

# Dispersion Report

## Workspace: 72438-1RiempFSRU-6R

### Study: Riempimento FSRU-ME4

### Equipment Item: 6R Linee ricircolo GNL durante riempimento FSRU

72438-1RiempFSRU-6R\Riempimento FSRU-ME4\6R Linee ricircolo GNL durante riempimento FSRU

Material	GAS NATURALE	
East	0	m
North	0	m

### Scenario (User defined source) : 65mm-Q25,4

72438-1RiempFSRU-6R\Riempimento FSRU-ME4\6R Linee ricircolo GNL durante riempimento FSRU\65mm-Q25,4

Material to track	GAS NATURALE
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### Weather: Category 2/F

Wind speed [m/s]	2
Pasquill stability	F stable - night with moderate clouds and light/moderate wind
Atmospheric temperature [degC]	25
Relative humidity [fraction]	0,75
Solar radiation flux [kW/m2]	0,5
Mixing layer height [m]	100

### Observer Release Data and Observer Mass Data

Observer number	Release type	Start time [s]	Start downwind distance [m]	Unit	Masses or mass rates		
					Release	Rainout	Final

1	Continuous	0	0	kg/s	25,4	0	25,4
2	Continuous	3600	0	kg/s	25,4	0	25,4

### Time-varying Observer Dispersion Data (before along-wind-diffusion effects)

Dispersion data correspond to an averaging time of: 18,75 s

Observer number	Time [s]	Down wind distance [m]	C/Line height [m]	C/Line conc [ppm]	Effective width [m]	Effective depth [m]	C/Line vapour temperature [degC]	C/Line liquid fraction	Centroid velocity [m/s]	C/Line cloud density [kg/m <sup>3</sup> ]
1	0	0	1	999.99 9,37	0,4431 91	0,2125 49	-160,343	0	66,262 7	2,0346 3
1	0,01	0,61788 1	0,999 813	914.24 5,54	0,5298 3	0,2585 47	-144,093	0	57,753 9	1,8439 1
1	0,02	1,16351	0,999 311	846.27 1,49	0,6106 67	0,3011 51	-130,842	0	51,565 8	1,7248 1
1	0,03	1,65449	0,998 559	790.92 2,46	0,6869 31	0,3408 69	-119,817	0	46,850 9	1,6427 2
1	0,04	2,10269	0,997 6	744.81 0,68	0,7593 71	0,3781 89	-110,472	0	43,125 7	1,5823 2
1	0,05	2,51699	0,996 467	705.64 7,90	0,8285 62	0,4135 35	-102,422	0	40,096 6	1,5357 5
1	0,06	2,90408	0,995 187	671.85 1,80	0,8949 99	0,4472 61	-95,3905	0	37,576 2	1,4985 8
1	0,07	3,26816	0,993 778	642.30 2,53	0,9591 08	0,4796 58	-89,179	0	35,440 1	1,4681 1
1	0,08	3,61266	0,992 256	616.17 7,75	1,0212 8	0,5109 74	-83,6376	0	33,601 7	1,4425 9
1	0,09	3,94016	0,990 632	592.86 3,26	1,0818 5	0,5414 11	-78,653	0	31,999 5	1,4208 6
1	0,1	4,25277	0,988 916	571.88 8,40	1,1411 1	0,5711 35	-74,1369	0	30,587 9	1,4020 8
1	0,11	4,55226	0,987 119	552.88 4,29	1,1992 8	0,6002 82	-70,0196	0	29,332 6	1,3856 7



1	0,12	4,84013	0,985 248	535.55 9,07	1,2565 7	0,6289 57	-66,2451	0	28,207 5	1,3711 7
1	0,13	5,11744	0,983 309	519.68 1,10	1,3130 9	0,6572 3	-62,769	0	27,193	1,3582 7
1	0,14	5,38496	0,981 308	505.06 5,32	1,3689 5	0,6851 6	-59,5555	0	26,272 3	1,3466 9
1	0,15	5,64361	0,979 249	491.55 1,28	1,4242 4	0,7128	-56,5732	0	25,432 2	1,3362 5
1	0,16	5,89383	0,977 136	479.01 3,54	1,4790 2	0,7401 73	-53,7979	0	24,662 2	1,3267 7
1	0,17	6,13638	0,974 974	467.33 7,72	1,5333 5	0,7673 14	-51,2069	0	23,953 1	1,3181 3
1	0,18	6,3719	0,972 767	456.42 7,80	1,5872 7	0,7942 48	-48,7813	0	23,297 6	1,3102 2
1	0,19	6,60109	0,970 52	446.19 9,40	1,6408 3	0,8210 02	-46,5042	0	22,689	1,3029 5
1	0,2	6,82482	0,968 238	436.60 5,55	1,6943 2	0,8477 17	-44,3669	0	22,114 7	1,2962 6
1	0,206 542	6,96811	0,966 738	430.76 3,94	1,7301 2	0,8656 01	-43,0653	0	21,728 3	1,2922 4
1	0,206 542	6,96811	0,966 738	430.76 3,94	1,7301 2	0,8656 01	-43,0653	0	21,728 3	1,2922 4
1	0,212	7,08577	0,965 49	426.22 8,05	1,7453 4	0,8914 18	-42,0545	0	21,383 1	1,2891 6
1	0,226 4	7,38686	0,962 302	415.58 3,58	1,7854 4	0,9641 38	-39,6835	0	20,44	1,2820 3
1	0,243 68	7,73069	0,958 745	404.67 3,01	1,8335 9	1,0543 4	-37,257	0	19,374 6	1,2748 9
1	0,264 416	8,12048	0,954 868	393.52 6,64	1,8913 9	1,1612 5	-34,7857	0	18,250 8	1,2677 9
1	0,289 299	8,56003	0,950 696	382.17 6,83	1,9606 9	1,2830 1	-32,2814	0	17,116 2	1,2607 7
1	0,319 159	9,05375	0,946 221	370.66 1,21	2,0435 7	1,4170 6	-29,7583	0	16,000 3	1,2538 8
1	0,354 991	9,60685	0,941 399	358.99 9,76	2,1423 6	1,5602 7	-27,2274	0	14,922 4	1,2471 5
1	0,397 989	10,2253	0,936 142	347.21 1,87	2,2596 8	1,7095 2	-24,7008	0	13,892 7	1,2406 4



1	0,449 587	10,9159	0,930 316	335.32 4,06	2,3983 8	1,8623 6	-22,1929	0	12,914 3	1,2343 8
1	0,511 504	11,6858	0,923 753	323.38 8,16	2,5616 6	2,0163 6	-19,7237	0	11,988 4	1,2284 4
1	0,585 805	12,5424	0,916 247	311.47 3,41	2,7530 5	2,1687 4	-17,3161	0	11,117 2	1,2228 6
1	0,674 966	13,4953	0,907 508	299.59 9,66	2,9764 6	2,3195 4	-14,9816	0	10,295 3	1,2176 8
1	0,781 959	14,5549	0,897 219	287.81 2,61	3,2364 9	2,4687 9	-12,7352	0	9,5193 4	1,2129 3
1	0,910 351	15,731	0,885 011	276.18 8,84	3,5379 9	2,6151 4	-10,595	0	8,7899 4	1,2086 2
1	1,064 42	17,0324	0,870 444	264.81 0,86	3,8869 2	2,7566 2	-8,57632	0	8,1088 4	1,2047 9
1	1,249 31	18,4695	0,852 985	253.73 3,29	4,2898 4	2,8923 5	-6,6859	0	7,4750 5	1,2014
1	1,471 17	20,0591	0,831 974	242.93 1,41	4,7549 1	3,0264	-4,91492	0	6,8802 8	1,1984 3
1	1,737 4	21,816	0,806 648	232.42 6,35	5,2919 4	3,1599 7	-3,26112	0	6,3221 8	1,1958 5
1	2,056 88	23,7522	0,776 052	222.29 2,35	5,9123 4	3,2898 6	-1,72868	0	5,804	1,1936 3
1	2,440 26	25,8864	0,738 947	212.51 4,01	6,6300 1	3,4190 1	-0,306996	0	5,3212	1,1917 2
1	2,900 31	28,2308	0,693 548	203.13 3,16	7,4691 5	3,5414 1	0,89499	0	4,8727 3	1,1906 1
1	3,452 37	30,8061	0,637 578	194.12 3,83	8,4425 4	3,6691 6	2,1722	0	4,4563 8	1,189
1	4,114 84	33,6302	0,568 771	185.49 4,01	9,5665 3	3,8040 7	3,36523	0	4,0712	1,1875 9
1	4,909 81	36,7194	0,484 435	177.25 8,76	10,863 6	3,947	4,47865	0	3,7173 3	1,1863 4
1	5,863 77	40,0969	0,381 253	169.40 2,55	12,36	4,1011 3	5,52086	0	3,3931 4	1,1852 2
1	7,008 53	43,7962	0,255 193	161.87 4,31	14,086 6	4,2732 8	6,50415	0	3,0955 7	1,1842
1	8,382 23	47,8476	0,101 374	154.65 7,89	16,076 2	4,4673 1	7,43589	0	2,8242 5	1,1832 5



1	9,189 72	50,0727	0,01	151.06 6,47	17,209 3	4,5784 6	7,8967	0	2,6942 5	1,1827 9
1	9,189 72	50,0727	0	151.06 6,50	17,209 3	4,5891 2	7,89632	0	2,6938 7	1,1827 9
1	10,03 07	52,2872	0	148.21 5,48	18,363 4	4,5940 5	8,27266	0	2,5741 6	1,1823 6
1	12,00 88	57,1462	0	142.53 4,07	20,982 4	4,6094 5	9,02963	0	2,3418	1,1814 6
1	14,38 26	62,4457	0	136.97 3,68	23,959 3	4,6349 7	9,78238	0	2,1286 6	1,1805
1	17,23 11	68,2217	0	130.60 8,20	27,310 8	4,7078	10,6278	0	1,9346 2	1,1794 6
1	20,64 93	74,5297	0	123.06 4,60	31,052 2	4,8381 2	11,5801	0	1,7638 4	1,1784 5
1	24,75 12	81,453	0	114.36 0,12	35,211 7	5,0170 4	12,6148	0	1,6208 6	1,1775 4
1	29,67 34	89,1267	0	104.58 6,87	39,850 2	5,2429 5	13,7052	0	1,5051 1	1,1768 2
1	35,58 01	97,738	0	94.040, 29	45,102 5	5,5011 6	14,8097	0	1,4158 5	1,1763 4
1	42,66 81	107,53	0	83.189, 61	51,215 9	5,7681 3	15,8802	0	1,3500 7	1,1761 2
1	51,17 37	118,797	0	72.246, 27	58,588 8	6,0346 3	16,8967	0	1,3043 2	1,1761 4
1	61,38 05	131,945	0	61.519, 35	67,860 5	6,2877	17,8368	0	1,2741 3	1,1763 9
1	62,99 38	134	0	60.038, 71	69,381 4	6,3210 4	17,9626	0	1,2708 5	1,1764 4
1	62,99 38	134	0	60.038, 71	69,381 4	6,3220 5	17,9626	0	1,2706 5	1,1764 4
1	73,62 86	147,429	0	51.728, 99	79,275 8	6,5146 8	18,658	0	1,2561 3	1,1767 5
1	88,32 63	165,846	0	43.334, 72	92,121 2	6,7400 6	19,3449	0	1,2507 7	1,1771 2
1	105,9 64	187,998	0	36.000, 93	104,72 3	7,0777	20,5003	0	1,2664 5	1,1754 8
1	127,1 28	215,366	0	29.651, 43	111,08 6	7,7774 7	21,7772	0	1,3249	1,1731 5



1	152,5 26	250,267	0	24.095, 04	112,64 2	8,8340 3	22,7454	0	1,4202 7	1,1717 2
1	162,7 48	264,928	0	22.750, 14	113,31	9,1364 2	22,9871	0	1,4470 6	1,1713 4
1	183,0 03	294,643	0	20.972, 96	114,61 9	9,5629 2	23,3317	0	1,4842 8	1,1707 5
1	219,5 76	350,122	0	18.280, 45	117,03 6	10,310 4	23,7883	0	1,5492 2	1,1701 1
1	263,4 63	419,763	0	15.697, 01	120,02 6	11,183 3	24,1501	0	1,6239 2	1,1698
1	316,1 27	507,551	0	13.268, 89	123,73 6	12,204 4	24,4253	0	1,7091 6	1,1697 7
1	379,3 25	618,649	0	11.035, 09	128,35 2	13,399 1	24,626	0	1,8057 9	1,1699 4
1	438,8 95	728,807	0	9.407,3 3	132,85 6	14,499 2	24,7422	0	1,8919 2	1,1701 9
2	3600	0	1	999.99 9,37	0,4431 91	0,2125 49	-160,343	0	66,262 7	2,0346 3
2	3600, 01	0,61788 1	0,999 813	914.24 5,54	0,5298 3	0,2585 47	-144,093	0	57,753 9	1,8439 1
2	3600, 02	1,16351	0,999 311	846.27 1,49	0,6106 67	0,3011 51	-130,842	0	51,565 8	1,7248 1
2	3600, 03	1,65449	0,998 559	790.92 2,46	0,6869 31	0,3408 69	-119,817	0	46,850 9	1,6427 2
2	3600, 04	2,10269	0,997 6	744.81 0,68	0,7593 71	0,3781 89	-110,472	0	43,125 7	1,5823 2
2	3600, 05	2,51699	0,996 467	705.64 7,90	0,8285 62	0,4135 35	-102,422	0	40,096 6	1,5357 5
2	3600, 06	2,90408	0,995 187	671.85 1,80	0,8949 99	0,4472 61	-95,3905	0	37,576 2	1,4985 8
2	3600, 07	3,26816	0,993 778	642.30 2,53	0,9591 08	0,4796 58	-89,179	0	35,440 1	1,4681 1
2	3600, 08	3,61266	0,992 256	616.17 7,75	1,0212 8	0,5109 74	-83,6376	0	33,601 7	1,4425 9
2	3600, 09	3,94016	0,990 632	592.86 3,26	1,0818 5	0,5414 11	-78,653	0	31,999 5	1,4208 6
2	3600, 4,25277	0,988	571.88	1,1411	0,5711	-74,1369	0	30,587	1,4020	



	1		916	8,40	1	35			9	8
2	3600,11	4,55226	0,987119	552.884,29	1,19928	0,600282	-70,0196	0	29,3326	1,38567
2	3600,12	4,84013	0,985248	535.559,07	1,25657	0,628957	-66,2451	0	28,2075	1,37117
2	3600,13	5,11744	0,983309	519.681,10	1,31309	0,65723	-62,769	0	27,193	1,35827
2	3600,14	5,38496	0,981308	505.065,32	1,36895	0,68516	-59,5555	0	26,2723	1,34669
2	3600,15	5,64361	0,979249	491.551,28	1,42424	0,7128	-56,5732	0	25,4322	1,33625
2	3600,16	5,89383	0,977136	479.013,54	1,47902	0,740173	-53,7979	0	24,6622	1,32677
2	3600,17	6,13638	0,974974	467.337,72	1,53335	0,767314	-51,2069	0	23,9531	1,31813
2	3600,18	6,3719	0,972767	456.427,80	1,58727	0,794248	-48,7813	0	23,2976	1,31022
2	3600,19	6,60109	0,97052	446.199,40	1,64083	0,821002	-46,5042	0	22,689	1,30295
2	3600,2	6,82482	0,968238	436.605,55	1,69432	0,847717	-44,3669	0	22,1147	1,29626
2	3600,21	6,96811	0,966738	430.763,94	1,73012	0,865601	-43,0653	0	21,7283	1,29224
2	3600,21	6,96811	0,966738	430.763,94	1,73012	0,865601	-43,0653	0	21,7283	1,29224
2	3600,21	7,08577	0,96549	426.228,05	1,74534	0,891418	-42,0545	0	21,3831	1,28916
2	3600,23	7,38686	0,962302	415.583,58	1,78544	0,964138	-39,6835	0	20,44	1,28203
2	3600,24	7,73069	0,958745	404.673,01	1,83359	1,05434	-37,257	0	19,3746	1,27489
2	3600,26	8,12048	0,954868	393.526,64	1,89139	1,16125	-34,7857	0	18,2508	1,26779
2	3600,29	8,56003	0,950696	382.176,83	1,96069	1,28301	-32,2814	0	17,1162	1,26077
2	3600,32	9,05375	0,946221	370.661,21	2,04357	1,41706	-29,7583	0	16,0003	1,25388
2	3600,9	9,60685	0,941	358.99	2,1423	1,5602	-27,2274	0	14,922	1,2471

	35		399	9,76	6	7			4	5
2	3600,4	10,2253	0,936142	347.211,87	2,25968	1,70952	-24,7008	0	13,8927	1,24064
2	3600,45	10,9159	0,930316	335.324,06	2,39838	1,86236	-22,1929	0	12,9143	1,23438
2	3600,51	11,6858	0,923753	323.388,16	2,56166	2,01636	-19,7237	0	11,9884	1,22844
2	3600,59	12,5424	0,916247	311.473,41	2,75305	2,16874	-17,3161	0	11,1172	1,22286
2	3600,67	13,4953	0,907508	299.599,66	2,97646	2,31954	-14,9816	0	10,2953	1,21768
2	3600,78	14,5549	0,897219	287.812,61	3,2364	2,46879	-12,7352	0	9,51934	1,21293
2	3600,91	15,731	0,885011	276.188,84	3,53799	2,61514	-10,595	0	8,78994	1,20862
2	3601,06	17,0324	0,870444	264.810,86	3,88692	2,75662	-8,57632	0	8,10884	1,20479
2	3601,25	18,4695	0,852985	253.733,29	4,28984	2,89235	-6,6859	0	7,47505	1,20145
2	3601,47	20,0591	0,831974	242.931,41	4,75491	3,0264	-4,91492	0	6,88028	1,19843
2	3601,74	21,816	0,806648	232.426,35	5,29194	3,15997	-3,26112	0	6,32218	1,19585
2	3602,06	23,7522	0,776052	222.292,35	5,91234	3,28986	-1,72868	0	5,804	1,19363
2	3602,44	25,8864	0,738947	212.514,01	6,63001	3,41901	-0,306996	0	5,3212	1,19172
2	3602,9	28,2308	0,693548	203.133,16	7,46915	3,54141	0,89499	0	4,87273	1,19061
2	3603,45	30,8061	0,637578	194.123,83	8,44254	3,66916	2,1722	0	4,45638	1,189
2	3604,11	33,6302	0,568771	185.494,01	9,56653	3,80407	3,36523	0	4,0712	1,18759
2	3604,91	36,7194	0,484435	177.258,76	10,8636	3,947	4,47865	0	3,71733	1,18634
2	3605,86	40,0969	0,381253	169.402,55	12,36	4,10113	5,52086	0	3,39314	1,18522
2	3607,	43,7962	0,255	161.87	14,086	4,2732	6,50415	0	3,0955	1,1842





	01		193	4,31	6	8			7	
2	3608,38	47,8476	0,101374	154.657,89	16,0762	4,46731	7,43589	0	2,82425	1,18325
2	3609,19	50,0727	0,01	151.066,47	17,2093	4,57846	7,8967	0	2,69425	1,18279
2	3609,19	50,0727	0	151.066,50	17,2093	4,58912	7,89632	0	2,69387	1,18279
2	3610,03	52,2872	0	148.215,48	18,3634	4,59405	8,27266	0	2,57416	1,18236
2	3612,01	57,1462	0	142.534,07	20,9824	4,60945	9,02963	0	2,3418	1,18146
2	3614,38	62,4457	0	136.973,68	23,9593	4,63497	9,78238	0	2,12866	1,18056
2	3617,23	68,2217	0	130.608,20	27,3108	4,7078	10,6278	0	1,93462	1,17946
2	3620,65	74,5297	0	123.064,60	31,0522	4,83812	11,5801	0	1,76384	1,17845
2	3624,75	81,453	0	114.360,12	35,2117	5,01704	12,6148	0	1,62086	1,17754
2	3629,67	89,1267	0	104.586,87	39,8502	5,24295	13,7052	0	1,50511	1,17682
2	3635,58	97,738	0	94.040,29	45,1025	5,50116	14,8097	0	1,41585	1,17634
2	3642,67	107,53	0	83.189,61	51,2159	5,76813	15,8802	0	1,35007	1,17612
2	3651,17	118,797	0	72.246,27	58,5888	6,03463	16,8967	0	1,30432	1,17614
2	3661,38	131,945	0	61.519,35	67,8605	6,2877	17,8368	0	1,27413	1,17639
2	3662,99	134	0	60.038,71	69,3814	6,32104	17,9626	0	1,27085	1,17644
2	3662,99	134	0	60.038,71	69,3814	6,32205	17,9626	0	1,27065	1,17644
2	3673,63	147,429	0	51.728,99	79,2758	6,51468	18,658	0	1,25613	1,17675
2	3688,33	165,846	0	43.334,72	92,1212	6,74006	19,3449	0	1,25077	1,17712
2	3705,	187,998	0	36.000,	104,72	7,0777	20,5003	0	1,2664	1,1754



	96			93	3				5	8
2	3727,13	215,366	0	29.651,43	111,086	7,77747	21,7772	0	1,3249	1,17315
2	3752,53	250,267	0	24.095,04	112,642	8,83403	22,7454	0	1,42027	1,17172
2	3762,75	264,928	0	22.750,14	113,31	9,13642	22,9871	0	1,44706	1,17134
2	3783	294,643	0	20.972,96	114,619	9,56292	23,3317	0	1,48428	1,17075
2	3819,58	350,122	0	18.280,45	117,036	10,3104	23,7883	0	1,54922	1,17011
2	3863,46	419,763	0	15.697,01	120,026	11,1833	24,1501	0	1,62392	1,1698
2	3916,13	507,551	0	13.268,89	123,736	12,2044	24,4253	0	1,70916	1,16977
2	3979,32	618,649	0	11.035,09	128,352	13,3991	24,626	0	1,80579	1,16994
2	4038,89	728,807	0	9.407,33	132,856	14,4992	24,7422	0	1,89192	1,17019

### Weather: Category 5/D

Wind speed [m/s]	5
Pasquill stability	D neutral - little sun and high wind or overcast/windy night
Atmospheric temperature [degC]	25
Relative humidity [fraction]	0,75
Solar radiation flux [kW/m2]	0,5
Mixing layer height [m]	800

### Observer Release Data and Observer Mass Data

Observer number	Release type	Start time [s]	Start downwind distance [m]	Unit	Masses or mass rates		
					Release	Rainout	Final
1	Continuous	0	0	kg/s	25,4	0	25,4
2	Continuous	3600	0	kg/s	25,4	0	25,4

### Time-varying Observer Dispersion Data (before along-wind-diffusion effects)

Dispersion data correspond to an averaging time of: 18,75 s

Observer number	Time [s]	Down wind distance [m]	C/Li ne height [m]	C/Li ne conc [ppm]	Effect ive width [m]	Effect ive depth [m]	C/Line vapour temperature [degC]	C/Li ne liqui d fraction	Centr oid veloci ty [m/s]	C/Lin e cloud densi ty [kg/m3]
1	0	0	1	999.99 9,37	0,4433 74	0,2124 61	-160,343	0	66,262 7	2,0346 3
1	0,01	0,61582 9	0,999 815	906.95 8,14	0,5367 53	0,2620 6	-142,695	0	57,356 5	1,8301 1
1	0,02	1,15603	0,999 323	832.99 1,95	0,6251 45	0,3085 9	-128,23	0	50,906 4	1,7042 1

1	0,03	1,63933	0,998 592	772.64 2,91	0,7097 31	0,3525 13	-116,149	0	46,008 7	1,6181 9
1	0,04	2,07823	0,997 67	722.28 6,25	0,7912 57	0,3943 52	-105,878	0	42,149 7	1,5552 7
1	0,05	2,48235	0,996 594	679.47 3,82	0,8703 36	0,4345 84	-97,0106	0	39,019 4	1,5069 8
1	0,06	2,85821	0,995 39	642.50 2,67	0,9475 06	0,4736 07	-89,2521	0	36,420 6	1,4685 6
1	0,07	3,21044	0,994 077	610.15 3,78	1,0232 1	0,5117 31	-82,387	0	34,223 6	1,4371 4
1	0,08	3,54255	0,992 672	581.53 3,42	1,0978 3	0,5492 08	-76,2536	0	32,336 7	1,4108 9
1	0,09	3,85722	0,991 187	555.97 1,48	1,1716 7	0,5862 22	-70,7287	0	30,695 2	1,3885 6
1	0,1	4,1567	0,989 635	532.95 2,70	1,2449 6	0,6229 16	-65,7162	0	29,251 3	1,3693
1	0,11	4,44282	0,988 023	512.07 5,17	1,3178 8	0,6593 98	-61,1407	0	27,969 3	1,3524 7
1	0,12	4,71704	0,986 361	493.02 0,97	1,3905 7	0,6957 46	-56,9421	0	26,821 8	1,3376 4
1	0,13	4,9804	0,984 655	475.53 7,29	1,4631 2	0,7320 09	-53,0726	0	25,787 4	1,3244 5
1	0,14	5,23374	0,982 909	459.41 7,85	1,5355 9	0,7682 23	-49,4932	0	24,849 3	1,3126 5
1	0,15	5,4779	0,981 131	444.49 0,98	1,6080 2	0,8044 16	-46,1716	0	23,993 7	1,3020 2
1	0,16	5,71351	0,979 324	430.61 5,02	1,6804 4	0,8406 01	-43,081	0	23,209 6	1,2924 1
1	0,169 626	5,93349	0,977 566	418.31 2,41	1,7495 4	0,8751 26	-40,3419	0	22,514 7	1,2841 1
1	0,169 626	5,93349	0,977 566	418.31 2,41	1,7495 4	0,8751 26	-40,3419	0	22,514 7	1,2841 1
1	0,17	5,9419	0,977 498	417.87 7,62	1,7521 3	0,8764 19	-40,2451	0	22,488 9	1,2838 2
1	0,18	6,16344	0,975 684	407.21 0,38	1,8190 6	0,9098 59	-37,8699	0	21,829 6	1,2767 9
1	0,19	6,37866	0,973 923	397.86 4,05	1,8828 7	0,9417 43	-35,7919	0	21,224 6	1,2707 7



1	0,2	6,58808	0,972 228	389.48 0,98	1,9443 1	0,9724 44	-33,9328	0	20,667 4	1,2654 7
1	0,212	6,83234	0,970 288	380.43 0,13	2,0153 6	1,0079 5	-31,9328	0	20,053 8	1,2598 8
1	0,213 499	6,86233	0,970 053	379.36 5,74	2,0240 5	1,0123	-31,6982	0	19,981 1	1,2592 4
1	0,213 499	6,86233	0,970 053	379.36 5,74	2,0240 5	1,0123	-31,6982	0	19,981 1	1,2592 4
1	0,226 4	7,11632	0,968 095	370.87 2,74	2,0565 3	1,0756 9	-29,8317	0	19,401 1	1,2541 3
1	0,243 68	7,44559	0,965 648	361.04 2,25	2,0996 8	1,1554	-27,6852	0	18,715 6	1,2483 9
1	0,264 416	7,82611	0,962 954	350.95 4,09	2,1509 2	1,2440 9	-25,5023	0	18,002 4	1,2426 8
1	0,289 299	8,26493	0,960 007	340.56 8,08	2,2116 4	1,3423 2	-23,2814	0	17,266 2	1,2370 3
1	0,319 159	8,76946	0,956 803	329.91 0,16	2,2834 1	1,4498 3	-21,0362	0	16,514	1,2314 8
1	0,354 991	9,34773	0,953 331	319.02 4,91	2,3679 7	1,5659	-18,7848	0	15,752 8	1,2261
1	0,397 989	10,0084	0,949 57	307.96 7,20	2,4673	1,6893	-16,5475	0	14,990 3	1,2209 3
1	0,449 587	10,7614	0,945 468	296.76 6,28	2,5835 8	1,8190 1	-14,3391	0	14,232 1	1,2160 3
1	0,511 504	11,6186	0,940 933	285.41 9,62	2,7192 3	1,9547 4	-12,1676	0	13,481 4	1,2114 2
1	0,585 805	12,5922	0,935 882	274.00 7,67	2,8769 7	2,0947 7	-10,0551	0	12,744 1	1,2071 4
1	0,674 966	13,6952	0,930 206	262.60 5,23	3,0598 2	2,2372 7	-8,01975	0	12,025 5	1,2032 4
1	0,781 959	14,9433	0,923 757	251.25 6,98	3,2712 1	2,3811 3	-6,07124	0	11,328 6	1,1997 2
1	0,910 351	16,3531	0,916 375	240.02 7,09	3,5150 3	2,5247 8	-4,21947	0	10,656 8	1,1965 7
1	1,064 42	17,9332	0,907 903	229.09 0,30	3,7944 7	2,6635 8	-2,48738	0	10,019 1	1,1938 3
1	1,249 31	19,708	0,898 11	218.42 2,73	4,1149 1	2,7979	-0,864025	0	9,4121 2	1,1914 2



1	1,471 17	21,721	0,886 659	207.88 0,17	4,4877 7	2,9286 7	0,55269	0	8,8246 5	1,1898 6
1	1,737 4	23,9943	0,873 178	197.57 5,88	4,9188 9	3,0578 3	2,07292	0	8,2636 4	1,1877 5
1	2,056 88	26,548	0,857 409	187.65 4,40	5,4100 2	3,1821 8	3,50001	0	7,7354 3	1,1858 6
1	2,440 26	29,4137	0,839 141	178.25 6,02	5,9667 5	3,2978 8	4,82486	0	7,2425 8	1,1841 7
1	2,900 31	32,6354	0,818 19	169.39 8,03	6,5952 7	3,4055 9	6,05573	0	6,7824 5	1,1826 3
1	3,452 37	36,257	0,794 443	161.05 9,97	7,2998 9	3,5071 9	7,20525	0	6,3540 9	1,1811 9
1	4,114 84	40,3319	0,768 027	152.47 0,12	8,0823 3	3,6319 6	8,36631	0	5,9512 7	1,1797 9
1	4,909 81	44,9155	0,739 408	143.27 8,02	8,9394 7	3,7963 7	9,57113	0	5,5785	1,1784 2
1	5,863 77	50,0816	0,709 412	133.49 6,26	9,8624 8	4,0053 7	10,8071	0	5,2445	1,1771 5
1	7,008 53	55,9204	0,679 306	123.21 8,97	10,833 5	4,2629 9	12,0524	0	4,9574 2	1,1760 1
1	8,382 23	62,5569	0,650 724	112.57 2,52	11,829 7	4,5740 5	13,2747	0	4,7225	1,1751
1	10,03 07	70,1776	0,624 979	101.70 9,86	12,839 6	4,9426 6	14,447	0	4,5396 5	1,1744 7
1	12,00 88	79,0147	0,602 036	90.801, 80	13,884 3	5,3657 4	15,5525	0	4,4061 2	1,1741 2
1	14,38 26	89,3547	0,579 708	80.005, 21	15,059 2	5,8235	16,5796	0	4,3146	1,1740 6
1	16,4	98,008	0,560 832	72.296, 47	16,107 1	6,1561 2	17,2737	0	4,2673 4	1,1741 7
1	16,4	98,008	0,560 832	72.296, 47	16,107 1	6,1562 4	17,2737	0	4,2672 6	1,1741 7
1	17,23 11	101,548	0,552 318	69.401, 19	16,566 9	6,2806 6	17,5254	0	4,2528 9	1,1742 5
1	20,64 93	116,019	0,507 841	58.596, 53	18,649 5	6,7659	18,4161	0	4,2185 7	1,1747 6
1	24,75 12	133,308	0,423 183	47.771, 59	21,491 7	7,3462 2	19,2368	0	4,2176 9	1,1755 8



1	29,67 34	154,182	0,281 175	37.475, 31	24,694 1	8,2565 8	20,6463	0	4,2794 5	1,1742 1
1	35,58 01	179,91	0,240 328	28.194, 10	27,180 9	9,7538 9	22,1389	0	4,4371 7	1,1723 1
1	40,15 43	200,506	0,370 842	22.750, 14	29,080 2	10,902 4	22,8916	0	4,5684 3	1,1716 7
1	42,66 81	212,079	0,532 134	20.325, 00	30,127 4	11,476 8	23,1991	0	4,6383 7	1,1714 9
1	51,17 37	252,465	1,562 77	14.267, 67	33,752 2	13,058 3	23,8868	0	4,8577 2	1,1712 6
1	61,38 05	303,28	3,616 38	9.712,5 3	38,254 4	14,484 6	24,3129	0	5,1079 7	1,1712 8
1	72,96 98	364,1	6,579 28	6.516,2 0	43,569	16,044 4	24,5498	0	5,4031 7	1,1713 5
2	3600	0	1	999.99 9,37	0,4433 74	0,2124 61	-160,343	0	66,262 7	2,0346 3
2	3600, 01	0,61582 9	0,999 815	906.95 8,14	0,5367 53	0,2620 6	-142,695	0	57,356 5	1,8301 1
2	3600, 02	1,15603	0,999 323	832.99 1,95	0,6251 45	0,3085 9	-128,23	0	50,906 4	1,7042 1
2	3600, 03	1,63933	0,998 592	772.64 2,91	0,7097 31	0,3525 13	-116,149	0	46,008 7	1,6181 9
2	3600, 04	2,07823	0,997 67	722.28 6,25	0,7912 57	0,3943 52	-105,878	0	42,149 7	1,5552 7
2	3600, 05	2,48235	0,996 594	679.47 3,82	0,8703 36	0,4345 84	-97,0106	0	39,019 4	1,5069 8
2	3600, 06	2,85821	0,995 39	642.50 2,67	0,9475 06	0,4736 07	-89,2521	0	36,420 6	1,4685 6
2	3600, 07	3,21044	0,994 077	610.15 3,78	1,0232 1	0,5117 31	-82,387	0	34,223 6	1,4371 4
2	3600, 08	3,54255	0,992 672	581.53 3,42	1,0978 3	0,5492 08	-76,2536	0	32,336 7	1,4108 9
2	3600, 09	3,85722	0,991 187	555.97 1,48	1,1716 7	0,5862 22	-70,7287	0	30,695 2	1,3885 6
2	3600, 1	4,1567	0,989 635	532.95 2,70	1,2449 6	0,6229 16	-65,7162	0	29,251 3	1,3693
2	3600, 4,44282	0,988	512.07	1,3178	0,6593	-61,1407	0	27,969	1,3524	



	11		023	5,17	8	98			3	7
2	3600,	4,71704	0,986	493.02	1,3905	0,6957	-56,9421	0	26,821	1,3376
	12		361	0,97	7	46			8	4
2	3600,	4,9804	0,984	475.53	1,4631	0,7320	-53,0726	0	25,787	1,3244
	13		655	7,29	2	09			4	5
2	3600,	5,23374	0,982	459.41	1,5355	0,7682	-49,4932	0	24,849	1,3126
	14		909	7,85	9	23			3	5
2	3600,	5,4779	0,981	444.49	1,6080	0,8044	-46,1716	0	23,993	1,3020
	15		131	0,98	2	16			7	2
2	3600,	5,71351	0,979	430.61	1,6804	0,8406	-43,081	0	23,209	1,2924
	16		324	5,02	4	01			6	1
2	3600,	5,93349	0,977	418.31	1,7495	0,8751	-40,3419	0	22,514	1,2841
	17		566	2,41	4	26			7	1
2	3600,	5,93349	0,977	418.31	1,7495	0,8751	-40,3419	0	22,514	1,2841
	17		566	2,41	4	26			7	1
2	3600,	5,9419	0,977	417.87	1,7521	0,8764	-40,2451	0	22,488	1,2838
	17		498	7,62	3	19			9	2
2	3600,	6,16344	0,975	407.21	1,8190	0,9098	-37,8699	0	21,829	1,2767
	18		684	0,38	6	59			6	9
2	3600,	6,37866	0,973	397.86	1,8828	0,9417	-35,7919	0	21,224	1,2707
	19		923	4,05	7	43			6	7
2	3600,	6,58808	0,972	389.48	1,9443	0,9724	-33,9328	0	20,667	1,2654
	2		228	0,98	1	44			4	7
2	3600,	6,83234	0,970	380.43	2,0153	1,0079	-31,9328	0	20,053	1,2598
	21		288	0,13	6	5			8	8
2	3600,	6,86233	0,970	379.36	2,0240	1,0123	-31,6982	0	19,981	1,2592
	21		053	5,74	5				1	4
2	3600,	6,86233	0,970	379.36	2,0240	1,0123	-31,6982	0	19,981	1,2592
	21		053	5,74	5				1	4
2	3600,	7,11632	0,968	370.87	2,0565	1,0756	-29,8317	0	19,401	1,2541
	23		095	2,74	3	9			1	3
2	3600,	7,44559	0,965	361.04	2,0996	1,1554	-27,6852	0	18,715	1,2483
	24		648	2,25	8				6	9
2	3600,	7,82611	0,962	350.95	2,1509	1,2440	-25,5023	0	18,002	1,2426
	26		954	4,09	2	9			4	8
2	3600,	8,26493	0,960	340.56	2,2116	1,3423	-23,2814	0	17,266	1,2370
	29		007	8,08	4	2			2	3
2	3600,	8,76946	0,956	329.91	2,2834	1,4498	-21,0362	0	16,514	1,2314





	32		803	0,16	1	3			8	
2	3600,35	9,34773	0,953331	319.024,91	2,36797	1,5659	-18,7848	0	15,7528	1,2261
2	3600,4	10,0084	0,94957	307.967,20	2,4673	1,6893	-16,5475	0	14,9903	1,22093
2	3600,45	10,7614	0,945468	296.766,28	2,58358	1,81901	-14,3391	0	14,2321	1,21603
2	3600,51	11,6186	0,940933	285.419,62	2,71923	1,95474	-12,1676	0	13,4814	1,21142
2	3600,59	12,5922	0,935882	274.007,67	2,87697	2,09477	-10,0551	0	12,7441	1,20714
2	3600,67	13,6952	0,930206	262.605,23	3,05982	2,23727	-8,01975	0	12,0255	1,20324
2	3600,78	14,9433	0,923757	251.256,98	3,27121	2,38113	-6,07124	0	11,3286	1,19972
2	3600,91	16,3531	0,916375	240.027,09	3,51503	2,52478	-4,21947	0	10,6568	1,19657
2	3601,06	17,9332	0,907903	229.090,30	3,79447	2,66358	-2,48738	0	10,0191	1,19383
2	3601,25	19,708	0,89811	218.422,73	4,11491	2,7979	-0,864025	0	9,41212	1,19142
2	3601,47	21,721	0,886659	207.880,17	4,48777	2,92867	0,55269	0	8,82465	1,18986
2	3601,74	23,9943	0,873178	197.575,88	4,91889	3,05783	2,07292	0	8,26364	1,18775
2	3602,06	26,548	0,857409	187.654,40	5,41002	3,18218	3,50001	0	7,73543	1,18586
2	3602,44	29,4137	0,839141	178.256,02	5,96675	3,29788	4,82486	0	7,24258	1,18417
2	3602,9	32,6354	0,81819	169.398,03	6,59527	3,40559	6,05573	0	6,78245	1,18263
2	3603,45	36,257	0,794443	161.059,97	7,29989	3,50719	7,20525	0	6,35409	1,18119
2	3604,11	40,3319	0,768027	152.470,12	8,08233	3,63196	8,36631	0	5,95127	1,17979
2	3604,91	44,9155	0,739408	143.278,02	8,93947	3,79637	9,57113	0	5,5785	1,17842
2	3605,	50,0816	0,709	133.49	9,8624	4,0053	10,8071	0	5,2445	1,1771



	86		412	6,26	8	7				5
2	3607,01	55,9204	0,679306	123.218,97	10,8335	4,26299	12,0524	0	4,95742	1,17601
2	3608,38	62,5569	0,650724	112.572,52	11,8297	4,57405	13,2747	0	4,7225	1,1751
2	3610,03	70,1776	0,624979	101.709,86	12,8396	4,94266	14,447	0	4,53965	1,17447
2	3612,01	79,0147	0,602036	90.801,80	13,8843	5,36574	15,5525	0	4,40612	1,17412
2	3614,38	89,3547	0,579708	80.005,21	15,0592	5,8235	16,5796	0	4,3146	1,17406
2	3616,4	98,008	0,560832	72.296,47	16,1071	6,15612	17,2737	0	4,26734	1,17417
2	3616,4	98,008	0,560832	72.296,47	16,1071	6,15624	17,2737	0	4,26726	1,17417
2	3617,23	101,548	0,552318	69.401,19	16,5669	6,28066	17,5254	0	4,25289	1,17425
2	3620,65	116,019	0,507841	58.596,53	18,6495	6,7659	18,4161	0	4,21857	1,17476
2	3624,75	133,308	0,423183	47.771,59	21,4917	7,34622	19,2368	0	4,21769	1,17558
2	3629,67	154,182	0,281175	37.475,31	24,6941	8,25658	20,6463	0	4,27945	1,17421
2	3635,58	179,91	0,240328	28.194,10	27,1809	9,75389	22,1389	0	4,43717	1,17231
2	3640,15	200,506	0,370842	22.750,14	29,0802	10,9024	22,8916	0	4,56843	1,17167
2	3642,67	212,079	0,532134	20.325,00	30,1274	11,4768	23,1991	0	4,63837	1,17149
2	3651,17	252,465	1,56277	14.267,67	33,7522	13,0583	23,8868	0	4,85772	1,17126
2	3661,38	303,28	3,61638	9.712,53	38,2544	14,4846	24,3129	0	5,1079	1,17128
2	3672,97	364,1	6,57928	6.516,20	43,5690	16,0444	24,5498	0	5,40317	1,17135

