United States Department of Agriculture
Rural Development

September 9, 2011

SUBJECT: Finding of No Significant Impact (FONSI)
Chemtex Project Alpha
Turkey, North Carolina

DESCRIPTION OF ACTION

The U.S. Department of Agriculture, Rural Business-Cooperative Service (RBS) has received an application from a lender, BB&&T, on behalf of Chemtex International LLC for funding under the RBS 9003 Biorefinery Assistance Program. The proposed funding is for construction and operation of a refinery to produce advanced biofuels in Sampson County, North Carolina. The applicant proposes to build a facility to process hybrid perennial grasses which will be grown in near-by marginal agricultural areas presently used for disposal of swine wastes, to produce some 20 million gallons of ethanol from integrated operations; the production of which would help meet the national goal for renewable fuel standard production of 36 billion gallons of renewable fuels by 2022 established by the Energy Independence and Security Act of 2007.

The environmental analysis of this proposed action is contained in an Environmental Assessment (EA) prepared by RBS.

Chemtex proposes to site, build and operate what is called Project Alpha, on a site of 166 acres located just outside the city of Clinton, NC; the facilities would use approximately 22 acres of the site for operations and services. Production of cellulosic ethanol will use different feedstocks, primarily two hybrid grasses, Miscanthus giganteus and Arundo donax which will be developed and grown on farms presently used for growing Bermuda grasses as part of swine waste disposition. The processing technology will be a proprietary technology developed by Chemtex, called Proesa™.

This proposal, construction and operation of an advanced biofuels facility, does not pose significant adverse effects to the natural or human environment. Some mitigation measures are proposed as loan conditions, detailed below.

BASIS FOR FINDINGS

As required by the National Environmental Policy Act and agency regulations, RBS has assessed the potential environmental effects of the proposal. After consideration of the

Table 1: Recommended Feedstock Producer Conditions

The applicant, Chemtex International Inc., will incorporate into all feedstock producer agreements, the following action items, unless there is an approved Conservation Plan with in RCS: approved Conservation Plan with NRCS:
if

1. New Producer orientation to discuss production methods, management activities, potential for spread of giant miscanthus and/or Arundo donax, treatment methods, and responsibilities, pest/disease identification, treatment methods, and responsibilities, eradication methods, if necessary, and reporting requirements;
2.

3. Site-specific best management practices(BMPs), which could include, but not be limited to, NRCS Conservation Practice Standards (CPS) for soil erosion, pesticide use and application, fertilizer use and application, and other relevant areas for each specific site;
4.

3. Setbacks/buffers to manage the giant miscanthus/Arundo donax stand and to prevent unintentional spread of the giant miscanthus/Arundo donax shall follow all local, State, or Federal regulations for containment of biomass plantings in existence at the time of the development of the producer's Conservation Plan or through an amendment of the Conservation Plan initiated by the producer and approved by RBCS and NRCS, if determined appropriate or the site-specific conditions. If no such guidance exists, minimum procedures to prevent unintentional spread of giant miscanthus/Arundo donax shall include:

a. Establish or maintain a minimum 25 feet of setback/border around a giant miscanthus/Arundo donax stand, unless the field is adjacent to existing cropland or actively managed pasture with the same operator.
b.

b. Setback/border areas may be planted to an annual row crop such as corn or soybeans; may be planted to a site-adapted, perennial cool-season or warm season forage or turf grass; may be kept in existing vegetation; or kept clear by disking, rotovating, or treating with a non-selective burn down herbicide at least once a year. The method used may be dependent on slope and the potential for erosion.

c. The use of only those known sterile varieties of giant miscanthus cultivars for producers included within the proposed project areas; all clone cultivars must be approved for planting under a recognized Quality Assurance program;

d. The initiation of a seed sampling program to determine the on-going sterility of seeds produced from the BCAP acres within the project areas. The seed sampling program includes recommended actions, including eradication, if a seed sample returns viable seed.

e. Exclusion of planting giant miscanthus on certain acreage within approximately 1,300 Feet from any known *Miscanthus sinensis* or *Miscanthus sacchariflorus* to limit the potential for cross-pollination resulting in viable seed.

f. Exclusion of planting giant miscanthus and/or *Arundo donax* on certain acreage within the project areas, depending upon certain site-specific conditions, like those lands subject to frequent flooding events;

4. Monitoring program developed to identify (1) spread of giant miscanthus or Arundo donax outside of planted fields with notification provided to both USDA and the Project Sponsors as soon as possible after identification of the issue, (2) identification of diseases and pests with notification provided to the Project Sponsors as soon as possible after identification of the issue; a USDA representative will conduct an annual field visit to monitor the site and to look for potential spread of giant miscanthus/Arundo donax beyond the site; the USDA will work with local weed control districts to provide additional monitoring/evaluation of these sites as appropriate.
5. Annual producer reporting, which would include land use tracking with the average and total size of enrolled fields; prior land use; rationale for land use change; spread of giant miscanthus/Arundo donax outside of planted fields; any pests/diseases identification; the use of pesticides/herbicides to control unwanted spread of giant miscanthus/Arundo donax or pests/diseases; BMP and CPS incorporated into field management, such as erosion control structures or materials, vegetative barriers, etc.; fertilizer usage and application methods; and cost data.

Environmental Assessment
For
Chemtex International
Inc.
Project
Alpha
Clinton, NC

September 9, 2011

I. Project Description and Need

The USDA, Rural Business-Cooperative Service (RBS) is considering an application for a loan guarantee pursuant to Section 9003 of the Food, Conservation, and Energy Act of 2008 (known as the Farm Bill of 2008). The loan guarantee is to the lender, BB&T, for ChemTex International, Inc. (the Company). to construct and operate a Cellulosic Biorefinery, known as Project Alpha, to be located southeast of Clinton, Sampson County, North Carolina. The proposal would include the construction of the biorefinery and its related infrastructure on approximately 166 acres located south of Warsaw Road (SR 24) between Fontana Street and Clive Jacobs Road (Figure1).

The biorefinery proposes the use of local fiber crops for the production of up to 20 million gallons per year of ethanol and bio-based chemicals that will contribute to meeting the requirements of the USEPA Renewable Fuel Standard (RFS) requirements established by the Energy Independence and Security Act (EISA).

If approved, the project would commence construction in the 2nd quarter of 2012, with operations planned to begin in 2014. Simultaneous with plant construction would be the establishment of new energy crops in the nearby Sprayfield Areas, which are marginal lands that will benefit from remediation through energy crop production. There are nearly 100,000 acres of Sprayfield area lands available for growing *Miscanthus giganteus* and/or *Arundo donax,*

two species of perennial grasses suitable (known as giant cane and giant reed) for biofuel production: it is estimated that approximately 15-20,000 acres of the Sprayfields Areas will be utilized for growing *Miscanthus giganteus* and/or *Arundo donax* for the initial biorefinery production of 20 million gallons/yr of ethanol; future production increases may be possible and the number of acres for Miscanthus/Arundo donax production in the Sprayfield areas would increase proportionally; however, such increases are not part of this proposed action. Chemtex International Inc's Project Alpha will produce bioethanol and develop downstream sustainable chemicals. The project will yield the following: 20 million gallons per year of cellulosic ethanol and develop downstream sustainable chemicals. 60,000 tons of high purity chemical grade lignin. Create 65 direct jobs and 250 indirect jobs in an economically depressed area.

Chemtex has a proprietary process, known as Proesa™, to produce low-cost fermentable sugars from cellulosic biomass for the production of ethanol and/or bio-chemicals. The technology is unique in that it offers significant capital and operating cost benefits compared with other second generation technologies in the marketplace.

II. Primary Beneficiaries and Related Activities

The primary beneficiary of the project is the applicant, Chemtex International Inc (Chemtex). The project will also benefit the entire Sampson County area which is heavily reliant on the agricultural sector. This region is currently promoting growth in the biofuel industry. The project will create at least 65 direct jobs. There is also potential for future projects within North Carolina for additional job creation. This will have a positive economic impact on the area. Because of this project, the people in Sampson County, with possible expansion to the state of North Carolina, will benefit though indirect job creation and increased taxable assessments. To the extent that some 20 million gallons of cellulosic ethanol will be produced annually, the project will contribute to the achieving of the goals of the EISA and RFS2 standards of increased production of cellulosic and advanced biofuels which reduce dependency upon imported petroleum as well as reduce the level of greenhouses gas (GHG) emissions caused by the combustion of petroleum fuels.

III. Description of Project Area

The 166 acre site has been identified as *NC 24 Clinton* and is located south of the Turkey Highway near Clinton, Sampson County, NC. Figures 2-4 show the location of the site (Appendix A contains additional maps and photos).

Two site surveys were completed in March and April, 2011, to assess a number of parcels beyond the proposed 166 acre site. The proposed site is bounded on the north by railroad tracks and North Carolina Highway 24, beyond which are industrial businesses. The site is bounded to the east by wooded areas, beyond which are single family residential properties. The site is bounded to the south by agricultural field as well as wooded areas. The site is bounded to the west by agricultural fields. The site is bounded to the northwest by an auto salvage yard. The undeveloped woodlands consisted mainly of second and third growth loblolly pines and saplings. The surrounding landscape was generally flat. Portions of the site are heavily overgrown with greenbriers and small saplings, along with existing agricultural fields and undeveloped woodlands in the center and western side of the site. The western portion of the

site includes hydric soils and wetlands indicators, and an unnamed tributary to Chestnut Creek

and thence to the Rowan Branch stream.

Soil units for the parcels consisted of Faceville Sandy Loam, Marvyn Loamy Sand, Norfolk Loamy Sands and Rains Sandy Loam. These soil units are found predominately in agricultural settings. The upper 3 to 8 feet of these soil types consist mainly silty and or clayey sand with varying degrees of organic content underlain by sandy silty clays to an approximate depth of 99 inches. Permeability and average water storage capacity within these soil types are considered to be moderate in nature. (Appendix B contains the NRCS soils report.)

The site has a natural buffer of between 400 and 1,200 feet of woods on its east and west property lines. The site‘s north property line extends for approximately 750 feet along NC Highway 24. The site‘s southern boundary extends along a property that is planned for future industrial development purposes.

The site's west and north boundaries are industrial use areas that include heavy industrial zoning and light industrial zoning. Industrial activities in this area include metalworking manufacturing, a metals machining shop, metal scrap dealer, oil jobber, industrial laundry, and warehousing/distribution. The site's east boundary line of approximately 2,000 feet with between 400 and 1,200 feet of woodland buffer. This property boundary adjoins residential zoning and has about 10 residents.

The proposed site is currently zoned RA-20: Residential Agriculture. Plans are underway to submit an application to the City of Clinton Planning Board for changing this site‘s zoning classification to I-2: Heavy Industrial zoning, which would fully apply to this projects uses. I-2 heavy Industrial zoning would be consistent with the City of Clinton‘s zoning requirements for this project.