ARS Aleut Remediation

December 26, 2018

Mr. Chris McLellan
Hard Rock Construction, L.L.C.
1255 Peters Rd
Harvey, La 70058

Subject: Status and Interim Proposal

Chris,

AAR is working to pull together a proposal to meet the City of New Orleans requests for final remediation of the Lowerline Radium Source. After careful review of the work performed on December 20, 2018 and the results of radiological survey after the temporary asphalt patch was placed on December 21, 2018, AAR has revised its proposed path forward.

We believe that the previous identification of the "source" did not adequately look at potential contamination beyond the area of the source. AAR then based our work scope on it being a localized source with little spread. Based on our post-work survey, a significant area is potentially impacted. Our proposal is to perform a walkover survey to better delineate the extent of contamination and then propose a path forward.

Proposal for this work is $18,208 for equipment rental, travel, civil location survey, walkover survey, data processing, quality control review and report.

Status

We have completed the removal presented in the work plan approved by LDEQ. No distinct radium-226 source was observed. Instead, a rather highly radioactive soil contamination was discovered throughout the bottom of the excavation approximately 2.5 feet below ground surface. A "hotspot" of highly radioactive soil exhibiting from 7,000 to 10,000 milliRoentgens (mR/hr) was discovered, removed, and containerized. Additionally, five (5) drums of contaminated soil, debris, and PPE was removed and containerized. Despite removal of the soil and the "hotspot", additional contamination was detected in the bottom of the excavation, indicating that the contamination had migrated further into the adjacent soils. Radiation levels in the excavation following excavation continued to exceed cleanup criteria established by LDEQ by 100 times or more.

After discussions with the State of Louisiana Department of Environmental Quality (LDEQ) and the City of New Orleans, the excavation was placed into a safe configuration by the addition of gravel and an asphalt cold-patch. A dose rate survey of the patch and immediate area was performed to document the radiological conditions of the area following placement of the patch. Waste containers were shipped to the ARS Analytical laboratory in Port Allen, LA for characterization and interim storage pending disposal as low level radioactive waste.

2609 North River Road ♦ Port Allen, Louisiana 70767 ♦ 1 (800) 401-4277 ♦ Fax (225) 381-2996

The survey showed elevated readings over a large area around that extends well beyond the boundaries of the original excavation. When compared to ambient background radiation levels (7-10 microRoentgens per hour (uR/hr)), several readings in excess of background and approaching 100 times background were discovered. Radiation levels over the excavation were 2-5 times background, which indicate a significant reduction from the pre-excavation radiation level, which was approximately 150 times background. These readings indicate that the radioactivity is not localized as was previously suspected but consists of several areas of radioactivity adjacent to the original location. While the risk to the public has been reduced significantly due to the recovery of the "hotspot", the presence of elevated radiation levels at the ground surface indicate that a significant amount of radioactive contamination remains beneath the street at this location and need to be remediated.

Interim Proposal

We understand that the City of New Orleans and the LDEQ want the radioactivity removed as quickly as possible and AAR intends to be responsive to these needs. AAR believes that from a cost and schedule perspective, additional information is necessary to (1) accurately assess the magnitude and extent of the radiological contamination and (2) plan this work more efficiently. We propose the following near-term path forward:

Initial analytical data from the original excavation will be received by December 31. This information is critical to determining the type of packaging necessary for future remedial action at the site. Use of the correct package type is necessary to ensure compliance with Department of Transportation (DOT) shipping requirements. If it is determined that "Type A" rated packaging is required due to the amount of radioactivity in the soil, a 6-8 week lead time is anticipated while the containers are fabricated and tested. If the waste analysis indicates that more common "IP-1" containers maybe used, a lead-time of 2-3 weeks is anticipated.

Perform a GPS based radiation survey of the roadway surface the week of January 2. This is a common method used in the nuclear industry to define areas of contamination and display them using GIS mapping software. The performance of this survey requires that a technician walk slowly over the roadway with a detector and high-accuracy GPS unit that records the radiation level at a specific position. The result is a mosaic that allows one to accurately estimate the extent and magnitude of contamination. The result is an accurate estimate of the extent and magnitude of radiological contamination and the volume of soil to be removed. The data will also improve our understanding of the waste stream for selecting a final disposal package. We would mobilize on January 2; the survey will take two days and the post-processing with take another 2-4 days, so we would have the results back about January 10. The Firm Fixed Price Proposal for this work is $18,208 for equipment rental, travel, civil location survey, walkover survey, data processing, quality control review and report.

Once we have the laboratory data back and the walkover survey completed, we can present the city with a cost estimate and schedule for moving forward.

2609 North River Road ♦ Port Allen, Louisiana 70767 ♦ 1 (800) 401-4277 ♦ Fax (225) 381-2996

I look forward to working with you on this. We will need a response by COB Thursday, December 27, 2018 in order to have equipment ordered and delivered for Wednesday, January 3, 2019.

Sincerely,

G Greg Lord

G. Greg Lord
Senior Project Manager
ARS Aleut Remediation, LLC

CC: Beth Edens
Kristine Puckett
Kelly Ausbrooks

2609 North River Road ♦ Port Allen, Louisiana 70767 ♦ 1 (800) 401-4277 ♦ Fax (225) 381-2996