













### Legend

-  Proposed Access Road/Pipeline ROW
-  Proposed Disturbance Area
-  Proposed Working Pad Surface
-  One Mile Buffer

### Soil Types

-  19 - Keith-Richfield silt loams
-  20 - Keith-Ulysses silt loams
-  21 - Kim loam eroded
-  23 - Kim-Canyon loams
-  37 - Sampson loam
-  38 - Satanta loam
-  39 - Satanta-Colby complex
-  53 - Weld silt loam

SOURCE: NRCS July 2020

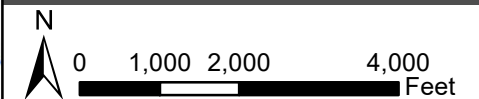
Date: 9/15/2022

### Project Location



WAVETECH ENERGY, INC.  
 1 WAVETECH FPI BURLINGTON FARMS 43-2  
 SEC. 2 T12S R43W (NE/4 SE/4)  
 CHEYENNE COUNTY, COLORADO  
 SURFACE: FEE

### SOILS



Prepared By: Redhawk GIS, LLC

## Cheyenne County, Colorado

### 20—Keith-Ulysses silt loams, 1 to 4 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2tv5w  
*Elevation:* 3,840 to 4,720 feet  
*Mean annual precipitation:* 14 to 16 inches  
*Mean annual air temperature:* 50 to 54 degrees F  
*Frost-free period:* 130 to 170 days  
*Farmland classification:* Prime farmland if irrigated

#### Map Unit Composition

*Keith and similar soils:* 45 percent  
*Ulysses and similar soils:* 30 percent  
*Minor components:* 25 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Keith

##### Setting

*Landform:* Plains  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Loess

##### Typical profile

*Ap - 0 to 6 inches:* silt loam  
*Bt1 - 6 to 10 inches:* silty clay loam  
*Bt2 - 10 to 25 inches:* silty clay loam  
*C - 25 to 79 inches:* silt loam

##### Properties and qualities

*Slope:* 1 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Runoff class:* Low  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.60 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 8 percent  
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water supply, 0 to 60 inches:* Very high (about 12.6 inches)

### **Interpretive groups**

*Land capability classification (irrigated): 2e*  
*Land capability classification (nonirrigated): 3e*  
*Hydrologic Soil Group: C*  
*Ecological site: R072XY100KS - Loamy Tableland*  
*Hydric soil rating: No*

### **Description of Ulysses**

#### **Setting**

*Landform: Hillslopes*  
*Landform position (two-dimensional): Shoulder, backslope*  
*Landform position (three-dimensional): Side slope*  
*Down-slope shape: Convex*  
*Across-slope shape: Linear*  
*Parent material: Loess*

#### **Typical profile**

*Ap - 0 to 3 inches: silt loam*  
*Bw - 3 to 8 inches: silt loam*  
*Bk - 8 to 13 inches: silt loam*  
*C - 13 to 79 inches: silt loam*

#### **Properties and qualities**

*Slope: 2 to 4 percent*  
*Depth to restrictive feature: More than 80 inches*  
*Drainage class: Well drained*  
*Runoff class: Low*  
*Capacity of the most limiting layer to transmit water*  
*(Ksat): Moderately high to high (0.60 to 2.00 in/hr)*  
*Depth to water table: More than 80 inches*  
*Frequency of flooding: None*  
*Frequency of ponding: None*  
*Calcium carbonate, maximum content: 6 percent*  
*Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0*  
*mmhos/cm)*  
*Available water supply, 0 to 60 inches: Very high (about 12.7*  
*inches)*

### **Interpretive groups**

*Land capability classification (irrigated): 3e*  
*Land capability classification (nonirrigated): 4e*  
*Hydrologic Soil Group: B*  
*Ecological site: R072XY100KS - Loamy Tableland*  
*Hydric soil rating: No*

### **Minor Components**

#### **Colby**

*Percent of map unit: 10 percent*  
*Landform: Hillslopes*  
*Landform position (two-dimensional): Shoulder*  
*Landform position (three-dimensional): Nose slope*

*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Ecological site:* R072XY101KS - Limy Slopes  
*Hydric soil rating:* No

#### **Goshen**

*Percent of map unit:* 5 percent  
*Landform:* Swales  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Ecological site:* R072XY117KS - Tableland Swale  
*Hydric soil rating:* No

#### **Richfield**

*Percent of map unit:* 5 percent  
*Landform:* Rises  
*Landform position (two-dimensional):* Summit, backslope  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Ecological site:* R072XY100KS - Loamy Tableland  
*Hydric soil rating:* No

#### **Wiley**

*Percent of map unit:* 5 percent  
*Landform:* Plains  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Ecological site:* R072XY100KS - Loamy Tableland  
*Hydric soil rating:* No

## **Data Source Information**

Soil Survey Area: Cheyenne County, Colorado  
Survey Area Data: Version 23, Aug 31, 2021



Cheyenne County, Colorado



Map unit symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		<i>Lb/ac</i>	<i>Lb/ac</i>	<i>Lb/ac</i>		<i>Pct</i>
20—Keith-Ulysses silt loams, 1 to 4 percent slopes						
Keith	R072XY100KS: Loamy Tableland	2,200	1,700	900	Miscellaneous perennial grasses	85
					Miscellaneous perennial forbs	10
					Miscellaneous shrubs	5
Ulysses	R072XY100KS: Loamy Tableland	2,200	1,700	900	Miscellaneous perennial grasses	85
					Miscellaneous perennial forbs	10
					Miscellaneous shrubs	5

## Cheyenne County, Colorado

### 21—Kim loam, 1 to 3 percent slopes, eroded

#### Map Unit Setting

*National map unit symbol:* 3547  
*Elevation:* 4,500 to 5,900 feet  
*Mean annual precipitation:* 13 to 15 inches  
*Mean annual air temperature:* 46 to 52 degrees F  
*Frost-free period:* 135 to 150 days  
*Farmland classification:* Prime farmland if irrigated

#### Map Unit Composition

*Kim and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Kim

##### Setting

*Landform:* Plains  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Alluvium and/or eolian deposits

##### Typical profile

*A - 0 to 7 inches:* loam  
*C - 7 to 60 inches:* clay loam

##### Properties and qualities

*Slope:* 1 to 3 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Runoff class:* Low  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 2.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 20 percent  
*Maximum salinity:* Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)  
*Available water supply, 0 to 60 inches:* High (about 9.6 inches)

##### Interpretive groups

*Land capability classification (irrigated):* 2e  
*Land capability classification (nonirrigated):* 6e  
*Hydrologic Soil Group:* B  
*Ecological site:* R067BY002CO - Loamy Plains  
*Hydric soil rating:* No

### **Minor Components**

#### **Fort collins**

*Percent of map unit: 10 percent*

#### **Stoneham**

*Percent of map unit: 5 percent*

## **Data Source Information**

Soil Survey Area: Cheyenne County, Colorado

Survey Area Data: Version 23, Aug 31, 2021



Cheyenne County, Colorado



Map unit symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		<i>Lb/ac</i>	<i>Lb/ac</i>	<i>Lb/ac</i>		<i>Pct</i>
21—Kim loam, 1 to 3 percent slopes, eroded						
Kim	R067BY002CO: Loamy Plains	1,600	1,000	500	Western wheatgrass	30
					Green needlegrass	10
					Needleandthread	5
					Sand dropseed	5
					Blue grama	—

## Cheyenne County, Colorado

### 38—Satanta loam, 0 to 3 percent slopes

#### Map Unit Setting

*National map unit symbol:* 354t  
*Elevation:* 3,000 to 6,500 feet  
*Mean annual precipitation:* 15 to 25 inches  
*Mean annual air temperature:* 45 to 57 degrees F  
*Frost-free period:* 130 to 200 days  
*Farmland classification:* Prime farmland if irrigated

#### Map Unit Composition

*Satanta and similar soils:* 90 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Satanta

##### Setting

*Landform:* Paleoterraces  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Alluvium

##### Typical profile

*A - 0 to 8 inches:* loam  
*Bt - 8 to 16 inches:* clay loam  
*Bk - 16 to 60 inches:* loam

##### Properties and qualities

*Slope:* 0 to 3 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Runoff class:* Low  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 2.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 10 percent  
*Available water supply, 0 to 60 inches:* High (about 9.8 inches)

##### Interpretive groups

*Land capability classification (irrigated):* 2e  
*Land capability classification (nonirrigated):* 3e  
*Hydrologic Soil Group:* B  
*Ecological site:* R067BY002CO - Loamy Plains  
*Hydric soil rating:* No

### **Minor Components**

#### **Ascalon**

*Percent of map unit: 5 percent*

#### **Kim**

*Percent of map unit: 5 percent*

## **Data Source Information**

Soil Survey Area: Cheyenne County, Colorado

Survey Area Data: Version 23, Aug 31, 2021



Cheyenne County, Colorado



Map unit symbol and soil name	Ecological site	Total dry-weight production			Characteristic vegetation	Rangeland composition
		Favorable year	Normal year	Unfavorable year		
		<i>Lb/ac</i>	<i>Lb/ac</i>	<i>Lb/ac</i>		<i>Pct</i>
38—Satanta loam, 0 to 3 percent slopes						
Satanta	R067BY002CO: Loamy Plains	1,600	1,200	800	Western wheatgrass	15
					Needleandthread	10
					Green needlegrass	10
					Prairie sandreed	5
					Miscellaneous perennial forbs	5
					Blue grama	—