WHARF MINE
LEAD, SOUTH DAKOTA
NIRATE/ARSENIC GEOCHEMICAL MIXING CELL MODEL
Area - Portland Pit Overlap Barren Rock

INPUT BLOCK

CHEMICAL	Nitrate	

INFILTRATION	Total Drainage Area:	894,901	ft^2
	Unreclaimned Infiltration Rate:	9	in/yr
	Reclaimed Infilgration Rate:	4.5	in/yr

BARREN ROCK	Porewater Concentration:	35.6	ppm
	Moisture at Offload:	0.04	wt %

CELLS	Cell No.	Material	Mass (tons)	Kd (L/kg)	Moisture (wt%)	GW Inflow (tons)	GW Conc. (ppm)
	1	Barren Rock	Time Dependent	0.000	0.04	0	0
	2	Unsaturated Bedrock	7,039,222	0.000	0.01	0	0
	3	Unused	0	0.000	0	0	0
	4	Unused	0	0.000	0	0	0
	5	Unused	0	0.000	0	0	0
	6	Unused	0	0.000	0	0	0
	7	Unused	0	0.000	0	0	0

TIME																					
	Start Time		yrs	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00
	Time Step		yrs	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	End Time		yrs	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00	18.00
	Calendar Year		year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016

TIME DEPENDENT DATA																					
	Infiltration Rate		in/yr	9	9	9	9	9	9	4.5	4.5	9	9	4.5	4.5	4.5	9	9	9	9	9
	Chemicals in Infiltration		ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Backfill Added		tons	0	0	253,482	2,234,415	915,077	0	0	0	-771,673	0	0	0	0	0	0	0	0	0

CALCULATION BLOCK

CELL 1 - Barren Rock

DATA	VARIABLE		FORMULA	UNITS	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
ROCK	Initial Solids in Cell	A1	C1 from previous year	tons	0	0	0	253,482	2,487,897	3,402,974	3,402,974	3,402,974	3,402,974	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301
	Material Added	B1		tons	0	0	253,482	2,234,415	915,077	0	0	0	-771,673	0	0	0	0	0	0	0	0	0
	Total Solids in Cell	C1	A1 + B1	tons	0	0	253,482	2,487,897	3,402,974	3,402,974	3,402,974	3,402,974	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301
WATER	Initial Mass Water in Cell	D1	V1 from previous year	tons	0	0	0	10,139	99,516	136,119	136,119	136,119	136,119	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252
	Inflow from Infiltration	E1	infiltration rate x area x conversion factor	tons	20,947	20,947	20,947	20,947	20,947	20,947	10,474	10,474	20,947	20,947	10,474	10,474	10,474	20,947	20,947	20,947	20,947	20,947
	Inflow from Groundwater	F1		tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	New ore Moisture	G1	B1 x % moisture at offload	tons	0	0	10,139	89,377	36,603	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Water in Cell	H1	D1 + E1 + F1 + G1	tons	20,947	20,947	31,087	120,463	157,066	157,066	146,593	146,593	157,066	126,199	115,726	115,726	115,726	126,199	126,199	126,199	126,199	126,199
CHEMICALS	Initial Chemicals	I1	Z1 from previous year	tons	0.000	0.000	0.000	0.118	2.726	3.492	3.026	2.810	2.609	1.748	1.458	1.326	1.206	1.097	0.915	0.763	0.636	0.531
	Chemicals from Above	J1	E1 x infiltration chemical concentration	tons	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Chemicals from Groundwater	K1	F1 x groundwater chemical concentration	tons	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Chemicals in New Porewater	L1	G1 x porewater chemical concentration	tons	0.000	0.000	0.361	3.182	1.303	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Adsorbed Chemicals in Ore	M1	B1 x Q1 x porewater chemical concentration	tons	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Total Chemicals in Liquid	N1	J1 + K1 + L1	tons	0.000	0.000	0.361	3.182	1.303	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Total Chemicals on Solids	O1	I1 + M1	tons	0.000	0.000	0.000	0.118	2.726	3.492	3.026	2.810	2.609	1.748	1.458	1.326	1.206	1.097	0.915	0.763	0.636	0.531
	Total Chemicals in Cell	P1	O1 + N1	tons	0.000	0.000	0.361	3.300	4.029	3.492	3.026	2.810	2.609	1.748	1.458	1.326	1.206	1.097	0.915	0.763	0.636	0.531
PARTITION CHEMICALS	Kd	Q1		L/kg	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Adsorbed Chemicals	R1	(Q1 x C1 x P1) / (Q1 x C1 + H1)	tons	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Solid Concentration	S1	R1 / C1 x 10e6	ppm	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Dissolved Chemicals	T1	P1 - R1	tons	0.000	0.000	0.361	3.300	4.029	3.492	3.026	2.810	2.609	1.748	1.458	1.326	1.206	1.097	0.915	0.763	0.636	0.531
	Liquid Concentration	U1	T1 / H1 x 10e6	ppm	0.000	0.000	11.611	27.390	25.651	22.230	20.641	19.167	16.610	13.853	12.600	11.459	10.422	8.692	7.249	6.046	5.043	4.206
OUTFLOW	Water Remaining	V1	C1 x % moisture	tons	0	0	10,139	99,516	136,119	136,119	136,119	136,119	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252
	Water Out	W1	H1 - V1	tons	20,947	20,947	20,947	20,947	20,947	20,947	10,474	10,474	51,814	20,947	10,474	10,474	10,474	20,947	20,947	20,947	20,947	20,947
	Chemicals Out in Water	X1	W1 x U1 / 10e6	tons	0.000	0.000	0.243	0.574	0.537	0.466	0.216	0.201	0.861	0.290	0.132	0.120	0.109	0.182	0.152	0.127	0.106	0.088
	Chemicals Remaining in Water	Y1	T1 - X1	tons	0.000	0.000	0.118	2.726	3.492	3.026	2.810	2.609	1.748	1.458	1.326	1.206	1.097	0.915	0.763	0.636	0.531	0.443
	Total Chemicals Remaining	Z1	R1 + Y1	tons	0.000	0.000	0.118	2.726	3.492	3.026	2.810	2.609	1.748	1.458	1.326	1.206	1.097	0.915	0.763	0.636	0.531	0.443

CELL 2 - Unsaturated Bedrock

DATA	VARIABLE		FORMULA	UNITS	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
ROCK	Total Solids in Cell	C2		tons	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222
WATER	Initial Mass Water in Cell	D2	V2 from previous year	tons	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392
	Inflow from Cell Above	E2	W1	tons	20,947	20,947	20,947	20,947	20,947	20,947	10,474	10,474	51,814	20,947	10,474	10,474	10,474	20,947	20,947	20,947	20,947	20,947
	Inflow from Groundwater	F2		tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Water in Cell	H2	D2 + E2 + F2	tons	91,340	91,340	91,340	91,340	91,340	91,340	80,866	80,866	122,207	91,340	80,866	80,866	80,866	91,340	91,340	91,340	91,340	91,340
CHEMICALS	Initial Chemicals	I2	Z2 from previous year	tons	0.000	0.000	0.000	0.187	0.587	0.866	1.026	1.082	1.116	1.139	1.101	1.073	1.039	0.999	0.911	0.819	0.729	0.643
	Chemicals from Above	J2	X1	tons	0.000	0.000	0.243	0.574	0.537	0.466	0.216	0.201	0.861	0.290	0.132	0.120	0.109	0.182	0.152	0.127	0.106	0.088
	Chemicals from Groundwater	K2	F2 x groundwater chemical concentration	tons	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Total Chemicals in Cell	P2	I2 + J2 + K2	tons	0.000	0.000	0.243	0.761	1.124	1.332	1.243	1.282	1.977	1.429	1.233	1.193	1.148	1.181	1.062	0.945	0.834	0.731
PARTITION CHEMICALS	Kd	Q2		L/kg	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Adsorbed Chemicals	R2	(Q2 x C2 x P2) / (Q2 x C2 + H2)	tons	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Solid Concentration	S2	R2 / C2 x 10e6	ppm	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Dissolved Chemicals	T2	P2 - R2	tons	0.000	0.000	0.243	0.761	1.124	1.332	1.243	1.282	1.977	1.429	1.233	1.193	1.148	1.181	1.062	0.945	0.834	0.731
	Liquid Concentration	U2	T2 / H2 x 10e6	ppm	0.000	0.000	2.663	8.334	12.305	14.581	15.366	15.858	16.177	15.644	15.250	14.759	14.197	12.935	11.631	10.350	9.133	8.003
OUTFLOW	Water Remaining	V2	D2	tons	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392
	Water Out	W2	H2 - V2	tons	20,947	20,947	20,947	20,947	20,947	20,947	10,474	10,474	51,814	20,947	10,474	10,474	10,474	20,947	20,947	20,947	20,947	20,947
	Chemicals Out in Water	X2	W2 x U2 / 10e6	tons	0.000	0.000	0.056	0.175	0.258	0.305	0.161	0.166	0.838	0.328	0.160	0.155	0.149	0.271	0.244	0.217	0.191	0.168
	Chemicals Remaining in Water	Y2	T2 - X2	tons	0.000	0.000	0.187	0.587	0.866	1.026	1.082	1.116	1.139	1.101	1.073	1.039	0.999	0.911	0.819	0.729	0.643	0.563
	Total Chemicals Remaining	Z2	R2 + Y2	tons	0.000	0.000	0.187	0.587	0.866	1.026	1.082	1.116	1.139	1.101	1.073	1.039	0.999	0.911	0.819	0.729	0.643	0.563

18.00	19.00	20.00	21.00	22.00	23.00	24.00	25.00	26.00	27.00	28.00	29.00	30.00	31.00	32.00	33.00	34.00	35.00	36.00	37.00	38.00	39.00	40.00	41.00	42.00	43.00
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
19.00	20.00	21.00	22.00	23.00	24.00	25.00	26.00	27.00	28.00	29.00	30.00	31.00	32.00	33.00	34.00	35.00	36.00	37.00	38.00	39.00	40.00	41.00	42.00	43.00	44.00
2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042

9	9	9	9	9	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301

105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252
20,947	20,947	20,947	20,947	20,947	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
126,199	126,199	126,199	126,199	126,199	115,726	115,726	115,726	115,726	115,726	115,726	115,726	115,726	115,726	115,726	115,726	115,726	115,726	115,726	115,726	115,726	115,726	115,726	115,726	115,726	115,726

0.443	0.369	0.308	0.257	0.214	0.179	0.162	0.148	0.134	0.122	0.111	0.101	0.092	0.084	0.076	0.069	0.063	0.057	0.052	0.047	0.043	0.039	0.036	0.032	0.029	0.027
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.443	0.369	0.308	0.257	0.214	0.179	0.162	0.148	0.134	0.122	0.111	0.101	0.092	0.084	0.076	0.069	0.063	0.057	0.052	0.047	0.043	0.039	0.036	0.032	0.029	0.027
0.443	0.369	0.308	0.257	0.214	0.179	0.162	0.148	0.134	0.122	0.111	0.101	0.092	0.084	0.076	0.069	0.063	0.057	0.052	0.047	0.043	0.039	0.036	0.032	0.029	0.027

0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.443	0.369	0.308	0.257	0.214	0.179	0.162	0.148	0.134	0.122	0.111	0.101	0.092	0.084	0.076	0.069	0.063	0.057	0.052	0.047	0.043	0.039	0.036	0.032	0.029	0.027
3.507	2.925	2.440	2.035	1.697	1.543	1.404	1.277	1.161	1.056	0.960	0.874	0.794	0.723	0.657	0.598	0.544	0.494	0.450	0.409	0.372	0.338	0.308	0.280	0.255	0.231

105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252
20,947	20,947	20,947	20,947	20,947	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474
0.073	0.061	0.051	0.043	0.036	0.016	0.015	0.013	0.012	0.011	0.010	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.003	0.002
0.369	0.308	0.257	0.214	0.179	0.162	0.148	0.134	0.122	0.111	0.101	0.092	0.084	0.076	0.069	0.063	0.057	0.052	0.047	0.043	0.039	0.036	0.032	0.029	0.027	0.024
0.369	0.308	0.257	0.214	0.179	0.162	0.148	0.134	0.122	0.111	0.101	0.092	0.084	0.076	0.069	0.063	0.057	0.052	0.047	0.043	0.039	0.036	0.032	0.029	0.027	0.024

2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222

70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392
20,947	20,947	20,947	20,947	20,947	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91,340	91,340	91,340	91,340	91,340	80,866	80,866	80,866	80,866	80,866	80,866	80,866	80,866	80,866	80,866	80,866	80,866	80,866	80,866	80,866	80,866	80,866	80,866	80,866	80,866	80,866

0.563	0.491	0.425	0.367	0.316	0.271	0.250	0.230	0.212	0.195	0.180	0.165	0.152	0.139	0.128	0.117	0.107	0.099	0.090	0.083	0.076	0.069	0.063	0.058	0.053	0.048
0.073	0.061	0.051	0.043	0.036	0.016	0.015	0.013	0.012	0.011	0.010	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.003	0.002
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.637	0.552	0.477	0.410	0.351	0.287	0.265	0.244	0.224	0.206	0.190	0.174	0.160	0.147	0.135	0.123	0.113	0.104	0.095	0.087	0.080	0.073	0.067	0.061	0.056	0.051

0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.637	0.552	0.477	0.410	0.351	0.287	0.265	0.244	0.224	0.206	0.190	0.174	0.160	0.147	0.135	0.123	0.113	0.104	0.095	0.087	0.080	0.073	0.067	0.061	0.056	0.051
6.972	6.044	5.217	4.487	3.848	3.549	3.271	3.013	2.773	2.551	2.345	2.154	1.978	1.815	1.665	1.527	1.400	1.283	1.175	1.075	0.984	0.901	0.824	0.753	0.689	0.630

70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392
20,947	20,947	20,947	20,947	20,947	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474
0.146	0.127	0.109	0.094	0.081	0.037	0.034	0.032	0.029	0.027	0.025	0.023	0.021	0.019	0.017	0.016	0.015	0.013	0.012	0.011	0.010	0.009	0.009	0.008	0.007	0.007
0.491	0.425	0.367	0.316	0.271	0.250	0.230	0.212	0.195	0.180	0.165	0.152	0.139	0.128	0.117	0.107	0.099	0.090	0.083	0.076	0.069	0.063	0.058	0.053	0.048	0.044
0.491	0.425	0.367	0.316	0.271	0.250	0.230	0.212	0.195	0.180	0.165	0.152	0.139	0.128	0.117	0.107	0.099	0.090	0.083	0.076	0.069	0.063	0.058	0.053	0.048	0.044

44.00	45.00	46.00	47.00	48.00	49.00	50.00	51.00	52.00	53.00	54.00	55.00	56.00	57.00	58.00	59.00	60.00	61.00
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
45.00	46.00	47.00	48.00	49.00	50.00	51.00	52.00	53.00	54.00	55.00	56.00	57.00	58.00	59.00	60.00	61.00	62.00
2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060

4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060
2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301	2,631,301

105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252
10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
115,726	115,726	115,726	115,726	115,726	115,726	115,726	115,726	115,726	115,726	115,726	115,726	115,726	115,726	115,726	115,726	115,726	115,726

0.024	0.022	0.020	0.018	0.017	0.015	0.014	0.013	0.011	0.010	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.005
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.024	0.022	0.020	0.018	0.017	0.015	0.014	0.013	0.011	0.010	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.005
0.024	0.022	0.020	0.018	0.017	0.015	0.014	0.013	0.011	0.010	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.005

0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.024	0.022	0.020	0.018	0.017	0.015	0.014	0.013	0.011	0.010	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.005
0.211	0.191	0.174	0.158	0.144	0.131	0.119	0.108	0.099	0.090	0.082	0.074	0.067	0.061	0.056	0.051	0.046	0.042

105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252	105,252
10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474
0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.000	0.000
0.022	0.020	0.018	0.017	0.015	0.014	0.013	0.011	0.010	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.004
0.022	0.020	0.018	0.017	0.015	0.014	0.013	0.011	0.010	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.004

2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060
7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222	7,039,222

70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392
10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
80,866	80,866	80,866	80,866	80,866	80,866	80,866	80,866	80,866	80,866	80,866	80,866	80,866	80,866	80,866	80,866	80,866	80,866

0.044	0.040	0.037	0.034	0.031	0.028	0.026	0.023	0.021	0.020	0.018	0.016	0.015	0.014	0.012	0.011	0.010	0.009
0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.047	0.043	0.039	0.035	0.032	0.030	0.027	0.025	0.022	0.020	0.019	0.017	0.016	0.014	0.013	0.012	0.011	0.010

0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.047	0.043	0.039	0.035	0.032	0.030	0.027	0.025	0.022	0.020	0.019	0.017	0.016	0.014	0.013	0.012	0.011	0.010
0.575	0.526	0.480	0.438	0.400	0.365	0.334	0.304	0.278	0.253	0.231	0.211	0.192	0.175	0.160	0.146	0.133	0.121

70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392	70,392
10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474	10,474
0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001
0.040	0.037	0.034	0.031	0.028	0.026	0.023	0.021	0.020	0.018	0.016	0.015	0.014	0.012	0.011	0.010	0.009	0.009
0.040	0.037	0.034	0.031	0.028	0.026	0.023	0.021	0.020	0.018	0.016	0.015	0.014	0.012	0.011	0.010	0.009	0.009