

**UNREVIEWED WASTE MANAGEMENT QUESTION
EVALUATION (UWMQE)**

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UWMQE Number: SRR-UWMQE-2017-00004

Revision: 81 *PRW FOR KHR*

UWMQE Title: UWMQE to Evaluate Impacts to SDF PA Doses Due to the Update of the GSA Model

UWMQE Supported Documents

TECHNICAL

Number: <u>SRR-CWDA-2017-00065</u>	Date: <u>Sept. 2017</u>	Revision: <u>0</u>
Number: <u>SRNL-STI-2017-00008</u>	Date: <u>Sept. 2017</u>	Revision: <u>1</u>

SUPPORTING

Number: <u>SRR-CWDA-2009-00017</u>	Date: <u>Oct. 2009</u>	Revision: <u>0</u>
Number: <u>SRR-CWDA-2016-00072</u>	Date: <u>Oct. 2016</u>	Revision: <u>0</u>

1. Unreviewed Waste Management Question Evaluation

Proposed Activity Description

The General Separations Area (GSA) Model was recently updated to incorporate new field data from groundwater monitoring wells and to apply more a rigorous approach (mathematical optimization) for integrating and interpreting the groundwater data. The GSA Model provides inputs (groundwater flow rates and groundwater flow directions) to all SRS Performance Assessments (PAs), including the Saltstone Disposal Facility (SDF) PA. The updated GSA Model is documented in the *Groundwater Flow Simulation of the Savannah River Site General Separations Area* (SRNL-STI-2017-00008) and the evaluation of this new data, with respect to PA modeling, is documented in the *Evaluation of Impacts to SDF PA Doses Due to the Update of the GSA Database* (SRR-CWDA-2017-00065).

NOTE: Each question below requires Comment / Justification.

- a. Is the Proposed Activity or New Data outside the bounds of the critical inputs/assumptions of the analyses contained in the WD, PA, CA, approved SA(s), or approved UWMQE(s)? For example, does the proposed activity or new information involve a change to the assumed critical design features for a waste tank/disposal unit design as described in the WD, PA, CA, approved SA(s), or approved UWMQE(s) such as critical inputs/assumptions?

Yes ☒ No ☐

Comment / Justification:

Changes made to the GSA Model result in significantly different flow fields relative to those used as inputs to previous PA and Special Analysis (SA) modeling. Modeling in support of this evaluation indicates that although the expected doses increase, they do NOT challenge performance objectives within the 1,000-year compliance period. As such, while no operational or design changes are required, a revised PA or an SA are recommended to fully evaluate the potential risks associated with these revised flow fields.

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1. Unreviewed Waste Management Question Evaluation - continued

- b. Does the New Data involve an increase in the radionuclide inventory or chemical constituents evaluated in the approved WD, PA, CA, approved SA(s), and approved UWMQE(s)?

Yes ☐ No ☒

Comment / Justification:

The new data does not result in increase to the disposal inventory.

- c. Would the radionuclide disposal limits need to be changed to implement the proposed activity?

Yes ☐ No ☒

Comment / Justification:

While this evaluation determined that performance objectives are not exceeded, a PA revision or an SA is recommended to determine if (and to what extent) future disposal limits may need to be changed. Regardless, near-term disposal operations (i.e., disposal to Saltstone Disposal Units (SDUs) 3A, 3B, 6, and 7) may proceed without any change to disposal limits because the dose contributions from these SDUs do not drive dose peaks in current calculations.

- d. Is it possible that the Proposed Activity or New Data causes the WD, PA, CA, approved SA(s), or approved UWMQE(s) performance objectives to be exceeded?

Yes ☐ No ☒

Comment / Justification:

The evaluation of the new GSA Model indicates a general increase to SDF doses, however "the dose results from this evaluation are all within the performance objectives required for compliance" (SRR-CWDA-2017-00065). Within the 1,000-year compliance period, all doses remain below the performance objectives.

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2. UWMQE Originator

IS the activity within the bounds of the existing
WD, PA, CA or approved SA(s) and approved
UWMQEs?

Yes ☐ No ☒

IS a Special Analysis required?

Yes ☒ No ☐

Comment / Justification:

Modeling performed in support of this evaluation (SRR-CWDA-2017-00065) demonstrates that although the expected doses are generally higher than those reported within the existing PA and SAs, the doses remain within the bounds of the performance objectives. As such, disposal operations may proceed to SDUs 3A, 3B, 6 and 7, as currently planned. However, incorporation of other new data from ongoing tests and studies, as well as consideration for sensitivity modeling cases (via a revised PA or a new SA), are recommended to fully inform decisions related to SDF operations and future SDU design considerations.

Check one of the following boxes below and forward to peer reviewer.

- ☐ CANCEL the proposed activity. (Document canceled activities as applicable.)
- ☐ MODIFY the proposed activity.
- ☐ PROCEED to PARC approval (if no SA is required).
- ☐ PROCEED with proposed activity; categorical exclusion applies.
- ☒ PERFORM Special Analysis.

Originator: Steven P. Hommel

Print



Signature

Date: 10/12/17 Time: 3:00 PM

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3. UWMQE Peer Reviewer

Concur with the UWMQEO's determination?

Yes ☒

No ☐

Comment / Justification:

No comments

Peer Reviewer: David Watkins

Print



Signature

Date:

10/12/17

UNREVIEWED WASTE MANAGEMENT QUESTION
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4. UWMQE AGCC Reviewer

Is there a legal objection to the UWMQEO's
determination?

Yes ☐

No ☒

Comment / Justification:

AGCC or Delegate AGCC

Thomas Frank England
Print

Thomas Frank England
Signature

Date: 16 OCT 2017

5. UWMQE VP/GC Reviewer

a. Will VP/GC participate in the UWMQE?

Yes ☒

No ☐

b. If "Yes" to 5a., Does VP/GC concur with the UWMQEO's determination?

Yes ☒

No ☐

Comment / Justification:

VP/GC or Delegate VP/GC

Thomas Frank England
Print

Thomas Frank England
Signature

Date: 16 OCT 2017

WD official

J. Kent Fontenberry

10-24-2017

UNREVIEWED WASTE MANAGEMENT QUESTION EVALUATION (UWMQE)

6. PARC Chairman

IS the activity consistent with the existing WD?

Yes ☒ No ☐

IS a Special Analysis required?

Yes ☒ No ☐

Comment / Justification:

IF a Special Analysis is required, INDICATE the follow-up action by checking one of the following boxes below and return to the UWMQE Originator

- ☐ CANCEL the proposed activity (Document canceled activities as applicable)
- ☐ MODIFY the proposed activity to attempt to eliminate the SA
- ☒ PERFORM SA

**PARC Chairman
or Designee:**

Joel Cantrell
Print


Signature

Date: 10/17/17