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Dated at Rockville, Maryland, this 21st day of October 2003.

For the Nuclear Regulatory Commission.

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NUCLEAR REGULATORY COMMISSION

[Docket No. 030-30249]

Environmental Assessment and Finding of No Significant Impact Related to Materials License No. 42-26928-01, Core Laboratories, Inc. (dba Protechnics) of Houston, TX, License Amendment Request for Approval of an Alternate Disposal Method

I. Introduction

The U.S. Nuclear Regulatory Commission (NRC) is issuing a license amendment for a proposal made by Core Laboratories, Inc. (dba ProTechnics) of Houston, Texas. Core Laboratories requested an amendment to Materials License No. 42-26928-01 to allow an additional disposal alternative pursuant to 10 CFR 20.2002 to inject well returns containing radioactive tracer material into Class II disposal wells that have been approved to accept non-hazardous oil and gas waste by State agencies. An Environmental Assessment (EA) was performed by the NRC staff in support of its review of the license amendment request, in accordance with the requirements of 10 CFR part 51. The conclusion of the EA is a Finding of No Significant Impact (FONSI).

II. Environmental Assessment

Related to the Core Laboratories, Inc. Request for an Alternate Disposal Method to Inject Well-Logging Waste into Class II Disposal Wells.

Summary: The NRC considered a license amendment request for approval for an alternate disposal method for well-logging waste produced under NRC Byproduct Materials License No. 42-26928-01. Core Laboratories, Inc. (dba

ProTechnics) requested NRC approval to allow fracturing sand well returns containing residual material to be injected into Class II disposal wells. These Class II wells would have been approved under permits to accept non-hazardous oil and gas waste by State agencies. Approval of this license amendment request is based upon the NRC's review and evaluation of the merits of the licensee's proposal, current alternatives, and waste disposal regulations in 10 CFR part 20. The NRC staff has evaluated the licensee's proposal and has developed an EA in accordance with the requirements of 10 CFR part 51.

1.0 Introduction

Core Laboratories, Inc., is based in Houston, Texas, and conducts well-logging operations with radioactive materials in oil and natural gas fields worldwide. Core Laboratories is licensed to conduct tracer operations where the NRC has jurisdiction and in Agreement States including Louisiana, Texas, Colorado, Utah, California, Oklahoma, and New Mexico. Core Laboratories performs over 3,000 well-logging fracturing jobs a year in the United States using various radioactive tracer materials with half-lives of less than 120 days. In general, Core Laboratories injects three radioactive materials during its tracer operations: Iridium-192, scandium-46, and antimony-124. The longest half-life of these materials is 84 days. Core Laboratories procedures require that 1,000 pounds of sand be mixed with every 0.4 millicuries of tracer material prior to injection into a well.

Core Laboratories is authorized to use only well-logging beads patented as a Zero-Wash product. Zero-Wash is a well-logging bead that is insoluble (*i.e.*, the radioactivity will not migrate or leach into groundwater). These waste materials are not classified as hazardous or mixed waste by the U.S.

Environmental Protection Agency (EPA) regulations. The purpose of the tracer material is to enhance the performance of the oil well fracturing procedures. Using the information provided by the tracer material, the well operator can maximize the production from the well. Approximately 10 percent of the fracturing jobs result in the backflow of injected tracer material to the surface. This phenomena is called sandout or well-logging returns. The amount of the well-logging returns can range from a few gallons (20 pounds) to a tanker truck load (50,000 pounds). The concentration of radioactive material in the well-logging returns is low because the tracer material is mixed into

fracturing sand prior to being injected into the well.

Currently, Core Laboratories is allowed to hold radioactive material with a half-life of less than 120 days for decay-in-storage before unrestricted disposal. Under this authorization, the well-logging returns are transported by truck to a storage facility that is distant (sometimes 30 miles or more) from the original tracer injection point. Additionally, the sandout waste may be shipped to an approved waste site for burial. On December 18, 1995, the NRC approved Core Laboratories' generic 10 CFR 20.2002 onsite disposal request for burying radioactive wastes from well-logging sandouts, flowbacks, or any other form into shallow earthen pits at the well site pursuant to 10 CFR 20.2002.

On August 23, 2000, Core Laboratories requested a license amendment to allow fracturing sand well returns to be injected in Class II disposal wells. All the sandout well-logging returns containing tracer radioactive materials would be recovered and contained in Class II disposal wells that met the State's and EPA's regulations. Core Laboratories proposes to dispose of material into Class II wells with radioactivity concentrations that are less than 30 percent of the levels in 10 CFR part 20, appendix B, table 2, column 2. These radioactive concentrations are not radioactive waste as defined in the EPA regulation 40 CFR 144.3. Class II disposal wells are described in part in EPA regulations under 40 CFR 144.6 as "Wells which inject fluids which are brought to the surface in connection with natural gas storage operations, or conventional oil or natural gas production." Some of the EPA requirements imposed on Class II disposal well operators are found in 40 CFR 144.28 and address compliance with the Safe Drinking Water Act, 24-hour reporting of noncompliance, well plugging and abandonment planning, financial assurance, well casing and cementing, operating and monitoring requirements, records retention, and change of ownership and operational control.

2.0 Proposed Action

The proposed action is to issue a license amendment to Byproduct Materials License No. 42-26928-01 for approval of an alternate disposal method for well-logging waste produced as a result of fracturing sand well-logging operations. The licensee seeks approval to allow fracturing sand well returns to be injected into Class II disposal wells that have been approved