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Table 1 Parameter settings and matrices for non-dimensional single- and dual-media transport simulations.

Non-dimensional parameter settings

1000	L (ft)		
3	travel time (yr)		
0.91	v_m (ft/d)		
1.00E-04	ζ (1/day)	from F- and H-area experience	
1.54E-04	λ (1/day)	0.0564 λ (1/yr)	12.3 τ (yr)
0.45	θ		
0.15	θ_m	from F- and H-area experience	
0.30	θ_{im}		
0.33	ϕ		
0.137	U (ft/d)		
0.730	ζ'		
0.507	λ'		

Single-medium runs		α_L'					
no decay	λ'=0	0.02	0.05	0.10	0.20	0.50	
	0.05			SN 6			0.111
	0.15			SN 7			0.333
θ_{eff}	0.25	SN 1	SN 2	SN 3	SN 4	SN 5	0.556 ϕ
	0.35			SN 8			0.778
	0.45			SN 9			1.000

Single-medium runs		α_L'					
w/ decay	λ'=0.50	0.02	0.05	0.10	0.20	0.50	
	0.05			SD 6			0.111
	0.15			SD 7			0.333
θ_{eff}	0.25	SD 1	SD 2	SD 3	SD 4	SD 5	0.556 ϕ
	0.35			SD 8			0.778
	0.45			SD 9			1.000

Dual-media runs		ζ'					
no decay	λ'=0	0.20	0.50	1.00	2.00	5.00	
	0.05			DN 6			0.111
	0.10			DN 7			0.222
θ_m	0.15	DN 1	DN 2	DN 3	DN 4	DN 5	0.333 ϕ
	0.20			DN 8			0.444
	0.25			DN 9			0.556

Dual-media runs		ζ'					
w/ decay	λ'=0.50	0.20	0.50	1.00	2.00	5.00	
	0.05			DD 6			0.111
	0.10			DD 7			0.222
θ_m	0.15	DD 1	DD 2	DD 3	DD 4	DD 5	0.333 ϕ
	0.20			DD 8			0.444
	0.25			DD 9			0.556

Table 2 Tritium source, migration and related data for the F-area seepage basins.

F area seepage basins		0.7 factor					lambda	0.0564	12.3 tau	
Year	Activity to basin (Ci/yr)	Net activity to F basin (Ci/yr)	Liquid to basin (gpm)	Relative liquid	F migration to FMB (Ci/yr)	Annual rainfall (in)	Relative rainfall	"Exact" System activity (Ci)	"Discrete" System activity (Ci)	F extraction flux (Ci/yr)
cumulative	**292960**	**205072**			**88833**					
average	**8616**	**6032**	**68**	1	**2692**	**51**	1			
1954										
1955	293	205	24	0.36				199	205	
1956	293	205	49	0.72				388	399	
1957	293	205	28	0.41				566	582	
1958	0	0	19	0.28				535	550	
1959	5900	4130	36	0.53				4522	4650	
1960	8340	5838	73	1.08				9950	10233	
1961	10000	7000	44	0.65				16212	16673	
1962	18050	12635	87	1.29				27609	28394	
1963	17160	12012	76	1.12				37776	38850	
1964	21570	15099	106	1.56		71.7	1.40	50387	51820	
1965	16150	11305	53	0.79		44.9	0.88	58619	60286	
1966	19990	13993	56	0.83		48.1	0.94	69013	70976	
1967	11940	8358	59	0.87	2600	42.5	0.83	70830	72844	
1968	14002	9801	64	0.94	2887	34.6	0.67	73672	75767	
1969	11700	8190	98	1.45	2589	38.9	0.76	75081	77217	
1970	10940	7658	96	1.42	2592	51.4	1.00	75893	78052	
1971	4766	3336	62	0.91	2299	73.1	1.43	72743	74812	
1972	7051	4936	77	1.13	3485	44.4	0.87	70168	72163	
1973	11941	8359	105	1.54	4185	78.1	1.52	70381	72383	
1974	7500	5250	66	0.97	3176	50.1	0.98	68541	70491	
1975	3690	2583	40	0.58	2080	72.2	1.41	65275	67131	
1976	6040	4228	84	1.25	2653	54.5	1.06	63229	65028	
1977	3922	2745	74	1.09	3657	51.1	1.00	58878	60553	
1978	4763	3334	78	1.15	3454	39.6	0.77	55535	57115	
1979	5970	4179	96	1.42	2160	66.5	1.30	54456	56004	
1980	5322	3725	97	1.44	1507	44.6	0.87	53629	55154	
1981	7577	5304	136	2.01	1106	44.4	0.87	54772	56330	
1982	4540	3178	64	0.94	2770	54.1	1.06	52167	53651	
1983	7482	5237	37	0.55	2568	52.3	1.02	51904	53381	
1984	9344	6541	59	0.87	2320	48.2	0.94	53164	54677	
1985	9895	6927	75	1.11	2690	47.2	0.92	54371	55917	
1986	10232	7162	82	1.21	1770	39.8	0.78	56635	58245	
1987	13162	9213	68 assumed	1.00	2760	43.0	0.84	59806	61507	
1988	3142	2199	38	0.57	3330	36.9	0.72	55430	57006	
1989				1.00	4440	51.3	1.00	48075	49443	
1990				1.00	3570	54.0	1.05	41970	43164	
1991				1.00	5750	60.8	1.19	34079	35048	
1992				1.00	4260	58.5	1.14	28070	28868	
1993				1.00	2180	49.0	0.96	24412	25106	
1994				1.00	2880	52.1	1.02	20274	20850	
1995				1.00	2370	54.8	1.07	16858	17338	
1996				1.00	1620	46.4	0.91	14359	14768	
1997				1.00	1000	58.9	1.15	12600	12959	
1998				1.00	1477	55.0	1.07	10474	10772	
1999				1.00	648	41.5	0.81	9270	9533	
2000					*363*	41.4	0.81	8409	8648	868 <-- 3/14/00

Table 3 Tritium source, migration and related data for the H-area seepage basins.

H area seepage basins		0.7 factor					lambda	0.0564	12.3 tau	
Year	Activity to basin (Ci/yr)	Net activity to H basin (Ci/yr)	Liquid to basin (gpm)	Relative liquid	H migration to FMB (Ci/yr)	Annual rainfall (in)	Relative rainfall	"Exact" System activity (Ci)	"Discrete" System activity (Ci)	H extraction flux (Ci/yr)
cumulative	**376841**	**263789**			**156477**					
average	**11084**	**7758**	**88**	1	**3726**	**51**	1			
1954										
1955	1700	1190	24	0.27				1157	1190	
1956	1700	1190	70	0.79				2251	2315	
1957	1700	1190	68	0.77				3285	3378	
1958	5500	3850	35	0.40	400			6459	6643	
1959	5600	3920	27	0.31	800			9139	9399	
1960	4360	3052	27	0.30	1600			10050	10336	
1961	12000	8400	31	0.35	2000			15722	16170	
1962	12700	8890	58	0.66	1700			21852	22473	
1963	8240	5768	61	0.69	2700			23638	24310	
1964	6430	4501	120	1.36	4700	71.7	1.40	22149	22779	
1965	13140	9198	202	2.29	5600	44.9	0.88	24434	25129	
1966	17020	11914	103	1.17	4600	48.1	0.94	30207	31066	
1967	7610	5327	99	1.12	3000	42.5	0.83	30814	31691	
1968	20678	14475	114	1.29	2900	34.6	0.67	40380	41529	
1969	11015	7711	138	1.56	3500	38.9	0.76	42262	43464	
1970	21110	14777	154	1.74	4400	51.4	1.00	50036	51459	
1971	14160	9912	151	1.71	9500	73.1	1.43	47695	49051	
1972	15176	10623	121	1.36	5400	44.4	0.87	50160	51587	
1973	19891	13924	108	1.22	6800	78.1	1.52	54338	55884	
1974	8100	5670	100	1.13	5700	50.1	0.98	51332	52792	
1975	10144	7101	76	0.86	6800	72.2	1.41	48811	50200	
1976	15662	10963	40	0.45	4300	54.5	1.06	52616	54112	
1977	8824	6177	39	0.44	4500	51.1	1.00	51363	52824	
1978	8891	6224	66	0.74	5500	39.6	0.77	49253	50653	
1979	7511	5258	77	0.87	6700	66.5	1.30	45151	46436	
1980	8021	5615	83	0.94	5300	44.6	0.87	42983	44206	
1981	13376	9363	84	0.94	4200	44.4	0.87	45648	46947	
1982	9134	6394	80	0.91	5372	54.1	1.06	44141	45396	
1983	12952	9066	101	1.14	6500	52.3	1.02	44217	45475	
1984	11955	8369	106	1.20	8020	48.2	0.94	42133	43332	
1985	12414	8690	106	1.20	4560	47.2	0.92	43840	45087	
1986	26677	18674	107	1.21	7360	39.8	0.78	52439	53930	
1987	13599	9519	149	1.69	5630	43.0	0.84	53347	54865	
1988	9851	6896	83	0.94	3980	36.9	0.72	53259	54774	
1989				1.00	3310	51.3	1.00	47122	48463	
1990				1.00	1900	54.0	1.05	42693	43907	
1991				1.00	1810	60.8	1.19	38594	39691	
1992				1.00	1470	58.5	1.14	35050	36046	
1993				1.00	1020	49.0	0.96	32137	33051	
1994				1.00	739	52.1	1.02	29658	30501	
1995				1.00	528	54.8	1.07	27519	28302	
1996				1.00	505	46.4	0.91	25520	26246	
1997				1.00	400	58.9	1.15	23733	24408	
1998				1.00	515	55.0	1.07	21932	22556	
1999				1.00	258	41.5	0.81	20479	21062	
2000				1.00	*131*	41.4	0.81	19229	19776	519 <-- 3/14/00

Table 4 Calculation of evaporative losses of tritium from the F- and H-area seepage basins.

F-area		H-area	
Horton, Corey, Wallace calculation		Horton, Corey, Wallace calculation	
5.47	A (acres)	13.68	$A_{1,2,3,4}$ (acres)
238271.34	A (ft^2)	10.38	$A_{1,2,4}$ (acres)
68	Q (gal/min)	452149.271	A (ft^2)
13090	Q (ft^3/d)	88	Q (gal/min)
0.05493714	U (ft/d)	16940	Q (ft^3/d)
241	U (in/yr)	0.03746535	U (ft/d)
6.0E-06	β (cm/s)	164	U (in/yr)
2.2E+08	A (cm^2)	6.0E-06	β (cm/s)
4.3E+03	f (cm^3/s)	4.2E+08	A (cm^2)
0.73	$C/C_0=\exp(-\beta A/f)$	5.6E+03	f (cm^3/s)
27%	%loss	0.64	$C/C_0=\exp(-\beta A/f)$
		36%	%loss

Table 5 Multipliers to GeoTrans (1999a,b) conductivity fields.

H-area		Rech. adjust.	Bring LAZ in
Unit	Factor	Components	
UAZ	0.49	0.7	0.7
TCCZ	2	1	2
LAZ	5	1	5

F-area		Rech. adjust.	Bring LAZ in?
Unit	Factor	Components	
UAZ	0.7	0.7	1
TCCZ	1	1	1
LAZ	1	1	1

Table 6 Input parameter matrices for single-medium transport simulations.

F-area single-medium cases		Effective porosity, θ_{eff} (unitless)				
		0.20	0.25	0.30	0.35	0.40
	40	FS 1	FS 2	FS 3	FS 4	FS 5
Dispersivity	80	FS 6	FS 7	FS 8	FS 9	FS 10
α_L (ft)	160	FS 11	FS 12	FS 13	FS 14	FS 15
	320	FS 16	FS 17	FS 18	FS 19	FS 20
	640	FS 21	FS 22	FS 23	FS 24	FS 25

H-area single-medium cases		Effective porosity, θ_{eff} (unitless)				
		0.20	0.25	0.30	0.35	0.40
	12.5	HS 1	HS 2	HS 3	HS 4	HS 5
Dispersivity	25	HS 6	HS 7	HS 8	HS 9	HS 10
α_L (ft)	50	HS 11	HS 12	HS 13	HS 14	HS 15
	100	HS 16	HS 17	HS 18	HS 19	HS 20
	200	HS 21	HS 22	HS 23	HS 24	HS 25

Table 7 Input parameter matrices for dual-media transport simulations.

F-area dual-media cases		Mobile porosity, θ_m (unitless)				
		0.1	0.1414	0.2	0.2828	0.4
	2.5E-05	FD 1	FD 2	FD 3	FD 4	FD 5
Mass	5.0E-05	FD 6	FD 7	FD 8	FD 9	FD 10
ζ (d^{-1})	1.0E-04	FD 11	FD 12	FD 13	FD 14	FD 15
transfer	2.0E-04	FD 16	FD 17	FD 18	FD 19	FD 20
coefficient	4.0E-04	FD 21	FD 22	FD 23	FD 24	FD 25
		0.35	0.3086	0.25	0.167	0.05
		Immobile porosity, θ_{im} (unitless)				

H-area dual-media cases		Mobile porosity, θ_m (unitless)						
		0.025	0.0354	0.05	0.0707	0.1	0.1414	0.2
	2.5E-05	HD 1	HD 2	HD 3	HD 4	HD 5	HD 26	HD 27
Mass	5.0E-05	HD 6	HD 7	HD 8	HD 9	HD 10	HD 28	HD 29
ζ (d^{-1})	1.0E-04	HD 11	HD 12	HD 13	HD 14	HD 15	HD 30	HD 31
transfer	2.0E-04	HD 16	HD 17	HD 18	HD 19	HD 20	HD 32	HD 33
coefficient	4.0E-04	HD 21	HD 22	HD 23	HD 24	HD 25	HD 34	HD 35
		0.425	0.4146	0.40	0.379	0.35	0.309	0.25
		Immobile porosity, θ_{im} (unitless)						

Table 8 Analysis of borehole flowmeter data from RPC-2PR.

RPC-2PR

Mid-point z (ft)	Δz (ft)	K/<K>	Δz * (K/<K>)^p	Category	Mobile Δz (ft)	Immobile Δz (ft)	Avg. Immobile thickness (ft)	Weighted Avg. (ft)	p	f	min
Sum	*40.00*		*40.00*		*10.00*		*30.00*	*184.00*			
Average		*1.00*					***5.00***	***6.13***	*1.00*	*1.00*	*-999.00*
Criterion				*1.00*							
Vol. ratio					***0.25***						
270.22	0.67	1.1427	0.7618	1	0.67	0.00					
269.39	1.00	3.4634	3.4634	1	1.00	0.00					
268.39	1.00	0.9342	0.9342	0	0.00	1.00	7.00	49.00			
267.39	1.00	0.1222	0.1222	0	0.00	1.00					
266.39	1.00	-0.0174	-0.0174	0	0.00	1.00					
265.39	1.00	-0.1285	-0.1285	0	0.00	1.00					
264.39	1.00	-0.1483	-0.1483	0	0.00	1.00					
263.39	1.00	-0.0408	-0.0408	0	0.00	1.00					
262.39	1.00	0.1302	0.1302	0	0.00	1.00					
261.39	1.00	1.1661	1.1661	1	1.00	0.00					
260.39	1.00	0.6480	0.6480	0	0.00	1.00	7.00	49.00			
259.39	1.00	0.8663	0.8663	0	0.00	1.00					
258.39	1.00	0.4745	0.4745	0	0.00	1.00					
257.39	1.00	-0.2065	-0.2065	0	0.00	1.00					
256.39	1.00	0.5564	0.5564	0	0.00	1.00					
255.39	1.00	-0.0572	-0.0572	0	0.00	1.00					
254.39	1.00	-0.0256	-0.0256	0	0.00	1.00					
253.39	1.00	2.4041	2.4041	1	1.00	0.00					
252.39	1.00	1.4529	1.4529	1	1.00	0.00					
251.39	1.00	0.8452	0.8452	0	0.00	1.00	8.00	64.00			
250.39	1.00	0.9280	0.9280	0	0.00	1.00					
249.39	1.00	0.5038	0.5038	0	0.00	1.00					
248.39	1.00	0.3975	0.3975	0	0.00	1.00					
247.39	1.00	0.4574	0.4574	0	0.00	1.00					
246.39	1.00	0.2478	0.2478	0	0.00	1.00					
245.39	1.00	0.0127	0.0127	0	0.00	1.00					
244.39	1.00	0.8451	0.8451	0	0.00	1.00					
243.39	1.00	1.6987	1.6987	1	1.00	0.00					
242.39	1.00	0.6578	0.6578	0	0.00	1.00	3.00	9.00			
241.39	1.00	0.2558	0.2558	0	0.00	1.00					
240.39	1.00	0.8269	0.8269	0	0.00	1.00					
239.39	1.00	3.7203	3.7203	1	1.00	0.00					
238.39	1.00	5.7342	5.7342	1	1.00	0.00					
237.39	1.00	0.5342	0.5342	0	0.00	1.00	3.00	9.00			
236.39	1.00	0.5989	0.5989	0	0.00	1.00					
235.39	1.00	0.6573	0.6573	0	0.00	1.00					
234.39	1.00	2.5291	2.5291	1	1.00	0.00					
233.39	1.00	5.0021	5.0021	1	1.00	0.00					
232.39	1.00	0.2770	0.2770	0	0.00	1.00	2.00	4.00			
231.39	1.00	0.2018	0.2018	0	0.00	1.00					
230.72	0.33	2.1381	0.7127	1	0.33	0.00					

Table 9 Analysis of borehole flowmeter data from RPT-2PW.

RPT-2PW

Mid-point z (ft)	Δz (ft)	K/<K>	Δz * (K/<K>)^p	Category	Mobile Δz (ft)	Immobile Δz (ft)	Avg. Immobile thickness (ft)	Weighted Avg. (ft)	p	f	min
Sum	*15.00*		*15.00*		*6.00*		*6.00*	*18.00*			
Average		*1.00*					***2.00***	***3.00***	*1.00*	*1.00*	*-999.00*
Criterion				*1.00*							
Vol. ratio					***0.40***						
208.83	1.00	0.9820	0.9787	0	0.00	1.00					
207.83	1.00	2.0087	2.0087	1	1.00	0.00					
206.83	1.00	0.4840	0.4840	0	0.00	1.00	1.00	1.00			
205.83	1.00	1.0980	1.0980	1	1.00	0.00					
204.83	1.00	0.9342	0.9342	0	0.00	1.00	4.00	16.00			
203.83	1.00	0.9052	0.9052	0	0.00	1.00					
202.83	1.00	0.5071	0.5071	0	0.00	1.00					
201.83	1.00	0.7507	0.7507	0	0.00	1.00					
200.83	1.00	1.1091	1.1091	1	1.00	0.00					
199.83	1.00	1.3406	1.3406	1	1.00	0.00					
198.83	1.00	0.9942	0.9942	0	0.00	1.00	1.00	1.00			
197.83	1.00	1.1190	1.1190	1	1.00	0.00					
196.83	1.00	2.5327	2.5327	1	1.00	0.00					
195.83	1.00	0.1437	0.1437	0	0.00	1.00					
195.12	0.42	0.0210	0.0088	0	0.00	0.42					
194.62	0.58	0.1416	0.0821	0	0.00	0.58					

Table 10 Analysis of borehole flowmeter data from RPT-30PZ.

RPT-30PZ

Mid-point z (ft)	Δz (ft)	K/<K>	Δz * (K/<K>)^p	Category	Mobile Δz (ft)	Immobile Δz (ft)	Avg. Immobile thickness (ft)	Weighted Avg. (ft)	p	f	min
Sum	*29.17*		*29.17*		*10.17*		*19.00*	*103.00*			
Average		*1.00*					***3.80***	***5.42***	*1.00*	*1.00*	*-999.00*
Criterion				*1.00*							
Vol. ratio					***0.35***						
259.78	3.17	1.6042	5.0854	1	3.17	0.00					
257.69	1.00	-1.5646	-1.5646	0	0.00	1.00	7.00	49.00			
256.69	1.00	0.1004	0.1004	0	0.00	1.00					
255.69	1.00	-0.3666	-0.3666	0	0.00	1.00					
254.69	1.00	0.2334	0.2334	0	0.00	1.00					
253.69	1.00	-1.6222	-1.6222	0	0.00	1.00					
252.69	1.00	-0.0323	-0.0323	0	0.00	1.00					
251.69	1.00	-0.5447	-0.5447	0	0.00	1.00					
250.69	1.00	2.1452	2.1452	1	1.00	0.00					
249.69	1.00	0.5006	0.5006	0	0.00	1.00	1.00	1.00			
248.69	1.00	1.0549	1.0549	1	1.00	0.00					
247.69	1.00	0.8332	0.8332	0	0.00	1.00	6.00	36.00			
246.69	1.00	-0.3102	-0.3102	0	0.00	1.00					
245.69	1.00	-0.3430	-0.3430	0	0.00	1.00					
244.69	1.00	0.1671	0.1671	0	0.00	1.00					
243.69	1.00	0.3218	0.3218	0	0.00	1.00					
242.69	1.00	0.2448	0.2448	0	0.00	1.00					
241.69	1.00	1.1103	1.1103	1	1.00	0.00					
240.69	1.00	0.9766	0.9766	0	0.00	1.00	4.00	16.00			
239.69	1.00	0.5547	0.5547	0	0.00	1.00					
238.69	1.00	0.4880	0.4880	0	0.00	1.00					
237.69	1.00	0.9403	0.9403	0	0.00	1.00					
236.69	1.00	6.1702	6.1702	1	1.00	0.00					
235.69	1.00	3.7106	3.7106	1	1.00	0.00					
234.69	1.00	0.5387	0.5387	0	0.00	1.00	1.00	1.00			
233.69	1.00	1.1103	1.1103	1	1.00	0.00					
232.69	1.00	7.6672	7.6672	1	1.00	0.00					

Table 11 Analysis of borehole flowmeter data from RPT-3PW.

RPT-3PW

Mid-point z (ft)	Δz (ft)	K/<K>	Δz * (K/<K>)^p	Category	Mobile Δz (ft)	Immobile Δz (ft)	Avg. Immobile thickness (ft)	Weighted Avg. (ft)	p	f	min
Sum	*40.00*		*40.00*		*16.00*		*24.00*	*168.00*			
Average		*1.00*					***4.80***	***7.00***	*1.00*	*1.00*	*-999.00*
Criterion				*1.00*							
Vol. ratio					***0.40***						
137.83	0.96	1.0069	0.9633	1	0.96	0.00					
136.85	1.00	-0.1096	-0.1096	0	0.00	1.00	5.00	25.00			
135.85	1.00	0.2402	0.2402	0	0.00	1.00					
134.85	1.00	0.8713	0.8713	0	0.00	1.00					
133.85	1.00	-0.2303	-0.2303	0	0.00	1.00					
132.85	1.00	0.3487	0.3487	0	0.00	1.00					
131.85	1.00	1.0163	1.0163	1	1.00	0.00					
130.85	1.00	2.3703	2.3703	1	1.00	0.00					
129.85	1.00	4.3377	4.3377	1	1.00	0.00					
128.85	1.00	4.6135	4.6135	1	1.00	0.00					
127.85	1.00	3.4876	3.4876	1	1.00	0.00					
126.85	1.00	1.0276	1.0276	1	1.00	0.00					
125.85	1.00	-0.0431	-0.0431	0	0.00	1.00	11.00	121.00			
124.85	1.00	0.3088	0.3088	0	0.00	1.00					
123.85	1.00	-0.0088	-0.0088	0	0.00	1.00					
122.85	1.00	0.3830	0.3830	0	0.00	1.00					
121.85	1.00	0.0355	0.0355	0	0.00	1.00					
120.85	1.00	0.5878	0.5878	0	0.00	1.00					
119.85	1.00	0.0953	0.0953	0	0.00	1.00					
118.85	1.00	0.0708	0.0708	0	0.00	1.00					
117.85	1.00	0.0453	0.0453	0	0.00	1.00					
116.85	1.00	-0.1019	-0.1019	0	0.00	1.00					
115.85	1.00	0.7172	0.7172	0	0.00	1.00					
114.85	1.00	1.1235	1.1235	1	1.00	0.00					
113.85	1.00	0.8866	0.8866	0	0.00	1.00	3.00	9.00			
112.85	1.00	0.5080	0.5080	0	0.00	1.00					
111.85	1.00	0.6253	0.6253	0	0.00	1.00					
110.85	1.00	1.0272	1.0272	1	1.00	0.00					
109.85	1.00	1.6869	1.6869	1	1.00	0.00					
108.85	1.00	1.8530	1.8530	1	1.00	0.00					
107.85	1.00	1.5696	1.5696	1	1.00	0.00					
106.85	1.00	0.3775	0.3775	0	0.00	1.00	3.00	9.00			
105.85	1.00	0.2070	0.2070	0	0.00	1.00					
104.85	1.00	0.7361	0.7361	0	0.00	1.00					
103.85	1.00	1.7145	1.7145	1	1.00	0.00					
102.85	1.00	1.6935	1.6935	1	1.00	0.00					
101.85	1.00	1.4789	1.4789	1	1.00	0.00					
100.85	1.00	0.6000	0.6000	0	0.00	1.00	2.00	4.00			
99.85	1.00	0.9454	0.9454	0	0.00	1.00					
98.83	1.04	1.8627	1.9372	1	1.04	0.00					

Table 12 Analysis of borehole flowmeter data from RPC-3PW.

RPC-3PW 5ft

Mid-point z (ft)	Δz (ft)	K/<K>	Δz * (K/<K>)^p	Category	Mobile Δz (ft)	Immobile Δz (ft)	Avg. Immobile thickness (ft)	Weighted Avg. (ft)	p	f	min
Sum	*40.00*		*40.00*		*10.73*		*29.27*	*856.54*			
Average		*1.00*					***29.27***	***29.27***	*1.00*	*1.00*	*-999.00*
Criterion				*1.00*							
Vol. ratio					***0.27***						
200.11	4.27	0.1019	0.4349	0	0.00	4.27	29.27	856.54			
195.48	5.00	-0.0055	-0.0274	0	0.00	5.00					
190.48	5.00	0.0549	0.2744	0	0.00	5.00					
185.48	5.00	0.5743	2.8715	0	0.00	5.00					
180.48	5.00	0.1978	0.9891	0	0.00	5.00					
175.48	5.00	0.2922	1.4611	0	0.00	5.00					
170.48	5.00	2.0210	10.1050	1	5.00	0.00					
165.11	5.73	4.1671	23.8916	1	5.73	0.00					

Table 13 Analysis of borehole flowmeter data from SWP-300A.

SWP-300A 2ft

Mid-point z (ft)	Δz (ft)	K/<K>	Δz * (K/<K>)^p	Category	Mobile Δz (ft)	Immobile Δz (ft)	Avg. Immobile thickness (ft)	Weighted Avg. (ft)	p	f	min
Sum	*40.01*		*40.01*		*10.03*		*29.98*	*690.79*			
Average		*1.00*					***14.99***	***23.04***	*1.00*	*1.00*	*-999.00*
Criterion				*1.00*							
Vol. ratio					***0.25***						
105.18	1.98	-0.0203	-0.0400	0	0.00	1.98	25.98	674.79			
103.19	2.00	0.1255	0.2511	0	0.00	2.00					
101.19	2.00	0.0519	0.1038	0	0.00	2.00					
99.19	2.00	0.3114	0.6227	0	0.00	2.00					
97.19	2.00	-0.0069	-0.0137	0	0.00	2.00					
95.19	2.00	0.7343	1.4685	0	0.00	2.00					
93.19	2.00	0.2573	0.5147	0	0.00	2.00					
91.19	2.00	0.1410	0.2819	0	0.00	2.00					
89.19	2.00	0.0119	0.0239	0	0.00	2.00					
87.19	2.00	0.1626	0.3252	0	0.00	2.00					
85.19	2.00	0.5435	1.0871	0	0.00	2.00					
83.19	2.00	0.5584	1.1168	0	0.00	2.00					
81.19	2.00	0.5680	1.1360	0	0.00	2.00					
79.19	2.00	4.2224	8.4447	1	2.00	0.00					
77.19	2.00	0.2198	0.4396	0	0.00	2.00	4.00	16.00			
75.19	2.00	0.5094	1.0187	0	0.00	2.00					
73.19	2.00	1.2721	2.5442	1	2.00	0.00					
70.54	3.30	4.9797	16.4329	1	3.30	0.00					
67.52	2.73	1.5556	4.2520	1	2.73	0.00					

Table 14 Analysis of borehole flowmeter data from SWP-200C.

SWP-200C 2ft

Mid-point z (ft)	Δz (ft)	K/<K>	Δz * (K/<K>)^p	Category	Mobile Δz (ft)	Immobile Δz (ft)	Avg. Immobile thickness (ft)	Weighted Avg. (ft)	p	f	min
Sum	*59.99*		*59.99*		*14.00*		*44.04*	*842.26*			
Average		*1.00*					***14.68***	***19.12***	*1.00*	*1.00*	*-999.00*
Criterion				*1.00*							
Vol. ratio					***0.23***						
179.29	1.95	0.3988	0.7763	0	0.00	1.95					
177.32	2.00	2.6120	5.2240	1	2.00	0.00					
175.32	2.00	-2.6348	-5.2695	0	0.00	2.00	10.00	100.00			
173.32	2.00	0.8384	1.6768	0	0.00	2.00					
171.32	2.00	-1.4924	-2.9847	0	0.00	2.00					
169.32	2.00	-0.4479	-0.8958	0	0.00	2.00					
167.32	2.00	0.4766	0.9532	0	0.00	2.00					
165.32	2.00	1.8655	3.7309	1	2.00	0.00					
163.32	2.00	2.3212	4.6424	1	2.00	0.00					
161.32	2.00	8.2657	16.5314	1	2.00	0.00					
159.32	2.00	3.4566	6.9131	1	2.00	0.00					
157.32	2.00	0.2698	0.5396	0	0.00	2.00	8.00	64.00			
155.32	2.00	0.9311	1.8622	0	0.00	2.00					
153.32	2.00	-0.2546	-0.5091	0	0.00	2.00					
151.32	2.00	0.5206	1.0413	0	0.00	2.00					
149.32	2.00	3.2696	6.5392	1	2.00	0.00					
147.32	2.00	7.6833	15.3667	1	2.00	0.00					
145.32	2.00	0.3332	0.6664	0	0.00	2.00	26.04	678.26			
143.32	2.00	-0.0432	-0.0863	0	0.00	2.00					
141.32	2.00	0.5947	1.1894	0	0.00	2.00					
139.32	2.00	0.1010	0.2019	0	0.00	2.00					
137.32	2.00	0.0309	0.0618	0	0.00	2.00					
135.32	2.00	-0.1912	-0.3824	0	0.00	2.00					
133.32	2.00	-0.1748	-0.3497	0	0.00	2.00					
131.32	2.00	0.2361	0.4721	0	0.00	2.00					
129.32	2.00	0.1629	0.3259	0	0.00	2.00					
127.32	2.00	0.1987	0.3975	0	0.00	2.00					
125.32	2.00	-0.0517	-0.1033	0	0.00	2.00					
123.32	2.00	0.1181	0.2363	0	0.00	2.00					
121.30	2.04	0.5983	1.2225	0	0.00	2.04					

Table 15 Analysis of borehole flowmeter data from SWP-100D.

SWP-100D 2ft

Mid-point z (ft)	Δz (ft)	K/<K>	Δz * (K/<K>)^p	Category	Mobile Δz (ft)	Immobile Δz (ft)	Avg. Immobile thickness (ft)	Weighted Avg. (ft)	p	f	min
Sum	*21.03*		*21.03*		*6.03*		*15.00*	*225.00*			
Average		*1.00*					***15.00***	***15.00***	*1.00*	*1.00*	*-999.00*
Criterion				*1.00*							
Vol. ratio					***0.29***						
212.47	3.00	0.7128	2.1383	0	0.00	3.00	15.00	225.00			
209.47	3.00	0.4564	1.3691	0	0.00	3.00					
206.47	3.00	0.0579	0.1737	0	0.00	3.00					
203.47	3.00	0.9493	2.8479	0	0.00	3.00					
200.47	3.00	0.7283	2.1850	0	0.00	3.00					
197.47	3.00	1.3874	4.1622	1	3.00	0.00					
194.45	3.03	2.6891	8.1571	1	3.03	0.00					

Table 16 Analysis of borehole flowmeter data from DCB-25.

DCB-25

Mid-point z (ft)	Δz (ft)	K/<K>	Δz * (K/<K>)^p	Category	Mobile Δz (ft)	Immobile Δz (ft)	Avg. Immobile thickness (ft)	Weighted Avg. (ft)	p	f	min
Sum	*43.76*		*43.76*		*12.00*		*26.30*	*224.09*			
Average		*1.00*					***6.58***	***8.52***	*1.00*	*1.00*	*-999.00*
Criterion				*1.00*							
Vol. ratio					***0.27***						
110.07	4.46	0.5132	2.2890	0	0.00	4.46					
107.34	1.00	0.8079	0.8079	0	0.00	1.00					
106.34	1.00	4.2189	4.2189	1	1.00	0.00					
105.34	1.00	6.9567	6.9567	1	1.00	0.00					
104.34	1.00	5.8795	5.8795	1	1.00	0.00					
103.34	1.00	2.1543	2.1543	1	1.00	0.00					
102.34	1.00	1.6606	1.6606	1	1.00	0.00					
101.34	1.00	0.6283	0.6283	0	0.00	1.00	1.00	1.00			
100.34	1.00	2.2890	2.2890	1	1.00	0.00					
99.34	1.00	0.6732	0.6732	0	0.00	1.00	6.00	36.00			
98.34	1.00	-0.8528	-0.8528	0	0.00	1.00					
97.34	1.00	0.3591	0.3591	0	0.00	1.00					
96.34	1.00	-0.0449	-0.0449	0	0.00	1.00					
95.34	1.00	0.8528	0.8528	0	0.00	1.00					
94.34	1.00	-1.0772	-1.0772	0	0.00	1.00					
93.34	1.00	1.0323	1.0323	1	1.00	0.00					
92.34	1.00	2.8500	2.8500	1	1.00	0.00					
91.34	1.00	3.8823	3.8823	1	1.00	0.00					
90.34	1.00	1.4811	1.4811	1	1.00	0.00					
89.34	1.00	1.6158	1.6158	1	1.00	0.00					
88.34	1.00	0.6283	0.6283	0	0.00	1.00	9.00	81.00			
87.34	1.00	0.1122	0.1122	0	0.00	1.00					
86.34	1.00	-0.1122	-0.1122	0	0.00	1.00					
85.34	1.00	0.0000	0.0000	0	0.00	1.00					
84.34	1.00	0.1346	0.1346	0	0.00	1.00					
83.34	1.00	0.2244	0.2244	0	0.00	1.00					
82.34	1.00	0.4488	0.4488	0	0.00	1.00					
81.34	1.00	0.2693	0.2693	0	0.00	1.00					
80.34	1.00	0.2693	0.2693	0	0.00	1.00					
79.34	1.00	1.2791	1.2791	1	1.00	0.00					
78.34	1.00	0.8303	0.8303	0	0.00	1.00	10.30	106.09			
77.34	1.00	0.4488	0.4488	0	0.00	1.00					
76.34	1.00	0.0673	0.0673	0	0.00	1.00					
75.34	1.00	0.1346	0.1346	0	0.00	1.00					
74.34	1.00	0.0898	0.0898	0	0.00	1.00					
73.34	1.00	0.4264	0.4264	0	0.00	1.00					
72.34	1.00	0.2693	0.2693	0	0.00	1.00					
71.34	1.00	0.1795	0.1795	0	0.00	1.00					
70.34	1.00	0.1795	0.1795	0	0.00	1.00					
69.34	1.00	0.0898	0.0898	0	0.00	1.00					
68.69	0.30	0.4488	0.1346	0	0.00	0.30					

Table 17 Analysis of borehole flowmeter data from P26-M1.

P26-M1 6.2L

Mid-point z (ft)	Δz (ft)	K/<K>	Δz * (K/<K>)^p	Category	Mobile Δz (ft)	Immobile Δz (ft)	Avg. Immobile thickness (ft)	Weighted Avg. (ft)	p	f	min
Sum	*44.00*		*45.17*		*22.00*		*16.00*	*88.00*			
Average		*1.03*					***4.00***	***5.50***	*1.00*	*1.00*	*-999.00*
Criterion				*1.03*							
Vol. ratio					***0.50***						
142.00	2.00	0.01	0.0296	0	0.00	2.00					
140.00	2.00	1.36	2.7111	1	2.00	0.00					
138.00	2.00	0.67	1.3407	0	0.00	2.00	2.00	4.00			
136.00	2.00	1.08	2.1556	1	2.00	0.00					
134.00	2.00	2.67	5.3407	1	2.00	0.00					
132.00	2.00	1.43	2.8593	1	2.00	0.00					
130.00	2.00	2.34	4.6741	1	2.00	0.00					
128.00	2.00	0.33	0.6593	0	0.00	2.00	8.00	64.00			
126.00	2.00	0.48	0.9630	0	0.00	2.00					
124.00	2.00	0.38	0.7556	0	0.00	2.00					
122.00	2.00	0.64	1.2889	0	0.00	2.00					
120.00	2.00	1.09	2.1704	1	2.00	0.00					
118.00	2.00	1.28	2.5556	1	2.00	0.00					
116.00	2.00	1.29	2.5778	1	2.00	0.00					
114.00	2.00	0.97	1.9333	0	0.00	2.00	2.00	4.00			
112.00	2.00	1.37	2.7481	1	2.00	0.00					
110.00	2.00	1.78	3.5630	1	2.00	0.00					
108.00	2.00	0.12	0.2444	0	0.00	2.00	4.00	16.00			
106.00	2.00	0.50	0.9926	0	0.00	2.00					
104.00	2.00	1.54	3.0815	1	2.00	0.00					
102.00	2.00	0.70	1.4000	0	0.00	2.00					
100.00	2.00	0.56	1.1259	0	0.00	2.00					

Table 18 Analysis of borehole flowmeter data from P26-M2.

P26-M2 5.2L

Mid-point z (ft)	Δz (ft)	K/<K>	Δz * (K/<K>)^p	Category	Mobile Δz (ft)	Immobile Δz (ft)	Avg. Immobile thickness (ft)	Weighted Avg. (ft)	p	f	min
Sum	*42.00*		*45.63*		*20.00*		*12.00*	*72.00*			
Average		*1.09*					***4.00***	***6.00***	*1.00*	*1.00*	*-999.00*
Criterion				*1.09*							
Vol. ratio					***0.48***						
138.00	2.00	0.61	1.2208	0	0.00	2.00					
136.00	2.00	0.83	1.6631	0	0.00	2.00					
134.00	2.00	1.28	2.5654	1	2.00	0.00					
132.00	2.00	1.34	2.6804	1	2.00	0.00					
130.00	2.00	1.90	3.7950	1	2.00	0.00					
128.00	2.00	1.66	3.3262	1	2.00	0.00					
126.00	2.00	1.09	2.1762	1	2.00	0.00					
124.00	2.00	0.40	0.7962	0	0.00	2.00	2.00	4.00			
122.00	2.00	1.12	2.2381	1	2.00	0.00					
120.00	2.00	0.88	1.7604	0	0.00	2.00	2.00	4.00			
118.00	2.00	1.23	2.4504	1	2.00	0.00					
116.00	2.00	2.34	4.6885	1	2.00	0.00					
114.00	2.00	2.03	4.0604	1	2.00	0.00					
112.00	2.00	0.87	1.7427	0	0.00	2.00	8.00	64.00			
110.00	2.00	1.05	2.1054	0	0.00	2.00					
108.00	2.00	0.75	1.5038	0	0.00	2.00					
106.00	2.00	0.08	0.1592	0	0.00	2.00					
104.00	2.00	1.73	3.4588	1	2.00	0.00					
102.00	2.00	1.00	1.9992	0	0.00	2.00					
100.00	2.00	0.57	1.1412	0	0.00	2.00					
98.00	2.00	0.05	0.0973	0	0.00	2.00					

Table 19 Summary of borehole flowmeter analyses.

Borehole	Zone	Volume Ratio	All	UTR	GAU	Immobile Region Thickness (ft)	All	UTR	GAU	Weighted Avg. Thickness (ft)	All	UTR	GAU
RPC-2PR	TZ	0.25	0.25	0.25		5.00	5.00	5.00		6.13	6.13	6.13	
RPT-2PW	TZ	0.40	0.40	0.40		2.00	2.00	2.00		3.00	3.00	3.00	
RPT-30PZ	A/AA	0.35	0.35	0.35		3.80	3.80	3.80		5.42	5.42	5.42	
RPT-3PW	LAZ	0.40	0.40	0.40		4.80	4.80	4.80		7.00	7.00	7.00	
RPC-3PW 5ft	LAZ	0.27	0.27	0.27		29.27				29.27			
SWP-300A 1ft	GAU	0.25	0.25		0.25	9.99	9.99		9.99	21.38	21.38		21.38
SWP-300A 2ft	GAU	0.25				14.99				23.04			
SWP-200C 2ft	LAZ	0.23	0.23	0.23		14.68	14.68	14.68		19.12	19.12	19.12	
SWP-200C 6ft	LAZ	0.30				14.00				18.02			
SWP-100D 1ft	UAZ	0.52				2.00				2.00			
SWP-100D 2ft	UAZ	0.29	0.29	0.29		15.00	15.00	15.00		15.00	15.00	15.00	
DCB-25	UTR	0.27	0.27	0.27		6.58	6.58	6.58		8.52	8.52	8.52	
P26-M1 6.2L		0.50	0.50		0.50	4.00	4.00		4.00	5.50	5.50		5.50
P26-M2 5.2L		0.48				4.00				6.00			
Averages			**0.32**	**0.31**	**0.38**		**7.3**	**7.4**	**7.0**		**10.1**	**9.2**	**13.4**

Table 20 Mobile-immobile volume fraction estimates based on effective conductivity concept

Ln	extrapolation		eff K concept						extrapolation			MADE-2
μ=log(K)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ph	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
sigma	0.00	0.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00	2.121
variance	0.00	0.25	1.00	2.25	4.00	6.25	9.00	12.25	16.00	20.25	25.00	4.50
mean K	1.00E+00	1.13E+00	1.65E+00	3.08E+00	7.39E+00	2.28E+01	9.00E+01	4.57E+02	2.98E+03	2.50E+04	2.68E+05	9.48E+00
median K	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
mode K	1.00E+00	7.79E-01	3.68E-01	1.05E-01	1.83E-02	1.93E-03	1.23E-04	4.79E-06	1.13E-07	1.61E-09	1.39E-11	1.11E-02
effective K	1.00E+00	1.11E+00	1.51E+00	2.54E+00	5.26E+00	1.34E+01	4.19E+01	1.61E+02	7.65E+02	4.46E+03	3.20E+04	6.47E+00
log(mean K)	0.00	0.13	0.50	1.13	2.00	3.13	4.50	6.13	8.00	10.13	12.50	2.25
log(median K)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
log(mode K)	0.00	-0.25	-1.00	-2.25	-4.00	-6.25	-9.00	-12.25	-16.00	-20.25	-25.00	-4.50
log(effective K)	0.00	0.10	0.42	0.93	1.66	2.59	3.74	5.08	6.64	8.40	10.38	1.87
zscore mean K	0.00	0.25	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50	1.06
zscore median K	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
zscore mode K	0.00	-0.50	-1.00	-1.50	-2.00	-2.50	-3.00	-3.50	-4.00	-4.50	-5.00	-2.12
zscore effective K	0.00	0.21	0.42	0.62	0.83	1.04	1.25	1.45	1.66	1.87	2.08	0.88
P(z< zscore mean K)	0.50	0.60	0.69	0.77	0.84	0.89	0.93	0.96	0.98	0.99	0.99	0.86
P(z< zscore median K)	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
P(z< zscore mode K)	0.50	0.31	0.16	0.07	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.02
P(z< zscore effective K)	0.50	0.58	0.66	0.73	0.80	0.85	0.89	0.93	0.95	0.97	0.98	0.81
ϕ_m	0.500	0.582	0.661	0.733	0.797	0.850	0.893	0.927	0.952	0.969	0.981	0.811
ϕ_m	0.500	0.418	0.339	0.267	0.203	0.150	0.107	0.073	0.048	0.031	0.019	0.189

8 ρ
63 ρ^2-1
7.937254 sqrt(ρ^2-1)
0.084565 g_{11}
0.83087 p_h

Table 21 First-order mass transfer coefficient estimation assuming pure diffusion.

L (cm)	θ	θ_m/θ	D (cm^2/s)	tortuosity
125	0.4	0.125	1.00E-05	0.10

θ_{im}	D* (cm^2/s)		β (d^{-1})	$\alpha=\beta/\theta_{im}$ (d^{-1})
0.35	1.00E-06	FZ&M	0.000600	0.001959
		H&G	0.003369	0.011000

$\tau=D^*t/L^2$	t(s)	t (d)	t (yr)	β (d^{-1})	$\alpha=\beta/\theta_{im}$ (d^{-1})	$u_{bar}=(C_{bar}-C_{inf})/(C_i-C_{inf})$
4.04E-02	6.3E+08	7300	20	0.000020	0.000057	0.547

	m	β_m	β_m^2	$\exp(-\beta_m^2\tau)$	$\exp(-\beta_m^2\tau)/\beta_m^2$
sum				6.99E-01	6.83E-02
	0	3.14E+00	9.87E+00	6.71E-01	6.80E-02
	1	9.42E+00	8.88E+01	2.77E-02	3.12E-04
	2	1.57E+01	2.47E+02	4.73E-05	1.92E-07
	3	2.20E+01	4.84E+02	3.33E-09	6.88E-12
	4	2.83E+01	7.99E+02	9.67E-15	1.21E-17
	5	3.46E+01	1.19E+03	1.16E-21	9.71E-25
	6	4.08E+01	1.67E+03	5.75E-30	3.44E-33
	7	4.71E+01	2.22E+03	1.18E-39	5.29E-43
	8	5.34E+01	2.85E+03	9.92E-51	3.48E-54
	9	5.97E+01	3.56E+03	3.46E-63	9.71E-67
	10	6.60E+01	4.35E+03	4.98E-77	1.14E-80
	11	7.23E+01	5.22E+03	2.96E-92	5.67E-96
	12	7.85E+01	6.17E+03	7.27E-109	1.18E-112
	13	8.48E+01	7.19E+03	7.36E-127	1.02E-130
	14	9.11E+01	8.30E+03	3.08E-146	3.71E-150
	15	9.74E+01	9.48E+03	5.32E-167	5.61E-171
	16	1.04E+02	1.07E+04	3.80E-189	3.53E-193
	17	1.10E+02	1.21E+04	1.12E-212	9.25E-217
	18	1.16E+02	1.35E+04	1.36E-237	1.01E-241
	19	1.23E+02	1.50E+04	6.82E-264	4.54E-268
	20	1.29E+02	1.66E+04	1.41E-291	8.52E-296
	21	1.35E+02	1.82E+04	0.00E+00	0.00E+00
	22	1.41E+02	2.00E+04	0.00E+00	0.00E+00
	23	1.48E+02	2.18E+04	0.00E+00	0.00E+00
	24	1.54E+02	2.37E+04	0.00E+00	0.00E+00
	25	1.60E+02	2.57E+04	0.00E+00	0.00E+00
	26	1.67E+02	2.77E+04	0.00E+00	0.00E+00
	27	1.73E+02	2.99E+04	0.00E+00	0.00E+00
	28	1.79E+02	3.21E+04	0.00E+00	0.00E+00
	29	1.85E+02	3.44E+04	0.00E+00	0.00E+00
	30	1.92E+02	3.67E+04	0.00E+00	0.00E+00
	31	1.98E+02	3.92E+04	0.00E+00	0.00E+00
	32	2.04E+02	4.17E+04	0.00E+00	0.00E+00
	33	2.10E+02	4.43E+04	0.00E+00	0.00E+00
	34	2.17E+02	4.70E+04	0.00E+00	0.00E+00

Table 22 First-order mass transfer coefficient estimation assuming pure advection.

L_z (cm)	K_v (cm/s)	dh/dz	θ	θ_m/θ
125	1.00E-05	0.01	0.4	0.125

u_z (cm/s)	θ_{im}		β (d^{-1})	$\alpha=\beta/\theta_{im}$ (d^{-1})
1.00E-07	0.35	FZ&M	0.0006	0.0020
		H&G	0.0034	0.0110

t_b (s)	t_b (d)	t_b (yr)	dt
4.38E+08	5064	13.9	2

t (s)	t (d)	t (yr)	β (d^{-1})	$\alpha=\beta/\theta_{im}$ (d^{-1})
0.0E+00	0	0	0.0001	0.0002
6.3E+07	730	2.0	0.0001	0.0002
1.3E+08	1460	4.0	0.0001	0.0003
1.9E+08	2190	6.0	0.0001	0.0003
2.5E+08	2920	8.0	0.0002	0.0005
3.2E+08	3650	10.0	0.0002	0.0007
3.8E+08	4380	12.0	0.0005	0.0015
4.3E+08	5013	13.7	0.0069	0.0197
4.3E+08	5013	13.7	0.0069	0.0197
4.3E+08	5013	13.7	0.0069	0.0197
4.3E+08	5013	13.7	0.0069	0.0197
4.3E+08	5013	13.7	0.0069	0.0197
4.3E+08	5013	13.7	0.0069	0.0197
4.3E+08	5013	13.7	0.0069	0.0197
4.3E+08	5013	13.7	0.0069	0.0197
4.3E+08	5013	13.7	0.0069	0.0197
4.3E+08	5013	13.7	0.0069	0.0197
4.3E+08	5013	13.7	0.0069	0.0197
4.3E+08	5013	13.7	0.0069	0.0197
4.3E+08	5013	13.7	0.0069	0.0197
4.3E+08	5013	13.7	0.0069	0.0197