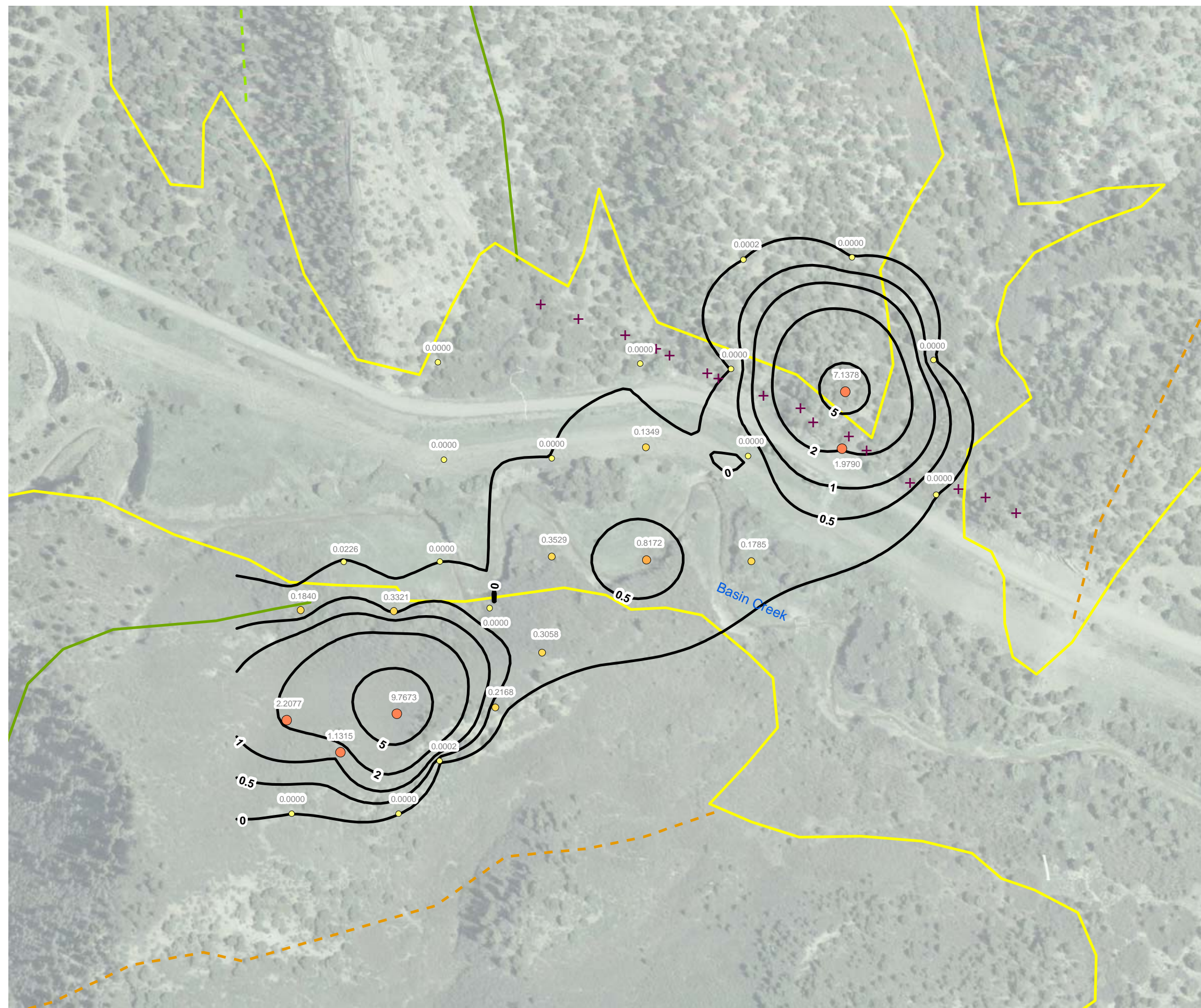


**APPENDIX D**  
**FLUX CONTOUR MAPS**





**LEGEND**

- + Gas Monitoring Probes
- ☆ Gas Flux Chambers

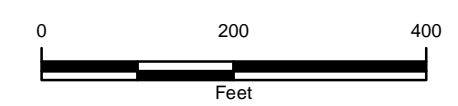
— Methane Flux Contours in  $\text{mol/m}^2 \cdot \text{day}$   
Flux contours generated with Surfer® Version 8.0  
**Methane Flux Location ( $\text{mol/m}^2 \cdot \text{day}$ )**

- 0.0000 - 0.1000
- 0.1001 - 0.5000
- 0.5100 - 1.0000
- 1.0100 - 10.0000
- 10.1000 - 50.0000
- 51.0000 - 100.0000
- 101.0000 - 1175.0000

$\text{mol/m}^2 \cdot \text{day}$  - moles per square meter per day

**Geology**

- Fruitland Formation (Kf)
- Fruitland Formation Tongue (Kft)
- Kirtland Formation (Kk)
- Pictured Cliffs Formation (Kpc)
- Pictured Cliffs Formation Tongue (Kpct)
- Quaternary Alluvium (Qa)
- Quaternary Gravel (Qg)

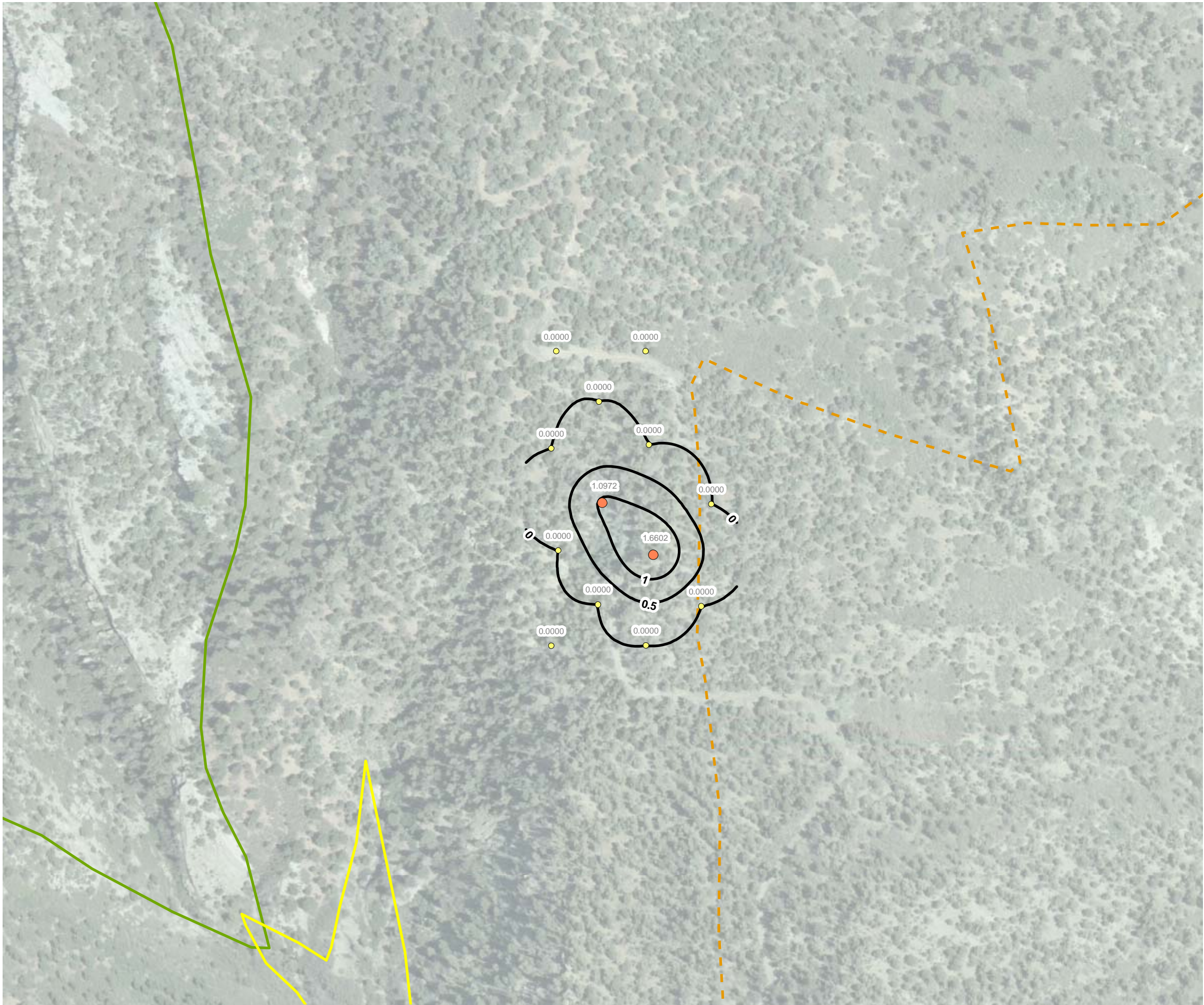


**METHANE FLUX CONTOUR MAP  
2007 DETAILED SEEP MAPPING  
BASIN CREEK**

THE GROUP







LEGEND

- + Gas Monitoring Probes
- ☆ Gas Flux Chambers

— Methane Flux Contours in mol/m<sup>2</sup> • day  
Flux contours generated with Surfer® Version 8.0

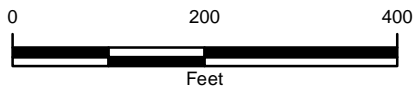
Methane Flux Location (mol/m<sup>2</sup> • day)

- 0.0000 - 0.1000
- 0.1001 - 0.5000
- 0.5100 - 1.0000
- 1.0100 - 10.0000
- 10.1000 - 50.0000
- 51.0000 - 100.0000
- 101.0000 - 1175.0000

mol/m<sup>2</sup> • day - moles per square meter per day

Geology

- Fruitland Formation (Kf)
- Fruitland Formation Tongue (Kft)
- Kirtland Formation (Kk)
- Pictured Cliffs Formation (Kpc)
- Pictured Cliffs Formation Tongue (Kpct)
- Quaternary Alluvium (Qa)
- Quaternary Gravel (Qg)

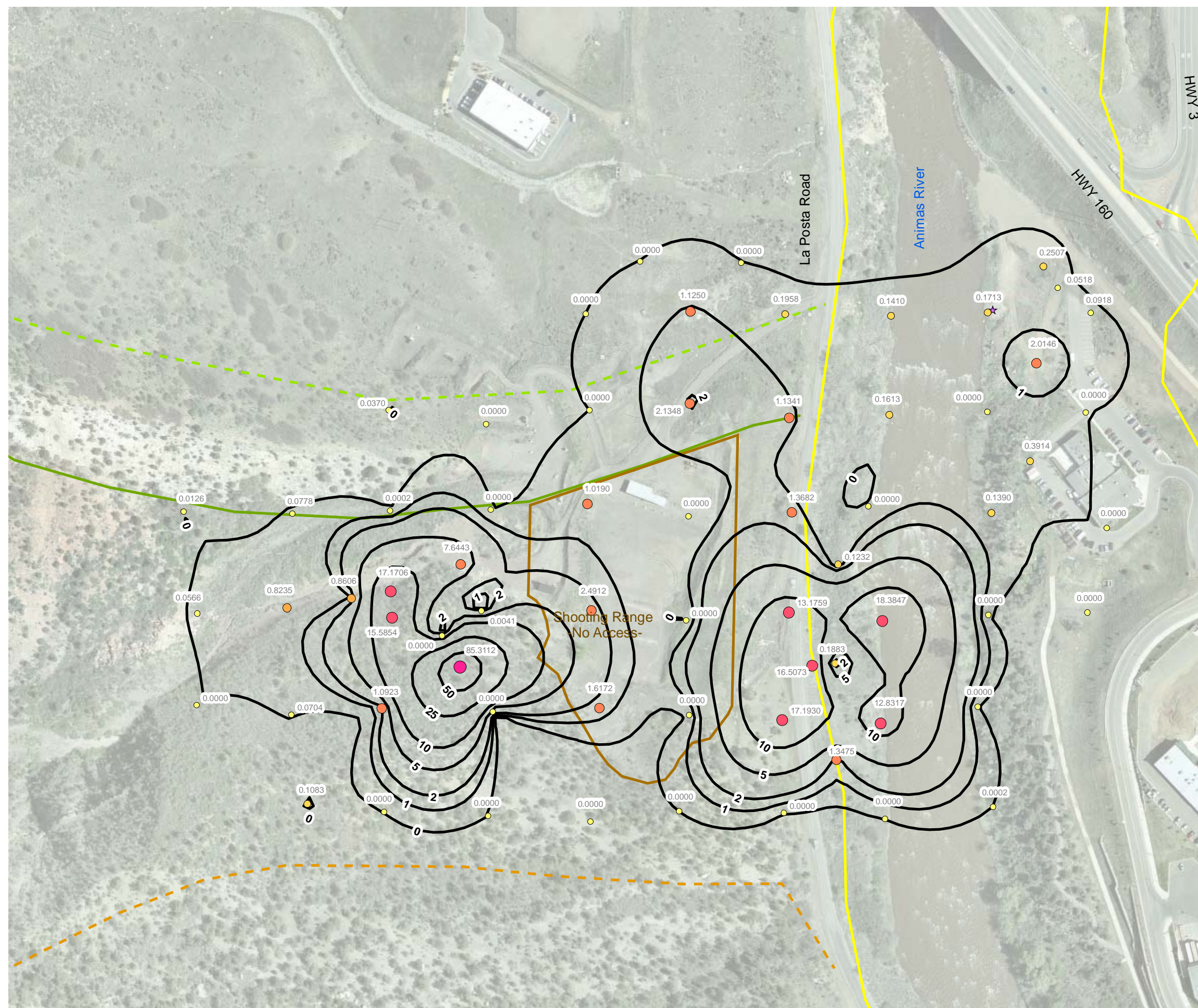


METHANE FLUX CONTOUR MAP  
2007 DETAILED SEEP MAPPING  
BASIN CREEK NORTH

THE GROUP



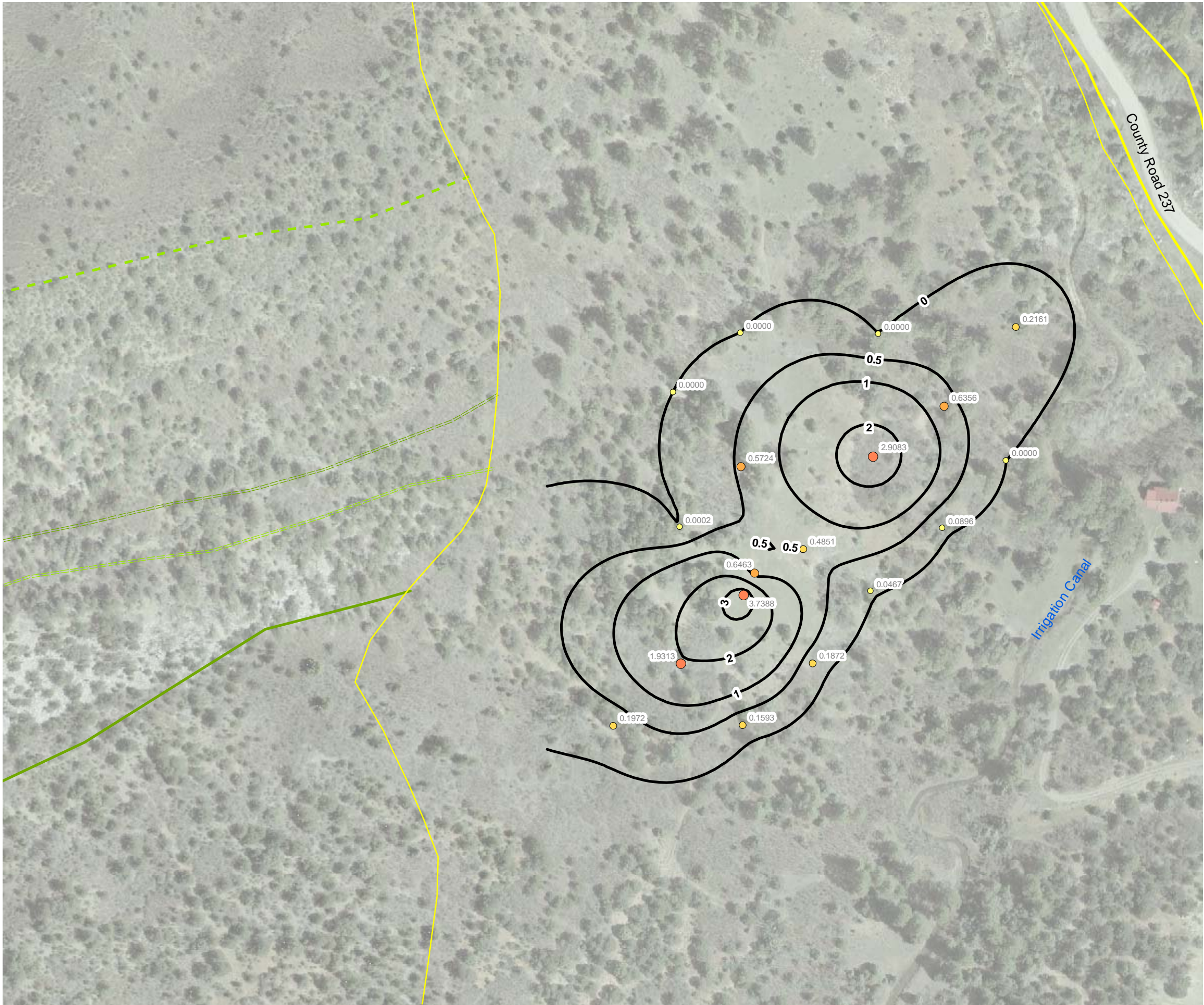












LEGEND

- + Gas Monitoring Probes
- ☆ Gas Flux Chambers

— Methane Flux Contours in mol/m<sup>2</sup> • day  
Flux contours generated with Surfer® Version 8.0

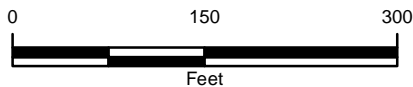
Methane Flux Location (mol/m<sup>2</sup> • day)

- 0.0000 - 0.1000
- 0.1001 - 0.5000
- 0.5100 - 1.0000
- 1.0100 - 10.0000
- 10.1000 - 50.0000
- 51.0000 - 100.0000
- 101.0000 - 1175.0000

mol/m<sup>2</sup> • day - moles per square meter per day

Geology

- Fruitland Formation (Kf)
- Fruitland Formation Tongue (Kft)
- Kirtland Formation (Kk)
- Pictured Cliffs Formation (Kpc)
- Pictured Cliffs Formation Tongue (Kpct)
- Quaternary Alluvium (Qa)
- Quaternary Gravel (Qg)

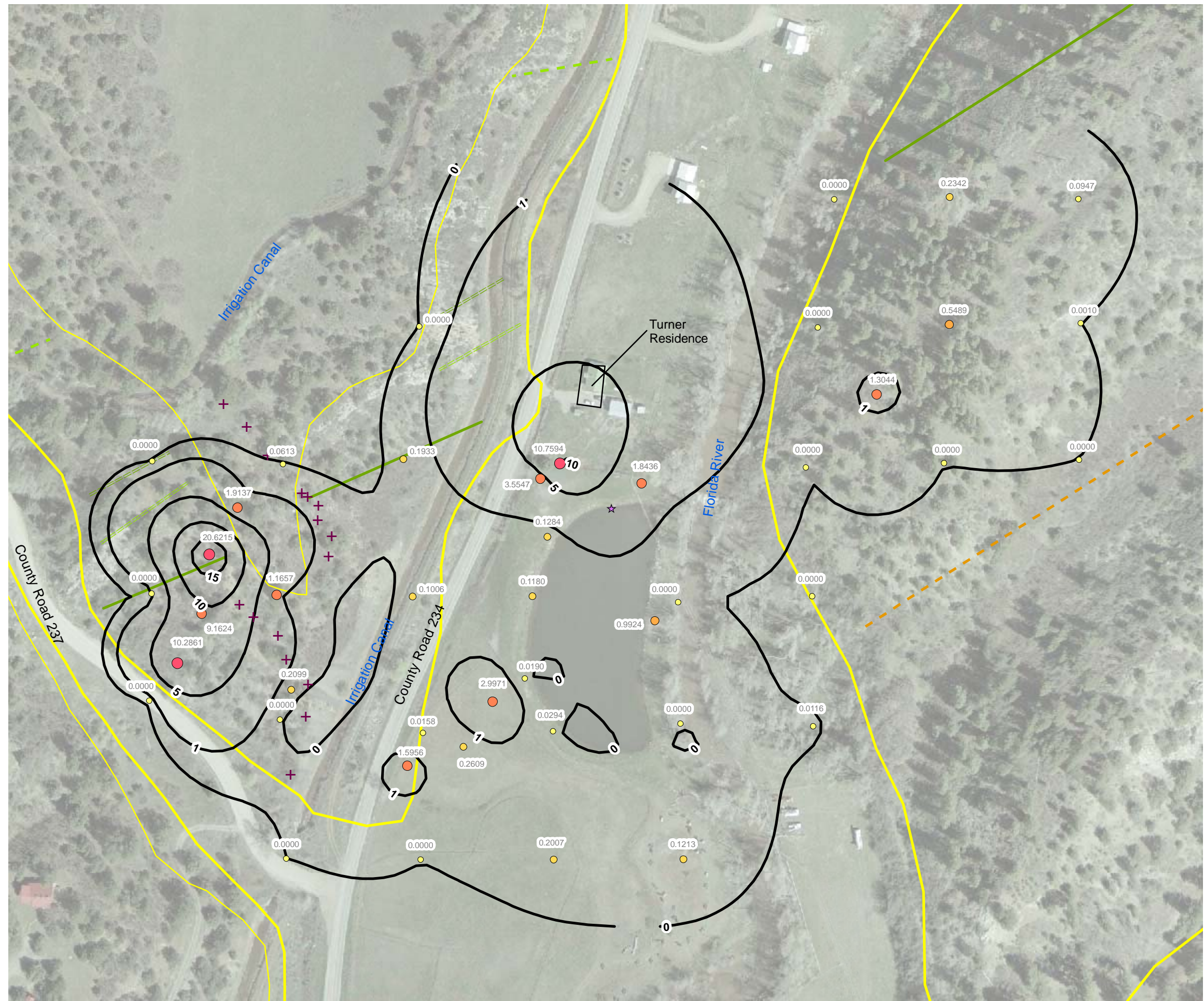


METHANE FLUX CONTOUR MAP  
2007 DETAILED SEEP MAPPING  
FLORIDA RIVER WEST

THE GROUP

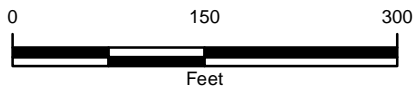






LEGEND

- + Gas Monitoring Probes
- ☆ Gas Flux Chambers
- Methane Flux Contours in  $\text{mol/m}^2 \cdot \text{day}$   
Flux contours generated with Surfer® Version 8.0
- Methane Flux Location ( $\text{mol/m}^2 \cdot \text{day}$ )
  - 0.0000 - 0.1000
  - 0.1001 - 0.5000
  - 0.5100 - 1.0000
  - 1.0100 - 10.0000
  - 10.1000 - 50.0000
  - 51.0000 - 100.0000
  - 101.0000 - 1175.0000
- $\text{mol/m}^2 \cdot \text{day}$  - moles per square meter per day
- Geology
  - Fruitland Formation (Kf)
  - Fruitland Formation Tongue (Kft)
  - Kirtland Formation (Kk)
  - Pictured Cliffs Formation (Kpc)
  - Pictured Cliffs Formation Tongue (Kpct)
  - Quaternary Alluvium (Qa)
  - Quaternary Gravel (Qg)

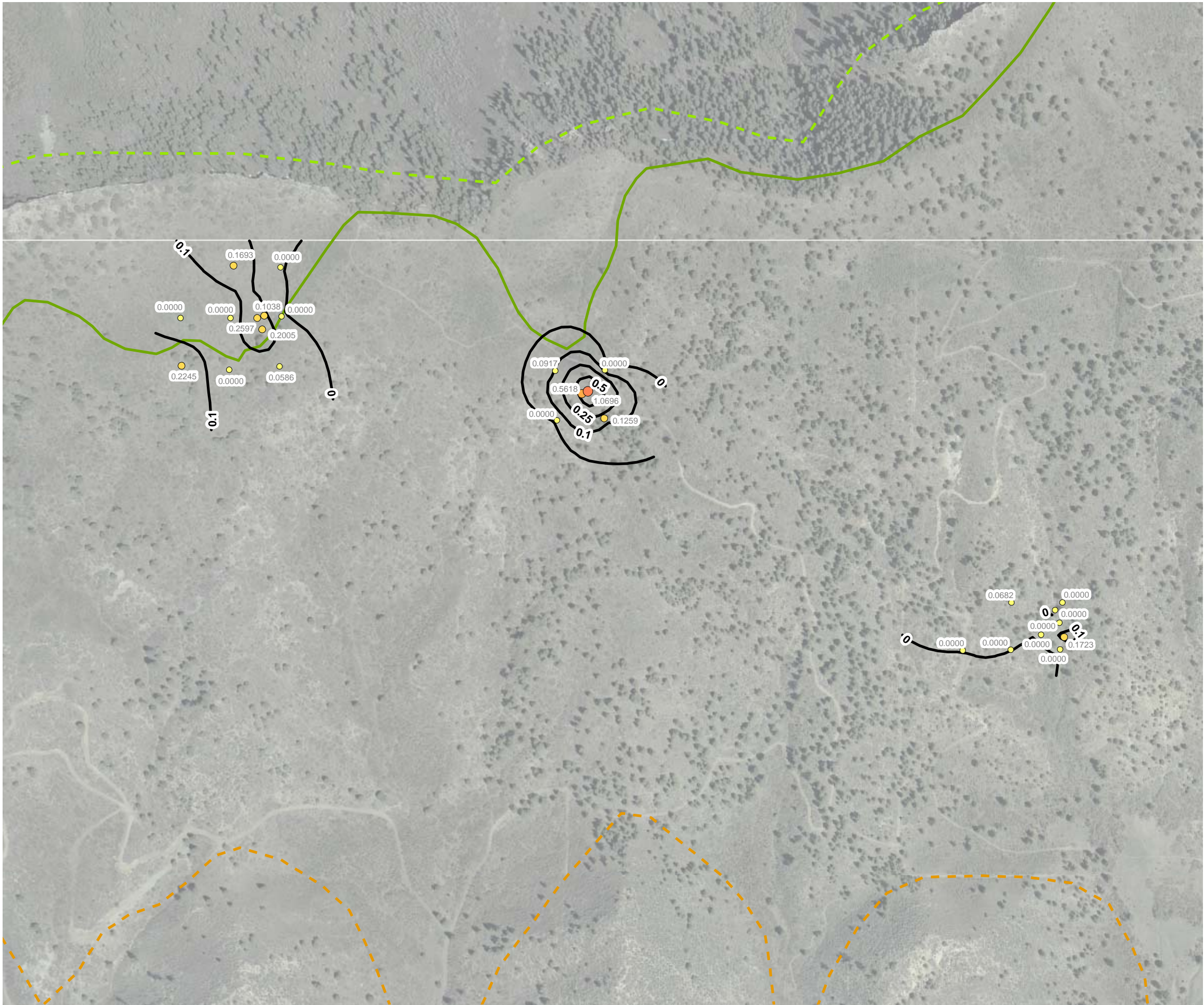


METHANE FLUX CONTOUR MAP  
2007 DETAILED SEEP MAPPING  
FLORIDA RIVER EAST

THE GROUP







**LEGEND**

- ✚ Gas Monitoring Probes
- ☆ Gas Flux Chambers

— Methane Flux Contours in mol/m<sup>2</sup> • day  
Flux contours generated with Surfer® Version 8.0

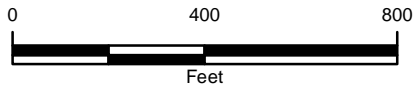
**Methane Flux Location (mol/m<sup>2</sup> • day)**

- 0.0000 - 0.1000
- 0.1001 - 0.5000
- 0.5100 - 1.0000
- 1.0100 - 10.0000
- 10.1000 - 50.0000
- 51.0000 - 100.0000
- 101.0000 - 1175.0000

mol/m<sup>2</sup> • day - moles per square meter per day

**Geology**

- Fruitland Formation (Kf)
- Fruitland Formation Tongue (Kft)
- Kirtland Formation (Kk)
- Pictured Cliffs Formation (Kpc)
- Pictured Cliffs Formation Tongue (Kpct)
- Quaternary Alluvium (Qa)
- Quaternary Gravel (Qg)

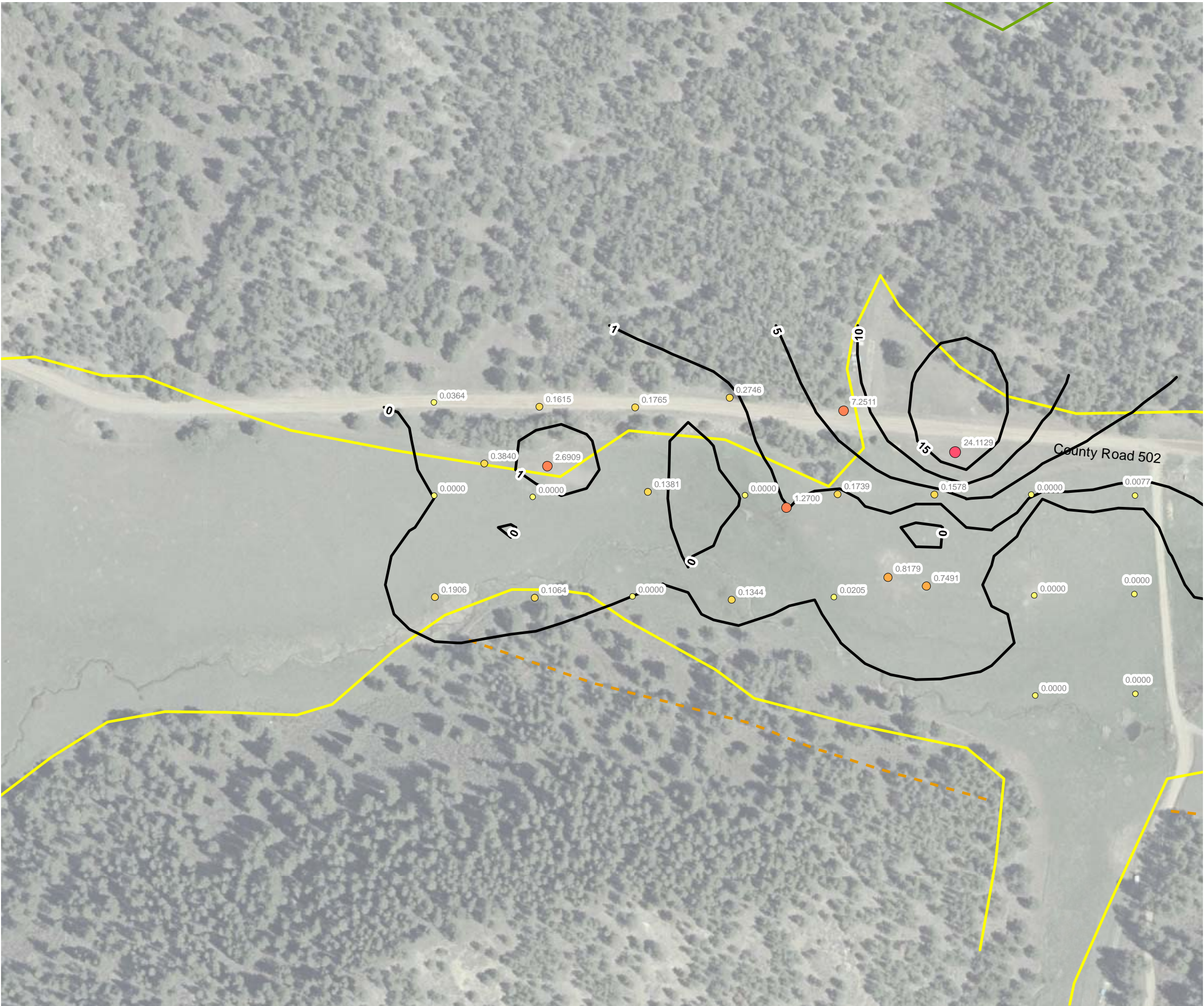


**METHANE FLUX CONTOUR MAP  
2007 DETAILED SEEP MAPPING  
VOSBURG PIKE**

THE GROUP







**LEGEND**

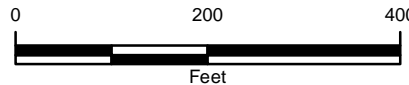
- Gas Monitoring Probes
- Gas Flux Chambers
- Methane Flux Contours in  $\text{mol/m}^2 \cdot \text{day}$
- Flux contours generated with Surfer® Version 8.0
- Methane Flux Location ( $\text{mol/m}^2 \cdot \text{day}$ )

- 0.0000 - 0.1000
- 0.1001 - 0.5000
- 0.5100 - 1.0000
- 1.0100 - 10.0000
- 10.1000 - 50.0000
- 51.0000 - 100.0000
- 101.0000 - 1175.0000

$\text{mol/m}^2 \cdot \text{day}$  - moles per square meter per day

**Geology**

- Fruitland Formation (Kf)
- Fruitland Formation Tongue (Kft)
- Kirtland Formation (Kk)
- Pictured Cliffs Formation (Kpc)
- Pictured Cliffs Formation Tongue (Kpct)
- Quaternary Alluvium (Qa)
- Quaternary Gravel (Qg)

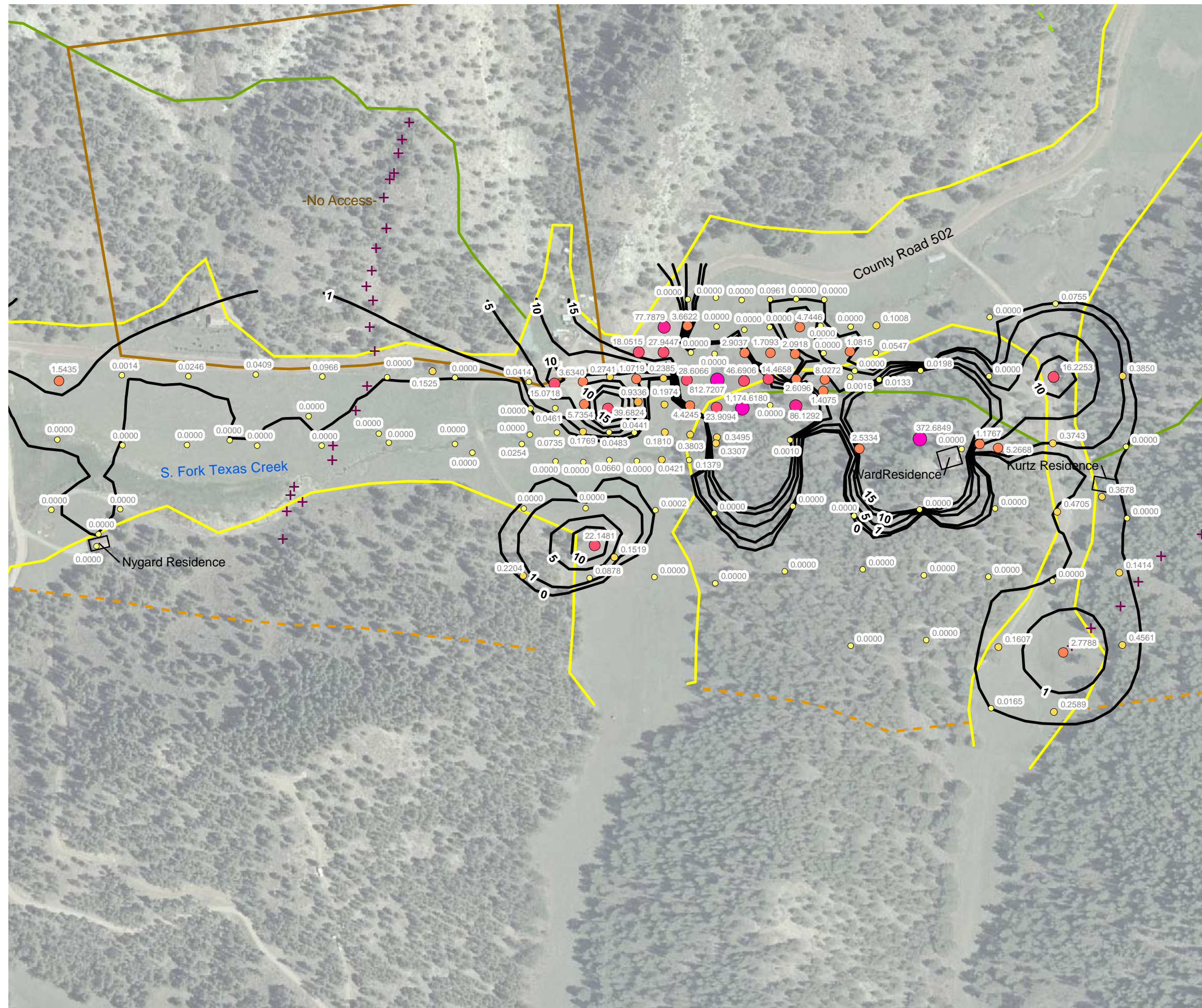


**METHANE FLUX CONTOUR MAP  
2007 DETAILED SEEP MAPPING  
SOUTH FORK TEXAS CREEK WEST**

THE GROUP







**LEGEND**

- + Gas Monitoring Probes
- ☆ Gas Flux Chambers

— Methane Flux Contours in  $\text{mol/m}^2 \cdot \text{day}$   
Flux contours generated with Surfer® Version 8.0  
**Methane Flux Location ( $\text{mol/m}^2 \cdot \text{day}$ )**

- 0.0000 - 0.1000
- 0.1001 - 0.5000
- 0.5100 - 1.0000
- 1.0100 - 10.0000
- 10.1000 - 50.0000
- 51.0000 - 100.0000
- 101.0000 - 1175.0000

$\text{mol/m}^2 \cdot \text{day}$  - moles per square meter per day

**Geology**

- Fruitland Formation (Kf)
- Fruitland Formation Tongue (Kft)
- Kirtland Formation (Kk)
- Pictured Cliffs Formation (Kpc)
- Pictured Cliffs Formation Tongue (Kpct)
- Quaternary Alluvium (Qa)
- Quaternary Gravel (Qg)

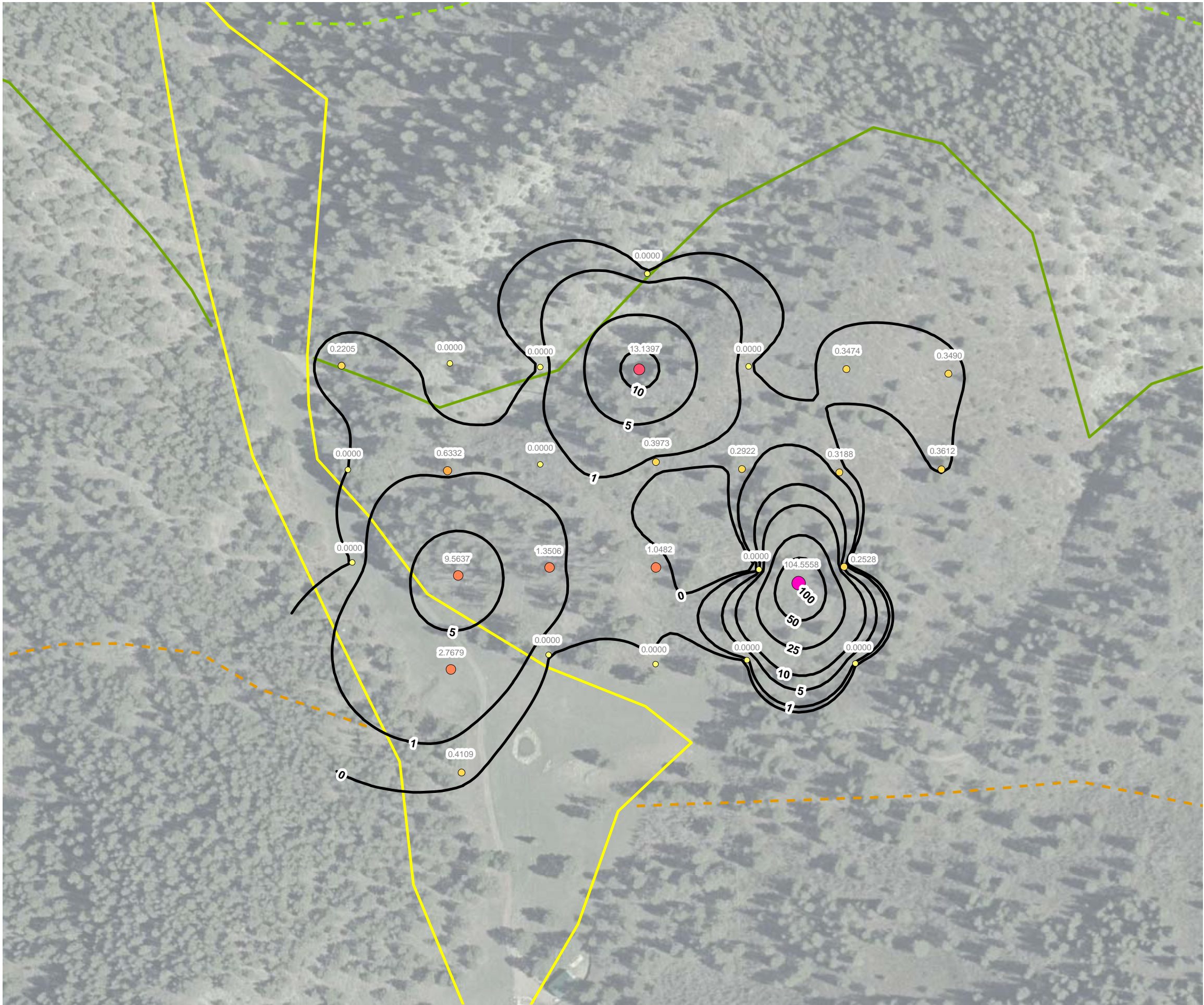


**METHANE FLUX CONTOUR MAP  
2007 DETAILED SEEP MAPPING  
SOUTH FORK TEXAS CREEK CENTRAL**

THE GROUP







LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers

Methane Flux Contours in  $\text{mol/m}^2 \cdot \text{day}$   
Flux contours generated with Surfer® Version 8.0

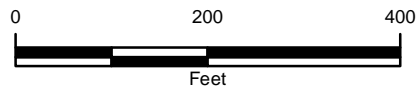
Methane Flux Location ( $\text{mol/m}^2 \cdot \text{day}$ )

- 0.0000 - 0.1000
- 0.1001 - 0.5000
- 0.5100 - 1.0000
- 1.0100 - 10.0000
- 10.1000 - 50.0000
- 51.0000 - 100.0000
- 101.0000 - 1175.0000

$\text{mol/m}^2 \cdot \text{day}$  - moles per square meter per day

Geology

- Fruitland Formation (Kf)
- Fruitland Formation Tongue (Kft)
- Kirtland Formation (Kk)
- Pictured Cliffs Formation (Kpc)
- Pictured Cliffs Formation Tongue (Kpct)
- Quaternary Alluvium (Qa)
- Quaternary Gravel (Qg)

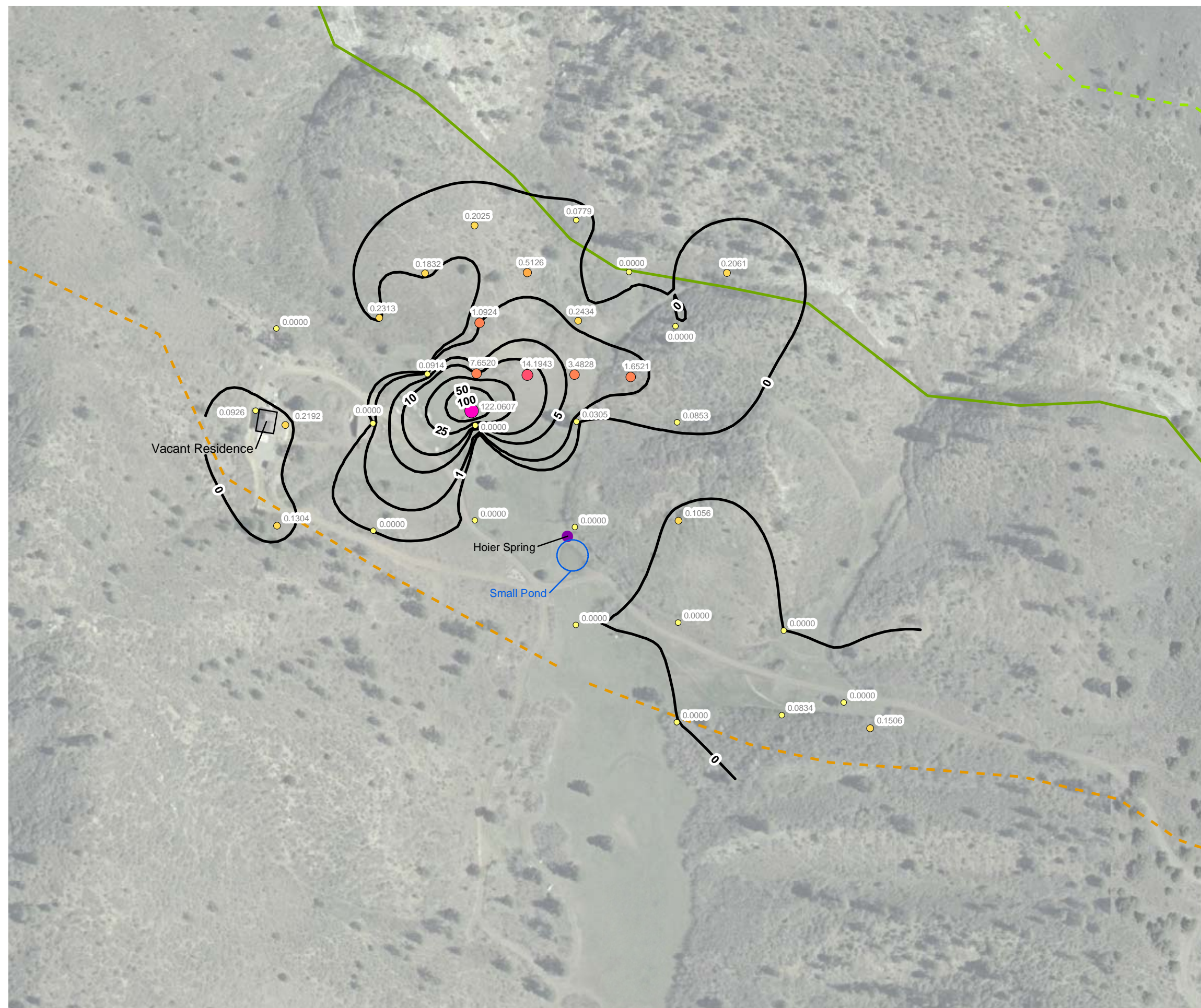


METHANE FLUX CONTOUR MAP  
2007 DETAILED SEEP MAPPING  
SOUTH FORK TEXAS CREEK EAST







THE GROUP







### LEGEND

-  Gas Monitoring Probes
  -  Gas Flux Chambers
  -  Methane Flux Contours in  $\text{mol/m}^2 \cdot \text{day}$
- Natural Spring Location**
-  Sampled
  -  Not Sampled
  -  Dry

Flux contours generated with Surfer® Version 8.0

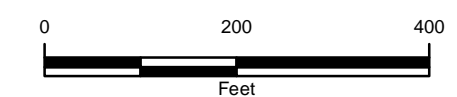
Methane Flux Location ( $\text{mol/m}^2 \cdot \text{day}$ )

- 0.0000 - 0.1000
- 0.1001 - 0.5000
- 0.5100 - 1.0000
- 1.0100 - 10.0000
- 10.1000 - 50.0000
- 51.0000 - 100.0000
- 101.0000 - 1175.0000

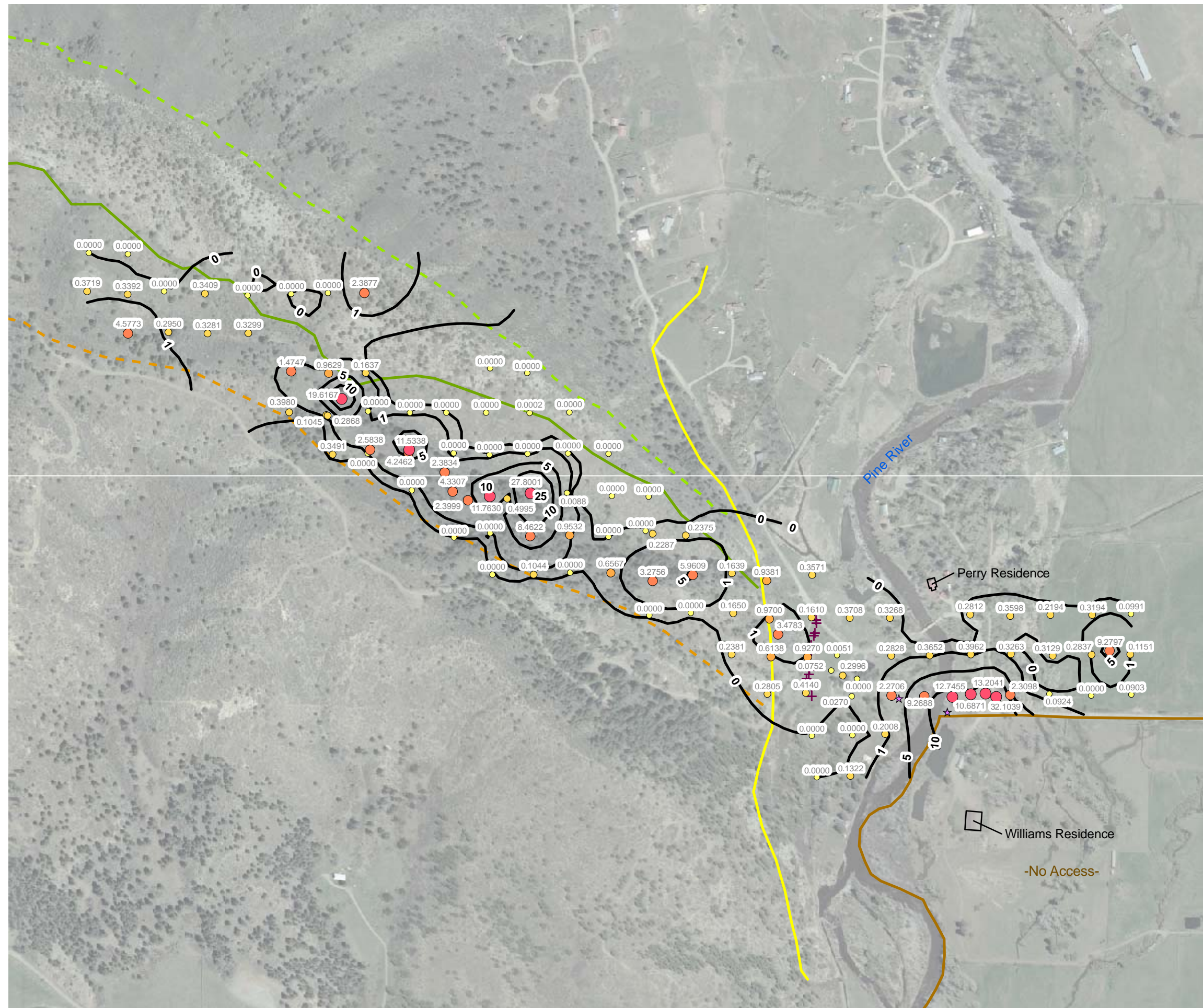
mol/m<sup>2</sup> • day - moles per square meter per day

## Geology

-  Fruitland Formation (Kf)
-  Fruitland Formation Tongue (Kft)
-  Kirtland Formation (Kk)
-  Pictured Cliffs Formation (Kpc)
-  Pictured Cliffs Formation Tongue (Kpct)
-  Quaternary Alluvium (Qa)
-  Quaternary Gravel (Qg)







#### LEGEND

- ✚ Gas Monitoring Probes
- ★ Gas Flux Chambers

— Methane Flux Contours in  $\text{mol/m}^2 \cdot \text{day}$   
Flux contours generated with Surfer® Version 8.0

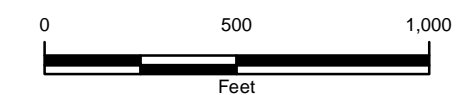
**Methane Flux Location ( $\text{mol/m}^2 \cdot \text{day}$ )**

- 0.0000 - 0.1000
- 0.1001 - 0.5000
- 0.5100 - 1.0000
- 1.0100 - 10.0000
- 10.1000 - 50.0000
- 51.0000 - 100.0000
- 101.0000 - 1175.0000

$\text{mol/m}^2 \cdot \text{day}$  - moles per square meter per day

#### Geology

- Fruitland Formation (Kf)
- Fruitland Formation Tongue (Kft)
- Kirtland Formation (Kk)
- Pictured Cliffs Formation (Kpc)
- Pictured Cliffs Formation Tongue (Kpct)
- Quaternary Alluvium (Qa)
- Quaternary Gravel (Qg)

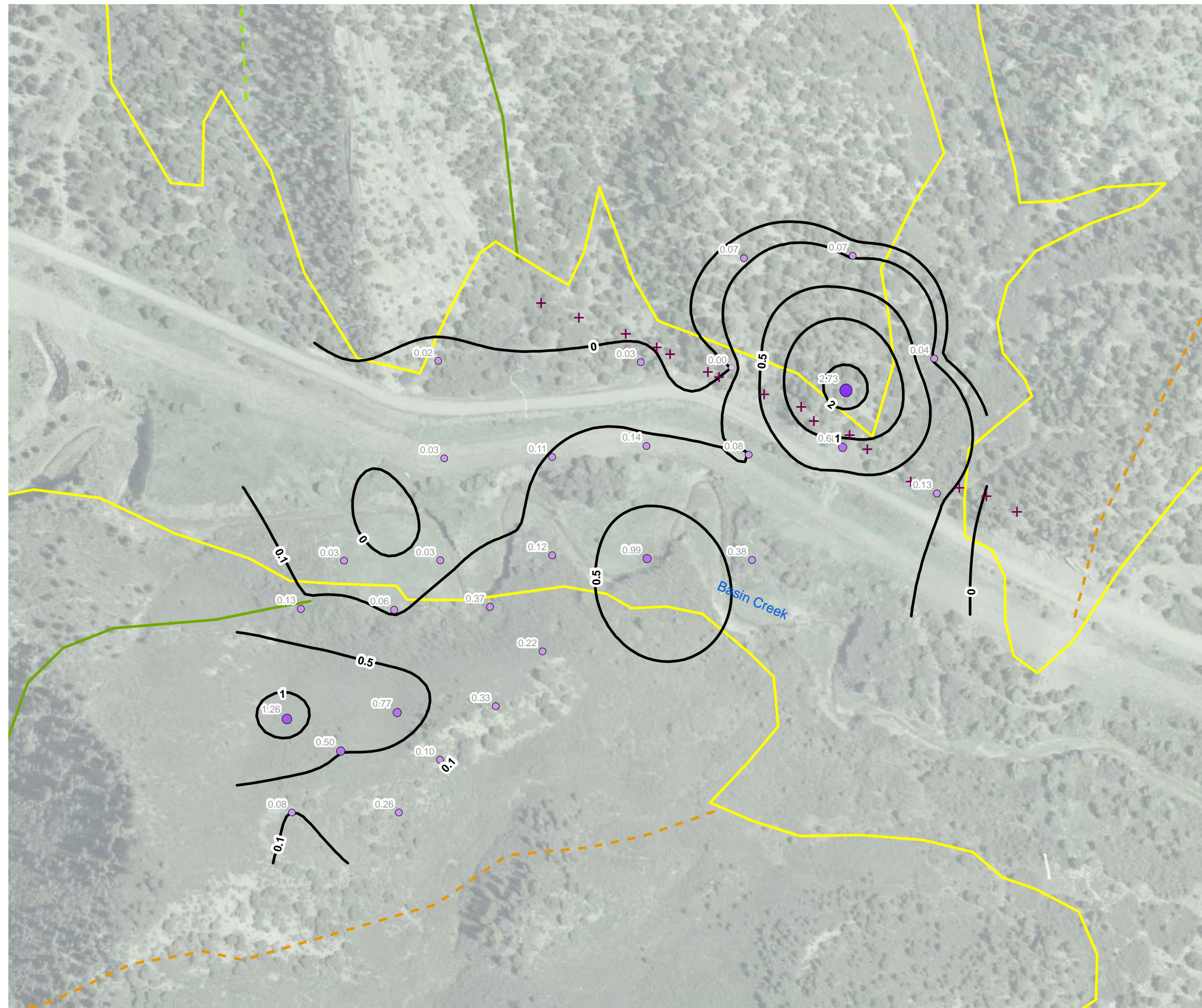


**METHANE FLUX CONTOUR MAP  
2007 DETAILED SEEP MAPPING  
PINE RIVER**

THE GROUP

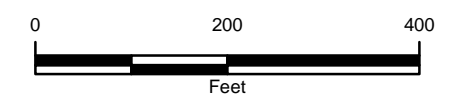






#### LEGEND

- ✚ Gas Monitoring Probes
- ★ Gas Flux Chambers
- Carbon Dioxide Flux Contour in  $\text{mol/m}^2 \cdot \text{day}$   
Flux contours generated with Surfer® Version 8.0
- Carbon Dioxide Flux Location ( $\text{mol/m}^2 \cdot \text{day}$ )**
  - 0.0000 - 0.0100
  - 0.0101 - 0.500
  - 0.501 - 1.00
  - 1.01 - 2.50
  - 2.51 - 5.00
  - 5.01 - 10.00
- $\text{mol/m}^2 \cdot \text{day}$  - moles per square meter per day
- Geology**
  - Fruitland Formation (Kf)
  - Fruitland Formation Tongue (Kft)
  - Kirtland Formation (Kk)
  - Pictured Cliffs Formation (Kpc)
  - Pictured Cliffs Formation Tongue (Kpct)
  - Quaternary Alluvium (Qa)
  - Quaternary Gravel (Qg)

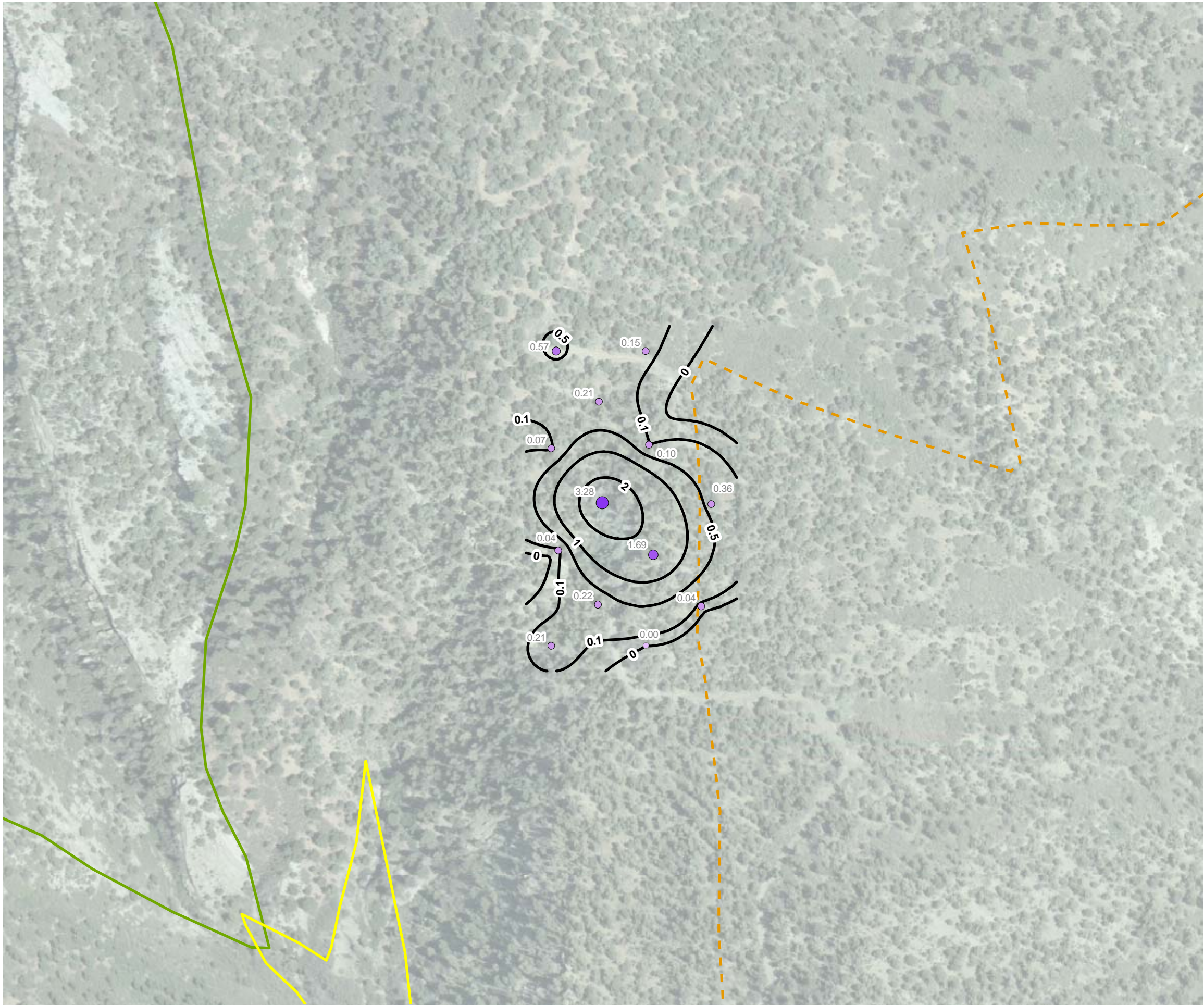


**CARBON DIOXIDE FLUX CONTOUR MAP  
2007 DETAILED SEEP MAPPING  
BASIN CREEK**

THE GROUP

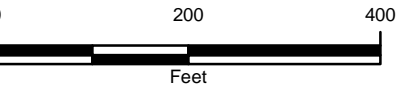






**LEGEND**

- + Gas Monitoring Probes
- ☆ Gas Flux Chambers
- Carbon Dioxide Flux Contour in  $\text{mol/m}^2 \cdot \text{day}$   
Flux contours generated with Surfer® Version 8.0
- Carbon Dioxide Flux Location ( $\text{mol/m}^2 \cdot \text{day}$ )**
  - 0.0000 - 0.0100
  - 0.0101 - 0.500
  - 0.501 - 1.00
  - 1.01 - 2.50
  - 2.51 - 5.00
  - 5.01 - 10.00
- Geology**
  - Fruitland Formation (Kf)
  - == Fruitland Formation Tongue (Kft)
  - - Kirtland Formation (Kk)
  - - Pictured Cliffs Formation (Kpc)
  - == Pictured Cliffs Formation Tongue (Kpct)
  - Quaternary Alluvium (Qa)
  - Quaternary Gravel (Qg)

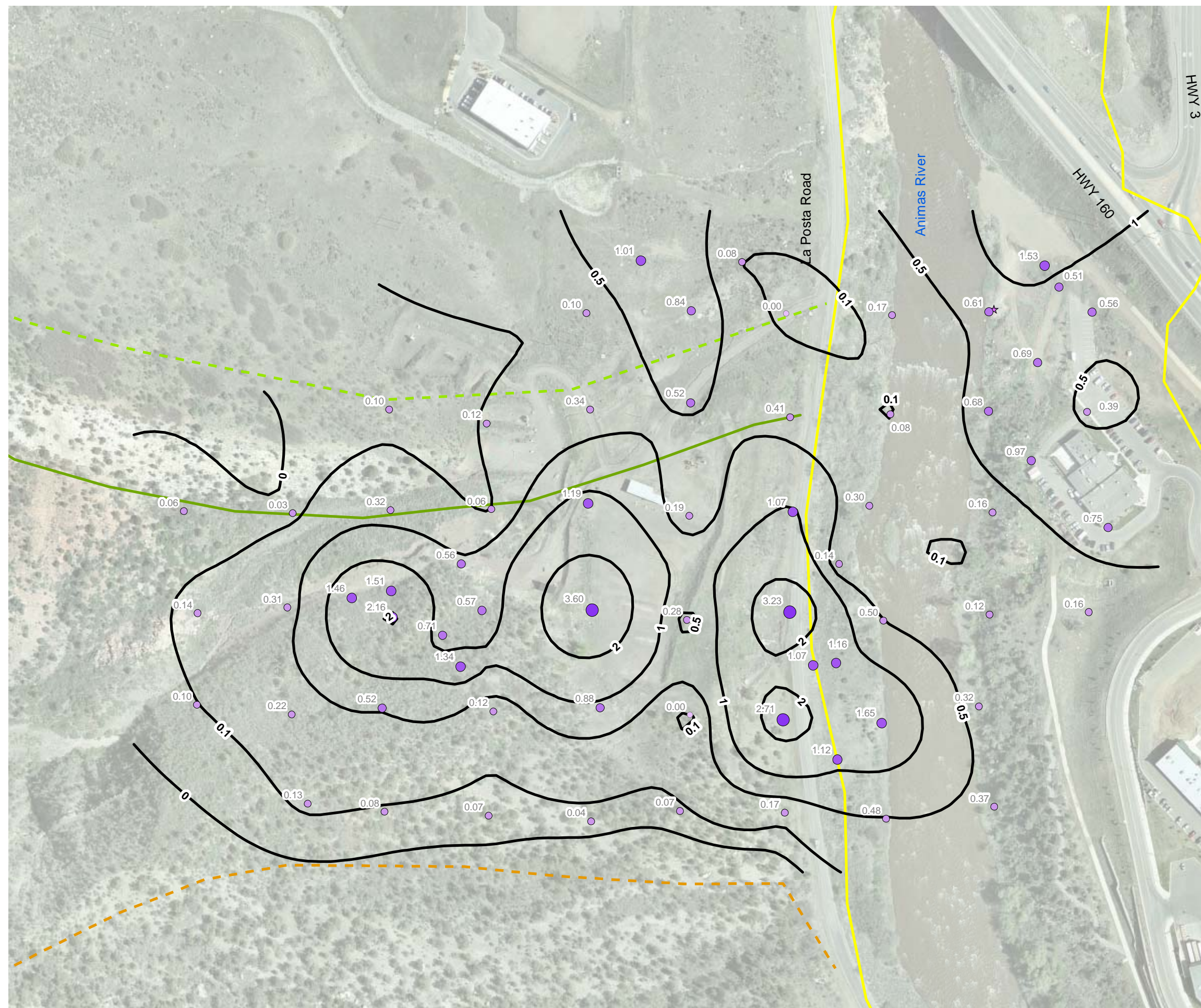


**CARBON DIOXIDE FLUX CONTOUR MAP  
2007 DETAILED SEEP MAPPING  
BASIN CREEK NORTH**

THE GROUP

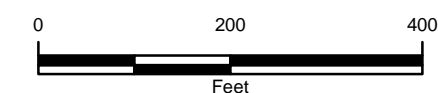






**LEGEND**

- + Gas Monitoring Probes
- ☆ Gas Flux Chambers
- Carbon Dioxide Flux Contour in  $\text{mol/m}^2 \cdot \text{day}$   
Flux contours generated with Surfer® Version 8.0
- Carbon Dioxide Flux Location ( $\text{mol/m}^2 \cdot \text{day}$ )**
  - 0.0000 - 0.0100
  - 0.0101 - 0.500
  - 0.501 - 1.00
  - 1.01 - 2.50
  - 2.51 - 5.00
  - 5.01 - 10.00
- $\text{mol/m}^2 \cdot \text{day}$  - moles per square meter per day
- Geology**
  - Fruitland Formation (Kf)
  - Fruitland Formation Tongue (Kft)
  - Kirtland Formation (Kk)
  - Pictured Cliffs Formation (Kpc)
  - Pictured Cliffs Formation Tongue (Kpct)
  - Quaternary Alluvium (Qa)
  - Quaternary Gravel (Qg)



**CARBON DIOXIDE FLUX CONTOUR MAP  
2007 DETAILED SEEP MAPPING  
CARBON JUNCTION WEST**

THE GROUP







**LEGEND**

- + Gas Monitoring Probes
- ☆ Gas Flux Chambers

— Carbon Dioxide Flux Contour in  $\text{mol/m}^2 \cdot \text{day}$

Flux contours generated with Surfer® Version 8.0

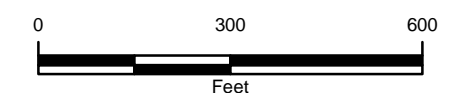
**Carbon Dioxide Flux Location ( $\text{mol/m}^2 \cdot \text{day}$ )**

- 0.0000 - 0.0100
- 0.0101 - 0.500
- 0.501 - 1.00
- 1.01 - 2.50
- 2.51 - 5.00
- 5.01 - 10.00

$\text{mol/m}^2 \cdot \text{day}$  - moles per square meter per day

**Geology**

- Fruitland Formation (Kf)
- Fruitland Formation Tongue (Kft)
- Kirtland Formation (Kk)
- Pictured Cliffs Formation (Kpc)
- Pictured Cliffs Formation Tongue (Kpct)
- Quaternary Alluvium (Qa)
- Quaternary Gravel (Qg)

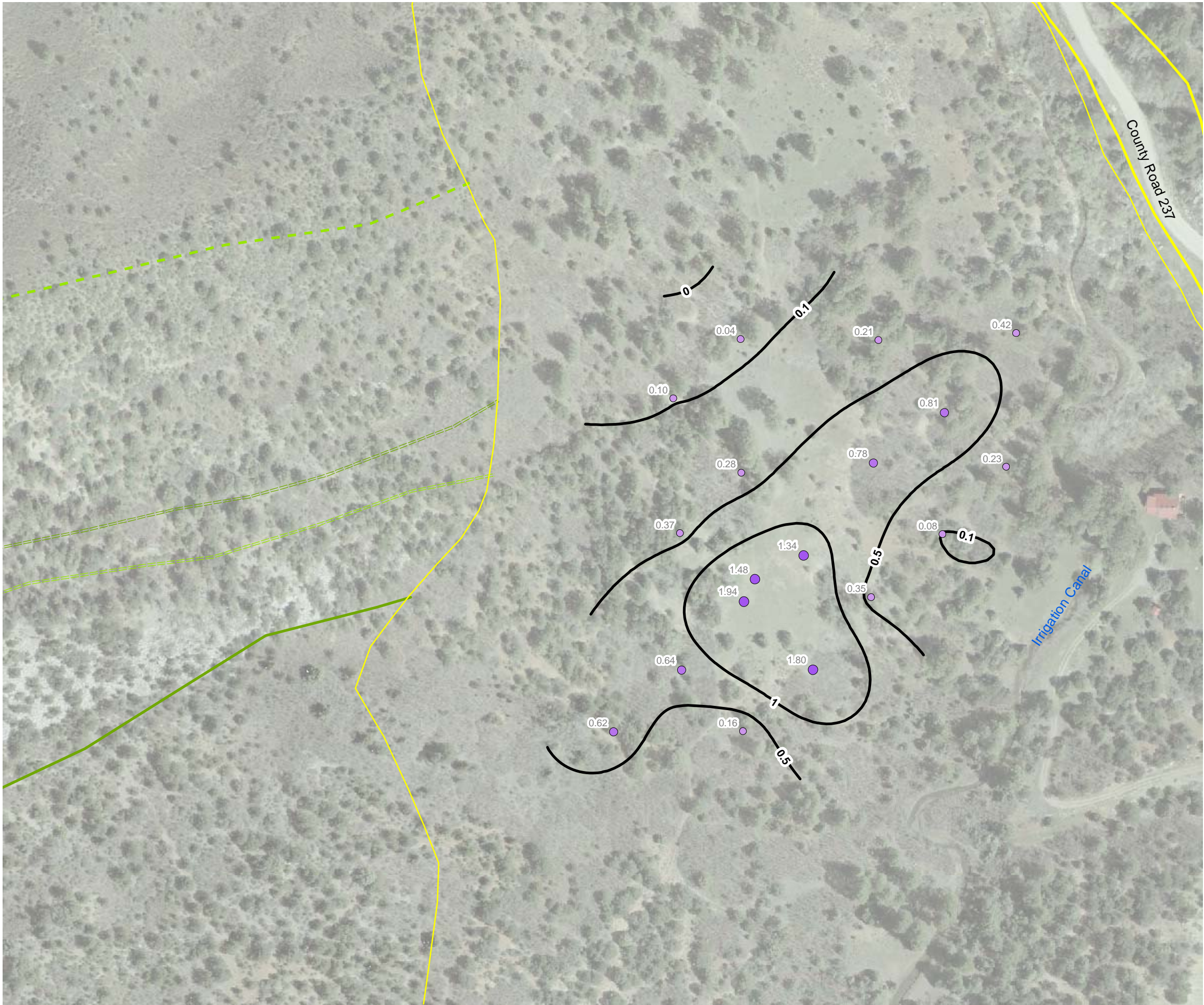


**CARBON DIOXIDE FLUX CONTOUR MAP  
2007 DETAILED SEEP MAPPING  
CARBON JUNCTION EAST**

THE GROUP

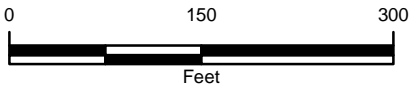






**LEGEND**

- + Gas Monitoring Probes
- ☆ Gas Flux Chambers
- Carbon Dioxide Flux Contour in  $\text{mol/m}^2 \cdot \text{day}$   
Flux contours generated with Surfer® Version 8.0
- Carbon Dioxide Flux Location ( $\text{mol/m}^2 \cdot \text{day}$ )**
  - 0.0000 - 0.0100
  - 0.0101 - 0.500
  - 0.501 - 1.00
  - 1.01 - 2.50
  - 2.51 - 5.00
  - 5.01 - 10.00
- $\text{mol/m}^2 \cdot \text{day}$  - moles per square meter per day
- Geology**
  - Fruitland Formation (Kf)
  - - - Fruitland Formation Tongue (Kft)
  - - - Kirtland Formation (Kk)
  - - - Pictured Cliffs Formation (Kpc)
  - - - Pictured Cliffs Formation Tongue (Kpct)
  - Quaternary Alluvium (Qa)
  - Quaternary Gravel (Qg)

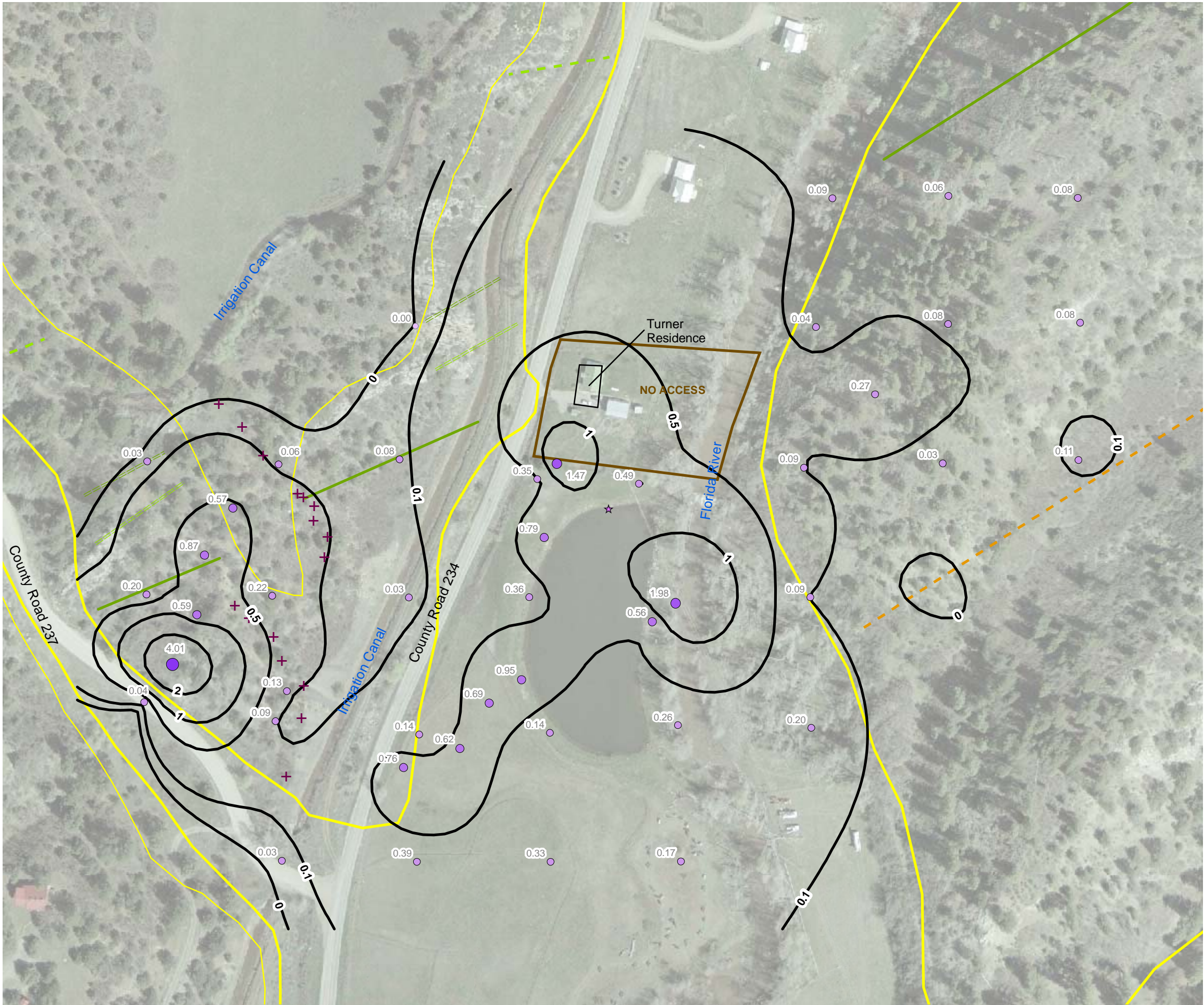


**CARBON DIOXIDE FLUX CONTOUR MAP  
2007 DETAILED SEEP MAPPING  
FLORIDA RIVER WEST**

THE GROUP

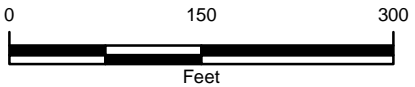






**LEGEND**

- + Gas Monitoring Probes
- ☆ Gas Flux Chambers
- Carbon Dioxide Flux Contour in  $\text{mol/m}^2 \cdot \text{day}$   
Flux contours generated with Surfer® Version 8.0
- Carbon Dioxide Flux Location ( $\text{mol/m}^2 \cdot \text{day}$ )**
  - 0.0000 - 0.0100
  - 0.0101 - 0.500
  - 0.501 - 1.00
  - 1.01 - 2.50
  - 2.51 - 5.00
  - 5.01 - 10.00
- $\text{mol/m}^2 \cdot \text{day}$  - moles per square meter per day
- Geology**
  - Fruitland Formation (Kf)
  - Fruitland Formation Tongue (Kft)
  - Kirtland Formation (Kk)
  - Pictured Cliffs Formation (Kpc)
  - Pictured Cliffs Formation Tongue (Kpct)
  - Quaternary Alluvium (Qa)
  - Quaternary Gravel (Qg)

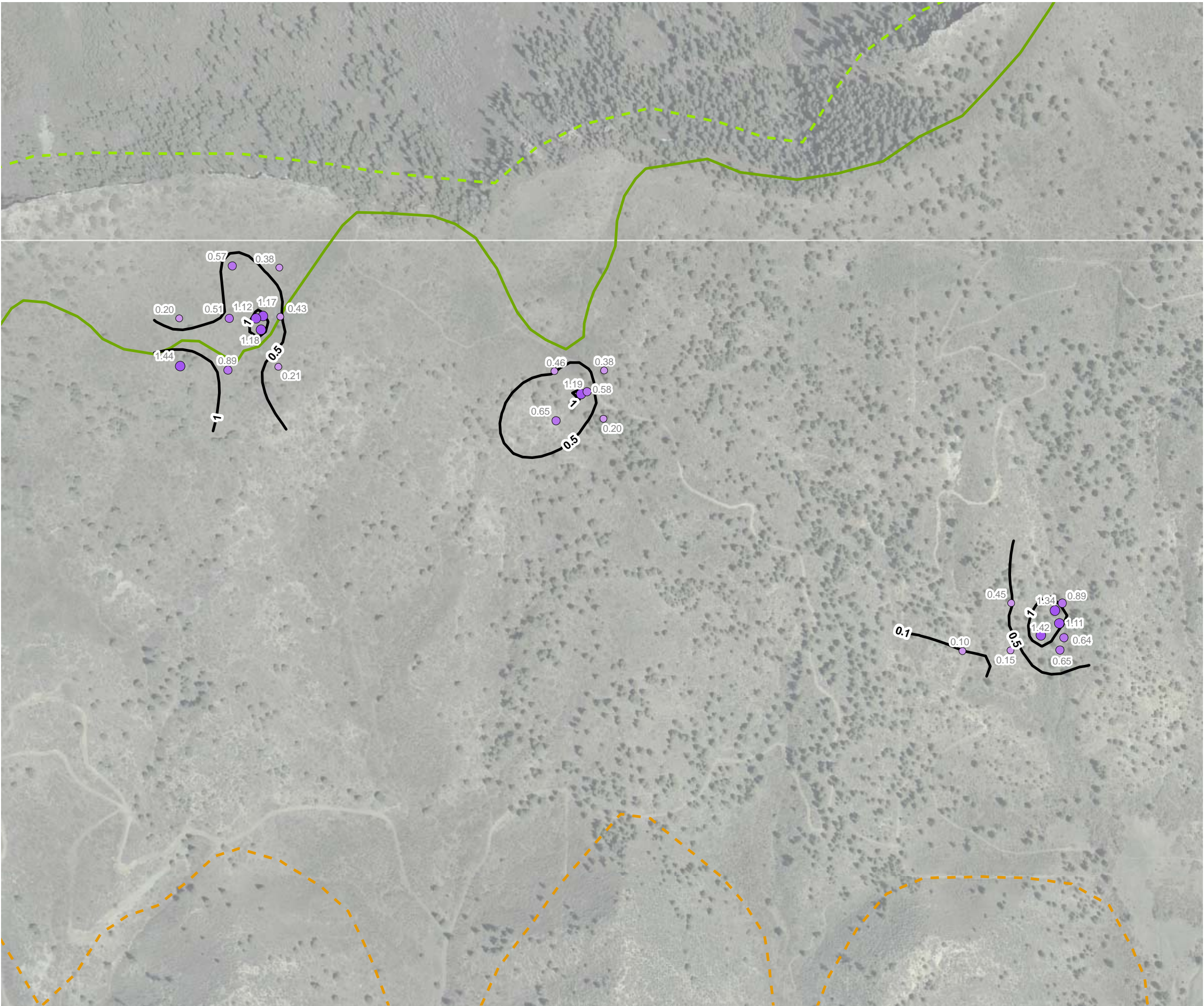


**CARBON DIOXIDE FLUX CONTOUR MAP  
2007 DETAILED SEEP MAPPING  
FLORIDA RIVER EAST**

THE GROUP







LEGEND

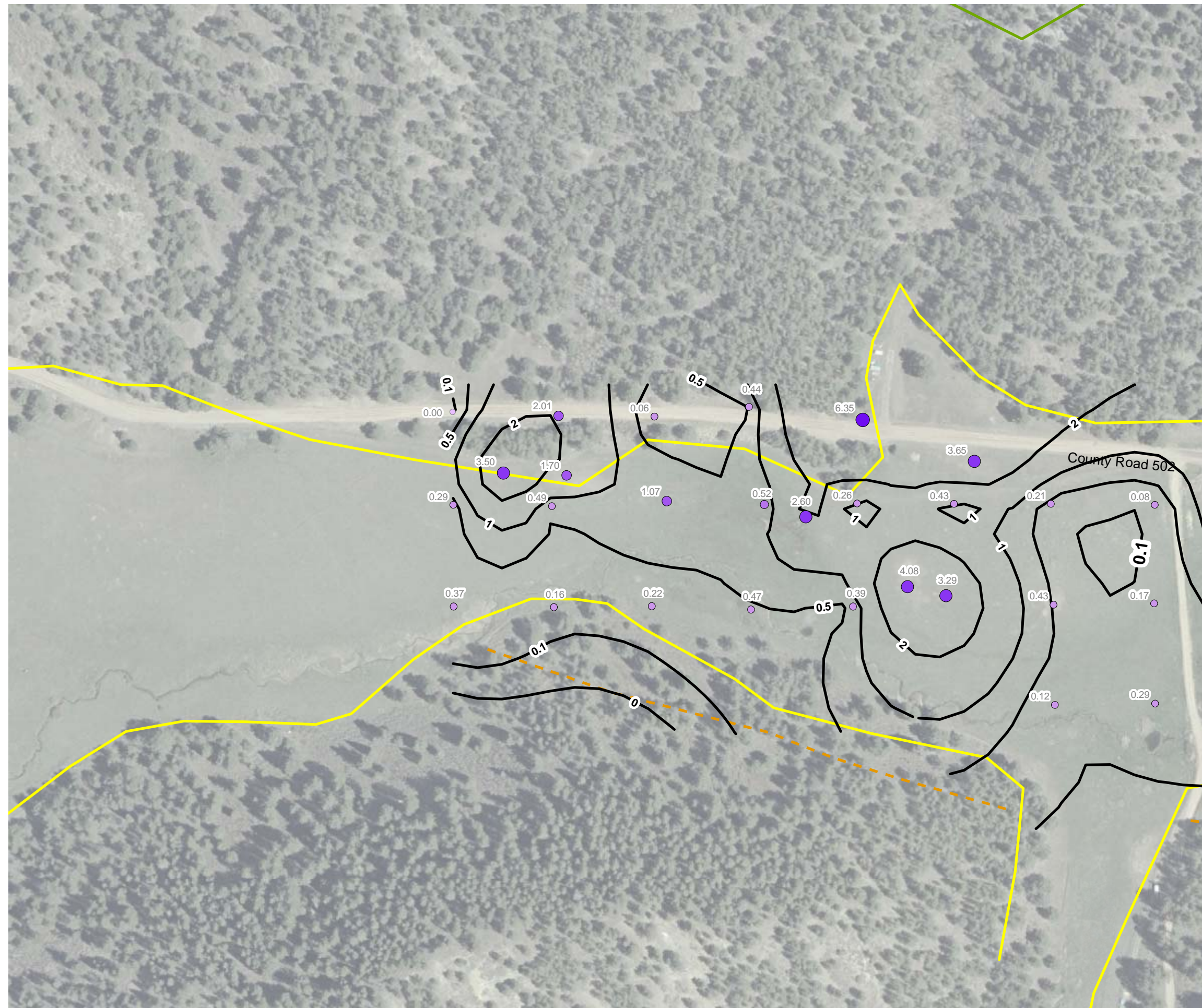
- Gas Monitoring Probes
- Gas Flux Chambers
- Carbon Dioxide Flux Contour in mol/m<sup>2</sup> • day
- Flux contours generated with Surfer® Version 8.0
- Carbon Dioxide Flux Location (mol/m<sup>2</sup> • day)
  - 0.0000 - 0.0100
  - 0.0101 - 0.500
  - 0.501 - 1.00
  - 1.01 - 2.50
  - 2.51 - 5.00
  - 5.01 - 10.00
- mol/m<sup>2</sup> • day - moles per square meter per day
- Geology
  - Fruitland Formation (Kf)
  - Fruitland Formation Tongue (Kft)
  - Kirtland Formation (Kk)
  - Pictured Cliffs Formation (Kpc)
  - Pictured Cliffs Formation Tongue (Kpct)
  - Quaternary Alluvium (Qa)
  - Quaternary Gravel (Qg)



CARBON DIOXIDE FLUX CONTOUR MAP  
2007 DETAILED SEEP MAPPING  
VOSBURG PIKE  
THE GROUP

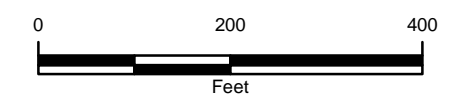






#### LEGEND

- ✚ Gas Monitoring Probes
- ☆ Gas Flux Chambers
- Carbon Dioxide Flux Contour in  $\text{mol/m}^2 \cdot \text{day}$   
Flux contours generated with Surfer® Version 8.0
- Carbon Dioxide Flux Location ( $\text{mol/m}^2 \cdot \text{day}$ )**
  - 0.0000 - 0.0100
  - 0.0101 - 0.500
  - 0.501 - 1.00
  - 1.01 - 2.50
  - 2.51 - 5.00
  - 5.01 - 10.00
- $\text{mol/m}^2 \cdot \text{day}$  - moles per square meter per day
- Geology**
  - Fruitland Formation (Kf)
  - === Fruitland Formation Tongue (Kft)
  - - - Kirtland Formation (Kk)
  - - - Pictured Cliffs Formation (Kpc)
  - === Pictured Cliffs Formation Tongue (Kpct)
  - Quaternary Alluvium (Qa)
  - Quaternary Gravel (Qg)

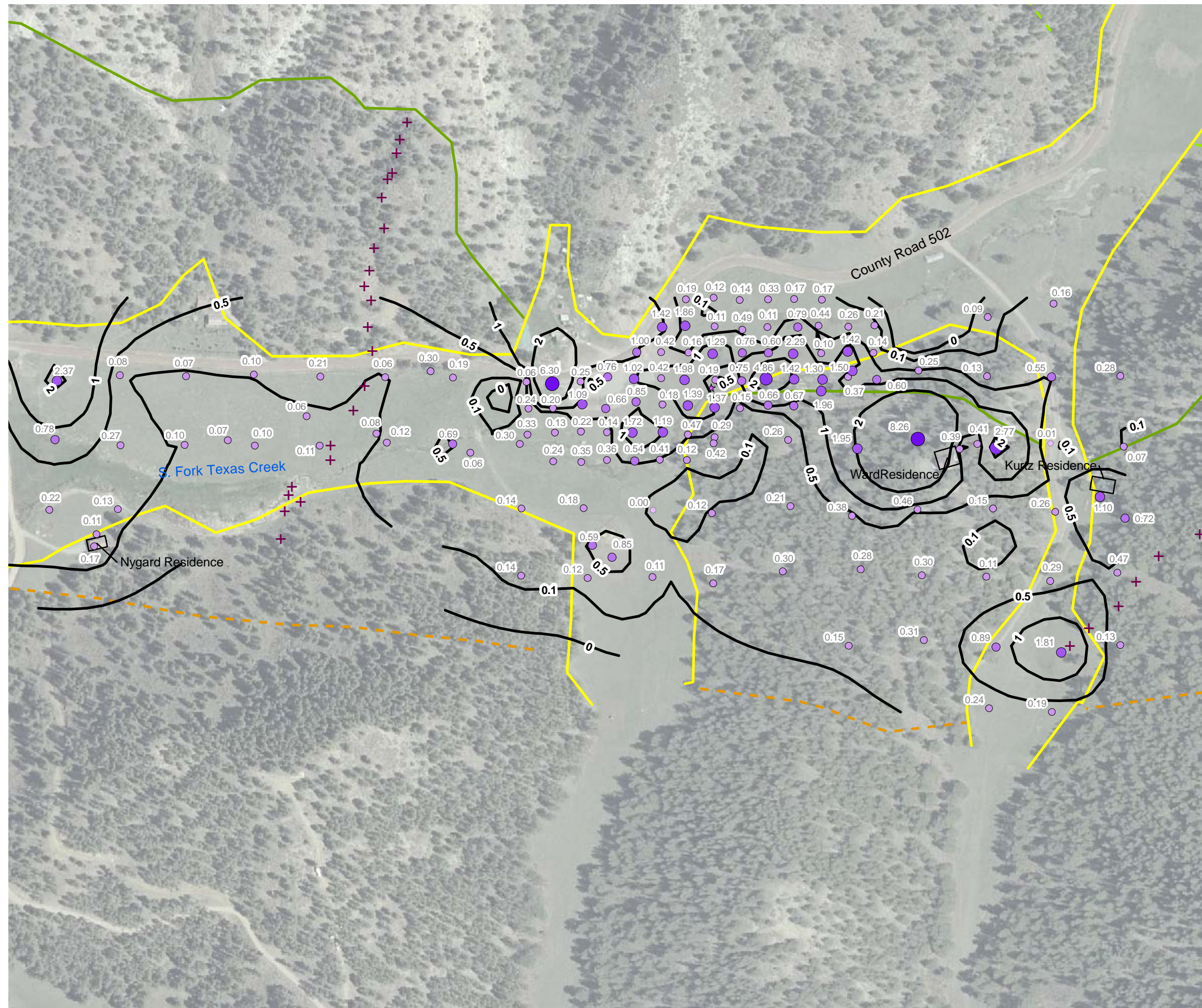


**CARBON DIOXIDE FLUX CONTOUR MAP  
2007 DETAILED SEEP MAPPING  
SOUTH FORK TEXAS CREEK WEST**

THE GROUP

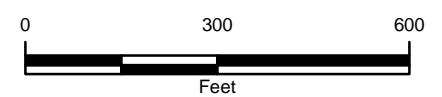






#### LEGEND

- + Gas Monitoring Probes
- ☆ Gas Flux Chambers
- Carbon Dioxide Flux Contour in  $\text{mol/m}^2 \cdot \text{day}$   
Flux contours generated with Surfer® Version 8.0
- Carbon Dioxide Flux Location ( $\text{mol/m}^2 \cdot \text{day}$ )
  - 0.0000 - 0.0100
  - 0.0101 - 0.500
  - 0.501 - 1.00
  - 1.01 - 2.50
  - 2.51 - 5.00
  - 5.01 - 10.00
- $\text{mol/m}^2 \cdot \text{day}$  - moles per square meter per day
- Geology
  - Fruitland Formation (Kf)
  - - - Fruitland Formation Tongue (Kft)
  - Kirtland Formation (Kk)
  - - - Pictured Cliffs Formation (Kpc)
  - - - Pictured Cliffs Formation Tongue (Kpct)
  - Quaternary Alluvium (Qa)
  - - - Quaternary Gravel (Qg)

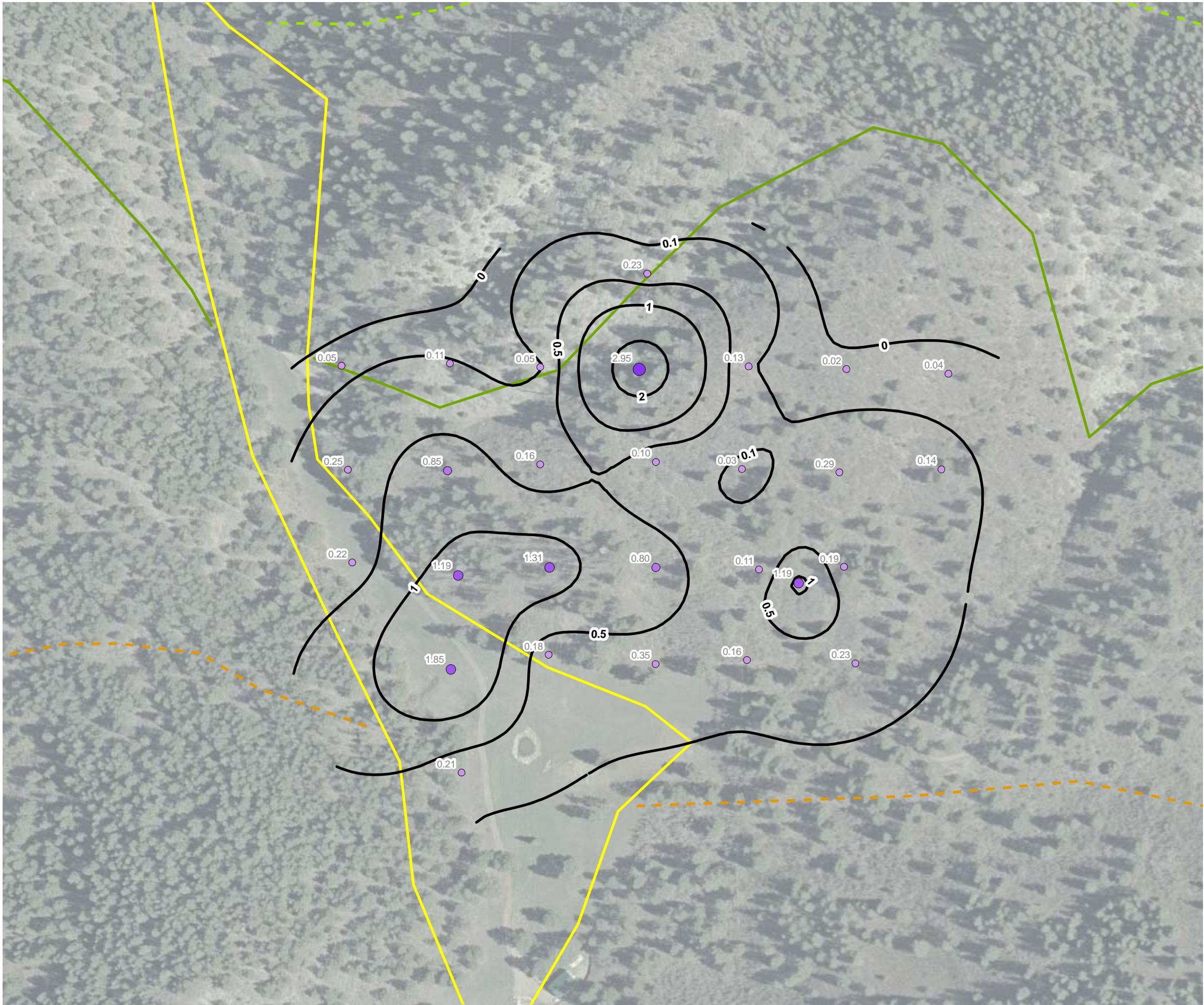


**CARBON DIOXIDE FLUX CONTOUR MAP  
2007 DETAILED SEEP MAPPING  
SOUTH FORK TEXAS CREEK CENTRAL**

THE GROUP

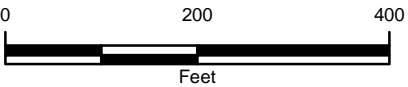






**LEGEND**

- + Gas Monitoring Probes
- ☆ Gas Flux Chambers
- Carbon Dioxide Flux Contour in  $\text{mol/m}^2 \cdot \text{day}$   
Flux contours generated with Surfer® Version 8.0
- Carbon Dioxide Flux Location ( $\text{mol/m}^2 \cdot \text{day}$ )**
  - 0.0000 - 0.0100
  - 0.0101 - 0.500
  - 0.501 - 1.00
  - 1.01 - 2.50
  - 2.51 - 5.00
  - 5.01 - 10.00
- mol/m<sup>2</sup> • day** - moles per square meter per day
- Geology**
  - Fruitland Formation (Kf)
  - - - Fruitland Formation Tongue (Kft)
  - - - Kirtland Formation (Kk)
  - Pictured Cliffs Formation (Kpc)
  - - - Pictured Cliffs Formation Tongue (Kpct)
  - Quaternary Alluvium (Qa)
  - Quaternary Gravel (Qg)



**CARBON DIOXIDE FLUX CONTOUR MAP  
2007 DETAILED SEEP MAPPING  
SOUTH FORK TEXAS CREEK EAST**

**THE GROUP**

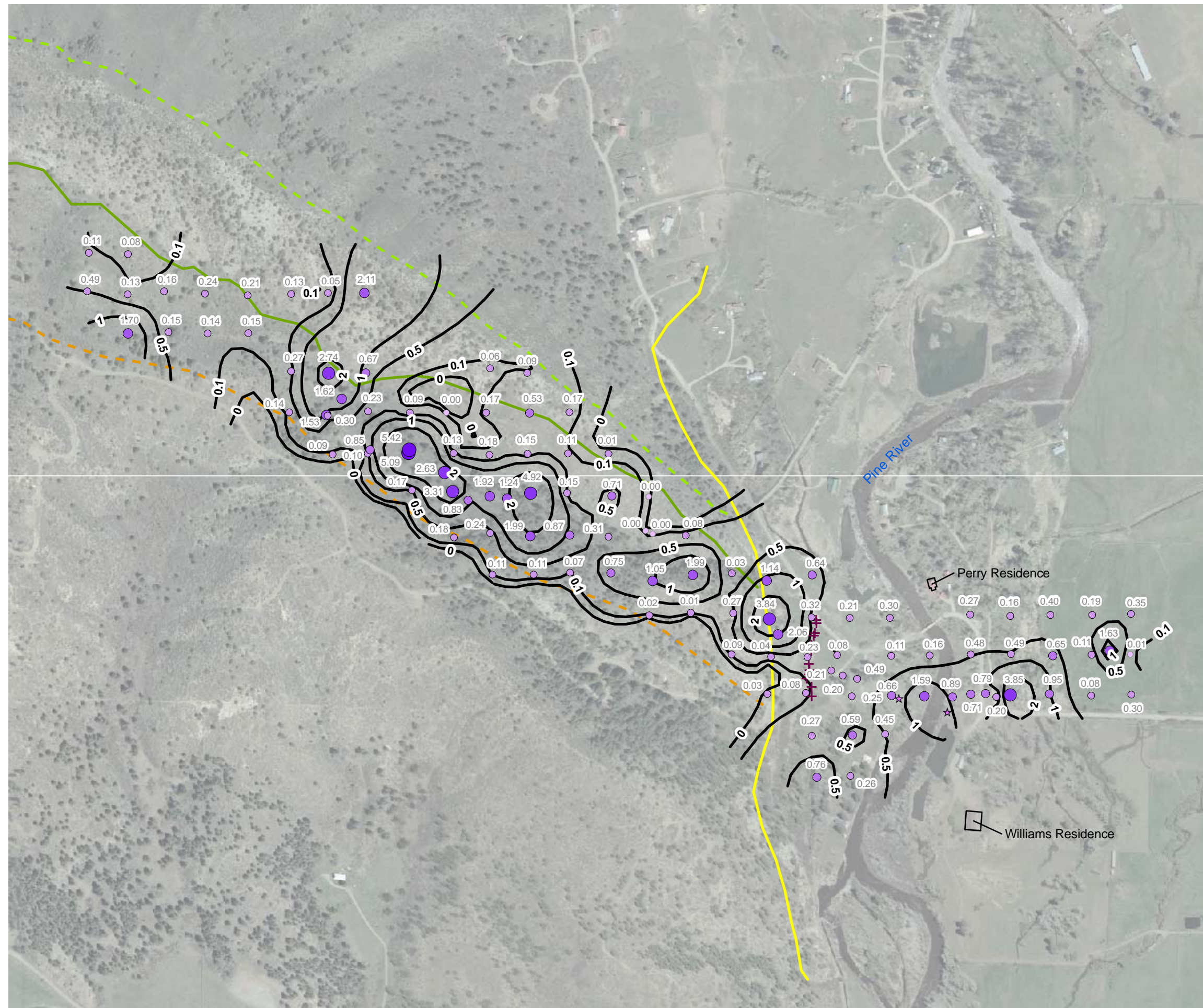






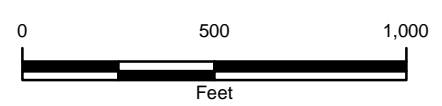
P:\San Juan Basin GIS\LaPlata\Fruitland\_OMR\MXD\Vers. 8.3\2007\Fig 38\_CO2 FLUX CONTOURS.mxd





**LEGEND**

- + Gas Monitoring Probes
- ☆ Gas Flux Chambers
- Carbon Dioxide Flux Contour in mol/m<sup>2</sup> • day
- Flux contours generated with Surfer® Version 8.0
- Carbon Dioxide Flux Location (mol/m<sup>2</sup> • day)**
- 0.0000 - 0.0100
- 0.0101 - 0.500
- 0.501 - 1.00
- 1.01 - 2.50
- 2.51 - 5.00
- 5.01 - 10.00
- mol/m<sup>2</sup> • day - moles per square meter per day
- Geology**
- Fruitland Formation (Kf)
- Fruitland Formation Tongue (Kft)
- Kirtland Formation (Kk)
- Pictured Cliffs Formation (Kpc)
- Pictured Cliffs Formation Tongue (Kpct)
- Quaternary Alluvium (Qa)
- Quaternary Gravel (Qg)



**CARBON DIOXIDE FLUX CONTOUR MAP  
2007 DETAILED SEEP MAPPING  
PINE RIVER**

THE GROUP

