I. Abstract
A project meeting was held and it was discuss that too far from the time that litter is needed to identify a specific source. The amount need for this project is miniscule compared to the amount available. Project timeline was modified in the QAPP to fit within the three year project window. The QAPP was also modified to include language about a control plot for the environmental effects of litter application. Progress on the project continues with all partners.

II. Overall Progress and Results by Task

TASK 1: Project Administration

Subtask 1.1: TWRI will prepare electronic quarterly progress reports (QPRs) for submission to the TSSWCB. QPRs shall document all activities performed within a quarter and shall be submitted by the 15th of January, April, July and October. QPRs shall be distributed to all project partners.

The following actions have been completed during this reporting period:

a. TWRI submitted Year 1, Quarter 4 Progress Report on October 13, 2010.

30% Complete

Subtask 1.2: TWRI will perform accounting functions for project funds and will submit appropriate Reimbursement Forms to TSSWCB at least quarterly.

The following actions have been completed during this reporting period:

a. As of December 31, 2010, $16,251.00 or 6% of federal project funds had been expended.

6% Complete

Subtask 1.3: TWRI will participate in meetings with TSSWCB and project partners as appropriate in order to efficiently and effectively achieve project goals, coordinate monitoring efforts and summarize activities and achievements made throughout the course of this project.

The following actions have been completed during this reporting period:

a. A project meeting was held October 12 by teleconference. POSC stated it was too far from time to spread to identify a specific source of litter. The amount need for this project
is miniscule compared to the amount available. POSC said he would need at most 6 weeks prior to spreading to identify a source. It was discussed that Table A-6 in QAPP needed revision and wording about control plot added to QAPP as well.

b. A project meeting will be held next quarter on January 18, 2011 with all project personnel to discuss project goals, tasks and revise timelines.

33% Complete

Subtask 1.4: TWRI will work with the POSC, USDA-ARS, and SAML to ensure appropriate communication with the poultry industry.

The following actions have been completed during this reporting period:

a. POSC continues to communicate with Sanderson Farms (who fully supports the project activities).

33% Complete

Subtask 1.5: TWRI will organize semi-annual TTVN meetings with project participants to discuss project activities, project schedule, lines of responsibility, communication needs, and other requirements.

The following actions have been completed during this reporting period:

a. A project meeting was held October 12 by teleconference. POSC stated it was too far from time to spread to identify a specific source of litter. The amount need for this project is miniscule compared to the amount available. POSC said he would need at most 6 weeks prior to spreading to identify a source. It was discussed that Table A-6 in QAPP needed revision and wording about control plot added to QAPP as well.

b. A project meeting will be held next quarter on January 18, 2011 with all project personnel to discuss project goals, tasks and revise timelines.

33% Complete

TASK 2: Quality Assurance

Subtask 2.1: TWRI will develop a QAPP for activities in Task 3 and 4 consistent with the most recent versions of EPA Requirements for Quality Assurance Project Plans (QA/R-5) and the TSSWCB Environmental Data Quality Management Plan.

All monitoring procedures and methods prescribed in the QAPP shall be consistent with the guidelines detailed in the TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods for Water, Sediment, and Tissue (RG-415) and Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data (RG-416).

The following actions have been completed during this reporting period:

a. QAPP has been approved.

100% Complete
Subtask 2.2: *TWRI will submit revisions and necessary amendments to the QAPP as needed.*

The following actions have been completed during this reporting period:

a. QAPP revisions, revising timeline to fit within the three year project time window, and to add information about control plot for evaluation of air quality with no litter applied, submitted to EPA

5% Complete

**TASK 3: Demonstration of IWC of Poultry Litter**

Subtask 3.1: *POSC will work with integrators (primarily Sanderson Farms) in Limestone and Falls Counties to identify a cooperator (poultry grower) for conducting the IWC demonstration. The cooperator demonstration site will provide the poultry house where IWC will be performed and the IWC and raw litter for land application.*

The following actions have been completed during this reporting period:

a. No activity to report this quarter.

5% Complete

Subtask 3.2: *IWC will be conducted by POSC at the cooperator site identified in Subtask 3.1 in years 1 and 2 to demonstrate and evaluate IWC utility prior to litter removal from poultry houses.*

The following actions have been completed during this reporting period:

b. No activity to report this quarter.

10% Complete

Subtask 3.3: *Raw and IWC poultry litter samples will be collected by POSC prior to land application to evaluate the effect of composting on levels of bacteria, nutrients, and volatiles in the litter. Bacteria levels (E. coli) in the litter will be analyzed by SAML. Nutrient levels (N-P-K) in the litter will be analyzed by SWFTL. Volatiles emitted from the litter prior to land application will be analyzed by W-TAMU.*

The following actions have been completed during this reporting period:

a. Soil samples were collected for routine analysis by SWTFL.

25% Complete

Subtask 3.4: *Raw and IWC poultry litter will be applied by POSC at 3 tons/ac to the USDA-ARS Riesel site. Annual soil tests will be performed by SWFTL and by USDA-ARS.*

The following actions have been completed during this reporting period:

a. No activity to report this quarter.

0% Complete

Subtask 3.5: *POSC will assess the cost of implementing IWC on poultry operations for inclusion*
with educational materials as compared to conventional methods.

The following actions have been completed during this reporting period:

a. No activity to report this quarter.

\[0\% \text{ Complete}\]

**TASK 4: Analysis of Environmental Effects of IWC**

Subtask 4.1: Runoff samples will be collected from two pastures at the USDA-ARS Riesel site for about one year prior to litter application and for about two years following litter application to evaluate the impacts of using IWC poultry litter versus raw poultry litter. Runoff samples will be collected from all other field- and watershed-scale sites at Riesel to quantify nutrient and bacteria from background sites and litter application sites. E. coli levels in water samples will be evaluated by SAML. Nutrient analysis (NO\textsubscript{3}-N, NH\textsubscript{4}-N, and PO\textsubscript{4}-P) for water samples will be conducted by the USDA-ARS with funding from another project.

The following actions have been completed during this reporting period:

a. No runoff occurred during the period.

\[30\% \text{ Complete}\]

Subtask 4.2: Runoff samples will also be collected from four 0.25 acre field sites at the USDA-ARS Riesel site for about 1 year prior to litter application and for 2 years following litter application to compare the impacts of using IWC and raw poultry litter on bacteria and nutrient runoff. Two of the field sites will receive raw litter and two will receive IWC litter. Rainfall amounts, runoff, and quantities of E. coli and nutrients will be evaluated. E. coli levels in water samples will be evaluated by SAML. Nutrient analysis (NO\textsubscript{3}-N, NH\textsubscript{4}-N, and PO\textsubscript{4}-P) for water samples will be conducted by the USDA-ARS with funding from another project.

The following actions have been completed during this reporting period:

b. No runoff occurred during the period.

\[30\% \text{ Complete}\]

Subtask 4.3: POSC and W-TAMU will also evaluate other potential environmental benefits of using IWC poultry litter instead of raw litter. Through the use of field assessment of volatile levels at the litter application sites at Riesel by POSC and W-TAMU, the environmental impacts of using IWC poultry litter instead of raw litter will be demonstrated/evaluated.

The following actions have been completed during this reporting period:

a. No activity to report this quarter.

\[0\% \text{ Complete}\]

**TASK 5: Technology Transfer**

Subtask 5.1: POSC, SAML, and USDA-ARS, with assistance from TWRI and project participants, will develop outreach materials (1 refereed journal article and 1 Extension fact sheet) summarizing the results of the demonstration and the analysis of the environmental
impacts of IWC poultry litter. The Extension Fact Sheet will be submitted to the TSSWCB and poultry integrators for review prior to publication.

The following actions have been completed during this reporting period:

a. A one page promotional sheet to disseminate information about this project to the public will be completed this quarter.

25% Complete

Subtask 5.2: POSC will conduct 6-9 grower meetings throughout the poultry producing areas of the state to present results of the IWC demonstration/evaluation. POSC will work with poultry integrators to deliver 2-3 programs for growers for each integrator (Sanderson Farms, Tyson, Pilgrim’s Pride). At least 1 field day will be held in conjunction with the grower meetings to view the IWC at the cooperater site and Riesel field sites. TWRI will assist POSC by developing press releases, meeting notification materials for distribution prior to the meetings, and post meeting summaries.

The following actions have been completed during this reporting period:

a. No activity to report this quarter.

5% Complete

Subtask 5.3: TWRI, with assistance from POSC, USDA-ARS, and SAML, will develop (Month 1-6), host and maintain (Months 6-36) a project website for dissemination of project materials.

The following actions have been completed during this reporting period:

a. The Environmental Effects of In-House Windrow Composting of Poultry Litter website went online in February 2010. It can be found at http://windrowlitter.tamu.edu/. Since the website went online, it has been viewed by a grand total of 41 unique visitors.

b. This quarter, the website was viewed by:
   • 25 unique visitors in October 2010
   • 15 unique visitors in November 2010
   • 11 unique visitors in December 2010

78% Complete

Subtask 5.4: POSC, with assistance from TSSWCB, TWRI and USDA-ARS, will work with USDA-NRCS to make necessary revisions to various practice standards (i.e., 629 Waste Treatment, 633 Waste Utilization, 317 Composting Facility) to include IWC.

The following actions have been completed during this reporting period:

a. 629 In-House Pasteurization of Litter Waste Treatment now has a job sheet. (see attached)

100% Complete

Subtask 5.5: POSC will work with SAML, USDA-ARS, and TWRI to develop a final report summarizing the results of the project.
The following actions have been completed during this reporting period:

a. No activity to report this quarter.

0% Complete

III. Related Issues/Current Problems and Favorable or Unusual Developments

TWRI Project Manager Brian VanDelist presented a short informational talk on the project, utilizing slides from POSC Coufal at the Southeast and South Central Texas WCSC meeting held on Thursday, December 2, 2010 in Wharton, Texas.

Projected Work for Next Quarter

Project meeting scheduled for January 18, 2011