Technical Report No. 78

HERBAGE DYNAMICS STUDIES AT THE PANTEX SITE

Richard E. Fagan and Russ D. Pettit

Department of Range and Wildlife Management

Texas Tech University

Lubbock, Texas

GRASSLAND BIOME

U. S. International Biological Program

January 1971

TABLE OF CONTENTS

ABSTRACT

Herbage biomass has been sampled at 2-week intervals for aboveground biomass and at monthly intervals for belowground biomass at the Pantex, U.S. IBP, Site since June 15, 1970. Hand clipping of aboveground biomass with field separation of the major species, blue grama (*Bouteloua gracilis*), plains prickly pear (*Opuntia polyacantha*), little barley (*Hordeum pusillum*) and pepperweed (*Lepidium spp.*), was the sampling technique used. A "Bull" hydraulically operated soil corer was used for root biomass studies.

Twelve aboveground and belowground plots were sampled in each of three treatments--ungrazed, moderately grazed, and grazed 1969/ungrazed 1970. Brushes were used to sweep all plots for litter collection. Root cores were pulverized by hand, then washed, to obtain belowground biomass.

Blue grama and prickly pear made up from 70-90% of the total aboveground biomass. Maximum aboveground biomass--362 g/m^2--was found in the grazed 1969/ungrazed 1970 treatment on July 13. The least biomass, likewise, was found on this treatment on August 24, when only 80 g/m^2 were recorded. At all clipping dates (except one) least biomass was found on the ungrazed site. Higher biomass on the grazed sites was attributed to the increased quantity of prickly pear found on these treatments.

Maximum litter accumulation was found on the ungrazed site, where approximately 30% more was found than on grazed sites. Up to 154 g/m^2 of litter were present on the ungrazed site on June 29; however, only 90 g/m^2 were collected on August 10.

Root biomass estimates indicate more roots to be present in the grazed than ungrazed treatments. A maximum of 952 g/m^2 was found in the

grazed 1969/ungrazed 1970 treatment on June 30. Least biomass came from the ungrazed treatment on June 30, when only 399 g/m^2 was found.

Precision of all data collected was very poor. Standard errors in many cases exceeded the means. Modifications of sampling techniques and increased sampling intensity should correct this in 1971.

INTRODUCTION

The Pantex Site is located on the Texas Tech University Research Farm which is 15 miles northeast of Amarillo, Texas, on U.S. 60. The total land area of the research farm is 16,076 acres, of which Texas Tech has 5,821.9 acres deeded and an agricultural use permit for an additional 8,000 acres.

The ungrazed study area (treatment 1) is located in a 35-acre pasture on U.S. Atomic Energy Commission land. Bomb storage structures are located in the pastures on the east and west sides of the plot. This pasture was used for occasional grazing by a few bulls from 1940 to 1966. The grazed treatment (treatment 3) and the grazed 1969/ungrazed 1970 treatment (treatment 5) are located on deeded land in two adjacent 40-acre pastures. Prior to 1970, both pastures had been grazed moderately to lightly each year in a systematic grazing management procedure. Blue grama (*Bouteloua gracilis*) and buffalograss (*Buchloe dactyloides*) are the dominant grasses on all sites. There are many annual grasses and forbs on all sites with the major ones being: pepperweed (*Lepidium spp.*), little barley (*Hordeum pusillum*), and annual mustard weed.

The climate throughout the area is semi-arid. Rainfall varies widely from year to year, with 70% to 80% of the total occurring between May and October as short, intensive thunderstorms covering small areas. The average annual rainfall is approximately 21 inches, with a range of less than 4 inches in 1970 to 40 inches in 1923. Average annual snowfall is 12 inches; high winds frequently cause considerable drifting.

Mean annual maximum temperature is 72°F; mean annual minimum temperature is 42°F. July is the hottest month, with January being the coldest. The average frost-free season is 197 days from April 17 to October 31.

The Pullman silty clay loam which predominates in all of the North Texas Panhandle is the soil present on the study sites. The Pullman series has been classified as a reddish chestnut soil and has a brown compact clayey subsoil which restricts water percolation. The substrata are permanently dry and the soil is seldom wet for extensive periods of time.

METHODS AND PRECEDURES

Belowground samples were taken with a "Bull" hydraulic soil corer mounted on the back of a tractor. A 7.62 cm core was used to reach an average depth of 20 cm; a 1.54 cm core was then used to go on down to a depth of 70 cm. The first 10 cm was divided into two 5 cm segments. The lower depths were divided into 10 cm segments. Each sample was washed through a 32-mesh screen with a fine water spray. Samples were then oven dried at 70°C for 24 hours and weighed to the nearest .01 g.

Ash weights were obtained by ashing one complete core from each replication and calculating a correction percentage for the remaining samples.

Aboveground sampling was done at two week intervals from June through August and at one month intervals thereafter. Six 0.5 m^2 circular plots were clipped in each replication. Plots were clipped near ground level and species were hand separated in the field. Standing dead weights of blue grama were obtained by hand separating one sample from each replication in the laboratory and calculating a correction percentage which was used for

the remaining samples. All samples were oven dried at 70°C for 24 hours and weighed to the nearest .01 g. Those samples with prickly pear present required five days of drying to become completely dry.

Litter samples were obtained by hand sweeping each plot after it had been clipped. Litter samples from each replication were weighed to the nearest .01 g and deposited in a box. One subsample from the composite was ashed and a correction percentage calculated for the remaining samples.

RESULTS

Results from belowground sampling were very inconsistent and no definite trend in belowground biomass could be established. Most of the variation seemed to be in the lower depths where the smaller 1.54 cm core was used. The accuracy with which this small tube can be put on an equal basis with and compared to the larger 7.62 cm core is highly questionable. Results of root sampling to a depth of 20 cm for three sampling dates are shown below (Table 1).

Results from aboveground sampling were also subject to a great deal of variation, and no real trend was established. The majority of the variation in total biomass was due to the prickly pear which is evident on all sites. The amount of prickly pear sampled varied from time to time. Abundance of *Opuntia* is related to blue grama, and other species are shown below for each sampling date (Fig. 1).

The total standing crop and variability are shown below for each treatment at each sampling date (Fig. 2, 3, and 4).

Least biomass was harvested from the ungrazed treatment 1. Maximum standing crop was found June 29 when 160 g/m^2 were harvested, while only

Table 1. Average root biomass from three sampling dates on the Pantex Site 1970. Weights are in g/m^2.

Sampling Dates	Treatment 1	Treatment 3	Treatment 5
6/2/70	---	672	541
6/30/70	399	773	952
7/27/70	576	639	812

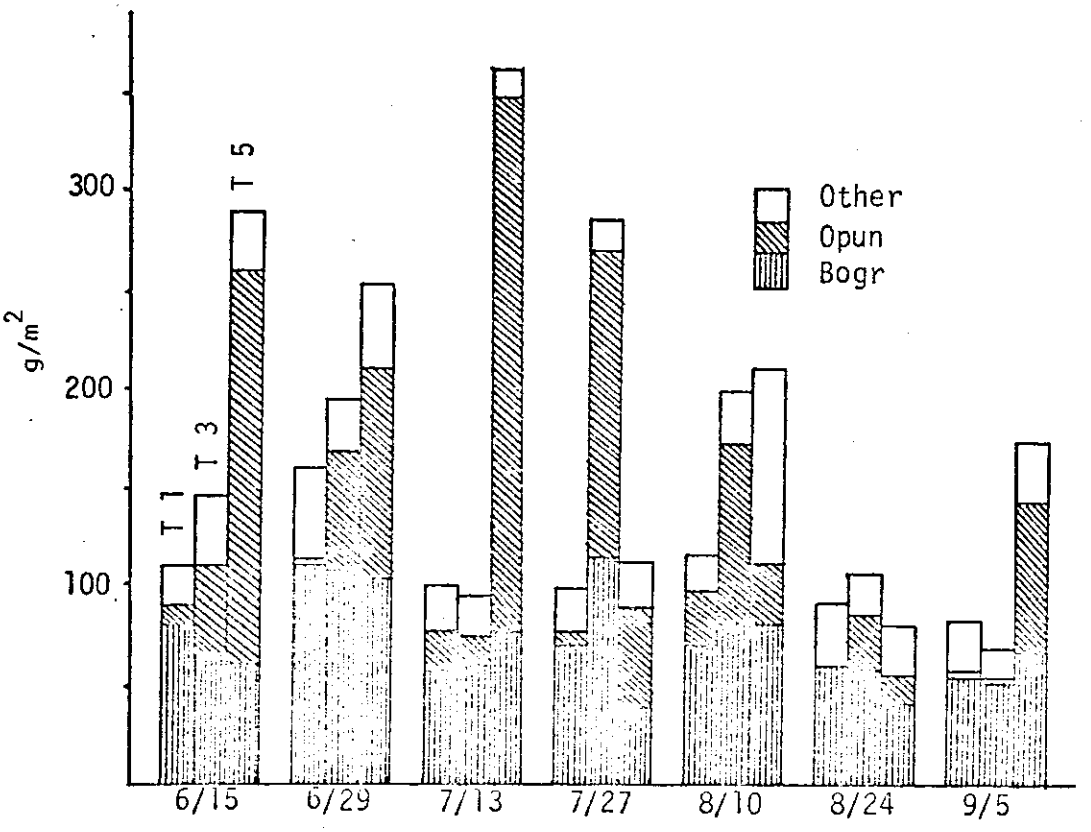
300
200
100
g/m2
T 1
T 3
T 5
Other
Opun
Bogr
6/15
6/29
7/13
7/27
8/10
8/24
9/5

Fig. 1.

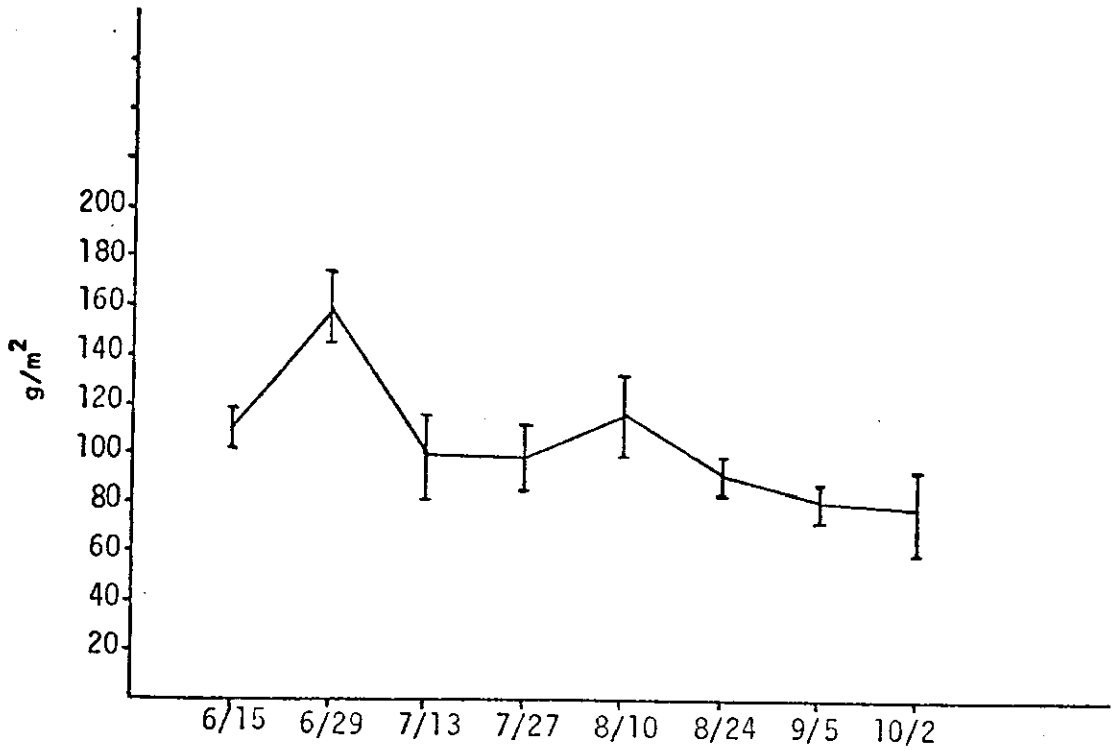

Fig. 2. Aboveground biomass, treatment 1.

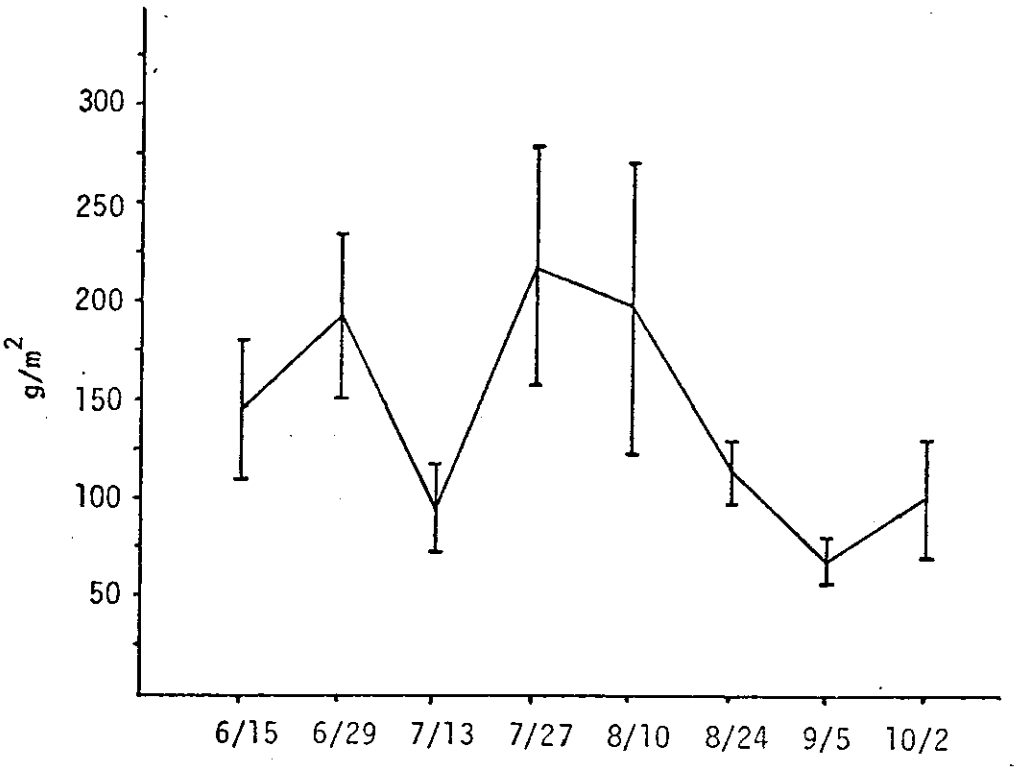

Fig. 3. Aboveground biomass, treatment 3.

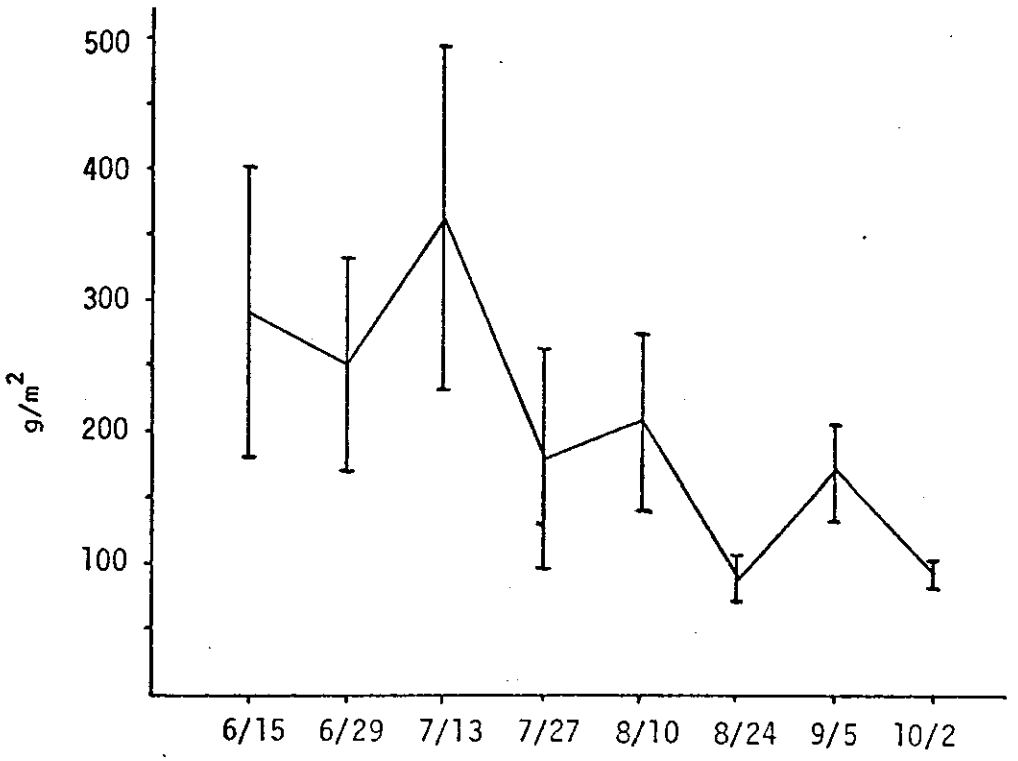

Fig. 4. Aboveground biomass, treatment 5.

90 g/m^2 were clipped October 2. Standard errors were quite low in treatment 1 when compared to the grazing treatments. Fig. 1 points out that this can largely be attributed to the decreased quantity of *Opuntia* in the ungrazed treatment. If a clipped plot contained a colony of prickly pear, over 2000 g/m^2 was occasionally found. Conversely, when prickly pear was absent, less than 50 g/m^2 was sometimes harvested.

Aboveground biomass estimates for treatments 3 and 5 showed similar trends. The reasons for the large standard errors are two: (a) plots with prickly pear gave atypically high biomass, and (b) numbers of plots clipped were insufficient to get precision desired.

Greatest biomass was obtained in July. Throughout the rest of the growing season, there was a steady decline in standing crop. The reason for having this low a standing crop was attributed to the current year's drought.

There was a noticeable contrast between the standing dead blue grama on treatments 3 and 5 as compared to treatment 1. Fig. 5 shows the percentage dead on all treatments. A light shower on the grazed site in late July could have caused the wide fluctuation in standing dead; however, no rain gages were present on either site to validate this.

There is a noticeable difference in litter in treatment 1 as compared to treatments 3 and 5. This difference was evident at all but one of our sampling dates as shown below (Fig. 6). In the ungrazed treatment, a uniform layer of litter was found throughout most plots. In the grazed treatments, on the other hand, abnormally large litter accumulations were found below prickly pear cladophylls. Conversely, little litter was found where blue grama buffalograss dominated. Standard errors pointed this out.

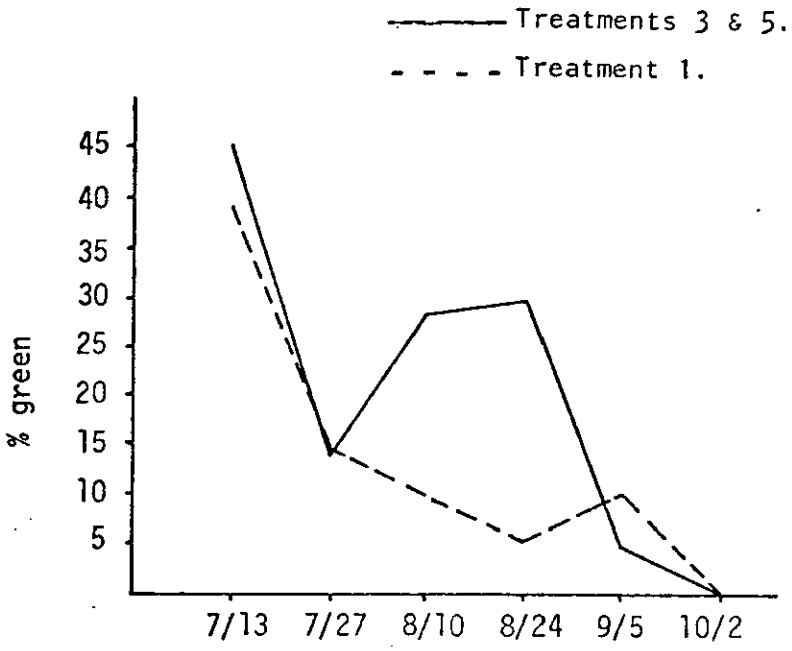
Treatments 3 & 5.
Treatment 1.
% green
45
40
35
30
25
20
15
10
5
7/13
7/27
8/10
8/24
9/5
10/2

Fig. 5.

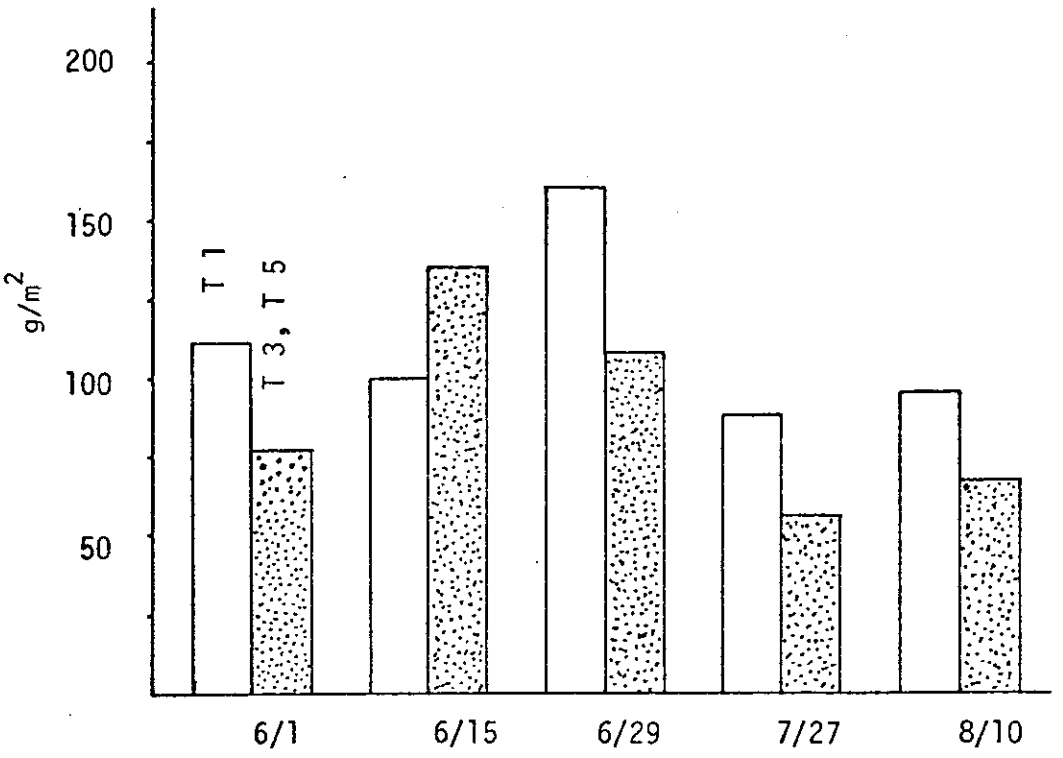

Fig. 6.

PROBLEMS AND PROJECTIONS

From our results of this year's sampling, it is evident that our sampling procedures and techniques need to be revised. We feel the great deal of variability encountered at the Pantex Site was, for the most part, due to the following sources of error:

(i) Between clippers

Different individuals were used to aid in clipping at each sampling date.

(ii) *Opuntia* variability

(iii) Wind velocity (litter)

Wind often removed litter from plots before it could be picked up.

(iv) Ashing samples

Cannot accurately correct for samples not ashed.

(v) Sample size

Larger sample size would aid in decreasing variability.

(vi) Soil core size

Smaller core cannot accurately be put on an equal basis and compared to larger core.

These are some of the most obvious sources of error at the Pantex Site and will receive the most attention in revising our procedures and techniques for the coming year.

APPENDIX I

FIELD DATA

Aboveground Biomass Data

Aboveground biomass data collected in 1970 at the Pantex Site is Grassland Biome data set A2U000A. Data were collected on form NREL-01. A sample data form and a sample of the data follow.

INITIALS	SPECIAL	DRY WT. SEP.

PE

+++ EXAMPLE OF DATA +++

```
    1         2         3         4         5         6         7
[illegible]7890123456789012345678901234567890123456789012345678901234567890123456789
[illegible]FF311070110.71
                001 2 1 BOGB    19  1     1  29.89
                001 2 4 FOBB    19  2     2   4.07
                001 2 4 LFB     19  3     3   3.29
                001 2 2 HOBIJ   19  4     4   3.75
                002 2 4 LFB     19  3     1   1.25
                002 2 1 BOGB    19  1     2  37.33
                002 2 2 HOBIJ   19  2     3   1.04
                003 2 1 BOGB    19  1     1  16.25
                003 2 4 LFB     19  2     2   4.25
                003 2 2 HOBIJ   19  3     3   1.09
                004 2 4 LFB     19  2     1  16.34
                004 2 1 BOGB    19  1     2  36.24
                004 2 4 FOBB    19  3     3   2.67
                004 2 2 HOBIJ   19  4     4   0.77
                005 2 1 BOGB    19  1     1  37.20
                005 2 4 LFB     19  2     2   7.74
                005 2 2 HOBIJ   19  3     3   1.04
                006 2 4 LFB     19  3     1   8.70
                006 2 2 HOBIJ   19  2     2   1.97
                006 2 1 BOGB    19  1     3  13.77
                007 3 1 BOGB    19  1
                007 3 4 LFB     19  2
                007 3 2 HOBIJ   19  3
                007 3 4 FOBB    19  4
                008 3 1 BOGB    19  1
                008 3 4 LFB     19  2
                008 3 2 HOBIJ   19  3
                009 3 1 BOGB    19  1
                009 3 4 LFB     19  2
                009 3 2 HOBIJ   19  4
                009 3 4 FOBB    19  3
                010 3 1 BOGB    19  1
                010 3 4 LFB     19  2
                010 3 2 HOBIJ   19  3
                011 3 1 BOGB    19  1
                011 3 4 LFB     19  2
                011 3 2 HOBIJ   19  3
                012 3 1 BOGB    19  1
                012 3 2 HOBIJ   19  3
```

```
012  3  4  FORR     19   2
013  3  1  BOGD     19   1
013  3  2  HOPU     19   3
013  3  4  LFD      19   4
013  3  4  FORR     19   2
014  3  1  BOGD     19   1
014  3  6  OPU      18   2
014  3  4  LFD      19   3
014  3  2  HOPU     19   4
014  3  4  FORR     19   5
015  3  1  BOGD     19   1
015  3  2  HOPU     19   2
015  3  4  LFD      19   3
015  3  4  FORR     19   4
016  3  1  BOGR     19   1
016  3  2  HOPU     19   2
015  3  4  LFD      19   3
016  3  4  FORR     19   4
017  3  1  BOGD     19   1
017  3  4  LFD      19   2
017  3  4  FORR     19   3
018  3  1  BOGD     19   1
018  3  4  LFD      19   2
018  3  2  HOPU     19   3
```

Litter Data

Litter data collected in 1970 at the Pantex Site is Grassland Biome data set A2U001A. Data were collected on form NREL-02. A sample data form and the data follow.

GRASSLAND BIOME

U.S. INTERNATIONAL BIOLOGICAL PROGRAM

FIELD DATA SHEET - LITTER

SITE	INITIALS	DATE			TREATMENT	REPLICATE	PLOT SIZE	QUADRAT	TYPE	SACK NO.	DRY WT.	SACK WT.	ASH WT.	PREVIOUS DATE		
		Day	Mo	Yr										Day	Mo	Yr
3-4	5-7	8-9	10-11	12-13	14	15	16-19	21-23	25	27-30	32-37	39-42	44-49	51-52	53-54	55-56

DATA TYPE

- 10 Aboveground Biomass
- 20 Litter
- 30 Belowground Biomass
- 10 Vertebrate - Live Trapping
- 11 Vertebrate - Snap Trapping
- 12 Vertebrate - Collection
- 20 Avian Flush Census
- 21 Avian Road Count
- 22 Avian Road Count Summary
- 23 Avian Collection - Internal
- 24 Avian Collection - External
- 25 Avian Collection - Plumage
- 30 Invertebrate
- 40 Microbiology - Decomposition
- 41 Microbiology - Nitrogen
- 42 Microbiology - Biomass
- 43 Microbiology - Root Decomposition
- 44 Microbiology - Respiration

SITE

- 01 Ale
- 02 Bison
- 03 Bridger
- 04 Cottonwood
- 05 Dickinson
- 06 Hays
- 07 Hopland
- 08 Jornada
- 09 Osage
- 10 Pantex
- 11 Pawnee

TREATMENT

1. Ungrazed
2. Lightly grazed
3. Moderately grazed
4. Heavily grazed
5. Grazed 1969, ungrazed 1970

TYPE

1. Quadrat, total
2. Quadrat, part
3. Cleared plot
4. Litter bag

*** FIELD DATA ***

1	2	3	4	5
[redacted]EF010670110.71	1 1	1	107.3	48.3
	2 1	2	133.0	59.8
	3 1	3	60.2	27.1
	4 1	4	129.2	58.1
	5 1	5	111.6	50.2
	6 1	6	111.8	50.3
[redacted]EF010670120.71	1 1	1	52.9	23.8
	2 1	2	101.7	45.7
	3 1	3	90.1	40.5
	4 1	4	84.0	37.8
	5 1	5	48.1	21.6
	6 1	6	144.3	64.9
[redacted]EF010670310.71	1 1	1	32.3	20.3
	2 1	2	96.4	60.7
	3 1	3	83.3	52.5
	4 1	4	51.6	32.5
	5 1	5	98.9	62.3
[redacted]EF010670320.71	1 1	1	62.0	39.0
	2 1	2	28.1	17.7
	3 1	3	102.3	64.4
	4 1	4	90.6	57.0
	5 1	5	57.0	35.9
	6 1	6	81.0	51.0
[redacted]EF010670510.71	1 1	1	97.9	61.7
	2 1	2	87.0	54.8
	3 1	3	77.8	49.0
	4 1	4	73.2	46.1
	5 1	5	115.4	72.7
	6 1	6	51.4	32.4
[redacted]EF010670520.71	1 1	1	439.5	276.9
	2 1	2	110.0	69.3
	3 1	3	71.4	45.0
	4 1	4	93.2	58.7
	5 1	5	247.7	156.0
	6 1	6	107.7	67.9
[redacted]EF150670110.71	1 1	1	129.0	95.5
	2 1	2	220.9	163.5
	3 1	3	170.7	126.3
	4 1	4	95.2	70.4
	5 1	5	243.7	180.3
	6 1	6	121.3	89.8

[redacted]EF150670120.71	1 1	1	160.7	118.9
	2 1	2	120.5	89.2
	3 1	3	101.5	75.1
	4 1	4	157.1	116.2
	5 1	5	174.2	128.9
	6 1	6	532.7	394.2
[redacted]EF150670310.71	1 1	1	32.4	18.5
	2 1	2	81.2	46.3
	3 1	3	44.7	25.5
	4 1	4	94.3	53.7
	5 1	5	62.7	35.7
	6 1	6	62.7	35.7
[redacted]EF150670320.71	1 1	1	109.7	62.5
	2 1	2	63.3	36.1
	3 1	3	174.5	99.4
	4 1	4	135.2	77.1
	5 1	5	171.8	97.9
	6 1	6	69.3	39.5
[redacted]EF150670510.71	1 1	1	422.6	240.8
	2 1	2	126.3	72.0
	3 1	3	131.4	74.8
	4 1	4	143.7	82.0
	5 1	5	80.6	45.9
	6 1	6	613.8	349.0
[redacted]EF150670520.71	1 1	1	192.1	109.5
	2 1	2	197.9	112.8
	3 1	3	228.2	130.0
	4 1	4	92.0	52.4
	5 1	5	106.6	60.7
	6 1	6	204.1	116.3
[redacted]EF290670110.71	1 1	1	269.4	199.4
	2 1	2	774.1	573.8
	3 1	3	573.9	424.7
	4 1	4	195.4	144.5
	5 1	5	249.2	184.4
	6 1	6	410.7	303.9
[redacted]EF290670120.71	1 1	1	291.4	215.6
	2 1	2	110.2	81.5
	3 1	3	214.8	159.0
	4 1	4	317.3	234.8
	5 1	5	94.0	69.5
	6 1	6	82.5	61.0
[redacted]EF290670310.71	1 1	1	125.8	86.8
	2 1	2	186.1	128.4
	3 1	3	247.5	170.7
	4 1	4	199.6	137.7
	5 1	5	175.2	120.8
	6 1	6	138.9	95.8
[redacted]EF290670320.71	1 1	1	135.3	93.4
	2 1	2	169.9	117.1
	3 1	3	70.7	48.8
	4 1	4	268.8	185.5
	5 1	5	261.0	180.1
	6 1	6	170.6	117.7

[redacted]290670510.71	1	1	1	270.6	186.7
	2	1	2	194.5	134.2
	3	1	3	159.5	110.0
	4	1	4	80.0	55.2
	5	1	5	210.5	145.2
	6	1	6	385.8	266.2
[redacted]F290670520.71	1	1	1	172.0	118.6
	2	1	2	132.9	91.7
	3	1	3	189.3	130.6
	4	1	4	18.7	12.9
	5	1	5	84.7	58.4
	6	1	6	180.1	183.7
[redacted]EF270770110.71	1	1	1	79.89	44.74
	2	1	2	129.86	72.72
	3	1	3	158.81	88.93
	4	1	4	104.92	58.78
	5	1	5	134.25	75.18
	6	1	6	68.74	38.49
[redacted]EF270770120.71	1	1	1	95.41	53.43
	2	1	2	93.57	52.39
	3	1	3	97.04	54.34
	4	1	4	50.34	28.19
	5	1	5	52.25	29.26
	6	1	6	86.69	48.55
[redacted]EF270770310.71	1	1	1	25.32	12.15
	2	1	2	88.50	42.48
	3	1	3	34.58	16.59
	4	1	4	46.92	22.52
	5	1	5	56.38	27.06
	6	1	6	49.14	23.58
[redacted]EF270770320.71	1	1	1	36.34	17.44
	2	1	2	27.38	13.14
	3	1	3	95.69	45.93
	4	1	4	38.57	18.51
	5	1	5	69.30	33.26
	6	1	6	30.23	14.51
[redacted]EF270770510.71	1	1	1	72.35	34.73
	2	1	2	91.83	44.07
	3	1	3	53.37	25.62
	4	1	4	17.35	8.32
	5	1	5	47.81	22.94
	6	1	6	59.16	28.39
[redacted]EF270770520.71	1	1	1	26.26	12.60
	2	1	2	55.70	26.73
	3	1	3	77.10	37.00
	4	1	4	14.21	6.83
	5	1	5	74.21	35.62
	6	1	6	64.83	31.12
[redacted]EF100870110.71	1	1	1	58.09 6.94	29.15
	2	1	2	113.64 6.72	60.94
	3	1	3	118.78 6.75	63.85
	4	1	4	140.89 6.97	76.33
	5	1	5	84.47 6.97	44.17
	6	1	6	111.36 6.70	59.65

[redacted]00870120.71	1	1	1	69.79	6.67	35.97
	2	1	2	59.51	6.64	30.13
	3	1	3	78.50	6.74	40.90
	4	1	4	123.15	6.93	66.24
	5	1	5	136.26	6.82	73.78
	6	1	6	258.36	6.94	143.33
[redacted]100870310.71	1	1	1	99.30	6.76	48.12
	2	1	2	94.47	6.78	45.59
	3	1	3	40.64	6.61	17.69
	4	1	4	74.58	6.83	35.23
	5	1	5	34.78	6.76	14.57
	6	1	6	82.26	6.83	39.22
[redacted]F100870320.71	1	1	1	52.45	6.53	23.87
	2	1	2	40.39	6.84	17.44
	3	1	3	40.08	6.51	17.45
	4	1	4	56.40	6.60	25.89
	5	1	5	79.66	6.59	37.99
	6	1	6	70.56	6.64	33.23
[redacted]EF100870510.71	1	1	1	34.74	6.90	14.47
	2	1	2	63.39	6.60	29.53
	3	1	3	108.33	6.73	5.28
	4	1	4	20.43	6.62	7.81
	5	1	5	85.27	6.71	40.85
	6	1	6	60.07	6.78	27.71
[redacted]EF100870520.71	1	1	1	118.70	6.80	58.18
	2	1	2	35.08	6.50	14.86
	3	1	3	132.07	6.70	65.19
	4	1	4	94.53	6.72	45.66
	5	1	5	81.56	6.65	38.95
	6	1	6	76.12	6.64	36.12

Belowground Biomass Data

Belowground biomass data collected in 1970 at the Pantex Site is Grassland Biome data set A2U002A. Data were collected on form NREL-03. A sample data form and the data follow.

GRASSLAND BIOME

U.S. INTERNATIONAL BIOLOGICAL PROGRAM

FIELD DATA SHEET - BELOWGROUND BIOMASS

INITIALS	DATE			TREATMENT	REPLICATE	PLOT SIZE	QUADRAT	CORE DIAM.	HORIZON	TOP DEPTH	BOTTOM DEP.	LENGTH	WASH WT.	DRY WT.	ASH WT.	CROWN DRY WT.
	Day	Mo	Yr													
5-7	8-9	10-11	12-13	14	15	16-19	21-23	25-27	29	31-33	35-37	39-41	43-47	49-54	56-61	63-68

A TYPE
- Aboveground Biomass
- Litter
- Belowground Biomass
- Vertebrate - Live Trapping
- Vertebrate - Snap Trapping
- Vertebrate - Collection
- Avian Flush Census
- Avian Road Count
- Avian Road Count Summary
- Avian Collection - Internal
- Avian Collection - External
- Avian Collection - Plumage
- Invertebrate
- Microbiology - Decomposition
- Microbiology - Nitrogen
- Microbiology - Biomass
- Microbiology - Root Decomposition
- Microbiology - Respiration

E
- Ale
- Bison
- Bridger
- Cottonwood
- Dickinson
- Hays
- Hopland
- Jornada
- Osage
- Pantex
- Pawnee

EATMENT
- Ungrazed
- Lightly grazed
- Moderately grazed
- Heavily grazed
- Grazed [illegible]

RIZON
- A0
- A
- B
- C

*** FIELD DATA ***

```
    1         2         3         4         5         6         7         8
6789012345678901234567890123456789012345678901234567890123456789012345678890
```

02067031.707	5	7.6	2	0	5	5	23.29	4.55	1.36	1.13
	5	7.6	2	5	10	5	5.82	1.49	.83	
	5	7.6	2	10	20	10	7.15	3.38	1.08	
	5	7.6	3	20	30	10	2.92	.70	.38	
	5	7.6	3	30	40	10	5.50	1.12	.36	
	5	2.5	3	40	50	10	.34	.13	.08	
	5	2.5	3	50	60	10	.22	.11	.08	
	5	2.5	3	60	70	10	.28	.21	.05	
	6	7.6	2	0	5	5	17.83	3.88	1.16	.94
	6	7.6	2	5	10	5	6.26	1.17	.65	
	6	7.6	2	10	20	10	11.78	2.09	.67	
	6	7.6	3	20	30	10	3.80	.99	.50	
	6	7.6	3	30	40	10	3.91	.66	.21	
	6	2.5	3	40	50	10	.06	.01	.01	
	6	2.5	3	50	60	10	.09	.05	.04	
	6	2.5	3	60	70	10	.19	.12	.03	
	1	7.6	2	0	5	5	4.51	1.20	.36	.20
	1	7.6	2	5	10	5	1.46	.48	.27	
	1	7.6	2	10	20	10	1.85	.52	.16	
	1	2.5	3	20	30	10	.20	.19	.09	
	1	2.5	3	30	40	10	.18	.16	.05	
	1	2.5	3	40	50	10	.25	.24	.16	
	2	7.6	2	0	5	5	19.13	4.46	1.34	.22
	2	7.6	2	5	10	5	3.49	.70	.39	
	2	7.6	2	10	20	10	1.38	.30	.09	
	2	2.5	3	20	30	10	.19	.18	.09	
	2	2.5	3	30	40	10	.04	.03	.01	
	2	2.5	3	40	50	10	.15	.12	.08	
	2	2.5	3	50	60	10	.02	.01	.01	
	3	7.6	2	0	5	5	17.46	3.44	1.03	.80
	3	2.5	2	5	10	5	.08	.06	.03	
	3	2.5	2	10	20	10	.05	.05	.02	
	3	2.5	3	20	30	10	.05	.04	.02	
	3	2.5	3	30	40	10	.02	.01	.01	
	3	2.5	3	40	50	10	.06	.05	.03	
	3	2.5	3	50	60	10	.05	.04	.03	
	4	7.6	2	0	5	5	8.13	1.97	.59	.09
	4	7.6	2	5	10	5	3.70	1.12	.63	
	4	7.6	2	10	20	10	3.49	1.07	.34	
	4	7.6	3	20	30	10	2.61	.52	.26	
	4	7.6	3	30	40	10	4.07	1.10	.35	
	4	2.5	3	40	50	10	.14	.07	.05	
	4	2.5	3	50	60	10	.09	.07	.05	
	4	2.5	3	60	70	10	.24	.24	.05	

02067032.707	1	7.6	2	0	5	5	3.37	.59	.18	.05
	1	7.6	2	5	10	5	2.10	.52	.29	
	1	7.6	2	10	20	10	1.88	.47	.15	
	1	7.6	3	20	30	10	2.03	.31	.16	
	1	7.6	3	30	40	10	.58	.20	.06	
	1	2.5	3	40	50	10	0.0	0.0	0.0	
	1	2.5	3	50	60	10	.11	.07	.05	
	2	7.6	2	0	5	5	7.37	1.68	.50	.03
	2	7.6	2	5	10	5	3.11	.59	.33	
	2	7.6	2	10	20	10	3.04	.95	.30	
	2	2.5	3	20	30	10	.18	.15	.08	
	2	2.5	3	30	40	10	.04	.01	.01	
	2	2.5	3	40	50	10	.16	.11	.07	
	2	2.5	3	50	60	10	.08	.05	.04	
	2	2.5	3	60	70	10	.40	.29	.06	
	3	7.6	2	0	5	5	27.08	7.01	2.10	4.14
	3	2.5	2	5	10	5	.10	.02	.01	
	3	2.5	2	10	20	10	.10	.03	.01	
	3	2.5	3	20	30	10	.12	.05	.03	
	3	2.5	3	30	40	10	.10	.03	.01	
	3	2.5	3	40	50	10	.10	.03	.02	
	3	2.5	3	50	60	10	.08	.01	.01	
	3	2.5	3	60	70	10	.23	.17	.04	
	4	7.6	2	0	5	5	10.63	2.30	.69	.48
	4	7.6	2	5	10	5	1.62	.26	.15	
	4	7.6	2	10	20	10	2.27	.34	.11	
	4	7.6	3	20	30	10	1.61	.36	.18	
	4	7.6	3	30	40	10	1.11	.32	.10	
	4	2.5	3	40	50	10	.17	.09	.06	
	4	2.5	3	50	60	10	.13	.04	.03	
	4	2.5	3	60	70	10	.03	.03	.01	
	5	7.6	2	0	5	5	8.41	1.41	.42	.85
	5	7.6	2	5	10	5	4.58	.77	.43	
	5	7.6	2	10	20	10	5.07	.79	.25	
	5	2.5	3	20	30	10	.14	.04	.02	
	5	2.5	3	30	40	10	.04	.03	.01	
	5	2.5	3	40	50	10	.07	.07	.05	
	5	2.5	3	50	60	10	.04	.04	.03	
	5	2.5	3	60	70	10	.10	.09	.02	
	6	2.5	2	0	5	5	.13	.08	.02	.00
	6	2.5	2	5	10	5	.12	.06	.03	
	6	2.5	2	10	20	10	.40	.13	.04	
	6	2.5	3	20	30	10	.21	.07	.03	
	6	2.5	3	30	40	10	.19	.06	.02	
	6	2.5	3	40	50	10	.13	.05	.03	
	6	2.5	3	50	60	10	.29	.19	.14	
	6	2.5	3	60	70	10	.13	.14	.03	

2067051.707	2	7.6	2	0	5	5	15.59	3.37	1.01	.62
	2	7.6	2	5	10	5	2.49	.83	.46	
	2	7.6	2	10	20	10	2.33	.86	.27	
	2	7.6	3	20	30	10	8.83	4.48	2.28	
	2	7.6	3	30	40	10	.26	.25	.08	
	2	2.5	3	40	50	10	.18	.15	.09	
	2	2.5	3	50	60	10	.16	.12	.09	
	2	2.5	3	60	70	10	.13	.09	.02	
	3	7.6	2	0	5	5	8.26	2.09	.63	.15
	3	7.6	2	5	10	5	3.69	.70	.39	
	3	7.6	2	10	20	10	1.64	.48	.15	
	3	7.6	3	20	30	10	2.66	.94	.48	
	3	7.6	3	30	40	10	.48	.21	.07	
	3	2.5	3	40	50	10	.08	.04	.03	
	3	2.5	3	50	60	10	.17	.12	.09	
	3	2.5	3	60	70	10	.17	.13	.03	
	4	7.6	2	0	5	5	6.70	1.59	.47	.68
	4	7.6	2	5	10	5	3.12	.79	.44	
	4	7.6	2	10	20	10	2.58	.89	.28	
	4	2.5	3	20	30	10	.35	.13	.06	
	4	2.5	3	30	40	10	.05	.05	.01	
	4	2.5	3	40	50	10	.07	.05	.03	
	4	2.5	3	50	60	10	.07	.05	.04	
	4	2.5	3	60	70	10	.31	.29	.06	
	6	7.6	2	0	5	5	5.19	1.02	.30	.45
	6	7.6	2	5	10	5	2.73	.86	.48	
	6	7.6	2	10	20	10	2.95	.95	.30	
	6	2.5	3	20	30	10	.14	.12	.06	
	6	2.5	3	30	40	10	.09	.07	.02	
	6	2.5	3	40	50	10	.20	.18	.11	
	6	2.5	3	50	60	10	.19	.19	.14	
	6	2.5	3	60	70	10	.14	.12	.03	
	1	7.6	2	0	5	5	16.04	2.77	.83	.47
	1	7.6	2	5	10	5	2.89	.58	.32	
	1	7.6	2	10	20	10	1.91	.79	.25	
	1	2.5	3	20	30	10	.12	.10	.05	
	1	2.5	3	30	40	10	.06	.05	.02	
	1	2.5	3	40	50	10	.05	.04	.03	
	1	2.5	3	50	60	10	.10	.10	.07	
	1	2.5	3	60	70	10	.69	.66	.14	
	5	7.6	2	0	5	5	20.73	4.61	1.38	1.72
	5	2.5	2	5	10	5	.14	.11	.06	
	5	2.5	2	10	20	10	.08	.07	.02	
	5	2.5	3	20	30	10	.04	.04	.02	
	5	2.5	3	30	40	10	.02	.01	.01	
	5	2.5	3	40	50	10	.06	.04	.03	
	5	2.5	3	50	60	10	.05	.03	.02	
	5	2.5	3	60	70	10	.21	.20	.04	

[redacted]2067052.707	3	7.6	2	0	5	5	5.14	1.14	.34	.35
	3	7.6	2	5	10	5	3.51	1.07	.60	
	3	7.6	2	10	20	10	2.10	.62	.19	
	3	7.6	3	20	30	10	2.30	1.21	.62	
	3	7.6	3	30	40	10	1.68	.80	.25	
	3	2.5	3	40	50	10	1.05	.05	.03	
	3	2.5	3	50	60	10	.28	.20	.01	
	3	2.5	3	60	70	10	.53	.44	.10	
	4	7.6	2	0	5	5	9.53	1.74	.52	2.22
	4	7.6	2	5	10	5	1.29	.49	.27	
	4	2.5	2	10	20	10	.22	.13	.04	
	4	2.5	3	20	30	10	.60	.50	.25	
	4	2.5	3	30	40	10	.21	.13	.04	
	4	2.5	3	40	50	10	.25	.17	.11	
	4	2.5	3	50	60	10	.62	.55	.41	
	4	2.5	3	60	70	10	.69	.61	.13	
	1	7.6	2	0	5	5	12.19	3.18	1.21	2.57
	1	7.6	2	5	10	5	4.66	1.43	.85	
	1	7.6	2	10	20	10	2.01	.93	.47	
	1	7.6	3	20	30	10	.90	.67	.49	
	1	2.5	3	30	40	10	.06	.06	.01	
	1	2.5	3	40	50	10	.05	.05	.04	
	1	2.5	3	50	60	10	.77	.77	.58	
	1	2.5	3	60	70	10	0.0	0.0	0.0	
	5	7.6	2	0	5	5	12.00	4.29	.95	1.18
	5	7.6	2	5	10	5	4.24	1.79	.93	
	5	2.5	2	10	20	10	.08	.08	.01	
	5	2.5	3	20	30	10	.06	.06	.03	
	5	2.5	3	30	40	10	.04	.04	.02	
	5	2.5	3	40	50	10	.22	.22	.14	
	5	2.5	3	50	60	10	.16	.16	.12	
	5	2.5	3	60	70	10	0.0	0.0	0.0	
	6	7.6	2	0	5	5	5.49	2.06	1.15	.34
	6	7.6	2	5	10	5	3.56	1.08	.55	
	6	7.6	2	10	20	10	4.53	1.45	.77	
	6	7.6	3	20	30	10	2.34	.87	.51	
	6	2.5	3	30	40	10	1.27	.41	.21	
	6	2.5	3	40	50	10	.19	.19	.10	
	6	2.5	3	50	60	10	.02	.02	.01	
	6	2.5	3	60	70	10	.07	.06	.02	
	2	7.6	2	0	5	5	7.39	2.68	.46	.72
	2	7.6	2	5	10	5	1.46	.66	.28	
	2	7.6	2	10	20	10	.53	.43	.11	
	2	2.5	3	20	30	10	.07	.07	.01	
	2	2.5	3	30	40	10	.06	.05	0.0	
	2	2.5	3	40	50	10	.04	.05	.02	
	2	2.5	3	50	60	10	.04	.04	.01	
	2	2.5	3	60	70	10	.04	.03	.01	

[illegible]00670110.50	1	7.6	2	0	5	5	17.72	3.01	1.47	1.74
[illegible]00670110.50	1	7.6	2	5	10	5	3.86	1.14	.19	
	1	7.6	2	10	20	10	10.28	1.44	0.40	
	1	7.6	3	20	30	10	2.41	1.04	.48	
	1	7.6	3	30	40	10	0.23	0.13	0.08	
	1	2.5	3	40	50	10	0.09	0.13	0.09	
	1	2.5	3	50	60	10	0.17	0.21	0.16	
	1	2.5	3	60	70	10	0.02	0.06	0.03	
	2	7.6	2	0	5	5	12.49	3.71	1.82	1.15
	2	7.6	2	5	10	5	5.05	2.36	0.40	
	2	7.6	2	10	20	10	4.19	1.47	0.41	
	2	7.6	3	20	30	10	1.85	0.41	0.18	
	2	7.6	3	30	40	10	0.46	0.21	0.14	
	2	2.5	3	40	50	10	0.11	0.11	0.09	
	2	2.5	3	50	60	10	0.10	0.10	0.09	
	2	2.5	3	60	70	10	0.04	0.04	0.03	
	3	7.6	2	0	5	5	10.00	2.02	.99	.76
	3	7.6	2	5	10	5	0.74	0.32	.05	
	3	7.6	2	10	20	10	0.30	0.30	.09	
	3	2.5	3	20	30	10	0.00	0.00	0.00	
	3	2.5	3	30	40	10	0.01	0.01	.01	
	3	2.5	3	40	50	10	0.20	0.20	.02	
	3	2.5	3	50	60	10	0.17	0.17	.14	
	3	2.5	3	60	70	10	0.21	0.21	.11	
	4	7.6	2	0	5	5	22.60	3.67	1.18	1.19
	4	7.6	2	5	10	5	8.56	0.39	0.07	
	4	7.6	2	10	20	10	1.84	0.53	0.15	
	4	7.6	3	20	30	10	2.12	0.74	0.34	
	4	2.5	3	30	40	10	0.01	0.01	0.02	
	4	2.5	3	40	50	10	0.00	0.00	0.00	
	4	2.5	3	50	60	10	0.01	0.01	0.01	
	4	2.5	3	60	70	10	0.00	0.00	0.00	
	5	7.6	2	0	5	5	8.51	2.30	1.12	.08
	5	7.6	2	5	10	5	4.21	1.14	0.19	
	5	7.6	2	10	20	10	3.61	0.89	0.25	
	5	7.6	3	20	30	10	1.67	0.45	0.20	
	5	7.6	3	30	40	10	1.37	0.86	0.56	
	5	7.6	3	40	50	10	0.59	0.58	0.38	
	5	7.6	3	50	60	10	1.40	0.90	0.67	
	5	2.5	3	60	70	10	0.00	0.00	0.00	
	6	7.6	2	0	5	5	10.01	2.32	1.13	.19
	6	7.6	2	5	10	5	1.74	0.53	0.09	
	6	7.6	2	10	20	10	0.96	0.39	0.11	
	6	7.6	3	20	30	10	1.24	0.40	0.18	
	6	7.6	3	30	40	10	0.20	0.21	0.14	
	6	2.5	3	40	50	10	0.00	0.02	0.01	
	6	2.5	3	50	60	10	0.00	0.03	0.02	
	6	2.5	3	60	70	10	.01	0.04	0.02	

[redacted]00670120.50	1	7.6	2	0	5	5	0.45	0.19	0.09	0.03
	1	7.6	2	5	10	5	0.63	0.29	0.05	
	1	7.6	2	10	20	10	1.02	0.34	0.09	
	1	7.6	3	20	30	10	0.72	0.47	0.22	
	1	7.6	3	30	40	10	0.69	0.25	0.16	
	1	7.6	3	40	50	10	0.58	0.36	0.24	
	1	7.6	3	50	60	10	0.12	0.15	0.11	
	1	7.6	3	60	70	10	0.16	0.17	0.08	
	2	7.6	2	0	5	5	10.87	1.97	0.96	0.51
	2	7.6	2	5	10	5	2.31	0.78	0.13	
	2	7.6	2	10	20	10	1.54	0.51	0.14	
	2	7.6	3	20	30	10	0.97	0.56	0.26	
	2	2.5	3	30	40	10	0.02	0.02	0.02	
	2	2.5	3	40	50	10	0.05	0.05	0.05	
	2	2.5	3	50	60	10	0.00	0.00	0.00	
	2	2.5	3	60	70	10	0.00	0.00	0.00	
	3	7.6	2	0	5	5	10.23	1.94	0.95	.17
	3	7.6	2	5	10	5	1.53	0.40	0.07	
	3	7.6	2	10	20	10	0.70	0.29	0.08	
	3	7.6	3	20	30	10	0.27	0.16	0.07	
	3	7.6	3	30	40	10	0.09	0.09	0.08	
	3	7.6	3	40	50	10	0.23	0.23	0.15	
	3	7.6	3	50	60	10	0.99	0.80	0.60	
	3	7.6	3	60	70	10	0.17	0.17	0.08	
	4	7.6	2	0	5	5	5.50	1.46	0.72	.08
	4	7.6	2	5	10	5	1.80	0.45	0.08	
	4	7.6	2	10	20	10	4.23	0.80	0.22	
	4	7.6	3	20	30	10	2.14	0.66	0.30	
	4	7.6	3	30	40	10	0.84	0.28	0.18	
	4	2.5	3	40	50	10	0.01	0.01	0.00	
	4	2.5	3	50	60	10	0.00	0.00	0.00	
	4	2.5	3	60	70	10	0.00	0.00	0.00	
	5	7.6	2	0	5	5	6.63	0.98	0.48	0.11
	5	7.6	2	5	10	5	1.53	0.43	0.07	
	5	7.6	3	10	20	10	1.19	0.46	0.13	
	5	7.6	3	20	30	10	0.36	0.31	0.14	
	5	7.6	3	30	40	10	0.62	0.34	0.22	
	5	7.6	3	40	50	10	0.36	0.30	0.20	
	5	7.6	3	50	60	10	1.78	0.91	0.68	
	5	2.5	3	60	70	10	0.12	0.12	0.05	
	6	7.6	2	0	5	5	5.98	1.31	0.64	0.17
	6	7.6	2	5	10	5	2.81	0.78	0.13	
	6	7.6	2	10	20	10	3.17	1.22	0.34	
	6	7.6	3	20	30	10	2.31	0.97	0.44	
	6	2.5	3	30	40	10	0.06	0.06	0.39	
	6	2.5	3	40	50	10	0.08	0.08	0.53	
	6	2.5	3	50	60	10	0.00	0.00	0.00	
	6	2.5	3	60	70	10	0.00	0.00	0.00	

[redacted]00670310.50	1	7.6	2	0	5	5	6.66	1.46	0.16	0.57
	1	7.6	2	5	10	5	1.83	0.50	0.14	
	1	7.6	2	10	20	10	0.88	0.32	0.15	
	1	7.6	3	20	30	10	0.06	0.06	0.03	
	1	7.6	3	30	40	10	0.01	0.01	0.01	
	1	2.5	3	40	50	10	0.04	0.04	0.03	
	1	2.5	3	50	60	10	0.07	0.07	0.05	
	1	2.5	3	60	70	10	0.13	0.13	0.09	
	2	7.6	2	0	5	5	22.09	4.07	0.45	1.49
	2	7.6	2	5	10	5	2.45	0.63	0.18	
	2	7.6	2	10	20	10	1.31	0.28	0.13	
	2	2.5	3	20	30	10	2.51	0.89	0.40	
	2	2.5	3	30	40	10	1.08	0.31	0.19	
	2	2.5	3	40	50	10	0.09	0.11	0.08	
	2	2.5	3	50	60	10	0.08	0.08	0.06	
	2	2.5	3	60	70	10	0.30	0.30	0.20	
	3	7.6	2	0	5	5	9.13	1.99	0.21	0.65
	3	7.6	2	5	10	5	1.79	0.44	0.12	
	3	2.5	2	10	20	10	0.00	0.00	0.00	
	3	2.5	3	20	30	10	0.14	0.14	0.06	
	3	2.5	3	30	40	10	0.00	0.00	0.00	
	3	2.5	3	40	50	10	0.00	0.00	0.00	
	3	2.5	3	50	60	10	0.05	0.05	0.04	
	3	2.5	3	60	70	10	0.38	0.38	0.25	
	4	7.6	2	0	5	5	15.88	2.87	0.31	0.75
	4	7.6	2	5	10	5	1.09	0.38	0.11	
	4	2.5	2	10	20	10	3.24	0.73	0.34	
	4	2.5	3	20	30	10	1.11	0.31	0.14	
	4	2.5	3	30	40	10	0.02	0.01	0.01	
	4	2.5	3	40	50	10	0.10	0.09	0.07	
	4	2.5	3	50	60	10	0.25	0.25	0.20	
	4	2.5	3	60	70	10	0.99	0.98	0.65	
	5	7.6	2	0	5	5	13.76	2.60	0.29	
	5	7.6	2	5	10	5	3.58	0.76	0.21	0.23
	5	2.5	2	10	20	10	0.04	0.04	0.02	
	5	2.5	3	20	30	10	0.04	0.04	0.02	
	5	2.5	3	30	40	10	0.02	0.02	0.01	
	5	2.5	3	40	50	10	0.03	0.03	0.02	
	5	2.5	3	50	60	10	0.30	0.30	0.23	
	5	2.5	3	60	70	10	0.42	0.42	0.28	
	6	7.6	2	0	5	5	17.64	3.25	0.36	0.32
	6	7.6	2	5	10	5	6.22	1.56	0.44	
	6	7.6	2	10	20	10	3.39	1.01	0.47	
	6	7.6	3	20	30	10	2.00	0.39	0.18	
	6	2.5	3	30	40	10	0.27	0.00	0.00	
	6	2.5	3	40	50	10	0.39	0.00	0.00	
	6	2.5	3	50	60	10	0.35	0.00	0.00	
	6	2.5	3	60	70	10	0.08	0.00	0.00	

300670320.50	1	7.6	2	0	5	5	13.07	2.10	0.23	0.48
	1	7.6	2	5	10	5	2.97	0.30	0.08	
	1	7.6	2	10	20	10	3.53	0.69	0.32	
	1	7.6	3	20	30	10	2.26	0.25	0.11	
	1	7.6	3	30	40	10	3.09	0.52	0.32	
	1	2.5	3	40	50	10	0.00	0.00	0.00	
	1	2.5	3	50	60	10	0.07	0.00	0.00	
	1	2.5	3	60	70	10	0.27	0.00	0.00	
	2	7.6	2	0	5	5	12.18	2.66	0.29	0.82
	2	7.6	2	5	10	5	2.65	0.45	0.13	
	2	7.6	2	10	20	10	3.77	0.95	0.45	
	2	7.6	3	20	30	10	4.23	0.82	0.37	
	2	2.5	3	30	40	10	0.13	0.00	0.00	
	2	2.5	3	40	50	10	0.06	0.00	0.00	
	2	2.5	3	50	60	10	0.30	0.00	0.00	
	2	2.5	3	60	70	10	0.31	0.00	0.00	
	3	7.6	2	0	5	5	22.06	4.07	0.45	0.55
	3	7.6	2	5	10	5	6.50	1.11	0.31	
	3	7.6	2	10	20	10	1.33	0.05	0.0	
	3	2.5	3	20	30	10	0.35	0.00	0.00	
	3	2.5	3	30	40	10	0.04	0.00	0.00	
	3	2.5	3	40	50	10	0.45	0.17	0.13	
	3	2.5	3	50	60	10	0.65	0.16	0.1	
	3	2.5	3	60	70	10	1.15	0.59	0.39	
	4	7.6	2	0	5	5	21.15	3.90	0.41	0.59
	4	7.6	2	5	10	5	3.42	0.50	0.14	
	4	7.6	2	10	20	10	4.95	0.81	0.38	
	4	2.5	3	20	30	10	0.28	0.00	0.00	
	4	2.5	3	30	40	10	0.26	0.00	0.00	
	4	2.5	3	40	50	10	0.07	0.00	0.00	
	4	2.5	3	50	60	10	0.28	0.00	0.00	
	4	2.5	3	60	70	10	0.17	0.00	0.00	
	5	7.6	2	0	5	5	32.86	2.64	0.85	2.64
	5	7.6	2	5	10	5	9.43	7.76	0.43	
	5	2.5	2	10	20	10	0.25	1.52	0.00	
	5	2.5	3	20	30	10	0.09	0.00	0.00	
	5	2.5	3	40	50	10	0.20	0.00	00.00	
	5	2.5	3	50	60	10	0.28	0.00	0.0	
	5	2.5	3	60	70	10	0.66	0.00	0.24	
	6	7.6	2	0	5	5	8.26	1.95	0.21	0.00
	6	7.6	2	5	10	5	3.27	0.62	0.17	
	6	2.5	2	10	20	10	0.50	0.00	0.00	
	6	2.5	3	20	30	10	0.34	0.02	0.01	
	6	7.6	3	30	40	10	0.36	0.00	0.00	
	6	2.5	3	40	50	10	0.27	0.00	0.00	
	6	2.5	3	50	60	10	0.10	0.00	0.00	
	6	2.5	3	60	70	10	0.33	0.00	0.00	

[redacted]00670510.50	1	7.6	2	0	5	5	7.63	1.43	0.16	0.55
	1	7.6	2	5	10	5	2.61	0.58	0.16	
	1	7.6	2	10	20	10	2.34	0.41	0.19	
	1	7.6	3	20	30	10	1.43	0.53	0.23	
	1	2.5	3	30	40	10	0.01	0.04	0.02	
	1	2.5	3	40	50	10	0.01	0.01	0.01	
	1	2.5	3	50	60	10	0.15	0.15	0.12	
	1	2.5	3	60	70	10	0.04	0.04	0.03	
	2	7.6	2	0	5	5	7.47	1.29	0.14	0.10
	2	7.6	2	5	10	5	0.14	0.14	0.04	
	2	7.6	2	10	20	10	0.73	0.34	0.16	
	2	7.6	3	20	30	10	0.51	0.31	0.14	
	2	2.5	3	30	40	10	0.00	0.00	0.00	
	2	2.5	3	40	50	10	0.00	0.00	0.00	
	2	2.5	3	50	60	10	0.09	0.09	0.07	
	2	2.5	3	60	70	10	0.00	0.00	0.00	
	3	7.6	2	0	5	5	7.24	1.46	0.16	0.26
	3	2.5	2	5	10	5	0.02	0.02	0.01	
	3	2.5	2	10	20	10	0.12	0.12	0.06	
	3	2.5	3	20	30	10	0.00	0.00	0.00	
	3	2.5	3	30	40	10	0.13	0.13	0.08	
	3	2.5	3	40	50	10	0.00	0.00	0.00	
	3	2.5	3	50	60	10	0.00	0.00	0.00	
	3	2.5	3	60	70	10	0.00	0.00	0.00	
	4	7.6	2	0	5	5	7.42	1.67	0.18	0.02
	4	7.6	2	5	10	5	0.64	0.21	0.06	
	4	7.6	2	10	20	10	0.87	0.28	0.13	
	4	2.5	3	20	30	10	0.00	0.00	0.00	
	4	2.5	3	30	40	10	0.00	0.00	0.00	
	4	2.5	3	40	50	10	0.00	0.00	0.00	
	4	2.5	3	50	60	10	0.00	0.00	0.00	
	4	2.5	3	60	70	10	0.02	0.02	0.01	
	5	7.6	2	0	5	5	4.04	0.94	0.10	0.06
	5	7.6	2	5	10	5	2.16	0.56	0.16	
	5	7.6	2	10	20	10	3.48	1.12	0.52	
	5	7.6	3	20	30	10	4.50	1.37	0.62	
	5	2.5	3	30	40	10	0.01	0.01	0.01	
	5	2.5	3	40	50	10	0.00	0.00	0.00	
	5	2.5	3	50	60	10	0.07	0.07	0.05	
	5	2.5	3	60	70	10	0.39	0.39	0.26	
	6	7.6	2	0	5	5	10.71	2.07	0.23	0.16
	6	7.6	2	5	10	5	4.03	1.09	0.31	
	6	2.5	2	10	20	10	0.16	0.16	0.08	
	6	2.5	3	20	30	10	0.04	0.04	0.02	
	6	2.5	3	30	40	10	0.00	0.00	0.00	
	6	2.5	3	40	50	10	0.13	0.13	0.10	
	6	2.5	3	50	60	10	0.11	0.11	0.09	
	6	2.5	3	60	70	10	0.17	0.17	0.11	

[redacted]00670520.50	1	7.6	2	0	5	5	4.36	2.87	0.31	0.59
	1	7.6	2	5	10	5	1.71	0.45	0.13	
	1	7.6	2	10	20	10	2.48	0.71	0.33	
	1	2.5	3	20	30	10	0.00	0.00	0.00	
	1	2.5	3	30	40	10	0.00	0.00	0.00	
	1	2.5	3	40	50	10	0.00	0.00	0.00	
	1	2.5	3	50	60	10	0.02	0.02	0.02	
	1	2.5	3	60	70	10	0.26	0.26	0.17	
	2	7.6	2	0	5	5	50.17	9.48	1.04	2.59
	2	7.6	2	5	10	5	13.42	3.62	1.01	
	2	7.6	2	10	20	10	5.45	1.34	0.63	
	2	2.5	3	20	30	10	0.06	0.06	0.03	
	2	2.5	3	30	40	10	0.00	0.00	0.00	
	2	2.5	3	40	50	10	0.02	0.02	0.0	
	2	2.5	3	50	60	10	0.14	0.14	0.11	
	2	2.5	3	60	70	10	0.04	0.04	0.0	
	3	7.6	2	0	5	5	14.74	3.07	0.34	1.35
	3	7.6	2	5	10	5	4.02	1.09	0.31	
	3	7.6	2	10	20	10	3.53	0.94	0.44	
	3	7.6	3	20	30	10	1.05	0.51	0.23	
	3	7.6	3	30	40	10	1.23	0.60	0.37	
	3	2.5	3	40	50	10	0.03	0.03	0.02	
	3	2.5	3	50	60	10	0.00	0.00	0.00	
	3	2.5	3	60	70	10	0.22	0.22	0.15	
	4	7.6	2	0	5	5	15.06	3.22	0.35	0.88
	4	7.6	2	5	10	5	4.35	1.17	0.33	
	4	7.6	2	10	20	10	5.30	1.95	0.92	
	4	7.6	3	20	30	10	2.55	0.90	0.41	
	4	2.5	3	30	40	10	0.04	0.04	0.02	
	4	2.5	3	40	50	10	0.02	0.02	0.02	
	4	2.5	3	50	60	10	0.01	0.01	0.01	
	4	2.5	3	60	70	10	0.32	0.32	0.21	
	5	7.6	2	0	5	5	6.73	1.77	0.19	0.31
	5	7.6	2	5	10	5	3.87	1.47	0.41	
	5	7.6	2	10	20	10	4.23	1.18	0.55	
	5	7.6	3	20	30	10	0.99	0.54	0.24	
	5	2.5	3	40	50	10	0.00	0.00	0.00	
	5	2.5	3	50	60	10	0.07	0.07	0.05	
	5	2.5	3	60	70	10	0.20	0.20	0.13	
	6	7.6	2	0	5	5	26.47	4.29	0.47	1.87
	6	7.6	2	5	10	5	1.15	0.50	0.14	
	6	2.5	2	10	20	10	0.00	0.00	0.00	
	6	2.5	3	20	30	10	0.00	0.00	0.00	
	6	2.5	3	30	40	10	0.00	0.00	0.00	
	6	2.5	3	40	50	10	0.05	0.05	0.03	
	6	7.6	3	50	60	10	0.21	0.21	0.16	
	6	2.5	3	60	70	10	0.57	0.57	0.37	

F270770l1.707	17.62	2	0	5	5	5.05	2.12	0.65
	17.62	2	5	10	5	0.78	0.19	
	12.54	2	10	20	10	0.12	0.05	
	12.54	3	20	30	10	0.12	0.07	
	12.54	3	30	40	10	0.05	0.03	
	12.54	3	40	50	10	0.96	0.64	
	12.54	3	50	60	10	0.19	0.14	
	12.54	3	60	70	10	0.41	0.35	
	27.62	2	0	5	5	2.57	1.08	0.40
	27.62	2	5	10	5	0.42	0.11	
	27.62	2	10	20	10	0.49	0.21	
	27.62	3	20	30	10	0.70	0.41	
	27.62	3	30	40	10	0.55	0.31	
	22.54	3	40	50	10	0.07	0.05	
	22.54	3	50	60	10	0.04	0.03	
	22.54	3	60	70	10	0.22	0.19	
	37.62	2	0	5	5	3.00	0.96	2.00
	37.62	2	5	10	5	0.36	0.09	
	37.62	2	10	20	10	0.65	0.28	
	32.54	3	20	30	10	0.55	0.32	
	32.54	3	30	40	10	0.10	0.06	
	32.54	3	40	50	10	0.10	0.06	
	32.54	3	50	60	10	0.06	0.04	
	32.54	3	60	70	10	0.12	0.10	
	47.62	2	0	5	5	3.54	1.48	0.42
	47.62	2	5	10	5	0.51	0.13	
	47.62	2	10	20	10	0.80	0.34	
	47.62	3	20	30	10	0.70	0.41	
	47.62	3	30	40	10	0.20	0.11	
	47.62	3	40	50	10	0.25	0.17	
	42.54	3	50	60	10	0.02	0.01	
	42.54	3	60	70	10	0.05	0.04	
	57.62	2	0	5	5	8.01	3.36	1.40
	57.62	2	5	10	5	1.23	0.31	
	57.62	2	10	20	10	1.59	0.68	
	57.62	3	20	30	10	0.88	0.51	
	57.62	3	30	40	10	0.52	0.30	
	52.54	3	40	50	10	0.03	0.02	
	52.54	3	50	60	10	0.11	0.08	
	52.54	3	60	70	10	0.06	0.05	
	67.62	2	0	5	5	1.57	0.66	0.27
	67.62	2	5	10	5	1.05	0.26	
	67.62	2	10	20	10	0.85	0.37	
	62.54	3	20	30	10	0.12	0.07	
	62.54	3	30	40	10	0.21	0.12	
	62.54	3	40	50	10	0.09	0.06	
	62.54	3	50	60	10	0.18	0.13	
	62.54	3	60	70	10	0.08	0.07	

F27077012.707	17.62	2	0	5	5	0.90	0.38	0.11
	17.62	2	5	10	5	0.48	0.12	
	17.62	2	10	20	10	0.78	0.33	
	12.54	3	20	30	10	0.04	0.02	
	12.54	3	30	40	10	0.04	0.02	
	12.54	3	40	50	10	0.04	0.03	
	12.54	3	50	60	10	0.13	0.09	
	12.54	3	60	70	10	0.12	0.09	
	27.62	2	0	5	5	0.39	0.16	0.56
	27.62	2	5	10	5	0.51	0.13	
	27.62	2	10	20	10	0.27	0.17	
	27.62	3	20	30	10	0.26	0.15	
	22.54	3	30	40	10	0.07	0.04	
	22.54	3	40	50	10	0.02	0.01	
	22.54	3	50	60	10	0.04	0.03	
	22.54	3	60	70	10	0.14	0.12	
	37.62	2	0	5	5	2.11	0.89	0.83
	37.62	2	5	10	5	0.72	0.18	
	37.62	2	10	20	10	0.84	0.36	
	32.54	3	20	30	10	0.07	0.04	
	32.54	3	30	40	10	0.06	0.03	
	32.54	3	40	50	10	0.05	0.03	
	32.54	3	50	60	10	0.37	0.27	
	32.54	3	60	70	10	0.34	0.29	
	47.62	2	0	5	5	1.16	0.49	0.29
	47.62	2	5	10	5	0.57	0.14	
	47.62	2	10	20	10	1.11	0.48	
	42.54	3	20	30	10	0.46	0.26	
	42.54	3	30	40	10	0.62	0.35	
	42.54	3	40	50	10	0.11	0.08	
	42.54	3	50	60	10	1.15	0.09	
	42.54	3	60	70	10	1.82	1.56	
	57.62	2	0	5	5	2.38	0.99	0.29
	57.62	2	5	10	5	0.70	0.18	
	57.62	2	10	20	10	1.39	0.81	
	57.62	3	20	30	10	1.21	0.70	
	52.54	3	30	40	10	0.02	0.01	
	52.54	3	40	50	10	0.09	0.06	
	52.54	3	50	60	10	0.32	0.23	
	52.54	3	60	70	10	0.61	0.52	
	67.62	2	0	5	5	1.55	0.65	0.04
	67.62	2	5	10	5	1.58	0.39	
	67.62	2	10	20	10	1.12	0.48	
	62.54	3	20	30	10	0.43	0.25	
	62.54	3	30	40	10	0.07	0.04	
	62.54	3	40	50	10	0.08	0.05	
	62.54	3	50	60	10	0.28	0.21	
	62.54	3	60	70	10	0.21	0.18	

F27077031.707	17.62	2	0	5	5	3.01	0.81	.71
	17.62	2	5	10	5	1.06	0.31	
	17.62	2	10	20	10	0.63	0.38	
	17.62	3	20	30	10	0.50	0.33	
	12.54	3	30	40	10	0.06	0.03	
	12.54	3	40	50	10	0.44	0.29	
	12.54	3	50	60	10	1.24	0.73	
	12.54	3	60	70	10	0.18	0.10	
	27.62	2	0	5	5	6.54	1.76	.93
	27.62	2	5	10	5	0.70	0.20	
	27.62	2	10	20	10	0.13	0.08	
	22.54	3	20	30	10	0.10	0.07	
	22.54	3	30	40	10	0.12	0.06	
	22.54	3	40	50	10	0.01	0.01	
	22.54	3	50	60	10	0.36	0.21	
	22.54	3	60	70	10	0.47	0.29	
	37.62	2	0	5	5	2.96	0.80	1.04
	37.62	2	5	10	5	0.81	0.10	
	37.62	2	10	20	10	1.21	0.73	
	37.62	3	20	30	10	0.67	0.44	
	37.62	3	30	40	10	0.73	0.37	
	32.54	3	40	50	10	0.04	0.03	
	32.54	3	50	60	10	0.21	0.12	
	32.54	3	60	70	10	0.18	0.11	
	47.62	2	0	5	5	1.25	0.34	0.14
	47.62	2	5	10	5	0.90	0.26	
	47.62	2	10	20	10	1.17	0.70	
	47.62	3	20	30	10	1.14	0.75	
	42.54	3	30	40	10	0.02	0.01	
	42.54	3	40	50	10	0.08	0.05	
	42.54	3	50	60	10	0.18	0.11	
	42.54	3	60	70	10	0.81	0.49	
	57.62	2	0	5	5	3.05	0.82	2.24
	57.62	2	5	10	5	0.99	0.29	
	57.62	2	10	20	10	1.25	0.75	
	52.54	3	20	30	10	0.09	0.06	
	52.54	3	30	40	10	0.06	0.03	
	52.54	3	40	50	10	0.10	0.07	
	52.54	3	50	60	10	0.04	0.02	
	52.54	3	60	70	10	0.09	0.05	
	67.62	2	0	5	5	3.60	0.97	0.42
	67.62	2	5	10	5	1.30	0.38	
	67.62	2	10	20	10	0.52	0.31	
	67.62	3	20	30	10	0.60	0.40	
	62.54	3	30	40	10	0.03	0.02	
	62.54	3	40	50	10	0.16	0.10	
	62.54	3	50	60	10	0.14	0.08	
	62.54	3	60	70	10	0.56	0.34	

REF27077032.707	17.62	2	0	5	5	3.94	1.06	1.53
	17.62	2	5	10	5	0.99	0.29	
	17.62	2	10	20	10	1.95	1.17	
	17.62	3	20	30	10	0.75	0.50	
	12.54	3	30	40	10	0.10	0.05	
	12.54	3	40	50	10	0.08	0.05	
	12.54	3	50	60	10	0.20	0.12	
	12.54	3	60	70	10	0.31	0.19	
	27.62	2	0	5	5	5.70	1.54	3.74
	27.62	2	5	10	5	0.49	0.14	
	22.54	2	10	20	10	0.06	0.04	
	22.54	3	20	30	10	0.06	0.04	
	22.54	3	30	40	10	0.04	0.02	
	22.54	3	40	50	10	0.03	0.02	
	22.54	3	50	60	10	0.06	0.04	
	22.54	3	60	70	10	0.53	0.32	
	37.62	2	0	5	5	1.30	0.35	0.13
	37.62	2	5	10	5	1.31	0.38	
	37.62	2	10	20	10	1.01	0.60	
	32.54	3	20	30	10	1.19	0.79	
	32.54	3	30	40	10	0.06	0.03	
	32.54	3	40	50	10	0.25	0.16	
	32.54	3	50	60	10	0.17	0.39	
	32.54	3	60	70	10	0.21	0.13	
	47.62	2	0	5	5	5.85	1.58	2.44
	47.62	2	5	10	5	0.44	0.13	
	42.54	2	10	20	10	0.08	0.05	
	42.54	3	20	30	10	0.02	0.01	
	42.54	3	30	40	10	0.07	0.04	
	42.54	3	40	50	10	0.03	0.02	
	42.54	3	50	60	10	0.07	0.04	
	42.54	3	60	70	10	0.19	0.12	
	57.62	2	0	5	5	1.90	0.51	0.15
	57.62	2	5	10	5	0.71	0.21	
	57.62	2	10	20	10	1.20	0.72	
	57.62	3	20	30	10	0.49	0.32	
	52.54	3	30	40	10	0.06	0.03	
	52.54	3	40	50	10	0.11	0.07	
	52.54	3	50	60	10	0.28	0.16	
	52.54	3	60	70	10	0.78	0.48	
	62.54	2	0	5	5	0.08	0.02	.01
	62.54	2	5	10	5	0.07	0.02	
	62.54	2	10	20	10	0.15	0.09	
	62.54	3	20	30	10	0.09	0.06	
	62.54	3	30	40	10	0.00	0.00	
	62.54	3	40	50	10	0.06	0.04	
	62.54	3	50	60	10	0.27	0.16	
	62.54	3	60	70	10			

F27077051.707	17.62	2	0	5	5	3.39	0.92	0.97
	17.62	2	5	10	5	1.58	0.46	
	17.62	2	10	20	10	1.40	0.84	
	17.62	3	20	30	10	1.44	0.95	
	12.54	3	30	40	10	0.21	0.10	
	12.54	3	40	50	10	0.20	0.13	
	12.54	3	50	60	10	0.13	0.07	
	12.54	3	60	70	10	0.27	0.16	
	27.62	2	0	5	5	5.50	1.49	1.35
	27.62	2	5	10	5	0.69	0.20	
	27.62	2	10	20	10	0.37	0.22	
	27.62	3	20	30	10	0.49	0.32	
	22.54	3	30	40	10	0.06	0.03	
	22.54	3	40	50	10	0.10	0.06	
	22.54	3	50	60	10	0.05	0.03	
	22.54	3	60	70	10	0.42	0.26	
	37.62	2	0	5	5	2.11	0.57	1.34
	37.62	2	5	10	5	1.85	0.54	
	37.62	2	10	20	10	1.54	0.93	
	32.54	3	20	30	10	1.58	1.04	
	32.54	3	30	40	10	1.28	0.64	
	32.54	3	40	50	10	0.89	0.58	
	32.54	3	50	60	10	0.19	0.11	
	32.54	3	60	70	10	0.63	0.38	
	47.62	2	0	5	5	3.40	0.92	1.45
	47.62	2	5	10	5	1.07	0.31	
	47.62	2	10	20	10	1.31	0.79	
	47.62	3	20	30	10	0.75	0.50	
	47.62	3	30	40	10	0.86	0.43	
	42.54	3	40	50	10	0.10	0.07	
	42.54	3	50	60	10	0.06	0.04	
	42.54	3	60	70	10	0.09	0.05	
	57.62	2	0	5	5	3.74	1.00	0.27
	57.62	2	5	10	5	0.81	0.23	
	57.62	2	10	20	10	0.93	0.56	
	52.54	3	20	30	10	0.07	0.05	
	52.54	3	30	40	10	0.07	0.04	
	52.54	3	40	50	10	0.06	0.04	
	52.54	3	50	60	10	0.09	0.05	
	52.54	3	60	70	10	0.22	0.13	
	67.62	2	0	5	5	0.62	0.17	0.14
	67.62	2	5	10	5	1.65	0.48	
	67.62	2	10	20	10	1.27	0.76	
	67.62	3	20	30	10	0.76	0.50	
	62.54	3	30	40	10	0.06	0.03	
	62.54	3	40	50	10	0.11	0.07	
	62.54	3	50	60	10	0.29	0.17	
	62.54	3	60	70	10	0.73	0.44	

F27077052.707	17.62	2	0	5	5	4.95	1.34	1.33
	17.62	2	5	10	5	0.77	0.22	
	17.62	2	10	20	10	1.18	0.71	
	17.62	3	20	30	10	0.59	0.39	
	12.54	3	30	40	10	0.12	0.06	
	12.54	3	40	50	10	0.13	0.08	
	12.54	3	50	60	10	1.86	1.09	
	12.54	3	60	70	10	0.64	0.39	
	27.62	2	0	5	5	3.35	0.90	1.55
	27.62	2	5	10	5	0.66	0.19	
	27.62	2	10	20	10	0.71	0.43	
	22.54	3	20	30	10	0.04	0.03	
	22.54	3	30	40	10	0.09	0.05	
	22.54	3	40	50	10	0.08	0.05	
	22.54	3	50	60	10	0.03	0.02	
	22.54	3	60	70	10	0.10	0.06	
	37.62	2	0	5	5	2.53	0.68	0.42
	32.54	2	5	10	5	0.04	0.01	
	32.54	2	10	20	10	0.05	0.03	
	32.54	3	20	30	10	0.01	0.01	
	32.54	3	30	40	10	0.05	0.03	
	32.54	3	40	50	10	0.08	0.05	
	32.54	3	50	60	10	0.18	0.11	
	32.54	3	60	70	10	0.70	0.43	
	47.62	2	0	5	5	2.20	0.59	1.93
	47.62	2	5	10	5	1.52	0.44	
	47.62	2	10	20	10	2.25	1.35	
	42.54	3	20	30	10			
	42.54	3	30	40	10	0.17	0.08	
	42.54	3	40	50	10	0.02	0.01	
	42.54	3	50	60	10	0.02	0.01	
	42.54	3	60	70	10	0.21	0.13	
	57.62	2	0	5	5	4.10	1.10	1.57
	57.62	2	5	10	5	0.87	0.25	
	57.62	2	10	20	10	1.08	0.65	
	52.54	3	20	30	10	0.71	0.47	
	52.54	3	30	40	10	0.03	0.02	
	52.54	3	40	50	10	0.06	0.04	
	52.54	3	50	60	10	0.27	0.16	
	52.54	3	60	70	10	0.57	0.35	
	67.62	2	0	5	5	0.99	0.27	0.28
	67.62	2	5	10	5	0.50	0.15	
	67.62	2	10	20	10	1.37	0.82	
	67.62	3	20	30	10	0.60	.40	
	62.54	3	30	40	10	0.04	0.02	
	62.54	3	40	50	10	0.14	0.09	
	62.54	3	50	60	10	0.24	0.16	
	62.54	3	60	70	10	0.25	0.15	