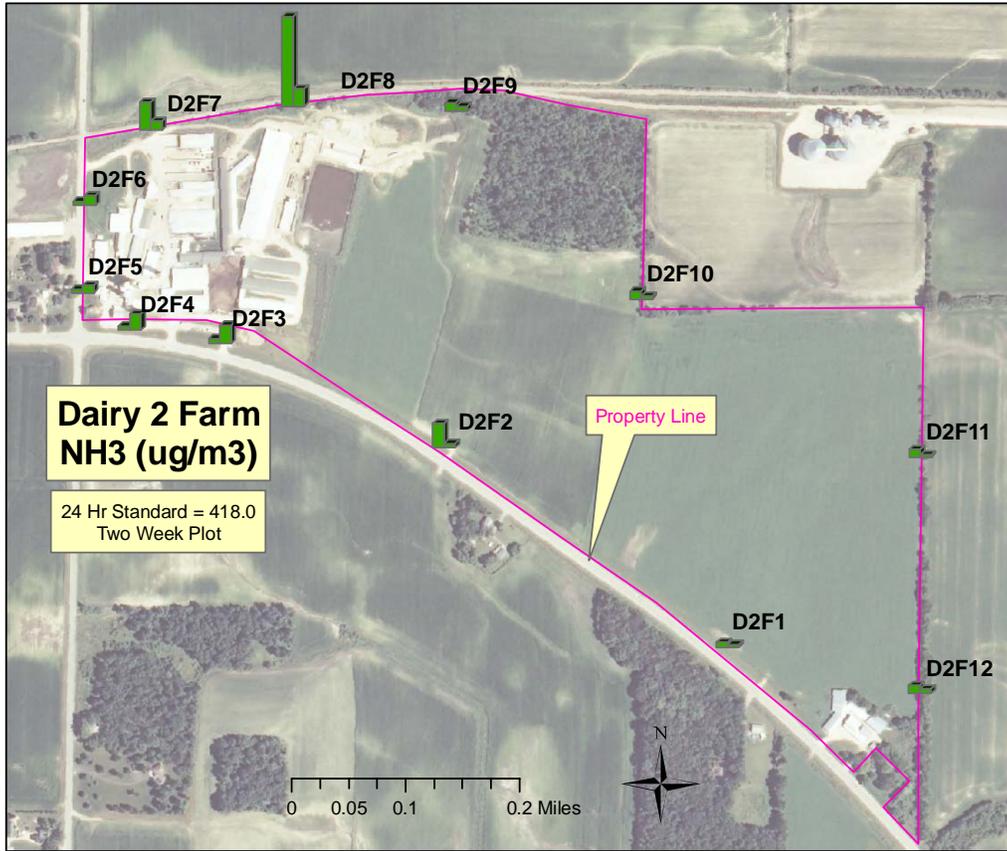


WIND SPEED (Knots)



Calms: 16.67%

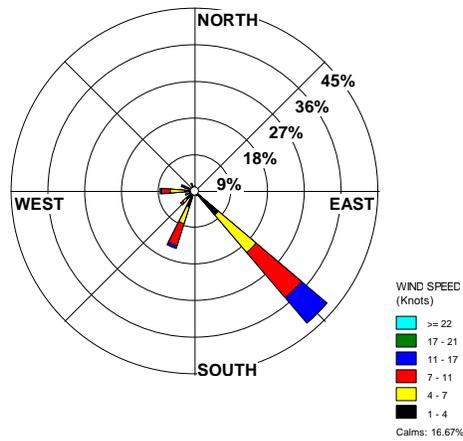
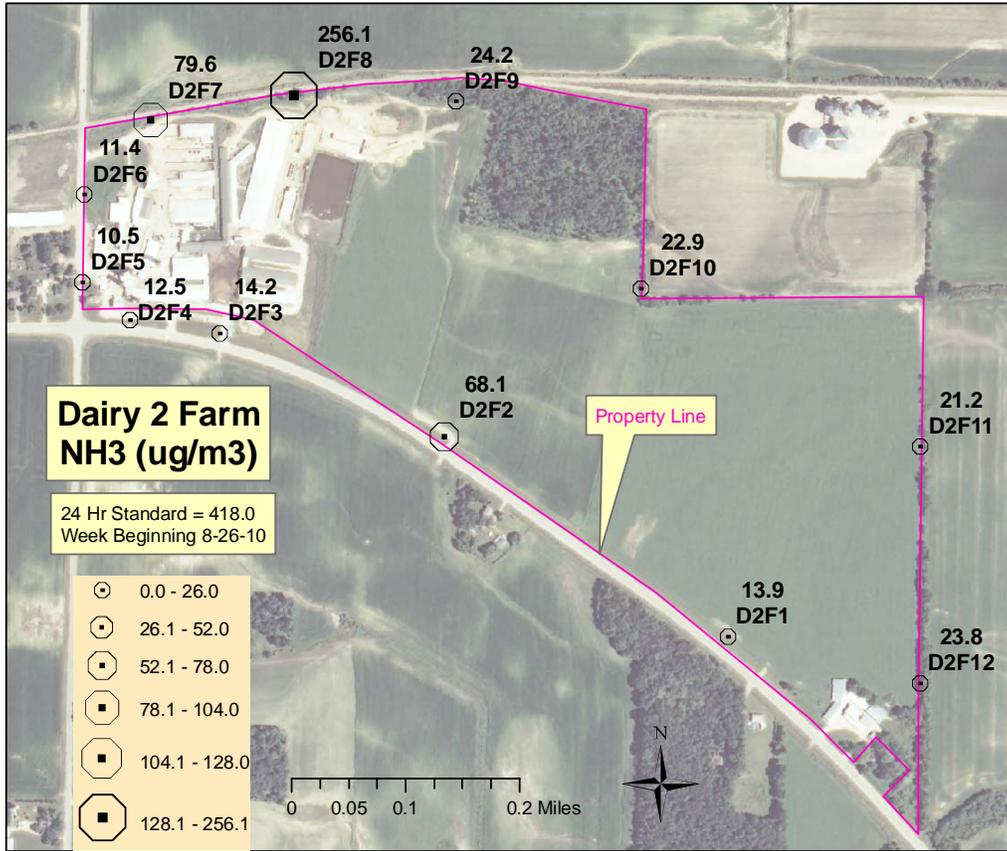
Figure C-I: Two Week Passive Project Results, Complete



Dairy 2 Fenceline Passive Ammonia Samples, 8/26 – 9/10/2010
 Ambient Air Concentrations in Micrograms per Cubic Meter.
 Asterisk denotes values calculated from results below lab reporting limit.

Location	08/26/2010	09/03/2010
D2F1	13.9*	7.6*
D2F2	68.1	11.4*
D2F3	14.2*	53.5
D2F4	12.5*	46.8
D2F5	10.5*	22.1
D2F6	11.4*	27.4
D2F7	79.6	25.8
D2F8	256.1	50.2
D2F9	24.2	14.7*
D2F10	22.9	9.0*
D2F11	21.2	7.0*
D2F12	23.8	13.3*

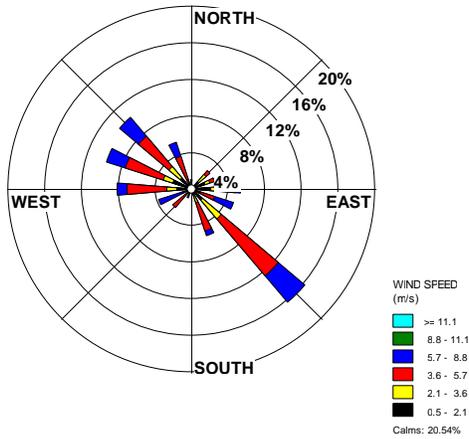
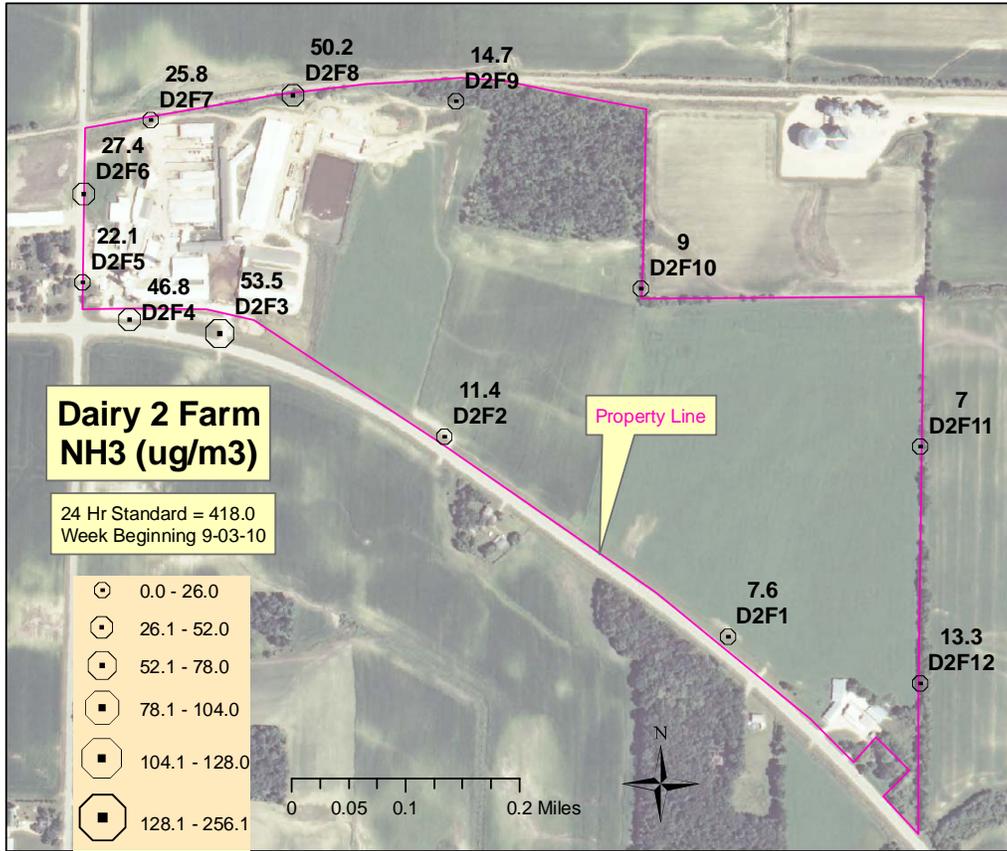
Figure C-II: Passive Results, August 26 – September 3, 2010



Dairy 2 Fenceline Passive Ammonia Samples, 8/26 – 9/3/2010
Ambient Air Concentrations in Micrograms per Cubic Meter. An asterisk denotes values calculated from results below lab reporting limit.

Location	08/26/2010
D2F1	13.9*
D2F2	68.1
D2F3	14.2*
D2F4	12.5*
D2F5	10.5*
D2F6	11.4*
D2F7	79.6
D2F8	256.1
D2F9	24.2
D2F10	22.9
D2F11	21.2
D2F12	23.8

Figure C-III: Passive Results, September 3 – September 10, 2010



Dairy 2 Fenceline Passive Ammonia Samples, 9/3 – 9/10/2010
Ambient Air Concentrations in Micrograms per Cubic Meter. An asterisk denotes values calculated from results below lab reporting limit.

Location	09/03/2010
D2F1	7.6*
D2F2	11.4*
D2F3	53.5
D2F4	46.8
D2F5	22.1
D2F6	27.4
D2F7	25.8
D2F8	50.2
D2F9	14.7*
D2F10	9.0*
D2F11	7.0*
D2F12	13.3*

Figure C-IV: Active Sampling Site Locations

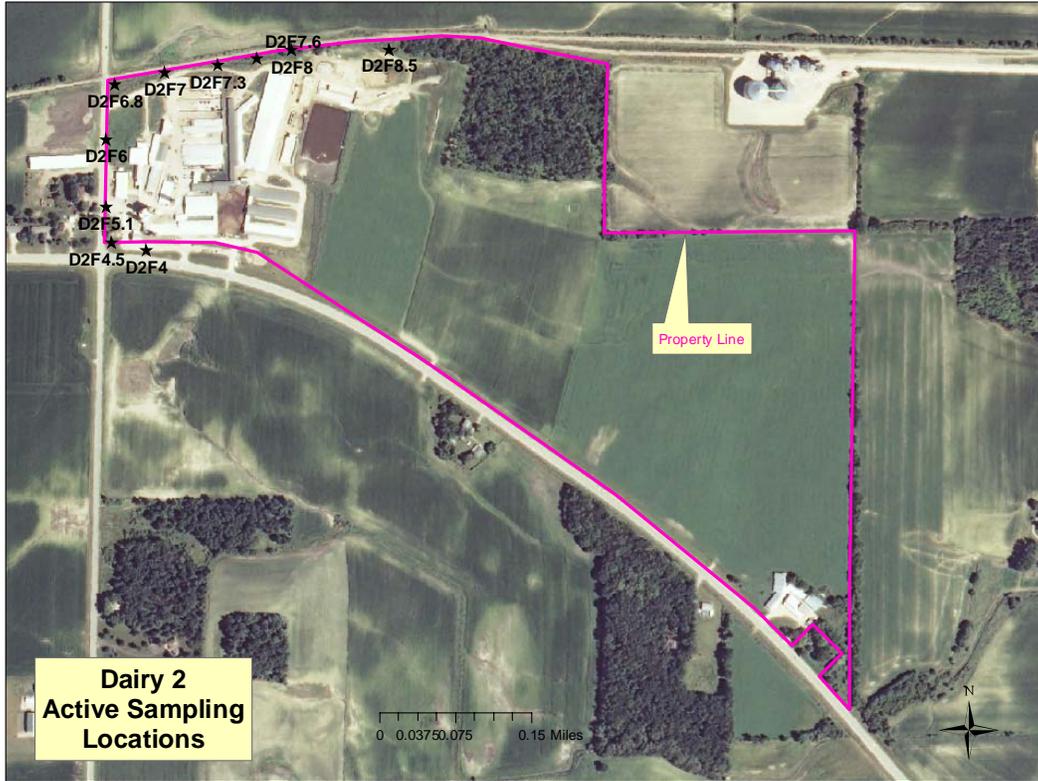
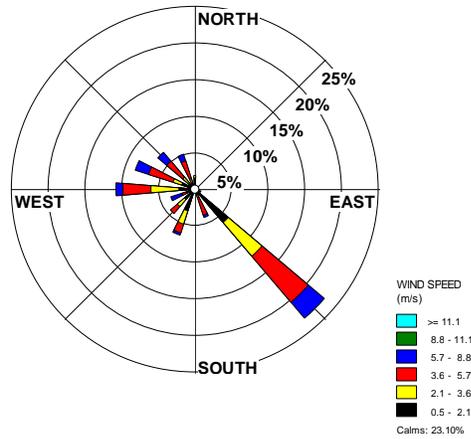
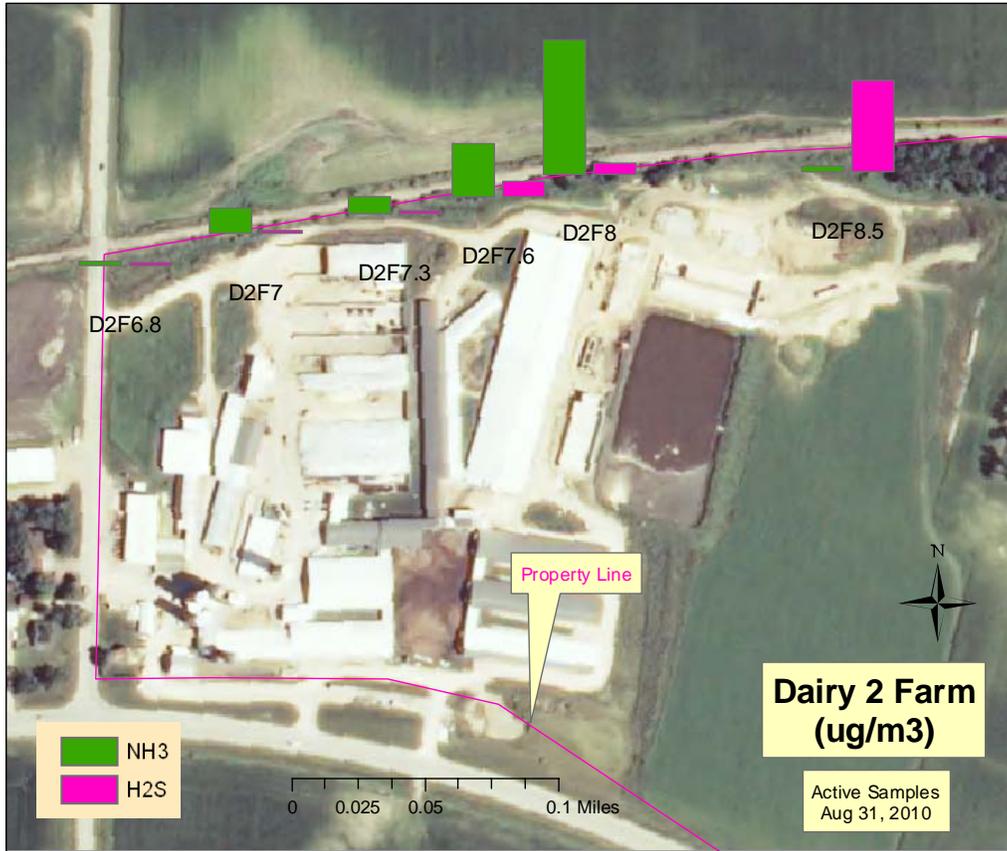


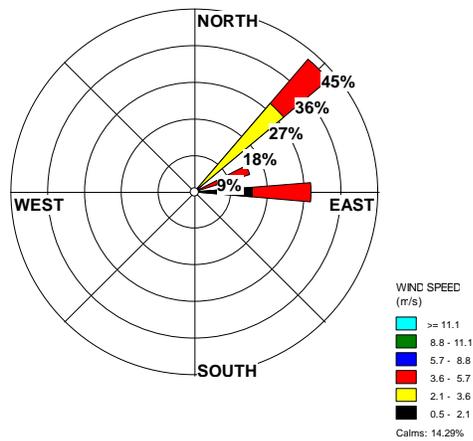
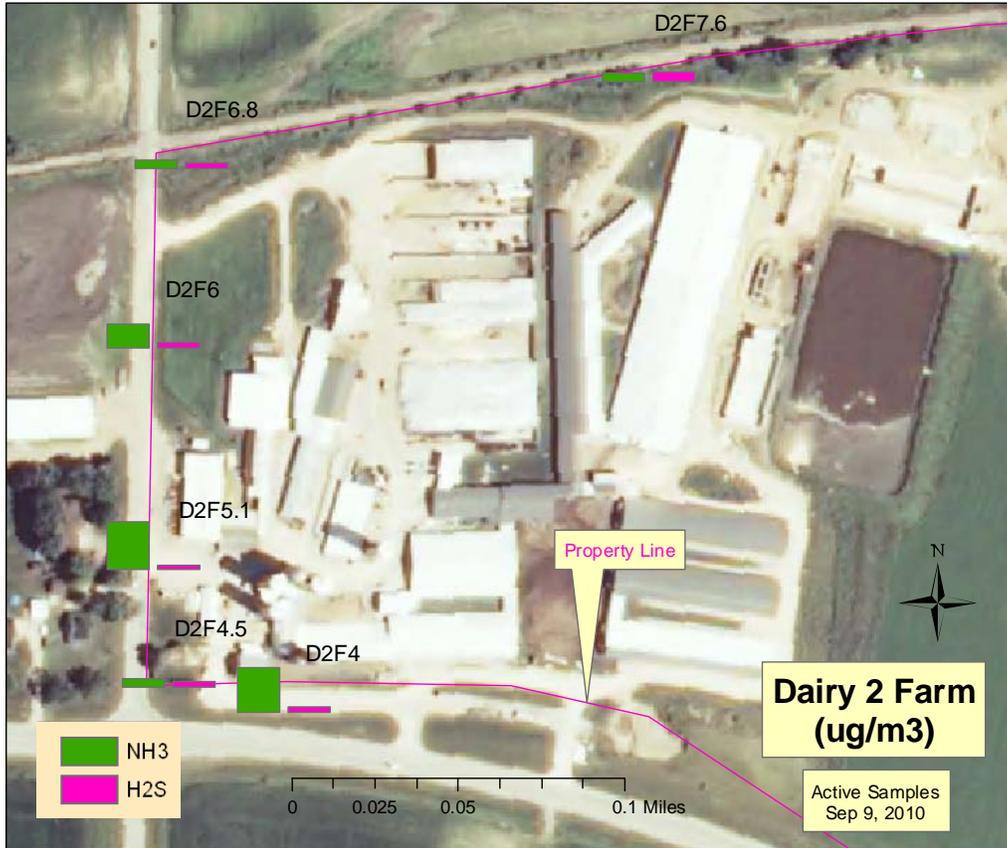
Figure C-V: Active Sampling Results, August 31, 2010



**Dairy 2 Active Sample Results
08/31/2010**

Location	NH3	H2S
D2F6.8	<9.0	<5.7
D2F7	48.9	<5.8
D2F7.3	33.0	<5.9
D2F7.6	101.4	30.0
D2F8	254.8	21.8
D2F8.5	<10.2	174.4

Figure C-VI: Active Sampling Results, September 9, 2010



**Dairy 2 Active Sample Results
09/09/2010**

Location	NH3	H2S
D2F4	83.6	<10.9
D2F4.5	<15.4	<10.0
D2F5.1	89.7	<8.2
D2F6	44.8	<10.4
D2F6.8	<15.6	<9.7
D2F7.6	<15.0	<18.4