U.S. Department of Energy

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project

Final Environmental Impact Statement

Volume II – Appendices

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Office of Fossil Energy
National Energy Technology Laboratory

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APPENDICES – VOLUME II

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APPENDIX A

ENVIRONMENTAL SYNOPSIS CCPI ROUND 3

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ENVIRONMENTAL SYNOPSIS
CCPI Round 3
DE-PS26-08NT43181
DE-FOA-0000042

October 2010

National Energy Technology Laboratory
U.S. Department of Energy

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INTRODUCTION

The U.S. Department of Energy (DOE or the Department) prepared this Environmental Synopsis pursuant to the Department's responsibilities under section 1021.216 of DOE's National Environmental Policy Act (NEPA) Implementing Procedures set forth in 10 CFR Part 1021. This synopsis summarizes the consideration given to environmental factors and records that the relevant environmental consequences of reasonable alternatives were evaluated in the process of selecting projects seeking financial assistance under Round 3 of the Clean Coal Power Initiative (CCPI). DOE selected five applicants seeking financial assistance under CCPI Round 3 during its merit review process. In addition to financial and technical elements, DOE considered relevant environmental factors and consequences of the projects proposed to DOE in response to the funding opportunity announcements. As required by section 1021.216, this synopsis does not contain business, confidential, trade secret or other information that statutes or regulations would prohibit DOE from disclosing. It also does not contain data or other information that may in any way reveal the identity of the offerors.[1]

BACKGROUND

Coal is an abundant and indigenous energy resource and supplies almost 50 percent of the United States' electric power. Demand for electricity is projected to increase by more than 30 percent by 2030. Based on analyses conducted by the EIA, it is projected that this power increase can only be achieved if coal use is also increased. Furthermore, nearly half of the nation's electric power generating infrastructure is more than 30 years old, with a significant portion in service for twice as long. These aging facilities are - or soon will be - in need of substantial refurbishment or replacement. Additional capacity must also be put in service to keep pace with the nation's ever-growing demand for electricity. Therefore, DOE expects that nearly half of the nation's electricity needs will continue to be served by coal for at least the next several decades. Given heightened awareness of environmental stewardship, while at the same time meeting the demand for a reliable and cost-effective electric power supply, it is clearly in the public interest for the nation's energy infrastructure to be upgraded with the latest and most advanced commercially viable technologies to achieve greater efficiencies, environmental performance, and cost-competitiveness. However, to realize acceptance and replication of these advanced technologies into the electric power generation sector, the technologies must first be demonstrated (i.e., designed and constructed to industrial standards and operated at significant scale under industrial conditions).

Public Law 107-63, enacted in November 2001, first provided funding for the Clean Coal Power Initiative, or CCPI. The CCPI is a multi-year federal program tasked with accelerating the commercial readiness of advanced multi-pollutant emissions control, combustion, gasification, and efficiency improvement technologies to retrofit or repower existing coal-based power plants and for deployment in new coal-based generating facilities. The CCPI encompasses a broad spectrum of commercial-scale demonstrations that target environmental challenges, including reducing greenhouse gas (GHG) emissions, by boosting the efficiency at which coal is converted to electricity or other energy forms. The CCPI is closely linked with DOE's research and development activities directed toward creating ultra-clean, fossil fuel-based energy complexes in the 21st century. When integrated with other DOE initiatives, the CCPI will help the nation successfully commercialize advanced power systems that will produce electricity at greater efficiencies, produce almost no emissions, and create clean fuels. Improving power plant efficiency is a potentially significant way to reduce carbon dioxide (CO_2) emissions in the near- and midterm. In the longer term, the most recent future funding opportunity announcements targeted CCPI technologies employing CO_2 capture and storage, or beneficial reuse. Accelerating

[1] The five projects selected for awards are identified in this synopsis and information on these projects is available on the DOE National Energy Technology Laboratory web site at http://www.netl.doe.gov/technologies/coalpower/cctc/ccpi/index.html.

commercialization of clean coal technologies also positions the United States to supply these technologies to a rapidly expanding world market.

Congress provided for competitively awarded federal cost-shared funding for CCPI demonstration projects. In contrast to other federally funded activities, CCPI projects are not federal projects seeking private investment; instead, they are private projects seeking federal financial assistance. Under the CCPI funding opportunities, industry proposes projects that meet its needs and those of its customers while furthering the national goals and objectives of DOE's CCPI. Demonstration projects selected by the CCPI program become private-public partnerships that satisfy a wide set of industry and government needs. Through the CCPI program, industry may satisfy its short-term need to retrofit or repower a facility, develop new power generating capacity, or obtain critical economic or technical evaluation of emerging commercial-scale technologies, all for the benefit of its customers. By providing financial incentives to the energy sector that reduce risks associated with project financing and technical challenges for emerging clean coal technologies, the government: (a) supports the verification of commercial readiness leading toward the long-term objective of transitioning the nation's existing fleet of electric power plants to more efficient, environmentally sound, and cost-competitive facilities; and (b) facilitates the adoption of technologies that can meet more stringent environmental regulation through more efficient power generation, advanced environmental controls, and production of environmentally attractive energy carriers and byproduct utilization.

DOE selects projects for CCPI funding in a series of rounds, each of which starts with a Funding Opportunity Announcement (FOA) that asks project proponents to submit applications for federal cost-sharing for their demonstration projects. DOE issued the first CCPI FOA (Round 1) in March 2002 and a second FOA (Round 2) in February 2004. These funding opportunities focused on projects involving advanced coal-based power generation, including gasification, efficiency improvements, optimization through neural networking, environmental and economic improvements, and mercury control. For Round 3, DOE issued a Financial Assistance FOA on August 11, 2008 (DE-PS26-08NT43181) to solicit applications and subsequently issued Amendment 005 (as DE-FOA-0000042) on June 9, 2009, to reopen the FOA and provide a second closing date (August 24, 2009) for additional applications. Projects receiving awards under the amended FOA could be funded, in whole or in part, with funds appropriated by the American Recovery and Reinvestment Act of 2009, Public Law 111-5.

Applications for demonstrations under CCPI Round 3 were evaluated against specific programmatic criteria:

- Technology merit, technical plan, and site suitability;
- Project organization and project management plan;
- Commercialization potential;
- Funding plan;
- Financial business plan.

Evaluations against these criteria represented the total evaluation scoring. However, the selection official also considered the results of the environmental evaluation and the applicant's budget information and financial management system, as well as program policy factors, in making final selections.

As a Federal agency, DOE must comply with NEPA (42 U.S.C. §§ 4321 et seq.) by considering potential environmental issues associated with its actions prior to deciding whether to undertake these actions. The environmental review of applications received in response to the CCPI Round 3 FOA was conducted pursuant to Council on Environmental Quality Regulations (40 Code of Federal Regulations (CFR) Parts 1500 - 1508) and DOE's NEPA Implementing Procedures (10 CFR Part 1021), which provide directions specific to procurement actions that DOE may undertake or fund before completing the NEPA process.

PURPOSE AND NEED

The purpose and need for DOE's selections of projects under the CCPI Program are to satisfy the responsibility Congress imposed on the Department to demonstrate advanced coal-based technologies that can generate clean, reliable, and affordable electricity in the United States.

The specific objectives of the Round 3 FOAs were:

- The CO_2 capture process must operate at a CO_2 capture efficiency of at least 90 percent;
- Progress is made toward carbon capture and sequestration (CCS) at less than a 10 percent increase in the cost of electricity for gasification systems and less than 35 percent increase for combustion and oxy-combustion systems;
- Progress is made toward CCS of 50 percent of plant CO_2 output at a scale sufficient to evaluate the full impact of the carbon capture technology on plant operations, economics, and performance; and
- At least 300,000 tons per year of CO_2 emissions from the demonstration plant must be captured and sequestered or put to beneficial use.

ALTERNATIVES

DOE received eleven (11) applications in response to the initial FOA (issued August 11, 2008) for CCPI-3, all of which were determined to have met the mandatory eligibility requirements listed in the FOA. The applications covered a wide geographic range, including sites in fourteen different states representing nearly every region of the country. In response to the reopened FOA (issued June 9, 2009), DOE received thirty eight (38) applications, of which twenty five (25) were determined to have met the mandatory eligibility requirements listed in the FOA. The requirements for the reopened FOA were the same as for the initial. The twenty five applications offered projects involving sites in nineteen different states representing nearly all geographic regions of the country. Several applicants in the initial FOA also resubmitted modified applications in response to the reopened FOA. The applications were evaluated against technical, financial and environmental factors. The criteria for evaluating applications received under CCPI-3 were published in the FOA. The technical and financial evaluations resulted in separate numerical scores; the environmental evaluation, while not scored, was considered in making selections. Each applicant was required to complete and submit a standard environmental questionnaire for each site proposed in its application.

The evaluations focused on the technical description of the proposed project, financial plans and budgets, potential environmental impacts, and other information that the applicants submitted. Following reviews by technical, environmental and financial panels and a comprehensive assessment by a merit review board, a DOE official selected those projects that best met the CCPI program's purpose and need. By broadly soliciting proposals to meet the programmatic purpose and need for DOE action and by evaluating the potential environmental impacts associated with each proposal before selecting projects, DOE considered a reasonable range of alternatives for meeting the purpose and need of the CCPI Round 3 solicitation.

For the initial FOA, applications were divided into three broad categories:

- Retrofit of CCS to an existing integrated gasification combined cycle (IGCC) facility or to an IGCC facility under construction;
- Retrofit of CCS to an existing pulverized coal (PC)-fired facility; and
- Construction and operation of new IGCC or Fluidized Bed Combustion (FBC) facilities with integrated CCS.

DOE received no less than two applications in each of the above groupings, which provided DOE with a range of reasonable alternatives for meetings the Department's need to demonstrate, at a commercial scale, new technologies that capture CO_2 emissions from coal-based power plants and either sequester the CO_2 or put it to beneficial reuse. The applications included demonstration of CCS integrated into new facilities using advanced technologies for power generation, as well as retrofits of CCS to existing facilities or ones already under construction, including both advanced and conventional technologies for power generation.

For the reopened FOA, DOE divided the applications into four groups, because of the larger number of submissions received:

- Retrofit of CCS to an existing plant (already permitted and operating);
- Retrofit of CCS to a planned or authorized power plant (but not yet constructed or operating);
- Construction and operation of a new power plant with CCS on an existing industrial site; and
- Construction and operation of a new power plant with CCS on an undeveloped site.

DOE received no less than four applications in each of the above groupings.

ENVIRONMENTAL REVIEW

DOE assembled environmental review teams to assess all applications that met the mandatory requirements. The review teams considered twenty (20) resource areas that could potentially be impacted by the projects proposed under CCPI-3. These resource areas consisted of:

Aesthetics	Floodplains	Soils
Air Quality	Geology	Surface Water
Biological Resources	Ground Water	Transportation and Traffic
Climate	Human Health and Safety	Utilities
Community Services	Land Use	Wastes and Materials
Cultural Resources	Noise	Wetlands
Environmental Justice	Socioeconomics	

The review teams were composed of environmental professionals with experience evaluating the impacts of power plants and energy-related projects, and with expertise in the resource areas considered by DOE. The review teams considered the information provided as part of each application, which included narrative text, worksheets, and the environmental questionnaire(s) for the site(s) proposed by the applicant. In addition, reviewers independently verified the information provided to the extent practicable using available sources commonly consulted in the preparation of NEPA documents, and conducted preliminary analyses to identify the potential range of impacts associated with each application. Reviewers identified both direct and indirect, as well as short-term impacts, which might occur during construction and start-up, and long-term impacts, which might occur over the expected operational life of the proposed project and beyond. The reviewers also considered any mitigation measures proposed by the applicant and any reasonably available mitigation measures that may not have been proposed.

Reviewers assessed the potential for environmental issues and impacts using the following characterizations:

- **Beneficial** – Expected to have a net beneficial effect on the resource in comparison to baseline conditions.

- **None (negligible)** – Immeasurable or negligible in consequence (not expected to change baseline conditions).
- **Low** – Measurable or noticeable but of minimal consequence (barely discernable change in baseline conditions).
- **Moderate** – Adverse and considerable in consequence but moderate and not expected to reach a level of significance (discernable, but not drastic, alteration of baseline conditions).
- **High** – Adverse and potentially significant in severity (anticipated substantial changes or effects on baseline conditions that might not be mitigable).

Applications in Response to the Initial FOA

Based on the technologies and sites proposed, none of the applications for the initial FOA were deemed to have a high potential for adverse impacts in nineteen of the twenty resource areas. However, four applications could have a potential for high adverse impacts to biological resources. The following impacts by resource area were considered in the selection of candidates for award:

Aesthetics – No impacts would be expected for one project at an existing power plant. Low to moderate impacts would be expected for other existing facilities or facilities to be constructed. Impacts ranged from temporary impacts during construction to new construction within the line-of-sight of public property, including nearby roads and highways.

Air Quality – Low to moderate impacts would be expected from emissions of criteria pollutants from new sources and fugitive emissions of dust. Compliance with Prevention of Significant Deterioration increments would be required for three projects; and new source reviews would be required for four projects. Increased emissions of volatile organic compounds (VOCs) and ammonia would be expected for more than half of the projects. Some increase in cooling tower drift could be expected for two projects.

Biological Resources – Four applications could potentially impact threatened or endangered species or their critical habitat, waterfowl and other migratory bird flyways or their crucial habitat, or wildlife refuges either because of new plant construction or installation of pipelines for CO_2 transport. No impacts were expected for two projects at existing plants. Low to moderate potential impacts would be expected for five applications.

Climate – No impacts would be expected for four projects at existing power plants. Low to moderate impacts would be expected for other existing facilities or facilities to be constructed. Impacts ranged from potential operational impacts from severe weather to localized increases in fogging or icing. Successful demonstration of CCS could contribute to reduced carbon footprints of fossil-fuel power plants.

Community Services – No impacts would be expected at the sites of two existing plants. Low to moderate impacts would be expected for the remaining applications. Generally, projects anticipating a larger temporary workforce during construction would be expected to place a higher demand on community services – particularly in smaller, more rural communities where currently existing community services are more limited.

Cultural Resources – No impacts would be expected at three existing facilities. Low to moderate impacts would be expected for the remaining applications. Potential impacts include tribal concerns over pipeline routes. Impacts would vary with the extent of known tribal claims and their proximity to the proposed project or pipeline route.

Environmental Justice – No impacts would be expected for five applications with no environmental justice populations present. There is a moderate potential for environmental justice issues at all but one of the remaining sites either because of environmental justice populations near the proposed site or along a

proposed pipeline route. Potential impacts at the remaining site are expected to be low because of more limited environmental justice populations in the project area.

Floodplains – No impacts would be expected for two proposed projects. Low to moderate potential impacts during construction or pipeline routing would be expected for the remaining proposed projects.

Geology – The potential for low to moderate impacts exists for all applications either from CO_2 injection into saline aquifers or use for enhanced oil recovery. Some impacts could be expected from increased demand for coal if such demand contributes to opening new coal mines or expanding existing mines.

Ground Water – No impacts would be expected for one application involving an existing facility. Low to moderate impacts could be expected for the other applications. Impacts could include displacement of saline waters in reservoirs targeted for CO_2 injection or loss of CO_2 containment should injection pressures be too high.

Human Health and Safety – Potential impacts would be low to moderate and consist mainly of hazards associated with construction. The level of risk is generally related to the size and complexity of the planned construction. There could also be risk to human health and safety from loss of containment of CO_2 during transport and injection. This risk is present for all applications and generally varies from low to moderate with distance and population density along the CO_2 transport route where shorter routes through sparsely populated areas would have a lower risk than longer routes through regions of higher population.

Land Use – No impacts were identified for applications at existing facilities where the proposed project would not increase the footprint of the existing plant. Low to moderate impacts would be expected for applications proposing new construction. The level of potential impacts would generally be higher for new facilities on land currently used for other than industrial purposes. The assessment of impacts included both the plant site, sequestration site, and required pipeline routes for CO_2 transport.

Noise – No impacts would be expected for one project at an existing power plant. Low to moderate impacts could result from increases to ambient noise during construction and operation. Impacts would generally vary with distance and population density.

Socioeconomics – Expected impacts would be low for all applications. All applications would provide some additional employment during construction and operations. Most employment opportunities would be in the local area.

Soils – No impacts would be expected for one project at an existing power plant. Low impacts related to increased erosion during construction would be expected for other existing facilities requiring new pipelines or new facilities to be constructed.

Surface Water – Low to moderate impacts, including increased demand for cooling water and discharges to surface waters, would be expected for most of the applications. Some applications offered plans to maximize on-site reuse of water. Sediment control during construction was also considered.

Transportation and Traffic – Low to moderate impacts to traffic flow would be expected for all applications. Impacts would generally be higher during construction. Impacts expected during operations vary depending on increased rail or truck traffic. Projects in more rural areas would generally have lower impacts than new or existing facilities in more urban areas, where some increases in travel time could be expected during periods of peak construction.

Utilities – Low to moderate impacts would be expected for all applications. These would include an energy penalty for CCS retrofitted to existing power plants and increased demand for natural gas, potable water and wastewater treatment and disposal. Expected impacts would be higher for new plants proposed at sites not previously serviced by public utilities.

Wastes and Materials – Low to moderate impacts would be expected for all applications. Applications for projects that would include associated construction and operation of a new power plant would generally involve more material and waste impacts than would retrofits to existing plants.

Wetlands – No wetlands are located on the preferred site for one application. The potential for low to moderate impacts could be expected to small jurisdictional wetlands located on the proposed site or near proposed pipeline routes.

Applications in Response to the Reopened FOA

Based on the technologies and sites proposed, none of the applications for the reopened FOA were deemed to have a high potential for adverse impacts in sixteen of the twenty resource areas. All applications that would involve construction and operation of a new power plant were considered to have potentially high air quality impacts based on the need for new source permitting. Four applications were determined to have high potential for adverse impacts on biological resources; three applications were determined to have high potential for adverse impacts on surface waters; and one was determined to have high potential for adverse impacts on floodplains. The following impacts by resource area were considered in the selection of candidates for award:

Aesthetics – Impacts would be negligible for six projects that would involve retrofit or new construction at existing power plants or industrial sites. Low to moderate impacts would be expected for other retrofits to existing facilities or new facilities to be constructed. Moderate adverse impacts would result in the case of four applications involving construction of new power plants that would introduce line-of-sight impacts from superstructure and exhaust stacks where similar structures do not exist.

Air Quality – Impacts would result from emissions of criteria pollutants from new sources and fugitive emissions of dust. Twelve projects would have potentially high adverse impacts relating to emissions from proposed new plants. Lowest potential impacts would result from retrofits to existing or already-planned power plants.

Biological Resources – Four applications could potentially impact threatened or endangered species or their critical habitat, waterfowl and other migratory bird flyways, crucial habitat, or wildlife refuges either because of new plant construction or installation of pipelines for CO_2 transport. Moderate potential impacts would be expected for seven applications based on the locations of pipelines and other features. Low potential impacts would be expected for fourteen applications.

Climate – All applications were considered to present net beneficial effects on climate, because successful demonstration of CCS could contribute to reduced carbon footprints for fossil-fuel power plants. Potential adverse climate effects on plant operations were considered more from the perspective of engineering and design challenges to plant construction and maintenance.

Community Services – Negligible to low impacts would be expected for twenty applications. Five applications were determined to have potential for moderate impacts based on the size of the proposed projects to be located in smaller, more rural communities where existing community services are more limited.

Cultural Resources – Low potential for impacts would be expected for seventeen applications, including most retrofit projects. Moderate impacts would be expected for eight applications that could involve construction of structures or pipelines in proximity to tribal areas or historic sites.

Environmental Justice – Negligible to low potential for impacts would be expected for twenty three applications involving locations where environmental justice populations are not present. There is a moderate potential for environmental justice issues relating to the two remaining applications because of low-income or minority populations near the proposed site or along a proposed pipeline route.

Floodplains – One application would involve construction of structures within a 100-year floodplain with high potential for adverse impacts. Four applications were determined to have moderate potential impacts

during construction of structures or pipelines. Negligible to low potential for impacts would be expected for twenty applications that do not directly involve actions in floodplains.

Geology – Negligible to low potential for impacts would be expected for twenty two applications based on CO_2 injection into saline aquifers or use for enhanced oil recovery. Three applications would have potential for moderate impacts based on limited information and uncertainties relating to target formations for proposed CO_2 injection.

Ground Water – Negligible to low potential for impacts would be expected for eighteen applications. Moderate impacts could be expected for the seven other applications relating to limited information about groundwater capacity to supply plant operations or the potential effects on groundwater sources from required dewatering operations.

Human Health and Safety – Moderate potential for impacts would be expected for seventeen applications; low potential would be expected for eight. The level of risk is generally related to the size and complexity of the planned construction. There could also be risk to human health and safety from loss of containment of CO_2 during transport and injection. This risk is present for all applications and generally varies from low to moderate with distance and population density along the CO_2 transport route.

Land Use – Negligible to low potential for impacts would be expected for twenty applications, mainly including projects involving retrofit at existing facilities or new construction on industrial sites. Moderate potential for impacts would be expected for five applications particularly requiring new construction on land currently used for other than industrial purposes.

Noise – Negligible to low potential for impacts from increases to ambient noise during construction and operation for all applications. Moderate potential for impacts could occur in the cases of five applications if coal would be transported by truck instead of by rail.

Socioeconomics – All applications were determined to provide beneficial impacts to the respective host areas based on economic multipliers associated with project spending as well as additional employment during construction and operations.

Soils – Low potential for impacts would be expected for twenty applications, mainly including projects involving retrofit at existing facilities or new construction on industrial sites. Moderate potential for impacts would relate to increased erosion during construction of structures or pipelines for five applications.

Surface Water – Three applications could have high potential for impacts attributable to substantial planned withdrawals from surface waters for plant operations, construction of pipelines along impaired surface waters, or planned discharges to surface waters. Moderate potential for impacts would be expected for eight applications; low potential would be expected for fourteen, including most retrofit projects.

Transportation and Traffic – Negligible to low potential for impacts could result from increases in traffic during construction and operation for all applications. Moderate potential for impacts could occur in the cases of five applications if coal would be transported by truck instead of by rail.

Utilities – Low potential for impacts would be expected for twelve applications that would not require extensive new pipelines and transmission lines. Thirteen applications would have potential for moderate impacts based on the need for longer pipeline and/or transmission line construction.

Wastes and Materials – Low potential for impacts would be expected for nine applications, including most projects proposing retrofits. Sixteen applications would have potential for moderate impacts based on the development of new facilities or new processes at existing facilities that would increase demands for management of materials and wastes.

Wetlands – The potential for negligible to low impacts could be expected for nineteen applications. Six applications would have potential for moderate impacts based on the lengths and routing of utility features and the potential for encountering wetlands along corridors.

CONCLUSION

The applications received in response to the CCPI-3 FOAs provided reasonable alternatives for accomplishing the Department's purpose and need to satisfy the responsibility Congress imposed on DOE to demonstrate advanced coal-based technologies that can generate clean, reliable and affordable electricity in the United States. The alternatives available to DOE would also meet the Department's goal of accelerating the deployment of carbon capture and storage. An environmental review was part of the evaluation process of these applications. DOE prepared a critique containing information from this environmental review. That critique, summarized here, contained summary as well as project-specific environmental information. The critique was made available to, and considered by, the selection official before selections for financial assistance were made.

DOE determined that selecting two applications in response to the initial FOA, and three applications in response to the reopened FOA, would meet its purpose and need. The following provides a list of the projects selected, their locations, brief descriptions of the projects, and the anticipated level of NEPA review:

CCPI-3 initial FOA:

- Hydrogen Energy California Project (Kern County, CA). Hydrogen Energy International LLC, a joint venture owned by BP Alternative Energy and Rio Tinto, would design, construct, and operate an IGCC power plant that would take blends of coal and petroleum coke, combined with non-potable water, and convert them into hydrogen and CO_2. The CO_2 would be separated from the hydrogen using the methanol-based Rectisol process. The hydrogen gas would be used to fuel a power station, and the CO_2 would be transported by pipeline to nearby oil reservoirs where it would be injected for storage and used for enhanced oil recovery. The project, which would be located in Kern County, California, would capture more than 2,000,000 tons per year of CO_2. The anticipated level of NEPA review for this project is an EIS.
- Basin Electric Power Cooperative - Post Combustion CO_2 Capture Project - Basin Electric Power Cooperative proposed to add CO_2 capture and sequestration (CCS) to Basin Electric's existing Antelope Valley Station, located near Beulah, N.D. Negotiations are still ongoing to define the project scope and schedule.

CCPI-3 reopened FOA:

- Mountaineer Carbon Dioxide Capture and Storage Demonstration (New Haven, WV). American Electric Power (AEP) would design, construct, and operate a chilled ammonia process that is expected to effectively capture at least 90 percent of the CO_2 (1.5 million metric tons per year) in a 235 megawatt (MW) flue gas stream at the existing 1,300 MW Appalachian Power Company (APCo) Mountaineer Power Plant near New Haven, WV. The captured CO_2 would be treated, compressed, and then transported by pipeline to proposed injection sites located near the capture facility. During the operation phase, AEP proposed to permanently store the entire amount of captured CO_2 in two separate saline formations located approximately 1.5 miles below the surface. The project team includes AEP, APCo, Schlumberger Carbon Services, Battelle Memorial Institute, CONSOL Energy, Alstom, and an advisory team of geologic experts. The anticipated level of NEPA review for this project is an EIS.
- The Texas Clean Energy Project. Summit Texas Clean Energy, LLC (Bainbridge Island, WA) would integrate Siemens gasification and power generating technology with carbon capture technologies to effectively capture 90% of the carbon dioxide (2.7 million metric tons per year) at a 400 MW plant to

be built near Midland-Odessa, TX. The captured CO_2 would be treated, compressed and then transported by CO_2 pipeline to oilfields in the Permian Basin of West Texas, for use in enhanced oil recovery (EOR) operations. The Bureau of Economic Geology (BEG) at the University of Texas would design and assure compliance with a state-of-the-art CO_2 sequestration monitoring, verification, and accounting program. The anticipated level of NEPA review for this project is an EIS.

- The Parish Post-Combustion CO_2 Capture and Sequestration Project (Thompsons, Texas). NRG Energy, Inc. (NRG) would design, construct, and operate a system that would capture and store approximately 400,000 tons of carbon CO_2 per year. The system would employ Fluor's Econamine FG Plus technology to capture at least 90 percent of the CO_2 from a 60 MW flue gas stream of the 617-MW Unit 7 at the W.A. Parish Generating Station located in Thompsons, Texas. Fluor's Econamine FG Plus CO_2 capture system features advanced process design and techniques, which lower the energy consumption of existing amine-based CO_2 capture processes by more than 20 percent. The captured CO_2 would be compressed and transported by pipeline to a mature oil field for injection into geologic formations for permanent storage through an enhanced oil recovery operation. The site would be monitored to track the migration of the CO_2 underground and to establish the permanence of sequestration. DOE is in the process of evaluating the appropriate level of NEPA documentation for this project.

APPENDIX B

PUBLIC SCOPING SUMMARY REPORT

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Introduction

In accordance with its NEPA implementing procedures, as specified in 10 CFR 1021, the U.S. Department of Energy (DOE) initiated the public scoping process November 14, 2011 with publication of a Notice of Intent (NOI) to prepare the *W.A. Parish Post-Combustion CO_2 Capture and Sequestration (PCCS) Project Environmental Impact Statement (EIS)* in the Federal Register. The NOI (Attachment 1) and subsequent newspaper notices invited the public to comment on the proposed scope and content of the EIS. DOE also held two public scoping meetings for this proposed project. The following document describes the process followed and the results.

Notice of Intent

The U.S. Department of Energy (DOE) published a Notice of Intent (NOI) to prepare the *W.A. Parish Post-Combustion CO_2 Capture and Sequestration (PCCS) Project Environmental Impact Statement (EIS)* in the Federal Register on Monday, November 14, 2011 (FR Vol. 76, No. 219, 70429). The NOI (Attachment 1) initiated the public scoping period, in which members of the public were invited to comment on the proposed scope and content of the EIS. Comments and suggestions were requested to be received within the 30-day scoping period and no later than December 14, 2011. The NOI described the proposed project and identified the dates and times for the two public scoping meetings.

Newspaper Notices

In addition to the NOI published in the Federal Register (FR Vol. 76, No. 219, 70429), DOE published notices in four local newspapers between November 16, 2011 and November 30, 2011 (see Table 1). These public notices advertised the public scoping meetings and solicited public comments. Copies of the notices and the Affidavits of Publication for these notices are provided in Attachment 2.

Table 1. Dates and Publications for Advertisement

Newspaper	Dates of Publication
Fort Bend Herald	November 16 and 27, 2011
El Campo Leader-News	November 16 and 26, 2011
Jackson County Herald-Tribune	November 16 and 30, 2011
La Sabasta (Southwest edition, in Spanish)	November 17 and 24, 2011

Public Scoping Meetings

DOE held two public scoping meetings to provide information to the public regarding the scope of the EIS for the proposed Parish PCCS Project, including the purpose of the proposed project, the range of alternatives, and the proposed project schedule. The meetings also offered the public an opportunity to comment on and ask questions about the proposed project. The first meeting was held on November 30, 2011 at Needville High School (100 Fritzella Road, Needville, Texas, 77461). The second meeting was held on December 1, 2011 at the Jackson County Services Building (411 North Wells Street, Edna, Texas, 77957).

A total of eight individuals attended the public scoping meeting on November 30, 2011 in Needville, Texas. On December 1, 2011, two individuals, both elected officials, attended the public scoping meeting in Edna, Texas. Lists of attendees are provided in Attachment 3.

Each of the two public scoping meetings began with a two-hour open house from 5:00 to 7:00 pm. During this time, attendees were provided access to informational handouts and posters about DOE's Proposed Action and NRG's proposed project, and comment forms to assist with submittal of comments. Personnel from DOE; NRG Energy, Inc./Petra Nova LLC (NRG/Petra Nova); the Texas Bureau of Economic Geology (BEG); and URS Group, Inc. (URS) were available to sign in attendees and to answer questions about the project.

The following displays were available for viewing at the Public Scoping Meetings:

- a project location map showing potential pipeline route alternatives,
- an explanation of the National Environmental Policy Act (NEPA) process,
- a schematic of the pipeline construction process, and
- a schematic of the carbon capture and enhanced oil recovery process.

In addition, detailed maps of the project area were available for viewing. The following handouts were made available for meeting attendees:

- a project fact sheet explaining the NEPA process and the DOE Clean Coal Power Initiative (CCPI);
- a Petra Nova fact sheet titled, "You're Looking at the Beginning of a Smarter, Brighter Energy Future;"
- a Petra Nova fact sheet titled, "The West Ranch CO_2 – EOR Project;"
- a Petra Nova fact sheet titled, "W.A. Parish CO_2 Capture Project;"
- a Petra Nova fact sheet titled, "CO_2 Enhanced Oil Recovery;"
- a copy of the NOI; and
- comment cards (in Spanish and English).

The open house was followed by a formal presentation beginning at 7:00 pm. DOE and NRG

representatives explained the proposed Parish PCCS Project, the NEPA process, DOE's Clean Coal Power Initiative Program, and the ways in which the public could submit comments on the scope of the EIS. Copies of posters and handouts provided at the public scoping meetings are provided in Attachment 4. A copy of the presentation is provided in Attachment 5.

After the formal presentation, the public was invited to give verbal comments at the microphone. A court reporter was present at the meeting to document verbal comments for the project record. Transcripts of the formal portions of both public scoping meetings are provided in Attachment 6. The formal meetings adjourned at approximately 9:00 pm on November 30, 2011 and at approximately 8:45 pm on December 1, 2011.

All meeting attendees were invited to provide comments, either written or verbal, on the proposed scope of the EIS. Those attendees wishing to provide oral comments were given an opportunity to sign up to do so. Comment sheets were made available for all attendees to provide written comments either at the meeting, or to be faxed or mailed after the meeting. An email address, a postal address, a fax number, and a toll-free telephone number were provided. In addition, individuals could request to receive the Draft EIS and/or the Final EIS or Summary (hard copy of the full EIS or a hard copy summary plus a compact disk (CD) that contains the entire EIS).

Presentation Summary

Mr. Mark Lusk, the DOE NEPA Project Manager for the proposed project, welcomed the meeting participants. He explained his role in the project and the purpose of the public scoping meeting. Mr. Lusk also described the NEPA process for the proposed project, including a preliminary schedule for major NEPA milestones. Mr. Ted McMahon, the DOE Project Manager, provided some background on selection of the Parish PCCS Project and provided an overview of the Clean Coal Power Initiative (CCPI, the DOE program that would provide federal funding for the proposed project.

Mr. Jon Barfield of NRG/Petra Nova, with input from Mr. Tony Armpriester, also of NRG/Petra Nova, began his discussion by explaining why NRG/Petra Nova is pursuing the proposed project, including fulfillment of CCPI goals and benefits to NRG and the community. Mr. Barfield described the scope of the proposed project, including process overviews for the following project components: a CO_2 capture system at the W. A. Parish Generating Station in Fort Bend County; a pipeline running through Fort Bend, Wharton, and Jackson Counties; and enhanced oil recovery (EOR) operations at the West Ranch oil field in Jackson County. Mr. Barfield went on to review the project schedule, noting that the NEPA process is scheduled for completion by the end of 2012. Next would come detailed engineering and construction, followed by the commercial demonstration of the project in 2015.

Mr. Lusk concluded the presentation by reminding participants of the comment submission process and asking for any comments that attendees wanted to deliver verbally or directly to the court reporter.

A copy of the presentation described above is provided in Attachment 5. Transcripts of the presentations given at both meetings are included in Attachment 6.

Public Comments and Concerns

Four individuals spoke at the November 30, 2011 public scoping meeting in Needville, Texas. Their comments are summarized below. A complete transcript of comments made during the public meeting is provided in Attachment 6.

- **Mr. Mike Trahan** asked if NRG would be the sole owner of the pipeline and whether NRG would be able to use eminent domain to obtain land where they are making crossovers from one existing right-of-way to another existing right-of-way.
- **Mr. Richard Lord of the Gulf Coast District Council** said that that he had heard that there has been difficulty obtaining the payrolls from DOE-funded projects for review. Mr. Lord asked if there would be a certified payroll and whether it would available for review. Mr. Lord also asked how much DOE funding would be available for this project.
- **Mr. Josh Grable** noted that the area had undergone a severe drought and asked how much water the expansion of the W.A. Parish Plant would use.
- **Mr. Mark Baker, a business agent for the pipefitters local,** expressed his concerns that the highest quality of workers would be available for the project. Mr. Baker also asked if the project would have an impact on the cost of electricity to the consumer.

No verbal comments were delivered at the December 1, 2011, meeting in Edna, Texas and no written comments were received during the scoping period (i.e., from November 14, 2011 to December 14, 201).

ATTACHMENT 1

NOTICE OF INTENT

INTENTIONALLY LEFT BLANK

19. LTG William Phillips, Deputy Assistant Secretary of the Army (Acquisition, Logistics and Technology), Office of the Assistant Secretary of the Army (Acquisition, Logistics and Technology).

20. Mr. Wimpy D. Pybus, Deputy Assistant Secretary of the Army for Acquisition, Policy and Logisitics, Office of the Assistant Secretary of the Army (Acquisition, Logistics, and Technology).

21. Mr. Craig R. Schmauder, Deputy General Counsel (Installation, Environment and Civil Works), Office of the General Counsel.

22. Mr. Karl F. Schneider, Principal Deputy to the Assistant Secretary of the Army (Manpower and Reserve Affairs), Office of Assistant Secretary of the Army, Manpower and Reserve Affairs.

23. Mr. Brian M. Simmons, Executive Technical Director/Deputy to the Commander, United States Army Test and Evaluation Command.

24. Ms. Heidi Shyu, Acting Assistant Secretary of the Army (Acquisition, Logistics and Technology), Office of the Assistant Secretary of the Army (Acquisition, Logistics and Technology).

25. Mr. Lawrence Stubblefield, Deputy Assistant Secretary of the Army (Diversity and Leadership), Office of the Assistant Secretary of the Army (Manpower and Reserve Affairs).

26. MG Merdith B. W. Temple, Deputy Commanding General, United States Army Corps of Engineers.

27. LTG Dennis L. Via, Deputy Commanding General, United States Army Material Command.

Brenda S. Bowen,

Army Federal Register Liaison Officer.

[FR Doc. 2011–29272 Filed 11–10–11; 8:45 am]

BILLING CODE 3710–08–P

DEPARTMENT OF ENERGY

Notice of Intent To Prepare an Environmental Impact Statement and Notice of Potential Floodplain and Wetlands Involvement for the W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project, Southeastern TX

AGENCY: Department of Energy.

ACTION: Notice of Intent to Prepare an Environmental Impact Statement and Notice of Potential Floodplain and Wetlands Involvement.

SUMMARY: The U.S. Department of Energy (DOE) announces its intent to prepare an environmental impact statement (EIS) pursuant to the National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. 4321 *et seq.*), the Council on Environmental Quality's (CEQ) NEPA regulations (40 CFR parts 1500–1508), and DOE's NEPA implementing procedures (10 CFR part 1021), to assess the potential environmental impacts of providing financial assistance for a project proposed by NRG Energy, Inc (NRG). DOE selected NRG's proposed W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project (Parish PCCS Project) for a financial assistance award through a competitive process under the Clean Coal Power Initiative (CCPI) program. NRG would design, construct and operate a commercial-scale carbon dioxide (CO_2) capture facility at its existing W.A. Parish Generating Station (Parish Plant) in Fort Bend County, Texas; deliver the CO_2 via a new pipeline to the existing West Ranch oil field in Jackson County, Texas for use in enhanced oil recovery (EOR) operations; and demonstrate monitoring techniques to verify the permanence of geologic CO_2 storage.

The project would use an amine-based post-combustion technology to capture 90 percent (approximately 1.6 million tons) of the CO_2 annually from a 250-megawatt equivalent (MWe) flue gas slip stream taken from the 617 megawatt (MW) Unit 8 at the Parish Plant. Captured CO_2 would be dried, compressed, and transported about 80 miles in a new pipeline to an existing oil field where it would be used for EOR. The project would demonstrate an integrated commercial-scale deployment of post-combustion CO_2 capture technology for use in EOR operations and long-term geologic storage. DOE selected this project to receive a financial assistance award through a competitive process under Round 3 (second selection phase) of the CCPI program.

The EIS will further inform DOE's decision on whether to provide financial assistance to NRG for the Parish PCCS Project. DOE proposes to provide NRG with up to $355 million of the overall project cost, which would constitute approximately 42 percent of the estimated $845 million total (in 2010 dollars). The project would further a specific objective of Round 3 of the CCPI program by demonstrating advanced coal-based technologies that capture and sequester, or put to beneficial use, CO_2 emissions from coal-fired power plants.

The purposes of this Notice of Intent (NOI) are to: (1) Inform the public about DOE's proposed action and NRG's proposed project; (2) announce the public scoping meetings; (3) solicit comments for DOE's consideration regarding the scope and content of the EIS; (4) invite those agencies with jurisdiction by law or special expertise to be cooperating agencies in preparation of the EIS; and (5) provide notice that the proposed project may involve potential impacts to floodplains and wetlands.

DOE does not have regulatory jurisdiction over the Parish PCCS Project, and its decisions are limited to whether and under what circumstances it would provide financial assistance to the project. As part of the EIS process, DOE will consult with interested federal, state, regional and local agencies and Native American tribes.

DATES: DOE invites comments on the proposed scope and content of the EIS. Comments must be received within 30 days after publication of this NOI in the **Federal Register** to ensure consideration. In addition to receiving comments in writing and by email [See **ADDRESSES** below], DOE will conduct public scoping meetings to provide government agencies, private-sector organizations and the general public with opportunities to present oral and written comments or suggestions with regard to DOE's proposed action, alternatives, and the potential impacts of NRG's proposed project for DOE consideration during development of the EIS. The public scoping meetings will be held at the Needville High School, 100 Fritzella Road, in Needville, Texas, on Wednesday, November 30, 2011; and at the Jackson County Services Building, 411 North Wells Street, in Edna, Texas, on Thursday, December 1, 2011.

Oral comments will be heard during the formal portion of the scoping meetings beginning at 7 p.m. [See Public Scoping Process.] The public is also invited to informal sessions beginning at 5 p.m. at the same locations to learn more about the project and the proposed action. Representatives from DOE and NRG will be present at the informal sessions to discuss the proposed project, the CCPI program, and the EIS process. Displays and other information about DOE's proposed action and NRG's proposed project will also be available.

ADDRESSES: Written comments on environmental concerns about the project, overall scope of the EIS, or requests to participate in the public scoping meetings should be addressed to Mr. Mark W. Lusk, U.S. Department of Energy, National Energy Technology Laboratory, 3610 Collins Ferry Road, P.O. Box 880, Morgantown, WV 26507–0880. Individuals and organizations who would like to provide oral or electronic comments should contact Mr.

Lusk by postal mail at the above address; telephone ((412) 386–7435, or toll-free 1–(877) 812–1569); fax (304) 285–4403); or electronic mail (*Parish.EIS0473@netl.doe.gov.*)

FOR FURTHER INFORMATION CONTACT: For further information about this proposed project, contact Mr. Lusk, as described above. For general information on the DOE National Environmental Policy Act (NEPA) process, contact Ms. Carol M. Borgstrom, Director, Office of NEPA Policy and Compliance (GC–54), U.S. Department of Energy, 1000 Independence Avenue SW., Washington, DC 20585; telephone ((202) 586–4600); fax (202) 586–7031); or leave a toll-free message (1–(800) 472–2756).

SUPPLEMENTARY INFORMATION:

Background

The CCPI program was established in 2002 as a government and private sector partnership to increase investment in clean coal technology. Through cooperative agreements with its private sector partners, the program advances clean coal technologies to commercialization. Congress established criteria for projects receiving financial assistance under this program in Title IV of the Energy Policy Act of 2005 (Pub. L. 109–58; EPAct 2005). Under this statute, CCPI projects must ''advance efficiency, environmental performance and cost competitiveness well beyond the level of technologies that are in commercial service'' (Pub. L. 109–58, Sec. 402(a)). On February 17, 2009, the *American Recovery and Reinvestment Act of 2009* (Pub. L. 111–5, 123 Stat. 115) appropriated $3.4 billion to DOE for Fossil Energy Research and Development. DOE intends to use a significant portion of these funds to provide financial assistance to CCPI projects.

The CCPI program selects projects for its government-private sector partnerships through an open and competitive process. DOE issues funding opportunity announcements specifying the types of projects it seeks, and invites submission of applications. DOE reviews applications according to the criteria specified in the funding opportunity announcement; these criteria include technical, financial, environmental, and other considerations. DOE selects projects demonstrating the most promise when evaluated against these criteria, and enters into a cooperative agreement with the selected applicants. These agreements set out project objectives, obligations of the parties, and other features of the partnerships. Applicants must agree to provide at least 50 percent of their project's cost; and for most CCPI projects, the applicant's cost share is much higher.

To date, the CCPI program has conducted three rounds of solicitations and project selections. Round 1 sought projects that would demonstrate advanced technologies for power generation and improvements in plant efficiency, economics, and environmental performance. Round 2 requested applications for projects that would demonstrate improved mercury controls and gasification technology. Round 3, which DOE conducted in two phases, sought projects that would demonstrate advanced coal-based electricity generating technologies, coupled with the capture and sequestration (or beneficial use) of CO_2 emissions. DOE's overarching goal for Round 3 projects was to demonstrate technologies at commercial scale in a commercial setting that would: (1) Operate at 90 percent capture efficiency for CO_2; (2) make progress towards capture and sequestration at less than a 10 percent increase in the cost of electricity for gasification systems and a less than 35 percent increase for combustion and oxy-combustion systems; and (3) make progress towards capture and sequestration of 50 percent of the facility's CO_2 output at a scale sufficient to evaluate full impacts of carbon capture technology on a generating plant's operations, economics, and performance. The Parish PCCS Project was one of three projects selected in the second phase of Round 3. DOE entered into a cooperative agreement with NRG on May 7, 2010.

Purpose and Need for DOE Action

The purpose and need for DOE action is to advance the CCPI program by funding projects with the best chance of achieving the program's objectives as established by Congress: commercialization of clean coal technologies that advance efficiency, environmental performance, and cost competitiveness well beyond the level of technologies currently in commercial service.

DOE Proposed Action

DOE's proposed action is to provide limited financial assistance through a cooperative agreement with NRG for a new post-combustion carbon capture and compression system that would be added to the existing W.A. Parish power plant, with the captured CO_2 piped to an oil field for EOR. Under the original cooperative agreement, DOE agreed to provide approximately $167 million in cost-shared funding, or about 50 percent of the total estimated costs for a smaller project (about 60 MWe). However, the cooperative agreement also specified that NRG would perform a screening study to determine if a larger scale system can be employed to improve system economics and performance. As a result, NRG recently proposed that the technology be demonstrated at a larger scale and requested an increase in DOE funding to be applied to the total estimated $845 million project cost. DOE's proposed action for purposes of the EIS is to provide up to $355 million in cost-shared funding for this project.

The W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project

NRG's proposed project would demonstrate the commercial feasibility of a retrofit, commercial-scale CO_2 capture and compression system, coupled with use of CO_2 for enhanced oil recovery (EOR) and ultimate sequestration. NRG would design and construct a system that would capture approximately 90 percent of the CO_2 in an up to 250 MWe flue gas slip stream of the combustion exhaust gases from the existing 617 MW coal-fired Unit 8 at NRG's Parish Plant. The captured CO_2 (up to 5,475 tons per day) would be transported an estimated 80 miles in a new pipeline to be constructed by NRG. The CO_2 would be used for EOR and ultimately sequestered at the existing West Ranch oil field in Jackson County, Texas.

Proposed Carbon Capture Facility: W.A. Parish Generating Station

The proposed capture system would be constructed on NRG's 4,880-acre W.A. Parish Plant in rural Fort Bend County near the small town of Thompsons, Texas. The plant site includes four large pulverized coal-fueled power generating units, four smaller natural gas-fired units, and a 2,100-acre lake used for cooling water. The proposed project would retrofit one of the coal-fueled units (Unit 8) with a post combustion CO_2 capture system, using space available on the plant site immediately adjacent to the unit. The CO_2 capture system would use the Fluor Corporation (Fluor) advanced Econamine FG Plus^{SM} technology, with monoethanolamine as the basis for the solvent. The project demonstration period may also include tests of other amine-based solvents. A new natural gas-fired combined-cycle power plant, estimated to be 80 MW in size, would be constructed to produce the auxiliary power needed to drive the compressors and equipment of the capture system. The exhaust gases from the new combustion turbine would produce

steam to provide heat for the solvent regeneration process.

CO_2 Compression and Transport

Captured CO_2 would be compressed and transported in a new pipeline to injection sites at the West Ranch oil field, an estimated 80 miles from the proposed capture facility. The pipeline route would traverse parts of Fort Bend, Wharton and Jackson counties. The anticipated route includes mostly rural, sparsely-developed agricultural lands. NRG is currently evaluating potential pipeline routes; and plans to use existing rights-of-way and avoid sensitive resources to the greatest extent practical. Potential pipeline routes will be considered as part of the NEPA process.

CO_2 Sequestration via Enhanced Oil Recovery

The proposed project would deliver up to 1.6 million tons of CO_2 per year to the West Ranch oil field, located in Jackson County near the central Gulf Coast of Texas, to be used for EOR. The oil field has operated since 1938 and is well-characterized. However, CO_2 floods have not been previously demonstrated in this field. A joint venture between NRG and Hilcorp Energy Company would conduct the EOR operations.

Project activities eligible for cost-sharing would include: engineering and design, permitting, equipment procurement, construction, startup and demonstration. Infrastructure investments in the oil field by NRG and the costs of EOR operations would not be cost-shared by DOE and are not included in the total project cost estimates. DOE would, however, cost-share in monitoring, verification, and accounting (MVA) activities at the EOR site to demonstrate the permanence of CO_2 sequestration through EOR. Following the DOE cost-shared demonstration phase, the system would likely continue long-term commercial operations, without further DOE funding.

CO_2 Monitoring, Verification, and Accounting Program

NRG would implement a MVA program to monitor the injection and migration of CO_2 within the geologic formations. The MVA program must meet regulatory and CCPI program requirements and may consist of the following components: (1) Injection system monitoring; (2) containment monitoring (via monitoring wells, mechanical integrity testing, and other means); (3) CO_2 plume tracking via multiple techniques; (4) CO_2 injection simulation modeling; and (5) experimental techniques yet to be developed.

Proposed Project Schedule

The project proposed by NRG includes three phases: (1) Planning and conceptual design; (2) detailed engineering, procurement and construction; and (3) three years of demonstration and monitoring. NRG plans to start construction in November 2012 and begin commercial operations (demonstration phase) by 2015. The schedule is contingent on NRG receiving the necessary permits and regulatory approvals, as well as financial closing on all the necessary funding sources, including DOE's financial assistance. DOE's decision to provide financial assistance for detailed design, procurement of equipment, construction, and operations is contingent on completion of the NEPA process.

Connected and Cumulative Actions

Under the cooperative agreement between DOE and NRG, DOE would share in the cost of the carbon capture and supporting facilities at the power plant site, pipeline construction, development of monitoring wells and related facilities at the EOR site, and some of the operational costs (e.g., MVA activities) during the three-year demonstration phase. DOE will consider the potential impacts associated with connected actions, such as potential development of additional support facilities or infrastructure that would be anticipated for the proposed project.

DOE will also consider the cumulative impacts of the proposed project along with any other connected actions, including those of third parties. The cumulative impacts analysis will include an assessment of pollutant emissions (including greenhouse gas emission reductions) and other incremental impacts that, when added to past, present and reasonably foreseeable future impacts, may have significant effects on the human environment.

Alternatives, Including the Proposed Action

NEPA requires that an EIS evaluate the range of reasonable alternatives to an agency's proposed action. The range of reasonable alternatives encompasses those alternatives that would satisfy the underlying purpose and need for agency action. The purpose and need for DOE action is to advance the CCPI program by providing cost-shared funding for selected projects that have the best chance of achieving the program's objectives as established by Congress: the commercialization of clean coal technologies that advance efficiency, environmental performance, and cost competitiveness well beyond the level of technologies currently in service.

DOE's NEPA implementing procedures include a process for identifying and analyzing reasonable alternatives in the context of providing financial assistance through the competitive selection of projects proposed by entities outside the Federal Government. The range of reasonable alternatives in competitions for grants, loans, loan guarantees and other financial support is defined initially by the range of responsive proposals received by DOE. Unlike projects undertaken directly by the federal government, DOE cannot mandate what outside entities propose, where they propose their project, or how they propose to do it, beyond expressing basic requirements in the funding opportunity announcement; and these express requirements must be limited to those that further the program's objectives. DOE's decision is then limited to selecting projects from the applications that meet the CCPI program's goals.

DOE prepared an environmental critique (see 10 CFR § 1021.216) that assessed the environmental impacts and issues relating to each of the proposals received in CCPI Round 3 that met the basic eligibility requirements. The DOE selecting official considered these impacts and issues, along with other aspects of the proposals (such as technical merit and financial ability) and the program's objectives, in making awards. After DOE selects a project for an award, the range of reasonable alternatives becomes the project as proposed by the applicant, any alternatives still under consideration by the applicant or that are reasonable within the confines of the project as proposed (e.g., the locations of the processing units, pipelines, and injection sites on land proposed for the project) and a ''no action'' alternative.

DOE currently plans to evaluate the project as proposed by NRG (with and without any mitigating conditions that DOE may identify as reasonable and appropriate), alternatives to NRG's proposal that it is still considering (e.g., CO_2 capture rates and solvents, power and steam supply options, locations of alternative pipeline routes, and locations of injection and monitoring wells), and the no action alternative. The EIS may also analyze other reasonable project-specific alternatives identified by DOE (in consultation with NRG) or the public (as part of the public scoping process).

Under the no action alternative, DOE would not provide funding to NRG. In the absence of financial assistance from DOE, NRG could reasonably pursue two options. It could build the project without DOE funding; the impacts of this option would be essentially the same as those of NRG's proposed project, except any DOE-required mitigations would not be imposed. Alternatively, NRG could choose not to pursue its project, and there would be no impacts from the project. This latter option would not contribute to the goal of the CCPI program, which is to accelerate commercial deployment of advanced coal technologies that provide the United States with clean, reliable, and affordable energy. However, as required by NEPA, DOE analyzes this option as the no action alternative for the purpose of making a meaningful comparison between the impacts of DOE providing financial assistance and withholding that assistance.

Alternatives being considered by NRG related to specifics of the proposed project will also be discussed in the EIS. NRG and its partners are considering locations for the injection and monitoring wells and the pipeline corridors necessary for transportation of the CO_2.

Floodplains and Wetlands

The footprint of the proposed capture facilities and related infrastructure that would be constructed at the existing Parish Plant would be located to avoid or minimize potential impacts to wetlands or floodplains. Wetland and floodplain impacts, if any, would likely only be associated with installation of monitoring and injection wells, or the construction of CO_2 pipelines or other linear features required for this project. The CO_2 pipeline would likely need to cross the Colorado, Navidad and Lavaca rivers, as well as smaller streams along the route. DOE will identify such impacts during preparation of the EIS and, if any are identified, DOE will prepare a floodplain and wetland assessment in accordance with its regulations (10 CFR Part 1022) and include the assessment in the EIS.

Preliminary Identification of Environmental Issues

DOE intends to address the issues listed below when considering the potential impacts resulting from the construction and operation of NRG's proposed project and any connected actions. This list is neither intended to be all-inclusive, nor a predetermined set of potential impacts. DOE invites comments on the list of important issues to be considered in the EIS. The preliminary list of potentially affected resources or activities and their related environmental issues includes, but is not limited to:

- Air quality resources: potential air quality impacts from emissions during construction and operation of the proposed project on local sensitive receptors, local environmental conditions, and special-use areas, including impacts to smog and haze, impacts from dusts, and impacts from amine and greenhouse gas emissions;
- Water resources: potential impacts from water utilization and consumption, plus potential impacts from wastewater discharges;
- Infrastructure and land use: potential impacts associated with delivery of feed materials and distribution of products (*e.g.,* access roads, pipelines);
- Visual resources: potential impacts to the viewshed, scenic views (e.g., impacts from the injection wells, pipelines, and support facilities for the injection wells and pipelines), and internal and external perception of the community or locality;
- Solid wastes: pollution prevention and waste management (generation, treatment, transport, storage, disposal or use), including hazardous materials;
- Ecological resources: potential on-site and off-site impacts to vegetation, wildlife, threatened or endangered species, and ecologically sensitive habitats;
- Floodplains and wetlands: potential wetland and floodplain impacts from construction of project facilities and pipelines;
- Traffic: potential impacts from the construction and operation of the facilities, including changes in local traffic patterns, deterioration of roads, traffic hazards, and traffic controls;
- Historic and cultural resources: potential impacts related to land disturbance and development associated with new linear facilities (pipelines, etc.);
- Geology: potential impacts from the injection and storage of CO_2 on underground resources such as ground water supplies, mineral resources, and fossil fuel resources;
- Fate and stability of CO_2 being sequestered by its use for EOR;
- Health and safety issues: potential impacts associated with use, transport, and storage of hazardous chemicals (including ammonia), and CO_2 capture and transport to the sequestration site(s);
- Socioeconomic impacts, including the creation of jobs;
- Disproportionately high and adverse human health and environmental impacts on minority and low-income populations;
- Noise and light: potential impacts from construction, transportation of materials, and facility operations;
- Connected actions: potential development of support facilities or supporting infrastructure (e.g., facilities and utilities anticipated for EOR operations);
- Cumulative effects: incremental impacts of the proposed project when added to other past, present, and reasonably foreseeable future projects; and
- Compliance with regulatory and environmental permitting requirements.

Public Scoping Process

This NOI initiates the public scoping process under NEPA, which will assist in the development of the draft EIS. To ensure identification of issues related to DOE's proposed action and NRG's proposed project, DOE seeks public input to define the scope of the EIS. The public scoping period will end 30 days after publication of this NOI in the **Federal Register**. Interested government agencies, tribal governments, private-sector organizations, and individuals are encouraged to submit comments or suggestions concerning the content of the EIS, issues and impacts that should be addressed, and alternatives that should be considered. Scoping comments should clearly describe specific issues or topics that the EIS should address. Written, emailed, or faxed comments should be received within 30 calendar days of this notice (see **ADDRESSES**).

DOE will conduct public scoping meetings at the Needville High School, 100 Fritzella Road, in Needville, Texas, on Wednesday, November 30, 2011; and at the Jackson County Services Building, 411 North Wells Street, in Edna, Texas, on Thursday, December 1, 2011. The public is invited to learn more about the project at informal sessions at these locations beginning at 5 p.m. DOE will begin the formal meetings with an overview of NRG's proposed project. Oral comments will be heard during the formal portion of the scoping meetings beginning at 7 p.m. DOE requests that anyone wishing to speak at the public scoping meetings should contact Mr. Lusk, either by phone, email, fax, or postal mail (see **ADDRESSES**). Those who do not make advance arrangements may register at the meetings (preferably at the beginning of the meeting) and may be given an opportunity to speak after previously scheduled speakers. Speakers will be given approximately five minutes to present their comments. Speakers wanting more than five

minutes should indicate the length of time desired in their requests. Depending on the number of speakers, DOE may need to limit all speakers to five minutes initially and provide second opportunities as time permits. Oral and written comments will be given equal consideration.

The meetings will not be conducted as evidentiary hearings and speakers will not be cross-examined. However, speakers may be asked clarifying questions to help ensure that DOE fully understands the comments or suggestions. A presiding officer will establish the order of speakers and provide any additional procedures necessary to conduct the meetings. A court stenographer will record the proceedings, including all oral comments received. Individuals may also provide written materials in lieu of, or to supplement, their oral comment.

Issued in Pittsburgh, Pennsylvania, this 4th day of November 2011.

Anthony V. Cugini

Director, National Energy Technology Laboratory.

[FR Doc. 2011–29333 Filed 11–10–11; 8:45 am]

BILLING CODE 6450–01–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Project No. 12790–001]

Andrew Peklo III; Notice of Application Accepted for Filing with the Commission, Intent to Waive Scoping, Soliciting Motions to Intervene and Protests, Ready for Environmental Analysis, Soliciting Comments, Terms and Conditions, Recommendations, and Prescriptions, and Establishing an Expedited Schedule for Processing

Take notice that the following hydroelectric application has been filed with the Commission and is available for public inspection.

a. *Type of Application:* Exemption From Licensing.

b. *Project No.:* 12790–001.

c. *Date filed:* February 16, 2011.

d. *Applicant:* Andrew Peklo III.

e. *Name of Project:* Pomperaug Hydro Project.

f. *Location:* On the Pomperaug River, in the Town of Woodbury, Litchfield County, Connecticut. The project would not occupy lands of the United States.

g. *Filed Pursuant to:* Public Utility Regulatory Policies Act of 1978, 16 U.S.C. 2705, 2708.

h. *Applicant Contact:* Andrew Peklo III, 29 Pomperaug Road, Woodbury, CT 06798, (203) 263–4566, *themill@charter.net.*

i. *FERC Contact:* Steve Kartalia, (202) 502–6131 or *Stephen.kartalia@ferc.gov.*

j. *Deadline for filing motions to intervene and protests, comments, terms and conditions, recommendations, and prescriptions:* Due to the small size and particular location of this project and the close coordination with state and federal agencies during the preparation of the application, the 60-day timeframe in 18 CFR 4.34(b) for filing comments, terms and conditions, recommendations, and prescriptions is shortened. Instead, comments, terms and conditions, recommendations, and prescriptions will be due 30 days from the issuance date of this notice. Further, the date for filing motions to intervene and protests will be due 30 days from the issuance date of this notice. All reply comments must be filed with the Commission within 45 days from the date of this notice.

All documents may be filed electronically via the Internet. See 18 CFR 385.2001(a)(1)(iii) and the instructions on the Commission's Web site *http://www.ferc.gov/docs-filing/efiling.asp.* Commenters can submit brief comments up to 6,000 characters, without prior registration, using the eComment system at *http://www.ferc.gov/docs-filing/ecomment.asp.* You must include your name and contact information at the end of your comments. For assistance, please contact FERC Online Support at *FERCOnlineSupport@ferc.gov* or toll free at 1–(866) 208–3676, or for TTY, (202) 502–8659. Although the Commission strongly encourages electronic filing, documents may also be paper-filed. To paper-file, mail an original and seven copies to: Kimberly D. Bose, Secretary, Federal Energy Regulatory Commission, 888 First Street NE., Washington, DC 20426.

The Commission's Rules of Practice require all intervenors filing documents with the Commission to serve a copy of that document on each person on the official service list for the project. Further, if an intervenor files comments or documents with the Commission relating to the merits of an issue that may affect the responsibilities of a particular resource agency, they must also serve a copy of the document on that resource agency.

k. This application has been accepted for filing and is now ready for environmental analysis.

l. *Project Description:* The Pomperaug Hydro Project would consist of: (1) the existing 90-foot-long, 15-foot-high Pomperaug River dam equipped with three existing gates; (2) an existing 0.1-acre impoundment with a normal water surface elevation of 226 feet above mean sea level; (3) an existing 40-foot-long, 42- to 50-inch-diameter penstock; and (4) an existing powerhouse integral to the dam, containing one new 76-kilowatt turbine generating unit. Project power would be transmitted through a new 24-foot-long, 208-volt underground transmission line. The proposed project is estimated to generate an average of 300,000 kilowatt-hours annually.

The applicant proposes to: (1) Rehabilitate the existing gates including constructing a new intake structure with a trashrack; and (2) construct a new fish passage facility adjacent to the existing powerhouse.

m. Due to the project works already existing and the limited scope of proposed rehabilitation of the project site described above, the applicant's close coordination with Federal and State agencies during the preparation of the application, completed studies, and agency recommended preliminary terms and conditions, we intend to waive scoping, shorten the notice filing period, and expedite the exemption process. Based on a review of the application, resource agency consultation letters including the preliminary terms and conditions, and comments filed to date, Commission staff intends to prepare a single environmental assessment (EA). Commission staff determined that the issues that need to be addressed in its EA have been adequately identified during the pre-filing period, which included a public meeting and site visit, and no new issues are likely to be identified through additional scoping. The EA will consider assessing the potential effects of project construction and operation on geology and soils, aquatic, terrestrial, threatened and endangered species, recreation and land use, aesthetic, and cultural and historic resources.

n. A copy of the application is available for review at the Commission in the Public Reference Room or may be viewed on the Commission's Web site at *http://www.ferc.gov* using the ''eLibrary'' link. Enter the docket number excluding the last three digits in the docket number field to access the document. For assistance, contact FERC Online Support.

Register online at *http://www.ferc.gov/docs-filing/esubscription.asp* to be notified via email of new filings and issuances related to this or other pending projects. For assistance, contact FERC Online Support.

o. Anyone may submit comments, a protest, or a motion to intervene in accordance with the requirements of

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ATTACHMENT 2

AFFIDAVITS OF PUBLICATION

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PUBLISHER'S AFFIDAVIT

STATE OF TEXAS
COUNTY OF JACKSON

Personally appeared before the undersigned, a notary public within and for said County and State, Chris Lundstrom, Managing Editor of THE JACKSON COUNTY HERALD-TRIBUNE a newspaper having general circulation in Jackson County, Texas, who, being duly sworn, states on oath that the foregoing attached notice was published in said newspaper on the following date(s), to wit:

11/16/11
11/30/11

Chris Lundstrom
Chris Lundstrom, Managing Editor

Subscribed and sworn to me before this 1 day of Dec, 2011 to certify which witness my hand and seal of office.

KERRY KARL
Notary Public
STATE OF TEXAS
My Comm. Exp. 03/26/2015

Kerry Karl

DOT-NETL ANNOUNCES PUBLIC SCOPING MEETING

The U.S. Department of Energy (DOE) and its National Energy Technology Laboratory (NETL) recently issued a Notice of Intent to prepare an Environmental Impact Statement (EIS) for its proposed action to provide financial assistance for a project proposed by NRG Energy, Inc.

(NRG). NRG's project would design, construct, and operate a commercial-scale carbon dioxide (CO_2) capture facility and a new 80 MW natural gas-fired power plant at the W.A. Parish Generating Station in Fort Bend County, Texas; deliver the CO_2 via a new 80-mile pipeline to the existing West Ranch oil field in Jackson County, Texas, for use in enhanced oil recovery (EOR) operations; and demonstrate monitoring techniques to verify the permanence of geologic CO_2 storage. DOE selected the W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project for a financial assistance award through a competitive process under the Clean Coal Power Initiative Program.

DOE will host two public scoping meetings to present an overview of the proposed project and offer the public opportunities to comment and ask questions. The meetings will be held at the following locations:

Wednesday, November 30, 2011
Needville High School, 100 Fritzella Rd., Needville, TX 77461

Thursday, December 1, 2011
Jackson County Services Building, 411 N. Wells St., Edna, TX 77957

NOV 16

DOE-NETL ANNOUNCES PUBLIC SCOPING MEETING

The U.S. Department of Energy (DOE) and its National Energy Technology Laboratory (NETL) recently issued a Notice of Intent to prepare an Environmental Impact Statement (EIS) for its proposed action to provide financial assistance for a project proposed by NRG Energy, Inc.
(NRG). NRG's project would design, construct, and operate a commercial-scale carbon dioxide (CO_2) capture facility and a new 80 MW natural gas-fired power plant at the W.A. Parish Generating Station in Fort Bend County, Texas; deliver the CO_2 via a new 80-mile pipeline to the existing West Ranch oil field in Jackson County, Texas, for use in enhanced oil recovery
(EOR) operations; and demonstrate monitoring techniques to verify the permanence of geologic CO_2 storage. DOE selected the W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project for a financial assistance award through a competitive process under the Clean Coal Power Initiative Program.

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Thursday, December 1, 2011 Jackson County Services Building, 411 N. Wells St., Edna, TX 77957

The schedule for each meeting will be as follows:
5:00 – 7:00 pm Open House
7:00 – 7:30 pm DOE/NRG presentation
7:30 – 9:00 pm Public comment session

Comments or requests for additional information may be submitted by letter to Mr. Mark Lusk, NEPA Document Manager, DOE NETL, 3610 Collins Ferry Road, PO Box 880, MS B07, Morgantown, WV 26507-0880; submitted by e-mail to Parish.EIS0473@netl.doe.gov; or faxed to (304) 285-4403. Envelopes, subject lines of e-mails, and faxes should be labeled "Parish EIS Comments."

The Notice of Intent is available on the DOE-NETL website at http://www.netl.doe.gov /publications/others/nepa/index.html.

NOV 30

AFFIDAVIT OF PUBLICATION OF NEWSPAPER
NOTICE OF PUBLIC HEARING

THE STATE OF TEXAS

COUNT OF Wharton

BEFORE ME, the undersigned authority, on this day personally appeared Jay Strasner, publisher of El Campo Leader-News, who, being by me duly sworn, upon oath deposes and says:

That the attached NOTICE OF PUBLIC HEARING was published in El Campo Leader-News a newspaper published in the English language and of general circulation in the City of El Campo, Texas and in the territory proposed to be annexed, which said territory is described in said NOTICE OF PUBLIC HEARING, in the following issue: 11-16 and 11-26, 2011, and that the attached newspaper clipping is a true and correct copy of said published notice.

Signed: Jay Strasner

SWORN TO AND SUBSCRIBED BEFORE ME, this the 28 day of November, 2011.

Diana David
Notary Public in and for Wharton County, Texas

DIANA L DAVID
Notary Public, State of Texas
My Commission Expires
July 24, 2013

(SEAL)

(AFFIX NEWSPAPER CLIPPING HERE)

El Campo
Leader-News
11/26/2011

DOT-NETL ANNOUNCES PUBLIC SCOPING MEETING

The U.S. Department of Energy (DOE) and its National Energy Technology Laboratory (NETL) recently issued a Notice of Intent to prepare an Environmental Impact Statement (EIS) for its proposed action to provide financial assistance for a project proposed by NRG Energy, Inc. (NRG). NRG's project would design, construct, and operate a commercial-scale carbon dioxide (CO_2) capture facility and a new 80 MW natural gas-fired power plant at the W.A. Parish Generating Station in Fort Bend County, Texas; deliver the CO_2 via a new 80-mile pipeline to the existing West Ranch oil field in Jackson County, Texas, for use in enhanced oil recovery (EOR) operations; and demonstrate monitoring techniques to verify the permanence of geologic CO_2 storage. DOE selected the W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project for a financial assistance award through a competitive process under the Clean Coal Power Initiative Program.

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El Campo Leader-News 11/26/2011

DOT-NETL ANNOUNCES PUBLIC SCOPING MEETING

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11-27

URS Corporation

PUBLISHER'S AFFIDAVIT Scoping meeting

THE STATE OF TEXAS §
COUNTY OF FORT BEND §

Before me, the undersigned authority, on this day personally appeared Stan Woody who being by me duly sworn, deposes and says that he is the Publisher of *Fort Bend Herald* and that said newspaper meets the requirements of Section 2051.044 of the Texas Government Code, to wit:

1. it devotes not less than twenty-five percent (25%) of its total column lineage to general interest items;

(CLIPPING) (S) ON Back

2. it is published at least once each week;

3. it is entered as second-class postal matter in the county where it is published; and

4. it has been published regularly and continuously since 1959.

5. it is generally circulated within Fort Bend County.

Publisher further deposes and says that the attached notice was published in said newspaper on the following date(s) to wit:

11-27

_____, A.D. 2011

_____
Stan Woody
Publisher

SUBSCRIBED AND SWORN BEFORE ME by Stan Woody who

X a) is personally known to me, or

_____b) provided the following evidence to establish his/her identity, _____

on this the 28th day of November, A.D. 2011 to certify which witness my hand and seal of office.

_____
Notary Public, State of Texas

JEANNE M. CARROLL
NOTARY PUBLIC
STATE OF TEXAS
My Comm. Expires 04-22-2012

DOT-NETL ANNOUNCES PUBLIC SCOPING MEETING

The U.S. Department of Energy (DOE) and its National Energy Technology Laboratory (NETL) recently issued a Notice of Intent to prepare an Environmental Impact Statement (EIS) for its proposed action to provide financial assistance for a project proposed by NRG Energy, Inc. (NRG). NRG's project would design, construct, and operate a commercial-scale carbon dioxide (CO_2) capture facility and a new 80 MW natural gas-fired power plant at the W.A. Parish Generating Station in Fort Bend County, Texas; deliver the CO_2 via a new 80-mile pipeline to the existing West Ranch oil field in Jackson County, Texas, for use in enhanced oil recovery (EOR) operations; and demonstrate monitoring techniques to verify the permanence of geologic CO_2 storage. DOE selected the W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project for a financial assistance award through a competitive process under the Clean Coal Power Initiative Program.

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The Notice of Intent is available on the DOE-NETL website at http://www.netl.doe.gov/publications/others/nepa/index.html.

11-16

URS Corporation

PUBLISHER'S AFFIDAVIT Scoping Meeting

THE STATE OF TEXAS §
COUNTY OF FORT BEND §

Before me, the undersigned authority, on this day personally appeared Stan Woody who being by me duly sworn, deposes and says that he is the Publisher of *Fort Bend Herald* and that said newspaper meets the requirements of Section 2051.044 of the Texas Government Code, to wit:

1. it devotes not less than twenty-five percent (25%) of its total column lineage to general interest items; (CLIPPING) (S)

2. it is published at least once each week;

3. it is entered as second-class postal matter in the county where it is published; and

4. it has been published regularly and continuously since 1959.

5. it is generally circulated within Fort Bend County.

Publisher further deposes and says that the attached notice was published in said newspaper on the following date(s) to wit:

11-16

_____, A.D. 2011

_____
Stan Woody
Publisher

SUBSCRIBED AND SWORN BEFORE ME by Stan Woody who

___X___a) is personally known to me, or

_____b) provided the following evidence to establish his/her identity, _____

on this the 16th day of November, A.D. 2011 to certify which witness my hand and seal of office.

_____
Notary Public, State of Texas

JEANNE M. CARROLL
NOTARY PUBLIC
STATE OF TEXAS
My Comm. Expires 04-22-2012

La Subasta
El Periódico de las oportunidades

Affidavit of Publication

The State of Texas

County of Harris

Before me, the undersigned authority, on this day personally appeared Patty Alvarez-Marroquin who being by me duly sworn, deposes and says that he is the Account Executive of **La Subasta Newspaper** this said newspaper is weekly in Houston, Texas, Harris County. An advertisement for **URS Corporation** was published in the said newspaper in the following date(s), November 17, 2011 and November 24, 2011 in the Legal/Avisos Publicos Section of La Subasta Newspaper.

Customer # 111514 Contract #230312 Display ad size 3x5"

Patty Alvarez-Marroquin:
Newspaper Representative

Subscribed and sworn before me this 29th day of November , 2011, to certify which witness my hand and seal of office.

Yvette O. Jaramillo
Notary Public in and for the State of Texas
My commission expires: January 21, 2014

YVETTE O. JARAMILLO
Notary Public, State of Texas
My Commission Expires
January 21, 2014

DOT-NETL ANUNCIA UNA JUNTA PÚBLICA

El Departamento de Energía de Estados Unidos (DOE) y el Laboratorio Nacional Tecnológico de Energía (NETL) recientemente emitió una Noticia de Intento para preparar una Declaración de Impacto al Medioambiente (EIS) para su acción propuesta para proveer asistencia financiera para un proyecto propuesto por NRG Energy, Inc. (NRG). El proyecto de NRG diseñaría, construiría y operaría una instalación de escala-comercial de dióxido de carbono (CO_2) y una planta de energía natural de 80 MW de gas-lumbre en WA. Parish Generating Station en el Condado de Fort Bend, Texas; el CO_2 se va a entregar por la vía de un nuevo conducto de 80 millas a West Ranch Oil Field en el Condado de Jackson, Texas, para usar en operaciones de recuperación de aceite mejoradas; y demostrar técnicas de monitoreo para verificar la permanencia de alojamiento geológico de CO_2. El DOE seleccionó y otorgó al Proyecto WA. Parish Post-Combustion CO_2 Capture and Sequestration una asistencia financiera por medio de un proceso competitivo bajo el Programa Iniciativo Clean Coal Power.

El DOE va a ofrecer dos juntas públicas para presentar una información general del proyecto propuesto y ofrecer al público oportunidades para comentar y hacer preguntas. Las reuniones se llevarán a cabo en las siguientes ubicaciones:

Miércoles, 30 de Noviembre, 2011
Needville High School, 100 Frizella Rd., TX 77461

Jueves, 1 de Diciembre, 2011
Jackson County Services Building, 411 N. Wells St.,

El horario para cada reunión será de la siguiente manera:

5:00 – 7:00 pm Open House.
7:00 – 7:30 pm Presentación de DOE/NRG
7:30 – 9:00 pm Sesión de comentarios públicos.

Comentarios o peticiones para obtener información adicional pueden ser sometidos por carta al Sr. Mark Lusk, Document Manager de NEPA, DOE NETL, 3610 Collins Ferry Road, PO BOX 880, MS B07, Morgantown, WV 26507-0880; Someter por correo electrónico a: Parish.EIS0473@netl.doe.gov o vía fax al (304)285-4403. En los sobres, línea de "Subject" de correo electrónicos y fax deben de indicar "Parish EIS Comments".

La Nota de Intención esta disponible en el sitio Web de la DOE-NETL en: "http://www.netl.doe.gov/publications/others/nepa/index.html.

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ATTACHMENT 3

PUBLIC SCOPING MEETING ATTENDEE LIST

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SIGN-IN SHEET

W.A. Parish Post-Combustion
CO_2 Capture and Sequestration Project –
Southeastern Texas.
November 30, 2011

Name	Title	Address	Telephone	Fax	E-mail
Joshua Grable		Needville	979-418-1004		joshuagrable@gmail.com
RICHARD RAKERS		BRAZORIA			
LOUIS C REDD		Houston, Tex 2827 Hopper	713 3060951		
Michael Moore		12012 Wickdale	77079	281-668-8471	moore73@att.net
MIKE TRAHAN					MIKET@PFLocal211.com
Mark Baker		1314 PALM	LaMarque TX	77568	markb@PFLocal211.com
Richard Lord		16906 Redwood Falls	713-906 3479		RickL_68@yahoo.com
Arun N. Naik	Sr Facility Advisor	150N Dairy Ashford Houston 77079	832-337-1541		arun.naik@shell.com

SIGN-IN SHEET

W.A. Parish Post-Combustion
CO_2 Capture and Sequestration Project –
Southeastern Texas.
December 1, 2011

Name	Title	Address	Telephone	Fax	E-mail
Dennis Simons	Co. Judge	115 W. Main, Edna 77957	782-2352		
LARRY DeYOUNG	COMMISSIONER PCT 4	P.O. Box 127 Laward Tx 77970	781-2751		

ATTACHMENT 4

PUBLIC SCOPING MEETING POSTERS AND HANDOUTS

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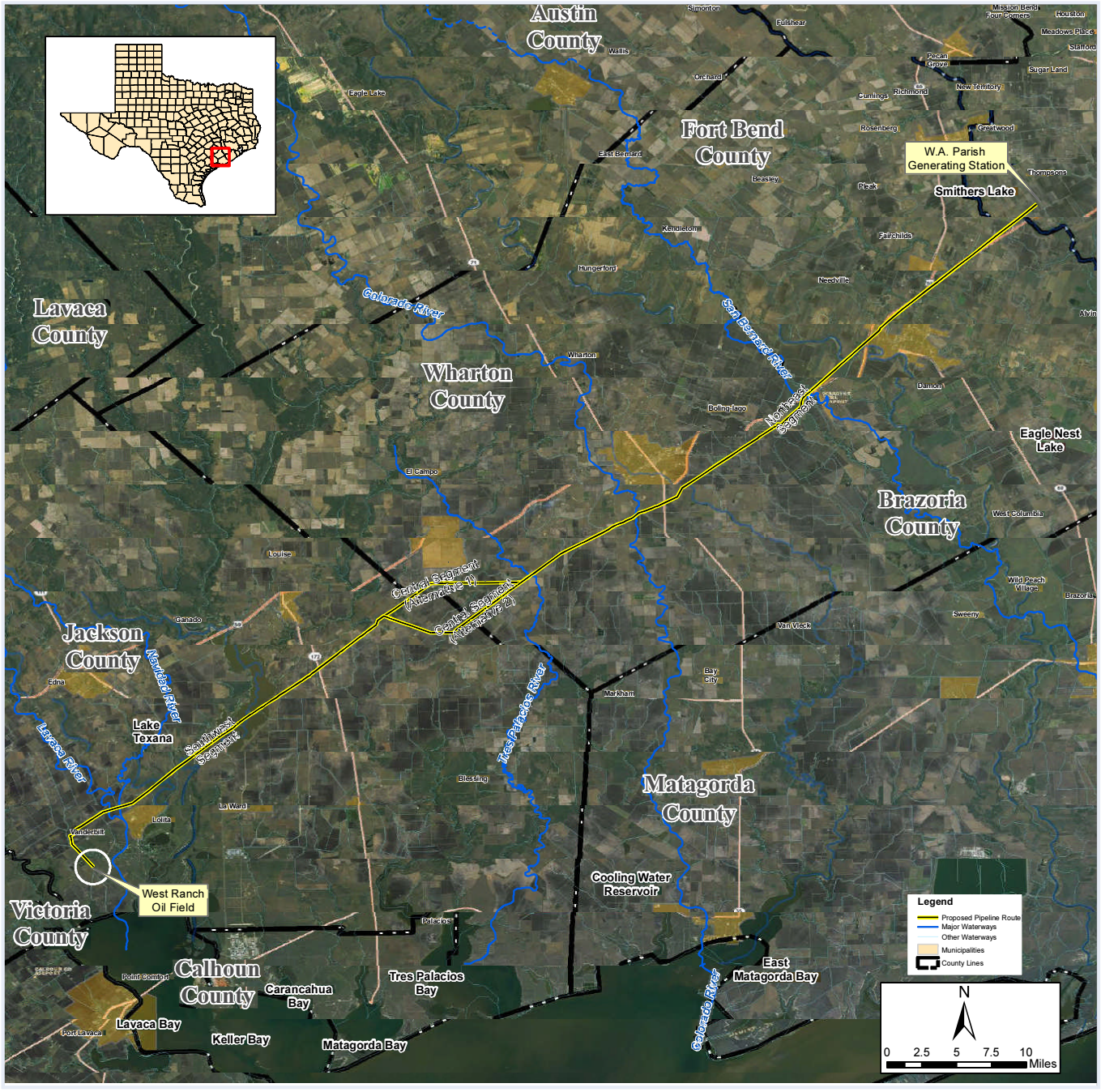
Project Location Map

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project

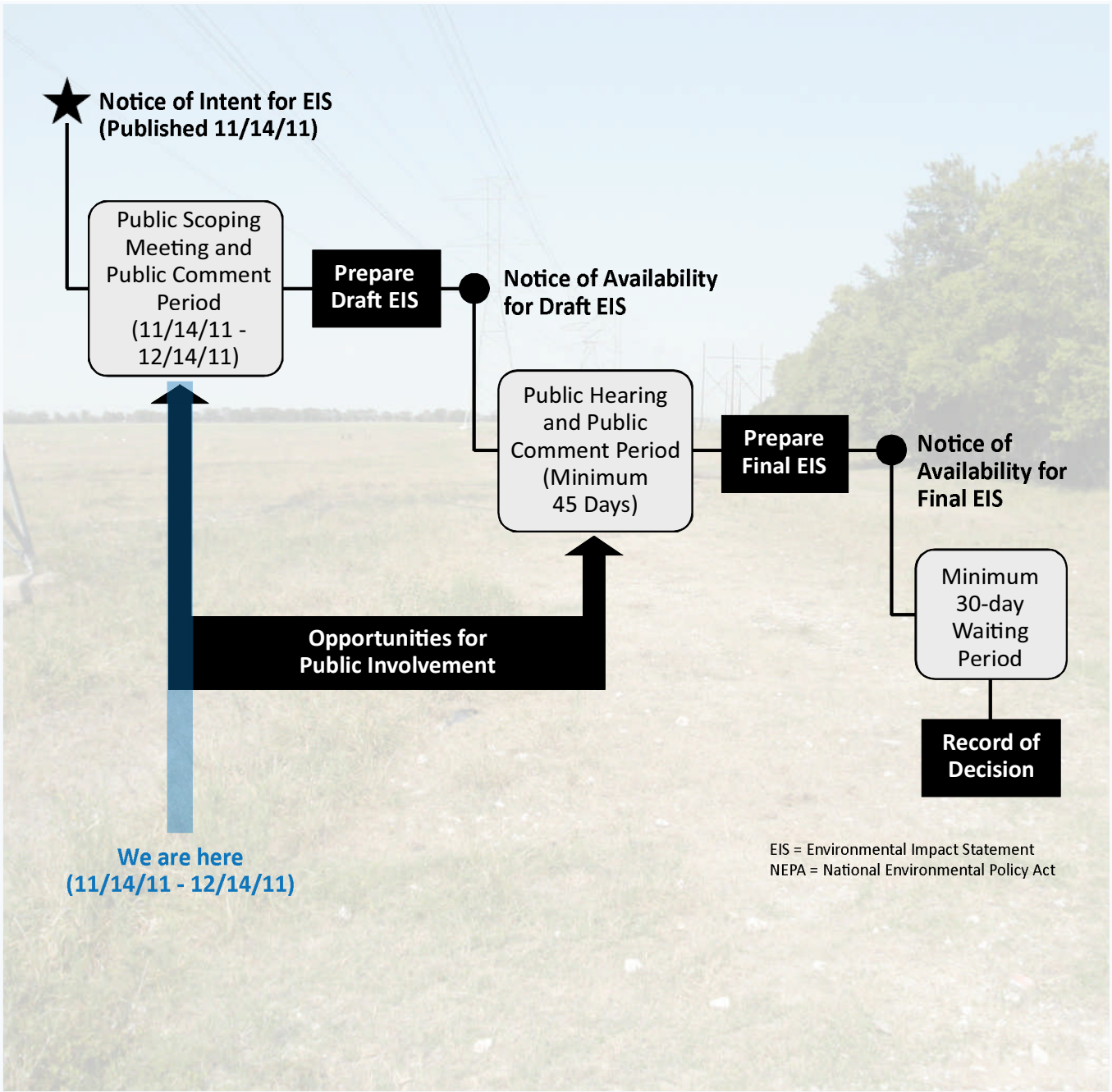


NETL

petra nova
an NRG company

NEPA Process and EIS Milestones

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project

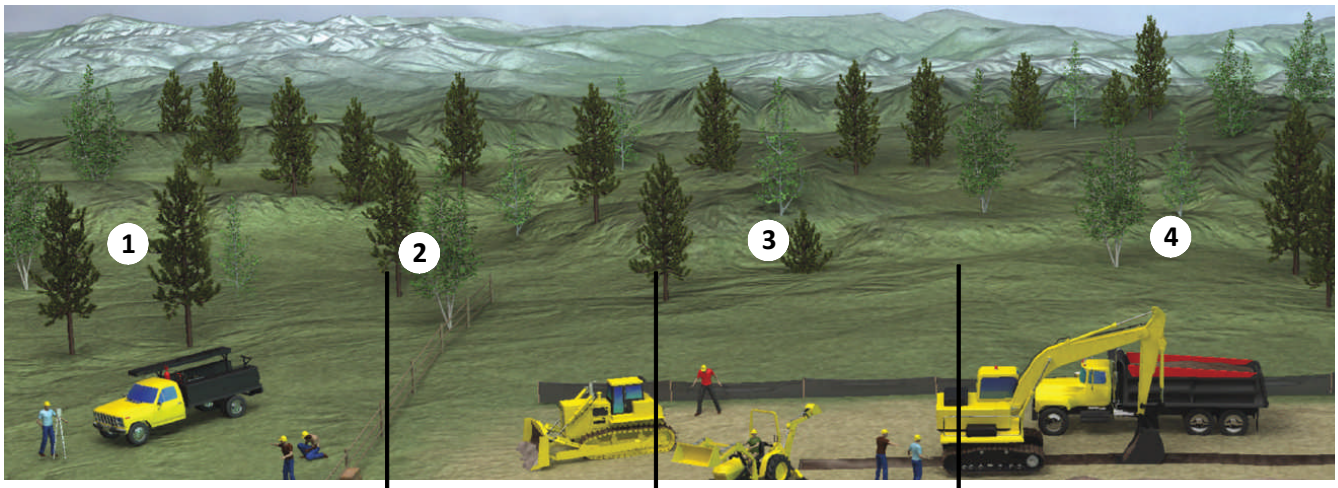


NETL

petra nova
an NRG company

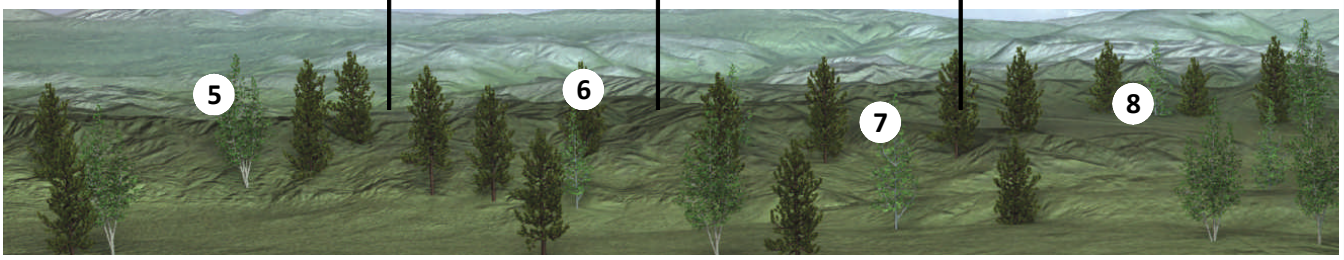
Pipeline Construction Process

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project



1. Pre-construction survey
2. Clearing and grading
3. Trenching
4. Pipe stringing and bending

5. Welding, pipe coating and weld inspection
6. Lowering pipe in and backfilling
7. Testing
8. Restoration

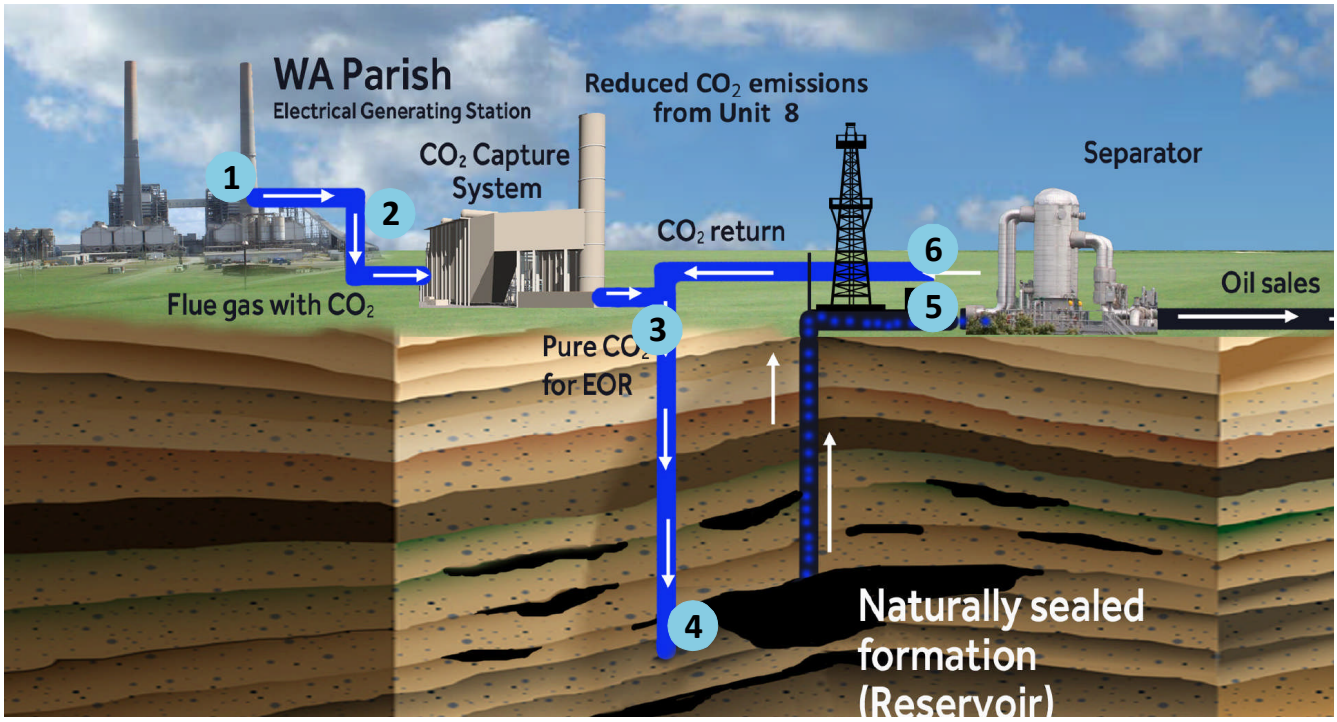


NETL

petra nova
an NRG company

Carbon Capture and Enhanced Oil Recovery

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project



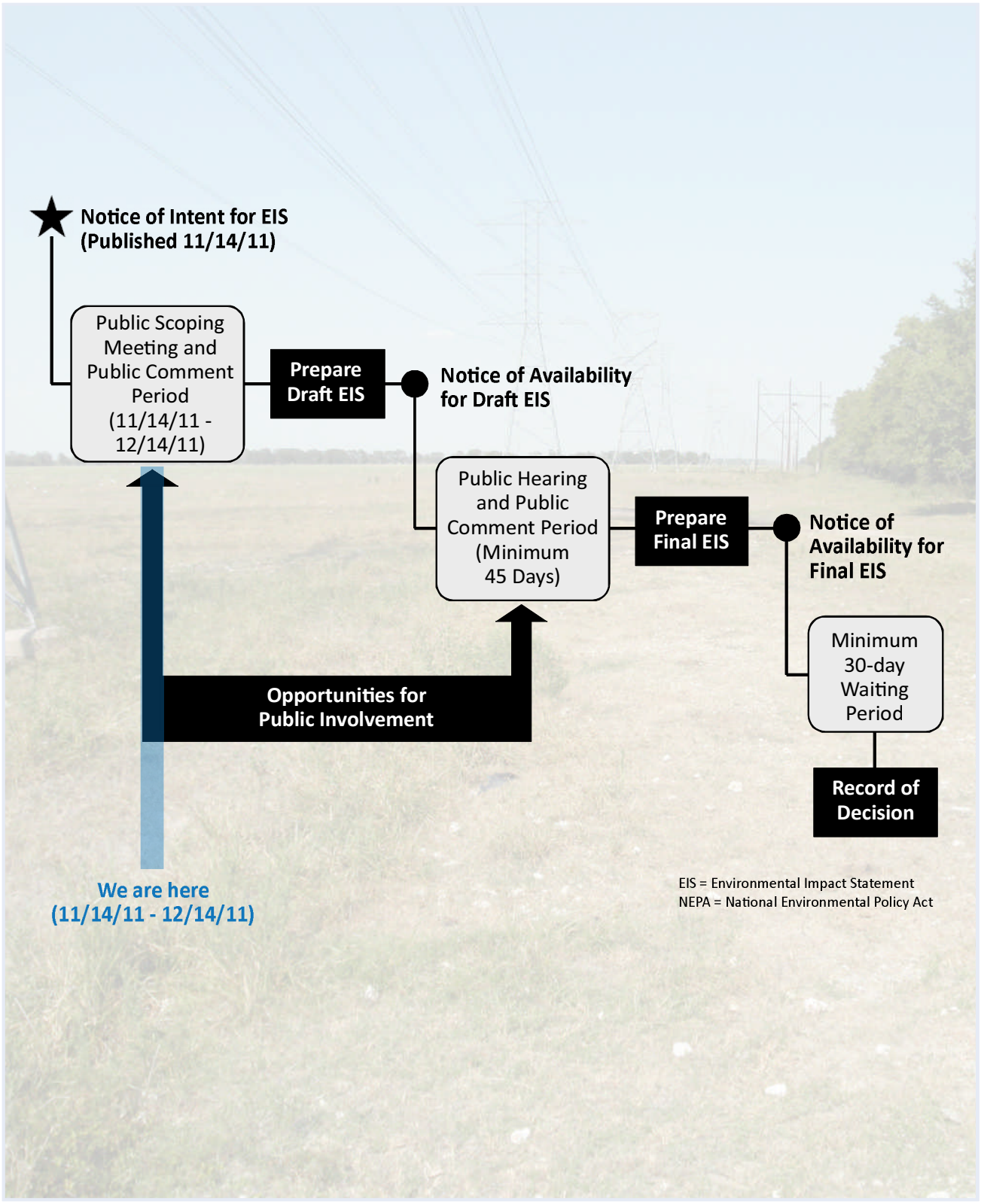
1. Divert flue gas from power plant into CO_2 capture system
2. Capture system removes virtually all the sulfur and 90% of CO_2 from flue gas
3. CO_2 is compressed to 2,500 psi and piped to the oil field
4. CO_2 is injected into the formation to re-pressurize and act like a solvent, mobilizing oil to producing wells, while some CO_2 remains within the formation
5. Once at the surface, special equipment separates CO_2 from the oil
6. CO_2 is then re-injected to mobilize more oil

NETL

petra nova
an NRG company

The NEPA Process and EIS Milestones

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project



NETL

petra nova
an NRG company

DOE CCPI Program Summary and NEPA Process

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project

DOE'S CLEAN COAL POWER INITIATIVE (CCPI) PROGRAM

- The CCPI program was established in 2002 as a government and private sector partnership to increase investment in clean coal technologies. Through agreements with private-sector partners, the CCPI program advances innovative technologies to commercialization.
- These technologies include combustion improvements, control system advances, gasifier design, pollution reduction (including greenhouse gas reduction), and efficiency increases.
- Under the Energy Policy Act of 2005, CCPI projects must "advance efficiency, environmental performance, and cost competitiveness well beyond the level of technologies that are in commercial service."
- DOE selects projects for its CCPI partnerships through open and competitive solicitations. Applications are reviewed according to criteria specified in the solicitation; these include technical, financial, environmental, and other considerations.
- After selection, DOE enters into a cooperative agreement with the applicant that sets out the project's objectives and the obligations of the parties.
- Applicants must agree to pay at least 50% of their project's cost; for most CCPI projects, the applicant's cost share is much greater.

SELECTION FOR CCPI FUNDING

- **The CCPI program has conducted three rounds of solicitations and project selections:**
  - Round 1: Projects demonstrating advanced technologies for power generation and improvements in plant efficiency, economics, and environmental performance.
  - Round 2: Projects demonstrating improved mercury controls and gasification technology.
  - Round 3: Projects demonstrating advanced coal-based electricity generating technologies that capture and sequester carbon dioxide (CO_2) emissions.
- **Objective for Round 3 projects – to demonstrate technologies at commercial scale in commercial settings that:**
  - Operate at a target 90% capture efficiency for CO_2.
  - Make progress towards capture and sequestration at less than a 35% increase in the cost of electricity for post-combustion systems.
  - Sequester a minimum of 300,000 tons/year of CO_2. (Project will operate at approximately 1.6 million tons/year).
- The Project was one of three selected in the second phase of Round 3. DOE entered into a cooperative agreement with NRG on May 7, 2010.
- Much of the funding DOE intends to use for its contribution would come from the American Recovery and Reinvestment Act of 2009 (Recovery Act). Its objectives include job creation and preservation; infrastructure investment; and energy efficiency.
- Recovery Act funds expire on September 30, 2015.

THE NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) PROCESS

1. The NEPA process for competitive financial assistance awards starts with preparation of an "environmental critique" that assesses the environmental impacts and issues relating to each of the proposals that DOE considers for an award (10 CFR §1021.216). (October 2009)
2. Determination that the W. A. Parish project requires preparation of an Environmental Impact Statement (EIS). (July 5, 2011)
3. Preparation of the EIS:
   - A. Issue Notice of Intent to prepare an EIS in the Federal Register. (November 14, 2011)
   - B. Public Scoping Meeting. (November/December 2011)
   - C. Close of Comment Period for Scoping Process. (December 14, 2011)
   - D. Preparation and Issuance of the Draft EIS.
   - E. Period for Public Comment on the Draft EIS. (45 days)
   - F. Public Hearing (During the period for public comment)
   - G. Preparation and issurance of the Final EIS.
4. Issuance of DOE's Record of Decision.(No sooner than 30 days after the Final EIS)

For additional information on the NEPA process see:

http://ceq.hss.dbe.gov/NEPA/citizens_guide_Dec07.pdf

NETL

petra nova
an NRG company

A traditional power plant.
An advanced solution.

How natural.

Compelling solutions can come from everyday places. At Petra Nova, that idea is being demonstrated at a coal-fired power plant where innovative thinking leads to wide-ranging benefits.

- START WITH ... a traditional coal-burning power plant
- ADD ... post-combustion CO_2 capture
- BENEFIT ... by capturing 90% of CO_2 emissions
- EXTEND ... the story and inject the captured CO_2 into mature oil fields
- BENEFIT AGAIN ... by revitalizing oil reservoirs and increasing domestic oil supply

Innovation is a great thing. Innovation applied in ways that transform existing resources is even better. Welcome to a smarter energy future.

Intrigued by innovation?

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You're looking at the beginning of a smarter, brighter energy future.

Lower emissions and greater energy independence start here.

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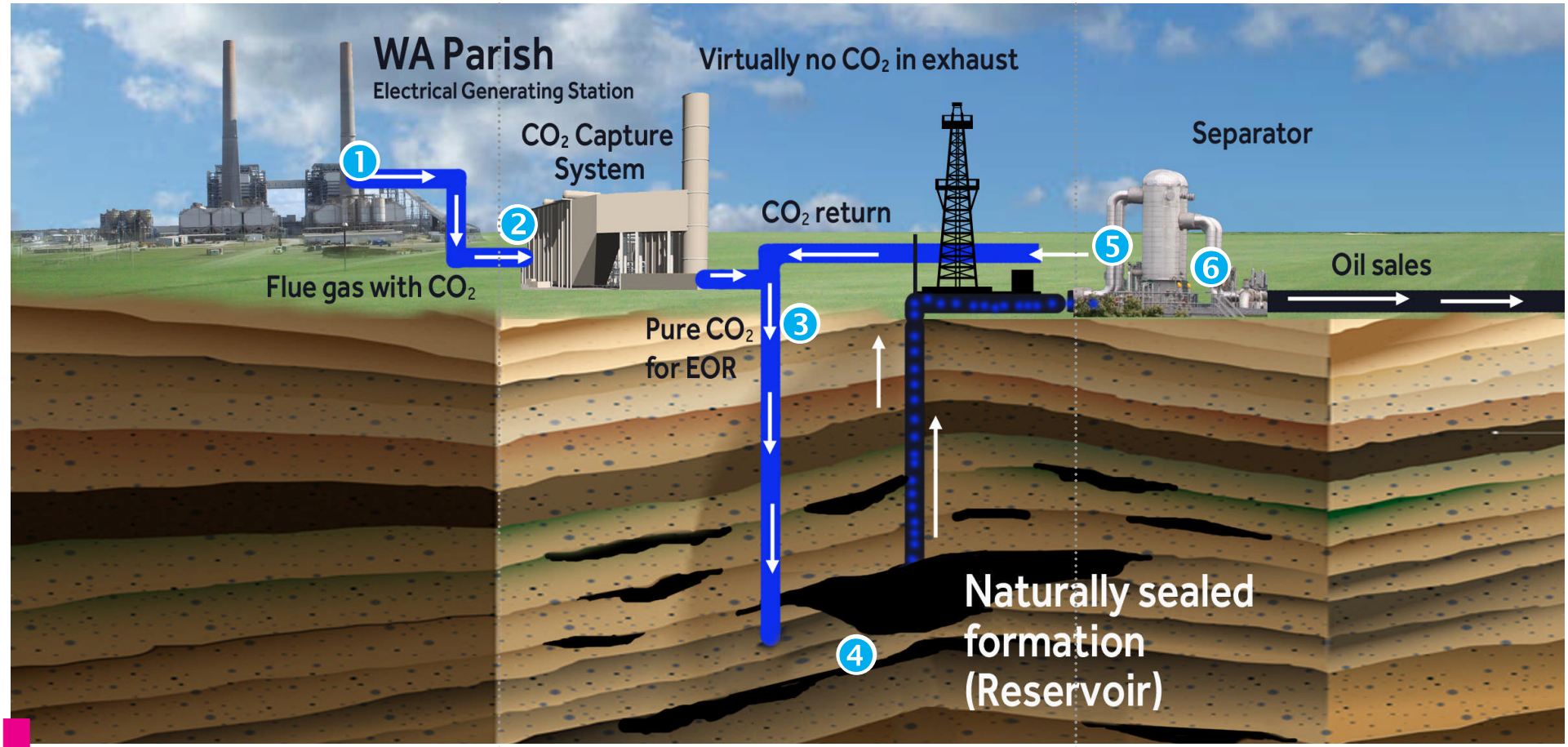
A power plant is an ideal place to initiate a high-level solution.

1. Divert flue gas from power plant into CO_2 capture system
2. Capture system removes virtually all the sulfur and 90% of CO_2 from flue gas
3. CO_2 is compressed to 2,500 psi and piped to the oil field
4. CO_2 is injected into the formation to re-pressurize and act like a solvent, mobilizing oil to producing wells
5. Once at the surface, special equipment separates CO_2 from the oil
6. CO_2 is then re-injected to mobilize more oil



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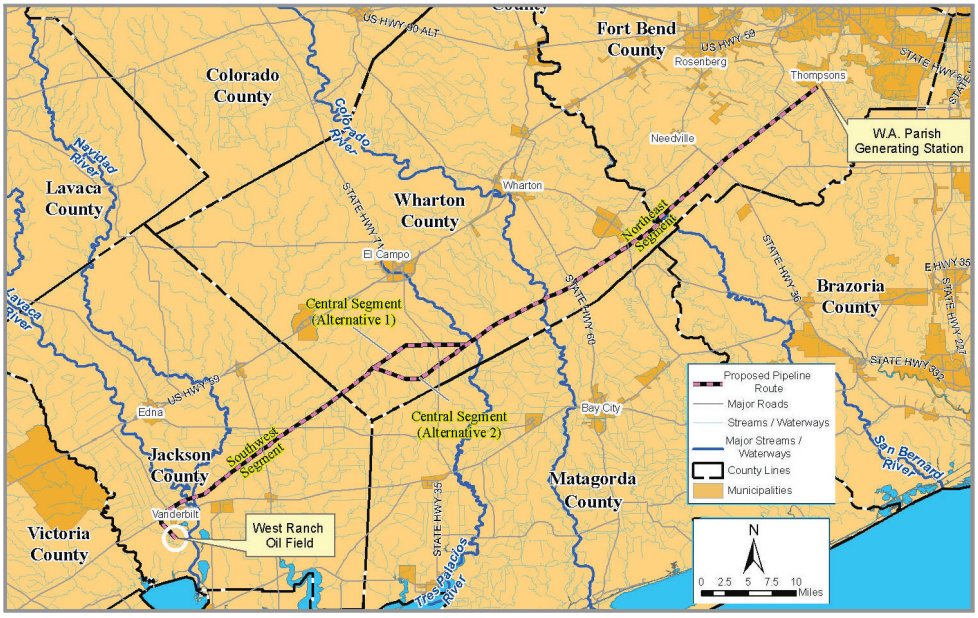
The West Ranch CO_2-EOR Project

Quick Facts

- We will use proven Enhanced Oilfield Recovery (EOR) technology.
- The West Ranch Field is operated by Hilcorp Energy Company. It began operations in 1938 and has been in safe, continuous operation ever since.
- We will use existing wells to support CO_2 operations and do not expect to need to drill new wells.



Proposed CO_2 Pipeline Route

Project Overview

For the West Ranch project we will use proven Enhanced Oilfield Recovery (EOR) technology to support continuing oil production at the West Ranch Oil Field in Jackson County. EOR uses carbon dioxide (CO_2), and Petra Nova will supply CO_2 captured from the flue gas of the WA Parish plant that previously would have been emitted into the atmosphere.

Petra Nova will safely move the CO_2 from the WA Parish plant to the West Ranch Oil Field through an 80 mile-long pipeline running through Fort Bend, Wharton and Jackson Counties.

The 12 – 16 inch pipeline will be buried in accordance with the Department of Transportation standards with a minimum of three feet of cover except at river and stream crossings where the depth of cover will be a minimum of five feet. The only above ground facilities currently expected will be a meter station at the WA Parish plant and the West Ranch Field.

Hilcorp Energy Company operates the West Ranch Field, which was discovered in 1938 and has been in continuous operation ever since. Since then, it has produced approximately 390 million barrels of oil. The West Ranch Field covers approximately 11,500 acres, and the target zone for CO_2 injection is roughly 4,000 acres. The wells utilized for CO_2 injection are more than a mile deep. Under the Petra Nova partnership, the field will continue to be safely operated by Hilcorp.

Petra Nova anticipates using existing wells to support CO_2 injection and does not expect to need to drill new wells.

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1201 Fannin, Houston Texas 77002
Office: 713 537-2130
david.knox@nrgenergy.com

WA Parish CO_2 Capture Project

Quick Facts

- NRG Energy's WA Parish plant is located near Richmond, Texas.
- Carbon capture demonstration will prevent 90% of the carbon in a 200+ MW slipstream of flue gas from entering the atmosphere.

Project Overview

NRG Energy has been selected by the Department of Energy to receive up to $167 million to develop a commercial scale post-combustion carbon capture project at the Company's WA Parish generating station southwest of Houston, Texas.

This demonstration is designed to use an up to 250MW flue gas slipstream to capture approximately 90 percent of carbon dioxide (CO_2) in the flue gas and use or sequester 1.5 million tonnes (1.65 million U.S. short tons) of this greenhouse gas annually. The demonstration facility is expected to be operational in 2015.

At 200+ MW, this project can prove the ability to take coal-based carbon capture technology from a pilot program to a real-world, commercial-scale that can be applied to any existing coal-fired power plant in the U.S. and the world.

Captured CO_2 will be used to enhance production at mature oil fields in Texas's Gulf Coast region. Potential sites have been identified and reservoir analysis is already underway.

Background

Coal is America's most abundant fuel resource, providing half of U.S. electricity generated, but it is also the most carbon intensive fuel. Approximately 85 percent of U.S. electric sector emissions and 40 percent of total U.S. energy-related CO_2 emissions come from coal plants.

Post-combustion carbon capture is essential in order for the U.S. to continue to use coal while reducing our carbon footprint. However, no CO_2 capture technologies have been demonstrated at commercial scale or are currently available for use on coal-fired power plants at the scale of the typical baseload plant. Additionally, existing CO_2 capture solutions have capital and operating costs that cannot compete with conventional power generation technologies without government assistance.

The two main goals of this demonstration are:

- To show that carbon capture will work at commercial scale when retrofitted on an existing coal plant
- To demonstrate other emerging technology advancements that will make post-combustion carbon capture more economically viable.

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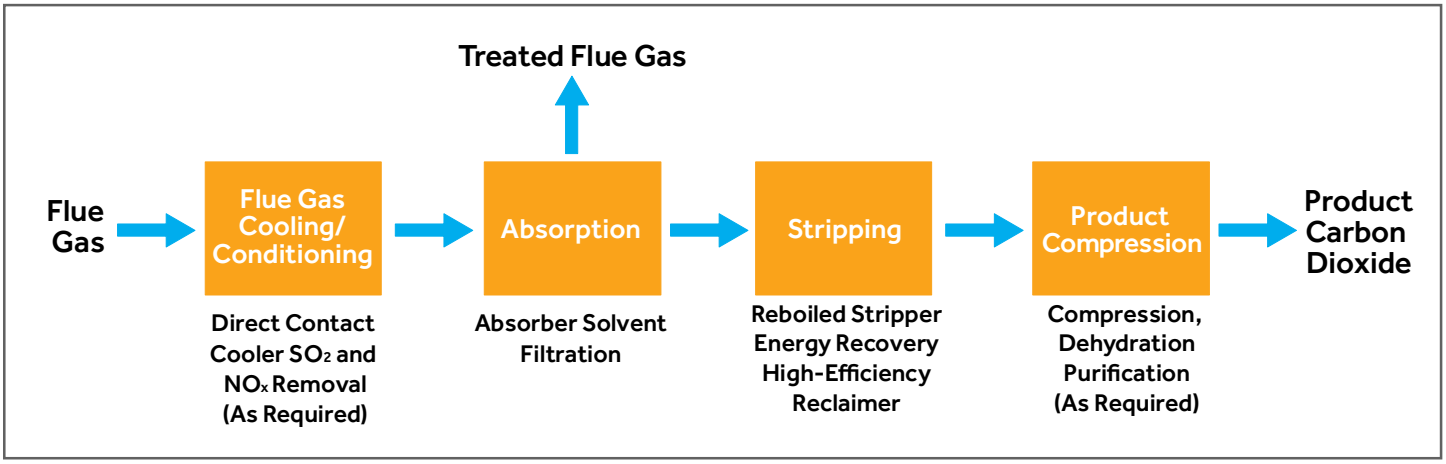

Department of Energy/ NRG Energy partnership

The WA Parish CO_2 capture project was selected under the third round of the Clean Coal Power Initiative (CCPI), a cost-shared collaboration between the federal government and private industry to demonstrate low-emission carbon capture and storage technologies in advanced coal-based power generation. The goal of CCPI is to accelerate the readiness of advanced coal technologies for commercial deployment, ensuring that the United States has clean, reliable, and affordable electricity and power.

Technology and Process Advancements

The demonstration will use an amine technology specifically designed to capture CO_2 from low pressure coal plant flue gas streams that also contain ash, sulfur dioxide and trioxide, nitrogen oxides, and oxygen. The primary amine solvent ingredient used in the process is readily available worldwide and inexpensive. The solvents have relatively low energy consumption properties and, in addition, the industry is developing more advanced solvents for even better performance. Existing and future solvents can be deployed in this project for testing with coal-fired flue gas.

NRG, together with its engineering partner, Sargent & Lundy, is also developing efficiency improvements in various balance of plant processes, including steam production and CO_2 compression, to reduce energy demands on units equipped with carbon capture systems.

Partnerships

The project is working closely with the University of Texas (UT) to take advantage of the University's world-renowned expertise in CO_2 monitoring. The University of Texas Bureau of Economic Geology, with its globally recognized experience in monitoring enhanced oil recovery and other sequestration methods, will design and manage our carbon monitoring plans. We are also working with the scientists in UT's Chemical Engineering school on cutting edge solvent formulations.

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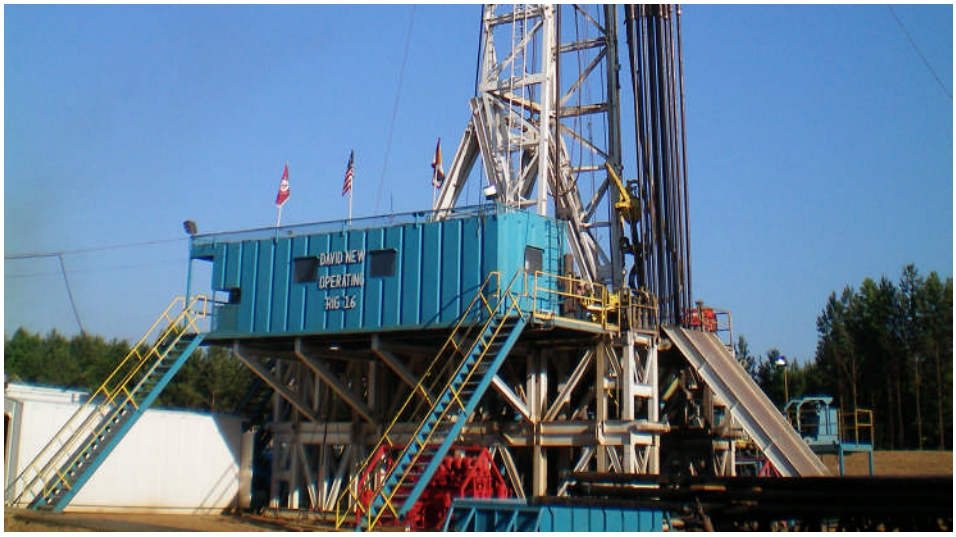
CO_2 Enhanced Oil Recovery

Quick Facts

- CO_2-EOR has been a safe part of oil production in Texas for 40 years.
- Use of CO_2 for EOR will increase domestic oil supply and keep CO_2 out of the atmosphere.
- CO_2-EOR can revitalize older on-shore oil fields allowing them to produce significant more oil.



Background

- Significant volumes of conventional oil remaining in U.S. on-shore oil reservoirs could be produced by injection of carbon dioxide (CO_2).
- CO_2 enhanced oil recovery (CO_2-EOR) has been constrained by an inadequate CO_2 supply, and expensive pipeline infrastructure.
- Use of CO_2-EOR in more basins and reservoirs will increase domestic oil supply and trap CO_2 in deep rock formations.
- Current oil production from CO_2-EOR is approximately 237,000 Barrels/day.[1] (Figure 1)

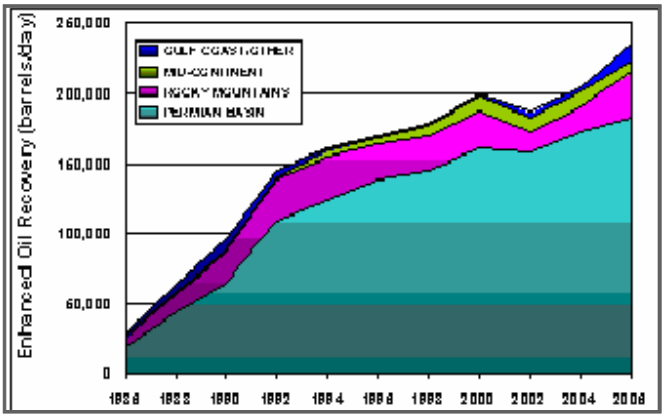


Figure 1 - U.S. CO2-EOR Production is growing
Most Production Comes from the Permian Basin

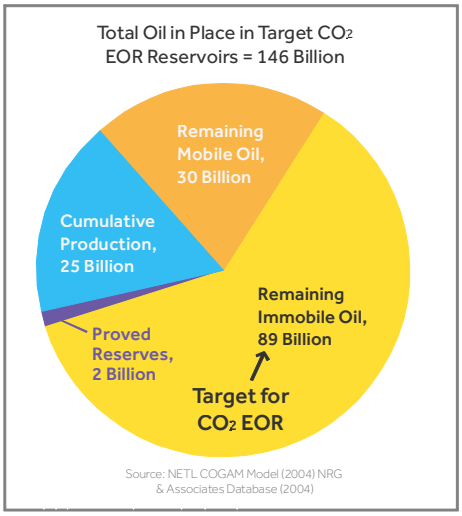


Figure 2 – Potential Target for CO_2 EOR

U.S. CO_2 EOR Resources

- Based on the information available in the DOE/NETL Comprehensive Oil and Gas Analysis Model (COGAM), a total of 1,673 fields/reservoirs have been identified as candidates for CO_2-flooding in the United States.
- These fields and reservoirs collectively have 65 billion barrels of remaining immobile oil that is the target resource for CO_2 flooding. (Figure 2)
- Application of CO_2-EOR in candidate reservoirs in other basins depends on the economic availability of CO_2 from industrial sources.

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CO_2 EOR Economics

- Construction of new pipelines from CO_2 sources to target basins requires significant capital investments that must be supported by the long-term oil production potential of the target basin and by expectations of future oil prices.
- Oil price volatility is a significant deterrent to CO_2 pipeline and project investment by industry, particularly for smaller independent producers.

CO_2 EOR Technology

- CO_2 injection in oil reservoirs can produce oil unrecovered by primary production or secondary water-flooding. CO_2 acts as a solvent that reduces viscosity and enables the oil to flow to the production well. (Figure 3)[2]
- When production is complete, the CO_2 remains trapped in deep rock formations.

CO_2 Sources and EOR Market

- Natural sources of CO_2 now supply about 950 billion cubic feet per year for CO_2-EOR projects. Approximately 75 percent is used in projects in West Texas (the Permian Basin). Other states with CO_2-EOR projects include Colorado, Wyoming, and Mississippi. (Figure 4)[3]
- CO_2-EOR can provide a significant market for "EOR-ready CO_2", from industrial sources, such as coal-fired power plants.
- The potential market is about 380 trillion cubic feet or about 20 billion metric tons of CO_2. Future oil prices and CO_2 cost will determine how much of this market can be economically captured.[4]

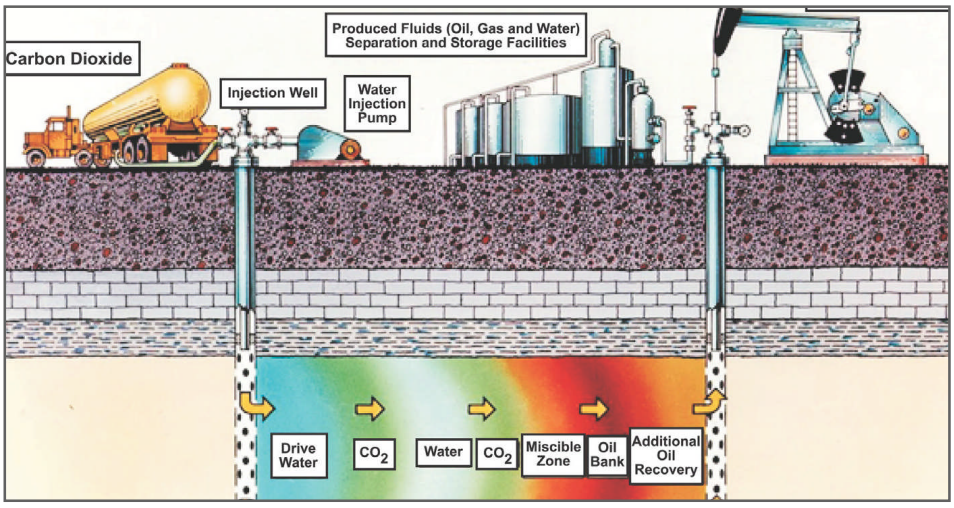

Figure 3 – What is CO2 Enhanced Oil Recovery?

CO_2 EOR Environmental Factors

Environmental concerns associated with CO_2-EOR development differ from those of other unconventional oil resources.

- Most production potential exists in already producing oil fields. So, many environmental concerns are already addressed within the existing regulatory oversight framework for these fields.
- CO_2 captured from the production well is recycled, so CO_2 emissions are negligible.
- Most of the water needed for CO_2-EOR will come from saltwater already in the oil formation.

REFERENCES

1 Oil & Gas Journal Vol. 105.15, April 17 2006 p.40.
2 Advanced Resources International, 2006.
3 Oil and Gas Journal, April 2006.
4 U.S. DOE Office of Fossil Energy,

Figure 4 - Natural CO2 Sources and Pipelines

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ATTACHMENT 5

PUBLIC SCOPING MEETING PRESENTATION

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W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project and the National Environmental Policy Act

Public Scoping Meetings –

November 30 and December 1, 2011

Mark Lusk

NEPA Document Manager

U.S. Department of Energy

National Environmental Policy Act (NEPA)

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project

- U.S. Federal Law - effective January 1, 1970
- Applies to all Federal agencies
- National charter for protection of the environment
- Promotes environmental considerations in decision-making

NEPA Mandate

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project

- Environmental information must be available to public officials and citizens before Federal decisions are made and before Federal actions are taken
  - High quality information
  - Accurate scientific analyses
  - Expert agency comments
  - Public involvement

NEPA Process for the W.A. Parish Post-Combustion CO_2 Capture & Sequestration Project Initiated

- EIS Determination – July 5, 2011
  - Official DOE decision that an EIS is needed
- Notice of Intent – November 14, 2011
  - Official announcement to stakeholders
  - Begins the 30-day public scoping period

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Content of Typical Environmental Impact Statement (EIS)

- Purpose and Need for agency action
- Proposed agency action and reasonable alternatives
- Proposed project and project alternatives
- Description of the affected environment
- Analysis of potential environmental consequences
- List of agencies, organizations, and persons contacted
- Public participation and responses to public input

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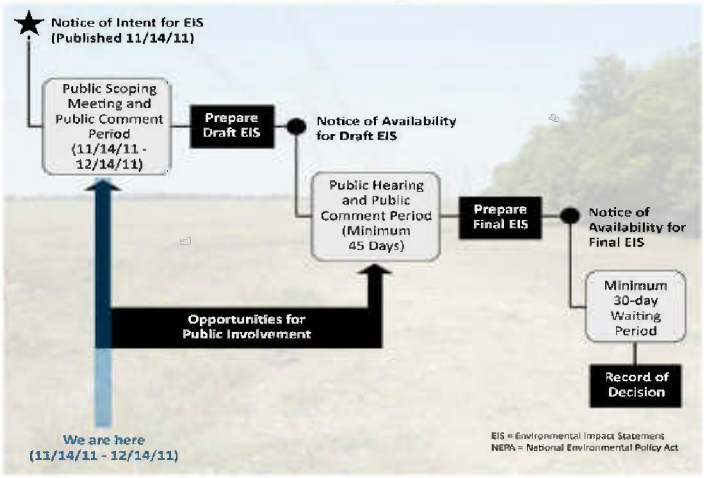
NEPA Process and EIS Milestones

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project



Anticipated Schedule

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project

	SCHEDULE
NEPA Site Visit & Kickoff Meeting	Sep. 14-15, 2011
Notice of Intent (NOI)	Nov. 14, 2011
Draft EIS	Mar 2012
Public Hearing(s)	Apr 2012
Final EIS	Oct 2012
Record of Decision (ROD)	Dec 2012

Purpose of Public Scoping Meeting

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project

- Invite comments and input from all interested people on:

Scope of the EIS

  - Issues to be addressed in the EIS
  - Data to be collected
  - Analyses to be performed
  - Stakeholder concerns

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Program Overview and NEPA Process

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project

Ted McMahon

Project Manager

U.S. Department of Energy

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DOE's Clean Coal Power Initiative (CCPI)

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project

- The CCPI program was established in 2002 as a government and private sector partnership to increase investment in clean coal technologies. Through agreements with private-sector partners, the CCPI program advances innovative technologies to commercialization.
- These technologies include combustion improvements, control system advances, gasifier design, pollution reduction (including greenhouse gas reduction), and efficiency increases.
- Under the Energy Policy Act of 2005, CCPI projects must "advance efficiency, environmental performance, and cost competitiveness well beyond the level of technologies that are in commercial service."

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DOE's Clean Coal Power Initiative (CCPI) (cont.)

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project

- DOE selects projects for its CCPI partnerships through open and competitive solicitations. Applications are reviewed according to criteria specified in the solicitation; these include technical, financial, environmental, and other considerations.
- After selection, DOE enters into a cooperative agreement with the applicant that sets out the project's objectives and the obligations of the parties.
- Applicants must agree to pay at least 50% of their project's cost; for most CCPI projects, the applicant's cost share is much greater.

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Selection for CCPI Funding

- The CCPI program has conducted three rounds of solicitations and project selections:
  - Round 1: Projects demonstrating advanced technologies for power generation and improvements in plant efficiency, economics, and environmental performance.
  - Round 2: Projects demonstrating improved mercury controls and gasification technology.
  - Round 3: Projects demonstrating advanced coal-based electricity generating technologies that capture and sequester carbon dioxide emissions.

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project - Selection for CCPI Funding

- Objective for Round 3 projects – to demonstrate technologies at commercial scale in commercial settings that:
  - Make progress toward a target 90% capture efficiency for CO_2.
  - Make progress towards capture and sequestration at less than a 35% increase in the cost of electricity for post combustion systems.
  - Sequester a minimum of 300,000 tons/year of CO_2.
- The NRG W.A. Parish PCCS Project was selected in the second phase of Round 3. DOE entered into a cooperative agreement with NRG on May 7, 2010, that calls for DOE to contribute $167 million.
- Much of the funding DOE intends to use for its contribution would come from the American Recovery and Reinvestment Act of 2009 (Recovery Act). Its objectives include job creation and preservation; infrastructure investment; and energy efficiency.
- Recovery Act funds expire on September 30, 2015.

Project Summary

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project

Jon Barfield

Engineering Manager,
Environmental and Pipeline

Petra Nova LLC

W. A. Parish Post-Combustion CO_2 Capture and Sequestration Project

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project

- Project Overview
- Project Details
- Timeline
- Carbon Capture System
- CO_2 Transport and Use for Enhanced Oil Recovery

Project Overview

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project

- Why is NRG Petra Nova conducting this project?
  - Reduce carbon emissions; help with climate change
  - Modernize coal; maintain its viability as an established energy source, including coal-related jobs.
  - Drive the development and deployment of integrated commercial scale CCUS (Carbon Capture Utilization & Sequestration) solutions; combining CO_2 Capture with commercially proven Enhanced Oil Recovery (EOR) technologies

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Project Overview

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project

- Why is NRG Petra Nova conducting this project? (cont.)
  - Use EOR to produce stranded oil following primary production; generating revenue stream to help offset cost of CO_2 capture, which by itself, is currently uneconomic under existing legislation
  - Integrated CCUS solutions deliver significant economic and environmental benefits, increases domestic energy security and growth, and ushers in new era of American innovation, entrepreneurship, competitiveness.

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How will this project benefit the community?

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project

- Greenhouse gas reduction
  - Improved air quality, health benefits
- Economic Development
  - Extends/preserves a large, valuable community asset, occupancy rates, local services, and private investment
- Job Creation
  - Preserves and extends over 100 existing jobs at the power plant and oil field
  - Upwards of 500 construction jobs
  - Nearly 50 permanent jobs
- Local opportunities
  - Texas Gulf Coast will become the world leader in CCUS

Provides jobs, economic, green energy, reduced emissions, and lasting community benefits

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Project Details

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project

- Purpose: Demonstrate how two distinct sectors of the energy industry can work together to meet common goals of GHG reduction and enhance domestic oil production by adding Carbon Capture System to an existing coal plant and using CO_2 for EOR.
- Location:
  - Capture System - W. A. Parish Generating Station in Fort Bend County
  - Transport System (Pipeline) – through Fort Bend, Wharton, and Jackson Counties
  - EOR Operations – Jackson County
- Preliminary Cost Estimate: ~$ 845 million
  - Department of Energy may provide a grant of up to $355 million
  - Private investment will cover the rest

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Project Details

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project

- Capture, use, and sequester up to approximately 1.6 million tons of CO_2 annually (equivalent to 500,000 cars) through 90% CO_2 removal of treated flue gas.
- Demonstrate how commercial-scale carbon capture system can be fully integrated to existing coal plant with minimal impacts/disruptions to cost and production of electricity.
- Utilize, protect, and modernize existing energy infrastructure to deliver significant economic, environmental and social benefits.
- Success of project will establish repeatable template for future CO_2-EOR projects involving existing coal-fired power plants and mature oil fields.

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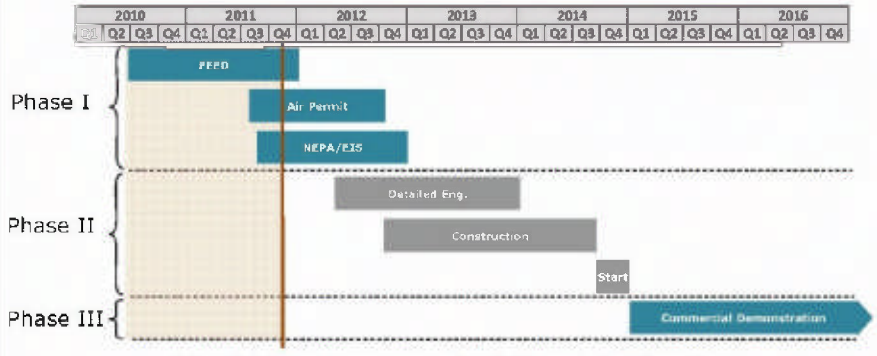
Timeline

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project



- CO_2/EOR Offtake Arrangement Established– October, 2011
- Air Permit Application Submittal – September, 2011
- Completing preliminary design study – December, 2011 Target
- NEPA – December, 2012 Target

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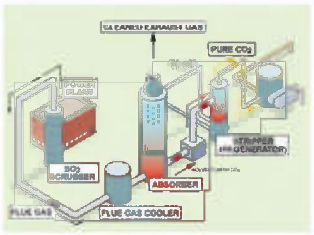
Carbon Capture System

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project

WA Parish



General Capture Process

- NRG's W. A. Parish facility is located in Thompsons, Texas, 25 miles southwest of downtown Houston. The plant provides approximately enough power to serve over 3 million homes.
- The CO_2 capture plant for the NRG site will use a post-combustion chemical amine process technology to capture the equivalent up to a 240MW unit.
- At 240 MW, the capture plant would recover 90% or more of the CO_2 contained in that gas, resulting in ~5,000 tons per operating day (largest in the world).
- The project plans to also install a cogeneration facility to supply the energy requirements to the carbon capture facility.
- Existing plant performance will not degraded or disrupted by installation of Carbon Capture system.

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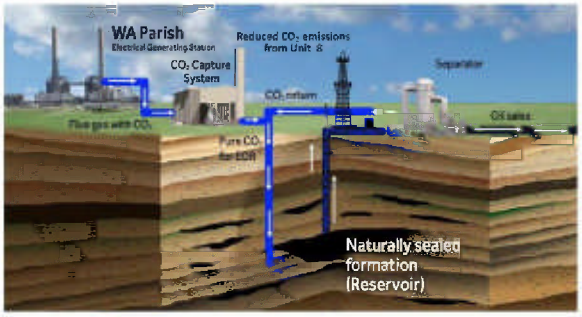
CO_2 Transport and Enhanced Oil Recovery

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project

- Divert about 35% of Parish Unit 8 flue gas into CO_2 capture system
- CO_2 capture system removes virtually all the sulfur and 90% of CO_2 from treated flue gas
- CO_2 then compressed to 2,100 psi and piped to oil field



- CO_2 injected into formation to re-pressurize and act like a solvent, mobilizing oil to producing wells
- Once at surface, special equipment separates CO_2 from the oil
- CO_2 is then re-injected to mobilize more oil

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Pipeline Corridor

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project

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Program Overview and NEPA Process

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project

Opportunity for

Public Comments

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Scoping Meeting Logistics for Verbal Comments

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project

- Five minutes per speaker, please
- Additional opportunities to speak, time permitting
- Selected government officials & pre-registered speakers will go first – sign up to speak
- An official transcript will be made
- Speakers should state their name and speak clearly
- Comment forms are also available

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DOE Wants Your Participation!

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project

- Send written comments to:
  - Mark W. Lusk, NEPA Document Manager
    DOE - National Energy Technology Laboratory
    MS B07, P.O. Box 880
    Morgantown, WV 26507-0880
  - Email to: Parish.EIS0473@netl.doe.gov
  - Fax to: (304) 285-4403
  - Envelopes, subject line of emails, and faxes should be labeled "Parish EIS comments"
- Comments due by: Wednesday – December 14, 2011

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ATTACHMENT 6

PUBLIC SCOPING MEETING TRANSCRIPTS

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W.A. PARISH POST-COMBINATION CO2

CAPTURE AND SEQUESTRATION PROJECT

****

PUBLIC SCOPING MEETING

NEEDVILLE, TEXAS

NOVEMBER 30, 2011

****

PUBLIC SCOPING MEETING, was taken in the on the 30th day of November, 2011, from 6:58 p.m. to 7:40 p.m., before Cindi L. Bench, Certified Shorthand Reporter in and for the State of Texas, reported by computerized stenotype machine at the Needville High School, 100 Fritzella Road, Needville, Texas.

P R O C E E D I N G S

MR. LUSK: Well, let me introduce myself. My name is Mark Lusk. I'm from the U.S. Department of Energy. And we're here tonight for our public scoping meeting for a public project that we have at NRG Energy and project. And this is a project that is going to be proceeding at this stage. Thanks for letting us propose the project to us. And we're selected for the financial award for the Department of Energy.

18:58 MR. LUSK: Can you hear me?

THE COURT REPORTER: A litle louder.

MR. LUSK: Closer?

THE COURT REPORTER: Yes.

MR. LUSK: Is that better? Can you hear

18:59 okay?

THE COURT REPORTER: A little louder.

MR. LUSK: I'll try.

THE COURT REPORTER: Yes, that's fine.

MR. LUSK: Anyway, we're here to talk

18:59 about the proposed project going on with the energy folks, and it's big coming down the road, and we've agreed to give them a grant for carbon capture plant. I'll talk about it in more detail as we go through the slides.

18:59 Basically, it's a carbon capturing piping

18:59 to the plant, pipes it into the plant. Pipe it 80 miles down to the West Ranch oilfield, which is probably about 70 miles from here. And we'll use this there for tracking, it is right here already.

18:59 Tonight, really the purpose of the meeting is to present to you some information about the project, but for mostly the hearing, too, and we want to hear you through you coming up and talking to us and give us some oral comments, tell us what your concerns

19:00 are, what you'd like to see us address from it and we will be prepared to answer shortly.

You can also send comments if you don't want to speak to us tonight. We have comment forms and will give it out to some folks. Just take one of the

19:00 forms with you. Fill this out and send it to me. My address is on the bottom. It's a good way to make sure your comments are received and we have a record of it.

There's also an e-mail set up. Send those directly to me. And they both have my name and

19:00 e-mail. It comes to me.

And there's also a phone you can call and ask questions. And if I can't answer the questions, I'll get with my colleague with your questions.

But at this point, we're going to go

19:00 through the short slide presentation. First I'm going

19:01 to talk about the NEPA process, National Environmental Policy Act process.

This case is a federal activity that will give you grants that specific energy required to

19:01 announce it.

After I speak about that process, my colleague Ted McMahon will speak to you about how the project is selected very briefly. And then Jon Barfield from Energy will talk to you about the project in

19:01 specific details and for that and many.

It's still early in the project, in the development, but we'll give you a snapshot of the project as it's being detailed at this time.

One of the things on this comment form is

19:01 if you'd like to receive a copy of it when it's done. If you could let us know if you want a full copy -- a full copy. It probably would be an inch or so, or 2 inches thick. And especially when it comes time, comes in a couple of different volumes. So it will be a big

19:02 document.

Or you can opt for the -- this is an example -- much smaller summary. But in the back of the CD of the back, and see and produce it.

So if you will, we'll go ahead and do the

19:02 slides. It will give you a little bit better idea.

19:02 Again, my name is Mark Lusk, and comments will be referred to me, so feel free to let us know what's going on in your mind.

Basically, the National Environmental 19:02 Policy Act is a federal requirement. Federal agencies who are going to be building something on their own first and at few storage facility, or in this case, (Inaudible)special and do built project (Inaudible) building.

19:02 The Department of Energy has to follow not only the rules and policies of their own regulations and (Inaudible)for do. Basically, it's not familiar with the management involved. It caused us to take a good hard look at all the various resources and 19:03 socioeconomics, you know, whatever, various places that you hang your hat up in at brought Brock project. We look at all that, wrap it up and send it to the public for comment.

Let's go the next one.

19:03 Basically since we're saying it's going to a larger standard, that's one of the larger and more onerous reviews we can do because you have high quality information. And experts like me here sitting here and and have resonated and are awarded that's then before 19:04 us. It was reviewed by the department and reviewed to

make sure everything is done accurately, you know, solicit experts when they can to serve Texas and reorganize, and the EPA.

And of course, we will be excited. The first stage in the process is to come to you and ask you what your comments are, what your concerns are.

As I said, the Department of Energy made a determination that an environment impact statement would be necessary based on the nature of this project. We made that determination last July. That kicked off the whole process. I think most of the people here today heard of the availability or saw the ad in the paper. And that's kicked off what we call the Public Scoping Period, which beginning on the 14th of November will run for about 30 days. And we must ask you to please submit your comments by December 14th.

Now, kind of alluded to the environmental impact statement and what they are. I mean, basically it's a very comprehensive look at the project. The first firms for the project, and we do that two ways. One is why the department's wanting to fund the project and also why EPA (Inaudible)

Now we're moving to various alternatives to consider. Will describe the environment that's around, does it affect the environment at all. What is

there now? And then we'll describe the potential environmental consequences of the project, and that's to look at various resources areas. Also what impacts, resource impacts, socioeconomics, things of that concern.

And there will be (Inaudible)AC contacting and also your input during the conference. These are the public scoping meetings. And those signed up do have comments

This is the snapshot of the process. As you can see the blue line here, that's where we are now. What we're really trying to show you is you're going to have two opportunities to comment on the project.

At this point, it's early in the project stages. You will be commenting on what your concerns are now, what you want us to know, what the stage is, so to make sure we cover everything that is covered by the public's concerns.

And the second arrow, that is the stage where we have Notice of Intent. At that point, we'll be commenting on what's in the impact statement itself. And we'll be back, you know, maybe here for another round of public hearings or somewhere in the vicinity.

And then at that point we would then take your comments and address it, and incorporate your

19:07 comments addressed initially to us, and be sure to be honest with me today.

Final EIS, and then following the final EIS, there's a 30-day minimum waiting period, and an

19:08 issue decision, which document the decision to fund the project and making requirement at issue for (Inaudible)in audible and in mitigating or minimized (Inaudible) project before.

This is the dates. Here we are, November

19:08 the 30th in the scoping period. And you see down below there.

So we're here to listen to you, what your concerns are, in addition to giving you some more information about the project which will follow shortly.

19:08 We want to really -- we really want to know what your concerns are and what you think about it and it will help us and get back with you.

So please use your comment forms.

I guess at this point I'll turn it over

19:09 shortly to Ted McMahon. Ted is from the Department of Energy as well, and he's the project manager for the project.

MR. MCMAHON: Thank you.

So the project that we're talking about

19:09 tonight want to talk about CCPI. CCPI was established

19:09 in 2002. It's a partnership between the federal government and private industry to increase investment in clean coal technology. And stress that's help --

MS. GATES: She can't hear you.

19:10 MR. MCMAHON: CCPI specifically refers to -- applies to coal-fired systems that produce electricity.

In some of the technology areas of interest to us are listed up on the slide. But

19:10 primarily we're interested in systems that reduce pollution and increase energy efficiency of the -- of coal-fired power systems.

Projects that we fund must be better than technologies that are commercially available. And so

19:10 what we're really doing is we're funding projects that develop and demonstrate technologies that are going to increase efficiency, reduce pollution, and increase cost competitiveness of coal-fired power systems.

Next slide.

19:10 We select projects under the CCPI program through open competitions. We look at technology aspects, environmental, and financial aspects of projects to select them for funding.

We then enter into what's called a

19:11 cooperative agreement -- which most people, in common

language, would call a contract -- with the -- with the participant. And this cooperative agreement specifies what the objectives of the project are and what the responsibilities of each party are.

And one of the main aspects of the project is that the applicant, or the participant, the private sector has to fund at least 50 percent of the project.

Next.

We've conducted three rounds of the CCPI program since 2002, and we're currently in what's called Round 3. And the focus of Round 3 is capturing and sequestering carbon dioxide emissions from coal-fired power plants.

The primary objective is to demonstrate new technologies at commercial scale in a commercial setting. That means -- commercial setting means having and operating power plants. And -- and some of the requirements of the program are listed here.

We're targeting processes that capture CO2 at a 90-percent efficient rate. That increased cost competitiveness of the capture systems, and that would sequester a minimum of 300,000 tons per year of CO2.

We, the Department of Energy, entered into a cooperative agreement with NRG on May 7th of

2010, and that cooperative agreement calls for DOE to share $167 million in -- of the total project costs.

And this funding that we're using, most of it, it was appropriated under the -- what's called the Recovery Act of 2009, and the main purposes of the Recovery Act were to create and preserve jobs, to invest in infrastructure, and to invest in energy-efficient systems. So I think we're -- we're meeting those objectives there.

And a final word is that the Recovery Act funds actually expire on September 30th, 2015, so they all have to be spent and utilized by that time.

And so, that's all I have. I guess I'll introduce Jon Barfield who's with NRG and Petra Nova.

MR. BARFIELD: I probably don't have any problem with you guys hearing me, right? You good? Outstanding.

Okay. Let's go ahead and see the next slide.

Briefly, we're going to talk a little bit about the project, what it -- what it consists of, the parts of it, the basic overview. We'll go into some details of it, talk about the time line. And as you've seen with what Mark and Ted have shown you, that basic time line for going through the DOE process and ending

19:14 up with the final EIS and Capture System.

So that's what we're here to talk about tonight, is what are the environmental impacts. We'll talk a little bit about the carbon capturing system, 19:14 kind of in a big box way, so we're not going to go into the nuts and bolts of it. Just kind of walk you through the basics of it, because that's probably all I can do.

And then we'll talk about the use of the carbon that we capture, the CO2 that we captured. How 19:14 we transport it through a pipe line and how we're going to use it to -- in enhanced oil recovery.

So why are we conducting this project or why are we doing this? Well, one thing is it reduces carbon emissions. We're not adding anything new here. 19:14 We're taking stuff from the gas slip stream, we're purifying it. Taking CO2 out of it. We're compressing it, and we're going to put it in a pipeline to use in an oil field that's approximately 80 -- 80 miles away from the power plant.

19:14 It helps us do a couple of things here. One, you hear about carbon dioxide and greenhouse -- greenhouse gas and how we need to reduce the CO2 emissions. Well, we're taking these existing CO2 emissions, and we're using them for another purpose. 19:15 We're putting them in the ground to try and make -- to

19:15 stimulate oil to come up out of the ground. The CO2 part of it stays in the ground, or comes up with the oil. We try to recapture that, and put it right back down into the ground, because it's it costs us 19:15 something to produce it, and because it does, we don't want it to just slip away.

Modernize coal, maintain its viability as an established energy source, including coal-related jobs. Big coal-fired power plant, we got lots of coal 19:15 in the United States, well over a hundred years' supply. So it's to the benefit of this country for us to use coal, and use it responsibly and use it in a environmentally-protected manner as much as we possibly can.

19:15 And we're driving to develop it at the point of integrated commercial scale. Carbon Capture Utilization Sequestration -- that's a big mouthful to say, isn't it -- solutions, combining carbon dioxide capture -- so this is, again, pulling the CO2, purifying 19:16 it out of the slip stream, the flue gas in our Parish plant and then purifying it, putting it in a pipeline, sending it down the pipeline to use in oil recovery.

And hopefully, that will do another thing for us as well, that is, we're trying to increase U.S. 19:16 production of oil, and -- and decrease our reliance on

foreign oil.

So, to continue, we use EOR to produce otherwise unrecoverable oil. And I know I've talked with several of you, and I know that you've talked to several other folks from Petra -- where is she? There she is over there from the URS. But a lot of the oil that's in the ground is staying in the ground because it's just not very easy to produce.

So what we do by putting the CO2 down into the ground, it acts as a solvent and it gets in the pores of the rocks. It forces that oil out. Oil comes back up, and you get otherwise unrecoverable oil.

Again, we'll use the revenue from that oil produced to offset the costs of this very expensive carbon capturing system that we're putting on our power plant.

So there's a lot of benefits here. There's economic benefits because we're producing domestic oil. There's environmental benefits in that we're reducing greenhouse gases. And then it's also helping us to maintain coal as the viable energy resource in this country, of which, again, like I said, this country has a very vast coal reserve. And so it's in our best interest to try to utilize that.

UNIDENTIFIED SPEAKER: Question, where is

it physically (Inaudible.)

MR. BARFIELD: At this time, we are not going to take questions otherwise.

But what he's talking about is it's not economically recoverable in technology, other than get it under pressure (inaudible)

I think we're ready for the next one.

So as I said, we have greenhouse gas production, we hear all this talk about global warming and climate change, and C02 in the atmosphere is causing, you know, global warming.

So we're taking CO2 that's otherwise going to be going up out of our stacks, purifying it, putting it in the ground and using it as a means to recover oil.

Economic development, like I said, we're going to continue to be able to operate our coal-fired plants that provides jobs for people who mine coal. It provides people to transport that coal. It provides people who operate coal-fired plants, and it provides jobs for people who work on pipelines. If they're built by pipelines that use pipelines to transport CO2, it provides jobs for oil field workers as well.

And so here we've just got some basic numbers here. It preserves and extends over a hundred

existing jobs at the power plant and the oil field, upwards of 500 construction jobs. And really, we're talking about two different construction projects here, because we have the work that's at the plant that's going to be a carbon capturing system, and then we'll have a pipeline project. And those will slightly overlap, but really the plant work is going to come first and the pipeline will come afterwards.

And so at any given time, you know, the number may -- may increase above that 500 because we're really looking at two different work forces there. And nearly 50 permanent jobs that will be created.

Local opportunities, the Texas gulf coast has a lot of target oil fields that will be great for enhanced oil recovery, and it has the potential to start building an infrastructure that will enable us to become, as a state, and as a region, a world leader in Carbon Capture and Sequestration.

So our purpose is to demonstrate how two distinct sectors in the energy industry could work together to meet common goals -- it's hard to read from here -- of greenhouse gas reduction and enhanced domestic oil reduction by adding our CCUS in our plant and then using that CO2 that we capture for enhanced oil recovery.

19:20 The capture system will be in the Parish generating station, which is just a short ways from here -- and if you don't know where it is exactly, I'll be happy to talk to you afterwards and show it to you on 19:20 the map -- here in Fort Bend County.

The pipeline will run from that plant down to West Ranch oil field in Jackson County.

The pipeline, as currently envisioned, is about 80 miles. And what we did is we looked at several 19:21 different project corridors. Where could we put this pipeline where it, one, minimizes the impact of the environment, minimizes impacts of the land owners.

And then two, it's a straight shot. I mean, because from an economic perspective, you don't 19:21 want to build, you know, a hundred miles of pipeline to go 40 miles to deliver a product. And so what we did is we looked at power line corridors. We looked at road corridors. We looked at railway corridors. We looked at combinations of those. We looked at existing 19:21 pipeline corridors.

What we came up with is a combination. For about the first half of the project, we'll be following, as currently scoped, the Centerpoint Energy right-of-way.

19:21 Directly adjacent to that is a

19:21 right-of-way for an energy transport pipeline. Those two rights-of-way together, I think, comprise of about somewhere between 350 and 400 feet, and our pipeline will actually lay within that existing corridor, or
19:22 those existing corridors, so there will be no new impacts or no more clearing. We have pretty well-known variables with respect to impacts on the environment with wetlands, archaeological, historical resources, endangered species, those sorts of things, land use.

19:22 And then for the second half of the pipeline corridor, we're following South Texas Electric Co-op. And again, it's an existing corridor, and we're putting it in the existing corridor, and so we're not creating any new impacts, because it will be subsurface
19:22 structures.

The EOR operations, like I said, were at West Ranch oil field in Jackson County. It's an existing oil field. It's been an oil field that's been producing since the late '30s, early '40s. And -- and
19:22 it continues to produce even today.

You see some numbers here. These are very preliminary cost estimates, approximately $845 million for the capture system, the pipeline.

The Department of Energy has granted
19:23 Petra Nova 167 million, but we may get up to

19:23 $355 million, and then private investment will cover the rest of the cost of the project.

So capturing CO2 approximately 1.6 million tons annually, which is equivalent to the 19:23 CO2 output or greenhouse gas output of a half a million cars. And from that flue gas, that slip stream recaptured 90 percent of the CO2 will be removed from it. And that will, again, be purified and be put in the pipeline.

19:23 Now, this is a flue gas that comes from -- it already has a lot of pollution and reduction already on it. So it's gone through a selective reduction for NOX, remove nitrogen oxide, and flue gas and I've got CO2. Mercury's knocked out and goes through 19:24 and back out and things like this.

All those things are primary pollutants. Most of them are already knocked out, which makes this an ideal candidate for this.

In partnership with the DOE and we're 19:24 trying to demonstrate how we can take this existing technology for capturing carbon and really build it up at a commercial scale. There's been some small scale projects, but this is a very large scale project in comparison.

19:24 Now, the technology of using CO2 for EOR

is not a problem. It's something that's been done in west Texas for 40-plus years. Gates Oil Field, they take CO2 that's naturally produced out of the Cortez stone in Colorado. They pipe it down through approximately 3- or 400 miles of pipeline infrastructure and inject it and use that and have been doing that for 40 years. So that -- that piece of the puzzle is proven technology.

While we're doing this, obviously, we're attaching it to an existing power plant. We also want to make certain that we balance that against not increasing the cost of the electricity that is produced at that power plant.

One of the goals of DOE's program and one of our goals is, if we can -- if we could commercialize this, if we can prove it on this scale, that will help us in taking and move other projects like this, because there is going to be a need for CO2, for enhanced oil recovery, and there is going to be a need to reduce greenhouse gases in the future.

So if we can improve this technology at this larger scale, make sure that it's economically viable, make sure that we can do it in a way that protects the public, then we have a template that we can then go forward and use in other coal-fired power

19:25 plants.

Here's our timeline. We talked about it a little bit earlier, and I think Mark put some slides up on the NEPA process, but this has a little bit more.

19:26 Up in -- starting in the upper corner there, the feed is the front-end engineering design, so that's where the -- on the power plant side, looking at the carbon capture system, what's required there, how we're going to do that. We have technological

19:26 difficulties that we have to overcome. Same with the pipeline.

So out of that feed, we'll produce output level and have that estimate and have some baseline assumptions on how we're going to do the work.

19:26 The air permit process, because we are modifying the emissions at the power plant, we have to get a new air permit for that. That air permit application has been prepared, and it's been filed. I think it has been declared, at least administratively

19:26 complete, so it has all the pieces of the puzzle there. And now -- now it's just in the state's hands to review and process.

The next bar down you see is NEPA/EIS process, and that's why we're here tonight. We're here

19:27 to talk about what the environmental concerns that the

19:27 public has, making certain we capture those concerns, and then incorporating those into the environmental impact statement.

We call this level a scoping meeting because, even though we have a line on the map over there, there may be environmental issues that I haven't caught in my background and research in looking at all the various grids, and so we need to hear from the public, as well as what are their concerns. So we look at a wide variety of things.

Then next year we'll be kickingn off detailed engineering for the plant and pipeline. That's where we'll get really refined estimates and start talking about, okay, here's the type of equipment we're going to have, here's where we need to purchase it, when are we going to hire contractors to construct both of those pieces, and what -- what things have to happen in sequence to make that occur so that we go into construction --

19:28 Go back a second.

Okay.

-- construction at the plant is currently scheduled for the last part of 2012 for the pipeline. There's a little bit more wiggle room there, and that's simply because pipelines are a lot easier to build than

power plants and carbon capturing systems.

And then finally, our Phase 3 is going to be the commericial demonstration. That's where we're actually delivering CO2 to the field, and as part of that, we have to have a MVA, or monitoring, verifying and accounting for what's happening to the CO2.

We're putting it in the ground, it's staying in the ground, part of it's staying in the ground, and what's coming back up, and the oil and we've recovered that, and we're re-injecting it.

So we want to know what happens to it, what's the fate of the CO2 in the environment.

Okay. Next slide.

So here's a picture of the Parish plant, and you can see the general process here where you have the power plant and there's the flue gas regeneration, the scrubber there. The flue gas is coming off, it's cooled, it goes through an absorber and a stripper that regenerates the insolvent that's used, and the CO2 gets purified. All the -- all the stuff is knocked out of it as best as possible. Then it is pressed into a superficial state and then injected into a pipeline.

At that point, it will be metered going out of the facility, and it will be metered when it's delivered to the customer at the other end of the

pipeline.

As we currently have it planned, we're looking at a 12-inch pipeline. It may go up to at least a 16-inch. Don't know yet because we're just running very preliminary hydraulic models as to whether we're going to have to have pumping stations or booster stations along that line. We're looking at a pressure leaving the plant of about somewhere between 21 and 2,500 pounds.

Again, we're still playing with that hard computer modeling in figuring that out. And then the delivery pressure in the field of about 15 or 1,600 pounds.

Let's see if there's anything else here.

At this -- one other point I'll point out here of all those bullet points is that -- the last bullet point is the existing plant performance will not be degraded and disrupted by the installation of the carbon capture system.

In other words, we're not going to rob any electricity to run the carbon capture system. Instead we're going to put a new unit in there that will produce electricity, that will be a natural gas-fired unit to run the Carbon Capture System. And there will be excess power produced. It's always a good thing.

19:30 I don't know if anybody was reading the news over this last summer, but we had some days where the Texas power grid was really pretty constrained because it was so darned hot here. And if you're like
19:31 me, I run my air conditioner all the time. I'm one of those people. And so any power that we can produce in the back of the grids, that's a good thing.

So here, this is, again, one of the graphs you've seen on one of our posters out here, but
19:31 it just shows, looking at the graphing itself, where we have the plant, the carbon capture system where the CO2 is pulled out of that flue gas on our Parish Unit Number 8, and it's one coal-fired unit of four coal-fired units at that plant, and there's also four natural gas units
19:31 there.

We purified the CO2, compress it, put it in the pipeline, send it through the pipeline down into the field. It's injected into the field. Some of that CO2 will stay in the formation some of it will come back
19:31 up as oil is produced. When the oil is produced, the C02 will be separated out of the oil, re-injected back in the field.

Okay. This is our preliminary corridor where I was talking about where we looked at the two
19:32 power line corridors. And you will see there in the

middle that there's two different alternatives. And a couple of people asked me why do you have two different alternatives there? It's simply where do I come off of one pipe -- one power line corridor and go to the other. There's a couple of options there.

That's a random thing, and so it just depends upon how we can get through that area with the least amount of impact. Most of this is very rural. That area has at least some development. If we look at that Alternative 1 central segment, that's coming down and we have the county road over to the south Texas electric co-op corridor there. And if you look at the lower one, that's coming all the way down into Centerpoint, their substation, and then we'll be following another local electric utility line over to this corridor there. And then it comes all the way down to the West Ranch oil field.

One of the things that we looked for when we were siting these is, as I said, you know, reducing impacts on creating new corridors, utilizing what was already impacted, making certain that we don't have to clear any new areas, making certain that we avoid known areas of archeological or historical concern, the ranges and threatening endangered species, wetlands impacts, all those things were taken into account when we started

19:33 to site this. And this was the cleanest corridor that we could come up with. And it's also designed to be as short as possible as well.

And with that, I'm going to turn it over
19:33 to Mark.

MR. LUSK: Okay. At this point, we are ready to hear your oral comments, and we only have two people signed up to speak. I assume they're still here.

The first one I have is Mike Trahan.
19:34 Actually, I forgot, we need to go over the -- we kind of have some rules here, but we only have two people who are scheduled to speak, so we generally use five minutes at a time. It is okay if one of you want more time, since there is only two of you.

19:34 But please say your name. I will give Cindi the list here when I'm done so she'll have the names and spelled correctly. But basically you're going to come up and let us know your name, issue identified yourself. And then tell us what your concerns are.

19:35 When we're done, if anyone else wants to come up afterwards, and put their comment in writing, I probably have time for discussion about the project and to ask question, if you want to ask questions. But we can do this as an informal process. If you want to
19:35 speak, you can have a chance to do so.

19:35 MR. LUSK: If you like -- thank you -- you can come sit with Cindi up front by yourself if you don't want to speak in front of everybody and you can dictate your comment to her as well. Or you can, as I 19:35 said, simply make a comment in writing. That's just as good. All count whatever you want to say.

So go ahead and do the next slide. We'll leave -- we'll just leave this up while we're doing the speaking. It's on the form here as well.

19:36 MR. TRAHAN: yes. I'm Mike Trahan, and I am down in Houston. My concern is that -- or question would be is -- will NRG solely own the pipeline? And the other question would be, will they be able to use imminent domain to obtain where they're making their 19:36 crossovers from one right-of-way existing to the other right-of-way existing imminent domain, safe to obtain that property?

MR. LUSK: Thank you. And I guess next we have Richard Lord.

19:37 MR. LORD: yes, my name is Rick Lord, or Richard Lord. I'm with the Gulf Coast District Council. And I've been told that there's been difficulty getting the payrolls from these DOE-funded projects. Will there be a certified payroll and will it be ready and 19:37 available for us, or for anyone, to come check out the

payrolls on the project?

And also, DOE's part of the funding, what percentage of the overall cost is -- I've seen the numbers come up, but I'm just curious, is there a certain magic number or how much it's funded will be available for this project?

MR. LUSK: Would anybody else like to provide oral comment at this time?

MR. GRABLE: Good evening. I'm Josh Grable. I'm also here and as a member of the community. And you all know we have a situation right now with the water, there was a severe drought, and how much more water, if any, would this expansion to the Parish actually use?

MR. BAKER: Yes, my name is Mark Baker. I'm a business agent for the pipefitters local, the training program and stuff like this, and I'd like just to express my concerns that I want to know that the highest quality of workers is going to be available at this job.

And also another concern of mine would be if -- will this project have any kind of impact on the cost of electricity to the consumer in any way, anything like that, because what we have with the regeneration process.

19:39 MR. LUSK: Thank you, Mark.

Anybody else want to revisit something or additional comments from anybody?

Well, anybody have any interest in
19:39 reconvening more informally and discussing some of these things or -- we can go by the posters and talk about it or -- that's what we've done in the past. If there's people interested, we can go discuss these things.

We have your comments on record. I thank
19:40 you. And I do encourage you all -- I hate to repeat myself over and over, but if you do have comments, please submit the forms and there as good as oral, so send them in.

Hope to see you back in a few months and
19:40 we can talk about the graph. Thanks for your participation.

Do you guys have any desire to leave a comment with Cindi? Okay. We are good to go? Okay.

(Proceedings concluded at 7:40 p.m.)

REPORTER'S CERTIFICATE

PUBLIC SCOPING MEETING

November 30, 2011

I, Cindi L. Bench, the undersigned Certified Shorthand Reporter in and for the State of Texas, certify that the facts stated in the foregoing pages are true and correct.

I further certify that I am neither attorney or counsel for, related to, nor employed by any parties to the meeting in which the comments are taken and, further, that I am not a relative or employee of any parties employed by the parties hereto or financially interested in the action.

SUBSCRIBED AND SWORN TO under my hand and seal of office on this the _____ day of _____, _____.

_____

Cindi L. Bench, CSR
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W.A. PARISH POST-COMBUSTION CO2 CAPTURE AND SEQUESTRATION PROJECT AND THE NATIONAL ENVIRONMENTAL POLICY ACT

DECEMBER 1, 2011

COPY

MR. LUSK: We'll start with some introductions. My name is Mark Lusk. I just met you guys, and I'm the -- what we call the NEPA Document Manger with the Department of Energy, and my role is to guide the production of the Environmental Impact Statement that we'll be preparing here in the next few months.

At this point we're here to, you know, generally get comments from the public, but, you know, we don't have too many people showing up, so we're glad that you're here, but we can introduce you to the project, you know, introduce you to the people that are working on the project, and let you know kind of what's coming down the road.

At this point we will start production of the Environmental Impact Statement. We'll take comments, then, the next few weeks, I think until December 14th -- even later. If they come in a little later, that's fine too, you know, we're not gonna ignore them.

There's various ways they can comment. You can bring a stack of those forms with you, and they can submit those to me directly, either by e-mail, or, you know, put them in the mail. They can drop a note to me on a -- on a phone number we've set up. All that is in the Notice of Intent that I gave a copy to you. So

there's a number of ways they can comment and also request a copy of the Environmental Impact Statement, if they would like a copy.

With us today we also have Ted McMahon. He's with the Department of Energy as well. Ted is the project manager from our side of the -- of the partnership, and his boss, Gary Stiegel, is here as well, behind you -- Gary. And Steve Mascaro is also with the Department of Energy. He is the project engineer and will oversee a lot of the design and review things, make sure it meets the requirements from -- from our side. They were awarded this financial assistance grant, and Ted can talk a little bit about that, how they got selected, but basically they have to, you know, meet certain requirements in order to get the grant.

And you've met David Greeson.

MR. GREESON: Yeah; David Greeson. I'm the -- the commercial lead for the project for Petra Nova, which is a subsidiary of NRG Energy, and then I'm gonna let the rest of my team introduce themselves.

MS. STONITSCH: Devon Stonitsch, and I'm the (inaudible) for the Petra Nova team.

MR. LUSK: Speak up so she can hear you.

MS. STONITSCH: Devon Stonitsch. I am the finance and accounting lead for the Petra Nova team.

MR. GREESON: Okay. And you've met John.

MR. BARFIELD: John Barfield. I'm the pipeline and the overall environmental lead for the project.

MR. ARMPRIESTER: And I'm Tony Armpriester. I'm leading the engineering and construction efforts of the carbon capture facility inside the plant fence line.

MR. KNOX: And David Knox, I do media relations for NRG that support the Petra Nova group.

MS. ROSS: Peggy Ross, I'm the executive assistant for Petra Nova.

MR. LUSK: And then also with us we have U.T. folks.

MS. SMYTH: Becky Smyth. I'm with the U.T. Bureau of Economic Geology, and we'll be looking at the subsurface in the oil fields, designing and monitoring plans and trying to figure out where the CO2 is going, tracking it.

MR. COMWELL: I'm Pete Comwell. I'm from the URS Corporation, and I'm managing the preparation of the EIS from I guess either subcontractor to DOE and NRG Petra Nova, and then. . .

MS. GATES: Oh, I'm Nancy Gates, and I'm a public involvement task leader for the URS project.

MR. DUPRES: And I'm Jason Dupres with URS, and I'm involved with the permitting of the pipeline.

MR. LUSK: So URS will be doing a lot of the work on developing the EIS and looking at the various impacts, and that document will probably go out, like I say, in what, four or five months? Why don't you flip the slides for the schedule.

UNIDENTIFIED PERSON: Is that --

MR. LUSK: Yeah, stay there for a minute; yeah. Basically, we're at this first arrow that's going -- going up here, at the public scoping meeting, we call these, where we come out to the public, describe the project, give them an idea of the schedule, tell them how the public can get involved. Basically the public has two points in the process where they get involved. One is the scoping period where we are now, and we're asking for input on what the concerns are. As the develop -- the document is developed, we make sure we address those concerns.

Later, the second arrow that's pointing up, after the draft of the Environmental Impact Statement is released, well, there's another public comment period where the public can then comment on the content of the document itself. And we'll come out and do another

series of meetings, and people can let us know what they thought of the document, if we missed something, if we were inaccurate, you know, whatever they --

MR. GREESON: Late spring you expect?

MR. LUSK: Yeah, probably or, you know, sometime this spring, I would think.

And you know, generally there's a 45-day period where we accept comments and give everybody a chance to review it, and like I say, we'll come out for a public meeting. At that point we take those comments and other comments we've received from, you know, EPA, the State, whoever else has had a chance to look at it. We send it to a lot of different agencies, and I'm -- I'm sure we'll be sending it to a lot of local officials as well. So, if you have a chance to review it, that will be great.

We'll accept those comments, and we'll prepare the final Environmental Impact Statement based on the comments we receive, and not any other developments that have occurred, and release the final Environmental Impact Statement sometime late in the year next year.

And at that point, we would have a 30-day waiting period to issue what we call the Record of Decision, which is the agency's decision to, you know, go forward with the project, and it might identify various

mitigation actions that we would, you know, place on NRG Petra Nova to make sure that it minimizes the impacts that we've sought. And at that point they'd be basically turned loose to do their construction and carry the project forward.

There is a tentative schedule we've lined out curbing some of the dates I've mentioned, and like I said, basically, you know, the reason we hold these meetings is to get public comment. Some -- some projects are more contentious and controversial, and you might get a hundred people show up; some projects get -- you know, we had like seven people last night, I think.

And then, Ted, if you want to give them just a little background on the selection process, that would be great.

MR. MCMAHON: Okay. I can make this pretty brief.

The -- the project that we're talking about today receives federal funding under what's called the Clean Coal Power Initiative, or CCPI, which is a program that was established in 2002 to increase investment in clean coal technologies.

Some of the technologies that we're interested in are listed in the second bullet, but mainly the program focuses on reducing pollution and increasing

energy efficiency of coal-fired systems that produce electricity.

We give funding to projects that are better than what is technologies that are commercially available. They have to make advancements in efficiency performance and environmental performance and or cost competitiveness received -- to receive federal funding.

We have competitions -- open competitions for these pro -- to receive funding. We have specific criteria that we look at to make selections from. We look at the technology that's proposed, the finances of the project, environmental performance of the technology, in order to select which projects will receive funding.

When we select a project, we enter into what's called a cooperative agreement. In common terms that would just be known as a contract that specifies what the objectives of the projects are and what the obligations of both parties are. And one -- one of the most important aspects of the project is that the applicant or the participant, in this case, NRG Petra Nova, has to agree to pay at least 50 percent of the project costs.

This is the third round that we've done since 2002. This particular round, Round 3, was focused on projects that capture carbon dioxide emissions from

coal-fired power systems. And there are some specific objectives that we had; the first is that the objective is to demonstrate technologies at commercial scale and commercial settings. So this is for big projects. This is not for laboratory-scale work at all.

And we -- projects had to target a 90 percent capture efficiency for CO2. They had to make progress towards reducing costs of these types of systems, and they had to capture and sequester a minimum of 300,000 tons a year of CO2.

We selected this project in early 2010 and signed an agreement with NRG in May of 2010, and it calls for DOE to contribute $167 million to the project.

Much of this funding comes from the American Recovery and Reinvestment Act of 2009. It's called the Recovery Act or the Stimulus Bill -- and y'all can hear about that in the news. And its objectives are to create and preserve jobs, invest in infrastructure, and invest in energy efficient technologies. And one important point is that some -- the Recovery Act funds will expire on September 30th, 2015. So they all have to be spent by that date. I think this project won't have a problem spending that money by that time.

So, that's really all I have to say. If you have any questions, I'll be happy to entertain any;

otherwise, John -- I guess I will turn it over to John.

MR. BARFIELD: Sure. And we can -- that's just kind of a list of kind of some of the things we'll cover, so we'll just move on.

Something we talked about last week, greenhouse gas reduction, economic development, job creation, preserving and extending existing jobs at the plant, in the oilfield, and creation of some new jobs as well as jobs that will be during construction -- 500 construction jobs that will probably be -- what do we say at the plant, Tony --

MR. ARMPRIESTER: It means 500 construction jobs for a two-year period, but there will be peaks and valleys --

MR. BARFIELD: Right.

MR. ARMPRIESTER: -- along the way, so -- two-and-a-half-million man hours in construction at the plant, so. . .

MR. BARFIELD: Okay. And then the pipeline is gonna not be that many hours, because we will build the pipeline. And by pipeline, we can do that in, you know, be anywhere between three and six months, but we will probably have, again, upwards of 500 jobs during that time, and those are -- those are good -- good quality jobs -- we're talking welders, equipment

operators, those sorts of things, so. . .

As you know, the plant is up in Fort Bend County. The pipeline system goes through Fort Bend, Wharton and Jackson County, and I showed y'all on the map here where -- where it crosses into Jackson County.

In Jackson County we're following the South Texas Electric Co-Op Corridor. The reason we chose to do that -- we looked at several different options, we looked at other pipelines, we looked at railroad corridors, we looked at road corridors, we looked at other power line corridors -- it's simply to minimize impacts to landowners. We have known environmental impacts where those corridors are, and beyond that, it's trying to find the straightest line between two points to do it and build it as efficiently as possible to the least amount of impact.

We've got some preliminary cost estimates up here -- approximately 845 million, and we're still in engineering -- front-end engineering design phase, so these are preliminary costs, and it says here -- you know, Ted had mentioned we have a $167 million grant from DOE currently, but we may be able to get a grant up to 355 million, and then private investment will cover the rest.

The carbon dioxide we're capturing is

approximately 1.6 million tons of -- I think Ted talked about we -- the target was due at least 300,000, and the system is going to be designed to capture 1.6 million tons, which is the equivalent of the CO2 in the exhaust of a half a million cars a year.

Again, just kind of building upon what Ted said, we're trying to take it from -- we -- we've seen it in the laboratory, we've seen a small scale, now we're taking it a commercial scale, so a much larger application with the -- the proviso that we don't want to, you know, significantly increase the cost of electricity at the plant, and, then, in fact, this -- this project could be separate and not tied to the cost of electricity at that plant.

Go ahead and go on to the next slide.

This lays out a little bit -- in a little bit more detail. They talk about the -- the EIS schedule, and that's certainly a part of this, but where we are now, we start up here in the -- in the far corner, that's the front-end engineering design. That's for the plant work, and that's the pipeline work, and that's where we are right now, and the red line kind of shows where, you know, where we are here today.

The Air Permit Application in Fort Bend County has already been prepared. It's been submitted to

the State. It's been found to be administrative and complete -- in other words, it has all the parts that it's supposed to have, and so it's now under review there.

The NEPA EIS process we're in now, starting back when the decision was made to do an EIS in July to when the Notice of Intent was published, and then we start with these scoping meetings.

The next step for us as a company, Petra Nova, is we'll actually get out in the field with civil surveyors, put stakes on the ground, we'll have biologists come out, archeologists; looking at are there wetlands impacts, are there threatening endangered species impacts, are we gonna hit any archeological resources?

A good thing about if you are in the existing corridors, you already know a lot of those things, and so those are part of the process to filter down where it makes sense to site a pipeline.

We'll be starting detailed engineering soon, and -- and I'll say here I think that -- that may be moving too -- a little bit earlier than 2012, because we're -- we're trying to get a jump, but. . . And then construction starting in -- in the fourth quarter of 2012, and that will be at the plant. The pipeline

construction is much easier, much more straightforward, and so it will be pushed out towards, you know, the last six or eight months of that construction schedule there.

The start is simply the startup where we're gonna be testing all the systems, making certain that the work that happens at the field has been done, and everything is integrated and working together, and then we'll start actually operating the system as the commercial demonstration.

Becky talked earlier about the -- the MBA activities, what happens to the CO2, how much of it is staying down in the ground, how much of it is coming back up that gets separated back out from the oil. That's going to be part of that commercial demonstration period, that two-year period or so.

MR. GREESON: John, when will you start contacting landowners on the pipeline in Jackson County?

MR. BARFIELD: In Jackson?

MR. GREESON: Uh-huh.

MR. BARFIELD: We're contacting them now. We've -- we've contacted everybody in Fort Bend. We have been contacting the folks in Jackson County starting Monday, and in Wharton County as well.

So, part of that, though, is the -- what we started with was a list of landowners that we got from

STEC, when they built their line. Obviously some -- some of those parcels may have changed over time, so they have to take what we've given them, the maps we've given them. They go to the county courthouse, they look at all the titles, they figure out whose -- who -- who now owns the properties, if they have changed. And then once we get that, then we'll start contacting folks.

At this point, we're contacting them just to ask permission to go on their property and do the civil surveys, so the engineering surveyor will be out there putting the stakes out on the ground, marking the edges of where our post-construction right-of-way is. And we're looking for -- for a 12 to 16-inch line, we'll look at a hundred -- a hundred foot construction corridor and somewhere between 30 and 50 feet of permanent right-of-way, which will be overlapping with the STEC right-of-way. So, for this, it just depends on how much it is.

We're gonna lay at least five feet inboard on the STEC right-of-way, so we will be in their right-of-way. There will be five feet, and then we'll have to get some additional permanent easement just outside of that, and it will be somewhere between 15, 20 -- 20 feet. We will compensate -- we will compensate landowners, of course, for temporary impacts as well as

the permanent easement.

MR. GREESON: And how wide is the STEC right-of-way in that area?

MR. BARFIELD: Eighty feet, I believe. Don't quote me on that. I'll have to go back and look, because --

MR. GREESON: And we're gonna try to live within that, right?

MR. BARFIELD: And we're gonna try to -- to live -- we're gonna try to, as much as possible, use as much temporary right-of-way on that existing right-of-way already. So, in other words, we'll overlap as much as possible there, and -- but we will need a little bit on the outboard side, and it's -- it's just a decision on how much do we want from our center line, which will be five feet in.

Typically, the -- the narrowest I've ever seen is, you know, 15 foot outside the center line, which would put us ten foot additional permanent easement that we would be impacting landowners. Twenty foot is probably more likely, but, again, it's gonna be a negotiation, and we will talk with folks, and it depends on how easy it is to get around on the STEC right-of-way. We have access to it.

One of the things that we'll do, because a

lot of it is ag area, David, is that we'll segregate top soils, so that we can put them back in place -- put the soil profiles back in place. If we're in building during a growing season, we'll compensate the crops. That's -- that's typical, and that's what everyone should do.

And then, you know, since we need access to that right-of-way, STEC has some gates in there, but we'll still have to negotiate with the landowners for the rights to use those gates, put our locks in. And where there's not any gates, then we'll put some gates in there as well.

Some other impacts, in getting to some of the Judge's and Commissioner's comments earlier, where we have road crossings, before those road crossings, we'll put fans (ph) out, or whatever the -- the county engineering department says, "This is how we're gonna do it," then that's how we'll do it, and do all of those things, and then, you know, if we have to pull them out, we'll pull them out; if it's a benefit to the landowner and it's agreeable to the county, then we'll leave them in place, but that's -- because they're county roads, it's really their call. It's not the landowner's call.

So, this is -- this is kind of some details about the plant and everything, and probably I'm -- this is really up in Fort Bend County, so let's

move on to the next one, which is here at the field. This is showing how -- just a basic schematic where it will capture a slip stream of flue gas out of the existing coal-fired plant up in Fort Bend County. So, we're gonna pull it off at just one of the coal-fired units there, and that's Parish Unit No. 8.

We're gonna pull about what, 35 percent of that flue gas stream. We're gonna run it through a system where there's a chemical solvent, an amine solvent, then we'll purify the CO2. We'll try to recover as much as that solvent as possible and regenerate it for use, and then we'll compress that CO2, put it in the pipeline. It will be metered as it goes out of that facility, and then it will come all the way down here to the West Ranch field, where it will be metered again, and then -- and then put into the ground.

As it's used, of course, the idea is that the CO2 acts as a solvent and gets into the interstices or the pores in the rock and forces the trapped oil out, so as the oil comes out, then it will -- it will still have CO2 in it. The CO2 will be separated out, and the oil will go into transport into existing pipeline systems that already cross the field out there. That CO2 that's recovered will be recompressed and reinjected into the field.

It's a -- it's a valuable commodity. It takes some money to produce it, to purify it, to get it there, so we don't want to -- to lose it.

And this is just the basic route as we've laid it out. And as I, you know, mentioned earlier in some of the informal comments, we looked at a lot of various ways to get down here, looking at combinations of existing power line rights-of-way, road rights-of-way, railroad rights-of-way, other pipeline rights-of-way, and we believe that the route that we've chosen has the least amount of impacts to landowners, the least amount of impacts to the environment.

You will see here in the center where we have two different alternatives -- and that's just a decision of where do we come off of one power line right-of-way and go onto the other one? And that's just a decision when we get out there on the field and we're looking at it, we'll make a determination which one looks like it's the easiest route, the cleanest route.

Right now I can tell you, just based upon the studies I've done, it looks like coming off on that northernmost part there and -- and coming -- we have to follow a county road, about four-tenths of mile, I think, and then we'll pick up the STEC right-of-way. That looks like the easiest -- easiest and cleanest route.

And I think that's my last slide. So, I'll be happy to answer a few questions now.

MR. LUSK: At this point, we would, you know, take public comments. They would have a chance to speak if they wanted to. You guys are welcome to, you know, ask questions just informally or provide a comment. And then this last slide just gives all the various options for sending me comments. You know, you're welcome to take some of those forms back with you and give it to some of your constituents. They don't have to use the form, they can just send me an e-mail. That e-mail I have direct access to, so it basically all comes to me, and I'll funnel them to these guys to help me answer questions, but that input would be helpful as we start to develop the draft EIS. So if you have any questions --

MR. DEYTON: No, I don't.

MR. LUSK: -- we'll take them.

MR. DEYTON: Not at this time.

MR. GREESON: Yeah, and feel free to call us any time, you know, DOE or us.

MR. LUSK: You've got my card.

MR. GREESON: I'm sure we'll be back in touch with you soon. We'll be -- we'll be getting more folks together and come back down and talk a little bit

more about what the plans are for the field, so you guys can know what's going on out there, and as John gets more input or feedback from the landowners, we'll update you on how that's going with the landowners on the right-of-ways, so --

MR. DEYTON: Yeah. We really appreciate that, you know, because that's the people we deal with.

MR. GREESON: I know, and we intend to make them happy.

MR. DEYTON: All right.

MR. BARFIELD: And you know, you have my card, and I'm the person who will be signing those easement agreements, so I can't hide.

MR. DEYTON: Okay.

MR. BARFIELD: So I'll be around.

MR. LUSK: Anything else we can do for you or questions on the EIS process or --

MR. SIMONS: No, I don't think. I think I pretty well understand it. I just wanted to -- just interested to see if anybody else was gonna be here to make any comments.

MR. LUSK: We haven't generated a lot of interest quite yet, but maybe later.

(Conclusion of hearing)

THE STATE OF TEXAS)

COUNTY OF JACKSON)

REPORTER'S CERTIFICATE

I, TAMMY C. WATKINS, Certified Shorthand Reporter in and for the State of Texas, do hereby certify that the above and foregoing contains a true and correct transcription of the Public Hearing Meeting held on December 1, 2011 in Jackson County, Texas, to the best of my ability.

WITNESS MY OFFICIAL HAND this the 4th day of January, 2012.

TAMMY C. WATKINS, CSR, RPR
Texas CSR No. 3623
Expiration Date: 12/31/2013
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COPY

APPENDIX C

CONSULTATION LETTERS

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CONSULTATION LETTERS

In the course of preparing this EIS, interaction efforts with Native American tribes and state and federal agencies were necessary to **present DOE's Proposed Action,** discuss issues of concern or other interests that could be affected by **DOE's** Proposed Action **or NRG's proposed project**, obtain information pertinent to the environmental impact analysis of the **proposed project**, and initiate consultations or permit processes. Following are the consultation letters sent to the various agencies accompanied by the agency responses, when responses were received. This appendix is organized as follows:

C.1 NATIVE AMERICAN TRIBAL CONSULTATION

- April 5, 2012 consultation letter from Mr. Mark Lusk of the DOE to Mr. Carlos Bullock of the Alabama-Coushatta Tribe of Texas
- April 5, 2012 consultation letter from Mr. Mark Lusk of the DOE to Mr. Louis Maynahonah of the Apache Tribe of Oklahoma[1]
- April 5, 2012 consultation letter from Mr. Mark Lusk of the DOE to Mr. Johnny Wauqua of the Comanche Nation of Oklahoma[1]
- April 5, 2012 consultation letter from Mr. Mark Lusk of the DOE to Mr. Kevin Sickey of the Coushatta Tribe of Louisiana[1]
- April 5, 2012 consultation letter from Mr. Mark Lusk of the DOE to Mr. Ron Twohatchet of the Kiowa Indian Tribe of Oklahoma[1]
- April 5, 2012 consultation letter from Mr. Mark Lusk of the DOE to Mr. Mark Chino of the Mescalero Apache Tribe of the Mescalero Reservation[1]
- April 5, 2012 consultation letter from Mr. Mark Lusk of the DOE to Mr. Donald Patterson of the Tonkawa Tribe of Indians of Oklahoma[1]
- April 5, 2012 consultation letter from Mr. Mark Lusk of the DOE to Mr. Earl J. Barbry, Sr. of the Tunica-Biloxi Indian Tribe of Louisiana[1]
- **October 29, 2012 response letter from Mr. Michael Tarpley of the Coushatta Tribe of Louisiana to Mr. Mark Lusk of the DOE**

C.2 PROTECTED SPECIES CONSULTATION

- February 14, 2012 consultation letter from Mr. Mark Lusk of the DOE to Mr. Steve Parris of the U.S. Fish and Wildlife Service
- February 2012 response letter from Ms. Edith Erfling of the U.S. Fish and Wildlife Service to Mr. Mark Lusk of the DOE.
- February 14, 2012 consultation letter from Mr. Mark Lusk of the DOE to the Field Supervisor of the Texas Parks and Wildlife Department, Wildlife Habitat Assessment Program[2]
- March 20, 2012 response letter from Ms. Amy Turner of the Texas Parks and Wildlife Department, Wildlife Habitat Assessment Program to Mr. Mark Lusk of the DOE
- **November 5, 2012 response letter from Mr. Stephen Spencer of the U.S. Fish and Wildlife Service to Mr. Mark Lusk of the DOE**

[1] Attachments omitted from this appendix because they are the same as the attachments to the April 5, 2012 letter to the Alabama-Coushatta Tribe of Texas.
[2] Attachments omitted from this appendix because they are the same as the attachments to the February 14, 2012 letter to the U.S. Fish and Wildlife Service.

- **November 6, 2012 response letter from Ms. Amy Turner of the Texas Parks and Wildlife Department, Wildlife Habitat Assessment Program to Mr. Mark Lusk of the DOE**

C.3 CULTURAL RESOURCES CONSULTATION

- February 10, 2012 consultation letter and proposed scope of work from Mr. Mark Lusk of the DOE to Mr. Mark Wolfe of the Texas Historical Commission
- February 23, 2012 project review letter from Mr. Mark Wolfe of the Texas Historical Commission to Mr. Mark Lusk of the DOE, requesting backhoe trenching
- April 25, 2012 letter from Mr. Mark Lusk of the DOE to Mr. Mark Wolfe of the Texas Historical **Commission** containing proposed scope of work for backhoe trenching
- May 14, 2012 response from Mr. Mark Wolfe of the Texas Historical Commission to Mr. Mark Lusk of the DOE, approving April 25, 2012 proposed scope of work for backhoe trenching
- June 19, 2012 letter from Mr. Mark Lusk of the DOE to Mr. Mark Wolfe of the Texas Historical containing Section 106 determination for proposed project activities at the W.A. Parish Plant and West Ranch Oil Field
- July 11, 2012 response from Mr. William Martin of the Texas Historical Commission (for Mr. Mark Wolfe) to Mr. Mark Lusk of the DOE, concurring that no historic properties would be affected by the proposed project activities at the W.A. Parish Plant and West Ranch Oil Field
- August 2, 2012 letter from Mr. Mark Lusk of the DOE to Mr. Mark Wolfe of the Texas Historical containing Section 106 determination for proposed project activities along the proposed pipeline construction right-of-way
- **September 14, 2012 response from Mr. Mark Wolfe of the Texas Historical Commission to Mr. Mark Lusk of the DOE**
- **December 14, 2012 letter from Mr. Mark Lusk of the DOE to Mr. Mark Wolfe of the Texas Historical Commission**
- **January 2, 2013 letter from Mr. Mark Lusk of the DOE to Mr. Mark Wolfe of the Texas Historical Commission**
- **January 17, 2013 response from Mr. Mark Wolfe of the Texas Historical Commission to Mr. Mark Lusk of the DOE**
- **January 18, 2013 response from Mr. Mark Wolfe of the Texas Historical Commission to Mr. Mark Lusk of the DOE**

C.4 OTHER CONSULTATION

- February 10, 2012 consultation letter from Mr. Mark Lusk of the DOE to Ms. Rhonda Smith of U.S. Environmental Protection Agency, Region 6
- February 13, 2012 consultation letter from Mr. Mark Lusk of the DOE to Mr. Johnny Ortega of the Fort Bend County, Floodplain Administration[3]
- February 13, 2012 consultation letter from Mr. Mark Lusk of the DOE to the Jackson County Permit & Inspection Department, Floodplain Administration[3]
- February 13, 2012 consultation letter from Mr. Mark Lusk of the DOE to Ms. Monica Martin of the Wharton County, Floodplain Administration[3]
- March 22, 2012 response letter from Ms. Monica Martin of the Wharton County, Floodplain Administration to Mr. Mark Lusk of the DOE[3]

[3] Attachments omitted from this appendix because they are the same as the attachments to the February 10, 2012 letter to U.S. Environmental Protection Agency, Region 6.

- **November 2, 2012 response letter from Ms. Rhonda Smith of U.S. Environmental Protection Agency, Region 6 to Mr. Mark Lusk of the DOE**

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C.1 NATIVE AMERICAN TRIBAL CONSULTATION

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NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA

U.S. DEPARTMENT OF ENERGY

April 5, 2012

Mr. Carlos Bullock, Chairman
Alabama-Coushatta Tribe of Texas
571 State Park Rd. 56
Livingston, TX 77351

Subject: Request for Section 106 Consultation for the Proposed W.A. Parish Post-Combustion Carbon Capture and Storage Project in Southeastern Texas (Fort Bend, Wharton, and Jackson Counties)

Dear Mr. Bullock:

The U.S. Department of Energy (DOE) proposes to provide financial assistance to NRG Energy, Inc. (NRG) and its subsidiary, Petra Nova, LLC, for a project that would capture carbon dioxide gas (CO_2) at NRG's W.A. Parish Generating Station (Parish Plant) in Fort Bend County, Texas. The CO_2 would be delivered in a new, approximately 80-mile-long pipeline to the West Ranch oil field located near the city of Vanderbilt in Jackson County, Texas, where it would be used for enhanced oil recovery (EOR) and ultimately sequestered. This proposed project, known as the W.A. Parish Post-Combustion Carbon Capture and Storage Project (Project), would demonstrate an integrated commercial-scale deployment of post-combustion CO_2 capture technology for use in EOR operations and long-term geologic storage.

DOE would provide NRG with approximately $167 million of cost-shared funding, which includes *American Recovery and Reinvestment Act of 2009* funds, to implement the Project. DOE selected NRG's Project for a financial assistance award through a competitive process under the Clean Coal Power Initiative (CCPI) Program. The estimated total project cost is $845 million.

DOE is preparing an environmental impact statement (EIS) to assess the potential environmental impacts associated with its proposed action and NRG's proposed Project. As part of the *National Environmental Policy Act of 1969* (NEPA) process, DOE consults with interested Native American tribes, as well as federal, state, regional, and local agencies, including consultations required under Section 106 of the *National Historic Preservation Act of 1966* (NHPA). DOE plans to coordinate its Section 106 obligations with the NEPA process.

DOE is providing this Project description to you so that your Tribe may relate any potential concerns regarding traditional and cultural sites. For your convenience, please find enclosed a response form (Attachment 2). Any information you provide will assist DOE in the preparation of the EIS. All correspondence(s) with your office will be included in an appendix to the EIS.

3610 Collins Ferry Road, P.O. Box 880, Morgantown, WV 26507
mark.lusk@netl.doe.gov • Voice (304) 285-4145 • Fax (304) 285-4216 • www.netl.doe.gov

Project Description

NRG proposes to design, construct, and operate a commercial-scale CO_2 capture facility at its W.A. Parish Plant and deliver the CO_2 via an approximately 80-mile-long, 12.75-inch (outside diameter) pipeline to the West Ranch oil field in Jackson County, Texas. A map showing the expected Project footprint is enclosed (Attachment 1).

The proposed Project would use an advanced amine-based absorption technology to capture 90 percent (approximately 1.6 million tons) of CO_2 annually from a 240-megawatt (MW) equivalent flue gas slip stream taken from the 617-MW Unit 8 at the Parish Plant. Up to 5,475 tons per day of captured CO_2 would be dried, compressed, and transported via a new pipeline to the West Ranch oil field where it would be used in EOR operations.

The primary components of the Project include the following:

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The proposed Project would retrofit one of the W.A. Parish Plant's existing coal-fueled units (Unit 8) with a post-combustion CO_2 capture system that would be constructed within the existing 4,880-acre Parish Plant site. A new natural gas-fired combined-cycle power plant, estimated to be 80-MW in size, would also be constructed to produce the auxiliary power needed to drive the proposed carbon capture system.

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Captured CO_2 would be transported via a new approximately 80-mile-long pipeline to the West Ranch oil field. The anticipated pipeline route includes mostly sparsely developed rural and agricultural lands in Fort Bend, Wharton, and Jackson Counties in Texas. The majority (approximately 95 percent) of the planned pipeline route will utilize existing mowed/maintained utility rights-of-ways (ROWs) to minimize environmental impacts and avoid sensitive resources to the greatest extent practical. Although the proposed pipeline will be located within existing ROWs for the majority of its length, NRG may need to review existing landowner agreements along the route to negotiate for widening of the ROW for construction of the pipeline in some areas.

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4. CO_2 Monitoring, Verification, and Accounting Program

NRG would implement a monitoring, verification, and accounting (MVA) program to monitor the injection and migration of CO_2 within the geologic formations at the EOR site. The MVA program must meet specific regulatory and CCPI Program requirements, and may consist of a variety of monitoring and modeling activities.

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DOE respectfully requests that your Tribe provide any opinions or site-specific information concerning the Project to DOE within 30 days of receiving this letter. Information provided by your Tribe will assist DOE in preparing the EIS and with fulfillment of its regulatory responsibilities under NEPA and the NHPA.

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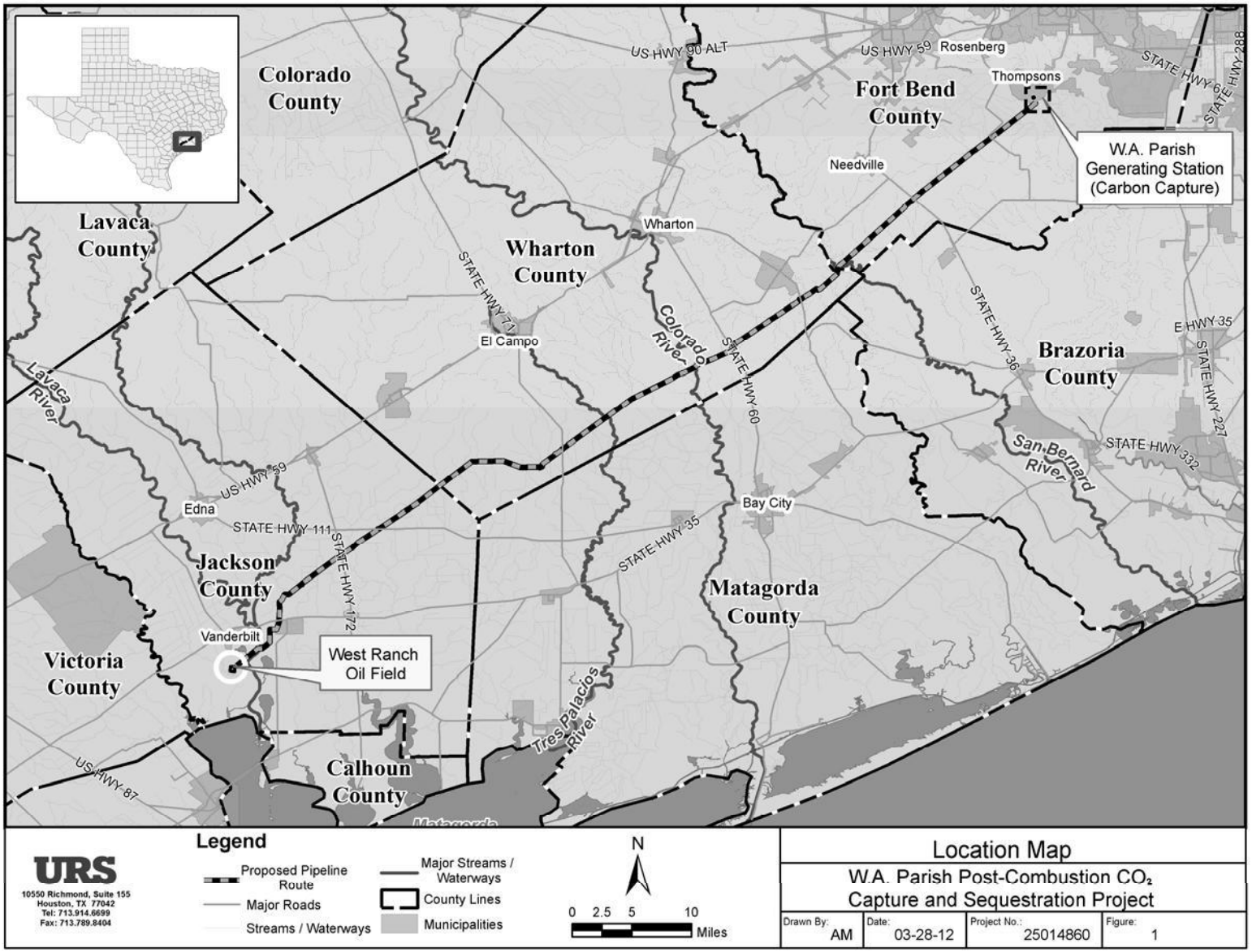
Sincerely,

Mark W. Lusk
NEPA Document Manager

Attachments (2)

cc:
Jon Barfield - NRG
Anthony Armpriester - NRG
Ted McMahon - DOE
Pete Conwell - URS
Rob Lackowicz - URS

Attachment 1. Location Map



Attachment 2. Comments for Proposed NRG Project in Southeastern Texas (Fort Bend, Wharton, and Jackson Counties)

Alabama-Coushatta Tribe of Texas
571 State Park Road
Livingston, Texas 77351
Tel: (936) 563-1101

We have reviewed the following proposed project: W.A. Parish Post-Combustion Carbon Capture and Storage Project and have:

_____ No comments _____ The following comments (attach sheets if preferred):

_____

_____

_____

_____

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_____

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_____

_____

_____

_____

_____
Signature

_____ _____
Printed Name Date

Return to: Mark W. Lusk, U.S. Department of Energy, National Energy Technology Laboratory, 3610 Collins Ferry Road, P.O. Box 880, Morgantown, WV 26507

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NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA

U.S. DEPARTMENT OF ENERGY

April 5, 2012

Mr. Louis Maynahonah, Chairman
Apache Tribe of Oklahoma
P.O. Box 1330
Anadarko, OK 73005

Subject: Request for Section 106 Consultation for the Proposed W.A. Parish Post-Combustion Carbon Capture and Storage Project in Southeastern Texas (Fort Bend, Wharton, and Jackson Counties)

Dear Mr. Maynahonah:

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DOE would provide NRG with approximately $167 million of cost-shared funding, which includes *American Recovery and Reinvestment Act of 2009* funds, to implement the Project. DOE selected NRG's Project for a financial assistance award through a competitive process under the Clean Coal Power Initiative (CCPI) Program. The estimated total project cost is $845 million.

DOE is preparing an environmental impact statement (EIS) to assess the potential environmental impacts associated with its proposed action and NRG's proposed Project. As part of the *National Environmental Policy Act of 1969* (NEPA) process, DOE consults with interested Native American tribes, as well as federal, state, regional, and local agencies, including consultations required under Section 106 of the *National Historic Preservation Act of 1966* (NHPA). DOE plans to coordinate its Section 106 obligations with the NEPA process.

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3610 Collins Ferry Road, P.O. Box 880, Morgantown, WV 26507
mark.lusk@netl.doe.gov • Voice (304) 285-4145 • Fax (304) 285-4216 • www.netl.doe.gov

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Sincerely,

Mark W. Lusk
NEPA Document Manager

Attachments (2)

cc:
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Anthony Armpriester - NRG
Ted McMahon - DOE
Pete Conwell - URS
Rob Lackowicz - URS

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NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA

U.S. DEPARTMENT OF ENERGY

April 5, 2012

Mr. Johnny Wauqua, Chairman
Comanche Nation of Oklahoma
HC-32, Box 1720
Lawton, OK 73502

Subject: Request for Section 106 Consultation for the Proposed W.A. Parish Post-Combustion Carbon Capture and Storage Project in Southeastern Texas (Fort Bend, Wharton, and Jackson Counties)

Dear Mr. Wauqua:

The U.S. Department of Energy (DOE) proposes to provide financial assistance to NRG Energy, Inc. (NRG) and its subsidiary, Petra Nova, LLC, for a project that would capture carbon dioxide gas (CO_2) at NRG's W.A. Parish Generating Station (Parish Plant) in Fort Bend County, Texas. The CO_2 would be delivered in a new, approximately 80-mile-long pipeline to the West Ranch oil field located near the city of Vanderbilt in Jackson County, Texas, where it would be used for enhanced oil recovery (EOR) and ultimately sequestered. This proposed project, known as the W.A. Parish Post-Combustion Carbon Capture and Storage Project (Project), would demonstrate an integrated commercial-scale deployment of post-combustion CO_2 capture technology for use in EOR operations and long-term geologic storage.

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NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA

U.S. DEPARTMENT OF ENERGY

April 5, 2012

Mr. Kevin Sickey, Chairman
Coushatta Tribe of Louisiana
P.O. Box 818
Elton, LA 70532

Subject: Request for Section 106 Consultation for the Proposed W.A. Parish Post-Combustion Carbon Capture and Storage Project in Southeastern Texas (Fort Bend, Wharton, and Jackson Counties)

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NATIONAL ENERGY TECHNOLOGY LABORATORY
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U.S. DEPARTMENT OF ENERGY

April 5, 2012

Mr. Ron Twohatchet, Chairman
Kiowa Indian Tribe of Oklahoma
P.O. Box 369
Carnegie, OK 73015

Subject: Request for Section 106 Consultation for the Proposed W.A. Parish Post-Combustion Carbon Capture and Storage Project in Southeastern Texas (Fort Bend, Wharton, and Jackson Counties)

Dear Mr. Twohatchet:

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U.S. DEPARTMENT OF ENERGY

April 5, 2012

Mr. Mark Chino, President
Mescalero Apache Tribe of the Mescalero Reservation
P.O. Box 227
Mescalero, NM 88340

Subject: Request for Section 106 Consultation for the Proposed W.A. Parish Post-Combustion Carbon Capture and Storage Project in Southeastern Texas (Fort Bend, Wharton, and Jackson Counties)

Dear Mr. Chino:

The U.S. Department of Energy (DOE) proposes to provide financial assistance to NRG Energy, Inc. (NRG) and its subsidiary, Petra Nova, LLC, for a project that would capture carbon dioxide gas (CO_2) at NRG's W.A. Parish Generating Station (Parish Plant) in Fort Bend County, Texas. The CO_2 would be delivered in a new, approximately 80-mile-long pipeline to the West Ranch oil field located near the city of Vanderbilt in Jackson County, Texas, where it would be used for enhanced oil recovery (EOR) and ultimately sequestered. This proposed project, known as the W.A. Parish Post-Combustion Carbon Capture and Storage Project (Project), would demonstrate an integrated commercial-scale deployment of post-combustion CO_2 capture technology for use in EOR operations and long-term geologic storage.

DOE would provide NRG with approximately $167 million of cost-shared funding, which includes *American Recovery and Reinvestment Act of 2009* funds, to implement the Project. DOE selected NRG's Project for a financial assistance award through a competitive process under the Clean Coal Power Initiative (CCPI) Program. The estimated total project cost is $845 million.

DOE is preparing an environmental impact statement (EIS) to assess the potential environmental impacts associated with its proposed action and NRG's proposed Project. As part of the *National Environmental Policy Act of 1969* (NEPA) process, DOE consults with interested Native American tribes, as well as federal, state, regional, and local agencies, including consultations required under Section 106 of the *National Historic Preservation Act of 1966* (NHPA). DOE plans to coordinate its Section 106 obligations with the NEPA process.

DOE is providing this Project description to you so that your Tribe may relate any potential concerns regarding traditional and cultural sites. For your convenience, please find enclosed a response form (Attachment 2). Any information you provide will assist DOE in the preparation of the EIS. All correspondence(s) with your office will be included in an appendix to the EIS.

3610 Collins Ferry Road, P.O. Box 880, Morgantown, WV 26507
mark.lusk@netl.doe.gov • Voice (304) 285-4145 • Fax (304) 285-4216 • www.netl.doe.gov

Project Description

NRG proposes to design, construct, and operate a commercial-scale CO_2 capture facility at its W.A. Parish Plant and deliver the CO_2 via an approximately 80-mile-long, 12.75-inch (outside diameter) pipeline to the West Ranch oil field in Jackson County, Texas. A map showing the expected Project footprint is enclosed (Attachment 1).

The proposed Project would use an advanced amine-based absorption technology to capture 90 percent (approximately 1.6 million tons) of CO_2 annually from a 240-megawatt (MW) equivalent flue gas slip stream taken from the 617-MW Unit 8 at the Parish Plant. Up to 5,475 tons per day of captured CO_2 would be dried, compressed, and transported via a new pipeline to the West Ranch oil field where it would be used in EOR operations.

The primary components of the Project include the following:

1. Carbon Capture Facility

The proposed Project would retrofit one of the W.A. Parish Plant's existing coal-fueled units (Unit 8) with a post-combustion CO_2 capture system that would be constructed within the existing 4,880-acre Parish Plant site. A new natural gas-fired combined-cycle power plant, estimated to be 80-MW in size, would also be constructed to produce the auxiliary power needed to drive the proposed carbon capture system.

2. CO_2 Transport

Captured CO_2 would be transported via a new approximately 80-mile-long pipeline to the West Ranch oil field. The anticipated pipeline route includes mostly sparsely developed rural and agricultural lands in Fort Bend, Wharton, and Jackson Counties in Texas. The majority (approximately 95 percent) of the planned pipeline route will utilize existing mowed/maintained utility rights-of-ways (ROWs) to minimize environmental impacts and avoid sensitive resources to the greatest extent practical. Although the proposed pipeline will be located within existing ROWs for the majority of its length, NRG may need to review existing landowner agreements along the route to negotiate for widening of the ROW for construction of the pipeline in some areas.

3. EOR and CO_2 Sequestration

The proposed Project would deliver up to 1.6 million tons of CO_2 per year to the existing West Ranch oil field, located in Jackson County. The oil field has been in operation since 1938, and Texas Coastal Ventures, LLC, a joint venture between NRG and Hilcorp Energy Company, would conduct the EOR operations. The proposed project would use existing wells and access roads to the extent practicable.

4. CO_2 Monitoring, Verification, and Accounting Program

NRG would implement a monitoring, verification, and accounting (MVA) program to monitor the injection and migration of CO_2 within the geologic formations at the EOR site. The MVA program must meet specific regulatory and CCPI Program requirements, and may consist of a variety of monitoring and modeling activities.

Project Schedule

NRG plans to start construction of the Project in November 2012 and begin the demonstration phase of commercial operations by 2015. The schedule is contingent on NRG receiving the necessary permits and regulatory approvals, as well as financial closing on all funding sources, including DOE's financial assistance.

DOE respectfully requests that your Tribe provide any opinions or site-specific information concerning the Project to DOE within 30 days of receiving this letter. Information provided by your Tribe will assist DOE in preparing the EIS and with fulfillment of its regulatory responsibilities under NEPA and the NHPA.

Cultural resource surveys along the proposed pipeline route have commenced and are expected to be completed in April 2012. DOE can supply your office with the findings of these studies if you are interested. The results will also be presented in the draft EIS, which DOE plans to provide to your office for review and comment. All correspondence with your office will be included in an appendix to the EIS.

DOE appreciates your participation and respectfully requests a response as soon as practical to help us quickly identify potential issues. You can reach me for comment by email at mark.lusk@netl.doe.gov, by telephone at (304) 285-4145, or at the address listed on the front page.

Sincerely,

Mark W. Lusk
NEPA Document Manager

Attachments (2)

cc:
Jon Barfield - NRG
Anthony Armpriester - NRG
Ted McMahon - DOE
Pete Conwell - URS
Rob Lackowicz - URS

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NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA

U.S. DEPARTMENT OF ENERGY

April 5, 2012

Mr. Donald Patterson, President
Tonkawa Tribe of Indians of Oklahoma
1 Rush Buffalo Road
Tonkawa, OK 74653-4449

Subject: Request for Section 106 Consultation for the Proposed W.A. Parish Post-Combustion Carbon Capture and Storage Project in Southeastern Texas (Fort Bend, Wharton, and Jackson Counties)

Dear Mr. Patterson:

The U.S. Department of Energy (DOE) proposes to provide financial assistance to NRG Energy, Inc. (NRG) and its subsidiary, Petra Nova, LLC, for a project that would capture carbon dioxide gas (CO_2) at NRG's W.A. Parish Generating Station (Parish Plant) in Fort Bend County, Texas. The CO_2 would be delivered in a new, approximately 80-mile-long pipeline to the West Ranch oil field located near the city of Vanderbilt in Jackson County, Texas, where it would be used for enhanced oil recovery (EOR) and ultimately sequestered. This proposed project, known as the W.A. Parish Post-Combustion Carbon Capture and Storage Project (Project), would demonstrate an integrated commercial-scale deployment of post-combustion CO_2 capture technology for use in EOR operations and long-term geologic storage.

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Project Description

NRG proposes to design, construct, and operate a commercial-scale CO_2 capture facility at its W.A. Parish Plant and deliver the CO_2 via an approximately 80-mile-long, 12.75-inch (outside diameter) pipeline to the West Ranch oil field in Jackson County, Texas. A map showing the expected Project footprint is enclosed (Attachment 1).

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The primary components of the Project include the following:

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The proposed Project would deliver up to 1.6 million tons of CO_2 per year to the existing West Ranch oil field, located in Jackson County. The oil field has been in operation since 1938, and Texas Coastal Ventures, LLC, a joint venture between NRG and Hilcorp Energy Company, would conduct the EOR operations. The proposed project would use existing wells and access roads to the extent practicable.

4. CO_2 Monitoring, Verification, and Accounting Program

NRG would implement a monitoring, verification, and accounting (MVA) program to monitor the injection and migration of CO_2 within the geologic formations at the EOR site. The MVA program must meet specific regulatory and CCPI Program requirements, and may consist of a variety of monitoring and modeling activities.

Project Schedule

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DOE respectfully requests that your Tribe provide any opinions or site-specific information concerning the Project to DOE within 30 days of receiving this letter. Information provided by your Tribe will assist DOE in preparing the EIS and with fulfillment of its regulatory responsibilities under NEPA and the NHPA.

Cultural resource surveys along the proposed pipeline route have commenced and are expected to be completed in April 2012. DOE can supply your office with the findings of these studies if you are interested. The results will also be presented in the draft EIS, which DOE plans to provide to your office for review and comment. All correspondence with your office will be included in an appendix to the EIS.

DOE appreciates your participation and respectfully requests a response as soon as practical to help us quickly identify potential issues. You can reach me for comment by email at mark.lusk@netl.doe.gov, by telephone at (304) 285-4145, or at the address listed on the front page.

Sincerely,

Mark W. Lusk
NEPA Document Manager

Attachments (2)

cc:
Jon Barfield - NRG
Anthony Armpriester - NRG
Ted McMahon - DOE
Pete Conwell - URS
Rob Lackowicz - URS

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NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA

U.S. DEPARTMENT OF ENERGY

April 5, 2012

Mr. Earl J. Barbry, Sr., Chairman
Tunica-Biloxi Indian Tribe of Louisiana
P.O. Box 1589
Marksville, LA 71351

Subject: Request for Section 106 Consultation for the Proposed W.A. Parish Post-Combustion Carbon Capture and Storage Project in Southeastern Texas (Fort Bend, Wharton, and Jackson Counties)

Dear Mr. Barbry:

The U.S. Department of Energy (DOE) proposes to provide financial assistance to NRG Energy, Inc. (NRG) and its subsidiary, Petra Nova, LLC, for a project that would capture carbon dioxide gas (CO_2) at NRG's W.A. Parish Generating Station (Parish Plant) in Fort Bend County, Texas. The CO_2 would be delivered in a new, approximately 80-mile-long pipeline to the West Ranch oil field located near the city of Vanderbilt in Jackson County, Texas, where it would be used for enhanced oil recovery (EOR) and ultimately sequestered. This proposed project, known as the W.A. Parish Post-Combustion Carbon Capture and Storage Project (Project), would demonstrate an integrated commercial-scale deployment of post-combustion CO_2 capture technology for use in EOR operations and long-term geologic storage.

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3610 Collins Ferry Road, P.O. Box 880, Morgantown, WV 26507
mark.lusk@netl.doe.gov • Voice (304) 285-4145 • Fax (304) 285-4216 • www.netl.doe.gov

Project Description

NRG proposes to design, construct, and operate a commercial-scale CO_2 capture facility at its W.A. Parish Plant and deliver the CO_2 via an approximately 80-mile-long, 12.75-inch (outside diameter) pipeline to the West Ranch oil field in Jackson County, Texas. A map showing the expected Project footprint is enclosed (Attachment 1).

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DOE appreciates your participation and respectfully requests a response as soon as practical to help us quickly identify potential issues. You can reach me for comment by email at mark.lusk@netl.doe.gov, by telephone at (304) 285-4145, or at the address listed on the front page.

Sincerely,

Mark W. Lusk
NEPA Document Manager

Attachments (2)

cc:
Jon Barfield - NRG
Anthony Armpriester - NRG
Ted McMahon - DOE
Pete Conwell - URS
Rob Lackowicz - URS

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COUSHATTA TRIBE
OF LOUISIANA

HERITAGE DEPARTMENT

October 29, 2012

Mark Lusk, NEPA Document Manager
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road, M/S I07
PO Box 880
Morgantown, WV 26507-0880

SUBJECT: Section 106 Compliance Review

RE: W.A. Parish Post-Combustion CO2 Capture and Sequestration Project

Dear Mr. Lusk:

The Coushatta Tribe of Louisiana has reviewed the above referenced proposed undertaking and are in concurrence with your findings of "no historical properties affected".

Sincerely,

Michael Tarpley
Deputy THPO
Coushatta Tribe of Louisiana

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C.2 PROTECTED SPECIES CONSULTATION

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NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA

U.S. DEPARTMENT OF ENERGY

February 14, 2012

Mr. Steve Parris
Field Supervisor
U.S. Fish and Wildlife Service
Clear Lake ES Field Office
17629 El Camino Real #211
Houston, Texas 77058-3051

Re: Consultation Request for the Proposed W.A. Parish Post-Combustion Carbon Capture and Storage Project in Southeastern Texas (Fort Bend, Wharton, and Jackson Counties)

Dear Mr. Parris;

The U.S. Department of Energy (DOE) proposes to provide funding to NRG Energy, Inc. (NRG) and its subsidiary, Petra Nova, LLC, for a project that would capture carbon dioxide (CO_2) at NRG's W.A. Parish Generating Station (Parish Plant) in Fort Bend County, Texas. The CO_2 would be delivered in a new approximately 80-mile-long pipeline to the West Ranch oil field located near the city of Vanderbilt in Jackson County, Texas, where it would be used for enhanced oil recovery (EOR) and ultimately sequestered. This proposed project, known as the W.A. Parish Post-Combustion Carbon Capture and Storage Project (Project), would demonstrate an integrated commercial-scale deployment of post-combustion CO_2 capture technology coupled with EOR operations and long-term geologic storage of the CO_2.

DOE proposes to provide NRG with approximately $167 million of cost-shared funding, which includes *American Recovery and Reinvestment Act of 2009* funds, to implement the Project. DOE selected the Project for a financial assistance award through a competitive process under the Clean Coal Power Initiative (CCPI) Program. The estimated total project cost is $845 million.

DOE is preparing an environmental impact statement (EIS) to assess the potential environmental impacts associated with the proposed Project. As part of the *National Environmental Policy Act of 1969* (NEPA) process, DOE will consult with interested federal, state, regional, and local agencies; as well as Native American tribes. As a result, DOE requests consultation with the U.S. Fish and Wildlife Service (USFWS) regarding threatened and endangered species or their critical habitat in the vicinity of the Project as required under Section 7 of the *Endangered Species Act* (ESA).

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mark.lusk@netl.doe.gov • Voice (304) 285-4145 • Fax (304) 285-4216 • www.netl.doe.gov

Project Details

NRG proposes to design, construct, and operate a commercial-scale CO_2 capture facility at its Parish Plant and deliver the CO_2 via an approximately 80-mile-long, 12.75-inch (outside diameter) pipeline to the West Ranch oil field in Jackson County, Texas. The enclosed maps (Attachment 1) illustrate the proposed project areas.

The Project would use an advanced amine-based absorption technology to capture 90 percent (approximately 1.6 million tons) of CO_2 annually from a 240-megawatt (MW) equivalent flue gas slip stream taken from the 617-MW Unit 8 at the Parish Plant. Up to 5,475 tons per day of captured CO_2 would be dried, compressed, and transported via a new pipeline to the West Ranch oil field for its use in EOR operations.

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Project Schedule

NRG plans to start construction of the Project in November 2012 and begin the demonstration phase of commercial operations by 2015. The schedule is contingent on NRG receiving the necessary permits and regulatory approvals, as well as financial closing on all the necessary funding sources, including DOE's financial assistance.

Maps showing the expected footprint for the proposed carbon capture site, the proposed pipeline route, and the existing oil field area are provided in Attachment 1. Biological and cultural resource surveys along the proposed pipeline route are scheduled between January and March 2012. DOE and NRG have contracted with URS Group, Inc., to provide environmental and cultural resources services to support development of the EIS and other regulatory compliance requirements for the Project. Results of the surveys will be documented in separate reports and analyzed in the EIS.

Threatened and Endangered Species in the Project Area

A desktop review of USFWS/Texas Parks and Wildlife Department (TPWD) online databases has shown that the Federally-listed endangered species located within the three counties traversed by the proposed Project include: (1) the Whooping crane (*Grus Americana*) in Fort Bend, Wharton, and Jackson Counties; (2) the Texas prairie dawn flower (*Hymenoxys texana*) in Fort Bend County only; and (3) the West Indian manatee *(Trichechus manatus)* in Jackson County only (see Attachment 2). No impacts to these species or their critical habitat are anticipated as a result of the proposed Project. Furthermore, the proposed Project will not impact any marine or shoreline habitats utilized by any of these protected species.

A search of the Texas Natural Diversity Database (TXNDD) showed that the proposed pipeline route intersects two TXNDD element occurrence polygons. According to maps depicting TXNDD search results (see Attachment 2); the northernmost polygon is based on the historic presence of an eagle nest in the area (TPWD Nest #241-4A [Wharton County]). This nest, first identified in 2001, was inactive in 2003 and 2004, and there is no information after 2004. The southernmost polygon is based on the historic presence of eagle nests in the area (TPWD Nests 120-2A, 2B, and 2C). Nest 2C was found to have fallen in 2004, and no information is available after 2004. DOE recognizes that the bald eagle is afforded Federal protection under the *Bald and Golden Eagle Protection Act,* the *Migratory Bird Treaty Act,* and is protected by the State of Texas. However, since the proposed pipeline would be primarily constructed along an existing ROW to minimize or avoid environmental impacts during construction, impacts to these bald eagle habitats (i.e. trees that have nests or that would be potential nesting sites) are not expected.

DOE respectfully requests that the USFWS provide site-specific information concerning existing natural resources within Fort Bend, Wharton, and Jackson Counties. This information would include details regarding threatened and endangered species, species of special concern, critical habitats, or any other significant biological resources (e.g., unique or sensitive habitats, nature preserves, and migratory bird fallout areas) that may be located within the vicinity of the proposed Project. DOE also requests guidance from USFWS concerning survey recommendations or seasonal constraints on construction with respect to threatened and endangered species. The information provided by the USFWS will assist DOE in the preparation

of the EIS and with fulfillment of its regulatory responsibilities under the ESA. DOE also plans to provide a copy of the draft EIS to your office for review and comment. All correspondence with your office will be included in an appendix to the EIS.

DOE would appreciate your participation and request a response as soon as practical to help quickly identify potential impacts to protected species in the vicinity of the Project. You can reach me by email at mark.lusk@netl.doe.gov, by telephone at (304) 285-4145, or at the address listed on the front page with any questions or comments.

Sincerely,

Mark W. Lusk
NEPA Document Manager/NEPA Compliance Officer

Attachments:
1. Project Location Maps
2. Threatened and Endangered Species Lists/Texas Natural Diversity Database Maps

cc:
Jon Barfield - NRG
Anthony Armpriester - NRG
Ted McMahon - DOE
Pete Conwell - URS

ATTACHMENT 1

PROJECT LOCATION MAPS

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URS
10550 Richmond, Suite 155
Houston, TX 77042
Tel: 713.914.6699
Fax: 713.789.8404

Legend

Proposed Pipeline Route

0 375 750 1,500 Feet

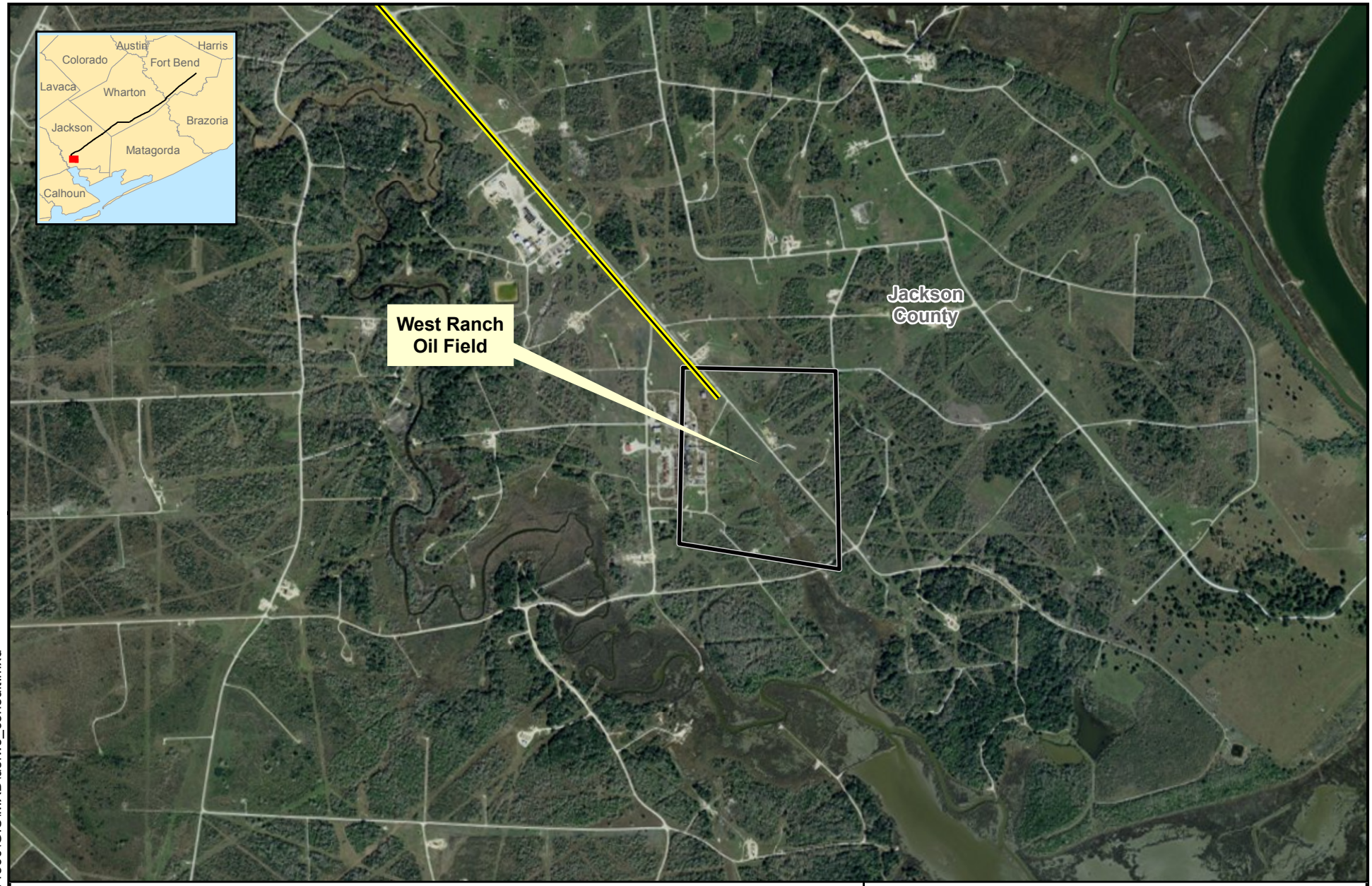
1 in = 1,500 feet

N

Proposed Pipeline Route Map

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project

Drawn By:	Date:	Project No.:	Figure:
AM	12-16-11	25014860	5 of 8



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Proposed Pipeline Route Map

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Drawn By:	Date:	Project No.:	Figure:
AM	12-16-11	25014860	7 of 8

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URS
10550 Richmond, Suite 155
Houston, TX 77042
Tel: 713.914.6699
Fax: 713.789.8404

Legend

- Proposed Pipeline Route
- Major Roads
- Streams / Waterways
- Major Streams / Waterways
- County Lines
- Municipalities

N

0 2.5 5 10 Miles

Location Map

W.A. Parish Post-Combustion CO Capture and Sequestration Project

Drawn By:	Date:	Project No.:	Figure:
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ATTACHMENT 2

T&E SPECIES LIST/TXNDD MAPS

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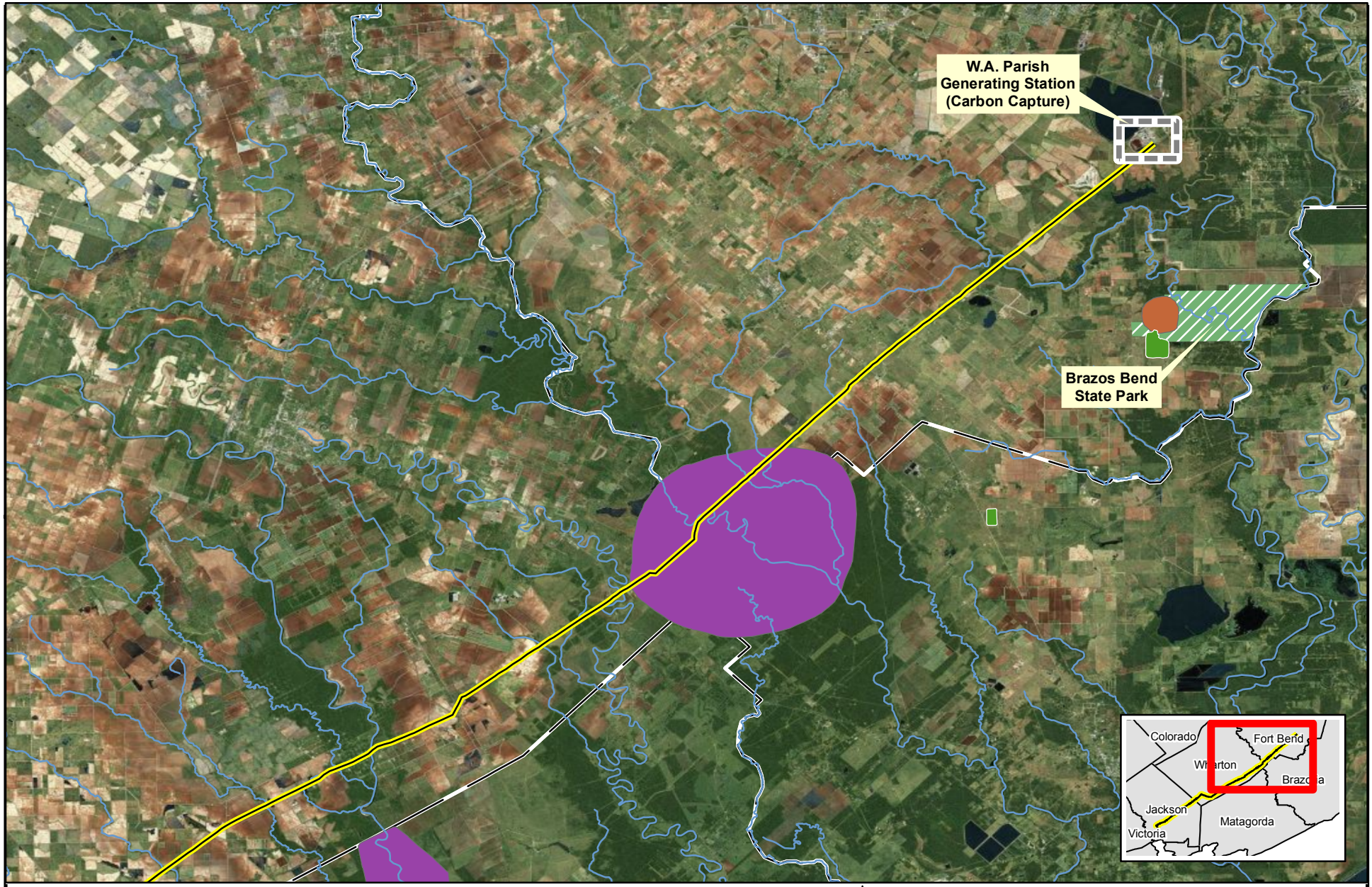

URS
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Fax: 713.789.8404

Legend

- Proposed line
- Managed Areas
- County Lines

Species

- Bald Eagle
- Welder machaeranthera / Threeflower broomweed
- Little Bluestem-brownseed Paspalum Series
- Threeflower broomweed
- Rookery

N

0 2.5 5 Miles

Texas Natural Diversity Database

W.A. Parish Post-Combustion CO Capture and Sequestration Project

Drawn By:	Date:	Project No.:	Figure:
AM	01-18-12	25014860	1 - 2

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URS
10550 Richmond, Suite 155
Houston, TX 77042
Tel: 713.914.6699
Fax: 713.789.8404

Legend

- Proposed line
- Managed Areas
- County Lines

Species

- Bald Eagle
- Welder machaeranthera / Threeflower broomweed
- Little Bluestem-brownseed Paspalum Series
- Threeflower broomweed
- Rookery

N

0 2.5 5 Miles

Texas Natural Diversity Database

W.A. Parish Post-Combustion CO
Capture and Sequestration Project

Drawn By:	Date:	Project No.:	Figure:
AM	01-18-12	25014860	2 - 2

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JACKSON COUNTY

BIRDS

		Federal Status	State Status
American Peregrine Falcon	*Falco peregrinus anatum*	DL	T

year-round resident and local breeder in west Texas, nests in tall cliff eyries; also, migrant across state from more

Arctic Peregrine Falcon	*Falco peregrinus tundrius*	DL	

migrant throughout state from subspecies' far northern breeding range, winters along coast and farther south;

Bald Eagle	*Haliaeetus leucocephalus*	DL	T

found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts,

Brown Pelican	*Pelecanus occidentalis*	DL	E

largely coastal and near shore areas, where it roosts and nests on islands and spoil banks

Henslow's Sparrow	*Ammodramus henslowii*		

wintering individuals (not flocks) found in weedy fields or cut-over areas where lots of bunch grasses occur along

Interior Least Tern	*Sterna antillarum athalassos*	LE	E

subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars

Mountain Plover	*Charadrius montanus*		

breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass

Peregrine Falcon	*Falco peregrinus*	DL	T

both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along

Reddish Egret	*Egretta rufescens*		T

resident of the Texas Gulf Coast; brackish marshes and shallow salt ponds and tidal flats; nests on ground or in

Snowy Plover	*Charadrius alexandrinus*		

formerly an uncommon breeder in the Panhandle; potential migrant; winter along coast

Sooty Tern	*Sterna fuscata*		T

predominately 'on the wing'; does not dive, but snatches small fish and squid with bill as it flies or hovers over

Southeastern Snowy Plover	*Charadrius alexandrinus tenuirostris*		

wintering migrant along the Texas Gulf Coast beaches and bayside mud or salt flats

Sprague's Pipit	*Anthus spragueii*	C	

only in Texas during migration and winter, mid September to early April; short to medium distance, diurnal

Western Burrowing Owl	*Athene cunicularia hypugaea*		

open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human

White-faced Ibis	*Plegadis chihi*		T

prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; nests

White-tailed Hawk	*Buteo albicaudatus*		T

near coast on prairies, cordgrass flats, and scrub-live oak; further inland on prairies, mesquite and oak savannas,

Whooping Crane	*Grus americana*	LE	E

potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun,

Wood Stork	*Mycteria americana*		T

forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-

FISHES

		Federal Status	State Status
American eel	*Anguilla rostrata*		

coastal waterways below reservoirs to gulf; spawns January to February in ocean, larva move to coastal waters,

Smalltooth sawfish	*Pristis pectinata*	LE	E

different life history stages have different patterns of habitat use; young found very close to shore in muddy and

MAMMALS

		Federal Status	State Status
Louisiana black bear	*Ursus americanus luteolus*	LT	T

possible as transient; bottomland hardwoods and large tracts of inaccessible forested areas

Plains spotted skunk	*Spilogale putorius interrupta*		

catholic; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded,

Red wolf	*Canis rufus*	LE	E

extirpated; formerly known throughout eastern half of Texas in brushy and forested areas, as well as coastal

West Indian manatee	*Trichechus manatus*	LE	E

Gulf and bay system; opportunistic, aquatic herbivore

MOLLUSKS

		Federal Status	State Status
Texas fatmucket	*Lampsilis bracteata*	C	T

streams and rivers on sand, mud, and gravel substrates; intolerant of impoundment; broken bedrock and course

REPTILES

		Federal Status	State Status
Green sea turtle	*Chelonia mydas*	LT	T

Gulf and bay system; shallow water seagrass beds, open water between feeding and nesting areas, barrier island

Gulf Saltmarsh snake	*Nerodia clarkii*		

saline flats, coastal bays, and brackish river mouthss

Kemp's Ridley sea turtle	*Lepidochelys kempii*	LE	E

Gulf and bay system, adults stay within the shallow waters of the Gulf of Mexico; feed primarily on crabs, but

Loggerhead sea turtle	*Caretta caretta*	LT	T

Gulf and bay system primarily for juveniles, adults are most pelagic of the sea turtles; omnivorous, shows a

Texas diamondback terrapin	*Malaclemys terrapin littoralis*		

coastal marshes, tidal flats, coves, estuaries, and lagoons behind barrier beaches; brackish and salt water; burrows

Texas horned lizard	*Phrynosoma cornutum*		T

open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees;

Texas scarlet snake	*Cemophora coccinea lineri*		T

mixed hardwood scrub on sandy soils; feeds on reptile eggs; semi-fossorial; active April-September

Texas tortoise	*Gopherus berlandieri*		T

open brush with a grass understory is preferred; open grass and bare ground are avoided; when inactive occupies

Timber/Canebrake rattlesnake	*Crotalus horridus*		T

swamps, floodplains, upland pine and deciduous woodlands, riparian zones, abandoned farmland; limestone

PLANTS

Federal Status State Status

Shinner's sunflower *Helianthus occidentalis ssp plantagineus*
mostly in prairies on the Coastal Plain, with several slightly disjunct populations in the Pineywoods and South

Threeflower broomweed *Thurovia triflora*
Texas endemic; near coast in sparse, low vegetation on a veneer of light colored silt or fine sand over saline clay

Welder machaeranthera *Psilactis heterocarpa*
Texas endemic; grasslands , varying from midgrass coastal prairies, and open mesquite-huisache woodlands on

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FORT BEND COUNTY

AMPHIBIANS

		Federal Status	State Status
Houston toad	*Anaxyrus houstonensis*	LE	E

endemic; sandy substrate, water in pools, ephemeral pools, stock tanks; breeds in spring especially after rains;

BIRDS

		Federal Status	State Status
American Peregrine Falcon	*Falco peregrinus anatum*	DL	T

year-round resident and local breeder in west Texas, nests in tall cliff eyries; also, migrant across state from more

Arctic Peregrine Falcon	*Falco peregrinus tundrius*	DL	

migrant throughout state from subspecies' far northern breeding range, winters along coast and farther south;

Attwater's Greater Prairie-	*Tympanuchus cupido attwateri*	LE	E

this county within historic range; endemic; open prairies of mostly thick grass one to three feet tall; from near sea

Bald Eagle	*Haliaeetus leucocephalus*	DL	T

found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts,

Henslow's Sparrow	*Ammodramus henslowii*		

wintering individuals (not flocks) found in weedy fields or cut-over areas where lots of bunch grasses occur along

Interior Least Tern	*Sterna antillarum athalassos*	LE	E

subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars

Peregrine Falcon	*Falco peregrinus*	DL	T

both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along

Sprague's Pipit	*Anthus spragueii*	C	

only in Texas during migration and winter, mid September to early April; short to medium distance, diurnal

Western Burrowing Owl	*Athene cunicularia hypugaea*		

open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human

White-faced Ibis	*Plegadis chihi*		T

prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; nests

White-tailed Hawk	*Buteo albicaudatus*		T

near coast on prairies, cordgrass flats, and scrub-live oak; further inland on prairies, mesquite and oak savannas,

Whooping Crane	*Grus americana*	LE	E

potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun,

Wood Stork	*Mycteria americana*		T

forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-

FISHES

		Federal Status	State Status
American eel	*Anguilla rostrata*		

coastal waterways below reservoirs to gulf; spawns January to February in ocean, larva move to coastal waters,

Sharpnose shiner	*Notropis oxyrhynchus*	C	

endemic to Brazos River drainage; also, apparently introduced into adjacent Colorado River drainage; large

MAMMALS

		Federal Status	State Status
Louisiana black bear	*Ursus americanus luteolus*	LT	T

possible as transient; bottomland hardwoods and large tracts of inaccessible forested areas

Plains spotted skunk	*Spilogale putorius interrupta*		

catholic; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded,

Red wolf	*Canis rufus*	LE	E

extirpated; formerly known throughout eastern half of Texas in brushy and forested areas, as well as coastal

MOLLUSKS

		Federal Status	State Status
False spike mussel	*Quadrula mitchelli*		T

possibly extirpated in Texas; probably medium to large rivers; substrates varying from mud through mixtures of

Smooth pimpleback	*Quadrula houstonensis*	C	T

small to moderate streams and rivers as well as moderate size reservoirs; mixed mud, sand, and fine gravel,

Texas fawnsfoot	*Truncilla macrodon*	C	T

little known; possibly rivers and larger streams, and intolerant of impoundment; flowing rice irrigation canals,

REPTILES

		Federal Status	State Status
Alligator snapping turtle	*Macrochelys temminckii*		T

perennial water bodies; deep water of rivers, canals, lakes, and oxbows; also swamps, bayous, and ponds near

Texas horned lizard	*Phrynosoma cornutum*		T

open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees;

Timber/Canebrake rattlesnake	*Crotalus horridus*		T

swamps, floodplains, upland pine and deciduous woodlands, riparian zones, abandoned farmland; limestone

PLANTS

		Federal Status	State Status
Texas prairie dawn	*Hymenoxys texana*	LE	E

Texas endemic; in poorly drained, sparsely vegtated areas (slick spots) at the base of mima mounds in open

Threeflower broomweed	*Thurovia triflora*		

Texas endemic; near coast in sparse, low vegetation on a veneer of light colored silt or fine sand over saline clay

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WHARTON COUNTY

BIRDS

		Federal Status	State Status
American Peregrine Falcon	*Falco peregrinus anatum*	DL	T

year-round resident and local breeder in west Texas, nests in tall cliff eyries; also, migrant across state from more

Arctic Peregrine Falcon	*Falco peregrinus tundrius*	DL	

migrant throughout state from subspecies' far northern breeding range, winters along coast and farther south;

Attwater's Greater Prairie-	*Tympanuchus cupido attwateri*	LE	E

this county within historic range; endemic; open prairies of mostly thick grass one to three feet tall; from near sea

Bald Eagle	*Haliaeetus leucocephalus*	DL	T

found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts,

Henslow's Sparrow	*Ammodramus henslowii*		

wintering individuals (not flocks) found in weedy fields or cut-over areas where lots of bunch grasses occur along

Interior Least Tern	*Sterna antillarum athalassos*	LE	E

subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars

Peregrine Falcon	*Falco peregrinus*	DL	T

both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along

Sprague's Pipit	*Anthus spragueii*	C	

only in Texas during migration and winter, mid September to early April; short to medium distance, diurnal

Western Burrowing Owl	*Athene cunicularia hypugaea*		

open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human

White-faced Ibis	*Plegadis chihi*		T

prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; nests

White-tailed Hawk	*Buteo albicaudatus*		T

near coast on prairies, cordgrass flats, and scrub-live oak; further inland on prairies, mesquite and oak savannas,

Whooping Crane	*Grus americana*	LE	E

potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun,

Wood Stork	*Mycteria americana*		T

forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-

CRUSTACEANS

		Federal Status	State Status
A crayfish	*Cambarellus texanus*		

shallow water; benthic, burrowing in or using soil; apparently tolerant of warmer waters; prefers standing water

FISHES

		Federal Status	State Status
American eel	*Anguilla rostrata*		

coastal waterways below reservoirs to gulf; spawns January to February in ocean, larva move to coastal waters,

Blue sucker	*Cycleptus elongatus*		T

larger portions of major rivers in Texas; usually in channels and flowing pools with a moderate current; bottom

Sharpnose shiner	*Notropis oxyrhynchus*	C	

endemic to Brazos River drainage; also, apparently introduced into adjacent Colorado River drainage; large

MAMMALS

		Federal Status	State Status
Louisiana black bear	*Ursus americanus luteolus*	LT	T

possible as transient; bottomland hardwoods and large tracts of inaccessible forested areas

Plains spotted skunk	*Spilogale putorius interrupta*		

catholic; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded,

Red wolf	*Canis rufus*	LE	E

extirpated; formerly known throughout eastern half of Texas in brushy and forested areas, as well as coastal

MOLLUSKS

		Federal Status	State Status
Creeper (squawfoot)	*Strophitus undulatus*		

small to large streams, prefers gravel or gravel and mud in flowing water; Colorado, Guadalupe, San Antonio,

False spike mussel	*Quadrula mitchelli*		T

possibly extirpated in Texas; probably medium to large rivers; substrates varying from mud through mixtures of

Smooth pimpleback	*Quadrula houstonensis*	C	T

small to moderate streams and rivers as well as moderate size reservoirs; mixed mud, sand, and fine gravel,

Texas fawnsfoot	*Truncilla macrodon*	C	T

little known; possibly rivers and larger streams, and intolerant of impoundment; flowing rice irrigation canals,

Texas pimpleback	*Quadrula petrina*	C	T

mud, gravel and sand substrates, generally in areas with slow flow rates; Colorado and Guadalupe river basins

REPTILES

		Federal Status	State Status
Texas horned lizard	*Phrynosoma cornutum*		T

open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees;

Timber/Canebrake rattlesnake	*Crotalus horridus*		T

swamps, floodplains, upland pine and deciduous woodlands, riparian zones, abandoned farmland; limestone

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Houston Toad
Willow Flycatcher
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Dunes Sagebrush Lizard
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List of species by county for Texas:

Counties Selected: Fort Bend

Select one or more counties from the following list to view a county list:

Anderson
Andrews
Angelina
Aransas
Archer

View County List

Fort Bend County

Common Name	Scientific Name	Species Group	Listing Status	Species Image	Species Distribution Map	Critical Habitat	More Info
Texas prairie dawn-flower	*Hymenoxys texana*	Flowering Plants	E				P
whooping crane	*Grus americana*	Birds	E, EXPN				P

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Oklahoma
Texas

Back to Start

List of species by county for Texas:

Counties Selected: Jackson

Select one or more counties from the following list to view a county list:

Anderson
Andrews
Angelina
Aransas
Archer

View County List

Jackson County

Common Name	Scientific Name	Species Group	Listing Status	Species Image	Species Distribution Map	Critical Habitat	More Info
West Indian Manatee	*Trichechus manatus*	Mammals	E				P
whooping crane	*Grus americana*	Birds	E, EXPN				P

Last updated: November 1, 2011

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WIND ENERGY
WETLANDS
ES FIELD OFFICES
Arizona
New Mexico
Oklahoma
Texas

Back to Start

List of species by county for Texas:

Counties Selected: Wharton

Select one or more counties from the following list to view a county list:

Anderson
Andrews
Angelina
Aransas
Archer

View County List

Wharton County

Common Name	Scientific Name	Species Group	Listing Status	Species Image	Species Distribution Map	Critical Habitat	More Info
whooping crane	*Grus americana*	Birds	E, EXPN				P

Last updated: November 1, 2011

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Division of Ecological Services
17629 El Camino Real, Suite 211
281/286-8282 / (FAX) 281/488-5882

February, 2012

Thank you for your request for threatened and endangered species information in the Clear Lake Ecological Services Office's area of responsibility. According to Section 7(a)(2) of the Endangered Species Act and the implementing regulations, it is the responsibility of each Federal agency to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any federally listed species.

Please note that while a Federal agency may designate a non-Federal representative to conduct informal consultation or prepare a biological assessment, the Federal agency must notify the U.S. Fish and Wildlife Service (Service) in writing of such designation. The Federal agency shall also independently review and evaluate the scope and contents of a biological assessment prepared by their designated non-Federal representative before that document is submitted to the Service.

A county-by-county listing of federally-listed threatened and endangered species that occur within this office's work area can be found at http://www.fws.gov/southwest/es/EndangeredSpecies/EndangeredSpecies_Lists/EndangeredSpecies_Lists_Main.cfm. You should use the county-by-county listing and other current species information to determine whether suitable habitat for a listed species is present at your project site. If suitable habitat is present, a qualified individual should conduct surveys to determine whether a listed species is present.

After completing a habitat evaluation and /or any necessary surveys, you should evaluate the project for potential effects to the listed species and make one of the following determinations:

No effect – the proposed action will not affect federally listed species or critical habitat (i.e., suitable habitat for species occurring in the project county is not present in, or adjacent to, the action area). No coordination or conduct with the Service is necessary. However, if the project changes or additional information on the distribution of listed or proposed species becomes available, the project should be reanalyzed for effects not previously considered.

Is not likely to adversely affect – the project may affect listed species and/or critical habitat: however, the effects are expected to be discountable, insignificant, or completely beneficial. Certain avoidance and minimization measures may need to be implemented in order to reach this level of effects. The Federal agency or the designated non-Federal representative should seek written concurrence from the Service that adverse effects have been eliminated. Be sure to include all the information and documentation used to reach your decision with your concurrence. The Service must have this documentation before issuing a concurrence.

Is likely to adversely affect – adverse effect to listed species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not discountable, insignificant, or beneficial. If the overall effect of the proposed action is beneficial to the listed species but also likely to cause some adverse effect to individuals or that species, then the proposed action "is likely to adversely affect" the listed species. An "is likely to adversely affect" determination requires the Federal action agency to initiate formal Section 7 consultation with this office.

Regardless of your determination, the Service recommends that you maintain a complete record of the evaluation, including steps leading to the determination of affect, the qualified personnel conducting the evaluation, habitat conditions, site photographs, and any other related articles. The Service's Consultation Handbook is available online to assist you with further information on definitions, process, and fulfilling Endangered Species Act requirements for your projects at http://www.fws.gov/endangered/esa-libray/pdf/esa_section7_handbook.pdf.

If we can further assist you in understanding a federal agency's obligations under the Endangered Species Act, please contact Donna Anderson, Moni Belton, Kelsey Gocke, Jeff Hill, Charrish Stevens, or Arturo Vale at 281-286-8282.

Sincerely,

Edith Erfling

Edith Erfling
Field Supervisor

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NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA

U.S. DEPARTMENT OF ENERGY

February 14, 2012

Field Supervisor
Texas Parks and Wildlife Department
Wildlife Division
Wildlife Habitat Assessment Program
4200 Smith School Road
Austin, TX 78744-3291

Re: Consultation Request for the Proposed W.A. Parish Post-Combustion Carbon Capture and Storage Project in Southeastern Texas (Fort Bend, Wharton, and Jackson Counties)

To Whom It May Concern:

The U.S. Department of Energy (DOE) proposes to provide funding to NRG Energy, Inc. (NRG) and its subsidiary, Petra Nova, LLC, for a project that would capture carbon dioxide (CO_2) at NRG's W.A. Parish Generating Station (Parish Plant) in Fort Bend County, Texas. The CO_2 would be delivered in a new approximately 80-mile-long pipeline to the West Ranch oil field located near the city of Vanderbilt in Jackson County, Texas, where it would be used for enhanced oil recovery (EOR) and ultimately sequestered. This proposed project, known as the W.A. Parish Post-Combustion Carbon Capture and Storage Project (Project), would demonstrate an integrated commercial-scale deployment of post-combustion CO_2 capture technology coupled with EOR operations and long-term geologic storage of the CO_2.

DOE proposes to provide NRG with approximately $167 million of cost-shared funding, which includes *American Recovery and Reinvestment Act of 2009* funds, to implement the Project. DOE selected the Project for a financial assistance award through a competitive process under the Clean Coal Power Initiative (CCPI) Program. The estimated total project cost is $845 million.

DOE is preparing an environmental impact statement (EIS) to assess the potential environmental impacts associated with the proposed Project. As part of the *National Environmental Policy Act of 1969* (NEPA) process, DOE will consult with interested federal, state, regional, and local agencies; as well as Native American tribes. As a result, DOE requests consultation with the Texas Parks and Wildlife Department (TPWD) regarding state threatened and endangered species in the vicinity of the Project as required under Section 7 of the *Endangered Species Act* (ESA).

3610 Collins Ferry Road, P.O. Box 880, Morgantown, WV 26507
mark.lusk@netl.doe.gov • Voice (304) 285-4145 • Fax (304) 285-4216 • www.netl.doe.gov

Project Details

NRG proposes to design, construct, and operate a commercial-scale CO_2 capture facility at its Parish Plant and deliver the CO_2 via an approximately 80-mile-long, 12.75-inch (outside diameter) pipeline to the West Ranch oil field in Jackson County, Texas.

The Project would use an advanced amine-based absorption technology to capture 90 percent (approximately 1.6 million tons) of CO_2 annually from a 240-megawatt (MW) equivalent flue gas slip stream taken from the 617-MW Unit 8 at the Parish Plant. Up to 5,475 tons per day of captured CO_2 would be dried, compressed, and transported via a new pipeline to the West Ranch oil field where it would be used in EOR operations.

The primary components of the Project include the following:

1. *Carbon Capture Facility*

   The proposed Project would retrofit one of the Parish Plant's existing coal-fueled units (Unit 8) with a post-combustion CO_2 capture system that would be constructed within the existing 4,880-acre Parish Plant. A new natural gas-fired combined-cycle power plant, estimated to be 80-MW in size, would be constructed to produce the auxiliary power needed to drive the proposed carbon capture system.

2. *CO_2 Transport*

   Captured CO_2 would be transported via a new approximately 80-mile-long pipeline to the West Ranch oil field. The anticipated pipeline route includes mostly sparsely-developed rural and agricultural lands in Fort Bend, Wharton, and Jackson Counties in Texas. The majority (approximately 95 percent) of the planned pipeline route will utilize existing mowed/maintained utility rights-of-ways (ROWs) to minimize environmental impacts and avoid sensitive resources to the greatest extent practical. Although the proposed pipeline will be located within existing ROWs for the majority of its length, NRG may need to review existing landowner agreements along the route to negotiate for widening of the ROW for construction of the pipeline in some areas.

3. *EOR and CO_2 Sequestration*

   The proposed Project would deliver up to 1.6 million tons of CO_2 per year to the existing West Ranch oil field, located in Jackson County. The oil field has been in operation since 1938, and Texas Coastal Ventures, LLC, a joint venture between NRG and Hilcorp Energy Company, would conduct the EOR operations.

4. *CO_2 Monitoring, Verification, and Accounting Program*

   NRG would implement a monitoring, verification, and accounting (MVA) program to monitor the injection and migration of CO_2 within the geologic formations at the EOR site. The MVA program must meet specific regulatory and CCPI Program requirements, and may consist of a variety of monitoring and modeling activities

Project Schedule

NRG plans to start construction of the Project in November 2012 and begin the demonstration phase of commercial operations by 2015. The schedule is contingent on NRG receiving the necessary permits and regulatory approvals, as well as financial closing on all the necessary funding sources, including DOE's financial assistance.

Maps showing the expected footprint for the proposed carbon capture site, the proposed pipeline route, and the existing oil field area are provided in Attachment 1. Biological and cultural resource surveys along the proposed pipeline route are scheduled between January and March 2012. DOE and NRG have contracted with URS Group, Inc., to provide environmental and cultural resources services to support development of the EIS and other regulatory compliance requirements for the Project

Threatened and Endangered Species in the Project Area

A desktop review of the TPWD online database has shown that the State-listed endangered species located within Fort Bend, Wharton, and Jackson Counties, Texas include (see T&E lists in Attachment 2):

- **Whooping crane** (*Grus americana*) - Ft. Bend, Wharton, Jackson
- **Red wolf** *(Canis rufus)* – Ft. Bend, Wharton, Jackson
- **Interior least tern** (*Sterna antillarum athalassos)* - Ft. Bend, Wharton, Jackson
- **Attwater's greater prairie-chicken** (*Tympanuchus cupido attwateri)* - Ft. Bend, Wharton
- **Houston toad** (*Anaxyrus houstonensis)* – Ft. Bend
- **Texas prairie dawn flower** (*Hymenoxys texana*) - Ft. Bend
- **West Indian manatee** *(Trichechus manatus)* - Jackson
- **Brown pelican** (*Pelecanus occidentalis)* - Jackson
- **Smalltooth sawfish** (*Pristis pectinata)* - Jackson
- **Kemp's Ridley sea turtle** (*Lepidochelys kempii)* – Jackson

No impacts to the above-listed species or their critical habitat are anticipated as a result of the Project, and the proposed Project will not impact any marine or shoreline habitats utilized by any of these protected species.

A search of the Texas Natural Diversity Database (TXNDD) showed that the proposed pipeline route intersects two TXNDD element occurrence polygons. According to maps depicting TXNDD search results provided in Attachment 2, the northernmost polygon is based on the historic presence of an eagle nest in the area (TPWD Nest #241-4A [Wharton County]). This nest was first identified in 2001, was inactive in 2003 and 2004, and there is no information after 2004. The southernmost polygon is based on the historic presence of eagle nests in the area (TPWD Nests 120-2A, 2B, and 2C). Nest 2C was found to have fallen in 2004. No information is available after 2004. DOE recognizes that the bald eagle is afforded Federal protection under the *Bald and Golden Eagle Protection Act*, the *Migratory Bird Treaty Act*, and is protected by the State of Texas. However, since the proposed pipeline would be primarily constructed along

an existing ROW to minimize or avoid environmental impacts during construction, impacts to the bald eagle habitat (i.e. trees that have nests or that would be potential nesting sites) is not expected.

DOE respectfully requests that the TPWD provide site-specific information concerning existing natural resources within Fort Bend, Wharton, and Jackson Counties. This information would include details regarding threatened and endangered species, species of special concern, critical habitats, or any other significant biological resources (e.g., unique or sensitive habitats, nature preserves, and migratory bird fallout areas) that may be located within the vicinity of the proposed Project. DOE also requests guidance from TPWD concerning surveying recommendations or seasonal constraints on construction with respect to threatened and endangered species. The information provided by the TPWD will assist DOE in the preparation of an EIS and fulfillment of its regulatory responsibilities under the ESA. DOE also intends to provide a copy of the draft EIS for the Project to your office for review and comment. All correspondence with your office will be included in an appendix to the EIS.

DOE would appreciate your participation and request a response as soon as practical to help quickly identify potential impacts to protected species in the vicinity of the Project. You can reach me for comment by email at mark.lusk@netl.doe.gov, by telephone at (304) 285-4145, or at the address listed on the front page.

Sincerely,

Mark W. Lusk
NEPA Document Manager/NEPA Compliance Officer

Attachments:
1. Project Location Maps
2. Threatened and Endangered Species Lists/Texas Natural Diversity Database Maps

cc:
Jon Barfield - NRG
Anthony Armpriester - NRG
Ted McMahon - DOE
Pete Conwell - URS

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March 20, 2012

Mark Lusk
NETL
3610 Collins Ferry Road
Morgantown, WV 26507

RE: W.A. Parish Post-Combustion Carbon Capture and Storage Project
NRG Energy, Inc.
Fort Bend County, Texas

Dear Mr. Lusk:

NRG Energy, Inc. (NRG) is proposing a project that would capture carbon dioxide (CO_2) at NRG's W.A. Parish Generating Station (Parish Plant) in Fort Bend County. The CO_2 would be delivered in a new approximately 80-mile long pipeline to the West Ranch oil field located near the city of Vanderbilt in Jackson County, Texas, where it would be used for enhanced oil recovery and ultimately sequestered.

Under section 12.0011 of the Texas Parks and Wildlife Code, Texas Parks and Wildlife Department (TPWD) is charged with "providing recommendations that will protect fish and wildlife resources to local, state, and federal agencies that approve, permit, license, or construct developmental projects" and "providing information on fish and wildlife resources to any local, state, and federal agencies or private organizations that make decisions affecting those resources."

Based on the project description and the preliminary pipeline alignment, TPWD offers the following preliminary comments and recommendations:

Federal Regulations

Endangered Species Act (ESA)

Federally-listed animal species and their habitat are protected from "take" on any property by the ESA. Take of a federally-listed species can be allowed if it is "incidental" to an otherwise lawful activity and must be permitted in accordance with Section 7 or 10 of the ESA. Federally-listed plants are not protected from take except on lands under federal/state jurisdiction or for which a federal/state nexus (i.e., permits or funding) exists. Any take of a federally-listed species or its habitat without the required allowance from U.S. Fish and Wildlife Service (USFWS) is a violation of the ESA.

The Texas Natural Diversity Database (TXNDD) is intended to assist users in avoiding harm to rare species or significant ecological features. Given the small proportion of public versus private land in Texas, the TXNDD does not include a representative inventory of rare resources in the state. Absence of information in the database does not

imply that a species is absent from that area. Although it is based on the best data available to TPWD regarding rare species, the data from the TXNDD do not provide a definitive statement as to the presence, absence or condition of special species, natural communities, or other significant features within your project area. These data are not inclusive and **cannot be used as presence/absence data**. This information cannot be substituted for on-the-ground surveys. The TXNDD is updated continuously based on new, updated and undigitized records; for questions regarding a record, please contact txndd@tpwd.state.tx.us.

Due to the large scope of the project, TPWD recommends that the applicant contact the TXNDD through the email above and request the TXNDD data to adequately evaluate the proposed project's impacts upon rare resources. Records within 5 miles are discussed below and shown on Figure 1.

Please refer to the enclosed map (Figure 1) and element occurrence list for additional information.

> **Recommendation:** Potential impacts to federally-listed species and their habitat should be considered for the project. TPWD recommends that routes be designed to avoid areas of suitable habitat. If suitable habitat is present and harm to federally-listed species may occur, then the appropriate USFWS field office should be consulted pursuant to the ESA.

Bald and Golden Eagle Protection Act

The Bald Eagle (*Haliaeetus leucocephalus*) is known to nest and winter in the portions of Texas. Please note that, although the Bald Eagle is no longer federally-listed threatened, this species remains state-listed threatened and receives protection under the U.S. Bald and Golden Eagle Protection Act. Under this act eagles are protected from disturbance which is defined as: "*To agitate or bother a bold or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in it productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.*"

In addition to immediate impacts, this definition also covers impacts that result from human-caused alterations initiated around a previously used nest site during a time when eagles are not present, if upon the eagles return, such alterations agitate or bother an eagle to a degree that injures an eagle or substantially interferes with normal breeding, feeding, or sheltering habits and causes, or is likely to cause, a loss of productivity or nest abandonment.

Guidelines for minimizing disturbance to both nesting and wintering Bald Eagles can be found at http://www.tpwd.state.tx.us/publications/pwdpubs/media/pwd_bk_w7000_0013_bald_eagle_mgmt.pdf.

The TXNDD revealed known occurrences of the Bald Eagle (*Haliaeetus leucocephalus*) within 5 miles of the project area as shown on the enclosed map (Figure 1). Please note, known occurrences of Bald Eagle nesting locations along the Colorado River are not indicated on Figure 1. The proposed project falls within these known locations. For more information on these nesting locations please contact Brent Ortego at (361) 576-0022 x 221.

Recommendation: TPWD recommends the project be developed to avoid or minimize potential impacts to areas along the project where the state-threatened Bald Eagle may occur, but have not been officially reported and recorded in the TXNDD. Areas buffering active nests should be protected from disturbance.

Migratory Bird Treaty Act (MBTA)

MBTA implicitly prohibits intentional and unintentional take of migratory birds, including their nests and eggs, except where permitted. Measures should be taken to ensure that migratory bird species within and near the project area are not adversely impacted by clearing and construction activities.

Recommendation: TPWD recommends that vegetation removal be avoided during the primary migratory bird nesting season, March through August, to avoid adverse impacts to this group. If clearing vegetation during the nesting season is unavoidable, TPWD recommends the construction area be surveyed to ensure that no nests with eggs or young will be disturbed by construction. Any vegetation (trees, shrubs, and grasses) where occupied nests are located should not be disturbed until the eggs have hatched and the young have fledged. For additional information regarding potential impacts of the project on migratory birds, contact the USFWS - Migratory Bird Office at (505) 248-7882.

Clean Water Act (CWA)

The U.S. Army Corps of Engineers (USACE) as authorized by Section 404 of the CWA of 1972 issues permits for unavoidable discharge of dredged or fill material into Waters of the U.S., including wetlands. Any unavoidable impacts to jurisdictional streams and wetlands would be subject to review and approval of the USACE. If potential impacts to jurisdictional wetlands are anticipated, the appropriate USACE district office should be consulted pursuant to CWA.

Wetlands, riparian areas, and bottomland forests generally provide valuable habitat for wildlife and protect waterways from sediment loads in runoff water. Such habitats are priority habitat types targeted for conservation by TPWD across the state.

Recommendation: If crossing streams, wetlands, and associated riparian habitat and bottomland forest is unavoidable, TPWD recommends that minimization of impacts be proposed through:

- reductions in the nominal construction ROW width in wetlands, riparian habitat, and bottomland forest
- placement of the pipeline parallel to existing road or utility ROW *except* where this would cause greater impact to wetland and riparian habitats or rare resources,
- selective routing
- the use of wetland and waterbody construction and mitigation procedures,
- crossing wetlands, streams and associated riparian habitat and bottomland forest using boring techniques
- reducing maintenance of the permanent ROW in wetlands to a 10-ft. wide area centered over the pipeline

Recommendation: Where boring would be conducted, TPWD recommends that staging areas for drilling equipment be located in previously disturbed areas or areas of low value habitat. The footprint of disturbance should be reduced as much as possible and crossings should be conducted perpendicular to linear stream and riparian habitats to reduce the amount of disturbance.

Recommendation: NRG should minimize disturbance to inert microhabitats, i.e., snags, brush piles, fallen logs, creek banks, and pools as these provide habitat for a variety of wildlife species and their food sources.

Recommendation: In wetland areas, only vegetation impeding construction should be removed, equipment should not be driven over vegetation when it is extremely wet, and heavy machinery should not be stored on vegetative cover for long periods of time. Protective mats should be placed within streambeds during construction to reduce the amount of soil and root disturbance and aid in the recovery of plants.

Recommendation: Vehicles not needed specifically at creek crossings should utilize nearby roadways and bridges when crossing wetlands and streams to avoid soil disturbances.

State Regulations

Ecologically Significant Stream Segments

TPWD has identified Ecologically Significant Stream Segments (ESSSs) throughout the state to assist regional water planning groups in identifying ecologically unique stream segments under Texas Administrative Code Title 31 357.8. Until approved by the legislature this is not a legal designation. The stream segments are identified through extensive review by TPWD staff and are determined to be ecologically important due to one or more of the following criteria: Biological function; hydrologic function; riparian conservation areas; high water quality/exceptional aquatic life/high aesthetic value; or threatened or endangered species/unique communities. Additional information on ESSS may be found at http://www.tpwd.state.tx.us/landwater/water/environconcerns/water_quality/sigsegs/. The proposed pipeline crosses the following ESSSs (Figure 2):

- Big Creek
- Colorado River
- Lavaca River
- San Bernard River
- West Carancahua Creek

Recommendation: If ground or water disturbing activities are to occur in or near an ESSS, every effort should be undertaken to preserve the biological, hydrological, aquatic life and aesthetic qualities that support the ESSS. Best management practices (BMPs) to avoid erosion, sedimentation, turbidity, stream bank, stream bed and vegetative disturbance should be developed and implemented to the greatest extent practicable. Such measures would include strict adherence to the Texas Commission on Environmental Quality Section 401 CWA Water Quality Certification, the Section 402 CWA Storm Water Pollution Prevention Plan and the USACE Nationwide 14 Permit terms and conditions for mitigation, erosion and sediment control during the construction phase. Those controls include the use of double silt fencing in construction areas near creek drainages, avoiding clearing of stream bank and in-stream native vegetation, phasing work during dry periods, crossing ESSSs by horizontal directional drilling, minimizing any stream bed disturbance, and siting equipment storage areas, valves, and pump stations beyond the floodplain of streams and rivers including ESSS.

Chapter 86, Parks and Wildlife Code – State-Owned Streambeds

No TPWD permit is required for **boring underneath** navigable streams (as defined in Texas state law). Disturbance to state owned streambeds and removal of streambed materials may require a permit from this Department under Chapter 86 of the Parks and Wildlife Code. Information regarding such permits can be found at http://www.tpwd.state.tx.us/faq/landwater/sand_gravel/.

Recommendation: If state owned streambeds would be disturbed as a result of proposed project, TPWD recommends NRG contact Tom Heger at the letterhead address or by phone at (512) 389-4583 for application forms and additional information.

Section 68.015, Parks and Wildlife Code – State-listed Species

Section 68.015 of the Parks and Wildlife Code regulates state-listed species. Please note that there is no provision for take (incidental or otherwise) of state-listed species. A copy of *TPWD Guidelines for Protection of State-Listed Species* is attached for your reference. This document includes a list of penalties for take of state-listed species. State-listed species may only be handled by persons with a scientific collection permit obtained through TPWD. For more information on this permit, please contact the Wildlife Permits Office at (512) 389-4647.

The TPWD county lists for rare species may be obtained from the following link: http://gis.tpwd.state.tx.us/TpwEndangeredSpecies/DesktopDefault.aspx. These lists provide information regarding rare species that have potential to occur within each county. Rare species could potentially be impacted if suitable habitat is present at or near the project site.

The TXNDD revealed the following known occurrences of state-listed species within 5 miles of the project area in Texas (Figure 1):

- Bald Eagle (*Haliaeetus leucocephalus*)

Recommendation: TPWD recommends that NRG consult the above-reference TPWD county lists to determine if habitat for state-threatened species occurs within the project area. An on-the-ground survey by a qualified biologist should be performed in areas of suitable habitat to determine if species are present. If present, NRG should incorporate actions into the project to avoid impacts to these species.

Potential adverse impacts should be identified and conservation measures to offset harm should be incorporated into the project mitigation plan. If rare, threatened, and endangered species are to be adversely affected, TPWD should be contacted for further coordination.

State Fish and Wildlife Resources

Rare Resources

Special features, natural communities, and rare species that are not listed as threatened or endangered are tracked in the TXNDD. Although not afforded protection by the ESA or Parks and Wildlife Code Section 68.015, TPWD actively promotes rare species conservation. TPWD considers it important to evaluate and if necessary, minimize impacts to rare species and their habitat to reduce the likelihood of endangerment.

The TXNDD revealed the following known occurrences of species of concern, special features, and natural communities within 5 miles of the project area in Texas:

- Texas Diamondback Terrapin (*Malaclemys terrapin littoralis*)
- Threeflower broomweed (*Thurovia triflora*)
- Welder machaeranthera (*Psilactis heterocarpa*)
- Colonial waterbird rookery

Rookeries

In general, nesting dates for herons and egrets range from early February to late August in Texas, depending on the species. Great Blue Herons (GBHE) are usually the first to nest. When GBHE get disrupted from the nest and abandon nesting, then the other

species of herons and egrets may not attempt to nest at the colony that year. A reference that indicates nesting dates for Texas species within heronries can be found in *Nuisance Heronries in Texas*: http://www.tpwd.state.tx.us/publications/pwdpubs/media/pwd_bk_w7000_0134.pdf

Recommendation: If rookeries are encountered, TPWD recommends BMPs for avoiding/minimizing disturbance during nesting. TPWD recommends a primary buffer area of 300 meters (984 feet) from the heronry periphery to avoid any vegetation clearing as a protection measure to protect the heronry and its habitat. Pipeline construction and permanent easements that would encroach within this buffer area should be re-routed, adjusted, or narrowed to avoid clearing within this buffer area. Utilizing areas that have already been cleared within this buffer area may be acceptable depending on site-specific characteristics. Additionally, human foot traffic or machinery use should not occur within this buffer area during the nesting season.

Recommendation: TPWD recommends a secondary buffer area of 1000 meters (3281 feet) from the heronry periphery to avoid clearing activities or construction using heavy machinery during the breeding season (courting and nesting). At this time, TPWD does not have a detailed report of the heronries found along the proposed pipeline route. When details regarding the heronries are provided, TPWD staff can discuss NRG's ability to feasibly meet the recommended setback distances. Details to aid in decision making includes the size of the heronry number of nests and area of heronry), species utilizing the heronry, distance of heronry periphery from the construction area, and characteristics regarding the habitat within and surrounding the heronry.

Mussels

On November 5, 2009, the Texas Parks and Wildlife Commission acted to place 15 native freshwater mussel species on the state-threatened species list.

Recommendation: TPWD recommends potentially impacted waterways within the range of state listed mussels be assessed for rare mussel habitat. Where suitable habitat is present, mussel surveys should be conducted if construction would be conducted in waters associated with mussels. Direct disturbance of habitat and degradation of water quality should be avoided where threatened mussels or their habitat are found. If mussel populations are present within the limits of the proposed project area, those populations should be protected from disturbance to the greatest extent possible. If disturbance of mussel beds cannot be avoided, the TPWD Wildlife Habitat Assessment Program (512) 389-4571 should be contacted for guidance on mitigation.

Recommendation: TPWD recommends use of BMPs for riparian areas to minimize impacts on mussels as well as fish species which are the mussel larval host. BMPs would include measures such as: 1) avoiding impact to perennial waters and their

associated riparian areas by using horizontal directional drilling techniques, 2) avoiding construction during fish and mussel spawning periods, 3) completing construction through the streambed during periods of drought when the stream is dry, and 4) use of double silt fences and doubling soil stabilization measures along the banks to avoid increasing the turbidity of the creek.

Vegetation

The proposed project crosses the Gulf Coast Prairies and Marshes Ecoregion and would occur within various vegetation types associated with the region. Texas Ecological Systems Classification and Mapping Project (ESMP) Phase 1 and 2 provide recently mapped vegetative cover based on the NatureServe Ecological System Classification System as described by Comer (2003). More information and downloads from the ESMP can be obtained at http://www.tpwd.state.tx.us/landwater/land/maps/gis/tescp/index.phtml.

Recommendation: TPWD recommends the ESMP be used to aid in routing to avoid sensitive areas and important habitats. TPWD would like to note that although a route may appear to have certain impacts based on remote analysis, the quality of the habitat being impacted cannot be determined without field surveys.

TPWD prefers that disturbed upland areas be restored to pre-construction contours and planted with a mixture of **native** herbaceous species, especially when the adjacent property on one or both sides of the pipeline ROW contains native species of vegetation. Introduction of non-native species into native landscapes should be prevented.

Based on a review of the TPWD Vegetation Types of Texas (1984) map, the following vegetation types are found in the study area:

- Crops
- Pecan Elm
- Marsh Barrier Island

A map of vegetation types in the study area is attached for your reference (Figure 3).

Recommendation: TPWD recommends minimizing impacts to native vegetation to the extent feasible during project design and construction. Unavoidable loss of native vegetation should be mitigated by revegetating areas disturbed by project activities with site-specific native species. A list of native plant species suitable for use in the project area can be developed to fit your specific site needs using the TPWD Texas Plant Information Database at http://tpid.tpwd.state.tx.us/.

Recommendation: For revegetation, TPWD recommends selection of species that are suited to the site conditions and intended uses and to consider native species that have multiple benefits and provide species diversity. Native perennial grass species recommended by TPWD for permanent cover include Switchgrass (*Panicum*

virgatum), Eastern Gamagrass (*Tripsacum dactyloides*), Virginia Wildrye (*Elymus virginicus*), Canada Wildrye (*E. canadensis*), Yellow Indiangrass (*Sorghastrum nutans*) and Little Bluestem (*Schizachyrium scoparium*). Other species appropriate for the area can be found by accessing the TPWD Texas Plant Information Database. During the easement acquisition process, each landowner should be offered a native seed mix.

Recommendation: To verify successful revegetation and to determine the need for additional restoration, TPWD recommends the applicant conduct at least 2 years of post-construction monitoring. In wetlands, TPWD recommends that vegetation be allowed to reestablish naturally with a three year monitoring plan to determine success. TPWD recommends that unsuccessful wetland revegetation be accompanied by active planting with native wetland herbaceous and woody plant species in consultation with a professional wetland ecologist.

Invasive Species

The Chinese tallowtree (*Triadica sebifera*) is an invasive species known to invade stream banks, riverbanks, and wet areas as well as upland sites. Disturbed areas are especially susceptible to infestation of tallow trees. Other exotic species with potential to invade portions of the project ROW include cogon grass (*Imperata cylindrica*), Chinese privet (*Ligustrum sinese*), deep-rooted sedge (Cyperus entrerianus), Japanese honeysuckle (*Lonicera japonica*), and purple loosestrife (*Lythrum salicaria*).

Recommendation: A revegetation and maintenance plan should be prepared to monitor and control invasive species within the construction and operation ROWs. Occurrences of the exotic species listed above should be treated and controlled.

Mitigation Plan

TPWD recommends NRG prepare a mitigation plan to provide compensatory mitigation for loss of important wildlife habitats where impacts from the pipeline cannot be avoided or minimized. This would include impacts to species and habitats covered under federal law (wetlands and associated habitats, threatened or endangered species) and state resource habitat types not covered by state or federal law (riparian areas, native prairies, certain types of bottomland hardwoods, S1 and S2 natural communities). At a minimum, TPWD recommends a replacement ratio of 1:1 for state resource habitat types.

TPWD advises review and implementation of the comments and recommendations. If you have any questions, please contact Amy Turner, Ph.D. at (361) 576-0022 or amy.turner@tpwd.state.tx.us. As the primary point-of-contact for this project, correspondence regarding this project should be addressed to Amy Turner, Ph.D., TPWD Wildlife Division, Wildlife Habitat Assessment Program, 4200 Smith School Road, Austin, TX 78744.

Sincerely,

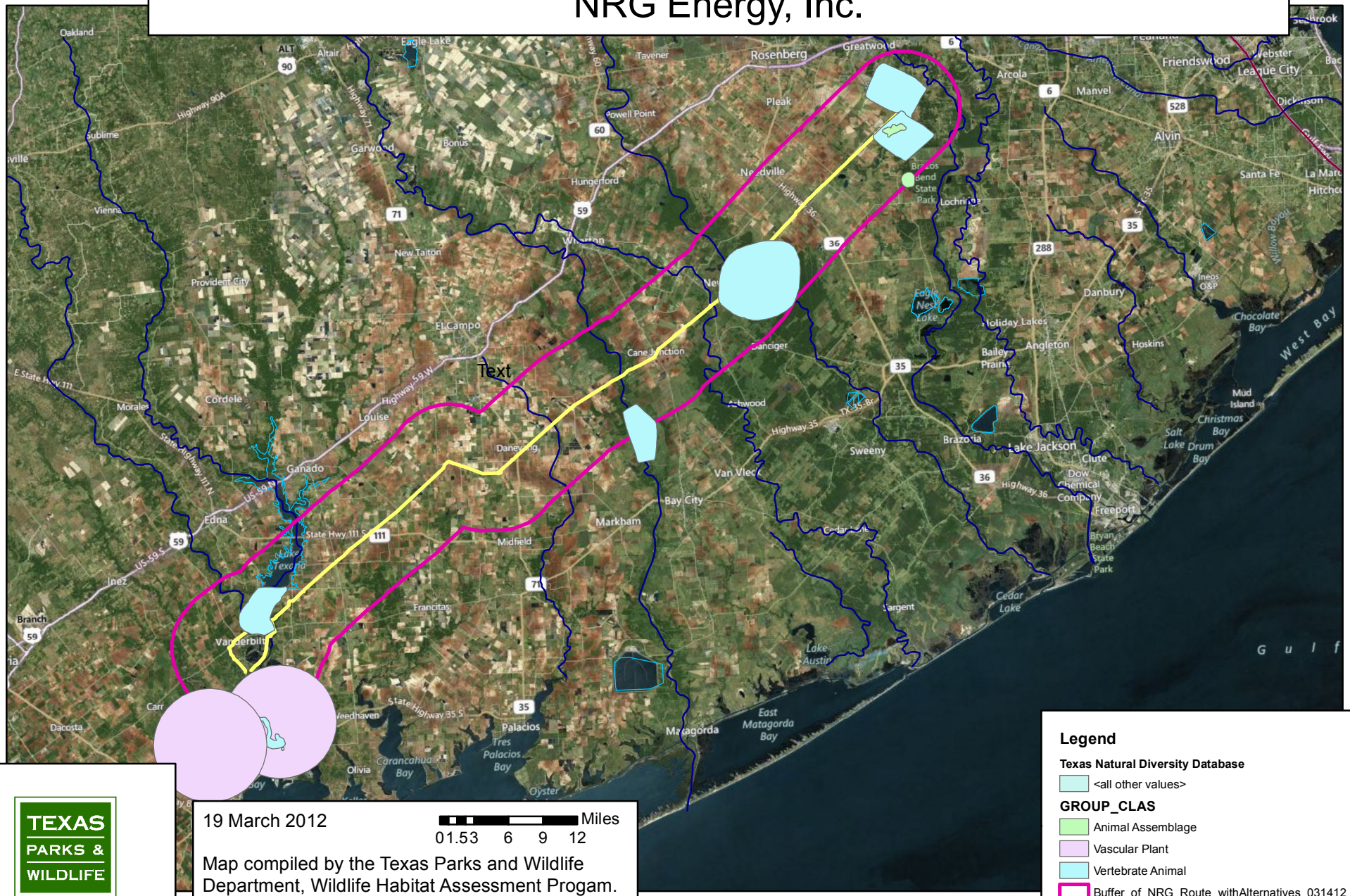
Amy Turner

Amy Turner, Ph.D.
Wildlife Habitat Assessment Program
Wildlife Division

/ajt:17002

Enclosures: TXNDD Occurrence Shapefiles and Element Occurrence Records
TPWD Guidelines for Protection of State-Listed Species

Figure 1
Texas Natural Diversity Database
W.A. Parish Post- Combustion Carbon Capture and Storage Project
NRG Energy, Inc.



19 March 2012

Miles
0 1.5 3 6 9 12

Map compiled by the Texas Parks and Wildlife Department, Wildlife Habitat Assessment Progam. No claims are made to accuracy of the data or the suitablity of the data to a particular use.

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Legend

Texas Natural Diversity Database

<all other values>

GROUP_CLAS

Animal Assemblage

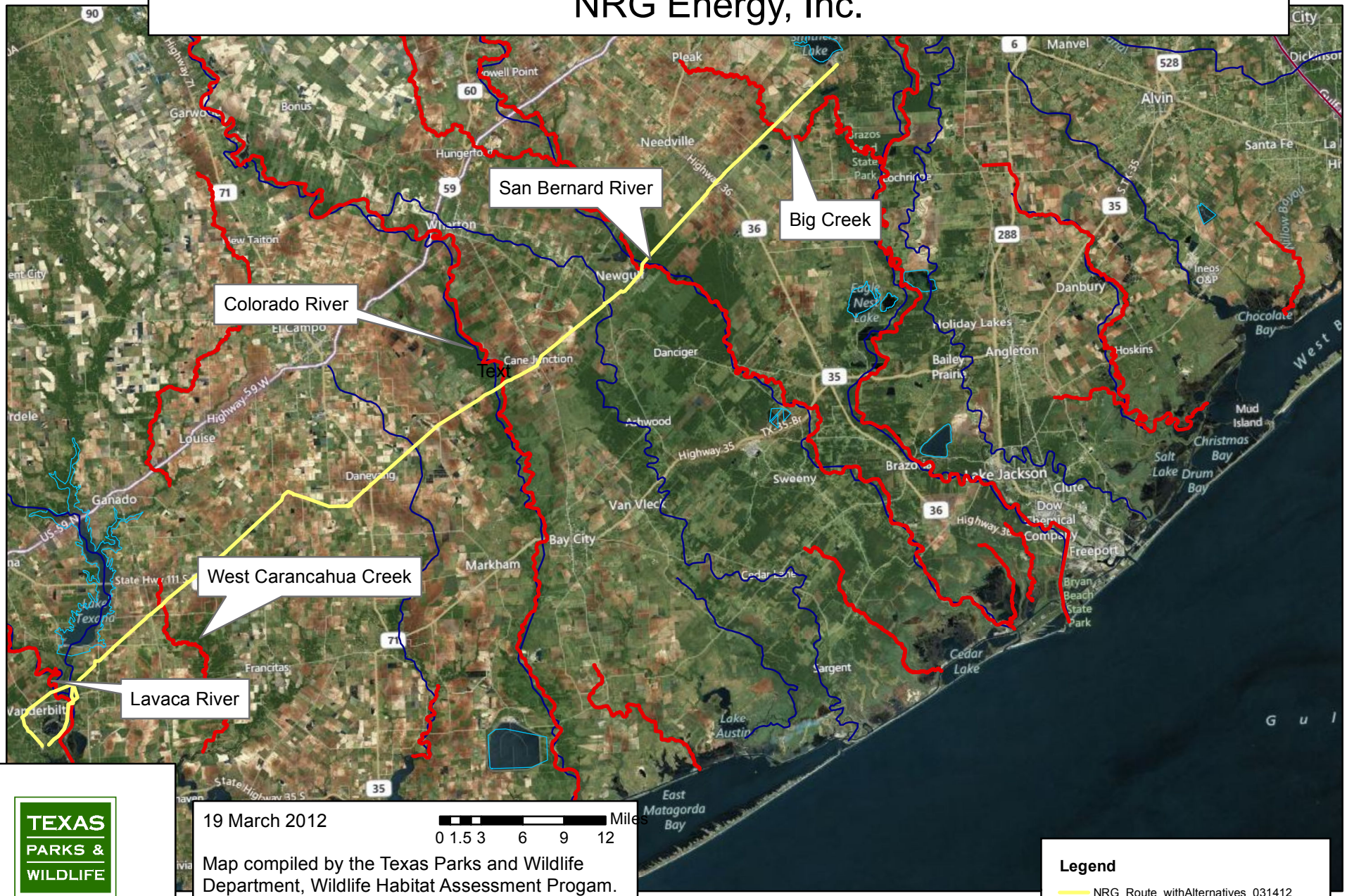
Vascular Plant

Vertebrate Animal

Buffer_of_NRG_Route_withAlternatives_031412

NRG_Route_withAlternatives_031412

Figure 2
Ecologically Significant Stream Segments
W.A. Parish Post- Combustion Carbon Capture and Storage Project
NRG Energy, Inc.



19 March 2012

0 1.5 3 6 9 12 Miles

Map compiled by the Texas Parks and Wildlife Department, Wildlife Habitat Assessment Progam. No claims are made to accuracy of the data or the suitablity of the data to a particular use.

Legend

- NRG_Route_withAlternatives_031412
- Ecologically Significant Stream Segments

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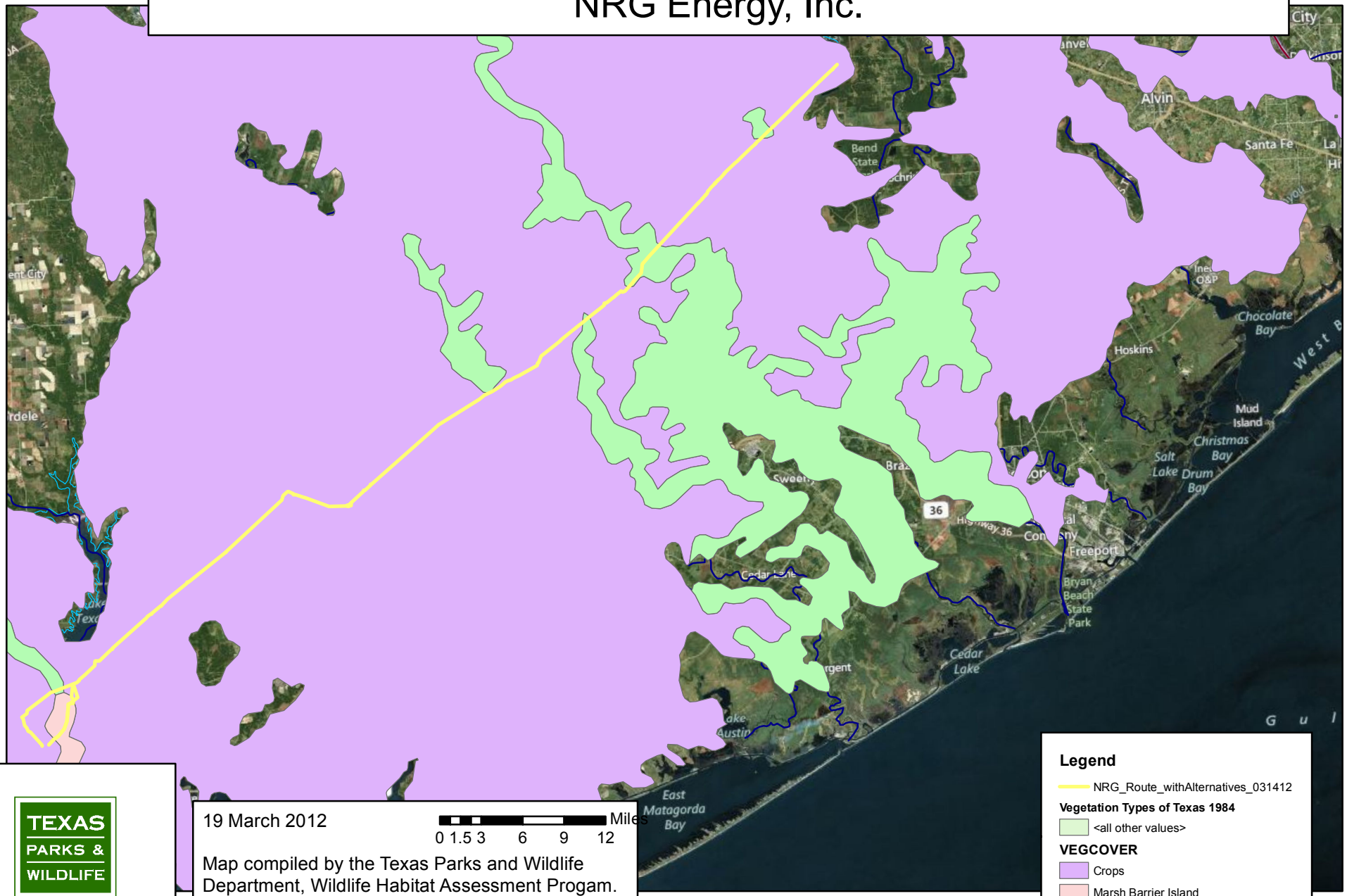
Figure 3
Vegetation Types of Texas 1984
W.A. Parish Post- Combustion Carbon Capture and Storage Project
NRG Energy, Inc.



19 March 2012

0 1.5 3 6 9 12 Miles

Map compiled by the Texas Parks and Wildlife Department, Wildlife Habitat Assessment Progam. No claims are made to accuracy of the data or the suitablity of the data to a particular use.

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United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
1001 Indian School Road NW, Suite 348
Albuquerque, New Mexico 87104

ER 12/676
File 9043.1

November 5, 2012

VIA ELECTRONIC MAIL ONLY

Mark W. Lusk
National Environmental Policy Act Document Manager
U.S. Department of Energy
National Energy Technology Laboratory (NETL)
3610 Collins Ferry Road, M/S I07
Morgantown, West Virginia 26507-0880

Dear Mr. Lusk:

The U.S. Department of the Interior has reviewed the Draft Environmental Impact Statement (DEIS) for the W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project Funding, Fort Bend and Jackson Counties, Texas, for the Department of Energy's proposed action to provide financial assistance to NRG Energy, Inc., for a demonstration project to use captured carbon dioxide at the Parish PCCS Project in Fort Bend, Texas, to enhance oil recovery at the West Ranch oil field in Jackson County, Texas. The captured and compressed carbon dioxide would be transported via an 80-mile-long, 12-inch-diameter underground pipeline through Fort Bend, Wharton, and Jackson Counties, Texas. We provide the following comments in accordance with the Fish and Wildlife Coordination Act (16 U.S.C. 661-667e), Endangered Species Act (16 U.S.C. 1531 *et seq*.), National Environmental Policy Act (42 U.S.C. 4321 *et seq*.), Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c), and Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703 *et seq*.). We also offer general comments on the DEIS.

General Comments

Threatened and Endangered Species

According to Section 7(a)(2) of the Endangered Species Act (ESA), it is the responsibility of each federal agency to ensure any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any species listed under the ESA. Based upon an inventory of listed species and other current information, the federal action agency determines if any endangered or threatened species may be affected by the proposed action.

The U.S. Fish and Wildlife Service's (FWS) Consultation Handbook is online at: *http://www.fws.gov/endangered/esa-library/pdf/esa_section7_handbook.pdf* for further information on definitions and the Section 7 process.

Whooping Crane

The endangered whooping crane (*Grus Americana*) has been documented in Fort Bend and Wharton Counties, Texas. The lack of documented sightings of whooping cranes within the region of influence (ROI) and lack of observation of whooping cranes during field surveys is not sufficient data to predict with certainty where whooping cranes may be found in the future. Although rare, it is conceivable that whooping cranes may use agriculture fields, rivers, and fresh water wetlands within or adjacent to the pipeline footprint for feeding or staging areas during migration.

Whooping cranes are monogamous, forming lifelong pair bonds, and breed in Wood Creek National Park, Canada. Once the breeding season has ended, whooping cranes migrate to their wintering grounds in Texas, usually arriving in late October to mid-November. Overall, the migration can take several months and encompasses a 200-mile wide corridor. The birds migrate during the day and stop to feed and rest at night. Whooping cranes feed on insects, frogs, rodents, small birds, minnows and berries during migration and switch to predominantly blue crabs and clams on the wintering grounds. Typically, the birds winter at the Aransas National Wildlife Refuge and surrounding areas, where they prefer the coastal salt marshes, but they will also forage in fresh water habitats such as rolling sandy areas characterized by oak brush, grasslands, swales, and ponds. Whooping cranes begin the migration to Canada in late March and early April. However, as noted above, whooping cranes have occasionally stopped over in Fort Bend and Wharton Counties, Texas.

Bald Eagle

On August 8, 2007, the bald eagle was removed from the list of threatened or endangered species under the ESA. However, the bald eagle continues to be protected under the Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act. Bald eagle nesting season in Texas typically begins on October 1 and can extend through May. They usually nest 1-2 miles from rivers or other large water bodies such as a lake or reservoir. Bald eagles tend to nest in very large, mature trees (such as those found in the footprint of the proposed pipeline corridor) that can support a nest up to 10 feet in diameter and weighing upwards of half a ton (USFWS[1]).

The DEIS mentions several inactive bald eagle nests and one active bald eagle nest known to occur within the ROI. Breeding bald eagle pairs will return to the same area year after year, often using alternate nests sites within the territory during different breeding years. Although a given nest may be lost between nesting periods, the pair often returns to the same territory to build another nest. There may be additional bald eagle nests located in the project area, since the number of bald eagles nesting in Texas is increasing and locations of their nests are unknown. Therefore, FWS recommends conducting additional surveys for bald eagle nests prior to the

[1] U.S. Fish and Wildlife Service. June 2007. Bald Eagle Fact Sheet. July, 23, 2012 *http://www.fws.gov/midwest/eagle/recovery/biologue.html*

commencement of construction. All work crew members should be informed bald eagles may be in the area and should be aware of what bald eagles and bald eagle nests look like. There should be one point of contact designated in each crew to be notified if workers observe a bald eagle. If an active nest(s) is found, FWS recommends implementing the strategies found in the Bald Eagle Management Guidelines at: *http://www.fws.gov/midwest/eagle/guidelines/index.html* to avoid disturbance of the nest.

All eagle nests are protected under the Bald and Golden Eagle Protection Act and require a permit before one can be removed. Only inactive nests may be removed, provided the take is necessary to protect an interest in a particular locality and the activity necessitating the take or the mitigation for the take will, with reasonable certainty, provide a clear and substantial benefit to eagles. Before removing a bald eagle nest, you will be required to comply with all avoidance, minimization, or other mitigation measures determined as reasonable to compensate for the detrimental effects, including indirect effects, to the regional eagle population.

Mussels

Several candidate species of freshwater mussels have been documented in the Colorado River basin and have the potential to occur within the project area. Candidate species are those species being considered for listing pursuant to the ESA. While these species are not afforded any legal protection under the ESA, the FWS provides species information for consideration in the environmental review process and to encourage efforts to avoid adverse impacts to these species. It is known that sedimentation smothers and suffocates mussels and is one of the main contributors to mussel die offs. Therefore, the FWS recommends the use of silt fences and filter fabric to reduce sedimentation within the Colorado River and its tributaries located within the project area. Please review the Best Management Practices for Projects Affecting Rivers, Streams and Tributaries (enclosed) and coordinate with the FWS's Clear Lake Ecological Services Field Office at 281-286-8282, regarding impacts to candidate species to avoid potential project modifications or delays if these species become federally listed before the project is completed.

Migratory Birds

Over 1,000 species of birds are protected by the Migratory Bird Treaty Act. Any taking of migratory birds, including nests with eggs, incidental to an otherwise lawful activity is a violation of the MBTA. All measures must be taken to avoid incidental take such as conducting land clearing activities outside of the breeding season.

If the proposed project or action includes a reasonable likelihood that take of nesting migratory birds will occur, then that action should be undertaken outside of the nesting season. This includes clearing or cutting of vegetation, structure construction and maintenance, etc. The primary nesting season for migratory birds varies greatly between species and geographic location but generally extends from early April to mid-July. However, the maximum time period for the nesting season can extend from early February through late August. Also, eagles may initiate nesting as early as late December or January depending on the geographic area. Due to this variability, project proponents should consult with the USFWS Region 2 Migratory Bird Program for specific nesting seasons. Strive to schedule all disruptive activities outside the peak of migratory bird nesting season to the greatest extent possible. Always avoid any habitat

alteration, removal, or destruction during the primary nesting season for migratory birds. Clearing vegetation in the year prior to construction (but not within the nesting season) may discourage birds from attempting to nest in the proposed construction area, thereby decreasing chance of take during construction activities. Inactive nests on structures scheduled for maintenance, remodeling, or demolition should be removed in advance of the planned activity so that re-nesting is not attempted. For example, swallows may return to the same nest year after year. Therefore, inactive swallow nests from a previous year's nesting season should be removed before commencing an activity in the current year's nesting season. New nesting attempts should be discouraged and new nests should be destroyed before egg-laying begins. If a proposed project or action poses the potential for take of migratory birds and/or the loss or degradation of migratory bird habitat and work cannot occur outside the migratory bird nesting season, project proponents should provide the FWS with an explanation for why work has to occur during the migratory bird nesting season. Further, in these cases, project proponents also need to demonstrate that all efforts to complete work outside the migratory bird nesting season were attempted and that the reasons work needs to be completed during the nesting season were beyond the proponent's control.

Where project work cannot occur outside the migratory bird nesting season, project proponents must survey those portions of the project area during the nesting season prior to construction occurring to determine if migratory birds are present and nesting in those areas. In addition to conducting surveys during the nesting season/construction phase, companies may also benefit from conducting surveys during the prior nesting season Such surveys will assist the company in any decisions about the likely presence of nesting migratory birds or sensitive species in the proposed project or work area. While individual migratory birds will not necessarily return to nest at the exact site as in previous years, a survey in the nesting season in the year before construction allows the company to become familiar with species and numbers present in the project area well before the nesting season in the year of construction. Bird surveys should be completed during the nesting season in the best biological timeframe for detecting the presence of nesting migratory birds, using accepted bird survey protocols. FWS offices can be contacted for recommendations on appropriate survey guidance. Project proponents should also be aware that results of migratory bird surveys are subject to spatial and temporal variability. Finally, project proponents will need to conduct migratory bird surveys during the actual year of construction if they cannot avoid work during the primary nesting season (see above) and if construction will impact habitats suitable for supporting nesting birds.

Pipeline Corridors, Compressor Stations, and Metering Facilities

Previous pipeline projects have used bright lighting on associated above ground pipeline structures such as meter stations, compressor stations, connection stations, main line valve stations, and other small facilities associated with the pipeline project. We recommend all bright lighting associated with these above ground structures be down-shielded to significantly reduce impacts to resident and migratory birds and other resident wildlife. Security lighting for on the ground facilities and equipment should be down-shielded to keep light within the boundaries of each site. Overall, we recommend alternative routes and directional drilling be evaluated and the least environmentally damaging route/method should be selected.

FWS also recommends including the enclosed pipeline conditions (enclosure), jointly developed by the Galveston, Texas District of the U.S. Army Corps of Engineers and the associated

resource agencies in any necessary permits. These guidelines were developed to reduce project impacts to sensitive habitats along new rights-of-way.

We appreciate the opportunity to review the proposed W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project and DEIS. If you have any questions or need additional information, please contact Edith Erfling, Supervisor, FWS Clear Lake Ecological Services Field Office, at 281-286-8282.

Sincerely,

Stephen R. Spencer, Ph.D.
Regional Environmental Officer

Enclosures

BEST MANAGEMENT PRACTICES FOR PROJECTS AFFECTING RIVERS, STREAMS AND TRIBUTARIES

The project crosses or potentially affects river, stream or tributary aquatic habitat. Therefore the Service recommends implementing the following applicable Best Management Practices:

1. Construct stream crossings during a period of low streamflow (e.g., July - September);

2. Cross streams, stream banks and riparian zones at right angles and at gentle slopes;

3. When feasible, directionally bore under stream channels;

4. Disturb riparian and floodplain vegetation only when necessary;

5. Construction equipment should cross the stream at one confined location over an existing bridge, equipment pads, clean temporary native rock fill, or over a temporary portable bridge;

6. Limit in-stream equipment use to that needed to construct crossings;

7. Place trench spoil at least 25 feet away landward from streambanks;

8. Use sediment filter devices to prevent movement of spoil off right-of-way when standing or flowing water is present;

9. Trench de-watering, as necessary, should be conducted to prevent discharge of silt laden water into the stream channel;

10. Maintain the current contours of the bank and channel bottom;

11. Do not store hazardous materials, chemicals, fuels, lubricating oils, and other such substances within 100 feet of streambanks;

12. Refuel construction equipment at least 100 feet from streambanks;

13. Revegetate all disturbed areas as soon as possible after construction to prevent unnecessary soil erosion. Use only native riparian plants to help prevent the spread of exotics;

14. Maintain sediment filters at the base of all slopes located adjacent to the streams until right-of-way vegetation becomes established;

15. Maintain a vegetative filtration strip adjacent to streams and wetlands. The width of a filter strip is based on the slope of the banks and the width of the stream. Guidance to determine the appropriate filter strip (stream management zone, SMZ) width is provided below; and

16. Direct water runoff into vegetated areas.

SMZ WIDTH

SMZ widths should consider watershed characteristics, risk of erosion, soil type, and stream width. SMZ widths are measured from the top of each bank and established on each side of the stream. Erosion risk is increased with sandy soil, steep slopes, large watersheds and increasing stream widths. Recommended primary (refers to ephemeral streams) and secondary SMZ (refers to intermittent, braided, and perennial streams, lakes, and ponds) widths are provided in the table below.

Steam Width (Feet)	Slope (Percent)	Primary SMZ (Feet)	Secondary SMZ (Feet)
<20	<7	35	0
<20	7-20	35	50
<20	>20	Top of slope or 150	75
20-50	<7	50	0
20-50	7-20	50	50
20-50	>20	Top of slope or 150	75
>50	<7	Width of stream or 100 max.	0
>50	7-20	Width of stream or 100 max.	50
>50	>20	Top of slope or 150	75

PERMIT REQUIREMENTS

A permit may be required from the U.S. Army Corps of Engineers should fill material be placed in wetlands or other waters of the United States. Should such a permit be required, the BMP's contained in this enclosure, as well as other conservation provisions, may become permit conditions. Additional permit requirements may apply, depending upon the nature of individual projects.

DEFINITIONS

Perennial streams have a well defined channel and flow year-round, except during periods of extreme drought.

Intermittent streams have a seasonal flow and a continuous well-defined channel.

Ephemeral streams flow during and for a few hours or days after periods of heavy rain and the stream channel is less recognizable than either perennial or intermittent streams.

Braided streams are stream systems with multiple and frequently interconnected channels.

Wetlands generally support hydrophytic vegetation, hydric soils and wetland hydrology.

Literature Cited

Arkansas Forestry Commission. 2001. Draft Arkansas Forestry Best Management Practices for Water Quality Protection.

USACE Pipeline Conditions developed by USACE, USFWS, NOAA, & TPWD

These special conditions can be used to address impacts to non-forested wetlands along pipeline routes.

1. The permittee must notify the U.S. Army Corps of Engineers (USACE) Galveston District, Regulatory Branch, Compliance Section Chief (Compliance) in writing within 7 days of the completion of the pipeline construction. The permittee must restore all impacted jurisdictional waters of the U.S. including wetlands within the permit area, to pre-project contours and elevations within 30 calendar days of completion of the pipeline construction.

2. The permittee will conduct four separate reports that will be used to compare pre- and post-construction site conditions, including one pre-construction report and three restoration reports. All reports will use geographical information system (GIS)/Remote Sensing analysis based on aerial imagery and ground surveys of the project site according to the "Protocols for Data Submission" (Protocol), which is described in the attachment. The restoration reports must compare pre- and post-construction conditions in the permit area, present conclusions on the success or failure of the restoration activities, and include a proposal to bring the project into compliance, if restoration is not successful. Reports will include the following:

a. The **first** report will be conducted before pipeline construction begins. The permittee will conduct aerial and ground surveys as part of the GIS analyses of the permit area (including any proposed temporary work areas) according to the attached Protocol.

b. The **second** report will be an initial restoration report and submitted to Compliance within 60 calendar days of the completion of pipeline construction. This second report will be based on post-construction aerial and ground surveys conducted after the completion of the pipeline construction. Should some wetland areas not be restored satisfactorily, remedial action, such as planting, addition of fill material, or additional mitigation, may be required, at the discretion of Compliance.

c. The **third** report will be a supplemental restoration report submitted to Compliance one year after the completion of pipeline construction. This third report will be based on post-construction aerial and ground surveys conducted one year after the completion of the pipeline construction (or the end of first growing season, whichever comes first). The third report must be submitted 60 days after the surveys are conducted. The re-vegetation of disturbed areas should be at least 30% of the pre-construction aerial coverage of non invasive, native vegetation, to be considered on target for eventual restoration. Should some wetland areas not be restored satisfactorily, remedial action, such as replanting, addition of fill material, or additional mitigation, may be required, at the discretion of Compliance.

d. The **fourth** report will be a supplemental restoration report submitted to Compliance within two years after the completion of pipeline construction. The fourth report must be submitted 60 days after the two year time limit. This fourth report will be based on a post-construction aerial and ground surveys conducted two years after the completion of the pipeline construction (or the end of second growing season, whichever comes first). The re-vegetation of disturbed areas should be 100% of the pre-construction aerial coverage with non-invasive, native vegetation, to be considered on target for complete restoration. Should some wetland areas not be restored satisfactorily, remedial action, such as replanting, addition of fill material, or additional mitigation, may be required, at the discretion of Compliance.

Protocols for Data Submission (Protocol)

a. Aerial Imagery Protocol: The first report must utilize recent aerial imagery (within the last five years) of the permit area and an area 300-foot-wide on each side of the permit area. The second report must utilize aerial images taken within two months of project completion. The third image must be taken approximately one year after pipeline construction is complete. The fourth image must be taken approximately two years after pipeline construction is complete. The aerial imagery must be color infrared, ortho-corrected, with a maximum of 6-inch pixel size, and +/- 1 meters spatial accuracy, presented at a scale of 1 inch = 200 feet.

b. Ground Survey Protocol: Each restoration reports will include GIS analysis of the permit area, accompanied by a ground survey that includes sample points with geographic coordinates, a wetland data sheet percent of relative vegetation cover, and elevations for each change in plant community (described in the USACE 1987 Wetland Delineation Manual) throughout the entire permit area. The survey coordinates must have sub-meter accuracy; data must be recorded and submitted in NAD 1983 UTM zones and coordinates.

c. GIS/Remote Sensing Analysis Protocol: Each report must include aerial imagery of the permit area, and an area 300-foot-wide on each side of the permit area with a GIS analysis of the aerial imagery. Survey reports will assess all existing plant communities, open water, and special aquatic sites (in acres) within the entire permit area. The GIS analysis must be submitted in the reports as an 8 ½ by 11-inch hard copy. Upon request by Compliance, the permittee shall submit the GIS analysis in Arcview Shapefile format with Federal Geographic Data Committee (FGDC) compliant metadata, and all raster imagery in GEoTiff format with FGDC compliant metadata, on a CD-ROM.

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Carter P. Smith
Executive Director

November 6, 2012

Mark Lusk
NETL
3610 Collins Ferry Road
Morgantown, WV 26507

RE: W.A. Parish Post-Combustion Carbon Capture and Storage Project
NRG Energy, Inc.
Fort Bend County, Texas

Dear Mr. Lusk:

Under section 12.0011 of the Texas Parks and Wildlife Code, Texas Parks and Wildlife Department (TPWD) is charged with "providing recommendations that will protect fish and wildlife resources to local, state, and federal agencies that approve, permit, license, or construct developmental projects" and "providing information on fish and wildlife resources to any local, state, and federal agencies or private organizations that make decisions affecting those resources."

NRG Energy, Inc. (NRG) is proposing a project that would capture carbon dioxide (CO_2) at NRG's W.A. Parish Generating Station (Parish Plant) in Fort Bend County. The CO_2 would be delivered in a new approximately 80-mile long pipeline to the West Ranch oil field located near the city of Vanderbilt in Jackson County, Texas, where it would be used for enhanced oil recovery and ultimately sequestered.

TPWD provided comments for the proposed project on March 20, 2012 and additionally has met with the project sponsor to evaluate the project's impacts upon fish and wildlife resources. The DEIS has incorporated TPWD's comments and concerns regarding impacts to fish and wildlife resources. TPWD requests that the project sponsor utilize the recommendations provided in the March 20, 2012 comment letter and coordinate with TPWD if project plans change.

TPWD appreciates the efforts of NRG Energy, Inc. to coordinate with TPWD on the impacts to fish and wildlife resources and looks forward to continued cooperative efforts. Please contact TPWD staff, Amy Turner, Ph.D., Wildlife Habitat Assessment Biologist, at (361) 576-0022 if you have any questions or need additional assistance.

Sincerely,

Amy Turner

Amy Turner, Ph.D.
Wildlife Habitat Assessment Program
Wildlife Division

AJT:ERS-2670

4200 SMITH SCHOOL ROAD
AUSTIN, TEXAS 78744-3291
512.389.4800
www.tpwd.state.tx.us

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C.3 CULTURAL RESOURCES CONSULTATION

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(See Appendix A to EIS Appendix G for a copy of the February 10, 2012 Phase I Cultural Resources Investigation Scope of Work)

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TEXAS HISTORICAL COMMISSION
real places telling real stories

February 23, 2012

Mark Lusk
U.S. Department of Energy
3610 Collins Ferry Road
P.O. Box 880
Morgantown, West Virginia 26507

Re: Project review under Section 106 of the National Historic Preservation Act of 1966
Notification of Project and Proposed Phase I Cultural Resources Inventory Scope of Work for the W.A. Parish Post-Combustion Carbon Capture and Storage Project in Southeastern Texas (Fort Bend, Wharton, and Jackson Counties)

Dear Mr. Lusk:

Thank you for your correspondence describing the above referenced project. This letter serves as comment on the proposed federal undertaking from the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission. As the state agency responsible for administering the Antiquities Code of Texas, these comments also provide recommendations on compliance with state antiquities laws and regulations.

The review staff, led by Jeff Durst, has examined our records. According to our maps, the proposed project area should be surveyed as recommended by URS Group, Inc. (URS). However, we recommend, in addition to the procedures outlined in the URS scope of work, that backhoe trenching be conducted in areas adjacent to waterways where there is the potential for deeply buried cultural resources. In areas where directional drilling will be utilized to pass underneath waterways backhoe trenching should take place at the location of the bore holes entrance and exit points where deep sediments are observed or suspected. In instances where deep sediments are not encountered in these areas then this should be explained in the report as the reason why backhoe trenching was not conducted.

All work on the should meet the minimum archeological survey standards posted on-line at www.thc.state.tx.us. A report of investigations should be produced in conformance with the Secretary of the Interior's Guidelines for Archaeology and Historic Preservation, and submitted to this office for review.

Thank you for your cooperation in this federal and state review process, and for your efforts to preserve the irreplaceable heritage of Texas. **If you have any questions concerning our review or if we can be of further assistance, please contact Jeff Durst at 512/463-8884.**

Sincerely,

for
Mark Wolfe, State Historic Preservation Officer

MW/jjd

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NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA

U.S. DEPARTMENT OF ENERGY

April 25, 2012

Mr. Mark Wolfe
State Historic Preservation Officer
Texas Historical Commission
1511 Colorado St.
Austin, Texas 78701

Subject: Response to Texas Historical Commission Request for Backhoe Trenching; Proposed Phase I Cultural Resources Inventory Scope of Work for the W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project in Southeastern Texas (Fort Bend, Wharton, and Jackson Counties)

Dear Mr. Wolfe,

In correspondence from your office dated February 23, 2012, the Texas Historical Commission (THC) recommended that "backhoe trenching be conducted in areas adjacent to waterways where there is the potential for deeply buried cultural resources. In areas where directional drilling will be utilized to pass underneath waterways backhoe trenching should take place at the location of the bore holes entrance and exit points where deep sediments are observed or suspected."

URS Group, Inc. (URS) conducted a soil and geomorphological review of the six horizontal directional drills (HDD) planned for waterbody crossings during construction of the proposed CO_2 pipeline. As shown in Attachment 1, HDDs are planned for the following six waterbody crossings: Big Creek; FM 1994 (and adjacent pond); San Bernard River; Colorado River; Jones Creek; and Lavaca River. Attachment 1 also provides detailed aerial imagery of the HDD locations and indicates the proposed limits of the pipeline construction corridor, including additional temporary workspace, approximate milepost (MP) locations, and soil types. A summary of the soil types encountered at the entry and exit points for each HDD is provided in Table 1 below.

The FM 1994 HDD would cross under a man-made pond and would be completed in Bernard-Edna Complex soil (Table 1), which is associated with an upland landform. Therefore, the U.S. Department of Energy (DOE) proposes that no deep testing would be required for the FM 1994 HDD. Additionally, the HDD exit points for the Big Creek and Lavaca River crossings are characterized by the Edna fine sandy loam and Telferner fine sandy loam, respectively (Table 1). Both of these soils are affiliated with ancient (i.e., pre-Holocene) meander ridges on the Beaumont Formation. Based on their landform characteristics and age, no additional deep testing is considered warranted for the HDD exit locations at the Big Creek and Lavaca River crossings.

3610 Collins Ferry Road, P.O. Box 880, Morgantown, WV 26507
mark.lusk@netl.doe.gov • Voice (304) 285-4145 • Fax (304) 285-4216 • www.netl.doe.gov

The soils encountered at the remaining eight HDD entry and exit locations (i.e., the entry locations for the Big Creek and Lavaca River HDDs and the entry and exit locations for the San Bernard River, Colorado River, and Jones Creek HDDs) are associated with well-defined floodplain deposits that may contain more deeply buried cultural resources. As recommended by THC, DOE proposes that additional deep testing via backhoe trenching be conducted at these eight locations. Table 1 summarizes the recommendations for each HDD entry and exit location.

Table 1. HDD Entry and Exit Location Soils

HDD Name	MP	Entry Location			Exit Location		
		Soil Symbol	Soil Name	Deep Testing Proposed	Soil Symbol	Soil Name	Deep Testing Proposed
Big Creek	6.5	Kd	Kaman clay	Yes	Eb	Edna fine sandy loam	No
FM 1994	8.5	Be	Bernard-Edna complex	No	Be	Bernard-Edna complex	No
San Bernard River	20.5	As	Asa silty clay loam	Yes	Pa	Pledger clay	Yes
Colorado River	34	Cn	Clemville-Norwood complex	Yes	Me	Brazoria clay, rarely flooded	Yes
Jones Creek	35.5	Me	Brazoria clay, rarely flooded	Yes	Me	Brazoria clay, rarely flooded	Yes
Lavaca River	77.0	Ar	Aransas clay, saline, frequently flooded	Yes	TfA	Telferner fine sandy loam	No

Source: U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) soil survey data for Fort Bend, Wharton, and Jackson Counties, Texas. URL: http://soildatamart.nrcs.usda.gov. Accessed April 2012.

The deep testing methodology for the eight proposed testing locations would be confined to the approximate boundaries of the proposed entry/exit points. The HDD borehole size is anticipated to be approximately 20 to 24-in (51 to 61-cm) in diameter. During pipeline construction, a pit measuring approximately 10-ft by 10-ft (2.6-m by 2.6-m) in areal extent and approximately 4-ft (1.2-m) in depth would be excavated at each HDD entry and exit point to contain drilling muds. Based on this project design, DOE proposes to excavate a 10-ft-long, 4-ft-deep trench, oriented perpendicular to the pipeline corridor, within the planned entry/exit pit at each of the eight deep testing locations. Trenching would be conducted utilizing a rubber-tired or tracked backhoe, depending upon soil and weather conditions, with a smooth (i.e., clean-up) bucket measuring approximately 3-ft (0.9-m) in width. The trenches would be excavated in approximately 6-in (15-cm) intervals to allow for examination of the exposed trench soils and sidewalls. Any exposed archaeological materials and/or subsurface features would be noted and recorded during this procedure and representative soil profiles would be drawn and photographed for each exposed trench face once the maximum depth of 4-ft (1.2-m) is reached.

If the Principal Archaeologist feels that additional depth is required to adequately assess a testing location, the Principal Archaeologist would request that the backhoe excavator excavate deeper in that portion of the trench. However, for health and safety reasons, survey personnel will not enter portions of the trench that are deeper than 4-ft (1.2-m) in depth, but will visually assess the trench wall from the ground surface or an adjacent location. Once observations are completed for each trench, excavated soil would be placed back into the trench and the ground surface returned to preexisting contours. Any encountered cultural features and/or materials will be analyzed and assessed as described in the February 10, 2012, Scope of Work that was reviewed by your office. The results of the deep testing at the eight proposed HDD locations would then be summarized in the Phase I cultural resources report being prepared for the ongoing pipeline corridor investigation.

We hope that the above rationale and trenching methodology address THC's recommendation for deep soil testing. DOE and NRG Energy, Inc., plan to proceed with this work as soon as possible (i.e., beginning around May 1, 2012) and are providing this approach to your office for informational purposes. Should you have any questions regarding the proposed backhoe trenching, please contact Mr. Rob Lackowicz (URS National Historical Preservation Act consultant) at 225-935-2974 or by email at rob.lackowicz@urs.com. You can also reach me for comment at the address listed on the front page, by telephone at (304) 285-4145, or by email at mark.lusk@netl.doe.gov.

Sincerely,

Mark W. Lusk
NEPA Document Manager/NEPA
Compliance Officer

Attachment

cc:
Jeff Durst - THC
Ted McMahon - DOE
Jon Barfield - NRG
Anthony Armpriester - NRG
Rob Lackowicz - URS
Martin Handly - URS
Pete Conwell - URS

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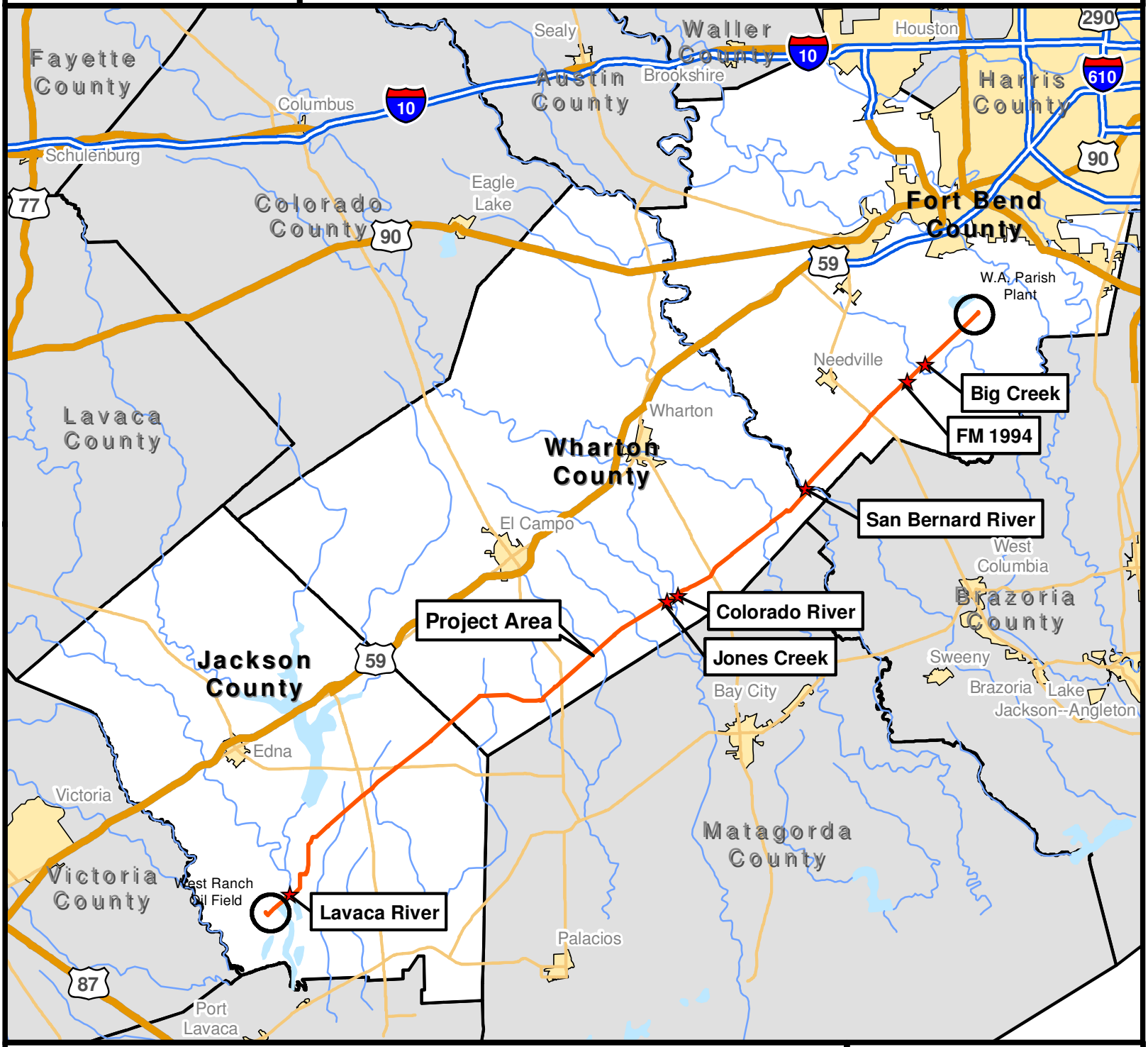
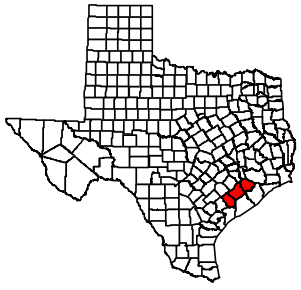
Baton Rouge, LA 70806
225/922-5700

Proposed NRG Energy CO_2 Pipeline



- Proposed HDD Location
- Project Area
- Major River
- Major Lake
- Interstate Highway
- Highway
- Major Road
- Urban Area
- Project County
- Surrounding County

Locator Map



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Overview Map

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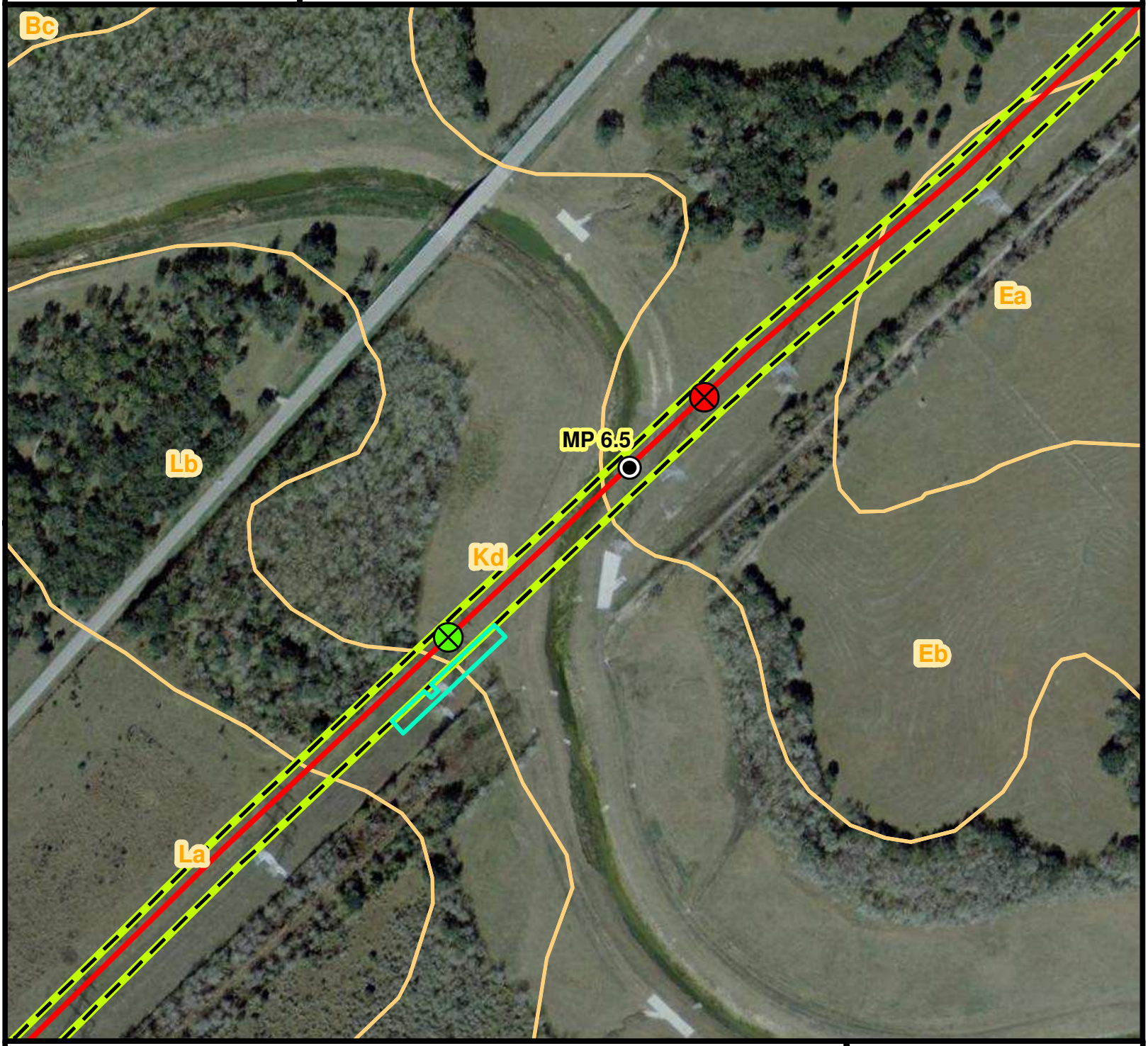
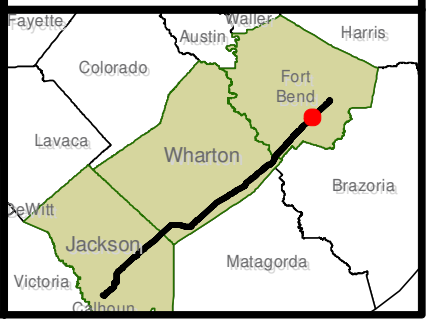
NRG W. A. Parish CO_2 Pipeline



- Proposed HDD Entry
- Proposed HDD Exit
- Soil
- Proposed ATWS
- Proposed Pipeline Centerline
- Proposed Pipeline Corridor

Location Map



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Big Creek HDD Entry/ Exit Points

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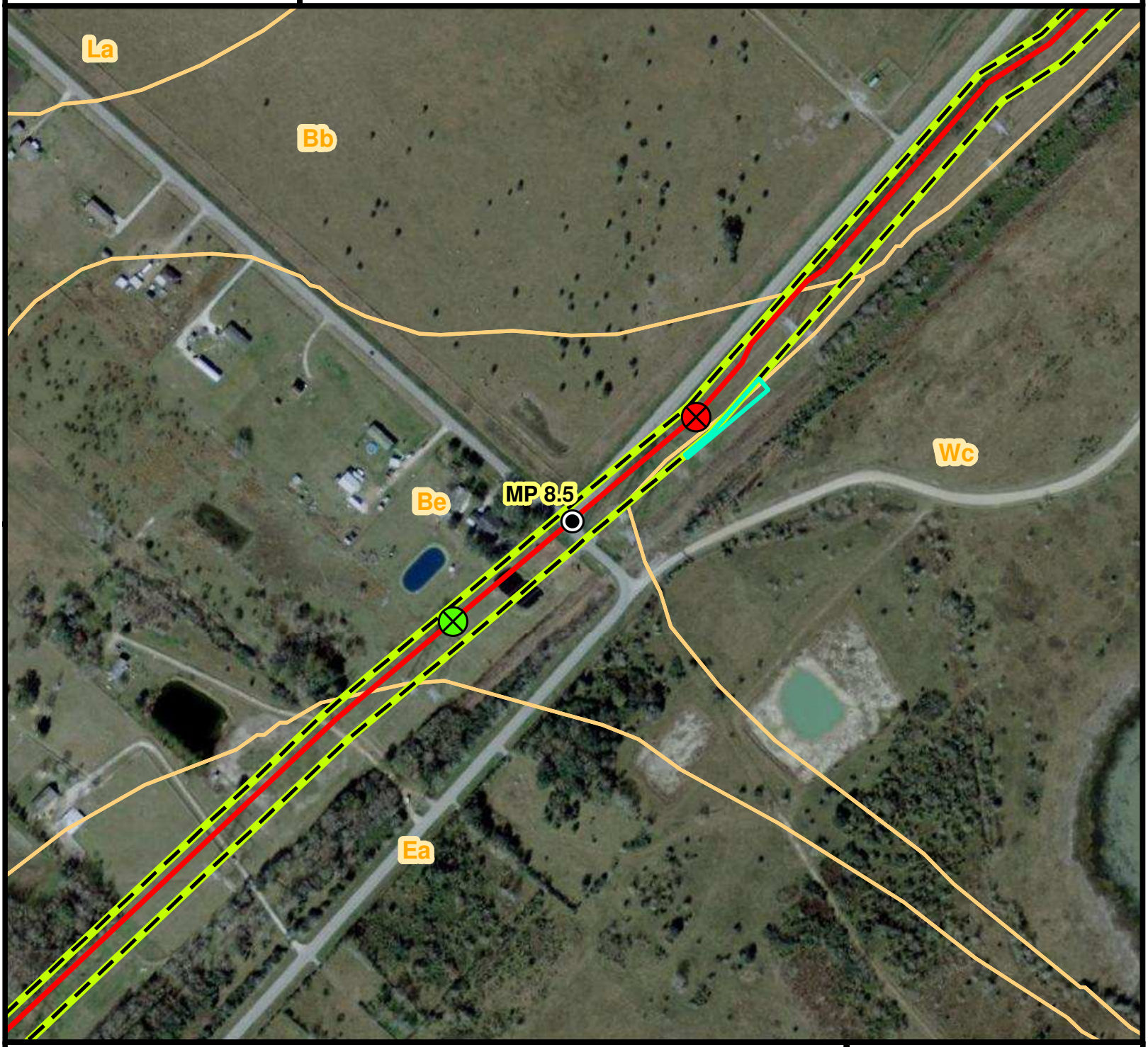
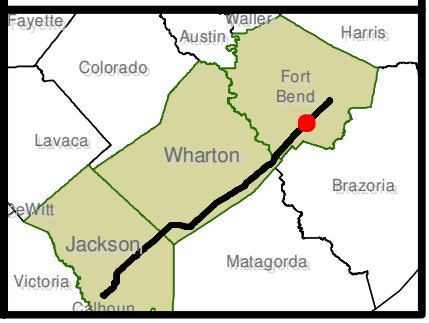
NRG W. A. Parish CO_2 Pipeline



- Proposed HDD Entry
- Proposed HDD Exit
- Soil
- Proposed ATWS
- Proposed Pipeline Centerline
- Proposed Pipeline Corridor

Location Map



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FM 1994 HDD Entry/ Exit Points

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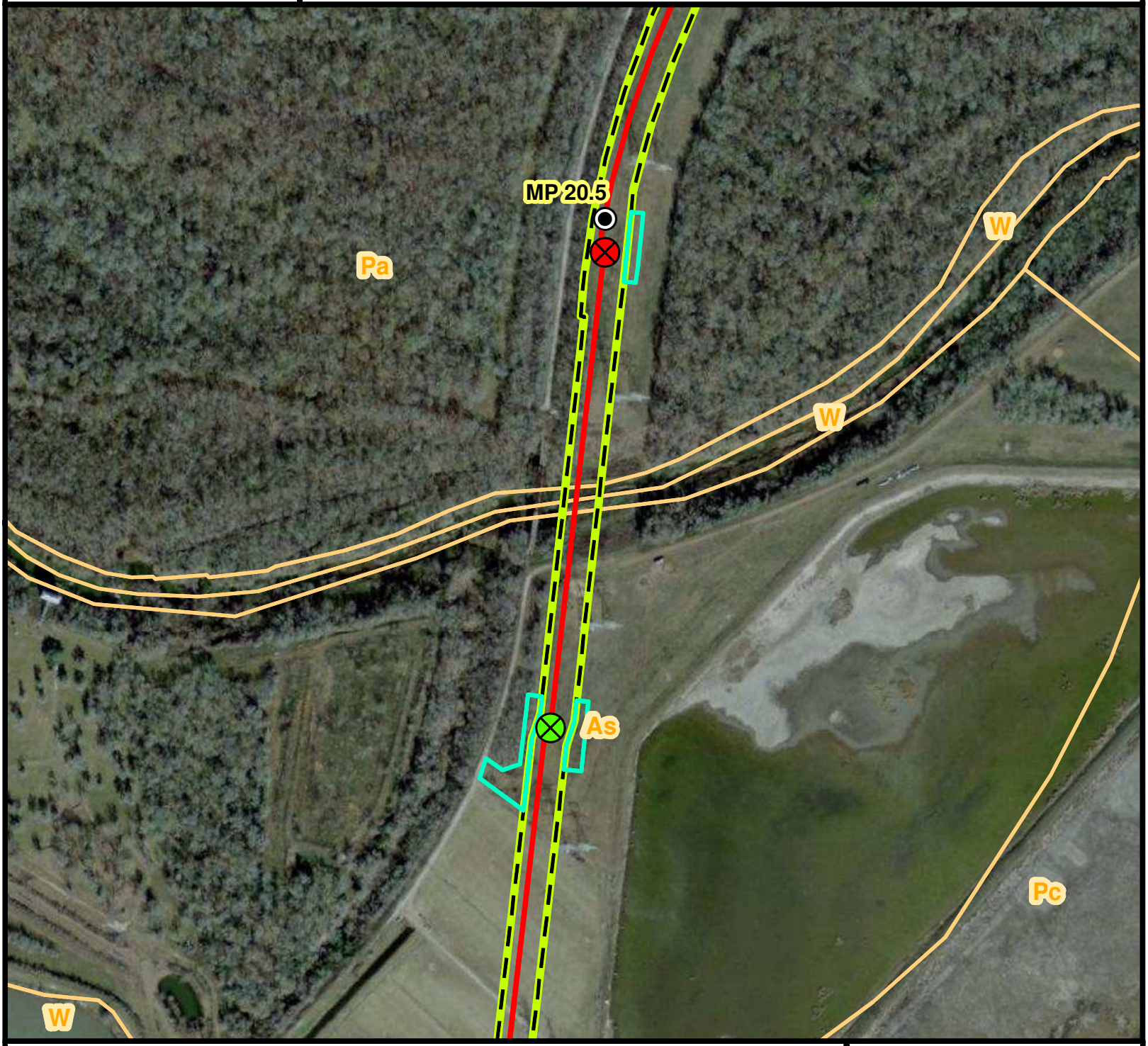
NRG W. A. Parish CO_2 Pipeline



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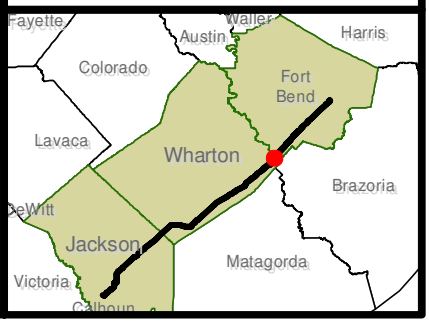
- Soil
- Proposed ATWS
- Proposed Pipeline Centerline
- Proposed Pipeline Corridor

Location Map



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San Bernard River HDD Entry/ Exit Points

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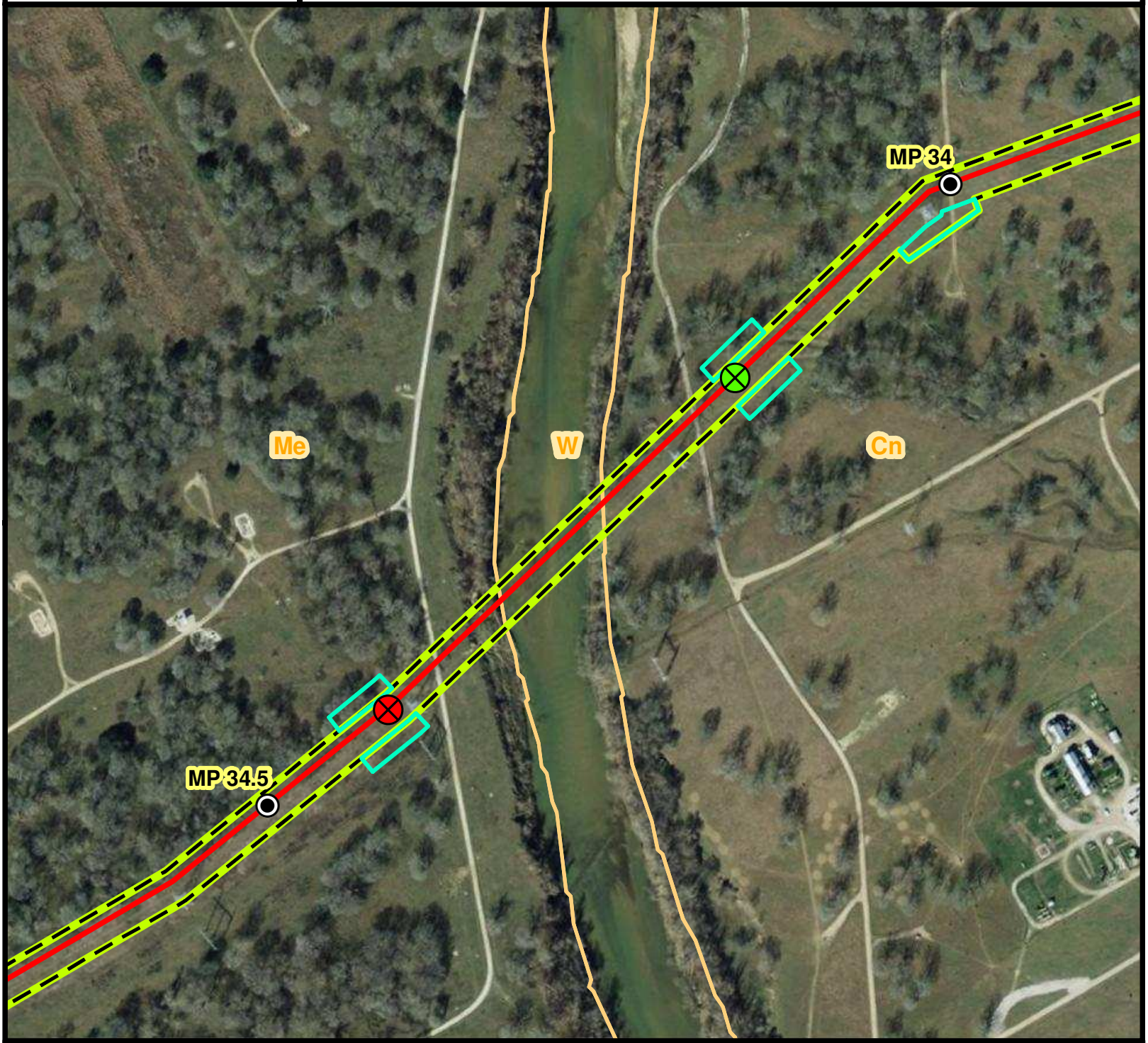
NRG W. A. Parish CO_2 Pipeline



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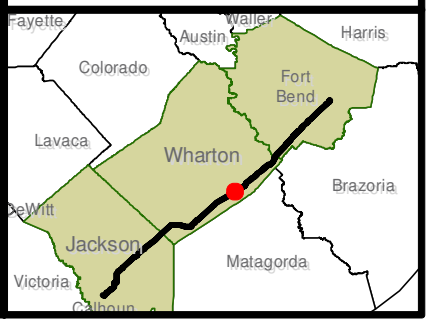
- Proposed Pipeline Centerline
- Proposed Pipeline Corridor

Location Map



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Colorado River HDD Entry/ Exit Points

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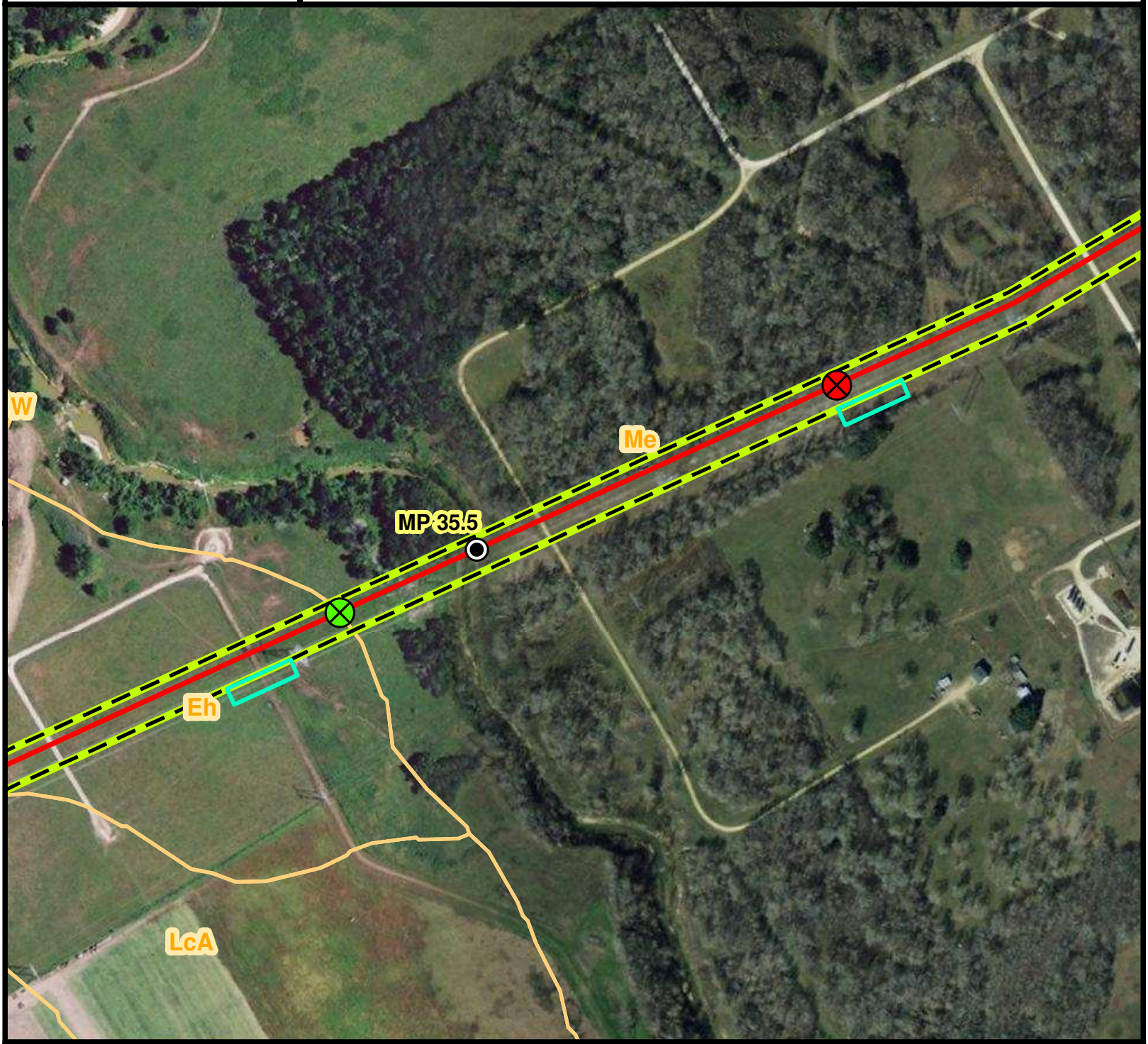
NRG W. A. Parish CO_2 Pipeline



- Proposed HDD Entry
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- Soil
- Proposed ATWS
- Proposed Pipeline Centerline
- Proposed Pipeline Corridor

Location Map

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Jones Creek HDD Entry/ Exit Points

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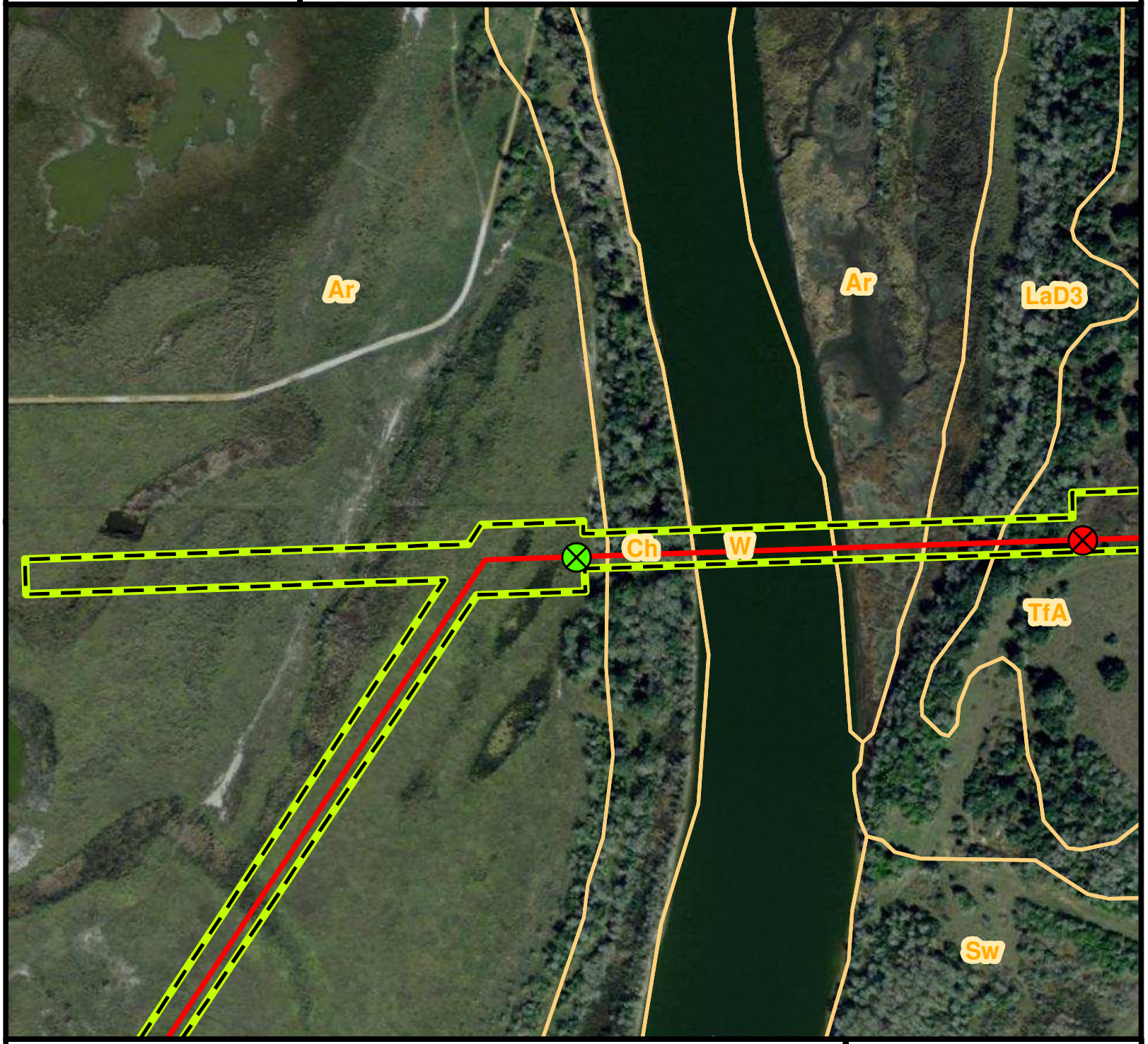
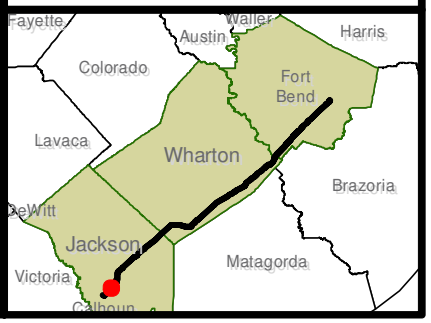
NRG W. A. Parish CO_2 Pipeline



- Proposed HDD Entry
- Proposed HDD Exit
- Soil
- Proposed ATWS
- Proposed Pipeline Centerline
- Proposed Pipeline Corridor

Location Map



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Lavaca River HDD Entry/ Exit Points

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April 25, 2012

Mr. Mark Wolfe
State Historic Preservation Officer
Texas Historical Commission
1511 Colorado St.
Austin, Texas 78701

Subject: Response to Texas Historical Commission Request for Backhoe Trenching; Proposed Phase I Cultural Resources Inventory Scope of Work for the W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project in Southeastern Texas (Fort Bend, Wharton, and Jackson Counties)

Dear Mr. Wolfe,

In correspondence from your office dated February 23, 2012, the Texas Historical Commission (THC) recommended that "backhoe trenching be conducted in areas adjacent to waterways where there is the potential for deeply buried cultural resources. In areas where directional drilling will be utilized to pass underneath waterways backhoe trenching should take place at the location of the bore holes entrance and exit points where deep sediments are observed or suspected."

URS Group, Inc. (URS) conducted a soil and geomorphological review of the six horizontal directional drills (HDD) planned for waterbody crossings during construction of the proposed CO_2 pipeline. As shown in Attachment 1, HDDs are planned for the following six waterbody crossings: Big Creek; FM 1994 (and adjacent pond); San Bernard River; Colorado River; Jones Creek; and Lavaca River. Attachment 1 also provides detailed aerial imagery of the HDD locations and indicates the proposed limits of the pipeline construction corridor, including additional temporary workspace, approximate milepost (MP) locations, and soil types. A summary of the soil types encountered at the entry and exit points for each HDD is provided in Table 1 below.

The FM 1994 HDD would cross under a man-made pond and would be completed in Bernard-Edna Complex soil (Table 1), which is associated with an upland landform. Therefore, the U.S. Department of Energy (DOE) proposes that no deep testing would be required for the FM 1994 HDD. Additionally, the HDD exit points for the Big Creek and Lavaca River crossings are characterized by the Edna fine sandy loam and Telferner fine sandy loam, respectively (Table 1). Both of these soils are affiliated with ancient (i.e., pre-Holocene) meander ridges on the Beaumont Formation. Based on their landform characteristics and age, no additional deep testing is considered warranted for the HDD exit locations at the Big Creek and Lavaca River crossings.

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The soils encountered at the remaining eight HDD entry and exit locations (i.e., the entry locations for the Big Creek and Lavaca River HDDs and the entry and exit locations for the San Bernard River, Colorado River, and Jones Creek HDDs) are associated with well-defined floodplain deposits that may contain more deeply buried cultural resources. As recommended by THC, DOE proposes that additional deep testing via backhoe trenching be conducted at these eight locations. Table 1 summarizes the recommendations for each HDD entry and exit location.

Table 1. HDD Entry and Exit Location Soils

HDD Name	MP	Entry Location			Exit Location		
		Soil Symbol	Soil Name	Deep Testing Proposed	Soil Symbol	Soil Name	Deep Testing Proposed
Big Creek	6.5	Kd	Kaman clay	Yes	Eb	Edna fine sandy loam	No
FM 1994	8.5	Be	Bernard-Edna complex	No	Be	Bernard-Edna complex	No
San Bernard River	20.5	As	Asa silty clay loam	Yes	Pa	Pledger clay	Yes
Colorado River	34	Cn	Clemville-Norwood complex	Yes	Me	Brazoria clay, rarely flooded	Yes
Jones Creek	35.5	Me	Brazoria clay, rarely flooded	Yes	Me	Brazoria clay, rarely flooded	Yes
Lavaca River	77.0	Ar	Aransas clay, saline, frequently flooded	Yes	TfA	Telferner fine sandy loam	No

Source: U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) soil survey data for Fort Bend, Wharton, and Jackson Counties, Texas. URL: http://soildatamart.nrcs.usda.gov. Accessed April 2012.

The deep testing methodology for the eight proposed testing locations would be confined to the approximate boundaries of the proposed entry/exit points. The HDD borehole size is anticipated to be approximately 20 to 24-in (51 to 61-cm) in diameter. During pipeline construction, a pit measuring approximately 10-ft by 10-ft (2.6-m by 2.6-m) in areal extent and approximately 4-ft (1.2-m) in depth would be excavated at each HDD entry and exit point to contain drilling muds. Based on this project design, DOE proposes to excavate a 10-ft-long, 4-ft-deep trench, oriented perpendicular to the pipeline corridor, within the planned entry/exit pit at each of the eight deep testing locations. Trenching would be conducted utilizing a rubber-tired or tracked backhoe, depending upon soil and weather conditions, with a smooth (i.e., clean-up) bucket measuring approximately 3-ft (0.9-m) in width. The trenches would be excavated in approximately 6-in (15-cm) intervals to allow for examination of the exposed trench soils and sidewalls. Any exposed archaeological materials and/or subsurface features would be noted and recorded during this procedure and representative soil profiles would be drawn and photographed for each exposed trench face once the maximum depth of 4-ft (1.2-m) is reached.

If the Principal Archaeologist feels that additional depth is required to adequately assess a testing location, the Principal Archaeologist would request that the backhoe excavator excavate deeper in that portion of the trench. However, for health and safety reasons, survey personnel will not enter portions of the trench that are deeper than 4-ft (1.2-m) in depth, but will visually assess the trench wall from the ground surface or an adjacent location. Once observations are completed for each trench, excavated soil would be placed back into the trench and the ground surface returned to preexisting contours. Any encountered cultural features and/or materials will be analyzed and assessed as described in the February 10, 2012, Scope of Work that was reviewed by your office. The results of the deep testing at the eight proposed HDD locations would then be summarized in the Phase I cultural resources report being prepared for the ongoing pipeline corridor investigation.

We hope that the above rationale and trenching methodology address THC's recommendation for deep soil testing. DOE and NRG Energy, Inc., plan to proceed with this work as soon as possible (i.e., beginning around May 1, 2012) and are providing this approach to your office for informational purposes. Should you have any questions regarding the proposed backhoe trenching, please contact Mr. Rob Lackowicz (URS National Historical Preservation Act consultant) at 225-935-2974 or by email at rob.lackowicz@urs.com. You can also reach me for comment at the address listed on the front page, by telephone at (304) 285-4145, or by email at mark.lusk@netl.doe.gov.

Sincerely,

Mark W. Lusk
NEPA Document Manager/NEPA
Compliance Officer

Attachment

cc:
Jeff Durst - THC
Ted McMahon - DOE
Jon Barfield - NRG
Anthony Armpriester - NRG
Rob Lackowicz - URS
Martin Handly - URS
Pete Conwell - URS

NO HISTORIC
PROPERTIES AFFECTED
PROJECT MAY PROCEED
by
for Mark Wolfe
State Historic Preservation Officer
Date 5/14/12
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NATIONAL ENERGY TECHNOLOGY LABORATORY
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U.S. DEPARTMENT OF ENERGY

June 19, 2012

Mr. Mark Wolfe
State Historic Preservation Officer
Texas Historical Commission
1511 Colorado Street
Austin, Texas 78701

Subject: Section 106 Determination for Proposed Project Activities within Previously Developed Lands at the W.A. Parish Plant (Fort Bend County) and West Ranch Oil Field (Jackson County) for the W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project

Dear Mr. Wolfe:

This letter supplements my earlier communication to your office, dated February 10, 2012, regarding the above-referenced project proposed by NRG Energy (NRG). The U.S. Department of Energy's (DOE) proposed action would provide NRG with a cost-shared award for the project. DOE is currently preparing a draft environmental impact statement (EIS) to comply with the *National Environmental Policy Act of 1969* (NEPA). DOE also intends to coordinate its obligations under Section 106 of the *National Historic Preservation Act of 1966* (NHPA) with the NEPA process.

NRG's proposed project would include the following four primary components:

1. *Carbon Dioxide (CO_2) Capture Facility*

The proposed project would construct a post-combustion CO_2 capture system to treat a slipstream from one of the W.A. Parish Plant's existing coal-fueled units (Unit 8). A new natural gas-fired cogeneration plant, estimated to be 80-megawatts in size, would also be constructed to produce the auxiliary power needed to drive the proposed CO_2 capture system. These activities would occur within the existing 4,880-acre W.A. Parish Plant site.

2. *CO_2 Transport*

Captured CO_2 would be transported via a new, approximately 80-mile-long pipeline to the West Ranch oil field. The anticipated pipeline route includes mostly sparsely developed rural and agricultural lands in Fort Bend, Wharton, and Jackson Counties in Texas. Currently, NRG plans to collocate the pipeline within expanded or existing mowed/maintained utility rights-of-way (ROW) to minimize environmental impacts and avoid sensitive resources to the greatest extent practical for approximately 85 percent of the route. New ROW would be used for the remaining 15 percent.

3. *Enhanced Oil Recovery (EOR) Operations*

Up to 1.6 million tons of CO_2 per year would be delivered to the existing West Ranch oil field, located in Jackson County. The CO_2 would be injected into the 98-A, 41-A, and Greta sand units of the Frio Formation, which lie approximately 5,000 to 6,300-feet below ground surface. The oil field has operated since 1938 and the portions of the West Ranch oil field in which EOR operations would be conducted are currently owned or leased by Hilcorp Energy Company (HEC). A joint venture

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between NRG and HEC, known as Texas Coastal Ventures LLC (TCV), would conduct the EOR operations. TCV would also operate the pipeline.

4. *CO_2 Monitoring Program*

TCV would implement a program to monitor the injection and migration of CO_2 within the geologic formations at the West Ranch oil field EOR area. The CO_2 monitoring program may consist of a variety of monitoring and modeling activities.

The proposed pipeline route listed above as Project Component 2 is currently being assessed through a Phase I cultural resource field investigation. DOE expects the results of that survey to be reported to you in the near future for separate comment. The results will also be summarized in the draft EIS.

Project Components 1, 3 and 4, as listed above, are described further in the enclosed document to afford the Texas Historical Commission a reasonable opportunity to comment before the draft EIS is issued. Given the level of existing land disturbance and the types of activities to be conducted as part of these project components, it is the opinion of DOE that the activities proposed to occur within these two project areas (i.e., the W.A. Parish Plant and the West Ranch oil field) will not impact historic properties meeting the criteria of significance for listing on the National Register of Historic Places. Please reply whether your office concurs with this determination of No Historic Properties Present or Affected. Again, please refer to the attached enclosure for more details regarding the background and proposed activities at these two locations.

Should you have any technical questions regarding the enclosed letter report, please contact Mr. Martin Handly (NHPA consultant–URS Group, Inc.) at (225) 276-4826 or by email at martin.handly@urs.com. You can also reach me for comment by email at mark.lusk@netl.doe.gov, by telephone at (304) 285-4145, or at the address listed on the front page.

Sincerely,

Mark W Lusk
NEPA Document Manager/NEPA Compliance Officer

Enclosure

cc: J. Barfield - NRG
A. Armpriester - NRG
T. McMahon - DOE
M. Handly - URS
Rob Lackowicz - URS
Pete Conwell - URS

URS

June 18, 2012

Mark W. Lusk
NEPA Document Manager
3610 Collins Ferry Road
P.O. Box 880
Morgantown, West Virginia 26507

Re: NRG Energy W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project; W.A. Parish Plant (Fort Bend County) and West Ranch Oil Field (Jackson County) - Assessment of Project Activities Impacting Historic Properties.

Dear Mr. Lusk:

The purpose of this letter is to communicate the results of an evaluation of the W.A. Parish Plant in Fort Bend County and the West Ranch oil field in Jackson County (Figure 1) for their potential to contain and impact significant cultural resources, defined as historic properties under Section 106 of the National Historic Preservation Act (NHPA) and the National Register of Historic Places (NRHP) criteria for evaluation (36 CFR Part 800 and 36 CFR 60.4). Section 106 of the NHPA, as amended, requires the lead federal agency with jurisdiction over an undertaking to consider impacts to historic properties before the undertaking occurs. In this case, the undertaking is the U.S. Department of Energy's (DOE's) proposed financial assistance grant to NRG for the W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project (project), under the American Recovery and Reinvestment Act of 2009.

Project Introduction

Under the American Recovery and Reinvestment Act of 2009, the DOE has made funding available for certain large-scale carbon dioxide (CO_2) capture and storage projects. With DOE's cost-shared support, NRG Energy (NRG) proposes to capture CO_2 at NRG's existing W.A. Parish Plant in Fort Bend County, Texas. The captured CO_2 would be delivered via an approximately 80-mile pipeline to the West Ranch oil field in Jackson County, Texas where it would be used for enhanced oil recovery (EOR) and ultimately sequestered. NRG's proposed project would demonstrate an integrated commercial-scale deployment of post-combustion CO_2 capture technology for use in EOR operations and long-term geologic storage.

The project would use an advanced amine-based absorption technology to capture approximately 90 percent of CO_2 annually (i.e., approximately 1.6 million tons of CO_2 per year) from a 250-megawatt equivalent (MWe) flue gas slip stream taken from the 650 megawatt (MW) Unit 8 at the W.A. Parish Plant. Up to 5,475 tons per day of captured CO_2 would be dried, compressed, and transported via pipeline to the West Ranch oil field where it would be used in EOR operations. The primary components of the project include the following:

1. *CO_2 Capture Facility*
   The proposed project would retrofit one of the W.A. Parish Plant's existing coal-fueled units (Unit 8) with a post-combustion CO_2 capture system that would be constructed within the existing 4,880-acre W.A. Parish Plant. A new natural gas-fired cogeneration plant, estimated to be 80 MW in size, would be constructed to produce the auxiliary power needed to drive the proposed CO_2 capture system.

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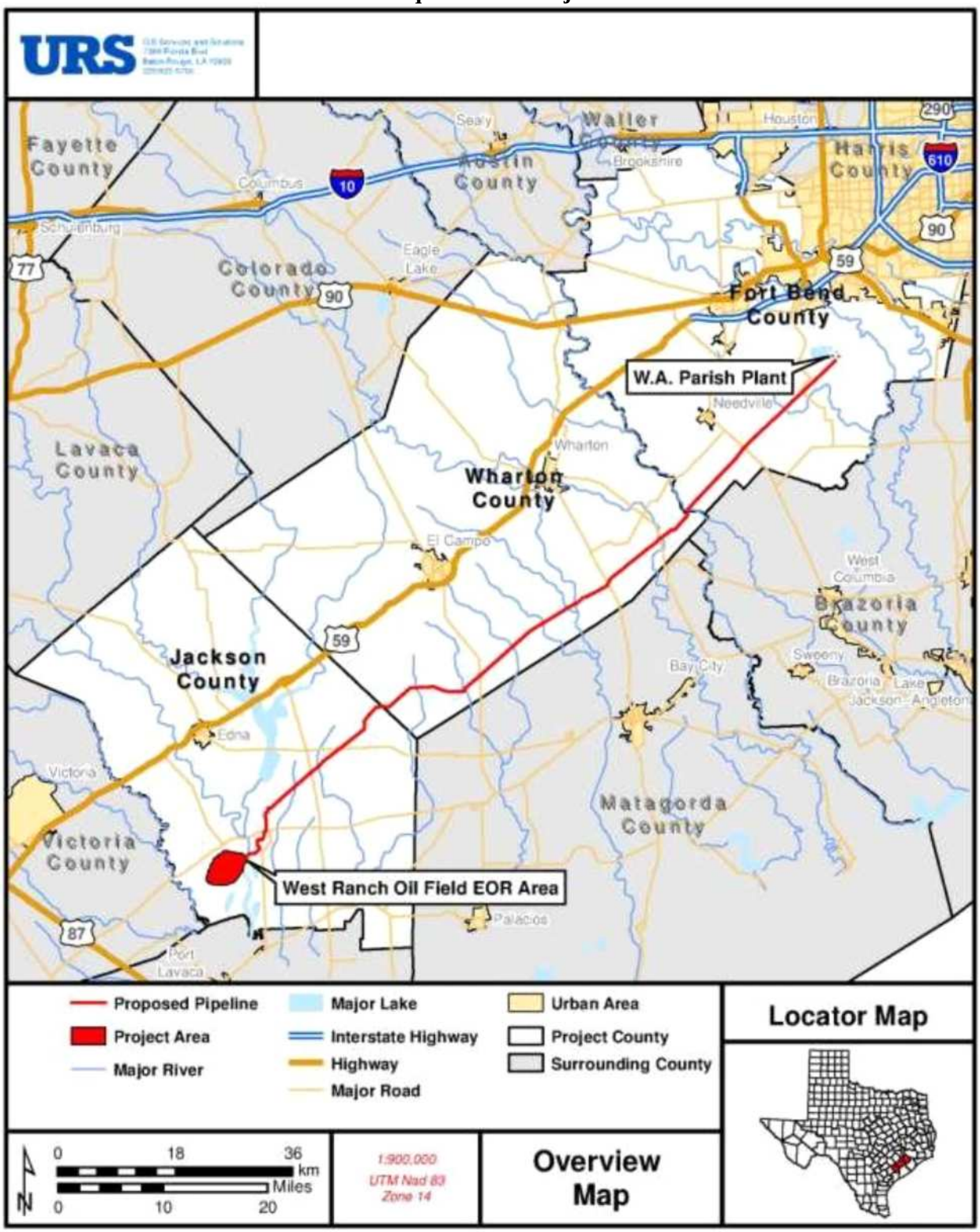
Figure 1. Overview Map of NRG Energy W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project



2. CO_2 Transport

Captured CO_2 would be transported via a new, approximately 80-mile-long pipeline to the West Ranch oil field. The anticipated pipeline route includes mostly rural and sparsely-developed agricultural lands in Fort Bend, Wharton, and Jackson Counties in Texas. NRG plans to use existing mowed/maintained utility rights-of-way (ROWs) to minimize environmental impacts and avoid sensitive resources to the greatest extent practical.

3. EOR Operations

The proposed project would deliver up to 1.6 million tons of CO_2 per year to the existing West Ranch oil field, located in Jackson County, where the CO_2 would be injected through injection wells into the 98-A, 41-A, and Greta sand units of the Frio Formation, which lie approximately 5,000 to 6,300 feet below ground surface (bgs). The oil field has operated since 1938 and the portions of the West Ranch oil field in which EOR operations would be conducted are currently owned or leased by Hilcorp Energy Company (HEC). A joint venture between NRG and HEC, known as Texas Coastal Ventures LLC (TCV), would conduct the EOR operations. TCV would also operate the pipeline.

4. CO_2 Monitoring Program

TCV would implement a CO_2 monitoring program to monitor the injection and migration of CO_2 within the geologic formations at the West Ranch oil field EOR area. The CO_2 monitoring program may consist of a variety of monitoring and modeling activities.

The pipeline portion of this project, listed above as Project Component 2, was referred to the THC for evaluation on February 10, 2012 and is currently being assessed by URS Group (URS) through a Phase I cultural resource field investigation. The results of that survey will be reported to the DOE, THC and applicable Native American Tribes upon its completion. This letter report examines project activities anticipated within the W.A. Parish Plant (i.e., Project Component 1) and West Ranch oil field (i.e., Project Components 3 and 4).

Description of Project Areas

CO_2 Capture Facility, W.A. Parish Plant, Fort Bend County

The W.A. Parish Plant is located in Thompsons, Texas along the southeast shore of Smithers Lake, a 2,430-acre man-made water body used for plant cooling water. The CO_2 capture facility includes the following nine project components, totaling approximately 29 acres in extent, all of which lie within the boundaries of the existing W.A. Parish Plant (Figures 2 and 3): North Laydown Area (8.8 acres); South Laydown Area (13 acres); CO_2 Capture Area (3.3 acres); Warehouse (1.6 acres); Road Relocation (0.83 acres); 138kV Switchyard (0.23 acres); CO_2 Compressor (0.20 acres); Combustion Turbine/Heat Recovery Steam Generator (CT/HRSG) (0.44 acres); Pipe Rack (0.07acres); Rail Unloading Area (0.26 acres); and Flue Tank and Dump (0.01 acres). The Area of Potential Effect (APE) associated with the CO_2 capture facility is defined as the 29 acres within these proposed project areas. All of the above listed project components are situated within lands that have been disturbed by ongoing power generating operations, including leveling, road construction, and building construction.

A review was conducted by URS on May 17, 2012 of data on file at the THC via the online Texas Archeological Sites Atlas, along with the online records of the NRHP. This research was undertaken to identify previously completed cultural resources surveys and cultural resources recorded within one mile (1.6 km) of the proposed project activities. According to these sources, no State Archeological Landmarks, Texas Historic Landmarks, National Register historic buildings or historic structures have been identified within one mile (1.6 km) of the W.A. Parish Plant.

Figure 2. Topographic Map – Proposed W.A. Parish Plant Project Areas

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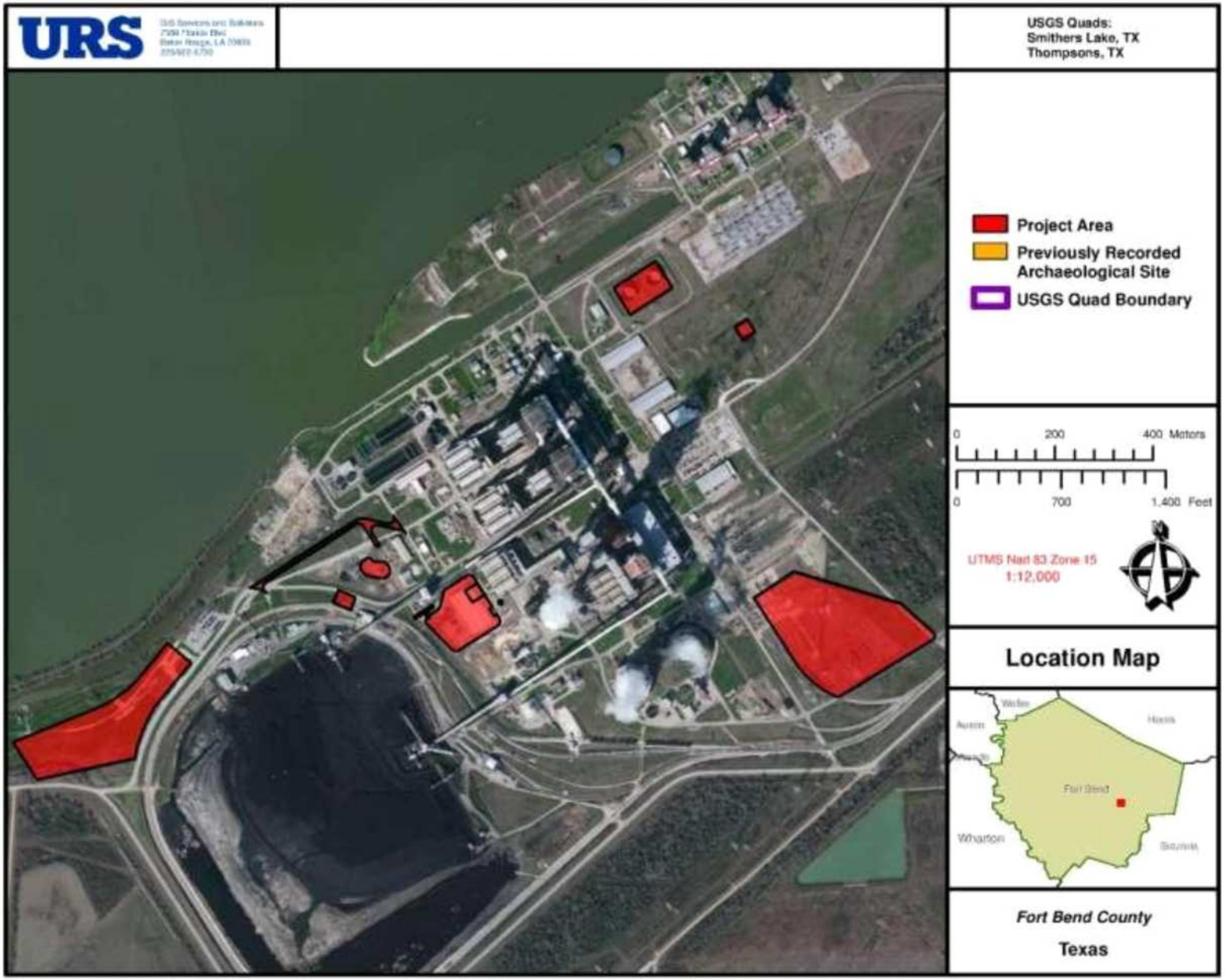
Figure 3. Aerial Overview – Proposed W.A. Parish Plant Project Areas



Three prehistoric lithic artifact scatters (Sites 41FB225, 41FB226, and 41FB227) are situated within one mile (1.6 km) of the W.A. Parish Plant (Figure 3). They were recorded between 1994 and 1995 by the Fort Bend Archaeological Society and these sites are positioned along the southern shore of Smithers Lake (Site 41FB225) and Dry Creek/Rabbs Bayou (Sites 41FB226 and 41FB227). However, none of these sites was considered eligible for listing in the NRHP.

EOR Operations and CO_2 Monitoring Program, West Ranch Oil Field, Jackson County

The West Ranch oil field is located roughly 3.2 miles south of the community of Vanderbilt, between Venado Creek (west) and the Lavaca River (east), within Jackson County (Figures 4a to 4d and 5a to 5d). HEC currently operates the West Ranch oil field, which was first developed in 1938. The oil field covers approximately 11,500 acres, but only 5,500 acres are currently targeted for EOR operations, as shown in Figures 4 and 5. The CO_2 generated by the proposed project would be injected by TCV within the West Ranch oil field. The project will involve a CO_2 monitoring program, which will be carried out by TCV.

The currently defined locations of any active, inactive, temporarily abandoned, and/or plugged and abandoned wells are shown for the West Ranch oil field in Figure 5. Numerous unused wells are available for conversion and use as part of EOR or CO_2 monitoring operations. Existing wells that are unable to accommodate the pressure increase from the CO_2 injection will be remediated by TCV prior to initiating CO_2 injection.

At this time, all of the CO_2 monitoring program activities are expected to be limited to existing drilled well sites and therefore minimal to no new land impacts are expected for this phase of the NRG project. Also, approximately 130 existing injection wells and 130 existing production wells may be utilized, with approximately 10 to 13 monitoring wells being utilized in the CO_2 monitoring program (i.e., one monitoring well for every 10 to 15 injection wells). In general, existing wells would be utilized (i.e., refurbished or deepened as needed) to the extent practicable, so that few new injection, production, or monitoring wells would be needed. New wells, if required, would be installed on existing well pads to the extent practicable. Existing roads would be used to the extent practical to access EOR and CO_2 monitoring areas within the West Ranch Oil Field; therefore, no new road construction is currently anticipated. Finally, any new CO_2 distribution piping would be installed, to the extent practicable, along the existing piping corridors. The APE associated with the West Ranch oil field is defined as the proposed 5,500-acre EOR area shown on Figures 4 and 5.

A review of the online Texas Archeological Sites Atlas and NRHP was performed by URS on May 17, 2012. This research was undertaken to identify previously completed surveys and cultural resources in proximity to the proposed project activities. According to these sources, no State Archeological Landmarks, Texas Historic Landmarks, National Register historic buildings or historic structures have been identified within one mile (1.6 km) of the West Ranch oil field.

A total of 14 archaeological sites have been identified within one mile (1.6 km) of the West Ranch oil field (i.e., Sites 41JK2, 41JK35, 41JK38, 41JK39, 41JK61 to 41JK63, 41JK114, 41JK115, 41JK126, 41JK127, 41JK129, 41JK138, and 41JK139), as shown in Figure 5. The majority of these sites appear to be prehistoric lithic and ceramics scatters situated along the Lavaca River Bluff (eight sites), Venado Creek (three sites), Menefee Lake (two sites), and Redfish Lake (one site). Four of these sites were considered Not Eligible for listing in the NRHP (i.e., sites 41JK115, 41JK126, 41JK127, and 41JK139) and an additional four sites did not provide any information concerning their eligibility (i.e., 41JK2, 41JK35, 41JK38, and 41JK39). The remaining six sites (i.e., 16JK61, 16JK62, 16JK63, 16JK114, 16JK129, and 16JK138) were recommended for additional testing to determine their eligibility status by the previous researchers.

Figure 4a. Topographic Map – Proposed West Ranch Oil Field EOR Area

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Figure 4b. Topographic Map – Proposed West Ranch Oil Field EOR Area

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Figure 4c. Topographic Map – Proposed West Ranch Oil Field EOR Area

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Figure 4d. Topographic Map – Proposed West Ranch Oil Field EOR Area

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Figure 5a. Aerial Overview – Proposed West Ranch Oil Field EOR Area

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Figure 5b. Aerial Overview – Proposed West Ranch Oil Field EOR Area

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Figure 5c. Aerial Overview – Proposed West Ranch Oil Field EOR Area

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Figure 5d. Aerial Overview – Proposed West Ranch Oil Field EOR Area

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In addition, a further nine archaeological sites have been identified within the boundary of the West Ranch oil field (i.e., Sites 41JK128 and 41JK130 to 41JK137), as shown in Figure 5. Most of these sites (i.e., eight sites) are located along the boundaries of Venado Creek, with a single site associated with Menefee Bayou (i.e., Site 16JK128). All of these sites are identified as prehistoric lithic scatters, except for Site 16JK128, which also contained prehistoric ceramics. None of the site forms provided information on their eligibility for listing in the NRHP.

Findings and Recommendation

URS has conducted an office review of the potential for the proposed project areas at the W.A. Parish Plant in Fort Bend County and the West Ranch oil field located in Jackson County, Texas to contain and impact historic properties as defined under Section 106 of the NHPA. A records review found that no historic properties are currently plotted within the project areas.

Based on a review of the proposed project activities and their locations, it is our opinion that a very low likelihood exists of unrecorded historic properties being situated within the Areas of Potential Effect associated with these two proposed project areas. This opinion for the W.A. Parish Plant is based on the level of existing ground disturbance within this operating facility, which includes extensive grading as well as facility, road, and building construction. For the West Ranch oil field, our opinion is based on project plans that anticipate re-using existing well sites for the proposed monitoring program; therefore, little to no new land impacts are expected. To the extent practicable, any proposed new wells would be installed on existing well pads, existing built roads would be used to access EOR and CO_2 monitoring areas, and any new CO_2 distribution piping would be installed along the pre-existing piping corridors. We therefore recommend that no further archaeological or architectural studies are warranted for these project components as currently defined. If additional rights-of-way for new well pads, access roads, or CO_2 distribution piping are required within the West Ranch oil field for this undertaking, beyond what has already been disturbed, TCV would initiate consultation with the THC to determine whether any further cultural resources investigations would be necessary.

If you have any questions or concerns regarding this study, please do not hesitate to contact Mr. Martin Handly at 225-276-4826 or by email at martin.handly@urs.com.

Sincerely,

Martin Handly, M.A.
Principal Investigator
URS Group

Rob Lackowicz, M.A.
Principal Investigator
URS Group

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NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA

U.S. DEPARTMENT OF ENERGY

June 19, 2012

Mr. Mark Wolfe
State Historic Preservation Officer
Texas Historical Commission
1511 Colorado Street
Austin, Texas 78701

Subject: Section 106 Determination for Proposed Project Activities within Previously Developed Lands at the W.A. Parish Plant (Fort Bend County) and West Ranch Oil Field (Jackson County) for the W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project

Dear Mr. Wolfe:

This letter supplements my earlier communication to your office, dated February 10, 2012, regarding the above-referenced project proposed by NRG Energy (NRG). The U.S. Department of Energy's (DOE) proposed action would provide NRG with a cost-shared award for the project. DOE is currently preparing a draft environmental impact statement (EIS) to comply with the *National Environmental Policy Act of 1969* (NEPA). DOE also intends to coordinate its obligations under Section 106 of the *National Historic Preservation Act of 1966* (NHPA) with the NEPA process.

NRG's proposed project would include the following four primary components:

1. *Carbon Dioxide (CO_2) Capture Facility*

The proposed project would construct a post-combustion CO_2 capture system to treat a slipstream from one of the W.A. Parish Plant's existing coal-fueled units (Unit 8). A new natural gas-fired cogeneration plant, estimated to be 80-megawatts in size, would also be constructed to produce the auxiliary power needed to drive the proposed CO_2 capture system. These activities would occur within the existing 4,880-acre W.A. Parish Plant site.

2. *CO_2 Transport*

Captured CO_2 would be transported via a new, approximately 80-mile-long pipeline to the West Ranch oil field. The anticipated pipeline route includes mostly sparsely developed rural and agricultural lands in Fort Bend, Wharton, and Jackson Counties in Texas. Currently, NRG plans to collocate the pipeline within expanded or existing mowed/maintained utility rights-of-way (ROW) to minimize environmental impacts and avoid sensitive resources to the greatest extent practical for approximately 85 percent of the route. New ROW would be used for the remaining 15 percent.

3. *Enhanced Oil Recovery (EOR) Operations*

Up to 1.6 million tons of CO_2 per year would be delivered to the existing West Ranch oil field, located in Jackson County. The CO_2 would be injected into the 98-A, 41-A, and Greta sand units of the Frio Formation, which lie approximately 5,000 to 6,300-feet below ground surface. The oil field has operated since 1938 and the portions of the West Ranch oil field in which EOR operations would be conducted are currently owned or leased by Hilcorp Energy Company (HEC). A joint venture

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between NRG and HEC, known as Texas Coastal Ventures LLC (TCV), would conduct the EOR operations. TCV would also operate the pipeline.

4. CO_2 Monitoring Program

TCV would implement a program to monitor the injection and migration of CO_2 within the geologic formations at the West Ranch oil field EOR area. The CO_2 monitoring program may consist of a variety of monitoring and modeling activities.

The proposed pipeline route listed above as Project Component 2 is currently being assessed through a Phase I cultural resource field investigation. DOE expects the results of that survey to be reported to you in the near future for separate comment. The results will also be summarized in the draft EIS.

Project Components 1, 3 and 4, as listed above, are described further in the enclosed document to afford the Texas Historical Commission a reasonable opportunity to comment before the draft EIS is issued. Given the level of existing land disturbance and the types of activities to be conducted as part of these project components, it is the opinion of DOE that the activities proposed to occur within these two project areas (i.e., the W.A. Parish Plant and the West Ranch oil field) will not impact historic properties meeting the criteria of significance for listing on the National Register of Historic Places. Please reply whether your office concurs with this determination of No Historic Properties Present or Affected. Again, please refer to the attached enclosure for more details regarding the background and proposed activities at these two locations.

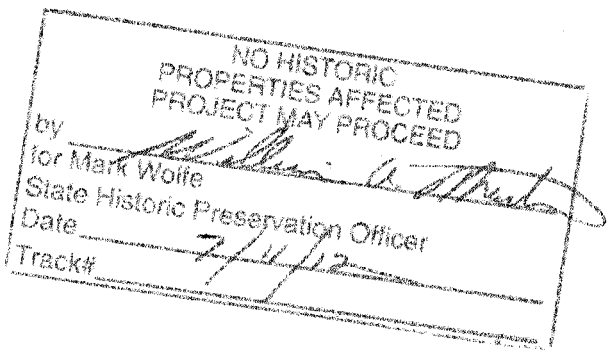
Should you have any technical questions regarding the enclosed letter report, please contact Mr. Martin Handly (NHPA consultant–URS Group, Inc.) at (225) 276-4826 or by email at martin.handly@urs.com. You can also reach me for comment by email at mark.lusk@netl.doe.gov, by telephone at (304) 285-4145, or at the address listed on the front page.

Sincerely,

Mark W Lusk
NEPA Document Manager/NEPA Compliance Officer

Enclosure

cc: J. Barfield - NRG
A. Armpriester - NRG
T. McMahon - DOE
M. Handly - URS
Rob Lackowicz - URS
Pete Conwell - URS



NATIONAL ENERGY TECHNOLOGY LABORATORY
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U.S. DEPARTMENT OF ENERGY

August 2, 2012

Mr. Mark Wolfe
State Historic Preservation Officer
Texas Historical Commission
1511 Colorado St.
Austin, Texas, 78701

Re: Section 106 Determination for Proposed CO_2 Pipeline in Fort Bend, Wharton, and Jackson Counties for the W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project and Submittal of the Draft Phase I Cultural Resources Investigation Report

Dear Mr. Wolfe:

This letter supplements my earlier communication to your office dated June 19, 2012, regarding the above-referenced project proposed by NRG Energy, Inc. (NRG). The U. S. Department of Energy's (DOE) proposed action would provide NRG with a cost-shared award for the project. DOE is currently preparing a draft environmental impact statement (EIS) to comply with the *National Environmental Policy Act of 1969* (NEPA). DOE also intends to coordinate its obligations under Section 106 of the *National Historic Preservation Act of 1966* (NHPA) with the NEPA process.

NRG's proposed project would include the following four primary components:

1. *Carbon Dioxide (CO_2) Capture Facility*
The proposed project would construct a post-combustion CO_2 capture system to treat a slipstream from one of the W.A. Parish Plant's existing coal-fueled electric generation units (Unit 8). A new natural gas-fired cogeneration plant, estimated to be 80-megawatts in size, would also be constructed to produce the auxiliary electricity and steam needed for the proposed CO_2 capture system. These activities would occur within previously developed areas of the existing 4,880-acre W.A. Parish Plant site in Fort Bend County.

2. *CO_2 Transport*
Captured CO_2 would be transported via a new, approximately 80-mile-long pipeline from the W. A. Parish Plant to the West Ranch oil field in Jackson County. The anticipated pipeline route would mostly cross sparsely developed rural and agricultural lands in Fort Bend, Wharton, and Jackson Counties. Currently, NRG plans to collocate approximately 85 percent of the pipeline within expanded or existing mowed/maintained utility rights-of-way (ROW) to minimize environmental impacts and avoid sensitive resources to the greatest extent practical. New ROW would be used for the remaining 15 percent of the route. A joint venture between NRG and Hilcorp Energy Company (HEC), known as Texas Coastal Ventures LLC (TCV), would operate the pipeline.

3. *Enhanced Oil Recovery (EOR) Operations*
Up to 1.6 million tons of CO_2 per year would be delivered to the existing West Ranch oil field. The CO_2 would be injected into the 98-A, 41-A, Glasscock, and Greta sand units of the Frio Formation, which lie approximately 5,000 to 6,300-feet below ground surface. The oil field has operated since 1938 and the portions of the West Ranch oil field in which EOR operations would be conducted are currently owned or leased by TCV. HEC has been contracted to conduct the EOR operations.

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4. CO_2 Monitoring Program

TCV would implement a program to monitor the injection and migration of CO_2 within the geologic formations at the West Ranch oil field EOR area. The CO_2 monitoring program may consist of a variety of monitoring and modeling activities.

DOE's review of NRG project components 1, 3, and 4 (i.e., activities limited to the W.A. Parish Plant and the West Ranch oil field) were sent to you in my letter on June 19, 2012. On July 11, 2012, your office concurred with the determination of no historic properties affected for these project components and approved proposed project activities to proceed at the W.A. Parish Plant and the West Ranch oil field. The proposed pipeline route, listed as project component 2 above, was assessed through a Phase I cultural resource field investigation that is reported in the attached draft cultural resources investigation report. Results of the report will be summarized in the draft EIS and the full report will be included as an appendix, along with all correspondence with your office.

The backhoe trenching requested by your office in previous correspondence will be conducted within the next month according to the work plan submitted to you on April 25, 2012. Your office approved the work plan on May 14, 2012. DOE will submit the results of that investigation to you as an addendum to the attached report for your review and concurrence once the backhoe trenching activities have been completed.

Given the results of the Phase I cultural resource investigation activities completed to date, it is the opinion of DOE that the activities proposed in project component 2 (i.e., the proposed CO_2 pipeline construction ROW, additional temporary workspace areas, and access roads) would not impact historic properties meeting the criteria of significance for listing on the National Register of Historic Places. Please reply within 30 days whether your office concurs with this determination of No Historic Properties Affected for the surveyed areas.

Should you have any technical questions regarding the enclosed report, please contact Mr. Martin Handly (NHPA consultant–URS Group, Inc.) at (225) 276-4826 or by email at martin.handly@urs.com. You can also reach me for comment by email at mark.lusk@netl.doe.gov, by telephone at (304) 285-4145, or at the address listed on the front page.

Sincerely,

Mark W. Lusk
NEPA Document Manager/NEPA Compliance Officer

Enclosure

DISTRIBUTION:
J. Barfield – NRG
A. Armpriester – NRG
T. McMahon – NETL/DOE
M. Handly – URS
R. Lackowicz – URS
P. Conwell – URS

(See EIS Appendix G for a copy of the July 2012
Phase I Cultural Resources Investigation Draft Report)

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TEXAS HISTORICAL COMMISSION

real places telling real stories

September 14, 2012

Mark Lusk
U.S. Department of Energy
P.O. Box 880
Morgantown, WV 26507

Re: Project review
Draft report: *Phase I Cultural Resources Investigation Proposed NRG Energy W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project, Fort Bend, Wharton, and Jackson Counties, Texas.*

Dear Mr. Lusk:

Thank you for allowing us to review the report referenced above. This letter serves as comment on the proposed undertaking from the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission.

The review staff, led by Jeff Durst, has completed its review. After reviewing the documentation, we concur that newly recorded prehistoric sites 41WH106 and 41JK192 that will be impacted by construction are ineligible for inclusion in the National Register of Historic Places (NRHP) based on the lack of buried deposits, cultural features, or temporally diagnostic materials. We also concur that newly recorded historic period sites 41WH103, 41WH105, and 41JK193 are also ineligible for inclusion in the NRHP based on the lack of intact buried deposits or cultural features.

THC staff disagrees with the National Register of Historic Places (NRHP) determinations of eligibility for resources HSS-FB-6 and HSS-WH-3. The railroad bridge (HSS-FB-6) is lacking its historic setting, but without more information about that abandoned rail line's history in Fort Bend County, we find the information inconclusive. For the house identified as HSS-WH-3, we feel the building is eligible under Criterion A and Criterion C at the local level of significance based on its ties to the Danevang community and its architectural integrity. The pipeline project does not seem like it will impact these resources, though, so we are not requesting any additional information at this time. Should the alignment change in a way that would adversely impact them, please provide additional information to clarify NRHP eligibility and documentation about project impacts.

The draft report that you have submitted is accepted and this project may proceed without further consultation with this office, provided that no significant archeological deposits are encountered during construction and development of the property and that the pipeline alignment does not change.

Thank you for your cooperation in this review process, and for your efforts to preserve the irreplaceable heritage of Texas. **If we may be of further assistance, please call Jeff Durst of our staff at 512/463-8884.**

Sincerely,

for
Mark Wolfe, State Historic Preservation Officer

MW/jjd

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NATIONAL ENERGY TECHNOLOGY LABORATORY
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U.S. DEPARTMENT OF ENERGY

December 14, 2012

Mr. Mark Wolfe
State Historic Preservation Officer
Texas Historical Commission
1511 Colorado Street
Austin, TX 78701

Subject: Transmittal of Addendum Letter Report No. 1 - Additional Cultural Resource Survey for the Proposed NRG Energy W. A. Parish Post-Combustion CO_2 Capture and Sequestration Project (Fort Bend, Wharton, and Jackson Counties, Texas)

Dear Mr. Wolfe:

The primary route for the above proposed project was surveyed by URS Corporation, Inc. (URS) and reported by the U.S. Department of Energy (DOE) to the Texas Historical Commission (THC) earlier this year. An additional cultural resource assessment was conducted in association with proposed changes to the pipeline route and, as requested by THC, near horizontal drilling sites for proposed pipeline river crossings. URS conducted the additional cultural resource surveys from September to November 2012 for an additional 11.68 miles of proposed corridor, 10.63 acres of additional temporary workspace, 6.71 miles of proposed access roads, and seven deep testing locations associated with the proposed project located in Fort Bend, Wharton and Jackson counties in Texas. No historic structures, features, or archaeological materials were identified during the investigation. The purpose of the enclosed *Addendum Letter Report No. 1* is to communicate the results of the additional Phase I cultural resource field surveys to your office for review.

As of November 21, 2012, only a single proposed 0.14 mile long access road and a proposed 2.3 mile long pipeline corridor reroute, all located in Wharton County, remain to be surveyed for this project. Once land access has been granted for the remaining access road and pipeline corridor reroute, cultural resources fieldwork will be initiated and a second addendum report will be prepared and submitted to your office for review and comment. Since these locations occur in low probability areas and near where no findings have occurred to date, we don't anticipate finding anything significant. Additional reroutes will be handled on a case-by-case basis as need arises.

Based on the findings to date, DOE anticipates that the proposed project would have no effect on historic properties within the area of potential effects. Should you have any technical questions regarding *Addendum Letter Report No. 1*, please contact Mr. Martin Handly (URS National

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mark.lusk@netl.doe.gov • Voice (304) 285-4145 • Fax (304) 285-4403 • www.netl.doe.gov

Historic Preservation Act consultant) at 225-231-6328 or by email at martin.handly@urs.com. You can also reach me for comment at the address listed on the front page, by telephone at (304) 285-4145, or by email at mark.lusk@netl.doe.gov.

Sincerely,

Mark W. Lusk
NEPA Document Manager/NEPA Compliance Officer

Enclosure:
(2) Addendum Letter Report No. 1

e-mail cc:
Jon Barfield - NRG
Anthony Armpriester - NRG
Ted McMahon - DOE
Rob Lackowicz - URS
Martin Handly - URS
Kerry Winkler - URS

(See EIS Appendix G for a copy of the December 2012
Cultural Resources Investigation Addendum 1)

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U.S. DEPARTMENT OF ENERGY

January 2, 2013

Mr. Mark Wolfe
State Historic Preservation Officer
Texas Historical Commission
1511 Colorado St.
Austin, Texas 78701

Dear Mr. Wolfe:

RE: Transmittal of Addendum Letter Report No. 2 - Additional Cultural Resource Survey for the Proposed NRG Energy W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project (Wharton County, Texas.

The primary route for the above-proposed project was surveyed by URS Corporation, Inc. (URS) and reported by the U.S. Department of Energy (DOE) to the Texas Historical Commission (THC) earlier this year. URS conducted a cultural resource survey in mid-December 2012 for an additional 2.3 miles of proposed corridor associated with the NRG Energy (NRG) W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project, located in Wharton County, Texas, as a result of proposed changes to the proposed pipeline alignment routing. No historic structures, features, or archaeological materials were identified during the investigation. The purpose of the attached Addendum Letter Report No. 2 is to communicate the results of the additional Phase I cultural resource field survey to your office for review.

As of December 19, 2012, only a single additional temporary workspace, located in Wharton County, remained to be surveyed for this project. Once land access has been granted for the remaining workspace, cultural resources fieldwork will be initiated and a third, addendum report will be prepared and submitted to your office for review and comment.

Based on the findings to date, DOE anticipates that the proposed project would have no effect on historic properties within the area of potential effects. Should you have any technical questions regarding the attached, please contact Mr. Martin Handly (URS NHPA consultant) at (225) 231-6328 or by email at martin.handly@urs.com. You can also reach me using the information listed below.

Sincerely,

Mark Wfusk

3610 Collins Ferry Road, P.O. Box 880, Morgantown, WV 26507
Mark.Lusk@netl.doe.gov • Voice (304) 285-4145 • Fax (304) 285-4403 • www.netl.doe.gov

Mark W. Lusk
NEPA Document Manager/NEPA Compliance Officer

Enclosure
By e-mail cc: Jon Barfield - NRG
Anthony Armpriester - NRG
Ted McMahon - DOE
Rob Lackowicz - URS
Martin Handly - URS
Kerry Winkler - URS

(See EIS Appendix G for a copy of the December 2012
Cultural Resources Investigation Addendum 2)

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U.S. DEPARTMENT OF ENERGY

December 14, 2012

Mr. Mark Wolfe
State Historic Preservation Officer
Texas Historical Commission
1511 Colorado Street
Austin, TX 78701

Subject: Transmittal of Addendum Letter Report No. 1 - Additional Cultural Resource Survey for the Proposed NRG Energy W. A. Parish Post-Combustion CO_2 Capture and Sequestration Project (Fort Bend, Wharton, and Jackson Counties, Texas)

Dear Mr. Wolfe:

The primary route for the above proposed project was surveyed by URS Corporation, Inc. (URS) and reported by the U.S. Department of Energy (DOE) to the Texas Historical Commission (THC) earlier this year. An additional cultural resource assessment was conducted in association with proposed changes to the pipeline route and, as requested by THC, near horizontal drilling sites for proposed pipeline river crossings. URS conducted the additional cultural resource surveys from September to November 2012 for an additional 11.68 miles of proposed corridor, 10.63 acres of additional temporary workspace, 6.71 miles of proposed access roads, and seven deep testing locations associated with the proposed project located in Fort Bend, Wharton and Jackson counties in Texas. No historic structures, features, or archaeological materials were identified during the investigation. The purpose of the enclosed *Addendum Letter Report No. 1* is to communicate the results of the additional Phase I cultural resource field surveys to your office for review.

As of November 21, 2012, only a single proposed 0.14 mile long access road and a proposed 2.3 mile long pipeline corridor reroute, all located in Wharton County, remain to be surveyed for this project. Once land access has been granted for the remaining access road and pipeline corridor reroute, cultural resources fieldwork will be initiated and a second addendum report will be prepared and submitted to your office for review and comment. Since these locations occur in low probability areas and near where no findings have occurred to date, we don't anticipate finding anything significant. Additional reroutes will be handled on a case-by-case basis as need arises.

Based on the findings to date, DOE anticipates that the proposed project would have no effect on historic properties within the area of potential effects. Should you have any technical questions regarding *Addendum Letter Report No. 1*, please contact Mr. Martin Handly (URS National

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Historic Preservation Act consultant) at 225-231-6328 or by email at martin.handly@urs.com. You can also reach me for comment at the address listed on the front page, by telephone at (304) 285-4145, or by email at mark.lusk@netl.doe.gov.

Sincerely,

Mark W. Lusk
NEPA Document Manager/NEPA Compliance Officer

Enclosure:
(2) Addendum Letter Report No. 1

e-mail cc:
Jon Barfield - NRG
Anthony Armpriester - NRG
Ted McMahon - DOE
Rob Lackowicz - URS
Martin Handly - URS
Kerry Winkler - URS

NO HISTORIC
PROPERTIES AFFECTED
PROJECT MAY PROCEED
by
for Mark Wolfe
State Historic Preservation Officer
Date 1/17/13
Track#

DRAFT REPORT
ACCEPTABLE

NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA

U.S. DEPARTMENT OF ENERGY

January 2, 2013

Mr. Mark Wolfe
State Historic Preservation Officer
Texas Historical Commission
1511 Colorado St.
Austin, Texas 78701

Dear Mr. Wolfe:

RE: Transmittal of Addendum Letter Report No. 2 - Additional Cultural Resource Survey for the Proposed NRG Energy W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project (Wharton County, Texas.

The primary route for the above-proposed project was surveyed by URS Corporation, Inc. (URS) and reported by the U.S. Department of Energy (DOE) to the Texas Historical Commission (THC) earlier this year. URS conducted a cultural resource survey in mid-December 2012 for an additional 2.3 miles of proposed corridor associated with the NRG Energy (NRG) W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project, located in Wharton County, Texas, as a result of proposed changes to the proposed pipeline alignment routing. No historic structures, features, or archaeological materials were identified during the investigation. The purpose of the attached Addendum Letter Report No. 2 is to communicate the results of the additional Phase I cultural resource field survey to your office for review.

As of December 19, 2012, only a single additional temporary workspace, located in Wharton County, remained to be surveyed for this project. Once land access has been granted for the remaining workspace, cultural resources fieldwork will be initiated and a third, addendum report will be prepared and submitted to your office for review and comment.

Based on the findings to date, DOE anticipates that the proposed project would have no effect on historic properties within the area of potential effects. Should you have any technical questions regarding the attached, please contact Mr. Martin Handly (URS NHPA consultant) at (225) 231-6328 or by email at martin.handly@urs.com. You can also reach me using the information listed below.

DRAFT REPORT
ACCEPTABLE

Sincerely,

Mark Wolfe

NO HISTORIC PROPERTIES AFFECTED
PROJECT MAY PROCEED
by William A. Martin
for Mark Wolfe
State Historic Preservation Officer
Date 1/18/13
Track#

3610 Collins Ferry Road, P.O. Box 880, Morgantown, WV 26507
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C.4 OTHER CONSULTATION

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U.S. DEPARTMENT OF ENERGY

February 10, 2012

Rhonda M. Smith
U.S. Environmental Protection Agency, Region 6
Chief, Office of Planning and Coordination (6EN-XP)
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202

Re: Request for Consultation for the Proposed W.A. Parish Post-Combustion Carbon Capture and Storage Project in Southeastern Texas (Fort Bend, Wharton, and Jackson Counties)

To Ms. Smith:

The U.S. Department of Energy (DOE) proposes to provide funding to NRG Energy, Inc. (NRG) and its subsidiary, Petra Nova, LLC, for a project that would capture carbon dioxide (CO_2) at NRG's W.A. Parish Generating Station (Parish Plant) in Fort Bend County, Texas. The CO_2 would be delivered in a new approximately 80-mile-long pipeline to the West Ranch oil field located near the city of Vanderbilt in Jackson County, Texas, where it would be used for enhanced oil recovery (EOR) and ultimately sequestered. This proposed project, known as the W.A. Parish Post-Combustion Carbon Capture and Storage Project (Project), would demonstrate an integrated commercial-scale deployment of post-combustion CO_2 capture technology for use in EOR operations and long-term geologic storage.

DOE proposes to provide NRG with approximately $167 million of cost-shared funding, which includes *American Recovery and Reinvestment Act of 2009* (ARRA) funds, to implement the Project. DOE selected the Project for a financial assistance award through a competitive process under the Clean Coal Power Initiative (CCPI) Program. The estimated total project cost is $845 million.

DOE is preparing an environmental impact statement (EIS) to assess the potential environmental impacts associated with the proposed Project. As part of the *National Environmental Policy Act of 1969* (NEPA) process, DOE will consult with interested federal, state, regional, and local agencies; as well as Native American tribes. As a result, DOE requests consultation with the U.S. Environmental Protection Agency (USEPA) regarding potential environmental impacts or other considerations in the vicinity of the Project.

Project Details

NRG proposes to design, construct, and operate a commercial-scale CO_2 capture facility at its Parish Plant and deliver the CO_2 via an approximately 80-mile-long, 12.75-inch (outside diameter) pipeline to the West Ranch oil field in Jackson County, Texas. The enclosed maps (Attachment 1) illustrate the proposed project areas.

The Project would use an advanced amine-based absorption technology to capture 90 percent (approximately 1.6 million tons) of CO_2 annually from a 240-megawatt (MW) equivalent flue gas slip stream taken from the 617-MW Unit 8 at the Parish Plant. Up to 5,475 tons per day of

captured CO_2 would be dried, compressed, and transported via a new pipeline to the West Ranch oil field where it would be used in EOR operations.

The primary components of the Project include the following:

1. Carbon Capture Facility

The proposed Project would retrofit one of the Parish Plant's existing coal-fueled units (Unit 8) with a post-combustion CO_2 capture system that would be constructed within the existing 4,880-acre Parish Plant. A new natural gas-fired combined-cycle power plant, estimated to be 80-MW in size, would be constructed to produce the auxiliary power needed to drive the proposed carbon capture system.

2. CO_2 Transport

Captured CO_2 would be transported via a new approximately 80-mile-long pipeline to the West Ranch oil field. The anticipated pipeline route includes mostly sparsely-developed rural and agricultural lands in Fort Bend, Wharton, and Jackson Counties in Texas. The majority (approximately 95 percent) of the planned pipeline route will utilize existing mowed/maintained utility rights-of-ways (ROWs) to minimize environmental impacts and avoid sensitive resources to the greatest extent practical. Although the proposed pipeline will be located within existing ROWs for the majority of its length, NRG may need to review existing landowner agreements along the route to negotiate for widening of the ROW for construction of the pipeline in some areas.

3. EOR and CO_2 Sequestration

The proposed Project would deliver up to 1.6 million tons of CO_2 per year to the existing West Ranch oil field, located in Jackson County. The oil field has been in operation since 1938, and Texas Coastal Ventures, LLC, a joint venture between NRG and Hilcorp Energy Company, would conduct the EOR operations.

4. CO_2 Monitoring, Verification, and Accounting Program

NRG would implement a monitoring, verification, and accounting (MVA) program to monitor the injection and migration of CO_2 within the geologic formations at the EOR site. The MVA program must meet specific regulatory and CCPI Program requirements, and may consist of a variety of monitoring and modeling activities.

Project Schedule

NRG plans to start construction of the Project in November 2012 and begin commercial operations (demonstration phase) by 2015. The schedule is contingent on NRG receiving the necessary permits and regulatory approvals, as well as financial closing on all the necessary funding sources, including DOE's financial assistance.

Maps showing the expected footprint for the proposed carbon capture site, the proposed pipeline route, and the existing oil field area are provided in Attachment 1. Biological and cultural

resource surveys along the proposed pipeline route are scheduled between January and March 2012. DOE and NRG have contracted with URS Group, Inc., to provide environmental and cultural resources services to support development of the EIS and other regulatory compliance requirements for the Project.

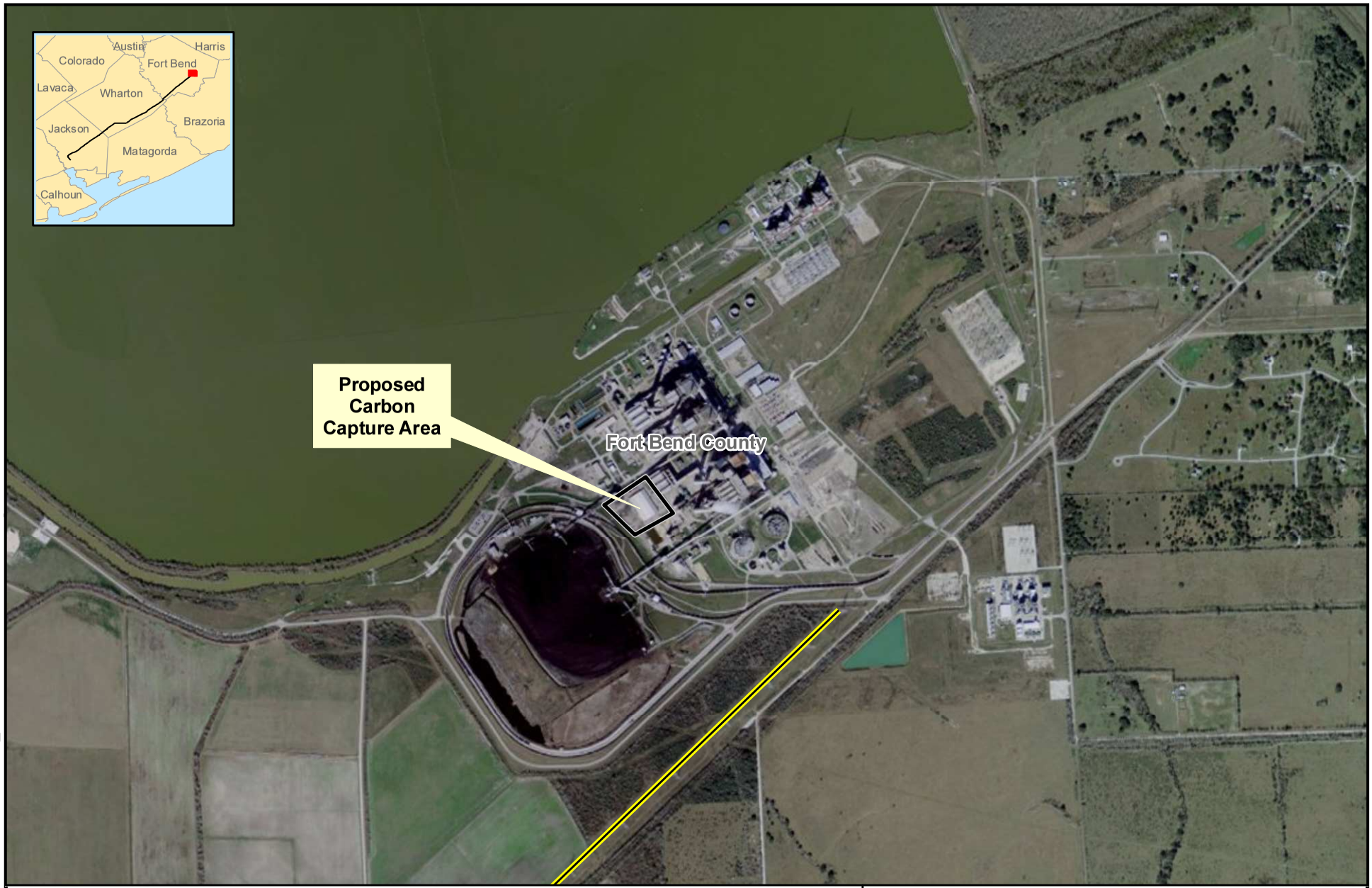
DOE respectfully requests that the USEPA provide any opinions or site-specific information concerning natural resources or other environmental considerations within the vicinity of the proposed Project in Fort Bend, Wharton, and Jackson Counties. Information provided by the USEPA will assist DOE in the preparation of an EIS and with fulfillment of its regulatory responsibilities under NEPA. DOE also intends to provide your office with a copy of the draft EIS for the Project for review and comment. All correspondence with your office will be included in an appendix to the EIS. We would appreciate your participation and request a response as soon as practical to help us more quickly identify potential issues. You can reach me by email at mark.lusk@netl.doe.gov, by telephone at (304) 285-4145, or at the address listed on the front page with any questions or comments.

Sincerely,

Mark W. Lusk
NEPA Document Manager / NEPA Compliance Officer

Attachment: Project Location Maps

cc:
Jon Barfield - NRG
Anthony Armpriester - NRG
Ted McMahon - DOE
Rob Lackowicz - URS
Pete Conwell - URS



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URS
10550 Richmond, Suite 155
Houston, TX 77042
Tel: 713.914.6699
Fax: 713.789.8404

Legend

Proposed Pipeline Route

0 375 750 1,500 Feet

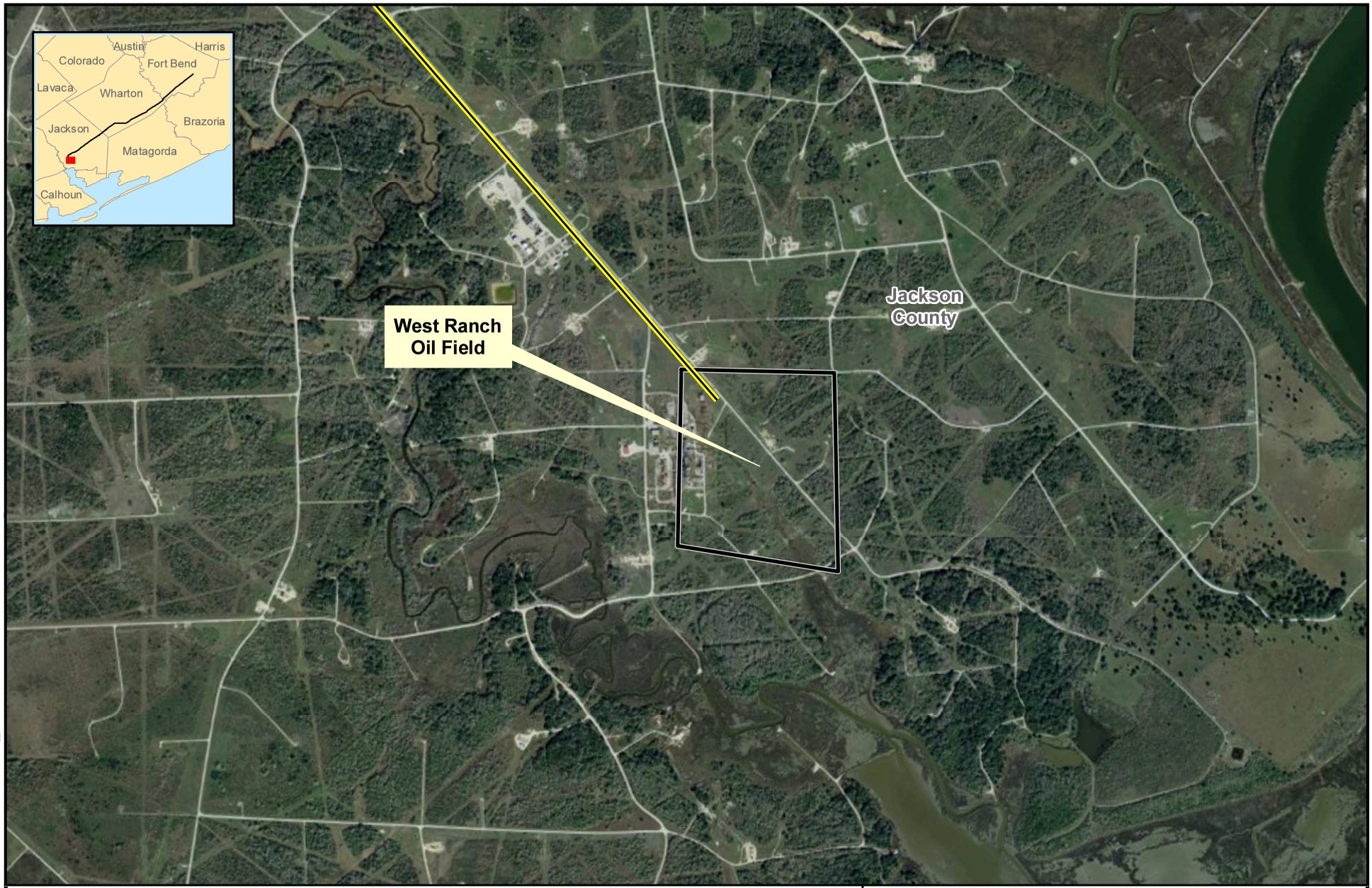
1 in = 1,500 feet

N

Proposed Pipeline Route Map

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project

Drawn By:	Date:	Project No.:	Figure:
AM	12-16-11	25014860	5 of 8



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Proposed Pipeline Route

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1 in = 1,500 feet

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Proposed Pipeline Route Map

W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project

Drawn By:	Date:	Project No.:	Figure:
AM	12-16-11	25014860	7 of 8

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URS
10550 Richmond, Suite 155
Houston, TX 77042
Tel: 713.914.6699
Fax: 713.789.8404

Legend

- Proposed Pipeline Route
- Major Roads
- Streams / Waterways
- Major Streams / Waterways
- County Lines
- Municipalities

N

0 2.5 5 10 Miles

Location Map

W.A. Parish Post-Combustion CO Capture and Sequestration Project

Drawn By:	Date:	Project No.:	Figure:
AM	12-16-11	25014860	1

NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA

U.S. DEPARTMENT OF ENERGY

February 13, 2012

Johnny Ortega
Floodplain Administrator
Fort Bend County Engineering Department
1124 Blume Road
Rosenberg, TX 77471-1449

Re: Request for Consultation for Proposed W.A. Parish Post-Combustion Carbon Capture and Storage Project in Southeastern Texas (Fort Bend, Wharton, and Jackson Counties)

Dear Mr. Ortega:

The U.S. Department of Energy (DOE) proposes to provide funding to NRG Energy, Inc. (NRG) and its subsidiary, Petra Nova, LLC, for a project that would capture carbon dioxide (CO_2) at NRG's W.A. Parish Generating Station (Parish Plant) in Fort Bend County, Texas. The CO_2 would be delivered in a new approximately 80-mile-long pipeline to the West Ranch oil field located near the city of Vanderbilt in Jackson County, Texas, where it would be used for enhanced oil recovery (EOR) and ultimately sequestered. This proposed project, known as the W.A. Parish Post-Combustion Carbon Capture and Storage Project (Project), would demonstrate an integrated commercial-scale deployment of post-combustion CO_2 capture technology and use of the CO_2 with EOR operations and long-term geologic storage.

DOE proposes to provide NRG with approximately $167 million of cost-shared funding, which includes *American Recovery and Reinvestment Act of 2009* funds to help implement the Project in Fort Bend, Wharton, and Jackson Counties, Texas. DOE selected the Project for a financial assistance award through a competitive process under the Clean Coal Power Initiative (CCPI) Program. The estimated total project cost is approximately $845 million.

DOE is preparing an environmental impact statement (EIS) to assess the potential environmental impacts associated with the proposed Project. As part of the *National Environmental Policy Act of 1969* (NEPA) process, the DOE will consult with interested federal, state, regional, and local agencies; as well as Native American tribes. As a result, NRG requests early consultation with the Fort Bend County floodplain administration regarding your opinion on potential environmental impacts or other considerations in the vicinity of the Project.

Project Details

NRG proposes to design, construct, and operate a commercial-scale CO_2 capture facility at its Parish Plant and deliver the CO_2 via an approximately 80-mile-long, 12.75-inch (outside diameter) pipeline to the West Ranch oil field in Jackson County, Texas.

3610 Collins Ferry Road, P.O. Box 880, Morgantown, WV 26507
mark.lusk@netl.doe.gov • Voice (304) 285-4145 • Fax (304) 285-4216 • www.netl.doe.gov

The Project would use an advanced amine-based absorption technology to capture 90 percent (approximately 1.6 million tons) of CO_2 annually from a 240-megawatt (MW) equivalent flue gas slip stream taken from the 617-MW Unit 8 at the Parish Plant. Up to 5,475 tons per day of captured CO_2 would be dried, compressed, and transported via a new pipeline to the West Ranch oil field where it would be used in EOR operations.

The primary components of the Project include the following:

1. *Carbon Capture Facility*

The proposed Project would retrofit one of the Parish Plant's existing coal-fueled units (Unit 8) with a post-combustion CO_2 capture system that would be constructed within the existing 4,880-acre Parish Plant. A new natural gas-fired combined-cycle power plant, estimated to be 80-MW in size, would be constructed to produce the auxiliary power needed to drive the proposed carbon capture system.

2. *CO_2 Transport*

Captured CO_2 would be transported via a new approximately 80-mile-long pipeline to the West Ranch oil field. The anticipated pipeline route includes mostly sparsely-developed rural and agricultural lands in Fort Bend, Wharton, and Jackson Counties in Texas. The majority (approximately 95 percent) of the planned pipeline route will utilize existing mowed/maintained utility rights-of-ways (ROWs) to minimize environmental impacts and avoid sensitive resources to the greatest extent practical. Although the proposed pipeline would be located within existing ROWs for the majority of its length, NRG may need to review existing landowner agreements along the route to negotiate for widening of the ROW for construction of the pipeline in some areas.

3. *EOR and CO_2 Sequestration*

The proposed Project would deliver up to 1.6 million tons of CO_2 per year to the existing West Ranch oil field, located in Jackson County. The oil field has been in operation since 1938, and Texas Coastal Ventures, LLC, a joint venture between NRG and Hilcorp Energy Company, would conduct the EOR operations.

4. *CO_2 Monitoring, Verification, and Accounting Program*

NRG would implement a monitoring, verification, and accounting (MVA) program to monitor the injection and migration of CO_2 within the geologic formations at the EOR site. The MVA program must meet specific regulatory and CCPI Program requirements, and may consist of a variety of monitoring and modeling activities.

Project Schedule

NRG plans to start construction of the Project in November 2012 and begin the demonstration phase of commercial operations by 2015. The schedule is contingent on NRG receiving the necessary permits and regulatory approvals, as well as financial closing on all the necessary funding sources, including DOE's financial assistance.

Maps showing the expected footprint for the proposed carbon capture site, the proposed pipeline route, and the existing oil field area are provided in Attachment 1. Biological and cultural resource surveys along the proposed pipeline route are scheduled between January and March 2012. DOE and NRG have contracted with URS Group, Inc., to provide environmental and cultural resources services to support development of the EIS and other regulatory compliance requirements for the Project.

DOE respectfully requests that the Fort Bend County Floodplain Administration provide any opinions or site-specific information concerning the proposed Project's potential floodplain and related environmental impacts within Fort Bend County. The information provided will assist DOE in the preparation of an EIS. DOE also intends to provide a copy of the draft EIS for the Project to your office for review and comment. All correspondence with your office will be included in an appendix to the EIS.

DOE would appreciate your participation and requests a response as soon as practical to help identify potential floodplain impacts in the vicinity of the Project. You can reach me for comment by email at mark.lusk@netl.doe.gov, by telephone at (304) 285-4145, or at the address listed on the front page.

Sincerely,

Mark W. Lusk
NEPA Document Manager / NEPA Compliance Officer

Attachment: Project Location Maps

cc:
Jon Barfield - NRG
Anthony Armpriester - NRG
Ted McMahon - DOE
Pete Conwell - URS

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NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA

U.S. DEPARTMENT OF ENERGY

February 13, 2012

Floodplain Administration
Jackson County Permit & Inspection Department
115 West Main St. RM 104
Edna, TX 77957

Re: Request for Consultation for Proposed Petra Nova W.A. Parish Post-Combustion Carbon Capture and Storage Project in Southeastern Texas (Fort Bend, Wharton, and Jackson Counties)

To Whom It May Concern:

The U.S. Department of Energy (DOE) proposes to provide funding to NRG Energy, Inc. (NRG) and its subsidiary, Petra Nova, LLC, for a project that would capture carbon dioxide (CO_2) at NRG's W.A. Parish Generating Station (Parish Plant) in Fort Bend County, Texas. The CO_2 would be delivered in a new approximately 80-mile-long pipeline to the West Ranch oil field located near the city of Vanderbilt in Jackson County, Texas, where it would be used for enhanced oil recovery (EOR) and ultimately sequestered. This proposed project, known as the W.A. Parish Post-Combustion Carbon Capture and Storage Project (Project), would demonstrate an integrated commercial-scale deployment of post-combustion CO_2 capture technology and use of the CO_2 with EOR operations and long-term geologic storage.

DOE proposes to provide NRG with approximately $167 million of cost-shared funding, which includes *American Recovery and Reinvestment Act of 2009* funds to help implement the Project in Fort Bend, Wharton, and Jackson Counties, Texas. DOE selected the Project for a financial assistance award through a competitive process under the Clean Coal Power Initiative (CCPI) Program. The estimated total project cost is approximately $845 million.

DOE is preparing an environmental impact statement (EIS) to assess the potential environmental impacts associated with the proposed Project. As part of the National *Environmental Policy Act of 1969* (NEPA) process, the DOE will consult with interested federal, state, regional, and local agencies; as well as Native American tribes. As a result, NRG requests early consultation with the Fort Bend County floodplain administration regarding your opinion on potential environmental impacts or other considerations in the vicinity of the Project.

Project Details

NRG proposes to design, construct, and operate a commercial-scale CO_2 capture facility at its Parish Plant and deliver the CO_2 via an approximately 80-mile-long, 12.75-inch (outside diameter) pipeline to the West Ranch oil field in Jackson County, Texas.

3610 Collins Ferry Road, P.O. Box 880, Morgantown, WV 26507
mark.lusk@netl.doe.gov • Voice (304) 285-4145 • Fax (304) 285-4216 • www.netl.doe.gov

The Project would use an advanced amine-based absorption technology to capture 90 percent (approximately 1.6 million tons) of CO_2 annually from a 240-megawatt (MW) equivalent flue gas slip stream taken from the 617-MW Unit 8 at the Parish Plant. Up to 5,475 tons per day of captured CO_2 would be dried, compressed, and transported via a new pipeline to the West Ranch oil field where it would be used in EOR operations.

The primary components of the Project include the following:

1. *Carbon Capture Facility*

   The proposed Project would retrofit one of the Parish Plant's existing coal-fueled units (Unit 8) with a post-combustion CO_2 capture system that would be constructed within the existing 4,880-acre Parish Plant. A new natural gas-fired combined-cycle power plant, estimated to be 80-MW in size, would be constructed to produce the auxiliary power needed to drive the proposed carbon capture system.

2. *CO_2 Transport*

   Captured CO_2 would be transported via a new approximately 80-mile-long pipeline to the West Ranch oil field. The anticipated pipeline route includes mostly sparsely-developed rural and agricultural lands in Fort Bend, Wharton, and Jackson Counties in Texas. The majority (approximately 95 percent) of the planned pipeline route will utilize existing mowed/maintained utility rights-of-ways (ROWs) to minimize environmental impacts and avoid sensitive resources to the greatest extent practical. Although the proposed pipeline would be located within existing ROWs for the majority of its length, NRG may need to review existing landowner agreements along the route to negotiate for widening of the ROW for construction of the pipeline in some areas.

3. *EOR and CO_2 Sequestration*

   The proposed Project would deliver up to 1.6 million tons of CO_2 per year to the existing West Ranch oil field, located in Jackson County. The oil field has been in operation since 1938, and Texas Coastal Ventures, LLC, a joint venture between NRG and Hilcorp Energy Company, would conduct the EOR operations.

4. *CO_2 Monitoring, Verification, and Accounting Program*

   NRG would implement a monitoring, verification, and accounting (MVA) program to monitor the injection and migration of CO_2 within the geologic formations at the EOR site. The MVA program must meet specific regulatory and CCPI Program requirements, and may consist of a variety of monitoring and modeling activities.

Project Schedule

NRG plans to start construction of the Project in November 2012 and begin the demonstration phase of commercial operations by 2015. The schedule is contingent on NRG receiving the necessary permits and regulatory approvals, as well as financial closing on all the necessary funding sources, including DOE's financial assistance.

Maps showing the expected footprint for the proposed carbon capture site, the proposed pipeline route, and the existing oil field area are provided in Attachment 1. Biological and cultural resource surveys along the proposed pipeline route are scheduled between January and March 2012. DOE and NRG have contracted with URS Group, Inc., to provide environmental and cultural resources services to support development of the EIS and other regulatory compliance requirements for the Project.

DOE respectfully requests that the Jackson County Floodplain Administration provide any opinions or site-specific information concerning the proposed Project's potential floodplain and related environmental impacts within Jackson County. The information provided will assist the DOE in the preparation of an EIS. DOE also intends to provide a copy of the draft EIS for the Project to your office for review and comment. All correspondence with your office will be included in an appendix to the EIS.

DOE would appreciate your participation and requests a response as soon as practical to help quickly identify potential floodplain impacts in the vicinity of the Project. You can reach me for comment by email at mark.lusk@netl.doe.gov, by telephone at (304) 285-4145, or at the address listed on the front page.

Sincerely,

Mark W. Lusk
NEPA Document Manager / NEPA Compliance Officer

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cc:
Jon Barfield - NRG
Anthony Armpriester - NRG
Ted McMahon - DOE
Pete Conwell - URS

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NETL
NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA
U.S. DEPARTMENT OF ENERGY

February 13, 2012

Monica Martin
Wharton County Floodplain Administrator
Permit & Inspection Department
1017 North Alabama St.
Wharton, TX 77488

Re: Request for Consultation for Proposed Petra Nova W.A. Parish Post-Combustion Carbon Capture and Storage Project in Southeastern Texas (Fort Bend, Wharton, and Jackson Counties)

Dear Ms. Martin;

The U.S. Department of Energy (DOE) proposes to provide funding to NRG Energy, Inc. (NRG) and its subsidiary, Petra Nova, LLC, for a project that would capture carbon dioxide (CO_2) at NRG's W.A. Parish Generating Station (Parish Plant) in Fort Bend County, Texas. The CO_2 would be delivered in a new approximately 80-mile-long pipeline to the West Ranch oil field located near the city of Vanderbilt in Jackson County, Texas, where it would be used for enhanced oil recovery (EOR) and ultimately sequestered. This proposed project, known as the W.A. Parish Post-Combustion Carbon Capture and Storage Project (Project), would demonstrate an integrated commercial-scale deployment of post-combustion CO_2 capture technology and use of the CO_2 with EOR operations and long-term geologic storage.

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DOE is preparing an environmental impact statement (EIS) to assess the potential environmental impacts associated with the proposed Project. As part of the *National Environmental Policy Act of 1969* (NEPA) process, the DOE will consult with interested federal, state, regional, and local agencies; as well as Native American tribes. As a result, NRG requests early consultation with the Fort Bend County floodplain administration regarding your opinion on potential environmental impacts or other considerations in the vicinity of the Project.

Project Details

NRG proposes to design, construct, and operate a commercial-scale CO_2 capture facility at its Parish Plant and deliver the CO_2 via an approximately 80-mile-long, 12.75-inch (outside diameter) pipeline to the West Ranch oil field in Jackson County, Texas.

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The Project would use an advanced amine-based absorption technology to capture 90 percent (approximately 1.6 million tons) of CO_2 annually from a 240-megawatt (MW) equivalent flue gas slip stream taken from the 617-MW Unit 8 at the Parish Plant. Up to 5,475 tons per day of captured CO_2 would be dried, compressed, and transported via a new pipeline to the West Ranch oil field where it would be used in EOR operations.

The primary components of the Project include the following:

1. Carbon Capture Facility

The proposed Project would retrofit one of the Parish Plant's existing coal-fueled units (Unit 8) with a post-combustion CO_2 capture system that would be constructed within the existing 4,880-acre Parish Plant. A new natural gas-fired combined-cycle power plant, estimated to be 80-MW in size, would be constructed to produce the auxiliary power needed to drive the proposed carbon capture system.

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4. CO_2 Monitoring, Verification, and Accounting Program

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Project Schedule

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Maps showing the expected footprint for the proposed carbon capture site, the proposed pipeline route, and the existing oil field area are provided in Attachment 1. Biological and cultural resource surveys along the proposed pipeline route are scheduled between January and March 2012. DOE and NRG have contracted with URS Group, Inc., to provide environmental and cultural resources services to support development of the EIS and other regulatory compliance requirements for the Project.

DOE respectfully requests that the Wharton County Floodplain Administration provide any opinions or site-specific information concerning the proposed Project's potential floodplain and related environmental impacts within Wharton County. The information provided will assist DOE in the preparation of an EIS. The DOE also intends to provide a copy of the draft EIS for the Project to your office for review and comment. All correspondence with your office will be included in an appendix to the EIS.

DOE would appreciate your participation and requests a response as soon as practical to help quickly identify potential floodplain impacts in the vicinity of the Project. You can reach me for comment by email at mark.lusk@netl.doe.gov, by telephone at (304) 285-4145, or at the address listed on the front page.

Sincerely,

Mark W. Lusk
NEPA Document Manager / NEPA Compliance Officer

Attachment: Project Location Maps

cc:
Jon Barfield - NRG
Anthony Armpriester - NRG
Ted McMahon - DOE
Pete Conwell - URS

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March 22, 2012
100809-6515 WO01

Monica Martin
Floodplain Manager
Permit and Inspections Department
Wharton County
315 E. Milam, Suite 102
Wharton, Texas 77488

Subject: **NRG Energy W.A. Parish Post-Combustion Carbon Capture & Storage Project**

Ms. Martin:

At your request Halff Associates is responding to a letter request you received from the National Energy Technology Laboratory (NETL), a division of the U.S. Department of Energy for opinions or site-specific information concerning the proposed NRG Energy W.A. Parish Post-Combustion Carbon Capture & Storage Project pipeline that will traverse through the southerly portion of Wharton County. Specifically, the NETL requested information on potential floodplain and environmental impacts the pipeline may have within the County.

The proposed 12.75-inch diameter pipeline will carry carbon dioxide. It will enter Wharton County at the eastern boundary, approximately 2-miles north of the southerly County line. It traverses along the southerly portion of the County for approximately 40 miles, leaving the County at the western boundary, approximately 4-miles north of the southerly County line. Construction is projected to begin in November 2012 with pipeline operations starting in 2015.

Potential impacts the pipeline may have through the County are based on a letter size exhibit in the NETL letter showing the proposed pipeline route. The image was scanned and geo-referenced in GIS to the Wharton County GIS geo-database. Stream crossings where impacts to the floodplain may be possible were considered in this review. The extent of impacts the pipeline will have on floodplain and environmental features will depend on the final route of the pipeline as well as type of crossings and construction methods. At this time, there is not sufficient information to determine the type or exact number of development permits that will be required. A conservative estimate would be to assume that each stream crossing is a major creek crossing. It would be expected that wetlands and other possible environmentally sensitive features will be located within the pipeline corridor.

The following is a list of stream crossings that fall under the Drainage Ordinance, potentially requiring a development permit. There was 5 other stream crossings noted that were not within mapped floodplain and may not require a development permit. Starting at the easterly County line, moving westward, the following stream crossings were noted within Wharton County:

1. San Bernard River
2. Lower Caney Creek
3. Quinine Slough
4. Water Hole Creek
5. Colorado River

HALFF ASSOCIATES, INC.
4030 WEST BRAKER LANE, SUITE 450
AUSTIN, TX 78759-5356
TEL (512) 252-8184
FAX (512) 252-8141
WWW.HALFF.COM

6. Jones Creek
7. Dry Creek
8. Blue Creek
9. Blue Creek Tributary
10. Tres Palacios Creek
11. Juanita Creek
12. Willow Creek
13. East Carancahua Creek
14. East Carancahua Tributary 1

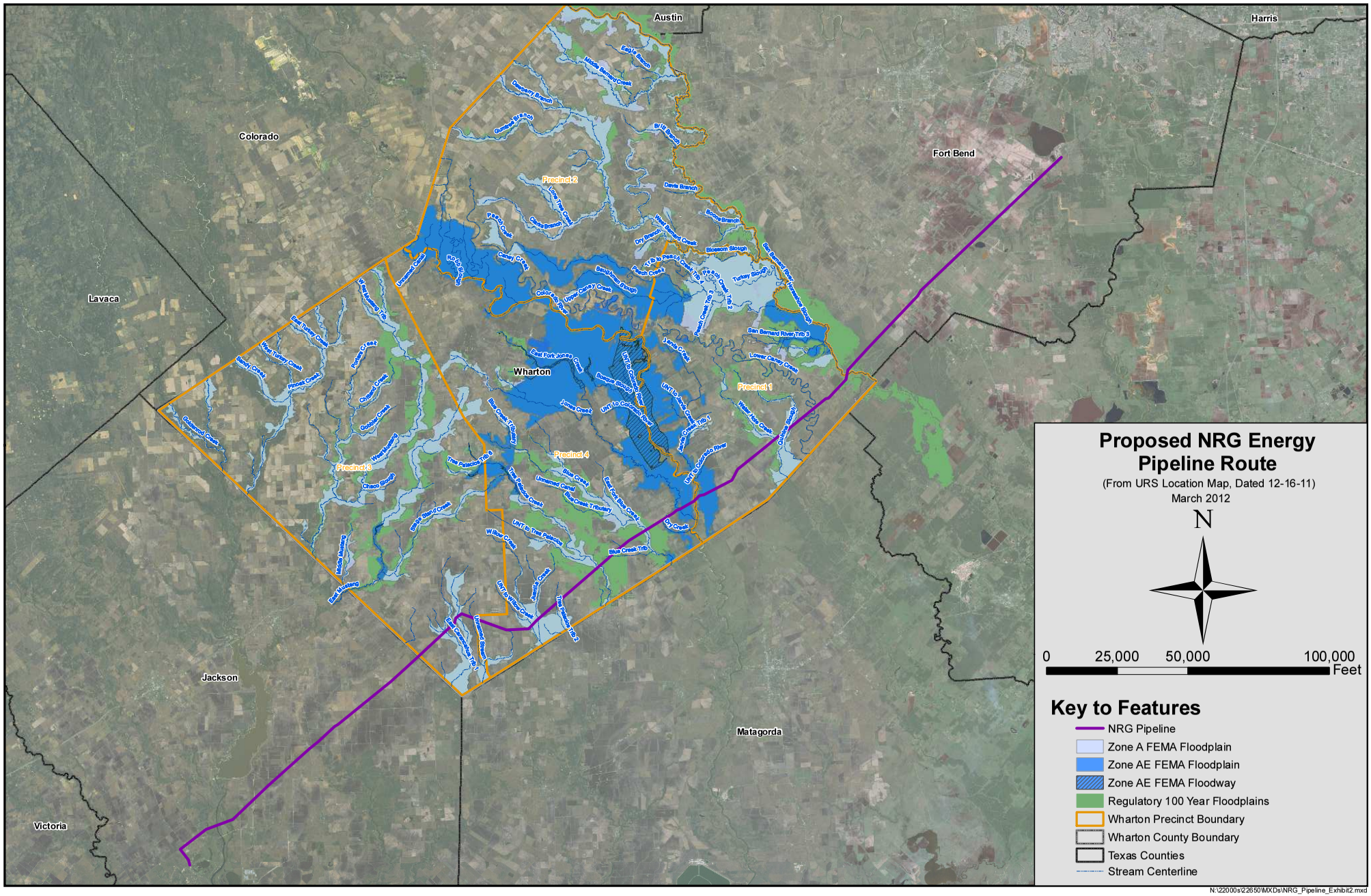
Please feel free to contact me at (512) 777-4583 if you have any questions.

Sincerely,

Halff Associates, Inc.

Mark W. McGraw, P.E.
Project Manager

attachments: NRG Pipeline Route and Floodplain Exhibit
NETL Consultation Request Letter


Austin
Harris
Colorado
Fort Bend
Lavaca
Wharton
Jackson
Matagorda
Victoria
Precinct 1
Precinct 2
Precinct 3
Precinct 4
Proposed NRG Energy Pipeline Route
(From URS Location Map, Dated 12-16-11)
March 2012
N
0
25,000
50,000
100,000
Feet
Key to Features
NRG Pipeline
Zone A FEMA Floodplain
Zone AE FEMA Floodplain
Zone AE FEMA Floodway
Regulatory 100 Year Floodplains
Wharton Precinct Boundary
Wharton County Boundary
Texas Counties
Stream Centerline
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

November 2, 2012

Mark Lusk
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road
M/S 107, P.O. Box 880
Morgantown, WV 26507-0880

Dear Mr. Lusk,

In accordance with our responsibilities under Section 309 of the Clean Air Act (CAA), the National Environmental Policy Act (NEPA), and the Council on Environmental Quality (CEQ) regulations for implementing NEPA, the U.S. Environmental Protection Agency (EPA) Region 6 office in Dallas, Texas, has completed its review of the Draft Environmental Impact Statement (DEIS) prepared by the U.S. Department of Energy for the W.A. Parish Post-Combustion CO_2 Capture and Sequestration Project.

EPA rates the DEIS as LO - "Lack of Objections". We are enclosing technical comments that provide recommendations for further clarification and additional discussion in the Final EIS (FEIS). The EPA's Rating System Criteria can be found here: http://www.epa.gov/oecaerth/nepa/comments/ratings.html. Responses to comments should be placed in a dedicated section of the FEIS and should include the specific location where the revision, if any, was made. If no revision was made, a clear explanation should be included.

EPA appreciates the opportunity to review the DEIS. Our classification will be published on the EPA website, www.epa.gov, according to our responsibility under Section 309 of the CAA to inform the public of our views on the proposed Federal action. Please send our office one copy of the FEIS and an internet link. On October 1, 2012, EPA began requiring mandatory EIS filing on the *e-NEPA Electronic Filing* system at http://www.epa.gov/compliance/nepa/submiteis/index.html. If you have any questions or concerns, please contact John MacFarlane of my staff at macfarlane.john@epa.gov or 214-665-7491 for assistance.

Sincerely,

Rhonda Smith
Chief, Office of Planning
and Coordination

Enclosure

DETAILED COMMENTS ON THE
U.S. DEPARTMENT OF ENERGY'S
DRAFT ENVIRONMENTAL IMPACT STATEMENT
FOR THE
W.A. PARISH POST-COMBUSTION CO_2 CAPTURE AND
SEQUESTRATION PROJECT
FORT BEND COUNTY, TEXAS

BACKGROUND: NRG Energy, Inc's (NRG) proposed W.A. Parish Post-Combustion CO_2 Capture and Sequestration (PCCS) Project would construct a carbon dioxide (CO_2) capture facility at its 4,880-acre W.A. Parish Plant (Plant) in rural Fort Bend County. The capture facility would use an advanced amine-based CO_2 absorption technology to capture at least 90 percent of the CO_2 from a 250-megawatt equivalent portion of the flue gas exhaust from Unit 8 at the Plant. The Department of Energy (DOE) will provide $167 million in cost-shared financial assistance to NRG under the Clean Coal Power Initiative Program to support construction and operation of NRG's PCCS Project.

COMMENTS: The following are offered for your agency's consideration in completing the Final EIS:

2.3.2.4.4.4 Air Emissions, page 2-22

This and other sections in the DEIS explains that NRG is required, as part of the Nonattainment New Source Review permitting process, to provide offsets to reduce the total net project increases of ozone precursors (NOx and Volatile Organic Compounds [VOC]) within the Houston Galveston Brazoria (HGB) Metropolitan Statistical Area. In a September 27, 2012 letter, NRG contacted EPA Region 6 to determine available options for offsetting the project's increased VOC emissions, and specifically requested to offset the project's proposed VOC emission increases in the HGB ozone nonattainment area with banked NOx discreet emission reduction credits (DERCs) generated in the HGB area.

In an October 12, 2012 letter to NRG, EPA Region 6 provided concurrence on the use of HGB NOx DERCs to offset VOC emission increases at a 1:1 trading ratio in this specific situation. This approach will also require approval from the Texas Commission on Environmental Quality.

3.7.3.1 Surface Water, Direct and Indirect Impacts, Pipeline Corridor, page 3.7-23

This section states "As the pipeline is currently designed, the three major rivers (i.e., the San Bernard River, the Colorado River, and the Lavaca River) and three other waterbodies (i.e., the man-made pond by FM 1994, Big Creek and Jones Creek) would be crossed by horizontal directional drilling (HDD)**.** NRG anticipates that open-cut methods would be used to cross the remaining smaller waterbodies and wetland areas."

Recommendation:

- EPA recommends that the applicant use HDD to cross under all perennial waterways, all waterways designated as Ecologically Significant Stream Segments, and any other waterway with unique characteristics.

- EPA recommends the applicant verify the extent of Traditional Navigable Waters in the study area.

3.8.3.1.2 Wetlands and Floodplains, Construction Impacts, Pipeline Corridor, Wetlands, page 3.8-14

Table 3.8-5 lists the estimated temporary and permanent impacts to jurisdictional wetlands from the proposed project. The estimated permanent impacts to wetlands are listed at 7.4 acres.

- The applicant should provide appropriate compensatory mitigation for permanent impacts to 7.4 acres of wetlands.

- The applicant should use approved wetland functional assessment models to determine the wetland types that would be impacted and the extent of functional loss and appropriate compensatory mitigation that would be required to fully restore the unavoidable adverse impacts to waters of the U.S., including special aquatic sites as identified in 40 CFR Part 230 Section 404(b)(1).

3.9.2.1 Terrestrial Vegetation and Habitats

This section states "The U.S. National Vegetation Classification System and land cover data (NatureServe 2012) were used to characterize the terrestrial vegetation communities and habitats within the region of influence (ROI)." While that information is worthwhile, additional evaluation is necessary to identify rare plant communities within the study area.

Recommendation:

- The applicant should utilize the Texas Parks and Wildlife Department's (TPWD) Rare Plant Communities to identify any State or Global rare plant communities.

- If the proposed project would impact any State or Global rare plant communities, EPA recommends contacting TPWD to discuss appropriate mitigation measures.

3.19 Environmental Justice

The method used to determine Environmental Justice applicability and impact appears to be flawed and/or misleading. For the purpose of Environmental Justice, Hispanic or Latino is to be considered in the determination of the minority populations within the region of influence (ROI) and the environmental impact.

Recommendation:

- EPA recommends that DOE properly address and/or reassess the environmental justice impact of the proposed project on the affected populations. We recommend utilizing the Council on Environmental Quality's (CEQ) "Environmental Justice Guidance under NEPA"[1] and Executive Order (EO) 12898 - Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations[2] to evaluate EJ impacts.

4.0 Mitigation Measures, page 4-1

Table 4-1, Summary of Mitigation Measures, contains a list of practices NRG proposes to implement during project construction to minimize/mitigate potential adverse impacts to air quality and greenhouse gas emissions. In addition to the measures included in Table 4-1, as well as all applicable local, state, or federal requirements, EPA recommends that the following mitigation measures be included in the Construction Emissions Mitigation Plan in order to reduce impacts associated with emissions of NOx, CO, PM, SO_2, and other pollutants from construction-related activities:

Fugitive Dust Source Controls:

- Stabilize open storage piles and disturbed areas by covering and/or applying water or chemical/organic dust palliative where appropriate at active and inactive sites during workdays, weekends, holidays, and windy conditions;
- Install wind fencing and phase grading operations where appropriate, and operate water trucks for stabilization of surfaces under windy conditions; and
- Prevent spillage when hauling material and operating non-earthmoving equipment and limit speeds to 15 miles per hour. Limit speed of earth-moving equipment to 10 mph.

Mobile and Stationary Source Controls:

- Plan construction scheduling to minimize vehicle trips;
- Limit idling of heavy equipment to less than 5 minutes and verify through unscheduled inspections;
- Maintain and tune engines per manufacturer's specifications to perform at EPA certification levels, prevent tampering, and conduct unscheduled inspections to ensure these measures are followed;
- If practicable, utilize new, clean equipment meeting the most stringent of applicable Federal or State Standards. In general, commit to the best available emissions control technology. Tier 4 engines should be used for project construction equipment to the maximum extent feasible;
- Lacking availability of non-road construction equipment that meets Tier 4 engine standards, the responsible agency should commit to using EPA-verified particulate traps,

[1] http://www.epa.gov/environmentaljustice/resources/policy/ej_guidance_nepa_ceq1297.pdf
[2] http://www.epa.gov/lawsregs/laws/eo12898.html

oxidation catalysts and other appropriate controls where suitable to reduce emissions of diesel particulate matter and other pollutants at the construction site; and
- Consider alternative fuels and energy sources such as natural gas and electricity (plug-in or battery).

Administrative controls:

- Prepare an inventory of all equipment prior to construction and identify the suitability of add-on emission controls for each piece of equipment before groundbreaking;
- Develop a construction traffic and parking management plan that maintains traffic flow and plan construction to minimize vehicle trips; and
- Identify sensitive receptors in the project area, such as children, elderly, and infirmed, and specify the means by which impacts to these populations will be minimized (e.g. locate construction equipment and staging zones away from sensitive receptors and building air intakes).

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