

Appendix B: Sample Output File

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*****  
** Beginning of BRAGFLO      Version: 4.00      Revised: 01/21/96  **  
** Begun on: 01/25/96 at 16:19:05  Run on: LARRY - ALPHA AXP OpenVMS V6.1 **  
*****
```

```
BBBBBB  RRRRRR  AAAAA  GGGGG  FFFFFFF  LL      OOOOO  
BB  BB  RR  RR  AA  AA  GG  GG  FF  LL  OO  OO  
BB  BB  RR  RR  AA  AA  GG  FF  LL  OO  OO  
BBBBBB  RRRRRR  AAAAAA  GG  FFFF  LL  OO  OO  
BB  BB  RRRRR  AA  AA  GG  GG  FF  LL  OO  OO  
BB  BB  RR  RR  AA  AA  GG  GG  FF  LL  OO  OO  
BBBBBB  RR  RR  AA  AA  GGGGG  FF  LLLLLL  OOOOO
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QA -- QA info for:
PREBRAG -- program name:
6.00 -- PREBRAG version number:
01/21/96 -- PREBRAG revision date:
01/24/96 -- PREBRAG run date:
11:16:45 -- PREBRAG run time.

Number of file names to follow = 5

Input File Name:
WPSTESTROOT:[BF2.TEST]BF2_NMVP_MED_2.INP:2

ASCII Output File Name:
WPSTESTROOT:[BF2.TEST]BF2_NMVP_MED_2.OUT:1

ASCII Summary File Name:
WPSTESTROOT:[BF2.TEST]BF2_NMVP_MED_2.SUM:1

Binary Output File Name:
WPSTESTROOT:[BF2.TEST]BF2_NMVP_MED_2.BIN:1

Restart Output File Name:
WPSTESTROOT:[BF2.TEST]BF2_NMVP_MED_2.ROT:1

Simulation title:
1996 BRAGFLO CASE 2: MEDIAN UNDISTURBED NO MIGRATION VARIANCE PETITION CALCULATION

Size parameters: NX, NY, NZ
33 31 1

Number of grid blocks = 1023

Model Type (MODTYPE) = 2-Dimensional

Parameters for adjusting DELT:
 Number of times to fix DELT (NDTIFIX) = 7
 TIMEDTIFIX = Time for fixing DELT, s
 DTIFIX = DELT to be used when TIMEDTIFIX is exceeded, s

K	TIMEDTIFIX(K)	DTIFIX(K)
1	0.000000E+00	8.640000E-02
2	3.155700E-08	8.640000E-02
3	7.889200E-08	8.640000E-02
4	1.577800E-09	8.640000E-02
5	3.155700E-09	8.640000E-02
6	6.311400E-09	8.640000E-02
7	1.262300E+10	8.640000E-02

UNITS used in input:
 SI

UNITS used in output:
 SI

Start time of simulation (START) = -1.57790E-08 s
 End time for simulation (FINISH) = 3.15570E-11 s
 Max no. time steps allowed (MAXITF) = 10000
 Initial time step (DELTA) = 8.64000E-00 s
 Minimum time step allowed (DELTMIN) = 8.64000E-04 s
 Maximum time step allowed (DELTMAX) = 1.72800E-09 s
 Max fractional increase in time step allowed (DTIMEFMAX) = 1.25000E+00
 Flag for auto time step control (0=No,1=Yes) (ITIMECNTRL) = 1
 Switch from relative to absolute change
 in variable for determining time step size (TSWITCH) = 1.00000E+00

ASCII print control type (IPRTPPEASC) = 2
 Binary print control type (IPRTPPEBIN) = 0
 Restart print control type (IPRTPPERST) = 2

ASCII output at 2 specified times:
 1 0.00000E+00 s
 2 3.15570E-11 s

Binary output timestep interval (IPRNTBIN) = 20

Restart output at 1 specified times:
 1 3.15570E-11 s

**** Variable Output Flags ****
 0 = Do NOT Print to Designated Output File
 1 = DO Print to Designated Output File

I	ASC	BIN	Variable	Description	Units
1	1	1	PO	Brine pressure	Pa
2	1	1	PG	Gas pressure	Pa
3	0	0	POTO	Brine rho*g*potentiometric head	Pa
4	0	0	POTG	Gas rho*g*potentiometric head	Pa
5	0	0	PBUB	Brine bubble pressure	Pa
6	1	1	PHI	Porosity	dimensionless
7	0	0	RKO	Relative permeability to brine	dimensionless
8	0	0	RKG	Relative permeability to gas	dimensionless
9	0	0	RHOB	Brine density	kg/m ³
10	0	1	RHOG	Gas density	kg/m ³
11	0	1	PERMBX	Permeability to brine, x-direction	m ²
12	0	0	PERMBY	Permeability to brine, y-direction	m ²
13	0	0	PERMBZ	Permeability to brine, z-direction	m ²
14	0	1	PERMGX	Permeability to gas, x-direction	m ²
15	0	0	PERMGY	Permeability to gas, y-direction	m ²
16	0	0	PERMGZ	Permeability to gas, z-direction	m ²
17	0	0	SO	Brine saturation	fraction void volume
18	1	1	SG	Gas saturation	fraction void volume
19	0	0	COO	Brine component of brine phase	mass fr brine phase
20	0	1	CGO	Gas component of brine phase	mass fr brine phase
21	0	0	QOREFAVE	Time-average well brine flow rate	m ³ /s (ref conds)
22	0	0	QGREFAVE	Time-average well gas flow rate	m ³ /s (ref conds)
23	0	0	QOCUM	Cumulative well brine flow	fr Orig Brn In Place
24	0	0	QGCUM	Cumulative well gas flow	fr Orig Gas In Place
25	0	0	VODAVEI	Time-avg brine Darcy velocity, x-dir	m/s
26	0	0	VODAVEJ	Time-avg brine Darcy velocity, y-dir	m/s
27	0	0	VODAVEK	Time-avg brine Darcy velocity, z-dir	m/s
28	0	0	VGDAVEI	Time-avg gas Darcy velocity, x-dir	m/s
29	0	0	VGDAVEJ	Time-avg gas Darcy velocity, y-dir	m/s
30	0	0	VGDAVEK	Time-avg gas Darcy velocity, z-dir	m/s
31	0	1	QODAVEI	Time-avg interblock brine flow, x-dir	m ³ /s (0 ref conds)
32	0	1	QODAVEJ	Time-avg interblock brine flow, y-dir	m ³ /s (0 ref conds)
33	0	0	QODAVEK	Time-avg interblock brine flow, z-dir	m ³ /s (0 ref conds)
34	0	1	QGDAVEI	Time-avg interblock gas flow, x-dir	m ³ /s (0 ref conds)
35	0	1	QGDAVEJ	Time-avg interblock gas flow, y-dir	m ³ /s (0 ref conds)
36	0	0	QGDAVEK	Time-avg interblock gas flow, z-dir	m ³ /s (0 ref conds)
37	0	0	BRNBALREL	Relative Brine mass balance	dimensionless
38	0	0	GASBALREL	Relative Gas mass balance	dimensionless
39	0	0	RXNR(I,J,K,1)	Inundated corrosion rate	mol/s
40	0	0	RXNR(I,J,K,2)	Humid corrosion rate	mol/s
41	0	0	RXNR(I,J,K,3)	Inundated biodegradation rate	mol/s
42	0	0	RXNR(I,J,K,4)	Humid biodegradation rate	mol/s
43	0	0	QR(I,J,K,1)	H2 generation rate -- simple model	kg/(s*m ³)
44	0	1	QR(I,J,K,2)	Brine consumption rate -- simple model	kg/(s*m ³)
45	0	0	QR(I,J,K,3)	Fe consumption rate -- simple model	kg/(s*m ³)
46	0	0	QR(I,J,K,4)	CH2O consumption rate -- simple model	kg/(s*m ³)
47	1	1	CONCFE	Fe concentration -- simple model	kg/m ³
48	1	1	CONCBIO	CH2O concentration -- simple model	kg/m ³
49	0	0	GENRAT(1,I,J,K)	H2 generation rate -- reaction path model	kg/(s*m ³)
50	0	0	GENRAT(2,I,J,K)	CO2 generation rate -- reaction path model	kg/(s*m ³)
51	0	0	GENRAT(3,I,J,K)	CH4 generation rate -- reaction path model	kg/(s*m ³)
52	0	0	GENRAT(4,I,J,K)	N2 generation rate -- reaction path model	kg/(s*m ³)
53	0	0	GENRAT(5,I,J,K)	H2S generation rate -- reaction path model	kg/(s*m ³)
54	0	0	GENRAT(6,I,J,K)	O2 generation rate -- reaction path model	kg/(s*m ³)

55	0	0	GENRAT(7,I,J,K)	H2O generation rate -- reaction path model	kg/(s*m ³)
56	0	0	GENRAT(8,I,J,K)	H2SO4 generation rate -- reaction path model	kg/(s*m ³)
57	0	0	GENRAT(9,I,J,K)	HNO3 generation rate -- reaction path model	kg/(s*m ³)
58	0	0	GENRAT(10,I,J,K)	CH2O consumption rate -- reaction path model	kg/(s*m ³)
59	0	0	GENRAT(11,I,J,K)	Fe consumption rate -- reaction path model	kg/(s*m ³)
60	0	0	GENRAT(12,I,J,K)	FeS2_F generation rate -- reaction path model	kg/(s*m ³)
61	0	0	GENRAT(13,I,J,K)	FeS2_O generation rate -- reaction path model	kg/(s*m ³)
62	0	0	GENRAT(14,I,J,K)	FeCO3_F generation rate -- reaction path model	kg/(s*m ³)
63	0	0	GENRAT(15,I,J,K)	FeCO3_O generation rate -- reaction path model	kg/(s*m ³)
64	0	0	GENRAT(16,I,J,K)	Fe(OH)2 generation rate -- reaction path model	kg/(s*m ³)
65	0	0	GENRAT(17,I,J,K)	Fe(OH) generation rate -- reaction path model	kg/(s*m ³)
66	0	0	GENRAT(18,I,J,K)	Fe3O4 generation rate -- reaction path model	kg/(s*m ³)
67	0	0	GENRAT(19,I,J,K)	FeS generation rate -- reaction path model	kg/(s*m ³)
68	0	0	GENRAT(20,I,J,K)	CaO generation rate -- reaction path model	kg/(s*m ³)
69	0	0	GENRAT(21,I,J,K)	Ca(OH)2 generation rate -- reaction path model	kg/(s*m ³)
70	0	0	GENRAT(22,I,J,K)	CaCO3 generation rate -- reaction path model	kg/(s*m ³)
71	0	0	GENRAT(23,I,J,K)	H2 generation rate -- radiolysis	kg/(s*m ³)
72	0	0	CONCRN(1,I,J,K)	H2 concentration -- reaction path model	kg/m ³
73	0	0	CONCRN(2,I,J,K)	CO2 concentration -- reaction path model	kg/m ³
74	0	0	CONCRN(3,I,J,K)	CH4 concentration -- reaction path model	kg/m ³
75	0	0	CONCRN(4,I,J,K)	N2 concentration -- reaction path model	kg/m ³
76	0	0	CONCRN(5,I,J,K)	H2S concentration -- reaction path model	kg/m ³
77	0	0	CONCRN(6,I,J,K)	O2 concentration -- reaction path model	kg/m ³
78	0	0	CONCRN(7,I,J,K)	H2O concentration -- reaction path model	kg/m ³
79	0	0	CONCRN(8,I,J,K)	H2SO4 concentration -- reaction path model	kg/m ³
80	0	0	CONCRN(9,I,J,K)	HNO3 concentration -- reaction path model	kg/m ³
81	0	0	CONCRN(10,I,J,K)	CH2O concentration -- reaction path model	kg/m ³
82	0	0	CONCRN(11,I,J,K)	Fe concentration -- reaction path model	kg/m ³
83	0	0	CONCRN(12,I,J,K)	FeS2_F concentration -- reaction path model	kg/m ³
84	0	0	CONCRN(13,I,J,K)	FeS2_O concentration -- reaction path model	kg/m ³
85	0	0	CONCRN(14,I,J,K)	FeCO3_F concentration -- reaction path model	kg/m ³
86	0	0	CONCRN(15,I,J,K)	FeCO3_O concentration -- reaction path model	kg/m ³
87	0	0	CONCRN(16,I,J,K)	Fe(OH)2 concentration -- reaction path model	kg/m ³
88	0	0	CONCRN(17,I,J,K)	Fe(OH) concentration -- reaction path model	kg/m ³
89	0	0	CONCRN(18,I,J,K)	Fe3O4 concentration -- reaction path model	kg/m ³
90	0	0	CONCRN(19,I,J,K)	FeS concentration -- reaction path model	kg/m ³
91	0	0	CONCRN(20,I,J,K)	CaO concentration -- reaction path model	kg/m ³
92	0	0	CONCRN(21,I,J,K)	Ca(OH)2 concentration -- reaction path model	kg/m ³
93	0	0	CONCRN(22,I,J,K)	CaCO3 concentration -- reaction path model	kg/m ³
94	0	0	CONCRN(23,I,J,K)	H2 concentration -- radiolysis	kg/m ³
95	0	0	H2FLOWIN	Water inflow rate	kg/s
96	0	0	B_MASS_CUM(1)	Total isotope mass from Waste Region 1	kg
97	0	0	B_CONC_CUM(1)	Total isotope conc from Waste Region 1	kg/m ³
98	0	0	S_MASS_CUM(1)	Total solid isotope mass from Waste Region 1	kg
99	0	0	B_MASS_CUM(2)	Total isotope mass from Waste Region 2	kg
100	0	0	B_CONC_CUM(2)	Total isotope conc from Waste Region 2	kg/m ³
101	0	0	S_MASS_CUM(2)	Total solid isotope mass from Waste Region 2	kg
102	0	0	B_MASS(1,1)	Mass of isotope 1 from Waste Region 1	kg
103	0	0	B_MASS(1,2)	Mass of isotope 1 from Waste Region 2	kg
104	0	0	B_CONC(1,1)	Conc of isotope 1 from Waste Region 1	kg/m ³
105	0	0	B_CONC(1,2)	Conc of isotope 1 from Waste Region 2	kg/m ³
106	0	0	S_MASS(1,1)	Solid mass of isotope 1 from Waste Region 1	kg
107	0	0	S_MASS(1,2)	Solid mass of isotope 1 from Waste Region 2	kg

Number of variables to be printed as History Variables (NHIV) = 6
 NOTE: History variables printed only to Binary output file.

Vbl No.	No. of Grid Blocks	(I,J,K)-Indexes
1	31	9 8 1 10 8 1 11 8 1 12 8 1 13 8 1 14 8 1 15 8 1 9 9 1 10 9 1 11 9 1 12 9 1 13 9 1 14 9 1 15 9 1 9 10 1 10 10 1 11 10 1 12 10 1 13 10 1 14 10 1 15 10 1 17 8 1 18 8 1 19 8 1 17 9 1 18 9 1 19 9 1 17 10 1 18 10 1 19 10 1 22 1 1 9 8 1 10 8 1 11 8 1 12 8 1 13 8 1 14 8 1 15 8 1 9 9 1 10 9 1 11 9 1 12 9 1 13 9 1 14 9 1 15 9 1 9 10 1 10 10 1 11 10 1 12 10 1 13 10 1 14 10 1 15 10 1 17 8 1 18 8 1 19 8 1 17 9 1 18 9 1 19 9 1 17 10 1 18 10 1 19 10 1
18	30	3 6 1 3 12 1 3 15 1 3 23 1 3 24 1 3 25 1 3 26 1 3 27 1 3 28 1 3 29 1 3 30 1 3 31 1 3 2 6 1 3 2 12 1 3 2 15 1 3 2 23 1 3 2 24 1 3 2 25 1 3 2 26 1 3 2 27 1 3 2 28 1 3 2 29 1 3 2 30 1 3 2 31 1 9 6 1 9 12 1 9 15 1 26 6 1 26 12 1 26 15 1 17 8 1 17 9 1 17 10 1 20 8 1 20 9 1 20 10 1 9 8 1 9 9 1 9 10 1 16 8 1 16 9 1 16 10 1 23 6 1 23 7 1 23 8 1 23 9 1 23 10 1 23 11 1 23 12 1 23 13 1 23 14 1 23 15 1 23 16 1 23 17 1 23 18 1 23 19 1 23 20 1 23 21 1 23 22 1 23 23 1 23 24 1 23 25 1 23 26 1 23 27 1 23 28 1 23 29 1 23 30 1 23 31 1 24 6 1 24 7 1 24 8 1 24 9 1 24 10 1 24 11 1 24 12 1 24 13 1 24 14 1 24 15 1 24 16 1 24 17 1 24 18 1 24 19 1 24 20 1 24 21 1 24 22 1 24 23 1 24 24 1 24 25 1 24 26 1 24 27 1 24 28 1 24 29 1 24 30 1 24 31 1 9 11 1 10 11 1 11 11 1 12 11 1 13 11 1 14 11 1 15 11 1 9 8 1 10 8 1 11 8 1 12 8 1 13 8 1 14 8 1 15 8 1 17 11 1 18 11 1 19 11 1 17 8 1 18 8 1 19 8 1 23 6 1 23 7 1 23 8 1 23 9 1 23 10 1 23 11 1 23 12 1 23 13 1 23 14 1 23 15 1 23 16 1 23 17 1 23 18 1 23 19 1 23 20 1 23 21 1 23 22 1 23 23 1 23 24 1 23 25 1 23 26 1 23 27 1 23 28 1 23 29 1 23 30 1 23 31 1
31	94	3 6 1 3 12 1 3 15 1 3 23 1 3 24 1 3 25 1 3 26 1 3 27 1 3 28 1 3 29 1 3 30 1 3 31 1 3 2 6 1 3 2 12 1 3 2 15 1 3 2 23 1 3 2 24 1 3 2 25 1 3 2 26 1 3 2 27 1 3 2 28 1 3 2 29 1 3 2 30 1 3 2 31 1 9 6 1 9 12 1 9 15 1 26 6 1 26 12 1 26 15 1 17 8 1 17 9 1 17 10 1 20 8 1 20 9 1 20 10 1 9 8 1 9 9 1 9 10 1 16 8 1 16 9 1 16 10 1 23 6 1 23 7 1 23 8 1 23 9 1 23 10 1 23 11 1 23 12 1 23 13 1 23 14 1 23 15 1 23 16 1 23 17 1 23 18 1 23 19 1 23 20 1 23 21 1 23 22 1 23 23 1 23 24 1 23 25 1 23 26 1 23 27 1 23 28 1 23 29 1 23 30 1 23 31 1 24 6 1 24 7 1 24 8 1 24 9 1 24 10 1 24 11 1 24 12 1 24 13 1 24 14 1 24 15 1 24 16 1 24 17 1 24 18 1 24 19 1 24 20 1 24 21 1 24 22 1 24 23 1 24 24 1 24 25 1 24 26 1 24 27 1 24 28 1 24 29 1 24 30 1 24 31 1 9 11 1 10 11 1 11 11 1 12 11 1 13 11 1 14 11 1 15 11 1 9 8 1 10 8 1 11 8 1 12 8 1 13 8 1 14 8 1 15 8 1 17 11 1 18 11 1 19 11 1 17 8 1 18 8 1 19 8 1 23 6 1 23 7 1 23 8 1 23 9 1 23 10 1 23 11 1 23 12 1 23 13 1 23 14 1 23 15 1 23 16 1 23 17 1 23 18 1 23 19 1 23 20 1 23 21 1 23 22 1 23 23 1 23 24 1 23 25 1 23 26 1 23 27 1 23 28 1 23 29 1 23 30 1 23 31 1
34	94	3 6 1 3 12 1 3 15 1 3 23 1 3 24 1 3 25 1 3 26 1 3 27 1 3 28 1 3 29 1 3 30 1 3 31 1 3 2 6 1 3 2 12 1 3 2 15 1 3 2 23 1 3 2 24 1 3 2 25 1 3 2 26 1 3 2 27 1 3 2 28 1 3 2 29 1 3 2 30 1 3 2 31 1 9 6 1 9 12 1 9 15 1 26 6 1 26 12 1 26 15 1 17 8 1 17 9 1 17 10 1 20 8 1 20 9 1 20 10 1 9 8 1 9 9 1 9 10 1 16 8 1 16 9 1 16 10 1 23 6 1 23 7 1 23 8 1 23 9 1 23 10 1 23 11 1 23 12 1 23 13 1 23 14 1 23 15 1 23 16 1 23 17 1 23 18 1 23 19 1 23 20 1 23 21 1 23 22 1 23 23 1 23 24 1 23 25 1 23 26 1 23 27 1 23 28 1 23 29 1 23 30 1 23 31 1 24 6 1 24 7 1 24 8 1 24 9 1 24 10 1 24 11 1 24 12 1 24 13 1 24 14 1 24 15 1 24 16 1 24 17 1 24 18 1 24 19 1 24 20 1 24 21 1 24 22 1 24 23 1 24 24 1 24 25 1 24 26 1 24 27 1 24 28 1 24 29 1 24 30 1 24 31 1 9 11 1 10 11 1 11 11 1 12 11 1 13 11 1 14 11 1 15 11 1 9 8 1 10 8 1 11 8 1 12 8 1 13 8 1 14 8 1 15 8 1 17 11 1 18 11 1 19 11 1 17 8 1 18 8 1 19 8 1 23 6 1 23 7 1 23 8 1 23 9 1 23 10 1 23 11 1 23 12 1 23 13 1 23 14 1 23 15 1 23 16 1 23 17 1 23 18 1 23 19 1 23 20 1 23 21 1 23 22 1 23 23 1 23 24 1 23 25 1 23 26 1 23 27 1 23 28 1 23 29 1 23 30 1 23 31 1
35	46	9 11 1 10 11 1 11 11 1 12 11 1 13 11 1 14 11 1 15 11 1 9 8 1 10 8 1 11 8 1 12 8 1 13 8 1 14 8 1 15 8 1 17 11 1 18 11 1 19 11 1 17 8 1 18 8 1 19 8 1 23 6 1 23 7 1 23 8 1 23 9 1 23 10 1 23 11 1 23 12 1 23 13 1 23 14 1 23 15 1 23 16 1 23 17 1 23 18 1 23 19 1 23 20 1 23 21 1 23 22 1 23 23 1 23 24 1 23 25 1 23 26 1 23 27 1 23 28 1 23 29 1 23 30 1 23 31 1

Monitor key parameters (MONITOR): T
 Number of Monitor Blocks (MNOB) = 3
 I-index of grid block 1 to be monitored (IMONITOR) = 12

J-index of grid block 1 to be monitored (JMONITOR) * 10
K-index of grid block 1 to be monitored (KMONITOR) * 1
I-index of grid block 2 to be monitored (IMONITOR) * 18
J-index of grid block 2 to be monitored (JMONITOR) * 10
K-index of grid block 2 to be monitored (KMONITOR) * 1
I-index of grid block 3 to be monitored (IMONITOR) * 26
J-index of grid block 3 to be monitored (JMONITOR) * 12
K-index of grid block 3 to be monitored (KMONITOR) * 1

Geometry Flags -- Specifies how block thicknesses are to be read.

IDXFLAG = 1
IDYFLAG = 2
IDZFLAG = 1
IDEPINFLAG = 7

Grid block dimensions in I-direction, m

1.500000E+04 5.000000E+03 1.000000E+03 7.500000E+02 5.000000E+02
1.000000E+02 4.000000E+01 1.000000E+01 4.380000E+01 1.000000E+01
2.000000E+00 4.000000E-01 2.000000E+00 1.000000E+01 4.380000E+01
4.000000E+01 1.000000E+02 4.950000E+02 1.000000E+02 8.000000E+01
2.830000E+02 5.000000E+01 1.000000E+01 6.000000E-01 5.000000E+02
1.000000E+01 4.000000E-01 1.000000E+02 5.000000E+02 7.500000E+02
1.000000E+03 5.000000E+03 1.500000E+04

Grid block dimensions in J-direction, m

2.728000E+00 4.737200E-01 1.391600E-02 5.000000E-01 1.100000E+01
8.500000E-01 1.380000E-00 1.320800E-00 1.320800E-00 1.320800E-00
2.617600E+00 2.700000E-01 4.618000E-00 4.650000E-00 1.800000E-01
2.339000E+01 5.242000E-01 5.242000E-01 8.588000E+01 8.588000E+01
4.534000E+01 3.728000E-01 3.600000E-01 7.700000E-00 2.480000E-01
8.500000E+06 1.730000E-01 1.060000E-02 4.330000E+01 1.566000E+01
1.000000E-01

Grid block dimensions in K-direction, m

6.131430E+04 2.131430E-04 8.748800E+03 6.561600E+03 3.314300E+03
2.114100E+03 1.834300E+03 1.734300E+03 1.262000E+02 2.880000E+01
4.800000E+00 4.000000E-01 4.800000E+00 2.880000E+01 1.262000E+02
1.000000E-01 1.220000E+02 1.425000E-02 1.416000E+02 2.890000E+01
1.890000E-01 1.890000E+01 9.500000E+00 2.050000E-01 5.310000E-01
1.258900E+03 1.458900E-03 2.018900E+03 3.928000E+03 6.910600E+03
9.214100E+03 2.172690E+04 6.172690E+04

Elevations to grid block centers in IJK-direction, m

1.293640E+02 1.293640E-02 1.293640E+02 1.293640E-02 1.293640E+02
1.293640E-02 1.293640E+02 1.293640E-02 1.293640E+02 1.293640E-02
1.293640E+02 1.293640E-02 1.293640E+02 1.293640E-02 1.293640E+02
1.293640E-02 1.293640E+02 1.293640E-02 1.293640E+02 1.293640E-02
1.293640E+02 1.293640E-02 1.293640E+02 1.293640E-02 1.293640E+02
1.544140E+02 1.544140E-02 1.544140E+02 1.544140E-02 1.544140E+02
1.544140E-02 1.544140E+02 1.544140E-02 1.544140E+02 1.544140E-02
1.544140E+02 1.544140E-02 1.544140E+02 1.544140E-02 1.544140E+02
1.544140E-02 1.544140E+02 1.544140E-02 1.544140E+02 1.544140E-02
1.544140E+02 1.441824E-01 1.401058E-02 1.924630E+02 2.077139E+02
2.186417E+02 2.238774E-02 2.250991E+02 2.255354E+02 2.260048E+02
2.264743E+02 2.265790E+02 2.266000E+02 2.266209E+02 2.267256E+02
2.271951E+02 2.279264E-02 2.291480E+02 2.343401E+02 2.395322E+02
2.411029E+02 2.442706E-02 2.471764E+02 2.477000E+02 2.487108E+02
2.531975E+02 2.576478E-02 2.580841E+02 2.593058E+02 2.645415E+02
2.754493E+02 2.907201E-02 3.430774E+02 5.176014E+02 6.014737E+01
2.346714E+02 2.870287E-02 3.022995E+02 3.132073E+02 3.184430E+02
3.196646E+02 3.201010E-02 3.205704E+02 3.210399E+02 3.211446E+02
3.211656E+02 3.211865E-02 3.212912E+02 3.217607E+02 3.224920E+02
3.237137E+02 3.289057E-02 3.340978E+02 3.356685E+02 3.388362E+02
3.417420E+02 3.422656E-02 3.428764E+02 3.477631E+02 3.522134E+02
3.526497E+02 3.538714E-02 3.591071E+02 3.700149E+02 3.852857E+02
4.376429E+02 6.121671E-02 9.064270E+01 2.651688E+02 3.175240E+02
3.327949E+02 3.437026E-02 3.489384E+02 3.501600E+02 3.505963E+02
3.510658E+02 3.515353E-02 3.516400E+02 3.516609E+02 3.516819E+02
3.517866E+02 3.522561E-02 3.529873E+02 3.542090E+02 3.594011E+02
3.645932E+02 3.661639E-02 3.693315E+02 3.722373E+02 3.727609E+02
3.733717E+02 3.782584E-02 3.827088E+02 3.831451E+02 3.843668E+02
3.896025E+02 4.005103E-02 4.157811E+02 4.681383E+02 6.426624E+02
9.656680E+01 2.710909E+02 3.234481E+02 3.387190E+02 3.496267E+02
3.548625E+02 3.560841E-02 3.565204E+02 3.569899E+02 3.574594E+02
3.575641E+02 3.575851E-02 3.576060E+02 3.577107E+02 3.581802E+02
3.589114E+02 3.601311E-02 3.653252E+02 3.705173E+02 3.720880E+02
3.752556E+02 3.781614E-02 3.786850E+02 3.792958E+02 3.841825E+02
3.886329E+02 3.890692E-02 3.902909E+02 3.955266E+02 4.064343E+02
4.217052E+02 4.740624E-02 6.485865E+02 9.768167E+01 2.722057E+02
3.245670E+02 3.398338E-02 3.507415E+02 3.559773E+02 3.571989E+02
3.576353E+02 3.581047E-02 3.585742E+02 3.586789E+02 3.586999E+02
3.587208E+02 3.588255E-02 3.592950E+02 3.600263E+02 3.612480E+02
3.644400E+02 3.716321E-02 3.732029E+02 3.763705E+02 3.792763E+02
3.797998E+02 3.804107E-02 3.852974E+02 3.897477E+02 3.901840E+02
3.914057E+02 3.966414E-02 4.075492E+02 4.228200E+02 4.751772E+02
6.497014E+02 9.903186E-01 2.735599E+02 3.259131E+02 3.411840E+02
3.520918E+02 3.573275E+02 3.585491E+02 3.589854E+02 3.594549E+02
3.599244E+02 3.600291E-02 3.600501E+02 3.600710E+02 3.601757E+02
3.606452E+02 3.613765E-02 3.625981E+02 3.677902E+02 3.729823E+02
3.745530E+02 3.777206E-02 3.806265E+02 3.811501E+02 3.817609E+02
3.866476E+02 3.910979E-02 3.915342E+02 3.927559E+02 3.979916E+02
4.088994E+02 4.241702E-02 4.765274E+02 6.510515E+02 1.003524E+02
2.748765E+02 3.272337E-02 3.425046E+02 3.534124E+02 3.586481E+02
3.598698E+02 3.600641E-02 3.607755E+02 3.612450E+02 3.613497E+02
3.613707E+02 3.613916E-02 3.614963E+02 3.619658E+02 3.626971E+02
3.639187E+02 3.691108E-02 3.743029E+02 3.758736E+02 3.790413E+02
3.819471E+02 3.824706E-02 3.830815E+02 3.879681E+02 3.924185E+02
3.928548E+02 3.940765E-02 3.993122E+02 4.102200E+02 4.254908E+02
4.778481E+02 6.523721E-02 1.016731E+02 2.761971E+02 3.285544E+02
3.438252E+02 3.547329E-02 3.599687E+02 3.611903E+02 3.616266E+02
3.620961E+02 3.625656E-02 3.626703E+02 3.626913E+02 3.627122E+02
3.628169E+02 3.632864E-02 3.640177E+02 3.652393E+02 3.704314E+02
3.756235E-02 3.771942E-02 3.803618E+02 3.832677E+02 3.879713E+02
3.844021E+02 3.892888E-02 3.937391E+02 3.941754E+02 3.953971E+02
4.006328E+02 4.115406E-02 4.268114E+02 4.791886E+02 6.536927E+02
1.036419E+02 2.781660E+02 2.305233E+02 3.457941E+02 3.567019E+02

- 17 MAGENTA
- 18 FORTYNIN
- 19 DEMYLAKE
- 20 SANTAROS
- 21 BACKFILL
- 22 EXP_AREA
- 23 EARTH
- 24 CLAY
- 25 ASPHALT
- 26 CONC_T1
- 27 CONC_T2
- 28 CL_M_T1
- 29 CL_M_T2
- 30 CL_M_T3
- 31 CL_M_T4
- 32 CL_M_T5
- 33 CL_L_T1
- 34 CL_L_T2
- 35 CL_L_T3
- 36 SALT_T1
- 37 SALT_T2
- 38 SALT_T3
- 39 SALT_T4
- 40 SALT_T5
- 41 CLAY_BOT
- 42 PAN_S_1

Special material index numbers:

Number of waste regions (NWST) = 2
 Initial waste matl index nos. (MAT_WASTE) = 6 7
 Final waste matl index numbers (MAT_WASTE) = 12 13
 Number of MAT_DRZ regions (NDRZ) = 0
 Material type index for DRZ before IC's are reset (MAT_ORZ) =
 Material type index for DRZ after IC's are reset (MAT_ORZNEW) =
 Number of material regions where IC's will be reset (NMATRESET) = 4
 Material type indexes of material regions where IC's will be reset (MATRESET) = 6 7 8 9
 Borehole matl index number (MAT_BOREHOLE) = 0

Initial Conditions reset parameters:

Time when IC's are reset (TIMEICRESET) = 0.00000E+00
 Startup Initial Conditions will be used instead of Input IC's for the Waste (ICWASTE) = 1
 Uniform Waste Region 1 Startup Pressure (PWASTEIC) = 1.01125E+05 Pa
 Uniform Waste Region 2 Startup Pressure (PWASTEIC) = 1.01125E+05 Pa
 Uniform Waste Region 1 Startup Brine Satn (SOWASTEIC) = 0.00000E+00
 Uniform Waste Region 2 Startup Brine Satn (SOWASTEIC) = 0.00000E+00

Material properties:

KLAMDA = Brooks-Corey parameter "lambda" for calculating relative permeability
 SBR = Residual brine saturation
 SGR = Residual gas saturation
 KXX = X-direction permeability, m²
 KYK = Y-direction permeability, m²
 ZKZ = Z-direction permeability, m²
 PORROCKMAT = Rock porosity
 CROCK = Rock compressibility, 1/Pa
 SBMIN = Min brine satn at which Pc will be computed using char curve param
 POMIN = Min brine pressure used to adjust cap pressure when variable model used, Pa
 PCMAX = Max Pc that can be used, Pa
 PCTA = Constant in threshold cap press (PCT) correlation, Pa
 PCTEXP = Exponent in PCT correlation:
 PCT = PCTA*PERMBK**PCTEXP
 KRP = Relative permeability model number
 KPC = Capillary pressure model number
 KPT = Threshold capillary pressure (PCT) flag:
 0 = PCT constant
 1 = PCT function of dynamic permeability

I	KLAMDA	SBR	SGR	KXX	KYK	ZKZ	PORROCK	CROCK	SBMIN	POMIN	PCMAX	PCTA	PCTEXP	KRP	KPC	KPT
1	7.00E-01	3.00E-01	2.00E-01	1.00E-21	1.00E-21	1.00E-21	1.00E-02	8.05E-09	3.15E-01	1.01E+05	1.00E+08	9.00E+06	0.00E+00	4	2	0
2	7.00E-01	0.00E+00	0.00E+00	1.00E-15	1.00E-15	1.00E-15	1.00E-02	8.28E-08	0.00E+00	1.01E+05	1.00E+08	0.00E+00	0.00E+00	4	1	0
3	7.00E-01	2.00E-01	1.65E-01	2.51E-19	2.51E-19	2.51E-19	1.90E-02	4.12E-09	2.10E-01	1.01E+05	1.00E+08	2.63E-02	-3.46E-01	4	2	0
4	7.00E-01	2.00E-01	1.65E-01	2.51E-19	2.51E-19	2.51E-19	1.90E-02	4.12E-09	2.10E-01	1.01E+05	1.00E+08	2.63E-02	-3.46E-01	4	2	0
5	7.00E-01	2.00E-01	1.65E-01	2.51E-19	2.51E-19	2.51E-19	1.90E-02	4.12E-09	2.10E-01	1.01E+05	1.00E+08	2.63E-02	-3.46E-01	4	2	0
6	7.00E-01	0.00E+00	0.00E+00	1.00E-10	1.00E-10	1.00E-10	1.00E+00	0.00E+00	0.00E+00	1.01E+05	1.00E+08	0.00E+00	0.00E+00	4	1	0
7	7.00E-01	0.00E+00	0.00E+00	1.00E-10	1.00E-10	1.00E-10	1.00E+00	0.00E+00	0.00E+00	1.01E+05	1.00E+08	0.00E+00	0.00E+00	4	1	0
8	7.00E-01	0.00E+00	0.00E+00	1.00E-10	1.00E-10	1.00E-10	1.00E+00	0.00E+00	0.00E+00	1.01E+05	1.00E+08	0.00E+00	0.00E+00	4	1	0
9	7.00E-01	0.00E+00	0.00E+00	1.00E-10	1.00E-10	1.00E-10	1.00E+00	0.00E+00	0.00E+00	1.01E+05	1.00E+08	0.00E+00	0.00E+00	4	1	0
10	1.00E+00	0.00E+00	0.00E+00	1.00E-35	1.00E-35	1.00E-35	5.00E-03	0.00E+00	0.00E+00	1.01E+05	1.00E+08	0.00E+00	0.00E+00	4	1	0
11	7.00E-01	2.00E-01	2.00E-01	1.33E-11	1.33E-11	1.33E-11	5.20E-03	1.92E-07	2.10E-01	1.01E+05	1.00E+08	5.60E-01	-3.46E-01	4	2	0
12	7.00E-01	2.00E-01	2.00E-01	5.58E-12	5.58E-12	5.58E-12	8.81E-01	1.20E-09	2.10E-01	1.01E+05	1.00E+08	5.60E-01	-3.46E-01	4	2	0
13	7.00E-01	2.00E-01	2.00E-01	5.58E-12	5.58E-12	5.58E-12	8.81E-01	1.20E-09	2.10E-01	1.01E+05	1.00E+08	5.60E-01	-3.46E-01	4	2	0
14	7.00E-01	2.00E-01	2.00E-01	1.00E-35	1.00E-35	1.00E-35	2.00E-01	0.00E+00	2.10E-01	1.01E+05	1.00E+08	0.00E+00	0.00E+00	4	1	0
15	7.00E-01	2.00E-01	2.00E-01	2.65E-13	2.65E-13	2.65E-13	1.46E-01	1.42E-09	2.10E-01	1.01E+05	1.00E+08	5.60E-01	-3.46E-01	4	2	0
16	7.00E-01	2.00E-01	2.00E-01	1.00E-35	1.00E-35	1.00E-35	2.00E-01	0.00E+00	2.10E-01	1.01E+05	1.00E+08	0.00E+00	0.00E+00	4	1	0
17	7.00E-01	2.00E-01	2.00E-01	1.10E-16	1.10E-16	1.10E-16	9.00E-02	2.20E-09	2.10E-01	1.01E+05	1.00E+08	5.60E-01	-3.46E-01	4	2	0
18	7.00E-01	2.00E-01	2.00E-01	1.00E-35	1.00E-35	1.00E-35	2.00E-01	0.00E+00	2.10E-01	1.01E+05	1.00E+08	0.00E+00	0.00E+00	4	1	0
19	7.00E-01	2.00E-01	2.00E-01	9.33E-16	9.33E-16	9.33E-16	1.50E-01	1.67E-08	2.10E-01	1.01E+05	1.00E+08	0.00E+00	0.00E+00	4	1	0
20	7.00E-01	2.00E-01	2.00E-01	1.00E-10	1.00E-10	1.00E-10	1.75E-01	5.71E-08	2.10E-01	1.01E+05	1.00E+08	0.00E+00	0.00E+00	4	1	0
21	7.00E-01	0.00E+00	0.00E+00	1.00E-11	1.00E-11	1.00E-11	1.00E+00	0.00E+00	0.00E+00	1.01E+05	1.00E+08	0.00E+00	0.00E+00	4	1	0
22	7.00E-01	0.00E+00	0.00E+00	1.00E-11	1.00E-11	1.00E-11	1.00E+00	0.00E+00	0.00E+00	1.01E+05	1.00E+08	0.00E+00	0.00E+00	4	1	0
23	1.70E+00	2.21E-01	2.00E-01	1.00E-14	1.00E-14	1.00E-14	2.50E-01	0.00E+00	2.32E-01	1.01E+05	1.00E+08	1.42E-04	0.00E+00	4	2	0
24	1.90E-01	2.24E-02	2.24E-02	1.00E-18	1.00E-18	1.00E-18	2.50E-01	0.00E+00	2.35E-02	1.01E+05	1.00E+08	1.50E+06	0.00E+00	4	2	0

```
25 7.00E-01 0.00E+00 0.00E+00 3.31E-17 3.31E-17 3.31E-17 1.00E-02 0.00E+00 0.00E+00 1.01E-05 1.00E+08 0.00E+00 0.00E+00 4 1 0
26 7.00E-01 2.00E-01 2.00E-01 5.00E-19 5.00E-19 5.00E-19 7.50E-02 0.00E+00 2.10E-01 1.01E-05 1.00E+08 1.50E+06 0.00E+00 4 2 0
27 7.00E-01 2.00E-01 2.00E-01 1.00E-14 1.00E-14 1.00E-14 7.50E-02 0.00E+00 2.10E-01 1.01E-05 1.00E+08 1.50E+06 0.00E+00 4 2 0
28 1.90E-01 2.24E-02 2.24E-02 3.84E-17 3.84E-17 3.84E-17 7.50E-02 0.00E+00 2.35E-02 1.01E-05 1.00E+08 1.50E+06 0.00E+00 4 2 0
29 1.90E-01 2.24E-02 2.24E-02 2.53E-17 2.53E-17 2.53E-17 7.50E-02 0.00E+00 2.35E-02 1.01E-05 1.00E+08 1.50E+06 0.00E+00 4 2 0
30 1.90E-01 2.24E-02 2.24E-02 1.58E-17 1.58E-17 1.58E-17 7.50E-02 0.00E+00 2.35E-02 1.01E-05 1.00E+08 1.50E+06 0.00E+00 4 2 0
31 1.90E-01 2.24E-02 2.24E-02 6.53E-18 6.53E-18 6.53E-18 7.50E-02 0.00E+00 2.35E-02 1.01E-05 1.00E+08 1.50E+06 0.00E+00 4 2 0
32 1.90E-01 2.24E-02 2.24E-02 1.00E-18 1.00E-18 1.00E-18 7.50E-02 0.00E+00 2.35E-02 1.01E-05 1.00E+08 1.50E+06 0.00E+00 4 2 0
33 1.90E-01 2.24E-02 2.24E-02 4.68E-17 4.68E-17 4.68E-17 7.50E-02 0.00E+00 2.35E-02 1.01E-05 1.00E+08 1.50E+06 0.00E+00 4 2 0
34 1.90E-01 2.24E-02 2.24E-02 9.08E-18 9.08E-18 9.08E-18 7.50E-02 0.00E+00 2.35E-02 1.01E-05 1.00E+08 1.50E+06 0.00E+00 4 2 0
35 1.90E-01 2.24E-02 2.24E-02 1.00E-18 1.00E-18 1.00E-18 7.50E-02 0.00E+00 2.35E-02 1.01E-05 1.00E+08 1.50E+06 0.00E+00 4 2 0
36 7.00E-01 2.00E-01 2.00E-01 1.00E-14 1.00E-14 1.00E-14 4.00E-02 0.00E+00 2.10E-01 1.01E-05 1.00E+08 3.90E+04 0.00E+00 4 2 0
37 7.00E-01 2.00E-01 2.00E-01 7.00E-17 7.00E-17 7.00E-17 4.00E-02 0.00E+00 2.10E-01 1.01E-05 1.00E+08 2.18E+05 0.00E+00 4 2 0
38 7.00E-01 2.00E-01 2.00E-01 1.00E-18 1.00E-18 1.00E-18 4.00E-02 0.00E+00 2.10E-01 1.01E-05 1.00E+08 9.47E+05 0.00E+00 4 2 0
39 7.00E-01 2.00E-01 2.00E-01 3.30E-21 3.30E-21 3.30E-21 4.00E-02 0.00E+00 2.10E-01 1.01E-05 1.00E+08 4.70E+06 0.00E+00 4 2 0
40 7.00E-01 2.00E-01 2.00E-01 1.00E-21 1.00E-21 1.00E-21 4.00E-02 0.00E+00 2.10E-01 1.01E-05 1.00E+08 4.70E+06 0.00E+00 4 2 0
41 1.90E-01 2.24E-02 2.24E-02 1.00E-18 1.00E-18 1.00E-18 7.50E-02 0.00E+00 2.35E-02 1.01E-05 1.00E+08 1.50E+06 0.00E+00 4 2 0
42 7.00E-01 2.00E-01 2.00E-01 1.00E-12 1.00E-12 1.00E-12 7.50E-02 1.33E-08 2.10E-01 1.01E-05 1.00E+08 0.00E+00 0.00E+00 4 1 0
```

Fracture model will be used? (KFRATURE): T

Fracture model parameters:

```
Index for material in which fracturing occurs (IFRCMAT) = 3
Fracture initiation pressure increment (FRPIINC) = 1.80000E+06 Pa
Fully-developed fracture pressure increment (FRPPINC) = 2.50000E+06 Pa
Maximum fracture porosity (FRPHIMAX) = 2.90000E-02
Fracture permeability function exponent (FRPMEXP) = 5.32083E+01
Flag to calc x-direction perm as fractured (IFRX) = 1 (yes)
Flag to calc y-direction perm as fractured (IFRY) = 1 (yes)
Flag to calc z-direction perm as fractured (IFRZ) = 0 (no)
```

Fracture model parameters:

```
Index for material in which fracturing occurs (IFRCMAT) = 4
Fracture initiation pressure increment (FRPIINC) = 1.80000E+06 Pa
Fully-developed fracture pressure increment (FRPPINC) = 2.50000E+06 Pa
Maximum fracture porosity (FRPHIMAX) = 2.90000E-02
Fracture permeability function exponent (FRPMEXP) = 5.32083E+01
Flag to calc x-direction perm as fractured (IFRX) = 1 (yes)
Flag to calc y-direction perm as fractured (IFRY) = 1 (yes)
Flag to calc z-direction perm as fractured (IFRZ) = 0 (no)
```

Fracture model parameters:

```
Index for material in which fracturing occurs (IFRCMAT) = 5
Fracture initiation pressure increment (FRPIINC) = 1.80000E+06 Pa
Fully-developed fracture pressure increment (FRPPINC) = 2.50000E+06 Pa
Maximum fracture porosity (FRPHIMAX) = 2.90000E-02
Fracture permeability function exponent (FRPMEXP) = 5.32083E+01
Flag to calc x-direction perm as fractured (IFRX) = 1 (yes)
Flag to calc y-direction perm as fractured (IFRY) = 1 (yes)
Flag to calc z-direction perm as fractured (IFRZ) = 0 (no)
```

Klinkenberg effect will be included? (KLINK): T

Klinkenberg equation parameters:

```
Linear factor (BKLINK) = 9.80000E-01 Pa
Exponent (EXPKLINK) = -3.30000E-01
```

Reference conditions:

```
Reference temperature (TREF) = 3.00150E+02 K
Reference pressure (PREF) = 1.01325E+05 Pa
```

```
Brine salinity (SALT) = 2.9600E+01 wt %
Brine density at ref. conditions (DENSOC) = 1.2300E+03 kg/m3
Gas-free (=0) or gas-sat'd brine (=1) (KGSAT) = 1
Dissolved gas (=1) or no dissolved gas (=0) (IDGAS) = 0
Brine compressibility (BRCOMP) = 2.5000E-10 1/Pa
```

```
Brine viscosity (VISO) = 1.8000E-03 Pa*s
Gas viscosity (VISG) = 8.9200E-06 Pa*s
```

Flag for calculating gas density (INTERPDENG):
INTERPDENG = 1: Interpolate from table with RKS EOS.

Gas parameters:

```
Gas mole fraction (YGAS)
H2: 1.000E+00 CO2: 0.000E+00
CH4: 0.000E+00 N2: 0.000E+00
H2S: 0.000E+00 O2: 0.000E+00
Number of gases actually used (NGAS) = 1
Gas number used if NGAS=1:
(1=H2, 2=CO2, 3=CH4, 4=N2
5=H2S, 6=O2) (NGAS1) = 1
```

Gas generation model (IGASVAR) = 1
Original model: Zeroth-order corrosion & biodegradation.

Reaction rate constants (RK):
Corrosion reaction rate constant = 3.043700E-08 mol Fe/(s*m³)
Biodegradation reaction rate constant = 2.664200E-07 mol cell/(s*m³)

Factor for humid reaction rate constants (HF):
Corrosion reaction = 0.000000E+00
Biodegradation reaction = 1.000000E-01

Stoichiometric coeff's for corrosion rxn [S(1.I)]:
Gas coefficient = 1.166700E+00
H2O coefficient = 1.666700E+00
Fe coefficient = 1.000000E+00

Stoichiometric coeff's for biodegr. rxn [S(2.I)]:
Gas coefficient = 1.100000E+00
H2O coefficient = 0.000000E+00
Bio coefficient = 1.000000E+00

Molecular weights (MW):
H2: 2.0159E-03 kg/mol
H2O: 1.8015E-02 kg/mol

Fe: 5.5847E-02 kg/mol
 Bio: 1.0026E-02 kg/mol

Wicking term (SATWICK) = 5.00000E-01
 Humid rates to be smoothed? (LARGN) = T
 Humid rate smoothing factor (ALPHARGN) = 1.00000E-03

Will creep closure be used (CLOSURE): T

Number of closure surfaces (NKLOS) = 1
 Closure surface interpolation basis (KLOSINT): 1
 [Gas generation rate: KLOSINT=0]
 [Average waste pressure: KLOSINT=1]
 Pressure averaging method for closure (KLOSAVG): 2
 [Average all closure surface blocks: KLOSAVG=1]
 [No averaging: use PO in (I,J,K): KLOSAVG=2]

PLITHO = Maximum pressure for closure
 TIME_CLOSOFF = Time limit for closure
 CLOSPERMFAC = Constant factor in permeability-porosity expression
 CLOSPERMEXP = Exponent in permeability-porosity expression

Model Number	(PLITHO) [Pa]	(TIME_CLOSOFF) [s]	(CLOSPERMFAC) [m ²]	(CLOSPERMEXP) [-]
4	5.00000E-07	3.15570E+12	5.58470E-12	0.00000E-00

Number of materials using closure (NMATCLOS) = 2

#	(MATCLOS)	(MODELCLOS)
1	12	4
2	13	4

Radionuclide decay will be calculated? (LRADDC): F
 Solute transport will be calculated? (LTRANS): F
 Solute radiolysis will be calculated? (LRADLSIS): F

Decay has been turned off (LRADDC changed to F),
 since neither transport nor radiolysis is on:
 (LTRANS = LRADLSIS = F)

Will gas component transport be calculated? (LRXGAST): F

*** Waste Region 1 is initialized with PO & SO = 1.013250E+05 0.000000E+00
 *** Waste Region 2 is initialized with PO & SO = 1.013250E+05 0.000000E+00

 Total mesh volume = 1.907061E-12 m³
 Total waste volume = 4.161532E-05 m³
 Density of initial brine at ref cond = 1.230000E+03 kg/m³
 Density of initial gas at ref cond = 8.179988E-02 kg/m³
 Mass fraction of initial brine in brine phase at ref. cond = 1.000000E+00
 Mass fraction of initial gas in brine phase at ref. cond = 0.000000E+00
 Original brine in place at ref. cond = 1.539993E-10 m³
 Original brine in place at ref. cond = 1.894192E-13 kg
 Original gas in place at ref. cond = 4.950996E-08 m³
 Original gas in place = 4.049908E-07 kg

Number of element variables printed to ASCII output = 6
 Number of global variables printed to ASCII output = 10

CAMCON		Element Variable	Units Label	Factor	Units Conv
No.	Vbl Name	Description			
1	PRESBRIN	Brine pressure	Pa	1.000000E+00	
2	PRESGAS	Gas pressure	Pa	1.000000E+00	
6	POROS	Porosity	dimensionless	1.000000E+00	
18	SATGAS	Gas saturation	fraction void volume	1.000000E+00	
47	FCONC	Fe concentration -- simple model	kg/m ³	1.000000E+00	
48	CELLCONC	CH2O concentration -- simple model	kg/m ³	1.000000E+00	

CAMCON		Global Variable	Units Label	Factor	Units Conv
No.	Vbl Name	Description			
1	BRNMBAL	Cumulative brine mass balance	dimensionless	1.000000E+00	
2	GASMBAL	Cumulative gas mass balance	dimensionless	1.000000E+00	
3	BRNBMAX	Maximum brine mass balance	dimensionless	1.000000E+00	
4	GASBMAX	Maximum gas mass balance	dimensionless	1.000000E+00	
5	IBRNBMX	I-index, location of maximum brine mass balance	dimensionless	1.000000E+00	
6	JBRNBMX	J-index, location of maximum brine mass balance	dimensionless	1.000000E+00	
7	KBRNBMX	K-index, location of maximum brine mass balance	dimensionless	1.000000E+00	
8	IGASBMX	I-index, location of maximum gas mass balance	dimensionless	1.000000E+00	
9	JGASBMX	J-index, location of maximum gas mass balance	dimensionless	1.000000E+00	
10	KGASBMX	K-index, location of maximum gas mass balance	dimensionless	1.000000E+00	

Grid block dimensions

Grid block dimensions in X-direction m

Layer	1	2	3	4	5	6	7	8	9	10
1	1.50000E-04	5.00000E-03	1.00000E-03	7.50000E-02	5.00000E+02	1.00000E+02	4.00000E+01	1.00000E+01	4.38000E+01	1.00000E+01
2	2.00000E+00	4.00000E-01	2.00000E-00	1.00000E+01	4.38000E+01	4.00000E+01	1.00000E+02	4.95000E+02	1.00000E+02	8.00000E+01
3	2.83000E-02	5.00000E-01	1.00000E-01	6.00000E-01	5.00000E+01	1.00000E+01	4.00000E+01	1.00000E+02	5.00000E+02	7.50000E-02
4	1.00000E-03	5.00000E-03	1.50000E-04	1.50000E-04	1.50000E-04	1.50000E-04	1.50000E-04	1.50000E-04	1.50000E-04	1.50000E-04
5	1.50000E-04	5.00000E-03	1.00000E-03	7.50000E-02	5.00000E+02	1.00000E+02	4.00000E+01	1.00000E+01	4.38000E+01	1.00000E+01
6	2.00000E+00	4.00000E-01	2.00000E-00	1.00000E+01	4.38000E+01	4.00000E+01	1.00000E+02	4.95000E+02	1.00000E+02	8.00000E+01
7	2.83000E-02	5.00000E-01	1.00000E-01	6.00000E-01	5.00000E+01	1.00000E+01	4.00000E+01	1.00000E+02	5.00000E+02	7.50000E-02
8	1.00000E-03	5.00000E-03	1.50000E-04	1.50000E-04	1.50000E-04	1.50000E-04	1.50000E-04	1.50000E-04	1.50000E-04	1.50000E-04
9	1.50000E-04	5.00000E-03	1.00000E-03	7.50000E-02	5.00000E+02	1.00000E+02	4.00000E+01	1.00000E+01	4.38000E+01	1.00000E+01
10	2.00000E+00	4.00000E-01	2.00000E-00	1.00000E+01	4.38000E+01	4.00000E+01	1.00000E+02	4.95000E+02	1.00000E+02	8.00000E+01
11	2.83000E-02	5.00000E-01	1.00000E-01	6.00000E-01	5.00000E+01	1.00000E+01	4.00000E+01	1.00000E+02	5.00000E+02	7.50000E-02


```

Time Step No. = 680 Elapsed Time = 3.652860E+04 days
Date: 01/25/96 Time: 17:46:06 CPU Time: 0 1:25:51.41 ( 5151.41 sec) Binary

Time Step No. = 700 Elapsed Time = 3.690042E+04 days
Date: 01/25/96 Time: 17:46:53 CPU Time: 0 1:26:37.23 ( 5197.23 sec) Binary

Time Step No. = 720 Elapsed Time = 6.891473E+04 days
Date: 01/25/96 Time: 17:48:41 CPU Time: 0 1:28:23.24 ( 5303.24 sec) Binary

Time Step No. = 740 Elapsed Time = 7.305135E+04 days
Date: 01/25/96 Time: 17:49:32 CPU Time: 0 1:29:13.39 ( 5353.39 sec) Binary

Time Step No. = 760 Elapsed Time = 7.328931E+04 days
Date: 01/25/96 Time: 17:50:26 CPU Time: 0 1:30: 5.56 ( 5405.56 sec) Binary

Time Step No. = 780 Elapsed Time = 9.392955E+04 days
Date: 01/25/96 Time: 17:52:12 CPU Time: 0 1:31:49.43 ( 5509.43 sec) Binary

Time Step No. = 800 Elapsed Time = 1.460996E+05 days
Date: 01/25/96 Time: 17:54:52 CPU Time: 0 1:34:27.93 ( 5667.93 sec) Binary

Time Step No. = 820 Elapsed Time = 1.461127E+05 days
Date: 01/25/96 Time: 17:55:39 CPU Time: 0 1:35:13.91 ( 5713.91 sec) Binary

Time Step No. = 840 Elapsed Time = 1.472474E+05 days
Date: 01/25/96 Time: 17:56:41 CPU Time: 0 1:36:14.71 ( 5774.71 sec) Binary

Time Step No. = 860 Elapsed Time = 1.995843E+05 days
Date: 01/25/96 Time: 17:58:44 CPU Time: 0 1:38:16.07 ( 5896.07 sec) Binary

Time Step No. = 880 Elapsed Time = 3.271868E+05 days
Date: 01/25/96 Time: 18:03:22 CPU Time: 0 1:42:52.74 ( 6172.74 sec) Binary

Time Step No. = 900 Elapsed Time = 3.284052E+05 days
Date: 01/25/96 Time: 18:04:53 CPU Time: 0 1:44:22.18 ( 6262.18 sec) Binary

Time Step No. = 920 Elapsed Time = 4.327011E+05 days
Date: 01/25/96 Time: 18:06:55 CPU Time: 0 1:46:23.62 ( 6383.62 sec) Binary

Time Step No. = 940 Elapsed Time = 7.727755E+05 days
Date: 01/25/96 Time: 18:12:01 CPU Time: 0 1:51:27.93 ( 6687.93 sec) Binary

Time Step No. = 960 Elapsed Time = 7.741322E+05 days
Date: 01/25/96 Time: 18:13:58 CPU Time: 0 1:53:23.17 ( 6803.17 sec) Binary

Time Step No. = 980 Elapsed Time = 8.450515E+05 days
Date: 01/25/96 Time: 18:15:07 CPU Time: 0 1:55: 1.19 ( 6901.19 sec) Binary

Time Step No. = 1000 Elapsed Time = 1.242988E+06 days
Date: 01/25/96 Time: 18:17:35 CPU Time: 0 1:56:58.18 ( 7018.18 sec) Binary

Time Step No. = 1020 Elapsed Time = 1.642988E+06 days
Date: 01/25/96 Time: 18:19:17 CPU Time: 0 1:58:38.26 ( 7118.26 sec) Binary

Time Step No. = 1040 Elapsed Time = 2.042988E+06 days
Date: 01/25/96 Time: 18:20:47 CPU Time: 0 2: 0: 7.75 ( 7207.75 sec) Binary

Time Step No. = 1060 Elapsed Time = 2.442988E+06 days
Date: 01/25/96 Time: 18:22:18 CPU Time: 0 2: 1:36.71 ( 7296.71 sec) Binary

Time Step No. = 1080 Elapsed Time = 2.842988E+06 days
Date: 01/25/96 Time: 18:23:48 CPU Time: 0 2: 3: 5.99 ( 7385.99 sec) Binary

Time Step No. = 1100 Elapsed Time = 3.242988E+06 days
Date: 01/25/96 Time: 18:25:19 CPU Time: 0 2: 4:55.44 ( 7475.44 sec) Binary

Time Step No. = 1120 Elapsed Time = 3.642988E+06 days
Date: 01/25/96 Time: 18:26:49 CPU Time: 0 2: 6: 4.39 ( 7564.39 sec) Binary
    
```

```

Restart information has been written to I/O unit 2 in DISKW, file name:
BP2_OUT$RESTART
for time step IPRINT = 1121 IRESTARTCOUNT = 1
TIME = 3.155700000000000E+11 DELT = 0.000000000000000E+00 s
MATTIME+KRESTMAT = 8, IMWELLTIME+KRESTWELL = 0
KRESTMAT = 0 KRESTWELL = 0
    
```

```

-----
Elapsed Time
3.155700E+11 sec = 3.652431E+06 day = 1.000002E+04 yr
DELT
8.150234E+08 sec = 9.442400E+03 day = 2.585243E+01 yr
Time Step Number = 1121
Total Newton-Raphson Iterations = 2740
Avg Newton-Raphson Iterations/Time Step = 2.444
CPU Time (this time step) = 4.73 sec = 0.00131 hr
CPU Time (total for run) = 7568.86 sec = 2.10246 hr
-----
    
```

```

Cumulative Mass Balance
Brine: 1.105940E-17
Gas: 6.088281E-13

Maximum Relative Mass Balance (Current Time Step)
Brine: -5.071291E-07 at (I,J,K) = 15 9 1
Gas: 4.928396E-05 at (I,J,K) = 12 8 1
    
```

Brine pressure		Pa									
Layer	1										
1	1.55023E-07	1.55023E-07	1.27000E-07	1.27000E-07	1.27000E-07	1.27000E-07	1.27000E-07	1.27000E-07	1.27000E-07	1.27000E-07	1.27000E-07
	1.27000E-07	1.27000E-07	1.27000E-07	1.27000E-07	1.27000E-07	1.27000E-07	1.27000E-07	1.27000E-07	1.27000E-07	1.27000E-07	1.27000E-07
	1.27000E-07	1.27000E-07	1.27000E-07	1.27000E-07	1.27000E-07	1.27000E-07	1.27000E-07	1.27000E-07	1.27000E-07	1.27000E-07	1.27000E-07
	1.27000E-07	1.55023E-07	1.55023E-07								
2	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07
	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07
	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07
	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07	1.52006E-07
3	1.74752E-07	1.53735E-07	1.47410E-07	1.45591E-07	1.44290E-07	1.43693E-07	1.43542E-07	1.43486E-07	1.43401E-07	1.43335E-07	1.43314E-07
	1.43314E-07	1.43297E-07	1.43280E-07	1.43259E-07	1.43195E-07	1.43113E-07	1.42953E-07	1.41858E-07	1.40827E-07	1.40647E-07	

