



## Summary of Deliverables (primary project outputs)

1) Initially a white paper will be prepared that will outline the basic problem statement and consist of information on biodiesel and ethanol properties and characteristics, how these alternative fuels are produced, distributed and stored, expected uses and amounts, and the nature of potential environmental impacts. This project will examine broader issues such as those associated with growing feedstock for alternative fuels, loss of wildlife habitat, soil erosion, and water quality concerns. This paper will develop a solid base for subsequent projects. This project is not intended for public use.

2) Case Studies on the environmental impacts of alternative fuels will be the second deliverable. Through the ITRC network of state regulators, federal partners, and consultants, information and experiences will be collected, inventoried, and assessed. This document will detail the various problems that arise with biodiesel and ethanol production; demonstrate known best management practices for minimizing waste, preventing releases to the environment and in responding to spills and/or releases of these products; and provide a summary of states' experiences with environmental impacts of alternative fuels. The document will also examine the environmental impacts associated with alternative fuel technologies and use compared to traditional petroleum product management. This mitigation information would lead to a Technical and Regulatory Guidance document. At this point, the project will be evaluated and future biodiesel and ethanol deliverables may proceed on separate tracks. The Case Studies document will be developed for team use initially but would eventually be made available to the public.

3) The Tech Reg document(s) will focus on the specific problems of site characterization and existing remediation technologies and how these approaches may differ from conventional fuel sites. In addition, the environmental impacts of alternative fuels will be analyzed and compared to traditional fuels. The document(s) will include information on the synergistic impacts of mixtures of each alternative fuel with conventional fuels on the environment. An overview of release prevention and detection at conventional fuels sites modified to accept alternative fuels will also be included. Developing remediation technologies specific to biodiesel and ethanol will be presented along with an update on best management practices. The Tech Reg document(s) will include a compilation of current reference materials.

4) Internet training course(s) based on the Tech Reg document(s).

## Project Schedule

### Year 1

- Team Formation – confirm leader(s), members, federal agencies, industrial partners, and community stakeholders; evaluate individual skill sets
- Select Program Advisor
- Data gathering and review for white paper and case studies– define scope and goals; form team units; assign writing assignments & schedules
- Prepare outlines as data dictates

### Year 2

- 1<sup>st</sup> Draft of white paper and case studies
- Prepare table of contents for Technical & Regulatory document
- Finalize White Paper and Case Study
- 1<sup>st</sup> Draft of Tech Reg Doc
- 2<sup>nd</sup> Draft of Tech Reg Doc

### Year 3

- Final Draft of Tech Reg
- Internet Based Training development
- Finalize Tech Reg – Battelle editing, DOD review, POC review, incorporate comments

- Develop implementation strategy
- Publish Tech Reg Doc
- Internet Based Training dry-run

Year 4

- Pursue State concurrence, IBT, attend conferences, and advocate use of products
- Initiate project implementation

Year 5

- Complete project implementation

**Target Audience**

Local/state/federal government agencies, lawmakers, and regulators; industry – facility owners, operators, distributors, and users; investors; consultants; farmers; and the public.

**Resources Required**

**Personnel:**

**Team Leader :** Allan Goldberg (IA) and another TBD

**Supporting State Members (As of 4/25/07):**

Pennsylvania, Kansas, Iowa, Texas, Oregon, Florida, Nevada, Minnesota, Nebraska, Ohio, Wyoming, Missouri, and Arkansas have confirmed interest in providing team members

- **Skill Mix of Team Members (e.g., regulatory, engineering, scientific, etc.)**
  - UST regulators familiar with water, wastewater, air quality, and groundwater release and remediation issues
  - soil conservationist
  - scientist/engineer with biofuels processing/storage/dispensing operations experience
  - academician familiar with animal ecology
- **Sectors of Team Members (e.g., federal, state, community, regulated, regulator, etc.)**
  - Federal agency representative – DOD and/or DOE
  - representative from the alternative fuels industry
  - representative from the farming community
  - regulator – UST/AST tank programs
  - environmental/engineering consultants
  - tank installers/vendors
  - emergency responders

**Financial Resources:** add text to clarify expenses (i.e., Team Form – travel, conf. incl.)

**Year 1 Budget**

	<b>Program Advisor</b> \$68,000
	<b>Team Formation</b> (includes meeting and conference call expenses) \$13,700
	<b>Case Studies/Tech Overview/Other Development</b> (includes meeting and conference call expenses) \$9,500
	<b>Year 1 Total</b> \$91,200

**Year 2 Budget**

	<b>Program Advisor</b> \$63,750
	<b>Case Studies/Tech Overview/Other Development</b> (includes meeting and conference call expenses) \$20,000
	<b>Tech &amp; Reg Document/IBT Training Development</b> (includes meeting and conference call expenses) \$9,500
	<b>Year 2 Total</b> \$93,250

**Year 3 Budget****Program Advisor** \$68,000**Tech & Reg Document/IBT Training Development** (includes meeting and conference call expenses) \$25,500**Team Closure Process** (includes meeting and conference call expenses) \$15,000**\$108,500****Year 4 Budget****Program Advisor** \$10,200**Project Implementation** (includes meeting and conference call expenses) \$4,800**\$15,000****Year 5 Budget****Program Advisor** \$5,100**Project Implementation** (includes meeting and conference call expenses) \$2,400**\$15,000****Total Project****Program Advisor** \$215,050**Project Costs** \$100,400**Project Total** \$315,450**Related Work:**

Information generated from the teams listed below may be used to expand upon or supplement preliminary efforts by the alternative energy team, and will not be duplicative. Linkages to current or prior ITRC teams include: Brownfields; Diffusion Sampler; In-Situ Bioremediation; In-Situ Chemical Oxidation; MTBE and Other Fuel Oxygenates; Permeable Reactive Barriers; Phytotechnologies; Remediation Process Optimization; LNAPLs, RISK Resources; Sampling, Characterization, and Monitoring; Thermal Desorption; and Vapor Intrusion. Linkages to proposed ITRC teams include: CAFOs and Sediments.