YUCCA
MOUNTAIN
PROJECT

Studies

Traceability Example for TSPA-VA

Presented to:
NWTRB Panel on Performance Assessment
Albuquerque, New Mexico

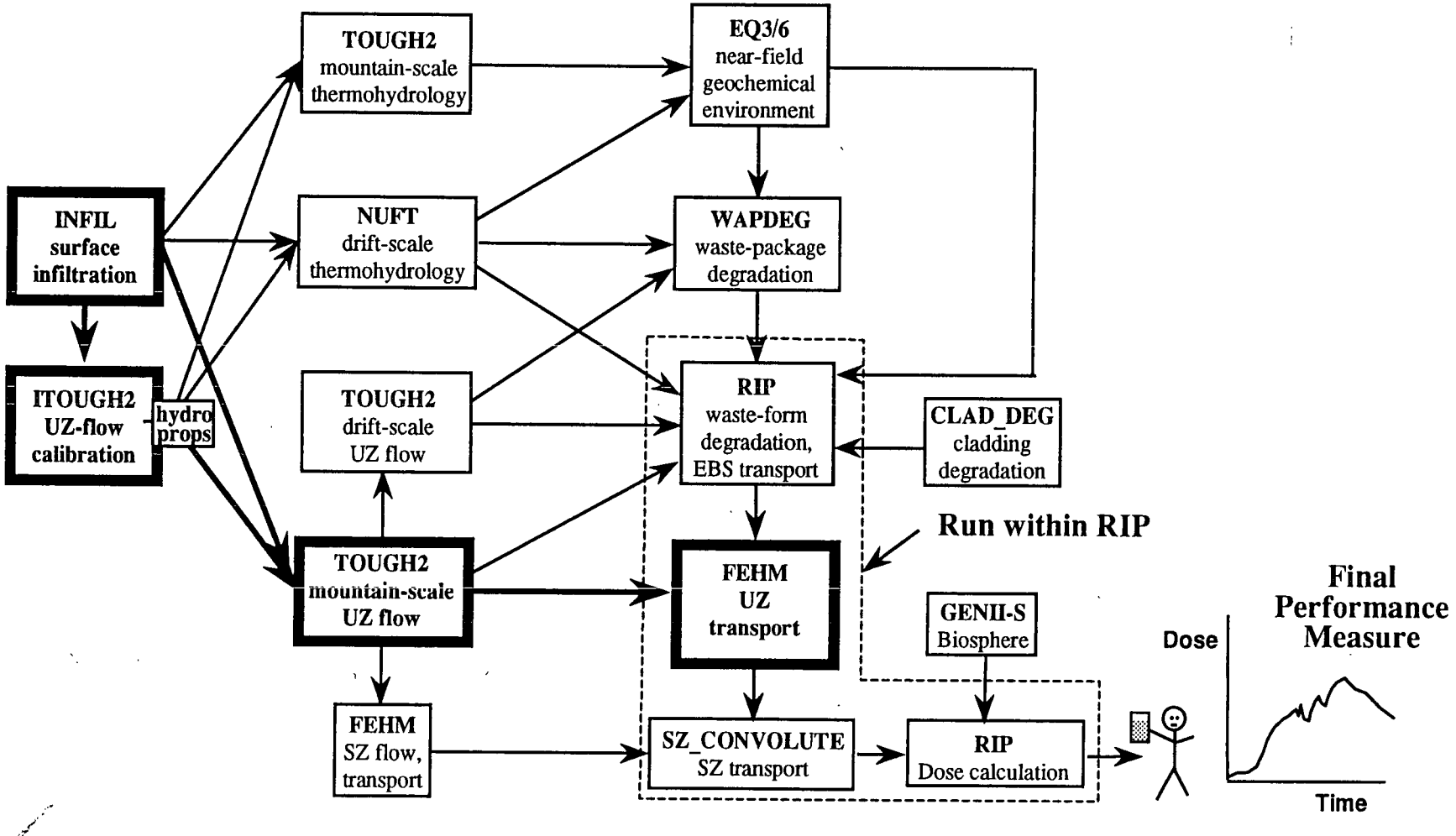
Presented by:
Clifford K. Ho
Sandia National Laboratories
Albuquerque, New Mexico

April 23-24, 1998

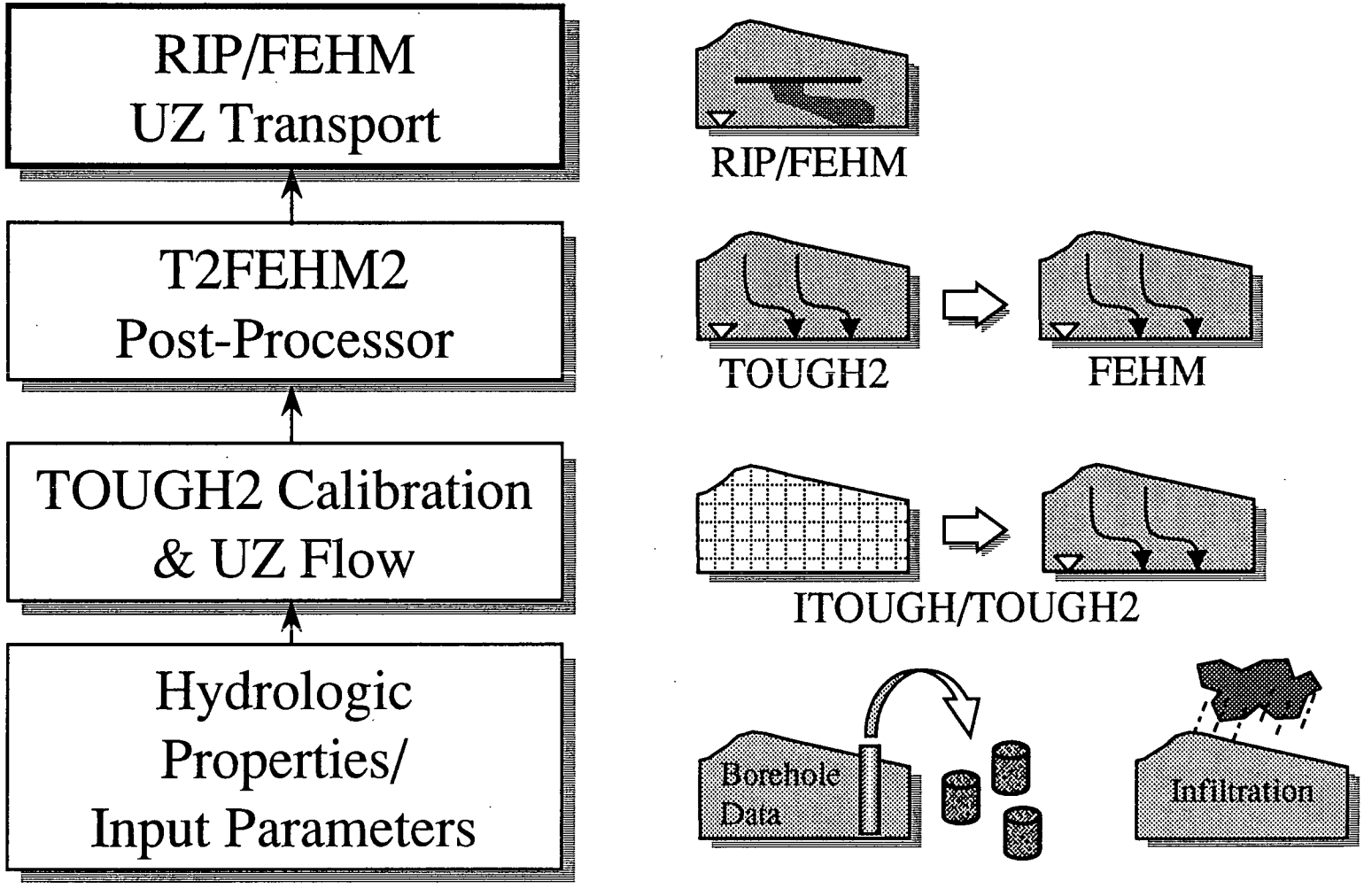
Definition and Objective

- **trace´a·ble** *adj.*
  - Able to ascertain the successive stages in the development or progress of.
- **Demonstrate framework to produce traceable performance assessment calculations**
  - Data and files are traceable and retrievable
  - Analyses can be reproduced

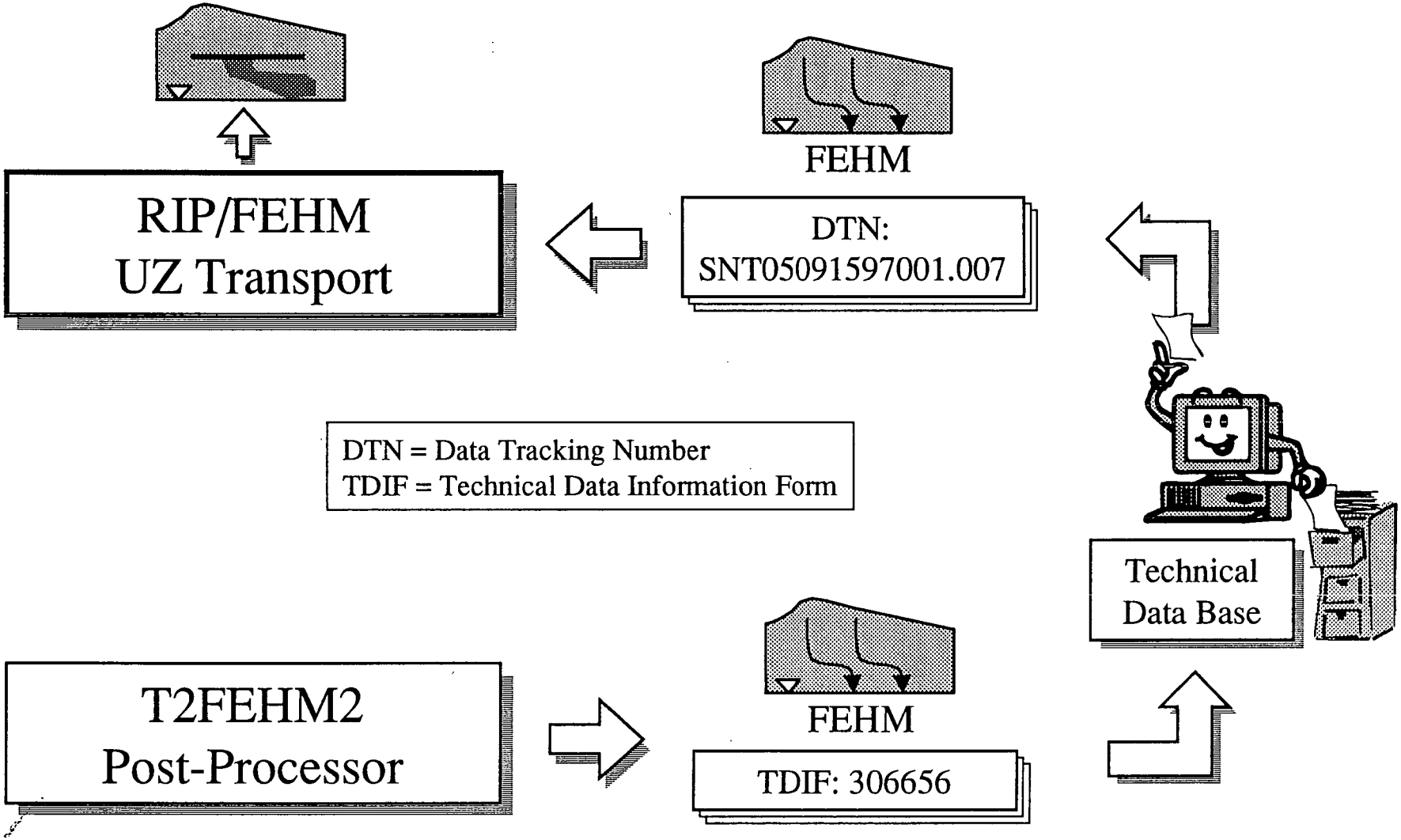
TSPA-VA Components



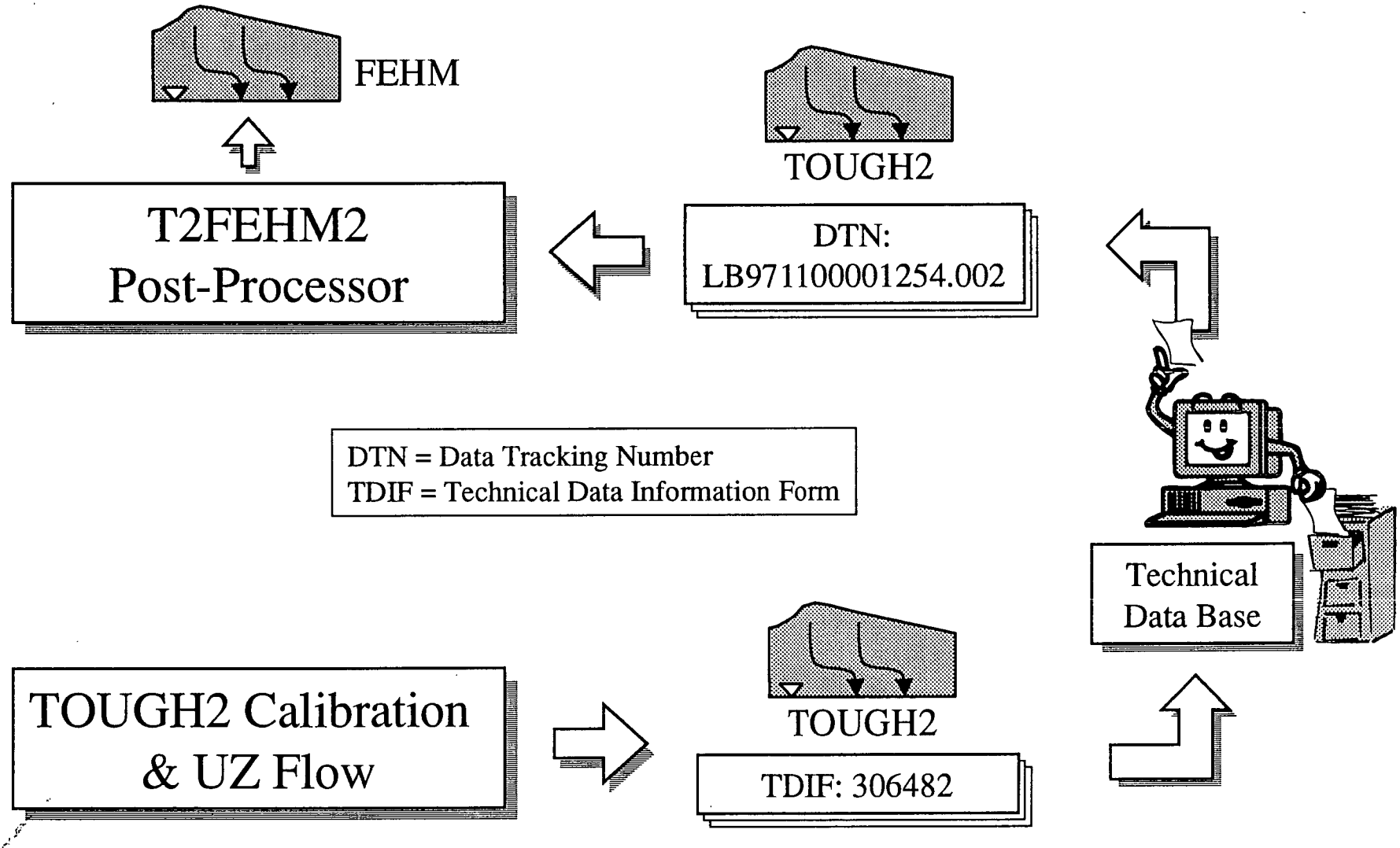
Unsaturated-Zone Flow and Transport



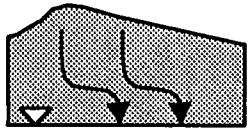
Input to RIP/FEHM



Input to T2FEHM2 Post-Processor



Input to TOUGH2 Calibration & UZ Flow



TOUGH2

TOUGH2 Calibration & UZ Flow

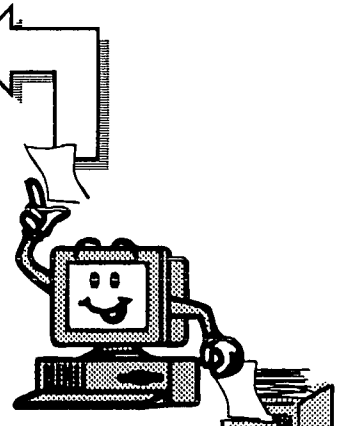
DTNs:

Porosity at SD-9:
GS950408312231.004

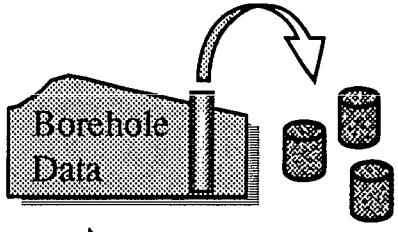
Air-Permeability Testing:
GS960908312232.013

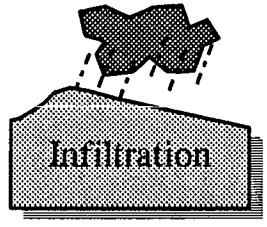
Infiltration Rates:
GS960908312211.003

DTN = Data Tracking Number
TDIF = Technical Data Information Form



Technical Data Base





Hydrologic Properties/ Input Parameters

TDIF: 304288

Summary

- Framework currently exists to provide traceability of TSPA-VA calculations
- Working towards traceability for all TSPA components

INFORMATION ONLY

306779

YMP-023-R4
05/06/96

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
TECHNICAL DATA INFORMATION

(Check one): ☐ ACQUIRED DATA *(complete Parts I and II)*
Data Tracking Number (DTN): _____

☒ DEVELOPED DATA *(complete Parts I, II and III)*
Data Tracking Number (DTN): SNT05091597001.010

PART I Identification of Data

Title/Description of Data: TSPA-VA (TOTAL SYSTEM PERFORMANCE ASSESSMENT-VIABILITY ASSESSMENT) POST-PROCESSOR TO OBTAIN FRACTURE-MATRIX MULTIPLIERS FROM LBNL (LAWRENCE BERKLEY NATIONAL LABORATORIES) (UNSATURATED ZONE) UZ-FLOW FIELDS FOR USE IN UZ TRANSPORT.

Principal Investigator (PI): HO, C K
Last Name First and Middle Initials

PI Organization: SANDIA NATIONAL LABORATORIES

Are Data Qualified?: ☐ Yes ☒ No Governing Plan: PAMP

SCPB Activity Number(s): _____

WBS Number(s): 1.2.5.4.1

PART II Data Acquisition/Development Information

Method: USED A POST-PROCESSOR TO EXTRACT FRACTURE-MATRIX FLUX MULTIPLIERS THAT WERE USED IN THE UZ FLOW MODELS TO YIELD CONSISTENT FRACTURE-MATRIX INTERACTIONS IN THE TRANSPORT CALCULATIONS.

Location(s): SANDIA NATIONAL LABORATORIES - ALBUQUERQUE, NM

Period(s): 4/7/98 to 4/11/98
From: MM/DD/YY To: MM/DD/YY

Sample ID Number(s): N/A

PART III Source Data DTN(s)

LB971212001254.006	LB971212001254.009	
LB971212001254.007	LB971212001254.010	—
LB971212001254.008		

Comments

SNL DATASET ID: 52/T05-09/15/97. THIS DATA IS NQ BECAUSE THE DATA DEVELOPMENT PROCESS WAS NOT A QA ACTIVITY.

Checked by: Eloise James 4/13/98
Signature Date

Manager's Note

Technical Databases

ATDT: Automated Technical Data Tracking
Database Definition

GI: Geographic Information
Database Definition

RIB: Reference Information Base
Database Definition

SEP: Site and Engineering Properties
Database Definition

Datasets

EIS: Environmental Impact Statement
Dataset Definition

LAD: License Application Data
Dataset Definition

RDI: Repository Design Input
Dataset Definition

SCD: Site Characteristics Data
Dataset Definition

SPA: System Performance Assessment
Dataset Definition

VAD: Viability Assessment Data
Dataset Definition

Managed Databases

CST: Chemical Species Thermodynamics
Database Definition

MWD: Modeling Warehouse Data
Database Definition

RTN: Requirements Traceability Network
Database Definition

SCC: Standards, Constants, and Conversions
Database Definition

WFC: Waste Form Characteristics
Database Definition


30-Day Posted Data Changes


Send Us Your Comments


TechData Contacts

Return to M&O Nevada Page

Last updated April 8, 1998

Input Data for LBNL Site-Scale UZ Flow Model

TYPE OF DATA USED	DATA SOURCE/ PRINCIPAL INVEST.	GENERAL DESCRIPTION	DTN	QA Status
Geologic Framework (only Q data summarized here; complete listing of Q & NQ data given in Bandurraga, 1996)	Geslin & Moyer (1994)	NRG-2c lithologic log	GS940308314211.012	Q
	Geslin & Moyer (1994)	NRG-2d lithologic log	GS940308314211.013	Q
	Geslin & Moyer (1994)	NRG-7/7a litho. log	GS940408314211.020	Q
	Geslin et al. (1994)	Summary of litho. logs	GS940308314211.009	Q
	Moyer & Mongano (1994a, 1994b)	SD-9 lithologic log	GS940808314211.041	Q
		SD-9 lithologic log	GS941108314211.052	Q
	Moyer et al. (1995)	Summary of litho. logs	GS941208314211.060	Q
	Moyer & Geslin (1994a)	UZ N-11 litho. log	GS940308314211.010	Q
	Moyer & Geslin (1994b)	UZ N-15,-16,-17 logs	GS940308314211.019	Q
	Moyer & Geslin (1994c)	UZ N-36 litho. log	GS940308314211.018	Q
	Moyer & Geslin (1994d)	UZ N-38 litho. log	GS940308314211.011	Q
	Moyer & Geslin (1994e)	UZ N-63 litho. log	GS940308314211.017	Q
	Moyer & Geslin (1994f)	UZ N-64 litho. log	GS940308314211.016	Q
	Moyer et al. (1993)	North Ramp Tiva litho.	GS931108314211.044	Q
	Rautman & Engstrom (1996a, b)	SD-7 geology	SNT02110894001.002	Q
		SD-12 geology	SNT02012894001.002	Q
	Zimmerman & Buesch (1995)	UZ-7a lithologic log	GS950908314211.034	Q
Thermal Properties	Brodsky et al. (1997)	Thermal-k	SNL01A05059301.005	Q
Matrix Properties: Saturation Moisture Potential Porosity Rock Grain Density Van Genuchten param.	L. Flint (1997)	ESF Alcoves 2, 3, 4, 6	GS961008312231.009	Q
	L. Flint (1995)	SD-7	GS951108312231.009	Q
	L. Flint (1995)	SD-9	GS950408312231.004	Q
	L. Flint (1995)	SD-12	GS950308312231.002	Q
	L. Flint (1995)	UZ-14	GS950408312231.005	Q
	L. Flint (1995)	UZ#16	GS940508312231.006	Q
	L. Flint (1995)	UZ#16, N27	GS950608312231.008	Q
	L. Flint (1995)	NRG-6	GS950608312231.007	Q
	L. Flint (1995)	NRG-7a	GS951108312231.010	Q
	Moyer et al. (1994)	SD-9/12, N31/32	GS941208314211.060	Q
Fracture Data (only Q data summarized here; complete listing of Q & NQ data given in Ch. 7 of Bodvarsson et al., 1997)	Detailed Line Survey (DLS) – Stations in meters along the ESF. Data collected by USGS/BR.	DLS 0+60 to 4+00	GS950508314224.002	Q
		DLS 4+00 to 8+00	GS950808314224.004	Q
		DLS 8+00 to 10+00	GS951108314224.005	Q
		DLS 10+00 to 18+00	GS960408314224.002	Q
		DLS 18+00 to 26+00	GS960608314224.006	Q
		DLS 26+00 to 30+00	GS960608314224.007	Q
		DLS 35+00 to 40+00	GS960808314224.011	Q
		DLS 40+00 to 45+00	GS960708314224.010	Q
		DLS 45+00 to 50+00	GS960808314224.013	Q
	Anna (1996)	Tiva Canyon Tuff	GS960408312281.001	Q
	Anna (1997)	Topopah Spring Tuff	GS970208312281.001	Q
	Sweetkind & Williams-Stroud (1996)	synthesis of fract. data	GS960808314224.010	Q
	Sweetkind (1995)	Fran Ridge	GS950108314222.001	Q
	Kessel (1995a)	SD-12	SNF29041993002.071	Q
	Kessel (1994)	NRG-7a	SNF29041993002.015	Q
	Kessel (1995b)	NRG-7a	SNF29041993002.048	Q
Pneumatic/Air-k	G. LeCain (1997)	Air-permeability	GS960908312232.013	Q
	G. Patterson (1996a)	*In situ* gas pressure	GS960908312261.004	Q
	G. Patterson (1996b)	*In situ* gas pressure	GS960908312261.003	Q
	G. Patterson (1996c)	*In situ* gas pressure	GS960208312261.001	Q
	J. Rousseau (1996)	*In situ* gas pressure	GS960308312232.001	Q

Input Data for LBNL Site-Scale UZ Flow Model

TYPE OF DATA USED	DATA SOURCE/ PRINCIPAL INVEST.	GENERAL DESCRIPTION	DTN	QA Status
Temperature	J. Rousseau (1996)	*in situ* temperature – UZ#4/5, UZ-7a, NRG-6, NRG-7a, SD-12	GS960308312232.001	Q
	Sass et al., 1988	Borehole temperature logs	GS950408318523.001/ NNA.1989.0123.0010	Non-Q
Geochemical	Fabryka-Martin et al. (1996a, b)	$^{36}Cl/Cl$	MOL.19970211.0035	TBQ
	Z. Peterman (1997)	$^{87}Sr/^{86}Sr$	GS970308315215.006	Q
	Levy et al. (1997)	chloride and $^{36}Cl/Cl$	LASL831222AQ97.001	Q
	Yang et al. (1996)	chemical/isotopic data	GS970108312271.001	Q
	Peterman & Stuckless (1993)	rock chemistry	GS930108315213.005	Q
	Peterman et al. (1992)	Sr isotopes	GS920208315215.009	Q
	Carlos et al. (1995)	Fracture-coatings	MOL.19960306.0564	Q
Perched Water	G. O'Brien (1996)	G-2 pumping test	GS960508312312.006	Q
	R. Luckey (1996)	UZ-14 pumping test	GS960308312312.005	Q
Variable Infiltration Maps	Flint et al. (1996)	Infiltration rates	GS960908312211.003	Q