

CENTURY GEOPHYSICAL CORPORATION OF COLORADO

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March 9, 1976

Environmental Improvement Agency Radiation Protection Section P. O. Box 2348 Santa Fe, New Mexico 87501



Attn: Mr. Alfonso A. Topp, Jr.

Dear Sir:

This is to notify your section of the loss of radioactive material on February 17, 1976.

(1) Type and Amount of Radioactive Material: One Americium-Berylium 241, 1 curie source, serial number N-202, The source is a sealed source(NEEI Model 71-1, AM-BE) as noted in Century's License Number: NM-Cen-WL-00, expiration date January 31, 1980. The source is hermetically sealed in a brass container with an 3.25 inches long by 1.125 inches. This brass container is attached to the stainless steel nose. The probe nose is then attached to the stainless steel housing.

(2) Location:

660' From East Line 660' From North Line Section: 22 Township: T4S Range: R6E Area: Bingham County: Socorro State: New Mexico

(3) <u>Depth Determination</u>: A second neutron probe was used to determine at what depth the radioactive material was located. The probes center of the neutron helium detector was zeroed at the top of the drill pipe. This zero on the log then is the top of the drill pipe and not ground level. However, the distance from ground level to the top of the drill pipe is 31 inches (2.6 feet). Thus, the depth at which the radioactive material is located will be that distance minus the 31 inches (2.6 feet). The depth on the log where the radioactive material was detected with the neutron detector is 470.5 feet, actually making the depth of the radioactive material from ground level 468 feet.

(4) <u>Circumstance of Loss</u>; While logging a 750 foot deep 16 inch borehole, the logging probe with radioactive source inadvertantly became lodged in the side of the borehole and the cable attached to the probe had been cut by a fishing technique.

(5) <u>Recovery Attempts</u>: Our Mr. Don Thomasson went to the location along with Messers Richard Norman, Geologist; Jack Cash, Driller and Percy Hancock, Tool Pusher who met Mr. Thomasson at the drill site. The first method of recovery was a tool that slipped over the cable and it is this tool that cut the cable. A second approach to locate the lost tool was a 16 inch loop on 500 feet of sucker rods, with no success of recovery. Third, was the fabrication of a 16 inch overshot which was unsuccessful. Fourth, was making trips into the bore hole with the 16 inch bailer with a bit on top to pick up anything in the borehole, this too was unsuccessful. This activity started February 17, 1976 and lasted to February 19, 1976.

(6)<u>Method Of Immobilization and Sealing</u>: On February 21, 1976, after receiving a neutron probe from Century's Casper, Wyoming Office, Mr. Larry Rinaldo of Century went to the location. Upon arriving Mr. Rinaldo made several logs to determine the exact depth of the radioactive source. With this determined, Reeves Brothers Drilling Company then placed 750 feet of 12 3/4 inch 43 pound casing in the borehole. Upon completion of this activity the borehole was logged a third time to insure that the placing of the 12 3/4 inch casing had in no way dislodged the radioactive material, which in fact had not moved. The radioactive material remained detectable at the other logs previous depth. Via phone conversation with Mr. Cash, Driller with Reeves Brother Petroleum A Limited of 2701-2nd, NW, Albuquerque, New Mexico 87107 on February 23, 1976. He informed Mr. Rinaldo that they were having Haliburton pump a high viscosity mud between the casing and the wall of the borehole to insure keeping the radioactive material in place. They plan on drilling deeper as this is a wildcat oil/gas exploration well.

(7) <u>Placarding</u>: A steel post with a welded steel plate will be set in cement at the top of the borehole with permanent lettering, indicating all vital information; date of incident, type and amount of material lost, depth, name and location of our company and Reeves Company.

(8) <u>Public Notification</u>: A summary of this report will be submitted to the County Clerk of Socorro County, New Mexico for public notice.

This borehole is a wildcat oil/gas exploration well, with drilling operations continuing. Thus, upon completion of drilling activities we will submit a follow-up report of actions taken since those previously mentioned.

Respectfully

Larry Rinaldo, Field Supervisor & Radiation Supervisor

LR/amm

Enclosures

cc Jim Turner - Century Tulsa, Oklahoma Richard Norman - Geologist, Jenks, Oklahoma Jack Cash - Reeves Bros. Petroleum A Limited W. A. Hendricks - Reg. Manager, Grants, New Mexico File