| APPENDIX E. | GUIDE TO IMPLEMENTING CONSTRAINTS AND MITIGATION ON KNOWN SAGE-GROUSE LEKS, KEYSTONE XL PIPELINE PROJECT. |
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BASE GUIDE TO IMPLEMENTING SAGE-GROUSE CONSTRAINTS AND MITIGATION IS PRESENTED BELOW. GUIDES SPECIFIC TO EACH LEK FOLLOW.

- 1a. Is lek north of the Milk River^a? If YES go to 2; if NO go to 1b.
 - 2a. Is lek "Confirmed Active^b" or "Unconfirmed^b" and active^c during spring surveys the year of pipeline construction? If YES go to 3; if NO go to 2b.
 - 3a. Is lek \leq 3 miles from Project? If YES go to 4; if NO go to 3b.
 - 4a. Are portions of Project within line-of-sight of lek? If YES implement CONSTRAINT I; if NO go to 4b.
 - 4b. Are portions of Project not within line-of-sight of lek? If YES go to 5.
 - 5a. Are portions of Project ≤1 mile from lek? If YES implement CONSTRAINT I; if NO go to 5b.
 - 5b. Are portions of Project >1 mile from lek? If YES go to 6.
 - 6. Do portions of Project affect suitable nesting habitat^e? If YES implement CONSTRAINT I and MITIGATION I; if NO implement CONSTRAINT II and MITIGATION II.
 - NOTE: Recommend CONSTRAINT II rather than CONSTRAINT I since suitable nesting habitat quality is very marginal where crossed by the Project.
 - 3b. Is lek > 3 miles from Project? If YES, PROCEED WITH CONSTRUCTION.
 - 2b. Is lek "Confirmed Active" or "Unconfirmed" but not active during spring surveys the year of pipeline construction? If YES go to 7.
 - 7. Do portions of Project affect suitable nesting habitat^e within 3 miles of lek? If YES, PROCEED WITH CONSTRUCTION and implement MITIGATION I; if NO, PROCEED WITH CONSTRUCTION.
- 1b. Is lek south of the Milk River^a? If YES go to 8; if NO go to 1a.
 - 8a. Is lek "Confirmed Active^b" or "Unconfirmed^b" in Montana or "Priority^b" in South Dakota and active during spring surveys the year of pipeline construction? If YES go to 9; if NO go to 8b.
 - 9a. Is lek ≤3 miles from Project? If YES go to 10, if NO go to 9b.
 - 10a. Are portions of Project within line-of-sight^d of lek? If YES implement CONSTRAINT I; if NO go to 10b.
 - 10b. Are portions of Project not within line-of-sight of lek? If YES go to 11.
 - 11a. Are portions of Project ≤1 mile from lek? If YES implement CONSTRAINT I; if NO go to 11b.
 - 11b. Are portions of Project >1 mile from lek? If YES go to 12.
 - 12. Do portions of Project affect suitable nesting habitat[†]? If YES implement CONSTRAINT I and MITIGATION I; if NO implement CONSTRAINT II and MITIGATION II.
 - 9b. Is lek >3 miles from Project? If YES, PROCEED WITH CONSTRUCTION.
 - 8b. Is lek "Confirmed Active" or "Unconfirmed" but <u>not</u> active during spring surveys the year of pipeline construction? If YES go to 13.
 - 13. Do portions of Project affect suitable nesting habitat[†] within 3 miles of lek? If YES, PROCEED WITH CONSTRUCTION and implement MITIGATION I; if NO, PROCEED WITH CONSTRUCTION.
- CONSTRAINT I. No construction from March 1 through June 15.
- CONSTRAINT II. No construction from ½ hour before sunrise to 2 hours after sunrise from March 1 through June 15.
- MITIGATION I. Mow suitable nesting habitat between September 1 and November 30 in the year prior to construction.

 Implement sage-grouse nesting habitat Construction/Reclamation Unit.
- MITIGATION II. Monitor lek when pipeline construction is within 3 miles. If displaying males that were present prior to construction are not present for 3 consecutive mornings after construction has commenced, confer with designated personnel.

^a Sage-grouse habitat north of the Milk River (approximately MP 83 of the Keystone Pipeline Project route) differs from sage-grouse habitat described in Montana Sage Grouse Work Group (2005), primarily due to less total shrub cover and less sagebrush cover (Tack 2009). For the purposes of this key, all native rangeland along the pipeline route from MP 0 to MP 83 is potential sage-grouse habitat. South of the Milk River, sage-grouse habitats are defined by Montana Sage Grouse Work Group (2005).

^bConfirmed Active (MFWP): "data supports existence of lek. Supporting data is defined as: 1) minimum of 2 years with 2 or more males lekking on site (preferred); or b) 1 year with 2 or more males lekking on site followed with evidence of lekking (vegetation trampling, feathers and droppings) during the subsequent year;" Unconfirmed (MFWP): "single count with no subsequent survey or a reported lek without supporting survey data;" Priority (SD GFP): active in recent years.

^cFor the purposes of this key, "active" means that displaying males are observed on the lek on a minimum of one morning in the spring of pipeline construction.

^dFor the purposes of this key, the project is considered to be within a lek's line-of-sight as determined through viewshed analysis using ESRI's ArcGIS Spatial Analyst. Viewsheds were generated from the center of each lek based on a point 1 meter above the surface of USGS 1 arc-second NED.

^eNorth of the Milk River, sage-grouse nesting habitat is considered to be habitat with an overall shrub (not just sagebrush) cover of 15%. Sagebrush may comprise less than half the total overall shrub cover (Tack 2009). ^fSouth of the Milk River, sage-grouse nesting habitat is considered to be habitat with 15-31 percent sagebrush cover (Montana Sage Grouse Work Group 2005).

Keystone XL Pipeline Project Appendix E

Lek ID: BLM

1a. Is lek north of the Milk River^a? If YES go to 2; if NO go to 1b.

2a. Is lek "Confirmed Active^b" or "Unconfirmed^b" and active^c during spring surveys the year of pipeline construction? If YES go to 3;

if NO go to 2b.

3a. Is lek ≤3 miles from Project? If YES go to 4; if NO go to 3b.

4a. Are portions of Project within line-of-sight^d of lek? If YES implement CONSTRAINT I; if NO go to 4b.

4b. Are portions of Project not within line-of-sight of lek? If YES go to 5.

5a. Are portions of Project <1 mile from lek? If YES implement CONSTRAINT I; if NO go to 5b.

5b. Are portions of Project >1 mile from lek? If YES go to 6.

6. Do portions of Project affect suitable nesting habitat^e? If YES implement CONSTRAINT I and MITIGATION

I; if NO

implement CONSTRAINT II and MITIGATION II.

3b. Is lek > 3 miles from Project? If YES, PROCEED WITH CONSTRUCTION.

2b. Is lek "Confirmed Active" or "Unconfirmed" but <u>not</u> active during spring surveys the year of pipeline construction? If YES go to 7.

7. Do portions of Project affect suitable nesting habitat^e within 3 miles of lek? If YES, PROCEED WITH CONSTRUCTION and implement MITIGATION I; if NO, PROCEED WITH CONSTRUCTION.

CONSTRAINT I. No construction from March 1 through June 15.

CONSTRAINT II. No construct

No construction from ½ hour before sunrise to 2 hours after sunrise from March 1 through June 15.

MITIGATION I.

Mow suitable nesting habitat between September 1 and November 30 in the year prior to construction.

Implement sage-grouse nesting habitat Construction/Reclamation Unit.

MITIGATION II.

^aSage-grouse habitat north of the Milk River (approximately MP 83 of the Keystone Pipeline Project route) differs from sage-grouse habitat described in Montana Sage Grouse Work Group (2005), primarily due to less total shrub cover and less sagebrush cover (Tack 2009). For the purposes of this key, all native rangeland along the pipeline route from MP 0 to MP 83 is potential sage-grouse habitat. South of the Milk River, sage-grouse habitats are defined by Montana Sage Grouse Work Group (2005).

^bConfirmed Active (MFWP): "data supports existence of lek. Supporting data is defined as: 1) minimum of 2 years with 2 or more males lekking on site (preferred); or b) 1 year with 2 or more males lekking on site followed with evidence of lekking (vegetation trampling, feathers and droppings) during the subsequent year;" Unconfirmed (MFWP): "single count with no subsequent survey or a reported lek without supporting survey data;" Priority (SD GFP): active in recent years.

^cFor the purposes of this key, "active" means that displaying males are observed on the lek on a minimum of one morning in the spring of pipeline construction.

^dFor the purposes of this key, the project is considered to be within a lek's line-of-sight as determined through viewshed analysis using ESRI's ArcGIS Spatial Analyst. Viewsheds were generated from the center of each lek based on a point 1 meter above the surface of USGS 1 arcsecond NED.

^eNorth of the Milk River, sage-grouse nesting habitat is considered to be habitat with an overall shrub (not just sagebrush) cover of 15%. Sagebrush may comprise less than half the total overall shrub cover (Tack 2009).

^fSouth of the Milk River, sage-grouse nesting habitat is considered to be habitat with 15-31 percent sagebrush cover (Montana Sage Grouse Work Group 2005).

Lek ID: 744

Is lek north of the Milk River^a? If YES go to 2; if NO go to 1b.

2a. Is lek "Confirmed Active^b" or "Unconfirmed^b" and active^c during spring surveys the year of pipeline construction? If YES go to 3;

if NO go to 2b.

- 3a. Is lek ≤3 miles from Project? If YES go to 4; if NO go to 3b.
 - 4a. Are portions of Project within line-of-sight^d of lek? If YES implement CONSTRAINT I; if NO go to 4b.
 - 4b. Are portions of Project not within line-of-sight of lek? If YES go to 5.
 - 5a. Are portions of Project ≤1 mile from lek? If YES implement CONSTRAINT I; if NO go to 5b.
 - 5b. Are portions of Project >1 mile from lek? If YES go to 6.
 - Do portions of Project affect suitable nesting habitate? If YES implement CONSTRAINT I and MITIGATION

I; if NO

implement CONSTRAINT II and MITIGATION II.

- 3b. Is lek >3 miles from Project? If YES, PROCEED WITH CONSTRUCTION.
- 2b. Is lek "Confirmed Active" or "Unconfirmed" but not active during spring surveys the year of pipeline construction? If YES go to 7.
 - 7. Do portions of Project affect suitable nesting habitat within 3 miles of lek? If YES, PROCEED WITH CONSTRUCTION and implement MITIGATION I; if NO, PROCEED WITH CONSTRUCTION.

CONSTRAINT I. No construction from March 1 through June 15.

CONSTRAINT II.

No construction from ½ hour before sunrise to 2 hours after sunrise from March 1 through June 15.

MITIGATION I. Mow suitable nesting habitat between September 1 and November 30 in the year prior to construction.

Implement sage-grouse nesting habitat Construction/Reclamation Unit.

MITIGATION II. Monitor lek when pipeline construction is within 3 miles. If displaying males that were present prior to construction are not present for 3 consecutive mornings after construction has commenced, confer with

aSage-grouse habitat north of the Milk River (approximately MP 83 of the Keystone Pipeline Project route) differs from sage-grouse habitat described in Montana Sage Grouse Work Group (2005), primarily due to less total shrub cover and less sagebrush cover (Tack 2009). For the purposes of this key, all native rangeland along the pipeline route from MP 0 to MP 83 is potential sage-grouse habitat. South of the Milk River, sage-grouse habitats are defined by Montana Sage Grouse Work Group (2005).

^bConfirmed Active (MFWP): "data supports existence of lek. Supporting data is defined as: 1) minimum of 2 years with 2 or more males lekking on site (preferred); or b) 1 year with 2 or more males lekking on site followed with evidence of lekking (vegetation trampling, feathers and droppings) during the subsequent year;" Unconfirmed (MFWP): "single count with no subsequent survey or a reported lek without supporting survey data;" Priority (SD GFP): active in recent years.

For the purposes of this key, "active" means that displaying males are observed on the lek on a minimum of one morning in the spring of pipeline construction.

^dFor the purposes of this key, the project is considered to be within a lek's line-of-sight as determined through viewshed analysis using ESRI's ArcGIS Spatial Analyst. Viewsheds were generated from the center of each lek based on a point 1 meter above the surface of USGS 1 arc-

^eNorth of the Milk River, sage-grouse nesting habitat is considered to be habitat with an overall shrub (not just sagebrush) cover of 15%. Sagebrush may comprise less than half the total overall shrub cover (Tack 2009).

South of the Milk River, sage-grouse nesting habitat is considered to be habitat with 15-31 percent sagebrush cover (Montana Sage Grouse Work Group 2005).

Lek ID: 746

Is lek north of the Milk River^a? If YES go to 2; if NO go to 1b.

2a. Is lek "Confirmed Active" or "Unconfirmed" and active during spring surveys the year of pipeline construction? If YES go to 3;

if NO go to 2b.

3a. Is lek ≤3 miles from Project? If YES go to 4; if NO go to 3b.

4a. Are portions of Project within line-of-sight^d of lek? If YES implement CONSTRAINT I; if NO go to 4b.

4b. Are portions of Project not within line-of-sight of lek? If YES go to 5.

5a. Are portions of Project ≤1 mile from lek? If YES implement CONSTRAINT I; if NO go to 5b.

5b. Are portions of Project >1 mile from lek? If YES go to 6.

Do portions of Project affect suitable nesting habitate? If YES implement CONSTRAINT I and MITIGATION

I; if NO

implement CONSTRAINT II and MITIGATION II.

3b. Is lek >3 miles from Project? If YES, PROCEED WITH CONSTRUCTION.

2b. Is lek "Confirmed Active" or "Unconfirmed" but not active during spring surveys the year of pipeline construction? If YES go to 7.

7. Do portions of Project affect suitable nesting habitat within 3 miles of lek? If YES, PROCEED WITH CONSTRUCTION and implement MITIGATION I; if NO, PROCEED WITH CONSTRUCTION.

CONSTRAINT I. No construction from March 1 through June 15.

CONSTRAINT II.

No construction from ½ hour before sunrise to 2 hours after sunrise from March 1 through June 15. MITIGATION I. Mow suitable nesting habitat between September 1 and November 30 in the year prior to construction.

Implement sage-grouse nesting habitat Construction/Reclamation Unit.

MITIGATION II. Monitor lek when pipeline construction is within 3 miles. If displaying males that were present prior to construction are not present for 3 consecutive mornings after construction has commenced, confer with

aSage-grouse habitat north of the Milk River (approximately MP 83 of the Keystone Pipeline Project route) differs from sage-grouse habitat described in Montana Sage Grouse Work Group (2005), primarily due to less total shrub cover and less sagebrush cover (Tack 2009). For the purposes of this key, all native rangeland along the pipeline route from MP 0 to MP 83 is potential sage-grouse habitat. South of the Milk River, sage-grouse habitats are defined by Montana Sage Grouse Work Group (2005).

^bConfirmed Active (MFWP): "data supports existence of lek. Supporting data is defined as: 1) minimum of 2 years with 2 or more males lekking on site (preferred); or b) 1 year with 2 or more males lekking on site followed with evidence of lekking (vegetation trampling, feathers and droppings) during the subsequent year;" Unconfirmed (MFWP): "single count with no subsequent survey or a reported lek without supporting survey data;" Priority (SD GFP): active in recent years.

For the purposes of this key, "active" means that displaying males are observed on the lek on a minimum of one morning in the spring of pipeline construction.

^dFor the purposes of this key, the project is considered to be within a lek's line-of-sight as determined through viewshed analysis using ESRI's ArcGIS Spatial Analyst. Viewsheds were generated from the center of each lek based on a point 1 meter above the surface of USGS 1 arc-

^eNorth of the Milk River, sage-grouse nesting habitat is considered to be habitat with an overall shrub (not just sagebrush) cover of 15%. Sagebrush may comprise less than half the total overall shrub cover (Tack 2009).

South of the Milk River, sage-grouse nesting habitat is considered to be habitat with 15-31 percent sagebrush cover (Montana Sage Grouse Work Group 2005).

Lek ID: 753

1a. Is lek north of the Milk River^a? If YES go to 2; if NO go to 1b.

2a. Is lek "Confirmed Active^b" or "Unconfirmed^b" and active^c during spring surveys the year of pipeline construction? If YES go to 3;

if NO go to 2b.

3a. Is lek ≤3 miles from Project? If YES go to 4; if NO go to 3b.

4a. Are portions of Project within line-of-sight^d of lek? If YES implement CONSTRAINT I; if NO go to 4b.

NOTE: Recommend CONSTRAINT II rather than CONSTRAINT I since the Project is on the edge of the 3-mile buffer

adjacent to an active gravel pit (Figure 4).

- 4b. Are portions of Project not within line-of-sight of lek? If YES go to 5.
 - 5a. Are portions of Project ≤1 mile from lek? If YES implement CONSTRAINT I; if NO go to 5b.
 - 5b. Are portions of Project >1 mile from lek? If YES go to 6.
 - 6. Do portions of Project affect suitable nesting habitat^e? If YES implement CONSTRAINT I and MITIGATION

I; if NO

and

implement CONSTRAINT II and MITIGATION II.

- 3b. Is lek >3 miles from Project? If YES, PROCEED WITH CONSTRUCTION.
- 2b. Is lek "Confirmed Active" or "Unconfirmed" but <u>not</u> active during spring surveys the year of pipeline construction? If YES go to 7.
 - 7. Do portions of Project affect suitable nesting habitat^e within 3 miles of lek? If YES, PROCEED WITH CONSTRUCTION and implement MITIGATION I; if NO, PROCEED WITH CONSTRUCTION.

CONSTRAINT I. No construction from March 1 through June 15.

CONSTRAINT II. No construction from ½ hour before sunrise to 2 hours after sunrise from March 1 through June 15.

MITIGATION I. Mow suitable nesting habitat between September 1 and November 30 in the year prior to construction.

Implement sage-grouse nesting habitat Construction/Reclamation Unit.

MITIGATION II. Monitor lek when pipeline construction is within 3 miles. If displaying males that were present prior to construction are not present for 3 consecutive mornings after construction has commenced, confer with

^aSage-grouse habitat north of the Milk River (approximately MP 83 of the Keystone Pipeline Project route) differs from sage-grouse habitat described in Montana Sage Grouse Work Group (2005), primarily due to less total shrub cover and less sagebrush cover (Tack 2009). For the purposes of this key, all native rangeland along the pipeline route from MP 0 to MP 83 is potential sage-grouse habitat. South of the Milk River, sage-grouse habitats are defined by Montana Sage Grouse Work Group (2005).

^bConfirmed Active (MFWP): "data supports existence of lek. Supporting data is defined as: 1) minimum of 2 years with 2 or more males lekking on site (preferred); or b) 1 year with 2 or more males lekking on site followed with evidence of lekking (vegetation trampling, feathers and droppings) during the subsequent year;" Unconfirmed (MFWP): "single count with no subsequent survey or a reported lek without supporting survey data;" Priority (SD GFP): active in recent years.

^cFor the purposes of this key, "active" means that displaying males are observed on the lek on a minimum of one morning in the spring of pipeline construction.

^dFor the purposes of this key, the project is considered to be within a lek's line-of-sight as determined through viewshed analysis using ESRI's ArcGIS Spatial Analyst. Viewsheds were generated from the center of each lek based on a point 1 meter above the surface of USGS 1 arcsecond NED.

^eNorth of the Milk River, sage-grouse nesting habitat is considered to be habitat with an overall shrub (not just sagebrush) cover of 15%. Sagebrush may comprise less than half the total overall shrub cover (Tack 2009).

South of the Milk River, sage-grouse nesting habitat is considered to be habitat with 15-31 percent sagebrush cover (Montana Sage Grouse Work Group 2005).

Lek ID: 619

- 1b. Is lek south of the Milk River^a? If YES go to 8; if NO go to 1a.
 - 8a. Is lek "Confirmed Active^b" or "Unconfirmed^b" in Montana or "Priority^b" in South Dakota and active during spring surveys the year of pipeline construction? If YES go to 9; if NO go to 8b.
 - 9a. Is lek ≤3 miles from Project? If YES go to 10, if NO go to 9b.

10a. Are portions of Project within line-of-sight^d of lek? If YES implement CONSTRAINT I; if NO go to 10b.

- 10b. Are portions of Project not within line-of-sight of lek? If YES go to 11.
 - 11a. Are portions of Project ≤1 mile from lek? If YES implement CONSTRAINT I; if NO go to 11b.
 - 11b. Are portions of Project >1 mile from lek? If YES go to 12.
 - 12. Do portions of Project affect suitable nesting habitat^f? If YES implement CONSTRAINT I and MITIGATION I;

if NO

implement CONSTRAINT II and MITIGATION II.

- 9b. Is lek >3 miles from Project? If YES, PROCEED WITH CONSTRUCTION.
- 8b. Is lek "Confirmed Active" or "Unconfirmed" but <u>not</u> active during spring surveys the year of pipeline construction? If YES go to 13.
 - 13. Do portions of Project affect suitable nesting habitat within 3 miles of lek? If YES, PROCEED WITH CONSTRUCTION and implement MITIGATION I; if NO, PROCEED WITH CONSTRUCTION.

CONSTRAINT I. No construction from March 1 through June 15.

CONSTRAINT II. No construction from ½ hour before sunrise to 2 hours after sunrise from March 1 through June 15.

MITIGATION I. Mow suitable nesting habitat between September 1 and November 30 in the year prior to construction.

Implement sage-grouse nesting habitat Construction/Reclamation Unit.

^aSage-grouse habitat north of the Milk River (approximately MP 83 of the Keystone Pipeline Project route) differs from sage-grouse habitat described in Montana Sage Grouse Work Group (2005), primarily due to less total shrub cover and less sagebrush cover (Tack 2009). For the purposes of this key, all native rangeland along the pipeline route from MP 0 to MP 83 is potential sage-grouse habitat. South of the Milk River, sage-grouse habitats are defined by Montana Sage Grouse Work Group (2005).

^bConfirmed Active (MFWP): "data supports existence of lek. Supporting data is defined as: 1) minimum of 2 years with 2 or more males lekking on site (preferred); or b) 1 year with 2 or more males lekking on site followed with evidence of lekking (vegetation trampling, feathers and droppings) during the subsequent year;" Unconfirmed (MFWP): "single count with no subsequent survey or a reported lek without supporting survey data;" Priority (SD GFP): active in recent years.

^cFor the purposes of this key, "active" means that displaying males are observed on the lek on a minimum of one morning in the spring of pipeline construction.

^dFor the purposes of this key, the project is considered to be within a lek's line-of-sight as determined through viewshed analysis using ESRI's ArcGIS Spatial Analyst. Viewsheds were generated from the center of each lek based on a point 1 meter above the surface of USGS 1 arcsecond NED.

^eNorth of the Milk River, sage-grouse nesting habitat is considered to be habitat with an overall shrub (not just sagebrush) cover of 15%. Sagebrush may comprise less than half the total overall shrub cover (Tack 2009).

South of the Milk River, sage-grouse nesting habitat is considered to be habitat with 15-31 percent sagebrush cover (Montana Sage Grouse Work Group 2005).

Lek ID: 1739

- 1b. Is lek south of the Milk River^a? If YES go to 8; if NO go to 1a.
 - 8a. Is lek "Confirmed Active^b" or "Unconfirmed^b" in Montana or "Priority^b" in South Dakota and active during spring surveys the year of pipeline construction? If YES go to 9; if NO go to 8b.
 - 9a. Is lek \leq 3 miles from Project? If YES go to 10, if NO go to 9b.
 - 10a. Are portions of Project within line-of-sight^d of lek? If YES implement CONSTRAINT I; if NO go to 10b.
 - 10b. Are portions of Project not within line-of-sight of lek? If YES go to 11.
 - 11a. Are portions of Project ≤1 mile from lek? If YES implement CONSTRAINT I; if NO go to 11b.
 - 11b. Are portions of Project >1 mile from lek? If YES go to 12.
 - 12. Do portions of Project affect suitable nesting habitat^f? If YES implement CONSTRAINT I and MITIGATION I;

if NO

implement CONSTRAINT II and MITIGATION II.

- 9b. Is lek >3 miles from Project? If YES, PROCEED WITH CONSTRUCTION.
- 8b. Is lek "Confirmed Active" or "Unconfirmed" but <u>not</u> active during spring surveys the year of pipeline construction? If YES go to 13.
 - 13. Do portions of Project affect suitable nesting habitat within 3 miles of lek? If YES, PROCEED WITH CONSTRUCTION and implement MITIGATION I; if NO, PROCEED WITH CONSTRUCTION.

CONSTRAINT I. No construction from March 1 through June 15.

CONSTRAINT II.

MITIGATION I.

No construction from ½ hour before sunrise to 2 hours after sunrise from March 1 through June 15. Mow suitable nesting habitat between September 1 and November 30 in the year prior to construction.

Implement sage-grouse nesting habitat Construction/Reclamation Unit.

MITIGATION II.

^aSage-grouse habitat north of the Milk River (approximately MP 83 of the Keystone Pipeline Project route) differs from sage-grouse habitat described in Montana Sage Grouse Work Group (2005), primarily due to less total shrub cover and less sagebrush cover (Tack 2009). For the purposes of this key, all native rangeland along the pipeline route from MP 0 to MP 83 is potential sage-grouse habitat. South of the Milk River, sage-grouse habitats are defined by Montana Sage Grouse Work Group (2005).

^bConfirmed Active (MFWP): "data supports existence of lek. Supporting data is defined as: 1) minimum of 2 years with 2 or more males lekking on site (preferred); or b) 1 year with 2 or more males lekking on site followed with evidence of lekking (vegetation trampling, feathers and droppings) during the subsequent year;" Unconfirmed (MFWP): "single count with no subsequent survey or a reported lek without supporting survey data;" Priority (SD GFP): active in recent years.

^cFor the purposes of this key, "active" means that displaying males are observed on the lek on a minimum of one morning in the spring of pipeline construction.

^dFor the purposes of this key, the project is considered to be within a lek's line-of-sight as determined through viewshed analysis using ESRI's ArcGIS Spatial Analyst. Viewsheds were generated from the center of each lek based on a point 1 meter above the surface of USGS 1 arcsecond NED.

^eNorth of the Milk River, sage-grouse nesting habitat is considered to be habitat with an overall shrub (not just sagebrush) cover of 15%. Sagebrush may comprise less than half the total overall shrub cover (Tack 2009).

South of the Milk River, sage-grouse nesting habitat is considered to be habitat with 15-31 percent sagebrush cover (Montana Sage Grouse Work Group 2005).

Lek ID: 1894

- 1b. Is lek south of the Milk River^a? If YES go to 8; if NO go to 1a.
 - 8a. Is lek "Confirmed Active^b" or "Unconfirmed^b" in Montana or "Priority^b" in South Dakota and active during spring surveys the year of pipeline construction? If YES go to 9; if NO go to 8b.
 - 9a. Is lek ≤3 miles from Project? If YES go to 10, if NO go to 9b.
 - 10a. Are portions of Project within line-of-sight^d of lek? If YES implement CONSTRAINT I; if NO go to 10b.
 - 10b. Are portions of Project not within line-of-sight of lek? If YES go to 11.
 - 11a. Are portions of Project ≤1 mile from lek? If YES implement CONSTRAINT I; if NO go to 11b.
 - 11b. Are portions of Project >1 mile from lek? If YES go to 12.
 - 12. Do portions of Project affect suitable nesting habitat[†]? If YES implement CONSTRAINT I and MITIGATION I;

if NO

implement CONSTRAINT II and MITIGATION II.

- 9b. Is lek >3 miles from Project? If YES, PROCEED WITH CONSTRUCTION.
- 8b. Is lek "Confirmed Active" or "Unconfirmed" but not active during spring surveys the year of pipeline construction? If YES go to 13.
 - 13. Do portions of Project affect suitable nesting habitat within 3 miles of lek? If YES, PROCEED WITH CONSTRUCTION and implement MITIGATION I; if NO, PROCEED WITH CONSTRUCTION.

CONSTRAINT I.

No construction from March 1 through June 15.

CONSTRAINT II. MITIGATION I.

No construction from ½ hour before sunrise to 2 hours after sunrise from March 1 through June 15. Mow suitable nesting habitat between September 1 and November 30 in the year prior to construction. Implement sage-grouse nesting habitat Construction/Reclamation Unit.

MITIGATION II.

^aSage-grouse habitat north of the Milk River (approximately MP 83 of the Keystone Pipeline Project route) differs from sage-grouse habitat described in Montana Sage Grouse Work Group (2005), primarily due to less total shrub cover and less sagebrush cover (Tack 2009). For the purposes of this key, all native rangeland along the pipeline route from MP 0 to MP 83 is potential sage-grouse habitat. South of the Milk River, sage-grouse habitats are defined by Montana Sage Grouse Work Group (2005).

^bConfirmed Active (MFWP): "data supports existence of lek. Supporting data is defined as: 1) minimum of 2 years with 2 or more males lekking on site (preferred); or b) 1 year with 2 or more males lekking on site followed with evidence of lekking (vegetation trampling, feathers and droppings) during the subsequent year;" Unconfirmed (MFWP): "single count with no subsequent survey or a reported lek without supporting survey data;" Priority (SD GFP): active in recent years.

For the purposes of this key, "active" means that displaying males are observed on the lek on a minimum of one morning in the spring of pipeline construction.

^dFor the purposes of this key, the project is considered to be within a lek's line-of-sight as determined through viewshed analysis using ESRI's ArcGIS Spatial Analyst. Viewsheds were generated from the center of each lek based on a point 1 meter above the surface of USGS 1 arc-

^eNorth of the Milk River, sage-grouse nesting habitat is considered to be habitat with an overall shrub (not just sagebrush) cover of 15%. Sagebrush may comprise less than half the total overall shrub cover (Tack 2009).

South of the Milk River, sage-grouse nesting habitat is considered to be habitat with 15-31 percent sagebrush cover (Montana Sage Grouse Work Group 2005).

Lek ID: 656

- 1b. Is lek south of the Milk River^a? If YES go to 8; if NO go to 1a.
 - 8a. Is lek "Confirmed Active^b" or "Unconfirmed^b" in Montana or "Priority^b" in South Dakota and active during spring surveys the year of pipeline construction? If YES go to 9; if NO go to 8b.
 - 9a. Is lek \leq 3 miles from Project? If YES go to 10, if NO go to 9b.
 - 10a. Are portions of Project within line-of-sight^d of lek? If YES implement CONSTRAINT I; if NO go to 10b.
 - 10b. Are portions of Project not within line-of-sight of lek? If YES go to 11.
 - 11a. Are portions of Project ≤1 mile from lek? If YES implement CONSTRAINT I; if NO go to 11b.
 - 11b. Are portions of Project >1 mile from lek? If YES go to 12.
 - 12. Do portions of Project affect suitable nesting habitat[†]? If YES implement CONSTRAINT I and MITIGATION I;

if NO

implement CONSTRAINT II and MITIGATION II.

- 9b. Is lek >3 miles from Project? If YES, PROCEED WITH CONSTRUCTION.
- 8b. Is lek "Confirmed Active" or "Unconfirmed" but <u>not</u> active during spring surveys the year of pipeline construction? If YES go to 13.
 - 13. Do portions of Project affect suitable nesting habitat within 3 miles of lek? If YES, PROCEED WITH CONSTRUCTION and implement MITIGATION I; if NO, PROCEED WITH CONSTRUCTION.

CONSTRAINT I.

No construction from March 1 through June 15.

CONSTRAINT II.

MITIGATION I.

No construction from ½ hour before sunrise to 2 hours after sunrise from March 1 through June 15. Mow suitable nesting habitat between September 1 and November 30 in the year prior to construction.

Implement sage-grouse nesting habitat Construction/Reclamation Unit.

MITIGATION II.

^aSage-grouse habitat north of the Milk River (approximately MP 83 of the Keystone Pipeline Project route) differs from sage-grouse habitat described in Montana Sage Grouse Work Group (2005), primarily due to less total shrub cover and less sagebrush cover (Tack 2009). For the purposes of this key, all native rangeland along the pipeline route from MP 0 to MP 83 is potential sage-grouse habitat. South of the Milk River, sage-grouse habitats are defined by Montana Sage Grouse Work Group (2005).

^bConfirmed Active (MFWP): "data supports existence of lek. Supporting data is defined as: 1) minimum of 2 years with 2 or more males lekking on site (preferred); or b) 1 year with 2 or more males lekking on site followed with evidence of lekking (vegetation trampling, feathers and droppings) during the subsequent year;" Unconfirmed (MFWP): "single count with no subsequent survey or a reported lek without supporting survey data;" Priority (SD GFP): active in recent years.

^cFor the purposes of this key, "active" means that displaying males are observed on the lek on a minimum of one morning in the spring of pipeline construction.

^dFor the purposes of this key, the project is considered to be within a lek's line-of-sight as determined through viewshed analysis using ESRI's ArcGIS Spatial Analyst. Viewsheds were generated from the center of each lek based on a point 1 meter above the surface of USGS 1 arcsecond NED.

^eNorth of the Milk River, sage-grouse nesting habitat is considered to be habitat with an overall shrub (not just sagebrush) cover of 15%. Sagebrush may comprise less than half the total overall shrub cover (Tack 2009).

South of the Milk River, sage-grouse nesting habitat is considered to be habitat with 15-31 percent sagebrush cover (Montana Sage Grouse Work Group 2005).

Lek ID: 1298

- 1b. Is lek south of the Milk River^a? If YES go to 8; if NO go to 1a.
 - 8a. Is lek "Confirmed Active^b" or "Unconfirmed^b" in Montana or "Priority^b" in South Dakota and active during spring surveys the year of pipeline construction? If YES go to 9; if NO go to 8b.
 - 9a. Is lek ≤3 miles from Project? If YES go to 10, if NO go to 9b.

10a. Are portions of Project within line-of-sight^d of lek? If YES implement CONSTRAINT I; if NO go to 10b.

- 10b. Are portions of Project not within line-of-sight of lek? If YES go to 11.
 - 11a. Are portions of Project ≤1 mile from lek? If YES implement CONSTRAINT I; if NO go to 11b.
 - 11b. Are portions of Project >1 mile from lek? If YES go to 12.
 - 12. Do portions of Project affect suitable nesting habitat^f? If YES implement CONSTRAINT I and MITIGATION

I; if NO

implement CONSTRAINT II and MITIGATION II.

- 9b. Is lek >3 miles from Project? If YES, PROCEED WITH CONSTRUCTION.
- 8b. Is lek "Confirmed Active" or "Unconfirmed" but <u>not</u> active during spring surveys the year of pipeline construction? If YES go to 13.
 - 13. Do portions of Project affect suitable nesting habitat within 3 miles of lek? If YES, PROCEED WITH CONSTRUCTION and implement MITIGATION I; if NO, PROCEED WITH CONSTRUCTION.

CONSTRAINT I. No construction from March 1 through June 15.

CONSTRAINT II.

MITIGATION I.

No construction from ½ hour before sunrise to 2 hours after sunrise from March 1 through June 15. Mow suitable nesting habitat between September 1 and November 30 in the year prior to construction.

Implement sage-grouse nesting habitat Construction/Reclamation Unit.

MITIGATION II.

^aSage-grouse habitat north of the Milk River (approximately MP 83 of the Keystone Pipeline Project route) differs from sage-grouse habitat described in Montana Sage Grouse Work Group (2005), primarily due to less total shrub cover and less sagebrush cover (Tack 2009). For the purposes of this key, all native rangeland along the pipeline route from MP 0 to MP 83 is potential sage-grouse habitat. South of the Milk River, sage-grouse habitats are defined by Montana Sage Grouse Work Group (2005).

^bConfirmed Active (MFWP): "data supports existence of lek. Supporting data is defined as: 1) minimum of 2 years with 2 or more males lekking on site (preferred); or b) 1 year with 2 or more males lekking on site followed with evidence of lekking (vegetation trampling, feathers and droppings) during the subsequent year;" Unconfirmed (MFWP): "single count with no subsequent survey or a reported lek without supporting survey data;" Priority (SD GFP): active in recent years.

^cFor the purposes of this key, "active" means that displaying males are observed on the lek on a minimum of one morning in the spring of pipeline construction.

^dFor the purposes of this key, the project is considered to be within a lek's line-of-sight as determined through viewshed analysis using ESRI's ArcGIS Spatial Analyst. Viewsheds were generated from the center of each lek based on a point 1 meter above the surface of USGS 1 arcsecond NED.

^eNorth of the Milk River, sage-grouse nesting habitat is considered to be habitat with an overall shrub (not just sagebrush) cover of 15%. Sagebrush may comprise less than half the total overall shrub cover (Tack 2009).

South of the Milk River, sage-grouse nesting habitat is considered to be habitat with 15-31 percent sagebrush cover (Montana Sage Grouse Work Group 2005).

Lek ID: 658

- 1b. Is lek south of the Milk River^a? If YES go to 8; if NO go to 1a.
 - 8a. Is lek "Confirmed Active^b" or "Unconfirmed^b" in Montana or "Priority^b" in South Dakota and active during spring surveys the year of pipeline construction? If YES go to 9; if NO go to 8b.
 - 9a. Is lek ≤3 miles from Project? If YES go to 10, if NO go to 9b.

10a. Are portions of Project within line-of-sight of lek? If YES implement CONSTRAINT I; if NO go to 10b.

- 10b. Are portions of Project not within line-of-sight of lek? If YES go to 11.
 - 11a. Are portions of Project ≤1 mile from lek? If YES implement CONSTRAINT I; if NO go to 11b.
 - 11b. Are portions of Project >1 mile from lek? If YES go to 12.
 - 12. Do portions of Project affect suitable nesting habitat^f? If YES implement CONSTRAINT I and MITIGATION I;

if NO

implement CONSTRAINT II and MITIGATION II.

- 9b. Is lek >3 miles from Project? If YES, PROCEED WITH CONSTRUCTION.
- 8b. Is lek "Confirmed Active" or "Unconfirmed" but <u>not</u> active during spring surveys the year of pipeline construction? If YES go to 13.
 - 13. Do portions of Project affect suitable nesting habitat within 3 miles of lek? If YES, PROCEED WITH CONSTRUCTION and implement MITIGATION I; if NO, PROCEED WITH CONSTRUCTION.

CONSTRAINT I. No construction from March 1 through June 15.

 ${\tt CONSTRAINT\,II.} \qquad {\tt No\,construction\,from\,\%\,hour\,before\,sunrise\,to\,2\,hours\,after\,sunrise\,from\,March\,1\,through\,June\,15.}$

MITIGATION I. Mow suitable nesting habitat between September 1 and November 30 in the year prior to construction.

Implement sage-grouse nesting habitat Construction/Reclamation Unit.

^aSage-grouse habitat north of the Milk River (approximately MP 83 of the Keystone Pipeline Project route) differs from sage-grouse habitat described in Montana Sage Grouse Work Group (2005), primarily due to less total shrub cover and less sagebrush cover (Tack 2009). For the purposes of this key, all native rangeland along the pipeline route from MP 0 to MP 83 is potential sage-grouse habitat. South of the Milk River, sage-grouse habitats are defined by Montana Sage Grouse Work Group (2005).

^bConfirmed Active (MFWP): "data supports existence of lek. Supporting data is defined as: 1) minimum of 2 years with 2 or more males lekking on site (preferred); or b) 1 year with 2 or more males lekking on site followed with evidence of lekking (vegetation trampling, feathers and droppings) during the subsequent year;" Unconfirmed (MFWP): "single count with no subsequent survey or a reported lek without supporting survey data;" Priority (SD GFP): active in recent years.

^cFor the purposes of this key, "active" means that displaying males are observed on the lek on a minimum of one morning in the spring of pipeline construction.

^dFor the purposes of this key, the project is considered to be within a lek's line-of-sight as determined through viewshed analysis using ESRI's ArcGIS Spatial Analyst. Viewsheds were generated from the center of each lek based on a point 1 meter above the surface of USGS 1 arcsecond NED.

^eNorth of the Milk River, sage-grouse nesting habitat is considered to be habitat with an overall shrub (not just sagebrush) cover of 15%. Sagebrush may comprise less than half the total overall shrub cover (Tack 2009).

South of the Milk River, sage-grouse nesting habitat is considered to be habitat with 15-31 percent sagebrush cover (Montana Sage Grouse Work Group 2005).

Lek ID: 1781

- 1b. Is lek south of the Milk River^a? If YES go to 8; if NO go to 1a.
 - 8a. Is lek "Confirmed Active^b" or "Unconfirmed^b" in Montana or "Priority^b" in South Dakota and active during spring surveys the year of pipeline construction? If YES go to 9; if NO go to 8b.
 - 9a. Is lek \leq 3 miles from Project? If YES go to 10, if NO go to 9b.
 - 10a. Are portions of Project within line-of-sight^d of lek? If YES implement CONSTRAINT I; if NO go to 10b.
 - 10b. Are portions of Project not within line-of-sight of lek? If YES go to 11.
 - 11a. Are portions of Project ≤1 mile from lek? If YES implement CONSTRAINT I; if NO go to 11b.
 - 11b. Are portions of Project >1 mile from lek? If YES go to 12.
 - 12. Do portions of Project affect suitable nesting habitat ? If YES implement CONSTRAINT I and MITIGATION I;

if NO

implement CONSTRAINT II and MITIGATION II.

- 9b. Is lek >3 miles from Project? If YES, PROCEED WITH CONSTRUCTION.
- 8b. Is lek "Confirmed Active" or "Unconfirmed" but <u>not</u> active during spring surveys the year of pipeline construction? If YES go to 13.
 - 13. Do portions of Project affect suitable nesting habitat within 3 miles of lek? If YES, PROCEED WITH CONSTRUCTION and implement MITIGATION I; if NO, PROCEED WITH CONSTRUCTION.

CONSTRAINT I. No construction from March 1 through June 15.

CONSTRAINT II. No const MITIGATION I. Mow suit

No construction from ½ hour before sunrise to 2 hours after sunrise from March 1 through June 15. Mow suitable nesting habitat between September 1 and November 30 in the year prior to construction.

Implement sage-grouse nesting habitat Construction/Reclamation Unit.

MITIGATION II.

^aSage-grouse habitat north of the Milk River (approximately MP 83 of the Keystone Pipeline Project route) differs from sage-grouse habitat described in Montana Sage Grouse Work Group (2005), primarily due to less total shrub cover and less sagebrush cover (Tack 2009). For the purposes of this key, all native rangeland along the pipeline route from MP 0 to MP 83 is potential sage-grouse habitat. South of the Milk River, sage-grouse habitats are defined by Montana Sage Grouse Work Group (2005).

^bConfirmed Active (MFWP): "data supports existence of lek. Supporting data is defined as: 1) minimum of 2 years with 2 or more males lekking on site (preferred); or b) 1 year with 2 or more males lekking on site followed with evidence of lekking (vegetation trampling, feathers and droppings) during the subsequent year;" Unconfirmed (MFWP): "single count with no subsequent survey or a reported lek without supporting survey data;" Priority (SD GFP): active in recent years.

^cFor the purposes of this key, "active" means that displaying males are observed on the lek on a minimum of one morning in the spring of pipeline construction.

^dFor the purposes of this key, the project is considered to be within a lek's line-of-sight as determined through viewshed analysis using ESRI's ArcGIS Spatial Analyst. Viewsheds were generated from the center of each lek based on a point 1 meter above the surface of USGS 1 arcsecond NED.

^eNorth of the Milk River, sage-grouse nesting habitat is considered to be habitat with an overall shrub (not just sagebrush) cover of 15%. Sagebrush may comprise less than half the total overall shrub cover (Tack 2009).

^fSouth of the Milk River, sage-grouse nesting habitat is considered to be habitat with 15-31 percent sagebrush cover (Montana Sage Grouse Work Group 2005).

Lek ID: 662

- 1b. Is lek south of the Milk River^a? If YES go to 8; if NO go to 1a.
 - 8a. Is lek "Confirmed Active^b" or "Unconfirmed^b" in Montana or "Priority^b" in South Dakota and active during spring surveys the year of pipeline construction? If YES go to 9; if NO go to 8b.
 - 9a. Is lek ≤3 miles from Project? If YES go to 10, if NO go to 9b.
 - 10a. Are portions of Project within line-of-sight^d of lek? If YES implement CONSTRAINT I; if NO go to 10b.
 - 10b. Are portions of Project not within line-of-sight of lek? If YES go to 11.
 - 11a. Are portions of Project ≤1 mile from lek? If YES implement CONSTRAINT I; if NO go to 11b.
 - 11b. Are portions of Project >1 mile from lek? If YES go to 12.
 - 12. Do portions of Project affect suitable nesting habitat^f? If YES implement CONSTRAINT I and MITIGATION I;

if NO

implement CONSTRAINT II and MITIGATION II.

- 9b. Is lek >3 miles from Project? If YES, PROCEED WITH CONSTRUCTION.
- 8b. Is lek "Confirmed Active" or "Unconfirmed" but <u>not</u> active during spring surveys the year of pipeline construction? If YES go to 13.
 - 13. Do portions of Project affect suitable nesting habitat within 3 miles of lek? If YES, PROCEED WITH CONSTRUCTION and implement MITIGATION I; if NO, PROCEED WITH CONSTRUCTION.

CONSTRAINT I. No o

No construction from March 1 through June 15.

CONSTRAINT II.

MITIGATION I.

No construction from ½ hour before sunrise to 2 hours after sunrise from March 1 through June 15. Mow suitable nesting habitat between September 1 and November 30 in the year prior to construction.

Implement sage-grouse nesting habitat Construction/Reclamation Unit.

MITIGATION II.

^aSage-grouse habitat north of the Milk River (approximately MP 83 of the Keystone Pipeline Project route) differs from sage-grouse habitat described in Montana Sage Grouse Work Group (2005), primarily due to less total shrub cover and less sagebrush cover (Tack 2009). For the purposes of this key, all native rangeland along the pipeline route from MP 0 to MP 83 is potential sage-grouse habitat. South of the Milk River, sage-grouse habitats are defined by Montana Sage Grouse Work Group (2005).

^bConfirmed Active (MFWP): "data supports existence of lek. Supporting data is defined as: 1) minimum of 2 years with 2 or more males lekking on site (preferred); or b) 1 year with 2 or more males lekking on site followed with evidence of lekking (vegetation trampling, feathers and droppings) during the subsequent year;" Unconfirmed (MFWP): "single count with no subsequent survey or a reported lek without supporting survey data;" Priority (SD GFP): active in recent years.

^cFor the purposes of this key, "active" means that displaying males are observed on the lek on a minimum of one morning in the spring of pipeline construction.

^dFor the purposes of this key, the project is considered to be within a lek's line-of-sight as determined through viewshed analysis using ESRI's ArcGIS Spatial Analyst. Viewsheds were generated from the center of each lek based on a point 1 meter above the surface of USGS 1 arcsecond NED.

^eNorth of the Milk River, sage-grouse nesting habitat is considered to be habitat with an overall shrub (not just sagebrush) cover of 15%. Sagebrush may comprise less than half the total overall shrub cover (Tack 2009).

South of the Milk River, sage-grouse nesting habitat is considered to be habitat with 15-31 percent sagebrush cover (Montana Sage Grouse Work Group 2005).

Lek ID: 795

- 1b. Is lek south of the Milk River^a? If YES go to 8; if NO go to 1a.
 - 8a. Is lek "Confirmed Active^b" or "Unconfirmed^b" in Montana or "Priority^b" in South Dakota and active during spring surveys the year of pipeline construction? If YES go to 9; if NO go to 8b.
 - 9a. Is lek ≤3 miles from Project? If YES go to 10, if NO go to 9b.

10a. Are portions of Project within line-of-sight^d of lek? If YES implement CONSTRAINT I; if NO go to 10b.

- 10b. Are portions of Project not within line-of-sight of lek? If YES go to 11.
 - 11a. Are portions of Project ≤1 mile from lek? If YES implement CONSTRAINT I; if NO go to 11b.
 - 11b. Are portions of Project >1 mile from lek? If YES go to 12.
 - 12. Do portions of Project affect suitable nesting habitat^f? If YES implement CONSTRAINT I and MITIGATION I;

if NO

implement CONSTRAINT II and MITIGATION II.

- 9b. Is lek >3 miles from Project? If YES, PROCEED WITH CONSTRUCTION.
- 8b. Is lek "Confirmed Active" or "Unconfirmed" but <u>not</u> active during spring surveys the year of pipeline construction? If YES go to 13.
 - 13. Do portions of Project affect suitable nesting habitat within 3 miles of lek? If YES, PROCEED WITH CONSTRUCTION and implement MITIGATION I; if NO, PROCEED WITH CONSTRUCTION.

CONSTRAINT I.

No construction from March 1 through June 15.

CONSTRAINT II.

MITIGATION I.

No construction from ½ hour before sunrise to 2 hours after sunrise from March 1 through June 15. Mow suitable nesting habitat between September 1 and November 30 in the year prior to construction.

Implement sage-grouse nesting habitat Construction/Reclamation Unit.

MITIGATION II.

^aSage-grouse habitat north of the Milk River (approximately MP 83 of the Keystone Pipeline Project route) differs from sage-grouse habitat described in Montana Sage Grouse Work Group (2005), primarily due to less total shrub cover and less sagebrush cover (Tack 2009). For the purposes of this key, all native rangeland along the pipeline route from MP 0 to MP 83 is potential sage-grouse habitat. South of the Milk River, sage-grouse habitats are defined by Montana Sage Grouse Work Group (2005).

^bConfirmed Active (MFWP): "data supports existence of lek. Supporting data is defined as: 1) minimum of 2 years with 2 or more males lekking on site (preferred); or b) 1 year with 2 or more males lekking on site followed with evidence of lekking (vegetation trampling, feathers and droppings) during the subsequent year;" Unconfirmed (MFWP): "single count with no subsequent survey or a reported lek without supporting survey data;" Priority (SD GFP): active in recent years.

^cFor the purposes of this key, "active" means that displaying males are observed on the lek on a minimum of one morning in the spring of pipeline construction.

^dFor the purposes of this key, the project is considered to be within a lek's line-of-sight as determined through viewshed analysis using ESRI's ArcGIS Spatial Analyst. Viewsheds were generated from the center of each lek based on a point 1 meter above the surface of USGS 1 arcs and NED.

^eNorth of the Milk River, sage-grouse nesting habitat is considered to be habitat with an overall shrub (not just sagebrush) cover of 15%. Sagebrush may comprise less than half the total overall shrub cover (Tack 2009).

South of the Milk River, sage-grouse nesting habitat is considered to be habitat with 15-31 percent sagebrush cover (Montana Sage Grouse Work Group 2005).

Lek ID: 799

- 1b. Is lek south of the Milk River^a? If YES go to 8; if NO go to 1a.
 - 8a. Is lek "Confirmed Active^b" or "Unconfirmed^b" in Montana or "Priority^b" in South Dakota and active during spring surveys the year of pipeline construction? If YES go to 9; if NO go to 8b.
 - 9a. Is lek ≤3 miles from Project? If YES go to 10, if NO go to 9b.

10a. Are portions of Project within line-of-sight^d of lek? If YES implement CONSTRAINT I; if NO go to 10b.

- 10b. Are portions of Project not within line-of-sight of lek? If YES go to 11.
 - 11a. Are portions of Project ≤1 mile from lek? If YES implement CONSTRAINT I; if NO go to 11b.
 - 11b. Are portions of Project >1 mile from lek? If YES go to 12.
 - 12. Do portions of Project affect suitable nesting habitat^f? If YES implement CONSTRAINT I and MITIGATION I;

if NO

implement CONSTRAINT II and MITIGATION II.

- 9b. Is lek >3 miles from Project? If YES, PROCEED WITH CONSTRUCTION.
- 8b. Is lek "Confirmed Active" or "Unconfirmed" but <u>not</u> active during spring surveys the year of pipeline construction? If YES go to 13.
 - 13. Do portions of Project affect suitable nesting habitat within 3 miles of lek? If YES, PROCEED WITH CONSTRUCTION and implement MITIGATION I; if NO, PROCEED WITH CONSTRUCTION.

CONSTRAINT I.

No construction from March 1 through June 15.

CONSTRAINT II.

MITIGATION I.

No construction from ½ hour before sunrise to 2 hours after sunrise from March 1 through June 15. Mow suitable nesting habitat between September 1 and November 30 in the year prior to construction.

Implement sage-grouse nesting habitat Construction/Reclamation Unit.

MITIGATION II.

^aSage-grouse habitat north of the Milk River (approximately MP 83 of the Keystone Pipeline Project route) differs from sage-grouse habitat described in Montana Sage Grouse Work Group (2005), primarily due to less total shrub cover and less sagebrush cover (Tack 2009). For the purposes of this key, all native rangeland along the pipeline route from MP 0 to MP 83 is potential sage-grouse habitat. South of the Milk River, sage-grouse habitats are defined by Montana Sage Grouse Work Group (2005).

^bConfirmed Active (MFWP): "data supports existence of lek. Supporting data is defined as: 1) minimum of 2 years with 2 or more males lekking on site (preferred); or b) 1 year with 2 or more males lekking on site followed with evidence of lekking (vegetation trampling, feathers and droppings) during the subsequent year;" Unconfirmed (MFWP): "single count with no subsequent survey or a reported lek without supporting survey data;" Priority (SD GFP): active in recent years.

^cFor the purposes of this key, "active" means that displaying males are observed on the lek on a minimum of one morning in the spring of pipeline construction.

^dFor the purposes of this key, the project is considered to be within a lek's line-of-sight as determined through viewshed analysis using ESRI's ArcGIS Spatial Analyst. Viewsheds were generated from the center of each lek based on a point 1 meter above the surface of USGS 1 arcsecond NED.

^eNorth of the Milk River, sage-grouse nesting habitat is considered to be habitat with an overall shrub (not just sagebrush) cover of 15%. Sagebrush may comprise less than half the total overall shrub cover (Tack 2009).

^fSouth of the Milk River, sage-grouse nesting habitat is considered to be habitat with 15-31 percent sagebrush cover (Montana Sage Grouse Work Group 2005).

Lek ID: 1805 and 1430

- 1b. Is lek south of the Milk River^a? If YES go to 8; if NO go to 1a.
 - 8a. Is lek "Confirmed Active^b" or "Unconfirmed^b" in Montana or "Priority^b" in South Dakota and active during spring surveys the year of pipeline construction? If YES go to 9; if NO go to 8b.
 - 9a. Is lek ≤3 miles from Project? If YES go to 10, if NO go to 9b.
 - 10a. Are portions of Project within line-of-sight^d of lek? If YES implement CONSTRAINT I; if NO go to 10b.
 - 10b. Are portions of Project not within line-of-sight of lek? If YES go to 11.
 - 11a. Are portions of Project ≤1 mile from lek? If YES implement CONSTRAINT I; if NO go to 11b.
 - 11b. Are portions of Project >1 mile from lek? If YES go to 12.
 - 12. Do portions of Project affect suitable nesting habitat[†]? If YES implement CONSTRAINT I and MITIGATION I;

if NO

implement CONSTRAINT II and MITIGATION II.

- 9b. Is lek >3 miles from Project? If YES, PROCEED WITH CONSTRUCTION.
- 8b. Is lek "Confirmed Active" or "Unconfirmed" but not active during spring surveys the year of pipeline construction? If YES go to 13.
 - 13. Do portions of Project affect suitable nesting habitat within 3 miles of lek? If YES, PROCEED WITH CONSTRUCTION and implement MITIGATION I; if NO, PROCEED WITH CONSTRUCTION.

CONSTRAINT I. No construction from March 1 through June 15.

CONSTRAINT II.

No construction from ½ hour before sunrise to 2 hours after sunrise from March 1 through June 15. MITIGATION I. Mow suitable nesting habitat between September 1 and November 30 in the year prior to construction.

Implement sage-grouse nesting habitat Construction/Reclamation Unit.

MITIGATION II. Monitor lek when pipeline construction is within 3 miles. If displaying males that were present prior to construction are not present for 3 consecutive mornings after construction has commenced, confer with

^aSage-grouse habitat north of the Milk River (approximately MP 83 of the Keystone Pipeline Project route) differs from sage-grouse habitat described in Montana Sage Grouse Work Group (2005), primarily due to less total shrub cover and less sagebrush cover (Tack 2009). For the purposes of this key, all native rangeland along the pipeline route from MP 0 to MP 83 is potential sage-grouse habitat. South of the Milk River, sage-grouse habitats are defined by Montana Sage Grouse Work Group (2005).

^bConfirmed Active (MFWP): "data supports existence of lek. Supporting data is defined as: 1) minimum of 2 years with 2 or more males lekking on site (preferred); or b) 1 year with 2 or more males lekking on site followed with evidence of lekking (vegetation trampling, feathers and droppings) during the subsequent year;" Unconfirmed (MFWP): "single count with no subsequent survey or a reported lek without supporting survey data;" Priority (SD GFP): active in recent years.

For the purposes of this key, "active" means that displaying males are observed on the lek on a minimum of one morning in the spring of pipeline construction.

^dFor the purposes of this key, the project is considered to be within a lek's line-of-sight as determined through viewshed analysis using ESRI's ArcGIS Spatial Analyst. Viewsheds were generated from the center of each lek based on a point 1 meter above the surface of USGS 1 arc-

eNorth of the Milk River, sage-grouse nesting habitat is considered to be habitat with an overall shrub (not just sagebrush) cover of 15%. Sagebrush may comprise less than half the total overall shrub cover (Tack 2009).

South of the Milk River, sage-grouse nesting habitat is considered to be habitat with 15-31 percent sagebrush cover (Montana Sage Grouse Work Group 2005).

Lek ID: 1428 and 1725

- 1b. Is lek south of the Milk River^a? If YES go to 8; if NO go to 1a.
 - 8a. Is lek "Confirmed Active^b" or "Unconfirmed^b" in Montana or "Priority^b" in South Dakota and active during spring surveys the year of pipeline construction? If YES go to 9; if NO go to 8b.
 - 9a. Is lek \leq 3 miles from Project? If YES go to 10, if NO go to 9b.
 - 10a. Are portions of Project within line-of-sight^d of lek? If YES implement CONSTRAINT I; if NO go to 10b.

 NOTE: Recommend CONSTRAINT II rather than CONSTRAINT I at this site since visible area is very restricted.
 - 10b. Are portions of Project not within line-of-sight of lek? If YES go to 11.
 - 11a. Are portions of Project ≤1 mile from lek? If YES implement CONSTRAINT I; if NO go to 11b.
 - 11b. Are portions of Project >1 mile from lek? If YES go to 12.
 - 12. Do portions of Project affect suitable nesting habitat[†]? If YES implement CONSTRAINT I and MITIGATION I;

if NO

implement CONSTRAINT II and MITIGATION II.

- 9b. Is lek >3 miles from Project? If YES, PROCEED WITH CONSTRUCTION.
- 8b. Is lek "Confirmed Active" or "Unconfirmed" but <u>not</u> active during spring surveys the year of pipeline construction? If YES go to 13.
 - 13. Do portions of Project affect suitable nesting habitat within 3 miles of lek? If YES, PROCEED WITH CONSTRUCTION and implement MITIGATION I; if NO, PROCEED WITH CONSTRUCTION.

CONSTRAINT I. No construction from March 1 through June 15.

CONSTRAINT II. No construction from ½ hour before sunrise to 2 hours after sunrise from March 1 through June 15.

MITIGATION I. Mow suitable nesting habitat between September 1 and November 30 in the year prior to construction.

Implement sage-grouse nesting habitat Construction/Reclamation Unit.

MITIGATION II. Monitor lek when pipeline construction is within 3 miles. If displaying males that were present prior to

construction are not present for 3 consecutive mornings after construction has commenced, confer with

^aSage-grouse habitat north of the Milk River (approximately MP 83 of the Keystone Pipeline Project route) differs from sage-grouse habitat described in Montana Sage Grouse Work Group (2005), primarily due to less total shrub cover and less sagebrush cover (Tack 2009). For the purposes of this key, all native rangeland along the pipeline route from MP 0 to MP 83 is potential sage-grouse habitat. South of the Milk River, sage-grouse habitats are defined by Montana Sage Grouse Work Group (2005).

^bConfirmed Active (MFWP): "data supports existence of lek. Supporting data is defined as: 1) minimum of 2 years with 2 or more males lekking on site (preferred); or b) 1 year with 2 or more males lekking on site followed with evidence of lekking (vegetation trampling, feathers and droppings) during the subsequent year;" Unconfirmed (MFWP): "single count with no subsequent survey or a reported lek without supporting survey data;" Priority (SD GFP): active in recent years.

^cFor the purposes of this key, "active" means that displaying males are observed on the lek on a minimum of one morning in the spring of pipeline construction.

^dFor the purposes of this key, the project is considered to be within a lek's line-of-sight as determined through viewshed analysis using ESRI's ArcGIS Spatial Analyst. Viewsheds were generated from the center of each lek based on a point 1 meter above the surface of USGS 1 arcsecond NED.

^eNorth of the Milk River, sage-grouse nesting habitat is considered to be habitat with an overall shrub (not just sagebrush) cover of 15%. Sagebrush may comprise less than half the total overall shrub cover (Tack 2009).

^fSouth of the Milk River, sage-grouse nesting habitat is considered to be habitat with 15-31 percent sagebrush cover (Montana Sage Grouse Work Group 2005).

Lek ID: 1801

- 1b. Is lek south of the Milk River^a? If YES go to 8; if NO go to 1a.
 - 8a. Is lek "Confirmed Active^b" or "Unconfirmed^b" in Montana or "Priority^b" in South Dakota and active during spring surveys the year of pipeline construction? If YES go to 9; if NO go to 8b.
 - 9a. Is lek ≤3 miles from Project? If YES go to 10, if NO go to 9b.

10a. Are portions of Project within line-of-sight^d of lek? If YES implement CONSTRAINT I; if NO go to 10b.

- 10b. Are portions of Project not within line-of-sight of lek? If YES go to 11.
 - 11a. Are portions of Project ≤1 mile from lek? If YES implement CONSTRAINT I; if NO go to 11b.
 - 11b. Are portions of Project >1 mile from lek? If YES go to 12.
 - 12. Do portions of Project affect suitable nesting habitat^f? If YES implement CONSTRAINT I and MITIGATION I;

if NO

implement CONSTRAINT II and MITIGATION II.

NOTE: Recommend CONSTRAINT II rather than CONSTRAINT I at this site since suitable habitat is on the margin of the 3-mile buffer and very limited.

- 9b. Is lek >3 miles from Project? If YES, PROCEED WITH CONSTRUCTION.
- 8b. Is lek "Confirmed Active" or "Unconfirmed" but <u>not</u> active during spring surveys the year of pipeline construction? If YES go to 13.
 - 13. Do portions of Project affect suitable nesting habitat within 3 miles of lek? If YES, PROCEED WITH CONSTRUCTION and implement MITIGATION I; if NO, PROCEED WITH CONSTRUCTION.

CONSTRAINT I. No construction from March 1 through June 15.

CONSTRAINT II. No construction from ½ hour before sunrise to 2 hours after sunrise from March 1 through June 15.

MITIGATION I. Mow suitable nesting habitat between September 1 and November 30 in the year prior to construction.

Implement sage-grouse nesting habitat Construction/Reclamation Unit.

^aSage-grouse habitat north of the Milk River (approximately MP 83 of the Keystone Pipeline Project route) differs from sage-grouse habitat described in Montana Sage Grouse Work Group (2005), primarily due to less total shrub cover and less sagebrush cover (Tack 2009). For the purposes of this key, all native rangeland along the pipeline route from MP 0 to MP 83 is potential sage-grouse habitat. South of the Milk River, sage-grouse habitats are defined by Montana Sage Grouse Work Group (2005).

^bConfirmed Active (MFWP): "data supports existence of lek. Supporting data is defined as: 1) minimum of 2 years with 2 or more males lekking on site (preferred); or b) 1 year with 2 or more males lekking on site followed with evidence of lekking (vegetation trampling, feathers and droppings) during the subsequent year;" Unconfirmed (MFWP): "single count with no subsequent survey or a reported lek without supporting survey data;" Priority (SD GFP): active in recent years.

^cFor the purposes of this key, "active" means that displaying males are observed on the lek on a minimum of one morning in the spring of pipeline construction.

^dFor the purposes of this key, the project is considered to be within a lek's line-of-sight as determined through viewshed analysis using ESRI's ArcGIS Spatial Analyst. Viewsheds were generated from the center of each lek based on a point 1 meter above the surface of USGS 1 arcsecond NED.

^eNorth of the Milk River, sage-grouse nesting habitat is considered to be habitat with an overall shrub (not just sagebrush) cover of 15%. Sagebrush may comprise less than half the total overall shrub cover (Tack 2009).

^fSouth of the Milk River, sage-grouse nesting habitat is considered to be habitat with 15-31 percent sagebrush cover (Montana Sage Grouse Work Group 2005).

Lek ID: 1837

- 1b. Is lek south of the Milk River^a? If YES go to 8; if NO go to 1a.
 - 8a. Is lek "Confirmed Active^b" or "Unconfirmed^b" in Montana or "Priority^b" in South Dakota and active during spring surveys the year of pipeline construction? If YES go to 9; if NO go to 8b.
 - 9a. Is lek ≤3 miles from Project? If YES go to 10, if NO go to 9b.

10a. Are portions of Project within line-of-sight^d of lek? If YES implement CONSTRAINT I; if NO go to 10b.

- 10b. Are portions of Project not within line-of-sight of lek? If YES go to 11.
 - 11a. Are portions of Project ≤1 mile from lek? If YES implement CONSTRAINT I; if NO go to 11b.
 - 11b. Are portions of Project >1 mile from lek? If YES go to 12.
 - 12. Do portions of Project affect suitable nesting habitat[†]? If YES implement CONSTRAINT I and MITIGATION I;

if NO

implement CONSTRAINT II and MITIGATION II.

NOTE: Recommend CONSTRAINT II rather than CONSTRAINT I at this site since suitable habitat is very

limited.

- 9b. Is lek >3 miles from Project? If YES, PROCEED WITH CONSTRUCTION.
- 8b. Is lek "Confirmed Active" or "Unconfirmed" but <u>not</u> active during spring surveys the year of pipeline construction? If YES go to 13.
 - 13. Do portions of Project affect suitable nesting habitat within 3 miles of lek? If YES, PROCEED WITH CONSTRUCTION and implement MITIGATION I; if NO, PROCEED WITH CONSTRUCTION.

CONSTRAINT I. No construction from March 1 through June 15.

designated personnel.

CONSTRAINT II. No construction from ½ hour before sunrise to 2 hours after sunrise from March 1 through June 15.

MITIGATION I. Mow suitable nesting habitat between September 1 and November 30 in the year prior to construction.

Implement sage-grouse nesting habitat Construction/Reclamation Unit.

^aSage-grouse habitat north of the Milk River (approximately MP 83 of the Keystone Pipeline Project route) differs from sage-grouse habitat described in Montana Sage Grouse Work Group (2005), primarily due to less total shrub cover and less sagebrush cover (Tack 2009). For the purposes of this key, all native rangeland along the pipeline route from MP 0 to MP 83 is potential sage-grouse habitat. South of the Milk River, sage-grouse habitats are defined by Montana Sage Grouse Work Group (2005).

^bConfirmed Active (MFWP): "data supports existence of lek. Supporting data is defined as: 1) minimum of 2 years with 2 or more males lekking on site (preferred); or b) 1 year with 2 or more males lekking on site followed with evidence of lekking (vegetation trampling, feathers and droppings) during the subsequent year;" Unconfirmed (MFWP): "single count with no subsequent survey or a reported lek without supporting survey data;" Priority (SD GFP): active in recent years.

^cFor the purposes of this key, "active" means that displaying males are observed on the lek on a minimum of one morning in the spring of pipeline construction.

^dFor the purposes of this key, the project is considered to be within a lek's line-of-sight as determined through viewshed analysis using ESRI's ArcGIS Spatial Analyst. Viewsheds were generated from the center of each lek based on a point 1 meter above the surface of USGS 1 arcsecond NED.

^eNorth of the Milk River, sage-grouse nesting habitat is considered to be habitat with an overall shrub (not just sagebrush) cover of 15%. Sagebrush may comprise less than half the total overall shrub cover (Tack 2009).

^fSouth of the Milk River, sage-grouse nesting habitat is considered to be habitat with 15-31 percent sagebrush cover (Montana Sage Grouse Work Group 2005).

Lek ID: 1838

- 1b. Is lek south of the Milk River^a? If YES go to 8; if NO go to 1a.
 - 8a. Is lek "Confirmed Active^b" or "Unconfirmed^b" in Montana or "Priority^b" in South Dakota and active during spring surveys the year of pipeline construction? If YES go to 9; if NO go to 8b.
 - 9a. Is lek \leq 3 miles from Project? If YES go to 10, if NO go to 9b.
 - 10a. Are portions of Project within line-of-sight of lek? If YES implement CONSTRAINT I; if NO go to 10b.
 - 10b. Are portions of Project not within line-of-sight of lek? If YES go to 11.
 - 11a. Are portions of Project ≤1 mile from lek? If YES implement CONSTRAINT I; if NO go to 11b.
 - 11b. Are portions of Project >1 mile from lek? If YES go to 12.
 - 12. Do portions of Project affect suitable nesting habitat^f? If YES implement CONSTRAINT I and MITIGATION I;

if NO

implement CONSTRAINT II and MITIGATION II.

- 9b. Is lek >3 miles from Project? If YES, PROCEED WITH CONSTRUCTION.
- 8b. Is lek "Confirmed Active" or "Unconfirmed" but <u>not</u> active during spring surveys the year of pipeline construction? If YES go to 13.
 - 13. Do portions of Project affect suitable nesting habitat within 3 miles of lek? If YES, PROCEED WITH CONSTRUCTION and implement MITIGATION I; if NO, PROCEED WITH CONSTRUCTION.

CONSTRAINT I. No construction from March 1 through June 15.

CONSTRAINT II. No construc

MITIGATION I. Mow suitable

No construction from ½ hour before sunrise to 2 hours after sunrise from March 1 through June 15.

Mow suitable nesting habitat between September 1 and November 30 in the year prior to construction.

Implement sage-grouse nesting habitat Construction/Reclamation Unit.

MITIGATION II.

^aSage-grouse habitat north of the Milk River (approximately MP 83 of the Keystone Pipeline Project route) differs from sage-grouse habitat described in Montana Sage Grouse Work Group (2005), primarily due to less total shrub cover and less sagebrush cover (Tack 2009). For the purposes of this key, all native rangeland along the pipeline route from MP 0 to MP 83 is potential sage-grouse habitat. South of the Milk River, sage-grouse habitats are defined by Montana Sage Grouse Work Group (2005).

^bConfirmed Active (MFWP): "data supports existence of lek. Supporting data is defined as: 1) minimum of 2 years with 2 or more males lekking on site (preferred); or b) 1 year with 2 or more males lekking on site followed with evidence of lekking (vegetation trampling, feathers and droppings) during the subsequent year;" Unconfirmed (MFWP): "single count with no subsequent survey or a reported lek without supporting survey data;" Priority (SD GFP): active in recent years.

^cFor the purposes of this key, "active" means that displaying males are observed on the lek on a minimum of one morning in the spring of pipeline construction.

^dFor the purposes of this key, the project is considered to be within a lek's line-of-sight as determined through viewshed analysis using ESRI's ArcGIS Spatial Analyst. Viewsheds were generated from the center of each lek based on a point 1 meter above the surface of USGS 1 arcsecond NED.

^eNorth of the Milk River, sage-grouse nesting habitat is considered to be habitat with an overall shrub (not just sagebrush) cover of 15%. Sagebrush may comprise less than half the total overall shrub cover (Tack 2009).

South of the Milk River, sage-grouse nesting habitat is considered to be habitat with 15-31 percent sagebrush cover (Montana Sage Grouse Work Group 2005).

Lek ID: 1840

- 1b. Is lek south of the Milk River^a? If YES go to 8; if NO go to 1a.
 - 8a. Is lek "Confirmed Active^b" or "Unconfirmed^b" in Montana or "Priority^b" in South Dakota and active during spring surveys the year of pipeline construction? If YES go to 9; if NO go to 8b.
 - 9a. Is lek \leq 3 miles from Project? If YES go to 10, if NO go to 9b.
 - 10a. Are portions of Project within line-of-sight^d of lek? If YES implement CONSTRAINT I; if NO go to 10b.
 - 10b. Are portions of Project not within line-of-sight of lek? If YES go to 11.
 - 11a. Are portions of Project ≤1 mile from lek? If YES implement CONSTRAINT I; if NO go to 11b.
 - 11b. Are portions of Project >1 mile from lek? If YES go to 12.
 - 12. Do portions of Project affect suitable nesting habitat^f? If YES implement CONSTRAINT I and MITIGATION

I; if NO

implement CONSTRAINT II and MITIGATION II.

- 9b. Is lek >3 miles from Project? If YES, PROCEED WITH CONSTRUCTION.
- 8b. Is lek "Confirmed Active" or "Unconfirmed" but <u>not</u> active during spring surveys the year of pipeline construction? If YES go to 13.
 - 13. Do portions of Project affect suitable nesting habitat within 3 miles of lek? If YES, PROCEED WITH CONSTRUCTION and implement MITIGATION I; if NO, PROCEED WITH CONSTRUCTION.

CONSTRAINT I. No construction from March 1 through June 15.

CONSTRAINT II.

MITIGATION I.

No construction from ½ hour before sunrise to 2 hours after sunrise from March 1 through June 15. Mow suitable nesting habitat between September 1 and November 30 in the year prior to construction.

Implement sage-grouse nesting habitat Construction/Reclamation Unit.

MITIGATION II.

^aSage-grouse habitat north of the Milk River (approximately MP 83 of the Keystone Pipeline Project route) differs from sage-grouse habitat described in Montana Sage Grouse Work Group (2005), primarily due to less total shrub cover and less sagebrush cover (Tack 2009). For the purposes of this key, all native rangeland along the pipeline route from MP 0 to MP 83 is potential sage-grouse habitat. South of the Milk River, sage-grouse habitats are defined by Montana Sage Grouse Work Group (2005).

^bConfirmed Active (MFWP): "data supports existence of lek. Supporting data is defined as: 1) minimum of 2 years with 2 or more males lekking on site (preferred); or b) 1 year with 2 or more males lekking on site followed with evidence of lekking (vegetation trampling, feathers and droppings) during the subsequent year;" Unconfirmed (MFWP): "single count with no subsequent survey or a reported lek without supporting survey data;" Priority (SD GFP): active in recent years.

^cFor the purposes of this key, "active" means that displaying males are observed on the lek on a minimum of one morning in the spring of pipeline construction.

^dFor the purposes of this key, the project is considered to be within a lek's line-of-sight as determined through viewshed analysis using ESRI's ArcGIS Spatial Analyst. Viewsheds were generated from the center of each lek based on a point 1 meter above the surface of USGS 1 arcsecond NED.

^eNorth of the Milk River, sage-grouse nesting habitat is considered to be habitat with an overall shrub (not just sagebrush) cover of 15%. Sagebrush may comprise less than half the total overall shrub cover (Tack 2009).

South of the Milk River, sage-grouse nesting habitat is considered to be habitat with 15-31 percent sagebrush cover (Montana Sage Grouse Work Group 2005).

Lek ID: 1292

- 1b. Is lek south of the Milk River^a? If YES go to 8; if NO go to 1a.
 - 8a. Is lek "Confirmed Active^b" or "Unconfirmed^b" in Montana or "Priority^b" in South Dakota and active during spring surveys the year of pipeline construction? If YES go to 9; if NO go to 8b.
 - 9a. Is lek ≤3 miles from Project? If YES go to 10, if NO go to 9b.

10a. Are portions of Project within line-of-sight^d of lek? If YES implement CONSTRAINT I; if NO go to 10b.

- 10b. Are portions of Project not within line-of-sight of lek? If YES go to 11.
 - 11a. Are portions of Project ≤1 mile from lek? If YES implement CONSTRAINT I; if NO go to 11b.
 - 11b. Are portions of Project >1 mile from lek? If YES go to 12.
 - 12. Do portions of Project affect suitable nesting habitat^f? If YES implement CONSTRAINT I and MITIGATION

I; if NO

implement CONSTRAINT II and MITIGATION II.

- 9b. Is lek >3 miles from Project? If YES, PROCEED WITH CONSTRUCTION.
- 8b. Is lek "Confirmed Active" or "Unconfirmed" but <u>not</u> active during spring surveys the year of pipeline construction? If YES go to 13.
 - 13. Do portions of Project affect suitable nesting habitat within 3 miles of lek? If YES, PROCEED WITH CONSTRUCTION and implement MITIGATION I; if NO, PROCEED WITH CONSTRUCTION.

CONSTRAINT I. No construction from March 1 through June 15.

CONSTRAINT II.

MITIGATION I.

No construction from ½ hour before sunrise to 2 hours after sunrise from March 1 through June 15. Mow suitable nesting habitat between September 1 and November 30 in the year prior to construction.

Implement sage-grouse nesting habitat Construction/Reclamation Unit.

MITIGATION II.

^aSage-grouse habitat north of the Milk River (approximately MP 83 of the Keystone Pipeline Project route) differs from sage-grouse habitat described in Montana Sage Grouse Work Group (2005), primarily due to less total shrub cover and less sagebrush cover (Tack 2009). For the purposes of this key, all native rangeland along the pipeline route from MP 0 to MP 83 is potential sage-grouse habitat. South of the Milk River, sage-grouse habitats are defined by Montana Sage Grouse Work Group (2005).

^bConfirmed Active (MFWP): "data supports existence of lek. Supporting data is defined as: 1) minimum of 2 years with 2 or more males lekking on site (preferred); or b) 1 year with 2 or more males lekking on site followed with evidence of lekking (vegetation trampling, feathers and droppings) during the subsequent year;" Unconfirmed (MFWP): "single count with no subsequent survey or a reported lek without supporting survey data;" Priority (SD GFP): active in recent years.

^cFor the purposes of this key, "active" means that displaying males are observed on the lek on a minimum of one morning in the spring of pipeline construction.

^dFor the purposes of this key, the project is considered to be within a lek's line-of-sight as determined through viewshed analysis using ESRI's ArcGIS Spatial Analyst. Viewsheds were generated from the center of each lek based on a point 1 meter above the surface of USGS 1 arcsecond NED.

^eNorth of the Milk River, sage-grouse nesting habitat is considered to be habitat with an overall shrub (not just sagebrush) cover of 15%. Sagebrush may comprise less than half the total overall shrub cover (Tack 2009).

South of the Milk River, sage-grouse nesting habitat is considered to be habitat with 15-31 percent sagebrush cover (Montana Sage Grouse Work Group 2005).

Lek ID: 1437

- 1b. Is lek south of the Milk River^a? If YES go to 8; if NO go to 1a.
 - 8a. Is lek "Confirmed Active^b" or "Unconfirmed^b" in Montana or "Priority^b" in South Dakota and active during spring surveys the year of pipeline construction? If YES go to 9; if NO go to 8b.
 - 9a. Is lek ≤3 miles from Project? If YES go to 10, if NO go to 9b.

10a. Are portions of Project within line-of-sight^d of lek? If YES implement CONSTRAINT I; if NO go to 10b.

- 10b. Are portions of Project not within line-of-sight of lek? If YES go to 11.
 - 11a. Are portions of Project ≤1 mile from lek? If YES implement CONSTRAINT I; if NO go to 11b.
 - 11b. Are portions of Project >1 mile from lek? If YES go to 12.
 - 12. Do portions of Project affect suitable nesting habitat^f? If YES implement CONSTRAINT I and MITIGATION I;

if NO

implement CONSTRAINT II and MITIGATION II.

- 9b. Is lek >3 miles from Project? If YES, PROCEED WITH CONSTRUCTION.
- 8b. Is lek "Confirmed Active" or "Unconfirmed" but <u>not</u> active during spring surveys the year of pipeline construction? If YES go to 13.
 - 13. Do portions of Project affect suitable nesting habitat within 3 miles of lek? If YES, PROCEED WITH CONSTRUCTION and implement MITIGATION I; if NO, PROCEED WITH CONSTRUCTION.

CONSTRAINT I. No construction from March 1 through June 15.

CONSTRAINT II. No construction from ½ hour before sunrise to 2 hours after sunrise from March 1 through June 15.

MITIGATION I. Mow suitable nesting habitat between September 1 and November 30 in the year prior to construction.

Implement sage-grouse nesting habitat Construction/Reclamation Unit.

MITIGATION II. Monitor lek when pipeline construction is within 3 miles. If displaying males that were present prior to construction are not present for 3 consecutive mornings after construction has commenced, confer with

^aSage-grouse habitat north of the Milk River (approximately MP 83 of the Keystone Pipeline Project route) differs from sage-grouse habitat described in Montana Sage Grouse Work Group (2005), primarily due to less total shrub cover and less sagebrush cover (Tack 2009). For the purposes of this key, all native rangeland along the pipeline route from MP 0 to MP 83 is potential sage-grouse habitat. South of the Milk River, sage-grouse habitats are defined by Montana Sage Grouse Work Group (2005).

^bConfirmed Active (MFWP): "data supports existence of lek. Supporting data is defined as: 1) minimum of 2 years with 2 or more males lekking on site (preferred); or b) 1 year with 2 or more males lekking on site followed with evidence of lekking (vegetation trampling, feathers and droppings) during the subsequent year;" Unconfirmed (MFWP): "single count with no subsequent survey or a reported lek without supporting survey data;" Priority (SD GFP): active in recent years.

^cFor the purposes of this key, "active" means that displaying males are observed on the lek on a minimum of one morning in the spring of pipeline construction.

^dFor the purposes of this key, the project is considered to be within a lek's line-of-sight as determined through viewshed analysis using ESRI's ArcGIS Spatial Analyst. Viewsheds were generated from the center of each lek based on a point 1 meter above the surface of USGS 1 arcsecond NED.

^eNorth of the Milk River, sage-grouse nesting habitat is considered to be habitat with an overall shrub (not just sagebrush) cover of 15%. Sagebrush may comprise less than half the total overall shrub cover (Tack 2009).

South of the Milk River, sage-grouse nesting habitat is considered to be habitat with 15-31 percent sagebrush cover (Montana Sage Grouse Work Group 2005).