

## APPENDIX C – Belnap and Big Spring Pipeline Utilization and Monitoring Data

### Belnap Allotment Updated Monitoring Data

#### Actual Use

Actual use as reported by the permittee annually. Total active preference for the allotment is 734 AUMs. Average annual AUMs used, during the ten-years 2010 – 2020, was 573 which is 78% of the total available. AUMs used ranged from 65% in 2013 to 90% in 2012.

Actual use was determined by annual actual use reports submitted to BLM. Total active preference for the allotment is 2,671 AUMs through 2006. In 2006, one pasture was transferred from this permittee and allotment which reduced the AUMs to 2557.

**Table C.1. Belnap Allotment Actual Use**

Grazing Year	AUMs Used	Percent of Authorized AUMs Used
1986	320	60%
1987	441	83%
1988	440	82%
1989	456	85%
1990	343	64%
1991	0	0%
1992	334	63%
1993	237	44%
1994	352	66%
1995	408	76%
1996	461	86%
1997	376	70%
1998	428	80%
1999	405	76%
2000	400	75%
2001	0	0%
2006	388	73%
2007	276	52%
2008	0	0%
2009	213	40%
2010	0	0%
2011	203	38%
2012	0	0%
2013	208	39%
2014	124	23%
2015	363	68%
2016	175	33%
2017	225	42%
2018	340	64%

2019	209	39%
2020	0	0%

**Table C.2. Big Spring Pipeline Actual Use.**

<b>Grazing Year</b>	<b>AUMs Used</b>	<b>Percent of Authorized AUMs Used</b>
1986	2,092	78%
1987	2,055	77%
1988	1,731	65%
1989	2,277	85%
1990	1,840	69%
1991	1,648	62%
1992	1,593	60%
1993	1,593	60%
1994	934	35%
1995	1,767	66%
1996	1,672	63%
1997	994	37%
1998	2,059	77%
1999	2,284	86%
2000	2,033	76%
2001	1,488	56%
2002	1,256	47%
2003	967	36%
2004	772	30%
2005	980	38%
2006	903	35%
2007	289	11%
2008	910	36%
2009	715	28%
2010	995	39%
2011	1360	53%
2012	1195	47%
2013	954	37%
2014	642	25%
2015	340	13%
2016	714	28%
2017	994	39%
2018	600	23%
2019	768	30%
2020	571	22%

In the past decade or so, the permittee transports most of their cattle from public lands to private pasture between mid-spring to late summer. This gives all pastures in both the Belnap and Big Spring Pipeline allotments rest through the majority of the growing season.

### Utilization

Utilization is defined as the proportion of the current year's forage production that is consumed or destroyed by grazing animals (both livestock and wildlife). The Grazed-Class Method was used to collect the data (Section 4.3.4 Monitoring). Utilization is read at or around key areas. Average utilization levels of key forage species for this allotment should not exceed 50% (BLM 2008a). Utilization data from 1992 – 2021 has been compiled in the following tables. Tables C.2 - C.5 show percent utilization of key forage species by year read at each of the four key areas. Blank cells indicate no plants of that species were encountered in the transect. Average percent utilization by year is calculated by averaging the utilization readings for all key species read in a given year at a specific key area. No average utilization readings above 50% were recorded at any of the four key areas in the Belnap Allotment.

**Table C.3. Belnap Allotment - North Pasture Utilization – Key Area #1**

Species	1992	1993	1994	1995	1996	1997	1998	1999	2000	2006	2010	2011	2013	2014	2015	2017	2018	2019	2020	2021	Average
SPCR	38	32	52	44	57	43	36	33	43	38	0	18	25	23	16	10	0	10	10	0	26
SIHY	40	36	56	46	46	47	39	43	50	33	0	3	24	14	50	25	ND	10	10	0	30
BOER	23	32	48	36	48	41	36	27	33	39	0	ND	ND	ND	ND	ND	ND	ND	ND	ND	33
HIJA/BOGR	20	36	35	41	55	42	38	34	46	32	0	0	2	5	11	10	10	10	10	0	22

**Table C.4. Belnap Allotment – Belnap South Pasture - Utilization- Key Area #2**

Species	1992	1993	1994	1995	1996	1997	1998	1999	2000	2002	2006	2010	2011	2013	2014	2015	2017	2018	2019	2020	2021	Average
SPCR	34	50	54	46	57	47	43	31	44	8	35	0	10	17	8	29	10	0	10	10	0	26
SIHY	22	18	51	43	60	42	45	33	49	17	38	0	0	45	36	49	10	0	10	10	0	28
BOER	17	22	47	33	44	37	34	24	43	31	27	0	0	ND	ND	ND	ND	ND	ND	ND	ND	28
HIJA/BOGR	8	38	51	40	40	45	45	43	54	16	44	0	0	10	0	27	10	0	10	10	0	23
ORHY	ND	ND	51	43	60	42	45	33	49	24	43	0	23	41	56	43	20	ND	ND	ND	ND	38

**Table C.5. Big Spring Pipeline Allotment – Whitmore Point Pasture Key Species Utilization-Key Area #4**

Species	1990	1992	1994	1998	1999	2000	2001	2002	2003	2013	2014	2018	2019	2020	2021	Average
HIJA	70	32	26	24	47	43	22	38	15	30	47	8	18	45	ND	33
SPCR	ND	16	25	25	50	44	37	34	11	50	27	ND	ND	47	ND	33
SIHY	ND	24	37	24	36	43	30	24	13	52	36	20	10	42	ND	30
ATCA	ND	50	37	18	58	48	38	44	25	53	50	14	20	48	ND	39

**Table C.6. Big Spring Pipeline Allotment – Airstrip Pasture – Key Species Utilization – Key Area #5**

Species	1990	1994	1997	1998	1999	2000	2001	2002	2003	2010	2013	2014	2018	2019	2020	2021	Average
HIJA	62	45	NU	43	41	45	41	25	29	26	12	0	1	0	10	0	25
SPCR	64	53	NU	46	40	46	36	21	30	66	23	0	0	0	10	0	29
ATCA	ND	43	NU	48	38	47	44	43	33	10	30	ND	3	0	21	0	28
EPNE	ND	43	NU	49	40	46	59	41	23	41	30	19	5	0	21	0	30

**Table C.7. Big Spring Pipeline Allotment – Upper Cole Pasture Utilization - Key Area #6**

Species	1990	1991	1992	1994	1996	1997	1998	1999	2000	2001	2002	2003	2010	2014	2015	2018	2019	2020	Average
HIJA	51	28	14	37	41	21	10	46	NU	NU	32	35	0	10	8	0	10	20	21
BOGR	54	38	21	30	42	17	5	43	NU	NU	7	26	0	0	4	0	10	20	19
SIHY	N D	15	21	18	43	24	10	37	NU	NU	31	41	0	0	8	0	10	20	17
EPVI	N D	39	11	23	31	22	10	38	NU	NU	38	26	0	9	2	10	20	20	19

The Cole pasture has two key areas. The data displayed above represents upper Cole. The highest utilization recorded on key species occurred in 1999 at 41%. Use levels on individual key species above 50% did not occur during the evaluation period. The overall pasture average for all key species utilization is 8%.

**Table C.8. Big spring Pipeline Allotment – Lower Cole Pasture Utilization - Key Area #7**

Species	1990	1991	1994	1997	1999	2000	2001	2002	2003	2010	2013	2014	2018	2019	2020	2021	Average
HIJA	44	37	44	43	37	36	NU	41	36	0	4	0	13	20	30	ND	28
SPCR	ND	38	49	44	34	31	NU	38	35	0	6	3	11	20	30	ND	26
SIHY	ND	ND	ND	43	40	29	NU	37	35	0	ND	ND	ND	ND	ND	ND	31
BOGR	ND	ND	ND	32	25	24	NU	0	21	0	ND	ND	ND	ND	ND	ND	17
ATCA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3	21	3	10	10	ND	9
EPNE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	16	8	10	10	ND	10

Utilization at the lower Cole key area reached its highest levels in 1994 at 47%. Utilization on individual key species above the 50% allowable did not occur during the evaluation period. Overall utilization average is 38%.

**Table C.9. Big Spring Pipeline Allotment - Lava Pasture Utilization - Key Area #10**

Species	1994	1995	1997	1998	1999	2000	2001	2002	2003	2010	2013	2014	2015	2018	2019	2020	2021	Average
HIJA	44	NU	33	23	40	37	NU	NU	NU	35	39	4	0	3	20	40	0	24
SPCR	53	NU	33	20	43	39	NU	NU	NU	44	45	8	0	3	17	43	0	27
EPNE	36	NU	37	25	55	30	NU	NU	NU	30	13	40	0	6	20	40	0	26
ATCA	N D	ND	ND	ND	ND	ND	ND	ND	ND	38	45	53	0	4	20	40	0	25

Utilization on individual key species above the 45% allowable occurred in 1994 and 1999 during the evaluation period. The highest utilization on all key species happened also in 1994 and 1999 at 45%. The Lava pasture combined utilization average is 36%.

**Table C.10. Big Spring Pipeline Allotment – Chaparral Pasture Utilization - Key Area #11**

Species	1998	1999	2000	2001	2002	2003	2013	2014	2018	2019	2020	Average
HIJA	48	38	39	NU	32	38	41	0	5	30	40	31
SPCR	49	34	37	NU	35	38	11	0	7	30	40	28
BOER	52	33	38	NU	34	31	12	0	5	17	23	25
EPNE	ND	ND	ND	ND	ND	ND	46	0	5	30	30	22

Key species utilization above 45% occurred once in 1998. In 1998, the highest utilization for all key species also occurred at 50%. The overall average for the Chaparral pasture is 38%.

## **Trend**

Trend monitoring was conducted at two key areas in the Belnap Allotment. There are two pastures within the Belnap Allotment, the Belnap North Pasture and the Belnap South Pasture. There is one key area in each pasture (See Appendix A, Figure 2 ).

Data was collected using the Pace-Frequency method (Section 4.3.4 Monitoring). This method of monitoring measures the percent of bare ground, litter, rock and live vegetation/basal cover. In addition, this measures the presence and frequency of plant species. Key Areas #1 and #2 were established in 1982.

The trend of an area may be judged by noting changes in vegetation attributes such as species composition, density, cover, production, and frequency. Vegetation data is collected at different points in time on the same key area, and the results are then compared to detect change.

The key species frequency, which is the ratio between the number of sample units that contain key species and the total number of sample units, compares the most recent data to the base year. Detailed tables for each key area with data by year and species is available below in Tables C.6 - C.13. Overall trend at a key area is determined by assessing the sum percentages of the following attributes: key species, live vegetation cover/basal cover, and ground cover (surface litter). Both basal cover and surface litter are important attributes when evaluating Standard #1 (Upland Sites) of the Arizona Standards for Rangeland Health (Appendix B, BLM 1997). Overall trend at a key area is the direction of change in frequency observed between the initial reading (base year) and the current reading, as depicted by up, down, and no apparent change or static. The threshold for a change in trend is +/- 10 percent.

## **Ecological Site Inventory**

Rangeland landscapes are divided into ecological sites for the purposes of inventory, evaluation, and management. An ecological site is a distinctive kind of land with specific physical characteristics that differs from other kinds of land in its ability to produce a distinctive kind and amount of vegetation. It is the product of all the environmental factors responsible for its development. Within each precipitation zone, ecological sites are classified based on the differences in site factors (soil, slope, aspect, parent material, topographic potential, etc.) that affect the potential to produce vegetation.

Ecological sites have developed a characteristic kind and amount of vegetation. The natural plant community on an ecological site is typified by an association of species that differs from that of other ecological sites in the kind and/or proportion of species or in annual production (BLM 2001). While the natural plant community of a particular ecological site is recognized by characteristic *patterns* of species associations and community structure, the *specific species* present from one location to another may exhibit natural variability - the natural plant community is not a precise assemblage of species for which the proportions are the same from place to place, or even in the same place from year to year. Variability is the rule rather than the exception. The distinctive plant communities associated with each ecological site (including the

variability which frequently occurs) can be identified and described, and are called ecological site descriptions.

The BLM measures range condition, or ecological condition, by the degree to which the existing vegetation of a site is different from the Potential Natural Community (PNC) for the respective ecological site, as identified in the ecological site description. PNC is “the biotic community that would become established if all successful sequences were completed without interferences by humans under the present environmental conditions. It may include naturalized non-native species” (BLM 2005b and BLM 2001). This differs from “historic climax plant community” in that an historic climax plant community is “the plant community that existed before European immigration and settlement” (BLM 2001). The BLM uses “potential natural community” terminology rather than “historic climax plant community” because PNC recognizes past influences by man. Knowing the PNC of the area, and using the ecological site descriptions as a guide, DPC objectives can be developed. The DPC then becomes the objectives by which management actions would be measured (Section 3.4.2.3 DPC).

The “Dry Weight Rank” vegetative sampling method is used to determine species composition (4.3.4 Monitoring). The present composition and the potential for each key species are used to set composition objectives. The potential composition is determined by the applicable soil type and precipitation zone. These potentials are described in Ecological Site Guides provided by the Natural Resources Conservation Service.

Ecological condition expresses the relative degree to which the kinds, proportions, and amounts of plants in a plant community resemble that of the potential natural plant community for the site. Ecological condition for most of the sites in this area change slowly. Ecological condition is reported in the following four classes, or seral stages, which are the developmental stages of ecological succession:

- **Early Seral:** 0-25% of the expected potential natural community exists.
- **Mid-Seral:** 26-50% of the expected potential natural community exists.
- **Late Seral:** 51-75% of the expected potential natural community exists.
- **Potential Natural Community or PNC:** 76-100% of the expected potential natural community exists.



**Table C.11. Belnap Allotment - North Pasture Frequency Trend #1**

Ground Cover	07/07/82	08/14/84	09/30/87	09/20/90	10/21/93	10/12/07	08/29/11	09/14/16	08/16/21
Cryptogam							3	1	1
Litter	31	18	31	31	37	26	16	33	27
Live Basal Veg.	2	5	7	6	9	4	6	4	4
<b>Key Species</b>									
Achnatherum hymenoides			1	1		1	4	2	3
Bouteloua gracilis	34	31	31	33	21	16	24	25	25
Bouteloua eriopoda		1	3	4				1	
Elymus elymoides	2	3	8	13	11	8	19	20	13
Hilaria jamesii	36	27	41	45	43	27	31	44	23
Sporobolus cryptandrus		3	28	37	12	8	3	14	1
Hesperostipa comata	1	1	4	6	2		1	2	
Total	106	89	154	176	135	90	107	146	97

Overall Trend for Belnap North Key Area #1: Static.

**Table C.12 Belnap Allotment – Ground Cover – South Frequency Trend #2**

Ground Cover	07/07/82	12/04/86	09/29/88	09/19/91	10/21/93	10/12/07	09/01/11	09/14/16	08/09/21
Cryptogam						2			
Litter	28	38	41	29	41	26	37	50	36
Live Basal Veg.	4	8	8	20	11	11	8	5	16
<b>Key Species</b>									
Bouteloua gracilis	49	57	54	62	58	55	62	57	65
Hilaria jamesii	11	11	19	15	9	18	30	14	16

Elymus elymoides	2	15	19	4	4	5	33	6	
Sporobolus cryptandrus		13	12	14	19	10	10	21	
Total	94	142	153	144	142	127	180	153	133

Overall Trend for Belnap South Key Area #2: Upward.

**Table C.13. Big Spring Pipeline – Whitmore Frequency Trend #4**

Ground Cover	09/20/84	11/13/87	01/23/90	09/16/03	11/19/08	11/12/13	11/07/18
Cryptogam					1		
Litter	20	38	21	19	53	28	37
Live Basal Veg.	3	4	15	12	2	4	5
Key Species							
Bouteloua eriopoda		1			1	1	1
Hilaria jamesii	47	31	15	21	18	27	20
Oryzopsis hymenoides	1	4		1	1	1	2
Sitanion hystrix	12	25	4	13	5	15	
Sporobolus cryptandrus	6	3		6	1	3	
Total	89	106	55	72	82	79	65

Overall Trend for Whitmore Key Area #4: Down.

**Table C.14. Big Spring Pipeline – Airstrip Frequency Trend #5**

Ground Cover	09/20/84	01/11/90	02/02/00	12/04/03	11/17/08	11/14/13	11/06/18
Litter	21	3	30	36	39	35	17
Live Basal Veg.	6	2	8	2	5	8	20
Key Species							
Hilaria jamesii	32	45	34	10	15	27	32
Bouteloua eriopoda	2	3	4	1		2	
Sporobolus cryptandrus	23	8	29	3	4	24	9
Ephedra viridis	1	1	3	2	5	5	5
Total	84	61	105	52	63	96	78

Overall Trend for Airstrip Key Area #5: Static.

**Table C.15. Big Spring Pipeline – Upper Cole (Cold Spring) Frequency Trend #6**

Ground Cover	09/20/84	01/10/90	12/02/03	11/19/08	11/12/13	11/06/18
Litter	26	23	18	36	28	28
Live Basal Veg.	4	12	17	3	2	1
Key Species						
Hilaria jamesii	30	9	6	15	11	
Bouteloua gracilis	14	17	1	5	2	11
Sitanion hystrix	2			1	2	1
Total	76	61	42	60	45	41

Overall Trend for Upper Cole Key Area #6: Down.

**Table C.16. Big Spring Pipeline – Lower Cole (Whitmore Canyon) Frequency Trend #7**

Ground Cover	01/10/90	11/06/97	12/02/03	11/17/08	11/13/13	11/06/18
Cryptogam				2		
Litter	5	30	36	30	35	39
Live Basal Veg.	2	11	2	4	10	7
Key Species						
Bouteloua eriopoda					1	
Hilaria jamesii	49	44	42	50	75	61
Sporobolus cryptandrus	45	17	24	36	35	48
Total	101	102	104	122	156	155

Overall Trend for Lower Cole Key Area #7: Upward.

**Table C.17. Big Spring Pipeline – Airstrip Frequency Trend #8 (no longer read due to existing trend (#5) in the Airport/Airstrip Pasture**

Ground Cover	07/25/90	11/06/97	02/02/00	11/17/08
Litter	15	25	49	47
Live Basal Veg.	3	4	2	2
Key Species				
Hilaria jamesii	11	12	14	4
Sporobolus cryptandrus	33	19	41	7
Total	29	41	65	53

Overall Trend for Airstrip Key Area #8: Upward.

**Table C.18. Big Spring Pipeline – Big Spring Frequency Trend #9.**

Ground Cover	01/24/90	12/02/03	11/17/08	11/12/13	11/07/18
Cryptogam					
Litter	19	25	28	38	35
Live Basal Veg.	19	11	5	2	1
Key Species					
Bouteloua curtipendula				1	
Oryzopsis hymenoides				1	4
Sitanion hystrix		2	10	28	
Total	38	38	43	70	40

Overall Trend for Big Spring Key Area #9: Static.

**Table C.19. Big Spring Pipeline – Lava Frequency Trend #10.**

% Ground Cover	07/25/90	11/06/97	12/04/03	10/25/07	11/13/13	11/06/18
Cryptogam						
Litter	4	29	32	28	59	11
Live Basal Veg.	8	8	2	6	1	21
Key Species						
Hilaria jamesii	13	12	2	14	5	4
Sporobolus cryptandrus	28	2	2	12	87	77
Bouteloua eriopoda	75	79	18	23	17	27
Total	128	130	56	83	169	140

Overall Trend for Lava Key Area #10: Upward.

**Table C.20. Big Spring Pipeline – Chaparral Frequency Trend #11.**

% Ground Cover	07/27/90	11/06/97	12/04/03	12/11/08	11/14/13	11/07/18
Litter	6	11	2	26	57	13
Live Basal Veg.	3	8	1	2	1	16
Key Species						
Ephedra nevadensis	10	8	7	7	10	10
Hilaria jamesii	18	15	6	17	23	19
Bouteloua eriopoda	18	33	15	28	26	36
Sporobolus cryptandrus	58	36	3	23	34	14
Total	113	111	34	103	151	108

Overall Trend for Chaparral Key Area #11: Static.

## APPENDIX D – Desired Plant Community/Ecological Site Description comparison tables for the Belnap and Big Spring Pipeline Allotments/Key Areas

### Desired Plant Community Objectives

Desired Plant Community Objectives (DPC) were developed during the evaluation process by an interdisciplinary team of specialists (BLM 2005a). These DPCs are to replace the 1990 AMP allotment specific vegetation frequency and cover objectives which focus on livestock forage needs. These objectives focus on the ecological site and its potential, which is a reflection of the biodiversity of the area. DPCs include Species Composition by Weight (CBW) using the Dry Weight Ranking method of data collection and live vegetative ground cover using the point step method of data collection to measure vegetative basal cover (4.3.4 Monitoring). DPCs will be used, from this point forward, to assess effectiveness of management actions (BLM 2005a). Although canopy cover is included in the objectives it is not part of the data that is collected in the key area trend monitoring.

**Table D.1. Belnap North Pasture Frequency Key Area #1 Desired Plant Community Objectives Determination Table**  
ESD: Loamy Upland 10-14" p.z. (R035XC113AZ)

Species	Current Percent Composition	Site Guide Percent Composition (range)	Current Score	Desired Plant Community	DPC objective status
<b>Woody Species</b>					
Artemisia tridentata	15.70	7% - 18%	15.7	7-18	met
Chrysothamnus	1.40	1% - 6%	1.4	1-5	met
Cylindropuntia whipplei		0% - 0%			
Gutierrezia sarothrae	1.10	1% - 6%	1.1	1-5	met
Juniperus osteosperma	12.70	0% - 7%	7	2-10	slightly exceeds, not met
Lycium		0% - 0%			
<b>Grasses Perennial</b>					
Achnatherum hymenoides	4.60	14% - 26%	4.6	5-15	slightly low, not met
Bouteloua gracilis	28.70	21% - 36%	28.7	20-30	met
Elymus elymoides	8.60	6% - 12%	8.6	5-15	met

Hilaria jamesii	23.50	9% - 18%	18	20-30	met
Sporobolus cryptandrus		0% - 0%			
<b>Annuals</b>					
Euphorbia parryi	0.80	0% - 1%	0.8	0-1	met
Euphorbia serpyllifolia	2.90	0% - 1%	1	0-1	not met
<b>Total</b>			<b>86.9</b>		

Current Score total 86.9 Seral state = PNC

**Table D.2. Belnap South Pasture Frequency Key Area #2 Desired Plant Community Objectives Determination Table**  
ESD: Loamy Upland 10-14" p.z. (R035XC113AZ)

Species	Current Percent Composition	Site Guide Percent Composition (range)	Current Score	Desired Plant Community	DPC objective status
<b>Woody Species</b>					
Artemisia tridentata	8.45	7% - 18%	8.45	7-18	met
Juniperus osteosperma	1.45	0% - 7%	1.45	2-10	low, not met
<b>Grasses</b>					
Bouteloua gracilis	26.45	21% - 36%	26.45	20-30	met
Hilaria jamesii	7.35	9% - 18%	7.35	20-30	low, not met
<b>Forbs - Perennial/Biennial</b>					
Mirabilis linearis		0% - 6%		0-1	
Sphaeralcea parvifolia	1.35	0% - 6%	1.35	0-5	met
<b>Annuals</b>					
Euphorbia exstipulata	2.35	0% - 1%	1	0-1	exceeds, not met
Euphorbia serpyllifolia	14.05	0% - 1%	1	0-1	exceeds, not met
Kallstroemia parviflora	0.15	0% - 1%	0.15	0-1	met

Munroa squarrosa	0.40	0% - 1%	0.4	0-1	met
Portulaca oleracea	4.35	0% - 0%			
Sanvitalia abertii	33.65	0% - 1%	1	0-1	exceeds, not met
<b>Total</b>			<b>48.6</b>		

Current Score total 48.6 = Mid-seral state

**Table D.3. Big Spring Pipeline, Whitmore Pasture Frequency Key Area #4 -Desired Plant Community Objectives Determination Table**

ESD: Loamy Upland 10-14" p.z. (R035XC113AZ)

Species	Current Percent Composition	Site Guide Percent Composition (range)	Current Score	Desired Plant Community (DPC)	DPC objective status
<b>Woody Species</b>					
big sagebrush	34.46	7% - 18%	18.00	20-30	exceeds, not met
Fremont's mahonia	5.45	0% - 4%	4.00	--	--
Mormon tea		1% - 12%		--	--
broom snakeweed	28.51	1% - 6%	6.00	--	--
Utah juniper	0.30	0% - 7%	0.30	0-5	met
banana yucca	2.67	1% - 6%	2.67	--	--
<b>Grasses - Perennial</b>					
Fendler threeawn	0.30	0% - 4%	.30		
black grama	0.99	0% - 4%	0.99	1-5	met
James' galleta	15.35	9% - 18%	15.35	5-15	met
Indian ricegrass	1.09	14% - 26%	1.09	1-5	met
<b>Forbs Perennial/Biennial</b>					
globemallow	10.89	0% - 6%	5.00	1-5	exceeds, not met



<b>Total</b>			<b>53.70</b>		
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Current Score total 53.70 = Late seral

**Table D.4. Big Spring Pipeline Airstrip Pasture Frequency Key Area #5 Desired Plant Community Objectives Determination Table**  
ESD: Clay Loam Upland 7-11" p.z. (R035XD414AZ)

Species	Current Percent Composition	Site Guide Percent Composition (range)	Current Score	Desired Plant Community	DPC objective status
<b>Woody Species</b>					
Nevada joint fir	6.18	0% - 1%	1	5-10	met
broom snakeweed	9.31	2% - 5%	5.00	--	--
water jacket	1.96	0% - 2%	1.96	--	--
Prickly pear	1.18	0% - 1%	1.18	--	--
banana yucca	1.27	0% - 1%	1.00	--	--
<b>Grasses - Perennial</b>					
Fendler threeawn	3.43	3% - 8%	3.43		
James' galleta	60.69	16% - 31%	31.00	30-60	slightly exceeds
burrograss	1.96	10% - 16%	1.96		
sand dropseed	14.02	2% - 7%	7.00	2-10	slightly exceeds
<b>Annuals</b>					
sixweeks grama		0% - 3%			
redstem stork's bill		0% - 0%			
little hogweed		0%			
<b>Total</b>			<b>53.53</b>		

Current Score total 53.53 = Mid-seral

**Table D.5. Big Spring Pipeline, Upper Cole Pasture Frequency Key Area #6 Desired Plant Community Objectives Determination Table**  
ESD: Loamy Upland 10-14" p.z. (R035XC113AZ)

Species	Current Percent Composition	Site Guide Percent Composition (range)	Current Score	Desired Plant Community	DPC objective status
<b>Woody Species</b>					
big sagebrush	26.98	7% - 18%	18.00	20-30	met
Fremont's mahonia	2.71	0% - 4%	2.71	--	--
Mexican cliffrose	1.55	1% - 12%	1.55	--	--
broom snakeweed	30.78	1% - 6%	6.00	--	--
Utah juniper	13.80	0% - 7%	7.00	2-10	exceeds, not met
prickly pear	0.23	1% - 6%	0.23		
Two needle pinyon	1.55	0% - 7%	1.55	2-10	slightly less, not met
<b>Grasses - Perennial</b>					
Fendler threeawn	4.65	0% - 4%	4.00		
blue grama	13.57	21% - 36%	13.57	5-15	met
squirreltail	0.16	6% - 12%	0.16	1-10	not met
sand dropseed	0.23	0% - 4%	0.23		
<b>Forbs - Perennial/Biennial</b>					
Eriogonum - perennial forb #1	3.80	0% - 6%	3.80	1-5	met
<b>Total</b>			<b>58.80</b>		

Current Score total 58.80

**Table D.6. Big Spring Pipeline, Lower Cole Pasture Frequency Key Area #7 Desired Plant Community Objectives Determination Table**  
ESD: Sandy Loam Upland 7-11" p.z. (R035XD414AZ)

Species	Current Percent Composition	Site Guide Percent Composition (range)	Current Score	Desired Plant Community (DPC)	DPC objective status
<b>Woody Species</b>					
big sagebrush	0.30	0% - 0%	0.00	--	--
fourwing saltbush	1.70	3% - 8%	1.70	--	--
winterfat	0.10	1% - 5%	0.10	--	--
yellow rabbitbrush	12.70	0% - 1%	1.00	--	--
broom snakeweed	6.40	1% - 2%	2.00	--	--
prickly pear	0.30	0% - 1%	0.30	--	--
<b>Grasses - Perennial</b>					
James' galleta	44.70	20% - 36%	36.00	30-45	met
sand dropseed	33.80	5% - 15%	15.00	25-40	met
<b>Total</b>			<b>56.10</b>		

Current Score total 56.10 = Late seral.

**Table D.7. Big Spring Pipeline, Big Spring Pasture Frequency Key Area #9 Desired Plant Community Objectives Determination Table**  
ESD: Clay Loam Upland Gravelly 13-17" p.z. (R035XF611AZ)

Species	Current Percent Composition	Site Guide Percent Composition (range)	Current Score	Desired Plant Community (DPC)	DPC objective status
<b>Woody Species</b>					
big sagebrush	7.35	0% - 5%	5.00	5-15	met
Mexican cliffrose	1.06	0% - 5%	1.06	1-5	met
broom snakeweed	34.39	0% - 5%	5.00	--	--
Utah juniper	30.53	0% - 5%	5.00	1-10	exceeds, not met
prickly pear	16.74	0% - 5%	5	--	--
Whipple cholla	0.83	0% - 5%	0.83	--	--
Two needle pinyon	5.83	0% - 5%	5.00	--	--
<b>Grasses - Perennial</b>					
squirrel tail				1-5	not met
Indian ricegrass	2.50	0% - 5%	2.50	0-5	met
<b>Forbs - Perennial/Biennial</b>					
globemallow	0.76	0% - 5%	0.76		
<b>Total</b>			<b>30.15</b>		

Current Score total 30.15 = Mid-seral. Juniper exceeds site guide and DPC, resulting sparse understory.

**Table D.8. Big Spring Pipeline, Lava Pasture Frequency Key Area #10 Desired Plant Community Objectives Determination Table**  
ESD: Sandy Loam Upland 7-11" p.z. inclusions of Sandy Loam Upland Gypsic 7-11" p.z. (R035XD414AZ)

Species	Current Percent Composition	Site Guide Percent Composition (range)	Current Score	Desired Plant Community (DPC)	DPC objective status
<b>Woody Species</b>					
broom snakeweed	0.89	0% - 0%		--	--
Prickly pear	1.68	0% - 1%	1.68	--	--
<b>Grasses - Perennial</b>					
black grama	16.63	11% - 29%	16.63	55-70	not met
James' galleta		51% - 57%		2-10	not met
sand dropseed	80.20	32% - 44%	44.00	5-15	exceeds
<b>Forbs - Perennial/Biennial</b>					
globemallow	0.59	0% - 1%	0.59	1-5	
<b>Total</b>			<b>62.90</b>		

Current Score total 62.90 = Late seral.

**Table D.9. Big Spring Pipeline, Chaparral Pasture Frequency Key Area #11 Desired Plant Community Objectives Determination Table**  
ESD: Clay Loam Upland 7-11" p.z. (R035XD421AZ)

Species	Current Percent Composition	Site Guide Percent Composition (range)	Current Score	Desired Plant Community (DPC)	DPC objective status
<b>Woody Species</b>					
Nevada jointfir	7.60	0% - 1%	1.00	15-30	not met
broom snakeweed	15.00	2% - 5%	5.00	--	--
water jacket	3.40	0% - 2%	2.00	--	--
banana yucca		0% - 1%		--	--
<b>Grasses - Perennial</b>					
black grama	31.60	2% - 7%	7.00	5-15	exceeded, not met
James' galleta	19.00	16% - 31%	19.00	2-10	exceeded, not met

bush muhly	0.30	0% - 1%	0.3	--	--
burrograss	1.00	10% - 16%	1.00	--	--
sand dropseed	5.10	2% - 7%	5.10	2-10	met
low woollygrass	15.90	0% - 1%	1		
<b>Forbs - Perennial/Biennial</b>					
globemallow	0.10	0% - 2%	0.1		
<b>Total</b>			<b>41.5</b>		

Current Score total 41.5 = Mid-seral.