

**TECHNICAL EVALUATION REPORT FOR UMETCO MINERALS CORPORATION'S
PROPOSED 2017 FINANCIAL ASSURANCE SURETY UPDATE FOR THEIR GAS HILLS
URANIUM MILL TAILINGS SITE, FREMONT AND NATRONA COUNTIES, WYOMING**

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FACILITY: Umetco Minerals Corporation – Gas Hills Uranium Mill Tailings
Site, Fremont and Natrona Counties, Wyoming

TECHNICAL REVIEWERS: Dominick Orlando, Mirna Flores

PROJECT MANAGER: Dominick Orlando

SUMMARY AND CONCLUSIONS

By letter dated June 6, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession Number ML17159A532), Umetco Minerals Corporation (Umetco) submitted its 2017 annual financial assurance surety update for its Gas Hills uranium tailings site in Fremont and Natrona Counties, Wyoming.

The Nuclear Regulatory Commission (NRC) staff has reviewed the 2017 surety update, in the amount of \$1,459,701.06, for Umetco's Gas Hills, Wyoming site. The NRC staff has determined that the 2017 annual surety update meets the NRC's regulatory requirements in Title 10 of the Code of Federal Regulations (10 CFR), Part 40, Appendix A, Criterion 9. Therefore, the NRC staff finds that the annual surety update is acceptable, pending Umetco's submittal of a revised Standby Trust Agreement and Surety Bond to increase the amount of the previously approved 2016 surety from \$1,428,283.25 to \$1,459,701.06.

BACKGROUND

The Umetco Gas Hills site is located in a remote area of Wyoming, in Fremont and Natrona counties, approximately 60 miles east of Riverton, Wyoming. The restricted area of the site consists of approximately 542 acres, of which Umetco owns 280 acres. The remainder of the site is under the jurisdiction of the U.S. Bureau of Land Management. The mill was constructed in 1959 and was shut down in 1984. Mill building decommissioning was completed in 1993.

Site reclamation was completed in 2006 and approved by the NRC in 2008 (ADAMS Package Accession Number ML08170607). During field inspections of the tailings pile in 2009, Umetco identified incisions and rills on the tailings pile cover. Umetco determined that the incisions and rills were due to a deficiency in the design of the erosion protection system for the cover. In December 2010, Umetco proposed a solution to the deficiency (ADAMS Accession Number ML103640265) and the NRC approved Umetco's proposed Erosion Protection Enhancement in August 2011 (ADAMS Accession Number ML112060380).

ENCLOSURE 1

The Erosion Protection Enhancement work was completed in 2011 and approved by the NRC in 2012 (ADAMS Package Accession Number 120790251).

In 2001, Umetco submitted an application for Alternate Concentration Limits (ACLs) to address groundwater constituents-of-concern derived from historical milling operations at the site (ADAMS Accession Number ML011440258) that was approved by the NRC in March 2002 (ADAMS Accession Number ML021070805). The ACL application was supported by groundwater flow, solute transport, and geochemical models. To help validate these models, and provide ACL constituent attenuation information, Umetco prepared and implemented a groundwater monitoring plan that required the comparison of groundwater chloride and sulfate sampling results to corresponding model-predicted concentrations at four model validation wells. Between 2010 and 2012, measured concentrations of chloride and sulfate exceeded model predictions in monitoring well MW28, located along the groundwater flow path between the Western Flow Regime (WFR) Point of Compliance and the Point of Exposure. In addition, sampling results raised concerns that Radium-226 and Radium-228 were not attenuating as predicted in the model. Based on the sampling results, in January 2015, Umetco agreed to perform a groundwater evaluation of the WFR (ADAMS Accession Number ML14106A615). This evaluation is currently underway.

TECHNICAL EVALUATION

Summary

The NRC staff evaluated the surety update in accordance with the regulations in 10 CFR Part 40, Appendix A, Criterion 9 and the guidance in NUREG-1620, Rev. 1, Appendix C. The staff concludes that the licensee has met the requirement to submit its annual surety update three months prior to the annual due date of September 13.

The licensee proposes to adjust its financial assurance from \$1,428,283.25 to \$1,459,701.06. The licensee based their estimate on the costs of a third party contractor to complete the decommissioning, revisions to the groundwater monitoring plan, installation of four new wells, efficiency gains from prior groundwater evaluations and re-baselining estimates to reflect updated comparable industry cost estimates for the radiation officer, current property tax rates, and the Consumer Price Index (CPI) applied to legal expenses and long-term surveillance. The staff concludes that the revised cost estimate is based on the costs of a third party contractor decommissioning the site, and includes a 15 percent contingency factor.

In 2015, Umetco updated and rebaselined the costs for completing the decommissioning of the Gas Hills site and used the 2015 rebaselined costs to estimate the 2017 surety amount. Umetco updated this surety in 2016, in accordance with License Condition 55, and the NRC approved the updated surety amount via License Amendment 73 (ADAMS Accession Number ML16200A010). In evaluating the 2017 surety update, the NRC staff used the 2016 surety amount, rather than the 2015 rebaselined amount, because the 2016 amount is the most recently approved decommissioning cost estimate.

Groundwater monitoring

Groundwater monitoring, as required by license condition, based on the costs of a third party contractor, four additional wells, additional constituents, and the previously proposed modifications to the monitoring plan (semi-annual to annual sampling), is estimated to

increase from \$48,386.07 to \$49,450.41 to account for inflation. The staff concludes that the groundwater monitoring costs are acceptable, and are based on previously submitted estimates, plus inflation, third party contractor rates, four additional wells, additional constituents, and the previously modified monitoring plan (semi-annual to annual sampling).

Installation of new wells

Umetco has proposed the installation of four additional monitoring wells to address the NRC staff's concerns regarding constituent attenuation and groundwater model predictions (ADAMS Accession Number ML15027A095). The installation of four new wells (including field oversight and related reporting), based on a third party subcontractor quote, is estimated to increase from \$102,242.54 to \$104,491.56. The staff concludes that the costs of the installation of four additional monitoring wells are based on previously submitted estimates, plus inflation, and are acceptable.

Groundwater evaluation

Groundwater evaluations, as required by license condition (ADAMS Package Accession Number ML15211A329), based on the costs of a third party contractor and efficiencies gained from previous database development and systematic tools, is estimated to increase from \$80,430.23 to \$82,199.44. The staff concludes that the groundwater evaluation costs are based on previously submitted third party contractor rates, plus inflation, and are acceptable.

Miscellaneous costs

Umetco estimated the aggregate costs of legal expenses related to the land transfer, site property taxes, and the salary of the radiation safety officer to increase from \$127,392.63 to \$130,194.86. The staff finds that these miscellaneous costs are based on the cost of legal fees increasing from \$86,935.28 to \$88,847.58, based on inflation, an increase in property taxes from \$3,509.14 to \$3,586.33, based on inflation, and an increase in radiation safety officer rates from \$36,948.21 to \$37,760.95, based on inflation. The staff therefore concludes that Umetco's miscellaneous cost estimates are reasonable and acceptable.

Long-term surveillance fee

In the proposal, the Long-Term Surveillance (LTS) Fee increases from \$883,533.97 to \$902,968.98, based on inflation. The staff concludes that Umetco's long-term surveillance fee estimate reasonable and acceptable

PROPOSED LICENSE CONDITION CHANGE

Revise License Condition 55 to state: Umetco Gas Hills' currently approved surety instruments, a surety bond held by the Liberty Mutual Insurance Company and a standby trust agreement that is accessible to the NRC, shall be continuously maintained in an amount no less than \$1,459,701.06 for the purpose of complying with 10 CFR 40, Appendix A, Criteria 9 and 10, until a replacement is authorized by the NRC.