Appendix B

NUCLEAR WASTE MANAGEMENT PROCEDURE Sandia National Laboratories	**Parameter Problem Report (PPR)**	**Form Number:** NP 9-2-2 Page 1 of 1 2

ARN
1-13-2020

Material Abbreviated Name:	SOLMOD3
Property Abbreviated Name:	SOLSOH3
Associated Analysis: (CCA, PAVT, AP-159, etc.)	CRA19
Effective Date:	4/16/2019

Description of Problem

The alpha(1) terms for the binary Pitzer parameter for Ca2+ / EDTA4- , Mg2+ / MgEDTA2-, and the Ca2+ / MgEDTA2- pairs were entered incorrectly in the EQ3/6 thermodynamic database DATA0.FM4. They were entered as 2.0 when the correct value is 1.4. While this value is NOT a direct input to PA, it did have an impact on the SOLMOD3/SOLSOH3 parameter value. This issue was uncovered during an extent of condition evaluation triggered by PPR 2019-003.

Paul Domski   *Shelly R. Nielsen for*   1-13-2020
Requester (Print, Sign and Date)

Condition Adverse to Quality? ☐ Yes ☒ No   (Initiate NP 16 –1 if yes)

Problem Resolution and Justification for no Condition Adverse to Quality

Two analyses were performed, the first by Domski to determine if changes to the alpha(1) terms impacted any of the output PA parameters from the baseline solubility model. Domski determined that SOLMOD3/SOLSOH3 had been impacted which precipitated the need to evaluate downstream models which use the SOLMOD3/SOLSOH3 parameter. The second model was the PA model itself, Kim ran the model with the updated SOLMOD3/SOLSOH3 parameter and found there was no change in the mobilized An(III), brine pressure, hydrogen gas generation rate, and transport to the Culebra. The CCDFGF plots of total release of An(III) from the repository were not impacted by the change to the SOLMOD3/SOLSOH3 parameter, therefore, there is no condition adverse to quality, and the WIPP PA Parameter Database will not be updated. This problem resolution and justification for no condition adverse to quality is documented in memorandum "Correction of the α1 terms of three Binary Pitzer Parameter blocks in DATA0.FM4, PPR 2019-004 through 2019-013 (Domski, 2020).

Concurrence

Paul E. Shoemaker   *Paul E. Shoemaker*   01/13/2020
PA Manager (Print, Sign and Date)

Shelly R. Nielsen   *Shelly R Nielsen*   2019-006
1-13-2020

| QA Staff (Print, Sign and Date) | Parameter Problem Report No. (PPR) |