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Date: September 14, 2001
 Refer to: ER2001-0764

HSWA LAWL G/M/HWP, R-13
 TA-5

Mr. John Young, Corrective Action Project Leader
 Permits Management Program
 NMED – Hazardous Waste Bureau
 2905 Rodeo Park Drive East
 Building 1
 Santa Fe, NM 87505-6303

SUBJECT: DOCUMENTATION OF THE R-13 HYDRAULIC FLUID SPILL

Dear Mr. Young:

On September 10, 2001, during the drilling of Regional Well R-13 located at lower Mortandad Canyon, 165 gallons of hydraulic fluid was released into the mud tank as a result of a rupture in the hydraulic hose leading into the mud mixer. Before the leak was discovered, the hydraulic fluid was injected via reverse circulation to the bottom of the 832-foot borehole, contaminating the bottom 25 feet of the borehole and the cutting pit before the rupture was discovered. The amount of hydraulic fluid pumped into the borehole is estimated to be approximately 2 to 5 gallons. The hose was then repaired, the hydraulic oil reservoir was refilled and the borehole was flushed out with clean water for several hours. Once the discharge fluid appeared to be free of oil, the drill stem was tripped out and decontaminated.

After decontamination of drill stem was complete, the drill crew tripped back into the borehole and started flushing the bottom 32 feet of the uncased section of the borehole with hot water and a mild detergent (ALCONOX). The borehole was then subsequently flushed with 2000 gallons of hot water to assure that decontamination of the borehole was achieved. Once flushing was completed, a sample of the discharge was taken and sent to the Los Alamos National Laboratory (LANL) Earth and Environmental Science (EES) lab for analysis. Results of the analysis show that TOC levels are at 8 ppm, which indicates that the well flushing process was successful in removing the vast majority of residual hydraulic fluids. This 8 ppm represents potential detections of carbon associated with EZ-Mud and residual hydrocarbons. If hydraulic fluids were remaining in the boring to a significant degree, TOC levels would be expected to be in the 100s to 1000s of ppm.

A meeting was held in the AIP offices to discuss the status of this borehole on September 11, 2001. In attendance were John Young and Michael Dale from NMED, Bob Enz from DOE, John Eddy from Dynatec, Dan Thompson and Al Funk from WGII,



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and John McCann and Charlie Nylander from LANL. During this meeting, the following strategy was proposed:

Actions will be taken in two phases to prevent impacts from any potential residual contamination remaining in the affected interval of the borehole. In the first phase before drilling continues, casing will be advanced from 760 feet to 850 feet to seal off the potentially impacted zone. The second phase will be carried out during well construction, after the installation of 5-inch stainless steel well casing. During this phase, a bentonite seal of a thickness of no less than 20 feet located 10 feet above the single well screen, followed by a cement seal of up to a 100 feet in thickness that will be used to seal off the zone in question. Throughout this process all contaminated materials will be segregated. In order to prevent future hydraulic fluid contamination in this and other boreholes, the mud mixer will be redesigned so that no hydraulic hoses are located in the mud tank.

Based on the discussions at this meeting, it was agreed by LANL, DOE and NMED to proceed with this strategy and the continuation of the R-13 well installation. Should the presence of hydraulic fluid be detected in the saturated zone of this borehole, drilling will be suspended, and the same decision team reconvened to determine the appropriate path forward.

Thank you for your attention to this matter. If there are any questions please contact me at (505) 665-1091.

Sincerely,



John McCann, Acting Focus Area Leader
Ground Water Investigation Focus Area
Environmental Restoration

JM/eim

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