



United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
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IN REPLY REFER TO:

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File 9043.1

November 1, 2007

Chief, Rules Review and Directives Branch,
Mailstop: T6-D59,
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Draft Environmental Impact Statement (DEIS) for the Reclamation of Sequoyah Fuels Corporation Site, NUREG – 1888, Docket No. 40-8027, Gore, Sequoyah County, Oklahoma

Dear Sir:

The U.S. Department of the Interior has reviewed the subject DEIS. In this regard, the following comments are provided for your use in preparing the final document.

General Comments

The U.S. Nuclear Regulatory Commission (NRC) issued this DEIS for the Sequoyah Fuels Corporation (SFC) license amendment application, dated January 28, 2003, and subsequently revised by letters dated February 27, 2004, and July 30, 2004, for the surface reclamation of SFC's former uranium conversion site near Gore, Oklahoma. The DEIS discusses the purpose and need for SFC's proposed surface reclamation activities and groundwater corrective actions. The DEIS presents and compares the potential environmental impacts resulting from the proposed action and its alternatives and identifies mitigation measures that could eliminate or lessen the potential environmental impacts.

SFC proposes to focus on the 200-acre Industrial Area where the processing operations took place and to address the disposal of the raffinate sludge (a treated and consolidated solution containing radioactive and heavy metals) by storing the raffinate sludge on-site in a containment cell. Since the radioactive elements in the sludge - 226radium, 230thorium, and 238uranium - have considerably long half-lives (1,600 years, 75,000 years, and 4.4 billion years, respectively), there is no guarantee that the proposed containment cell will be sufficient in retaining the raffinate sludge over the long term.

The Site is located adjacent to the Illinois River and the Arkansas River (McClelland-Kerr Arkansas River Navigation System) and is immediately upstream of the Sequoyah National Wildlife Refuge, so any unforeseen circumstances that might result in a leak from the containment cell may cause immediate contamination of the rivers and the Refuge. ²²⁶Radium in particular is highly radioactive, and because its chemical properties resemble those of calcium, exposure to or ingestion of radium poses severe toxicological risks due to substitution of radium for calcium in bones of vertebrates (1,2). Thus, any releases of ²²⁶radium into the Illinois or Arkansas Rivers can result in considerable health problems in fish, piscivorous or wading birds, and other vertebrates downstream of the Site. The specifications of the containment cell, as set forth in the preferred alternative in the DEIS, appear to be formidable in safe-guarding against leakage, but long-term monitoring of the Site and the containment cell extends only for 13 years. This seems like a very short period of time, considering that SFC began operations at this Site more than 30 years ago. Unless there is a scientifically sound reason for limiting the monitoring to 13 years, the monitoring should be extended at least to a period equal to the term of the Site's operation.

However, considering that the preferred alternative would result in the placement of the radioactive raffinate sludge in a containment cell adjacent to some ecologically sensitive habitat for State and Federal trust resources, we strongly suggest that at the very least, Alternative 3 (Partial Off-Site Disposal of Contaminated Materials) be employed instead of Alternative 1. This would result in the removal of the raffinate sludge from the Site to a less ecologically sensitive disposal facility and minimize any concerns there may be about radioactive contamination of trust resources in the area of the Site.

In addition, the habitat surrounding the SFC Site is known to contain American burying beetles (*Nicrophorus americanus*), and it is possible that the grassy and wooded portions of the SFC Site will be used by the ABB. According to the DEIS, no site preparation or cell construction work will take place outside of the Industrial Area, but 2 acres of open-field habitat will be removed as part of the cell construction. The DEIS states that according to the FWS's 2005 Programmatic Biological Opinion (PBO) relating to oil and gas construction activities and their effects on ABB's in eastern Oklahoma, there will not likely be any adverse effects on ABB's by construction activities at the Site. The PBO was written specifically for the Environmental Protection Agency regarding oil and gas activities that required a storm water construction permit; the FWS concurred with EPA's determination that Adverse Impacts to the ABB Were Likely, hence formal consultation was necessary. Furthermore, the oil and gas companies agreed in all their project designs proactively to implement conservation and minimization actions for the ABB. Therefore, the PBO and any recommendations or determinations contained within are not applicable as part of the DEIS. In addition, the Energy Policy Act of 2005 voided the PBO; therefore, SFC should engage in a Section 7 consultation with the Tulsa, Oklahoma, FWS Ecological Services Field Office to ensure that any proposed work will not adversely affect the ABB. Enclosed are technical assistance documents that SFC should utilize during their evaluation of effects to the ABB. Additional guidance can be obtained at <http://www.fws.gov/southwest/es/oklahoma/beetle1.htm> before beginning any Site activities.

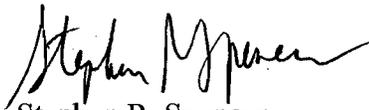
Specific Comments

Section 3.3.1.1, Surface Water Quality, page 3-8, lines 34-36, and Table 3.3-1 Surface Water Summary, pages 3-10 to 3-11 - Additional information is needed to enable the public to appropriately understand and evaluate the summary data presented in the table, including but not limited to the number of observations per parameter for each sampling reach or site, how the summary data were calculated when a range of values are not presented, and discharge values during sampling for critical paired data sets. Without such explanatory information, the hydrologic and environmental context of the data cannot be evaluated. For example, are decreases in the concentrations of uranium and 226radium due to dilution?

Figure 3.3-3, Location of Carlile School Fault Relative to the SFC site, page 3-15 - The figure would be improved by adding an explanation of what the various shading patterns represent, providing a map scale, and showing cultural features to orient the reader.

Thank you for the opportunity to review and comment on this DEIS. If you have any questions concerning our comments, please contact Todd Adornato at the FWS's Oklahoma Ecological Services Field Office at (918) 581-7458 or at todd_adornato@fws.gov and Lloyd Woosley, Chief of the USGS Environmental Affairs Program, at (703) 648-5028 or at lwoosley@usgs.gov.

Sincerely,



Stephen R. Spencer
Regional Environmental Officer

Enclosures

1. CRC Handbook of Chemistry and Physics, 75th Ed. 1994. CRC Press, Inc.
2. Hazardous Substances Data Bank. 2007. National Library of Medicine:
<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB>

AMERICAN BURYING BEETLE BIOLOGICAL ASSESSMENT/EVALUATION GUIDELINES

This guidance is provide to aid in the evaluation of the American burying beetle (ABB) , ensuring your compliance with the Endangered Species Act (ESA), and facilitating ABB evaluation, we, the U.S. Fish and Wildlife Service (Service), offer the following technical assistance. In the sections that follow, we provide the steps that will enable you to thoroughly perform evaluations for the ABB and refer you to sources from which you may obtain relevant information.

Step 1 - Determining presence of ABBs in project area county

Check the county the project is in to determine if located in a historic county; or a county containing or likely containing ABBs.

Table 1. American burying beetle current and historic distribution in Oklahoma by County.

Historic	Likely to be Present	Confirmed/Documented		Unconfirmed (Historic)
Creek	Pawnee	Atoka	McCurtain	Adair
Mayes	Pontotoc	Bryan	McIntosh	Delaware
Nowata	Seminole	Cherokee	Muskogee	
Okmulgee	Marshall	Choctaw	Okfuskee	
Ottawa		Coal	Osage	
Washington		Craig	Pittsburg	
		Haskell	Pushmataha	
		Hughes	Rogers	
		Johnston	Sequoyah	
		Latimer	Tulsa	
		Leflore	Wagoner	

- 1.a. Project sites in counties *not* listed above do not require further precautions with regard to the ABB.
- 1.b. Project sites in counties where the ABB *is* listed above, proceed to Step 2.

Step 2 - Determining habitat suitability in project areas in counties with ABBs

- 2.a. Sites *exhibiting* the below-described environmental characteristics are regarded as *unsuitable* habitat for ABBs and therefore unlikely to have ABBs. Consequently, projects implemented in these areas are unlikely to adversely impact ABBs and projects can proceed without further precautions with regard to the ABB. Projects *not* exhibiting the above-described characteristics, proceed to Step 2b. *However, other federally-listed species may need to be addressed.*

- A Soil that is greater than 70% sand.
- B Soil that is greater than 70% clay.
- C Land where greater than 80% of the soil surface is comprised of rock.
- D Land where greater than 80% of the subsurface soil structure within the top 4 inches is

- comprised of rock.
- E Land that has already been developed and no longer exhibits surficial topsoil or leaf litter.
- F Agricultural land that is tilled on at least an annual basis.
- G Land in an existing right-of-way/bar ditch along a roadway.
- H Urban areas.
- I Stockpiled soil.
- J Land that meets the U.S. Army Corps of Engineers definition of wetland. (However, projects developed in this type of habitat will need to be reviewed by the Corps to ensure compliance with section 404 of the Clean Water Act.)

2.b. Projects *with* the below-described characteristics are regarded as having *insignificant or discountable impacts* on ABBs. Projects can proceed without further precautions with regard to the ABB. Projects *not* exhibiting the above-described characteristics, proceed to Step 3. *However, other federally-listed species may need to be addressed.*

- A Less than 1.2 acre in size.

2.c. Projects *not* exhibiting any of the above-described characteristics, proceed to Step 3.

Step 3 - Determining presence of ABB in immediate project areas in counties with ABBs but in areas not exhibiting the above characteristics.

3.a. Consult the Service's database of ABB surveys at <http://ifw2es.fws.gov/Oklahoma/beetle1.htm> for recorded positive and negative ABB surveys conducted. Please note that this list is continually updated and should be referred to frequently.

A.1. If a nearby (within a five-mile radius) occurrence or survey is found which was conducted recently (within a year of planned soil disturbance commencement), the survey results *can be applied* to the project site, proceed to Step 4. Positive surveys take precedent over negative surveys in areas with both applicable positive and negative survey results.

A.2. If an existing survey is *not* within 5 miles of the project or the survey was *not* conducted within a year of soil disturbance commencement the survey results *cannot be applied*, proceed to Step 6.

Step 4- Project sites *with* existing applicable positive or negative ABB survey results.

4.a. If applicable survey results are negative for ABB occurrences, the project can proceed without further precautions with regard to the ABB.

4.b. If applicable survey results are positive for ABB occurrences, proceed to Step 5. Positive surveys take precedent over negative surveys in areas with both applicable positive and negative survey results.

Step 5- Project sites *with* positive ABB survey results.

- 5.a. Where possible implement construction activities to occur between May 20 to September 20, when nighttime temperatures average above 60°F. Projects can proceed once Baiting Away or Trapping and Relocating has been implemented. Refer to Trap and Relocating and Baiting Away Protocols for details.
- 5.b. If the project cannot be implemented during the ABBs active period but advanced planning is feasible then ABBs can be baited away or trapped and relocated just prior to the onset of their inactive period. Refer to Trap and Relocating and Baiting Away Protocols for details.
- 5.c. For projects which cannot be implemented during summer months, or be properly planned, formal consultation will be required.

Step 6 - Project sites *without* existing applicable ABB survey results.

- 6.a. Conduct ABB surveys during the ABBs active season (May 20 to September 20). Survey results are valid for one year. Meaning project soil disturbance must commence (not be completed) within one year of completed surveys.
 - A.1. If applicable survey results are negative for ABB occurrences, the project can proceed without further precautions.
 - A.2. If applicable survey results are positive for ABB occurrences, refer back to Step 5.



United States Department of the Interior

FISH AND WILDLIFE SERVICE

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Conservation Approach for the American Burying Beetle (ABB) In Counties¹ Lacking or with Limited Recent Survey Data²

Updated June 2005

The ABB is nocturnal (*i.e.*, active only at night), has a life span of about one year, and is considered a feeding habitat generalist. American burying beetles enter an inactive period spent underground when nighttime low temperatures are consistently (*i.e.*, at least 5 consecutive days) 60°F or below. In Oklahoma, this typically occurs from September 20 through May 20. Once nighttime low temperatures are consistently above 60°F, ABBs emerge and become active. The active period in Oklahoma typically occurs from May 20 through September 20.

The ABB has been captured via baited pitfall traps in a variety of habitats including grasslands, grazed pasture, bottomland forest, riparian zones, and oak-hickory forest (Creighton *et al.* 1993; Lomolino and Creighton 1996; Lomolino *et al.* 1995; NatureServe Explorer 2003; and U.S. Fish and Wildlife Service 1991). The ABB once occurred throughout the eastern United States. Today the ABB's range is restricted to less than approximately 10 percent of its former range. The historic and current ranges of the ABB, and other related ABB life history information can be obtained from our ABB web site: <<http://www.fws.gov/southwest/es/oklahoma/beetle1.htm>>.

Although ABBs are known to occupy numerous habitat types, they exhibit close associations with carrion and soil. Soil conditions where the species occurs must be conducive to excavation by ABBs (Anderson 1982, Lomolino and Creighton 1996). Soil related activities include burial of carcasses for egg deposition, development of young in the soil from egg through pupal stages, parental care of developing young underground, and retreat of adults underground to overwinter. Soils in the vicinity of ABB captures range from sandy and silt loams in the western part of their range to glacial marine deposits in the eastern part of their range (U.S. Fish and Wildlife Service 1991). The adults also typically reside in the duff during daylight hours of their active season (May 20 to September 20).

Carrion availability in a given area also is suspected to be a major factor influencing habitat selection by ABBs (U.S. Fish and Wildlife Service 1991). The ABB utilizes carrion during feeding and reproduction and is adapted to efficiently locate carrion (Bedick *et al.* 1999). American burying beetles have been recorded detecting carrion from a distance of 2 miles and moving an average distance of approximately 0.5 miles per night (Creighton and Schnell 1998).

Because the ABB may be present in your project area, the Oklahoma Ecological Services Field Office recommends that surveys be conducted to more precisely determine presence or absence of the ABB within your immediate project area. The ABB survey protocol we recommend, "ABB Survey Protocol May 2005," can be downloaded from our ABB website. A valid section 10 permit from the U.S. Fish and Wildlife Service (Service) is required for anyone conducting

such surveys. A list of current permit holders and related information also can be obtained from our ABB website. All surveys must be conducted during the ABB's active period and take place no earlier than one year prior to initiating ground disturbing activities; otherwise, another survey may be necessary. All survey results, positive or negative, must be submitted in writing to this office for review prior to initiating any ground disturbing activities.

If survey results are negative (*i.e.*, no ABBs were captured at your project site), and you have received concurrence from the Service, the project can proceed immediately. Conversely, if survey results are positive, or ABBs are definitely known to occur in proximity to the project area, ABBs potentially could be impacted by your proposed project. One of the following Conservation Approaches must then be implemented to avoid adverse impacts and unauthorized take of the ABB. Because ABBs enter an inactive period underground when nighttime low temperatures are consistently below 60°F, the timing of project ground disturbance is crucial in relation to the selection of the appropriate Conservation Approach and influences how effectively the available Conservation Approaches achieve conservation goals and comply with the Endangered Species Act of 1973, as amended (ESA).

Section 7(a)(2) of the ESA requires federal agencies to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any federally-listed threatened or endangered species, or result in adverse modification or destruction of designated critical habitat. Critical habitat has not been designated for the ABB. When the federal action agency determines that its action "may affect" a federally-listed threatened or endangered species or designated critical habitat, the agency is required to enter into formal consultation with the Service. A request from the federal action agency initiating formal consultation must be made in writing to this office. The federal agency, or their designated non-federal representative, will need to prepare a biological assessment for submission to the Service for review. At a minimum the biological assessment should include: a detailed project description; project schedule (including date for initiating ground disturbance); implementation methods; disturbance type, amount, and duration; and current habitat and land use of the project site. More detailed information on the section 7 consultation process is available in the Service's *Endangered Species Consultation Handbook*. This publication may be accessed at: <<http://www.fws.gov/endangered/consultations/s7hndbk/s7hndbk.htm>>.

Conservation Approach 1

Unauthorized take and most adverse impacts to the ABB can be avoided by removing the ABB from the project area by using one of the protocols below. Implementing either of these protocols ensures that further section 7 consultation will not be required unless your project plans change, or if additional information on the distribution of listed or proposed species becomes available.

Bait Away Protocol – Involves distributing the appropriate bait outside of the proposed disturbance area to lure ABBs a sufficient distance away from the areas to be disturbed.

Trap and Relocation Protocol – Involves trapping ABB within the area to be disturbed and then relocating any captured ABBs to a suitable relocation site.

The Service's current "Bait Away" and "Trap and Relocation Protocols" can be downloaded

from our ABB website. Both of these measures must be implemented during the ABB's active period and in accordance with the Service's recommended protocols. If the time frame for project ground disturbance is not planned to occur during the ABB's active period, ground disturbance may have to be postponed until onset of the next active period. Where construction during the ABB's active period is not possible, but the project can be planned during that time frame, ground disturbance can proceed during the inactive period provided baiting away or trapping and relocating is successfully conducted just prior to the onset of the inactive period corresponding with project ground disturbance.

Like surveys, trapping and relocating ABBs must be conducted under the authority of an appropriate section 10 permit from the Service. Any relocation site must be coordinated with this office. A "Relocation Data Form" or a "Bait Away Form" must be submitted to this office within 30 days following cessation of relocation or bait away efforts, respectively. Section 7 consultation is not considered complete until the proper form is submitted. These forms can be downloaded from our above mentioned ABB website. Although a section 10 permit from the Service is not currently required to conduct baiting away activities, a permit for such activities could be required in the future.

Conservation Approach 2

If ground disturbance cannot be postponed until the ABB's active period, or baiting away or trapping and relocating at the site just prior to the onset of the ABB's inactive period is not possible, then formal consultation in accordance with section 7 should be initiated with this office.

Due to the large number of projects we review, incomplete requests can significantly delay our evaluation of your project. A list of information generally required by the Service to fully evaluate such requests may be obtained from our website at < <http://www.fws.gov/southwest/es/oklahoma/sect7.htm> >. In addition, for projects within the historic range of the ABB, a completed "ABB Project Evaluation Form" should be submitted to this office for review. This form will allow staff to more accurately determine the potential impacts of the proposed project. This evaluation form also is available on our ABB web site.

References

- Anderson, R. S. 1982. On the declining abundance of *Nicrophorus americanus* Olivier (Coleoptera: Silphidae) in eastern North America. *Coleop. Bulletin* 36: 362-365.
- Bedick, J.C., B.C. Ratcliffe, W.W. Hoback, and L.G. Higley. 1999. Distribution, ecology and population dynamics of the ABB in south-central Nebraska. *Journal of Insect Conservation* 3:171-181.
- Creighton, J.C. and G.D. Schnell. 1998. Short-term movement patterns of the American burying beetle (*Nicrophorus americanus*). *Biological Conservation* 86:281-287.
- Creighton, J.C., M.V. Lomolino, and G.D. Schnell. 1993. Survey methods for the American burying beetle (*Nicrophorus americanus*) In Oklahoma and Arkansas. Oklahoma

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Lomolino, M., and C. Creighton. 1996. Habitat selection, breeding success and conservation of the endangered American burying beetle (*Nicrophorus americanus*). *Biological Conservation* 77:235-241.

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NatureServe Explorer: An online encyclopedia of life [web application]. 2003. Version 1.6 .
Arlington, Virginia, USA: NatureServe. Available: <http://www.natureserve.org/explorer>.

U.S. Fish and Wildlife Service. 1991. American Burying Beetle (*Nicrophorus americanus*)
Recovery Plan. Newton Corner, Massachusetts. 80 pp.

¹Adair, Atoka, Bryan, Cherokee, Choctaw, Coal, Craig, Creek, Delaware, Hughes, Johnston, Marshal, Mayes, McIntosh, Muskogee, Nowata, Okfuskee, Okmulgee, Osage, Ottawa, Pawnee, Pontotoc, Pushmataha, Rogers, Seminole, Sequoyah, Tulsa, Wagoner, and Washington counties

²Recent is defined as no older than five years from current date.