SRR-CWDA-2010-00104
Revision 1

H-Area Tank Farm (HTF) Performance Assessment (PA) Model Quality Assurance (QA) Report

November 2010

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APPROVALS

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11/15/2010
Date

Technical Checker and Reviewer:

Leslie E. Safley
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Portage, Inc.

11/15/2010
Date

Quality Assurance Reviewer:

for Vince Cordaro (Approved via email)

Vince Cordaro
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Date

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Tom Robinson
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11/16/2010
Date

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ACRONYMS/ABBREVIATIONS

C&WDA	Closure and Waste Disposal Authority
GTG	GoldSim© Technology Group
HTF	H-Area Tank Farm
PA	Performance Assessment
QA	Quality Assurance
SQAP	Software Quality Assurance Plan
SRNL	Savannah River National Laboratory

1.0 SCOPE

This report was developed according to Section 4.1.4 of the Software Quality Assurance Plan (SQAP) for the H-Area Tank Farm (HTF) Performance Assessment (PA) Probabilistic Model. [SRR-CWDA-2010-00080] The purpose of this report is to document input data verification and model implementation checking of the HTF PA Probabilistic Model. This includes checking the data inputs, formulas, calculations, model elements and links, and source documentation to ensure that the input values in the HTF PA Probabilistic Model are correct and that the model design and requirements were implemented properly.

Further, this report provides additional checking documentation for inputs to the HTF PA Deterministic Model as developed with the PORFLOW modeling code by the Savannah River National Laboratory (SRNL). [SRNL-L6200-2010-00026] Both the HTF PA Probabilistic Model and the HTF PA Deterministic Model have been designed and checked per Procedure Manual E7, 2.60, *Technical Reviews*.

The probabilistic model is described in SRR-CWDA-2010-00093. The deterministic model is described in SRNL-L6200-2010-00026.

2.0 SUMMARY OF REVIEW

Both the HTF PA Probabilistic Model (as designed within the GoldSim model file: "HTF Transport Model v0.016.gsm" and described in SRR-CWDA-2010-00093) and the HTF PA Deterministic Model (as designed in PORFLOW v6.30.1 and described within SRNL-L6200-2010-00026), use correct data inputs, are correctly implemented, and satisfy the requirements established by the Procedure Manual E7, 2.60 *Technical Reviews* and by the HTF PA Probabilistic Model SQAP. [SRR-CWDA-2010-00080]

3.0 METHODOLOGY

A three-part approach was used to satisfy both the software Test Phase requirements for the HTF PA Probabilistic Model and the technical review process for each model. First, the input values were checked to ensure that they were correct. In general, this was done by comparing values used by the model against source values. Second, the design of the model was checked to ensure that the calculations, formulas, links, etc. were all implemented correctly. This was performed by an experienced GoldSim modeler who navigated through the model and assessed the relationships between model elements and the equations implemented into the model. Finally, the model was reviewed at a high-level to ensure that it met the requirements of the SQAP. [SRR-CWDA-2010-00080]

During the checking and review process, the Technical Checker and Reviewer developed and implemented a set of checklists used to document any issues identified and the resolution of these issues. Copies of these forms are provided within the appendices.

The checking forms for the initial version of the HTF PA Probabilistic Model, and subsequent model versions, are attached in Appendix A to document the full evolution of the model development and checking. Some values in the HTF PA Probabilistic Model reflect values provided by SRNL and developed within the related PORFLOW Deterministic Model.

Checking activities documented in Appendix A included verification of these PORFLOW model inputs.

Additionally, inputs provided from Closure and Waste Disposal Authority (C&WDA) to SRNL for the development of the PORFLOW Deterministic Model were checked against source data to ensure that the proper inputs were used. Appendix B documents verification that SRNL implemented the provided inputs appropriately, providing additional confidence in the quality of the data used. This additional checking work supplements the model design checking documented in SRNL-L6200-2010-00027.

4.0 ROLES AND RESPONSIBILITIES

The Test Phase Developer / Author is the individual within C&WDA who prepared this software documentation for HTF PA Probabilistic Model.

The Technical Checker and Reviewer is the technical individual within C&WDA assigned to review and approve this model documentation.

The Quality Assurance (QA) Reviewer is the designated individual responsible for quality assurance of the model. The QA Reviewer reviewed and approved the associated SQAP.

The Manager is the manager of the C&WDA Assessments group. The Manager reviews and approves the model and related documentation.

5.0 INPUT CHECKING

As documented in Appendix A, issues identified throughout the model development process of the probabilistic model (relating to input data), have been resolved during normal model design activities. There are no further issues requiring resolution.

As documented in Appendix B, the issues identified throughout the model development process of the deterministic model (relating to input data), have been resolved during normal model design activities. There are no further issues requiring resolution.

6.0 IMPLEMENTATION REVIEW

As documented in Appendix A, issues identified throughout the model development process of the probabilistic model (relating to model design/implementation), have been resolved during normal model design activities. There are no further issues requiring resolution.

Model design and implementation checking for the HTF PA deterministic model is documented in SRNL-L6200-2010-00027. Appendix B provides additional checking documentation of input data verification. These forms supplement the checking documentation provided in SRNL-L6200-2010-00027. There are no further issues requiring resolution.

7.0 SQAP REQUIREMENTS

As documented in Appendix A, the probabilistic model file is correct and properly documented, satisfying the requirements for the SQAP. [SRR-CWDA-2010-00080]

The deterministic model was developed in PORFLOW v6.30.1. This version of PORFLOW has passed acceptance testing; therefore, the deterministic model is compliant with PORFLOW

software quality assurance requirements. [SRNL-L6200-2010-00016; SRNL-L6200-2010-00026]

8.0 REFERENCES

Procedure Manual E7, 2.60, *Technical Reviews*.

SRNL-L6200-2010-00016, Aleman, S. and G. Flach, *Acceptance Testing for PORFLOW version 6.30.1*, Savannah River Site, Aiken, SC, September 1, 2010.

SRNL-L6200-2010-00026, Jordan, J, G. Flach and D. Schep, *PORFLOW Modeling Supporting the H-Tank Farm Performance Assessment*, Rev. 1, Savannah River Site, Aiken, SC, 2010.

SRNL-L6200-2010-00027, G. Flach and Hang, T., *SRNL Design Checking for H-Tank Farm PORFLOW Modeling*, Rev. 1, Savannah River Site, Aiken, SC, 2010.

SRR-CWDA-2010-00080, Hommel, S., *Software Quality Assurance Plan (SQAP) for the H-Area Tank Farm (HTF) Performance Assessment (PA) Probabilistic Model*, Savannah River Site, Aiken, SC, Rev. 0, August 2010.

SRR-CWDA-2010-00093, Lester, B., *H-Area Tank Farm Stochastic Fate and Transport Model*, Rev. 1, Savannah River Site, Aiken, SC, November 2010.

APPENDIX A. MODEL CHECKING FORMS

APPENDIX A. MODEL CHECKING FORMS FOR THE INITIAL MODEL

The following checklists were prepared to demonstrate that the HTF PA Probabilistic Model (HTF Transport Model v0.016.gsm) meets quality assurance expectations. These checklists address input and data verification and implementation checking.

Pages A-3 to A-4 show the "Initial Model Check Form" for an earlier model version (v0.003). This form demonstrates that the implementation of the model is initially correct.

Pages A-5 to A-31 shows a "Changed Model Check Form" which shows checking comments made during the development of the initial GoldSim model file (HTF Transport Model v0.003.gsm, developed by Barry Lester). As provided on the check form, the checking comments (prepared by Steve Hommel) were addressed by the Analyst and concurrence was reached, thus satisfying quality assurance expectations.

The "Changed Model Check Forms" that follow demonstrate that the subsequent GoldSim model files (HTF Transport Model versions 0.004 through 0.016, developed by Barry Lester and Keely Brooks) were all checked (by Steve Hommel) and found to be correct and consistent with the conceptual description provided in SRR-CWDA-2010-00093. These changes were modifications to improve upon, update inputs for, and to add appropriate levels of complexity to the model, but did not result in any conceptual design changes; therefore the "Initial Model Check Form" for v0.003 still applies for each of these subsequent development versions.

Note that the forms used to document model checking and data verification activities, as provided within this appendix, are not specifically required for procedural compliance. Rather, these forms demonstrate the application of quality assurance practices consistent with Manual E7, 2.60, *Technical Reviews* and provide confidence that models were developed correctly and with appropriate inputs.

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QA&DV Form 4, Rev01

Initial Model Check Form

Model ID (or filename):	Model File Date:
~~SRS HTF Transport Module v0.0_052410.gsm~~ ~~HTF Transport Model v0.001.gsm~~ HTF Transport Model v0.003.gsm	~~5/24/2010~~ ~~7/9/2010~~ 7/16/2010

No.	Check Questions	Y, N, or NA	Checker Comments	Analyst Response	Checker Concur? Y, N
File Check					
1	Is the model file available?	Y	NA	NA	Y
2	Is a documented conceptual description available?	Y	See SRR-CWDA-2010-00093	NA	Y
3	Does the model filename follow an established naming convention?	Y	Naming convention established by SRR-CWDA-2010-00080, Section 4.2	NA	Y
Conceptual Check					
4	Does the conceptual description document: - Clearly and adequately state the purpose of the model?	Y	See SRR-CWDA-2010-00093	NA	Y
5	- Explain how the model is implemented?	Y	See SRR-CWDA-2010-00093	NA	Y
6	- Explain why it is implemented this way?	Y	See SRR-CWDA-2010-00093	NA	Y
7	Is the conceptual design appropriate for the stated purpose?	Y	See SRR-CWDA-2010-00093	NA	Y
Implementation Check					
8	Have all changed/added model elements/parameters been checked against their source information to verify that they were correctly implemented?	NA	See Comment 19	NA	NA
9	Are model inputs correct (or within specified ranges)?	NA	See Comment 19	NA	NA
10	Are the input links of added elements/parameters correct?	NA	See Comment 19	NA	NA
11	Are the output links of added elements/parameters correct?	NA	See Comment 19	NA	NA
12	Are modeled calculations correct?	NA	See Comment 19	NA	NA
13	Does the implementation reflect the description provided in the conceptual description document?	Y	See SRR-CWDA-2010-00093	NA	Y
14	Do the conceptual design, implementation, and analysis of results accomplish the stated purpose?	Y	See SRR-CWDA-2010-00093	NA	Y
Completion Check					

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QA&DV Form 4, Rev01

Initial Model Check Form

Model ID (or filename):	Model File Date:
~~SRS HTF Transport Module v0.0_052410.gsm~~ ~~HTF Transport Model v0.001.gsm~~ HTF Transport Model v0.003.gsm	~~5/24/2010~~ ~~7/9/2010~~ 7/16/2010

No.	Check Questions	Y, N, or NA	Checker Comments	Analyst Response	Checker Concur? Y, N
15	Does the model respond appropriately to inputs?	Y	NA	NA	Y
16	Can the final dose results be explained in terms of upstream parameters (e.g., pH, solubilities, flow and transport rates)?	Y	NA	NA	Y
17	Are there any unexpected behaviors that cannot be explained?	N	NA	NA	Y
18	Does any part of the model invalidate or bring into question assumptions of upstream or downstream data or models?	N	NA	NA	Y
19	Is there any additional work needed or outstanding issues generated by this work?	N	Comments in HTF Transport Model v0.001_HTF-Prime_Form-7.doc and HTF Transport Model v0.001_HTF-TSub_Form-7.doc have been resolved.	NA	Y

If checker has no comments, check here. ☒ Add additional rows above, as needed.

Analyst Name (print):	E-Signature (or sign/date/scan hardcopy): (Not required if no comments)
Barry Lester	

Checker Name (print):	E-Signature (or sign/date/scan hardcopy):
Steve Hommel	Steve Hommel Digitally signed by Steve Hommel DN: cn=Steve Hommel, o, ou, email=Steven.Hommel@srs.gov, c=US Date: 2010.09.08 12:21:21 -04'00'

HTF Transport Model v0.003_Form-4.doc 2 of 2 9/8/2010

The Analyst's signature is not required because the Checker made no comments that required resolution.

Closure & Waste Disposal Authority

QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.003.gsm	Source Model ID (or filename): HTF Transport Model v0.002.gsm
New Model File Date: 7/16/10	Source Model File Date: 7/12/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Can this new model be traced (by following the Source Model IDs) back to a source model with a completed Initial Model Check Form (QA&DV Form 4)? - If so, proceed. If not, disregard this form and complete an Initial Model Check Form (QA&DV Form 4) for this model.						
Submodel elements are denoted by this shading						
EffectiveDF_Drill	\HTF_DoseCalculations\PorflowModel\Chronic_Intruder_P\Exposure\IrrigatedSoilExposure	Changed equation to DCF_Ex15cm_Sector*ExposureFractionGarden	Y	NA	NA	Y
SeeptoWellRatio	\HTF_DoseCalculations\Parameters\INPUTS	Changed value to ~~0.0358~~ 0.06	N	As described in Appendix F of the HTF PA report, a more conservative value of 0.06 should be used.	Y	Y (KMB)
EffectiveDF_Seep	\HTF_DoseCalculations\PorflowModel\Chronic_Intruder_P\Inhalation\SwimmingInhalation	Changed equation to AirIntake*SwimmingGF*AnnualSwimming*DCF_Inhalation_Sector*AirWaterContent*ARF/WatDens	Y	NA	NA	Y
InhalationSwimming_EffectiveDF	\HTF_DoseCalculations\PorflowModel\Member_of_Public_Well_Paths_P	Changed equation to Matrix(Species,Sectors,SwimmingInhalation.EffectiveDF[row,1])/SeeptoWellRatio	Y	NA	NA	Y
EffectiveDF_Well	\HTF_DoseCalculations\PorflowModel\Chronic_Intruder_P\Exposure\IrrigatedSoilExposure	Changed equation to IrrigationRate/TillDepth*DCF_Ex15cm_Sector*ExposureFractionGarden*Matrix(Species,Sectors,*SoilBuildUpFactor*[row])*FracYearIrrigate	Y	NA	NA	Y

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QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.003.gsm	Source Model ID (or filename): HTF Transport Model v0.002.gsm
New Model File Date: 7/16/10	Source Model File Date: 7/12/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
EffectiveDF_Well	\HTF_DoseCalculations\PorflowModel\Chronic_Intruder_P\Ingestion\SoilIngestion	Changed equation to *IrrigationRate*/TillDepth*DCF_Ingestion_Sector/Soil_Properties.SandySoil:Density * SoilConsumptionRate *matrix(Species,Sectors,SoilBuildUpFactor[row])*FracYearIrrigate	Y	NA	NA	Y
EffectiveDF_Well	\HTF_DoseCalculations\PorflowModel\Chronic_Intruder_P\Inhalation\IrrigatedSoilDustInh	Changed equation to AirIntake*AirMassLoadingSoil*IrrigationRate/TillDepth*DCF_Inhalation_Sector*ExposureFractionGarden/Soil_Properties.SandySoil:Density*matrix(Species,Sectors,SoilBuildUpFactor[row])*FracYearIrrigate	Y	NA	NA	Y
EffectiveDF_Well	\HTF_DoseCalculations\GoldSimModel\Chronic_Intruder_G\Exposure\IrrigatedSoilExposure	Changed equation to IrrigationRate/TillDepth*DCF_Ex15cm_vector *ExposureFractionGarden*SoilBuildUpFactor* FracYearIrrigate	Y	NA	NA	Y
EffectiveDF_Well	\HTF_DoseCalculations\GoldSimModel\Chronic_Intruder_G\Ingestion\SoilIngestion	Changed equation to IrrigationRate/TillDepth*DCF_Ingestion_vector/Soil_Properties.SandySoil:Density * SoilConsumptionRate *SoilBuildUpFactor*FracYearIrrigate	Y	NA	NA	Y

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QA&DV Form 5, Rev01

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New Model File Date: 7/16/10	Source Model File Date: 7/12/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
EffectiveDF_Well	\HTF_DoseCalculations\GoldSimModel\Chronic_Intruder_G\Inhalation\IrrigatedSoilDustInh	Changed equation to AirIntake*AirMassLoadingSoil*IrrigationRate/TillDepth*DCF_Inhalation_vector*ExposureFractionGarden/Soil_Properties.SandySoil:Density*SoilBuildUpFactor*FracYearIrrigate	Y	NA	NA	Y
EffectiveDF_Well	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Well_Pathways\Exposure\IrrigratedSoilExposure_Well	Changed equation to IrrigationRate/TillDepth*DCF_Ex15cm*ExposureFractionGarden*matrix(Species,Wells,SoilBuildUpFactor[row])*FracYearIrrigate	Y	NA	NA	Y
EffectiveDF_Well	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Well_Pathways\Ingestion\SoilIngestion_Well	Changed equation to IrrigationRate/TillDepth*DCF_Ingestion/Soil_Properties.SandySoil:Density * SoilConsumptionRate *matrix(Species,Wells,SoilBuildUpFactor[row])*FracYearIrrigate	Y	NA	NA	Y
EffectiveDF_Well	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Well_Pathways\Inhalation\IrrigatedSoilDustInh_Well	Changed equation to AirIntake*AirMassLoadingSoil*IrrigationRate/TillDepth*DCF_Inhalation*ExposureFractionGarden/Soil_Properties.SandySoil:Density*matrix(Species,Wells,SoilBuildUpFactor[row])*FracYearIrrigate	Y	NA	NA	Y

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New Model File Date: 7/16/10	Source Model File Date: 7/12/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
EffectiveDF_Well	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Dose_Stream\Ingestion_Stream\SoilIngestion_Stream	Changed equation to IrrigationRate/TillDepth*DCF_Ingestion/Soil_Properties.SandySoil:Density * SoilConsumptionRate *matrix(Species,Wells,SoilBuildUpFactor[row])*SeeptoWellRatio*FracYearIrrigate	Y	NA	NA	Y
EffectiveDF_Well	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Dose_Stream\Exposure_Stream\IrrigatedSoilExposure_Stream	Changed equation to IrrigationRate/TillDepth*DCF_Ex15cm*ExposureFractionGarden*matrix(Species,Wells,SoilBuildUpFactor[row])*SeeptoWellRatio*FracYearIrrigate	Y	NA	NA	Y
EffectiveDF_Well	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Dose_Stream\Inhalation_Stream\IrrigatedSoilDustInh_Stream	Changed equation to AirIntake*AirMassLoadingSoil*IrrigationRate/TillDepth*DCF_Inhalation*ExposureFractionGarden/Soil_Properties.SandySoil:Density*SeeptoWellRatio*matrix(Species,Wells,SoilBuildUpFactor[row])*FracYearIrrigate	Y	NA	NA	Y
TotalRadionuclides	\HTF_DoseCalculations\DoseResults\GoldSimIntruderDoseResults	Added container	Y	NA	NA	Y

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QA&DV Form 5, Rev01

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New Model ID (or filename): HTF Transport Model v0.003.gsm	Source Model ID (or filename): HTF Transport Model v0.002.gsm
New Model File Date: 7/16/10	Source Model File Date: 7/12/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
TotalDoseSum_Sectors	\HTF_DoseCalculations\DoseResults\GoldSimIntruderDoseResults\TotalRadionuclides	Added data element equal to: sumv(TotalDoseSum)	Y	NA	NA	Y
Total_Exposure	Same as above	Added data element equal to: sumv(ExposureDoseSum)	Y	NA	NA	Y
TotalBoat_Expose	Same as above	Added data element equal to: sumv(BoatingExposureDose)	Y	NA	NA	Y
TotalSoil_Expose	Same as above	Added data element equal to: sumv(IrrigateSoilExposeDose)	Y	NA	NA	Y
TotalSwim_Expose	Same as above	Added data element equal to: sumv(SwimmingExposureDose)	Y	NA	NA	Y
Total_Ingest	Same as above	Added data element equal to: sumv(IngestionDoseSum)	Y	NA	NA	Y
TotalBeef_Ingest	Same as above	Added data element equal to: sumv(BeefIngestionDose)	Y	NA	NA	Y
TotalFish_Ingest	Same as above	Added data element equal to: sumv(FishIngestionDose)	Y	NA	NA	Y
TotalMilk_Ingest	Same as above	Added data element equal to: sumv(MilkIngestionDose)	Y	NA	NA	Y
TotalSoil_Ingest	Same as above	Added data element equal to: sumv(SoilIngestionDose)	Y	NA	NA	Y

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New Model File Date: 7/16/10	Source Model File Date: 7/12/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
TotalVeg_Ingest	Same as above	Added data element equal to: sumv(VegetableIngestionDose)	Y	NA	NA	Y
TotalWater_Ingest	Same as above	Added data element equal to: sumv(WaterIngestionDose)	Y	NA	NA	Y
Total_Inhale	Same as above	Added data element equal to: sumv(InhalationDoseSum)	Y	NA	NA	Y
TotalIrrSoil_Inhale	Same as above	Added data element equal to: sumv(IrrigatedSoilDustInhDose)	Y	NA	NA	Y
TotalIrrigiation_Inhale	Same as above	Added data element equal to: sumv(IrrigationInhDose)	Y	NA	NA	Y
TotalShowering_Inhale	Same as above	Added data element equal to: sumv(ShoweringInhDose)	Y	NA	NA	Y
TotalSwimming_Inhale	Same as above	Added data element equal to: sumv(SwimmingInhDose)	Y	NA	NA	Y
TotalBySector	\HTF_DoseCalculations\DoseResults\PorflowIntruderDoseResults	Added new container	Y	NA	NA	Y
TotalDoseSum_Sectors	\HTF_DoseCalculations\DoseResults\PorflowIntruderDoseResults\ TotalBySector	Added data element equal to: sumv(TotalDoseSum[*,A]) sumv(TotalDoseSum[*,B]) sumv(TotalDoseSum[*,C]) sumv(TotalDoseSum[*,D]) sumv(TotalDoseSum[*,E]) sumv(TotalDoseSum[*,F])	Y	NA	NA	Y

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.003.gsm	Source Model ID (or filename): HTF Transport Model v0.002.gsm
New Model File Date: 7/16/10	Source Model File Date: 7/12/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
TotalExpose_Sector	Same as above	Added data element equal to: sumv(ExposureDoseSum[*,A]) sumv(ExposureDoseSum[*,B]) sumv(ExposureDoseSum[*,C]) sumv(ExposureDoseSum[*,D]) sumv(ExposureDoseSum[*,E]) sumv(ExposureDoseSum[*,F])	Y	NA	NA	Y
TotalBoat_Sector	Same as above	Added data element equal to: sumv(BoatingExposureDose[*,A]) sumv(BoatingExposureDose[*,B]) sumv(BoatingExposureDose[*,C]) sumv(BoatingExposureDose[*,D]) sumv(BoatingExposureDose[*,E]) sumv(BoatingExposureDose[*,F])	Y	NA	NA	Y

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New Model File Date: 7/16/10	Source Model File Date: 7/12/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
TotalIrrSoil_Sector	Same as above	Added data element equal to: sumv(IrrigrateSoilExposeDose[*,A]) sumv(IrrigrateSoilExposeDose[*,B]) sumv(IrrigrateSoilExposeDose[*,C]) sumv(IrrigrateSoilExposeDose[*,D]) sumv(IrrigrateSoilExposeDose[*,E]) sumv(IrrigrateSoilExposeDose[*,F])	Y	NA	NA	Y
TotalSwim_Sector	Same as above	Added data element equal to: sumv(SwimmingExposureDose[*,A]) sumv(SwimmingExposureDose[*,B]) sumv(SwimmingExposureDose[*,C]) sumv(SwimmingExposureDose[*,D]) sumv(SwimmingExposureDose[*,E]) sumv(SwimmingExposureDose[*,F])	Y	NA	NA	Y

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New Model ID (or filename): HTF Transport Model v0.003.gsm	Source Model ID (or filename): HTF Transport Model v0.002.gsm
New Model File Date: 7/16/10	Source Model File Date: 7/12/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
TotalIngest_Sectors	Same as above	Added data element equal to: sumv(IngestionDoseSum[*,A]) sumv(IngestionDoseSum[*,B]) sumv(IngestionDoseSum[*,C]) sumv(IngestionDoseSum[*,D]) sumv(IngestionDoseSum[*,E]) sumv(IngestionDoseSum[*,F])	Y	NA	NA	Y
TotalBeef_Sectors	Same as above	Added data element equal to: sumv(BeefIngestionDose[*,A]) sumv(BeefIngestionDose[*,B]) sumv(BeefIngestionDose[*,C]) sumv(BeefIngestionDose[*,D]) sumv(BeefIngestionDose[*,E]) sumv(BeefIngestionDose[*,F])	Y	NA	NA	Y

Closure & Waste Disposal Authority

QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.003.gsm	Source Model ID (or filename): HTF Transport Model v0.002.gsm
New Model File Date: 7/16/10	Source Model File Date: 7/12/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
TotalFish_Sectors	Same as above	Added data element equal to: sumv(FishIngestionDose[*, A]) sumv(FishIngestionDose[*, B]) sumv(FishIngestionDose[*, C]) sumv(FishIngestionDose[*, D]) sumv(FishIngestionDose[*, E]) sumv(FishIngestionDose[*, F])	Y	NA	NA	Y
TotalMilk_Sectors	Same as above	Added data element equal to: sumv(MilkIngestionDose[*, A]) sumv(MilkIngestionDose[*, B]) sumv(MilkIngestionDose[*, C]) sumv(MilkIngestionDose[*, D]) sumv(MilkIngestionDose[*, E]) sumv(MilkIngestionDose[*, F])	Y	NA	NA	Y

Closure & Waste Disposal Authority

QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.003.gsm	Source Model ID (or filename): HTF Transport Model v0.002.gsm
New Model File Date: 7/16/10	Source Model File Date: 7/12/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
TotalSoil_Sectors	Same as above	Added data element equal to: sumv(SoilIngestionDose[*,A]) sumv(SoilIngestionDose[*,B]) sumv(SoilIngestionDose[*,C]) sumv(SoilIngestionDose[*,D]) sumv(SoilIngestionDose[*,E]) sumv(SoilIngestionDose[*,F])	Y	NA	NA	Y
TotalVeg_Sectors	Same as above	Added data element equal to: sumv(VegetableIngestionDose[*,A]) sumv(VegetableIngestionDose[*,B]) sumv(VegetableIngestionDose[*,C]) sumv(VegetableIngestionDose[*,D]) sumv(VegetableIngestionDose[*,E]) sumv(VegetableIngestionDose[*,F])	Y	NA	NA	Y

Closure & Waste Disposal Authority

QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.003.gsm	Source Model ID (or filename): HTF Transport Model v0.002.gsm
New Model File Date: 7/16/10	Source Model File Date: 7/12/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
TotalWater_Sectors	Same as above	Added data element equal to: sumv(WaterIngestionDose[*,A]) sumv(WaterIngestionDose[*,B]) sumv(WaterIngestionDose[*,C]) sumv(WaterIngestionDose[*,D]) sumv(WaterIngestionDose[*,E]) sumv(WaterIngestionDose[*,F])	N	Element is not there.	inserted	Y (KMB)
TotalInhale_Sector	Same as above	Added data element equal to: sumv(InhalationDoseSum[*,A]) sumv(InhalationDoseSum[*,B]) sumv(InhalationDoseSum[*,C]) sumv(InhalationDoseSum[*,D]) sumv(InhalationDoseSum[*,E]) sumv(InhalationDoseSum[*,F])	Y	NA	NA	Y

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QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.003.gsm	Source Model ID (or filename): HTF Transport Model v0.002.gsm
New Model File Date: 7/16/10	Source Model File Date: 7/12/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
TotalIrrSoilDust_Sectors	Same as above	Added data element equal to: sumv(IrrigatedSoilDustInhDose[*,A]) sumv(IrrigatedSoilDustInhDose[*,B]) sumv(IrrigatedSoilDustInhDose[*,C]) sumv(IrrigatedSoilDustInhDose[*,D]) sumv(IrrigatedSoilDustInhDose[*,E]) sumv(IrrigatedSoilDustInhDose[*,F])	Y	NA	NA	Y
TotalIrrInh_Sectors	Same as above	Added data element equal to: sumv(IrrigationInhDose[*,A]) sumv(IrrigationInhDose[*,B]) sumv(IrrigationInhDose[*,C]) sumv(IrrigationInhDose[*,D]) sumv(IrrigationInhDose[*,E]) sumv(IrrigationInhDose[*,F])	Y	NA	NA	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.003.gsm	Source Model ID (or filename): HTF Transport Model v0.002.gsm
New Model File Date: 7/16/10	Source Model File Date: 7/12/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
TotalShower_Sectors	Same as above	Added data element equal to: sumv(ShoweringInhDose[*,A]) sumv(ShoweringInhDose[*,B]) sumv(ShoweringInhDose[*,C]) sumv(ShoweringInhDose[*,D]) sumv(ShoweringInhDose[*,E]) sumv(ShoweringInhDose[*,F])	Y	NA	NA	Y
TotalSwim_Sectors	Same as above	Added data element equal to: sumv(SwimmingInhDose[*,A]) sumv(SwimmingInhDose[*,B]) sumv(SwimmingInhDose[*,C]) sumv(SwimmingInhDose[*,D]) sumv(SwimmingInhDose[*,E]) sumv(SwimmingInhDose[*,F])	Y	NA	NA	Y
GrandTotalDoseTimeHistories	\HTF_DoseCalculations\DoseResults\PorflowIntruderDoseResults	Add a new container	Y	NA	NA	Y
GrandTotalDose_Sectors	\HTF_DoseCalculations\DoseResults\PorflowIntruderDoseResults\GrandTotalDoseTimeHistories	Add new data element: sumv(TotalDoseSum[*,1]) sumv(TotalDoseSum[*,2]) sumv(TotalDoseSum[*,3]) sumv(TotalDoseSum[*,4]) sumv(TotalDoseSum[*,5]) sumv(TotalDoseSum[*,6])	Y	NA	NA	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.003.gsm	Source Model ID (or filename): HTF Transport Model v0.002.gsm
New Model File Date: 7/16/10	Source Model File Date: 7/12/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
HighTotalSectorDose	Same as above	Add new data element: maxv (GrandTotalDose_Sectors)	Y	NA	NA	Y
GrandTotalDoseMax	Same as above	Add new extrema element (Peak): HighTotalSectorDose	Y	NA	NA	Y
HighTotalSectorDose_10ky	Same as above	Add new expression element: if(ETime <= PeriodOfPerformance then HighTotalSectorDose else 0 mREM/yr)	Y	NA	NA	Y
HighTotalSectorDose_Late	Same as above	Add new expression element: if(ETime > PeriodOfPerformance then HighTotalSectorDose else 0 mREM/yr)	Y	NA	NA	Y
GrandTotalDoseMax_10ky	Same as above	Add new extrema element (Peak): HighTotalSectorDose_10ky	Y	NA	NA	Y
GrandTotalDoseMax_Late	Same as above	Add new extrema element (Peak): HighTotalSectorDose_Late	Y	NA	NA	Y
Early_vs_Late_Doses	Same as above	Add new Time History, reporting: GrandTotalDoseMax_10ky And GrandTotalDoseMax_Late	Y	NA	NA	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.003.gsm	Source Model ID (or filename): HTF Transport Model v0.002.gsm
New Model File Date: 7/16/10	Source Model File Date: 7/12/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PFFlows_pad_CaseC	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	GoldSim erroneously indicated that there was a change in this element, but no change was made and the values were checked against the previous version. The checker should perform the same recheck.	Y	NA	NA	Y
PFFlows_P_Sand_CaseC	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	GoldSim erroneously indicated that there was a change in this element, but no change was made and the values were checked against the previous version. The checker should perform the same recheck.	Y	NA	NA	Y
PFFlows_CZ_VolFlowRate_CaseC	Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Added volumetric flow rates (Column D) for the contaminant zone from the flowrates_Type*.tab files found in the folder Vadose Flow Case C	Y	NA	NA	Y

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.003.gsm	Source Model ID (or filename): HTF Transport Model v0.002.gsm
New Model File Date: 7/16/10	Source Model File Date: 7/12/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PFFlows_CZ_VolFlowRate_CaseE	Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Added volumetric flow rate (Column D) for the contaminant zone from the flowrates_type*.tab files found in the folder Vadose Flow Case E 071310	Y	NA	NA	Y
PFFlows_pad_CaseD	Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Updated basemat vertical darcy velocities (Column F) from the flowrates_type*.tab files found in the folder Vadose Flow Case D 071310	N	First column in element is erroneous.	Corrected.	Y(KMB)
PFFlows_grout_CaseD	Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Updated reducing grout vertical darcy velocities (Column F) from the flowrates_type*.tab files found in the folder Vadose Flow Case D 071310	N	First column in element is erroneous.	Corrected.	Y(KMB)
PFFlows_CZ_CaseD	Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Updated contaminant zone vertical darcy velocities (Column F) from the flowrates_type*.tab files found in the folder Vadose Flow Case D 071310	N	First column in element is erroneous.	Corrected.	Y(KMB)

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.003.gsm	Source Model ID (or filename): HTF Transport Model v0.002.gsm
New Model File Date: 7/16/10	Source Model File Date: 7/12/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PFFlows_P_Sand_CaseD	Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Updated primary sand vertical darcy velocities (Column F) from the flowrates_type*.tab files found in the folder Vadose Flow Case D 071310	Y	NA	NA	Y
PFFlows_S_Sand_CaseD	Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Updated secondary sand vertical darcy velocities (Column F) from the flowrates_type*.tab files found in the folder Vadose Flow Case D 071310	Y	NA	NA	Y
PFFlows_Annulus_CaseD	Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Updated annulus vertical darcy velocities (Column F) from the flowrates_type*.tab files found in the folder Vadose Flow Case D 071310	N	The GoldSim element only has two of the columns of data populated (Type II and Type II NL)	Unlike PORFLOW, in GoldSim, the annulus is modeled only for Type II and II NL tanks. The values are set to zero for the other tank types because there shouldn't be flow through this feature.	Y (KMB)
PFFlows_pad_CaseE	Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Updated basemat vertical darcy velocities (Column F) from the flowrates_type*.tab files found in the folder Vadose Flow Case D 071310	Y	NA	NA	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.003.gsm	Source Model ID (or filename): HTF Transport Model v0.002.gsm
New Model File Date: 7/16/10	Source Model File Date: 7/12/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PFFlows_grout_CaseE	Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Updated reducing grout vertical darcy velocities (Column F) from the flowrates_type*.tab files found in the folder Vadose Flow Case E 071310	Y	NA	NA	Y
PFFlows_CZ_CaseE	Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Updated contaminant zone vertical darcy velocities (Column F) from the flowrates_type*.tab files found in the folder Vadose Flow Case E 071310	Y	NA	NA	Y
PFFlows_P_Sand_CaseE	Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Updated primary sand vertical darcy velocities (Column F) from the flowrates_type*.tab files found in the folder Vadose Flow Case E 071310	Y	NA	NA	Y
PFFlows_S_Sand_CaseE	Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Updated secondary sand vertical darcy velocities (Column F) from the flowrates_type*.tab files found in the folder Vadose Flow Case E 071310	Y	NA	NA	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.003.gsm	Source Model ID (or filename): HTF Transport Model v0.002.gsm
New Model File Date: 7/16/10	Source Model File Date: 7/12/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PFFlows_Annulus_CaseE	Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Updated annulus vertical darcy velocities (Column F) from the flowrates_type*.tab files found in the folder Vadose Flow Case E 071310	N	The GoldSim element only has two of the columns of data populated (Type II and Type II NL)	Unlike PORFLOW, in GoldSim, the annulus is modeled only for Type II and II NL tanks. The values are set to zero for the other tank types because there shouldn't be flow through this feature.	Y (KMB)
PFFlow_Grout_VolFlwRate_Case**=A-E	Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Added volumetric flow rates (Column D) for the contaminant zone from the flowrates_Type*.tab files found in the folders "Vadose Flow Case *" for Cases A-C and "Vadose Flow Case * 071310" for cases D and E	Y	NA	NA	Y
PFFlows_pad_VolFlwRate_Case**=A-E	Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Added volumetric flow rates (Column D) for the basemat from the flowrates_Type*.tab files found in the folders "Vadose Flow Case *" for Cases A-C and "Vadose Flow Case * 071310" for cases D and E	Y	NA	NA	Y
PFFlows_CZ_VolFlwRate_~~CaseE~~CaseC	\HTF_TransportModel\HTFSourceLoop\InnerLoop	Added to input HTFTransportSubmodel interface	Y	I think you meant CaseC	Yes. I did mean C.	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.003.gsm	Source Model ID (or filename): HTF Transport Model v0.002.gsm
New Model File Date: 7/16/10	Source Model File Date: 7/12/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PFFlows_CZ_VolFlwRate_CaseE	\HTF_TransportModel\HTFSourceLoop\InnerLoop	Added to input HTFTransportSubmodel interface	Y	NONE	NA	Y
PFFlows_Grout_VolFlwRate_Case**=A-E	\HTF_TransportModel\HTFSourceLoop\InnerLoop	Added to input HTFTransportSubmodel interface	Y	NONE	NA	Y
PFFlows_pad_VolFlwRate_Case**=A-E	\HTF_TransportModel\HTFSourceLoop\InnerLoop	Added to input HTFTransportSubmodel interface	Y	NONE	NA	Y
PFFlows_CZ_VolFlwRate_~~CaseE~~CaseC	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Added selector element for feed to the submodel	Y	I think you meant Case C	Yes. I did mean C.	Y
PFFlows_CZ_VolFlwRate_CaseE	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Added selector element for feed to the submodel	Y	NONE	NA	Y
PFFlows_Grout_VolFlwRate_Case**=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Added selector elements for feeds to the submodel	Y	NONE	NA	Y
PFFlows_pad_VolFlwRate_Case**=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Added selector elements for feeds to the submodel	Y	NONE	NA	Y
GroutCZ_Volumetric_Flow	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added selector to choose flow based on tank type and case (configuration) selection	Y	NONE	NA	Y
Grout_Volumetric_Flow	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added selector to choose flow based on tank type and case (configuration) selection	Y	NONE	NA	Y
Basemat_Volumetric_Flow	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added selector to choose flow based on tank type and case (configuration) selection	Y	NONE	NA	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.003.gsm	Source Model ID (or filename): HTF Transport Model v0.002.gsm
New Model File Date: 7/16/10	Source Model File Date: 7/12/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
FlowRate_Grout	\HTFTanks_Transport_Model\WasteLayer\PoreFlushes	Renamed and updated selector to choose velocity field for grout breakdown based upon whether the tank is submerged or not	Y	NONE	NA	Y
FlowRate_CZ	\HTFTanks_Transport_Model\WasteLayer\PoreFlushes	Renamed and updated selector to choose velocity field for CZ breakdown based upon whether the tank is submerged or not. Note this flow rate is only used in Cases C and E and dummy flows from grout are used where CZ volumetric flows are unavailable	Y	NONE	NA	Y
FlowThruPores_CZ	\HTFTanks_Transport_Model\WasteLayer\PoreFlushes	Integrator set up to evealuate total flow into the CZ over time	Y	NONE	NA	Y
KdImpact	\HTFTanks_Transport_Model\WasteLayer\PoreFlushes	No change implemented for this element	ok	NONE	NA	Y
NumberofFlushes_CZ	\HTFTanks_Transport_Model\WasteLayer\PoreFlushes	Equation changed to FlowThruPores_CZ/PoreVolume_CZ	Y	NONE	NA	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.003.gsm	Source Model ID (or filename): HTF Transport Model v0.002.gsm
New Model File Date: 7/16/10	Source Model File Date: 7/12/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
FlowRate	\HTFTanks_Transport_Model\ConcretePadDegradation	Selector updated to If SourceID>8 Then Basemat_Volumetric_Flow/TankArea Else UnsatDarcyFlux_Deg*(1+CrossFlow/ClosureCapInfiltration(ETime))	Y	NONE	NA	Y
UnsatDarcyFlux	\HTFTanks_Transport_Model\LinerFailure	Equation updated to WaterAdvection_Switch * max(Infiltration,0.0 cm/yr) to prevent backflow which cannot be used in uncoupled cells	Y	NONE	NA	Y
UnsatDarcyFlux_Deg	\HTFTanks_Transport_Model\LinerFailure	Equation updated to WaterAdvection_Switch * max(Infiltration_Deg,0.0 cm/yr) to prevent backflow which cannot be used in uncoupled cells	Y	NONE	NA	Y
STAT100A	\PORFLOWFeedsToDoseCalculations	Reloaded with updated EXCEL File of the same name and set to "Locally defined data"	Y	NONE	NA	Y
STAT100B	\PORFLOWFeedsToDoseCalculations	Reloaded with updated EXCEL File of the same name and set to "Locally defined data"	Y	NONE	NA	Y
STAT100C	\PORFLOWFeedsToDoseCalculations	Reloaded with updated EXCEL File of the same name and set to "Locally defined data"	Y	NONE	NA	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.003.gsm	Source Model ID (or filename): HTF Transport Model v0.002.gsm
New Model File Date: 7/16/10	Source Model File Date: 7/12/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
STAT100D	\PORFLOWFeedsToDose Calculations	Reloaded with updated EXCEL File of the same name and set to "Locally defined data"	Y	NONE	NA	Y
STAT100E	\PORFLOWFeedsToDose Calculations	Reloaded with updated EXCEL File of the same name and set to "Locally defined data"	Y	NONE	NA	Y
STAT100F	\PORFLOWFeedsToDose Calculations	Reloaded with updated EXCEL File of the same name and set to "Locally defined data"	Y	NONE	NA	Y
STAT1A	\PORFLOWFeedsToDose Calculations	Reloaded with updated EXCEL File of the same name and set to "Locally defined data"	Y	NONE	NA	Y
STAT1B	\PORFLOWFeedsToDose Calculations	Reloaded with updated EXCEL File of the same name and set to "Locally defined data"	Y	NONE	NA	Y
STAT1C	\PORFLOWFeedsToDose Calculations	Reloaded with updated EXCEL File of the same name and set to "Locally defined data"	Y	NONE	NA	Y
STAT1D	\PORFLOWFeedsToDose Calculations	Reloaded with updated EXCEL File of the same name and set to "Locally defined data"	Y	NONE	NA	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.003.gsm	Source Model ID (or filename): HTF Transport Model v0.002.gsm
New Model File Date: 7/16/10	Source Model File Date: 7/12/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
STAT1E	\PORFLOWFeedsToDose Calculations	Reloaded with updated EXCEL File of the same name and set to "Locally defined data"	Y	NONE	NA	Y
STAT1F	\PORFLOWFeedsToDose Calculations	Reloaded with updated EXCEL File of the same name and set to "Locally defined data"	Y	NONE	NA	Y
STATSLA	\PORFLOWFeedsToDose Calculations	Reloaded with updated EXCEL File of the same name and set to "Locally defined data"	Y	NONE	NA	Y
MaximumDoseBySpecies	\HTF_DoseCalculations\DoseResults\GoldSimMOPWellDoseResults	Added expression element with the following equation: max(TotalDoseSum[*,1],TotalDoseSum[*,2],TotalDoseSum[*,3],TotalDoseSum[*,5],TotalDoseSum[*,6]) (note that Sector 4 (D) is not used in the analysis)	Y	NONE	NA	Y
NucDose_Water_Sectors	\HTF_DoseCalculations\ExposureMediaConc	Updated Equation to: NucDose_Sectors_Tanks+NucDose_Water_Sectors_AE	Y	NONE	NA	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.003.gsm	**Source Model ID (or filename):** HTF Transport Model v0.002.gsm
New Model File Date: 7/16/10	**Source Model File Date:** 7/12/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
MaximumConcentrationBySpecies	\HTF_DoseCalculations\ExposureMediaConc	Added expression element with the following equation: max(NucDose_Water_Sectors[*,1],NucDose_Water_Sectors[*,2],NucDose_Water_Sectors[*,3],NucDose_Water_Sectors[*,5],NucDose_Water_Sectors[*,6])	Y	NONE	NA	Y
PeakConcentrationBySpecies	\HTF_DoseCalculations\ExposureMediaConc	Added extrema element to derive the maximum value of MaximumConcentrationBySpecies over time	Y	NONE	NA	Y
EndPoints	\MultiVariate	Added species specific output from MaximumDoseBySpecies, MaximumConcentrationBySpecies, NucDose_Water_Sectors and PeakConcentrationBySpecies	Y	NONE	NA	Y
EndPoints_SA	\MultiVariate	Added stochastics to updated EndPoints	Y	NONE	NA	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.003.gsm	**Source Model ID (or filename):** HTF Transport Model v0.002.gsm
New Model File Date: 7/16/10	**Source Model File Date:** 7/12/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Analyst: Barry Lester				**E-Signature (or sign/date/scan hardcopy):** (Not required if no comments) 7/19/2010		
Checker: Steve Hommel				**E-Signature (or sign/date/scan hardcopy):** Steve Hommel Digitally signed by Steve Hommel DN: cn=Steve Hommel, o, ou, email=Steven.Hommel@srs.gov, c=US Date: 2010.07.19 11:22:01 -04'00'		

SPH 7/19/2010

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Changed Model Check Form

New Model ID (or filename):	Source Model ID (or filename):
HTF Transport Model v0.004.gsm	HTF Transport Model v0.003.gsm
New Model File Date: 7/28/10	**Source Model File Date:** 7/16/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Can this new model be traced (by following the Source Model IDs) back to a source model with a completed Initial Model Check Form (QA&DV Form 4)? - If so, proceed. If not, disregard this form and complete an Initial Model Check Form (QA&DV Form 4) for this model.						
Submodel elements are denoted by this shading						
TcOR2	\General_Inputs\WaterProperties\WaterInWaste\OxdizedDistribution	Value of first term in discrete distribution changed from 0 to -1 (note that the change did not register as a change in GoldSim and needs to be checked against the previous version)	Y	NA	NA	Y

If checker has no comments, check here. ☒ Add additional rows above, as needed.

Analyst Name (print):	E-Signature (or sign/date/scan hardcopy): (Not required if no comments)
Barry Lester/Jenifer Linville	NA
Checker Name (print): Steve Hommel	**E-Signature (or sign/date/scan hardcopy):** Steve Hommel Digitally signed by Steve Hommel DN: cn=Steve Hommel, o, ou, email=Steven.Hommel@srs.gov, c=US Date: 2010.08.10 15:48:12 -04'00'

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The Analyst's signature is not required because the Checker made no comments that required resolution.

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.005.gsm	**Source Model ID (or filename):** HTF Transport Model v0.004.gsm
New Model File Date: 8/10/10	**Source Model File Date:** 7/28/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Can this new model be traced (by following the Source Model IDs) back to a source model with a completed Initial Model Check Form (QA&DV Form 4)? - If so, proceed. If not, disregard this form and complete an Initial Model Check Form (QA&DV Form 4) for this model.						
Submodel elements are denoted by this shading						
DiffAnnulusTime1	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Set values for Type II Tanks Cases B-E	Y	Verified values against values in source files (as referenced with the element and provided in the AdditionalInfo folder).	NA	Y
DiffAnnulusTime2	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Set values for Type II Tanks Cases B-E	Y	Verified values against values in source files (as referenced with the element and provided in the AdditionalInfo folder).	NA	Y

If checker has no comments, check here. ☒ Add additional rows above, as needed.

Analyst Name (print): Barry Lester	**E-Signature (or sign/date/scan hardcopy):** (Not required if no comments) NA
Checker Name (print): Steve Hommel	**E-Signature (or sign/date/scan hardcopy):** Steve Hommel Digitally signed by Steve Hommel DN: cn=Steve Hommel, o, ou, email=steven.hommel@srs.gov, c=US Date: 2010.08.12 16:35:01 -04'00'

HTF Transport Model v0.005_Form-5.doc 1 of 1 8/12/2010

The Analyst's signature is not required because the Checker made no comments that required resolution.

Closure & Waste Disposal Authority

QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.006.gsm	**Source Model ID (or filename):** HTF Transport Model v0.005.gsm
New Model File Date: 8/24/10	**Source Model File Date:** 8/10/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Can this new model be traced (by following the Source Model IDs) back to a source model with a completed Initial Model Check Form (QA&DV Form 4)? - If so, proceed. If not, disregard this form and complete an Initial Model Check Form (QA&DV Form 4) for this model.						
Submodel elements are denoted by this shading						
SecondaryLiner	\HTFTanks_Transport_Model\Basemat\SandPads\SecondaryLiner	Outflows – Link to ConcretePadIn deleted	Y	NA	NA	Y
SecondaryLiner	\HTFTanks_Transport_Model\Basemat\SandPads\SecondaryLiner	Diffusive Fluxes – Link to ConcretePadIn deleted	Y	NA	NA	Y
UA_Results	\HTF_DoseCalculations\DoseResults\GoldSimMOPWellDoseResults	New container added	Y	NA	NA	Y
MaxDoseBySpecies_result	\HTF_DoseCalculations\DoseResults\GoldSimMOPWellDoseResults\UA_Results	Time history element added to output maximum dose contribution by species	Y	NA	NA	Y
HighTotalSectorDose_result	\HTF_DoseCalculations\DoseResults\GoldSimMOPWellDoseResults\UA_Results	Time history element added to output total dose	Y	NA	NA	Y
GrandTotalDoseMax_result	\HTF_DoseCalculations\DoseResults\GoldSimMOPWellDoseResults\UA_Results	Distribution element added to output peak dose statistics	Y	NA	NA	Y
GrandTotalDoseMax_10ky_result	\HTF_DoseCalculations\DoseResults\GoldSimMOPWellDoseResults\UA_Results	Distribution element added to output peak dose statistics for first 10,000 years	Y	NA	NA	Y

Closure & Waste Disposal Authority

QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.006.gsm	Source Model ID (or filename): HTF Transport Model v0.005.gsm
New Model File Date: 8/24/10	Source Model File Date: 8/10/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
MasterClock	Simulation Settings	The version report indicates that the master clock was changed, but settings are consistent with HTF Transport Model v0.005.gsm	Y	NA	NA	Y

If checker has no comments, check here. ☒ Add additional rows above, as needed.

Analyst Name (print): Barry Lester	E-Signature (or sign/date/scan hardcopy): (Not required if no comments) NA
Checker Name (print): Steve Hommel	E-Signature (or sign/date/scan hardcopy): Steve Hommel Digitally signed by Steve Hommel DN: cn=Steve Hommel, o, ou, email=steven.hommel@srs.gov, c=US Date: 2010.09.14 15:30:11 -04'00'

HTF Transport Model v0.006_Form-5.doc

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9/14/2010

The Analyst's signature is not required because the Checker made no comments that required resolution.

Closure & Waste Disposal Authority

QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.007.gsm (Implementation - Part A)	Source Model ID (or filename): HTF Transport Model v0.006.gsm
New Model File Date: 9/29/10	Source Model File Date: 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Can this new model be traced (by following the Source Model IDs) back to a source model with a completed Initial Model Check Form (QA&DV Form 4)? - If so, proceed. If not, disregard this form and complete an Initial Model Check Form (QA&DV Form 4) for this model.						
Submodel elements are denoted by this shading						
UZOutBySource_TH	\TransportModel_Results	Time Histories enabled	Y	None	NA	Y
NucDose_Water_Wells_TH	\HTF_DoseCalculations\ExposureMediaConc	Time Histories enabled	Y	None	NA	Y
EndPointData_I129	\HTF_DoseCalculations\ExposureMediaConc	Time Histories enabled	Y	None	NA	Y
EndPointData_Np237	\HTF_DoseCalculations\ExposureMediaConc	Time Histories enabled	Y	None	NA	Y
EndPointData_Pu239	\HTF_DoseCalculations\ExposureMediaConc	Time Histories enabled	Y	None	NA	Y
EndPointData_Ra226	\HTF_DoseCalculations\ExposureMediaConc	Time Histories enabled	Y	None	NA	Y
EndPointData_Tc99	\HTF_DoseCalculations\ExposureMediaConc	Time Histories enabled	Y	None	NA	Y
DiffAnnulusTime2	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Replaced data with values from *Pu times 9-02-10.xls*	Y	None	NA	Y
DiffBasematTime1	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Replaced data with values from *Pu times 9-02-10.xls*	Y	None	NA	Y
DiffBasematTime2	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Replaced data with values from *Pu times 9-02-10.xls*	Y	None	NA	Y
DiffTankGroutTime2	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Replaced data with values from *Pu times 9-02-10.xls*	Y	None	NA	Y
DiffCZTime1	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Replaced data with values from *Pu times 9-02-10.xls*	N	Only CaseA values match values from *Pu times 9-02-10.xls*	Only CaseA has transition times (which are based on degradation times)	Y

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QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.007.gsm (Implementation - Part A)	**Source Model ID (or filename):** HTF Transport Model v0.006.gsm
New Model File Date: 9/29/10	**Source Model File Date:** 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
DiffCZTime2	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Replaced data with values from *Pu times 9-02-10.xls*	N	Only CaseA values match values from *Pu times 9-02-10.xls*	Only CaseA has transition times (which are based on degradation times)	Y
PFFlows_TankGrout	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Added container element	Y	None	NA	Y
PFFlows_CZ	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Added container element	Y	None	NA	Y
PFFlows_Basemat	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Added container element	Y	None	NA	Y
PFFlows_Liners	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Added container element	Y	None	NA	Y
PFFlows_UZ	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Added container element	Y	None	NA	Y
PFFlows_Sandpads	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Added container element	Y	None	NA	Y
PFFlows_Annulus	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Added container element	Y	None	NA	Y
PFFlows_Wall	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Added container element	Y	None	NA	Y
PFFlows_pad_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Basemat	Replaced data with updated values from CaseXX.xls	Y	None	NA	Y
PFFlows_grout_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_TankGrout	Replaced data with updated values from CaseXX.xls	Y	None	NA	Y

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QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.007.gsm (Implementation - Part A)	Source Model ID (or filename): HTF Transport Model v0.006.gsm
New Model File Date: 9/29/10	Source Model File Date: 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PFFlows_CZ_Case XX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_CZ	Replaced data with updated values from CaseXX.xls	Y	None	NA	Y
PFFlows_P_Sand_ CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Sandpads	Replaced data with updated values from CaseXX.xls	Y	None	NA	Y
PFFlows_ S_Sand _CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Sandpads	Replaced data with updated values from CaseXX.xls	Y	None	NA	Y
PFFlows_Annulus_ CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Annulus	Replaced data with updated values from CaseXX.xls	N	Values (for all cases [except for the Type II and II no liner tanks]) do not match values in the referenced Excel files (sheet: ANNULUS_GROUT_V)	For this parameter, only Type II data is needed for modeling. Omission of other tank types was intentional.	Y
PFFlow_grout_Vol FlwRate_Case XX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Tank Grout	Replaced data with updated values from CaseXX.xls	Y	None	NA	Y
PFFlows_pad_Vol FlwRate_Case XX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Basemat	Replaced data with updated values from CaseXX.xls	Y	None	NA	Y
PFFlows_CZ_VolFlwRate_Case XX, XX=C,E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_CZ	Y	None	NA	Y

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QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.007.gsm (Implementation - Part A)	Source Model ID (or filename): HTF Transport Model v0.006.gsm
New Model File Date: 9/29/10	Source Model File Date: 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
WellDistance	\HTFTanks_Transport_Model\SiteGeometry	Subtracted tank radius from distance since the tank radius is already accounted fro in the footprint cells. Changed to: BufferDistance_Tanks_table[TankIndex]-sqrt(TankAreas[TankIndex]/pi)	Y	None	NA	Y
PFFlows_grout_ff_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Tank Grout	Added data element with values from CaseXX.xls	Y	None	NA	Y
PFFlows_pad_ff_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Basemat	Added data element with values from CaseXX.xls	Y	None	NA	Y
PFFlows_pliner_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Liners	Added data element with values from CaseXX.xls	Y	None	NA	Y
PFFlows_pliner_ff_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Liners	Added data element with values from CaseXX.xls	Y	None	NA	Y
PFFlows_sliner_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Liners	Added data element with values from CaseXX.xls	Y	None	NA	Y
PFFlows_sliner_ff_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Liners	Added data element with values from CaseXX.xls	Y	None	NA	Y

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QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.007.gsm (Implementation - Part A)	**Source Model ID (or filename):** HTF Transport Model v0.006.gsm
New Model File Date: 9/29/10	**Source Model File Date:** 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PFFlows_UZ_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_UZ	Added data element with native soil values from CaseXX.xls	Y	None	NA	Y
PFFlows_P_Sand_ff_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Sandpads	Added data element with values from CaseXX.xls	N	Values (for Case D) do not match values in the referenced Excel files (sheet: P_SAND_FF_V)	Corrected in v.008	Y
PFFlows_S_Sand_ff_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Sandpads	Added data element with values from CaseXX.xls	Y	None	NA	Y
PFFlows_wall_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Wall	Added data element with values from CaseXX.xls	Y	None	NA	Y
HTFTransportSubmodel	HTFTransportSubmodel	Added new data elements to input interface	Y	None	NA	Y
PFFlows_TankGrout	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Added container element	Y	None	NA	Y
PFFlows_CZ	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Added container element	Y	None	NA	Y
PFFlows_Basemat	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Added container element	Y	None	NA	Y
PFFlows_Liners	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Added container element	Y	None	NA	Y
PFFlows_UZ	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Added container element	Y	None	NA	Y
PFFlows_Sandpads	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Added container element	Y	None	NA	Y

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QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.007.gsm (Implementation - Part A)	Source Model ID (or filename): HTF Transport Model v0.006.gsm
New Model File Date: 9/29/10	Source Model File Date: 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PFFlows_Annulus	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Added container element	Y	None	NA	Y
PFFlows_Wall	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Added container element	Y	None	NA	Y
PFFlows_pad_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Moved to PFFlows_Basemat	Y	None	NA	Y
PFFlows_grout_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Moved to PFFlows_TankGrout	Y	None	NA	Y
PFFlows_CZ_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Moved to PFFlows_CZ	Y	None	NA	Y
PFFlows_P_Sand_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Moved to PFFlows_Sandpads	Y	None	NA	Y
PFFlows_ S_Sand_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Moved to PFFlows_Sandpads	Y	None	NA	Y
PFFlows_Annulus_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Moved to PFFlows_Annulus	Y	None	NA	Y
PFFlow_grout_VolFlwRate_Case XX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Moved to PFFlows_TankGrout	Y	None	NA	Y
PFFlows_pad_VolFlwRate_Case XX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Moved to PFFlows_Basemat	Y	None	NA	Y
PFFlows_CZ_VolFlwRate_Case XX, XX=C,E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Moved to PFFlows_CZ	Y	None	NA	Y
PFFlows_grout_ff_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_TankGrout	Added selector element to pass data into submodel	Y	None	NA	Y

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QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.007.gsm (Implementation - Part A)	Source Model ID (or filename): HTF Transport Model v0.006.gsm
New Model File Date: 9/29/10	Source Model File Date: 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PFFlows_pad_ff_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_Basemat	Added selector element to pass data into submodel	Y	None	NA	Y
PFFlows_pliner_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_Liners	Added selector element to pass data into submodel	Y	None	NA	Y
PFFlows_pliner_ff_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_Liners	Added selector element to pass data into submodel	Y	None	NA	Y
PFFlows_sliner_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_Liners	Added selector element to pass data into submodel	Y	None	NA	Y
PFFlows_sliner_ff_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_Liners	Added selector element to pass data into submodel	Y	None	NA	Y
PFFlows_UZ_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_UZ	Added selector element to pass data into submodel	Y	None	NA	Y
PFFlows_P_Sand_ff_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_Sandpads	Added selector element to pass data into submodel	Y	None	NA	Y
PFFlows_S_Sand_ff_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_Sandpads	Added selector element to pass data into submodel	Y	None	NA	Y
PFFlows_wall_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_Wall	Added selector element to pass data into submodel	Y	None	NA	Y
PF_Flow_ff_TankGrout	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added selector switch to assign the flow field by configuration	Y	None	NA	Y
PF_Flow_ff_Basemat	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added selector switch to assign the flow field by configuration	Y	None	NA	Y

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QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.007.gsm (Implementation - Part A)	Source Model ID (or filename): HTF Transport Model v0.006.gsm
New Model File Date: 9/29/10	Source Model File Date: 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PF_Flow_UZ	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added selector switch to assign the flow field by configuration	Y	None	NA	Y
PF_Flow_ff_PLiner	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added selector switch to assign the flow field by configuration	Y	None	NA	Y
PF_Flow_ff_SLiner	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added selector switch to assign the flow field by configuration	Y	None	NA	Y
PF_Flow_PLiner	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added selector switch to assign the flow field by configuration	Y	None	NA	Y
PF_Flow_SLiner	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added selector switch to assign the flow field by configuration	Y	None	NA	Y
PF_Flow_ff_P_Sand	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added selector switch to assign the flow field by configuration	Y	None	NA	Y
PF_Flow_ff_S_Sand	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added selector switch to assign the flow field by configuration	Y	None	NA	Y
PF_Flow_Wall	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added selector switch to assign the flow field by configuration	Y	None	NA	Y

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QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.007.gsm (Implementation - Part A)	Source Model ID (or filename): HTF Transport Model v0.006.gsm
New Model File Date: 9/29/10	Source Model File Date: 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
TypeI_Tank_ff_Radius	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\Tank_Dimensions	Added data element with radius of fast flow zone for Type I tanks (see PORFLOW xMesh.dat files)	Y	None	NA	Y
TypeII_Tank_ff_Radius	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\Tank_Dimensions	Added data element with radius of fast flow zone for Type II tanks (see PORFLOW xMesh.dat files)	Y	None	NA	Y
TypeIII_Tank_ff_Radius	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\Tank_Dimensions	Added data element with radius of fast flow zone for Type III tanks (see PORFLOW xMesh.dat files)	Y	None	NA	Y
TypeIV_Tank_ff_Radius	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\Tank_Dimensions	Added data element with radius of fast flow zone for Type IV tanks (see PORFLOW xMesh.dat files)	Y	None	NA	Y
Tank_ff_Radii	HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\Tank_Dimensions	Added data element dimensioned by the number of tanks to assign the fast flow zone radii	Y	None	NA	Y
HTFTransportSubmodel	HTFTransportSubmodel	Added Tank_ff_Radii to input interface	Y	None	NA	Y

Closure & Waste Disposal Authority

QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.007.gsm (Implementation - Part A)	Source Model ID (or filename): HTF Transport Model v0.006.gsm
New Model File Date: 9/29/10	Source Model File Date: 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Tank_ff_Radius	\HTFTanks_Transport_Model\SiteGeometry	Added expression element which sets the fast flow zone radius for a specific tank using the equation Tank_ff_Radii[TankIndex]	Y	None	NA	Y
TankArea_ff	\HTFTanks_Transport_Model\SiteGeometry	Added expression element which sets the fast flow zone horizontal area for a specific tank using the equation pi*Tank_ff_Radius^2	Y	None	NA	Y
TankArea_sf	\HTFTanks_Transport_Model\SiteGeometry	Added expression element which gives the slow flow zone horizontal area for a specific tank using the equation TankArea-TankArea_ff	Y	None	NA	Y
TankArea_sf_ratio	\HTFTanks_Transport_Model\SiteGeometry	Added expression element which gives the ratio of the slow flow zone horizontal area to the total tank area for a specific tank using the equation TankArea_sf/TankArea	Y	None	NA	Y

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QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.007.gsm (Implementation - Part A)	Source Model ID (or filename): HTF Transport Model v0.006.gsm
New Model File Date: 9/29/10	Source Model File Date: 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
TankArea_ff_ratio	\HTFTanks_Transport_Model\SiteGeometry	Added expression element which gives the ratio of the fast flow zone horizontal area to the total tank area for a specific tank using the equation 1.0-TankArea_sf_ratio	Y	None	NA	Y
PF_Flow	\HTFTanks_Transport_Model\LinerFailure	Moved to \InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly and changed name to PF_Flow_Basemat	Y	None	NA	Y
PF_Flow_CZ	\HTFTanks_Transport_Model\LinerFailure	Moved to \InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Y	None	NA	Y
PF_Flow_P_Sand	\HTFTanks_Transport_Model\LinerFailure	Moved to \InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Y	None	NA	Y
PF_Flow_S_Sand	\HTFTanks_Transport_Model\LinerFailure	Moved to \InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Y	None	NA	Y
PF_Flow_Annulus	\HTFTanks_Transport_Model\LinerFailure	Moved to \InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Grout_Flow_Deg	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Changed name to PF_Flow_TankGrout	Y	None	NA	Y
Grout_Flow	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Moved to \HTFTanks_Transport_Model\LinerFailure	Y	None	NA	Y
Grout_Flow	\HTFTanks_Transport_Model\LinerFailure	Changed name to TankGrout_Flow	Y	None	NA	Y
LinerFlowControl	\HTFTanks_Transport_Model\LinerFailure	Added Container to hold liner control flow selectors	Y	None	NA	Y
PLFFlowControl	\HTFTanks_Transport_Model\LinerFailure\LinerFlowControl	Data element that is used to zero out flow before liner fails in non-TypeII tanks or in sections including an atop the primary liner for Type II tanks	Y	None	NA	Y
PLFFlowControl_TypeII	\HTFTanks_Transport_Model\LinerFailure\LinerFlowControl	Data element that is used to zero out flow before liner fails in primary sand layer for TypeII tanks	Y	None	NA	Y
TankGrout_Flow_ff	\HTFTanks_Transport_Model\LinerFailure\LinerFlowControl	Selector element that is used to zero out flow before liner fails	Y	None	NA	Y
PLiner_Flow	\HTFTanks_Transport_Model\LinerFailure\LinerFlowControl	Selector element that is used to zero out flow before liner fails	Y	None	NA	Y
PLiner_Flow_ff	\HTFTanks_Transport_Model\LinerFailure\LinerFlowControl	Selector element that is used to zero out flow before liner fails	Y	None	NA	Y
SLiner_Flow	\HTFTanks_Transport_Model\LinerFailure\LinerFlowControl	Selector element that is used to zero out flow before liner fails	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
SLiner_Flow_ff	\HTFTanks_Transport_Model\LinerFailure\LinerFlow Control	Selector element that is used to zero out flow before liner fails	Y	None	NA	Y
Basemat_Flow	\HTFTanks_Transport_Model\LinerFailure\LinerFlow Control	Selector element that is used to zero out flow before liner fails	Y	None	NA	Y
Basemat_Flow_ff	\HTFTanks_Transport_Model\LinerFailure\LinerFlow Control	Selector element that is used to zero out flow before liner fails	Y	None	NA	Y
UZ_Flow	\HTFTanks_Transport_Model\LinerFailure\LinerFlow Control	Selector element that is used to zero out flow before liner fails	Y	None	NA	Y
P_Sand_Flow	\HTFTanks_Transport_Model\LinerFailure\LinerFlow Control	Selector element that is used to zero out flow before liner fails or if tank is not a type II tank	Y	None	NA	Y
P_Sand_Flow_ff	\HTFTanks_Transport_Model\LinerFailure\LinerFlow Control	Selector element that is used to zero out flow before liner fails or if tank is not a type II tank	Y	None	NA	Y
S_Sand_Flow	\HTFTanks_Transport_Model\LinerFailure\LinerFlow Control	Selector element that is used to zero out flow if tank is not a type II tank	Y	None	NA	Y
S_Sand_Flow_ff	\HTFTanks_Transport_Model\LinerFailure\LinerFlow Control	Selector element that is used to zero out flow if tank is not a type II tank	Y	None	NA	Y
Wall_Flow	\HTFTanks_Transport_Model\LinerFailure\LinerFlow Control	Selector element that is used to zero out flow if tank is not a type II tank	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
BasematDarcyFlux_Deg	\HTFTanks_Transport_Model\LinerFailure\LinerFlowControl	Deleted, renamed Basemat_Flow as BasematDarcyFlux_Deg then reset name back to Basemat_Flow	Y	None	NA	Y
BasematDarcyFlux_Deg	\HTFTanks_Transport_Model\LinerFailure\LinerFlowControl	Reset to max(PF_Flow_Basemat ,0.0 cm/yr)	Y	None	NA	Y
LinerThickness	\HTFTanks_Transport_Model\Basemat\PrimaryLiner	Renamed PLinerThickness	Y	None	NA	Y
LinerThickness	\HTFTanks_Transport_Model\Basemat\SandPads\SecondaryLiner	Renamed SLinerThickness	Y	None	NA	Y
PLinerThickness	\HTFTanks_Transport_Model\Basemat\SandPads\SecondaryLiner	Moved to \HTFTanks_Transport_Model\Liners	Y	None	NA	Y
SLinerThickness	\HTFTanks_Transport_Model\Basemat\SandPads\SecondaryLiner	Moved to \HTFTanks_Transport_Model\Liners	Y	None	NA	Y
SecondaryLiner	\HTFTanks_Transport_Model\Basemat\SandPads	Deleted container and remaining contents	Y	None	NA	Y
PrimaryLiner	\HTFTanks_Transport_Model	Changed name to Liners	Y	None	NA	Y
AnnulusBottom	\HTFTanks_Transport_Model\Basemat\SandPads\AnnulusModel	Switched outflow to SecondaryLiner	Y	None	NA	Y
AnnulusBottom	\HTFTanks_Transport_Model\Basemat\SandPads\AnnulusModel	Switched diffusive flux to SecondaryLiner	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PrimaryLinerThickness	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\LinerDimensions	Separated two liners for all tank types. Element now reads: 0.5 in 0.5 in 0.5 in 0.5 in 0.375 in 0.5 in 0.5 in 0.5 in	Y	None	NA	Y
SecondaryLinerThickness	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\LinerDimensions	Separated two liners for all tank types. Element now reads: 0.5 in 0.5 in 0.5 in 0.5 in 0.001 in 0.375 in 0.375 in 0.375 in	Y	None	NA	Y
PrimaryLiner	\HTFTanks_Transport_Model\Liners	Switched outflow and diffusive flux from basemat to Secondary liner	Y	None	NA	Y
SecondaryLiner	\HTFTanks_Transport_Model\Liners	Added outflow and diffusive flux to basemat.	Y	None	NA	Y
PrimaryLiner	\HTFTanks_Transport_Model\Liners	Changed outflow rates to new liner rates	Y	None	NA	Y
SecondaryLiner	\HTFTanks_Transport_Model\Liners	Changed outflow rates to new liner rates	Y	None	NA	Y

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New Model File Date: 9/29/10	Source Model File Date: 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PrimaryLiner	\HTFTanks_Transport_Model\Liners	Changed water volume solid mass, outflow and diffusive flux area terms by a factor of TankArea_sf_ratio	Y	None	NA	Y
SecondaryLiner	\HTFTanks_Transport_Model\Liners	Changed water volume solid mass, outflow and diffusive flux area terms by a factor of TankArea_sf_ratio	Y	None	NA	Y
PrimaryLiner_ff	\HTFTanks_Transport_Model\Liners	Added fast flow region cell	Y	None	NA	Y
SecondaryLiner_ff	\HTFTanks_Transport_Model\Liners	Added fast flow region cell	Y	None	NA	Y
SandInventoryTimeFactor	\HTFTanks_Transport_Model\SandPads\SandInventory	Multiplied the inventory by TankArea_sf_ratio	N	Inventory is NOT multiplied by TankArea_sf_ratio	Fixed in version 10	Y*
SandInventoryTimeFactor_Prim	\HTFTanks_Transport_Model\SandPads\SandInventory	Multiplied the inventory by TankArea_sf_ratio	Y	None	NA	Y
SandInventoryTimeFactor_Sec	\HTFTanks_Transport_Model\SandPads\SandInventory	Multiplied the inventory by TankArea_sf_ratio	Y	None	NA	Y
SandInventoryTimeFactor_ff	\HTFTanks_Transport_Model\SandPads\SandInventory	Set up predecayed inventory for the fast flow zone	Y	None	NA	Y
SandInventoryTimeFactor_Prim_ff	\HTFTanks_Transport_Model\SandPads\SandInventory	Set up predecayed inventory for the fast flow zone	Y	None	NA	Y
SandInventoryTimeFactor_Sec_ff	\HTFTanks_Transport_Model\SandPads\SandInventory	Set up predecayed inventory for the fast flow zone	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PrimarySandLayer	\HTFTanks_Transport_Model\SandPads	Changed water volume solid mass, outflow and diffusive flux area terms by a factor of TankArea_sf_ratio	N	Diffusive flux area from PrimarySandLayer to Annulus bottom area does not include a factor of TankArea_sf_ratio	This is because the diffusive area is vertical	Y
SecondarySandLayer	\HTFTanks_Transport_Model\SandPads	Changed water volume solid mass, outflow and diffusive flux area terms by a factor of TankArea_sf_ratio	Y	None	NA	Y
PrimarySandLayer_ff	\HTFTanks_Transport_Model\SandPads	Added cell for fast zone	Y	None	NA	Y
SecondarySandLayer_ff	\HTFTanks_Transport_Model\SandPads	Added cell for fast zone	N	Diffusive flux area from SecondarySandLayer_ff to ConcretePadIn_ff area includes a factor of TankArea_sf_ratio – should be TankArea_ff_ratio	Fixed in version 10	Y*
SandPos	\HTFTanks_Transport_Model\SandPads	Added data element to allow the user to include upward flow or disregard it	Y	None	NA	Y
PF_Flow_P_Sand_pos	\HTFTanks_Transport_Model\SandPads	Added selection for allowing for upward flow	Y	None	NA	Y
PF_Flow_S_Sand_pos	\HTFTanks_Transport_Model\SandPads	Added selection for allowing for upward flow	Y	None	NA	Y
PF_Flow_P_Sand_pos_ff	\HTFTanks_Transport_Model\SandPads	Added selector element for allowing eliminating upward flow in fast flow zone if desired	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PF_Flow_S_Sand_pos_ff	\HTFTanks_Transport_Model\SandPads	Added selector element for allowing eliminating upward flow in fast flow zone if desired	Y	None	NA	Y
TankIIOn	\HTFTanks_Transport_Model\SiteGeometry	Added selector element to create link structure needed for Type II tanks	Y	None	NA	Y
TankIVOn	\HTFTanks_Transport_Model\SiteGeometry	Added selector element to create link structure needed for Type IV tanks	Y	None	NA	Y
UseCZFlow	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added input element to control whether the CZ vertical flow values or the P_Liner vertical flow values are used to determine the flow from the CZ into the P_Liner	Y	None	NA	Y
CZPos	\HTFTanks_Transport_Model\WasteLayer	Allows the user to disallow upward flow in the CZ	Y	None	NA	Y
PF_Flow_CZ_pos	\HTFTanks_Transport_Model\WasteLayer	Updated selector element to allow control using UseCZFlow and CZPos	Y	None	NA	Y
PF_Flow_CZ_pos_ff	\HTFTanks_Transport_Model\WasteLayer	Set up fast flow zone data in case using the liner flow option is chosen	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
WasteCell	\HTFTanks_Transport_Model\WasteLayer	Updated outflows to incorporate fast flow data	Y	None	NA	Y
UsePSandFlow	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added input element to control whether the P_Sand vertical flow values or the S_Liner vertical flow values are used to determine the flow from the P_Sand into the S_Liner	Y	None	NA	Y
DiffusiveArea_P1a_Sand	\HTFTanks_Transport_Model\SandPads	Deleted element	Y	None	NA	Y
DiffusiveArea_P1b_Sand	\HTFTanks_Transport_Model\SandPads	Renamed DiffusiveArea_P1a_Sand	Y	None	NA	Y
ConcretePadIn	\HTFTanks_Transport_Model\Basemat	Added scaling factor for slow zone TankArea_sf_ratio to water volume, solid mass, outflows and diffusive fluxes	Y	None	NA	Y
ConcretePad01	\HTFTanks_Transport_Model\Basemat	Added scaling factor for slow zone TankArea_sf_ratio to water volume, solid mass, outflows and diffusive fluxes	Y	None	NA	Y
ConcretePad02	\HTFTanks_Transport_Model\Basemat	Added scaling factor for slow zone TankArea_sf_ratio to water volume, solid mass, outflows and diffusive fluxes	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
ConcretePad03	\HTFTanks_Transport_Model\Basemat	Added scaling factor for slow zone TankArea_sf_ratio to water volume, solid mass, outflows and diffusive fluxes	Y	None	NA	Y
ConcretePadOut	\HTFTanks_Transport_Model\Basemat	Added scaling factor for slow zone TankArea_sf_ratio to water volume, solid mass, outflows and diffusive fluxes	Y	None	NA	Y
ConcretePadIn_ff	\HTFTanks_Transport_Model\Basemat	Added fast zone cell based on slow zone cell	Y	None	NA	Y
ConcretePad01_ff	\HTFTanks_Transport_Model\Basemat	Added fast zone cell based on slow zone cell	Y	None	NA	Y
ConcretePad02_ff	\HTFTanks_Transport_Model\Basemat	Added fast zone cell based on slow zone cell	Y	None	NA	Y
ConcretePad03_ff	\HTFTanks_Transport_Model\Basemat	Added fast zone cell based on slow zone cell	Y	None	NA	Y
ConcretePadOut_ff	\HTFTanks_Transport_Model\Basemat	Added fast zone cell based on slow zone cell	Y	None	NA	Y
PadConcrete_ff	\HTFTanks_Transport_Model\Basemat	Set up solid element for fast flow zone	Y	None	NA	Y
PadConcrete	\HTFTanks_Transport_Model	Moved to \HTFTanks_Transport_Model\Basemat	Y	None	NA	Y
Basemat_Kds_config	\HTFTanks_Transport_Model\Basemat	Added selector element to define Kds in fast zone by configuration	?	When configuration > 3 the ff Kds are set to zero. Is this right?	Yes, the fast flow field in the basemat is part of configurations D and E	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
FF_Flow_Option	\HTFTanks_Transport_Model\Basemat	Added data input statement to all for option to use non-ff flow field in ff cells based on benchmarking	Y	None	NA	Y
FF_Flow_Basemat	\HTFTanks_Transport_Model\Basemat	Selector switch that controls optional flow field (see above)	Y	None	NA	Y
SLiner_Option	\HTFTanks_Transport_Model\LinerFailure\LinerFlowControl	Added data element which allows user to choose between PLiner and SLiner flow rates for the SLiner flow	Y	None	NA	Y
SLiner_Flow	\HTFTanks_Transport_Model\LinerFailure\LinerFlowControl	Added switch to selector element to allow user to set SLiner flow rate to PLiner flow rate	Y	None	NA	Y
ClosureCapInfitration	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Changed interpolation scheme to linear and respelled element name	Y	None	NA	Y
DeltaT	\HTFTanks_Transport_Model	Added expression element with the equation: Timestep_Length	Y	None	NA	Y
FlowRate	\HTFTanks_Transport_Model\ConcretePadDegradation	Changed second selector value to : BasematDarcyFlux_Deg*(1+CrossFlow/ClosureCapInfiltration(ETime+0.5*DeltaT))	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
FlowRate_Grout	\HTFTanks_Transport_Model\WasteLayer\PoreFlushes	Changed second selector value to : PF_Flow_TankGrout*(1+CrossFlow/ClosureCapInfiltration(ETime+0.5*DeltaT))	Y	None	NA	Y
FlowRate_CZ	\HTFTanks_Transport_Model\WasteLayer\PoreFlushes	Changed second selector value to : PF_Flow_CZ*(1+CrossFlow/ClosureCapInfiltration(ETime+0.5*DeltaT))	Y	None	NA	Y
Rad_Max_a	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Inventories\InventoryUncertainty	Changed Sn126 values for Tank Types IV, III, and IIIA to 1	?	This change is inconsistent with SRR-CWDA-2010-00023_R0 (Table 10.0-1). Will the inventory document be updated to justify/document this change? Also, the Type III and IIIA max for U-235 also differs from the reference document (10 instead of 1).	Inventory document will be updated to show the correct data. Values are good.	Y*
Rad_Min_a	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Inventories\InventoryUncertainty	Changed Sn126 values for Tank Types IV, III, and IIIA to 0.01	?	This change is inconsistent with SRR-CWDA-2010-00023_R0 (Table 10.0-1). Will the inventory document be updated to justify/document this change?	Inventory document will be updated to show the correct data. Values are good.	Y*
TankRadius	\Saturated_Zone_Inputs\PlumeCalc_Wells\Tanks	Added expression element to determine the tank radius	Y	None	NA	Y
PlumeCorrection_matrix_Tanks	\Saturated_Zone_Inputs\PlumeCalc_Wells\Tanks	Added TankRadius to first term of the plumefunction (QA Log 8). Changed radius to diameter of tank in the third term of the plume function (QA Log 6).	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
AERadius	\Saturated_Zone_Inputs\PlumeCalc_Wells\AncillaryEquipment	Added expression element to determine the AEradius	Y	None	NA	Y
PlumeCorrection_matrix_AE	\Saturated_Zone_Inputs\PlumeCalc_Wells\AncillaryEquipment	Added AERadius to first term of the plumefunction (QA Log 9). Changed radius to diameter of tank in the third term of the plume function (QA Log 7).	Y	None	NA	Y
TypeIIIBCDE	\General_Inputs\Chronology\LinerFailure_Times	Cumulative distribution changed to Di(O2)=1e-6 from Table 35 curves(WSRC-STI-2007-00061, Rev. 2): 0 117 0.005 281 0.025 400 0.1 634 0.25 1047 0.5 2077 0.75 4986 0.9 12341 0.975 13010 0.995 13201 1 13250	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
TypeIIIBCDE_west	\General_Inputs\Chronology\LinerFailure_Times	Cumulative distribution changed to Di(O2)=1e-6 fro Table 35 curves(WSRC-STI-2007-00061, Rev. 2): 0 117 0.005 281 0.025 400 0.1 634 0.25 1047 0.5 2077 0.75 4986 0.9 12341 0.975 13010 0.995 13201 1 13250	Y	None	NA	Y
TypeIVBCDE	\General_Inputs\Chronology\LinerFailure_Times	Cumulative distribution changed to Di(O2)=1e-6 fro Table 38 curves (WSRC-STI-2007-00061, Rev. 2): 0 38 0.005 42 0.025 45 0.1 49 0.25 56 0.5 75 0.75 126 0.9 280 0.975 1050 0.995 5107 1 10125	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
TypeIIBasematThickness	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\Tank_Basemat_Thicknesses	Changed maximum value to 48.5" as per QA Log 20	Y	None	NA	Y
WallDimensions	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry	Added container	Y	None	NA	Y
WallThickness	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\WallDimensions	Added wall thickness for Type II tanks	Y	None	NA	Y
WallHeight	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\WallDimensions	Added wall height for Type II tanks	Y	None	NA	Y
WallBySecondaryLinerHeight	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\WallDimensions	Added below liner height for Type II tanks	Y	None	NA	Y
NumberOfWallCells	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\WallDimensions	Added number of wall cells for Type II tanks	Y	None	NA	Y
TypeIITankRadiusToWall	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\WallDimensions	Added radial distance to the wall for Type II tanks	Y	None	NA	Y
HTFTransportSubmodel	\HTF_TransportModel\HTFSourceLoop\InnerLoop	Attached 5 new wall input elements to the submodel interface	Y	None	NA	Y
WallThickness	\InputData\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry	Added selector in submodel	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
WallHeight	\InputData\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry	Added selector in submodel	Y	None	NA	Y
WallBySecondaryLinerHeight	\InputData\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry	Added selector in submodel	Y	None	NA	Y
NumberOfWallCells	\InputData\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry	Added selector in submodel	Y	None	NA	Y
TypeIITankRadiusToWall	\InputData\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry	Added selector in submodel	Y	None	NA	Y
FlowRate	\HTFTanks_Transport_Model\SandPads\AnnulusModel\PoreFlushes	Updated second option to : PF_Flow_Annulus*(1+CrossFlow/ClosureCapInfiltration(ETime+0.5*DeltaT))	Y	None	NA	Y
AnnulusGrout_Kds	\HTFTanks_Transport_Model\SandPads\AnnulusModel\PoreFlushes	Set up selector to use number of flushes as a criteria	Y	None	NA	Y
DiffWallTime1	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Added input element with time for starting interpolation of Deff in the wall	Y	None	NA	Y
DiffWallTime2	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Added input element with time for ending interpolation of Deff in the wall	N	Per Tables 4.4-4 and 4.4-5 of the PA: Type II Tanks, Cases B and D should both be 534 years; and Type II no liner, Cases B and D should be 528 and 551, respectively.	Only CaseA data is entered in template at this point, the other cases will be entered in Version 10	Y*

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QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.007.gsm (Implementation - Part A)	Source Model ID (or filename): HTF Transport Model v0.006.gsm
New Model File Date: 9/29/10	Source Model File Date: 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
HTFTransportSubmodel	\HTF_TransportModel\HTFSourceLoop\InnerLoop	Added DiffWallTime1 and DiffWallTime2 input elements to the submodel interface	Y	None	NA	Y
DiffWallTime1	\InputData\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Added selector in submodel	Y	None	NA	Y
DiffWallTime2	\InputData\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Added selector in submodel	Y	None	NA	Y
Deff_Wall	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Added data element for wall diffusion coeffiient	Y	None	NA	Y
HTFTransportSubmodel	\HTF_TransportModel\HTFSourceLoop\InnerLoop	Added Deff_Wall to submodel interface	Y	None	NA	Y
Deff_Wall	\InputData\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Added selector in submodel	Y	None	NA	Y
WallProperties	\SRS_Material_Properties\Cementitious_Properties	Added container	Y	None	NA	Y
Density_Wall	\SRS_Material_Properties\Cementitious_Properties\WallProperties	Added data element with the value: 2.51 g/cm3	Y	None	NA	Y
Porosity_Wall	\SRS_Material_Properties\Cementitious_Properties\WallProperties	Added data element with the value: 0.168	Y	None	NA	Y
DryBulkDensity_Wall	\SRS_Material_Properties\Cementitious_Properties\WallProperties	Added expression element to derive the walls bulk density: Density_Wall*(1-Porosity_Wall)	Y	None	NA	Y

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QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.007.gsm (Implementation - Part A)	**Source Model ID (or filename):** HTF Transport Model v0.006.gsm
New Model File Date: 9/29/10	**Source Model File Date:** 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
HTFTransportSubmodel	\HTF_TransportModel\HTFSourceLoop\InnerLoop	Added Porosity_Wall and DryBulkDensity_Wall	Y	None	NA	Y
Porosity_Wall	\InputData\SRSMaterialProperties	Added selector element in submodel	Y	None	NA	Y
DryBulkDensity_Wall	\InputData\SRSMaterialProperties	Added selector element in submodel	Y	None	NA	Y
FlowThruPores	\HTFTanks_Transport_Model\SandPads\AnnulusModel\PoreFlushes	Changed area to annulus area as follows: FlowRate* AnnulusArea	Y	None	NA	Y
PFFlows_Basemat_2	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Added container	Y	None	NA	Y
PFFlows_pad_np_Casexx. xx=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Basemat_2	Added vertical component of Darcy velocities for basemat below the annulus	Y	Values checked against Excel files: CaseXX_Final.xls (Sheet: BASE_NON_PORE_V)	NA	Y
PFFlows_pad_np_VFRate_Casexx xx=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Basemat_2	Added vertical component of volumetric flow for basemat below the annulus	Y	Values checked against Excel files: CaseXX_Final.xls (Sheet: BASE_NON_PORE_Q)	NA	Y
PFFlows_wall_np_Casexx xx=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Basemat_2	Added vertical component of Darcy velocities for wall below the annulus	N	Values for all cases/ Type III, IIIA, and IIIAWest did not match. Values checked against Excel files: CaseXX_Final.xls (Sheet: WALL_NON_PORE_V) *Optional comment*: It might be more appropriate to create a separate container (named: PFFlows_Wall_2) for these elements.	For this parameter, only Type II data is needed for modeling. Omission of the Type III, IIIA, and IIIAWest data was intentional.	Y

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QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.007.gsm (Implementation - Part A)	Source Model ID (or filename): HTF Transport Model v0.006.gsm
New Model File Date: 9/29/10	Source Model File Date: 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PFFlows_wall_np_VFRate_Casexx xx=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Basemat_2	Added vertical component of volumetric flow for wall below the annulus	N	Values for all cases/ Type III, IIIA, and IIIAWest did not match. Values checked against Excel files: CaseXX_Final.xls (Sheet: WALL_NON_PORE_Q) *Optional comment*: It might be more appropriate to create a separate container (named: PFFlows_Wall_2) for these elements.	For this parameter, only Type II data is needed for modeling. Omission of the Type III, IIIA, and IIIAWest data was intentional.	Y
HTFTransportSubmodel	\HTF_TransportModel\HTFSourceLoop\InnerLoop	Added PFFlows_pad_np_Casexx.	Y	None	NA	Y
HTFTransportSubmodel	\HTF_TransportModel\HTFSourceLoop\InnerLoop	Added PFFlows_pad_np_VFRate_Casexx	Y	None	NA	Y
HTFTransportSubmodel	\HTF_TransportModel\HTFSourceLoop\InnerLoop	Added PFFlows_wall_np_Casexx	Y	None	NA	Y
HTFTransportSubmodel	\HTF_TransportModel\HTFSourceLoop\InnerLoop	Added PFFlows_wall_np_VFRate_Casexx xx=A-E	Y	None	NA	Y
PFFlows_Basemat_2	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Added container	Y	None	NA	Y
PFFlows_pad_np_Casexx. xx=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_Basemat_2	Added selector element for passing data	Y	None	NA	Y
PFFlows_pad_np_VFRate_Casexx xx=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_Basemat_2	Added selector element for passing data	Y	None	NA	Y

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QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.007.gsm (Implementation - Part A)	Source Model ID (or filename): HTF Transport Model v0.006.gsm
New Model File Date: 9/29/10	Source Model File Date: 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PFFlows_wall_np_Casexx xx=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_Basemat_2	Added selector element for passing data	Y	None	NA	Y
PFFlows_wall_np_VFRate_Casexx xx=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_Basemat_2	Added selector element for passing data	Y	None	NA	Y
PF_Flow_np_Basemat	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Selector that chooses the configuration and tank type specific flow for the basemat below the annulus	Y	None	NA	Y
Basemat_np_Volumetric_Flow	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Selector that chooses the configuration and tank type specific volumetric flow for the basemat below the annulus	Y	None	NA	Y
PF_Flow_npw_Basemat	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Selector that chooses the configuration and tank type specific flow for the basemat below the wall	Y	None	NA	Y
Basemat_npw_Volumetric_Flow	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Selector that chooses the configuration and tank type specific volumetric flow for the basemat below the wall	Y	None	NA	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.007.gsm (Implementation - Part A)	Source Model ID (or filename): HTF Transport Model v0.006.gsm
New Model File Date: 9/29/10	Source Model File Date: 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
DiffBasematNPTime1	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Added starting time for linear change in the diffusion coefficients from PORFLOW run.dat file for Tank Type II Tc99 run (note that this value is not species dependent)	Y	Values matched Tables 4.4-4 and 4.4-5 of the PA. (Could not match the values in the element to values within the run.dat file.)	NA	Y
DiffBasematNPTime2	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Added ending time for linear change in the diffusion coefficients from PORFLOW run.dat file for Tank Type II Tc99 run (note that this value is not species dependent)	N	Could not match the values in the element to values within the run.dat file. Per Tables 4.4-4 and 4.4-5 of Rev0A PA, the values in the element are not correct.	Only CaseA data is enteresd in template at this point, the other cases will be entered in Version 10	Y*
DiffBasematNPWTime1	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Added starting time for linear change in the diffusion coefficients from PORFLOW run.dat file for Tank Type II no liner Tc99 run (note that this value is not species dependent)	Y	Values matched Tables 4.4-4 and 4.4-5 of the PA. (Could not match the values in the element to values within the run.dat file.)	NA	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.007.gsm (Implementation - Part A)	Source Model ID (or filename): HTF Transport Model v0.006.gsm
New Model File Date: 9/29/10	Source Model File Date: 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
DiffBasematNPWTime2	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Added ending time for linear change in the diffusion coefficients from PORFLOW run.dat file for Tank Type II no linerTc99 run (note that this value is not species dependent)	N	Could not match the values in the element to values within the run.dat file. Per Tables 4.4-4 and 4.4-5 of Rev0A PA, the values in the element are not correct.	Only CaseA data is entered in template at this point, the other cases will be entered in Version 10	Y*
HTFTransportSubmodel	\HTF_TransportModel\HTFSourceLoop\InnerLoop	DiffBasematNPTime1, DiffBasematNPTime2, DiffBasematNPWTime1, and DiffBasematNPWTime2 added to the interface	Y	None	NA	Y
DiffBasematNPTime1	\InputData\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Added selector element for feeding submodel	Y	None	NA	Y
DiffBasematNPTime2	\InputData\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Added selector element for feeding submodel	Y	None	NA	Y
DiffBasematNPWTime1	\InputData\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Added selector element for feeding submodel	Y	None	NA	Y
DiffBasematNPWTime2	\InputData\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Added selector element for feeding submodel	Y	None	NA	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.007.gsm (Implementation - Part A)	Source Model ID (or filename): HTF Transport Model v0.006.gsm
New Model File Date: 9/29/10	Source Model File Date: 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PORFLOWTransitionTime1	\HTFTanks_Transport_Model\SandPads\AnnulusModel\PoreFlushes	Updated Porflow first transition times using run.dat files for Tank Type II and Tank Type IInl releases of Tc99	N	Could not match the values in the element to values within the run.dat file. Per Tables 4.4-4 and 4.4-5 of Rev0A PA, the values in the element are not correct.	Only CaseA data is entered in template at this point, the other cases will be entered in Version 10 or 11	Y*
PORFLOWTransitionTime2	\HTFTanks_Transport_Model\SandPads\AnnulusModel\PoreFlushes	Updated Porflow second transition times using run.dat files for Tank Type II and Tank Type IInl releases of Tc99	N	Could not match the values in the element to values within the run.dat file. Per Tables 4.4-4 and 4.4-5 of Rev0A PA, the values in the element are not correct.	Only CaseA data is entered in template at this point, the other cases will be entered in Version 10 or 11	Y*
UsePorflowTimes	\HTFTanks_Transport_Model\SandPads\AnnulusModel\PoreFlushes	Added data statement to allow the user to control whether the Kd transition time is taken from PORFLOW input files or GoldSim calculations	Y	None	NA	Y
AnnulusGrout_Kds	\HTFTanks_Transport_Model\SandPads\AnnulusModel\PoreFlushes	Updated the selector element so that the user can choose whether the annulus Kd transition time is taken from PORFLOW input files or GoldSim calculations	Y	None	NA	Y
Kd_Median	\SRS_Material_Properties\Soil_Properties\SandySoilsKds_LeachateImpacted	Updated Ba and Ra Kds to 45 and 75 mL/g respectively as per email from Kaplan to Rosenberger.	Y	None	NA	Y

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QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.007.gsm (Implementation - Part A)	**Source Model ID (or filename):** HTF Transport Model v0.006.gsm
New Model File Date: 9/29/10	**Source Model File Date:** 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Kd_Median	\SRS_Material_Properties\ Soil_Properties\SandySoil Kds	Updated Ba and Ra Kds to 15 and 25 mL/g respectively as per email from Kaplan to Rosenberger.	Y	None	NA	Y
Kd_Median	\SRS_Material_Properties\ Soil_Properties\ClayeySoil Kds_LeachateImpacted	Updated Ba and Ra Kds to 303 and 555 mL/g respectively as per email from Kaplan to Rosenberger.	Y	None	NA	Y
Kd_Median	\SRS_Material_Properties\ Soil_Properties\ClayeySoil Kds	Updated Ba and Ra Kds to 101 and 185 mL/g respectively as per email from Kaplan to Rosenberger.	Y	None	NA	Y

If checker has no comments, check here. ☐ Add additional rows above, as needed.

Analyst Name (print): Barry Lester	**E-Signature (or sign/date/scan hardcopy):** (Not required if no comments) 10/4/2010
Checker Name (print): Steve Hommel SPH 10/4/2010	**E-Signature (or sign/date/scan hardcopy):** 10/4/2010

Checkers NOTE: For items wherein the last column (Checker Concur) = Y*, the "*" indicates that the Checker agrees to conditionally pass these pending a review of later model versions in which the updates are intended to be implemented. The Checker accepts responsibility for monitoring these issues throughout development of the model. SPH 10/4/2010

Note: Items conditionally passed (indicated in the checklist with "Y*") have been verified. All updates implemented within versions between v0.007 and v0.011.

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QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.007.gsm (Implementation - Part B)	Source Model ID (or filename): HTF Transport Model v0.006.gsm
New Model File Date: 9/29/10	Source Model File Date: 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Can this new model be traced (by following the Source Model IDs) back to a source model with a completed Initial Model Check Form (QA&DV Form 4)? - If so, proceed. If not, disregard this form and complete an Initial Model Check Form (QA&DV Form 4) for this model.						
Submodel elements are denoted by this shading						
NOTE: Part A of the implementation is duplicated here and has already been documented in HTF Transport Model v0.007_Part_A_Form-5.pdf. Part B begins on page 34.						
UZOutBySource_TH	\TransportModel_Results	Time Histories enabled	Y	None	NA	Y
NucDose_Water_Wells_TH	\HTF_DoseCalculations\ExposureMediaConc	Time Histories enabled	Y	None	NA	Y
EndPointData_I129	\HTF_DoseCalculations\ExposureMediaConc	Time Histories enabled	Y	None	NA	Y
EndPointData_Np237	\HTF_DoseCalculations\ExposureMediaConc	Time Histories enabled	Y	None	NA	Y
EndPointData_Pu239	\HTF_DoseCalculations\ExposureMediaConc	Time Histories enabled	Y	None	NA	Y
EndPointData_Ra226	\HTF_DoseCalculations\ExposureMediaConc	Time Histories enabled	Y	None	NA	Y
EndPointData_Tc99	\HTF_DoseCalculations\ExposureMediaConc	Time Histories enabled	Y	None	NA	Y
DiffAnnulusTime2	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Replaced data with values from *Pu times 9-02-10.xls*	Y	None	NA	Y
DiffBasematTime1	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Replaced data with values from *Pu times 9-02-10.xls*	Y	None	NA	Y
DiffBasematTime2	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Replaced data with values from *Pu times 9-02-10.xls*	Y	None	NA	Y
DiffTankGroutTime2	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Replaced data with values from *Pu times 9-02-10.xls*	Y	None	NA	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.007.gsm (Implementation - Part B)	**Source Model ID (or filename):** HTF Transport Model v0.006.gsm
New Model File Date: 9/29/10	**Source Model File Date:** 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
DiffCZTime1	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Replaced data with values from *Pu times 9-02-10.xls*	N	Only CaseA values match values from *Pu times 9-02-10.xls*	Only CaseA has transition times (which are based on degradation times)	Y
DiffCZTime2	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Replaced data with values from *Pu times 9-02-10.xls*	N	Only CaseA values match values from *Pu times 9-02-10.xls*	Only CaseA has transition times (which are based on degradation times)	Y
PFFlows_pad_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Replaced data with updated values from CaseXX.xls	Y	None	NA	Y
PFFlows_grout_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Replaced data with updated values from CaseXX.xls	Y	None	NA	Y
PFFlows_CZ_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Replaced data with updated values from CaseXX.xls	Y	None	NA	Y
PFFlows_P_Sand_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Replaced data with updated values from CaseXX.xls	Y	None	NA	Y
PFFlows_ S_Sand_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Replaced data with updated values from CaseXX.xls	Y	None	NA	Y
PFFlows_Annulus_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Replaced data with updated values from CaseXX.xls	Y	None	NA	Y
PFFlow_grout_VolFlwRate_Case XX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Replaced data with updated values from CaseXX.xls	Y	None	NA	Y
PFFlows_pad_VolFlwRate_Case XX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Replaced data with updated values from CaseXX.xls	Y	None	NA	Y
PFFlows_CZ_VolFlwRate_Case XX, XX=C,E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Replaced data with updated values from CaseXX.xls	Y	None	NA	Y

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QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.007.gsm (Implementation - Part B)	**Source Model ID (or filename):** HTF Transport Model v0.006.gsm
New Model File Date: 9/29/10	**Source Model File Date:** 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
WellDistance	\HTFTanks_Transport_Model\SiteGeometry	Subtracted tank radius from distance since the tank radius is already accounted fro in the footprint cells. Changed to: BufferDistance_Tanks_table[TankIndex]-sqrt(TankAreas[TankIndex]/pi)	Y	None	NA	Y
PFFlows_TankGrout	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Added container element	Y	None	NA	Y
PFFlows_CZ	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Added container element	Y	None	NA	Y
PFFlows_Basemat	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Added container element	Y	None	NA	Y
PFFlows_Liners	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Added container element	Y	None	NA	Y
PFFlows_UZ	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Added container element	Y	None	NA	Y
PFFlows_Sandpads	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Added container element	Y	None	NA	Y
PFFlows_Annulus	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Added container element	N	Values (for all cases [except for the Type II and II no liner tanks]) do not match values in the referenced Excel files (sheet: ANNULUS_GROUT_V)	For this parameter, only Type II data is needed for modeling. Omission of other tank types was intentional.	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.007.gsm (Implementation - Part B)	Source Model ID (or filename): HTF Transport Model v0.006.gsm
New Model File Date: 9/29/10	Source Model File Date: 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PFFlows_Wall	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Added container element	Y	None	NA	Y
PFFlows_pad_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Moved to PFFlows_Basemat	Y	None	NA	Y
PFFlows_grout_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Moved to PFFlows_TankGrout	Y	None	NA	Y
PFFlows_CZ_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Moved to PFFlows_CZ	Y	None	NA	Y
PFFlows_P_Sand_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Moved to PFFlows_Sandpads	Y	None	NA	Y
PFFlows_ S_Sand _CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Moved to PFFlows_Sandpads	Y	None	NA	Y
PFFlows_Annulus_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Moved to PFFlows_Annulus	Y	None	NA	Y
PFFlow_grout_VolFlwRate_Case XX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Moved to PFFlows_TankGrout	Y	None	NA	Y
PFFlows_pad_VolFlwRate_Case XX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Moved to PFFlows_Basemat	Y	None	NA	Y
PFFlows_CZ_VolFlwRate_Case XX, XX=C,E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Moved to PFFlows_CZ	Y	None	NA	Y
PFFlows_grout_ff_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_TankGrout	Added data element with values from CaseXX.xls	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PFFlows_pad_ff_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Basemat	Added data element with values from CaseXX.xls	Y	None	NA	Y
PFFlows_pliner_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Liners	Added data element with values from CaseXX.xls	Y	None	NA	Y
PFFlows_pliner_ff_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Liners	Added data element with values from CaseXX.xls	Y	None	NA	Y
PFFlows_sliner_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Liners	Added data element with values from CaseXX.xls	Y	None	NA	Y
PFFlows_sliner_ff_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Liners	Added data element with values from CaseXX.xls	Y	None	NA	Y
PFFlows_UZ_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_UZ	Added data element with native soil values from CaseXX.xls	Y	None	NA	Y
PFFlows_P_Sand_ff_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Sandpads	Added data element with values from CaseXX.xls	N	Values (for Case D) do not match values in the referenced Excel files (sheet: P_SAND_FF_V)	Corrected in v.008	Y
PFFlows_S_Sand_ff_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Sandpads	Added data element with values from CaseXX.xls	Y	None	NA	Y
PFFlows_wall_CaseXX, XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Wall	Added data element with values from CaseXX.xls	Y	None	NA	Y

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HTFTransportSubmodel	HTFTransportSubmodel	Added new data elements to input interface	Y	None	NA	Y
PFFlows_TankGrout	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Added container element	Y	None	NA	Y
PFFlows_CZ	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Added container element	Y	None	NA	Y
PFFlows_Basemat	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Added container element	Y	None	NA	Y
PFFlows_Liners	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Added container element	Y	None	NA	Y
PFFlows_UZ	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Added container element	Y	None	NA	Y
PFFlows_Sandpads	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Added container element	Y	None	NA	Y
PFFlows_Annulus	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Added container element	Y	None	NA	Y
PFFlows_Wall	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Added container element	Y	None	NA	Y
PFFlows_pad_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Moved to PFFlows_Basemat	Y	None	NA	Y
PFFlows_grout_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Moved to PFFlows_TankGrout	Y	None	NA	Y
PFFlows_CZ_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Moved to PFFlows_CZ	Y	None	NA	Y

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PFFlows_P_Sand_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Moved to PFFlows_Sandpads	Y	None	NA	Y
PFFlows_ S_Sand _CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Moved to PFFlows_Sandpads	Y	None	NA	Y
PFFlows_Annulus_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Moved to PFFlows_Annulus	Y	None	NA	Y
PFFlow_grout_VolFlwRate_Case XX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Moved to PFFlows_TankGrout	Y	None	NA	Y
PFFlows_pad_VolFlwRate_Case XX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Moved to PFFlows_Basemat	Y	None	NA	Y
PFFlows_CZ_VolFlwRate_Case XX, XX=C,E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Moved to PFFlows_CZ	Y	None	NA	Y
PFFlows_grout_ff_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_TankGrout	Added selector element to pass data into submodel	Y	None	NA	Y
PFFlows_pad_ff_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_Basemat	Added selector element to pass data into submodel	Y	None	NA	Y
PFFlows_pliner_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_Liners	Added selector element to pass data into submodel	Y	None	NA	Y
PFFlows_pliner_ff_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_Liners	Added selector element to pass data into submodel	Y	None	NA	Y
PFFlows_sliner_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_Liners	Added selector element to pass data into submodel	Y	None	NA	Y
PFFlows_sliner_ff_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_Liners	Added selector element to pass data into submodel	Y	None	NA	Y

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PFFlows_UZ_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_UZ	Added selector element to pass data into submodel	Y	None	NA	Y
PFFlows_P_Sand_ff_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_Sandpads	Added selector element to pass data into submodel	Y	None	NA	Y
PFFlows_S_Sand_ff_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_Sandpads	Added selector element to pass data into submodel	Y	None	NA	Y
PFFlows_wall_CaseXX, XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_Wall	Added selector element to pass data into submodel	Y	None	NA	Y
PF_Flow_ff_TankGrout	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added selector switch to assign the flow field by configuration	Y	None	NA	Y
PF_Flow_ff_Basemat	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added selector switch to assign the flow field by configuration	Y	None	NA	Y
PF_Flow_ff_UZ	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added selector switch to assign the flow field by configuration	Y	None	NA	Y
PF_Flow_ff_PLiner	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added selector switch to assign the flow field by configuration	Y	None	NA	Y
PF_Flow_ff_SLiner	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added selector switch to assign the flow field by configuration	Y	None	NA	Y
PF_Flow_PLiner	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added selector switch to assign the flow field by configuration	Y	None	NA	Y

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PF_Flow_SLiner	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added selector switch to assign the flow field by configuration	Y	None	NA	Y
PF_Flow_ff_P_Sand	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added selector switch to assign the flow field by configuration	Y	None	NA	Y
PF_Flow_ff_S_Sand	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added selector switch to assign the flow field by configuration	Y	None	NA	Y
PF_Flow_Wall	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added selector switch to assign the flow field by configuration	Y	None	NA	Y
TypeI_Tank_ff_Radius	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\Tank_Dimensions	Added data element with radius of fast flow zone for Type I tanks (see PORFLOW xMesh.dat files)	Y	None	NA	Y
TypeII_Tank_ff_Radius	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\Tank_Dimensions	Added data element with radius of fast flow zone for Type II tanks (see PORFLOW xMesh.dat files)	Y	None	NA	Y
TypeIII_Tank_ff_Radius	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\Tank_Dimensions	Added data element with radius of fast flow zone for Type III tanks (see PORFLOW xMesh.dat files)	Y	None	NA	Y

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TypeIV_Tank_ff_Radius	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\Tank_Dimensions	Added data element with radius of fast flow zone for Type IV tanks (see PORFLOW xMesh.dat files)	Y	None	NA	Y
Tank_ff_Radii	HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\Tank_Dimensions	Added data element dimensioned by the number of tanks to assign the fast flow zone radii	Y	None	NA	Y
HTFTransportSubmodel	HTFTransportSubmodel	Added Tank_ff_Radii to input interface	Y	None	NA	Y
Tank_ff_Radius	\HTFTanks_Transport_Model\SiteGeometry	Added expression element which sets the fast flow zone radius for a specific tank using the equation Tank_ff_Radii[TankIndex]	Y	None	NA	Y
TankArea_ff	\HTFTanks_Transport_Model\SiteGeometry	Added expression element which sets the fast flow zone horizontal area for a specific tank using the equation pi*Tank_ff_Radius^2	Y	None	NA	Y
TankArea_sf	\HTFTanks_Transport_Model\SiteGeometry	Added expression element which gives the slow flow zone horizontal area for a specific tank using the equation TankArea-TankArea_ff	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
TankArea_sf_ratio	\HTFTanks_Transport_Model\SiteGeometry	Added expression element which gives the ratio of the slow flow zone horizontal area to the total tank area for a specific tank using the equation TankArea_sf/TankArea	Y	None	NA	Y
UnsatDarcyFlux	\HTFTanks_Transport_Model\LinerFailure	Changed name to BasematDarcyFlux	Y	None	NA	Y
UnsatDarcyFlux_Deg	\HTFTanks_Transport_Model\LinerFailure	Changed name to BasematDarcyFlux_Deg	Y	None	NA	Y
PF_Flow	\HTFTanks_Transport_Model\LinerFailure	Moved to \InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly and changed name to PF_Flow_Basemat	Y	None	NA	Y
PF_Flow_CZ	\HTFTanks_Transport_Model\LinerFailure	Moved to \InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Y	None	NA	Y
PF_Flow_P_Sand	\HTFTanks_Transport_Model\LinerFailure	Moved to \InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Y	None	NA	Y
PF_Flow_S_Sand	\HTFTanks_Transport_Model\LinerFailure	Moved to \InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Y	None	NA	Y

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PF_Flow_Annulus	\HTFTanks_Transport_Model\LinerFailure	Moved to \InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Y	None	NA	Y
Grout_Flow_Deg	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Changed name to PF_Flow_TankGrout	Y	None	NA	Y
Grout_Flow	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Moved to \HTFTanks_Transport_Model\LinerFailure	Y	None	NA	Y
Grout_Flow	\HTFTanks_Transport_Model\LinerFailure	Changed name to TankGrout_Flow	Y	None	NA	Y
LinerFlowControl	\HTFTanks_Transport_Model\LinerFailure	Added Container to hold liner control flow selectors	Y	None	NA	Y
PLFFlowControl	\HTFTanks_Transport_Model\LinerFailure\LinerFlowControl	Data element that is used to zero out flow before liner fails in non-TypeII tanks or in sections including an atop the primary liner for Type II tanks	Y	None	NA	Y
PLFFlowControl_TypeII	\HTFTanks_Transport_Model\LinerFailure\LinerFlowControl	Data element that is used to zero out flow before liner fails in primary sand layer for TypeII tanks	Y	None	NA	Y
TankGrout_Flow_ff	\HTFTanks_Transport_Model\LinerFailure\LinerFlowControl	Selector element that is used to zero out flow before liner fails	Y	None	NA	Y
PLiner_Flow	\HTFTanks_Transport_Model\LinerFailure\LinerFlowControl	Selector element that is used to zero out flow before liner fails	Y	None	NA	Y

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PLiner_Flow_ff	\HTFTanks_Transport_Model\LinerFailure\LinerFlow Control	Selector element that is used to zero out flow before liner fails	Y	None	NA	Y
SLiner_Flow	\HTFTanks_Transport_Model\LinerFailure\LinerFlow Control	Selector element that is used to zero out flow before liner fails	Y	None	NA	Y
SLiner_Flow_ff	\HTFTanks_Transport_Model\LinerFailure\LinerFlow Control	Selector element that is used to zero out flow before liner fails	Y	None	NA	Y
Basemat_Flow	\HTFTanks_Transport_Model\LinerFailure\LinerFlow Control	Selector element that is used to zero out flow before liner fails	Y	None	NA	Y
Basemat_Flow_ff	\HTFTanks_Transport_Model\LinerFailure\LinerFlow Control	Selector element that is used to zero out flow before liner fails	Y	None	NA	Y
UZ_Flow	\HTFTanks_Transport_Model\LinerFailure\LinerFlow Control	Selector element that is used to zero out flow before liner fails	Y	None	NA	Y
P_Sand_Flow	\HTFTanks_Transport_Model\LinerFailure\LinerFlow Control	Selector element that is used to zero out flow before liner fails or if tank is not a type II tank	Y	None	NA	Y
P_Sand_Flow_ff	\HTFTanks_Transport_Model\LinerFailure\LinerFlow Control	Selector element that is used to zero out flow before liner fails or if tank is not a type II tank	Y	None	NA	Y
S_Sand_Flow	\HTFTanks_Transport_Model\LinerFailure\LinerFlow Control	Selector element that is used to zero out flow if tank is not a type II tank	Y	None	NA	Y
S_Sand_Flow_ff	\HTFTanks_Transport_Model\LinerFailure\LinerFlow Control	Selector element that is used to zero out flow if tank is not a type II tank	Y	None	NA	Y

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Wall_Flow	\HTFTanks_Transport_Model\LinerFailure\LinerFlowControl	Selector element that is used to zero out flow if tank is not a type II tank	Y	None	NA	Y
BasematDarcyFlux_Deg	\HTFTanks_Transport_Model\LinerFailure\LinerFlowControl	Deleted, renamed Basemat_Flow as BasematDarcyFlux_Deg then reset name back to Basemat_Flow	Y	None	NA	Y
BasematDarcyFlux_Deg	\HTFTanks_Transport_Model\LinerFailure\LinerFlowControl	Reset to max(PF_Flow_Basemat ,0.0 cm/yr)	Y	None	NA	Y
LinerThickness	\HTFTanks_Transport_Model\Basemat\PrimaryLiner	Renamed PLinerThickness	Y	None	NA	Y
LinerThickness	\HTFTanks_Transport_Model\Basemat\SandPads\SecondaryLiner	Renamed SLinerThickness	Y	None	NA	Y
SecondaryLiner	\HTFTanks_Transport_Model\Basemat\SandPads\SecondaryLiner	Moved to \HTFTanks_Transport_Model\Basemat\PrimaryLiner and reconnected links to SandPads.PF_Flow_P_Sand_pos and SandPads.DiffusiveArea_P1_Sand	Y	None	NA	Y
SLinerThickness	\HTFTanks_Transport_Model\Basemat\SandPads\SecondaryLiner	Moved to \HTFTanks_Transport_Model\Basemat\PrimaryLiner and reconnected link to to PrimarySandLayer	Y	None	NA	Y
SecondaryLiner	\HTFTanks_Transport_Model\Basemat\SandPads	Deleted container and remaining contents	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PrimaryLiner	\HTFTanks_Transport_Model\Basemat	Changed name to Liners	Y	None	NA	Y
AnnulusBottom	\HTFTanks_Transport_Model\Basemat\SandPads\AnnulusModel	Switched outflow to SecondaryLiner	Y	None	NA	Y
AnnulusBottom	\HTFTanks_Transport_Model\Basemat\SandPads\AnnulusModel	Switched diffusive flux to SecondaryLiner	Y	None	NA	Y
PrimaryLinerThickness	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\LinerDimensions	Separated two liners for all tank types. Element now reads: 0.5 in 0.5 in 0.5 in 0.5 in 0.375 in 0.5 in 0.5 in 0.5 in	Y	None	NA	Y
SecondaryLinerThickness	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\LinerDimensions	Separated two liners for all tank types. Element now reads: 0.5 in 0.5 in 0.5 in 0.5 in 0.001 in 0.375 in 0.375 in 0.375 in	Y	None	NA	Y
PrimaryLiner	\HTFTanks_Transport_Model\Liners	Added outflow and diffusive flux to basemat .	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
SecondaryLiner	\HTFTanks_Transport_Model\Liners	Switched outflow and diffusive flux from basemat to Secondary liner	Y	None	NA	Y
PrimaryLiner	\HTFTanks_Transport_Model\Liners	Changed outflow rates to new liner rates	Y	None	NA	Y
SecondaryLiner	\HTFTanks_Transport_Model\Liners	Changed outflow rates to new liner rates	Y	None	NA	Y
TankArea_ff_ratio	\HTFTanks_Transport_Model\SiteGeometry	Added expression element that figures out the ratio of the fast flow regions area to the tank area	Y	None	NA	Y
PrimaryLiner	\HTFTanks_Transport_Model\Liners	Changed water volume solid mass, outflow and diffusive flux area terms by a factor of TankArea_sf_ratio	Y	None	NA	Y
SecondaryLiner	\HTFTanks_Transport_Model\Liners	Changed water volume solid mass, outflow and diffusive flux area terms by a factor of TankArea_sf_ratio	Y	None	NA	Y
PrimaryLiner_ff	\HTFTanks_Transport_Model\Liners	Added fast flow region cell	Y	None	NA	Y
SecondaryLiner_ff	\HTFTanks_Transport_Model\Liners	Added fast flow region cell	Y	None	NA	Y
SandInventoryTime Factor	\HTFTanks_Transport_Model\SandPads\SandInventory	Multiplied the inventory by TankArea_sf_ratio	N	Inventory is NOT multiplied by TankArea_sf_ratio	Fixed in version 10	Y*

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SandInventoryTimeFactor_Prim	\HTFTanks_Transport_Model\SandPads\SandInventory	Multiplied the inventory by TankArea_sf_ratio	Y	None	NA	Y
SandInventoryTimeFactor_Sec	\HTFTanks_Transport_Model\SandPads\SandInventory	Multiplied the inventory by TankArea_sf_ratio	Y	None	NA	Y
SandInventoryTimeFactor_ff	\HTFTanks_Transport_Model\SandPads\SandInventory	Set up predecayed inventory for the fast flow zone	Y	None	NA	Y
SandInventoryTimeFactor_Prim_ff	\HTFTanks_Transport_Model\SandPads\SandInventory	Set up predecayed inventory for the fast flow zone	Y	None	NA	Y
SandInventoryTimeFactor_Sec_ff	\HTFTanks_Transport_Model\SandPads\SandInventory	Set up predecayed inventory for the fast flow zone	Y	None	NA	Y
PrimarySandLayer	\HTFTanks_Transport_Model\SandPads	Changed water volume solid mass, outflow and diffusive flux area terms by a factor of TankArea_sf_ratio	N	Diffusive flux area from PrimarySandLayer to Annulus bottom area does not include a factor of TankArea_sf_ratio	This is because the diffusive area is vertical	Y
SecondarySandLayer	\HTFTanks_Transport_Model\SandPads	Changed water volume solid mass, outflow and diffusive flux area terms by a factor of TankArea_sf_ratio	Y	None	NA	Y
PrimarySandLayer_ff	\HTFTanks_Transport_Model\SandPads	Added cell for fast zone	Y	None	NA	Y
SecondarySandLayer_ff	\HTFTanks_Transport_Model\SandPads	Added cell for fast zone	N	Diffusive flux area from SecondarySandLayer_ff to ConcretePadIn_ff area includes a factor of TankArea_sf_ratio – should be TankArea_ff_ratio	Fixed in version 10	Y*

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
SandPos	\HTFTanks_Transport_Model\SandPads	Added data element to allow the user to include upward flow or disregard it	Y	None	NA	Y
PF_Flow_P_Sand_pos	\HTFTanks_Transport_Model\SandPads	Added selection for allowing for upward flow	Y	None	NA	Y
PF_Flow_S_Sand_pos	\HTFTanks_Transport_Model\SandPads	Added selection for allowing for upward flow	Y	None	NA	Y
PF_Flow_P_Sand_pos_ff	\HTFTanks_Transport_Model\SandPads	Added selector element for allowing eliminating upward flow in fast flow zone if desired	Y	None	NA	Y
PF_Flow_S_Sand_pos_ff	\HTFTanks_Transport_Model\SandPads	Added selector element for allowing eliminating upward flow in fast flow zone if desired	Y	None	NA	Y
TankIIOn	\HTFTanks_Transport_Model\SiteGeometry	Added selector element to create link structure needed for Type II tanks	Y	None	NA	Y
TankIVOn	\HTFTanks_Transport_Model\SiteGeometry	Added selector element to create link structure needed for Type IV tanks	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
UseCZFlow	\HTFTanks_Transport_Model\WasteLayer	Added input element to control whether the CZ vertical flow values or the P_Liner vertical flow values are used to determine the flow from the CZ into the P_Liner	Y	None	NA	Y
CZPos	\HTFTanks_Transport_Model\WasteLayer	Allows the user to disallow upward flow in the CZ	Y	None	NA	Y
PF_Flow_CZ_pos	\HTFTanks_Transport_Model\WasteLayer	Updated selector element to allow control using UseCZFlow and CZPos	Y	None	NA	Y
PF_Flow_CZ_pos_ff	\HTFTanks_Transport_Model\WasteLayer	Set up fast flow zone data in case using the liner flow option is chosen	Y	None	NA	Y
WasteCell	\HTFTanks_Transport_Model\WasteLayer	Updated outflows to incorporate fast flow data	Y	None	NA	Y
UsePSandFlow	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added input element to control whether the P_Sand vertical flow values or the S_Liner vertical flow values are used to determine the flow from the P_Sand into the S_Liner	Y	None	NA	Y
DiffusiveArea_P1a_Sand	\HTFTanks_Transport_Model\SandPads	Deleted element	Y	None	NA	Y

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DiffusiveArea_P1b_Sand	\HTFTanks_Transport_Model\SandPads	Renamed DiffusiveArea_P1a_Sand	Y	None	NA	Y
ConcretePadIn	\HTFTanks_Transport_Model\Basemat	Added scaling factor for slow zone TankArea_sf_ratio to water volume, solid mass, outflows and diffusive fluxes	Y	None	NA	Y
ConcretePad01	\HTFTanks_Transport_Model\Basemat	Added scaling factor for slow zone TankArea_sf_ratio to water volume, solid mass, outflows and diffusive fluxes	Y	None	NA	Y
ConcretePad02	\HTFTanks_Transport_Model\Basemat	Added scaling factor for slow zone TankArea_sf_ratio to water volume, solid mass, outflows and diffusive fluxes	Y	None	NA	Y
ConcretePad03	\HTFTanks_Transport_Model\Basemat	Added scaling factor for slow zone TankArea_sf_ratio to water volume, solid mass, outflows and diffusive fluxes	Y	None	NA	Y
ConcretePadOut	\HTFTanks_Transport_Model\Basemat	Added scaling factor for slow zone TankArea_sf_ratio to water volume, solid mass, outflows and diffusive fluxes	Y	None	NA	Y
ConcretePadIn_ff	\HTFTanks_Transport_Model\Basemat	Added fast zone cell based on slow zone cell	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
ConcretePad01_ff	\HTFTanks_Transport_Model\Basemat	Added fast zone cell based on slow zone cell	Y	None	NA	Y
ConcretePad02_ff	\HTFTanks_Transport_Model\Basemat	Added fast zone cell based on slow zone cell	Y	None	NA	Y
ConcretePad03_ff	\HTFTanks_Transport_Model\Basemat	Added fast zone cell based on slow zone cell	Y	None	NA	Y
ConcretePadOut_ff	\HTFTanks_Transport_Model\Basemat	Added fast zone cell based on slow zone cell	Y	None	NA	Y
PadConcrete_ff	\HTFTanks_Transport_Model\Basemat	Set up solid element for fast flow zone	Y	None	NA	Y
PadConcrete	\HTFTanks_Transport_Model	Moved to \HTFTanks_Transport_Model\Basemat	Y	None	NA	Y
Basemat_Kds_config	\HTFTanks_Transport_Model\Basemat	Added selector element to define Kds in fast zone by configuration	Y	None	NA	Y
Basemat_Flow_ff_opt	\HTFTanks_Transport_Model\Basemat	Added data input statement to all for option to use non-ff flow field in ff cells based on benchmarking	Y	None	NA	Y
FF_Flow_Basemat	\HTFTanks_Transport_Model\Basemat	Selector switch that controls optional flow field (see above)	Y	None	NA	Y
SLiner_Option	\HTFTanks_Transport_Model\LinerFailure\LinerFlowControl	Data element which allows user to choose between PLiner and SLiner flow rates for the SLiner flow	Y	None	NA	Y

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SLiner_Flow	\HTFTanks_Transport_Model\LinerFailure\LinerFlowControl	Added switch to selector element to allow user to set SLiner flow rate to PLiner flow rate	Y	None	NA	Y
ClosureCapInfitration	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows	Changed interpolation scheme to linear and respelled element name	Y	None	NA	Y
DeltaT	\HTFTanks_Transport_Model	Added expression element with the equation: Timestep_Length	Y	None	NA	Y
FlowRate	\HTFTanks_Transport_Model\ConcretePadDegradation	Changed second selector value to : BasematDarcyFlux_Deg*(1+CrossFlow/ClosureCapInfiltration(ETime+0.5*DeltaT))	Y	None	NA	Y
FlowRate_Grout	\HTFTanks_Transport_Model\WasteLayer\PoreFlushes	Changed second selector value to : PF_Flow_TankGrout*(1+CrossFlow/ClosureCapInfiltration(ETime+0.5*DeltaT))	Y	None	NA	Y
FlowRate_CZ	\HTFTanks_Transport_Model\WasteLayer\PoreFlushes	Changed second selector value to : PF_Flow_CZ*(1+CrossFlow/ClosureCapInfiltration(ETime+0.5*DeltaT))	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Rad_Max_a	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Inventories\InventoryUncertainty	Changed Sn126 values for Tank Types IV, III, and IIIA to 1	?	This change is inconsistent with SRR-CWDA-2010-00023_R0 (Table 10.0-1). Will the inventory document be updated to justify/document this change? Also, the Type III and IIIA max for U-235 also differs from the reference document (10 instead of 1).	Inventory document will be updated to show the correct data. Values are good.	Y*
Rad_Min_a	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Inventories\InventoryUncertainty	Changed Sn126 values for Tank Types IV, III, and IIIA to 0.01	?	This change is inconsistent with SRR-CWDA-2010-00023_R0 (Table 10.0-1). Will the inventory document be updated to justify/document this change?	Inventory document will be updated to show the correct data. Values are good.	Y*
TankRadius	\Saturated_Zone_Inputs\PlumeCalc_Wells\Tanks	Added expression element to determine the tank radius	Y	None	NA	Y
PlumeCorrection_matrix_Tanks	\Saturated_Zone_Inputs\PlumeCalc_Wells\Tanks	Added TankRadius to first term of the plumefunction (QA Log 8). Changed radius to diameter of tank in the third term of the plume function (QA Log 6).	Y	None	NA	Y
AERadius	\Saturated_Zone_Inputs\PlumeCalc_Wells\AncillaryEquipment	Added expression element to determine the AEradius	Y	None	NA	Y
PlumeCorrection_matrix_AE	\Saturated_Zone_Inputs\PlumeCalc_Wells\AncillaryEquipment	Added AERadius to first term of the plumefunction (QA Log 9). Changed radius to diameter of tank in the third term of the plume function (QA Log 7).	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
TypeIIIBCDE	\General_Inputs\Chronology\LinerFailure_Times	Cumulative distribution changed to Di(O2)=1e-6 fro Table 35 curves(WSRC-STI-2007-00061, Rev. 1, August 2007): 0 117 0.005 281 0.025 400 0.1 634 0.25 1047 0.5 2077 0.75 4986 0.9 12341 0.975 13010 0.995 13201 1 13250	Y	None	NA	Y
TypeIIIBCDE_west	\General_Inputs\Chronology\LinerFailure_Times	Cumulative distribution changed to Di(O2)=1e-6 fro Table 35 curves(WSRC-STI-2007-00061, Rev. 1, August 2007): 0 117 0.005 281 0.025 400 0.1 634 0.25 1047 0.5 2077 0.75 4986 0.9 12341 0.975 13010 0.995 13201 1 13250	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
TypeIVBCDE	\General_Inputs\Chronology\LinerFailure_Times	Cumulative distribution changed to Di(O2)=1e-6 fro Table 38 curves (WSRC-STI-2007-00061, Rev. 1, August 2007): 0 38 0.005 42 0.025 45 0.1 49 0.25 56 0.5 75 0.75 126 0.9 280 0.975 1050 0.995 5107 1 10125	Y	None	NA	Y
TypeIIBasematThickness	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\Tank_Basemat_Thicknesses	Changed maximum value to 48.5" as per QA Log 20	Y	None	NA	Y
WallDimensions	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry	Added container	Y	None	NA	Y
WallThickness	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\WallDimensions	Added wall thickness for Type II Liners	Y	None	NA	Y
WallHeight	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\WallDimensions	Added wall height for Type II liners	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
WallBySecondaryLinerHeight	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\WallDimensions	Added below liner height for Type II liners	Y	None	NA	Y
NumberOfWallCells	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\WallDimensions	Added number of wall cells for Type II liners	Y	None	NA	Y
TypeIITankRadiusToWall	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\WallDimensions	Added radial distance to the wall for Type II liners	Y	None	NA	Y
HTFTransportSubmodel	\HTF_TransportModel\HTFSourceLoop\InnerLoop	Attached 5 new wall input elements to the submodel interface	Y	None	NA	Y
WallThickness	\InputData\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry	Added selector in submodel	Y	None	NA	Y
WallHeight	\InputData\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry	Added selector in submodel	Y	None	NA	Y
WallBySecondaryLinerHeight	\InputData\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry	Added selector in submodel	Y	None	NA	Y
NumberOfWallCells	\InputData\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry	Added selector in submodel	Y	None	NA	Y
TypeIITankRadiusToWall	\InputData\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry	Added selector in submodel	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
FlowRate	\HTFTanks_Transport_Model\SandPads\AnnulusModel\PoreFlushes	Updated second option to : PF_Flow_Annulus*(1+CrossFlow/ClosureCapInfiltration(ETime+0.5*DeltaT))	Y	None	NA	Y
AnnulusGrout_Kds		Set up selector to use number of flushes as a criteria	Y	None	NA	Y
DiffWallTime1	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Added input element with time for starting interpolation of Deff in the wall	Y	None	NA	Y
DiffWallTime2	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Added input element with time for endinging interpolation of Deff in the wall	N	Per Tables 4.4-4 and 4.4-5 of the PA: Type II Tanks, Cases B and D should both be 534 years; and Type II no liner, Cases B and D should be 528 and 551, respectively.	Only CaseA data is entered in template at this point, the other cases will be entered in Version 10	Y*
HTFTransportSubmodel	\HTF_TransportModel\HTFSourceLoop\InnerLoop	Added DiffWallTime1 and DiffWallTime2 input elements to the submodel interface	Y	None	NA	Y
DiffWallTime1	\InputData\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Added selector in submodel	Y	None	NA	Y
DiffWallTime2	\InputData\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Added selector in submodel	Y	None	NA	Y
Deff_Wall	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Added data element for wall diffusion coeffiient	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
HTFTransportSubmodel	\HTF_TransportModel\HTFSourceLoop\InnerLoop	Added Deff_Wall to submodel interface	Y	None	NA	Y
Deff_Wall	\InputData\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Added selector in submodel	Y	None	NA	Y
WallProperties	\SRS_Material_Properties\Cementitious_Properties	Added container	Y	None	NA	Y
Density_Wall	\SRS_Material_Properties\Cementitious_Properties\WallProperties	Added data element with the value: 2.51 g/cm3	Y	None	NA	Y
Porosity_Wall	\SRS_Material_Properties\Cementitious_Properties\WallProperties	Added data element with the value: 0.168	Y	None	NA	Y
DryBulkDensity_Wall	\SRS_Material_Properties\Cementitious_Properties\WallProperties	Added expression element to derive the walls bulk density: Density_Wall*(1-Porosity_Wall)	Y	None	NA	Y
HTFTransportSubmodel	\HTF_TransportModel\HTFSourceLoop\InnerLoop	Added Porosity_Wall and DryBulkDensity_Wall	Y	None	NA	Y
Porosity_Wall	\InputData\SRSMaterialProperties	Added selector element in submodel	Y	None	NA	Y
DryBulkDensity_Wall	\InputData\SRSMaterialProperties	Added selector element in submodel	Y	None	NA	Y
FlowThruPores	\HTFTanks_Transport_Model\SandPads\AnnulusModel\PoreFlushes	Changed area to annulus area as follows: FlowRate* AnnulusArea	Y	None	NA	Y
PFFlows_Basemat_2	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows	Added container	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PFFlows_pad_np_ Casexx. xx=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Basemat_2	Added vertical component of Darcy velocities for basemat below the annulus	Y	Values checked against Excel files: CaseXX_Final.xls (Sheet: BASE_NON_PORE_V)	NA	Y
PFFlows_pad_np_ VFRate_Casexx xx=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Basemat_2	Added vertical component of volumetric flow for basemat below the annulus	Y	Values checked against Excel files: CaseXX_Final.xls (Sheet: BASE_NON_PORE_Q)	NA	Y
PFFlows_wall_np_ Casexx xx=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Basemat_2	Added vertical component of Darcy velocities for wall below the annulus	N	Values for all cases/ Type III, IIIA, and IIIAWest did not match. Values checked against Excel files: CaseXX_Final.xls (Sheet: WALL_NON_PORE_V) *Optional comment*: It might be more appropriate to create a separate container (named: PFFlows_Wall_2) for these elements.	For this parameter, only Type II data is needed for modeling. Omission of the Type III, IIIA, and IIIAWest data was intentional.	Y
PFFlows_wall_np_ VFRate_Casexx xx=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Basemat_2	Added vertical component of volumetric flow for wall below the annulus	N	Values for all cases/ Type III, IIIA, and IIIAWest did not match. Values checked against Excel files: CaseXX_Final.xls (Sheet: WALL_NON_PORE_Q) *Optional comment*: It might be more appropriate to create a separate container (named: PFFlows_Wall_2) for these elements.	For this parameter, only Type II data is needed for modeling. Omission of the Type III, IIIA, and IIIAWest data was intentional.	Y
HTFTransportSub model	\HTF_TransportModel\HTFSourceLoop\InnerLoop	Added PFFlows_pad_np_Casexx.	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
HTFTransportSubmodel	\HTF_TransportModel\HTFSourceLoop\InnerLoop	Added PFFlows_pad_np_VFRate_Casexx	Y	None	NA	Y
HTFTransportSubmodel	\HTF_TransportModel\HTFSourceLoop\InnerLoop	Added PFFlows_wall_np_Casexx	Y	None	NA	Y
HTFTransportSubmodel	\HTF_TransportModel\HTFSourceLoop\InnerLoop	Added PFFlows_wall_np_VFRate_Casexx xx=A-E	Y	None	NA	Y
PFFlows_pad_np_Casexx. xx=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_Basemat_2	Added selector element for passing data	Y	None	NA	Y
PFFlows_pad_np_VFRate_Casexx xx=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_Basemat_2	Added selector element for passing data	Y	None	NA	Y
PFFlows_wall_np_Casexx xx=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_Basemat_2	Added selector element for passing data	Y	None	NA	Y
PFFlows_wall_np_VFRate_Casexx xx=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_Basemat_2	Added selector element for passing data	Y	None	NA	Y
PF_Flow_np_Basemat	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Selector that chooses the configuration and tank type specific flow for the basemat below the annulus	Y	None	NA	Y
Basemat_np_Volumetric_Flow	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Selector that chooses the configuration and tank type specific volumetric flow for the basemat below the annulus	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PF_Flow_npw_Basemat	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Selector that chooses the configuration and tank type specific flow for the basemat below the wall	Y	None	NA	Y
Basemat_npw_Volumetric_Flow	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Selector that chooses the configuration and tank type specific volumetric flow for the basemat below the wall	Y	None	NA	Y
DiffBasematNPTime1	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Added starting time for linear change in the diffusion coefficients from PORFLOW run.dat file for Tank Type II Tc99 run (note that this value is not species dependent)	Y	Values matched Tables 4.4-4 and 4.4-5 of the PA. (Could not match the values in the element to values within the run.dat file.)	NA	Y
DiffBasematNPTime2	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Added endting time for linear change in the diffusion coefficients from PORFLOW run.dat file for Tank Type II Tc99 run (note that this value is not species dependent)	N	Could not match the values in the element to values within the run.dat file. Per Tables 4.4-4 and 4.4-5 of Rev0A PA, the values in the element are not correct.	Only CaseA data is enteresd in template at this point, the other cases will be entered in Version 10	Y*

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
DiffBasematNPWTime1	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Added starting time for linear change in the diffusion coefficients from PORFLOW run.dat file for Tank Type II no liner Tc99 run (note that this value is not species dependent)	Y	Values matched Tables 4.4-4 and 4.4-5 of the PA. (Could not match the values in the element to values within the run.dat file.)	NA	Y
DiffBasematNPWTime2	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Added endting time for linear change in the diffusion coefficients from PORFLOW run.dat file for Tank Type II no linerTc99 run (note that this value is not species dependent)	N	Could not match the values in the element to values within the run.dat file. Per Tables 4.4-4 and 4.4-5 of Rev0A PA, the values in the element are not correct.	Only CaseA data is entered in template at this point, the other cases will be entered in Version 10	Y*
HTFTransportSubmodel	\HTF_TransportModel\HTFSourceLoop\InnerLoop	DiffBasematNPTime1, DiffBasematNPTime2, DiffBasematNPWTime1 , and DiffBasematNPWTime2 added to the interface	Y	None	NA	Y
DiffBasematNPTime1	\InputData\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Added selector element for feeding submodel	Y	None	NA	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.007.gsm (Implementation - Part B)	**Source Model ID (or filename):** HTF Transport Model v0.006.gsm
New Model File Date: 9/29/10	**Source Model File Date:** 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
DiffBasematNPTime2	\InputData\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Added selector element for feeding submodel	Y	None	NA	Y
DiffBasematNPWTime1	\InputData\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Added selector element for feeding submodel	Y	None	NA	Y
DiffBasematNPWTime2	\InputData\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Added selector element for feeding submodel	Y	None	NA	Y
PORFLOWTransitionTime1	\HTFTanks_Transport_Model\SandPads\AnnulusModel\PoreFlushes	Updated Porflow first transition times using run.dat files for Tank Type II and Tank Type IInl releases of Tc99	N	Could not match the values in the element to values within the run.dat file. Per Tables 4.4-4 and 4.4-5 of Rev0A PA, the values in the element are not correct.	Only CaseA data is entered in template at this point, the other cases will be entered in Version 10 or 11	Y*
PORFLOWTransitionTime2	\HTFTanks_Transport_Model\SandPads\AnnulusModel\PoreFlushes	Updated Porflow second transition times using run.dat files for Tank Type II and Tank Type IInl releases of Tc99	N	Could not match the values in the element to values within the run.dat file. Per Tables 4.4-4 and 4.4-5 of Rev0A PA, the values in the element are not correct.	Only CaseA data is entered in template at this point, the other cases will be entered in Version 10 or 11	Y*
UsePorflowTimes	\HTFTanks_Transport_Model\SandPads\AnnulusModel\PoreFlushes	Added data statement to allow the user to control whether the Kd transition time is taken from PORFLOW input files or GoldSim calculations	Y	None	NA	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.007.gsm (Implementation - Part B)	Source Model ID (or filename): HTF Transport Model v0.006.gsm
New Model File Date: 9/29/10	Source Model File Date: 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
AnnulusGrout_Kds	\HTFTanks_Transport_Model\SandPads\AnnulusModel\PoreFlushes	Updfated the selector element so that the user can choose whether the annulus Kd transition time is taken from PORFLOW input files or GoldSim calculations	Y	None	NA	Y
Kd_Median	\SRS_Material_Properties\Soil_Properties\SandySoilsKds_LeachateImpacted	Updated Ba and Ra Kds to 45 and 75 mL/g respectively as per Ken	Y	None	NA	Y
Kd_Median	\SRS_Material_Properties\Soil_Properties\SandySoilKds	Updated Ba and Ra Kds to 15 and 25 mL/g respectively as per Ken	Y	None	NA	Y
Kd_Median	\SRS_Material_Properties\Soil_Properties\ClayeySoilKds_LeachateImpacted	Updated Ba and Ra Kds to 303 and 555 mL/g respectively as per Ken	Y	None	NA	Y
Kd_Median	\SRS_Material_Properties\Soil_Properties\ClayeySoilKds	Updated Ba and Ra Kds to 101 and 185 mL/g respectively as per Ken	Y	None	NA	Y
PART B						
WallModel	\HTFTanks_Transport_Model\SandPads	Added container for explicit cell network representing the wall along the vertical portion of the secondary liner in the Type II tanks	Y	None	NA	Y

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New Model ID (or filename): HTF Transport Model v0.007.gsm (Implementation - Part B)	Source Model ID (or filename): HTF Transport Model v0.006.gsm
New Model File Date: 9/29/10	Source Model File Date: 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
WallCell_XX Where XX= Top, Bottom, and 1-4	\HTFTanks_Transport_Model\SandPads\WallModel	Cell network for defining transport through the wall for TypeII Tanks. The top cell boundary source term is a cumulative input from the top of the vertically equivalent annulus network	Y	None	NA	Y
WallArea	\HTFTanks_Transport_Model\SandPads\WallModel	Expression element that defines that wall area as Max(pi*(WallThickness+SecondaryLinerThickness[TankType]+AnnulusThickness+PrimaryLinerThickness[TankType]+sqrt(TankAreas[TankIndex]/pi))^2-pi*TypeIITankRadiusToWall^2,0.001m2)	Y	None	NA	Y
WallCellThickness	\HTFTanks_Transport_Model\SandPads\WallModel	Wall cell height for all cells but the bottom cell, which is the same as the bottom annulus thickness	Y	None	NA	Y
WallSolid	HTFTanks_Transport_Model\SandPads\WallModel	Added solid element for the wall properties. Note that the element uses grout properties which have been updated to concrete properties in Version 10	Y	As noted, concrete properties should be used – not grout.	NA	Y*

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New Model File Date: 9/29/10	**Source Model File Date:** 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
To_npwPath	HTFTanks_Transport_Model\SandPads\WallModel	Data element that allows user to chose whether the wall releases go to a nonporous wall basemat cell network or to the central basemat network.	Y	None	NA	Y
FlowOut	HTFTanks_Transport_Model\SandPads\WallModel	Selector element that turns off wall network if user sends annulus output directly to basemat	Y	None	NA	Y
Water	HTFTanks_Transport_Model\SandPads\WallModel	Cloned water element that that uses diffusion coefficient transition times for the wall	Y	None	NA	Y
TypeIITankLinerMode	HTFTanks_Transport_Model\SandPads\WallModel	Selector element that is not presently used, but will be	Y	None	NA	Y
TypeIITankCircumDiffusiveArea	HTFTanks_Transport_Model\SandPads\WallModel	Expression element defining the cumferential area at the inner radius of the wall	Y	None	NA	Y
ReferenceFluid	HTFTanks_Transport_Model\SandPads\WallModel	Container with logic to define the diffusion coefficients for the wall	Y	None	NA	Y
RefDiffusivity_Water	\HTFTanks_Transport_Model\SandPads\WallModel\ReferenceFluid	Data element defining the reference diffusivity used in the model	Y	None	NA	Y

Changed Model Check Form

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New Model File Date: 9/29/10	Source Model File Date: 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Deff	\HTFTanks_Transport_Model\SandPads\WallModel\ReferenceFluid	Added selector element updating the wall diffusion coefficient based on transition times	Y	None	NA	Y
Diffusivity_Water	\HTFTanks_Transport_Model\SandPads\WallModel\ReferenceFluid	Added expression element vectorizing the relative diffusion coefficient	Y	None	NA	Y
PoreFlushes	HTFTanks_Transport_Model\SandPads\WallModel	Container with logic to evaluate wall Kds based on chemical transition times	Y	None	NA	Y
FlowRate	\HTFTanks_Transport_Model\SandPads\WallModel\PoreFlushes	Added selector element that chooses between unsaturated and saturated zone flows for determining the number of pore flushes	Y	None	NA	Y
PoreVolume	\HTFTanks_Transport_Model\SandPads\WallModel\PoreFlushes	Added expression element for determining the pore volume of the wall	Y	None	NA	Y
FlowThruPores	\HTFTanks_Transport_Model\SandPads\WallModel\PoreFlushes	Added integrater element for determining the volumetric flow rate through the wall	Y	None	NA	Y
NumberofFlushes	\HTFTanks_Transport_Model\SandPads\WallModel\PoreFlushes	Added expression element that determines the number of flushes of the pore volume that have occurred an any time	Y	None	NA	Y

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New Model ID (or filename): HTF Transport Model v0.007.gsm (Implementation - Part B)	Source Model ID (or filename): HTF Transport Model v0.006.gsm
New Model File Date: 9/29/10	Source Model File Date: 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PORFLOWTransitionTime1	\HTFTanks_Transport_Model\SandPads\WallModel\PoreFlushes	Starting time of first chemical transition in PORFLOW runs (middle reducing to middle oxidizing)	Y	None	NA	Y
PORFLOWTransitionTime2	\HTFTanks_Transport_Model\SandPads\WallModel\PoreFlushes	Ending time of diffusion coefficient transition in PORFLOW runs (middle oxidizing to old oxidizing)	Y	None	NA	Y
Wall_Kds	\HTFTanks_Transport_Model\SandPads\WallModel\PoreFlushes	Selector element that defines the Kd for the present time step	Y	None	NA	Y
UsePorflowTimes	\HTFTanks_Transport_Model\SandPads\WallModel\PoreFlushes	Data element that allows the user to choose between the PORFLOW transition times or GoldSim calculated transition times for updating Kds	Y	None	NA	Y
Basemat_2	\HTFTanks_Transport_Model\SandPads	Added container for cell network representing the basemat beneath the annulus and wall in the Type II tanks	Y	None	NA	Y
Basemat_np	\HTFTanks_Transport_Model\SandPads\Basemat_2	Added container for cell network representing the basemat beneath the annulus in the Type II tanks	Y	None	NA	Y

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New Model File Date: 9/29/10	**Source Model File Date:** 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
ConcretePadXX_np Where XX= Top, Bottom, and 1-3	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np	Cell network for defining transport annulus for TypeII Tanks	Y	None	NA	Y
PadConcrete_np	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np	Added solid element for the NonPore basemat properties.	Y	None	NA	Y
Water	HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np	Cloned water element that that uses diffusion coefficient transition times for the wall	Y	None	NA	Y
Np_Flow_Option	HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np	Selector element that is not presently used, but will be	Y	None	NA	Y
ReferenceFluid	HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np	Container with logic to define the diffusion coefficients for the NonPore basemat	Y	None	NA	Y
RefDiffusivity_Water	\ \HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np\ReferenceFluid	Data element defining the reference diffusivity used in the model	Y	None	NA	Y
Deff	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np\ReferenceFluid	Added selector element updating the NonPore basemat diffusion coefficient based on transition times	Y	None	NA	Y
Diffusivity_Water	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np\ReferenceFluid	Added expression element vectorizing the relative diffusion coefficient	Y	None	NA	Y

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New Model File Date: 9/29/10	**Source Model File Date:** 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PoreFlushes	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np\PoreFlushes	Container with logic to evaluate NONPORE basemat Kds based on chemical transition times	Y	None	NA	Y
FlowRate	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np\PoreFlushes	Added selector element that chooses between unsaturated and saturated zone flows for determining the number of pore flushes	Y	None	NA	Y
PoreVolume	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np\PoreFlushes	Added expression element for determining the pore volume of the NonPore basemat	Y	None	NA	Y
FlowThruPores	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np\PoreFlushes	Added integrator element for determining the volumetric flow rate	Y	None	NA	Y
NumberofFlushes	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np\PoreFlushes	Added expression element that determines the number of flushes of the pore volume that have occurred an any time	Y	None	NA	Y
PORFLOWTransitionTime1	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np\PoreFlushes	Starting time of first chemical transition in PORFLOW runs (middle reducing to middle oxidizing)	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PORFLOWTransitionTime2	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np\PoreFlushes	Ending time of diffusion coefficient transition in PORFLOW runs (middle oxidizing to old oxidizing)	Y	None	NA	Y
BasematNP_Kds	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np\PoreFlushes	Selector element that defines the Kd for the present time step	Y	None	NA	Y
UsePorflowTimes	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np\PoreFlushes	Data element that allows the user to choose between the PORFLOW transition times or GoldSim calculated transition times for updating Kds	Y	None	NA	Y
Basemat_npw	\HTFTanks_Transport_Model\SandPads\Basemat_2	Added container for cell network representing the basemat beneath the wall in the Type II tanks	Y	None	NA	Y
ConcretePadXX_npw Where XX= Top, Bottom, and 1-3	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np	Cell network for defining transport through the basement beneath the wall	Y	None	NA	Y
PadConcrete_npw	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np	Added solid element for the NonPore basemat under the wall properties.	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Water	HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np	Cloned water element that that uses diffusion coefficient transition times for the basemat under the wall	Y	None	NA	Y
ReferenceFluid	HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np	Container with logic to define the diffusion coefficients for the NonPore basemat below the wall	Y	None	NA	Y
RefDiffusivity_Water	\ \HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np\ReferenceFluid	Data element defining the reference diffusivity used in the model	Y	None	NA	Y
Deff	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np\ReferenceFluid	Added selector element updating the wall diffusion coefficient based on transition times	Y	None	NA	Y
Diffusivity_Water	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np\ReferenceFluid	Added expression element vectorizing the relative diffusion coefficient	Y	None	NA	Y
PoreFlushes	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np\PoreFlushes	Container with logic to evaluate Kds based on chemical transition times	Y	None	NA	Y
FlowRate	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np\PoreFlushes	Added selector element that chooses between unsaturated and saturated zone flows for determining the number of pore flushes	Y	None	NA	Y

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New Model File Date: 9/29/10	Source Model File Date: 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PoreVolume	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np\PoreFlushes	Added expression element for determining the pore volume of the NonPore basemat	Y	None	NA	Y
FlowThruPores	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np\PoreFlushes	Added integrater element for determining the volumetric flow rate through the wall	Y	None	NA	Y
NumberofFlushes	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np\PoreFlushes	Added expression element that determines the number of flushes of the pore volume that have occurred an any time	Y	None	NA	Y
PORFLOWTransitionTime1	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np\PoreFlushes	Starting time of first chemical transition in PORFLOW runs (middle reducing to middle oxidizing)	Y	None	NA	Y
PORFLOWTransitionTime2	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np\PoreFlushes	Ending time of diffusion coefficient transition in PORFLOW runs (middle oxidizing to old oxidizing)	Y	None	NA	Y
BasematNPW_Kds	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np\PoreFlushes	Selector element that defines the Kd for the present time step	Y	None	NA	Y

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New Model File Date: 9/29/10	Source Model File Date: 8/24/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
UsePorflowTimes	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np\PoreFlushes	Data element that allows the user to choose between the PORFLOW transition times or GoldSim calculated transition times for updating Kds	Y	None	NA	Y

If checker has no comments, check here. ☒ Add additional rows above, as needed.

Analyst Name (print):	E-Signature (or sign/date/scan hardcopy): (Not required if no comments)
Barry Lester	NA
Checker Name (print):	**E-Signature (or sign/date/scan hardcopy):**
Steve Hommel	Steve Hommel Digitally signed by Steve Hommel DN: cn=Steve Hommel, o, ou, email=Steven.Hommel@srs.gov, c=US Date: 2010.10.05 08:45:05 -04'00'

Note: The Analyst's signature is not required because the Checker made no comments that required resolution.

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.008.gsm	Source Model ID (or filename): HTF Transport Model v0.007_092810_Versioned.gsm
New Model File Date: 9/30/10	Source Model File Date: 9/29/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Can this new model be traced (by following the Source Model IDs) back to a source model with a completed Initial Model Check Form (QA&DV Form 4)? - If so, proceed. If not, disregard this form and complete an Initial Model Check Form (QA&DV Form 4) for this model.						
Submodel elements are denoted by this shading						
PFFlows_P_Sand_ff_CaseD, XX=D and E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Sandpads	Corrected data	Y	None	NA	Y
TypeI_Tank_ff_Disc_Thk	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\Tank_Dimensions	Added input element with thickness of grout fast zone for Type I tank	Y	None	NA	Y
TypeII_Tank_ff_Disc_Thk	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\Tank_Dimensions	Added input element with thickness of grout fast zone for Type II tank	Y	None	NA	Y
TypeIII_Tank_ff_Disc_Thk	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\Tank_Dimensions	Added input element with thickness of grout fast zone for Type IIII tank	Y	None	NA	Y
TypeIV_Tank_ff_Disc_Thk	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\Tank_Dimensions	Added input element with thickness of grout fast zone for Type IV tank	Y	None	NA	Y
Tank_ff_Disc_Thk	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\Tank_Dimensions	Added expression element to assemble thickness of grout fast zone values by tank index	Y	None	NA	Y
TankRadii	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\Tank_Dimensions	Added expression element to define tank radii	Y	None	NA	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.008.gsm	Source Model ID (or filename): HTF Transport Model v0.007_092810_Versioned.gsm
New Model File Date: 9/30/10	Source Model File Date: 9/29/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Tank_ff_Disc_Areas	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\Tank_Dimensions	Added expression element to define area of grout fast zone	Y	None	NA	Y
TankAreaByType	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\Tank_Dimensions	Added expression element to define tank area by tank type	Y	None	NA	Y
TankRadiiByType	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\Tank_Dimensions	Added expression element to define tank radii by tank type	Y	None	NA	Y
WallThickness_TypeI	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\WallDimensions	Added data element to define wall thickness for Type I tanks	Y	None	NA	Y
WallThickness_TypeII	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\WallDimensions	Added data element to define wall thickness for Type II tanks	Y	None	NA	Y
WallThickness_TypeIII	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\WallDimensions	Added data element to define wall thickness for Type III and IIIA tanks	Y	None	NA	Y
WallThickness_TypeIV	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\WallDimensions	Added data element to define wall thickness for Type IV tanks	Y	None	NA	Y
WallThicknesses	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\WallDimensions	Added data element to define wall thicknesses by tank type	Y	None	NA	Y

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New Model ID (or filename): HTF Transport Model v0.008.gsm	Source Model ID (or filename): HTF Transport Model v0.007_092810_Versioned.gsm
New Model File Date: 9/30/10	Source Model File Date: 9/29/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
WallHeights	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\WallDimensions	Added data element to define wall heights as equivalent to tank grout heights (this is approximate because the wall is slightly longer since it has no liner)	Y	None	NA	Y
NumberOfWallCells2	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\WallDimensions	Added data element to define the number of wall cells for the Type IV tanks (note that this is wrong and needs to be updated before the values is used so updated in Version 10)	Y	As noted, value should be updated.	NA	Y*
FlowRate	\HTFTanks_Transport_Model\SandPads\WallModel\PoreFlushes	Updated flow field in selector element to PF_Flow_Wall	Y	None	NA	Y
Tank_ff_Disc_Areas	\InputData\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry	Added selector element to feed the transport submodel	Y	None	NA	Y
TankRadii	\InputData\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry	Added selector element to feed the transport submodel	Y	None	NA	Y
WallHeights	\InputData\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry	Added selector element to feed the transport submodel	Y	None	NA	Y
WallInnerRadii	\InputData\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry	Added selector element to feed the transport submodel	Y	None	NA	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.008.gsm	Source Model ID (or filename): HTF Transport Model v0.007_092810_Versioned.gsm
New Model File Date: 9/30/10	Source Model File Date: 9/29/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
WallThicknesses	\InputData\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry	Added selector element to feed the transport submodel	Y	None	NA	Y
Tank_ff_Disc_Area	\HTFTanks_Transport_Model\SiteGeometry	Added expression element to chose tank specific Horizontal Area of fast flow zone in the basemat, liners, and sandpads	Y	None	NA	Y
TankArea_sf2	\HTFTanks_Transport_Model\SiteGeometry	Added expression element to calculate tank specific Horizontal Area of slow flow zone in the basemat, liners, and sandpads	Y	None	NA	Y
TankArea_sf2_ratio	\HTFTanks_Transport_Model\SiteGeometry	Added expression element to calculate fraction of Horizontal Area is in the slow zone	Y	None	NA	Y
TankArea_ff2_ratio	\HTFTanks_Transport_Model\SiteGeometry	Added expression element to calculate fraction of Horizontal Area is in the fastzone	Y	None	NA	Y
GroutCell_XX XX=In,2-11,Out	\HTFTanks_Transport_Model\Grout	Scaled volume, diffusive area, and outflow velocity terms with respect to the slow zone area	Y	None	NA	Y
GroutFastPath	\HTFTanks_Transport_Model\Grout	Added container to house the fast flow grout cell network	Y	None	NA	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.008.gsm	**Source Model ID (or filename):** HTF Transport Model v0.007_092810_Versioned.gsm
New Model File Date: 9/30/10	**Source Model File Date:** 9/29/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
GroutCell__XX_ff Where XX= In, Out, and 2-9	\HTFTanks_Transport_Model\Grout\GroutFastPath	Cell network for defining transport through the fast flow portion of the tank grout	Y	None	NA	Y
WallForGrout	\HTFTanks_Transport_Model\Grout	Added container to house wall cell network for Type IV Tanks	Y	None	NA	Y
WallForGrout__XX_ff Where XX= In, Out, and 2-9	\HTFTanks_Transport_Model\Grout\WallForGrout	Cell network for defining transport through the wall of the Type IV tanks	Y	None	NA	Y
WallArea	HTFTanks_Transport_Model\Grout\WallForGrout	Expression element that defines that wall area as Max(pi*((WallInnerRadii[TankType]+WallThicknesses[TankType])^2 - WallInnerRadii[TankType]^2),0.001ft2)	Y	None	NA	Y
NumWallForGroutCells	HTFTanks_Transport_Model\Grout\WallForGrout	Added data element with the number of wall cells for TypeIV tanks	Y	None	NA	Y
WallSolid	HTFTanks_Transport_Model\SandPads\WallModel	Added solid element for the wall properties. Note that the element uses grout properties which have been updated to concrete properties in Version 10	Y	As noted, value will be updated.	NA	Y*

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.008.gsm	Source Model ID (or filename): HTF Transport Model v0.007_092810_Versioned.gsm
New Model File Date: 9/30/10	Source Model File Date: 9/29/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
WallVolume	HTFTanks_Transport_Model\SandPads\WallModel	Added expression element for the wall volume	Y	None	NA	Y
WallVolumePerCell	HTFTanks_Transport_Model\SandPads\WallModel	Added expression element for the wall volume per cell	Y	None	NA	Y
Water	HTFTanks_Transport_Model\SandPads\WallModel	Cloned water element that that uses diffusion coefficient transition times for the wall	Y	None	NA	Y
ReferenceFluid	\HTFTanks_Transport_Model\Grout\WallForGrout	Container with logic to define the diffusion coefficients for the wall	Y	None	NA	Y
RefDiffusivity_Water	\HTFTanks_Transport_Model\Grout\WallForGrout\ReferenceFluid	Data element defining the reference diffusivity used in the model	Y	None	NA	Y
Deff	\HTFTanks_Transport_Model\Grout\WallForGrout\ReferenceFluid	Added selector element updating the wall diffusion coefficient based on transition times	Y	None	NA	Y
Diffusivity_Water	\HTFTanks_Transport_Model\Grout\WallForGrout\ReferenceFluid	Added expression element vectorizing the relative diffusion coefficient	Y	None	NA	Y
PoreFlushes	\HTFTanks_Transport_Model\Grout\WallForGrout	Container with logic to evaluate wall Kds based on chemical transition times	Y	None	NA	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.008.gsm	Source Model ID (or filename): HTF Transport Model v0.007_092810_Versioned.gsm
New Model File Date: 9/30/10	Source Model File Date: 9/29/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
FlowRate	\HTFTanks_Transport_Model\Grout\WallForGrout\PoreFlushes	Added selector element that chooses between unsaturated and saturated zone flows for determining the number of pore flushes	Y	None	NA	Y
PoreVolume	\HTFTanks_Transport_Model\Grout\WallForGrout\PoreFlushes	Added expression element for determining the pore volume of the wall	Y	None	NA	Y
FlowThruPores	\HTFTanks_Transport_Model\Grout\WallForGrout\PoreFlushes	Added integrater element for determining the volumetric flow rate through the wall	Y	None	NA	Y
NumberofFlushes	\HTFTanks_Transport_Model\Grout\WallForGrout\PoreFlushes	Added expression element that determines the number of flushes of the pore volume that have occurred an any time	Y	None	NA	Y
PORFLOWTransitionTime1	\HTFTanks_Transport_Model\Grout\WallForGrout\PoreFlushes	Starting time of first chemical transition in PORFLOW runs (middle reducing to middle oxidizing)	Y	None	NA	Y
PORFLOWTransitionTime2	\HTFTanks_Transport_Model\Grout\WallForGrout\PoreFlushes	Ending time of diffusion coefficient transition in PORFLOW runs (middle oxidizing to old oxidizing)	Y	None	NA	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.008.gsm	**Source Model ID (or filename):** HTF Transport Model v0.007_092810_Versioned.gsm
New Model File Date: 9/30/10	**Source Model File Date:** 9/29/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Wall_Kds	\HTFTanks_Transport_Model\Grout\WallForGrout\PoreFlushes	Selector element that defines the Kd for the present time step	Y	None	NA	Y
UsePorflowTimes	\HTFTanks_Transport_Model\Grout\WallForGrout\PoreFlushes	Data element that allows the user to choose between the PORFLOW transition times or GoldSim calculated transition times for updating Kds	Y	None	NA	Y

If checker has no comments, check here. ☒ Add additional rows above, as needed.

Analyst Name (print): Barry Lester	**E-Signature (or sign/date/scan hardcopy):** (Not required if no comments) NA
Checker Name (print): Steve Hommel	**E-Signature (or sign/date/scan hardcopy):** Steve Hommel Digitally signed by Steve Hommel DN: cn=Steve Hommel, o, ou, email=Steven.Hommel@srs.gov, c=US Date: 2010.10.05 11:07:05 -04'00'

Checkers NOTE: For items wherein the last column (Checker Concur) = Y*, the "*" indicates that the Checker agrees to conditionally pass these pending a review of later model versions in which the updates are intended to be implemented. The Checker accepts responsibility for monitoring these issues throughout development of the model.

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The Analyst's signature is not required because the Checker made no comments that required resolution. Note: Items conditionally passed (indicated in the checklist with "Y*") have been verified. All updates implemented within versions between v0.009 and v0.012. [S. Hommel – 11 November 2010]

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.009.gsm	**Source Model ID (or filename):** HTF Transport Model v0.008.gsm
New Model File Date: **10/01/2010**	**Source Model File Date:** 10/1/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Can this new model be traced (by following the Source Model IDs) back to a source model with a completed Initial Model Check Form (QA&DV Form 4)? - If so, proceed. If not, disregard this form and complete an Initial Model Check Form (QA&DV Form 4) for this model.						
Submodel elements are denoted by this shading						
PORFLOW_DoseSwitch	\SimulationSettings\Switches	Set to TRUE	Y	None	NA	Y
PORFLOW_SeepageLineSwitch	Same as above	Same as above	Y	None	NA	Y
BEEF_A DRILLWELL FISH_A MILK_A SOIL_A WATER_A	\HTF_DoseCalculations\Parameters\INPUTS	Create new folders	Y	None	NA	Y
EXPOSE_Inputs	Same as above	Rename folder "BOATSWIM"	Y	None	NA	Y
INHALE_Inputs	Same as above	Rename folder "AIR_A"	Y	None	NA	Y
ExposureFractionGarden	\HTF_DoseCalculations\Parameters\INPUTS\AIR_A	Move ELEMENT to \HTF_DoseCalculations\Parameters\INPUTS\SOIL_A	Y	None	NA	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.009.gsm	Source Model ID (or filename): HTF Transport Model v0.008.gsm
New Model File Date: 10/01/2010	Source Model File Date: 10/1/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
BeefConsumptionRate CattleWaterConsumptionBeef ConsumptionFodderBeef FodderFractionBeef FracLocalBeef_MOP FracLocalBeef_Intr BeefConsumption BeefConsumption_Intr	\HTF_DoseCalculations\Parameters\INPUTS\BEEF_A	MOVE ELEMENTS TO THIS FOLDER FROM \HTF_DoseCalculations\Parameters\INPUTS\INGEST_inputs folder.	Y	None	NA	Y
MilkConsumptionRate CattleWaterConsumptionMilk ConsumptionFodderMilk FodderFractionMilk FracLocalMilk_MOP FracLocalMilk_Intr MilkConsumption MilkConsumption_Intr	HTF_DoseCalculations\Parameters\INPUTS\MILK_A	MOVE ELEMENTS TO THIS FOLDER FROM \HTF_DoseCalculations\Parameters\INPUTS\INGEST_inputs folder.	Y	None	NA	Y
FractionExposedtoCuttings PipeAreaperLength WellDepth WellDiameter	\HTF_DoseCalculations\Parameters\INPUTS\DRILLWELL	MOVE ELEMENTS TO THIS FOLDER FROM \HTF_DoseCalculations\Parameters\INPUTS folder.	Y	None	NA	Y

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New Model File Date: 10/01/2010	**Source Model File Date:** 10/1/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
GardenSize TillDepth FracYearIrrigate IrrigationRate SurfaceSoilDensity SoilConsumptionRate SoilMoistureContent SoilThickness PR IR ER Lambda_Leach Lambda_RadioactiveDecay SoilBuildupTime	\HTF_DoseCalculations\Parameters\INPUTS\SOIL_A	MOVE ELEMENTS TO THIS FOLDER FROM \HTF_DoseCalculations\Parameters\INPUTS folder.	Y	Did not find SoilThickness at this location. This deletion was documented later.	NA	Y
WaterConsumptionRate WaterFraction	\HTF_DoseCalculations\Parameters\INPUTS\WATER_A	MOVE ELEMENTS TO THIS FOLDER FROM \HTF_DoseCalculations\Parameters\INPUTS\INGEST_Inputs	Y	None	NA	Y
FishConsumptionRate	\HTF_DoseCalculations\Parameters\INPUTS\FISH_A	MOVE ELEMENTS TO THIS FOLDER FROM \HTF_DoseCalculations\Parameters\INPUTS folder.	Y	None	NA	Y
VegHoldupTime_Sector VegHoldupTime_Vector VegetableHoldupTime	\HTF_DoseCalculations\Parameters\INPUTS\Ingest_Inputs	Delete elements	Y	None	NA	Y
INGEST_Inputs	\HTF_DoseCalculations\Parameters\INPUTS	RENAME CONTAINER VEG_A	Y	None	NA	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.009.gsm	Source Model ID (or filename): HTF Transport Model v0.008.gsm
New Model File Date: 10/01/2010	**Source Model File Date:** 10/1/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
BEEF_A	\HTF_DoseCalculations\ Parameters\INPUTS	CP AND PASTE CONTAINER, RENAME POULTRY_A	Y	None	NA	Y
FracLocalBeef_MOP	\HTF_DoseCalculations\ Parameters\INPUTS\ POULTRY_A	Rename stochastic **FracLocalChic_MOP**	Y	None	NA	Y
FracLocalChic_MOP	Same as above	Set deterministic Value: '0.306' Triangular distribution Min=0.1 Most likely='0.306' Max=0.5	Y	None	NA	Y
FracLocalBeef_Intr	Same as above	Rename stochastic **FracLocalChic_Intr**	Y	None	NA	Y
FracLocalChic_Intr	Same as above	Set deterministic Value: '0.319' Triangular distribution Min=0.1 Most likely=0.319 Max=0.5	Y	None	NA	Y
BeefConsumptionRate	\HTF_DoseCalculations\ Parameters\INPUTS\ POULTRY_A	Rename stochastic ChicConsumptionRate	Y	None	NA	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.009.gsm	Source Model ID (or filename): HTF Transport Model v0.008.gsm
New Model File Date: 10/01/2010	Source Model File Date: 10/1/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
ChicConsumptionRate	Same as above	Change to Cumulative Distribution 0 3.85 0.01 3.85 0.05 4.18 0.1 5.94 0.25 9.57 0.5 19.85 0.75 38.22 0.9 50.83 0.95 58.52 0.99 72.81 1 72.81 with deterministic set Value: '25 kg/yr'	Y	None	NA	Y
ChicWaterConsumption	Same as above	Create new data element Set = 0.3 L/d	Y	None	NA	Y
ConsumptionFodderChic	Same as above	Create new data element, set =0.1 kg/d	Y	None	NA	Y
FodderFractionChic	Same as above	Create new data element, set =1	Y	None	NA	Y
BeefConsumption	Same as above	Rename expression ChicConsumption	Y	None	NA	Y
BeefConsumption_Intr	Same as above	Rename expression ChicConsumption_Intr	Y	None	NA	Y
POULTRY_A	\HTF_DoseCalculations\Parameters\INPUTS\	Deselect localization box (so parameters are now globally recognized)	Y	None	NA	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.009.gsm	**Source Model ID (or filename):** HTF Transport Model v0.008.gsm
New Model File Date: **10/01/2010**	**Source Model File Date:** 10/1/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
POULTRY_A	\HTF_DoseCalculations\ Parameters\INPUTS\	Cp and paste. RENAME CONTAINER, EGG_A	Y	None	NA	Y
FracLocalChic_MOP	\HTF_DoseCalculations\ Parameters\INPUTS\ POULTRY_A	Clone element to \HTF_DoseCalculations\Parameters\INPUTS\EGG_A and rename **FracLocalEgg_MOP**	Y	None	NA	Y
FracLocalChic_Intr	Same as above	Clone element to \HTF_DoseCalculations\Parameters\INPUTS\EGG_A and rename **FracLocalEgg_Intr**	Y	None	NA	Y
ChicConsumptionRate	\HTF_DoseCalculations\ Parameters\INPUTS\EGG_A	Rename stochastic **EggConsumptionRate**	Y	None	NA	Y
EggConsumptionRate	Same as above	Change to Cumulative Distribution 0 2.8 0.01 2.8 0.05 4.5 0.1 5.3 0.25 8.23 0.5 12.36 0.75 21.35 0.9 35.9 0.95 47.35 0.99 120.71 1 120.71 with deterministic set Value: '19 kg/yr'	Y	None	NA	Y

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.009.gsm	Source Model ID (or filename): HTF Transport Model v0.008.gsm
New Model File Date: 10/01/2010	Source Model File Date: 10/1/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
EggWaterConsumption	\HTF_DoseCalculations\Parameters\INPUTS\EGG_A	make this a clone of the **ChicWaterConsumption** located in **POULTRY_A** cointainer	Y	None	NA	Y
ConsumptionFodderEgg	Same as above	make this a clone of the **ConsumptionFodderChic** located in **POULTRY_A** cointainer	Y	None	NA	Y
ConsumptionFodderEgg	Same as above	make this a clone of the **ConsumptionFodderChic** located in **POULTRY_A** cointainer	Y	None	NA	Y
FodderFractionEgg	Same as above	make this a clone of the FodderFractionChic located in **POULTRY_A** cointainer	Y	None	NA	Y
ChicConsumption	Same as above	Rename expression EggConsumption	Y	None	NA	Y
ChicConsumption_Intr	Same as above	Rename expression EggConsumption_Intr	Y	None	NA	Y
EGG_A	\HTF_DoseCalculations\Parameters\INPUTS\	Deselect localization box (so parameters are now globally recognized)	Y	None	NA	Y
TransFracBeef	\HTF_DoseCalculations\Parameters\Transfer_Coefficients	Cp and paste. Rename TransFracChic	Y	None	NA	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.009.gsm					Source Model ID (or filename): HTF Transport Model v0.008.gsm		
New Model File Date: 10/01/2010					Source Model File Date: 10/1/10		
Parameter or Element	Location	Change Description		Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
TransFracChic	Same as above	Cp new transfer coefficients into vector element:		N	For values cited in the change description (this form), when the value = "1.00E-10 d/kg", a value of "0.00E+00" is used within GoldSim. For example, see the third value (Al-26).	The very small values (i.e., 1e-10 d/kg) are more accurately represented with the zero value.	Y
		6.00E-03 d/kg	3.00E-03 d/kg				
		2.00E+00 d/kg	3.00E-03 d/kg				
		1.00E-10 d/kg	3.00E-03 d/kg				
		6.00E-03 d/kg	3.00E-03 d/kg				
		6.00E-03 d/kg	3.00E-03 d/kg				
		6.00E-03 d/kg	3.00E-02 d/kg				
		9.80E-02 d/kg	3.00E-02 d/kg				
		1.00E-10 d/kg	9.70E+00 d/kg				
		4.40E-02 d/kg	2.00E-03 d/kg				
		6.00E-03 d/kg	2.00E-03 d/kg				
		6.00E-03 d/kg	8.00E-01 d/kg				
		3.00E-02 d/kg	2.00E-02 d/kg				
		6.00E-03 d/kg	3.00E-02 d/kg				
		6.00E-03 d/kg	8.00E-03 d/kg				
		6.00E-03 d/kg	6.00E-03 d/kg				
		6.00E-03 d/kg	6.00E-03 d/kg				
		6.00E-03 d/kg	7.50E-01 d/kg				
		6.00E-03 d/kg	7.50E-01 d/kg				
		9.70E-01 d/kg	7.50E-01 d/kg				
		2.70E+00 d/kg	7.50E-01 d/kg				
		2.70E+00 d/kg	7.50E-01 d/kg				
		2.00E-03 d/kg	7.50E-01 d/kg				
		2.00E-03 d/kg	8.00E-05 d/kg				
		2.00E-03 d/kg	2.00E+00 d/kg				
		2.00E-03 d/kg	8.30E-01 d/kg				
		1.00E-10 d/kg	1.90E-02 d/kg				
		8.70E-03 d/kg	1.70E+00 d/kg				
		4.00E-01 d/kg	2.00E-01 d/kg				
		1.00E-10 d/kg	5.00E-01 d/kg				
		1.80E-01 d/kg	1.40E-02 d/kg				
		3.00E-04 d/kg	1.00E+00 d/kg				
		3.00E-04 d/kg	3.00E-02 d/kg				
		1.00E-03 d/kg	1.90E-03 d/kg				
		1.00E-03 d/kg	1.00E-03 d/kg				
		6.00E-03 d/kg	1.00E-10 d/kg				
		6.00E-03 d/kg	1.00E-10 d/kg				
		8.00E-01 d/kg	8.00E-01 d/kg				
		3.00E-04 d/kg	8.00E-03 d/kg				
		1.00E-10 d/kg	9.70E+00 d/kg				
		3.00E-03 d/kg	4.70E-01 d/kg				

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.009.gsm	Source Model ID (or filename): HTF Transport Model v0.008.gsm
New Model File Date: 10/01/2010	Source Model File Date: 10/1/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
TransferFractionBeef	Same as above	Cp and paste. Rename TransferFractionChic And modify expression: Matrix(Species,Wells, TransFracChic[row])	Y	None	NA	Y
TransFracBeef_Sector	Same as above	Cp and paste. Rename TransFracChic_Sector And modify expression: Matrix(Species,Sectors,TransFracChic[row])	Y	None	NA	Y
TransFracChic	Same as above	Cp and paste. Rename TransFracEgg	Y	None	NA	Y

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Changed Model Check Form

QA&DV Form 5, Rev01

New Model ID (or filename): HTF Transport Model v0.009.gsm	Source Model ID (or filename): HTF Transport Model v0.008.gsm
New Model File Date: 10/01/2010	Source Model File Date: 10/1/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
		Modify vector element:				
		4.00E-03 d/kg				
		5.00E-01 d/kg				
		1.00E-10 d/kg				
		3.00E-03 d/kg				
		3.00E-03 d/kg				
		3.00E-03 d/kg				
		2.60E-01 d/kg				
		1.00E-10 d/kg				
		4.40E-01 d/kg				
		4.00E-03 d/kg				
		4.00E-03 d/kg				
		2.70E+00 d/kg				
		4.00E-03 d/kg				
		4.00E-03 d/kg				
		4.00E-03 d/kg				
		4.00E-03 d/kg				
		4.00E-03 d/kg				
		4.00E-03 d/kg				
		3.30E-02 d/kg				
TransFracEgg	Same as above	4.00E-01 d/kg	N	For values cited in the change description (this form), when the value = "1.00E-10 d/kg", a value of "0.00E+00" is used within GoldSim. For example, see the third value (Al-26).	The very small values (i.e., 1e-10 d/kg) are more accurately represented with the zero value.	Y
		4.00E-01 d/kg				
		4.00E-05 d/kg				
		4.00E-05 d/kg				
		4.00E-05 d/kg				
		1.00E-10 d/kg				
		2.40E+00 d/kg				
		1.00E+00 d/kg				
		1.00E-10 d/kg				
		6.40E-01 d/kg				
		1.00E-03 d/kg				
		1.00E-03 d/kg				
		1.00E-01 d/kg				
		4.00E-03 d/kg				
		4.00E-03 d/kg				
		1.00E+00 d/kg				
		4.00E-03 d/kg				
		1.00E-10 d/kg				
		1.20E-03 d/kg				

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.009.gsm	Source Model ID (or filename): HTF Transport Model v0.008.gsm
New Model File Date: 10/01/2010	Source Model File Date: 10/1/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
TransferFractionChic	Same as above	Cp and paste. Rename to TransferFractionEgg	Y	None	NA	Y
TransferFractionEgg	Same as above	modify expression: Matrix(Species,Wells, TransFracEgg [row])	Y	None	NA	Y
TransFracChic_Sector	Same as above	Cp and paste. Rename to TransFracEgg_Sector	Y	None	NA	Y
TransFracEgg_Sector	Same as above	modify expression: Matrix(Species,Sectors,TransFracEgg[row])	Y	None	NA	Y
SoilBuildupCalc	\HTF_DoseCalculations\Parameters\INPUTS\SOIL_A	Create new expression with units: m2-yr/kg expression = (Vector(Species,1)-exp(-(Lambda_Radioactive Decay+Lambda_Leach)*SoilBuildupTime))/(SurfaceSoilDensity*(Lambda_Radioactive Decay+Lambda_Leach))	Y	None	NA	Y
Root_1D	\HTF_DoseCalculations\Parameters\INPUTS\VEG_A	Remove buildup calc from this expression, so and replace with "SoilBuildupCalc" It looks like: TransFracVeg*SoilBuildupCalc Units = m2-yr/kg	Y	None	NA	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.009.gsm	Source Model ID (or filename): HTF Transport Model v0.008.gsm
New Model File Date: 10/01/2010	Source Model File Date: 10/1/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Lambda_Leach	\HTF_DoseCalculations\ Parameters\INPUTS\SOIL_A	Set equal to (PR+IR-ER)/(TillDepth*(Vector(Species,SoilMoisture Content)+Soil_Properties.SandySoil:Density*Soil_Properties.Kd_2))	Y	None	NA	Y
SoilThickness	Same as above	Delete element	Y	None	NA	Y
FractionExposedtoCuttings	\HTF_DoseCalculations\ Parameters\INPUTS\DRILLWELL	Modified so deterministic Value: '0.0023' Min= 0.0011 (10 hrs) Most likely= 0.0023 (20 hrs) Max = 0.0046 (40 hrs)	Y	None	NA	Y
GardenSize	\HTF_DoseCalculations\ Parameters\INPUTS\SOIL_A	Modified so deterministic Value: '100 m2' Min= 100 Most likely= 0100 Max = 500	Y	None	NA	Y
VegetationProductionYield	\HTF_DoseCalculations\ Parameters\INPUTS\VEG_A	Modified so deterministic Value: '2.2 kg/m2' Min= 0.7 Most likely= 2.2 Max = 4.0	Y	None	NA	Y
LocalGrown LocalGrown_intr	\HTF_DoseCalculations\ Parameters\INPUTS\VEG_A	Modified so min =0.1	Y	None	NA	Y
FracLocalBeef_MOP FracLocalBeef_Intr	\HTF_DoseCalculations\ Parameters\INPUTS\BEEF_A	Modified so min =0.1	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
FracLocalMilk_MOP FracLocalMilk_Intr	\HTF_DoseCalculations\ Parameters\INPUTS\MILK_A	Modified so min =0.1	Y	None	NA	Y
SoilBuildUpFactor	\HTF_DoseCalculations\ GoldSimModel\Member_of_Public_Well_Pathways\Inhalation\IrrigatedSoilDustInh_Well	Delete element	Y	None	NA	Y
EffectiveDF	Same as above	Change expression to: AirIntake*AirMassLoadingSoil*IrrigationRate*DCF_Inhalation*ExposureFractionGarden *matrix(Species,Wells,SoilBuildupCalc[row])*FracYearIrrigate	Y	None	NA	Y
SoilBuildUpFactor	\HTF_DoseCalculations\ GoldSimModel\Member_of_Public_Well_Pathways\Ingestion\SoilIngestion_Well	Delete element	Y	None	NA	Y
EffectiveDF	Same as above	Change expression to: IrrigationRate*DCF_Ingestion* SoilConsumptionRate *matrix(Species,Wells,SoilBuildupCalc[row])*FracYearIrrigate	Y	None	NA	Y
SoilBuildUpFactor	\HTF_DoseCalculations\ GoldSimModel\Member_of_Public_Dose_Stream\Ingestion_Stream\SoilIngestion_Stream	Delete element	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
EffectiveDF	Same as above	Change expression to: IrrigationRate*DCF_Ingestion * SoilConsumptionRate *matrix(Species,Wells,SoilBuildupCalc[row])*FracYearIrrigate	Y	None	NA	Y
SoilBuildUpFactor	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Dose_Stream\Inhalation_Stream\IrrigatedSoilDustInh_Stream	Delete element	Y	None	NA	Y
EffectiveDF	Same as above	Change expression to: AirIntake*AirMassLoadingSoil*IrrigationRate*DCF_Inhalation*ExposureFractionGarden *matrix(*Species*,Wells,SoilBuildupCalc[row])*FracYearIrrigate	Y	None	NA	Y
SoilBuildUpFactor	\HTF_DoseCalculations\GoldSimModel\Chronic_Intruder_G\Ingestion\SoilIngestion	Delete element	Y	None	NA	Y
EffectiveDF_Well	Same as above	Change expression to: IrrigationRate*DCF_Ingestion_vector* SoilConsumptionRate *SoilBuildupCalc*FracYearIrrigate	Y	None	NA	Y

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New Model ID (or filename): HTF Transport Model v0.009.gsm	**Source Model ID (or filename):** HTF Transport Model v0.008.gsm
New Model File Date: **10/01/2010**	**Source Model File Date:** 10/1/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
SoilBuildUpFactor	\HTF_DoseCalculations\GoldSimModel\Chronic_Intruder_G\Inhalation\IrrigatedSoilDustInh	Delete element	Y	None	NA	Y
EffectiveDF_Well	Same as above	Change expression to: AirIntake*AirMassLoadingSoil*IrrigationRate*DCF_Inhalation_vector*ExposureFractionGarden*SoilBuildupCalc*FracYearIrrigate	Y	None	NA	Y
SoilBuildUpFactor	\HTF_DoseCalculations\PorflowModel\Chronic_Intruder_P\Ingestion\SoilIngestion	Delete element	Y	None	NA	Y
EffectiveDF_Well	Same as above	Change expression to: IrrigationRate*DCF_Ingestion_Sector*SoilConsumptionRate*matrix(Species,Sectors,*SoilBuildupCalc*[row])*FracYearIrrigate	Y	None	NA	Y
SoilBuildUpFactor	\HTF_DoseCalculations\PorflowModel\Chronic_Intruder_P\Inhalation\IrrigatedSoilDustInh	Delete element	Y	None	NA	Y

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New Model ID (or filename): HTF Transport Model v0.009.gsm	**Source Model ID (or filename):** HTF Transport Model v0.008.gsm
New Model File Date: **10/01/2010**	**Source Model File Date:** 10/1/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
EffectiveDF_Well	Same as above	Change expression to: AirIntake*AirMassLoadingSoil*IrrigationRate*DCF_Inhalation_Sector*ExposureFractionGarden*matrix(Species,Sectors,SoilBuildupCalc[row])*FracYearIrrigate	Y	None	NA	Y
SoilBuildUpFactor	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Well_Pathways\Exposure\IrrigratedSoilExposure_Well	Delete element	Y	None	NA	Y
EffectiveDF	Same as above	Change expression to: IrrigationRate*DCF_Ex15cm*ExposureFractionGarden*Soil_Properties.SandySoil:Density*matrix(Species,Wells,SoilBuildupCalc[row])*FracYearIrrigate	Y	None	NA	Y
SoilBuildUpFactor	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Dose_Stream\Exposure_Stream\IrrigratedSoilExposure_Stream	Delete element	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
EffectiveDF	Same as above	Change expression to: IrrigationRate*DCF_Ex15cm*ExposureFractionGarden*Soil_Properties.SandySoil:Density*matrix(Species,Wells,SoilBuildupCalc[row])*FracYearIrrigate	Y	None	NA	Y
SoilBuildUpFactor	\HTF_DoseCalculations\GoldSimModel\Chronic_Intruder_G\Exposure\IrrigatedSoilExposure	Delete element	Y	None	NA	Y
EffectiveDF_Well	Same as above	Change expression to: *IrrigationRate*DCF_Ex15cm_vector*ExposureFractionGarden*Soil_Properties.SandySoil:Density*SoilBuildupCalc*FracYearIrrigate	Y	None	NA	Y
~~SoilBuildUpFactor~~	~~\HTF_DoseCalculations\GoldSimModel\Chronic_Intruder_G\Exposure\IrrigatedSoilExposure~~	~~Delete element~~	NA	This is a repeated entry.	NA	NA
~~EffectiveDF_Well~~	~~Same as above~~	~~Change expression to: *IrrigationRate*DCF_Ex15cm_vector*ExposureFractionGarden*Soil_Properties.SandySoil:Density*SoilBuildupCalc*FracYearIrrigate~~	NA	This is a repeated entry.	NA	NA

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
IrrigratedSoilExposure_Stream	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Dose_Stream\Exposure_Stream	Changed name to: IrrigatedSoilExposure_Stream	Y	None	NA	Y
BeefDose_EffectiveDF	\HTF_DoseCalculations\PorflowModel\Member_of_Public_StreamPaths_P	Modified expression (deleted seeptowellratio): Matrix(Species,Sectors,BeefIngestionDose_Stream.EffectiveDF[row,1])	Y	None	NA	Y
EffectiveDF	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Dose_Stream\Ingestion_Stream\WaterIngestionDose_Stream	Modified expression (deleted seeptowellratio): WaterConsumptionRate * DCF_Ingestion	Y	None	NA	Y
EffectiveDF	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Dose_Stream\Ingestion_Stream\BeefIngestionDose_Stream	Modified expression (deleted seeptowellratio): DCF_Ingestion * BeefConsumption * TransferFractionBeef * (FodderFractionBeef* IrrigationRate* (LeafMatrix + Root_2D) * FracYearIrrigate* ConsumptionFodderBeef+ WaterFraction* CattleWaterConsumptionBeef*Matrix(Species,Wells,1.0))	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
EffectiveDF	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Dose_Stream\Ingestion_Stream\MilkIngestionDose_Stream	Modified expression (deleted seeptowellratio): DCF_Ingestion * MilkConsumption*TransferFractionMilk* (FodderFractionMilk* IrrigationRate* (LeafMatrix + Root_2D) * FracYearIrrigate * ConsumptionFodderMilk+ WaterFraction* CattleWaterConsumptionMilk*Matrix(Species,Wells,1.0))	Y	None	NA	Y
EffectiveDF	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Dose_Stream\Ingestion_Stream\VegetableIngestionDose_Stream	Modified expression (deleted seeptowellratio): IrrigationRate* (LeafMatrix + Root_2D) * FracYearIrrigate* DCF_Ingestion * (VeggieConsumption + LeafyVeggieConsumption*WashingFactor)* LocallyGrownfrac	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
EffectiveDF	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Dose_Stream\Ingestion_Stream\FishIngestion_clone	Modified expression (deleted seeptowellratio): FishConsumptionRate * Matrix(Species,Wells, TransFracFish [row])* DCF_Ingestion	Y	None	NA	Y
EffectiveDF	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Dose_Stream\Exposure_Stream\SwimmingExposure_clone	Modified expression (deleted seeptowellratio): SwimmingGF * AnnualSwimming* DCF_Immersion	Y	None	NA	Y
EffectiveDF	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Dose_Stream\Exposure_Stream\BoatingExposure_clone	Modified expression (deleted seeptowellratio): BoatingGF* AnnualBoating*DCF_Immersion	Y	None	NA	Y
EffectiveDF	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Dose_Stream\Inhalation_Stream\IrrigationInhalation_Stream	Modified expression (deleted seeptowellratio): DCF_Inhalation * AirIntake * ExposureFractionGarden* AirWaterContent*ARF / WatDens	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
EffectiveDF	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Dose_Stream\Inhalation_Stream\ShoweringInhalation_Stream	Modified expression (deleted seeptowellratio): DCF_Inhalation * AirIntake * ExposureFractionShower * ShowerAirWaterContent*ARF / WatDens	Y	None	NA	Y
EffectiveDF	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Dose_Stream\Inhalation_Stream\SwimmingInhalation_clone	Modified expression (deleted seeptowellratio): AirIntake*SwimmingGF*AnnualSwimming*DCF_Inhalation*AirWaterContent*ARF/WatDens	Y	None	NA	Y
ExposureBoating_EffectiveDF	\HTF_DoseCalculations\PorflowModel\Member_of_Public_Well_Paths_P	Modified expression (deleted seeptowellratio): Matrix(Species,Sectors,BoatingExposure.EffectiveDF[row,1])	Y	None	NA	Y
FishIngestion_EffectiveDF	Same as above	Modified expression (deleted seeptowellratio): Matrix(Species,Sectors,*FishIngestion.EffectiveDF*[row,1])	Y	None	NA	Y
InhalationSwimming_EffectiveDF	Same as above	Modified expression (deleted seeptowellratio): Matrix(Species,Sectors,SwimmingInhalation.EffectiveDF[row,1])	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
ExposureBoating_EffectiveDF	\HTF_DoseCalculations\PorflowModel\Member_of_Public_StreamPaths_P	Modified expression (deleted seeptowellratio): Matrix(Species,Sectors,BoatingExposure_clone.EffectiveDF[row,1])	Y	None	NA	Y
ExposureIrrSoil_EffectiveDF	Same as above	Modified expression (deleted seeptowellratio): Matrix(Species,Sectors,IrrigatedSoilExposure_Stream.EffectiveDF[row,1])	Y	None	NA	Y
ExposureSwimming_EffectiveDF	Same as above	Modified expression (deleted seeptowellratio): Matrix(Species,Sectors,SwimmingExposure_clone.EffectiveDF[row,1])	Y	None	NA	Y
VeggieDose_EffectiveDF	Same as above	Modified expression (deleted seeptowellratio): Matrix(Species,Sectors,VegetableIngestionDose_Stream.EffectiveDF[row,1])	Y	None	NA	Y
MilkDose_EffectiveDF	Same as above	Modified expression (deleted seeptowellratio): Matrix(Species,Sectors,MilkIngestionDose_Stream.EffectiveDF[row,1])	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
WaterIngestion_EffectiveDF	Same as above	Modified expression (deleted seeptowellratio): Matrix(Species,Sectors,WaterIngestionDose_Stream.EffectiveDF[row,1])	Y	None	NA	Y
FishIngestion_EffectiveDF	Same as above	Modified expression (deleted seeptowellratio): Matrix(Species,Sectors,FishIngestion_clone.EffectiveDF[row,1])	Y	None	NA	Y
PicaDose_EffectiveDF	Same as above	Modified expression (deleted seeptowellratio): Matrix(Species,Sectors,SoilIngestion_Stream.EffectiveDF[row,1])	Y	None	NA	Y
InhalationIrr_EffectiveDF	Same as above	Modified expression (deleted seeptowellratio): Matrix(Species,Sectors,IrrigationInhalation_Stream.EffectiveDF[row,1])	Y	None	NA	Y
InhalationShower_EffectiveDF	Same as above	Modified expression (deleted seeptowellratio): Matrix(Species,Sectors,ShoweringInhalation_Stream.EffectiveDF[row,1])	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
InhalationSwimming_EffectiveDF	Same as above	Modified expression (deleted seeptowellratio): Matrix(Species,Sectors,SwimmingInhalation_clone.EffectiveDF[row,1])	Y	None	NA	Y
InhalationIrrSoil_EffectiveDF	Same as above	Modified expression (deleted seeptowellratio): Matrix(Species,Sectors,IrrigatedSoilDustInh_Stream.EffectiveDF[row,1])	Y	None	NA	Y
SeeptoWellRatio	\PORFLOWFeedsToDoseCalculations	Move element from \HTF_DoseCalculations\Parameters\INPUTS	Y	None	NA	Y
ChicIngestionDose_Stream	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Dose_Stream\Ingestion_Stream	Cp and paste the container BeefIngestionDose_Stream, rename to ChicIngestionDose_Stream	Y	None	NA	Y
EffectiveDF	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Dose_Stream\Ingestion_Stream\ChicIngestionDose_Stream	Modify expression: DCF_Ingestion * ChicConsumption * TransferFractionChic* (FodderFractionChic*IrrigationRate* (LeafMatrix + Root_2D) * FracYearIrrigate* ConsumptionFodderChic + WaterFraction* ChicWaterConsumption* Matrix(Species,Wells,1.0))	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
EggIngestionDose_Stream	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Dose_Stream\Ingestion_Stream	Cp and paste the container ChicIngestionDose_Stream, rename to EggIngestionDose_Stream	Y	None	NA	Y
EffectiveDF	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Dose_Stream\Ingestion_Stream\EggIngestionDose_Stream	Modify expression: DCF_Ingestion * EggConsumption * TransferFractionEgg* (FodderFractionEgg*IrrigationRate* (LeafMatrix + Root_2D) * FracYearIrrigate* ConsumptionFodderEgg+ WaterFraction* EggWaterConsumption *Matrix(Species,Wells, 1.0))	Y	None	NA	Y
ChicIngestionDose_Well	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Well_Pathways\Ingestion	Cp and paste the container BeefIngestionDose_Well and rename to ChicIngestionDose_Well	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
EffectiveDF	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Well_Pathways\Ingestion\ChicIngestionDose_Well	Modify expression to: DCF_Ingestion * ChicConsumption * TransferFractionChic* (FodderFractionChic* IrrigationRate* (LeafMatrix + Root_2D) * FracYearIrrigate* *ConsumptionFodderChic*+ WaterFraction* ChicWaterConsumption*Matrix(Species,Wells,1.0))	Y	None	NA	Y
EggIngestionDose_Well	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Well_Pathways\Ingestion	Cp and paste the container ChicIngestionDose_Well and rename to EggIngestionDose_Well	Y	None	NA	Y
EffectiveDF	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Well_Pathways\Ingestion\EggIngestionDose_Well	Modify expression to: DCF_Ingestion * EggConsumption * TransferFractionEgg* (FodderFractionEgg*IrrigationRate* (LeafMatrix + Root_2D) * FracYearIrrigate* ConsumptionFodderEgg+ WaterFraction* EggWaterConsumption*Matrix(*Species*,Wells,1.0))	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
ChicIngestionDose	\HTF_DoseCalculations\GoldSimModel\Chronic_Intruder_G\Ingestion	Cp and paste the container BeefIngestionDose and rename to ChicIngestionDose	Y	None	NA	Y
EggIngestionDose	\HTF_DoseCalculations\GoldSimModel\Chronic_Intruder_G\Ingestion	Cp and paste the container BeefIngestionDose and rename to EggIngestionDose	Y	None	NA	Y
ChicIngestion	\HTF_DoseCalculations\GoldSimModel\Chronic_Intruder_G\Ingestion\ChicIngestionDose	Rename BeefIngestion ChicIngestion	Y	None	NA	Y
EffectiveDF_Well	\HTF_DoseCalculations\GoldSimModel\Chronic_Intruder_G\Ingestion\ChicIngestionDose	Modify expression: DCF_Ingestion_vector* ChicConsumption_Intr * TransFracChic* (FodderFractionChic* IrrigationRate* (LeafVector + Root_1D) * FracYearIrrigate*ConsumptionFodderChic+ WaterFraction*ChicWaterConsumption*Vector(Species,1.0))	Y	None	NA	Y
EggIngestion	\HTF_DoseCalculations\GoldSimModel\Chronic_Intruder_G\Ingestion\EggIngestionDose	Rename BeefIngestion EggIngestion	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
EffectiveDF_Well	Same as above	Modify expression: DCF_Ingestion_vector* EggConsumption_Intr * TransFracEgg* (FodderFractionEgg*IrrigationRate* (LeafVector + Root_1D) * FracYearIrrigate*ConsumptionFodderEgg+ WaterFraction*EggWaterConsumption*Vector(Species,1.0))	Y	None	NA	Y
ChicIngestionDose	\HTF_DoseCalculations\PorflowModel\Chronic_Intruder_P\Ingestion	Cp and paste containers ChicIngestionDose from \HTF_DoseCalculations\GoldSimModel\Chronic_Intruder_G\Ingestion	Y	None	NA	Y
ChicIngestion	\HTF_DoseCalculations\PorflowModel\Chronic_Intruder_P\Ingestion\ChicIngestionDose	Make matrix [Species, Sector] EffectiveDF_Well*STAT1	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
EffectiveDF_Well	Same as above	Modified expression: DCF_Ingestion_Sector * ChicConsumption_Intr * TransFracChic_Sector * (FodderFractionChic* IrrigationRate* (LeafMatrix_Sector + Root_2D_Sector) * FracYearIrrigate* ConsumptionFodderChic+WaterFraction* ChicWaterConsumption*Matrix(Species,Sectors,1.0))	Y	None	NA	Y
EggIngestionDose	\HTF_DoseCalculations\PorflowModel\Chronic_Intruder_P\Ingestion	Cp and paste container, ChicIngestionDose , rename to EggIngestionDose	Y	None	NA	Y
ChicDose_EffectiveDF Egg Dose_EffectiveDF	\HTF_DoseCalculations\PorflowModel\Member_of_Public_StreamPaths_P	Cp and paste 2 x , BeefDose_EffectiveDF, rename to chic and egg	Y	None	NA	Y
ChicDose_EffectiveDF	Same as above	Modify expression: Matrix(Species,Sectors,ChicIngestionDose_Stream.EffectiveDF[row,1])	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
EggDose_EffectiveDF	Same as above	Modify Matrix(Species,Sectors,EggIngestionDose_Stream.EffectiveDF[row,1])	Y	None	NA	Y
TotalEffectiveDF_Seeps	Same as above	Add the chicken and egg pathway to expression: FishIngestion_EffectiveDF+ExposureBoating_EffectiveDF+ExposureSwimming_EffectiveDF+InhalationSwimming_EffectiveDF+InhalationIrr_EffectiveDF+InhalationShower_EffectiveDF+WaterIngestion_EffectiveDF+VeggieDose_EffectiveDF+BeefDose_EffectiveDF+MilkDose_EffectiveDF+PicaDose_EffectiveDF+ExposureIrrSoil_EffectiveDF+InhalationIrrSoil_EffectiveDF+ChicDose_EffectiveDF+EggDose_EffectiveDF	Y	None	NA	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.009.gsm	Source Model ID (or filename): HTF Transport Model v0.008.gsm
New Model File Date: 10/01/2010	Source Model File Date: 10/1/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
ChicDose_EffectiveDF EggDose_EffectiveDF	\HTF_DoseCalculations\PorflowModel\Member_of_Public_Well_Paths_P	Cp and paste BeefDose_EffectiveDF, and rename to Chic and Egg Change to : Matrix(Species,Sectors,*ChicIngestionDose_Well.EffectiveDF*[row, 1]) And: Matrix(Species,Sectors,*EggIngestionDose_Well.EffectiveDF*[row, 1])	Y	None	NA	Y
TotalEffectiveDF_Wells	Same as above	Add the chic and egg pathway InhalationIrr_EffectiveDF+InhalationShower_EffectiveDF+WaterIngestion_EffectiveDF+VeggieDose_EffectiveDF+BeefDose_EffectiveDF+MilkDose_EffectiveDF+PicaDose_EffectiveDF+ExposureIrrSoil_EffectiveDF+InhalationIrrSoil_EffectiveDF+ChicDose_EffectiveDF+EggDose_EffectiveDF	Y	None	NA	Y

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New Model ID (or filename): HTF Transport Model v0.009.gsm	Source Model ID (or filename): HTF Transport Model v0.008.gsm
New Model File Date: 10/01/2010	Source Model File Date: 10/1/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
EffectiveDF	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Well_Pathways\Inhalation\SwimmingInhalation which is cloned with \HTF_DoseCalculations\GoldSimModel\Member_of_Public_Dose_Stream\Inhalation_Stream\SwimmingInhalation_clone	Remove the SwimmingGF from term: AirIntake*AnnualSwimming*DCF_Inhalation*AirWaterContent*ARF/WatDens	Y	None	NA	Y
EffectiveDF_Seep	\HTF_DoseCalculations\PorflowModel\Chronic_Intruder_P\Inhalation\SwimmingInhalation	Remove the SwimmingGF from term: AirIntake*AnnualSwimming*DCF_Inhalation_Sector*AirWaterContent*ARF/WatDens	Y	None	NA	Y
IntruderInventorySwitch	\SimulationSettings\Switches	Add element set equal to 1.	Y	None	NA	Y
TransLineInventory	\HTF_Source_Inputs\HTF_Ancillary_Equipment\Ancillary_Equipment_Inventory\TransferLineInventory	Delete	Y	None	NA	Y
TransLineInventory_3in	Same as above	Rename TransferLineInventory_Ci to: TransLineInventory_3in and replace with data from HTF Core Drill Inventory_ro_8-23-10.xls, tab "Tranfer Line 3", Column O	Y	None	NA	Y

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New Model ID (or filename): HTF Transport Model v0.009.gsm	Source Model ID (or filename): HTF Transport Model v0.008.gsm
New Model File Date: 10/01/2010	Source Model File Date: 10/1/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
TransLineInventory_4in	Same as above	Cp TransLineInventory_3in and replace with data from HTF Core Drill Inventory_ro_8-23-10.xls, tab "Tranfer Line 4", Column O	Y	None	NA	Y
Tank13Inventory_Intr	Same as above	Cp TransLineInventory_4in, rename and replace with data from HTF Core Drill Inventory_ro_8-23-10.xls, tab "Type II", Column O	Y	None	NA	Y
Tank24Inventory_Intr	Same as above	Cp TransLineInventory_4in, rename and replace with data from HTF Core Drill Inventory_ro_8-23-10.xls, tab "Type IV", Column O	Y	None	NA	Y

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New Model File Date: 10/01/2010	Source Model File Date: 10/1/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
TransLineInventory_Ci	Same as above	Add selector switch: If IntruderInventory=1, then TransLineInventory_3 in, If IntruderInventory=2, then TransLineInventory_4 in, If IntruderInventory=3, then Tank13Inventory_Intr , else Tank24Inventory_Intr	Y	None	NA	Y
TransferLineInventory_g	Same as above	delete	Y	None	NA	Y
ChangeTrans_Conc	\HTF_DoseCalculations\Intruder_Drilling_Source	Set equal to TransLineInventory_Ci/*Species.Specific_Activity*	Y	None	NA	Y
Rad_Max_a	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Inventories\InventoryUncertainty	Was going to change the inventory for Tanks 21-51 for Sn126 to equal 1, but was already done.	Y	None	NA	Y
Rad_Min_a	Same as above	Was going to change the inventory for Tanks 21-51 for Sn126 to equal 0.01, but was already done.	Y	None	NA	Y

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New Model ID (or filename): HTF Transport Model v0.009.gsm	Source Model ID (or filename): HTF Transport Model v0.008.gsm
New Model File Date: 10/01/2010	Source Model File Date: 10/1/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
ChicIngestionDose	\HTF_DoseCalculations\DoseResults\GoldSimIntruderDoseResults	Cp BeefIngestionDose and paste as ChicIngestionDose and set = Chronic_Intruder_G.ChicIngestion	Y	None	NA	Y
EggIngestionDose	Same as above	Cp BeefIngestionDose and paste as EggIngestionDose and set = Chronic_Intruder_G.EggIngestion	Y	None	NA	Y
IngestionDoseSum	Same as above	Add ChicIngestionDose And EggIngestionDose To the other ingestion doses.	Y	None	NA	Y
TotalChic_Ingest	\HTF_DoseCalculations\DoseResults\GoldSimIntruderDoseResults\TotalRadionuclides	Cp TotalBeef_Ingest and paste as TotalChic_Ingest make = sumv(ChicIngestionDose)	Y	None	NA	Y
TotalEgg_Ingest	Same as above	Cp TotalBeef_Ingest and paste as TotalEgg_Ingest , make = sumv(EggIngestionDose)	Y	None	NA	Y

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New Model File Date: 10/01/2010	Source Model File Date: 10/1/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
ChicIngestionDose	\HTF_DoseCalculations\DoseResults\GoldSimMOPStreamDoseResults	Cp BeefIngestionDose and paste as ChicIngestionDose, and set = ChicIngestionDose_Stream.NucDose_Sectors	Y	None	NA	Y
EggIngestionDose	Same as above	Cp BeefIngestionDose and paste as EggIngestionDose, and set = EggIngestionDose_Stream.NucDose_Sectors	Y	None	NA	Y
IngestionDoseSum	Same as above	Add ChicIngestionDose and EggIngestionDose	Y	None	NA	Y
ChicIngestionDose	\HTF_DoseCalculations\DoseResults\GoldSimMOPWellDoseResults	Cp BeefIngestionDose and paste as ChicIngestionDose, and set = ChicIngestionDose_Well.NucDose_Sectors	Y	None	NA	Y
EggIngestionDose	Same as above	Cp BeefIngestionDose and paste as EggIngestionDose, and set = EggIngestionDose_Well.NucDose_Sectors	Y	None	NA	Y

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.009.gsm	Source Model ID (or filename): HTF Transport Model v0.008.gsm
New Model File Date: 10/01/2010	Source Model File Date: 10/1/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
IngestionDoseSum	Same as above	Add ChicIngestionDose and EggIngestionDose	Y	None	NA	Y
ExposureDoseSum	\HTF_DoseCalculations\DoseResults\GoldSimMOPStreamDoseResults	Change the input to be linked to elements within container: BoatingExposureDose IrrigatedSoilExposureDose SwimmingExposureDose	Y	None	NA	Y
IngestionDoseSum	Same as above	Change the input to be linked to elements within container: BeefIngestionDose ChicIngestionDose EggIngestionDose FishIngestionDose MilkIngestionDose SoilIngestionDose VegetableIngestionDose WaterIngestionDose	Y	None	NA	Y
IngestionDoseSum	\HTF_DoseCalculations\DoseResults\GoldSimMOPWellDoseResults	Cp and paste from \HTF_DoseCalculations\DoseResults\GoldSimMOPStreamDoseResults	Y	None	NA	Y

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.009.gsm	Source Model ID (or filename): HTF Transport Model v0.008.gsm
New Model File Date: 10/01/2010	Source Model File Date: 10/1/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
InhalationDoseSum	\HTF_DoseCalculations\DoseResults\GoldSimMOPStreamDoseResults	Change the input to be linked to elements within container: IrrigatedSoilDuseInhDose IrrigationInhDose SwimmingInhDose ShoweringInhDose	Y	None	NA	Y
TotalDoseSum	Same as above	Change the input to be linked to elements within container: ExposureDoseSum IngestionDoseSum InhalationDoseSum	Y	None	NA	Y
ExposureDoseSum	Same as above	BoatingExposureDose IrrigatedSoilExposureDose SwimmingExposureDose	Y	None	NA	Y
ChicIngestionDose	\HTF_DoseCalculations\DoseResults\PorflowIntruderDoseResults	Cp BeefIngestionDose and paste as ChicIngestionDose, set = Chronic_Intruder_P.ChicIngestion	Y	None	NA	Y
EggIngestionDose	Same as above	Cp BeefIngestionDose and paste as EggIngestionDose, set = Chronic_Intruder_P.EggIngestion	Y	None	NA	Y

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New Model File Date: 10/01/2010	Source Model File Date: 10/1/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
IngestionDoseSum	Same as above	Add ChicIngestionDose and EggIngestionDose as inputs	Y	None	NA	Y
TotalChic_Sectors	\HTF_DoseCalculations\DoseResults\PorflowIntruderDoseResults\TotalBySector	Cp TotalBeef_Sectors and paste as TotalChic_Sectors, change to equal: sumv(ChicIngestionDose[*,A]) sumv(ChicIngestionDose[*,B]) sumv(ChicIngestionDose[*,C]) sumv(ChicIngestionDose[*,D]) sumv(ChicIngestionDose[*,E]) sumv(ChicIngestionDose[*,F])	Y	None	NA	Y

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New Model ID (or filename): HTF Transport Model v0.009.gsm	**Source Model ID (or filename):** HTF Transport Model v0.008.gsm
New Model File Date: **10/01/2010**	**Source Model File Date:** 10/1/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
TotalEgg_Sectors	Same as above	Cp TotalBeef_Sectors and paste as TotalEgg_Sectors, change to equal: sumv(EggIngestionDose[*,A]) sumv(EggIngestionDose[*,B]) sumv(EggIngestionDose[*,C]) sumv(EggIngestionDose[*,D]) sumv(EggIngestionDose[*,E]) sumv(EggIngestionDose[*,F])	Y	None	NA	Y

If checker has no comments, check here. ☐ Add additional rows above, as needed.

Analyst Name (print): Keely Brooks	**E-Signature (or sign/date/scan hardcopy):** (Not required if no comments) Keely Brooks Digitally signed by Keely Brooks DN: cn=Keely Brooks, o, ou, email=Keely.Brooks@srs.gov, c=US Date: 2010.10.04 13:28:42 -04'00'
Checker Name (print): Steve Hommel	**E-Signature (or sign/date/scan hardcopy):** Steve Hommel Digitally signed by Steve Hommel DN: cn=Steve Hommel, o, ou, email=steven.hommel@srs.gov, c=US Date: 2010.10.04 12:10:12 -04'00'

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.010.gsm	**Source Model ID (or filename):** HTF Transport Model v0.009.gsm
New Model File Date: 10/05/2010	**Source Model File Date:** 10/1/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Can this new model be traced (by following the Source Model IDs) back to a source model with a completed Initial Model Check Form (QA&DV Form 4)? - If so, proceed. If not, disregard this form and complete an Initial Model Check Form (QA&DV Form 4) for this model.						
Submodel elements are denoted by this shading						
SandInventoryTime Factor	\HTFTanks_Transport_Model\SandPads\SandInventory	Value changed to TankArea_sf_ratio*SandInventory_vector*SinkDecay.Mass_in_Pathway/vector(Species,1.0 g)	Y	None	NA	Y
SecondarySandLayer_ff	\HTFTanks_Transport_Model\SandPads	Diffusive area changed to: DiffusiveArea_sand*TankArea_ff_ratio	Y	None	NA	Y
WasteCell	\HTFTanks_Transport_Model\WasteLayer	Changed primary liner outflow Flow Rate to: PF_Flow_CZ_pos* *TankArea* * (1-BypassFraction)*TankArea_sf_ratio*LinerOff Changed fast flow primary liner outflow Flow Rate to: PF_Flow_CZ_pos_ff* *TankArea* * (1-BypassFraction)*TankArea_ff_ratio*LinerOff Changed third	Y	None	NA	Y
WallSolid	\HTFTanks_Transport_Model\SandPads\WallModel	Changed porosity to Porosity_Concrete and density to DryBulkDensity_Concrete	Y	None	NA	Y

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New Model ID (or filename): HTF Transport Model v0.010.gsm	Source Model ID (or filename): HTF Transport Model v0.009.gsm
New Model File Date: 10/05/2010	Source Model File Date: 10/1/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
TypeIBasematThickness	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\Tank_Basemat_Thicknesses	Changed stochastic elements triangular distribution maximum to 37 inches as per Dave	Y	None	NA	Y
TypeIIIBasematThickness	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\Tank_Basemat_Thicknesses	Changed stochastic elements triangular distribution maximum to 48.5 inches as per Dave.	Y	None	NA	Y
TypeIVBasematThickness	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\Tank_Basemat_Thicknesses	Changed stochastic elements triangular distribution minimum to 6.7775 inches and maximum to 7.0275 inches as per Dave.	Y	None	NA	Y
WallSolid	\HTFTanks_Transport_Model\Grout\WallForGrout	Changed porosity to Porosity_Concrete and density to DryBulkDensity_Concrete	Y	None	NA	Y
NumberOfWallCells 2	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Geometry\WallDimensions	Changed to 10	Y	None	NA	Y
NearWellInConcentrationAE	\HTFAE_Transport_Results	Added selector element to pass concentrations from first well outside of the footprint to the main model	Y	None	NA	Y
NearWellInConcAE_tsr	\HTFAE_Transport_Results	Added time series element to pass concentrations from first well outside of the footprint to the main model	Y	None	NA	Y

Changed Model Check Form

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New Model File Date: 10/05/2010	**Source Model File Date:** 10/1/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
HTFTransportSubmodel	\HTF_TransportModel\HTFSourceLoop\InnerLoop	Added NearWellInConcentrationAE to output interface	Y	None	NA	Y
TSProcAE	\HTF_TransportModel\HTFSourceLoop\InnerLoop\TS_Proc_AE	Added NearWellInConcentrationAE to input and output interfaces	Y	None	NA	Y
NearWellInConcAE	\TransportModel_Results	Added time series to receive data from TSProc2	Y	None	NA	Y
NearWellInConcByAE	\TransportModel_Results	Added expression element to feed concentrations from first well outside of the footprint to the main model to the dose calculator	Y	None	NA	Y
PFFlows_grout_CaseXX_U Where XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates*TankFlows**PFFlows_TankGrout*	Add new data element. From CaseXX_Final.xls, **"TANK_GROUT_U"** (09/23/2010). Contained in add'l_Info folder of NEW_U_Flow_10052010.zip.	Y	None	NA	Y
PFFlows_grout_ff_CaseXX_U Where XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates*TankFlows**PFFlows_TankGrout*	Add new data element. From CaseXX_Final.xls, **"FF_TANK_GROUT_U"** (09/23/2010). Contained in add'l_Info folder of NEW_U_Flow_10052010.zip.	Y	None	NA	Y

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New Model File Date: 10/05/2010	Source Model File Date: 10/1/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
HTFTransportSubmodel	\HTF_TransportModel\HTFSourceLoop\InnerLoop	Added PFFlows_grout_CaseXX_U Where XX=A-E and PFFlows_grout_CaseXX_U Where XX=A-E to input interface	Y	None	NA	Y
PFFlows_grout_CaseXX_U Where XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_TankGrout	Added selector elements to feed submodel	Y	None	NA	Y
PFFlows_grout_ff_CaseXX_U Where XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_TankGrout	Added selector elements to feed submodel	Y	None	NA	Y
PF_Flow_TankGrout_U	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added selector element to chose the horizontal flow fields for the tank grout by case	Y	None	NA	Y
PF_Flow_ff_TankGrout_U	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added selector element to chose the horizontal flow fields for the tank grout by case	Y	None	NA	Y
PFFlows_vpliner_CaseXX_U Where XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates*TankFlows\PFFlows_Liners*	Add new data element. From CaseE_VERT_LINER.xls, **"P_VERT_LINER_U"** (10/05/2010) Contained in add'l_Info folder of NEW_U_Flow_10052010.zip.	Y	None	NA	Y

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New Model File Date: 10/05/2010	Source Model File Date: 10/1/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
HTFTransportSubmodel	\HTF_TransportModel\HTFSourceLoop\InnerLoop	Added PFFlows_vpliner_CaseXX_U to input interface	Y	None	NA	Y
PFFlows_vpliner_CaseXX_U Where XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_Liners	Added selector elements to feed submodel	Y	None	NA	Y
PF_Flow_vpliner_U	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added selector element to chose the horizontal flow fields for the tank grout by case	Y	None	NA	Y
OuterFlux	\HTFTanks_Transport_Model\Grout\GroutFastPath	Added expression element to define the volumetric water flux at the tank-grout/wall interface (uses vertical liner velocities)	Y	None	NA	Y
VFAC	\HTFTanks_Transport_Model\Grout\GroutFastPath	Added selector element to allow user to turn off the volumetric water flux at the tank-grout/wall interface for either positive, negative or any flow	?	I think that maybe the first THEN statement should equal zero (to prevent negative flows?) instead of one.	This switch gives the user the option of turning off negative flow by changing the first term to a zero. With the present data, the use of negative flows seems to work fine.	Y
GroutCell_XX_ff Where XX=In,Out, 2-9	\HTFTanks_Transport_Model\Grout\GroutFastPath	Added outflows from the tank grout to the wall for TypeIV tanks	Y	None	NA	Y

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New Model File Date: 10/05/2010	Source Model File Date: 10/1/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
OuterFlux	\HTFTanks_Transport_Model\WasteLayer	Added expression element to define the volumetric water flux at the CZ/wall interface (uses vertical liner velocities)	Y	None	NA	Y
VFAC	\HTFTanks_Transport_Model\WasteLayer	Added selector element to allow user to turn off the volumetric water flux at CZ/wall interface for either positive, negative or any flow	?	I think that maybe the first THEN statement should equal zero (to prevent negative flows?) instead of one.	This switch gives the user the option of turning off negative flow by changing the first term to a zero. With the present data, the use of negative flows seems to work fine.	Y
WasteCell	\HTFTanks_Transport_Model\WasteLayer	Added outflow from the CZ to the wall for TypeIV tanks	Y	None	NA	Y
LinerOffDiff	\HTFTanks_Transport_Model\LinerFailure	Changed name of LinerOff	Y	None	NA	Y
LinerOffFlow	\HTFTanks_Transport_Model\LinerFailure	Added selector to give the user an option of turning off flow through liners	?	I think that the first THEN statement should be zero instead of 1.	This switch gives the user the option of turning off the flow through the liner before the liner fails. Because the PORFLOW model with the new velocity fields has measurable leakage through the liner before failure, the term is set to 1.	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PrimaryLiner	\HTFTanks_Transport_Model\Liners	Change made than negated but GoldSim still notes change made	Y	None	NA	Y
DiffWallTime1	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Filled in remainder of times with data from Degradation times 10-05-10.xls	Y	None	NA	Y
DiffWallTime2	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Filled in remainder of times with data from Degradation times 10-05-10.xls	Y	None	NA	Y
DiffBasematNPTime1	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Filled in remainder of times with data from Degradation times 10-05-10.xls	Y	None	NA	Y
DiffBasematNPTime2	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Filled in remainder of times with data from Degradation times 10-05-10.xls	Y	None	NA	Y
DiffBasematNPWTime1	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Filled in remainder of times with data from Degradation times 10-05-10.xls	Y	None	NA	Y
DiffBasematNPWTime2	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Filled in remainder of times with data from Degradation times 10-05-10.xls	Y	None	NA	Y
Rad_Max_a	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Inventories\InventoryUncertainty	Replaced with updated data from HTF PA Rev B. Inventory multipliers.xls	Y	None	NA	Y

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New Model File Date: 10/05/2010	**Source Model File Date:** 10/1/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Rad_Max_b	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Inventories\InventoryUncertainty	Replaced with updated data from HTF PA Rev B. Inventory multipliers.xls	Y	None	NA	Y
HTF_Tank_Inventory_1	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Inventories	New data from SRR-CWDA-2010-00023 Rev 1 See: Combined_SH_9-28-10.xls	Y	None	NA	Y
HTF_Tank_Inventory_2	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Inventories	New data from SRR-CWDA-2010-00023 Rev 1 See: Combined_SH_9-28-10.xls	Y	NOTE: Element in model is actually named: HTF_Tank_Inventories_NonRad_1	NA	Y

If checker has no comments, check here. ☐ Add additional rows above, as needed.

Analyst Name (print): Barry Lester	**E-Signature (or sign/date/scan hardcopy):** (Not required if no comments) Barry Lester 10/18/2010
Checker Name (print): Steve Hommel	**E-Signature (or sign/date/scan hardcopy):** Steve Hommel Digitally signed by Steve Hommel DN: cn=Steve Hommel, o, ou, email=Steven.Hommel@srs.gov, c=US Date: 2010.10.18 15:19:23 -04'00'

Closure & Waste Disposal Authority

QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.011.gsm	Source Model ID (or filename): HTF Transport Model v0.010.gsm
New Model File Date: 10/06/2010	Source Model File Date: 10/5/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Can this new model be traced (by following the Source Model IDs) back to a source model with a completed Initial Model Check Form (QA&DV Form 4)? - If so, proceed. If not, disregard this form and complete an Initial Model Check Form (QA&DV Form 4) for this model.						
Submodel elements are denoted by this shading						
DoseResults	\HTF_DoseCalculations	Replaced old container with the container from HTF Transport Model v0.010_100510_kmb.gsm	Y	None	NA	Y
ExposureIrrSoil_100m	\HTF_DoseCalculations\DoseResults\PorflowMOPWellDoseResults\GW_Path_Contributors	Reconnected link	Y	None	NA	Y
IngestBeef_100m	\HTF_DoseCalculations\DoseResults\PorflowMOPWellDoseResults\GW_Path_Contributors	Reconnected link	Y	None	NA	Y
IngestMilk_100m	\HTF_DoseCalculations\DoseResults\PorflowMOPWellDoseResults\GW_Path_Contributors	Reconnected link	Y	None	NA	Y
IngestSoil_100m	\HTF_DoseCalculations\DoseResults\PorflowMOPWellDoseResults\GW_Path_Contributors	Reconnected link	Y	None	NA	Y
IngestVeg_100m	\HTF_DoseCalculations\DoseResults\PorflowMOPWellDoseResults\GW_Path_Contributors	Reconnected link	Y	None	NA	Y
IngestWater_100m	\HTF_DoseCalculations\DoseResults\PorflowMOPWellDoseResults\GW_Path_Contributors	Reconnected link	Y	None	NA	Y

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QA&DV Form 5, Rev01

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New Model ID (or filename): HTF Transport Model v0.011.gsm	Source Model ID (or filename): HTF Transport Model v0.010.gsm
New Model File Date: 10/06/2010	Source Model File Date: 10/5/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
InhaleIrrSoil_100m	\HTF_DoseCalculations\DoseResults\PorflowMOPWellDoseResults\GW_Path_Contributors	Reconnected link	Y	None	NA	Y
InhaleIrrInh_100m	\HTF_DoseCalculations\DoseResults\PorflowMOPWellDoseResults\GW_Path_Contributors	Reconnected link	Y	None	NA	Y
InhaleShower_100m	\HTF_DoseCalculations\DoseResults\PorflowMOPWellDoseResults\GW_Path_Contributors	Reconnected link	Y	None	NA	Y
IngestFish_SL	\HTF_DoseCalculations\DoseResults\PorflowMOPWellDoseResults\GW_Path_Contributors	Reconnected link	Y	None	NA	Y
InhaleSwim_SL	\HTF_DoseCalculations\DoseResults\PorflowMOPWellDoseResults\GW_Path_Contributors	Reconnected link	Y	None	NA	Y
ExposureSwim_SL	\HTF_DoseCalculations\DoseResults\PorflowMOPWellDoseResults\GW_Path_Contributors	Reconnected link	Y	None	NA	Y
ExposureBoat_SL	\HTF_DoseCalculations\DoseResults\PorflowMOPWellDoseResults\GW_Path_Contributors	Reconnected link	Y	None	NA	Y
IngestChic_100m	\HTF_DoseCalculations\DoseResults\PorflowMOPWellDoseResults\GW_Path_Contributors	Reconnected link	Y	None	NA	Y
IngestEgg_100m	\HTF_DoseCalculations\DoseResults\PorflowMOPWellDoseResults\GW_Path_Contributors	Reconnected link	Y	None	NA	Y

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QA&DV Form 5, Rev01

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New Model File Date: 10/06/2010	Source Model File Date: 10/5/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
If checker has no comments, check here. ☒ Add additional rows above, as needed.						

Analyst Name (print):	E-Signature (or sign/date/scan hardcopy): (Not required if no comments)
Barry Lester	NA
Checker Name (print):	**E-Signature (or sign/date/scan hardcopy):**
Steve Hommel	Steve Hommel Digitally signed by Steve Hommel DN: cn=Steve Hommel, o, ou, email=steven.hommel@srs.gov, c=US Date: 2010.10.06 09:39:15 -04'00'

HTF Transport Model v0.011_Form-5.doc

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10/6/2010

The Analyst's signature is not required because the Checker made no comments that required resolution.

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QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.012.gsm	Source Model ID (or filename): HTF Transport Model v0.011.gsm
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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Can this new model be traced (by following the Source Model IDs) back to a source model with a completed Initial Model Check Form (QA&DV Form 4)? - If so, proceed. If not, disregard this form and complete an Initial Model Check Form (QA&DV Form 4) for this model.						
Submodel elements are denoted by this shading						
UseCTSN	\SimulationSettings\Switches\TankAndAESwitches	Added data element set to true	Y	None	NA	Y
UseCTSO	\SimulationSettings\Switches\TankAndAESwitches	Added data element set to true	Y	None	NA	Y
UseAE	\SimulationSettings\Switches\TankAndAESwitches	Added UseCTSN and UseCTSO to data	Y	None	NA	Y
SZLocalPecletNumber_AE	\Saturated_Zone_Inputs\Saturated_Zone_Properties\SaturatedZone_Dispersivities\SZ_Transport_Cell_Dispersion	Set Peclet number for CTSN and CTSO to 100	Y	None	NA	Y
HTF_Ancillary_Inventories	\HTF_Source_Inputs\HTF_Ancillary_Equipment\Ancillary_Equipment_Inventory	Added data from HTF Final Inventory Rollu_RevB_SH_9-28-10.xls	N	Note that new inventories have been calculated and this element should be updated.	Data is correct. The reference will be updated in a later version.	Y*
HTF_Ancillary_Invent_Nonrad	\HTF_Source_Inputs\HTF_Ancillary_Equipment\Ancillary_Equipment_Inventory	Added data from HTF Final Inventory Rollu_RevB_SH_9-28-10.xls	N	Note that new inventories have been calculated and this element should be updated.	Data is correct. The reference will be updated in a later version.	Y*
HTF_Tank_Inventory_1	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Inventories	Added data from HTF Final Inventory Rollu_RevB_SH_9-28-10.xls	N	Note that new inventories have been calculated and this element should be updated.	Data is correct. The reference will be updated in a later version.	Y*

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
HTF_Tank_Inventories_NonRad_1	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Inventories	Added data from HTF Final Inventory Rollu_RevB_SH_9-28-10.xls	N	Note that new inventories have been calculated and this element should be updated.	Data is correct. The reference will be updated in a later version.	Y*
TransLineInventory_3in	\HTF_Source_Inputs\HTF_Ancillary_Equipment\Ancillary_Equipment_Inventory\TransferLineInventory	Checker added this entry for completeness.	N	Note that new inventories have been calculated and this element should be updated.	Will be updated in a later version.	Y*
TransLineInventory_4in	\HTF_Source_Inputs\HTF_Ancillary_Equipment\Ancillary_Equipment_Inventory\TransferLineInventory	Checker added this entry for completeness.	N	Note that new inventories have been calculated and this element should be updated.	Will be updated in a later version.	Y*
Tank13Inventory_Intr	\HTF_Source_Inputs\HTF_Ancillary_Equipment\Ancillary_Equipment_Inventory\TransferLineInventory	Checker added this entry for completeness	N	Note that new inventories have been calculated and this element should be updated.	Will be updated in a later version.	Y*
Tank24Inventory_Intr	\HTF_Source_Inputs\HTF_Ancillary_Equipment\Ancillary_Equipment_Inventory\TransferLineInventory	Checker added this entry for completeness	N	Note that new inventories have been calculated and this element should be updated.	Will be updated in a later version.	Y*
AvgWasteThickness_CTS	\HTF_Source_Inputs\HTF_Ancillary_Equipment\Ancillary_Equipment_Geometry	Added input data with waste thickness for CTS tanks (set to the same value as HPTs)	Y	None	NA	Y

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New Model File Date: 10/11/2010	Source Model File Date: 10/5/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Tank24Inventory_Intr	\HTF_Source_Inputs\HTF_Ancillary_Equipment\Ancillary_Equipment_Inventory\TransferLineInventory	Checker added this entry for completeness	N	Note that new inventories have been calculated and this element should be updated.	Will be updated in a later version.	Y*
AvgWasteThickness_CTS	\HTF_Source_Inputs\HTF_Ancillary_Equipment\Ancillary_Equipment_Geometry	Added input data with waste thickness for CTS tanks (set to the same value as HPTs)	Y	None	NA	Y
AvgWasteThicknessAE_Table	\HTF_Source_Inputs\HTF_Ancillary_Equipment\Ancillary_Equipment_Geometry	Added AvgWasteThickness_CTS to CTN and CTO vector components	Y	None	NA	Y
PTArea	\HTF_Source_Inputs\HTF_Ancillary_Equipment\Ancillary_Equipment_Geometry	Renamed HPTArea	Y	None	NA	Y
CTSArea	\HTF_Source_Inputs\HTF_Ancillary_Equipment\Ancillary_Equipment_Geometry	Added data element to define the CTS tank area (radius = 4ft)	Y	None	NA	Y
HTFAreaAE_Table	\HTF_Source_Inputs\HTF_Ancillary_Equipment\Ancillary_Equipment_Geometry	Added CTSArea to CTN and CTO vector components	Y	None	NA	Y
UZThickness_AE_table	\Vadose_Zone_Inputs\VadoseZone_Geometry	Added CTSO and CTSN vadose zone thicknesses	Y	None	NA	Y
BufferDistance_AncillEq_table	\Saturated_Zone_Inputs\Saturated_Zone_Properties\SaturatedZone_Geometry	Added data for CTSO and CTSN tanks	?	Please provide "ExportedStreamtraces_Full_Work2.xls" Sheet2, which is based on "ExportedStreamtraces_Full.xls".	Files added to folder	Y

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New Model File Date: **10/11/2010**	**Source Model File Date:** 10/5/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
MeanSatZoneDarcyVel_AE	\Saturated_Zone_Inputs\Saturated_Zone_Properties\SaturatedZone_Velocity	Added CTSN and CTSO Darcy velocities. See ExportedStreamtraces_Full_ByBTCs_100610.xls (sheet2) and BreakthroughCurves_wTime.ppt	?	Please provide ExportedStreamtraces_Full_ByBTCs_100610.xls (sheet2) and BreakthroughCurves_wTime.ppt	Files added to folder	Y
Centerline_Mean_AE	\Saturated_Zone_Inputs\Well_Centerline_Distances	Added centerline values for CTSN and CTSO from HTF CTS Stream Trace Measurements.xls	Y	None	NA	Y
WellOffset_Mean_AE	\Saturated_Zone_Inputs\Well_Offset_Distances	Added centerline offset values for CTSN and CTSO from HTF CTS Stream Trace Measurements.xls	Y	None	NA	Y
INTRDR_1mWell_G	\HTF_DoseCalculations\GoldSimModel\Chronic_Intruder_G\GoldSimInput 1mWell	Changed Equation to: NearWellInConcByTanks[*,3]*Species.Specific_Activity	Y	None	NA	Y
Keely's changes:						
I_Loop2 (Under Array Labels)	In "Model" drop down menu	Change the end Array index to 18 (from 16)	Y	None	NA	Y

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New Model File Date: 10/11/2010	Source Model File Date: 10/5/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
CTSO_wellconc	\HTF_DoseCalculations\ ExposureMediaConc\By AncillaryWellConc	Cp and paste HPT10_wellconc, rename CTSO_wellconc. Modify expression to: vvmatrix(AE_wellconc[*,17]* Species.Specific_Activit y ,PlumeCalc_Wells.Plum eCorrection_AE[17,*]) * WellConcRatio	Y	None	NA	Y
CTSN_wellconc	Same as above	Cp and paste HPT10_wellconc, rename CTSN_wellconc. Modify expression to: vvmatrix(AE_wellconc[*,18]* Species.Specific_Activit y ,PlumeCalc_Wells.Plum eCorrection_AE[18,*]) * WellConcRatio	Y	None	NA	Y
CTSO_sectorconc	\HTF_DoseCalculations\ ExposureMediaConc\By AncillarySectorConc	Cp and paste HPT10_sectorconc, rename to CTSO_sectorconc. Modify expression to: Matrix(Species,Sectors, if(col=1,max(CTSO_we llconc[row,1],CTSO_w ellconc[row,2],CTSO_ wellconc[row,3],CTSO _wellconc[row,4],CTS O_wellconc[row,5]),if(col=2,max(CTSO_wellc	Y	None	NA	Y

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New Model File Date: 10/11/2010	Source Model File Date: 10/5/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
		onc[row,6],CTSO_wellconc[row,7],CTSO_wellconc[row,8],CTSO_wellconc[row,9],CTSO_wellconc[row,10]),if(col=3,max(CTSO_wellconc[row,11],CTSO_wellconc[row,12],CTSO_wellconc[row,13],CTSO_wellconc[row,14],CTSO_wellconc[row,15],CTSO_wellconc[row,16]),if(col=4,max(CTSO_wellconc[row,17],CTSO_wellconc[row,18]),if(col=5,max(CTSO_wellconc[row,19],CTSO_wellconc[row,20],CTSO_wellconc[row,21],CTSO_wellconc[row,22],CTSO_wellconc[row,23]),max(CTSO_wellconc[row,24],CTSO_wellconc[row,25],CTSO_wellconc[row,26],CTSO_wellconc[row,27],CTSO_wellconc[row,28]))))))				
CTSN_sectorconc	Same as above	Cp and paste CTSO_sectorconc, rename CTSN_sectorconc, then modify: Matrix(Species,Sectors,if(col=1,max(CTSN_wellconc[row,1],CTSN_wellconc[row,2],CTSN_wellconc[row,3],CTSN_we	Y	None	NA	Y

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New Model File Date: 10/11/2010	**Source Model File Date:** 10/5/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
		llconc[row,4],CTSN_wellconc[row,5]),if(col=2,max(CTSN_wellconc[row,6],CTSN_wellconc[row,7],CTSN_wellconc[row,8],CTSN_wellconc[row,9],CTSN_wellconc[row,10]),if(col=3,max(CTSN_wellconc[row,11],CTSN_wellconc[row,12],CTSN_wellconc[row,13],CTSN_wellconc[row,14],CTSN_wellconc[row,15],CTSN_wellconc[row,16]),if(col=4,max(CTSN_wellconc[row,17],CTSN_wellconc[row,18]),if(col=5,max(CTSN_wellconc[row,19],CTSN_wellconc[row,20],CTSN_wellconc[row,21],CTSN_wellconc[row,22],CTSN_wellconc[row,23]),max(CTSN_wellconc[row,24],CTSN_wellconc[row,25],CTSN_wellconc[row,26],CTSN_wellconc[row,27],CTSN_wellconc[row,28])))))))				
MaxTankContribution	\HTF_DoseCalculations\ExposureMediaConc	Modify expression to include CTSO and CTSN concentrations: max(Tank09_wellconc, Tank10_wellconc, Tank11_wellconc,	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
		Tank12_wellconc, Tank13_wellconc, Tank14_wellconc, Tank15_wellconc, *Tank16_wellconc,* Tank21_wellconc, Tank22_wellconc, Tank23_wellconc, Tank24_wellconc, Tank29_wellconc, Tank30_wellconc, Tank31_wellconc, Tank32_wellconc, Tank35_wellconc, Tank36_wellconc, Tank37_wellconc, Tank38_wellconc, Tank39_wellconc, Tank40_wellconc, Tank41_wellconc, Tank42_wellconc, Tank43_wellconc, Tank48_wellconc, Tank49_wellconc, Tank50_wellconc, Tank51_wellconc, HPT2_wellconc, HPT3_wellconc, HPT4_wellconc, HPT5_wellconc, HPT6_wellconc, HPT7_wellconc, HPT8_wellconc, HPT9_wellconc, HPT10_wellconc, E242H_wellconc, E242_16H_wellconc,				

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
		E242_25H_wellconc, TransferLine1_wellconc, TransferLine2_wellconc, TransferLine3_wellconc, TransferLine4_wellconc,CTSO_wellconc,CTSN_wellconc)				
NucDose_Water_Wells_AE	\HTF_DoseCalculations\ExposureMediaConc\ByAncillaryWellConc	Add as input to list of other ancillaries: CTSO_wellconc CTSN_wellconc	Y	None	NA	Y
WellTotalAnc	\HTF_DoseCalculations\ExposureMediaConc\ByWellWellConc	Insert into expression at end of list of all ancillaries: +CTSO_wellconc[row,col]+*CTSN_wellconc*[row,col])	Y	None	NA	Y
SectorTotalAnc	\HTF_DoseCalculations\ExposureMediaConc\ByAncillarySectorConc	Insert into expression at end of list of all ancillaries: +CTSO_sectorconc[row,col]+CTSN_sectorconc[row,col])	Y	None	NA	Y
NucDose_Water_Sectors_AE	Same as above	Add as input to list of other ancillaries: CTSO_sectorconc CTSO_sectorconc	Y	None	NA	Y
CTSO_sect	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Dose_Stream\Exposure_Stream\BoatingExposure_clone	Cp and paste *HPT9_sect*, rename CTSO_sect and modify to: CTSO_sectorconc * EffectiveDF_sectors Because this is a	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
		cloned container, this action also puts a clone in the location: \HTF_DoseCalculations \GoldSimModel\Member_of_Public_Well_Pathways\Exposure\BoatingExposure				
CTSN_sect	Same as above	Same as above but : CTSN_sectorconc * EffectiveDF_sectors	Y	None	NA	Y
NucDose_Sectors	Same as above	Add as input to list of other tanks and ancillaries: CTSO_sect CTSN_sect	Y	None	NA	Y
TotalDoseAnc_Sectors	Same as above	For each sector A-F, add to the string: + sumv(CTSO_sect[*,X]) + sumv(CTSN_sect[*,X]), Where X = 1-6, which corresponds to A-F.	Y	None	NA	Y
CTSO_sect	\HTF_DoseCalculations\ GoldSimModel\Member_of_Public_Dose_Stream\ Exposure_Stream\IrrigatedSoilExposure_Stream	Cp and paste *HPT9_sect*, rename CTSO_sect and modify to: CTSO_sectorconc * EffectiveDF_sectors Because this is a cloned container, this action also puts a clone in the location:	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
		\HTF_DoseCalculations \GoldSimModel\Member_of_Public_Well_Pathways\Exposure\SwimmingExposure				
CTSN_sect	Same as above	Same as above but for CTSN	Y	None	NA	Y
NucDose_Sectors	Same as above	Add as input to list of other tanks and ancillaries: CTSO_sect CTSN_sect	Y	None	NA	Y
TotalDoseAnc_Sectors	Same as above	For each sector A-F, add to the string: + sumv(CTSO_sect[*,X]) + sumv(CTSN_sect[*,X]). Where X = 1-6, which corresponds to A-F.	Y	None	NA	Y
(1) CTSO_sect	\HTF_DoseCalculations\ GoldSimModel\Member_of_Public_Dose_Stream\ Exposure_Stream\SwimmingExposure_clone	Cp and paste *HPT9_sect,* rename CTSO_sect and modify to: CTSO_sectorconc * EffectiveDF_sectors	Y	None	NA	Y
(2) CTSN_sect	Same as above	Same as above but for CTSN	Y	None	NA	Y
(3) NucDose_Sectors	Same as above	Add as input to list of other tanks and ancillaries: CTSO_sect CTSN_sect	Y	None	NA	Y

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New Model File Date: 10/11/2010	**Source Model File Date:** 10/5/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
(4) TotalDoseAnc_Sectors	Same as above	For each sector A-F, add to the string: + sumv(CTSO_sect[*,X]) + sumv(CTSN_sect[*,X]). Where X = 1-6, which corresponds to A-F.	Y	None	NA	Y
REPEAT THESE CHANGES (numbered 1-4 in highlighted rows above) FOR THE FOLLOWING Folder locations: \HTF_DoseCalculations\GoldSimModel\Member_of_Public_Dose_Stream\Ingestion_Stream\	Folders: BeefIngestionDose_Stream ChicIngestionDose_Stream EggIngestionDose_Stream FishIngestion_clone MilkIngestionDose_Stream SoilIngestion_Stream VegetableIngestionDose_Stream WaterIngestionDose_Stream	See parameter column	Y	None	NA	Y
REPEAT THESE CHANGES (numbered 1-4 in highlighted rows above) FOR THE FOLLOWING Folder locations: \HTF_DoseCalculations\GoldSimModel\Member_of_Public_Dose_Stream\Inhalation_Stream\	Folders: IrrigatedSoilDustInh_Stream IrrigationInhalation_Stream ShoweringInhalation_Stream SwimmingInhalation_clone	See parameter column	Y	None	NA	Y

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New Model File Date: 10/11/2010	**Source Model File Date:** 10/5/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
REPEAT THESE CHANGES (numbered 1-4 in highlighted rows above) FOR THE FOLLOWING Folder locations: \HTF_DoseCalculations\GoldSimModel\Member_of_Public_Well_Pathways\	Folders: Exposure\IrrigatedSoilExposure_Well Ingestion\BeefIngestionDose_Well Ingestion\ChicIngestionDose_Well \Ingestion\EggIngestionDose_Well Ingestion\MilkIngestionDose_Well Ingestion\SoilIngestion_Well Ingestion\VegetableIngestionDose_Well Ingestion\WaterIngestionDose_Well Inhalation\IrrigatedSoilDustInh_Well Inhalation\IrrigationInhalation_Well_CC Inhalation\ShoweringInhalation_Well	See parameter column	Y	None	NA	Y
EffectiveDF	\HTF_DoseCalculations\GoldSimModel\Member_of_Public_Dose_Stream (AND \HTF_DoseCalculations\GoldSimModel\Member_of_Public_Well_Pathways - where applicable)	In each of the Exposure, Ingestion, and Inhalation subcontainers, multiply the EffectiveDF by *SeeptoWellRatio	Y	None	NA	Y
TSProcAE	\HTF_TransportModel\HTFSourceLoop\InnerLoop\TS_Proc_AE	Delete interface inputs #4-11, and delete output interface #1-4	Y	None	NA	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.012.gsm	**Source Model ID (or filename):** HTF Transport Model v0.011.gsm	
New Model File Date: 10/11/2010	**Source Model File Date:** 10/5/10	

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
WellConcentrationAE_tsr	\HTF_TransportModel\HTFSourceLoop\InnerLoop\TS_Proc_AE	Add to input and output interface as weight1, timeseries, matrix [Species, I_Loop2]	Y	None	NA	Y
UZOut_AE_tsr	Same as above	Add to input and output interface as weight2, timeseries, matrix [Species, I_Loop2]	Y	None	NA	Y
FootprintOutConcAE_tsr	Same as above	Add to input and output interface as weight3, timeseries, matrix [Species, I_Loop2]	Y	None	NA	Y
NearWellInConcAE	Same as above	Add to input and output interface as weight4, timeseries, matrix [Species, I_Loop2]	Y	None	NA	Y
NumberOfAE	\SimulationSettings	Set to 18 (changed from 16)	Y	None	NA	Y
TotalDose	\HTF_DoseCalculations\DoseResults\GoldSimIntruderDoseResults\	Checker added this as a "carry-over" from a previous version (v0.009)	N	Element also includes: TotalDoseSum, but I think this should be TotalDose_Sum	Please check with Keely. Will be updated in a later version.	Y*
IngestContributorsBySector	\HTF_DoseCalculations\DoseResults\PorflowIntruderDoseResults	Checker added this as a "carry-over" from a previous version (v0.009)	N	Instead of TotalDoseSum_Sectors, this element should include Total_Ingest_Sectors	Please check with Keely. Will be updated in a later version.	Y*

If checker has no comments, check here. ☐ Add additional rows above, as needed.

Analyst Name (print):	**E-Signature (or sign/date/scan hardcopy):** (Not required if no comments)
Keely Brooks and Barry Lester	10/18/10

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.012.gsm	Source Model ID (or filename): HTF Transport Model v0.011.gsm
New Model File Date: **10/11/2010**	Source Model File Date: 10/5/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N

Checker Name (print):	E-Signature (or sign/date/scan hardcopy):
Steve Hommel	Steve Hommel Digitally signed by Steve Hommel DN: cn=Steve Hommel, o, ou, email=Steven.Hommel@srs.gov, c=US Date: 2010.10.18 15:21:34 -04'00'

Checkers NOTE: For items wherein the last column (Checker Concur) = Y*, the "*" indicates that the Checker agrees to conditionally pass these pending a review of later model versions in which the updates are intended to be implemented. The Checker accepts responsibility for monitoring these issues throughout development of the model.

Note: Items conditionally passed (indicated in the checklist with "Y*") have been verified. All updates implemented within versions v0.013 and v0.014. [S. Hommel – 11 November 2010]

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.013.gsm	Source Model ID (or filename): HTF Transport Model v0.012.gsm
New Model File Date: 10/11/2010	Source Model File Date: 10/11/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Can this new model be traced (by following the Source Model IDs) back to a source model with a completed Initial Model Check Form (QA&DV Form 4)? - If so, proceed. If not, disregard this form and complete an Initial Model Check Form (QA&DV Form 4) for this model.						
Submodel elements are denoted by this shading						
TankType4on	\HTFTanks_Transport_Model\Grout\WallForGrout	Added switch to turn off this wall model for non Type IV tanks	Y	None	NA	Y
WallForGrout_Out	\HTFTanks_Transport_Model\Grout\WallForGrout	Changed outflow flow rate to basemat to Wall_Flow*WallArea*GroutByPass*TankType4on and diffusive area between wall and basemat to WallArea*GroutByPass*TankType4on	Y	None	NA	Y
FlowRate	\HTFTanks_Transport_Model\Grout\WallForGrout\PoreFlushes	Changed the If term to SourceID>4	Y	None	NA	Y
FlowRate	\HTFTanks_Transport_Model\SandPads\AnnulusModel\PoreFlushes	Changed the If term to SourceID>4	Y	None	NA	Y
FlowRate	\HTFTanks_Transport_Model\SandPads\WallModel\PoreFlushes	Changed the If term to SourceID>4	Y	None	NA	Y
FlowRate_Grout	\HTFTanks_Transport_Model\WasteLayer\PoreFlushes	Changed the If term to SourceID>4	Y	None	NA	Y
FlowRate_CZ	\HTFTanks_Transport_Model\WasteLayer\PoreFlushes	Changed the If term to SourceID>4	Y	None	NA	Y

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New Model File Date: **10/11/2010**	**Source Model File Date:** 10/11/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
STAT100XX Where XX=A-E	\PORFLOWFeedsToDoseCalculations	Time series time steps changed to 10 year time steps	N	Need to update with: Z:\C&WDA\Folks\QA Files\06_QA_Completed\QA'd_in_10_2010\Inv_Data_PF_Doses_CaseA_R1.zip; file: STAT100XXxls	Updated in Version 0.014	Y*
STAT1XX Where XX=A-E	\PORFLOWFeedsToDoseCalculations	Time series time steps changed to 10 year time steps	N	Need to update with: Z:\C&WDA\Folks\QA Files\06_QA_Completed\QA'd_in_10_2010\Inv_Data_PF_Doses_CaseA_r1.zip; file: STAT1XX.xls	Updated in Version 0.014	Y*
STATSLA	\PORFLOWFeedsToDoseCalculations	Checker added this entry for completeness.	N	Need to update with: Z:\C&WDA\Folks\QA Files\06_QA_Completed\QA'd_in_10_2010\Inv_Data_PF_Doses_CaseA_R1.zip; file: STATSLA.xls	Updated in Version 0.014	Y*
NearWell3ConcTanks	\TransportModel_Results	Element deleted	Y	None	NA	Y
NearWell5ConcTanks	\TransportModel_Results	Element deleted	Y	None	NA	Y
NearWell3ConcByTanks	\TransportModel_Results	Element deleted	Y	None	NA	Y
NearWell5ConcByTanks	\TransportModel_Results	Element deleted	Y	None	NA	Y
TSProcTanks	\HTF_TransportModel\HTFSourceLoop\InnerLoop\TS_Proc_Tanks	Deleted interface data for NearWell3 and NearWell5	Y	None	NA	Y
UZCell_XX Wehere XX = In, Out, 2-9	\HTFTanks_Transport_Model\UnsatZone	Changed outflow flow field to UZ_Flow	Y	None	NA	Y
Flushes_1st_Above CZ	\InputData\General_Inputs\WaterProperties\WaterInWaste	Selector element added to set the flushing criteria for Type I tanks to the submerged criteria	Y	None	NA	Y

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New Model File Date: 10/11/2010	Source Model File Date: 10/11/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Flushes_2nd_AboveCZ	\InputData\General_Inputs\WaterProperties\WaterInWaste	Selector element added to set the flushing criteria for Type I tanks to the submerged criteria	Y	None	NA	Y
WasteSol	\HTFTanks_Transport_Model\WasteLayer\PoreFlushes	Second criteria for the first 2 IF statements set to Flushes_1st_AboveCZ and Flushes_2nd_AboveCZ	Y	None	NA	Y
Grout_Kds	\HTFTanks_Transport_Model\WasteLayer\PoreFlushes	Second criteria for the first 2 IF statements set to Flushes_1st_AboveCZ and Flushes_2nd_AboveCZ	Y	None	NA	Y
KdImpact	\HTFTanks_Transport_Model\WasteLayer\PoreFlushes	Second criteria for the first 2 IF statements set to Flushes_1st_AboveCZ and Flushes_2nd_AboveCZ	Y	None	NA	Y
Wall_Kds	\HTFTanks_Transport_Model\SandPads\WallModel\PoreFlushes	Criteria for the last 2 IF statements set to Flushes_1st_AboveCZ and Flushes_2nd_AboveCZ	Y	None	NA	Y
PORFLOWTransitionTime2	\HTFTanks_Transport_Model\SandPads\WallMod	CaseA Type II and TypIINoLiner data	Y	None	NA	Y

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New Model File Date: 10/11/2010	Source Model File Date: 10/11/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
	el\PoreFlushes	updated to 4558 and 4551 years respectively				
AnnulusGrout_Kds	\HTFTanks_Transport_Model\SandPads\AnnulusModel\PoreFlushes	Criteria for the last 2 IF statements set to Flushes_1st_AboveCZ and Flushes_2nd_AboveCZ	Y	None	NA	Y
PORFLOWTransitionTime2	\HTFTanks_Transport_Model\SandPads\AnnulusModel\PoreFlushes	CaseA Type II and TypIINoLiner data updated to 11291 and 17949 years respectively	Y	None	NA	Y
PORFLOWTransitionTime1	\HTFTanks_Transport_Model\SandPads\AnnulusModel\PoreFlushes	CaseA Type II and TypIINoLiner data updated to 9126 and 8392 years respectively	Y	None	NA	Y
PORFLOWTransitionTime2	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np\PoreFlushes	CaseA Type II and TypIINoLiner data updated to 3778 and 109 years respectively	Y	None	NA	Y
PORFLOWTransitionTime2	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np\PoreFlushes	CaseA Type II and TypIINoLiner data updated to 4558 and 4551 years respectively	Y	None	NA	Y
Wall_Kds	\HTFTanks_Transport_Model\Grout\WallForGrout\PoreFlushes	Criteria for the last 2 IF statements set to Flushes_1st_AboveCZ and Flushes_2nd_Above	Y	None	NA	Y

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New Model File Date: **10/11/2010**	**Source Model File Date:** 10/11/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
		CZ				
PORFLOWTransitionTime1	\HTFTanks_Transport_Model\Grout\WallForGrout\PoreFlushes	File not changed, but turned red anyways	Y	None	NA	Y
PORFLOWTransitionTime2	\HTFTanks_Transport_Model\Grout\WallForGrout\PoreFlushes	CaseA Type IV data updated to 1391 years respectively	Y	None	NA	Y
SeeptoWellRatio	\PORFLOWFeedsToDoseCalculations	Deleted data element	Y	None	NA	Y
SeeptoWellRatio_vec	\PORFLOWFeedsToDoseCalculations	Added data element that is a vector by species and filled element with contents of SeeptoWellRatio.xls	N	Need to update with: Z:\C&WDA\Folks\QA Files\06_QA_Completed\QA'd_in_10_2010\Inv_Data_PF_Doses_CaseA_R1.zip; file: SeeptoWellRatio.xls	Updated in Version 0.014	Y*
SeeptoWellRatio	\PORFLOWFeedsToDoseCalculations	Added expression element to create a matrix based on the vector SeeptoWellRatio_vec for multiplying (species X wells) matrices	Y	None	NA	Y
SeeptoWellRatio_sect	\PORFLOWFeedsToDoseCalculations	Added expression element to create a matrix based on the vector SeeptoWellRatio_vec for multiplying (species X sectors) matrices	Y	None	NA	Y

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New Model File Date: 10/11/2010	Source Model File Date: 10/11/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
STATSL_option	\PORFLOWFeedsToDoseCalculations	Replaced SeeptoWellRatio with SeeptoWellRatio_sect	Y	None	NA	Y
PORFLOWTransitionTime2	\HTFTanks_Transport_Model\Grout\WallForGrout\PoreFlushes	Filled out matrix with data from SRR-CWDA-2010-00128 Rev 1 Tables 4.4-2 - 4.4-9	Y	None	NA	Y
PORFLOWTransitionTime2	\HTFTanks_Transport_Model\SandPads\WallModel\PoreFlushes	Deleted element and replaced with copy of above	Y	None	NA	Y
PORFLOWTransitionTime2	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np\PoreFlushes	Filled out matrix with data from SRR-CWDA-2010-00128 Rev 1 Tables 4.4-2 - 4.4-9	Y	None	NA	Y
PORFLOWTransitionTime1	\HTFTanks_Transport_Model\SandPads\AnnulusModel\PoreFlushes	Filled out matrix with data from SRR-CWDA-2010-00128 Rev 1 Tables 4.4-2 - 4.4-9	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PORFLOWTransitionTime2	\HTFTanks_Transport_Model\SandPads\AnnulusModel\PoreFlushes	Filled out matrix with data from SRR-CWDA-2010-00128 Rev 1 Tables 4.4-2 - 4.4-9	Y	None	NA	Y
PORFLOWTransitionTime2	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_npw\PoreFlushes	Filled out matrix with data from SRR-CWDA-2010-00128 Rev 1 Tables 4.4-2 - 4.4-9	Y	None	NA	Y
STATSL_option	\PORFLOWFeedsToDoseCalculations	Changed second selection to STAT100	Y	None	NA	Y
BoatingExposure	\HTF_DoseCalculations\PorflowModel\Chronic_Intruder_P\Exposure\BoatingExposure	Changed Equation to EffectiveDF_Seep*STATSL_option*SeeptoWellRatio_sect	Y	None	NA	Y
DoseSeepline	\HTF_DoseCalculations\PorflowModel\Member_of_Public_Well_Paths_P	Changed than returned to original value	Y	None	NA	Y
FishIngestion	\HTF_DoseCalculations\PorflowModel\Chronic_Intruder_P\Ingestion\FishIngestion	Changed Equation to EffectiveDF_Seep*STATSL_option*SeeptoWellRatio_sect	Y	None	NA	Y
SwimmingExposure	\HTF_DoseCalculations\PorflowModel\Chronic_Intruder_P\Exposure\SwimmingExposure	Changed Equation to EffectiveDF_Seep*STATSL_option*SeeptoWellRatio_sect	Y	None	NA	Y

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New Model File Date: 10/11/2010	Source Model File Date: 10/11/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
SwimmingInhalation	\HTF_DoseCalculations\PorflowModel\Chronic_Intruder_P\Inhalation\SwimmingInhalation	Changed Equation to EffectiveDF_Seep*STATSL_option*SeeptoWellRatio_sect	Y	None	NA	Y
SeeptoWellRatio	\PORFLOWFeedsToDoseCalculations	Deleted then replaced with an identical element named SeeptoWellRatio_a	Y	None	NA	Y
SeeptoWellRatio_sect	\PORFLOWFeedsToDoseCalculations	Deleted then replaced with an identical element named SeeptoWellRatio_sect_a	Y	None	NA	Y
SeeptoWellRatio	\PORFLOWFeedsToDoseCalculations	Added selector element which sets the seep to well ratios to values of 1.0 when PORFLOW seepline data is used or SeeptoWellRatio_a when not used	Y	None	NA	Y
SeeptoWellRatio_sect	\PORFLOWFeedsToDoseCalculations	Added selector element which sets the seep to well ratios to values of 1.0 when PORFLOW seepline data is used or SeeptoWellRatio_sect_a when not used	Y	None	NA	Y

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Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Type_II_Sand_Pad_Invent_Rad	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Inventories	Updated with data from HTF Final Inventory Rollu_RevB_drw_10-14-10.xls	Y	None	NA	Y
Type_II_Sand_Pad_Invent_nonRad	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Inventories	Updated with data from HTF Final Inventory Rollu_RevB_drw_10-14-10.xls	Y	None	NA	Y
HTF_Tank_Inventory_1	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Inventories	Did not make changes	Y	Although the data is no different… To be consistent/clear, please update the reference in model from "HTF Final Inventory Rollu_RevB_SH_ 9-28-10.xls " to "HTF Final Inventory Rollu_RevB_drw_ 10-14-10.xls"	Updated in Version 0.014	Y*
HTF_Tank_Inventories_NonRad_1	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Inventories	Did not make changes	Y	Although the data is no different… To be consistent/clear, please update the reference in model from "HTF Final Inventory Rollu_RevB_SH_ 9-28-10.xls " to "HTF Final Inventory Rollu_RevB_drw_ 10-14-10.xls"	Updated in Version 0.014	Y*
HTF_Ancillary_Inventories	\HTF_Source_Inputs\HTF_Ancillary_Equipment\Ancillary_Equipment_Inventory	Added data from HTF Final Inventory Rollu_RevB_SH_ 9-28-10.xls	N	Although the data is no different… To be consistent/clear, please update the reference in model from "HTF Final Inventory Rollu_RevB_SH_ 9-28-10.xls " to "HTF Final Inventory Rollu_RevB_drw_ 10-14-10.xls"	Updated in Version 0.014	Y*

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New Model File Date: **10/11/2010**	**Source Model File Date:** 10/11/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
HTF_Ancillary_Invent_Nonrad	\HTF_Source_Inputs\HTF_Ancillary_Equipment\Ancillary_Equipment_Inventory	Added data from HTF Final Inventory Rollu_RevB_SH_ 9-28-10.xls	N	Although the data is no different… To be consistent/clear, please update the reference in model from "HTF Final Inventory Rollu_RevB_SH_ 9-28-10.xls " to "HTF Final Inventory Rollu_RevB_drw_ 10-14-10.xls"	Updated in Version 0.014	Y*
TransLineInventory_3in	\HTF_Source_Inputs\HTF_Ancillary_Equipment\Ancillary_Equipment_Inventory\TransferLineInventory	Checker added this entry for completeness.	N	Need to update with: Z:\C&WDA\Folks\QA Files\06_QA_Completed\QA'd_in_10_2010\Inv_Data_PF_Doses_CaseA_R1.zip; file: TransLineInventory_3in.xls	Updated in Version 0.014	Y*
TransLineInventory_4in	\HTF_Source_Inputs\HTF_Ancillary_Equipment\Ancillary_Equipment_Inventory\TransferLineInventory	Checker added this entry for completeness.	N	Need to update with: Z:\C&WDA\Folks\QA Files\06_QA_Completed\QA'd_in_10_2010\Inv_Data_PF_Doses_CaseA_R1.zip; file: TransLineInventory_4in.xls.	Updated in Version 0.014	Y*
Tank13Inventory_Intr	\HTF_Source_Inputs\HTF_Ancillary_Equipment\Ancillary_Equipment_Inventory\TransferLineInventory	Checker added this entry for completeness	N	Need to update with: Z:\C&WDA\Folks\QA Files\06_QA_Completed\QA'd_in_10_2010\Inv_Data_PF_Doses_CaseA_R1.zip; file: Tank13Inventory_Intr.xls	Updated in Version 0.014	Y*
Tank24Inventory_Intr	\HTF_Source_Inputs\HTF_Ancillary_Equipment\Ancillary_Equipment_Inventory\TransferLineInventory	Checker added this entry for completeness	N	Need to update with: Z:\C&WDA\Folks\QA Files\06_QA_Completed\QA'd_in_10_2010\Inv_Data_PF_Doses_CaseA_R1.zip; file: Tank24Inventory_Intr.xls	Updated in Version 0.014	Y*
FlowRate	\HTFTanks_Transport_Model\ConcretePadDegradation	Changed criterion to SourceID>8	Y	None	NA	Y

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New Model File Date: **10/11/2010**	**Source Model File Date:** 10/11/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
BasematNP_Kds	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np\PoreFlushes	Connected to BasematKds for option if not using PORFLOW times	Y	None	NA	Y
FlowRate	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np\PoreFlushes	Changed criterion to SourceID>8	Y	None	NA	Y
BasematNPW_Kds	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_npw\PoreFlushes	Connected to WallKds for option if not using PORFLOW times	Y	None	NA	Y
FlowRate	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_npw\PoreFlushes	Changed criterion to SourceID>8	Y	None	NA	Y
DiffBasematNPWTime1	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Updated based on Degradation times 10-13-10.xls	Y	None	NA	Y
DiffBasematNPWTime2	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Updated based on Degradation times 10-13-10.xls	Y	None	NA	Y
DiffBasematNPTime1	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Updated based on Degradation times 10-13-10.xls	Y	None	NA	Y
DiffBasematNPTime2	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Updated based on Degradation times 10-13-10.xls	Y	None	NA	Y
DiffWallTime1	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Updated based on Degradation times 10-13-10.xls	Y	None	NA	Y
DiffWallTime2	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Updated based on Degradation times 10-13-10.xls	Y	None	NA	Y

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New Model File Date: 10/11/2010	Source Model File Date: 10/11/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
DiffAnnulusTime1	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Updated based on Degradation times 10-13-10.xls	Y	None	NA	Y
DiffAnnulusTime2	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Updated based on Degradation times 10-13-10.xls	Y	None	NA	Y
DiffBasematTime2	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Updated based on HTF PA Draft B	Y	None	NA	Y
DiffTankGroutTime2	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Updated based on HTF PA Draft B	Y	None	NA	Y
DiffCZTime2	\HTF_Source_Inputs\HTF_Waste_Tanks\HW_Waste_Tank_Diffusion_Coef	Checker added this entry for completeness	?	Should the -1 values for all the data in Cases B thru E be updated?	No, only CaseA has a diffusion coefficient that is time dependent	Y
PFSats_UZ_CaseXX Where XX=A-E	\\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_UZ	Added saturations for UZ from CaseXX_Final.xls	Y	None	NA	Y
HTFTransportSubmodel	\HTF_TransportModel\HTFSourceLoop\InnerLoop	Added above elements to the input interface	Y	None	NA	Y
PFSats_CZ_CaseXX Where XX=A-E	\\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_CZ	Added saturations for UZ from CaseXX_Final.xls	Y	None	NA	Y
HTFTransportSubmodel	\HTF_TransportModel\HTFSourceLoop\InnerLoop	Added above elements to the input interface	Y	None	NA	Y
PFSats_grout_ff_CaseXX Where XX=A-E	\\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_TankGrout	Added saturations for UZ from CaseXX_Final.xls	Y	None	NA	Y

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QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.013.gsm	**Source Model ID (or filename):** HTF Transport Model v0.012.gsm
New Model File Date: **10/11/2010**	**Source Model File Date:** 10/11/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
HTFTransportSubmodel	\HTF_TransportModel\HTFSourceLoop\InnerLoop	Added above elements to the input interface	Y	None	NA	Y
PFSats_pad_ff_CaseXX Where XX=A-E	\Vadose_Zone_Inputs\VadoseZone_Flow\FlowRates\TankFlows\PFFlows_Basemat	Added saturations for UZ from CaseXX_Final.xls	Y	None	NA	Y
HTFTransportSubmodel	\HTF_TransportModel\HTFSourceLoop\InnerLoop	Added above elements to the input interface	Y	None	NA	Y
PFSats_pad_ff_CaseXX Where XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_Basemat	Added selector elements to feed data to submodel	Y	None	NA	Y
PFSats_grout_ff_CaseXX Where XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_TankGrout	Added selector elements to feed data to submodel	Y	None	NA	Y
PFSats_UZ_CaseXX Where XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_UZ	Added selector elements to feed data to submodel	Y	None	NA	Y
PFSats_CZ_CaseXX Where XX=A-E	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\PFFlows_CZ	Added selector elements to feed data to submodel	Y	None	NA	Y
PF_Sat_ff_Basemat	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added selector to choose the correct saturation for the Case and Tank type	Y	None	NA	Y
PF_Sat_ff_TankGrout	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added selector to choose the correct saturation for the Case and Tank type	Y	None	NA	Y
PF_Sat_CZ	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added selector to choose the correct saturation for the Case and Tank type	Y	None	NA	Y

Closure & Waste Disposal Authority

QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.013.gsm	**Source Model ID (or filename):** HTF Transport Model v0.012.gsm
New Model File Date: **10/11/2010**	**Source Model File Date:** 10/11/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PF_Sat_UZ	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Added selector to choose the correct saturation for the Case and Tank type	Y	None	NA	Y
SatType	\HTFTanks_Transport_Model\Basemat	Added data statement to control ff saturation (set to true)	Y	None	NA	Y
Sat_ff	\HTFTanks_Transport_Model\Basemat	Added selector switch to choose between PORFLOW saturations and a saturation of 1	Y	None	NA	Y
ConcretePadXX_ff Where XX = In, Out, 01-03	\HTFTanks_Transport_Model\Basemat	Added saturation term to the cell water volume term	Y	None	NA	Y
SatType	\HTFTanks_Transport_Model\Grout\GroutFastPath	Added data statement to control ff saturation (set to true)	Y	None	NA	Y
Sat_ff	\HTFTanks_Transport_Model\Grout\GroutFastPath	Added selector switch to choose between PORFLOW saturations and a saturation of 1	Y	None	NA	Y
GroutCell_XX_ff Where XX = In, Out, 02-09	\HTFTanks_Transport_Model\Grout\GroutFastPath	Added saturation term to the cell water volume term	Y	None	NA	Y
SatType_UZ	\HTFTanks_Transport_Model\UnsatZone	Added data statement to control ff saturation (set to true)	Y	None	NA	Y

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.013.gsm	**Source Model ID (or filename):** HTF Transport Model v0.012.gsm
New Model File Date: **10/11/2010**	**Source Model File Date:** 10/11/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Sat_UZ	\HTFTanks_Transport_Model\UnsatZone	Added selector switch to choose between PORFLOW saturations and a saturation of 1	Y	None	NA	Y
UZCell_XX Where XX = In, Out, 02-09	\HTFTanks_Transport_Model\UnsatZone	Added saturation term to the cell water volume term	Y	None	NA	Y
SatType_CZ	\HTFTanks_Transport_Model\WasteLayer	Added data statement to control ff saturation (set to true)	Y	None	NA	Y
Sat_CZ	\HTFTanks_Transport_Model\WasteLayer	Added selector switch to choose between PORFLOW saturations and a saturation of 1	Y	None	NA	Y
WasteCell	\HTFTanks_Transport_Model\WasteLayer	Added saturation term to the cell water volume term	Y	None	NA	Y
TotalDose	\HTF_DoseCalculations\DoseResults\GoldSimIntruderDoseResults\	Checker added this as a "carry-over" from a previous version (v0.009)	N	Element also includes: TotalDoseSum, but this should be TotalDose_Sum	Updated in Version 0.014	Y*
IngestContributorsBySector	\HTF_DoseCalculations\DoseResults\PorflowIntruderDoseResults	Checker added this as a "carry-over" from a previous version (v0.009)	N	Instead of TotalDoseSum_Sectors, this element should include Total_Ingest_Sectors	Updated in Version 0.014	Y*
P_Sand_Flow	\HTFTanks_Transport_Model\LinerFailure\LinerFlowControl	Checker added this entry	?	Element does not link to anything. May be a candidate for deletion or the Analyst may have intended to use this element. Consider revising, as needed.	No change – Analyst may use this in future versions; however an update at this time is not needed.	Y

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.013.gsm	Source Model ID (or filename): HTF Transport Model v0.012.gsm
New Model File Date: 10/11/2010	Source Model File Date: 10/11/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
P_Sand_Flow_ff	\HTFTanks_Transport_Model\LinerFailure\LinerFlowControl	Checker added this entry	?	Element does not link to anything. May be a candidate for deletion or the Analyst may have intended to use this element. Consider revising, as needed.	No change – Analyst may use this in future versions; however an update at this time is not needed.	Y
S_Sand_Flow	\HTFTanks_Transport_Model\LinerFailure\LinerFlowControl	Checker added this entry	?	Element does not link to anything. May be a candidate for deletion or the Analyst may have intended to use this element. Consider revising, as needed.	No change – Analyst may use this in future versions; however an update at this time is not needed.	Y
S_Sand_Flow_ff	\HTFTanks_Transport_Model\LinerFailure\LinerFlowControl	Checker added this entry	?	Element does not link to anything. May be a candidate for deletion or the Analyst may have intended to use this element. Consider revising, as needed.	No change – Analyst may use this in future versions; however an update at this time is not needed.	Y
Infiltration	\HTFTanks_Transport_Model\LinerFailure\LinerFlowControl	Checker added this entry	?	Element does not link to anything. May be a candidate for deletion or the Analyst may have intended to use this element. Consider revising, as needed.	No change – Analyst may use this in future versions; however an update at this time is not needed.	Y
Infiltration_Deg	\HTFTanks_Transport_Model\LinerFailure\LinerFlowControl	Checker added this entry	?	Element does not link to anything. May be a candidate for deletion or the Analyst may have intended to use this element. Consider revising, as needed.	No change – Analyst may use this in future versions; however an update at this time is not needed.	Y
TypeIITankCircumDiffusiveArea	\HTFTanks_Transport_Model\SandPads\WallModel	Checker added this entry	?	Element does not link to anything. May be a candidate for deletion or the Analyst may have intended to use this element. Consider revising, as needed.	No change – Analyst may use this in future versions; however an update at this time is not needed.	Y

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Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.013.gsm	**Source Model ID (or filename):** HTF Transport Model v0.012.gsm
New Model File Date: 10/11/2010	**Source Model File Date:** 10/11/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
UsePSandFlow	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Checker added this entry	?	Element does not link to anything. May be a candidate for deletion or the Analyst may have intended to use this element. Consider revising, as needed.	No change – Analyst may use this in future versions; however an update at this time is not needed.	Y
PF_Flow_TankGrout_U	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Checker added this entry	?	Element does not link to anything. May be a candidate for deletion or the Analyst may have intended to use this element. Consider revising, as needed.	No change – Analyst may use this in future versions; however an update at this time is not needed.	Y
PF_Flow_ff_TankGrout_U	\InputData\Vadose_Zone_Inputs\Vadose_Zone_Flows\FlowAssembly	Checker added this entry	?	Element does not link to anything. May be a candidate for deletion or the Analyst may have intended to use this element. Consider revising, as needed.	No change – Analyst may use this in future versions; however an update at this time is not needed.	Y

If checker has no comments, check here. ☐ Add additional rows above, as needed.

Analyst Name (print): Barry Lester	**E-Signature (or sign/date/scan hardcopy):** (Not required if no comments) 10/18/10
Checker Name (print): Steve Hommel	**E-Signature (or sign/date/scan hardcopy):** Steve Hommel Digitally signed by Steve Hommel DN: cn=Steve Hommel, o, ou, email=Steven.Hommel@srs.gov, c=US Date: 2010.10.18 15:24:12 -04'00'

Checkers NOTE: For items wherein the last column (Checker Concur) = Y*, the "*" indicates that the Checker agrees to conditionally pass these pending a review of later model versions in which the updates are intended to be implemented. The Checker accepts responsibility for monitoring these issues throughout development of the model.

HTF Transport Model v0.013_Form-5.doc 17 of 17 10/18/2010

Note: Items conditionally passed (indicated in the checklist with "Y*") have been verified. All updates implemented within version v0.014. [S. Hommel – 11 November 2010]

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QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.014.gsm	**Source Model ID (or filename):** HTF Transport Model v0.013.gsm
New Model File Date: **10/18/2010**	**Source Model File Date:** 10/15/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Can this new model be traced (by following the Source Model IDs) back to a source model with a completed Initial Model Check Form (QA&DV Form 4)? - If so, proceed. If not, disregard this form and complete an Initial Model Check Form (QA&DV Form 4) for this model.						
Submodel elements are denoted by this shading						
Dashboard checkboxes	\Dashboards\TankSelectorDashboard	Added dashboard checkbox elements for old and new CTS pumps tanks and attached them to UseCTSO and UseCTSN respectively.	Y	None	NA	Y
GroutCell_Out_ff	\HTFTanks_Transport_Model\Grout\GroutFastPath	Flowrate for first outflow changed to TankGrout_Flow_ff*TankArea*GroutByPass*TankArea_ff2_ratio	Y	None	NA	Y
TypeIV	\HTFTanks_Transport_Model\Liners	Added selector that creates a factor of 1 for all tanks except Type IV tanks	Y	None	NA	Y
PrimaryLiner_ff	\HTFTanks_Transport_Model\Liners	1) Multiplied flow rate to SecondaryLiner_ff by TypeIV 2) Added outflow to ConcretePadIn_ff using original flow rate to Secondary liner times (1-TypeIV)	Y	None	NA	Y

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QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.014.gsm	Source Model ID (or filename): HTF Transport Model v0.013.gsm
New Model File Date: 10/18/2010	Source Model File Date: 10/15/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
PrimaryLiner	\HTFTanks_Transport_Model\Liners	1) Multiplied flow rate to SecondaryLiner by TypeIV 2) Added outflow to ConcretePadIn using original flow rate to Secondary liner times (1-TypeIV)	Y	None	NA	Y
PrimaryLiner	\HTFTanks_Transport_Model\Liners	1) Multiplied diffusive area to SecondaryLiner by TypeIV 2) Added diffusive flux to ConcretePadIn using data to Secondary liner and multiplying the diffusive area by (1-TypeIV)	Y	None	NA	Y
PrimaryLiner_ff	\HTFTanks_Transport_Model\Liners	1) Multiplied diffusive area to SecondaryLiner_ff by TypeIV 2) Added diffusive flux to ConcretePadIn_ff using data to Secondary liner and multiplying the diffusive area by (1-TypeIV)	Y	None	NA	Y

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QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.014.gsm	Source Model ID (or filename): HTF Transport Model v0.013.gsm
New Model File Date: 10/18/2010	Source Model File Date: 10/15/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
SecondaryLiner	\HTFTanks_Transport_Model\Liners	Multiplied FlowRate to ConcretePadIn by TypeIV and multiplied the diffusive area to ConcretePadIn by TypeIV	Y	None	NA	Y
SecondaryLiner_ff	\HTFTanks_Transport_Model\Liners	Multiplied FlowRate to ConcretePadIn_ff by TypeIV and multiplied the diffusive area to ConcretePadIn_ff by TypeIV	Y	None	NA	Y
TankIIOn	\HTFTanks_Transport_Model\SiteGeometry	Deleted	Y	None	NA	Y
TankIVOn	\HTFTanks_Transport_Model\SiteGeometry	Deleted	Y	None	NA	Y
ClayeySoilKds_Tanks	\HTFTanks_Transport_Model\ConcretePadDegradation	Deleted	Y	None	NA	Y
SandySoilKds_Tanks	\HTFTanks_Transport_Model\ConcretePadDegradation	Deleted	Y	None	NA	Y
Np_Flow_Option	\HTFTanks_Transport_Model\SandPads\Basemat_2\Basemat_np	Deleted	Y	None	NA	Y
TypeIITankLinerMode	\HTFTanks_Transport_Model\SandPads\WallModel	Deleted	Y	None	NA	Y
STAT100XX Where XX=A-E	\PORFLOWFeedsToDoseCalculations	Updated element with most current data (per v0.013 checklist comment)	Y	None	NA	Y

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QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.014.gsm	Source Model ID (or filename): HTF Transport Model v0.013.gsm
New Model File Date: 10/18/2010	Source Model File Date: 10/15/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
STAT1XX Where XX=A-E	\PORFLOWFeedsToDoseCalculations	Updated element with most current data (per v0.013 checklist comment)	Y	None	NA	Y
STATSLA	\PORFLOWFeedsToDoseCalculations	Updated element with most current data (per v0.013 checklist comment)	Y	None	NA	Y
SeeptoWellRatio_vec	\PORFLOWFeedsToDoseCalculations	Updated element with most current data (per v0.013 checklist comment)	Y	None	NA	Y
HTF_Tank_Inventory_1	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Inventories	Reference updated (no change to data)	Y	None	NA	Y
HTF_Tank_Inventories_NonRad_1	\HTF_Source_Inputs\HTF_Waste_Tanks\HTF_Waste_Tank_Inventories	Reference updated (no change to data)	Y	None	NA	Y
HTF_Ancillary_Inventories	\HTF_Source_Inputs\HTF_Ancillary_Equipment\Ancillary_Equipment_Inventory	Reference updated (no change to data)	Y	None	NA	Y
HTF_Ancillary_Invent_Nonrad	\HTF_Source_Inputs\HTF_Ancillary_Equipment\Ancillary_Equipment_Inventory	Reference updated (no change to data)	Y	None	NA	Y
TransLineInventory_3in	\HTF_Source_Inputs\HTF_Ancillary_Equipment\Ancillary_Equipment_Inventory\TransferLineInventory	Updated element with most current data (per v0.013 checklist comment)	Y	None	NA	Y
TransLineInventory_4in	\HTF_Source_Inputs\HTF_Ancillary_Equipment\Ancillary_Equipment_Inventory\TransferLineInventory	Updated element with most current data (per v0.013 checklist comment)	Y	None	NA	Y

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QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.014.gsm	**Source Model ID (or filename):** HTF Transport Model v0.013.gsm
New Model File Date: **10/18/2010**	**Source Model File Date:** 10/15/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Tank13Inventory_Intr	\HTF_Source_Inputs\HTF_Ancillary_Equipment\Ancillary_Equipment_Inventory\TransferLineInventory	Updated element with most current data (per v0.013 checklist comment)	Y	None	NA	Y
Tank24Inventory_Intr	\HTF_Source_Inputs\HTF_Ancillary_Equipment\Ancillary_Equipment_Inventory\TransferLineInventory	Updated element with most current data (per v0.013 checklist comment)	Y	None	NA	Y
TotalDose	\HTF_DoseCalculations\DoseResults\GoldSimIntruderDoseResults\	Element updated to include TotalDose_Sum instead of TotalDoseSum	Y	None	NA	Y
IngestContributorsBySector	\HTF_DoseCalculations\DoseResults\PorflowIntruderDoseResults	Element updated to include Total_Ingest_Sectors instead of TotalDoseSum_Sectors	Y	None	NA	Y

If checker has no comments, check here. ☒ Add additional rows above, as needed.

Analyst Name (print):	**E-Signature (or sign/date/scan hardcopy):** (Not required if no comments)
Barry Lester	NA
Checker Name (print):	**E-Signature (or sign/date/scan hardcopy):**
Steve Hommel	Steve Hommel Digitally signed by Steve Hommel DN: cn=Steve Hommel, o, ou, email=Steven.Hommel@srs.gov, c=US Date: 2010.10.18 16:27:09 -04'00'

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QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.015.gsm	**Source Model ID (or filename):** HTF Transport Model v0.014.gsm
New Model File Date: **10/18/2010**	**Source Model File Date:** 10/18/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Can this new model be traced (by following the Source Model IDs) back to a source model with a completed Initial Model Check Form (QA&DV Form 4)? - If so, proceed. If not, disregard this form and complete an Initial Model Check Form (QA&DV Form 4) for this model.						
Submodel elements are denoted by this shading						
EndPoints_SA	\MultiVariate	Regenerated Multivariate element from EndPoints	Y	None	NA	Y

If checker has no comments, check here. ☒ Add additional rows above, as needed.

Analyst Name (print): Barry Lester	**E-Signature (or sign/date/scan hardcopy):** (Not required if no comments) NA
Checker Name (print): Steve Hommel	**E-Signature (or sign/date/scan hardcopy):** Steve Hommel Digitally signed by Steve Hommel DN: cn=Steve Hommel, o, ou, email=Steven.Hommel@srs.gov, c=US Date: 2010.10.18 15:48:58 -04'00'

HTF Transport Model v0.015_Form-5.doc 1 of 1 10/18/2010

The Analyst's signature is not required because the Checker made no comments that required resolution.

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QA&DV Form 5, Rev01

Changed Model Check Form

New Model ID (or filename): HTF Transport Model v0.016.gsm	Source Model ID (or filename): HTF Transport Model v0.015.gsm
New Model File Date: 10/19/2010	Source Model File Date: 10/18/10

Parameter or Element	Location	Change Description	Correct? Y,N	Checker Comment	Analyst Response	Checker Concur? Y,N
Can this new model be traced (by following the Source Model IDs) back to a source model with a completed Initial Model Check Form (QA&DV Form 4)? - If so, proceed. If not, disregard this form and complete an Initial Model Check Form (QA&DV Form 4) for this model.						
Submodel elements are denoted by this shading						
STAT100C	\PORFLOWFeedsToDoseCalculations	Updated time series with values from STAT100C.xls	Y	None	NA	Y

If checker has no comments, check here. ☒ Add additional rows above, as needed.

Analyst Name (print):	E-Signature (or sign/date/scan hardcopy): (Not required if no comments)
Barry Lester	NA
Checker Name (print):	**E-Signature (or sign/date/scan hardcopy):**
Steve Hommel	Steve Hommel Digitally signed by Steve Hommel DN: cn=Steve Hommel, o, ou, email=Steven.Hommel@srs.gov, c=US Date: 2010.10.19 10:51:14 -04'00'

The Analyst's signature is not required because the Checker made no comments that required resolution.

APPENDIX B. ADDITIONAL CHECKING FORMS (PORFLOW)

APPENDIX B. ADDITIONAL CHECKING FORMS (PORFLOW)

The following checklists are provided as evidence of additional input data verification activities for the HTF PA deterministic model. These forms supplement the checking documentation provided in SRNL-L6200-2010-00027. These forms show that inputs to the PORFLOW code were checked against appropriate source data.

Note that the forms used to document model checking and data verification activities, as provided within this appendix, are not specifically required for procedural compliance. Rather, these forms demonstrate the application of quality assurance practices consistent with Manual E7, 2.60, *Technical Reviews* and provide confidence that models were developed correctly and with appropriate inputs.

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QA&DV Form 7, Rev00

Check and Review Comment Form

Items Checked or Reviewed (Filenames):	**Rev or File Date:**
~~Chemistry HTF 3-18-10.xls~~ Chemistry HTF 3-24-10.xls	~~March 22, 2010, 8:34:31 AM~~ March 24, 2010, 12:13:13 PM
Additional comments or instructions for Checker (if any): None	

No.	Location	Comments	Analyst Response	Checker Concur? Y,N
1	Sheet: Kd, Column E	~~The referenced document: SRNL-STI-2009-00473 has not yet been approved. Please provide a signed/approved copy when it becomes available.~~ A signed copy of SRNL-STI-2009-00473 was approved on March 25, 2010. No further comment.	~~A signed/approved copy of SRNL-STI-2009-00473 will be placed in the LWO document library when available.~~	Y
2	Chemistry HTF 3-18-10.xls Sheet: MW	No comments on this sheet. Values match the Atomic Weights found in Appendix–I Table of Elemental Properties of the cited reference.	NA	NA
3	Chemistry HTF 3-18-10.xls Sheet: Kd, Rows where column B = clayey, clayey leachate, sandy, and sandy leachate	No comments on these values – data verified against Table 13 from cited reference.	NA	NA
4	Sheet: Kd, Rows where column B = xxx yyy (where xxx = oxidizing and reducing; and yyy = young, middle, and old)	No comments on these values – data verified against Table 14 from cited reference.	NA	NA
5	Sheet: Kd	*Optional Comment:* For the data from Table 13, we could improve clarity by documenting the rationale for using the data from the column "Best Cement Leachate with CDP Sand Kd" instead of the column "Best Sand Kd (CemLech)". (same w/ Clay)	Spreadsheet has been revised for the sand leachate and clay leachate to utilize the numbers from Table 14 of SRNL-STI-2009-00473 columns entitled "Best Sand Kd (ChemLech)" and "Best Clay Kd (ChemLech)". Also added a column to the spreadsheet documenting the title of the column in the tables used.	Y
		End of comments.		
Add additional rows above, as needed.				

Analyst Name (print):	**E-Signature (or sign/date/scan hardcopy):** (Not required if no comments)
David Watkins	David Watkins
Checker Name (print):	**E-Signature (or sign/date/scan hardcopy):**
Steve Hommel	Steve Hommel

Chemistry HTF 3-XX-10.xls_Form-7.doc

1 of 1

3/25/2010

The file (dated 24 March 201) documented above has been superseded. The replacing file (dated 23 September 2010) is documented as checked in the following checklist.

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QA&DV Form 7, Rev01

Check and Review Comment Form

Items Checked or Reviewed (Filenames): Chemistry.xls	Rev or File Date: 9/23/2010
Additional comments or instructions for Checker (if any): NA	

No.	Location	Checker Comments	Analyst Response	Checker Concur? Y,N
1	Sheet: Kd	Compared file against file of the same name, dated 3/25/2010. Eight differences (in Ba Kds and in Ra Kds) are consistent with values found in an emailed WORD document (sent to Kent Rosenberger from Dan Kaplan on 9/22/2010). The values are correct pending approval of Kaplan's report. The table from the emailed WORD document is attached.	NA	Y
2	Sheet: MW	Compared file against file of the same name, dated 3/25/2010. No differences.	NA	Y

If checker has no comments, check here. ☒ Add additional rows above, as needed.

Analyst Name (print): Greg Flach or Jeff Jordan	E-Signature (or sign/date/scan hardcopy): (Not required if no comments) N/A
Checker Name (print): Steve Hommel	E-Signature (or sign/date/scan hardcopy): Steve Hommel Digitally signed by Steve Hommel DN: cn=Steve Hommel, o, ou, email=Steven.Hommel@srs.gov, c=US Date: 2010.09.28 07:18:49 -04'00'

The Checker made no comments that required resolution, therefore Analyst signature is not required.

Check and Review Comment Form

COPIED FROM WORD DOCUMENT SENT FROM DAN KAPLAN TO KENT ROSENBERGER VIA EMAIL 9/21/2010

New Ba and Ra Kd values for the PA.

Rad	Sand Kd (mL/g)	Clay Kd (mL/g)	Reference
Sr	5	17	Site Specific measurements, SRNL-STI-2009-00473. These are not new values.
Ba	15	101	Calculated: Based on periodicity and half way between Sr and Ra. These values will be replaced once actual laboratory measurements will be conducted.
Ra	25	185	Measured, Site specific, Miller 2010

Miller, T.J. 2010. Conceptual Model Testing and Development for Neptunium and Radium Sorption to SRS Sediments. M.S. Thesis. Clemson University, Clemson, SC.

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QA&DV Form 7, Rev00

Check and Review Comment Form

Items Checked or Reviewed (Filenames): solubility 4-1-10.xls	**Rev or File Date:** 4/1/2010
Additional comments or instructions for Checker (if any):	

No.	Location	Comments	Analyst Response	Checker Concur? Y,N
1	Sheet: Submerged solubility Column E: Source	References to "WSRC-STI-2010-xxxxx, Rev. 0, Table 1" should be to "WSRC-STI-2007-00544, Rev. 2, Table 6"	Correct. This spreadsheet was set up based on tables received prior to the issuance of the actual draft report. The spreadsheet has been revised to reflect the draft report.	Y
2	Sheet: Region II and III sol Column E: Source	References to "WSRC-STI-2010-xxxxx, Rev. 0, Table 4" should be to "WSRC-STI-2007-00544, Rev. 2, Table 5"	Correct. This spreadsheet was set up based on tables received prior to the issuance of the actual draft report. The spreadsheet has been revised to reflect the draft report.	Y
3	Sheet: Region II and III sol Row 50: Np	Cell F50 says: NpO2(OH)am However WSRC-STI-2007-00544, Rev. 2 Draft, Table 5 says: NpO2OH(am)	Spreadsheet has been changed to reflect the correct name.	Y
4	NA	WSRC-STI-2007-00544, Rev. 2 is still in Draft status. Final checking (and signing of this form) will be performed once this reference is approved.	NA	NA
		End of comments		
Add additional rows above, as needed.				

Analyst Name (print): David Watkins	**E-Signature (or sign/date/scan hardcopy):** (Not required if no comments) David Watkins Digitally signed by David Watkins DN: cn=David Watkins, o, ou, email=david.watkins@srs.gov, c=US Date: 2010.04.13 09:10:11 -04'00'
Checker Name (print): Steve Hommel	**E-Signature (or sign/date/scan hardcopy):** Steve Hommel Digitally signed by Steve Hommel DN: cn=Steve Hommel, o, ou, email=Steven.Hommel@srs.gov, c=US Date: 2010.04.13 11:30:17 -04'00'

Closure & Waste Disposal Authority

QA&DV Form 7, Rev00

Check and Review Comment Form

Items Checked or Reviewed (Filenames): Table 4.2-10.doc	Rev or File Date: ~~3/30/2010~~ 4/12/2010
Additional comments or instructions for Checker (if any): Yellowed values may change – seeking clarification from author of referenced report.	

No.	Location	Comments	Analyst Response	Checker Concur? Y,N
1	Oxidized Region II Solubility, for Cm	Cm solubility should be 5.1E-10 (not 5.2E-10)	Value has been modified to 5.1E-10.	Y
2	Oxidized Region III Controlling Phase, for Cm	Cm Controlling Phase should be CmOHCO3 (not AmOHCO3)	Controlling phase has been revised to CmOHCO3.	Y
3	Columns for Oxidized Regions (II and III)	For Pu, Tc, and U - Justify using values from SRS-REG-2007-00002, Table 4.2-10 instead of values from WSRC-STI-2007-00544, Rev. 2:Table 5 (where all of the other data in the table are from)	Values have been updated for Np, Pu, Tc, and U per Table 13 of WSRC-STI-2007-00544, Rev. 2 for Oxidizing II and III and Reducing II to reflect FE Co-precipitation (values are the median values from the table).	Y
4	Reduced Region II Solubility, for Sr	Sr solubility should be 2.3E-5 (not 2.5E-5)	Value has been modified to 2.3E-5	Y
5	Reduced Region III Solubility, for Tc	The source (WSRC-STI-2007-00544, Rev. 2:Table 5) for Tc solubility only provides two significant figures (2.8E-38); however you present three significant figures (2.79e-38). Provide another source to justify more significant figures or modify the Table to reflect the value in WSRC-STI-2007-00544, Rev. 2:Table 5.	Value has been modified to 2.80E-38.	Y
6	Table Note	Add reference(s) to note.	Carryover from FTF PA. Note has been removed.	Y
		End of comments		
Add additional rows above, as needed.				

Analyst Name (print): David Watkins	E-Signature (or sign/date/scan hardcopy): (Not required if no comments) David Watkins Digitally signed by David Watkins DN: cn=David Watkins, o, ou, email=david.watkins@srs.gov, c=US Date: 2010.04.13 12:16:23 -04'00'
Checker Name (print): Steve Hommel	**E-Signature (or sign/date/scan hardcopy):** Steve Hommel Digitally signed by Steve Hommel DN: cn=Steve Hommel, o, ou, email=Steven.Hommel@srs.gov, c=US Date: 2010.04.13 11:25:20 -04'00'

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QA&DV Form 7, Rev00

Check and Review Comment Form

Items Checked or Reviewed (Filenames): Table 4.2-32.doc	**Rev or File Date:** 04/13/10
Additional comments or instructions for Checker (if any): Please review per the following document: Z:\C&WDA\Folks\Watkins-David\SRR-CWDA-2010-00019\SRR-CWDA-2010-00019_R0_3-15-10.pdf, Table 1	

No.	Location	Comments	Analyst Response	Checker Concur? Y,N
1	Value for Type III, HTF Concrete (Initial Properties)	The Table provides 2,550 years. Although this matches the source document (SRR-CWDA-2010-00019, Rev 0; Table 1) it is inconsistent with the other values for HTF Concrete (Initial Properties). Please verify this with originator of the source document, as this should probably be a range (instead of the single value): 0 - 2,550 years.	Value has been revised to reflect "0 – 2,550 years".	Y
		End of comments.		
Add additional rows above, as needed.				

Analyst Name (print): David Watkins	**E-Signature (or sign/date/scan hardcopy):** (Not required if no comments) David Watkins Digitally signed by David Watkins DN: cn=David Watkins, o, ou, email=david.watkins@srs.gov, c=US Date: 2010.04.14 07:55:52 -04'00'
Checker Name (print): Steve Hommel	**E-Signature (or sign/date/scan hardcopy):** Steve Hommel Digitally signed by Steve Hommel DN: cn=Steve Hommel, o, ou, email=Steven.Hommel@srs.gov, c=US Date: 2010.04.13 16:39:11 -04'00'

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QA&DV Form 7, Rev00

Check and Review Comment Form

Items Checked or Reviewed (Filenames): Table 4.2-33 cement Kds.doc	**Rev or File Date:** 3/30/2010
Additional comments or instructions for Checker (if any): Review using the following previously QA'd excel file: Z:\C&WDA\Folks\Watkins-David\HTF Solubilities and Kd\Chemistry HTF 3-24-10.xls	

No.	Location	Comments	Analyst Response	Checker Concur? Y,N
1	Table	Copper is missing from the table. Values for copper have been added and the elements Einsteinium (Es) through Indium (In) are wrong.	Copper has been added and values have been corrected.	Y
2	Reducing Cementitious Media, Middle Age Column	The values are shifted up by one row for Silver (Ag) through Indium (In), and the value for Actinium is missing.	Values have been corrected.	Y
3		No additional Comments		

Add additional rows above, as needed.

Analyst Name (print): David Watkins	**E-Signature (or sign/date/scan hardcopy):** (Not required if no comments) David Watkins Digitally signed by David Watkins DN: cn=David Watkins, o, ou, email=david.watkins@srs.gov, c=US Date: 2010.04.19 09:54:06 -04'00'
Checker Name (print): Jeff Zimmerly	**E-Signature (or sign/date/scan hardcopy):** Jeffrey Zimmerly

Closure & Waste Disposal Authority

QA&DV Form 7, Rev01

Check and Review Comment Form

Items Checked or Reviewed (Filenames): Hydraulic Properties_11-1_MHL-RES.xls	**Rev or File Date:** Dated: ~~February 16, 2010, 11:24:26 AM~~ May 11, 2010, 4:15:58 PM
Additional comments or instructions for Checker (if any): NA	

No.	Location	Checker Comments	Analyst Response	Checker Concur? Y,N
1	Sheet: Grout Life	Sheet is not used/has not been updated. Either update the data or remove the sheet.	Sheet Deleted	Y
2	Sheet: Table 6	Data in columns A through E (re: Strong Grout) do NOT match values in Table D1 of WSRC-STI-2007-00369, REV. 0. Need to justify differences or correct the values.	I updated the strong grout values - they should now match.	Y
3	NA	Note: Checker verified that all values matched source data within a 0.5% margin. Aside from comment(s) noted above, all values met this standard.	NA	NA
		End of Comments		

If checker has no comments, check here. ☐ Add additional rows above, as needed.

Analyst Name (print): Jeff Jordan	**E-Signature (or sign/date/scan hardcopy):** (Not required if no comments)
Checker Name (print): Steve Hommel	**E-Signature (or sign/date/scan hardcopy):** Steve Hommel Digitally signed by Steve Hommel DN: cn=Steve Hommel, o, ou, email=Steven.Hommel@srs.gov, c=US Date: 2010.05.12 11:32:03 -04'00'

Hydraulic Properties_11-1_MHL-RES.xls_Form-7_Check.doc 1 of 1 5/12/2010

Note: For this checking work, the response from the analyst and final approval was provided to the checker via telephone conversation [S. Hommel – 12 May 2010].

Closure & Waste Disposal Authority

QA&DV Form 7, Rev01

Check and Review Comment Form

Items Checked or Reviewed (Filenames):	**Rev or File Date:**
\\hpcfs2\hpc_project\projwork20\htank\new_htf\Common\Properties\ Files within Folders: krel_060828 krel_071008 suction_060828 suction_071008	All files dated Feb. 16, 2010
Additional comments or instructions for Checker (if any): NA	

No.	Location	Checker Comments	Analyst Response	Checker Concur? Y,N
1	NA	Checker sampled one to two files from each folder and compared values against those in the source file: Hydraulic Properties_11-1_MHL-RES.xls Differences in values were less than 0.01%. Therefore, the values are valid.	NA	NA
		End of Comments		

If checker has no comments, check here. ☒ Add additional rows above, as needed.

Analyst Name (print):	**E-Signature (or sign/date/scan hardcopy):** (Not required if no comments)
Jeff Jordan	
Checker Name (print):	**E-Signature (or sign/date/scan hardcopy):**
Steve Hommel	Steve Hommel Digitally signed by Steve Hommel DN: cn=Steve Hommel, o, ou, email=Steven.Hommel@srs.gov, c=US Date: 2010.05.12 11:36:39 -04'00'

Note: For this checking work, the response from the analyst and final approval was provided to the checker via telephone conversation [S. Hommel – 12 May 2010].

Closure & Waste Disposal Authority

QA&DV Form 7, Rev01

Check and Review Comment Form

Items Checked or Reviewed (Filenames): MaterialPalette.xls MaterialFactor1.xls MaterialFactor2.xls MaterialZones.xls	**Rev or File Date:** Dated: Wednesday, March 31, 2010, 8:42:16 AM MaterialPalette.xls updated May 12, 2010, 7:05:51 AM due to comment 1
Additional comments or instructions for Checker (if any): NA	

No.	Location	Checker Comments	Analyst Response	Checker Concur? Y,N
1	MaterialPalette.xls Sheet: Palette, Rows 4-18 and 22	Data is linked to the sheet: *Hydraulic Properties_11-1_MHL-RES.xls* Please resolve outstanding comments documented in: *Hydraulic Properties_11-1_MHL-RES.xls_Form-7_Check.doc*; then update the links in MaterialPalette.xls. (Note: No changes are expected.)	Done	Y
2	MaterialPalette.xls Sheet: Palette, Row 21	*Optional Comment*: For internal consistency, you may want to update Row 21 (fast_flow) to link to *Hydraulic Properties_11-1_MHL-RES.xls* as done in Rows 4-18 and 22.	The fast flow is not listed explicitly in the hydraulic properties spreadsheet. It is assigned the properties of gravel, so the link is made in the MaterialPalette between the two.	Y
3	MaterialPalette.xls Sheet: Palette, Rows 19, 20	Checker could not verify the data. Please provide a reference or source for the data.	These values were developed in the F-Tank Farm to ensure there would be no flow or diffusion through the liner. Since we defined it, there is no reference.	Y
4	MaterialFactor1.xls Sheet: liner AND Sheet: vertical_liner	~~Degradation times of cementitious materials are consistent with Table 1 of SRR-CWDA-2010-00019; however, checker could not verify degradation times of liner materials. Please provide a reference or source for the data.~~ Degradation of liner time data was found in: SRNL-STI-2010-00047 Rev 0, Figs 43-46 (for Tank Type I and II) WSRC-STI-2007-00061 Rev 2, Tbls 34-38 (for Tank Types III, IIIA, and IV) Therefore this comment is being removed.	~~Liner degradation times came from and email from Kent. I thought this information was going to end up in the conceptual model input package, but I did not see I there. We can discuss where to go from here.~~ NA	Y

Closure & Waste Disposal Authority

QA&DV Form 7, Rev01

Check and Review Comment Form

Items Checked or Reviewed (Filenames):	**Rev or File Date:**
MaterialPalette.xls MaterialFactor1.xls MaterialFactor2.xls MaterialZones.xls	Dated: Wednesday, March 31, 2010, 8:42:16 AM MaterialPalette.xls updated May 12, 2010, 7:05:51 AM due to comment 1
Additional comments or instructions for Checker (if any): NA	

No.	Location	Checker Comments	Analyst Response	Checker Concur? Y,N
5	MaterialPalette.xls MaterialFactor1.xls MaterialFactor2.xls MaterialZones.xls	Imbedded macros use various sheets to build a series of data files (*.dat). However, the sheet names in the macros do not reflect those in the Excel files (i.e., the macros cannot execute). Do these macros still provide a function? Or are these relics of an earlier approach?	The macros are not used.	Y
6	MaterialZones.xls	*Optional Comment*: Checker is not sure how uses this data – so it's prudent to point out that the "material zones" indicated in Column H ("Kd") of each of the sheets are inconsistent relative to the other columns. For example, sheets identifying sand materials use "Sand" as the material index, whereas the Kd column uses "Sandy". (Note: Checker does not believe this is an error, this comment provided just in case.)	For Kd materials, the name refers to the name in the Chemistry.xls spreadsheet. For solubility, the name refers to the solubility spreadsheet. For conductivity, diffusion, etc. the name refers to the name in the material palette. I tried to explain this more in the outline that I sent you.	Y
		End of Comments		

If checker has no comments, check here. ☐ Add additional rows above, as needed.

Analyst Name (print):	**E-Signature (or sign/date/scan hardcopy):** (Not required if no comments)
Jeff Jordan	
Checker Name (print):	**E-Signature (or sign/date/scan hardcopy):**
Steve Hommel	Steve Hommel Digitally signed by Steve Hommel DN: cn=Steve Hommel, o, ou, email=Steven.Hommel@srs.gov, c=US Date: 2010.05.12 11:38:35 -04'00'

MaterialXXXX.xls_Form-7_Check.doc 2 of 2 5/12/2010

Note: For this checking work, the response from the analyst and final approval was provided to the checker via telephone conversation [S. Hommel – 12 May 2010].

Closure & Waste Disposal Authority

QA&DV Form 7, Rev01

Check and Review Comment Form

Items Checked or Reviewed (Filenames):	Rev or File Date:
\\hpcfs2\hpc_project\projwork20\htank\new_htf\Common\Decay\Chains_3yr*.dat (subset defined below)	5/3/2010

Additional comments or instructions for Checker (if any):
Reviewed *.dat files of Half-lives for radionuclides to be evaluated in the HTF PA PORFLOW Modeling (List below) Confirmed Half-Lives using PIT-MISC-0072, Revision 7, April 2005 (Nuclear Wallet Cards).

No.	Location	Checker Comments	Analyst Response	Checker Concur? Y,N
1	NA	No comments. Confirmed *.dat files for the following radionuclides: Ac-227, Ag-108m, Al-26, Am-241, Am-242m, Am-243, Bi-210m, C-14, Ca-41, Cf-249, Cf-251, Cl-36, Cm-243, Cm-244, Cm-245, Cm-246, Cm-247, Cm-248, Co-60, Cs-135, Cs-137, Eu-152, Eu-154, Eu-155, Gd-152, H-3, I-129, K-40, Mo-93, Nb-93m, Nb-94, Ni-59, Ni-63, Np-237, Pa-231, Pb-210, Pd-107, Pt-193, Pu-238, Pu-239, Pu, 240, Pu-241, Pu-242, Pu-244, Ra-226, Ra-228, Se-79, Sm-147, Sm-151, Sn-126, Sr-90, Tc-99, Th-229, Th-230, Th-232, U-232, U-233, U-234, U-235, U-236, Y-238, Zr-93. Other *.dat half lives in PORFLOW will need confirmation in the future, if used.	NA	NA
2	NA	Note: Lu-174 was not in the PORFLOW modeling half-life files as it is not being considered by PORFLOW as it has a half life less than 5 years, although it is being considered in the GoldSim Modeling.	NA	NA
		End of comments		

If checker has no comments, check here. ☒ Add additional rows above, as needed.

Analyst Name (print):	E-Signature (or sign/date/scan hardcopy): (Not required if no comments)
Steve Hommel	Steve Hommel Digitally signed by Steve Hommel DN: cn=Steve Hommel, o, ou, email=Steven.Hommel@srs.gov, c=US Date: 2010.05.12 11:36:06 -04'00'
Checker Name (print): David Watkins	**E-Signature (or sign/date/scan hardcopy):** David Watkins Digitally signed by David Watkins DN: cn=David Watkins, o, ou, email=david.watkins@srs.gov, c=US Date: 2010.05.12 12:13:33 -04'00'

Closure & Waste Disposal Authority QA&DV Form 7, Rev01

Check and Review Comment Form

Items Checked or Reviewed (Filenames): BoundaryCondition.xls	Rev or File Date: ~~02/16/2010~~ May 11, 2010
Additional comments or instructions for Checker (if any): None	

No.	Location	Checker Comments	Analyst Response	Checker Concur? Y,N
1	Source of Table	Provide source of data in table. Is this the one that should be used? **SRNL-ESB-2008-00023, Table 2**	SNRL-ESB-2008-00023 is the correct source	Y
2	Table Heading	The source labels the table heading as Average Annual Infiltration thru the GCL (in/yr). Unsure why Boundary Condition.xls table labels as U_in/yr.	U is a generic symbol for Darcy Velocity. The heading is only used for information purposes in the spreadsheet. No change is needed.	Y
3	Conversion of in/yr to cm/yr	Using 2.54 cm/in conversion, number of significant digits for first 3 entries in table should be consistent with rest of table (i.e. 2.24E-03 cm/yr, 2.54E-02 cm/yr, 4.32E-01 cm/yr). Input values do not change, only the conversion column.	The number of significant digits for the first 5 items is 2. The conversion column is limited to the number of significant digits provided in the input values. The conversion of 0.50 in/yr was corrected to 1.3 cm/yr instead of 1.27 cm/yr	Y

If checker has no comments, check here. ☐ Add additional rows above, as needed.

Analyst Name (print): J. Jordan	E-Signature (or sign/date/scan hardcopy): (Not required if no comments)
Checker Name (print): Leslie E Safley	E-Signature (or sign/date/scan hardcopy): L Eugene Safley Digitally signed by L Eugene Safley DN: cn=L Eugene Safley, o, ou, email=Leslie.Safley@srs.gov, c=US Date: 2010.05.12 13:18:07 -04'00'

Note: For this checking work, the response from the analyst and final approval was provided to the checker via telephone conversation [L. E. Safley – 12 May 2010].

Closure & Waste Disposal Authority

QA&DV Form 7, Rev01

Check and Review Comment Form

Items Checked or Reviewed (Filenames): DecayBranching.xls	Rev or File Date:
Additional comments or instructions for Checker (if any):	

No.	Location	Checker Comments	Analyst Response	Checker Concur? Y,N
1	Branching Tab, Number 25	Should be Ba-10	This line is intended to cover the decay of beryllium-10 to boron-10 (http://en.wikipedia.org/wiki/Beryllium-10), so I think it is correct.	Y
2	Halflife Tab	Lu-176 halflife according to Tuli 2005 PIT-MISC-0072_04-05 is 4.08E+10	The copy of the 2005 Wallet Cards (Tuli 2005) that I am viewing indicates 3.76×10^{10} y. See attachments.	Y
3	Branching Tab	I was unable to verify all of the decay branches for the radionuclides that are not being modeled. Can you provide a source or links to enable me to complete the checking of the decay branching	I have attached the internal guidance and examples we used to establish progeny based solely on Tuli (2005), with a few exceptions: 1) The Wallet Cards do not identify when metastable species are formed. So in the case of Cs-137, Tuli indicates only eventual decay to Ba-137. To be consistent with GoldSim we implemented Cs-137 --> Ba-137m --> Ba-137. In a few other instances decay to a metastable species is indicated, but I recall the Cs-137 chain being the only important one for the HTF PA. Longer-term we need to introduce a second reference to complement Tuli (2005), but no action is planned (or necessary) for the HTF PA. 2) GoldSim enforced a rule that branching fractions should sum to exactly 1 (which makes sense). For Fr-221 and Pu-241 we reduced the main branch fraction from 1 to be consistent with GoldSim, despite that introducing a deviation with Tuli (2005). The practical impact is negligible.	Y

If checker has no comments, check here. ☐ Add additional rows above, as needed.

Analyst Name (print): Greg Flach	E-Signature (or sign/date/scan hardcopy): (Not required if no comments)
Checker Name (print): Gene Safley	E-Signature (or sign/date/scan hardcopy): Gene Safley L Eugene Safley Digitally signed by L Eugene Safley DN: cn=L Eugene Safley, o, ou, email=Leslie.Safley@srs.gov, c=US Date: 2010.05.27 17:23:27 -04'00'

Note: For this checking work, the response from the analyst and final approval was provided to the checker via telephone conversation [L. E. Safley – 27 May 2010].

Closure & Waste Disposal Authority

QA&DV Form 7, Rev01

Check and Review Comment Form

Items Checked or Reviewed (Filenames): Combined.xls (at: \\godzilla-01\hpc_project\projwork27\htank\new_htf\Common\Inventory)	**Rev or File Date:** 9/27/2010
Additional comments or instructions for Checker (if any): Checked values against values in "HTF Final Inventory Rollu_RevB_RO_ 9-20-10.xls" (sent from R. O'Bryant to D. Watkins on 9/20/2010)	

No.	Location	Checker Comments	Analyst Response	Checker Concur? Y,N
1	Sheet: CONTAM_ZONE, row 82	Chemical values for Zn for tanks 37, 39, 40, 42, 48, 49, and 50 vary significantly. However, after consultation with B. Dean, it was determined that the values in "HTF Final Inventory Rollu_RevB_RO_ 9-20-10.xls" were in the incorrect order. The values in "Combined.xls" are correct as is – no response needed.	NA	Y
2	Sheet: CONTAM_ZONE, all ancillary (i.e., non-tank) inventories	Values vary slightly (less than 5% difference) due to difference in the number of significant figures reported; values are still valid. This comment provided for completeness – no response needed.	NA	Y
3	Sheet: CONTAM_ZONE, all U chemical inventories	Values vary slightly (less than 5% difference) due to difference in the number of significant figures reported; values are still valid. This comment provided for completeness – no response needed.	NA	Y
4	Sheet: Type II sand inventory, all U chemical inventories	Values vary slightly (less than 5% difference) due to difference in the number of significant figures reported; values are still valid. This comment provided for completeness – no response needed.	NA	Y
5	Sheet: SECONDARY_SAND	Values impacted by previous comments. No additional comments – no response needed.	NA	Y
6	Sheet: PRIMARY_SAND	Values impacted by previous comments. No additional comments – no response needed.	NA	Y
7	Sheet: CONTAM_1_ZONE	Values impacted by previous comments. No additional comments – no response needed.	NA	Y

If checker has no comments, check here. ☒ Add additional rows above, as needed.

Analyst Name (print): Jeff Jordan	**E-Signature (or sign/date/scan hardcopy):** (Not required if no comments) NA
Checker Name (print): Steve Hommel	**E-Signature (or sign/date/scan hardcopy):** Steve Hommel Digitally signed by Steve Hommel DN: cn=Steve Hommel, o, ou, email=Steven.Hommel@srs.gov, c=US Date: 2010.09.28 09:41:13 -04'00'

Combined.xls_09272010-Form-7.doc 1 of 1 9/28/2010

The Checker made no comments that required resolution, therefore Analyst signature is not required.