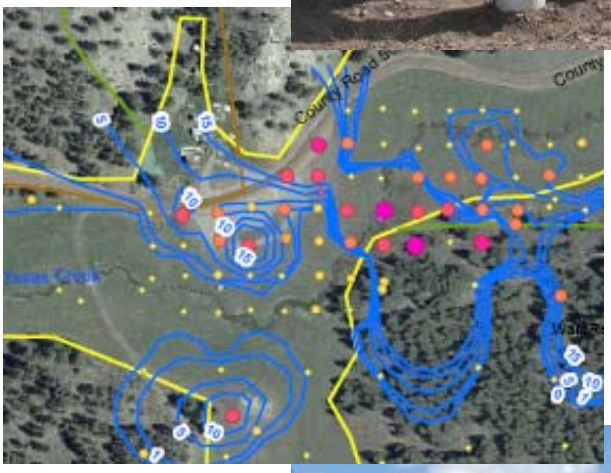
2007 FRUITLAND OUTCROP MONITORING REPORT

LA PLATA COUNTY, COLORADO



JUNE 2008

Prepared for:

THE GROUP
Durango, Colorado

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EXECUTIVE SUMMARY

Since 1997, LT Environmental, Inc. (LTE) has conducted methane seep monitoring on the Fruitland Formation (Kf) outcrop north of the Southern Ute Indian Tribe (SUIT) Reservation boundary in La Plata County, Colorado. The study area is located along the northern rim of the San Juan Basin (SJB). The objectives of the monitoring program are to observe and document the relative change in methane seepage from the Kf outcrop over time and space. The overriding goal of the program is to ensure the safety of the public and the environment.

The field methods of the monitoring program include methane seep mapping in known seep areas; regional reconnaissance along the entire outcrop using infrared imagery (IR) and field verification (pedestrian survey); and a survey of natural springs along the Kf outcrop north of the SUIT line in La Plata County. The most recent regional reconnaissance of the entire outcrop was conducted in 2005 and was discussed in the 2006 monitoring report. The next regional reconnaissance is scheduled for 2008.

During the 2007 monitoring event, LTE used a West Systems, LLC portable flux meter capable of detecting the presence of methane at very low levels. This is the first time a flux meter has been used to conduct Kf outcrop monitoring. Gas measurement data collected using the flux meter in 2007 were used to estimate a total methane flux over the Kf outcrop north of the SUIT line in La Plata County.

METHANE SEEP MAPPING

The 2007 methane seep mapping was performed during the period from September 6, 2007 through September 25, 2007. Results indicate that methane continues to seep along the Kf outcrop in La Plata County north of the SUIT line. The highest methane flux values were recorded in the main seep area at South Fork Texas Creek (SFTC).

Measureable carbon dioxide flux values were recorded at 98% of the sample locations during 2007. It is reasonable to assume that carbon dioxide flow exists within all portions of the project area, including areas where methane seepage does not exist. However, data indicate that carbon dioxide flux values are higher in areas of methane seepage. Measureable hydrogen sulfide flux values detected within the project area were very low. Hydrogen sulfide was detected in the subsurface soil at SFTC using traditional techniques. However, hydrogen sulfide was not detected in the breathing zone at any time.

FLUX ESTIMATE

A total methane flux of 7,125 thousand cubic feet per day (MCFD) was estimated for the project area in 2007. A total methane flux of 6,120 MCFD was estimated for the primary seep areas mapped by LTE during 2007 and an additional 1,005 MCFD was estimated for areas of suspected methane seepage not mapped by LTE during 2007 due to access restrictions. The highest methane flux within the project area was observed at the main seep area at SFTC.

A total carbon dioxide flux of 1,297 MCFD was estimated for the project area in 2007. The highest carbon dioxide flux within the primary seep areas was observed at Pine River and SFTC Central and West.

The following table summarizes the results of the total methane and total carbon dioxide flux estimations for the project area:

METHANE AND CARBON DIOXIDE FLUX OVER PROJECT AREA

Seep Area ID	Area (ft^2)	Methane Flux (MCFD)	Carbon Dioxide Flux (MCFD)
Basin Creek	1,534,926	88	37
Basin Creek North	588,672	6	16
Carbon Junction West	2,674,972	493	127
Carbon Junction East	2,348,391	67	49
Florida River West	734,121	25	25
Florida River East	1,743,535	110	42
Vosburg Pike	1,237,699	6	63
SFTC Central and West*	4,425,258	2,068	254
SFTC Main Seep Area	521,019	2,082	42
SFTC East	1,525,842	347	61
BP Highlands	1,434,191	145	28
Pine River	5,347,528	683	311
Subtotal	**24,116,153**	**6,120**	**1,055**
Other Areas**	5,827,892	1,005	242
Total	**29,944,045**	**7,125**	**1,297**

* - not including main seep area at SFTC

** - areas to which LTE was denied access or could not map in 2007

GAS SEEP SURVEY TECHNIQUE COMPARISON

LTE believes that the flux meter method for conducting methane seep mapping is a more appropriate method than the traditional subsurface gas measurement method used prior to 2007. Some of the benefits of the flux meter over the traditional method include:

- A reduction in the number of field meters required during mapping activities;
- Adaptability to difficult ground surface conditions;
- Eliminates the unknown capture zone variable by using an accumulation chamber of a known size;
- Minimal disruption of natural conditions (i.e. no vacuum applied, no disturbance of soil); and
- Ability to obtain more accurate flux measurements of low flux rates.

LTE attempted to correlate data collected using traditional techniques to data collected using the flux meter. Based on evaluation of data, there does not appear to be a strong correlation between the two techniques; however, both methods are effective at detecting the presence or absence of methane gas seeps.

HISTORICAL DATA COMPARISON

LTE used more accurate equipment (flux meter) to conduct methane seep mapping during 2007. Because the methodology used in 2007 is different than the methodology used during previous years, the historical data comparison was limited. However, LTE conducted methane seep mapping at the main seep area at SFTC using traditional techniques in 2007 to evaluate changes in methane seep conditions from 2006 to 2007. Data collected using traditional techniques indicate that methane concentrations were slightly higher in 2006 than 2007 and decreases in methane concentration from 2006 to 2007 were observed more often than increases. However, the aerial extent of methane seepage in 2007 was slightly greater than the aerial extent of methane seepage in 2006.

LTE believes that flux estimation is the best way to quantify methane seep conditions and observe changes in methane seepage over time and space. By estimating total methane flux using the flux meter method during future monitoring events, changes in methane seep conditions can be evaluated more accurately.

NATURAL SPRING SURVEY

A total of four natural springs were sampled by LTE during the 2007 natural spring survey. The dissolved methane concentration in each of the four water samples collected during 2007 was below the laboratory method detection limit of 0.02 milligrams per liter (mg/L). The dissolved methane concentrations observed during the 2006 natural spring survey were very low. Therefore, no trend in dissolved methane concentration is apparent at this time.

When comparing flow rates for the three natural springs that were sampled in both 2006 and 2007, results show that flow rates decreased or remained consistent from 2006 to 2007. A decreased flow rate was expected because the 2006 survey was conducted during spring run-off conditions (May) while the 2007 survey was conducted in the fall (October).

Based on natural spring data collected between 2005 and 2007, it appears that the risk of dissolved methane entering a drinking water well or piping system, or creating a hazardous situation in a confined space is low at this time.

RECOMMENDATIONS

Based on the results of the 2007 Kf outcrop monitoring event, LTE recommends the following:

- Conduct methane seep mapping and flux estimation using the portable flux meter in June 2008. Using Global Positioning System (GPS), LTE will return to the sample locations visited during the 2007 field activities. Additionally, LTE will extend the grid mapping area to include new areas along the Kf outcrop in La Plata County;

- Conduct the planned IR aerial survey (Spring 2008), suspect area identification (Summer 2008), and field verification event (Fall 2008); and

- Conduct an updated natural spring survey during Spring 2008 and Fall 2008 to assess any changes in the number of springs, the flow rates, and/or the chemistry of natural springs on the Kf outcrop in La Plata County north of the SUIT line.

Based on the results of the 2007 Kf outcrop monitoring event, the Colorado Oil and Gas Conservation Commission (COGCC) recommends the following:

- Conduct methane seep mapping and flux estimation using the portable flux meter in the upland area between Basin Creek and Carbon Junction and the upland area between Carbon Junction and Florida River. The addition of these areas to the monitoring program will help in understanding methane seep conditions prior to the drilling of new production wells down-dip of the Kf outcrop;

- Conduct soil gas surveys using traditional techniques at the Baird #1-25 (API #05-067-06568), Federal #34-1/2-34-1 (API #05-067-07514), and Pole Barn Monitor Well #1 (API #05-067-07969) abandoned well sites to determine whether methane seepage exists within the vicinity of the sites;

- Evaluate carbon dioxide flux measurements collected in areas where methane seepage does not exist in order to determine a background level of carbon dioxide at the ground surface. This background level will help in understanding the carbon dioxide flux values estimated along the Kf outcrop in La Plata County; and

- Conduct a natural spring survey in Spring 2008 and Fall 2008 to evaluate seasonal changes in natural spring conditions. The Fall 2008 natural spring survey will be conducted in conjunction with the 2008 field verification activities.

SECTION 1.0

INTRODUCTION

Since 1997, LT Environmental, Inc. (LTE) has conducted methane seep monitoring on the Fruitland Formation (Kf) outcrop in La Plata County, Colorado (Figures 1A and 1B). The study area is located along the north rim of the San Juan Basin (SJB), north of the Southern Ute Indian Tribe (SUIT) reservation boundary.

This program is being conducted on behalf of Chevron Corporation (Chevron); BP, Inc. (BP); XTO Energy, Inc. (XTO); the Colorado Oil and Gas Conservation Commission (COGCC); the Bureau of Land Management (BLM); and La Plata County. These companies and governmental agencies are collectively referred to as "The Group".

1.1 OBJECTIVES

The objective of the monitoring program is to observe and document the relative change in methane seepage from the Kf outcrop over time and space. An additional objective of the 2007 monitoring event was to test and evaluate the use of new equipment capable of measuring and recording the flux of methane from the outcrop. The measurements were used to estimate total methane flux over the Kf outcrop in La Plata County north of the SUIT line. The overriding goal of the program is to ensure the safety of the public and the environment.

1.2 ORGANIZATION OF REPORT

This report is organized into 10 sections including this introduction, which presents the objective of the study and discusses background information related to the project. The field methods used to complete the scope of work are described in Section 2.0. Section 3.0 summarizes the results of the methane seep mapping. The methane flux calculation is presented in Section 4.0. Section 5.0 presents the comparison of survey techniques. The historical data comparison is presented in Section 6.0. Section 7.0 presents the results of the natural spring survey. The limitations of the methane seep mapping are described in Section 8.0. Section 9.0 presents the conclusions of this survey and recommendations. Section 10.0 lists the references used during the creation of this report. Pertinent charts, tables, and photographs have been included in the text. Figures and appendices follow the text in separate sections.

1.3 BACKGROUND INFORMATION

The project area consists of approximately 23 miles of the Kf outcrop extending from the SUIT reservation northern boundary near Basin Creek (southwest of Durango) north and eastward to the La Plata County and Archuleta County border (Figure 1B). There have been a number of previous and ongoing studies, which support the overall methane seepage evaluation. Some of these studies include:

- Detailed mapping, methane seepage data collection, and mitigation in the Pine River area by BP between 1994 and 2004;

- Reconnaissance survey by Stonebrooke in 1995, on behalf of several oil and gas operators and with the help of the BLM, which consisted of collection of over 1,100 surface and/or subsurface methane sample points. This survey identified four additional primary methane gas seepage areas besides Pine River including Basin Creek, Carbon Junction, Florida River, and South Fork Texas Creek (SFTC);

- Installation of 162 permanent soil gas monitoring probes by LTE in 1997, with additional probes installed at various locations since that time, and ongoing monitoring of the points by the BLM. The probes are sampled by the BLM approximately six times per year;

- Installation and monitoring of six flux chambers in the primary seep areas from 1998 to 2005. The gas flux chambers measured gas flow on 10-minute intervals;

- Annual pedestrian reconnaissance surveys of the outcrop by LTE from 1998 through 2001;

- Flux chamber system modifications, detailed seep mapping, and infrared imagery (IR) pilot study performed in August 2002. The pilot study demonstrated that the IR imagery is useful in identifying suspect areas based on vegetation impacts, which can be subsequently field verified for the presence or absence of methane;

- Detailed seep mapping in the known seep areas in October 2002, May 2003, May 2004, June 2005, and May 2006;

- Regional reconnaissance of the 23-mile section of outcrop in the project area in July 2003 and September 2005. The regional reconnaissance included the collection of infrared imagery, identification of suspect areas, and field verification; and

- Natural spring survey of the 23-mile outcrop north of the Ute line in La Plata County in September 2005, and May 2006.

SECTION 2.0

FIELD METHODS

This section describes the approach and procedures used during methane seep mapping and the natural spring survey.

2.1 METHANE SEEP MAPPING

The 2007 methane seep mapping was performed September 6, 2007 through September 25, 2007 in the areas of Basin Creek (also known as Ridges Basin), Carbon Junction, Florida River, Vosburg Pike, SFTC, BP Highlands, and Pine River.

The streambed in the Basin Creek area has changed drastically since 2004 due to Animas-La Plata dam construction. LTE was able to access portions of the streambed in 2007 that were inaccessible during previous years. However, based on recent observations, the construction area appears to be steadily increasing in size and portions of the mapping area may be inaccessible during future mapping events.

Construction activities at Basin Creek, view northeast.

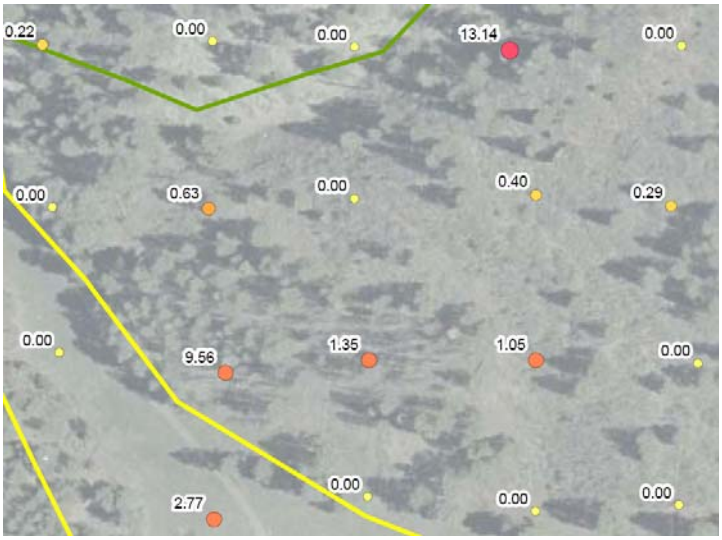
The LTE field crew was equipped with topographic maps, digital camera, global positioning system (GPS), and a WestSystems, LLC portable flux meter capable of measuring flux of methane, hydrogen sulfide, and carbon dioxide.

The methane seep mapping program involved traversing the known seep areas using a grid-mapping system and collecting gas measurements of methane, hydrogen sulfide, and carbon dioxide using the portable flux meter. In an attempt to compare historical methane seep conditions to current methane seep conditions, LTE conducted methane seep mapping in the main seep area at SFTC using traditional techniques. Additionally, the data collected using traditional techniques were compared to data collected in the same location using the portable flux meter to evaluate the correlation between the two techniques.

The mapping of suspect vegetation and visible methane seeps were not conducted during the 2007 monitoring event. General observations regarding vegetation and visible methane seeps were made; however, these features were not mapped with the GPS. LTE used the flux meter to collect gas measurements and estimate total methane flux over the Kf outcrop within the project area. LTE believes that flux estimation is a more accurate and objective method of quantifying methane seep conditions relative to mapping of suspect vegetation and visible methane seeps. Additionally, estimating flux during future monitoring events will help evaluate changes in methane seepage over time and space more accurately.

2.1.1 Grid Mapping System

LTE used a "grid mapping" system to survey the known seep areas during the 2007 monitoring event. LTE has used the grid system to conduct methane seep mapping in other areas and the method has proven to be systematic, consistent, and successful in delineating the extent of seep areas. The grid mapping system was used to map the main seep area at SFTC during the 2006 monitoring event. Results of the SFTC 2006 monitoring event supported the expanded use of the grid mapping system during the 2007 Kf outcrop monitoring event. The 2007 monitoring event is the first time a grid mapping system has been employed at all known seep areas in La Plata County.



Example of "Grid mapping" system used at SFTC East, 2007.

The grids were created in ArcView and uploaded directly to the GPS. The grids covered all portions of the Kf outcrop in the known seep areas. Grids for mapping areas consisted of varying numbers of squares, ranging in area from 2,500 square feet (ft^2) to 40,000 ft^2. The smaller grid spacing was used to map known methane seep areas with relatively small areal extent. LTE collected a gas flux measurement at the corners of each square in the grid. Each sample location was recorded using GPS. When methane was detected along the edges of the grid, additional measurements were collected outside of the grid to better define the lateral extent of the seep area. It is unreasonable to define the extent of carbon dioxide seepage because carbon dioxide exists in areas where methane seepage does not exist.

2.1.2 Gas Measurement Collection

2.1.2.1 Flux Measurements - Portable Flux Meter

As previously stated, LTE collected gas flux measurements using a West Systems, LLC portable flux meter. The flux meter records the concentration increase over time for a given area which, in a known volume, is proportional to flux. The flux is calculated and reported as a mass flux (flow rate per area) in units of moles per square meter per day (moles/m^2·day). Volumetric flux can be calculated based on the molecular weight and density of the gas. This is described further in Section 4.2.4.

At each grid node, an accumulation chamber was placed on the ground in order to capture gas seeping from the ground surface. To ensure a proper seal between the ground surface and the accumulation chamber, LTE chose relatively flat surfaces where possible and placed soil around the base of the accumulation chamber in order to prevent gas from circumventing the accumulation chamber. LTE attempted to minimize ground disturbance during the measurement process to ensure measurements of natural seep conditions.

A pump was used to circulate gas in the accumulation chamber, through methane, hydrogen sulfide and carbon dioxide sensors in a portable case, and then back through the accumulation chamber. The methane sensor is an infrared spectrometer that does not destroy methane during the measurement process. An internal fan was used to continuously mix the gas in the accumulation chamber during the process. The system allows for the accumulation of gas in the chamber because gas is allowed to enter the system from the surface soil throughout the measurement process, but no gas is allowed to escape the system. Because gas is exhausted into the accumulation chamber at the same rate as it is drawn through the pump, a vacuum is not created during the measurement process. This enables measurement of natural seep conditions.

During the measurement process, concentrations of the aforementioned gasses were recorded at one-second intervals and directly downloaded via Bluetooth® connection on an Acer® 300 portable digital assistant (PDA). Other measurements recorded by the flux meter include barometric pressure, temperature, date, and time.

LTE used the West Systems Flux Manager® software on the PDA to record the gas measurement data. The software plots the curve of gas concentration versus time for each measurement collected. LTE selected the best fit line for the curve generated. The slope of the best fit line is proportional to the flux at the measurement point. The steps involved in the flux estimate are described in detail in Section 4.0. Equipment specifications for the portable flux meter are included in Appendix A.

2.1.2.2 Subsurface Gas Measurements - Traditional Techniques

LTE collected subsurface gas measurements using traditional techniques at the SFTC in an attempt to compare data collected by the portable accumulation chamber mapping technique to data collected using traditional techniques. This method of gas measurement collection is the traditional method used to conduct outcrop monitoring in La Plata County prior to 2007. At each grid node in this area, LTE advanced a borehole using a hand-driven slide hammer to drive a ½-inch diameter steel rod into the ground surface to depths ranging from 1 foot below ground

surface (bgs) to 3 feet bgs. The rod was removed from the ground and ¼-inch diameter polyethylene tubing was inserted into the borehole. The tubing was perforated at the bottom 6 inches to allow soil gas to enter the tubing at depth.

Once the temporary tubing was in place and the borehole was sealed with native material, LTE attached a Mine Safety Appliances (MSA) Gasport® multi-gas field meter to the tubing. An internal pump extracted gas from the tubing into the gas sensors. The Gasport® measured the concentration of methane, carbon monoxide, hydrogen sulfide, and oxygen in the soil gas. Where methane was detected, LTE attached a portable ADM 2000® low-flow gas flow meter to the tubing in the borehole. LTE recorded the maximum concentration of methane, carbon monoxide, and hydrogen sulfide; the maximum stable flow rate; and the minimum concentration of oxygen at each location. Equipment specifications for the MSA The Gasport® and the ADM 2000® flow meter are included in Appendix A.

2.1.3 Use of Global Positioning System

LTE used a Trimble GeoXT® GPS with a real-time correction processor and sub-meter accuracy during the gas seep survey. The GPS used during field activities meets the specifications of the COGCC Rule 215. Prior to initiating field activities, LTE uploaded the grid node basemaps and the Kf outcrop layer into the GPS. These basemap layers facilitated efficient and accurate location of each grid node in the field and assured that the field crews were collecting data within the established project area. At each sampling location, LTE recorded the geographic position by logging a minimum of 25 GPS positions. The GPS uses a mathematical algorithm to establish the recorded geographical position of the sampling point.

When collecting gas measurements using the portable flux meter, a measurement location identification was assigned to the sample point and stored as an attribute in the GPS unit along with the associated positions. The measurement location identification was later used to match each Flux Manager data file to its respective GPS position. When collecting gas measurements using traditional techniques, all gas concentration and total gas flow rate data were stored as attributes in the GPS unit along with the associated GPS positions.

The data were collected with a GPS in the 1984 World Geodetic System (WGS 84) and projected into the Universal Transverse Mercator coordinate system using the 1983 North American Datum (NAD 83). The data are input into the ArcView® project file developed by LTE in 2001. Equipment specifications for the GPS are included in Appendix A.

2.2 NATURAL SPRING SURVEY

In 2005, LTE conducted a literature search to identify natural springs that had already been mapped. LTE interviewed regulatory agencies including the BLM, United States Forest Service (USFS), Colorado Division of Wildlife (CDOW), and the Office of the State Engineer (SEO) to identify the locations of any known natural springs on the Kf outcrop.

LTE prepared property boundary maps using aerial photography as a base map layer and the ownership parcel data from the La Plata County Assessor's office. The maps were sent to the landowners whose properties intersect the Kf outcrop. A letter requesting information about natural springs located on the property was included. Landowners were asked to draw the

location of natural springs on their property and return the maps to LTE. LTE compiled the data and digitized the locations into the GIS. As a result, four potential natural springs were identified on the Kf outcrop in La Plata County prior to 2005 field activities. LTE was able to field-verify and collect water samples from three of the four springs in September 2005.

The BLM conducted further research of natural springs in La Plata County in 2005 and 2006. The BLM identified four additional natural springs on the Kf outcrop in La Plata County that had not been identified during LTE's initial natural spring survey in 2005. During field activities, LTE identified one additional spring. Therefore, a total of nine natural springs were identified by LTE or the BLM during the 2006. However, LTE was unable to locate or denied access to four of the nine springs. Therefore, five natural springs were sampled in 2006.

During the 2007 field activities, LTE visited the five natural springs sampled in 2006. Where possible, LTE located the position and elevation using a GPS, measured a flow rate, and collected water quality measurements of pH, total dissolved solids (TDS), conductivity, oxidation-reduction potential (ORP), and temperature using a Myron L 6P Ultrameter II (Myron L). The equipment specifications for the Myron L are included in Appendix A.

One of the five natural springs visited was dry in 2007. Therefore, water samples from four springs were collected and submitted to an analytical laboratory. The samples were delivered to Four Corners Geoscience of Bayfield, Colorado for analysis of dissolved methane in water using method USGS/BLM.

Spring flow rate estimates were measured using a graduated cylinder and a stop-watch. The flow rate was reported in gallons per minute and recorded in the GPS. A subsurface gas measurement was also collected in the vicinity of each natural spring visited.

SECTION 3.0

METHANE SEEP MAPPING RESULTS

The following sections summarize the results of the methane seep mapping conducted from September 6, 2007 through September 25, 2007. This is the first time the West Systems, LLC portable flux meter has been used to conduct methane seep mapping. Previous detailed seep mapping events were conducted in October 2002, May 2003, May 2004, and June 2005, and May/June 2006.

The mapping activities followed the procedures outlined in Section 2.0. The report sections are grouped by study area and frequently reference figures for illustration purposes. Figures are included in a separate section following the text. For each figure reference, LTE has designated a text reference label to easily identify the location discussed. Each label consists of a two-letter abbreviation for the seep area followed by a number (i.e. BC-1). Aerial photographs used as the base map in the figures for this report are dated 2001 and 2003. The aerial photos do not depict physical changes that may have occurred since 2003, such as the ALP dam construction at Basin Creek. The geologic contacts depicted on the aerial photographic maps were derived from geologic maps prepared by the Colorado Geological Survey (CGS) and digitized at a scale of 1:25,000. Accuracy of the formation contact location is reduced when aerial photographs are viewed at a smaller scale.

LTE has reported flux measurements in this document in terms of mass flux with the units of moles/m^2·day. Conversion of mass flux units to volumetric flux is discussed in Section 4.2.4 and has been provided as a reference for the natural gas production industry, which typically uses volumetric flow rates. Flux data collected during the 2007 methane seep mapping are included as Appendix B. Methane flux results are presented on Figure 2 through Figure 13. Carbon dioxide flux maps are included as Appendix C.

3.1 BASIN CREEK

The methane seep mapping for Basin Creek was completed on September 20, 2007. The mapping area was centered on Basin Creek just east of the newly constructed dam. The mapping area consisted of approximately 0.4 miles in the east-west direction and 0.6 miles in the north-south direction. Figure 2 illustrates the results of the mapping in the Basin Creek area. Table 1 and the chart included at the end of Section 3.8 summarize the data collected from each seep area.

Sedimentation in stream bed of Basin Creek and thick scrub oak in upland area, view south.

The majority of the upland area south of Basin Creek is dominated by rocky soils and stressed scrub oak typical of the region during drought conditions. In general, this upland area is extremely difficult to map due to the thickness of the scrub oak and the steep topography (BC-1, Figure 2). Gas measurements were collected within the mapping grid where possible.

Two relatively high methane flux values were recorded along the access road located north of Basin Creek (BC-2, Figure 2). A methane flux value of 1.98 moles/m^2·day was reported at the base of a coal outcrop along the road and a methane flux value of 7.14 moles/m^2·day was reported at the top of the coal outcrop.

Coal outcrop along access road north of Basin Creek, view north.

At the upland area (Basin Creek North) located approximately 0.25 miles north of Basin Creek LTE collected 13 gas flux measurements (Figure 3). Two of the measurements reported measureable methane flux values. Several stressed/dead pines and junipers were noted in this area. Rocky soil and evidence of beetle infestation were also observed in this upland area.

3.2 CARBON JUNCTION

The mapping area at Carbon Junction is centered on the Animas River near the Wal-Mart shopping center on Highway 160 and extends approximately 0.7 miles in the east-west direction and 0.7 miles in the north-south direction. The methane seep mapping occurred on September 11, 2007 and September 19, 2007. The 2007 field data are illustrated on Figures 4 and 5. Table 1 and the chart included at the end of Section 3.8 summarize the data collected from each seep area.

LTE collected 22 gas flux measurements along the banks of the Animas River. Several areas of stressed/dead sage were observed in this lowland area (CJ-1 and CJ-2, Figure 4). Additionally, visible methane seeps were observed in the Animas River and a hydrogen sulfide odor was noted.

LTE collected 44 gas flux measurements in the upland area west of the Animas River. This area is dominated by stressed/dead scrub oak (CJ-3, Figure 4). A total of 48 sample points were collected in the upland area east of Highway 3. The highest methane flux values were recorded in the bottom of the drainage near the Kf-Kpc contact (CJ-4, Figure 5). Two permanent monitoring probe lines are located in this area.

Area of stressed/dead scrub oak and relatively high methane flux values. Located in upland area, west of Gun Club, view southwest.

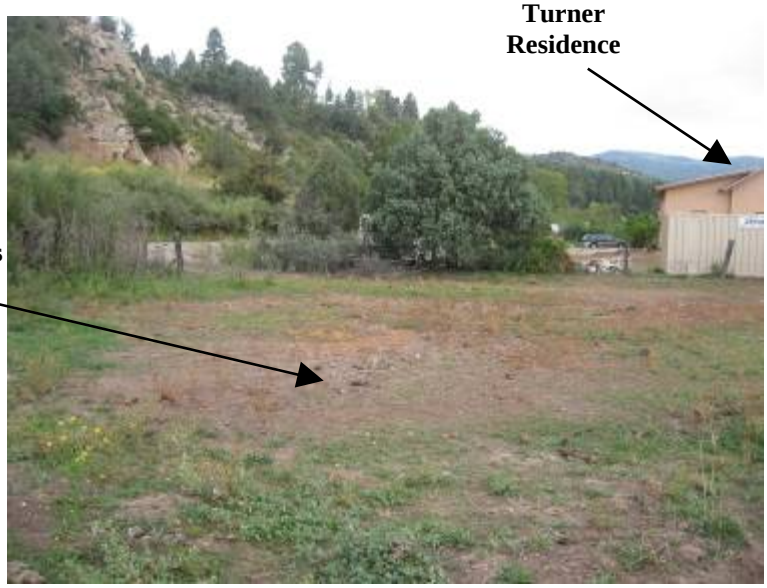
3.3 FLORIDA RIVER

The mapping area at Florida River is approximately 0.5 miles in the east-west direction by 0.3 miles in the north-south direction from where the river transects the Kf outcrop. The Florida River mapping occurred on September 16, 2007 and September 18, 2007. Figures 6 and 7 illustrate the results of the methane seep mapping performed at Florida River. Table 1 and the chart included at the end of Section 3.8 summarize the data collected from each seep area.

LTE collected 18 gas flux measurements in the upland meadow located west of CR 234 and the two irrigation canals (FR-1, Figure 6). Stressed/dead grasses were noted in the meadow and several dead pines were observed on the perimeter of the meadow. A total of 12 gas flux measurements were collected in the upland area located west of the pond and CR 234 (FR-2,

Figure 7). Two permanent monitoring probe lines were observed in this area. LTE collected 12 gas flux measurements in the vicinity of the Terry Palmer pond (FR-3, Figure 7). Several areas of stressed/dead grasses were observed in the vicinity of the pond. LTE also observed visible methane seeps in the Terry Palmer pond. LTE collected gas flux measurements in an area dominated by stressed/dead scrub oak and tree stumps located near the top of a ridge east of the Florida River (FR-4, Figure 7).

LTE was denied access to the Turner property during the 2007 methane seep mapping and therefore, no gas flux measurements were collected on the Turner property. Based on the 2007 field observations and historical data, it appears likely that methane seepage continues on the Turner property.



Area of methane seepage adjacent to Terry Palmer pond, view north.

3.4 VOSBURG PIKE

The mapping area at Vosburg Pike is an upland portion of the Kf outcrop, located approximately half way between the Florida River mapping area and the SFTC mapping area. The mapping area covers approximately 0.7 miles in the east to west direction and 0.3 miles in the north to south direction (Figure 8). The methane seep mapping at Vosburg Pike occurred on September 25, 2007. Table 1 and the chart included at the end of Section 3.8 summarize the data collected from each seep area.

The methane flux values recorded at Vosburg Pike were relatively low. An area of stressed/dead vegetation and a slight hydrogen sulfide odor was noted in the central portion of Vosburg Pike mapping area (VP-1, Figure 8). This area is a topographically low area within an upland area of the Kf outcrop.

Area of stressed/dead vegetation and methane seepage, text reference VP-1, view south.

3.5 SOUTH FORK TEXAS CREEK

The mapping area at SFTC is located where the SFTC transects the Kf. A large alluvial grass covered valley parallels the strike of the outcrop but eventually turns northward and transects the contact between the Kf and Kpc. The entire SFTC mapping area covers approximately 1.4 miles in the east to west direction and 0.3 miles in the north to south direction (Figures 9 through 11). The seep area located on the western end of SFTC has been labeled SFTC West (Figure 9). The main seep area within SFTC and the Ward and Kurtz properties have been labeled SFTC Central (Figure 10). The seep area located approximately 0.25 miles east of the creek has been labeled SFTC East (Figure 11). The most recent methane seep mapping at SFTC occurred on September 11 and 12, 2007 and September 16, 2007 through and September 18, 2007. The field data from the 2007 mapping event are illustrated on Figures 9 through 11. Table 1 and the chart included at the end of Section 3.8 summarize the data collected from each seep area.

At SFTC West, stressed/dead and non-vegetation patches were observed throughout the valley floor (TC-1, Figure 9). The highest methane flux values observed within La Plata County during the 2007 field activities were recorded within the main seep area at SFTC where the creek transects Kf-Kpc contact (TC-2, Figure 10). A hydrogen sulfide odor was noted along the banks of SFTC. Visible methane seeps in SFTC and several stressed/dead and non-vegetation patches were observed in this area. Dead pines were observed along a hillside between the SFTC and the Ward residence.

LTE collected gas flux measurements around the Nygard, Kurtz, and Ward residences during the 2007 field activities. Methane was not detected in the vicinity of the Nygard residence. Methane was detected next to the Kurtz residence during 2007, but the flux value was low (0.37 moles/m^2·day) and does not represent a change in methane seep conditions, but rather a change in gas measurement techniques. A relatively high methane flux value was reported along the Kurtz driveway north of the Kurtz residence (TC-3, Figure 10). Methane was detected in this area during the 2006 monitoring event. Relatively high methane flux values were also recorded near the Ward residence during 2007.

LTE collected 28 gas flux measurements at SFTC East. A large area of stressed/dead scrub oak was observed in this area (TC-4, Figure 11). A hydrogen sulfide odor was observed in a topographically low area near the Kf-Kpc contact at SFTC East (TC-5, Figure 11).

Non-vegetation patch with relatively high methane flux value, text reference TC-3, view southeast.

Location of methane detection (1.18 moles/m^2·day) with respect to the Ward residence, view southwest.

Area of stressed/dead scrub oak and methane seepage, text reference TC-4, view northeast.

3.6 BP HIGHLANDS

The mapping area at BP Highlands was added to the monitoring program following the completion of the IR regional reconnaissance mapping in 2003. The BP Highlands is an upland area west of Pine River. Over the last several years, the previous property owner had noted an increase in areas of dead vegetation and had also complained about methane in their water supply wells, which are completed in the Kf. The field data from the 2007 detailed mapping event are illustrated on Figure 12. Table 1 and the chart included at the end of Section 3.8 summarize the data collected from each seep area.

Several stressed/dead vegetation areas were observed in the area north of the pond on the BP Highlands property (BP-1, Figure 12). Methane was detected at two sample locations in the vicinity of the abandoned residence at BP Highlands, but the flux values were very low. The presence of methane at these low levels does not represent a change in methane seep conditions, but rather a change in gas measurement technique.

Areas of stressed/dead vegetation and methane seepage north of pond, view east.

3.7 PINE RIVER

The mapping area at Pine River is located where the Pine River transects the Kf (Figure 1A). The mapping area covers approximately 1.0 mile in the east-west direction and 0.5 miles in the north-south direction. The 2007 mapping event occurred between September 7, 2007 and September 9, 2007 and on September 15, 2007. Figure 13 illustrates the results of the methane seep mapping performed at Pine River. Table 1 and the chart included at the end of Section 3.8 summarize the data collected from each seep area.

Several stressed/dead vegetation areas were observed in the upland area located west of Pine River. The majority of these areas of stressed/dead vegetation were dominated by stressed/dead scrub oak and were located in a topographically low area between two ridges. It appears that the majority of the methane seepage in this upland area was confined to the southern side of the east-west trending drainage located west of Pine River. Only one sample location on the north side of the drainage reported a detectable methane flux value. This seep area is located on the Kf based

on surface geology, despite the location of the Kpc - Kf contact depicted on Figure 13. The accuracy of the geologic contacts is reduced when the aerial photographs are viewed at a large scale.

Stressed/dead and non-vegetation patches were observed in the lowland areas at Pine River. Additionally, visible methane seeps were noted in the Pine River.

3.8 METHANE SEEP MAPPING SUMMARY

The 2007 mapping event was performed during the period from September 6, 2007 through September 25, 2007. This was the first time a portable flux meter has been used to conduct methane seep mapping. LTE collected a total of 582 gas flux measurements in the project area. Results of the survey indicate that methane flux was measured at 355 of the 582 sampling locations. Flux data are included as Appendix B.

The following chart and table present the methane flux values from the 582 sample points across the project area:

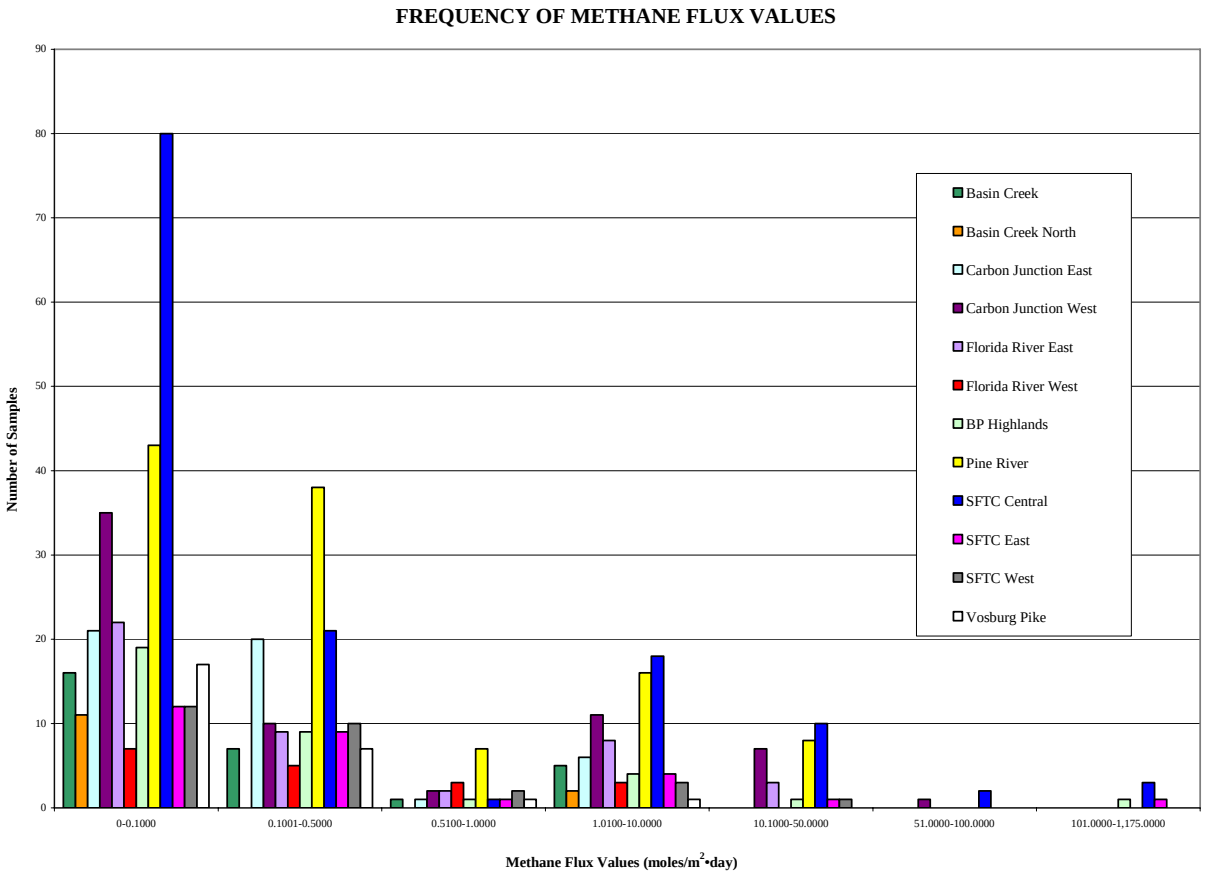


TABLE 1
METHANE FLUX VALUES

Seep Area	Number of Sample Points w/ Methane	Total Number of Sample Points	Mapped Area (ft^2)	Methane Flux (moles/m^2•day)				
				Min	Max	Arithmetic Mean	Geometric Mean	Median
Basin Creek	16	29	1,534,926	0.000238	9.767297	1.548030	0.208342	0.318925
Basin Creek North	2	13	588,672	1.097237	1.660191	1.378714	1.349675	1.378714
Carbon Junction West	41	66	2,674,972	0.000243	85.311200	5.441582	0.464381	0.823497
Carbon Junction East	30	48	2,348,391	0.000528	3.864298	0.648664	0.274708	0.327662
Florida River West	14	18	734,121	0.000235	3.738792	0.843869	0.246105	0.350598
Florida River East	29	44	1,743,535	0.000977	20.621470	2.363636	0.349052	0.234175
Vosburg Pike	12	26	1,237,699	0.058626	1.069628	0.258827	0.177556	0.170810
SFTC West	19	28	1,294,556	0.007742	24.112890	2.044968	0.291139	0.176542
SFTC Central	77	135	3,651,721	0.000243	1,174.618000	36.452247	0.627490	0.377327
SFTC East	16	28	1,525,842	0.220473	104.555800	8.500573	1.011988	0.404081
BP Highlands	22	35	1,434,191	0.030456	122.060700	6.944564	0.393026	0.204294
Pine River	77	112	5,347,528	0.000234	32.103890	2.926137	0.591704	0.359839
Total	**355**	**582**	**24,116,153**					

3.9 CARBON DIOXIDE AND HYDROGEN SULFIDE SUMMARY

Measureable carbon dioxide flux values were recorded at 98% of the sample locations during 2007 and the flux values ranged from 1.28 x 10^{-3} moles/m^2·day to 8.26 moles/m^2·day. It is reasonable to assume that carbon dioxide flow exists within all portions of the project area, including areas where methane seepage does not exist. Typically, carbon dioxide is observed in ambient air at a concentration of approximately 380 parts per million (ppm). However, data indicate that carbon dioxide flux values are generally higher in areas of methane seepage.

As previously discussed, a hydrogen sulfide odor was noted at several of the mapping areas during 2007. However, hydrogen sulfide flux values measured within the project area were low. Measureable hydrogen sulfide flux values ranged from 2.35 x 10^{-4} moles/m^2·day to 0.62 moles/m^2·day. The average hydrogen sulfide flux value was 4.68 x 10^{-3} moles/m^2·day. These flux values are considered very low.

LTE collected 64 subsurface gas measurements at the main seep area at SFTC during 2007. Hydrogen sulfide was detected at 3 of the 64 sample locations and the concentrations were 1 ppm, 1 ppm, and 7 ppm. LTE screened the ambient air for hydrogen sulfide during the mapping of SFTC and hydrogen sulfide was not detected in the breathing zone at any time during the field activities.

SECTION 4.0

FLUX ESTIMATES

The following section discusses the results of the methane flux estimates for the known seep areas. Although the focus of this study was on methane seepage, carbon dioxide flux was also estimated and is discussed in the following section. A statistical evaluation of the data collected using the flux meter is presented in Section 4.7.

4.1 ASSUMPTIONS

Using the data collected with the flux meter, LTE attempted to estimate total methane flux and total carbon dioxide flux within the project area. In order to perform this estimation, LTE had to make assumptions based on the data available. These assumptions are described below.

4.1.1 Definitions

Flux is defined as the flow of a fluid (specifically for this study - methane gas and carbon dioxide gas) across a given surface. The surface is the Kf outcrop within the project area.

4.1.2 Homogeneous Porous Media vs. Fracture Flow

Since the field mapping effort incorporated a grid network for sampling, LTE assumed that the gas flow is through a porous medium. Given the various hypotheses that suggest methane may also migrate up-dip from within the basin toward the outcrop along pathways of preferential flow, for instance coal cleats and fracture systems, the assumption of gas flow through a porous medium may not be valid.

However, the spatial distribution of the data suggests that the flow may mimic a homogeneous medium on a large scale because we observe relatively large areas containing contiguous sampling points that exhibit similar methane flow. If the system is fracture dominated, we might expect to see more discontinuous areas of flux or a spatial component distributing gas flow in the direction of the predominant fracture system which is in the direction of the formation dip. This type of spatial distribution is not readily observed in the data set. Rather, a spatial component to the data set in the direction of bedding (parallel to strike) is apparent.

Therefore, when looking at gas flux on a large scale, the grid spacing appears adequate to identify the extent of the seepage and provide an estimate of total flux from the project area.

LTE's experience has found that a smaller grid will likely identify discontinuity within a given seep area and that these discontinuities are likely related to stratigraphy of individual coal beds and/or subsurface structure patterns.

4.1.3 Variable Flow Over Time

Work previously done by LTE has documented both daily and seasonal changes in flow rate over time. It is not feasible to collect gas flux data from all the data points at the same time of day or within a period of one day. Therefore, there will be variations in the flow rate among each of the

sampling points. In order to calculate a flux from the project area, LTE assumed that all measurements were collected at the same time.

The 2007 methane seep mapping occurred in September 2007. It is important to recognize that the estimated flux from this sampling event is for a given time period and may vary through the year. Determining seasonal variation may be important in estimating total annual methane flux and carbon dioxide flux from the Kf outcrop.

4.2 ESTIMATION METHOD

The flux estimation method chosen by LTE is comprised of six steps including data processing, grid interpolation, grid math, contouring, volume calculations, and the resultant total flux calculation. Flux estimation data using this method are included as Appendix B. Each step involved in the method is described below.

For comparison purposes, LTE also used a statistical estimation method for calculating flux in two of the prominent seep areas. The results of this alternative method of flux estimation are discussed in detail in Section 4.6.

4.2.1 Data Processing

The Flux Manager® data files for each sample point were processed in order to determine the flux of each sample point. As previously mentioned, the slope of the flux curve created in the Flux Manager® software is proportional to the flux of the sample point. The flux of each sample point, measured in moles/m^2·day, was calculated using the following formula:

$$\text{Flux of Sample Point} = S \times K$$

where,

S = slope of flux curve (ppm/sec)
K = accumulation chamber factor

The accumulation chamber factor incorporates the air temperature, barometric pressure, volume of the accumulation chamber, and surface area of the inlet to the accumulation chamber. The accumulation factor was calculated using the following formula:

$$K = \frac{86{,}400 \times P}{10^6 \times R \times T_K} \times \frac{V}{A}$$

where,

K = accumulation factor
P = barometric pressure (mBar)
V = net volume of accumulation chamber (cubic meters)
R = gas constant (0.08314510 bar LK^{-1} mol^{-1})
T_K = air temperature (Kelvin)
A = net area of inlet to accumulation chamber (square meters)

By applying the aforementioned formulas to each data file, the flux of methane, carbon dioxide, and hydrogen sulfide were calculated for each sample point.

4.2.2 Interpolation Gridding – Kriging Method

LTE interpolated data using the Kriging method. The interpolation was performed using Surfer® version 8.0 by Golden Software, Inc. Surfer® is a grid-based graphics program that interpolates irregularly spaced data with Cartesian coordinates into a regularly spaced grid.

The Kriging method is a popular geostatistical gridding method. LTE utilized this method to interpolate a grid of methane flux and carbon dioxide flux at each of the seep areas using each of the measurement points. Detailed explanation of this statistical method is described in *Statistics for Spatial Data* (Cressie, Noel A.C.,1993) or *A Study on Kriging Small Blocks* (Armstrong, M. and Champigny, N., 1988).

In general, Kriging is a regression technique used in geostatistics to approximate or interpolate data. LTE utilized the Kriging defaults in Surfer® to generate grids. The Kriging algorithm can result in negative values in the region beyond the areas where data were collected. Negative values were excluded from the maps and the area and volume calculations.

4.2.3 Contouring

Once the grids of methane flux and carbon dioxide flux were generated, LTE exported the positive contours from Surfer® to ArcMap to generate the contour maps of methane flux and carbon dioxide flux area included as Appendix D.

4.2.4 Total Flux Calculations

In order to estimate the total flux of each seep area, the Grid Volume capability in Surfer® was utilized. The Surfer® Grid Volume output files, presenting the volume estimated for each seep area, are included as Appendix E. Under the heading "Cut & Fill Volumes", the "Positive Volume [Cut]" represents the volume between the contoured surface and the zero plane. The units of the contoured values are moles/m^2·day. Since the units for the X and Y coordinates were feet, a z-scale factor of 0.0929 m^2/ft^2 was used, such that the resulting volume has units of moles/m^2·day x m^2/ft^2. When the resulting volume is multiplied by the area of seepage (ft^2), these units are equal to moles/day.

For a better perspective of the methane flux and carbon dioxide flux rates, LTE converted the mass flux values into volumetric flux units of cubic feet per day (CFD), assuming equal areas. The unit conversion is based on the molecular weight of the gas and the density of the gas at approximately 7,000 feet above mean sea level. For methane flux, the calculation is as follows:

$$\frac{\text{mol } CH_4}{\text{day}} \times \frac{16.04276 \text{ g } CH_4}{\text{mol } CH_4} \times \frac{0.0698 \text{ ft}^3 CH_4}{\text{g } CH_4} = \frac{\text{ft}^3 CH_4}{\text{day}}$$

For example,

$$1.0 \text{ mole/day } CH_4 = 1.12 \text{ CFD } CH_4$$

For carbon dioxide flux, the calculation is as follows:

$$\frac{\text{mol } CO_2}{\text{day}} \times \frac{44.01 \text{ g } CO_2}{\text{mol } CO_2} \times \frac{0.0253 \text{ ft}^3 CO_2}{\text{g } CO_2} = \frac{\text{ft}^3 CO_2}{\text{day}}$$

For example,

$$1.0 \text{ mole/day } CO_2 = 1.11 \text{ CFD } CO_2$$

4.3 FLUX ESTIMATION RESULTS

The total methane flux and total carbon dioxide flux measured within each seep area are summarized in the table below.

TABLE 2
METHANE AND CARBON DIOXIDE FLUX WITHIN MAPPED SEEP AREAS

Seep Area ID	Area (ft^2)	Methane Flux (MCFD)	Carbon Dioxide Flux (MCFD)
Basin Creek	1,534,926	88	37
Basin Creek North	588,672	6	16
Carbon Junction West	2,674,972	493	127
Carbon Junction East	2,348,391	67	49
Florida River West	734,121	25	25
Florida River East	1,743,535	110	42
Vosburg Pike	1,237,699	6	63
SFTC Central and West*	4,425,258	2,068	254
SFTC Main Seep Area	521,019	2,082	42
SFTC East	1,525,842	347	61
BP Highlands	1,434,191	145	28
Pine River	5,347,528	683	311
Total	**24,116,153**	**6,120**	**1,055**

* - not including main seep area at SFTC
MCFD - thousand cubic feet per day
Values estimated using the Kriging method of flux estimation

4.4 TOTAL METHANE FLUX FROM Kf OUTCROP

Based on LTE's calculations, the total methane flux from the seep areas mapped along the Kf outcrop north of the SUIT line is 6,120 MCFD. The highest methane flux within the project area was observed at the main seep area at SFTC. Methane flux at this seep area (2,082 MCFD)

accounts for approximately 34% of the total methane flux within the mapped project area. Methane flux at SFTC Central and West (2,068 MCFD), not including the main seep area at SFTC, accounts for an additional 34% of total methane flux within the mapped project area. However, the areal extent of the main seep area at SFTC is only 12% the size of SFTC Central and West. Methane flux at Pine River and Carbon Junction West account for approximately 11% and 8% of total methane flux within the mapped project area, respectively. The remaining areas combined account for 13% of the total methane flux within the project area mapped by LTE in 2007.

It is important to consider surface area as well as methane flow values when evaluating seep conditions. The methane flux, on a per unit area basis, for a seep area can be calculated using the following equation:

$$\frac{\text{CH4 Flow (CFD)}}{\text{Area (ft}^2\text{)}} = \text{Methane Flux (CFD/ft}^2\text{)}$$

The methane flux per unit area for each seep area are presented in the table below.

TABLE 3
METHANE FLUX WITHIN SEEP AREAS – PER UNIT AREA

Seep Area ID	Methane Flux (CFD/ft^2)
Basin Creek	0.06
Basin Creek North	0.01
Carbon Junction West	0.18
Carbon Junction East	0.03
Florida River West	0.03
Florida River East	0.06
Vosburg Pike	0.01
SFTC Central and West*	0.47
SFTC Main Seep Area	4.00
SFTC East	0.23
BP Highlands	0.10
Pine River	0.13

* - not including main seep area at SFTC
Values based on results of Kriging method of flux estimation

When comparing methane flux values, on a per unit area basis, data indicate that methane seepage at the main seep area at SFTC (4.00 CFD/ft^2) is greater than methane seepage at all other areas by an order of magnitude.

LTE was denied access to several properties during the 2007 methane seep mapping. Based on field observations and historical data, it appears that methane seepage is occurring on properties to which LTE was denied access. Therefore, the total methane flux value estimated over the project area (6,120 MCFD) is most likely low because it does not include several areas of

suspected methane seepage. Based on maps showing estimated extent of seep areas (Appendix F) created by LTE, it is estimated that methane seepage is occurring on approximately 134 acres or 5,827,892 ft^2 of Kf outcrop that was not mapped in 2007 due to access or other restrictions. By applying the methane flux value for each seep area to the estimated area of seepage occurring on areas which LTE did not map, a total methane flux over each area not mapped by LTE can be estimated. The following table presents these results:

TABLE 4
ESTIMATED METHANE FLUX WITHIN AREAS NOT MAPPED BY LTE

Seep Area ID	Area Not Mapped (ft^2)	Methane Flux (CFD/ft^2)	Methane Flux (MCFD)
Basin Creek	757,430	0.06	45
Basin Creek North	NA	0.01	NA
Carbon Junction West	128,529	0.18	23
Carbon Junction East	198,605	0.03	6
Florida River West	110,731	0.03	3
Florida River East	NA	0.06	NA
Vosburg Pike	NA	0.01	NA
SFTC Central and West*	1,150,573	0.47	541
SFTC Main Seep Area	NA	4.00	NA
SFTC East	311,265	0.23	72
BP Highlands	515,463	0.10	52
Pine River	2,025,655	0.13	263
Total			**1,005**

NA - not applicable

If the total methane flux value (1,005 MCFD) for areas which LTE did not map is added to the 6,120 MCFD of methane estimated over the mapped portions of the project area, the result is 7,125 MCFD. Therefore, the estimated total methane flux over the Kf outcrop in La Plata County north of the SUIT line is 7,125 MCFD.

4.5 TOTAL CARBON DIOXIDE FLUX FROM KF OUTCROP

Based on LTE's calculations, the total carbon dioxide flux from the seep areas mapped along Kf outcrop north of the SUIT line is 1,055 MCFD. The highest carbon dioxide flux within the project area was observed at Pine River and SFTC Central and West. Carbon dioxide flux at Pine River (311 MCFD) and SFTC Central and West (296 MCFD) account for approximately 29% and 28% of total carbon dioxide flux, respectively within the mapped project area. Carbon dioxide flux at Carbon Junction West accounts for approximately 12% of total carbon dioxide flux within the mapped project area.

The following table presents the carbon dioxide flux values, on a per unit area basis, for each mapping area:

TABLE 5
CARBON DIOXIDE FLUX WITHIN SEEP AREAS – PER UNIT AREA

Seep Area ID	Carbon Dioxide Flux (CFD/ft^2)
Basin Creek	0.02
Basin Creek North	0.03
Carbon Junction West	0.05
Carbon Junction East	0.02
Florida River West	0.03
Florida River East	0.02
Vosburg Pike	0.05
SFTC Central and West*	0.06
SFTC Main Seep Area	0.08
SFTC East	0.04
BP Highlands	0.02
Pine River	0.06

* - Not including main seep area at SFTC
Values based on results of Kriging method of flux estimation

When comparing carbon dioxide flux values, on a per unit area basis, data indicate that carbon dioxide flux is relatively consistent at the majority of mapping areas. The greatest carbon dioxide flux (0.08 CFD/ft^2) was observed at the main seep area at SFTC. The carbon dioxide flux at all other mapping areas ranged between 0.02 CFD/ft^2 and 0.06 CFD/ft^2.

Carbon dioxide flux is ubiquitous over the entire project area. LTE did not extrapolate measured carbon dioxide flux values to areas that were not mapped to estimate total carbon dioxide flux for the project area.

4.6 STATISTICAL ESTIMATION METHOD

For comparison purposes, LTE used a statistical method of flux calculation preferred by the manufacturer of the flux meter to calculate methane flux at all mapped seep areas with the exception of Basin Creek North. Due to the relatively small size of the Basin Creek North seep area, a sufficient number of sample points were not collected to utilize the statistical estimation method.

The statistical estimation method involves selecting threshold values in geochemical data using probability graphs (Sinclair, 1974). Essentially, the method is looking at the variance among the data and establishes uncertainty control. The method calculates one flux rate to be applied over the entire mapping area based on the statistical distribution of all the flux rate values collected. The steps involved in the statistical method of flux calculation and the results of the flux calculation are described below.

4.6.1 Data Evaluation

After the flux for each measurement point was calculated using the accumulation factor, the natural log of each flux value [ln(flux)], was calculated. The ln(flux) data were sorted in ascending order. The cumulative probability of each flux value was also calculated. From this cumulative probability, the inverse of normal distribution can be determined.

A plot of the ln(flux) data versus the inverse of normal distribution data was then created. LTE determined a threshold value in order to divide the data set into two or more families, each indicating a good linear fit. These plots are included as Appendix G. The following table illustrates the determined threshold values of the data sets.

TABLE 6
DETERMINED THRESHOLD VALUES OF DATA SETS

Seep Area ID	Methane Threshold Value (moles/m^2·day)
Basin Creek	0.01; 0.08
Carbon Junction West	0.025; 0.61; 5.07; 52
Carbon Junction East	0.08; 1.01
Florida River West	NA
Florida River East	0.045; 0.4; 6.36
Vosburg Pike	0.4
SFTC Central and West	0.1; 0.6; 229
SFTC East	0.5
BP Highlands	0.4
Pine River	0.05; 0.46; 72

NA – not applicable because only one family exists

The mean of ln(flux) for each family was then calculated and the number of sample points in each family was determined. Using the t-estimate for lognormal distributions table (Sichel, 1966) and the mean of ln(flux) and number of data points in the family, a total flux was determined for the four mapping areas.

4.6.2 Results

The following table presents the results of the flux calculation using the statistical estimation method:

TABLE 7
METHANE FLUX – STATISTICAL ESTIMATION METHOD

Seep Area ID	Methane Flux (MCFD)
Basin Creek	53
Carbon Junction West	572
Carbon Junction East	78
Florida River West	34
Florida River East	131
Vosburg Pike	11
SFTC Central and West	5,412
SFTC East	942
BP Highlands	335
Pine River	806

When these values derived from the Statistical Estimation Method are compared to the results of the Kriging method, the results are as follows:

TABLE 8
COMPARISON OF STATISTICAL ESTIMATION METHOD AND KRIGING METHOD

Seep Area ID	Methane Flux (MCFD)	
	Statistical Method	Kriging Method
Basin Creek	53	88
Carbon Junction West	572	493
Carbon Junction East	78	67
Florida River West	34	25
Florida River East	131	110
Vosburg Pike	11	6
SFTC Central and West	5,412	4,150
SFTC East	942	347
BP Highlands	335	145
Pine River	806	683

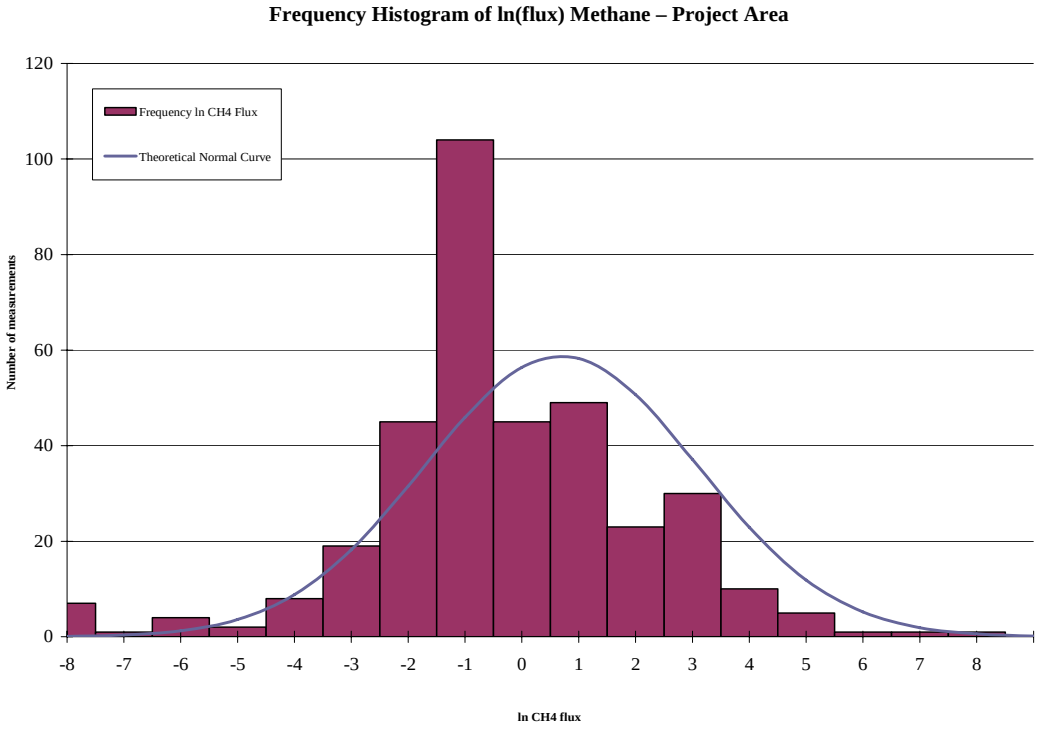
Results indicate that total flux values estimated using the Statistical method are slightly higher than total flux values estimated using the Kriging method. Nine of the 10 total flux values estimated using the Statistical method were higher than the total flux values estimated using the Kriging method; however, the results were within the same order of magnitude for all seep areas. Flux values estimated using the Statistical method may be biased high due to the influence of high flux values on the data set when determining the mean of ln(flux) for a family.

Ultimately, LTE decided that the Kriging method may be a more accurate method of flux estimation. The Statistical method requires a large sample population which was not available for all areas surveyed. Therefore, it is not possible to calculate methane flux for relatively small seep areas. Additionally, the method suggests omitting statistical outliers as anomalous data and therefore, not including outliers in the total flux estimate. LTE did not omit outliers when calculating flux using this method because these data measured in the field are valid data and representative of the anisotropic conditions within the seep areas.

4.7 STATISTICAL DATA EVALUATION

The distribution of methane flux data is strongly skewed, with 529 of the 582 measurements reporting flux values less than 5 moles/m^2·day. A total of 462 of those measurements were below 1.0 moles/m^2·day. However, 39 measurements exceeded 10 moles/m^2·day, and the maximum flux value was 1,174 moles/m^2·day. The high values are believed to occur where the sample grid point happens to coincide with a localized area of high flux, and are not considered outliers. Estimating an overall mean, and therefore an overall flux rate, is difficult with such skewed distributions because the small number of high values dominate the resulting estimate.

This sort of skewed pattern is typical of a log normal distribution. Log normal distributions occur frequently when measuring geologic parameters (Crow, 1988). If a population of measurements approximates a log normal distribution, then the natural logarithms of the measurements will approximate a normal distribution. One way to test for log normal distribution is to generate a frequency histogram of the natural logs of the measurements (Gilbert, 1987). This is shown in the following chart. The theoretical normal curve is superimposed on this histogram. Although the peak is higher than predicted, the curve indicates that these measurements roughly approximate a log normal distribution and are considered a representative population.



SECTION 5.0

GAS SEEP SURVEY TECHNIQUE COMPARISON

5.1 METHODOLOGY COMPARISON

LTE believes that the West Systems portable flux meter is a more appropriate tool for measuring methane flux along the Kf outcrop. One of the greatest benefits of the flux meter is the known area of capture of the sample point. The area of capture is a critical input parameter of the flux estimation and has a great influence on the resultant value. Previous work conducted by LTE within the San Juan Basin determined that a radius of influence (ROI) of the traditional method sample point between 0.25 inches and 1.0 foot results in a wide range of flux estimation. It is difficult to determine the exact ROI of the sample point and therefore, the accuracy of the flux estimation is limited when using data collected with traditional techniques. The area of capture when using the West Systems, LLC flux meter is a known variable equal to the ground surface area covered by the accumulation chamber. Therefore, by using the flux meter instead of traditional subsurface probe techniques, a degree of uncertainty can be eliminated from the overall flux estimation process.

The flux meter can collect measurements in areas where traditional techniques can not. This scenario is most evident in areas with little or no topsoil. In these areas, it is often difficult to advance the slide hammer probe to an appropriate depth. Often times several borings are advanced in the vicinity of the desired sample location before a boring can be advanced to the appropriate depth. This process requires additional time and effort and the desired sample location still may not be achieved. Based on field observations made during the 2007 outcrop monitoring, it appears that the flux meter is capable of collecting measurements at the desired sample location the majority of the time. The flux meter only requires enough topsoil to create a seal between the ground surface and the accumulation chamber.

Gas measurements collected using the flux meter are more representative of natural gas seep conditions than sample points collected using traditional techniques. The field meter associated with traditional techniques uses a pump to draw soil gas into the meter and then to the ambient air. The use of the pump creates a vacuum beneath the soil and therefore, may increase the quantity of gas flow at the sample location. It is possible that the total methane flux calculation could be biased-high when using data collected with traditional techniques because of the vacuum conditions. The flux meter also uses a pump to draw gas into the meter. However, the gas is then exhausted back into the accumulation chamber. Because gas is being drawn into the accumulation chamber at the same rate it is being exhausted into the accumulation chamber, a vacuum is not created. Therefore, measurements collected using the flux meter are more representative of natural gas seep conditions.

Another benefit of the flux meter is the reduction of the number of field meters required to perform gas seep surveys. Only one field meter is required when conducting gas seep surveys of methane and carbon dioxide flux. Both sensors are stored in the flux meter back pack which makes mobilization easier than when using traditional techniques. Traditional techniques require three field meters to collect the same type data. One field meter is used to measure methane

concentration, one field meter is used to measure carbon dioxide concentration, and a separate field meter is used to measure total gas flow rate.

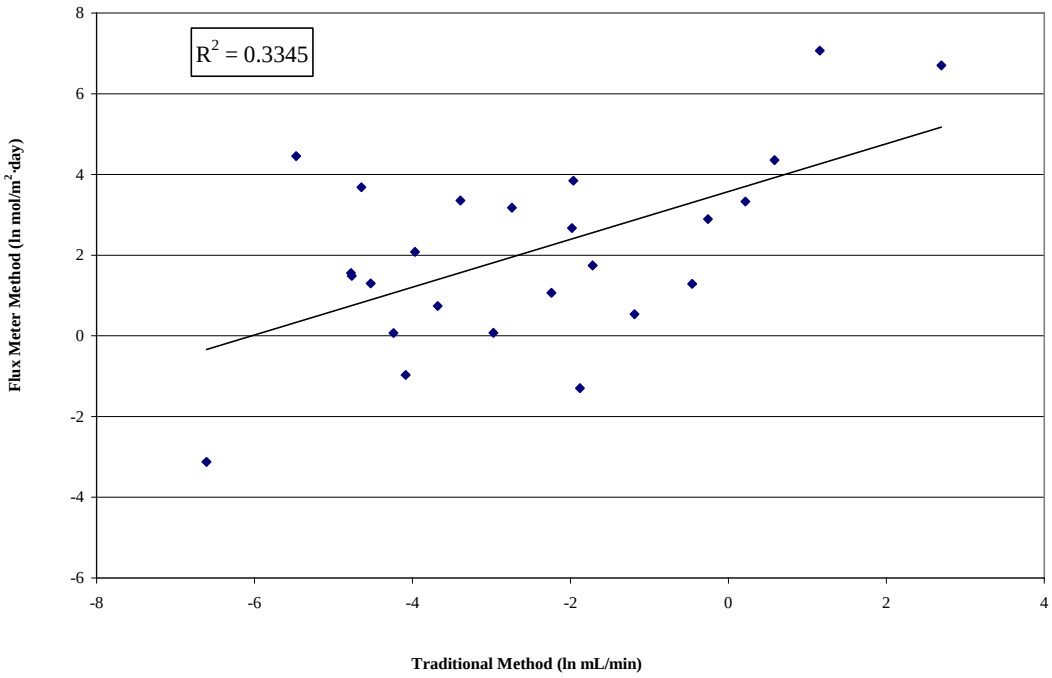
5.2 DATA CORRELATION

LTE attempted to correlate data collected using the flux meter in 2007 to data collected using traditional techniques at the same sample locations in 2007. The purpose of this correlation was to better understand the equipment used during outcrop monitoring of the Kf in La Plata County.

As previously mentioned, LTE conducted gas seep surveys at the main seep area within SFTC using both the flux meter and traditional techniques during 2007. The individual subsurface gas measurements were paired with the nearest flux measurement within 10 feet to attempt a correlation.

A table presenting the results of the data correlation, including methane flow and methane flux values and distances between paired points, is included as Appendix H. The following chart illustrates the relationship between data collected using the flux meter method flux values and data collected using traditional techniques at individual sample locations.

Comparison of Flux Values – Flux Meter Method vs. Traditional Method



The plot indicates a correlation coefficient of 0.334. Therefore, it appears that a weak correlation exists between data collected using the flux meter and data collected using traditional techniques. A linear trend is observed in the cross-plot; however, based on the values observed with respect to the line of regression and the relatively low correlation coefficient, the correlation between data collected using the two methods appears weak.

LTE calculated methane flux for the main seep area at SFTC using the traditional method and the flux meter method. The results, assuming a 1-inch ROI used during previous work conducted by LTE in the San Juan Basin, are as follows.

TABLE 9
ESTIMATED FLUX VARIANCE BASED ON MEASUREMENT METHOD

Seep Area ID	2007 – Traditional Method (MCFD)	2007 – Portable Flux Meter Method (MCFD)
SFTC Main Seep Area	20	2,082

The results show significant differences in estimated flux depending on the method used. These differences are largely due to the unknown ROI value in the traditional method. Other factors influencing the relationship between data collected using the two different methods are the distance between sample locations and the time between measurement collections. Previous gas seep work conducted by LTE on the Kf outcrop indicates that methane seep conditions can vary dramatically over short distances. This is due, in part, to gas flow through a heterogeneous medium and/or fracture systems. LTE collected measurements using the flux meter as close as possible to the subsurface gas measurements. However, the accuracy of the GPS was a limiting factor in this process. LTE's experience also indicates that methane seep conditions vary over time. This is due to change in barometric pressure, fluctuations in the water table, and seasonal changes. LTE conducted the gas seep survey using the flux meter and the gas seep survey using traditional techniques during the same time of year (Fall 2007) to limit the influence of time on the data comparison.

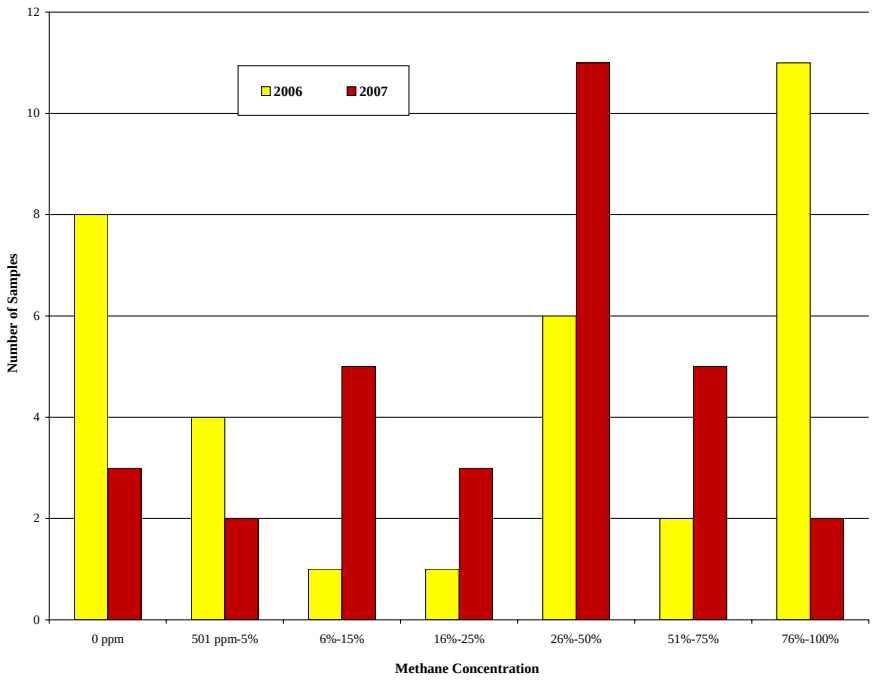
SECTION 6.0

HISTORICAL DATA COMPARISON

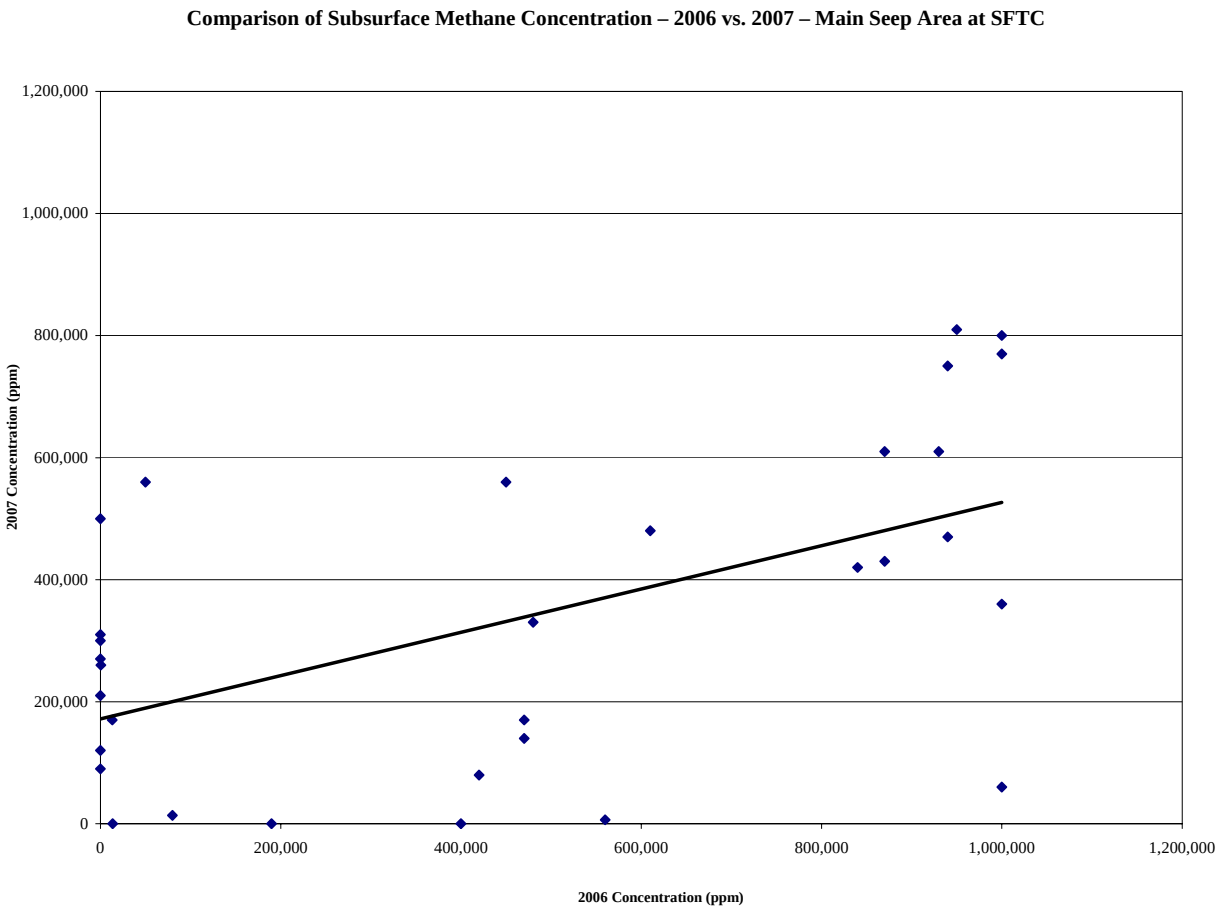
As previously mentioned, LTE collected 64 subsurface gas measurements using traditional techniques at the main seep area at SFTC during 2007. The data were compared to data collected at the same locations using traditional techniques during 2006 to evaluate changes in methane seepage from 2006 to 2007. A total of 30 sample locations reported no methane during 2006 and 2007 and therefore, these points were not used in the comparison. Two paired sample points were not used due to the distance of the sample location in 2006 relative to the sample location in 2007. Therefore, a total of 32 subsurface gas measurements were compared to evaluate changes in methane seepage from 2006 to 2007.

Methane was detected at higher concentrations more often in 2006 than in 2007. A total of 21 sample locations indicated decreases in methane concentrations from 2006 to 2007 and 11 sample locations indicated increases in methane concentrations. In 2006, methane was detected at a concentration of 100% at four sample locations. In 2007, the maximum methane concentration detected was 81%. The average detectable methane concentrations in 2006 and 2007 were 58% and 37%, respectively. The following chart illustrates the distribution of methane concentrations from the 32 sample locations in 2006 and 2007.

Historical Frequency of Subsurface Methane Concentration – 32 Sample Points at Main Seep Area at SFTC



LTE plotted the concentrations at individual sample locations in 2006 versus the concentrations at the same sample locations in 2007. Data indicate that decreases in methane concentration from 2006 to 2007 were slightly more frequent than increases. The following chart illustrates this relationship.



Although methane concentrations appear to have decreased slightly from 2006 to 2007, the aerial extent of methane seepage at the main seep area at SFTC was slightly greater during 2007 than 2006. Figure 14 shows the aerial extent of methane seepage observed during the 2006 and 2007 monitoring events.

When comparing data collected using traditional techniques from different years, it is useful to evaluate the change in the quantity of methane flow from an area in addition to changes in concentration and aerial extent. However, total gas flow measurements were not collected during the 2006 monitoring event. Total gas flow measurements were collected during 2007 in order to estimate a total flux over the main seep area using traditional techniques. Because total gas flow measurements were not collected during 2006, it is difficult to determine a change in seep conditions from 2006 to 2007. By estimating total methane flux using the flux meter method during future monitoring events, changes in methane seep conditions can be evaluated more accurately.

SECTION 7.0

NATURAL SPRING SURVEY RESULTS

Nine natural springs have been previously identified on the Kf outcrop in La Plata County north of the SUIT line. Five of the springs were located in the vicinity of SFTC, two springs were located in the Edgemont Ranch mapping area, one spring was located in the area west of Florida River, and one spring was located on the BP Highlands property, west of Pine River. All nine natural springs were physically accessible in 2007. However, due to access restrictions, only five of the natural springs were visited. One of the five springs visited was dry at the time that the 2007 survey was conducted. Locations of the natural springs are noted on Figures 15 through 17.

A total of four natural springs were sampled during the 2007 natural spring survey. One water sample was collected at the Darwin Rather property in the vicinity of the SFTC valley, two samples were collected at the Rancho Durango property near the Edgemont Ranch mapping area, and one sample was collected at the BP Highlands property west of Pine River. Analytical results indicate that the dissolved methane concentration in each of the water samples collected during 2007 was below the laboratory method detection limit of 0.02 mg/L.

Three natural springs have been sampled in 2005, 2006, and 2007. When comparing the dissolved methane concentrations in the three natural springs, analytical results indicate that the dissolved methane concentrations are relatively consistent from year to year. None of the samples collected during any of the annual surveys contained dissolved methane concentrations that exceed the 2007 laboratory detection limit (0.02 mg/L). Therefore, no apparent trend is observed at this time. Data collection for these sampling sites must continue for several more years in order to determine trends in dissolved methane concentration data.

When comparing water flow rates for the three natural springs that were sampled in both 2006 and 2007, results show that flow rates decreased or remained consistent. A decreased flow rate was expected because the 2006 survey was conducted during spring run-off conditions (May) and the 2007 survey was conducted in the fall (October). The first sign of water flow associated with the Darwin Rather Spring #1 in 2007 was observed topographically downgradient of the first water flow observed in 2006, though water flow measurements were consistent between the two years.

Based on natural spring data collected between 2005 and 2007, it appears that the risk of dissolved methane entering a drinking water well or piping system, or creating a hazardous situation in a confined space is low at this time. Field measurements for temperature, pH, conductivity, ORP, TDS, and flow as well as the reported methane concentration from the springs identified on the Kf outcrop in La Plata County north of the SUIT line are presented on the table on the following page.

SECTION 8.0

LIMITATIONS

Readings collected with the GPS unit can be located within one-meter radius of accuracy. But the type of terrain that exists along the Kf outcrop can occasionally present difficulties for the GPS unit. North-facing slopes and heavily wooded areas are difficult to obtain accurate positioning by the GPS, therefore, the GPS accuracy decreases. Satellite signals are frequently bounced among the trees or lost completely. When satellite signals are limited, positioning accuracy decreases. In some cases, the GPS unit can not obtain a signal. In these situations, LTE field personnel took subsurface methane measurements and noted the results on the maps.

Flux measurements can be limited by soil conditions. One of the most important factors in the collection of gas measurements using the flux meter is the integrity of the seal between the accumulation chamber and the ground surface. In areas with heterogeneous surfaces, the seal was sometimes difficult to achieve. This scenario was especially evident in areas with outcrops at the ground surface.

During subsurface gas measurement collection, advancement of boreholes in consolidated materials along the outcrop was limited. LTE used the slide hammer to probe to a maximum depth of 36 inches bgs. In some cases, probing depths of 24 inches bgs to 36 inches bgs were laborious to achieve. If refusal occurred, measurements were taken at the depth bored. All probe holes were advanced to a depth ranging from 12 inches to 36 inches bgs depending on the type of surface cover present.

The data collected using the various field meters were limited by the operating range, resolution, and accuracy of the instruments

The natural spring survey was limited by the amount of water at each spring. When dry springs were encountered, LTE recorded the location of the spring and noted the absence of water.

Finally, LTE was restricted by property owners from accessing several areas within the project area. These owners are noted on the maps presented in this report.

SECTION 9.0

CONCLUSIONS AND RECOMMENDATIONS

9.1 METHANE SEEP MAPPING

The 2007 methane seep mapping was performed during the period from September 6, 2007 through September 25, 2007. This was the first time a portable flux meter has been used to conduct methane seep mapping. Results indicate that methane continues to seep along the Kf outcrop in La Plata County north of the SUIT line. The highest methane flux values were recorded at the main seep area at SFTC.

It is reasonable to assume that carbon dioxide flow exists within all portions of the project area, including areas where methane seepage does not exist. However, data indicate that carbon dioxide flux values are higher in areas of methane seepage. Measureable hydrogen sulfide flux values within the project area were very low. Hydrogen sulfide was detected in the subsurface soil at SFTC using traditional techniques. However, hydrogen sulfide was not detected in the breathing zone at any time.

9.2 FLUX ESTIMATE

Based on LTE's calculations, the total methane flux from the Kf outcrop north of the SUIT line is 7,125 MCFD. The primary seep areas mapped by LTE in 2007 account for 6,120 MCFD of the total 7,125 MCFD methane over the project area. LTE estimates that methane flux over areas not mapped by LTE due to access or other restrictions is 1,005 MCFD. Methane flux at the main seep area at SFTC (2,082 MCFD) accounts for approximately 34% of the total methane flux within the mapped project area. Methane flux at SFTC Central and West (2,068 MCFD), not including the main seep area at SFTC, also accounts for approximately 34% of total methane flux within the mapped project area. However, the areal extent of the main seep area at SFTC is only 12% the size of SFTC Central and West. Methane flux at Pine River and Carbon Junction West account for approximately 11% and 8% of total methane flux. The remaining areas combined account for 13% of the total methane flux within the areas mapped by LTE in 2007.

LTE estimated a total carbon dioxide flux from the mapping areas of 1,297 MCFD. The highest carbon dioxide flux within the mapping area was observed at Pine River and SFTC Central and West. Carbon dioxide flux at Pine River (311 MCFD) and SFTC Central and West (296 MCFD) account for approximately 29% and 28% of total carbon dioxide flux over the mapped project area, respectively. Carbon dioxide flux at Carbon Junction West accounts for approximately 12% of total carbon dioxide flux within the areas mapped by LTE in 2007.

The accuracy of the total flux estimation within the project area is influenced by the ability of the grid spacing system to represent the actual flux on a detailed level relative to the subsurface fracture system, coal quality, and stratigraphy within the Kf. The accuracy of the field meters also influences the flux estimation.

For comparison purposes, LTE's estimation of methane flux from the seep areas (measured using the flux meter technique) was performed using a statistical method of flux estimation preferred

by the manufacturer of the flux meter. Results indicate that total flux values estimated using the Statistical method are slightly higher than total flux values estimated using the Kriging method. However, the results for each seep area are within the same order of magnitude and are considered comparable.

9.3 GAS SEEP SURVEY TECHNIQUE COMPARISON

LTE believes that the flux meter method of conducting methane seep mapping is a more appropriate method than the traditional method. Some of the benefits of the flux meter over the traditional method include:

- A reduction in the number of field meters required during mapping activities;
- Adaptability to difficult ground surface conditions;
- Eliminates the unknown capture zone variable by using an accumulation chamber of a known size;
- Minimal disruption of natural conditions (i.e. no vacuum applied, no disturbance of soil); and
- Ability to obtain more accurate flux measurements of low flux rates.

LTE attempted to correlate data collected using traditional techniques to data collected using the flux meter. Based on evaluation of data, there does not appear to be a strong correlation between the two techniques; however, both methods are effective at detecting the presence or absence of methane gas seeps.

9.4 HISTORICAL DATA COMPARISON

LTE used a flux meter to conduct methane seep mapping during 2007. Because the methodology used in 2007 is different than the methodology used during previous years, the historical data comparison was limited. However, LTE conducted methane seep mapping at the main seep area at SFTC using traditional techniques in 2007 to evaluate changes in methane seep conditions from 2006 to 2007.

At SFTC, data collected using traditional techniques indicate that methane concentrations were slightly higher in 2006 than 2007 and decreases in methane concentration from 2006 to 2007 were observed more often than increases. However, the aerial extent of methane seepage in 2007 was slightly greater than the aerial extent of methane seepage in 2006.

LTE believes that flux estimation is the best way to quantify methane seep conditions and observe changes in methane seepage over time and space. By estimating total methane flux using the flux meter method during future monitoring events, changes in methane seep conditions can be evaluated more accurately and estimation of methane lost can be quantified.

9.5 NATURAL SPRING SURVEY

A total of four natural springs were sampled by LTE during the 2007 natural spring survey. The dissolved methane concentration in each of the water samples collected during 2007 was below the laboratory method detection limit of 0.02 milligrams per liter (mg/L). The dissolved methane concentrations observed during the 2006 natural spring survey were very low. Therefore, no trend in dissolved methane concentration is apparent at this time.

When comparing flow rates for the three natural springs that were sampled in both 2006 and 2007, results show that flow rates decreased or remained consistent from 2006 to 2007. A decreased flow rate was expected because the 2006 survey was conducted during spring run-off conditions (May) while the 2007 survey was conducted in the fall (October).

Based on natural spring data collected between 2005 and 2007, it appears that the risk of dissolved methane entering a drinking water well or piping system, or creating a hazardous situation in a confined space is low at this time.

9.6 RECOMMENDATIONS

Based on the results of the 2007 Kf outcrop monitoring event, LTE recommends the following:

- Conduct methane seep mapping and flux estimation using the portable flux meter in June 2008. Using GPS, LTE will return to the sample locations visited during the 2007 field activities. Additionally, LTE will extend the grid mapping area to include new areas along the Kf outcrop in La Plata County;

- Conduct the planned IR aerial survey (Spring 2008), suspect area identification (Summer 2008), and field verification event (Fall 2008); and

- Conduct an updated natural spring survey during Spring 2008 and Fall 2008 to assess any changes in the number of springs, the flow rates, and/or the chemistry of natural springs on the Kf outcrop in La Plata County north of the SUIT line.

Based on the results of the 2007 Kf outcrop monitoring event, the COGCC recommends the following:

- Conduct methane seep mapping and flux estimation using the portable flux meter in the upland area between Basin Creek and Carbon Junction and the upland area between Carbon Junction and Florida River. The addition of these areas to the monitoring program will help in understanding methane seep conditions prior to the drilling of new production wells down-dip of the Kf outcrop;

- Conduct soil gas surveys using traditional techniques at the Baird #1-25 (API #05-067-06568), Federal #34-1/2-34-1 (API #05-067-07514), and Pole Barn Monitor Well #1 (API #05-067-07969) abandoned well sites to determine whether methane seepage exists within the vicinity of the sites;

- Evaluate carbon dioxide flux measurements collected in areas where methane seepage does not exist in order to determine a background level of carbon dioxide at the ground surface. This background level will help in understanding the carbon dioxide flux values estimated along the Kf outcrop in La Plata County; and

- Conduct a natural spring survey in Spring 2008 and Fall 2008 to evaluate seasonal changes in natural spring conditions. The Fall 2008 natural spring survey will be conducted in conjunction with the 2008 field verification activities.

SECTION 10.0

REFERENCES

Armstrong, M. and Champigny, N. “A Study on Kriging Small Blocks”. CIM Bulletin, Vol 82, No 923. 1988.

Cressie, Noel A.C. “Statistics for Spatial Distribution”. John Wiley and Sons, New Jersey. 1993.

Crow EL and Shimizu K Eds,. “Lognormal Distributions: Theory and Application”, Dekker, New York. 1988.

Gilbert, Richard O. “Statistical Methods for Environmental Pollution Monitoring”. Van Nostrand Reinhold, New York. 1987.

Sichel, H.S. “The estimation of means and associated confidence limits for small samples from lognormal populations”. Symposium on Mathematical Statistics and Computer Applications in Ore Evaluation, 106-122. S. Afr. Inst. Min. Metall,Johannesburg. 1966

Sinclair, A.J. “A Fundamental Approach to Threshold Estimation in Exploration Geochemistry: Probability Plots Revisited.” In: A.W. Rose and P.M. Taufen (Editors), Geochemical Exploration 1989. J. Geochem. Explor., 41: 1-22.

Surfer 8 – Contouring and 3D Surface Mapping for Scientists and Engineers – User’s Guide. Golden: Golden Software, Inc., 1993.

West Systems, “Portable Diffuse Flux Meter, Carbon Dioxide, Methane, & Hydrogen Sulfide, Release 7.00 Handbook”. July 2007.

FIGURES

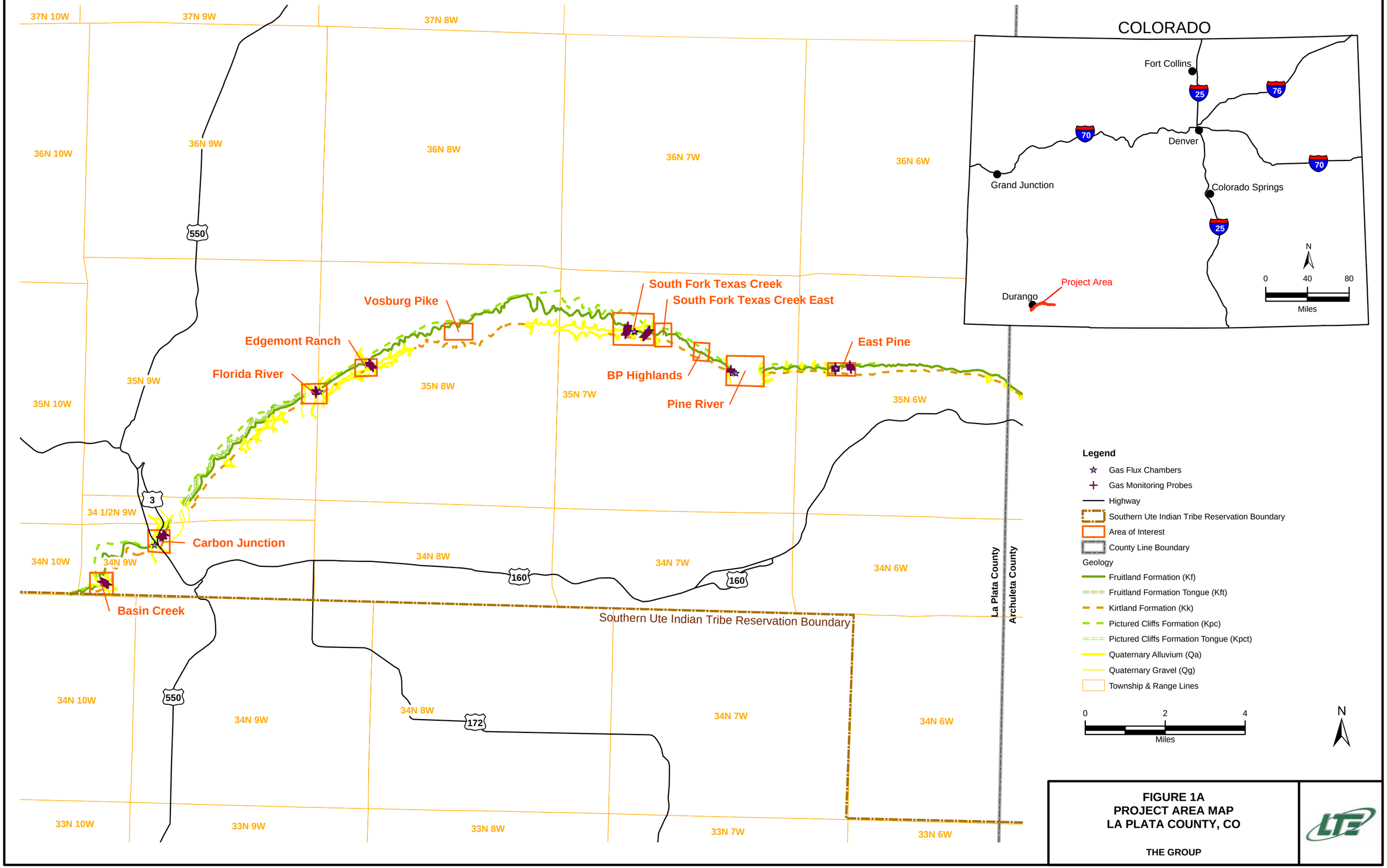


FIGURE 1A
PROJECT AREA MAP
LA PLATA COUNTY, CO

THE GROUP

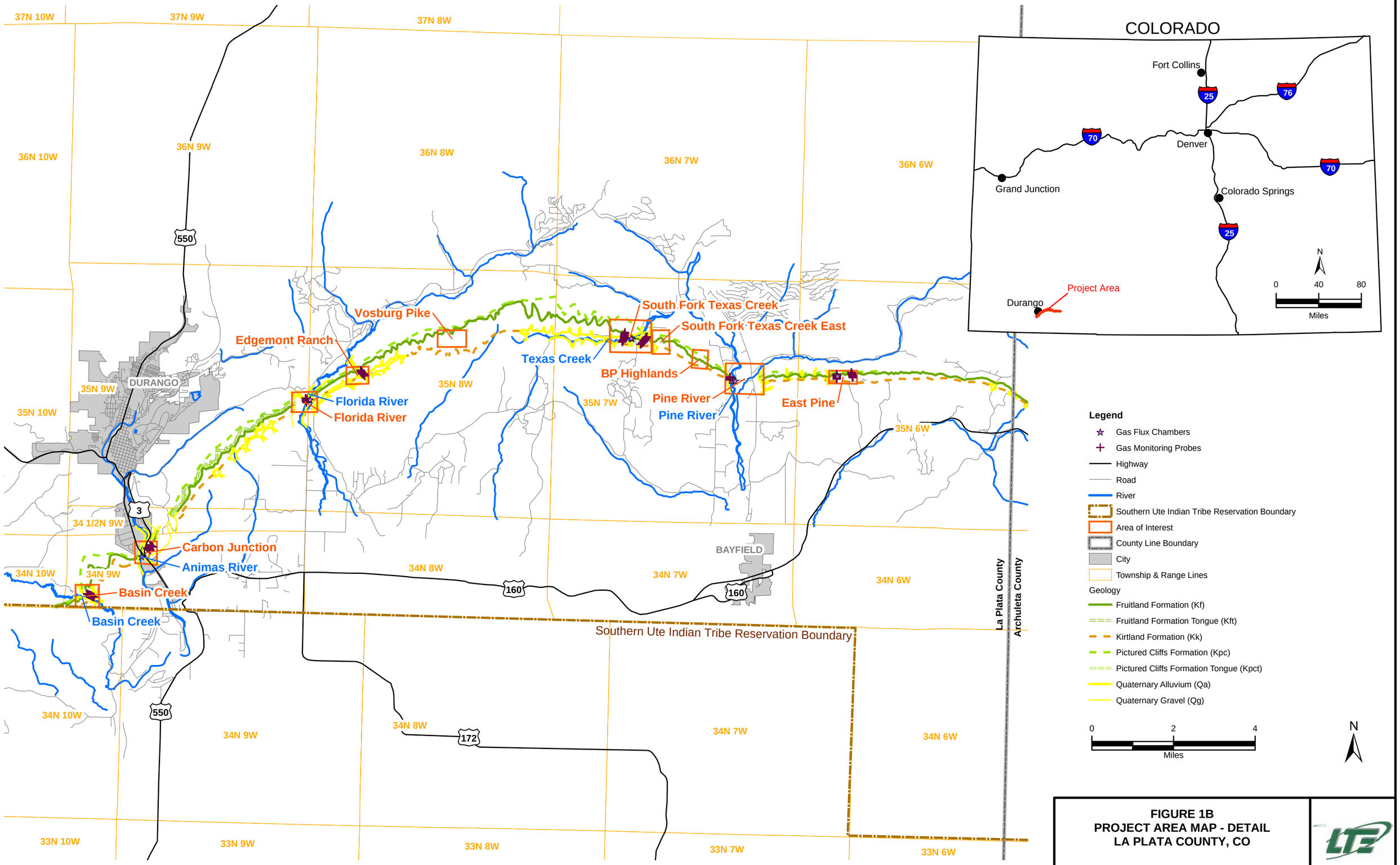


FIGURE 1B
PROJECT AREA MAP - DETAIL
LA PLATA COUNTY, CO

THE GROUP

LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers

Methane Flux Location (mol/m ^{2} • 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^2 • day - moles per square meter per day

Parcel Boundary & Owner (white)

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)

BC-1 Text Reference

0 200 400

Feet

N

FIGURE 2
METHANE FLUX MEASUREMENT MAP
2007 DETAILED SEEP MAPPING
BASIN CREEK

THE GROUP

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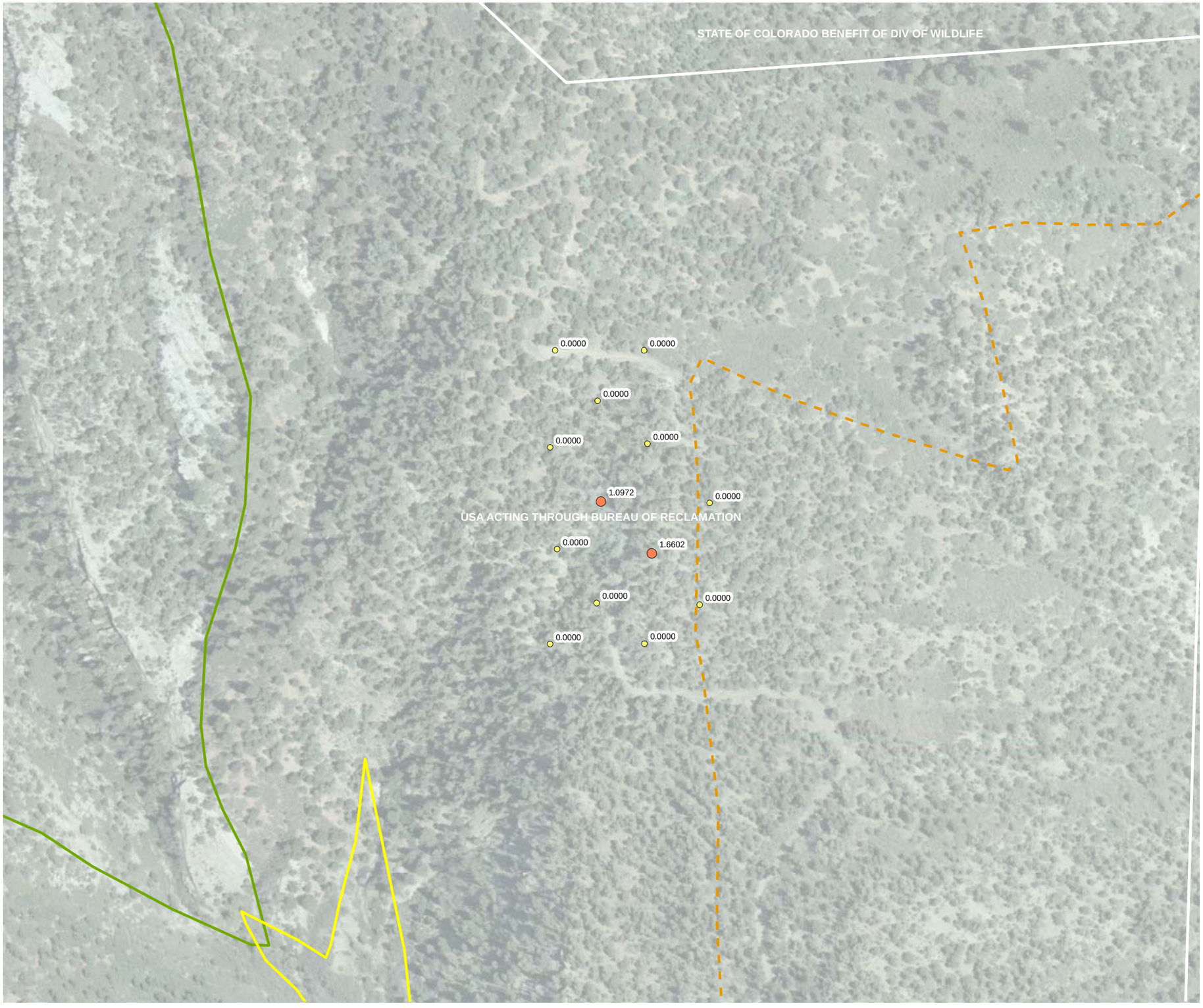

LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers

Methane Flux Location (mol/m ^{2} • day)

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- Quaternary Gravel (Qg)

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FIGURE 3
METHANE FLUX MEASUREMENT MAP
2007 DETAILED SEEP MAPPING
BASIN CREEK NORTH

THE GROUP

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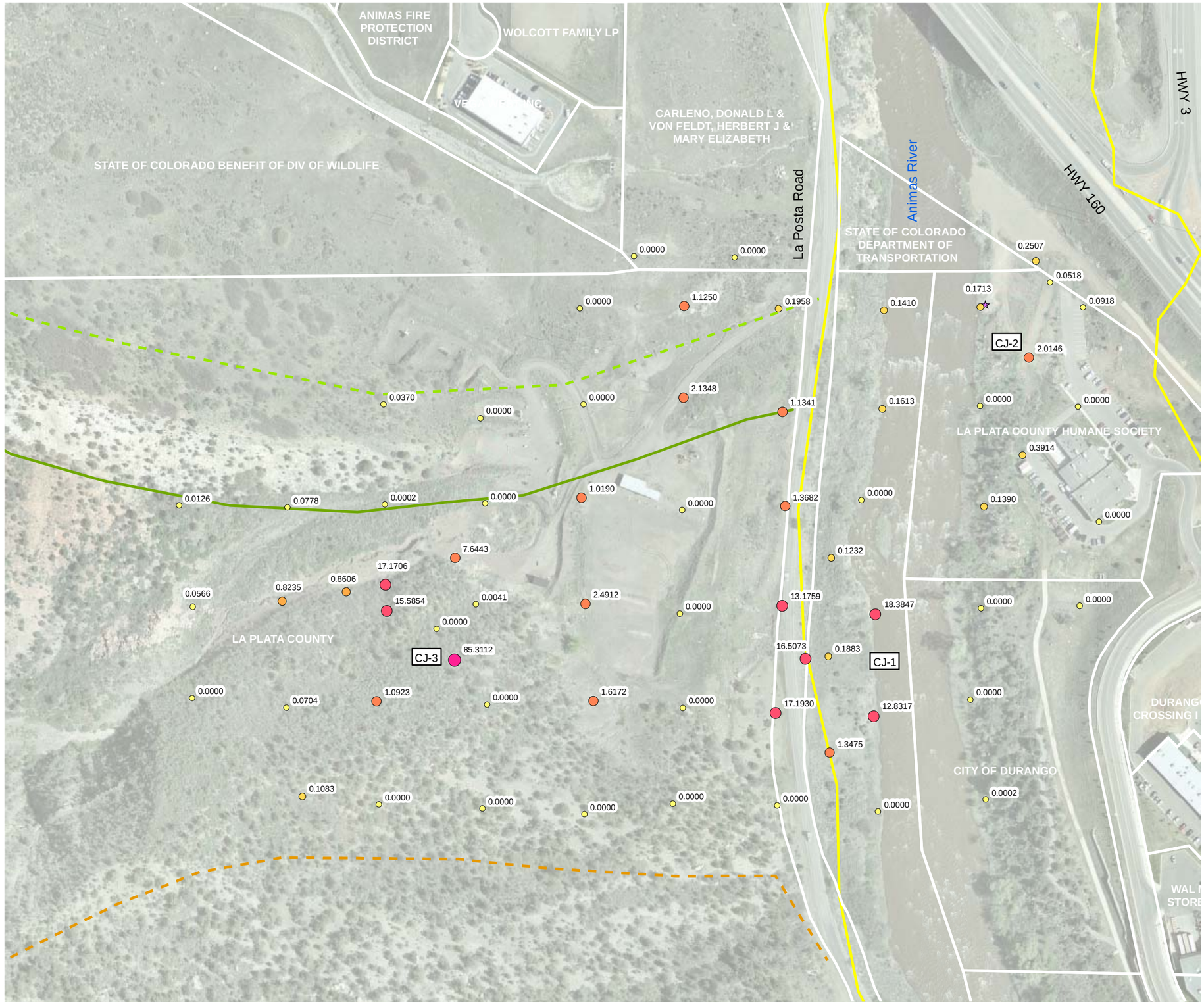

LEGEND

- Gas Monitoring Probes
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Methane Flux Location (mol/m ^{2} • day)

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- Pictured Cliffs Formation Tongue (Kpct)
- Quaternary Alluvium (Qa)
- Quaternary Gravel (Qg)

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FIGURE 4
METHANE FLUX MEASUREMENT MAP
2007 DETAILED SEEP MAPPING
CARBON JUNCTION WEST

THE GROUP

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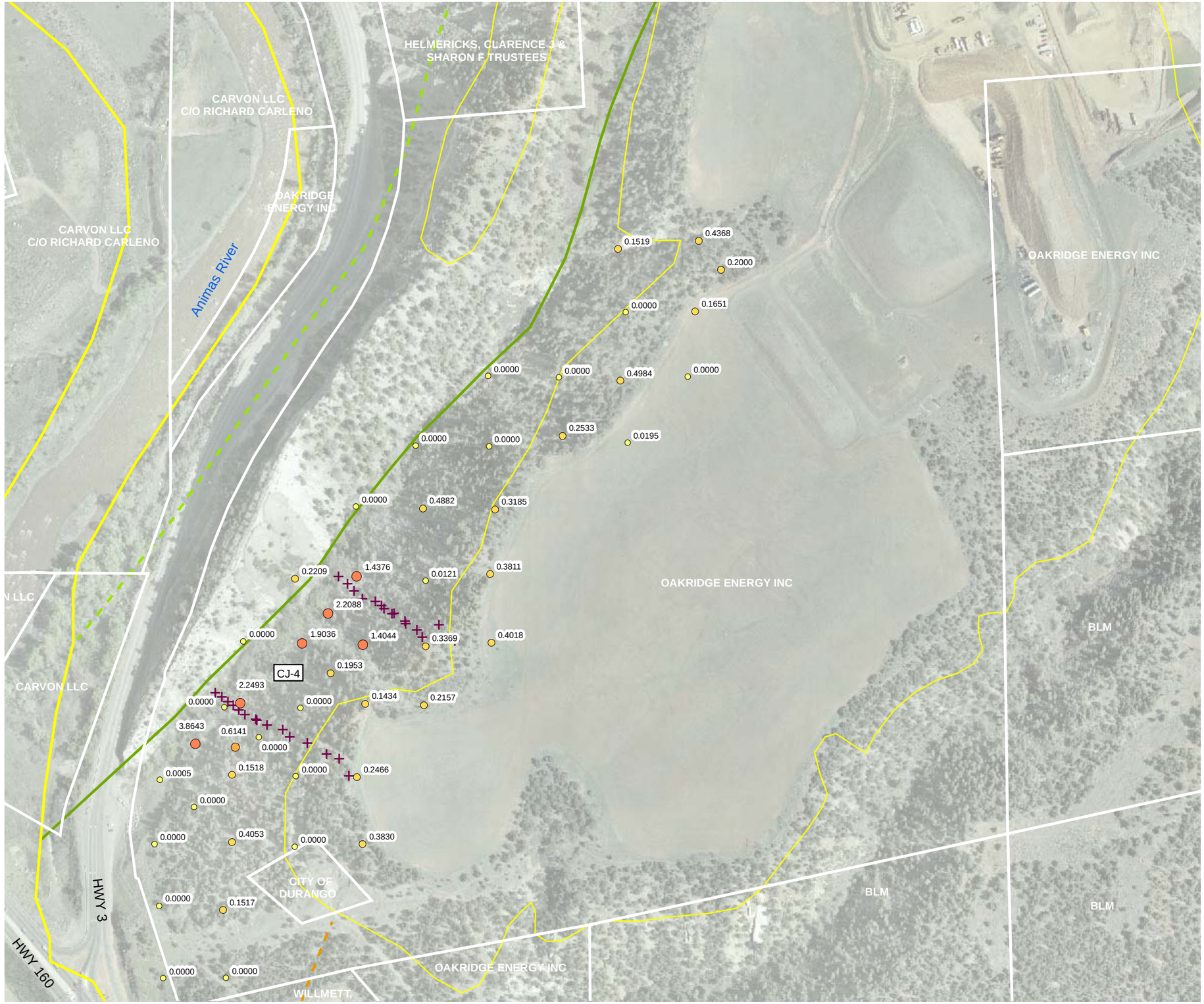

LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers

Methane Flux Location (mol/m ^{2} • day)

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mol/m^2 • day - moles per square meter per day

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- Quaternary Alluvium (Qa)
- Quaternary Gravel (Qg)

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FIGURE 5
METHANE FLUX MEASUREMENT MAP
2007 DETAILED SEEP MAPPING
CARBON JUNCTION EAST

THE GROUP

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LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers

Methane Flux Location (mol/m ^{2} • day)

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- 51.0000 - 100.0000
- 101.0000 - 1175.0000

mol/m^2 • day - moles per square meter per day

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- Quaternary Gravel (Qg)

FR-1 Text Reference

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FIGURE 6
METHANE FLUX MEASUREMENT MAP
2007 DETAILED SEEP MAPPING
FLORIDA RIVER WEST

THE GROUP

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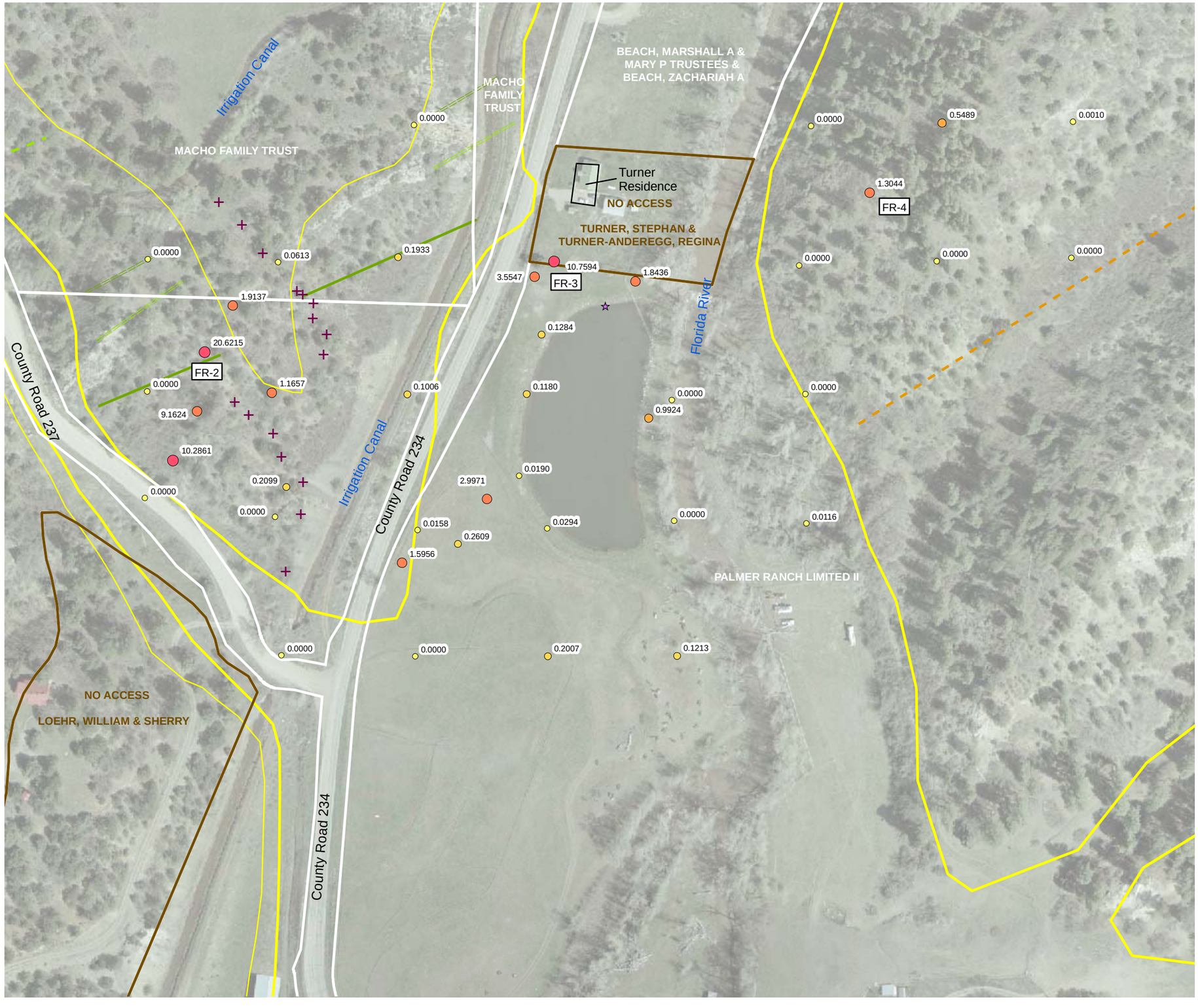

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- Gas Flux Chambers

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mol/m^2 • day - moles per square meter per day

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- Pictured Cliffs Formation Tongue (Kpct)
- Quaternary Alluvium (Qa)
- Quaternary Gravel (Qg)

FR-2 Text Reference

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Feet

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FIGURE 7
METHANE FLUX MEASUREMENT MAP
2007 DETAILED SEEP MAPPING
FLORIDA RIVER EAST

THE GROUP

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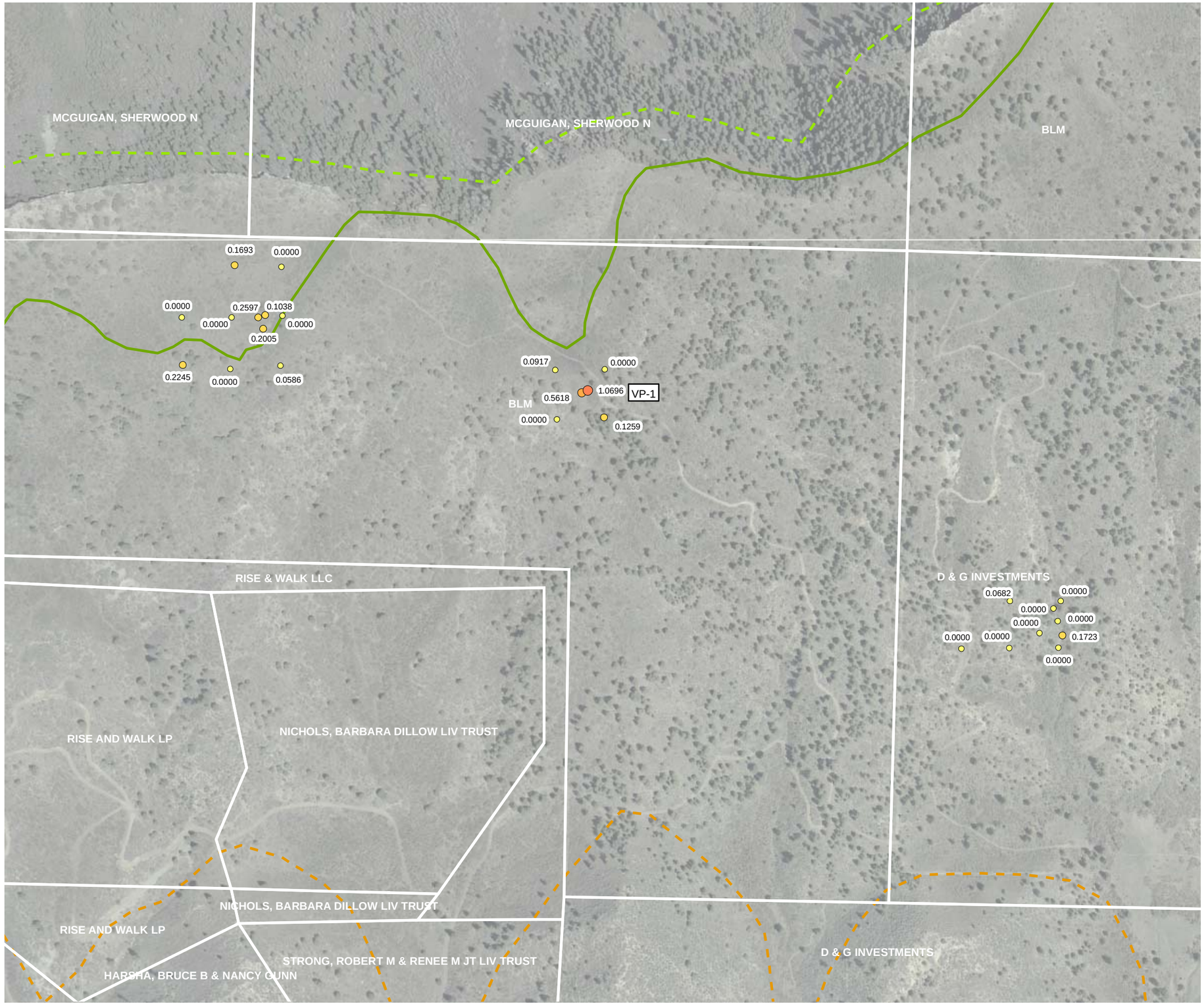


LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers

Methane Flux Location (mol/m ^{2} • 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^2 • day - moles per square meter per day

Parcel Boundary & Owner (white)

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)

VP-1 Text Reference

0 400 800

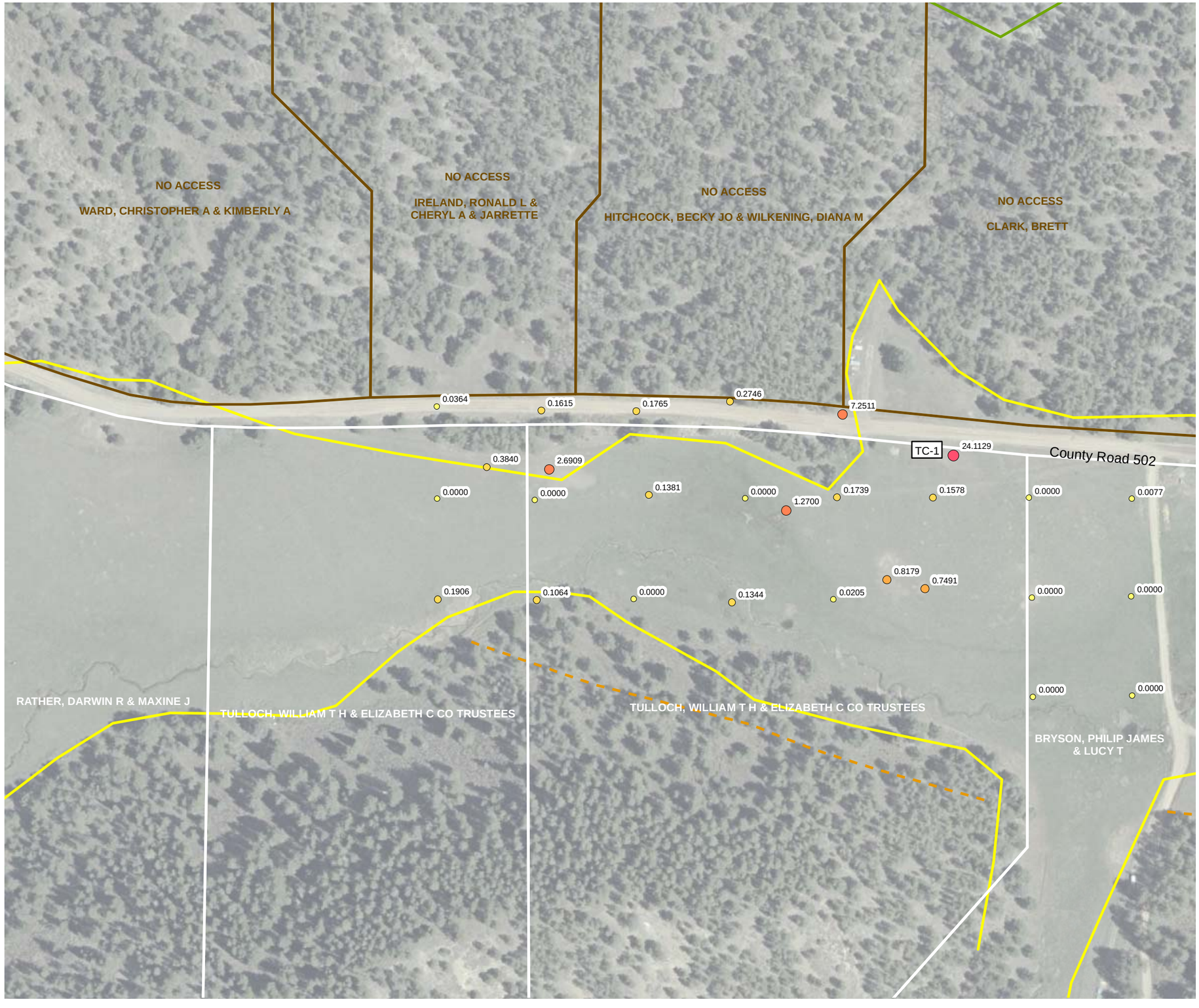
Feet

N

FIGURE 8
METHANE FLUX MEASUREMENT MAP
2007 DETAILED SEEP MAPPING
VOSBURG PIKE

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 02_detail.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers

Methane Flux Location (mol/m ^{2} • 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^2 • day - moles per square meter per day

Parcel Boundary & Owner (white)

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)

TC-1 Text Reference

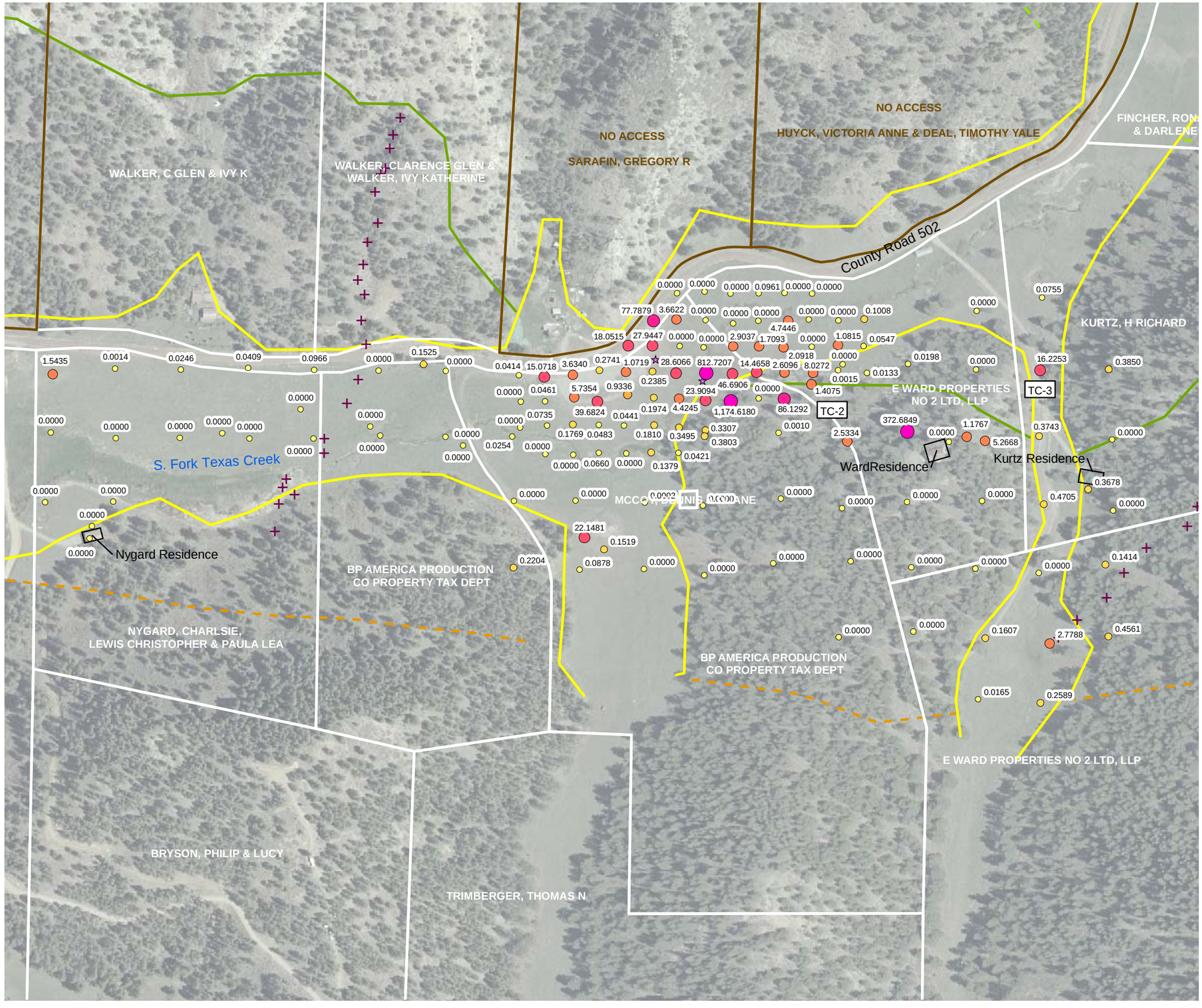
0 200 400
Feet

N

FIGURE 9
METHANE FLUX MEASUREMENT MAP
2007 DETAILED SEEP MAPPING
SOUTH FORK TEXAS CREEK WEST

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 02_detail.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers

Methane Flux Location (mol/m ^{2} • 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^2 • day - moles per square meter per day

Parcel Boundary & Owner (white)

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)

TC-2 Text Reference

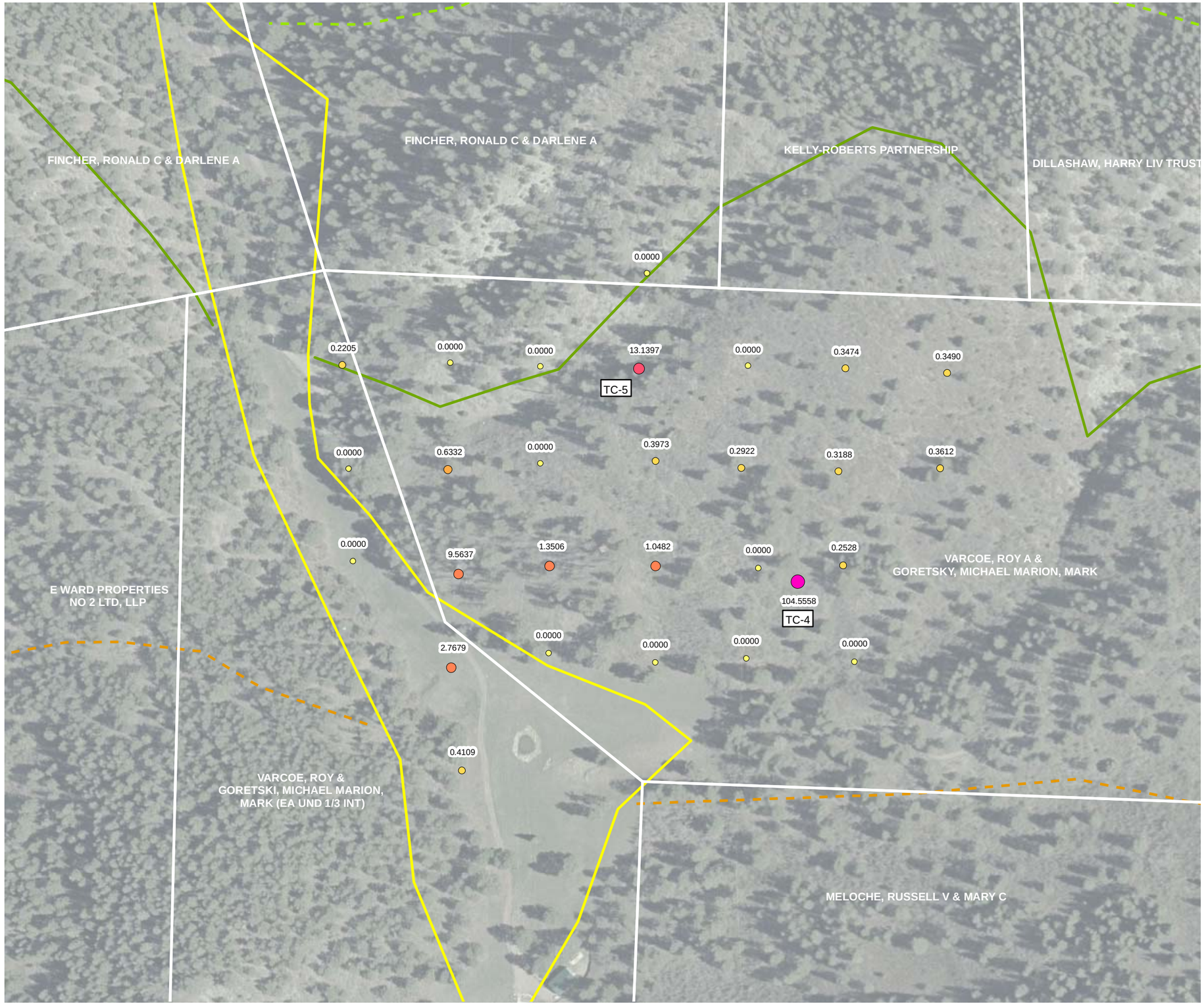
0 300 600
Feet

N

FIGURE 10
METHANE FLUX MEASUREMENT MAP
2007 DETAILED SEEP MAPPING
SOUTH FORK TEXAS CREEK CENTRAL

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 02_detail.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers

Methane Flux Location (mol/m ^{2} • 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^2 • day - moles per square meter per day

Parcel Boundary & Owner (white)

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)

TC-4 Text Reference

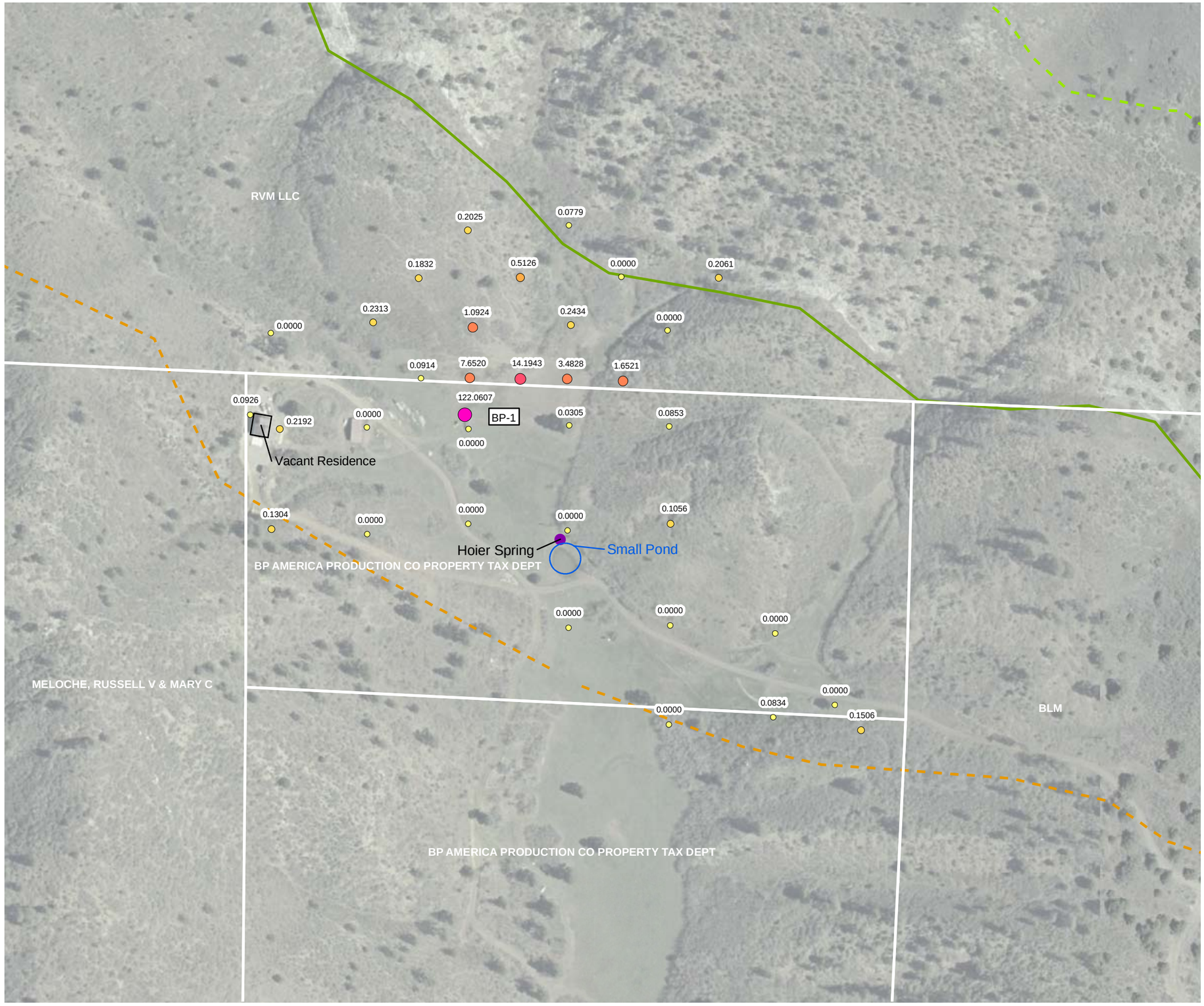
0 200 400
Feet

N

FIGURE 11
METHANE FLUX MEASUREMENT MAP
2007 DETAILED SEEP MAPPING
SOUTH FORK TEXAS CREEK EAST

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 02_detail.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers

Natural Spring Location

- Sampled
- Not Sampled
- Dry

Methane Flux Location (mol/m ^{2} • 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^2 • day - moles per square meter per day

Parcel Boundary & Owner (white)

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)

BP-1 Text Reference

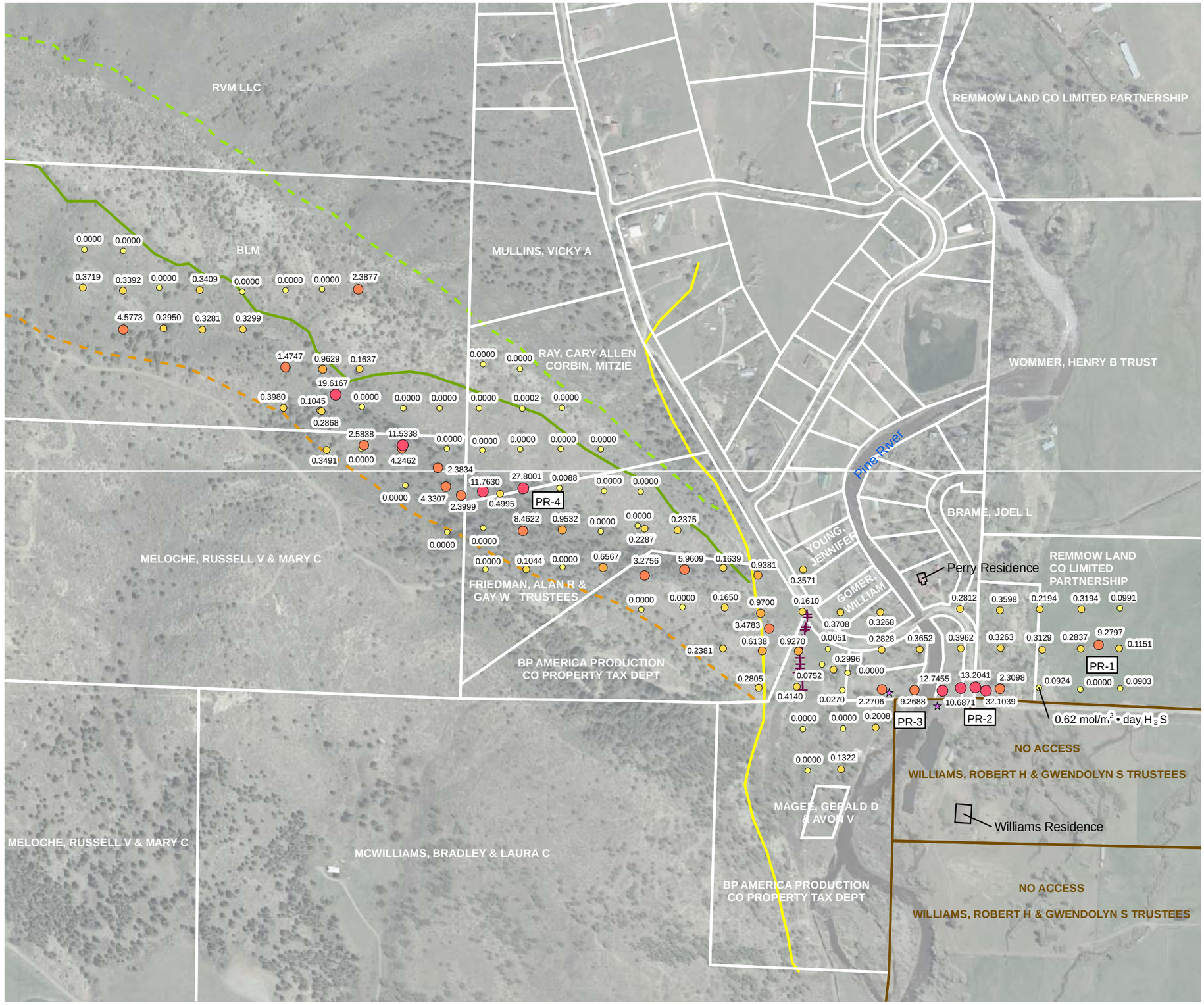
0 200 400
Feet

N

FIGURE 12
METHANE FLUX MEASUREMENT MAP
2007 DETAILED SEEP MAPPING
BP HIGHLANDS

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 02_detail.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers

Methane Flux Location (mol/m ^{2} • 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^2 • day - moles per square meter per day

Parcel Boundary & Owner (white)

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)

H_2S - Hydrogen Sulfide

PR-1 Text Reference

0 500 1,000

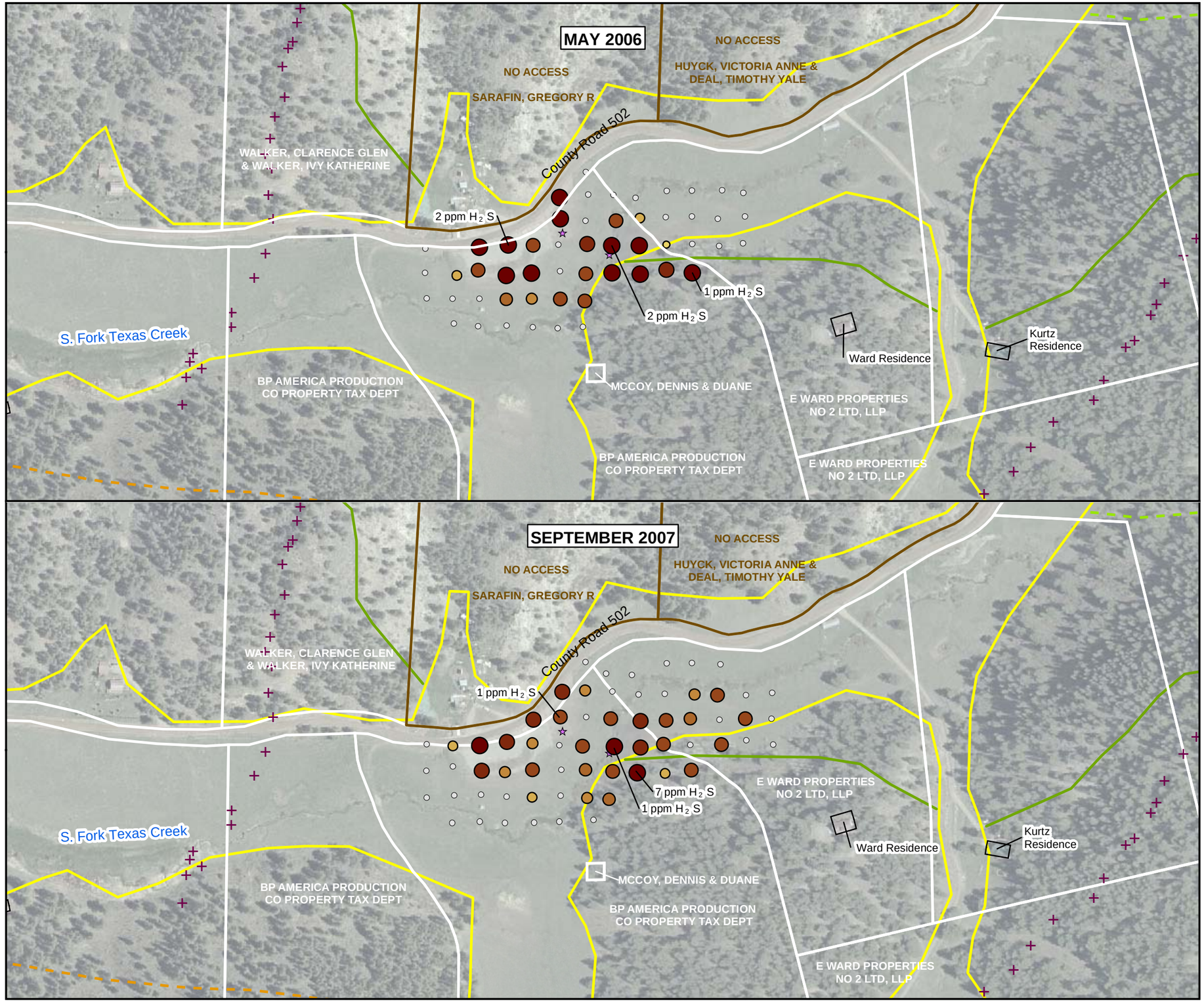
Feet

N

FIGURE 13
METHANE FLUX MEASUREMENT MAP
2007 DETAILED SEEP MAPPING
PINE RIVER

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 02_detail.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers

Subsurface Methane Measurements

- 0 ppm
- 1 ppm - 500 ppm
- 501 ppm - 5%
- 6% - 15%
- 16% - 25%
- 26% - 50%
- 51% - 75%
- 76% - 100%

Subsurface methane measurements collected from temporary soil probes advanced with slide hammer.

ppm - parts per million
H_2S - Hydrogen Sulfide

Parcel Boundary & Owner (white)

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)

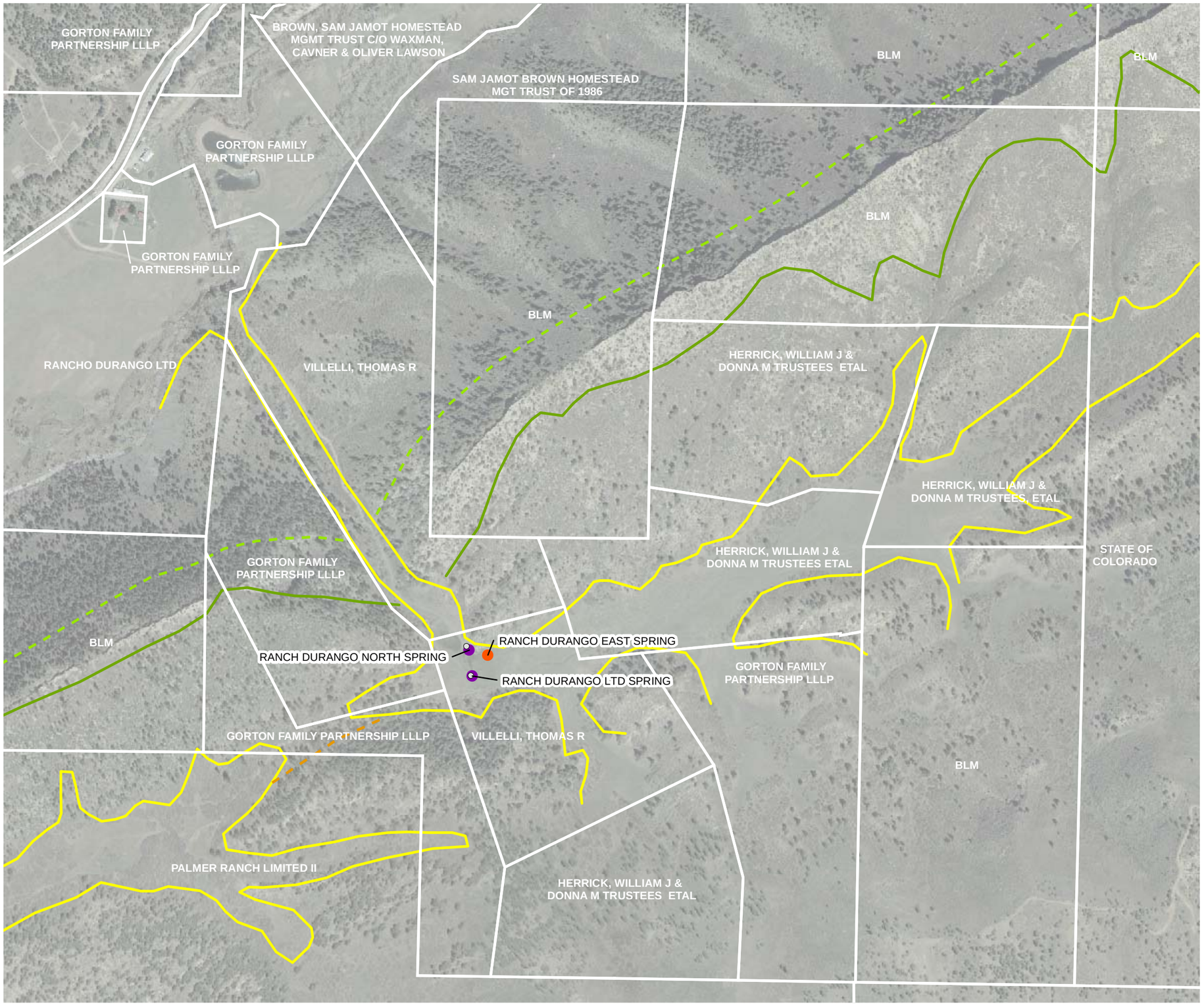
0 300 600
Feet

N

FIGURE 14
SUBSURFACE METHANE COMPARISON
2007 DETAILED SEEP MAPPING
SOUTH FORK TEXAS CREEK

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 14_TC_SUBGAS.mxd



LEGEND

Natural Spring Location

- Sampled
- Not Sampled
- Dry

Subsurface Methane Measurements

- 0 ppm
- 1 ppm - 500 ppm
- 501 ppm - 5%
- 6% - 15%
- 16% - 25%
- 26% - 50%
- 51% - 75%
- 76% - 100%

Subsurface methane measurements collected from temporary soil probes advanced with slide hammer.

ppm - parts per million

Parcel Boundary & Owner (white)

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)

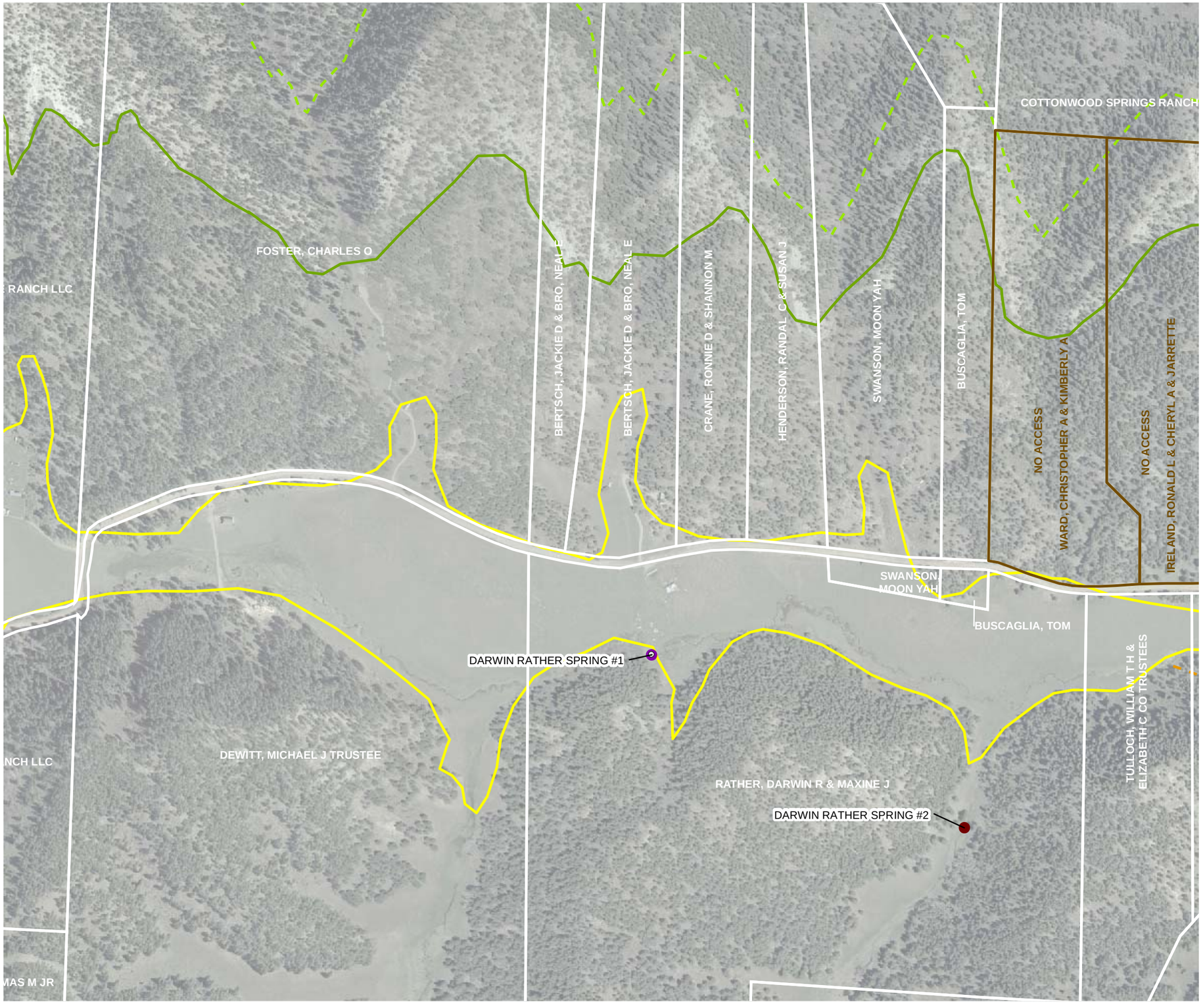
0 600 1,200

Feet

N

FIGURE 15
NATURAL SPRING SURVEY
2007 DETAILED SEEP MAPPING
EDGEMONT RANCH

THE GROUP



LEGEND

Natural Spring Location

- Sampled
- Not Sampled
- Dry

Subsurface Methane Measurements

- 0 ppm
- 1 ppm - 500 ppm
- 501 ppm - 5%
- 6% - 15%
- 16% - 25%
- 26% - 50%
- 51% - 75%
- 76% - 100%

Subsurface methane measurements collected from temporary soil probes advanced with slide hammer.

ppm - parts per million

Parcel Boundary & Owner (white)

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)

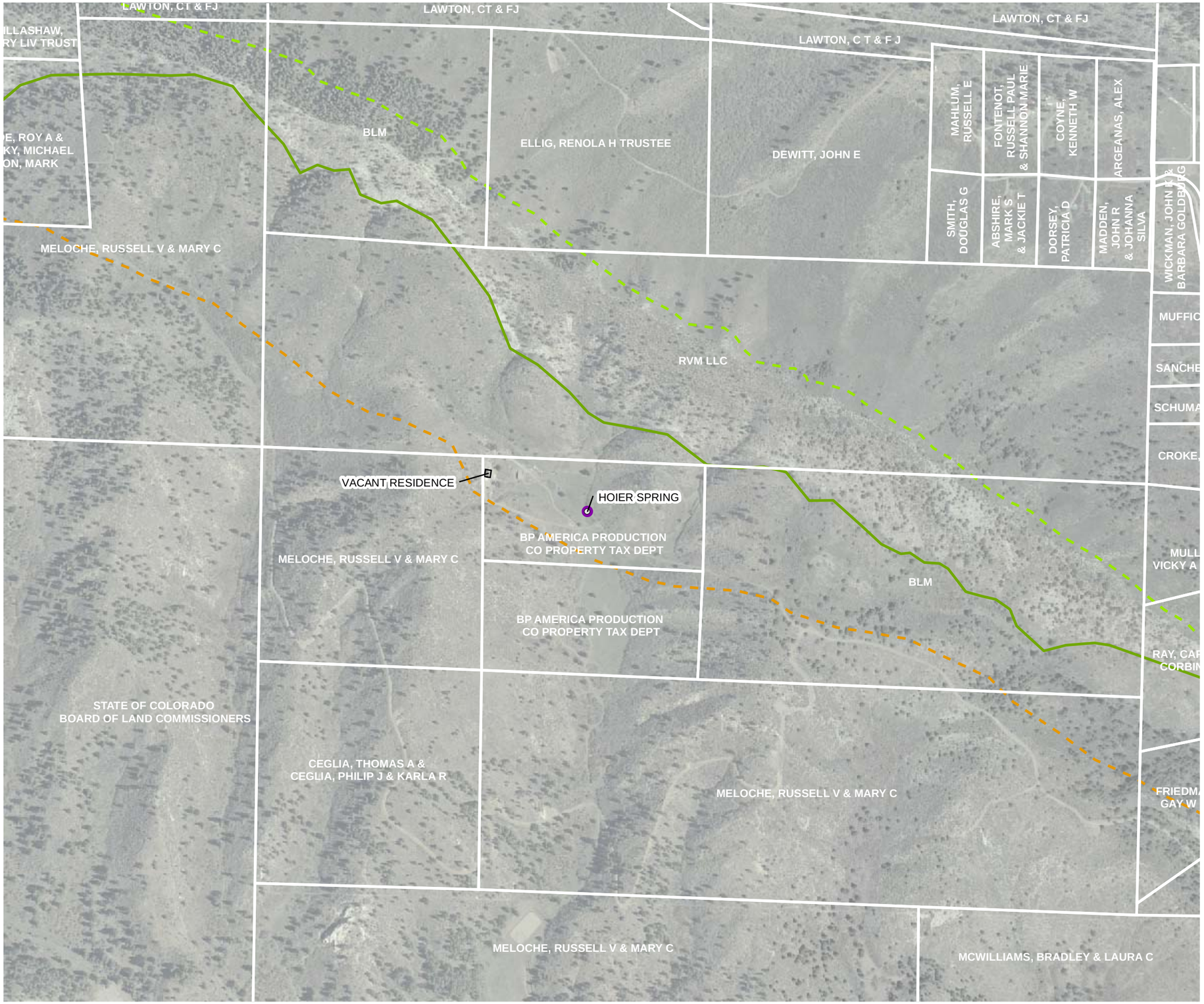
0 600 1,200

Feet

N

FIGURE 16
NATURAL SPRING SURVEY
2007 DETAILED SEEP MAPPING
SOUTH FORK TEXAS CREEK

THE GROUP



LEGEND

Natural Spring Location

- Sampled
- Not Sampled
- Dry

Subsurface Methane Measurements

- 0 ppm
- 1 ppm - 500 ppm
- 501 ppm - 5%
- 6% - 15%
- 16% - 25%
- 26% - 50%
- 51% - 75%
- 76% - 100%

Subsurface methane measurements collected from temporary soil probes advanced with slide hammer.

ppm - parts per million

Parcel Boundary & Owner (white)

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)

0 600 1,200

Feet

N

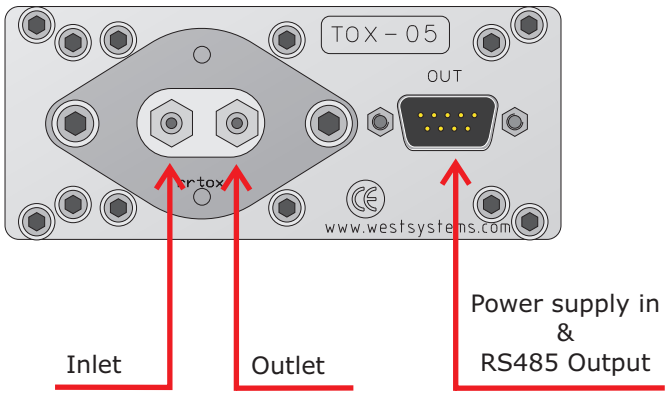
FIGURE 17
NATURAL SPRING SURVEY
2007 DETAILED SEEP MAPPING
BP HIGHLANDS

THE GROUP

APPENDIX A

EQUIPMENT SPECIFICATIONS

Hydrogen Sulfide Detector



Pin	Signal
1	Gnd
2	+VDC
3	Gnd
4	RS485-B
5	RS485-A
6	Gnd
7	+12V
8	Gnd
9	RS485-B

Legenda
Gnd: Ground reference for power supply and RS485
+VDC: 10-28 Volts Power supply input
RS485-A: Digital signal output A
RS485-B: Digital signal output B

Sensor specifications
Ambient conditions:
Air temperature -40°C to 65 °C
Air pressure 700 hPa to 1300 hPa
Air RH 5% - 95% non condensating.
Expected sensor life > 24 months.
Chemical cell order code: WEST H2S-BH
Detector order code: WEST TOX-05-H2S-BH
Factory calibration : 20 ppm
RMS Noise <= 0.02 ppm
Zero Offset <= 0.2 ppm
Max Overrange >= 200 ppm

The chemical cell reaction is:

$$H_2S + 2O_2 = H_2SO_4$$

the gas sample specific consuption is very low:

2.5×10^{-10} moles/Sec per ppm

Due to this consuption the H2S flux is methodically understimated by a -10% with the AccumulationChamber A and by a -5% when using the accumulation chamber B. Then we advise to use the accumulation chamber B except when the flux is very very low.

Appendix M

WS-HC detector

WS-HC Hydrocarbon Flux measurement:
The HydroCarbon detector is based on a double beam infrared spectrometer able to detect methane, hexane , propane and other molecules with HC linkages. The instrument comes calibrated for the methane. *The instrument requires a frequent **zero base-line** calibration that will be done using atmospheric air. The calibration requires 20 second*.

Detector specifications:

Accuracy 5%

Repeatibility 2%

Resolution 22 ppm (Methane equivalent)

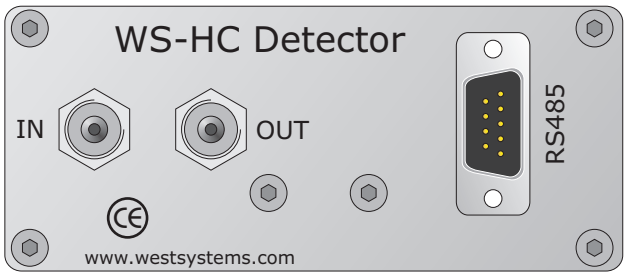
Full scale range is 50000 ppm of methane.

Detection limit 60 ppm.

Methane flux measurement range from 0.1 to 150 moles/m^2 per day.
The precision depends on the measured flux:

```
range 0.1  5      moles/ m^2 per day ±25%
      5 - 150     moles/ m^2 per day ±10%
```

The measurement of very low fluxes (< 0.1 moles/m^2/day) is possible but the error will increase due to the low detector sensitivity.



RS485 Connector	DB9 Male panel
Pin 1	Gnd
Pin 2	+Power supply
Pin 3	Gnd
Pin 4	RS485 B
Pin 5	RS485 A
Pin 6	Gnd
Pin 7	+Power supply
Pin 8	Gnd
Pin 9	RS485 B

The gas fittings can be used with rilsan 6x4 mm tubes or silicon 5x3.2 tubes. Please respect inlet and outlet ports.

LI-820 Specifications

CO_2 Specifications

Measurement Range: 0-1000 ppm, 0-2000 ppm with 14 cm bench; 0-5000 ppm, 0-20000 ppm with 5 cm bench

Accuracy: < 2.5% of reading with 14 cm bench; 4% of reading with 5 cm bench

Calibration Drift

[1]Zero Drift: < 0.15 ppm / °C

[2]Span Drift at 370 ppm: < 0.03% / °C

[3]Total Drift at 370 ppm: <0.4 ppm / °C

RMS Noise at 370 ppm with 1 sec Signal Filtering: < 1 ppm

[1] Zero drift is the change with temperature at 0 concentration
[2] Span drift is the change after re-zeroing following a temperature change
[3] Total drift is the change with temperature without re-zeroing or re-spanning

Measurement Principle: Non-Dispersive Infrared

Traceability: Traceable gases to WMO standards from 0-3000 ppm. Traceable gases to EPA protocol gases from 3000 to 20000 ppm

Pressure Compensation Range: 15 kPa-115 kPa

Maximum Gas Flow Rate: 1 liter/minute

Output Signals: Two Analog Voltage (0-2.5 V or 0-5 V) and Two Current (4-20 mA)
Digital: TTL (0-5 V) or Open Collector

DAC Resolution: 14-bits across user-specified range

Source Life: 18000 hours

Power Requirements: Input Voltage 12-30 VDC
1.2A @ 12V (14 W) maximum during warm-up with heaters on
0.3 A @ 12 V (3.6 W) average after warm-up with heaters on

Supply Operating Range: 12-30 VDC

Operating Temperature Range: -20 to 45 °C

Relative Humidity Range: 0 to 95% RH, Non-Condensing

Dimensions: 8.75" x 6" x 3" (22.23 x 15.25 x 7.62 cm)

Weight: 2.2 lbs (1 kg)

Gasport® Gas Tester

The Gasport Gas Tester is designed for gas utility workers to detect methane and certain toxic gases. It is a reliable, simple, versatile tool to help your service technicians get the job done quickly! With multiple ranges and sensing capabilities built into one rugged housing, the Gasport Tester simplifies your work by reducing the number of meters you have to carry on the job.

Applications

The Gasport Tester's poison-tolerant methane sensor provides three measurement ranges for your daily service needs:

- Open air, safety sampling
- Small, in-home leak detection
- Street/outdoor service line leak detection

Features and Benefits

- **Proven in field use–rugged and reliable**
  Less costly to maintain, less time in repair
- **Multiple functions in one instrument**
  No need to buy, carry & maintain multiple instruments
- **New, poison-tolerant combustible gas sensor**
  Reduces meter ownership costs
- **User-selectable, "silent" operation mode**
  Reduces customer disturbances and worries
- **Fast warm up time**
  Fastest warm up time in industry saves time
- **Can monitor up to four gases at a time**
  Fewer instruments to carry
- **Show all gas concentrations simultaneously**
  Eliminates guesswork on what reading is displayed
- **Autoranging methane sensor**
  Automatically switches between 0-5% and 5-100% methane ranges
- **Gas readings recorded for later retrieval**
  Can double check readings after job is done
- **Simple manual or automated calibration options**
  Reduces training time and helps ensure accuracy
- **Intrinsically safe**
  Meets safety standards for work in hazardous areas
- **Lifetime warranty on case and electronics**
  Reduced maintenance and lifetime costs

Specifications

Gas	Range	Resolution
Methane	0–5000 ppm	50 ppm
Methane	0–100% LEL or 0–5% CH_4	1 % LEL or 0.1% CH_4
Methane	5–100% CH_4	1% CH_4
Oxygen	0–25%	0.1%
Carbon Monoxide	0–1000 ppm	1 ppm
Hydrogen Sulfide	0–100 ppm	1 ppm

Battery types: NiCd and Alkaline
Case material: Impact resistant, stainless-steel-fiber-filled polycarbonate
Operating temperature: normal -10 to 40°C; extended -20 to 50°C
Operating humidity: Continuous: 15-95% RH, non-condensing
Intermittent duty: 5-95% RH, non condensing
Warm up time: Less than 20 seconds to initial readings
Datalog capacity: 12 hours
Input: 3 clearly marked, metal domed keys
Warranty: Case and Electronics: Lifetime
Sensors and consumable parts: 1 year

The answer for gas utilities' gas detection needs

Gasport® Gas Tester

Ordering Information

Battery Chargers

Part No.	Description
494716	Omega 120 VAC 50/60Hz
495965	Omega 220 VAC 50/60Hz
801759	Omega 110/220 VAC, Five Unit, 50/60Hz
800525	Omega 8 - 24VDC for vehicle use

Battery Packs

Part No.	Description
496990	Standard NiCd Rechargeable
800526	Alkaline, Type C
711041	Alkaline, with Thumbscrews
800527	Heavy Duty NiCd Rechargeable

Sensors

Part No.	Description
813693	Combustible Gas
480566	O2
812389	CO
812390	H2S

Protective Boots

Part No.	Description
804955	Black, for NiCd Battery Packs
802806	Orange, for NiCd Battery Packs
806751	Black, for Alkaline Battery Packs
806750	Orange, for Alkaline Battery Packs
806749	Black, for HD NiCd Battery Packs
806748	Orange, for HD NiCd Battery Packs
812833	Yellow Soft Carrying Case with Harness
711022	Black padded Vinyl Carrying Case with Harness

Sampling Equipment

Part No.	Description
800332	Probe - 1 ft., plastic
800333	Probe - 3 ft., plastic
803561	Probe - 3 ft., plastic (holes 2" from end) (bar hole probe)
803962	Probe - 3 ft., plastic (holes 2" from handle) (solid probe)
803848	Probe - Hot Gas Sampler
710465	Sampling Line - 5 ft., coiled
497333	Sampling Line - 10 ft.
497334	Sampling Line - 15 ft.
497335	Sampling Line - 25 ft.

Sampling Accessories

Part No.	Description
801582	Replacement Filter, Probe, pkg. of 10
801291	External Filter Holder
014318	Charcoal Filter
711039	Line Scrubber Filter Holder
711059	Line Scrubber Replacement Cartridges, Box of 12
808935	Dust Filter, Pump Module
802897	Water Trap (Teflon) Filter, Pump Module

Calibration Check Equipment

Part No.	Description
477149	Calibration Kit Model RP with 0.25 lpm Regulator
491041	Calibration Gas - methane, 2.5%
473180	Calibration Gas - 300 ppm CO
813718	Calibration Gas - methane, 2.5% oxygen, 15%60 ppm CO
813720	Calibration Gas - methane, 2.5% oxygen, 15%300 ppm CO 10 ppm H2S
710288	Gasmiser™ Demand Regulator 0 - 3.0 lpm

Accessories

Part No.	Description
804679	Data Docking Module Kit. Includes the Data Docking Module, MSA Link Software and Instruction Manual

Approvals

The Gasport Gas Tester has been designed to meet intrinsic safety testing requirements in certain hazardous atmospheres.

The Gasport Gas Tester is approved by MET (an OSHA Nationally Recognized Testing Laboratory [NRTL]) for use in Class I, Division I, Groups A, B, C, D; Class II, Division I, Groups E, F, G; and Class III Hazardous locations. Gaspor tGas Testers sold in Canada are approved by CSA for use in Class I, Division I, Groups A, B, C, and D locations.

Contact MSA at 1-800-MSA-2222 for more information or with questions regarding the status of approvals.

Gasport Gas Tester Kits

	LEL Display	O_2	CO	H_2S	Alarms Always	Alarms Optional	Leak Detect Page	Peak	Alkaline Battery	NiCd Battery	5ft Coiled Line	1ft Probe	Part No.
4-Gas, Selectable, NiCd	•	•	•	•		•	•	•		•	•	•	711489
4-Gas, Selectable, Alkaline	•	•	•	•		•	•	•	•		•	•	711490
3-Gas, Selectable, NiCd	•	•	•			•	•	•		•	•	•	711493
3-Gas, Selectable, Alkaline	•	•	•			•	•	•	•		•	•	711494
2-Gas, Selectable, NiCd	•		•			•	•	•		•	•	•	711495
2-Gas, Selectable, Alkaline	•		•			•	•	•	•		•	•	711496
4-Gas, Alarms On, NiCd	•	•	•	•	•		•	•		•	•	•	711491
4-Gas, Alarms On, Alkaline	•	•	•	•	•		•	•	•		•	•	711492

Assemble-to-Order (ATO) System: You Make the Choices

The ATO System makes it easy to "custom order" the Gasport Gas Tester, configured exactly the way you want it. You can choose from an extensive line of base instrument components and accessories. To obtain a copy of the "ATO System and Price Information for the Gasport Gas Tester," call toll-free 1-800-MSA-2222, and request Bulletin 0804-28. **To obtain a copy of the ATO via FAX, call MSA QuickLit Information Service at 1-800-672-9010. At the prompt, request QuickLit Document #2345 (ATO for Gasport Gas Tester).**

ID 08-04-27-MC / May 2000

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FAX (412) 967-3451

Offices and representatives worldwide
For further information:

GeoXT

The total GPS platform for all your GIS field requirements

The GeoXT™ handheld, from the GeoExplorer® series, is an essential tool for maintaining your GIS. It's all you need to collect location data, keep existing GIS information up to date, and even mobilize your GIS.

The unique GeoExplorer series combines a Trimble® GPS receiver with a rugged field-ready handheld computer running the Microsoft® Windows Mobile™ 2003 software for Pocket PCs. Plus there's an internal battery that easily lasts for a whole day of GPS operation. The result is tightly integrated, tough, and incredibly powerful.

High-accuracy integrated GPS

The GeoXT is optimized to provide the reliable, high-accuracy location data you need. Advanced features like EVEREST™ multipath rejection technology let you work under canopy, in urban canyons, or anywhere where accuracy is crucial.

Need submeter accuracy in real-time? Use corrections from a satellite-based augmentation system (SBAS) like WAAS[1] or EGNOS[2]. Want to get that extra edge in precision? Collect data with Trimble's TerraSync™ or GPScorrect™ software, and then postprocess back in the office.

Because the GPS receiver and antenna are built into the handheld computer, it's never been easier to use GPS in your application. The system is more than just cable-free: it's a totally integrated solution.

Optimized productivity

Take advantage of the power and flexibility of Windows Mobile software for Pocket PCs by choosing from the most comprehensive range of field software available—whether off-the-shelf or purpose-built. Whatever your needs, Windows Mobile lets you choose a software solution to match your workflow.

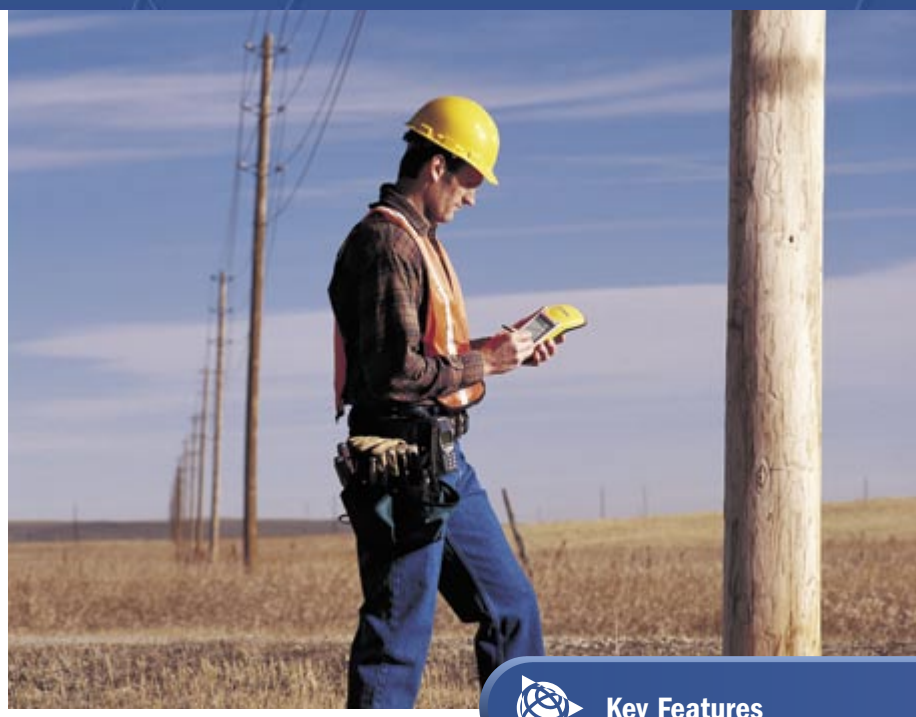
Windows Mobile includes familiar Microsoft productivity tools, including Pocket Word, Pocket Excel, and Pocket Outlook®. Pocket Outlook lets you synchronize e-mails, contacts, appointments, and data with your office computer, so whether you're in the office or in the field, you're always up to date.

Go wireless with integrated Bluetooth®* for connection to other Bluetooth-enabled devices, including cell phones and PCs. You also have the option to use the USB support module to connect to a desktop computer, or use the optional serial clip for cabled connections in the field.

Receive a free copy of Microsoft Streets & Trips** 2004 software with your GeoXT handheld, and take advantage of comprehensive map and travel information for easy navigation and route planning.

All the memory you need

There's plenty of storage space in the GeoXT for all your GIS data. The fast processor and large memory mean even big graphics files load quickly—and they're crisp and crystal-clear on the advanced TFT outdoor color screen.



Key Features

- High-performance submeter GPS with integrated WAAS/EGNOS
- Windows Mobile 2003 software for Pocket PCs, allowing maximum flexibility in software choice
- Rugged handheld with all-day battery
- Advanced color TFT display with backlight
- Integrated Bluetooth for wireless connectivity

From data collection to data maintenance, to mobile GIS and beyond ... the GeoXT is the handheld of choice.

* *Bluetooth type approvals are country specific. GeoExplorer series handhelds are approved for use with Bluetooth in the USA. For a complete list of other countries with Bluetooth approval please refer to: www.trimble.com/geo_bluetooth.html.*

** *Microsoft Streets & Trips 2004 software available in US/Canada; Microsoft AutoRoute® 2004 in Europe.*

Trimble®

GeoXT

The total GPS platform for all your GIS field requirements

Standard features

System

- Microsoft Windows Mobile 2003 software for Pocket PCs
- 206 MHz Intel StrongARM processor
- 512 MB non-volatile Flash data storage
- Outdoor color display
- Ergonomic cable-free handheld
- Rugged and water-resistant design
- All-day internally rechargeable battery
- Bluetooth wireless

GPS

- Submeter accuracy
- Integrated WAAS[1]/EGNOS[2]
- RTCM real-time correction support
- NMEA and TSIP protocol support
- EVEREST multipath rejection technology

Software

- GPS Controller for control of integrated GPS and in-field mission planning
- GPS Connector for connecting integrated GPS to external ports
- File Explorer, Internet Explorer, Pocket Outlook (Inbox, Calendar, Contacts, Tasks, Notes), Sprite Pocket Backup, Transcriber, Pocket Word, Pocket Excel, Pictures, Windows® Media Player, Bluetooth File Transfer, Calculator, ActiveSync®
- Microsoft Streets & Trips/AutoRoute 2004 software

Accessories

- Support module with power supply and USB data cable
- Getting Started Guide
- Companion CD includes Outlook 2002 and ActiveSync 3.7.1
- Hand strap
- Pouch
- Stylus

Optional Features

Software

- TerraSync
- GPScorrect for ESRI® ArcPad®
- GPS Pathfinder® Tools Software Development Kit (SDK)
- GPS Pathfinder Office
- Trimble GPS Analyst extension for ArcGIS®

Accessories

- Serial clip for field data and power input
- Vehicle power adaptor[3]
- Portable power kit[3]
- Hurricane antenna
- External patch antenna
- Pole-mountable ground plane
- Baseball cap with antenna sleeve
- Beacon-on-a-Belt (BoB™) differential correction receiver[3]
- Hard carry case
- Null modem cable[3]
- Backpack kit

Specifications subject to change without notice.

Technical specifications

Physical

Size . . . . . 21.5 cm × 9.9 cm × 7.7 cm (8.5 in × 3.9 in × 3.0 in)
Weight. . . . . 0.72 kg (1.59 lb) with battery
Processor . . . . . 206 MHz Intel StrongARM SA-1110
Memory . . . . . 64 MB RAM and 512 MB internal Flash disk
Power
  Low (no GPS) . . . . . 0.6 Watts
  Normal (with GPS) . . . . . 1.4 Watts
  High (with GPS, backlight, and Bluetooth) . . . . . 2.5 Watts
Battery . . . . . Internal lithium-ion, rapidly rechargeable in unit, 21 Watt-hours

Environmental

Temperature
  Operating . . . . . –10 °C to +50 °C (14 °F to 122 °F)
  Storage . . . . . –20 °C to +70 °C (–4 °F to 158 °F)
Humidity . . . . . 99% non-condensing
Casing . . . . . Wind-driven rain and dust-resistant per IP 54 standard
Slip-resistant grip, shock- and vibration-resistant

Input/output

Communications . . . . . Bluetooth for wireless connectivity
USB via support module, serial via optional DE9 serial clip adaptor
Bluetooth
  Certification. . . . . Bluetooth type approvals are country specific.
GeoExplorer series handhelds are approved for use with Bluetooth in the USA.
For a complete list of other countries with Bluetooth approval
please refer to www.trimble.com/geoxt_ts.asp.
  Profiles
    Both client and host support . . . . . Serial Port, File Transfer (using OBEX)
    Client support only . . . . . Dial-Up Networking, Lan Access
    Host support only. . . . . Basic Imaging, Object Push
Display . . . . . Advanced outdoor TFT, 240 × 320 pixel, 65,536 colors, with backlight
Audio . . . . . Microphone and half duplex speaker, record and playback utilities
Interface . . . . . Anti-glare coated touch screen, Soft Input Panel (SIP) virtual keyboard
2 hardware control keys plus 4 programmable permanent touch buttons
Handwriting recognition software, Audio system events, warnings, and notifications

GPS

Channels. 12
Integrated real-time. . . . . WAAS[1] or EGNOS[2]
Update rate. . . . . 1 Hz
Time to first fix . . . . . 30 sec (typical)
Protocols. . . . . NMEA (GGA, VTG, GLL, GSA, ZDA, GSV, RMC),
TSIP (Trimble Standard Interface Protocol)

Accuracy (RMS)[4] after differential correction

Postprocessed[5] . . . . . Submeter
Carrier postprocessed[6]
  With 10 minutes tracking satellites . . . . . 30 cm
Real-time . . . . . Submeter

1 *WAAS (Wide Area Augmentation System). Available in North America only. For more information, see http://gps.faa.gov/programs/index.htm.*
2 *EGNOS (European Geostationary Navigation Overlay System). Available in Europe only. For more information, see http://www.esa.int/export/esaSA/navigation.html.*
3 *Serial clip also required.*
4 *Horizontal accuracy. Requires data to be collected with minimum of 4 satellites, maximum PDOP of 6, minimum SNR of 4, minimum elevation of 15 degrees, and reasonable multipath conditions. Ionospheric conditions, multipath signals or obstruction of the sky by buildings or heavy tree canopy may degrade precision by interfering with signal reception. Accuracy varies with proximity to base station by +1 ppm for postprocessing and real-time, and by +5 ppm for carrier postprocessing.*
5 *Postprocessing with GPS Pathfinder Office software or GPS Analyst extension for ArcGIS.*
6 *Requires collection of carrier data. (Only available with the GPS Pathfinder Office software).*

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Flowmeter Basics

Agilent offers several models of gas flowmeters, as well as a liquid flowmeter.

The flowmeters can be categorized by two ways they measure flows:

volumetrically

by measuring mass

Volumetric flowmeters - measure movement of a known volume of gas in a certain time period.

Mass flowmeters - measures movement of mass or number of molecules (converted to volume) of a gas versus time.

Both types offer several advantages...

Volumetric Flowmeters

Independent of gas being measured

Allow measurement of mixed gases, like those commonly used in GC

Provide data similar to mass flowmeters at standard temperature and pressure (STP), but may deviate at temperature and pressure extremes

Best for general purpose chromatography work commonly done at STP

ADM 1000, 220-1170

Mass Flowmeters

Very accurate for specific gases

Unaffected by fluctuations in temperature and pressure (due to built-in temperature and pressure sensors)

Calibrated to measure specific gases

Measure the mass (thus number, converted to volume) of gas molecules moving per time

Mass flow rates are volume flow rates that are corrected to STP

Best for when temperature or pressure fluctuations are expected

Veri-Flow 500, HVF-500

Which Flowmeter Should You Choose?

Application	Optiflow 420	Optiflow 570	Optiflow 650	Optiflow 1000	ADM 1000	ADM 2000	Veri-Flow 500	Flow Tracker 1000	Flow Tracker 2000
Unknown gas quality (might contain significant moisture or corrosives)	X	X	X						
Good quality, non-corrosive GC gases					X	X	X	X	X
Might be used with some non-typical, good quality GC gases					X	X			
To be used mainly with typical GC fuel and carrier gases					X	X	X	X	X
Temperature and/or pressure fluctuations are expected							X	X	X
Need gas flow measurement and gross leak detection									X
General purpose work with all GCs gases		X			X	X			
Need pressure and temperature data of gases								X	X
Need gas flowmeter plumbed in-line							X	X	X
Need compatibility with EPC	X	X	X				X	X	X
Need RS232 output from gas flowmeter						X	X	X	X
Need RS232 input to and output from gas flowmeter							X		
Need to measure negative (vacuum) sources			X						
High gas flow application (>1000mL/min)			X						
Very low gas flow application (< 20mL/min)	X							X	X
All typical HPLC mobile phases				X					

Calibration Periods

All Agilent Flowmeters are supplied with at least 1 year of certified calibration on the unit, except Flow Trackers (which have 2 year calibrations).

Flowmeters should be recalibrated on or before their recalibration date listed on their calibration certificate.

FDA or company-specific calibration periods may be necessary to follow, so flowmeter users should check with their own regulations.

For repair and recalibration center contact information, see the Agilent web site:

http://www.chem.agilent.com/scripts/generic.asp?lPage=3356&indcol=N&prodcol=Y

Features

Ultrameter II™ Models	4PII Conductivity TDS, Resistivity Temperature	6PII Conductivity, TDS Resistivity, pH ORP, Temperature
Autoranging	•	•
Adjustable Temp. Compensation	•	•
Adjustable Cond/TDS ratio	•	•
Memory (100 readings)	•	•
Date & Time Stamp	•	•
pH Calibration Prompts		•
Low battery indicator	•	•
Auto-off	•	•

Specifications

Display	4 Digit Liquid Crystal Display
Dimensions LxWxH	196 x 68 x 64 mm/ 7.7 x 2.7 x 2.5 inches
Weight	352 g/12.4 oz.
Case/conductivity cell material	VALOX®
Cell capacities	pH/ORP: 1.2 ml/0.04 oz. Cond/TDS/Res: 5 ml/0.2 oz.
Power	9V alkaline battery
Battery life	>100 hours (5000 readings)
Operating/storage temperature	0 – 55°C/32 – 132°F
Protection ratings	IP67/NEMA 6 Waterproof to 1 meter/3 feet

®™GENERAL ELECTRIC

Parameters

	Conductivity	TDS	Resistivity	pH	ORP	Temperature
Ranges	0–9999 µS/cm 10–200 mS/cm in 5 autoranges	0–9999 ppm 10–200 ppt in 5 autoranges	10 KΩ–30 MΩ	0–14 pH	±999 mV	0–71°C 32–160°F
Resolution	0.01(<100 µS) 0.1(<1000 µS) 1.0(<10 mS) 0.01(<100 mS) 0.1(<200 mS)	0.01(<100 ppm) 0.1(<1000 ppm) 1.0(<10 ppt) 0.01(<100 ppt) 0.1(<200 ppt)	0.01(<100 KΩ) 0.1(<1000 KΩ) 0.1(>1 MΩ)	±0.01 pH	±1 mV	0.1°C/F
Accuracy	±1% of reading	±1% of reading	±1% of reading	±0.01 pH	±1 mV	±0.1°C
Auto Temperature Compensation	0–71°C 32–160°F	0–71°C 32–160°F	0–71°C 32–160°F	0–71°C 32–160°F	—	—
Adjustable Temperature Compensation to 25°C	0–9.99%/°C	0–9.99%/°C	0–9.99%/°C	—	—	—
Conductivity/TDS Ratios Preprogrammed	KCl, 442®, NaCl	KCl, 442®, NaCl	—	—	—	—
Adjustable Conductivity/TDS Ratio Factor	0.20–7.99	0.20–7.99	—	—	—	—

®442 Natural Water Standard ™ Myron L Company

Accessories

uDock™ Accessory Package includes uDock™, USB cable and Macintosh/PC application software for downloading data. MODEL: U2CIP

Certificates confirming the NIST traceability of an Ultrameter II are available (must be specified when placing instrument order). MODEL: MC

Conductivity Standard Solutions are necessary to maintain accuracy and for periodic calibration of conductivity/TDS parameters. All Standard Solutions are NIST traceable for your complete confidence. RECOMMENDED VALUES: KCl-7000 (7 mS), 442-3000 (TDS), or NaCl-14.0 (mS) available in 2 oz/59 ml, 1 qt/1 L, and 1 gal/3.8 L.

pH Buffers are necessary to maintain accuracy and for periodic calibration of pH and ORP parameters. Calibration with pH 7 Buffer is especially important. All pH 4, 7, and 10 Buffers are NIST traceable and are available in 2 oz/59 ml, 1 qt/1 L, and 1 gal/3.8 L.

pH Sensor Storage Solution Available in 2 oz/59 ml, 1 qt/1 L, and 1 gal/3.8 L.
MODEL: SS20Z, SSQ and SSG

Certificate of NIST traceability for pH Buffer or Conductivity Standard Solutions are available (must be specified when placing solution order). MODEL: SC

Hard protective case (small)
MODEL: UPP

Hard protective case (kit) with three buffers (pH 4, 7, and 10), one pH/ORP storage solution, and two standard solutions, (KCl-7000 and 442-3000). All bottles are 2 oz/59 ml.
MODEL: PKU

Soft protective case is constructed of padded Nylon and features a belt clip for hands-free mobility.
MODEL: UCC (Blue)
UCCDT (Desert Tan)

Replacement pH/ORP sensor user-replaceable, features a unique/porous liquid-junction.
MODEL: RPR

Built on Trust

Founded in 1967, Myron L Company is one of the world's leading manufacturers of water quality instruments. Because of our policy of continuous product improvement, changes in design and the specifications in this brochure are possible. You have our assurance any changes will be guided by our product philosophy: Accuracy, Reliability, Simplicity.

Limited Warranty

All Myron L Ultrameter II's have a Two (2) Year Limited Warranty. The pH/ORP sensors have a Six (6) Month Limited Warranty. Warranty is limited to the repair or replacement of the Ultrameter II only, at our discretion. Myron L Company assumes no other responsibility or liability.

www.myronl.com

MYRON L COMPANY
Water Quality Instrumentation
Accuracy • Reliability • Simplicity

APPENDIX B

FLUX DATA

FLUX DATA - PROJECT AREA

SitePt	SEEPAREA	Easting	Northing	Date	CH4flux	H2Sflux	CO2flux	Chamber	PRESSURE (HPa):	TEMP DegC	TIME:	CH4slope	H2Sslope	CO2slope	AcK
BC1	Basin Creek	2303959	1209865	9/20/2007	0.1784909	0.002014	0.3831638	A	800.74	24.3403	20-09-2007 20:03:46	0.709	0.008	1.522	0.2517502
BC10	Basin Creek	2303448	1209573	9/20/2007	0.2167786	0.006312	0.3262603	A	799.12	34.7418	20-09-2007 20:52:04	0.893	0.026	1.344	0.2427532
BC11	Basin Creek	2303336	1209466	9/20/2007	2.41E-04	0.000483	9.66E-02	A	796.86	35.5908	20-09-2007 20:56:39	0.001	0.002	0.4	0.241401
BC12	Basin Creek	2303251	1209560	9/20/2007	9.767297	0.005342	0.766572	A	803.47	36.337	20-09-2007 21:00:59	40.225	0.022	3.157	0.2428166
BC13	Basin Creek	2303138	1209484	9/20/2007	1.131505	0.004813	0.5015007	A	798.75	37.2975	20-09-2007 21:08:05	4.702	0.02	2.084	0.2406433
BC14	Basin Creek	2303255	1209361	9/20/2007	0	0.011941	0.25697	A	794.84	38.1368	20-09-2007 21:14:14	0	0.05	1.076	0.2388197
BC15	Basin Creek	2303041	1209362	9/20/2007	0	0.002146	7.56E-02	A	794.94	38.6979	20-09-2007 21:19:00	-0.032	0.009	0.317	0.23842
BC16	Basin Creek	2303031	1209548	9/20/2007	2.207651	0.006171	1.261888	A	793.36	39.5064	20-09-2007 21:26:03	9.302	0.026	5.317	0.2373308
BC17	Basin Creek	2303952	1210074	9/20/2007	0	0.001425	7.86E-02	A	798.34	41.188	20-09-2007 21:54:57	0	0.006	0.331	0.2375429
BC18	Basin Creek	2303748	1210092	9/20/2007	0.1349316	0.007430	0.1358902	A	805.76	41.3	20-09-2007 21:59:52	0.563	0.031	0.567	0.2396653
BC19	Basin Creek	2303560	1210070	9/20/2007	0	0.002139	0.1083818	A	798.88	41.2199	20-09-2007 22:04:29	0	0.009	0.456	0.2376795
BC2	Basin Creek	2303750	1209867	9/20/2007	0.8171983	0.001755	0.9896623	A	800.74	25.6171	20-09-2007 20:07:34	3.26	0.007	3.948	0.2506743
BC20	Basin Creek	2303345	1210067	9/20/2007	0	0.002139	3.11E-02	A	798.48	41.0393	20-09-2007 22:08:45	0	0.009	0.131	0.237697
BC21	Basin Creek	2303333	1210261	9/20/2007	0	0.001901	1.85E-02	A	797.67	40.8162	20-09-2007 22:13:10	0	0.008	0.078	0.2376246
BC22	Basin Creek	2303737	1210258	9/20/2007	0	0.001666	2.97E-02	A	797.94	40.4496	20-09-2007 22:19:19	0	0.007	0.125	0.237983
BC23	Basin Creek	2303919	1210248	9/20/2007	0	0.001667	0	A	798.07	40.2833	20-09-2007 22:22:22	0	0.007	-0.139	0.238148
BC24	Basin Creek	2304147	1210203	9/20/2007	7.137827	0.008571	2.731417	A	797.4	40.0909	20-09-2007 22:26:14	29.979	0.036	11.472	0.2380942
BC25	Basin Creek	2304323	1210266	9/20/2007	0	0.006912	0.0445673	A	797.67	39.8899	20-09-2007 22:29:47	0	0.029	0.187	0.2383278
BC26	Basin Creek	2304160	1210470	9/20/2007	0	0.001193	6.89E-02	A	797.67	39.6535	20-09-2007 22:34:33	0	0.005	0.289	0.2385079
BC27	Basin Creek	2303943	1210466	9/20/2007	2.38E-04	0.002145	6.96E-02	A	796.59	39.4214	20-09-2007 22:38:05	0.001	0.009	0.292	0.2383618
BC28	Basin Creek	2304140	1210089	9/20/2007	1.978959	0.000476	0.6808477	A	795.11	39.1288	20-09-2007 22:45:37	8.31	0.002	2.859	0.2381419
BC29	Basin Creek	2304328	1209997	9/20/2007	0	0.000957	0.1313228	A	798.07	38.9	20-09-2007 22:49:56	0	0.004	0.549	0.2392037
BC3	Basin Creek	2303560	1209874	9/20/2007	0.3529376	0.002744	0.1179784	A	800.47	27.0113	20-09-2007 20:12:12	1.415	0.011	0.473	0.2494259
BC4	Basin Creek	2303337	1209864	9/20/2007	0	0.001989	3.26E-02	A	800.6	28.0812	20-09-2007 20:16:00	0	0.008	0.131	0.2485803
BC5	Basin Creek	2303145	1209863	9/20/2007	2.26E-02	0.001737	2.88E-02	A	801.81	28.9842	20-09-2007 20:19:57	0.091	0.007	0.116	0.248212
BC6	Basin Creek	2303059	1209768	9/20/2007	0.1839949	0.004488	0.1274003	A	808.01	29.9726	20-09-2007 20:24:29	0.738	0.018	0.511	0.2493156
BC7	Basin Creek	2303245	1209765	9/20/2007	0.3320731	0.002229	0.0584409	A	806.94	31.6307	20-09-2007 20:32:34	1.341	0.009	0.236	0.2476309
BC8	Basin Creek	2303436	1209771	9/20/2007	0	0.002694	0.3653808	A	800.06	32.4102	20-09-2007 20:37:04	0	0.011	1.492	0.2448933
BC9	Basin Creek	2303541	1209682	9/20/2007	0.305776	0.004885	0.217609	A	801.01	33.6038	20-09-2007 20:43:40	1.252	0.02	0.891	0.24423
BC30	Basin Creek	2304872	1211759	9/20/2007	0	0.001179	0	A	785.27	38.2	20-09-2007 23:08:36	0	0.005	-0.038	0.2358964
BC31	Basin Creek	2304887	1211940	9/20/2007	1.660191	0.001653	1.690887	A	785.81	38.1132	20-09-2007 23:13:01	7.031	0.007	7.161	0.2361244
BC32	Basin Creek	2304878	1212159	9/20/2007	0	0.002359	9.95E-02	A	784.7	38	20-09-2007 23:18:40	0	0.01	0.422	0.2358766
BC33	Basin Creek	2304871	1212346	9/20/2007	0	0.002123	0.1467157	A	784.7	37.9991	20-09-2007 23:22:40	0	0.009	0.622	0.2358773
BC34	Basin Creek	2304693	1212346	9/20/2007	0	0.001646	0.5676693	A	782.3	37.9975	20-09-2007 23:25:46	0	0.007	2.414	0.2351571
BC35	Basin Creek	2304683	1212152	9/20/2007	0	0.005227	7.08E-02	A	790.22	37.9	20-09-2007 23:29:50	0	0.022	0.298	0.2376123
BC36	Basin Creek	2304697	1211948	9/20/2007	0	0.000000	0.0408696	A	790.22	37.8978	20-09-2007 23:33:22	0	0	0.172	0.237614
BC37	Basin Creek	2304682	1211758	9/20/2007	0	0.000236	0.2125618	A	784.97	37.7076	20-09-2007 23:38:00	0	0.001	0.9	0.2361798
BC38	Basin Creek	2304776	1211841	9/20/2007	0	0.000000	0.2249089	A	787.39	37.5925	20-09-2007 23:42:35	0	0	0.949	0.2369956
BC39	Basin Creek	2304785	1212044	9/20/2007	1.097237	0.003075	3.279171	A	785.54	37.4131	20-09-2007 23:46:02	4.638	0.013	13.861	0.2365754
BC40	Basin Creek	2304778	1212246	9/20/2007	0	0.002835	0.2133653	A	784.29	37.3	20-09-2007 23:50:06	0	0.012	0.903	0.236285
BC41	Basin Creek	2305003	1212041	9/20/2007	0	0.005673	0.359261	A	784.02	37.1	20-09-2007 23:55:38	0	0.024	1.52	0.2363559
BC42	Basin Creek	2304982	1211837	9/20/2007	0	0.003075	3.93E-02	A	784.32	37	20-09-2007 23:58:26	-0.461	0.013	0.166	0.2365226
CJE1	Carbon Junction East	2311177	1215651	9/11/2007	0	0.004548	0.4678414	B	811.35	19.041	11/9/2007 16:34	0	0.008	0.823	0.5684585
CJE10	Carbon Junction East	2311797	1216258	9/11/2007	0.1434245	0.002215	0.1273654	B	804.64	24.3147	11/9/2007 17:26	0.259	0.004	0.23	0.5537625
CJE11	Carbon Junction East	2311772	1216038	9/11/2007	0.2466287	0.000553	7.63E-02	B	804.64	24.7361	11/9/2007 17:30	0.446	0.001	0.138	0.5529791
CJE12	Carbon Junction East	2311789	1215836	9/11/2007	0.3830385	0.001680	4.31E-02	B	816.74	25.426	11/9/2007 17:36	0.684	0.003	0.077	0.5599977
CJE13	Carbon Junction East	2311974	1216254	9/11/2007	0.2157393	0.001651	8.42E-02	B	804.51	26.1079	11/9/2007 17:42	0.392	0.003	0.153	0.5503553
CJE14	Carbon Junction East	2312177	1216441	9/11/2007	0.4018265	0.001645	5.70E-02	B	803.84	27.0373	11/9/2007 17:49	0.733	0.003	0.104	0.5481945
CJE15	Carbon Junction East	2312173	1216647	9/11/2007	0.381065	0.001093	0.3772379	B	803.84	27.846	11/9/2007 17:55	0.697	0.002	0.69	0.5467216
CJE16	Carbon Junction East	2312188	1216842	9/11/2007	0.3184514	0.002177	0.0974407	B	803.57	29.0495	11/9/2007 18:02	0.585	0.004	0.179	0.5443614
CJE17	Carbon Junction East	2312391	1217063	9/11/2007	0.2532883	0.001085	6.73E-02	B	803.57	30.1573	11/9/2007 18:09	0.467	0.002	0.124	0.5423732
CJE18	Carbon Junction East	2312587	1217042	9/11/2007	1.95E-02	0.002703	0.1200289	B	803.03	30.9078	11/9/2007 18:15	0.036	0.005	0.222	0.5406709
CJE19	Carbon Junction East	2312565	1217228	9/11/2007	0.4983522	0.000000	6.17E-02	B	813	31.4335	11/9/2007 18:21	0.912	0	0.113	0.5464388
CJE2	Carbon Junction East	2311189	1215434	9/11/2007	0	0.000567	0.1133357	B	811.35	19.9589	11/9/2007 16:39	0	0.001	0.2	0.5666783
CJE20	Carbon Junction East	2312768	1217241	9/11/2007	0	0.002155	0.1002046	B	803.03	32.0006	11/9/2007 18:26	0	0.004	0.186	0.5387346
CJE21	Carbon Junction East	2312790	1217437	9/11/2007	0.1651028	0.001613	0.1500446	B	802.62	32.3782	11/9/2007 18:30	0.307	0.003	0.279	0.5377941
CJE22	Carbon Junction East	2312868	1217562	9/11/2007	0.1999836	0.000000	0.3682494	B	804.24	33.1109	11/9/2007 18:36	0.372	0	0.685	0.5375903
CJE23	Carbon Junction East	2312801	1217649	9/11/2007	0.4368088	0.001080	0.1322845	B	810.75	34.2483	11/9/2007 18:43	0.809	0.002	0.245	0.5399367
CJE24	Carbon Junction East	2312558	1217625	9/11/2007	0.1519017	0.001599	0.1966727	B	803.16	35.3404	11/9/2007 18:51	0.285	0.003	0.369	0.5329884
CJE25	Carbon Junction East	2312381	1217239	9/11/2007	0	0.001068	9.18E-02	B	806.67	36.1364	11/9/2007 19:07	0	0.002	0.172	0.53394

FLUX DATA - PROJECT AREA

SitePt	SEEPAREA	Easting	Northing	Date	CH4flux	H2Sflux	CO2flux	Chamber	PRESSURE (HPa):	TEMP DegC	TIME:	CH4slope	H2Sslope	CO2slope	AcK
CJE26	Carbon Junction East	2312581	1217435	9/11/2007	0	0.002657	7.49E-02	B	802.76	36.0964	11/9/2007 19:14	0	0.005	0.141	0.5314206
CJE27	Carbon Junction East	2312167	1217243	9/11/2007	0	0.001070	0.36067	B	808.45	36.1361	11/9/2007 19:26	0	0.002	0.674	0.5351187
CJE28	Carbon Junction East	2311949	1217034	9/11/2007	0	0.001604	0.2053459	B	808.59	36.4	11/9/2007 19:34	0	0.003	0.384	0.5347551
CJE29	Carbon Junction East	2311769	1216851	9/11/2007	0	0.002673	0.2673342	B	808.72	36.5	11/9/2007 19:40	0	0.005	0.5	0.5346683
CJE3	Carbon Junction East	2311378	1215434	9/11/2007	0	0.001132	0.1431978	B	812.02	20.5528	11/9/2007 16:43	0	0.002	0.253	0.5659994
CJE30	Carbon Junction East	2311586	1216633	9/11/2007	0.2209197	0.005956	8.88E-02	B	819.2	36.5727	11/9/2007 19:47	0.408	0.011	0.164	0.5414698
CJE31	Carbon Junction East	2311430	1216446	9/11/2007	0	0.003213	0.1253183	B	810.84	36.8016	11/9/2007 19:52	0	0.006	0.234	0.5355483
CJE32	Carbon Junction East	2311373	1216248	9/11/2007	0	0.003746	0.0374637	B	811.02	37.0746	11/9/2007 19:58	0	0.007	0.07	0.5351958
CJE33	Carbon Junction East	2311421	1216259	9/11/2007	2.249257	0.003741	1.856478	B	810.31	37.2691	11/9/2007 20:01	4.209	0.007	3.474	0.5343922
CJE34	Carbon Junction East	2311286	1216138	9/11/2007	3.864298	0.003202	1.124441	B	809.9	37.5324	11/9/2007 20:05	7.241	0.006	2.107	0.5336691
CJE35	Carbon Junction East	2311607	1216440	9/12/2007	1.903644	0.005262	0.4398691	B	806.13	40.5	12/9/2007 2:03	3.618	0.01	0.836	0.5261592
CJE36	Carbon Junction East	2311685	1216530	9/12/2007	2.208821	0.006474	0.4979829	B	806.67	32.9339	12/9/2007 0:25	4.094	0.012	0.923	0.5395265
CJE37	Carbon Junction East	2311772	1216641	9/12/2007	1.437633	0.008049	1.410264	B	808	35.0932	12/9/2007 0:32	2.679	0.015	2.628	0.5366303
CJE38	Carbon Junction East	2311971	1216845	9/12/2007	0.4882066	0.008500	7.65E-02	B	809.26	38.7083	12/9/2007 0:53	0.919	0.016	0.144	0.5312368
CJE39	Carbon Junction East	2312170	1217032	9/12/2007	0	0.008397	0.1180837	B	800.74	39.2	12/9/2007 1:06	0	0.016	0.225	0.5248163
CJE4	Carbon Junction East	2311369	1215639	9/11/2007	0.1516792	0.001692	0.1437851	B	810.81	21.2262	11/9/2007 16:48	0.269	0.003	0.255	0.5638632
CJE40	Carbon Junction East	2311979	1216431	9/12/2007	0.3368733	0.007335	2.31E-02	B	800.74	39.7411	12/9/2007 1:15	0.643	0.014	0.044	0.5239087
CJE41	Carbon Junction East	2311979	1216628	9/12/2007	1.21E-02	0.013625	0.4946829	B	802.12	40.2087	12/9/2007 1:25	0.023	0.026	0.944	0.5240285
CJE42	Carbon Junction East	2311790	1216436	9/12/2007	1.404434	0.010489	0.9785937	B	804.14	40.755	12/9/2007 1:36	2.678	0.02	1.866	0.5244339
CJE43	Carbon Junction East	2311693	1216350	9/12/2007	0.1953475	0.006285	0.1241216	B	803.16	40.8	12/9/2007 1:52	0.373	0.012	0.237	0.5237197
CJE44	Carbon Junction East	2311478	1216158	9/12/2007	0	0.011060	0.2348967	B	805.89	40.1	12/9/2007 2:16	-0.034	0.021	0.446	0.5266742
CJE45	Carbon Junction East	2311406	1216128	9/12/2007	0.6140786	0.005783	0.7344759	B	804.11	39.9562	12/9/2007 2:24	1.168	0.011	1.397	0.5257522
CJE46	Carbon Junction East	2311282	1215948	9/12/2007	0	0.007373	4.00E-02	B	804.91	39.7343	12/9/2007 2:31	-0.04	0.014	0.076	0.5266486
CJE47	Carbon Junction East	2311179	1216029	9/12/2007	5.28E-04	0.004226	0.1516121	B	807.11	39.6294	12/9/2007 2:36	0.001	0.008	0.287	0.5282651
CJE48	Carbon Junction East	2311163	1215837	9/12/2007	0	0.002118	0.1217954	B	808.99	39.6	12/9/2007 2:40	0	0.004	0.23	0.5295454
CJE5	Carbon Junction East	2311396	1215843	9/11/2007	0.4052768	0.000000	0.352439	B	810.4	21.9983	11/9/2007 16:54	0.721	0	0.627	0.5621037
CJE6	Carbon Junction East	2311396	1216045	9/11/2007	0.1518064	0.001681	0.3248993	B	809.5	22.6876	11/9/2007 17:01	0.271	0.003	0.58	0.5601712
CJE7	Carbon Junction East	2311602	1216245	9/11/2007	0	0.000000	0.257449	B	811.79	23.1438	11/9/2007 17:07	0	0	0.459	0.560891
CJE8	Carbon Junction East	2311588	1216040	9/11/2007	0	0.001114	0	B	807.61	23.6271	11/9/2007 17:13	0	0.002	-0.004	0.5570942
CJE9	Carbon Junction East	2311585	1215829	9/11/2007	0	0.001112	0.1189572	B	806.53	23.8805	11/9/2007 17:19	0	0.002	0.214	0.5558746
CJW1	Carbon Junction West	2310183	1214640	9/19/2007	13.17594	0.002116	3.233208	A	810.71	13.4824	19-09-2007 16:40:49	49.807	0.008	12.222	0.26454
CJW10	Carbon Junction West	2310387	1215232	9/19/2007	0.14102	0.003315	0.1670309	A	809.63	23.7992	19-09-2007 17:23:54	0.553	0.013	0.655	0.255009
CJW11	Carbon Junction West	2310384	1215035	9/19/2007	0.1612689	0.003312	7.82E-02	A	811.52	24.7726	19-09-2007 17:29:38	0.633	0.013	0.307	0.2547692
CJW12	Carbon Junction West	2310342	1214852	9/19/2007	0	0.006603	0.2966461	A	810.67	25.3878	19-09-2007 17:33:32	0	0.026	1.168	0.2539779
CJW13	Carbon Junction West	2310282	1214736	9/19/2007	0.1231892	0.002535	0.1381443	A	810.71	25.9939	19-09-2007 17:38:25	0.486	0.01	0.545	0.2534758
CJW14	Carbon Junction West	2310275	1214538	9/19/2007	0.1882909	0.004044	1.164118	A	809.9	26.5657	19-09-2007 17:42:51	0.745	0.016	4.606	0.2527394
CJW15	Carbon Junction West	2310278	1214346	9/19/2007	1.347476	0.003533	1.121382	A	810.17	27.1447	19-09-2007 17:46:38	5.34	0.014	4.444	0.2523362
CJW16	Carbon Junction West	2310230	1214534	9/19/2007	16.50731	0.007806	1.067636	A	809.9	27.6829	19-09-2007 17:50:19	65.557	0.031	4.24	0.2518008
CJW17	Carbon Junction West	2310581	1215238	9/19/2007	0.1713315	0.002997	0.6136464	A	810.31	30.3015	19-09-2007 18:09:47	0.686	0.012	2.457	0.2497543
CJW18	Carbon Junction West	2310580	1215040	9/19/2007	0	0.001747	0.6847435	A	810.44	30.6083	19-09-2007 18:13:25	0	0.007	2.744	0.2495421
CJW19	Carbon Junction West	2310588	1214839	9/19/2007	0.1389936	0.002740	0.1611628	A	809.9	30.9539	19-09-2007 18:18:29	0.558	0.011	0.647	0.2490924
CJW2	Carbon Junction West	2310170	1214425	9/19/2007	17.19298	0.002888	2.71055	A	810.71	15.6567	19-09-2007 16:48:18	65.485	0.011	10.324	0.2625484
CJW20	Carbon Junction West	2310780	1214639	9/19/2007	0	0.004235	0.1641814	A	810.58	31.1545	19-09-2007 18:22:16	0	0.017	0.659	0.2491372
CJW21	Carbon Junction West	2310582	1214635	9/19/2007	0	0.002735	0.1230844	A	809.36	31.2852	19-09-2007 18:26:09	0	0.011	0.495	0.2486555
CJW22	Carbon Junction West	2310561	1214452	9/19/2007	0	0.001741	0.3185918	A	810.04	31.4796	19-09-2007 18:32:25	0	0.007	1.281	0.2487056
CJW23	Carbon Junction West	2310591	1214252	9/19/2007	2.49E-04	0.004228	0.3740329	A	810.44	31.6465	19-09-2007 18:36:19	0.001	0.017	1.504	0.2486921
CJW24	Carbon Junction West	2310678	1215137	9/19/2007	2.014584	0.001987	0.6883367	A	810.04	31.8453	19-09-2007 18:44:10	8.11	0.008	2.771	0.2484073
CJW25	Carbon Junction West	2310692	1215330	9/19/2007	0.2506747	0.004219	1.533831	A	810.04	32.109	19-09-2007 18:49:04	1.01	0.017	6.18	0.2481928
CJW26	Carbon Junction West	2310721	1215288	9/19/2007	5.18E-02	0.003717	0.5080557	A	809.63	32.3985	19-09-2007 18:52:22	0.209	0.015	2.05	0.2478321
CJW27	Carbon Junction West	2310787	1215238	9/19/2007	9.18E-02	0.001237	0.5635183	A	808.96	32.7108	19-09-2007 18:55:43	0.371	0.005	2.278	0.2473742
CJW28	Carbon Junction West	2310777	1215039	9/19/2007	0	0.004947	0.3935443	A	809.77	33.0388	19-09-2007 18:59:21	0	0.02	1.591	0.2473566
CJW29	Carbon Junction West	2310666	1214942	9/19/2007	0.391408	0.001482	0.9749393	A	809.13	33.3066	19-09-2007 19:02:59	1.585	0.006	3.948	0.2469451
CJW3	Carbon Junction West	2310173	1214240	9/19/2007	0	0.006528	0.1660741	A	809.73	16.8825	19-09-2007 16:53:28	0	0.025	0.636	0.2611227
CJW30	Carbon Junction West	2310819	1214809	9/19/2007	0	0.008138	0.7529138	A	808.82	33.6	19-09-2007 19:06:49	0	0.033	3.053	0.2466144
CJW31	Carbon Junction West	2309985	1215057	9/19/2007	2.134814	0.003035	0.5224503	A	805.32	24.705	19-09-2007 22:48:35	8.442	0.012	2.066	0.2528801
CJW32	Carbon Junction West	2309784	1215044	9/19/2007	0	0.002773	0.3438089	A	806.26	26.0238	19-09-2007 22:52:20	0	0.011	1.364	0.2520593
CJW33	Carbon Junction West	2309780	1214856	9/19/2007	1.019002	0.003505	1.19376	A	804.78	27.4906	19-09-2007 22:56:15	4.07	0.014	4.768	0.2503691
CJW34	Carbon Junction West	2309587	1214845	9/19/2007	0	0.003232	5.67E-02	A	804.51	29.5379	19-09-2007 23:03:06	0	0.013	0.228	0.2485922
CJW35	Carbon Junction West	2309578	1215016	9/19/2007	0	0.005462	0.1174262	A	805.45	30.2992	19-09-2007 23:06:17	0	0.022	0.473	0.2482583
CJW36	Carbon Junction West	2309383	1215044	9/19/2007	3.70E-02	0.005432	9.90E-02	A	803.57	31.2318	19-09-2007 23:10:05	0.15	0.022	0.401	0.2469199

FLUX DATA - PROJECT AREA

SitePt	SEEPAREA	Easting	Northing	Date	CH4flux	H2Sflux	CO2flux	Chamber	PRESSURE (HPa):	TEMP DegC	TIME:	CH4slope	H2Sslope	CO2slope	AcK
CJW37	Carbon Junction West	2309190	1214837	9/19/2007	7.78E-02	0.001718	2.63E-02	A	801.41	32.3467	19-09-2007 23:15:21	0.317	0.007	0.107	0.2453575
CJW38	Carbon Junction West	2309179	1214649	9/19/2007	0.8234965	0.003656	0.3099993	A	799.39	33.6365	19-09-2007 23:21:27	3.379	0.015	1.272	0.2437101
CJW39	Carbon Junction West	2309000	1214638	9/19/2007	5.66E-02	0.004371	0.1403629	A	799.12	34.6288	19-09-2007 23:27:44	0.233	0.018	0.578	0.2428423
CJW4	Carbon Junction West	2310376	1214228	9/19/2007	0	0.002363	0.4842044	A	816.6	17.7158	19-09-2007 16:57:06	0	0.009	1.844	0.2625837
CJW40	Carbon Junction West	2308973	1214841	9/19/2007	1.26E-02	0.002174	6.14E-02	A	797.1	35.4481	19-09-2007 23:38:30	0.052	0.009	0.254	0.2415854
CJW41	Carbon Junction West	2308999	1214455	9/19/2007	0	0.004806	9.80E-02	A	795.24	36.399	19-09-2007 23:50:07	0	0.02	0.408	0.2402813
CJW42	Carbon Junction West	2309188	1214436	9/19/2007	7.04E-02	0.003605	0.2155889	A	796.32	36.738	19-09-2007 23:58:57	0.293	0.015	0.897	0.2403444
CJW43	Carbon Junction West	2309369	1214448	9/19/2007	1.092294	0.004085	0.5151514	A	796.32	36.8264	19-09-2007 00:05:16	4.546	0.017	2.144	0.2402758
CJW44	Carbon Junction West	2309220	1214258	9/20/2007	0.1082586	0.006227	0.1271799	A	794.16	36.9738	20-09-2007 00:12:00	0.452	0.026	0.531	0.2395102
CJW45	Carbon Junction West	2309373	1214242	9/20/2007	0	0.003112	8.28E-02	A	794.16	37.1	20-09-2007 00:17:06	0	0.013	0.346	0.2394128
CJW46	Carbon Junction West	2309581	1214234	9/20/2007	0	0.000960	6.68E-02	A	796.56	37.1319	20-09-2007 00:20:38	0	0.004	0.278	0.2401116
CJW47	Carbon Junction West	2309591	1214442	9/20/2007	0	0.001204	0.1177038	A	798.44	37.1	20-09-2007 00:26:01	0	0.005	0.489	0.2407031
CJW48	Carbon Junction West	2309525	1214531	9/20/2007	85.3112	0.001927	1.341596	A	798.85	37	20-09-2007 00:31:05	354.129	0.008	5.569	0.2409043
CJW49	Carbon Junction West	2309568	1214643	9/20/2007	4.11E-03	0.004592	0.5706645	A	800.47	36.6	20-09-2007 00:41:09	0.017	0.019	2.361	0.2417046
CJW5	Carbon Junction West	2310367	1214419	9/19/2007	12.83174	0.003412	1.654269	A	818.26	18.4011	19-09-2007 17:00:13	48.883	0.013	6.302	0.2624991
CJW50	Carbon Junction West	2309489	1214594	9/20/2007	0	0.004108	0.70581	A	799.83	36.444	20-09-2007 00:46:12	0	0.017	2.921	0.241633
CJW51	Carbon Junction West	2309389	1214630	9/20/2007	15.58537	0.004832	2.161762	A	798.88	36.0946	20-09-2007 00:53:32	64.504	0.02	8.947	0.2416187
CJW52	Carbon Junction West	2309308	1214668	9/20/2007	0.8605709	0.004844	1.4644	A	800.33	35.9	20-09-2007 00:57:50	3.553	0.02	6.046	0.2422097
CJW53	Carbon Junction West	2309387	1214682	9/20/2007	17.17062	0.005326	1.510612	A	799.66	35.8	20-09-2007 01:03:07	70.928	0.022	6.24	0.2420852
CJW54	Carbon Junction West	2309527	1214736	9/20/2007	7.644329	0.005576	0.5556163	A	801.01	35.9	20-09-2007 01:07:21	31.534	0.023	2.292	0.2424155
CJW55	Carbon Junction West	2309386	1214843	9/20/2007	2.43E-04	0.005337	0.3163231	A	801.81	36	20-09-2007 01:10:27	0.001	0.022	1.304	0.2425791
CJW56	Carbon Junction West	2309788	1214644	9/20/2007	2.491165	0.003400	3.599914	A	802.89	36.1	20-09-2007 01:14:50	10.259	0.014	14.825	0.2428273
CJW57	Carbon Junction West	2309804	1214449	9/20/2007	1.617217	0.007538	0.8760835	A	803.97	36.1	20-09-2007 01:18:35	6.651	0.031	3.603	0.2431539
CJW58	Carbon Junction West	2309786	1214222	9/20/2007	0	0.007040	4.44E-02	A	802.39	36	20-09-2007 01:23:35	0	0.029	0.183	0.2427545
CJW59	Carbon Junction West	2309963	1214243	9/20/2007	0	0.001937	7.00E-02	A	800.06	35.9	20-09-2007 01:26:11	0	0.008	0.289	0.242128
CJW6	Carbon Junction West	2310370	1214623	9/19/2007	18.38473	0.003375	0.4960918	A	811.11	19.0832	19-09-2007 17:03:40	70.82	0.013	1.911	0.259598
CJW60	Carbon Junction West	2309983	1214435	9/20/2007	0	0.002672	3.89E-03	A	802.35	35.8	20-09-2007 01:29:37	0	0.011	0.016	0.2428996
CJW61	Carbon Junction West	2309977	1214624	9/20/2007	0	0.001946	0.2825917	A	802.89	35.6333	20-09-2007 01:32:47	0	0.008	1.162	0.2431943
CJW62	Carbon Junction West	2309982	1214832	9/20/2007	0	0.001948	0.185821	A	803.16	35.2987	20-09-2007 01:40:35	0	0.008	0.763	0.24354
CJW63	Carbon Junction West	2309777	1215236	9/20/2007	0	0.001706	9.75E-02	A	803.47	35.1258	20-09-2007 01:44:30	-0.002	0.007	0.4	0.2437706
CJW64	Carbon Junction West	2309986	1215240	9/20/2007	1.124968	0.000244	0.8351337	A	803.3	35.0696	20-09-2007 01:48:08	4.615	0.001	3.426	0.2437635
CJW65	Carbon Junction West	2309885	1215340	9/20/2007	0	0.002440	1.011043	A	803.97	34.9815	20-09-2007 01:50:29	0	0.01	4.143	0.2440365
CJW66	Carbon Junction West	2310087	1215337	9/20/2007	0	0.003661	0.0839698	A	803.84	34.8538	20-09-2007 01:53:36	0	0.015	0.344	0.2440982
CJW7	Carbon Junction West	2310189	1214839	9/19/2007	1.368213	0.002348	1.071353	A	818.26	20.2326	19-09-2007 17:08:41	5.245	0.009	4.107	0.2608604
CJW8	Carbon Junction West	2310183	1215028	9/19/2007	1.134051	0.001543	0.4124757	A	809.53	21.2854	19-09-2007 17:13:01	4.41	0.006	1.604	0.2571544
CJW9	Carbon Junction West	2310176	1215235	9/19/2007	0.1958041	0.000769	1.28E-03	A	809.77	22.3683	19-09-2007 17:18:03	0.764	0.003	0.005	0.2562881
FR1	Florida River	2332134	1234977	9/16/2007	0	0.009387	0.3934937	A	792.68	19.0788	16-09-2007 16:43:08	0	0.037	1.551	0.2537032
FR10	Florida River	2332314	1235550	9/16/2007	3.554684	0.003733	0.3501919	A	793.19	24.9187	16-09-2007 17:18:24	14.282	0.015	1.407	0.2488926
FR11	Florida River	2332466	1235543	9/16/2007	1.843551	0.001244	0.4865065	A	793.59	25.2697	16-09-2007 17:22:25	7.412	0.005	1.956	0.2487252
FR12	Florida River	2332522	1235364	9/16/2007	0	0.002728	1.984394	A	792.92	25.9424	16-09-2007 17:30:51	0	0.011	8.003	0.2479563
FR13	Florida River	2332487	1235337	9/16/2007	0.9923663	0.001983	0.5596311	A	793.16	26.1688	16-09-2007 17:33:23	4.004	0.008	2.258	0.2478437
FR14	Florida River	2332725	1235178	9/16/2007	1.16E-02	0.003958	0.1989083	A	792.65	26.5148	16-09-2007 17:39:24	0.047	0.016	0.804	0.2473984
FR15	Florida River	2332723	1235373	9/16/2007	0	0.000000	8.60E-02	A	793.05	26.8869	16-09-2007 17:44:58	0	0	0.348	0.2472163
FR16	Florida River	2332714	1235567	9/16/2007	0	0.002988	8.72E-02	A	799.66	27.1969	16-09-2007 17:50:17	0	0.012	0.35	0.2490195
FR17	Florida River	2332732	1235778	9/16/2007	0	0.002213	3.59E-02	A	790.36	27.457	16-09-2007 17:54:52	0	0.009	0.146	0.2459105
FR18	Florida River	2332931	1235782	9/16/2007	0.5489268	0.000492	8.14E-02	A	791.71	27.9405	16-09-2007 18:02:22	2.232	0.002	0.331	0.2459349
FR19	Florida River	2332821	1235677	9/16/2007	1.304358	0.003426	0.2677238	A	788.74	28.3	16-09-2007 18:06:00	5.33	0.014	1.094	0.2447201
FR2	Florida River	2332334	1234977	9/16/2007	0.2006574	0.003791	0.3280269	A	792.35	20.0969	16-09-2007 16:47:26	0.794	0.015	1.298	0.2527172
FR20	Florida River	2332922	1235574	9/16/2007	0	0.001480	2.96E-02	A	796.42	28.7519	16-09-2007 18:11:29	-0.001	0.006	0.12	0.2467331
FR21	Florida River	2333126	1235579	9/16/2007	0	0.001955	0.1128749	A	789.41	29.0527	16-09-2007 18:15:30	-0.022	0.008	0.462	0.244318
FR22	Florida River	2333128	1235784	9/16/2007	9.77E-04	0.000733	0.076927	A	790.06	29.4319	16-09-2007 18:20:37	0.004	0.003	0.315	0.2442127
FR23	Florida River	2333125	1235971	9/16/2007	9.47E-02	0.001705	7.89E-02	A	789.01	29.8508	16-09-2007 18:26:01	0.389	0.007	0.324	0.243551
FR24	Florida River	2332931	1235974	9/16/2007	0.2341753	0.002427	5.70E-02	A	787.66	30.4321	16-09-2007 18:33:01	0.965	0.01	0.235	0.2426687
FR25	Florida River	2332757	1235971	9/16/2007	0	0.002185	9.06E-02	A	789.45	30.951	16-09-2007 18:39:12	0	0.009	0.373	0.2428052
FR26	Florida River	2332121	1235373	9/16/2007	0.1006333	0.000729	2.92E-02	A	792.41	31.7517	16-09-2007 18:51:07	0.414	0.003	0.12	0.2430755
FR27	Florida River	2331931	1234979	9/16/2007	0	0.000971	3.30E-02	A	792.55	32.1282	16-09-2007 18:56:38	-0.007	0.004	0.136	0.2428186
FR28	Florida River	2332113	1235118	9/16/2007	1.595581	0.001941	0.7632094	A	792.78	32.3989	16-09-2007 19:00:42	6.575	0.008	3.145	0.2426739
FR29	Florida River	2332137	1235168	9/16/2007	1.58E-02	0.002671	0.144719	A	793.59	32.5308	16-09-2007 19:02:51	0.065	0.011	0.596	0.242817
FR3	Florida River	2332530	1234978	9/16/2007	0.1212602	0.003529	0.173697	A	792.89	21.0149	16-09-2007 16:50:56	0.481	0.014	0.689	0.2521002
FR30	Florida River	2332198	1235147	9/16/2007	0.2608511	0.002424	0.6167335	A	792.82	32.7259	16-09-2007 19:05:54	1.076	0.01	2.544	0.2424267
FR31	Florida River	2332242	1235215	9/16/2007	2.997077	0.003873	0.686568	A	792.51	33.0312	16-09-2007 19:09:48	12.38	0.016	2.836	0.2420903
FR32	Florida River	2331921	1235188	9/16/2007	0	0.002474	8.68E-02	A	790.36	25.6868	16-09-2007 21:53:49	0	0.01	0.351	0.2473671

FLUX DATA - PROJECT AREA

SitePt	SEEPAREA	Easting	Northing	Date	CH4flux	H2Sflux	CO2flux	Chamber	PRESSURE (HPa):	TEMP DegC	TIME:	CH4slope	H2Sslope	CO2slope	AcK
FR33	Florida River	2331939	1235233	9/16/2007	0.2099391	0.001739	0.1319262	A	796.29	26.6184	16-09-2007 21:57:24	0.845	0.007	0.531	0.2484486
FR34	Florida River	2331916	1235375	9/16/2007	1.165716	0.001962	0.223478	A	789.15	27.7306	16-09-2007 22:01:07	4.752	0.008	0.911	0.2453107
FR35	Florida River	2331803	1235347	9/16/2007	9.162403	0.003419	0.587869	A	788.34	28.748	16-09-2007 22:04:57	37.515	0.014	2.407	0.2442331
FR36	Florida River	2331815	1235436	9/16/2007	20.62147	0.000731	0.8744252	A	788.2	29.4287	16-09-2007 22:08:28	84.639	0.003	3.589	0.2436403
FR37	Florida River	2331858	1235507	9/16/2007	1.913706	0.000243	0.568211	A	787.39	30.1324	16-09-2007 22:11:49	7.881	0.001	2.34	0.2428252
FR38	Florida River	2331926	1235572	9/16/2007	6.13E-02	0.000244	5.69E-02	A	794.27	30.9478	16-09-2007 22:15:47	0.251	0.001	0.233	0.2442902
FR39	Florida River	2332108	1235580	9/16/2007	0.1933406	0.001452	7.69E-02	A	788.88	31.7699	16-09-2007 22:20:41	0.799	0.006	0.318	0.2419782
FR4	Florida River	2332525	1235182	9/16/2007	0	0.002516	0.2598786	A	793.19	21.7387	16-09-2007 16:54:27	0	0.01	1.033	0.2515766
FR40	Florida River	2332132	1235779	9/16/2007	0	0.000961	0	A	787.12	33.272	16-09-2007 22:30:13	0	0.004	-0.118	0.2402548
FR41	Florida River	2331729	1235577	9/16/2007	0	0.000719	2.90E-02	A	787.12	33.9083	16-09-2007 22:35:44	0	0.003	0.121	0.239757
FR42	Florida River	2331728	1235377	9/16/2007	0	0.000719	0.2024469	A	787.8	34.3979	16-09-2007 22:40:13	0	0.003	0.845	0.2395821
FR43	Florida River	2331724	1235216	9/16/2007	0	0.000479	4.04E-02	A	787.93	34.789	16-09-2007 22:44:22	0	0.002	0.169	0.2393173
FR44	Florida River	2331767	1235273	9/16/2007	10.28613	0.002898	4.007821	A	795.92	35.1461	16-09-2007 22:47:21	42.599	0.012	16.598	0.2414641
FR5	Florida River	2332333	1235170	9/16/2007	2.94E-02	0.003766	0.1413558	A	793.29	22.3639	16-09-2007 16:58:11	0.117	0.015	0.563	0.251076
FR6	Florida River	2332290	1235250	9/16/2007	1.90E-02	0.001516	0.9468872	A	800.03	22.953	16-09-2007 17:02:40	0.075	0.006	3.747	0.2527054
FR7	Florida River	2332302	1235373	9/16/2007	0.1180448	0.002251	0.355635	A	793.43	23.5755	16-09-2007 17:07:01	0.472	0.009	1.422	0.2500949
FR8	Florida River	2332325	1235463	9/16/2007	0.1284454	0.000998	0.7921219	A	793.02	24.2382	16-09-2007 17:12:54	0.515	0.004	3.176	0.2494086
FR9	Florida River	2332344	1235573	9/16/2007	10.75936	0.001992	1.473748	A	792.62	24.643	16-09-2007 17:15:28	43.22	0.008	5.92	0.248944
FR45	Florida River	2330922	1235173	9/16/2007	0	0.002370	4.34E-02	A	784.83	36.5553	16-09-2007 23:09:07	0	0.01	0.183	0.2370162
FR46	Florida River	2330923	1234973	9/16/2007	0.5724137	0.001422	0.2754222	A	784.97	36.6	16-09-2007 23:13:51	2.415	0.006	1.162	0.2370243
FR47	Florida River	2330944	1234814	9/16/2007	0.6462517	0.003797	1.481893	A	784.97	36.2	16-09-2007 23:23:37	2.723	0.016	6.244	0.2373308
FR48	Florida River	2330927	1234780	9/16/2007	3.738792	0.002612	1.943374	A	785.24	36.1	16-09-2007 23:26:15	15.743	0.011	8.183	0.2374892
FR49	Florida River	2331129	1235172	9/18/2007	0	0.003080	0.2127889	A	785.51	36.8989	18-09-2007 21:46:10	0	0.013	0.898	0.2369587
FR50	Florida River	2331122	1234988	9/18/2007	2.908282	0.006640	0.7750359	A	785.67	36.7	18-09-2007 21:50:51	12.263	0.028	3.268	0.2371591
FR51	Florida River	2331118	1234787	9/18/2007	4.67E-02	0.005218	0.3517488	A	785.51	36.6	18-09-2007 21:57:44	0.197	0.022	1.483	0.2371873
FR52	Florida River	2331017	1234849	9/18/2007	0.485064	0.010916	1.337248	A	786.05	36.6512	18-09-2007 22:01:29	2.044	0.046	5.635	0.2373112
FR53	Florida River	2330833	1234678	9/18/2007	1.931294	0.004271	0.6425781	A	786.75	36.9563	18-09-2007 22:05:26	8.139	0.018	2.708	0.2372888
FR54	Florida River	2330732	1234585	9/18/2007	0.1972172	0.009707	0.6198254	A	785.94	37.3351	18-09-2007 22:09:37	0.833	0.041	2.618	0.2367553
FR55	Florida River	2330926	1234586	9/18/2007	0.1593264	0.003546	0.1600356	A	785.67	37.709	18-09-2007 22:13:53	0.674	0.015	0.677	0.2363893
FR56	Florida River	2331031	1234678	9/18/2007	0.1872014	0.010177	1.803618	A	787.42	38.0395	18-09-2007 22:17:19	0.791	0.043	7.621	0.2366642
FR57	Florida River	2331225	1234881	9/18/2007	8.96E-02	0.005424	8.37E-02	A	785.64	38.4409	18-09-2007 22:21:14	0.38	0.023	0.355	0.235825
FR58	Florida River	2331228	1235063	9/18/2007	0.6356195	0.007380	0.8094031	A	794.03	38.8123	18-09-2007 22:24:35	2.67	0.031	3.4	0.2380597
FR59	Florida River	2331336	1235182	9/18/2007	0.2161311	0.008240	0.4240219	A	786.31	39.2207	18-09-2007 22:29:13	0.918	0.035	1.801	0.2354369
FR60	Florida River	2331321	1234982	9/18/2007	0	0.003991	0.2298081	A	784.5	39.4301	18-09-2007 22:32:43	0	0.017	0.979	0.2347376
FR61	Florida River	2330821	1235085	9/18/2007	0	0.005629	9.55E-02	A	784.59	39.7	18-09-2007 22:40:36	0	0.024	0.407	0.234562
FR62	Florida River	2330831	1234883	9/18/2007	2.35E-04	0.007036	0.3742938	A	784.7	39.8	18-09-2007 22:43:49	0.001	0.03	1.596	0.23452
H1	BP Highlands	2381578	1240421	9/14/2007	0	0.001649	0.1095312	A	776.58	35.2059	14-09-2007 23:30:24	0	0.007	0.465	0.2355511
H10	BP Highlands	2382314	1240059	9/15/2007	0	0.001865	0.1592126	A	778.23	39.1	15-09-2007 00:23:03	0	0.008	0.683	0.2331077
H11	BP Highlands	2382366	1240007	9/15/2007	0.1505969	0.003259	0.1741059	A	777.28	39.1822	15-09-2007 00:26:13	0.647	0.014	0.748	0.2327619
H12	BP Highlands	2382193	1240202	9/15/2007	0	0.002327	0.1721817	A	777.55	39.4034	15-09-2007 00:30:08	-0.112	0.01	0.74	0.2326779
H13	BP Highlands	2381983	1240218	9/15/2007	0	0.001627	0	A	777.15	39.6402	15-09-2007 00:33:34	0	0.007	-0.116	0.2323822
H14	BP Highlands	2381984	1240421	9/15/2007	0.1056259	0.001625	9.01E-02	A	777.04	39.9158	15-09-2007 00:38:34	0.455	0.007	0.388	0.2321447
H15	BP Highlands	2381777	1240711	9/15/2007	3.482835	0.001158	3.599523	A	775.67	40.2	15-09-2007 00:47:19	15.043	0.005	15.547	0.2315253
H16	BP Highlands	2381581	1240713	9/15/2007	7.652036	0.001855	3.737343	A	776.61	40.1664	15-09-2007 00:50:31	33.007	0.008	16.121	0.2318307
H2	BP Highlands	2381200	1240611	9/14/2007	0.2192265	0.002345	0.1559204	A	776.07	36.4284	14-09-2007 23:43:16	0.935	0.01	0.665	0.2344668
H3	BP Highlands	2381140	1240640	9/14/2007	9.26E-02	0.001866	0.1892086	A	773.92	37.111	14-09-2007 23:48:15	0.397	0.008	0.811	0.2333028
H4	BP Highlands	2381182	1240803	9/14/2007	0	0.002795	5.96E-02	A	773.92	37.6413	14-09-2007 23:51:53	0	0.012	0.256	0.2329047
H5	BP Highlands	2381183	1240410	9/14/2007	0.1303677	0.003259	0.1129078	A	774.72	38.1032	14-09-2007 23:57:08	0.56	0.014	0.485	0.2327995
H6	BP Highlands	2381375	1240401	9/14/2007	0	0.002095	4.91E-02	A	775.26	38.333	14-09-2007 00:01:13	0	0.009	0.211	0.2327899
H7	BP Highlands	2381779	1240213	9/14/2007	0	0.002327	0.1323858	A	775.53	38.6101	14-09-2007 00:07:07	0	0.01	0.569	0.232664
H8	BP Highlands	2381981	1240019	9/15/2007	0	0.003265	6.25E-02	A	778.09	38.8653	15-09-2007 00:12:39	0	0.014	0.268	0.2332411
H9	BP Highlands	2382189	1240033	9/15/2007	8.34E-02	0.004672	0.2749318	A	779.58	39	15-09-2007 00:19:02	0.357	0.02	1.177	0.2335869
HP21	BP Highlands	2381777	1240408	9/14/2007	0	0.000000	5.94E-02	A	778.47	24.5867	14-09-2007 17:14:03	0	0	0.243	0.244546
HP22	BP Highlands	2381780	1240618	9/14/2007	3.05E-02	0.001706	0.3569501	A	778.77	25.7944	14-09-2007 17:19:16	0.125	0.007	1.465	0.243652
HP23	BP Highlands	2381682	1240711	9/14/2007	14.19426	0.001213	1.475607	A	777.55	26.6465	14-09-2007 17:22:31	58.514	0.005	6.083	0.2425788
HP24	BP Highlands	2381783	1240819	9/14/2007	0.2434193	0.000737	0.2851764	A	790.09	27.6974	14-09-2007 17:28:32	0.991	0.003	1.161	0.24563
HP25	BP Highlands	2381587	1240815	9/14/2007	1.092417	0.001686	0.7954707	A	777.02	28.6142	14-09-2007 17:33:30	4.536	0.007	3.303	0.2408328
HP26	BP Highlands	2381577	1241009	9/14/2007	0.2024752	0.001199	1.34E-02	A	777.02	29.7881	14-09-2007 17:39:38	0.844	0.005	0.056	0.2398995
HP27	BP Highlands	2381682	1240914	9/14/2007	0.5126282	0.001192	0.3715422	A	774.45	30.7862	14-09-2007 17:44:57	2.151	0.005	1.559	0.2383209
HP28	BP Highlands	2381780	1241019	9/14/2007	7.79E-02	0.001668	2.38E-02	A	776.48	31.7179	14-09-2007 17:49:33	0.327	0.007	0.1	0.2382153
HP29	BP Highlands	2382080	1240914	9/14/2007	0.2061125	0.001897	3.77E-02	A	776.07	32.8825	14-09-2007 17:56:57	0.869	0.008	0.159	0.2371835
HP30	BP Highlands	2381885	1240916	9/14/2007	0	0.002365	8.04E-02	A	775.26	33.499	14-09-2007 18:01:18	0	0.01	0.34	0.2364596
HP31	BP Highlands	2381978	1240808	9/14/2007	0	0.001441	8.67E-02	A	789.01	34.0732	14-09-2007 18:05:40	0	0.006	0.361	0.2402036

FLUX DATA - PROJECT AREA

SitePt	SEEPAREA	Easting	Northing	Date	CH4flux	H2Sflux	CO2flux	Chamber	PRESSURE (HPa):	TEMP DegC	TIME:	CH4slope	H2Sslope	CO2slope	AcK
HP32	BP Highlands	2381981	1240616	9/14/2007	8.53E-02	0.000943	0.1152896	A	776.07	34.7225	14-09-2007 18:11:23	0.362	0.004	0.489	0.235766
HP33	BP Highlands	2381888	1240707	9/14/2007	1.652082	0.003302	1.340769	A	777.55	35.2085	14-09-2007 18:16:12	7.005	0.014	5.685	0.2358433
HP34	BP Highlands	2381578	1240611	9/14/2007	0	0.002825	0.238915	A	777.02	35.5992	14-09-2007 18:20:47	0	0.012	1.015	0.2353843
HP35	BP Highlands	2381571	1240640	9/14/2007	122.0607	0.002838	3.061504	A	781.46	35.8735	14-09-2007 18:23:41	516.071	0.012	12.944	0.2365192
HP36	BP Highlands	2381483	1240713	9/14/2007	9.14E-02	0.002114	0.2200396	A	778.63	36.9637	14-09-2007 18:33:14	0.389	0.009	0.937	0.2348342
HP37	BP Highlands	2381478	1240913	9/14/2007	0.1832398	0.002340	0.5342738	A	777.82	37.7153	14-09-2007 18:39:23	0.783	0.01	2.283	0.2340227
HP38	BP Highlands	2381387	1240825	9/14/2007	0.2313308	0.002095	0.1068217	A	778.36	39.6629	14-09-2007 19:00:10	0.994	0.009	0.459	0.2327271
HP39	BP Highlands	2381374	1240615	9/14/2007	0	0.002552	0.1503194	A	777.72	40.42	14-09-2007 19:14:12	0	0.011	0.648	0.2319743
H17	BP Highlands	2384365	1239405	9/15/2007	0.1044649	0.001179	1.525943	A	777.53	35.2408	15-09-2007 01:15:04	0.443	0.005	6.471	0.2358125
H18	BP Highlands	2384443	1239486	9/15/2007	19.6167	0.001648	1.619935	A	777.55	35.8059	15-09-2007 01:19:14	83.338	0.007	6.882	0.2353873
H19	BP Highlands	2384378	1239613	9/15/2007	0.9629337	0.001887	2.73975	A	780.52	36.391	15-09-2007 01:25:07	4.083	0.008	11.617	0.2358397
H20	BP Highlands	2384563	1239614	9/15/2007	0.1637478	0.001192	0.6678622	A	789.58	36.6836	15-09-2007 01:29:40	0.687	0.005	2.802	0.238352
H21	BP Highlands	2384574	1239424	9/15/2007	0	0.003288	0.2270801	A	778.36	36.8623	15-09-2007 01:35:35	0	0.014	0.967	0.2348295
H22	BP Highlands	2384782	1239416	9/15/2007	0	0.001647	9.48E-02	A	779.85	36.9	15-09-2007 01:40:16	0	0.007	0.403	0.2352504
H23	BP Highlands	2384965	1239418	9/15/2007	0	0.001409	0	A	778.39	36.9	15-09-2007 01:44:07	0	0.006	-0.048	0.23481
H24	BP Highlands	2385163	1239418	9/15/2007	0	0.001174	0.1730765	A	778.63	36.9571	15-09-2007 01:46:56	0	0.005	0.737	0.2348392
H25	BP Highlands	2385183	1239637	9/15/2007	0	0.001641	5.86E-02	A	777.55	37.092	15-09-2007 01:50:40	0	0.007	0.25	0.2344115
H26	BP Highlands	2385368	1239615	9/15/2007	0	0.001403	8.91E-02	A	776.23	37.3111	15-09-2007 01:54:02	0	0.006	0.381	0.2338484
H27	BP Highlands	2385379	1239416	9/15/2007	2.34E-04	0.001403	0.531869	A	776.91	37.5259	15-09-2007 01:57:01	0.001	0.006	2.274	0.2338914
H28	BP Highlands	2385578	1239420	9/15/2007	0	0.001642	0.1693246	A	779.44	37.7	15-09-2007 01:59:59	0	0.007	0.722	0.2345216
H29	BP Highlands	2385773	1239212	9/15/2007	0	0.001639	1.26E-02	A	778.39	37.8451	15-09-2007 02:03:47	0	0.007	0.054	0.2340964
H30	BP Highlands	2385572	1239214	9/15/2007	0	0.001405	0.1098367	A	779.07	37.988	15-09-2007 02:07:19	0	0.006	0.469	0.2341933
H31	BP Highlands	2385369	1239212	9/15/2007	0	0.001171	0.1527263	A	779.44	38.0701	15-09-2007 02:10:37	0	0.005	0.652	0.2342428
H32	BP Highlands	2385268	1238989	9/15/2007	0.4994692	0.001641	1.243634	A	779.98	38.1	15-09-2007 02:16:50	2.131	0.007	5.306	0.2343825
H33	BP Highlands	2385073	1238980	9/15/2007	2.399895	0.001644	0.8335513	A	781.6	38.1	15-09-2007 02:20:55	10.218	0.007	3.549	0.2348693
H34	BP Highlands	2384957	1239118	9/15/2007	2.383392	0.002582	2.628655	A	780.79	38	15-09-2007 02:23:29	10.155	0.011	11.2	0.2347013
H35	BP Highlands	2384776	1239217	9/15/2007	4.246241	0.000235	5.086855	A	779.74	37.7	15-09-2007 02:30:15	18.099	0.001	21.682	0.2346119
H36	BP Highlands	2384573	1239214	9/15/2007	0	0.001874	0.1009856	A	777.82	37.3402	15-09-2007 02:35:38	-0.005	0.008	0.431	0.2343054
H37	BP Highlands	2386617	1238313	9/15/2007	3.478255	0.000952	2.061003	A	787.53	36.2405	15-09-2007 02:53:04	14.61	0.004	8.657	0.2380736
H38	BP Highlands	2386883	1238134	9/15/2007	7.52E-02	0.000478	0.2149825	A	789.15	35.844	15-09-2007 02:59:39	0.315	0.002	0.9	0.2388695
H39	BP Highlands	2386942	1238109	9/15/2007	0.2996227	0.000239	0.2046029	A	788.2	35.6352	15-09-2007 03:03:08	1.255	0.001	0.857	0.2387432
H40	BP Highlands	2387013	1238093	9/15/2007	0	0.000239	0.4857943	A	788.2	35.3623	15-09-2007 03:06:20	0	0.001	2.033	0.2389544
H41	BP Highlands	2387488	1238003	9/15/2007	12.74548	0.000240	0.8943607	A	788.2	33.9768	15-09-2007 03:22:57	53.099	0.001	3.726	0.2400324
H42	BP Highlands	2387707	1238002	9/15/2007	32.10389	0.000240	0.1950626	A	788.2	33.7307	15-09-2007 03:26:08	133.641	0.001	0.812	0.2402249
H43	BP Highlands	2387652	1238020	9/15/2007	13.20407	0.000240	0.7876676	A	788.34	33.6096	15-09-2007 03:28:00	54.934	0.001	3.277	0.2403624
HP1	BP Highlands	2384780	1239232	9/9/2007	11.5338	0.002622	5.417337	B	780.09	31.341	9/9/2007 18:46	21.991	0.005	10.329	0.5244784
HP10	BP Highlands	2383378	1239811	9/9/2007	4.577275	0.006053	1.699266	B	776.21	41.8976	9/9/2007 20:02	9.075	0.012	3.369	0.504383
HP11	BP Highlands	2383377	1240006	9/9/2007	0.3391761	0.002016	0.129018	B	777.42	42.6432	9/9/2007 20:11	0.673	0.004	0.256	0.5039765
HP12	BP Highlands	2383174	1240020	9/9/2007	0.3719188	0.008009	0.4910529	B	774.19	43.4753	9/9/2007 20:23	0.743	0.016	0.981	0.5005636
HP13	BP Highlands	2383183	1240212	9/9/2007	0	0.004499	0.1099818	B	774.21	43.8929	9/9/2007 20:33	0	0.009	0.22	0.4999172
HP14	BP Highlands	2383378	1240205	9/9/2007	0	0.012493	8.30E-02	B	773.94	43.9	9/9/2007 20:38	0	0.025	0.166	0.4997317
HP15	BP Highlands	2383558	1240020	9/9/2007	0	0.009477	0.1596083	B	772.46	43.9	9/9/2007 20:46	0	0.019	0.32	0.498776
HP16	BP Highlands	2383762	1240010	9/9/2007	0.3409077	0.010513	0.2387856	B	775.43	43.9602	9/9/2007 20:55	0.681	0.021	0.477	0.5005987
HP17	BP Highlands	2383975	1240001	9/9/2007	0	0.008513	0.2078212	B	775.8	44.0004	9/9/2007 21:03	0	0.017	0.415	0.5007741
HP18	BP Highlands	2384192	1240008	9/9/2007	0	0.010004	0.1315577	B	775.29	44.1434	9/9/2007 21:11	0	0.02	0.263	0.5002193
HP19	BP Highlands	2384374	1240012	9/9/2007	0	0.007510	5.16E-02	B	776.23	44.2283	9/9/2007 21:20	0	0.015	0.103	0.5006919
HP2	BP Highlands	2384584	1239233	9/9/2007	2.583784	0.004682	0.851551	B	778.63	33.2766	9/9/2007 18:52	4.967	0.009	1.637	0.52019
HP20	BP Highlands	2384556	1240013	9/9/2007	2.387697	0.006503	2.105556	B	778.39	45.3921	9/9/2007 21:44	4.773	0.013	4.209	0.5002508
HP3	BP Highlands	2384398	1239210	9/9/2007	0.3491427	0.003103	9.36E-02	B	779.04	35.1815	9/9/2007 19:01	0.675	0.006	0.181	0.5172485
HP4	BP Highlands	2384373	1239402	9/9/2007	0.2867772	0.002056	0.3032232	B	778.09	36.7894	9/9/2007 19:10	0.558	0.004	0.59	0.5139376
HP5	BP Highlands	2384181	1239419	9/9/2007	0.3980417	0.002565	0.1405456	B	778.77	37.6634	9/9/2007 19:18	0.776	0.005	0.274	0.5129403
HP6	BP Highlands	2384190	1239623	9/9/2007	1.474663	0.006645	0.2698863	B	777.55	38.2644	9/9/2007 19:25	2.885	0.013	0.528	0.5111484
HP7	BP Highlands	2383979	1239812	9/9/2007	0.3298704	0.004085	0.1496161	B	778.63	39.0103	9/9/2007 19:37	0.646	0.008	0.293	0.5106353
HP8	BP Highlands	2383775	1239811	9/9/2007	0.3280866	0.004585	0.1380613	B	778.63	39.7358	9/9/2007 19:45	0.644	0.009	0.271	0.5094513
HP9	BP Highlands	2383579	1239817	9/9/2007	0.2949544	0.003541	0.1472242	B	776.21	40.9372	9/9/2007 19:54	0.583	0.007	0.291	0.5059252
PR1	Pine River	2387579	1238015	9/7/2007	10.6871	0.000542	0.7088994	B	788.47	24.9058	7/9/2007 6:01	19.734	0.001	1.309	0.541558
PR10	Pine River	2388379	1238014	9/7/2007	9.03E-02	0.006823	0.3017936	B	791.17	35.4422	7/9/2007 19:23	0.172	0.013	0.575	0.5248585
PR11	Pine River	2388375	1238214	9/7/2007	0.1151145	0.001046	9.42E-03	B	790.9	36.2864	7/9/2007 19:35	0.22	0.002	0.018	0.523248
PR12	Pine River	2388378	1238416	9/7/2007	9.91E-02	0.006782	0.3485059	B	789.01	36.4537	7/9/2007 19:38	0.19	0.013	0.668	0.5217155
PR13	Pine River	2388184	1238410	9/7/2007	0.3193926	0.005826	0.1885635	B	801.54	36.6454	7/9/2007 19:42	0.603	0.011	0.356	0.5296727
PR14	Pine River	2387976	1238411	9/7/2007	0.2193715	0.008337	0.3965361	B	789.15	36.8908	7/9/2007 19:45	0.421	0.016	0.761	0.5210724
PR15	Pine River	2387775	1238406	9/7/2007	0.3598393	0.005192	0.1646018	B	788.34	37.6604	7/9/2007 19:52	0.693	0.01	0.317	0.5192487
PR16	Pine River	2387576	1238413	9/7/2007	0.2811728	0.004143	0.2697809	B	788.34	38.5218	7/9/2007 19:59	0.543	0.008	0.521	0.5178136

FLUX DATA - PROJECT AREA

SitePt	SEEPAREA	Easting	Northing	Date	CH4flux	H2Sflux	CO2flux	Chamber	PRESSURE (HPa):	TEMP DegC	TIME:	CH4slope	H2Sslope	CO2slope	AcK
PR17	Pine River	2387374	1238209	9/7/2007	0.365228	0.004133	0.1627253	B	788.47	39.3125	7/9/2007 20:06	0.707	0.008	0.315	0.5165883
PR18	Pine River	2387182	1238207	9/7/2007	0.2827546	0.002060	0.1097026	B	788	40.0677	7/9/2007 20:15	0.549	0.004	0.213	0.5150356
PR19	Pine River	2387185	1238010	9/7/2007	2.270593	0.003127	0.6576747	B	787.5	36.2043	7/9/2007 22:37	4.357	0.006	1.262	0.5211368
PR2	Pine River	2387580	1238214	9/7/2007	0.3962283	0.006478	0.4825996	B	788.47	25.8651	7/9/2007 18:06	0.734	0.012	0.894	0.5398206
PR20	Pine River	2387348	1238005	9/7/2007	9.268849	0.002076	1.586766	B	788.61	37.88	7/9/2007 22:44	17.857	0.004	3.057	0.5190597
PR21	Pine River	2387153	1237817	9/7/2007	0.2007726	0.004129	0.4454158	B	788.61	39.6486	7/9/2007 22:54	0.389	0.008	0.863	0.5161249
PR22	Pine River	2386989	1237813	9/7/2007	0	0.006695	0.5865881	B	788.2	40.1672	7/9/2007 23:03	0	0.013	1.139	0.5150027
PR23	Pine River	2386980	1237608	9/7/2007	0.1322058	0.005659	0.2608108	B	787.39	40.2	7/9/2007 23:10	0.257	0.011	0.507	0.5144196
PR24	Pine River	2386810	1237602	9/7/2007	0	0.010804	0.7635163	B	787.26	40.1	7/9/2007 23:15	0	0.021	1.484	0.5144989
PR25	Pine River	2386786	1237810	9/7/2007	0	0.005168	0.2733833	B	786.99	38.6027	7/9/2007 23:41	0	0.01	0.529	0.5167927
PR26	Pine River	2386756	1238023	9/8/2007	0.4140383	0.000519	7.79E-02	B	800.06	42.1309	8/9/2007 0:21	0.797	0.001	0.15	0.519496
PR27	Pine River	2386987	1238005	9/8/2007	0.0270404	0.005102	0.2464248	B	786.72	42.5251	8/9/2007 0:29	0.053	0.01	0.483	0.5101962
PR28	Pine River	2386912	1238211	9/8/2007	5.10E-03	0.006626	7.59E-02	B	787.12	42.9838	8/9/2007 0:36	0.01	0.013	0.149	0.509715
PR29	Pine River	2386765	1238201	9/8/2007	0.9269545	0.003577	0.2258621	B	789.68	43.2142	8/9/2007 0:42	1.814	0.007	0.442	0.5110003
PR3	Pine River	2387780	1238215	9/7/2007	0.3262611	0.003230	0.4904684	B	789.01	26.8679	7/9/2007 18:12	0.606	0.006	0.911	0.5383847
PR30	Pine River	2386582	1238202	9/8/2007	0.6137983	0.001656	3.86E-02	B	787.26	18.831	8/9/2007 17:34	1.112	0.003	0.07	0.5519769
PR31	Pine River	2386574	1238391	9/8/2007	0.9700382	0.001092	3.838642	B	786.82	21.7582	8/9/2007 17:51	1.776	0.002	7.028	0.5461927
PR32	Pine River	2386562	1238581	9/8/2007	0.9381325	0.001624	1.14005	B	787.26	24.5713	8/9/2007 17:58	1.733	0.003	2.106	0.5413344
PR33	Pine River	2386789	1238609	9/8/2007	0.3571215	0.002135	0.6384413	B	788.74	29.3333	8/9/2007 18:12	0.669	0.004	1.196	0.5338138
PR34	Pine River	2386784	1238398	9/8/2007	0.1609896	0.004782	0.3161347	B	789.68	31.1159	8/9/2007 18:19	0.303	0.009	0.595	0.5313188
PR35	Pine River	2386976	1238395	9/8/2007	0.3707704	0.004219	0.2130743	B	790.09	33.5291	8/9/2007 18:29	0.703	0.008	0.404	0.5274116
PR36	Pine River	2387176	1238396	9/8/2007	0.3267893	0.006284	0.3032227	B	788.88	35.2292	8/9/2007 18:37	0.624	0.012	0.579	0.5237008
PR37	Pine River	2386564	1238017	9/8/2007	0.2804905	0.006256	3.13E-02	B	789.55	36.8781	8/9/2007 18:53	0.538	0.012	0.06	0.5213578
PR38	Pine River	2386387	1238213	9/8/2007	0.2381267	0.004215	9.17E-02	B	800.74	38.0068	8/9/2007 19:02	0.452	0.008	0.174	0.5268289
PR39	Pine River	2386394	1238418	9/8/2007	0.1649531	0.004124	0.2695952	B	787.12	39.4492	8/9/2007 19:10	0.32	0.008	0.523	0.5154784
PR4	Pine River	2387775	1238013	9/7/2007	2.309773	0.001074	3.848549	B	788.88	27.6441	7/9/2007 18:17	4.302	0.002	7.168	0.5369069
PR40	Pine River	2386388	1238617	9/8/2007	0.1639246	0.005123	3.38E-02	B	785.91	40.9268	8/9/2007 19:25	0.32	0.01	0.066	0.5122645
PR41	Pine River	2386193	1238609	9/8/2007	5.960918	0.005114	1.989359	B	787.02	41.9	8/9/2007 19:39	11.656	0.01	3.89	0.5114034
PR42	Pine River	2386183	1238421	9/8/2007	0	0.009207	1.07E-02	B	787.02	41.8309	8/9/2007 19:48	0	0.018	0.021	0.5115156
PR43	Pine River	2385976	1238409	9/8/2007	0	0.005619	1.94E-02	B	785.67	41.7	8/9/2007 19:55	0	0.011	0.038	0.5108505
PR44	Pine River	2385993	1238580	9/8/2007	3.275561	0.002542	1.04643	B	782.41	41.8618	8/9/2007 20:02	6.442	0.005	2.058	0.5084695
PR45	Pine River	2385784	1238619	9/8/2007	0.6567101	0.002035	0.7482731	B	783.51	42.1721	8/9/2007 20:09	1.291	0.004	1.471	0.5086833
PR46	Pine River	2385581	1238621	9/8/2007	0	0.002541	6.91E-02	B	782.98	42.2	8/9/2007 20:17	0	0.005	0.136	0.5082942
PR47	Pine River	2385579	1238807	9/8/2007	0.9531704	0.003045	0.8714556	B	782.17	42.3385	8/9/2007 20:28	1.878	0.006	1.717	0.5075455
PR48	Pine River	2385773	1238798	9/8/2007	0	0.004584	0.3056102	B	785.81	42.6836	8/9/2007 20:35	0	0.009	0.6	0.5093503
PR49	Pine River	2385993	1238814	9/8/2007	0.2287032	0.007099	4.06E-03	B	783.51	43.1551	8/9/2007 20:43	0.451	0.014	0.008	0.5071024
PR5	Pine River	2387971	1238017	9/7/2007	9.24E-02	0.615339	0.950732	B	801.54	28.716	7/9/2007 18:25	0.17	1.132	1.749	0.5435861
PR50	Pine River	2386157	1238806	9/8/2007	0.237528	0.011624	8.49E-02	B	783.11	44.0719	8/9/2007 20:55	0.47	0.023	0.168	0.5053787
PR51	Pine River	2385399	1238611	9/9/2007	0.1043931	0.000525	0.1127865	B	792.68	36.1904	9/9/2007 0:35	0.199	0.001	0.215	0.5245883
PR52	Pine River	2385195	1238610	9/9/2007	0	0.001567	0.1128316	B	790.09	36.4899	9/9/2007 0:44	0	0.003	0.216	0.5223685
PR53	Pine River	2385183	1238818	9/9/2007	0	0.004700	0.2444218	B	790.22	36.6	9/9/2007 0:52	0	0.009	0.468	0.5222688
PR54	Pine River	2385180	1239000	9/9/2007	11.76304	0.001542	1.923151	B	779.31	37.193	9/9/2007 1:09	22.882	0.003	3.741	0.514074
PR55	Pine River	2384997	1239024	9/9/2007	4.330749	0.003586	3.313376	B	779.04	38.1767	9/9/2007 1:23	8.454	0.007	6.468	0.5122721
PR56	Pine River	2385002	1238796	9/9/2007	0	0.001535	0.181605	B	778.77	38.5	9/9/2007 1:36	0	0.003	0.355	0.5115634
PR57	Pine River	2384792	1239030	9/9/2007	0	0.005624	0.1738394	B	777.82	38.2848	9/9/2007 1:45	0	0.011	0.34	0.5112924
PR58	Pine River	2385000	1239215	9/9/2007	0	0.006665	0.1292027	B	777.96	37.4802	9/9/2007 2:05	0	0.013	0.252	0.512709
PR59	Pine River	2385179	1239207	9/9/2007	0	0.004620	0.178129	B	778.09	37.1502	9/9/2007 2:13	0	0.009	0.347	0.51334
PR6	Pine River	2387987	1238207	9/7/2007	0.3129274	0.001602	0.6525551	B	789.41	29.4814	7/9/2007 18:31	0.586	0.003	1.222	0.5340058
PR60	Pine River	2385384	1239016	9/9/2007	27.80006	0.004649	4.924612	B	780.25	36.0566	9/9/2007 2:30	53.815	0.009	9.533	0.5165857
PR61	Pine River	2385382	1238803	9/9/2007	8.462175	0.001551	1.988273	B	780.25	35.9061	9/9/2007 2:36	16.373	0.003	3.847	0.5168372
PR62	Pine River	2385566	1239017	9/9/2007	8.78E-03	0.000000	0.1513312	B	779.44	35.7935	9/9/2007 2:47	0.017	0	0.293	0.5164889
PR63	Pine River	2385789	1239002	9/9/2007	0	0.003619	0.7093125	B	779.71	35.6	9/9/2007 2:53	0	0.007	1.372	0.5169916
PR64	Pine River	2385973	1238999	9/9/2007	0	0.003619	2.07E-03	B	779.31	35.4764	9/9/2007 3:00	0	0.007	0.004	0.5169333
PR65	Pine River	2385958	1238829	9/9/2007	0	0.001034	0	B	778.63	35.2	9/9/2007 3:09	0	0.002	-0.292	0.5169452
PR7	Pine River	2388182	1238213	9/7/2007	0.2836684	0.000000	0.1136839	B	801.68	30.0148	7/9/2007 18:35	0.524	0	0.21	0.5413519
PR8	Pine River	2388271	1238232	9/7/2007	9.279672	0.001595	1.634086	B	788.47	30.4	7/9/2007 18:39	17.451	0.003	3.073	0.5317559
PR9	Pine River	2388180	1238009	9/7/2007	0	0.000000	0.0806525	B	788.61	35.1138	7/9/2007 19:20	0	0	0.154	0.5237175
TC1	SFTC	2373967	1243459	9/12/2007	27.94465	0.003745	0.4199268	B	780.38	25.498	12/9/2007 17:55	52.239	0.007	0.785	0.5349385
TC10	SFTC	2373730	1243304	9/12/2007	5.735433	0.001417	1.086716	A	790.12	39.7318	12/9/2007 23:57	24.283	0.006	4.601	0.2361913
TC100	SFTC	2373145	1243189	9/16/2007	0	0.001892	0.1225223	A	783.22	36.556	16-09-2007 01:16:25	0	0.008	0.518	0.2365295
TC101	SFTC	2373115	1243216	9/16/2007	0	0.000474	8.36E-02	A	784.16	36.389	16-09-2007 01:20:58	0	0.002	0.353	0.2369411
TC102	SFTC	2374944	1243564	9/16/2007	0	0.000473	8.89E-02	A	780.79	35.6923	16-09-2007 01:38:52	0	0.002	0.376	0.236455
TC103	SFTC	2375141	1243604	9/16/2007	7.55E-02	0.000950	0.1624138	A	783.62	35.5167	16-09-2007 01:41:36	0.318	0.004	0.684	0.2374471

FLUX DATA - PROJECT AREA

SitePt	SEEPAREA	Easting	Northing	Date	CH4flux	H2Sflux	CO2flux	Chamber	PRESSURE (HPa):	TEMP DegC	TIME:	CH4slope	H2Sslope	CO2slope	AcK
TC11	SFTC	2373801	1243291	9/15/2007	39.68238	0.002731	0.6550575	A	782.38	21.5392	15-09-2007 17:10:55	159.806	0.011	2.638	0.248316
TC12	SFTC	2373643	1243292	9/15/2007	4.61E-02	0.000744	0.2003584	A	783.89	22.5219	15-09-2007 17:14:34	0.186	0.003	0.808	0.2479683
TC13	SFTC	2373641	1243365	9/15/2007	15.07179	0.000739	6.298007	A	782.41	23.7596	15-09-2007 17:20:03	61.151	0.003	25.553	0.2464684
TC14	SFTC	2373726	1243371	9/15/2007	3.633956	0.000246	0.2479149	A	782.27	24.6305	15-09-2007 17:24:18	14.79	0.001	1.009	0.2457036
TC15	SFTC	2373569	1243291	9/15/2007	0	0.000736	0.2399893	A	782.54	25.1166	15-09-2007 17:28:06	0	0.003	0.978	0.2453878
TC16	SFTC	2373564	1243370	9/15/2007	4.14E-02	0.000245	6.07E-02	A	782.27	25.6471	15-09-2007 17:32:20	0.169	0.001	0.248	0.2448677
TC17	SFTC	2373567	1243213	9/15/2007	0	0.001225	0.3267727	A	783.35	25.9504	15-09-2007 17:35:32	0	0.005	1.334	0.2449571
TC18	SFTC	2373644	1243133	9/15/2007	0	0.001957	0.2428904	A	782.95	26.2308	15-09-2007 17:38:46	0	0.008	0.993	0.2446027
TC19	SFTC	2373727	1243131	9/15/2007	0	0.002934	0.3537316	A	783.08	26.457	15-09-2007 17:41:30	0	0.012	1.447	0.2444586
TC2	SFTC	2374037	1243376	9/12/2007	28.60664	0.001570	1.983266	B	780.65	32.2521	12/9/2007 18:33	54.667	0.003	3.79	0.5232891
TC20	SFTC	2373805	1243137	9/15/2007	6.60E-02	0.002932	0.3562638	A	783.35	26.6922	15-09-2007 17:44:31	0.27	0.012	1.458	0.244351
TC21	SFTC	2373887	1243135	9/15/2007	0	0.001953	0.5402474	A	783.35	26.9705	15-09-2007 17:47:13	0	0.008	2.213	0.2441245
TC22	SFTC	2373962	1243138	9/15/2007	0.1379251	0.003418	0.4130428	A	784.29	27.3421	15-09-2007 17:50:56	0.565	0.014	1.692	0.2441151
TC23	SFTC	2374044	1243137	9/15/2007	4.21E-02	0.002190	0.1231392	A	782.95	27.7618	15-09-2007 17:54:43	0.173	0.009	0.506	0.2433582
TC24	SFTC	2374047	1243213	9/15/2007	0.3803195	0.001943	0.4677493	A	783.22	28.4824	15-09-2007 18:00:47	1.566	0.008	1.926	0.2428605
TC25	SFTC	2374126	1243295	9/15/2007	23.90938	0.001699	1.370447	A	783.89	28.8507	15-09-2007 18:04:00	98.485	0.007	5.645	0.2427718
TC26	SFTC	2374208	1243374	9/15/2007	46.69064	0.001696	0.7502148	A	783.22	29.256	15-09-2007 18:07:48	192.746	0.007	3.097	0.2422392
TC27	SFTC	2374281	1243379	9/15/2007	14.46579	0.001210	4.862096	A	783.22	29.6106	15-09-2007 18:11:53	59.787	0.005	20.095	0.2419555
TC28	SFTC	2374364	1243378	9/15/2007	2.60956	0.001451	1.415506	A	783.35	29.9054	15-09-2007 18:16:15	10.794	0.006	5.855	0.2417603
TC29	SFTC	2374450	1243377	9/15/2007	8.027208	0.001951	1.964125	A	791.07	30.2451	15-09-2007 18:19:38	32.916	0.008	8.054	0.2438695
TC3	SFTC	2374121	1243454	9/12/2007	0	0.005251	1.286014	B	781.19	31.3989	12/9/2007 19:19	0	0.01	2.449	0.5251181
TC30	SFTC	2374526	1243385	9/15/2007	1.46E-03	0.001949	0.3737503	A	791.03	30.5102	15-09-2007 18:22:16	0.006	0.008	1.534	0.2436443
TC31	SFTC	2374613	1243377	9/15/2007	0.013262	0.001929	0.6040241	A	783.62	30.8056	15-09-2007 18:25:16	0.055	0.008	2.505	0.2411274
TC32	SFTC	2374603	1243458	9/15/2007	5.47E-02	0.001946	0.1432695	A	791.17	31.0662	15-09-2007 18:27:57	0.225	0.008	0.589	0.243242
TC33	SFTC	2374605	1243539	9/15/2007	0.1007888	0.002405	0.2121616	A	783.48	31.4857	15-09-2007 18:32:21	0.419	0.01	0.882	0.240546
TC34	SFTC	2374528	1243535	9/15/2007	0	0.003122	0.2579296	A	783.48	31.978	15-09-2007 18:35:27	0	0.013	1.074	0.2401579
TC35	SFTC	2374526	1243461	9/15/2007	1.08153	0.002402	1.420424	A	784.43	32.32	15-09-2007 18:38:56	4.503	0.01	5.914	0.2401799
TC36	SFTC	2374446	1243456	9/15/2007	0	0.001917	9.51E-02	A	783.62	32.7664	15-09-2007 18:41:56	-0.117	0.008	0.397	0.2395818
TC37	SFTC	2374361	1243454	9/15/2007	2.091755	0.001913	2.293828	A	783.48	33.2772	15-09-2007 18:45:01	8.747	0.008	9.592	0.2391397
TC38	SFTC	2374287	1243457	9/15/2007	1.709297	0.001428	0.601587	A	783.48	34.6622	15-09-2007 18:52:48	7.18	0.006	2.527	0.2380637
TC39	SFTC	2374210	1243457	9/15/2007	2.903739	0.002139	0.7584375	A	783.48	35.1589	15-09-2007 18:55:58	12.217	0.009	3.191	0.2376802
TC4	SFTC	2374049	1243458	9/12/2007	0	0.002615	0.1621453	B	781.19	32.6034	12/9/2007 19:23	0	0.005	0.31	0.5230494
TC40	SFTC	2374129	1243376	9/15/2007	812.7207	0.000474	0.1925095	A	783.22	35.8359	15-09-2007 19:00:03	3428.034	0.002	0.812	0.2370807
TC41	SFTC	2374046	1243300	9/15/2007	4.424542	0.000956	1.385134	A	791.03	36.382	15-09-2007 19:03:56	18.511	0.004	5.795	0.2390223
TC42	SFTC	2373970	1243303	9/15/2007	0.1973799	0.002148	0.1754223	A	790.93	36.8	15-09-2007 19:07:30	0.827	0.009	0.735	0.2386698
TC43	SFTC	2373971	1243220	9/15/2007	0.1809619	0.002831	1.194065	A	782.95	37.2297	15-09-2007 19:10:53	0.767	0.012	5.061	0.2359347
TC44	SFTC	2373880	1243219	9/15/2007	4.41E-02	0.003299	1.71621	A	782.95	37.6525	15-09-2007 19:14:33	0.187	0.014	7.284	0.2356137
TC45	SFTC	2373804	1243220	9/15/2007	4.83E-02	0.001178	0.1401563	A	783.62	37.9936	15-09-2007 19:18:00	0.205	0.005	0.595	0.2355569
TC46	SFTC	2373726	1243222	9/15/2007	0.1769316	0.001880	0.2171113	A	782.68	38.3979	15-09-2007 19:22:06	0.753	0.008	0.924	0.234969
TC47	SFTC	2373648	1243219	9/15/2007	7.35E-02	0.001880	0.1294685	A	783.35	38.6632	15-09-2007 19:24:58	0.313	0.008	0.551	0.23497
TC48	SFTC	2374127	1243205	9/15/2007	0.3495125	0.003049	0.2922769	A	782.95	39.0326	15-09-2007 19:31:52	1.49	0.013	1.246	0.2345721
TC49	SFTC	2374203	1243292	9/15/2007	1174.618	0.001875	0.1513697	A	782.44	39.1671	15-09-2007 19:35:55	5012.915	0.008	0.646	0.2343184
TC5	SFTC	2374039	1243538	9/12/2007	3.662192	0.004686	1.862078	B	780.12	33.5532	12/9/2007 19:26	7.033	0.009	3.576	0.5207154
TC50	SFTC	2374286	1243301	9/15/2007	0	0.000703	0.6582257	A	782.41	39.1431	15-09-2007 19:43:15	0	0.003	2.809	0.2343274
TC51	SFTC	2374363	1243299	9/15/2007	86.12919	0.002814	0.6666792	A	782.81	39.0748	15-09-2007 19:47:28	367.291	0.012	2.843	0.2344985
TC52	SFTC	2374437	1243538	9/15/2007	0	0.004694	0.4393215	A	783.48	39.1	15-09-2007 19:51:48	-0.017	0.02	1.872	0.2346803
TC53	SFTC	2374375	1243534	9/15/2007	4.744563	0.002581	0.7872409	A	783.62	39.2	15-09-2007 19:54:32	20.22	0.011	3.355	0.2346471
TC54	SFTC	2374285	1243534	9/15/2007	0	0.003048	0.1148845	A	783.24	39.3	15-09-2007 19:57:27	0	0.013	0.49	0.2344582
TC55	SFTC	2374209	1243526	9/15/2007	0	0.003984	0.4853777	A	783.08	39.3554	15-09-2007 19:59:42	0	0.017	2.071	0.2343688
TC56	SFTC	2374126	1243536	9/15/2007	0	0.002343	0.1110532	A	783.08	39.4613	15-09-2007 20:02:48	0	0.01	0.474	0.2342894
TC57	SFTC	2374124	1243622	9/15/2007	0	0.003277	0.1193822	A	782.81	39.6293	15-09-2007 20:05:14	0	0.014	0.51	0.2340828
TC58	SFTC	2374201	1243616	9/15/2007	0	0.001872	0.1406486	A	783.08	39.8154	15-09-2007 20:07:44	0	0.008	0.601	0.2340243
TC59	SFTC	2374286	1243617	9/15/2007	9.61E-02	0.004961	0.3314157	A	790.79	39.96	15-09-2007 20:09:50	0.407	0.021	1.403	0.2362193
TC6	SFTC	2373967	1243381	9/12/2007	0.2385372	0.001552	0.4175695	B	780.38	35.6009	12/9/2007 19:37	0.461	0.003	0.807	0.5174344
TC60	SFTC	2374364	1243618	9/15/2007	0	0.001403	0.1692535	A	783.08	40.1484	15-09-2007 20:12:34	0	0.006	0.724	0.2337755
TC61	SFTC	2374448	1243616	9/15/2007	0	0.003509	0.173589	A	784.05	40.3059	15-09-2007 20:14:52	0	0.015	0.742	0.2339475
TC62	SFTC	2374040	1243617	9/15/2007	0	0.003734	0.1909131	A	782.81	40.5576	15-09-2007 20:19:15	0	0.016	0.818	0.2333901
TC63	SFTC	2373970	1243534	9/15/2007	77.78793	0.005649	1.418969	A	790.22	40.8803	15-09-2007 20:24:47	330.51	0.024	6.029	0.2353572
TC64	SFTC	2373893	1243459	9/15/2007	18.05145	0.002096	0.9950573	A	782.17	41	15-09-2007 20:27:00	77.517	0.009	4.273	0.2328709
TC65	SFTC	2373943	1242987	9/15/2007	2.43E-04	0.001944	0	A	780.92	27.4312	15-09-2007 23:00:39	0.001	0.008	-1.439	0.2429942
TC66	SFTC	2373940	1242787	9/15/2007	0	0.004844	0.10996	A	780.92	28.4134	15-09-2007 23:03:46	0	0.02	0.454	0.2422027
TC67	SFTC	2373820	1242846	9/15/2007	0.1519278	0.000000	0.8507473	A	780.38	30.4748	15-09-2007 23:11:48	0.632	0	3.539	0.240392
TC68	SFTC	2373761	1242882	9/15/2007	22.14806	0.001680	0.5870629	A	780.92	31.1693	15-09-2007 23:14:59	92.28	0.007	2.446	0.2400094

FLUX DATA - PROJECT AREA

SitePt	SEEPAREA	Easting	Northing	Date	CH4flux	H2Sflux	CO2flux	Chamber	PRESSURE (HPa):	TEMP DegC	TIME:	CH4slope	H2Sslope	CO2slope	AcK
TC69	SFTC	2373746	1242785	9/15/2007	8.78E-02	0.001436	0.1196528	A	780.65	31.9587	15-09-2007 23:18:06	0.367	0.006	0.5	0.2393056
TC7	SFTC	2373891	1243312	9/12/2007	0.9335502	0.001044	0.8510553	B	789.28	36.3198	12/9/2007 19:42	1.788	0.002	1.63	0.5221198
TC70	SFTC	2373547	1242791	9/15/2007	0.2204326	0.001923	0.1370192	A	787.8	33.3713	15-09-2007 23:23:47	0.917	0.008	0.57	0.2403845
TC71	SFTC	2373549	1242992	9/15/2007	0	0.001661	0.1406909	A	779.58	34.1769	15-09-2007 23:27:24	0	0.007	0.593	0.2372527
TC72	SFTC	2373734	1242993	9/15/2007	0	0.002372	0.1805333	A	780.92	34.7324	15-09-2007 23:30:26	0	0.01	0.761	0.2372317
TC73	SFTC	2373543	1243186	9/15/2007	2.54E-02	0.001895	0.3018406	A	781.19	35.2395	15-09-2007 23:34:37	0.107	0.008	1.274	0.2369235
TC74	SFTC	2373343	1243185	9/15/2007	0	0.003074	0.6921113	A	780.82	35.7009	15-09-2007 23:38:50	0	0.013	2.927	0.2364575
TC75	SFTC	2373396	1243159	9/15/2007	0	0.001183	5.85E-02	A	782.14	35.9199	15-09-2007 23:41:35	0	0.005	0.247	0.2366894
TC76	SFTC	2373343	1243383	9/15/2007	0	0.001180	0.1850666	A	780.55	36.1214	15-09-2007 23:45:18	-0.008	0.005	0.784	0.2360544
TC77	SFTC	2373277	1243403	9/15/2007	0.1524891	0.001191	0.2961624	A	788.23	36.2678	15-09-2007 23:48:52	0.64	0.005	1.243	0.2382642
TC78	SFTC	2373140	1243384	9/15/2007	0	0.001178	6.06E-02	A	779.98	36.4	15-09-2007 23:51:25	0	0.005	0.257	0.2356697
TC79	SFTC	2372946	1243386	9/15/2007	9.66E-02	0.003297	0.2112624	A	779.85	36.5438	15-09-2007 23:54:41	0.41	0.014	0.897	0.235521
TC8	SFTC	2373886	1243380	9/12/2007	1.071857	0.006348	1.021074	A	777.42	36.1212	12/9/2007 23:24	4.559	0.027	4.343	0.235108
TC80	SFTC	2372905	1243268	9/15/2007	0	0.000941	6.38E-02	A	779.58	36.7665	15-09-2007 23:58:13	0	0.004	0.271	0.2352703
TC81	SFTC	2372747	1243392	9/15/2007	4.09E-02	0.001881	0.1025285	A	779.98	37.0747	15-09-2007 00:02:34	0.174	0.008	0.436	0.2351572
TC82	SFTC	2372545	1243387	9/15/2007	2.46E-02	0.001643	6.69E-02	A	779.17	37.3604	15-09-2007 00:06:34	0.105	0.007	0.285	0.2346968
TC83	SFTC	2372347	1243390	9/15/2007	1.41E-03	0.001174	8.33E-02	A	779.71	37.5603	15-09-2007 00:09:51	0.006	0.005	0.355	0.2347084
TC84	SFTC	2372158	1243373	9/16/2007	1.543483	0.000938	2.374464	A	779.87	37.7575	16-09-2007 00:15:25	6.579	0.004	10.121	0.2346076
TC9	SFTC	2373807	1243385	9/12/2007	0.2741119	0.009363	0.7642829	A	777.02	37.3148	12/9/2007 23:32	1.171	0.04	3.265	0.2340836
TC90	SFTC	2372135	1242988	9/16/2007	0	0.001879	0.2175073	A	780.41	37.6	16-09-2007 00:44:05	0	0.008	0.926	0.2348891
TC91	SFTC	2372341	1242990	9/16/2007	0	0.001644	0.1338868	A	780.41	37.6	16-09-2007 00:47:52	0	0.007	0.57	0.2348891
TC92	SFTC	2372276	1242916	9/16/2007	0	0.002587	0.1119536	A	781.19	37.5038	16-09-2007 00:50:23	0	0.011	0.476	0.2351966
TC93	SFTC	2372270	1242879	9/16/2007	0	0.000704	0.1676638	A	779.87	37.4721	16-09-2007 00:53:08	0	0.003	0.714	0.2348232
TC94	SFTC	2372153	1243198	9/16/2007	0	0.004694	0.7812996	A	778.9	37.2552	16-09-2007 00:58:42	0	0.02	3.329	0.234695
TC95	SFTC	2372348	1243181	9/16/2007	0	0.002586	0.2668737	A	780.01	37.1211	16-09-2007 01:02:04	0	0.011	1.135	0.235131
TC96	SFTC	2372541	1243182	9/16/2007	0	0.000940	9.90E-02	A	779.71	37.0112	16-09-2007 01:04:46	0	0.004	0.421	0.2351239
TC97	SFTC	2372669	1243196	9/16/2007	0	0.000470	6.58E-02	A	779.58	36.9168	16-09-2007 01:07:51	0	0.002	0.28	0.2351563
TC98	SFTC	2372751	1243180	9/16/2007	0	0.001188	9.60E-02	A	787.26	36.8011	16-09-2007 01:10:22	0	0.005	0.404	0.2375615
TC99	SFTC	2372944	1243180	9/16/2007	0	0.001883	0.1082999	A	779.85	36.6576	16-09-2007 01:13:41	0	0.008	0.46	0.2354345
W1	SFTC	2375355	1242963	9/10/2007	0	0.004769	0.716372	B	780.79	28.5183	10/9/2007 19:38	0	0.009	1.352	0.529861
W10	SFTC	2375341	1242584	9/11/2007	0.4560956	0.005195	0.134543	B	779.85	34.1815	11/9/2007 0:13	0.878	0.01	0.259	0.519471
W11	SFTC	2375332	1242800	9/11/2007	0.1413534	0.008284	0.468589	B	779.58	35.0797	11/9/2007 0:19	0.273	0.016	0.905	0.5177779
W12	SFTC	2375136	1242384	9/11/2007	0.2589435	0.005674	0.1934339	B	779.58	36.2474	11/9/2007 0:28	0.502	0.011	0.375	0.5158238
W13	SFTC	2374948	1242395	9/11/2007	1.65E-02	0.006177	0.2445	B	779.04	36.6859	11/9/2007 0:31	0.032	0.012	0.475	0.514737
W14	SFTC	2374970	1242579	9/11/2007	0.1606746	0.001030	0.8940101	B	780.65	37.178	11/9/2007 0:38	0.312	0.002	1.736	0.5149828
W15	SFTC	2374941	1242788	9/11/2007	0	0.003083	0.1053299	B	779.17	37.3	11/9/2007 0:43	0	0.006	0.205	0.5138045
W16	SFTC	2374960	1242992	9/11/2007	0	0.006679	0.1474619	B	779.17	37.3	11/9/2007 0:47	0	0.013	0.287	0.5138045
W17	SFTC	2374969	1243173	9/11/2007	5.266824	0.005134	2.768959	B	778.36	37.2	11/9/2007 0:51	10.258	0.01	5.393	0.5134357
W18	SFTC	2374942	1243387	9/11/2007	0	0.003595	0.1330026	B	778.09	37.0393	11/9/2007 0:57	0	0.007	0.259	0.5135236
W19	SFTC	2374735	1243201	9/11/2007	372.6849	0.003084	8.260723	B	778.09	36.7625	11/9/2007 1:03	725.093	0.006	16.072	0.5139822
W2	SFTC	2375352	1243177	9/10/2007	0	0.004221	7.23E-02	B	780.79	29.7962	10/9/2007 19:44	0	0.008	0.137	0.5276259
W20	SFTC	2374860	1243170	9/11/2007	0	0.004633	0.3896534	B	778.77	36.5805	11/9/2007 1:08	0	0.009	0.757	0.5147337
W21	SFTC	2374914	1243185	9/11/2007	1.176749	0.005657	0.4073364	B	777.69	36.4036	11/9/2007 1:12	2.288	0.011	0.792	0.5143136
W22	SFTC	2374734	1242989	9/11/2007	0	0.009782	0.4618202	B	777.69	36.0813	11/9/2007 1:18	0	0.019	0.897	0.5148497
W23	SFTC	2374747	1242792	9/11/2007	0	0.001047	0.3026142	B	790.36	35.8944	11/9/2007 1:22	0	0.002	0.578	0.5235539
W24	SFTC	2374754	1242599	9/11/2007	0	0.007233	0.3089336	B	778.77	35.4547	11/9/2007 1:37	0	0.014	0.598	0.5166115
W25	SFTC	2374528	1242582	9/11/2007	0	0.007234	0.1467437	B	778.77	35.4	11/9/2007 1:42	0	0.014	0.284	0.516703
W26	SFTC	2374564	1242810	9/11/2007	0	0.004131	0.2824813	B	778.09	35.3	11/9/2007 1:47	0	0.008	0.547	0.5164192
W27	SFTC	2374538	1242970	9/11/2007	0	0.005680	0.3820817	B	777.82	35.2483	11/9/2007 1:53	0	0.011	0.74	0.5163265
W28	SFTC	2374554	1243171	9/11/2007	2.533435	0.008781	1.947723	B	777.96	35.2	11/9/2007 1:59	4.905	0.017	3.771	0.5165004
W29	SFTC	2374346	1243197	9/11/2007	1.04E-03	0.005177	0.2593896	B	779.58	35.1	11/9/2007 2:03	0.002	0.01	0.501	0.5177438
W3	SFTC	2375133	1243187	9/10/2007	0.3743344	0.014235	7.38E-03	B	783.75	31.1721	10/9/2007 19:53	0.71	0.027	0.014	0.5272316
W30	SFTC	2374354	1242999	9/11/2007	0	0.006728	0.2121968	B	779.04	35	11/9/2007 2:10	0	0.013	0.41	0.5175531
W31	SFTC	2374330	1242804	9/11/2007	0	0.004147	0.3022229	B	780.25	34.9788	11/9/2007 2:15	0	0.008	0.583	0.5183926
W32	SFTC	2374122	1242768	9/11/2007	0	0.003631	0.1701296	B	780.25	34.8035	11/9/2007 2:21	0	0.007	0.328	0.5186877
W33	SFTC	2374119	1242978	9/11/2007	0	0.005184	0.1249411	B	779.85	34.8	11/9/2007 2:26	0	0.01	0.241	0.5184277
W34	SFTC	2374124	1243187	9/11/2007	0.3307466	0.002107	0.4229132	B	792.25	34.8026	11/9/2007 2:32	0.628	0.004	0.803	0.5266665
W35	SFTC	2374445	1243343	9/11/2007	1.407543	0.003159	1.299594	B	792.11	34.8	11/9/2007 2:41	2.673	0.006	2.468	0.5265779
W36	SFTC	2374540	1243403	9/11/2007	0	0.002597	1.504704	B	781.06	34.7	11/9/2007 2:46	0	0.005	2.897	0.5194008
W37	SFTC	2374737	1243404	9/11/2007	1.98E-02	0.002600	0.2542462	B	781.6	34.5987	11/9/2007 2:51	0.038	0.005	0.489	0.519931
W4	SFTC	2375135	1243385	9/10/2007	16.22533	0.004654	0.5460498	B	785.27	37.7409	10/9/2007 20:26	31.378	0.009	1.056	0.5170926
W5	SFTC	2375146	1242982	9/10/2007	0.470524	0.006781	0.2618659	B	784.16	34.592	10/9/2007 20:09	0.902	0.013	0.502	0.5216452
W6	SFTC	2375280	1243027	9/10/2007	0.3677762	0.020662	1.103845	B	781.06	36.4052	10/9/2007 20:17	0.712	0.04	2.137	0.5165396

FLUX DATA - PROJECT AREA

SitePt	SEEPAREA	Easting	Northing	Date	CH4flux	H2Sflux	CO2flux	Chamber	PRESSURE (HPa):	TEMP DegC	TIME:	CH4slope	H2Sslope	CO2slope	AcK
W7	SFTC	2375342	1243388	9/10/2007	0.3849881	0.014847	0.2810618	B	779.87	38.7031	10/9/2007 20:35	0.752	0.029	0.549	0.5119523
W8	SFTC	2375132	1242775	9/10/2007	0	0.011257	0.2921696	B	780.95	39.3008	10/9/2007 20:46	0	0.022	0.571	0.5116806
W9	SFTC	2375164	1242563	9/10/2007	2.77883029	0.016373	1.810256243	B	781.49	39.5289	10-09-2007 20:58:11	5.431	0.032	3.538	0.5116609
TCE1	SFTC	2376960	1242568	9/10/2007	9.563703	0.003624	1.188797	B	773.78	32.7921	10/9/2007 1:13	18.471	0.007	2.296	0.5177685
TCE10	SFTC	2377737	1242980	9/10/2007	0.3474245	0.000526	1.84E-02	B	768.79	26.2874	10/9/2007 17:47	0.661	0.001	0.035	0.5256044
TCE11	SFTC	2376946	1242381	9/10/2007	2.76794	0.003619	1.847189	B	773.11	32.9902	10/9/2007 2:44	5.354	0.007	3.573	0.5169854
TCE12	SFTC	2377143	1242584	9/10/2007	1.350621	0.004661	1.30712	B	774.72	33.1	10/9/2007 2:51	2.608	0.009	2.524	0.5178763
TCE13	SFTC	2377124	1242790	9/10/2007	0	0.003611	0.1588704	B	771.22	32.936	10/9/2007 2:57	0	0.007	0.308	0.5158129
TCE14	SFTC	2377141	1242410	9/10/2007	0	0.016037	0.1769584	B	778.23	14.9505	10/9/2007 16:42	0	0.029	0.32	0.5529951
TCE15	SFTC	2377355	1242391	9/10/2007	0	0.024715	0.3454655	B	778.23	16.9257	10/9/2007 16:48	0	0.045	0.629	0.5492296
TCE16	SFTC	2377356	1242584	9/10/2007	1.048171	0.004365	0.8015423	B	777.12	18.4186	10/9/2007 16:56	1.921	0.008	1.469	0.5456381
TCE17	SFTC	2377356	1242795	9/10/2007	0.3972554	0.001084	0.1018881	B	775.13	19.6466	10/9/2007 17:03	0.733	0.002	0.188	0.5419583
TCE18	SFTC	2377528	1242780	9/10/2007	0.2922271	0.002189	2.52E-02	B	785.78	20.8038	10/9/2007 17:11	0.534	0.004	0.046	0.5472417
TCE19	SFTC	2377723	1242774	9/10/2007	0.3187788	0.002683	0.2871156	B	773.51	21.9168	10/9/2007 17:20	0.594	0.005	0.535	0.5366646
TCE2	SFTC	2376748	1242594	9/10/2007	0	0.003625	0.2206043	B	775.13	33.2773	10/9/2007 1:19	0	0.007	0.426	0.5178505
TCE20	SFTC	2377927	1242780	9/10/2007	0.3612366	0.001603	0.1448153	B	773.38	23.132	10/9/2007 17:29	0.676	0.003	0.271	0.5343736
TCE21	SFTC	2377941	1242971	9/10/2007	0.3489877	0.002652	4.30E-02	B	771.49	24.6354	10/9/2007 17:38	0.658	0.005	0.081	0.5303765
TCE22	SFTC	2377732	1242585	9/10/2007	0.2527919	0.003127	0.1876393	B	768.79	28.806	10/9/2007 17:59	0.485	0.006	0.36	0.5212204
TCE23	SFTC	2377641	1242552	9/10/2007	104.5558	0.007298	1.189603	B	774.05	30.8264	10/9/2007 18:10	200.568	0.014	2.282	0.5212985
TCE24	SFTC	2377538	1242399	9/10/2007	0	0.002087	0.158633	B	775.94	31.2647	10/9/2007 18:23	0	0.004	0.304	0.521819
TCE25	SFTC	2377755	1242393	9/10/2007	0	0.003647	0.2328811	B	775.94	31.7509	10/9/2007 18:27	0	0.007	0.447	0.5209869
TCE26	SFTC	2377562	1242580	9/10/2007	0	0.002601	0.1149688	B	775.94	32.2	10/9/2007 18:34	0	0.005	0.221	0.5202206
TCE27	SFTC	2376967	1242175	9/10/2007	0.410906	0.008322	0.2096141	B	777.69	32.9395	10/9/2007 18:44	0.79	0.016	0.403	0.5201342
TCE28	SFTC	2376727	1242986	9/10/2007	0.2204726	0.003113	5.24E-02	B	777.42	33.6444	10/9/2007 18:55	0.425	0.006	0.101	0.518759
TCE3	SFTC	2376740	1242779	9/10/2007	0	0.000000	0.2543839	B	774.45	33.4882	10/9/2007 1:37	0	0	0.492	0.5170404
TCE4	SFTC	2376939	1242777	9/10/2007	0.6331699	0.003106	0.8537181	B	774.99	33.3	10/9/2007 1:47	1.223	0.006	1.649	0.5177187
TCE5	SFTC	2376944	1242991	9/10/2007	0	0.009787	0.1143483	B	771.76	33.5847	10/9/2007 1:53	0	0.019	0.222	0.5150824
TCE6	SFTC	2377124	1242984	9/10/2007	0	0.009244	4.98E-02	B	770.68	34.0507	10/9/2007 1:58	0	0.018	0.097	0.5135813
TCE7	SFTC	2377323	1242979	9/10/2007	13.13969	0.007813	2.951587	B	783.08	34.6447	10/9/2007 2:05	25.228	0.015	5.667	0.5208376
TCE8	SFTC	2377338	1243171	9/10/2007	0	0.008152	0.2333492	B	767.18	35.1076	10/9/2007 2:11	0	0.016	0.458	0.509496
TCE9	SFTC	2377541	1242985	9/10/2007	0	0.010688	0.1262151	B	767.18	35.4494	10/9/2007 2:19	0	0.021	0.248	0.5089318
TC85	SFTC	2371948	1243382	9/16/2007	7.74E-03	0.000938	7.93E-02	A	780.25	37.8979	16-09-2007 00:20:06	0.033	0.004	0.338	0.234616
TC86	SFTC	2371946	1243186	9/16/2007	0	0.002579	0.1704466	A	779.71	37.9	16-09-2007 00:26:17	0	0.011	0.727	0.234452
TC87	SFTC	2371948	1242987	9/16/2007	0	0.004738	0.289473	A	787.8	37.9	16-09-2007 00:29:09	0	0.02	1.222	0.2368846
TC88	SFTC	2371748	1242984	9/16/2007	0	0.002111	0.1210379	A	779.85	37.8	16-09-2007 00:31:52	0	0.009	0.516	0.2345695
TC89	SFTC	2371746	1243183	9/16/2007	0	0.000939	0.4273576	A	780.41	37.7022	16-09-2007 00:38:31	0	0.004	1.82	0.2348118
TCW1	SFTC	2371588	1243469	9/18/2007	24.11289	0.006959	3.652007	A	776.75	29.582	18-09-2007 19:36:27	100.479	0.029	15.218	0.2399794
TCW10	SFTC	2371251	1243359	9/18/2007	1.270021	0.010562	2.604851	A	785.37	32.8718	18-09-2007 20:11:00	5.291	0.044	10.852	0.2400342
TCW11	SFTC	2371354	1243385	9/18/2007	0.173882	0.008154	0.260943	A	785.24	33.0723	18-09-2007 20:13:51	0.725	0.034	1.088	0.2398373
TCW12	SFTC	2371547	1243384	9/18/2007	0.1578391	0.003792	0.4332281	A	776.75	33.3934	18-09-2007 20:17:39	0.666	0.016	1.828	0.2369957
TCW13	SFTC	2370744	1243380	9/18/2007	0	0.003540	0.4875088	A	777.42	34.9947	18-09-2007 20:35:59	0	0.015	2.066	0.2359675
TCW14	SFTC	2370648	1243446	9/18/2007	0.384003	0.006600	3.496101	A	777.15	35.1989	18-09-2007 20:39:58	1.629	0.028	14.831	0.2357293
TCW15	SFTC	2370548	1243383	9/18/2007	0	0.003767	0.2893416	A	776.75	35.434	18-09-2007 20:43:31	0	0.016	1.229	0.2354285
TCW16	SFTC	2370549	1243180	9/18/2007	0.1906443	0.005230	0.371067	A	784.83	35.65	18-09-2007 20:46:58	0.802	0.022	1.561	0.2377111
TCW17	SFTC	2370749	1243178	9/18/2007	0.1064231	0.005701	0.1627228	A	785	35.9244	18-09-2007 20:50:35	0.448	0.024	0.685	0.2375515
TCW18	SFTC	2370774	1243441	9/18/2007	2.690851	0.008063	1.704577	A	784.29	36.178	18-09-2007 20:54:03	11.347	0.034	7.188	0.237142
TCW19	SFTC	2370547	1243568	9/18/2007	3.64E-02	0.006342	0	A	777.42	36.4277	18-09-2007 20:58:05	0.155	0.027	-0.053	0.2348752
TCW2	SFTC	2371740	1243384	9/18/2007	0	0.005035	0.2059738	A	777.15	29.9858	18-09-2007 19:39:41	0	0.021	0.859	0.2397832
TCW20	SFTC	2370758	1243560	9/18/2007	0.1614832	0.005156	2.014204	A	776.34	36.6597	18-09-2007 21:01:44	0.689	0.022	8.594	0.2343733
TCW21	SFTC	2370949	1243558	9/18/2007	0.1765415	0.009144	6.40E-02	A	777.15	36.8803	18-09-2007 21:05:03	0.753	0.039	0.273	0.2344509
TCW22	SFTC	2371137	1243578	9/18/2007	0.2745509	0.009451	0.4423057	A	783.92	37.1674	18-09-2007 21:09:32	1.162	0.04	1.872	0.2362744
TCW23	SFTC	2371365	1243552	9/18/2007	7.251099	0.008671	6.35098	A	777.96	37.3438	18-09-2007 21:13:24	30.942	0.037	27.101	0.2343449
TCW3	SFTC	2371531	1243202	9/18/2007	0.7491132	0.006936	3.294711	A	777.15	30.7497	18-09-2007 19:46:32	3.132	0.029	13.775	0.2391805
TCW4	SFTC	2371454	1243219	9/18/2007	0.8178561	0.007164	4.081161	A	777.15	31.2465	18-09-2007 19:50:33	3.425	0.03	17.091	0.2387901
TCW5	SFTC	2371346	1243180	9/18/2007	2.05E-02	0.004769	0.3937067	A	777.15	31.6607	18-09-2007 19:53:25	0.086	0.02	1.651	0.2384656
TCW6	SFTC	2371142	1243174	9/18/2007	0.1344418	0.002384	0.4681626	A	777.69	31.9923	18-09-2007 19:56:38	0.564	0.01	1.964	0.238372
TCW7	SFTC	2370944	1243181	9/18/2007	0	0.003338	0.2193218	A	778.9	32.4398	18-09-2007 20:01:31	0	0.014	0.92	0.2383932
TCW8	SFTC	2370974	1243390	9/18/2007	0.1380895	0.006417	1.070253	A	776.88	32.5676	18-09-2007 20:05:33	0.581	0.027	4.503	0.2376756
TCW9	SFTC	2371168	1243383	9/18/2007	0	0.003326	0.5229213	A	777.02	32.7412	18-09-2007 20:08:32	0	0.014	2.201	0.2375835
VP1	Vosburg Pike	2350959	1243882	9/25/2007	0	0.001958	0.381903	A	758.42	16.606	25-09-2007 18:02:36	0	0.008	1.56	0.2448096
VP10	Vosburg Pike	2349262	1244091	9/25/2007	0	0.004463	0.2006046	A	754.91	27.4322	25-09-2007 18:57:51	-0.026	0.019	0.854	0.2349
VP11	Vosburg Pike	2349267	1243900	9/25/2007	0.2244699	0.005149	1.439276	A	754.51	28.3426	25-09-2007 19:03:54	0.959	0.022	6.149	0.2340666
VP12	Vosburg Pike	2349458	1243884	9/25/2007	0	0.008174	0.8910048	A	755.18	29.2739	25-09-2007 19:08:10	0	0.035	3.815	0.233553

FLUX DATA - PROJECT AREA

SitePt	SEEPAREA	Easting	Northing	Date	CH4flux	H2Sflux	CO2flux	Chamber	PRESSURE (HPa):	TEMP DegC	TIME:	CH4slope	H2Sslope	CO2slope	AcK
VP13	Vosburg Pike	2349658	1243897	9/25/2007	5.86E-02	0.001884	0.2069582	A	763	29.9472	25-09-2007 19:11:56	0.249	0.008	0.879	0.2354473
VP14	Vosburg Pike	2349589	1244045	9/25/2007	0.2005375	0.004653	1.175773	A	755.99	30.7837	25-09-2007 19:17:42	0.862	0.02	5.054	0.2326421
VP15	Vosburg Pike	2349597	1244099	9/25/2007	0.1038062	0.006735	1.171825	A	755.86	31.2726	25-09-2007 19:21:17	0.447	0.029	5.046	0.2322285
VP16	Vosburg Pike	2349474	1244300	9/25/2007	0.1693262	0.008107	0.5663511	A	755.32	31.8327	25-09-2007 19:25:49	0.731	0.035	2.445	0.2316364
VP17	Vosburg Pike	2349663	1244294	9/25/2007	0	0.005766	0.3817009	A	753.43	32.3905	25-09-2007 19:29:59	0	0.025	1.655	0.230635
VP18	Vosburg Pike	2352584	1242767	9/25/2007	0	0.008648	0.1500482	A	768.79	34.5044	25-09-2007 20:05:52	0	0.037	0.642	0.2337199
VP19	Vosburg Pike	2352586	1242955	9/25/2007	6.82E-02	0.009346	0.4500333	A	768.93	34.6365	25-09-2007 20:09:56	0.292	0.04	1.926	0.2336621
VP2	Vosburg Pike	2350868	1243789	9/25/2007	0.5618156	0.007322	1.194407	A	758.42	17.5014	25-09-2007 18:05:28	2.302	0.03	4.894	0.2440554
VP20	Vosburg Pike	2352790	1242954	9/25/2007	0	0.003957	0.8932579	A	766.64	34.9351	25-09-2007 20:15:38	0	0.017	3.838	0.2327405

FLUX DATA - PROJECT AREA

SitePt	SEEPAREA	Easting	Northing	Date	CH4flux	H2Sflux	CO2flux	Chamber	PRESSURE (HPa):	TEMP DegC	TIME:	CH4slope	H2Sslope	CO2slope	AcK
VP21	Vosburg Pike	2352779	1242875	9/25/2007	0	0.007697	1.107619	A	768.79	35.1479	25-09-2007 20:20:22	0	0.033	4.749	0.2332321
VP22	Vosburg Pike	2352705	1242826	9/25/2007	0	0.009564	1.418987	A	769.2	35.261	25-09-2007 20:24:13	0	0.041	6.083	0.2332709
VP23	Vosburg Pike	2352781	1242768	9/25/2007	0	0.010024	0.6522311	A	768.95	35.3786	25-09-2007 20:27:15	0	0.043	2.798	0.2331062
VP24	Vosburg Pike	2352797	1242817	9/25/2007	0.1722939	0.008473	0.64469	A	776.61	35.4495	25-09-2007 20:31:07	0.732	0.036	2.739	0.2353742
VP25	Vosburg Pike	2352761	1242925	9/25/2007	0	0.006760	1.343299	A	769.2	35.5	25-09-2007 20:33:37	0	0.029	5.763	0.2330903
VP26	Vosburg Pike	2352392	1242764	9/25/2007	0	0.006056	9.99E-02	A	768.79	35.545	25-09-2007 20:39:11	0	0.026	0.429	0.232932
VP3	Vosburg Pike	2350768	1243683	9/25/2007	0	0.006321	0.6518295	A	758.42	18.6086	25-09-2007 18:09:27	0	0.026	2.681	0.2431293
VP4	Vosburg Pike	2350761	1243880	9/25/2007	9.17E-02	0.004354	0.4581254	A	757.72	19.8418	25-09-2007 18:14:51	0.379	0.018	1.894	0.2418825
VP5	Vosburg Pike	2350892	1243799	9/25/2007	1.069628	0.005830	0.5786632	A	765.05	21.3985	25-09-2007 18:20:56	4.403	0.024	2.382	0.2429317
VP6	Vosburg Pike	2350957	1243691	9/25/2007	0.1258659	0.004850	0.2041986	A	765.83	22.2039	25-09-2007 18:24:47	0.519	0.02	0.842	0.2425162
VP7	Vosburg Pike	2349667	1244097	9/25/2007	0	0.001891	0.4294147	A	754.64	25.5044	25-09-2007 18:42:47	0	0.008	1.817	0.2363317
VP8	Vosburg Pike	2349570	1244091	9/25/2007	0.2596574	0.006373	1.115583	A	754.78	25.9135	25-09-2007 18:46:39	1.1	0.027	4.726	0.2360522
VP9	Vosburg Pike	2349463	1244091	9/25/2007	0	0.008002	0.5062408	A	754.51	26.6968	25-09-2007 18:52:56	0	0.034	2.151	0.2353514

APPENDIX C

CARBON DIOXIDE FLUX MAPS

LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers

Carbon Dioxide Flux Location (mol/m^2 • 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^2 • day - moles per square meter per day

Parcel Boundary & Owner (white)

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)

0 200 400

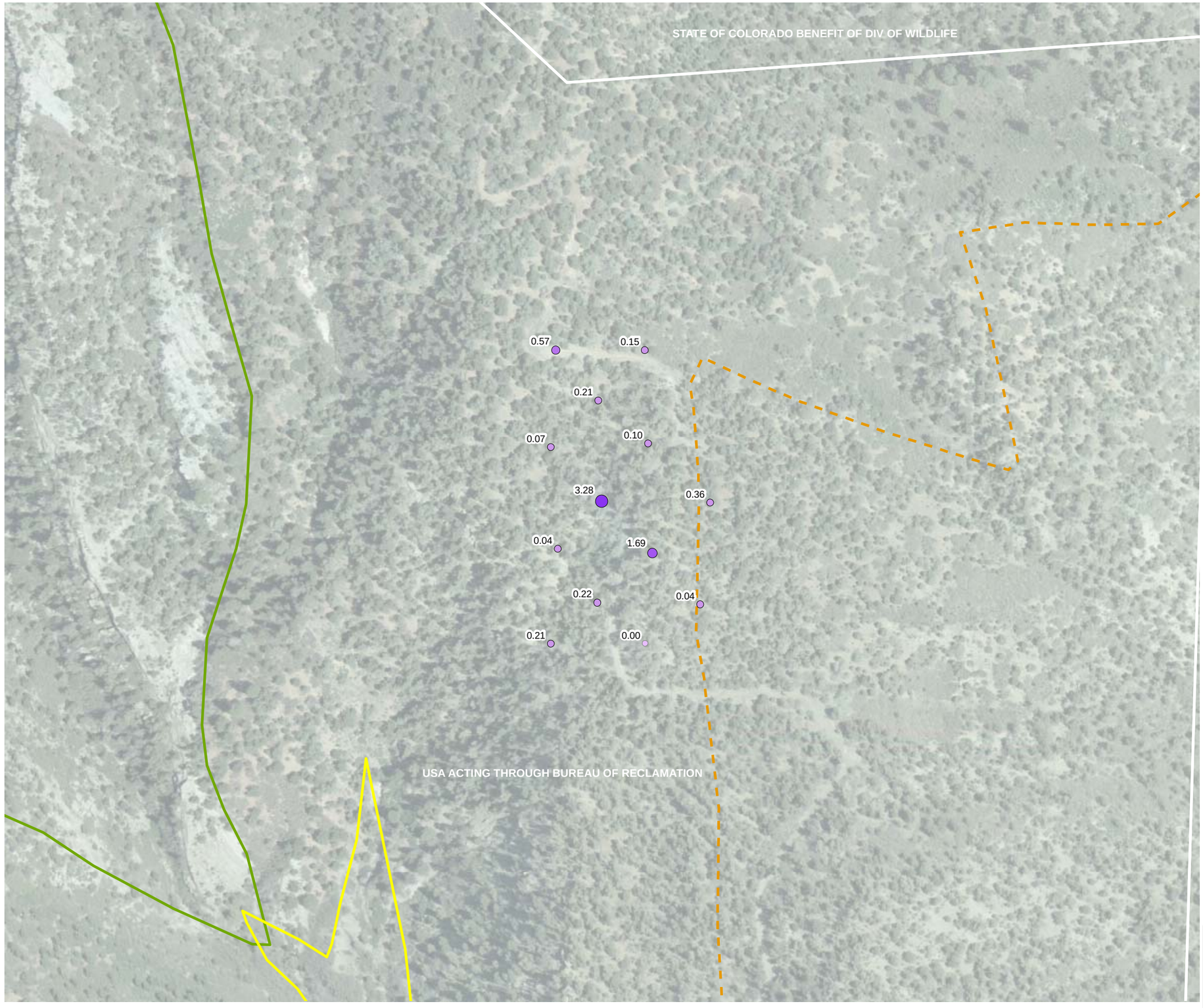
Feet

N

CARBON DIOXIDE FLUX MEASUREMENT MAP
2007 DETAILED SEEP MAPPING
BASIN CREEK

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 14_CO2_FLUX.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers

Carbon Dioxide Flux Location (mol/m^2 • 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^2 • day - moles per square meter per day

Parcel Boundary & Owner (white)

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)

0 200 400

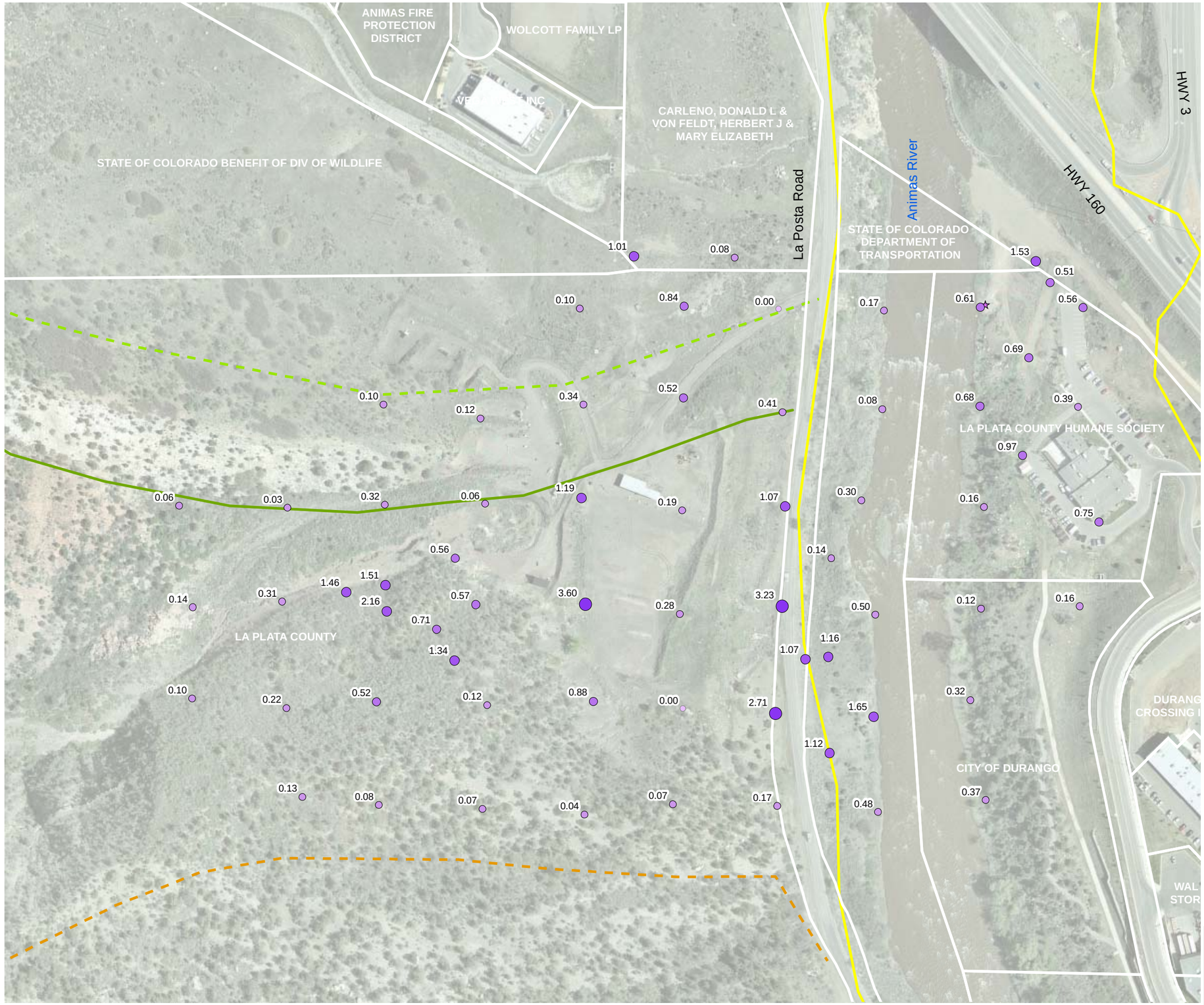
Feet

N

CARBON DIOXIDE FLUX MEASUREMENT MAP
2007 DETAILED SEEP MAPPING
BASIN CREEK NORTH

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 14_CO2_FLUX.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers

Carbon Dioxide Flux Location (mol/m^2 • 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^2 • day - moles per square meter per day

Parcel Boundary & Owner (white)

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)

0 200 400

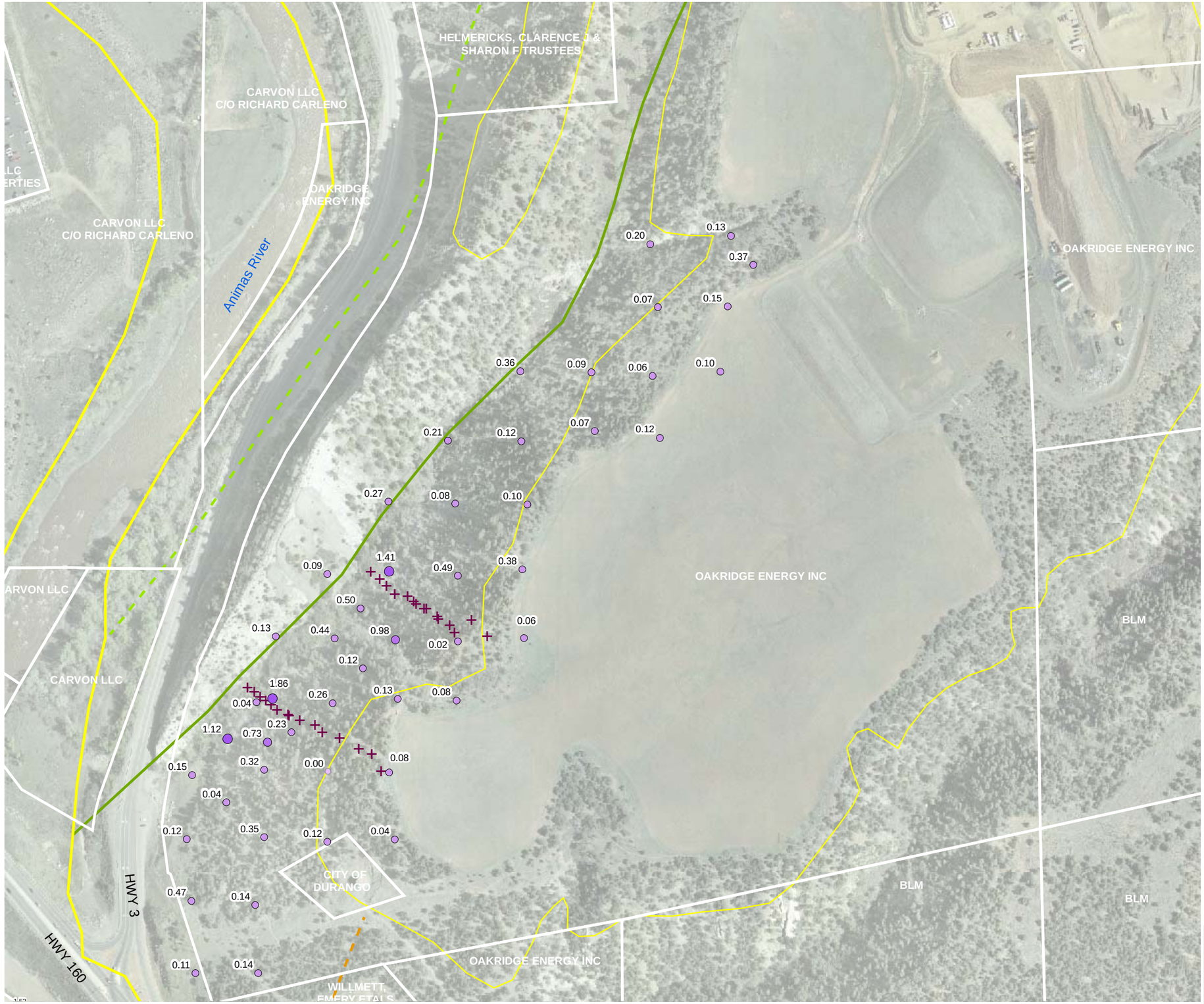
Feet

N

CARBON DIOXIDE FLUX MEASUREMENT MAP
2007 DETAILED SEEP MAPPING
CARBON JUNCTION WEST

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 14_CO2_FLUX.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers

Carbon Dioxide Flux Location (mol/m^2 • 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^2 • day - moles per square meter per day

Parcel Boundary & Owner (white)

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)

0 300 600
Feet

N

CARBON DIOXIDE FLUX MEASUREMENT MAP
2007 DETAILED SEEP MAPPING
CARBON JUNCTION EAST

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 14_CO2_FLUX.mxd

LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers

Carbon Dioxide Flux Location (mol/m^2 • 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^2 • day - moles per square meter per day

Parcel Boundary & Owner (white)

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)

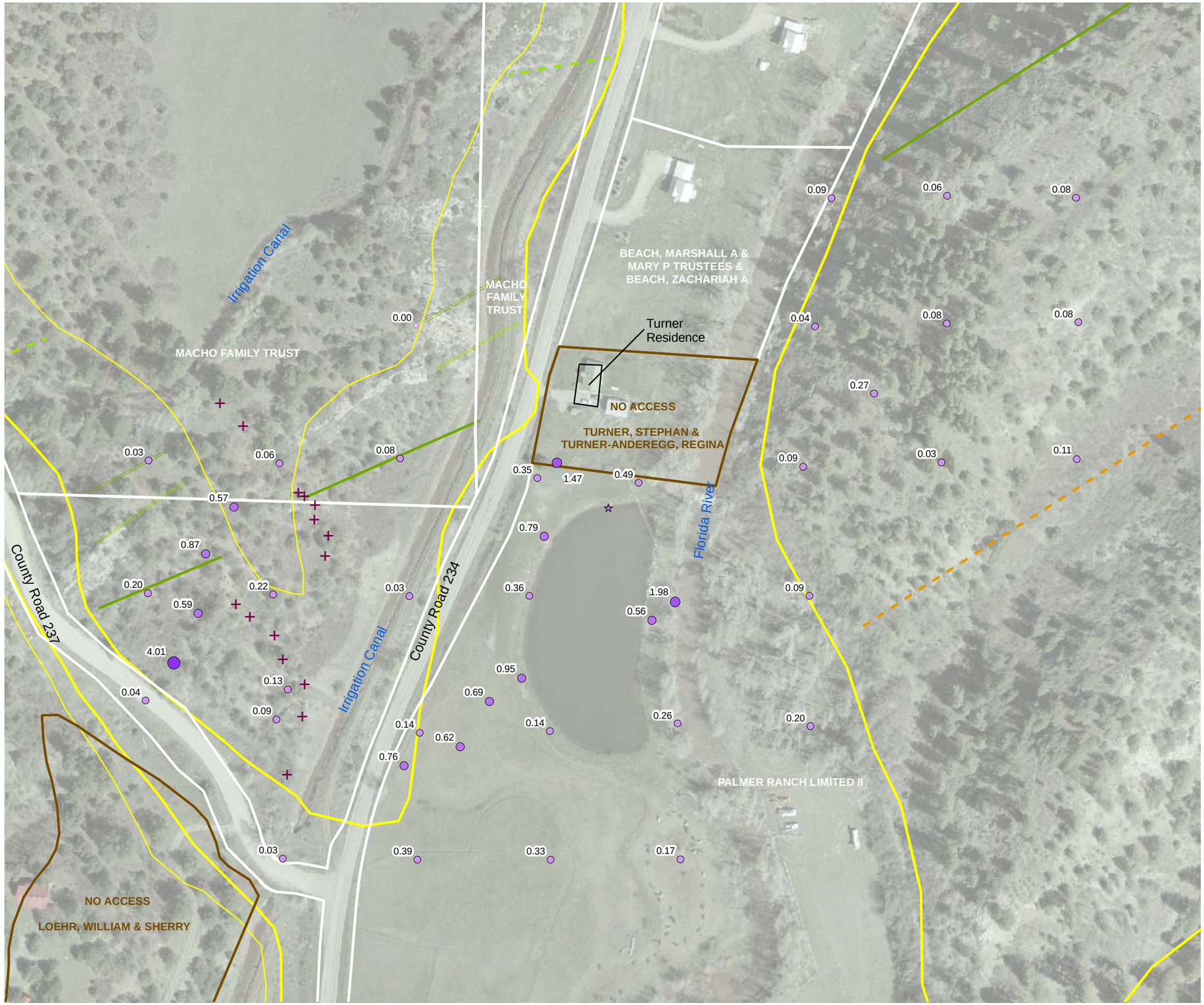
0 150 300
Feet

N

CARBON DIOXIDE FLUX MEASUREMENT MAP
2007 DETAILED SEEP MAPPING
FLORIDA RIVER WEST

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 14_CO2_FLUX.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers

Carbon Dioxide Flux Location (mol/m^2 • 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^2 • day - moles per square meter per day

Parcel Boundary & Owner (white)

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)

0 150 300

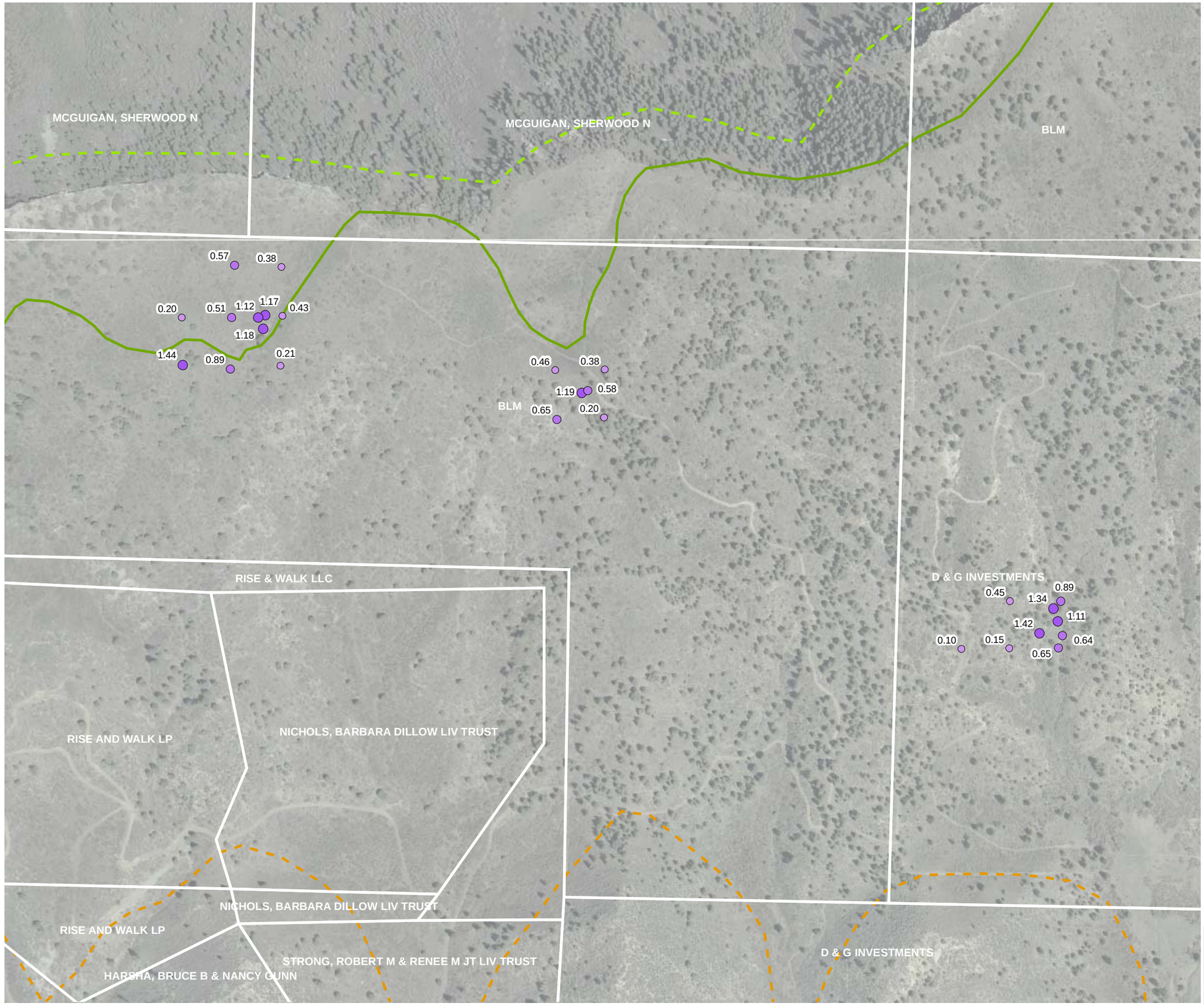
Feet

N

CARBON DIOXIDE FLUX MEASUREMENT MAP
2007 DETAILED SEEP MAPPING
FLORIDA RIVER EAST

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 14_CO2_FLUX.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers

Carbon Dioxide Flux Location (mol/m^2 • 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^2 • day - moles per square meter per day

Parcel Boundary & Owner (white)

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)

0 400 800

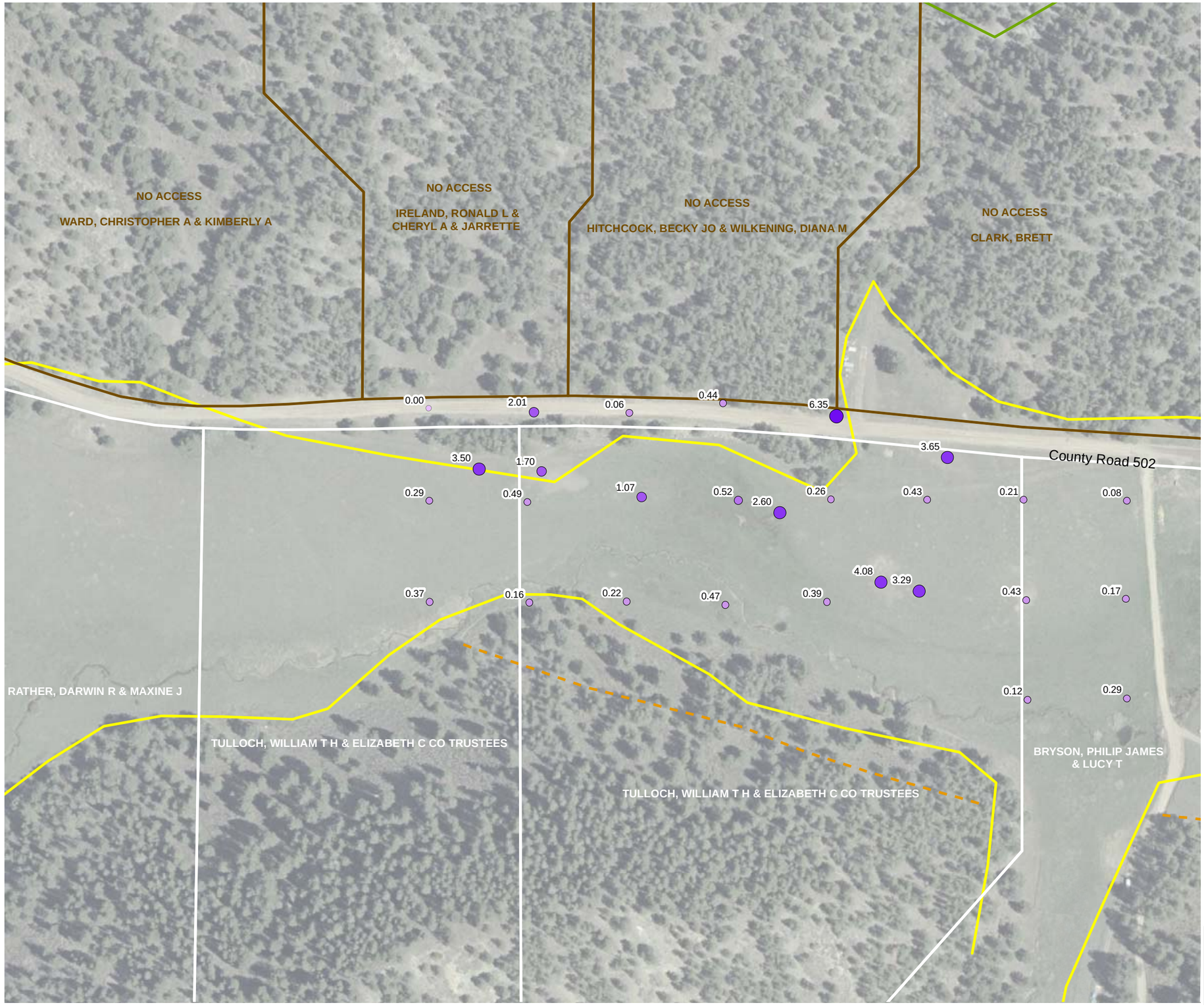
Feet

N

CARBON DIOXIDE FLUX MEASUREMENT MAP
2007 DETAILED SEEP MAPPING
VOSBURG PIKE

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 14_CO2_FLUX.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers

Carbon Dioxide Flux Location (mol/m^2 • 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^2 • day - moles per square meter per day

Parcel Boundary & Owner (white)

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)

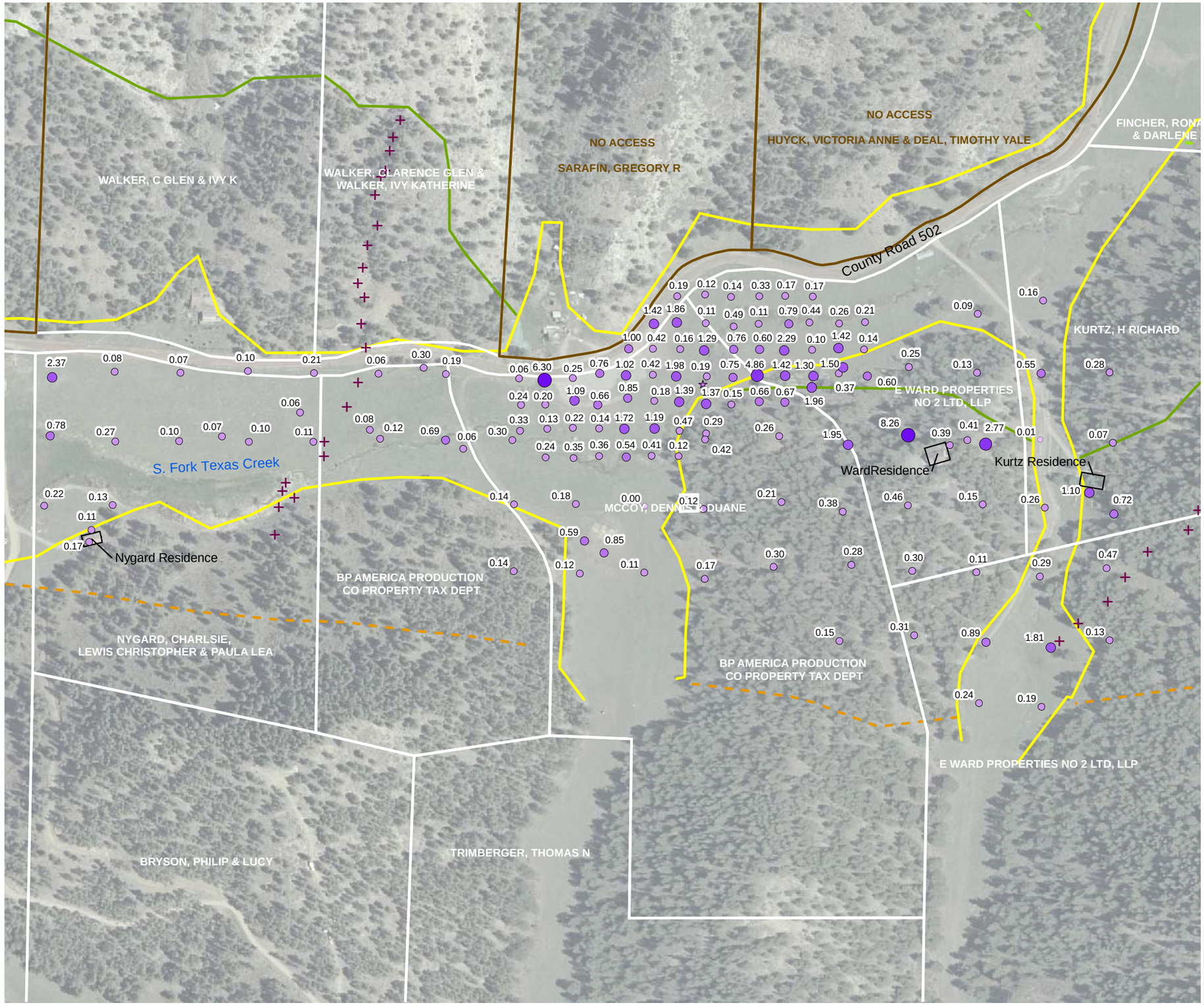
0 200 400
Feet

N

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

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 14_CO2_FLUX.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers

Carbon Dioxide Flux Location (mol/m^2 • 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^2 • day - moles per square meter per day

Parcel Boundary & Owner (white)

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)

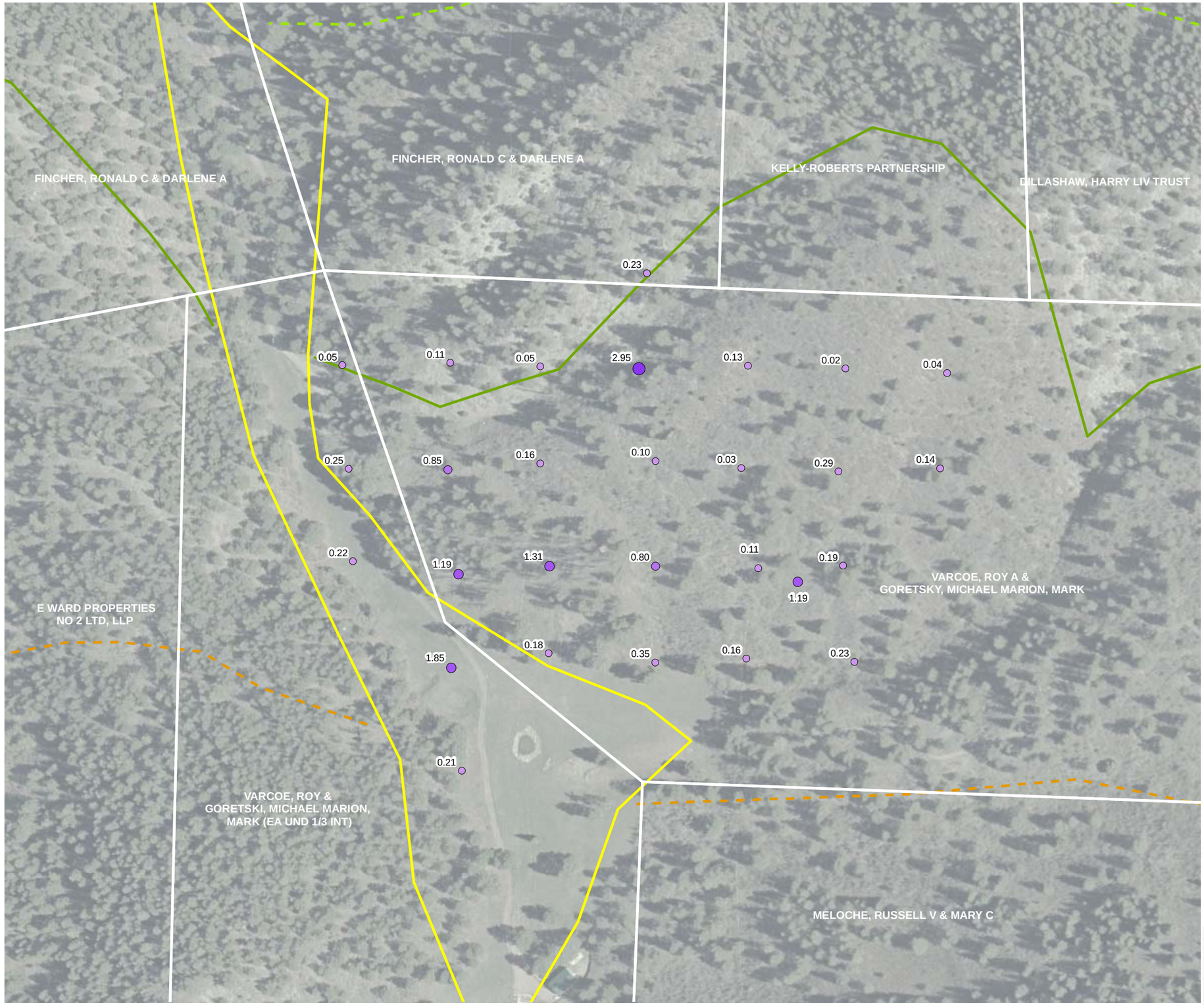
0 300 600
Feet

N

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

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 14_CO2_FLUX.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers

Carbon Dioxide Flux Location (mol/m^2 • 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^2 • day - moles per square meter per day

Parcel Boundary & Owner (white)

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)

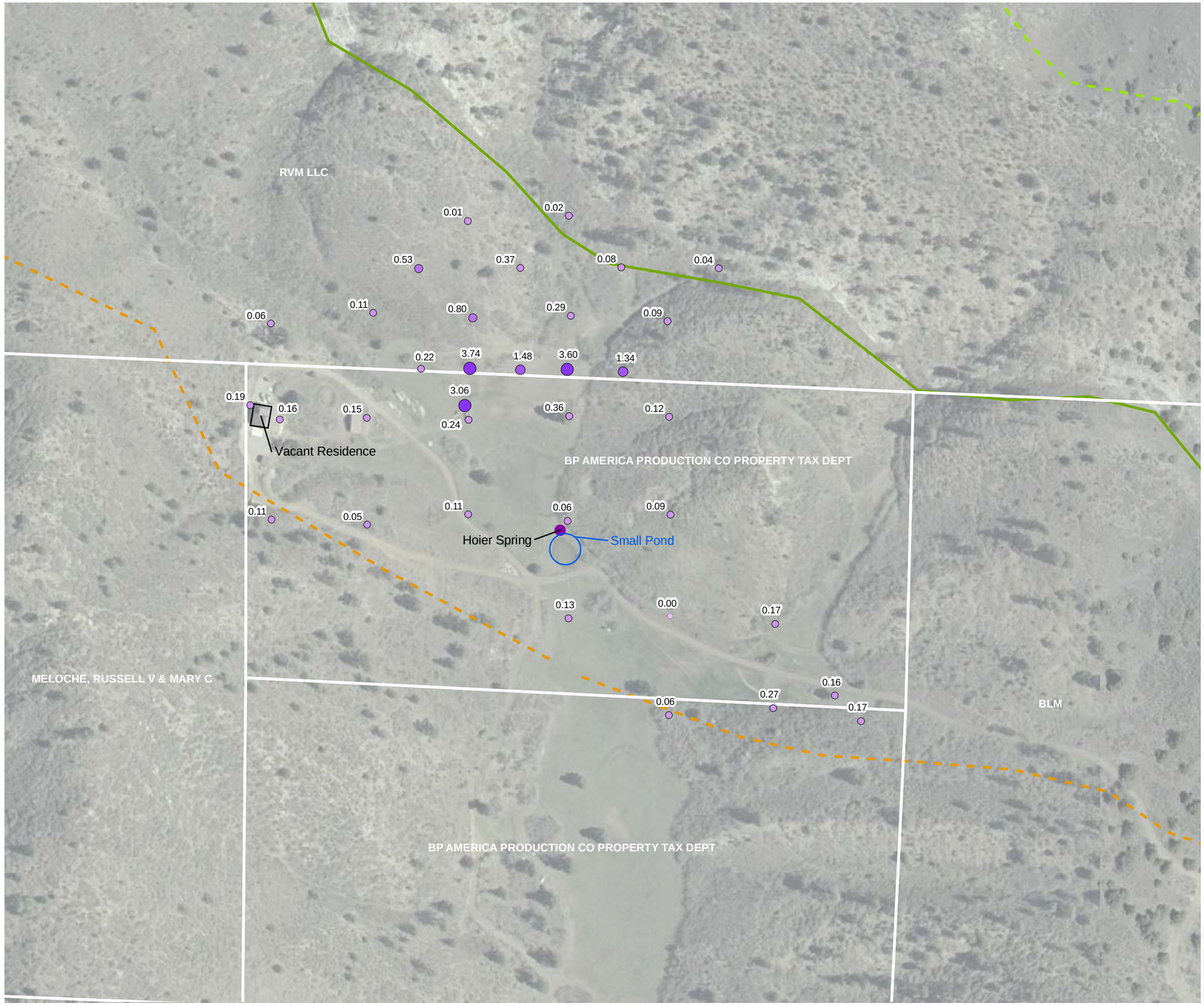
0 200 400
Feet

N

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

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 14_CO2_FLUX.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers

Natural Spring Location

- Sampled
- Not Sampled
- Dry

Carbon Dioxide Flux Location (mol/m^2 • 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^2 • day - moles per square meter per day

Parcel Boundary & Owner (white)

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)

0 200 400

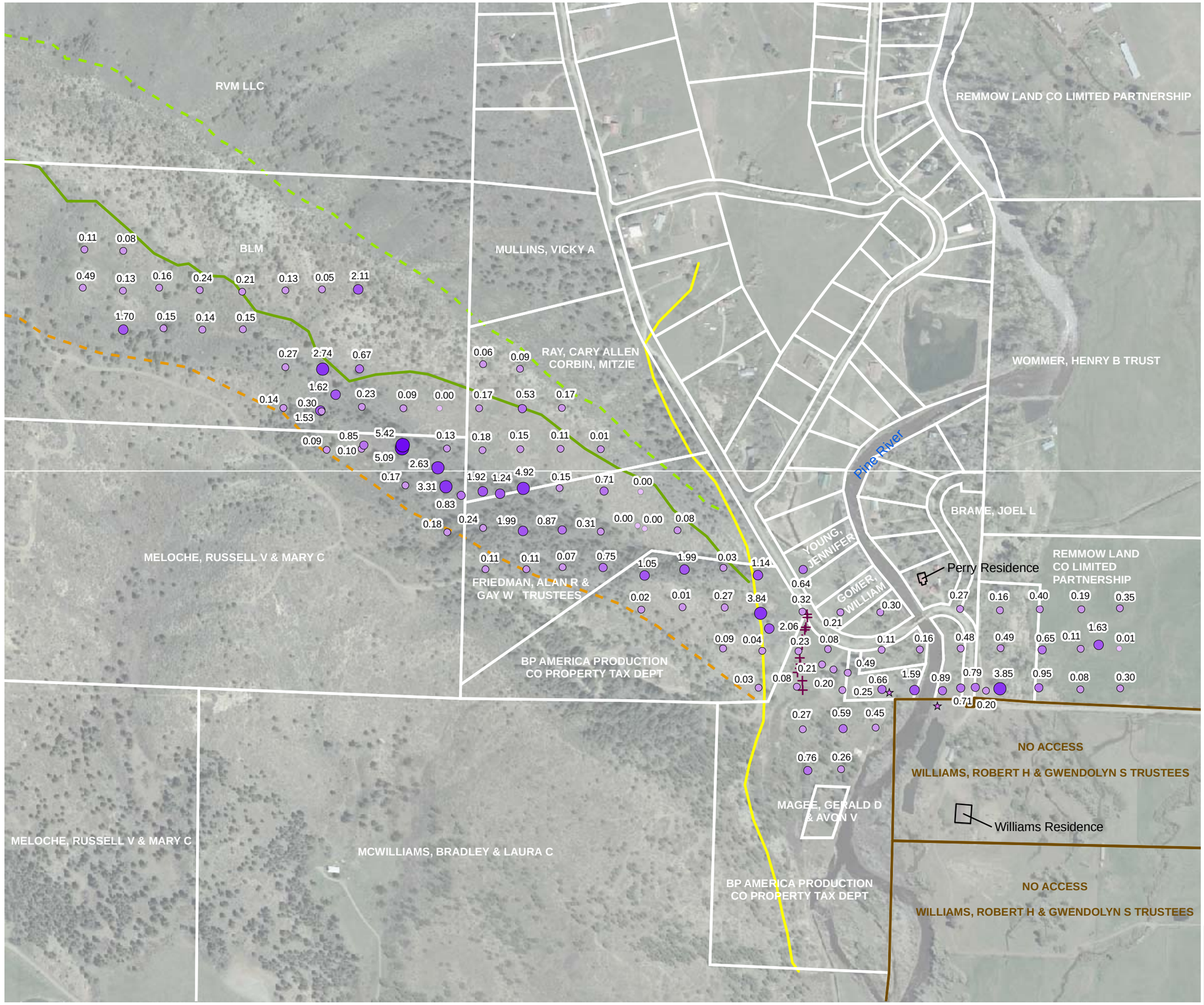
Feet

N

CARBON DIOXIDE FLUX MEASUREMENT MAP
2007 DETAILED SEEP MAPPING
BP HIGHLANDS

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.31\2007\Fig 14_CO2_FLUX.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers

Carbon Dioxide Flux Location (mol/m^2 • 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^2 • day - moles per square meter per day

Parcel Boundary & Owner (white)

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)

0 500 1,000
Feet

N

CARBON DIOXIDE FLUX MEASUREMENT MAP
2007 DETAILED SEEP MAPPING
PINE RIVER

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 14_CO2_FLUX.mxd

APPENDIX D

FLUX CONTOUR MAPS

LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Methane Flux Contours in mol/m^2 • day

Flux contours generated with Surfer® Version 8.0

Methane Flux Location (mol/m^2 • 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^2 • 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)

0 200 400

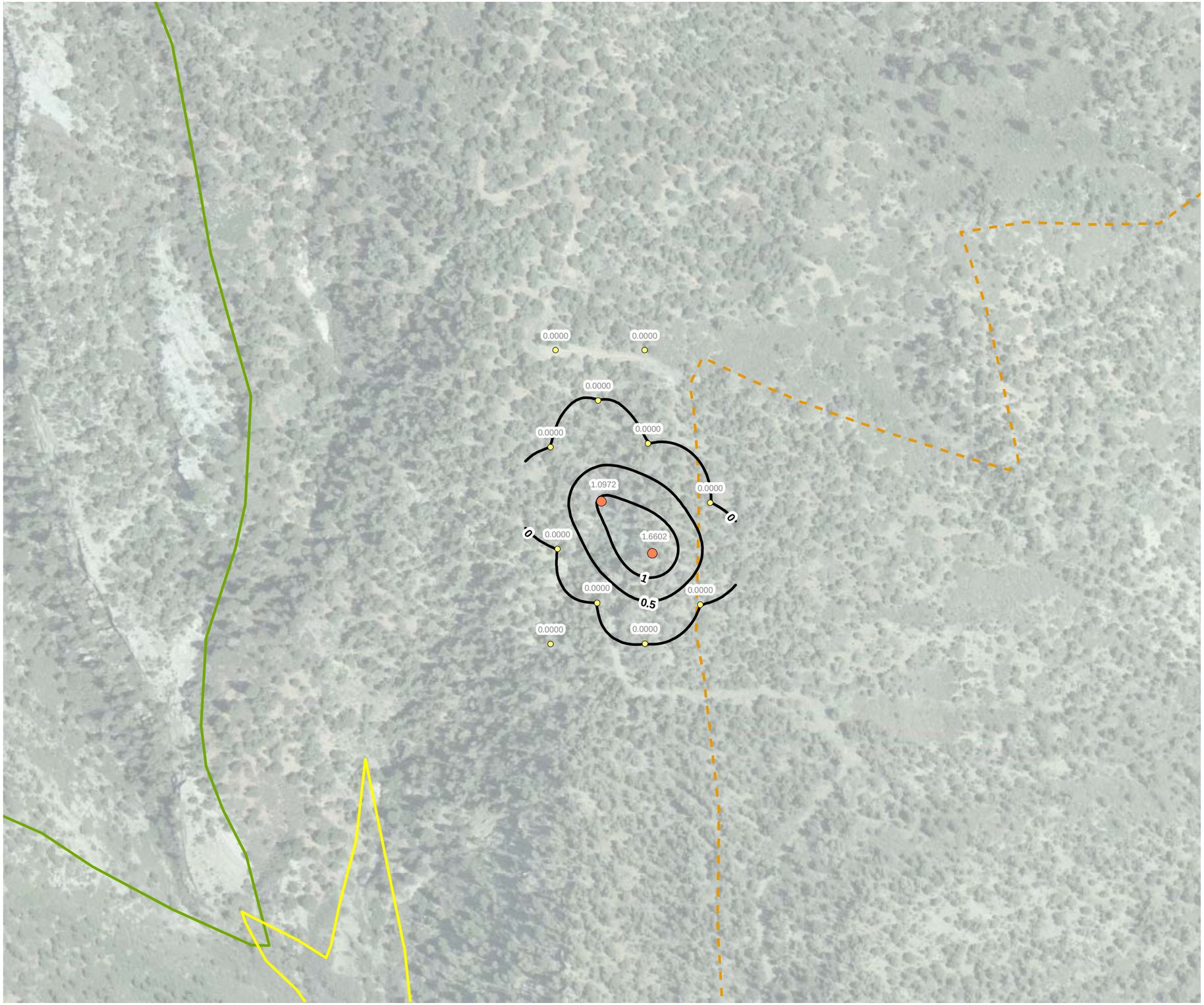
Feet

N

METHANE FLUX CONTOUR MAP 2007 DETAILED SEEP MAPPING BASIN CREEK

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 26_CH4_FLUX_CONTOURS.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Methane Flux Contours in mol/m^2 • day

Flux contours generated with Surfer® Version 8.0

Methane Flux Location (mol/m^2 • 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^2 • 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)

0 200 400

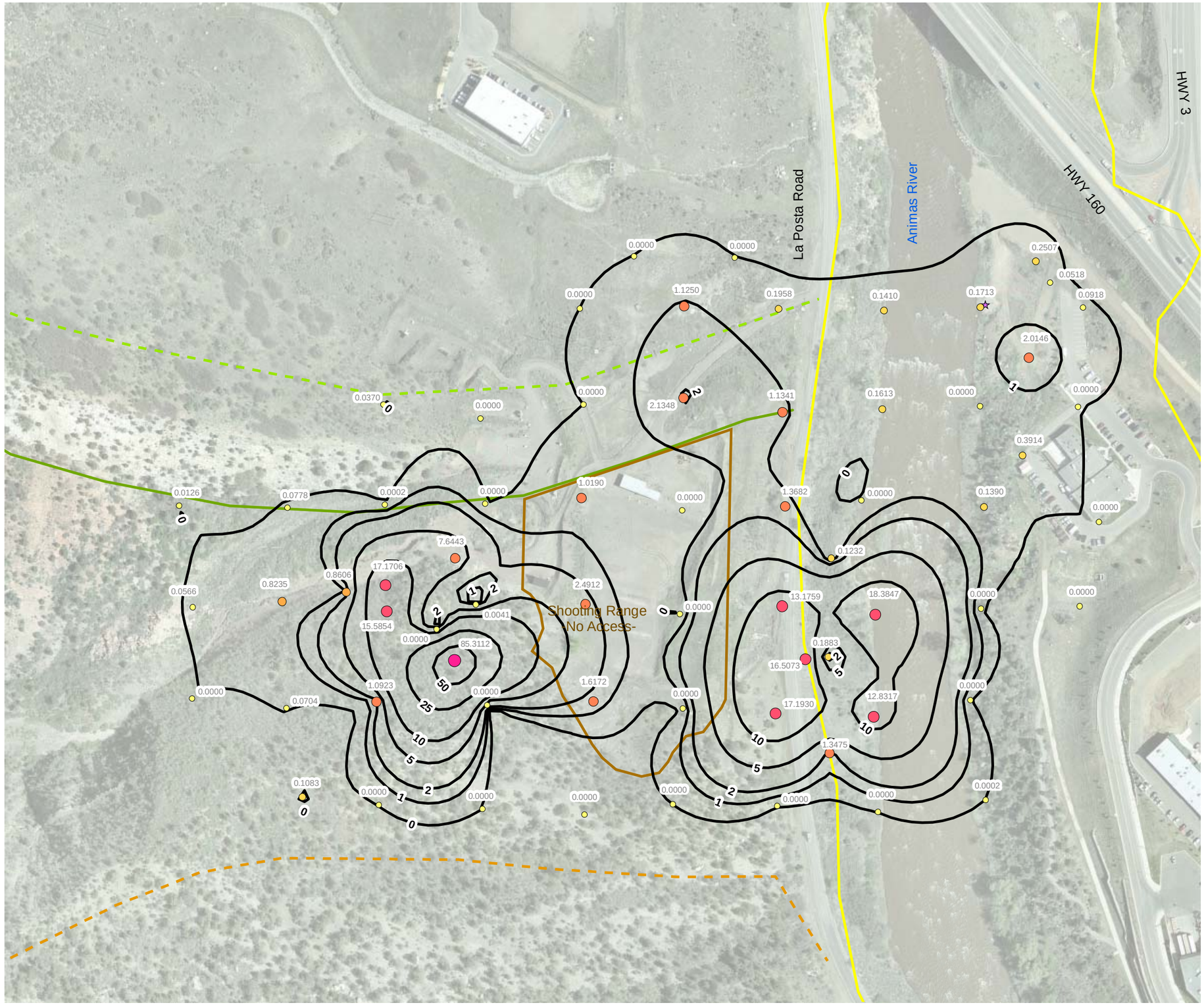
Feet

N

METHANE FLUX CONTOUR MAP
2007 DETAILED SEEP MAPPING
BASIN CREEK NORTH

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 26_CH4_FLUX_CONTOURS.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Methane Flux Contours in mol/m^2 • day

Flux contours generated with Surfer® Version 8.0

Methane Flux Location (mol/m^2 • 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^2 • 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)

0 200 400

Feet

N

METHANE FLUX CONTOUR MAP
2007 DETAILED SEEP MAPPING
CARBON JUNCTION WEST

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 26_CH4_FLUX_CONTOURS.mxd

LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Methane Flux Contours in mol/m^2 • day

Flux contours generated with Surfer® Version 8.0

Methane Flux Location (mol/m^2 • 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^2 • 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)

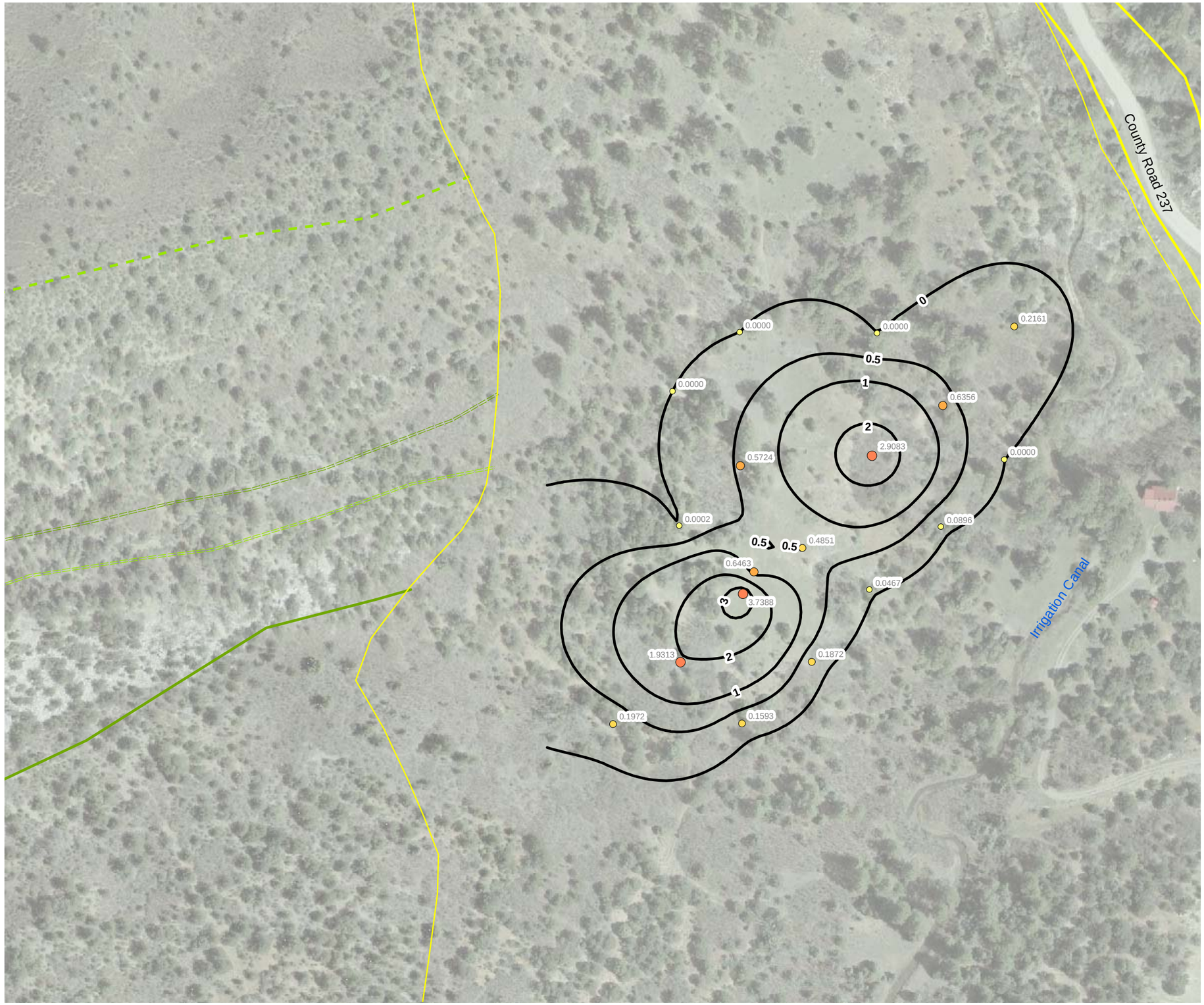
0 300 600
Feet

N

METHANE FLUX CONTOUR MAP
2007 DETAILED SEEP MAPPING
CARBON JUNCTION EAST

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 26_CH4_FLUX_CONTOURS.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Methane Flux Contours in mol/m^2 • day

Flux contours generated with Surfer® Version 8.0

Methane Flux Location (mol/m^2 • 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^2 • 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)

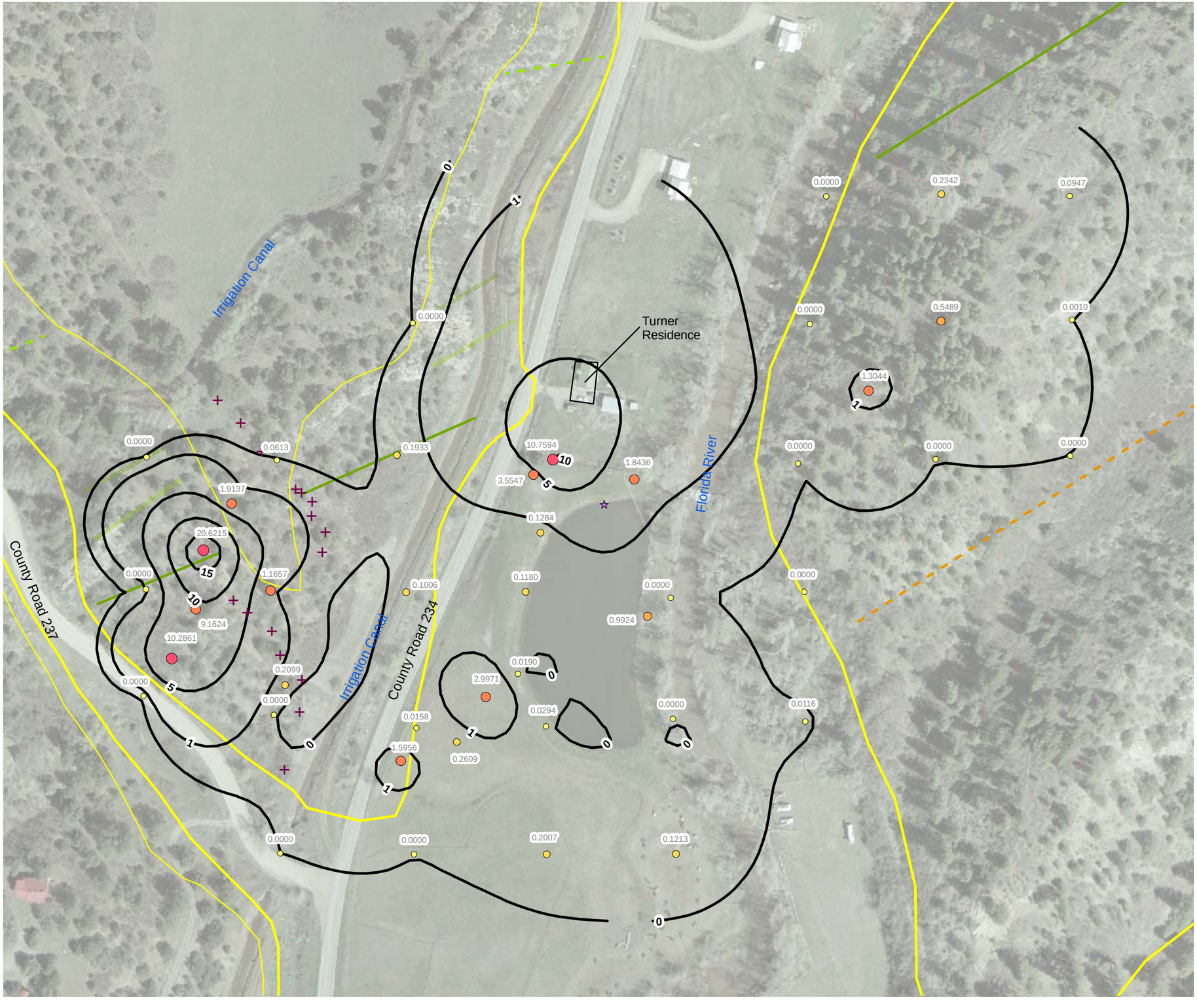
0 150 300
Feet

N

METHANE FLUX CONTOUR MAP
2007 DETAILED SEEP MAPPING
FLORIDA RIVER WEST

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 26_CH4_FLUX_CONTOURS.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Methane Flux Contours in mol/m^2 • day

Flux contours generated with Surfer® Version 8.0

Methane Flux Location (mol/m^2 • 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^2 • 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)

0 150 300

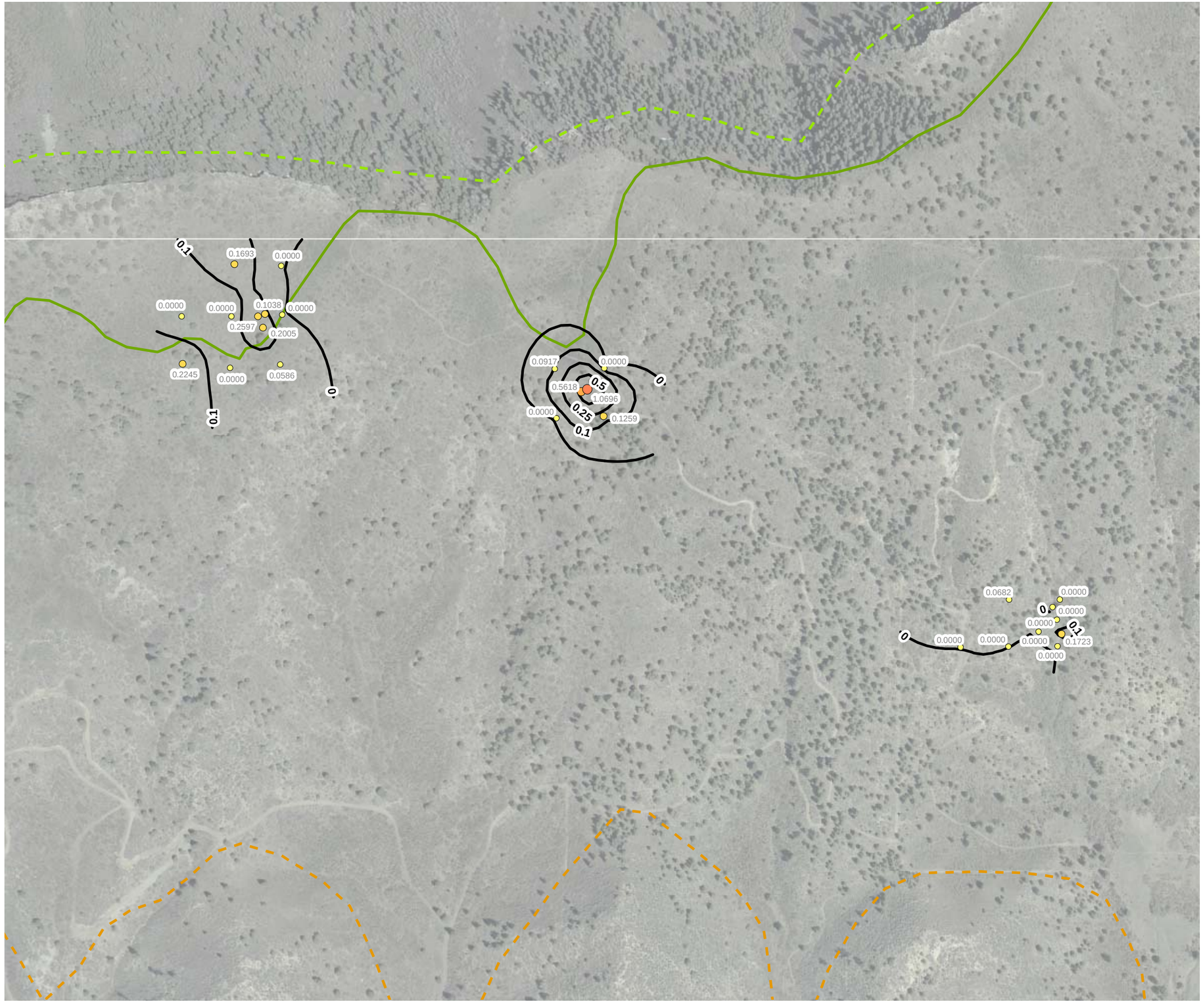
Feet

N

METHANE FLUX CONTOUR MAP 2007 DETAILED SEEP MAPPING FLORIDA RIVER EAST

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 26_CH4_FLUX_CONTOURS.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Methane Flux Contours in mol/m^2 • day

Flux contours generated with Surfer® Version 8.0

Methane Flux Location (mol/m^2 • 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^2 • 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)

0 400 800

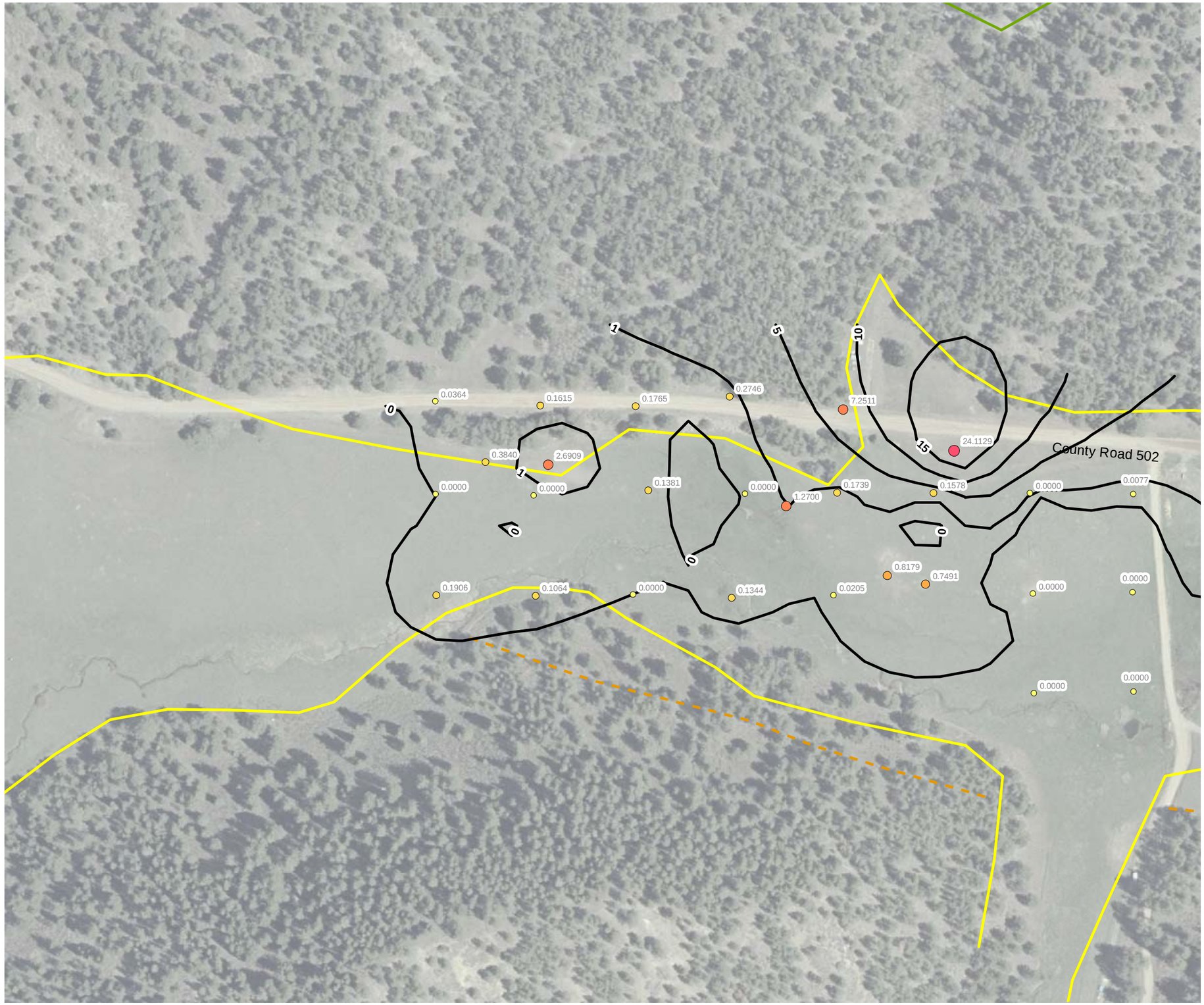
Feet

N

METHANE FLUX CONTOUR MAP 2007 DETAILED SEEP MAPPING VOSBURG PIKE

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 26_CH4_FLUX_CONTOURS.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Methane Flux Contours in mol/m^2 • day

Flux contours generated with Surfer® Version 8.0

Methane Flux Location (mol/m^2 • 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^2 • 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)

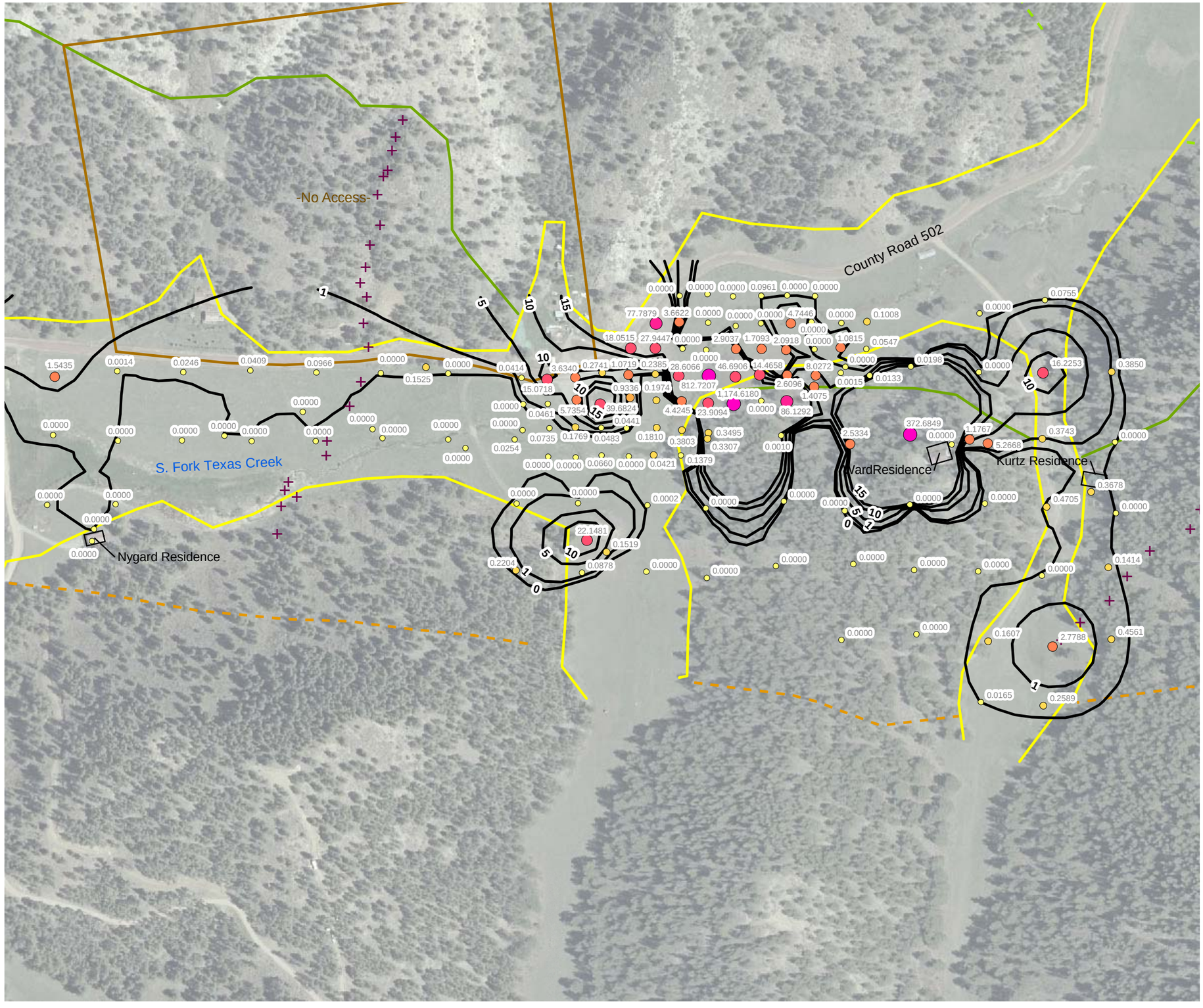
0 200 400
Feet

N

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

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 26_CH4_FLUX_CONTOURS.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Methane Flux Contours in mol/m^2 • day

Flux contours generated with Surfer® Version 8.0

Methane Flux Location (mol/m^2 • 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^2 • 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)

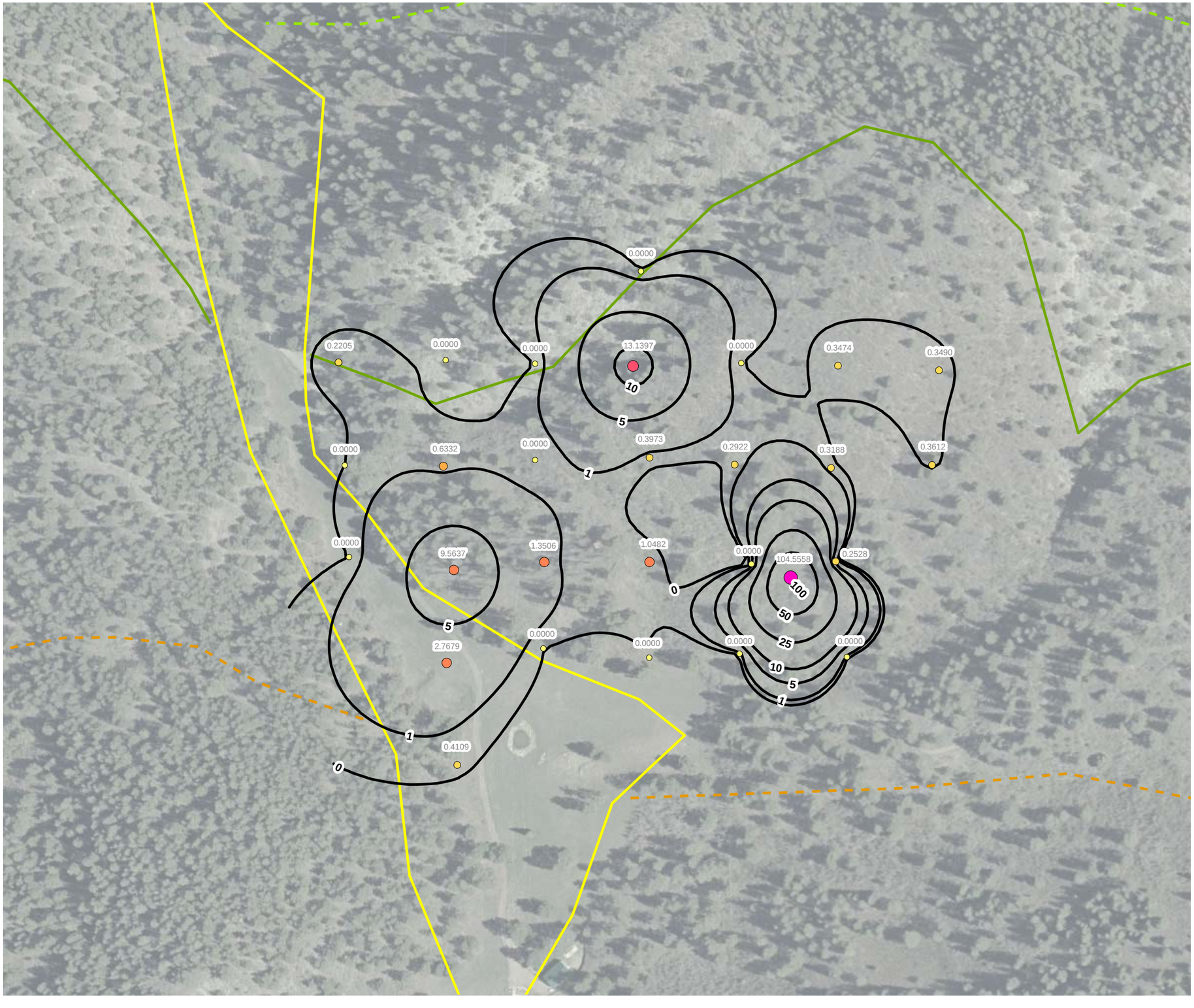
0 300 600
Feet

N

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

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 26_CH4_FLUX_CONTOURS.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Methane Flux Contours in mol/m^2 • day

Flux contours generated with Surfer® Version 8.0

Methane Flux Location (mol/m^2 • 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^2 • 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)

0 200 400

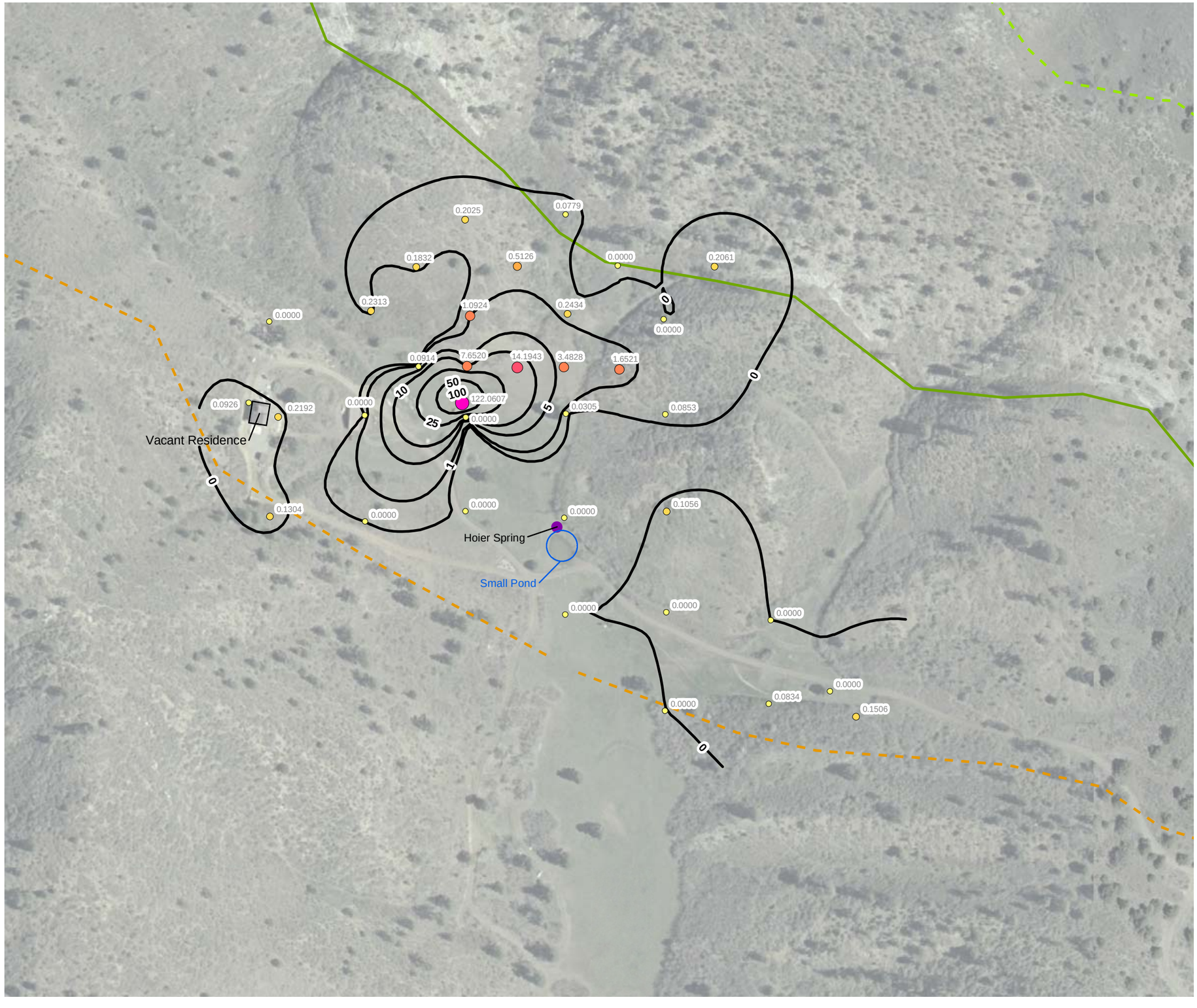
Feet

N

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

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 26_CH4_FLUX_CONTOURS.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Methane Flux Contours in mol/m^2 • day

Natural Spring Location

- Sampled
- Not Sampled
- Dry

Flux contours generated with Surfer® Version 8.0

Methane Flux Location (mol/m^2 • 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^2 • 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)

0 200 400

Feet

N

METHANE FLUX CONTOUR MAP
2007 DETAILED SEEP MAPPING
BP HIGHLANDS

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 26_CH4_FLUX_CONTOURS.mxd

Pine River

Perry Residence

Williams Residence

-No Access-

LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Methane Flux Contours in mol/m^2 • day

Flux contours generated with Surfer® Version 8.0

Methane Flux Location (mol/m^2 • 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^2 • 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)

0 500 1,000

Feet

N

METHANE FLUX CONTOUR MAP 2007 DETAILED SEEP MAPPING PINE RIVER

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 26_CH4_FLUX_CONTOURS.mxd

LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Carbon Dioxide Flux Contour in mol/m^2 • day

Flux contours generated with Surfer® Version 8.0

Carbon Dioxide Flux Location (mol/m^2 • 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^2 • 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)

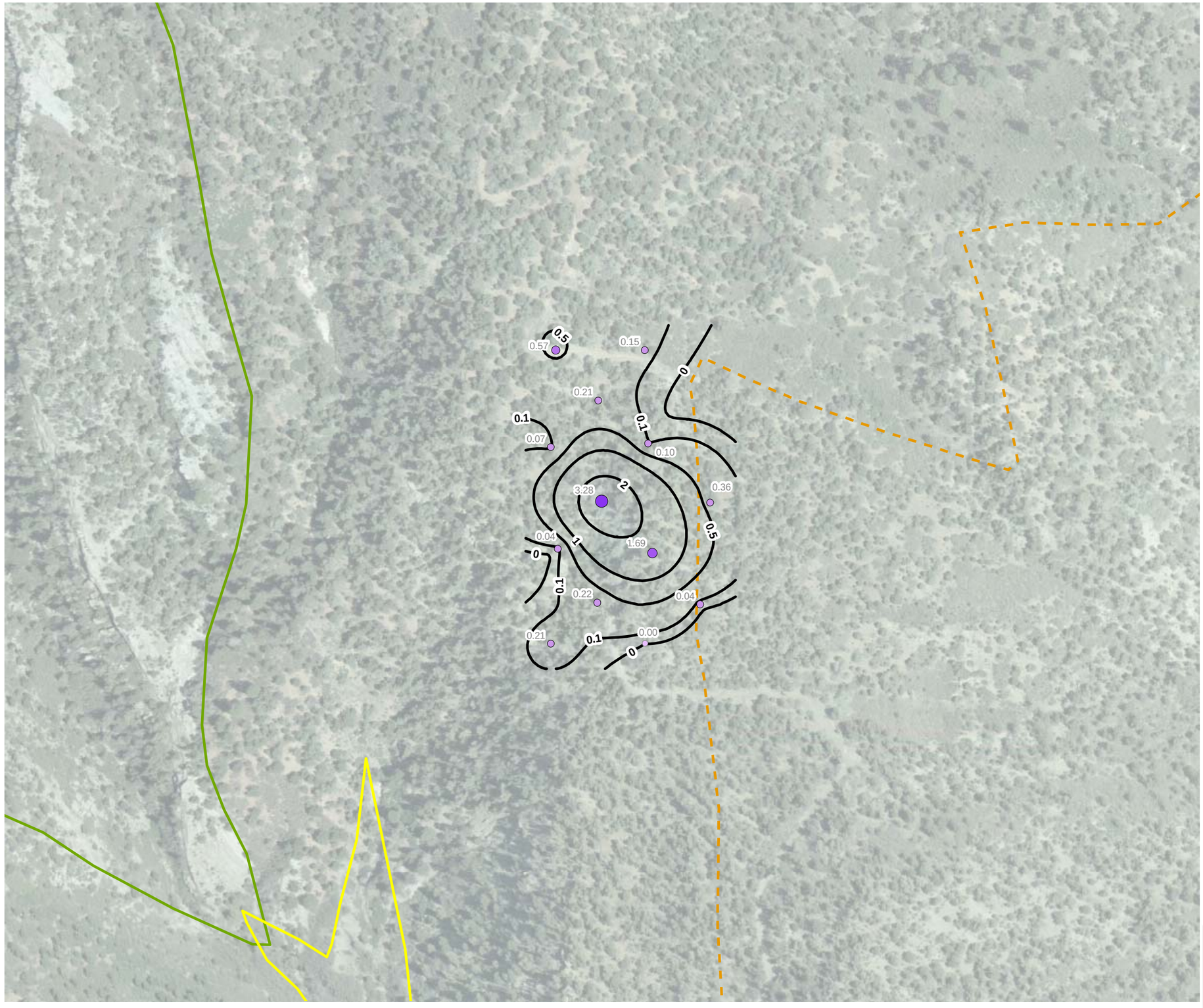
0 200 400
Feet

N

CARBON DIOXIDE FLUX CONTOUR MAP
2007 DETAILED SEEP MAPPING
BASIN CREEK

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 38_CO2_FLUX_CONTOURS.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Carbon Dioxide Flux Contour in mol/m^2 • day

Flux contours generated with Surfer® Version 8.0

Carbon Dioxide Flux Location (mol/m^2 • 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^2 • 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)

0 200 400
Feet

N

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

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 38_CO2_FLUX_CONTOURS.mxd

LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Carbon Dioxide Flux Contour in mol/m^2 • day

Flux contours generated with Surfer® Version 8.0

Carbon Dioxide Flux Location (mol/m^2 • day)

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

mol/m^2 • 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)

0 200 400
Feet

N

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

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 38_CO2_FLUX_CONTOURS.mxd

LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Carbon Dioxide Flux Contour in mol/m^2 • day

Flux contours generated with Surfer® Version 8.0

Carbon Dioxide Flux Location (mol/m^2 • 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^2 • 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)

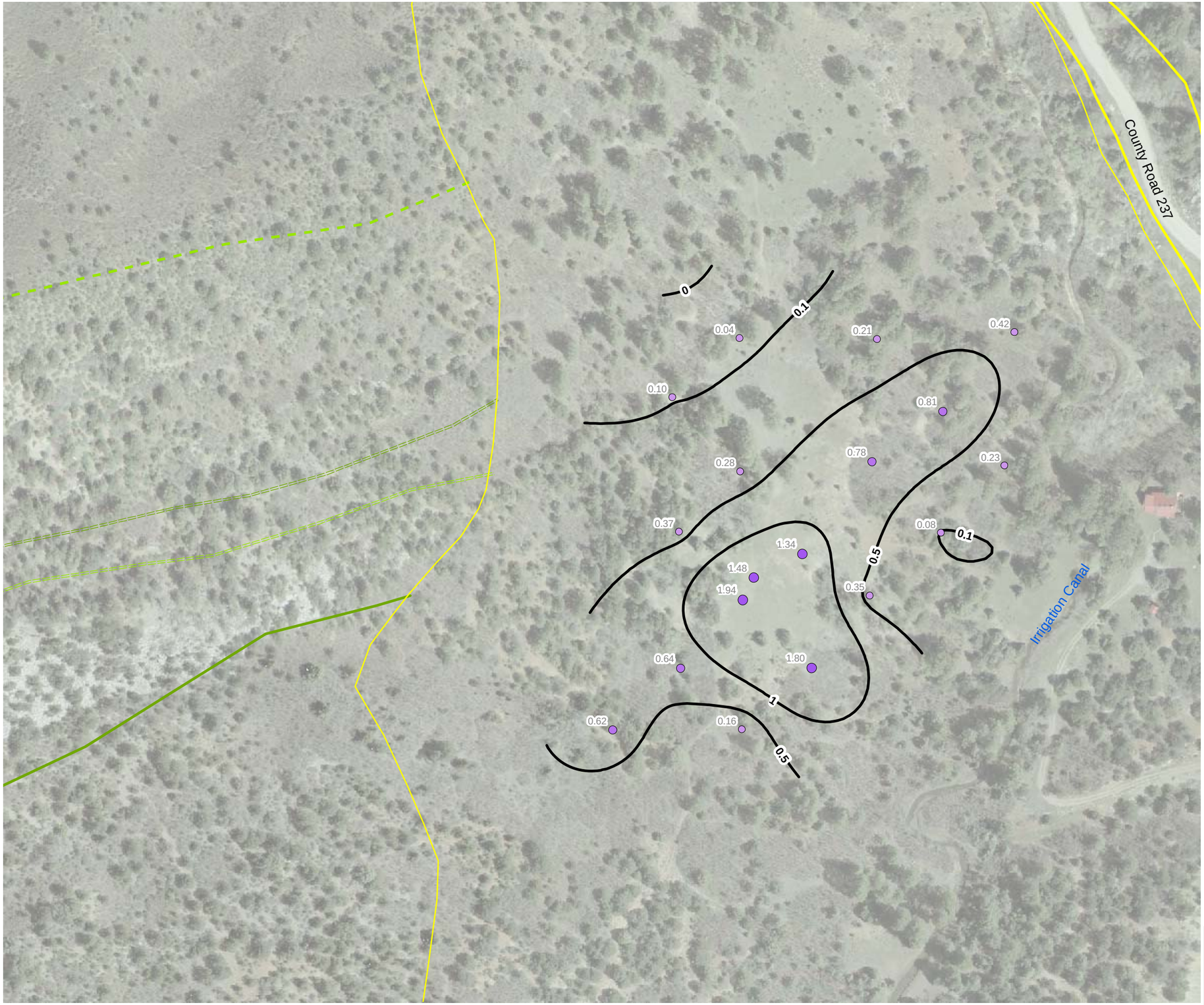
0 300 600
Feet

N

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

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 38_CO2_FLUX_CONTOURS.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Carbon Dioxide Flux Contour in mol/m^2 • day

Flux contours generated with Surfer® Version 8.0

Carbon Dioxide Flux Location (mol/m^2 • 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^2 • 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)

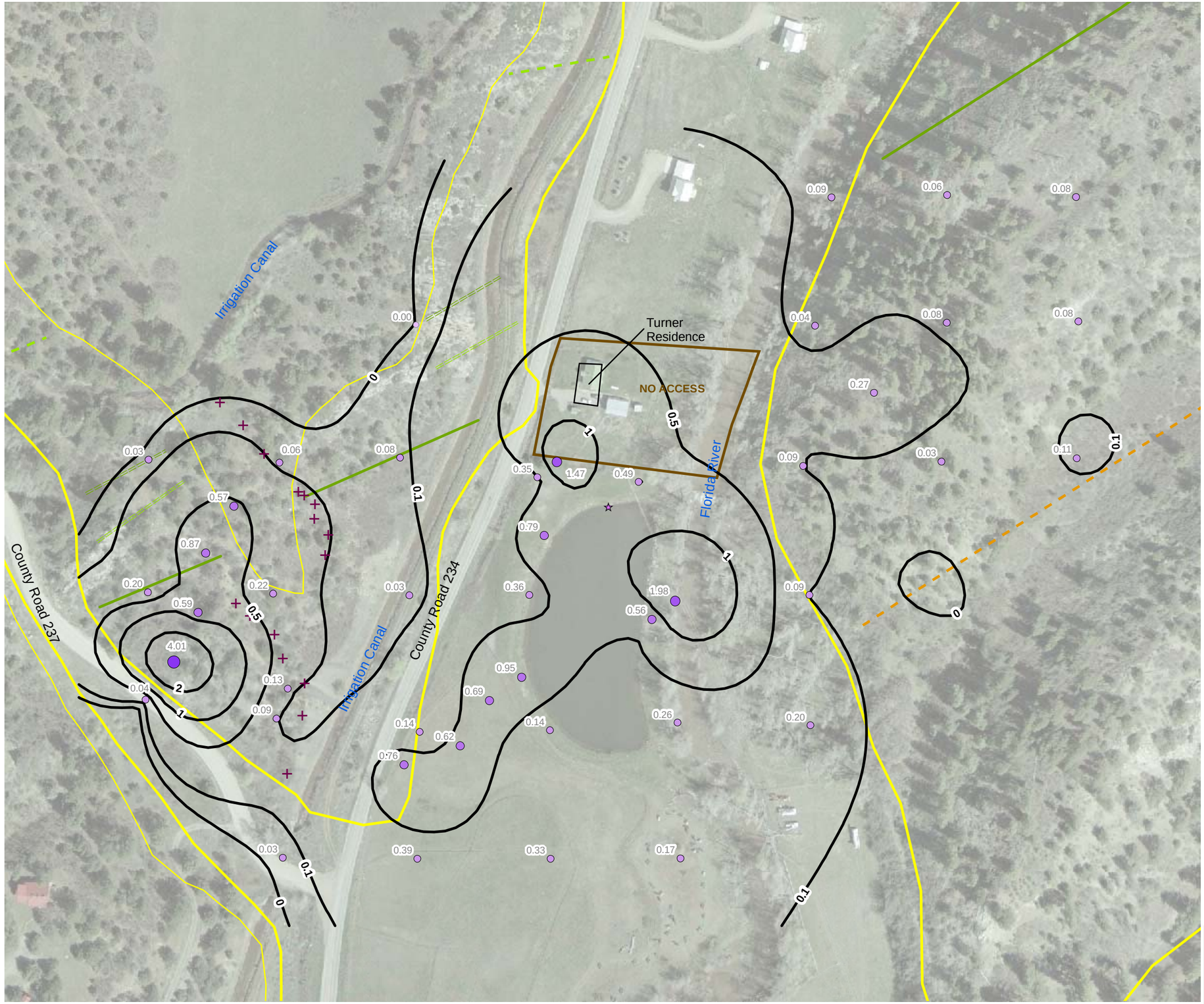
0 150 300
Feet

N

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

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 38_CO2_FLUX_CONTOURS.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Carbon Dioxide Flux Contour in mol/m^2 • day

Flux contours generated with Surfer® Version 8.0

Carbon Dioxide Flux Location (mol/m^2 • 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^2 • 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)

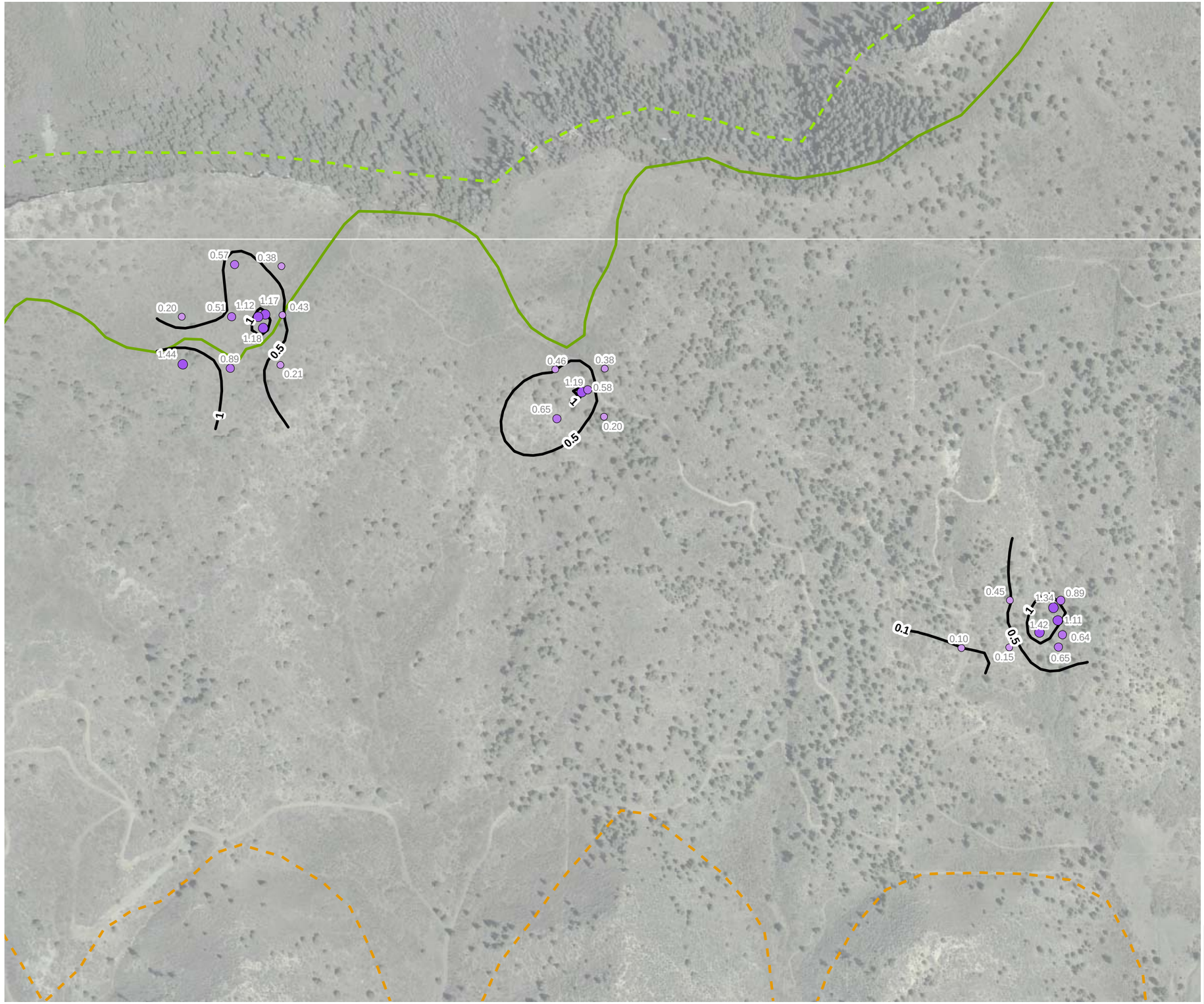
0 150 300
Feet

N

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

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 38_CO2_FLUX_CONTOURS.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Carbon Dioxide Flux Contour in mol/m^2 • day

Flux contours generated with Surfer® Version 8.0

Carbon Dioxide Flux Location (mol/m^2 • 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^2 • 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)

0 400 800

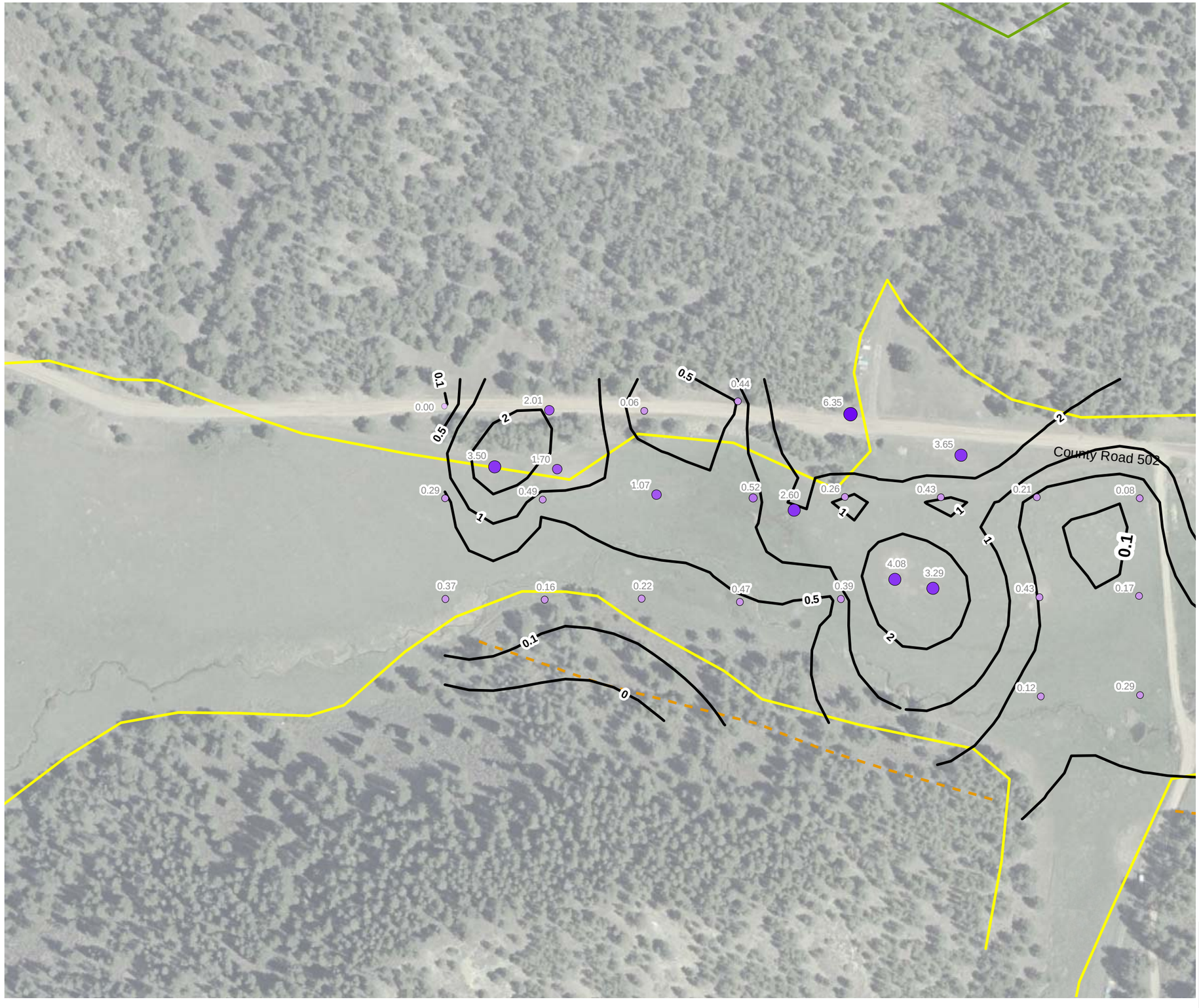
Feet

N

CARBON DIOXIDE FLUX CONTOUR MAP
2007 DETAILED SEEP MAPPING
VOSBURG PIKE

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 38_CO2_FLUX_CONTOURS.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Carbon Dioxide Flux Contour in mol/m^2 • day

Flux contours generated with Surfer® Version 8.0

Carbon Dioxide Flux Location (mol/m^2 • 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^2 • 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)

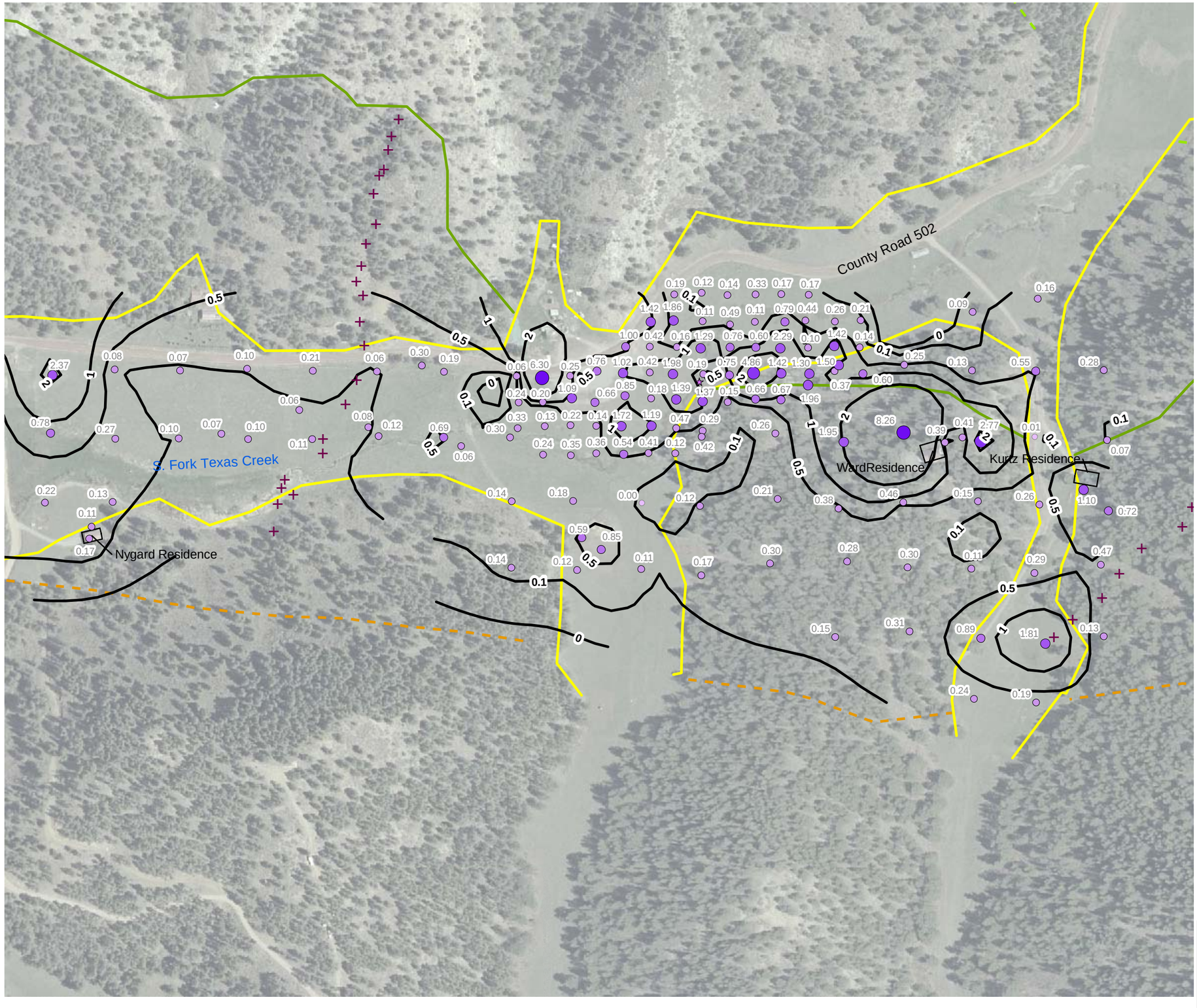
0 200 400
Feet

N

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

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 38_CO2_FLUX_CONTOURS.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Carbon Dioxide Flux Contour in mol/m^2 • day

Flux contours generated with Surfer® Version 8.0

Carbon Dioxide Flux Location (mol/m^2 • 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^2 • 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)

0 300 600

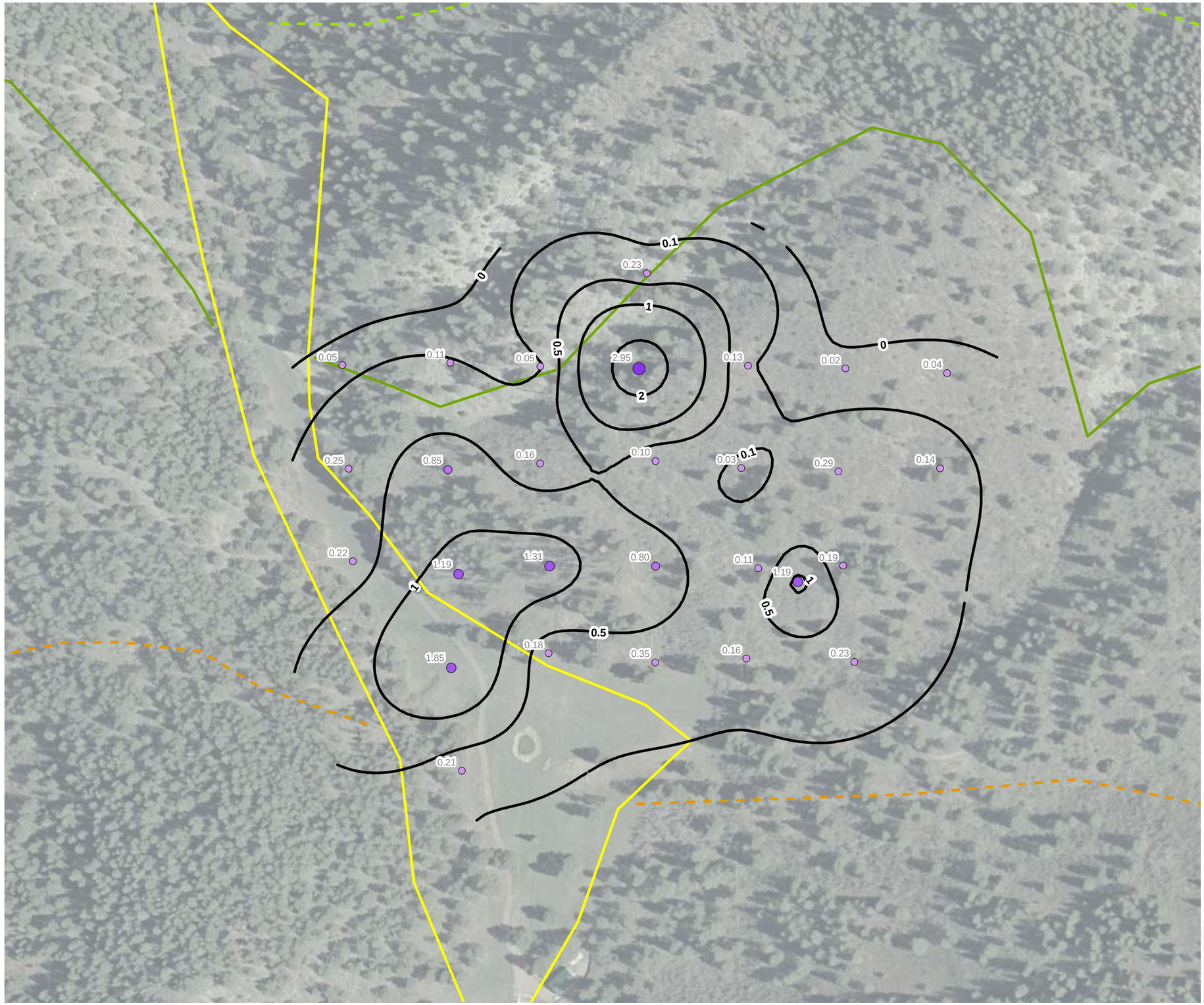
Feet

N

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

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 38_CO2_FLUX_CONTOURS.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Carbon Dioxide Flux Contour in mol/m^2 • day

Flux contours generated with Surfer® Version 8.0

Carbon Dioxide Flux Location (mol/m^2 • 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^2 • 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)

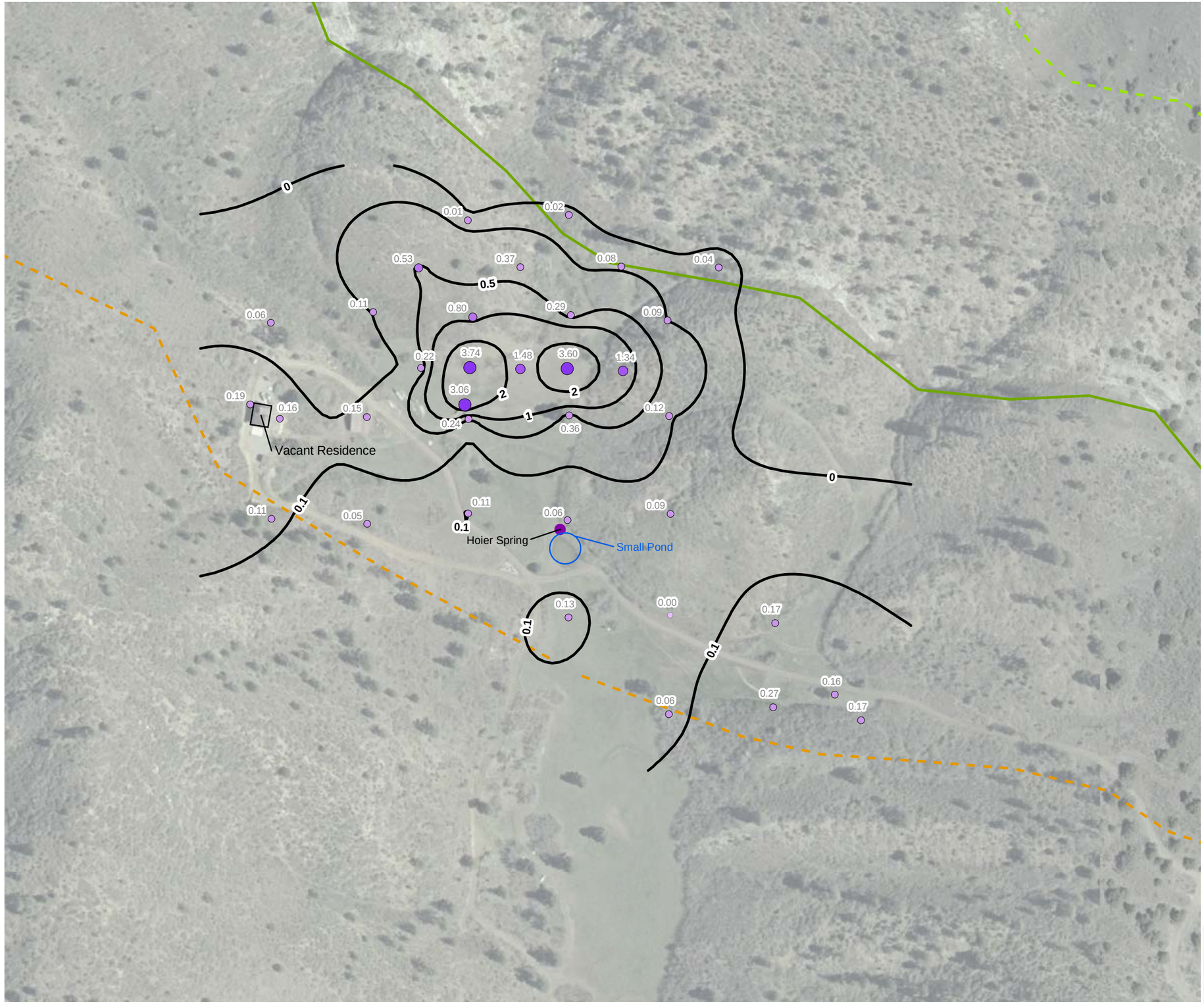
0 200 400
Feet

N

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

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 38_CO2_FLUX_CONTOURS.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers

Natural Spring Location

- Sampled
- Not Sampled
- Dry
- Carbon Dioxide Flux Contour in mol/m^2 • day

Flux contours generated with Surfer® Version 8.0

Carbon Dioxide Flux Location (mol/m^2 • 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^2 • 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)

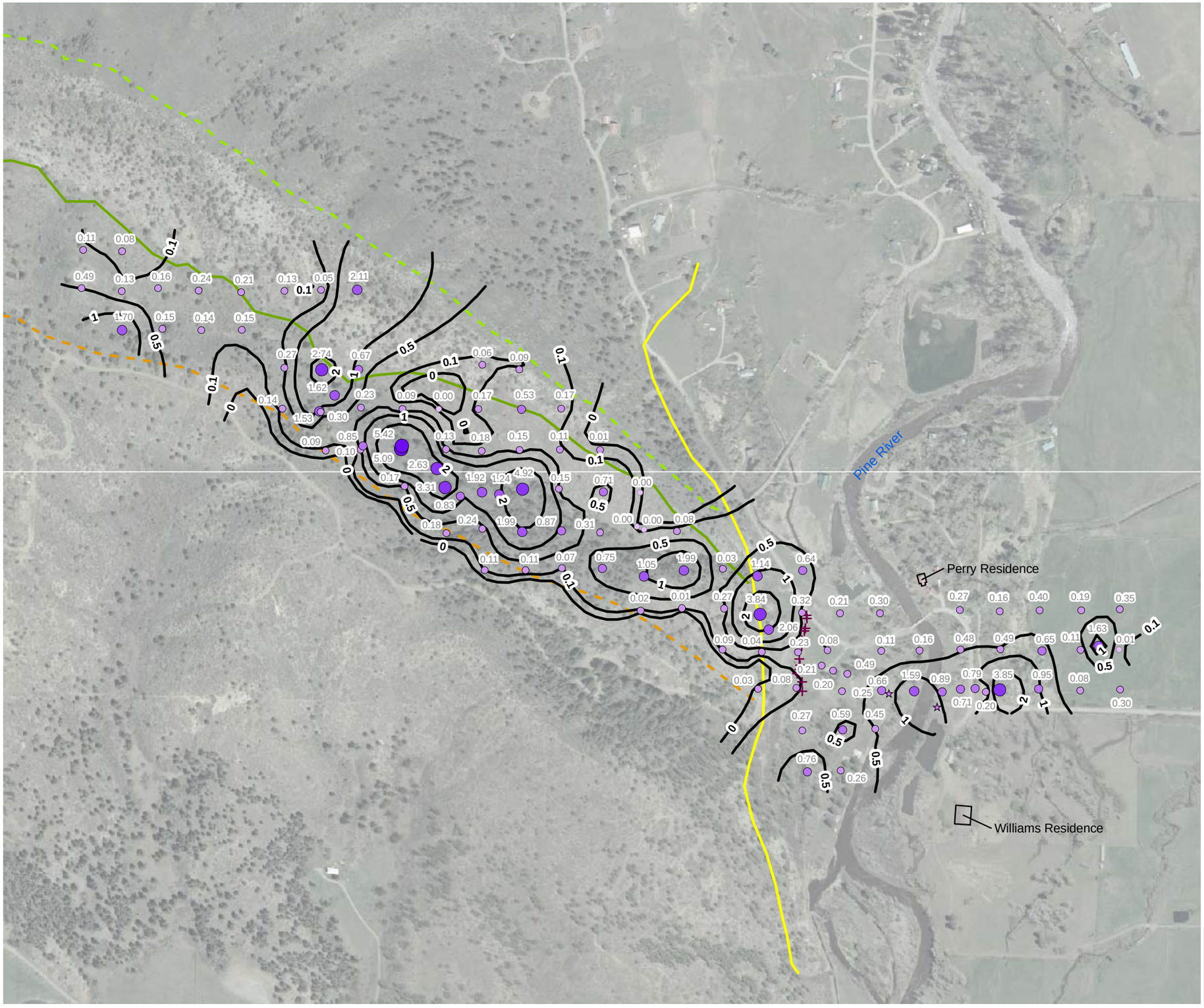
0 200 400
Feet

N

CARBON DIOXIDE FLUX CONTOUR MAP
2007 DETAILED SEEP MAPPING
BP HIGHLANDS

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 38_CO2_FLUX_CONTOURS.mxd



LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Carbon Dioxide Flux Contour in mol/m^2 • day

Flux contours generated with Surfer® Version 8.0

Carbon Dioxide Flux Location (mol/m^2 • 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^2 • 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)

0 500 1,000
Feet

N

CARBON DIOXIDE FLUX CONTOUR MAP
2007 DETAILED SEEP MAPPING
PINE RIVER

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 38_CO2_FLUX_CONTOURS.mxd

APPENDIX E

SURFER OUTPUT FILES

Basin Creek – CH4

Grid Volume Computations

Fri Jan 25 14:23:42 2008

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\BC_CH4.grd
Grid Size:	86 rows x 100 columns
X Minimum:	2302931
X Maximum:	2304428
X Spacing:	15.121212121212
Y Minimum:	1209261
Y Maximum:	1210570
Y Spacing:	15.4
Z Minimum:	-1.4762789969627
Z Maximum:	9.2268585091619

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	26109.980631648
Simpson's Rule:	26136.727674156
Simpson's 3/8 Rule:	26134.085612802

Cut & Fill Volumes

Positive Volume [Cut]:	78513.114912287
Negative Volume [Fill]:	52404.162623937
Net Volume [Cut-Fill]:	26108.95228835

Areas

Planar Areas

Positive Planar Area [Cut]:	750242.26934417
Negative Planar Area [Fill]:	1209330.7306558
Blanked Planar Area:	0
Total Planar Area:	1959573

Surface Areas

Positive Surface Area [Cut]:	750243.67200522
Negative Surface Area [Fill]:	1209330.7899666

Basin Creek – CO2

Grid Volume Computations

Fri Feb 08 12:40:01 2008

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\BC_CO2bln.grd
Grid Size:	86 rows x 100 columns
X Minimum:	2302931
X Maximum:	2304428
X Spacing:	15.121212121212
Y Minimum:	1209261
Y Maximum:	1210570
Y Spacing:	15.4
Z Minimum:	-0.28376219915033
Z Maximum:	2.6067899621524

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	31628.863129243
Simpson's Rule:	31640.188538828
Simpson's 3/8 Rule:	31623.438312286

Cut & Fill Volumes

Positive Volume [Cut]:	32993.209860153
Negative Volume [Fill]:	1364.6658539666
Net Volume [Cut-Fill]:	31628.544006186

Areas

Planar Areas

Positive Planar Area [Cut]:	1005626.8677515
Negative Planar Area [Fill]:	248592.99891513
Blanked Planar Area:	705353.13333333
Total Planar Area:	1959573

Surface Areas

Positive Surface Area [Cut]:	1005626.9541346
Negative Surface Area [Fill]:	248593.00001009

Basin Creek North – CH4

Grid Volume Computations

Fri Jan 25 14:48:31 2008

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\BCN_CH4.grd
Grid Size:	100 rows x 55 columns
X Minimum:	2304632
X Maximum:	2305053
X Spacing:	7.7962962962963
Y Minimum:	1211708
Y Maximum:	1212396
Y Spacing:	6.9494949494949
Z Minimum:	-0.22785521217331
Z Maximum:	1.6096279546862

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	4946.8734651128
Simpson's Rule:	4947.9447491773
Simpson's 3/8 Rule:	4947.8504927157

Cut & Fill Volumes

Positive Volume [Cut]:	5778.5049333603
Negative Volume [Fill]:	831.64394093762
Net Volume [Cut-Fill]:	4946.8609924227

Areas

Planar Areas

Positive Planar Area [Cut]:	142349.34230755
Negative Planar Area [Fill]:	147298.65769245
Blanked Planar Area:	0
Total Planar Area:	289648

Surface Areas

Positive Surface Area [Cut]:	142349.3776938
Negative Surface Area [Fill]:	147298.65879975

Basin Creek North – CO2

Grid Volume Computations

Fri Jan 25 15:04:21 2008

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\BCN_CO2.grd
Grid Size:	100 rows x 55 columns
X Minimum:	2304582
X Maximum:	2305103
X Spacing:	9.6481481481481
Y Minimum:	1211658
Y Maximum:	1212446
Y Spacing:	7.959595959596
Z Minimum:	-0.29087617681024
Z Maximum:	3.1878903814961

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	13616.774299025
Simpson's Rule:	13618.802640734
Simpson's 3/8 Rule:	13618.175924867

Cut & Fill Volumes

Positive Volume [Cut]:	14342.33287304
Negative Volume [Fill]:	725.46976887837
Net Volume [Cut-Fill]:	13616.863104161

Areas

Planar Areas

Positive Planar Area [Cut]:	317278.78922104
Negative Planar Area [Fill]:	93269.210778957
Blanked Planar Area:	0
Total Planar Area:	410548

Surface Areas

Positive Surface Area [Cut]:	317278.90421525
Negative Surface Area [Fill]:	93269.211657839

Carbon Junction East – CH4

Grid Volume Computations

Fri Feb 08 13:07:51 2008

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\CJE_CH4bln.grd
Grid Size:	100 rows x 77 columns
X Minimum:	2311063
X Maximum:	2312968
X Spacing:	25.065789473684
Y Minimum:	1215334
Y Maximum:	1217749
Y Spacing:	24.393939393939
Z Minimum:	-0.23000126979355
Z Maximum:	3.7667562141841

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	58634.335300453
Simpson's Rule:	58500.825208806
Simpson's 3/8 Rule:	58586.896371839

Cut & Fill Volumes

Positive Volume [Cut]:	59993.208337377
Negative Volume [Fill]:	1360.2923504867
Net Volume [Cut-Fill]:	58632.91598689

Areas

Planar Areas

Positive Planar Area [Cut]:	1835173.5602285
Negative Planar Area [Fill]:	268225.96130263
Blanked Planar Area:	2497175.4784689
Total Planar Area:	4600575

Surface Areas

Positive Surface Area [Cut]:	1835173.7955782
Negative Surface Area [Fill]:	268225.96246407

Carbon Junction East – CO2

Grid Volume Computations

Fri Feb 08 13:09:52 2008

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\CJE_CO2bln.grd
Grid Size:	100 rows x 77 columns
X Minimum:	2311063
X Maximum:	2312968
X Spacing:	25.065789473684
Y Minimum:	1215334
Y Maximum:	1217749
Y Spacing:	24.393939393939
Z Minimum:	-0.0053734984276717
Z Maximum:	1.6273316948624

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	44339.532057176
Simpson's Rule:	44242.743450443
Simpson's 3/8 Rule:	44214.634968477

Cut & Fill Volumes

Positive Volume [Cut]:	44341.860051986
Negative Volume [Fill]:	3.5670122743091
Net Volume [Cut-Fill]:	44338.293039712

Areas

Planar Areas

Positive Planar Area [Cut]:	2096050.8809585
Negative Planar Area [Fill]:	7348.640572626
Blanked Planar Area:	2497175.4784689
Total Planar Area:	4600575

Surface Areas

Positive Surface Area [Cut]:	2096050.9399444
Negative Surface Area [Fill]:	7348.6405729453

Carbon Junction West – CH4

Grid Volume Computations

Fri Jan 25 16:05:39 2008

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\CJW_CH4.grd
Grid Size:	61 rows x 100 columns
X Minimum:	2308873
X Maximum:	2310919
X Spacing:	20.666666666667
Y Minimum:	1214122
Y Maximum:	1215440
Y Spacing:	21.966666666667
Z Minimum:	-2.4015269830123
Z Maximum:	71.865162892216

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	377563.5730998
Simpson's Rule:	377722.91232896
Simpson's 3/8 Rule:	377910.63345118

Cut & Fill Volumes

Positive Volume [Cut]:	440287.93891441
Negative Volume [Fill]:	62729.492029022
Net Volume [Cut-Fill]:	377558.44688539

Areas

Planar Areas

Positive Planar Area [Cut]:	1411924.2079344
Negative Planar Area [Fill]:	1284703.7920656
Blanked Planar Area:	0
Total Planar Area:	2696628

Surface Areas

Positive Surface Area [Cut]:	1412000.0653191
Negative Surface Area [Fill]:	1284704.0532912

Carbon Junction West – CO2

Grid Volume Computations

Fri Jan 25 16:06:29 2008

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\CJW_CO2.grd
Grid Size:	61 rows x 100 columns
X Minimum:	2308873
X Maximum:	2310919
X Spacing:	20.666666666667
Y Minimum:	1214122
Y Maximum:	1215440
Y Spacing:	21.966666666667
Z Minimum:	-0.10312596252792
Z Maximum:	3.4680235841948

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	114006.22306553
Simpson's Rule:	114012.42561154
Simpson's 3/8 Rule:	114013.8547278

Cut & Fill Volumes

Positive Volume [Cut]:	114341.83612346
Negative Volume [Fill]:	338.06283033008
Net Volume [Cut-Fill]:	114003.77329313

Areas

Planar Areas

Positive Planar Area [Cut]:	2553238.7971355
Negative Planar Area [Fill]:	143389.20286447
Blanked Planar Area:	0
Total Planar Area:	2696628

Surface Areas

Positive Surface Area [Cut]:	2553239.0976037
Negative Surface Area [Fill]:	143389.20327342

Florida River East – CH4

Grid Volume Computations

Fri Jan 25 16:09:26 2008

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\FRE_CH4.grd
Grid Size:	71 rows x 100 columns
X Minimum:	2331624
X Maximum:	2333228
X Spacing:	16.20202020202
Y Minimum:	1234877
Y Maximum:	1236074
Y Spacing:	17.1
Z Minimum:	-2.7038971483396
Z Maximum:	19.036636443162

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	82033.303526797
Simpson's Rule:	82077.732064322
Simpson's 3/8 Rule:	82053.833176032

Cut & Fill Volumes

Positive Volume [Cut]:	125363.17896868
Negative Volume [Fill]:	43331.681162109
Net Volume [Cut-Fill]:	82031.497806567

Areas

Planar Areas

Positive Planar Area [Cut]:	1121614.3744933
Negative Planar Area [Fill]:	798373.62550674
Blanked Planar Area:	0
Total Planar Area:	1919988

Surface Areas

Positive Surface Area [Cut]:	1121620.202865
Negative Surface Area [Fill]:	798373.76621152

Florida River East – CO2

Grid Volume Computations

Fri Jan 25 16:10:06 2008

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\FRE_CO2.grd
Grid Size:	71 rows x 100 columns
X Minimum:	2331624
X Maximum:	2333228
X Spacing:	16.20202020202
Y Minimum:	1234877
Y Maximum:	1236074
Y Spacing:	17.1
Z Minimum:	-0.34297457303608
Z Maximum:	3.8201538759819

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	34594.307946835
Simpson's Rule:	34604.843613389
Simpson's 3/8 Rule:	34603.681895485

Cut & Fill Volumes

Positive Volume [Cut]:	38018.074480295
Negative Volume [Fill]:	3423.7273113074
Net Volume [Cut-Fill]:	34594.347168988

Areas

Planar Areas

Positive Planar Area [Cut]:	1623876.8131124
Negative Planar Area [Fill]:	296111.18688757
Blanked Planar Area:	0
Total Planar Area:	1919988

Surface Areas

Positive Surface Area [Cut]:	1623877.011693
Negative Surface Area [Fill]:	296111.18873324

Florida River West – CH4

Grid Volume Computations

Fri Feb 08 13:20:55 2008

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\FRW_CH4bln.grd
Grid Size:	99 rows x 100 columns
X Minimum:	2330632
X Maximum:	2331436
X Spacing:	8.1212121212121
Y Minimum:	1234485
Y Maximum:	1235282
Y Spacing:	8.1326530612245
Z Minimum:	-0.38381983045339
Z Maximum:	3.6610086764107

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	20515.611460639
Simpson's Rule:	20495.938463319
Simpson's 3/8 Rule:	20502.605504064

Cut & Fill Volumes

Positive Volume [Cut]:	22268.117317722
Negative Volume [Fill]:	1752.433349535
Net Volume [Cut-Fill]:	20515.683968187

Areas

Planar Areas

Positive Planar Area [Cut]:	339526.38060916
Negative Planar Area [Fill]:	135945.97684291
Blanked Planar Area:	165315.64254793
Total Planar Area:	640788

Surface Areas

Positive Surface Area [Cut]:	339526.60417076
Negative Surface Area [Fill]:	135945.98299895

Florida River West – CO2

Grid Volume Computations

Fri Feb 08 13:22:21 2008

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\FRW_CO2bln.grd
Grid Size:	99 rows x 100 columns
X Minimum:	2330632
X Maximum:	2331436
X Spacing:	8.1212121212121
Y Minimum:	1234485
Y Maximum:	1235282
Y Spacing:	8.1326530612245
Z Minimum:	-0.005732680497624
Z Maximum:	1.9077708166098

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	22463.071448508
Simpson's Rule:	22464.323597432
Simpson's 3/8 Rule:	22487.051615269

Cut & Fill Volumes

Positive Volume [Cut]:	22463.160392206
Negative Volume [Fill]:	0.31695221429327
Net Volume [Cut-Fill]:	22462.843439991

Areas

Planar Areas

Positive Planar Area [Cut]:	474392.62965152
Negative Planar Area [Fill]:	1079.7278005517
Blanked Planar Area:	165315.64254793
Total Planar Area:	640788

Surface Areas

Positive Surface Area [Cut]:	474392.67542986
Negative Surface Area [Fill]:	1079.7278008532

BP Highlands – CH4

Grid Volume Computations

Fri Feb 08 13:40:27 2008

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\HP_CH4bln.grd
Grid Size:	83 rows x 100 columns
X Minimum:	2381040
X Maximum:	2382466
X Spacing:	14.40404040404
Y Minimum:	1239907
Y Maximum:	1241119
Y Spacing:	14.780487804878
Z Minimum:	-2.5481709669166
Z Maximum:	110.72929841312

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	116106.13226399
Simpson's Rule:	116119.91547821
Simpson's 3/8 Rule:	116263.65314251

Cut & Fill Volumes

Positive Volume [Cut]:	129690.07861804
Negative Volume [Fill]:	13583.946354047
Net Volume [Cut-Fill]:	116106.13226399

Areas

Planar Areas

Positive Planar Area [Cut]:	579648.66007054
Negative Planar Area [Fill]:	540837.42714306
Blanked Planar Area:	607825.9127864
Total Planar Area:	1728312

Surface Areas

Positive Surface Area [Cut]:	579783.14617376
Negative Surface Area [Fill]:	540837.88854387

BP Highlands – CO2

Grid Volume Computations

Fri Feb 08 13:42:08 2008

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\HP_Co2bln.grd
Grid Size:	83 rows x 100 columns
X Minimum:	2381040
X Maximum:	2382466
X Spacing:	14.40404040404
Y Minimum:	1239907
Y Maximum:	1241119
Y Spacing:	14.780487804878
Z Minimum:	-0.11679436384805
Z Maximum:	3.5627586728373

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	25203.853903751
Simpson's Rule:	25238.807756938
Simpson's 3/8 Rule:	25233.290040092

Cut & Fill Volumes

Positive Volume [Cut]:	25603.472616383
Negative Volume [Fill]:	399.61871263207
Net Volume [Cut-Fill]:	25203.853903751

Areas

Planar Areas

Positive Planar Area [Cut]:	1030332.293345
Negative Planar Area [Fill]:	90153.793868557
Blanked Planar Area:	607825.9127864
Total Planar Area:	1728312

Surface Areas

Positive Surface Area [Cut]:	1030332.5440165
Negative Surface Area [Fill]:	90153.79410012

Pine River – CH4

Grid Volume Computations

Fri Feb 08 13:50:07 2008

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\PR_CH4bln.grd
Grid Size:	51 rows x 100 columns
X Minimum:	2383174
X Maximum:	2388379
X Spacing:	52.575757575758
Y Minimum:	1237602
Y Maximum:	1240212
Y Spacing:	52.2
Z Minimum:	-1.2653208138469
Z Maximum:	26.740775207879

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	544200.57762879
Simpson's Rule:	538878.11157179
Simpson's 3/8 Rule:	538956.37765496

Cut & Fill Volumes

Positive Volume [Cut]:	610410.39801357
Negative Volume [Fill]:	66209.664588238
Net Volume [Cut-Fill]:	544200.73342533

Areas

Planar Areas

Positive Planar Area [Cut]:	3503301.6566406
Negative Planar Area [Fill]:	2018540.8888139
Blanked Planar Area:	8063207.4545455
Total Planar Area:	13585050

Surface Areas

Positive Surface Area [Cut]:	3503321.7744738
Negative Surface Area [Fill]:	2018541.0410431

Pine River – CO2

Grid Volume Computations

Fri Feb 08 13:51:10 2008

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\PR_CO2bln.grd
Grid Size:	51 rows x 100 columns
X Minimum:	2383074
X Maximum:	2388479
X Spacing:	54.59595959596
Y Minimum:	1237502
Y Maximum:	1240312
Y Spacing:	56.2
Z Minimum:	-0.34817507140572
Z Maximum:	4.8164495026242

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	269195.07218197
Simpson's Rule:	270589.13585267
Simpson's 3/8 Rule:	270191.00903571

Cut & Fill Volumes

Positive Volume [Cut]:	279132.63736467
Negative Volume [Fill]:	9933.5433404738
Net Volume [Cut-Fill]:	269199.09402419

Areas

Planar Areas

Positive Planar Area [Cut]:	5110269.5733983
Negative Planar Area [Fill]:	776250.4114502
Blanked Planar Area:	9301530.0151515
Total Planar Area:	15188050

Surface Areas

Positive Surface Area [Cut]:	5110270.5480058
Negative Surface Area [Fill]:	776250.41723571

SFTC Central and West – CH4

Grid Volume Computations

Fri Feb 08 15:04:01 2008

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\TC_TCW_CH4bln.grd
Grid Size:	26 rows x 100 columns
X Minimum:	2370447
X Maximum:	2375455
X Spacing:	50.585858585859
Y Minimum:	1242284
Y Maximum:	1243722
Y Spacing:	57.52
Z Minimum:	-19.40786072007
Z Maximum:	750.22445982401

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	3521575.8177347
Simpson's Rule:	3532621.6358876
Simpson's 3/8 Rule:	3537623.3696932

Cut & Fill Volumes

Positive Volume [Cut]:	3706984.277584
Negative Volume [Fill]:	185408.45984929
Net Volume [Cut-Fill]:	3521575.8177347

Areas

Planar Areas

Positive Planar Area [Cut]:	2292293.9648497
Negative Planar Area [Fill]:	1616886.0852513
Blanked Planar Area:	3292323.949899
Total Planar Area:	7201504

Surface Areas

Positive Surface Area [Cut]:	2305318.1415248
Negative Surface Area [Fill]:	1616925.9453206

SFTC Central and West - CO2

Grid Volume Computations

Fri Feb 08 15:05:49 2008

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\TC_TCW_Co2bln.grd
Grid Size:	26 rows x 100 columns
X Minimum:	2370447
X Maximum:	2375455
X Spacing:	50.585858585859
Y Minimum:	1242284
Y Maximum:	1243722
Y Spacing:	57.52
Z Minimum:	-0.16587225559175
Z Maximum:	7.4385731387311

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	265502.86143045
Simpson's Rule:	262784.92407151
Simpson's 3/8 Rule:	266367.09574392

Cut & Fill Volumes

Positive Volume [Cut]:	266087.89031156
Negative Volume [Fill]:	585.02888110545
Net Volume [Cut-Fill]:	265502.86143045

Areas

Planar Areas

Positive Planar Area [Cut]:	3851700.3266315
Negative Planar Area [Fill]:	57479.723469469
Blanked Planar Area:	3292323.949899
Total Planar Area:	7201504

Surface Areas

Positive Surface Area [Cut]:	3851702.1567985
Negative Surface Area [Fill]:	57479.724301642

SFTC East – CH4

Grid Volume Computations

Fri Jan 25 16:28:02 2008

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\TCE_CH4.grd
Grid Size:	82 rows x 100 columns
X Minimum:	2376627
X Maximum:	2378041
X Spacing:	14.282828282828
Y Minimum:	1242075
Y Maximum:	1243271
Y Spacing:	14.765432098765
Z Minimum:	-11.087670482001
Z Maximum:	100.02761394681

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	121377.18489735
Simpson's Rule:	121460.43068674
Simpson's 3/8 Rule:	121429.09064569

Cut & Fill Volumes

Positive Volume [Cut]:	310105.31105803
Negative Volume [Fill]:	188743.09553514
Net Volume [Cut-Fill]:	121362.2155229

Areas

Planar Areas

Positive Planar Area [Cut]:	847755.13469726
Negative Planar Area [Fill]:	843388.86530274
Blanked Planar Area:	0
Total Planar Area:	1691144

Surface Areas

Positive Surface Area [Cut]:	847862.78270249
Negative Surface Area [Fill]:	843391.00740752

SFTC East – CO2

Grid Volume Computations

Fri Jan 25 16:28:47 2008

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\TCE_CO2.grd
Grid Size:	82 rows x 100 columns
X Minimum:	2376627
X Maximum:	2378041
X Spacing:	14.282828282828
Y Minimum:	1242075
Y Maximum:	1243271
Y Spacing:	14.765432098765
Z Minimum:	-0.15818457293902
Z Maximum:	2.8563001168585

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	54295.291646693
Simpson's Rule:	54302.510903222
Simpson's 3/8 Rule:	54301.673478713

Cut & Fill Volumes

Positive Volume [Cut]:	55240.578100313
Negative Volume [Fill]:	945.85515402816
Net Volume [Cut-Fill]:	54294.722946285

Areas

Planar Areas

Positive Planar Area [Cut]:	1515259.8468968
Negative Planar Area [Fill]:	175884.15310318
Blanked Planar Area:	0
Total Planar Area:	1691144

Surface Areas

Positive Surface Area [Cut]:	1515259.975771
Negative Surface Area [Fill]:	175884.1534087

Main Seep at SFTC – Trad Method – CH4

Grid Volume Computations

Fri Feb 08 15:52:01 2008

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\TCmsa2007SubgasCH4bln.grd
Grid Size:	47 rows x 100 columns
X Minimum:	2373464
X Maximum:	2374710
X Spacing:	12.585858585859
Y Minimum:	1243040
Y Maximum:	1243727
Y Spacing:	14.934782608696
Z Minimum:	-0.2851402920825
Z Maximum:	14.030186905326

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	17245.128580624
Simpson's Rule:	17232.121334223
Simpson's 3/8 Rule:	17240.998442409

Cut & Fill Volumes

Positive Volume [Cut]:	17881.615620743
Negative Volume [Fill]:	636.48704011934
Net Volume [Cut-Fill]:	17245.128580624

Areas

Planar Areas

Positive Planar Area [Cut]:	279264.45102555
Negative Planar Area [Fill]:	245163.65174125
Blanked Planar Area:	331573.8972332
Total Planar Area:	856002

Surface Areas

Positive Surface Area [Cut]: 279266.58614041
Negative Surface Area [Fill]: 245163.65770544

Main Seep at SFTC – CH4

Grid Volume Computations

Fri Feb 08 15:38:28 2008

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\TCmsach4.grd
Grid Size:	26 rows x 100 columns
X Minimum:	2370447
X Maximum:	2375455
X Spacing:	50.585858585859
Y Minimum:	1242284
Y Maximum:	1243722
Y Spacing:	57.52
Z Minimum:	-19.40786072007
Z Maximum:	750.22445982401

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	1823110.9635497
Simpson's Rule:	1853900.8960252
Simpson's 3/8 Rule:	1834319.81043

Cut & Fill Volumes

Positive Volume [Cut]:	1859562.8715174
Negative Volume [Fill]:	36451.907967606
Net Volume [Cut-Fill]:	1823110.9635497

Areas

Planar Areas

Positive Planar Area [Cut]:	265756.84240639
Negative Planar Area [Fill]:	182336.73981583
Blanked Planar Area:	6753410.4177778
Total Planar Area:	7201504

Surface Areas

Positive Surface Area [Cut]:	275991.97360559
Negative Surface Area [Fill]:	182364.78128565

Main Seep at SFTC – CO2

Grid Volume Computations

Fri Feb 08 15:41:17 2008

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\TCmsaCO2.grd
Grid Size:	26 rows x 100 columns
X Minimum:	2370447
X Maximum:	2375455
X Spacing:	50.585858585859
Y Minimum:	1242284
Y Maximum:	1243722
Y Spacing:	57.52
Z Minimum:	-0.057426160785816
Z Maximum:	5.3221515689303

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	37773.002284817
Simpson's Rule:	37287.843993358
Simpson's 3/8 Rule:	37914.075211361

Cut & Fill Volumes

Positive Volume [Cut]:	37786.416740413
Negative Volume [Fill]:	13.414455596667
Net Volume [Cut-Fill]:	37773.002284817

Areas

Planar Areas

Positive Planar Area [Cut]:	447201.42739437
Negative Planar Area [Fill]:	892.15482785198
Blanked Planar Area:	6753410.4177778
Total Planar Area:	7201504

Surface Areas

Positive Surface Area [Cut]:	447201.97080613
Negative Surface Area [Fill]:	892.15484271826

Vosburg Pike – CH4

Grid Volume Computations

Fri Jan 25 16:41:46 2008

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\VP_CH4bln.grd
Grid Size:	44 rows x 100 columns
X Minimum:	2349162
X Maximum:	2352897
X Spacing:	37.727272727273
Y Minimum:	1242664
Y Maximum:	1244400
Y Spacing:	40.372093023256
Z Minimum:	-0.058307265869013
Z Maximum:	0.98390794868961

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	3225.8637044729
Simpson's Rule:	3281.8888704918
Simpson's 3/8 Rule:	3241.6177904786

Cut & Fill Volumes

Positive Volume [Cut]:	5096.0329705337
Negative Volume [Fill]:	1870.1692660608
Net Volume [Cut-Fill]:	3225.8637044729

Areas

Planar Areas

Positive Planar Area [Cut]:	605298.40208852
Negative Planar Area [Fill]:	618535.72053305
Blanked Planar Area:	5260125.8773784
Total Planar Area:	6483960

Surface Areas

Positive Surface Area [Cut]:	605298.41050943
Negative Surface Area [Fill]:	618535.72059355

Vosburg Pike – CO2

Grid Volume Computations

Fri Jan 25 16:43:12 2008

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\VP_CO2bln.grd
Grid Size:	44 rows x 100 columns
X Minimum:	2349162
X Maximum:	2352897
X Spacing:	37.727272727273
Y Minimum:	1242664
Y Maximum:	1244400
Y Spacing:	40.372093023256
Z Minimum:	0.07686541840293
Z Maximum:	1.3977452308112

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	56934.117934939
Simpson's Rule:	57669.067076019
Simpson's 3/8 Rule:	57054.827844049

Cut & Fill Volumes

Positive Volume [Cut]:	56934.117934939
Negative Volume [Fill]:	0
Net Volume [Cut-Fill]:	56934.117934939

Areas

Planar Areas

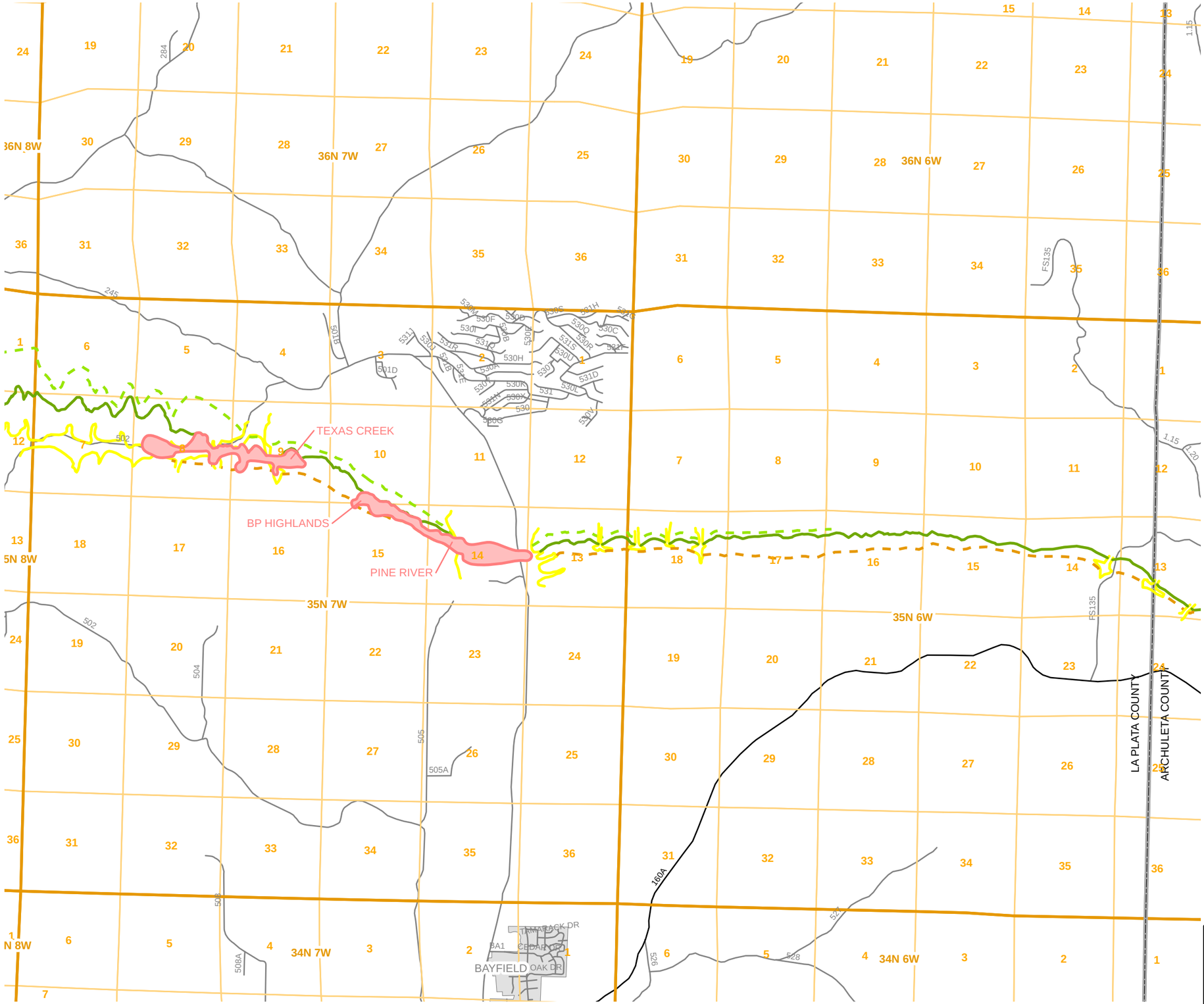
Positive Planar Area [Cut]:	1223834.1226216
Negative Planar Area [Fill]:	0
Blanked Planar Area:	5260125.8773784
Total Planar Area:	6483960

Surface Areas

Positive Surface Area [Cut]:	1223834.1518606
Negative Surface Area [Fill]:	0

APPENDIX F

EXTENT OF METHANE SEEPAGE MAPS



LEGEND

- Estimated Extent of Methane Seepage
- County Line
- Township and Range Lines
- Section Line
- City
- Major Road
- Minor Road

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)

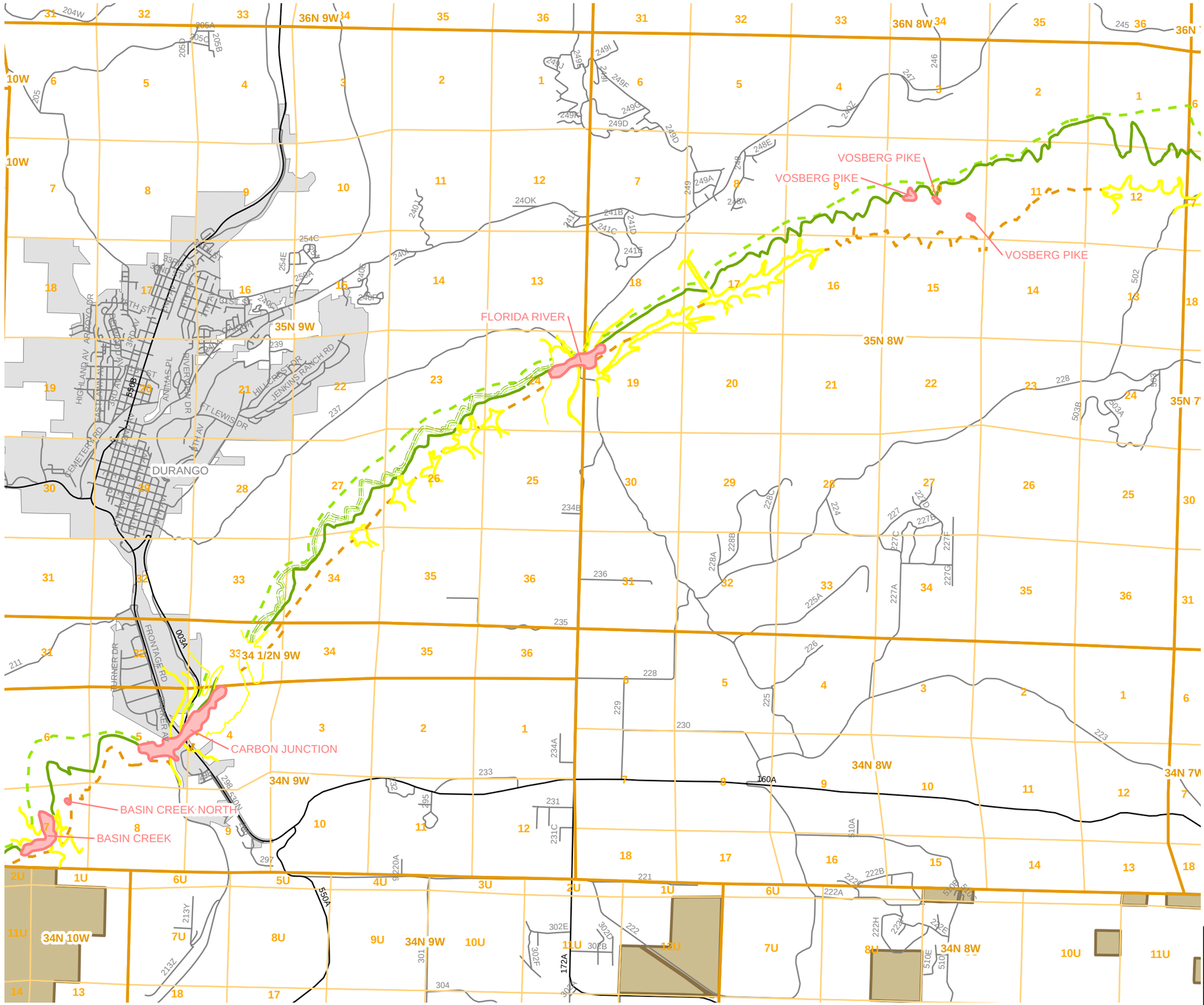
0 1 2
Miles

N

ESTIMATED EXTENT OF METHANE SEEPAGE 2007 DETAILED SEEP MAPPING EASTERN PORTION

THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 02_detail.mxd



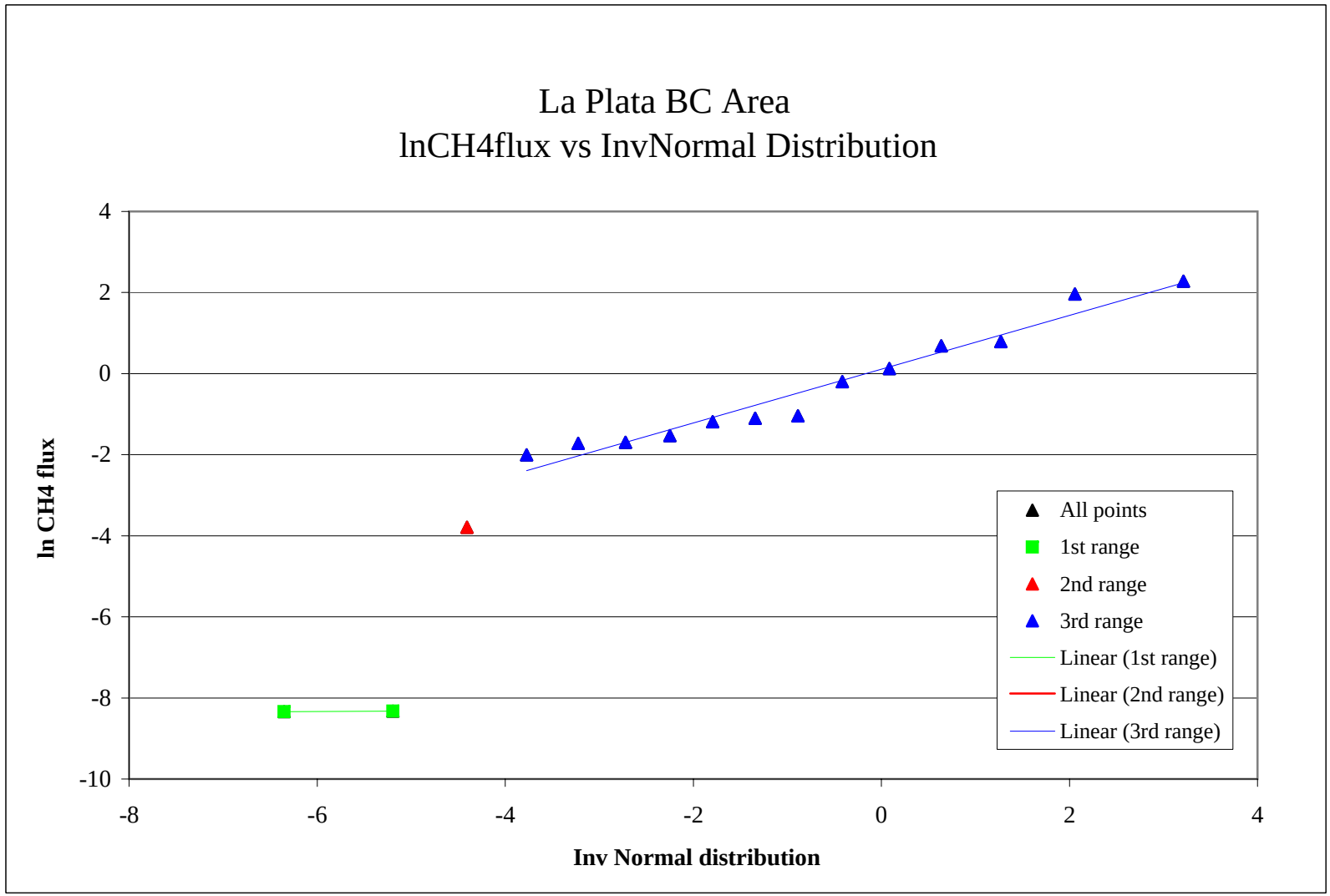
ESTIMATED EXTENT OF METHANE SEEPAGE
2007 DETAILED SEEP MAPPING
WESTERN PORTION

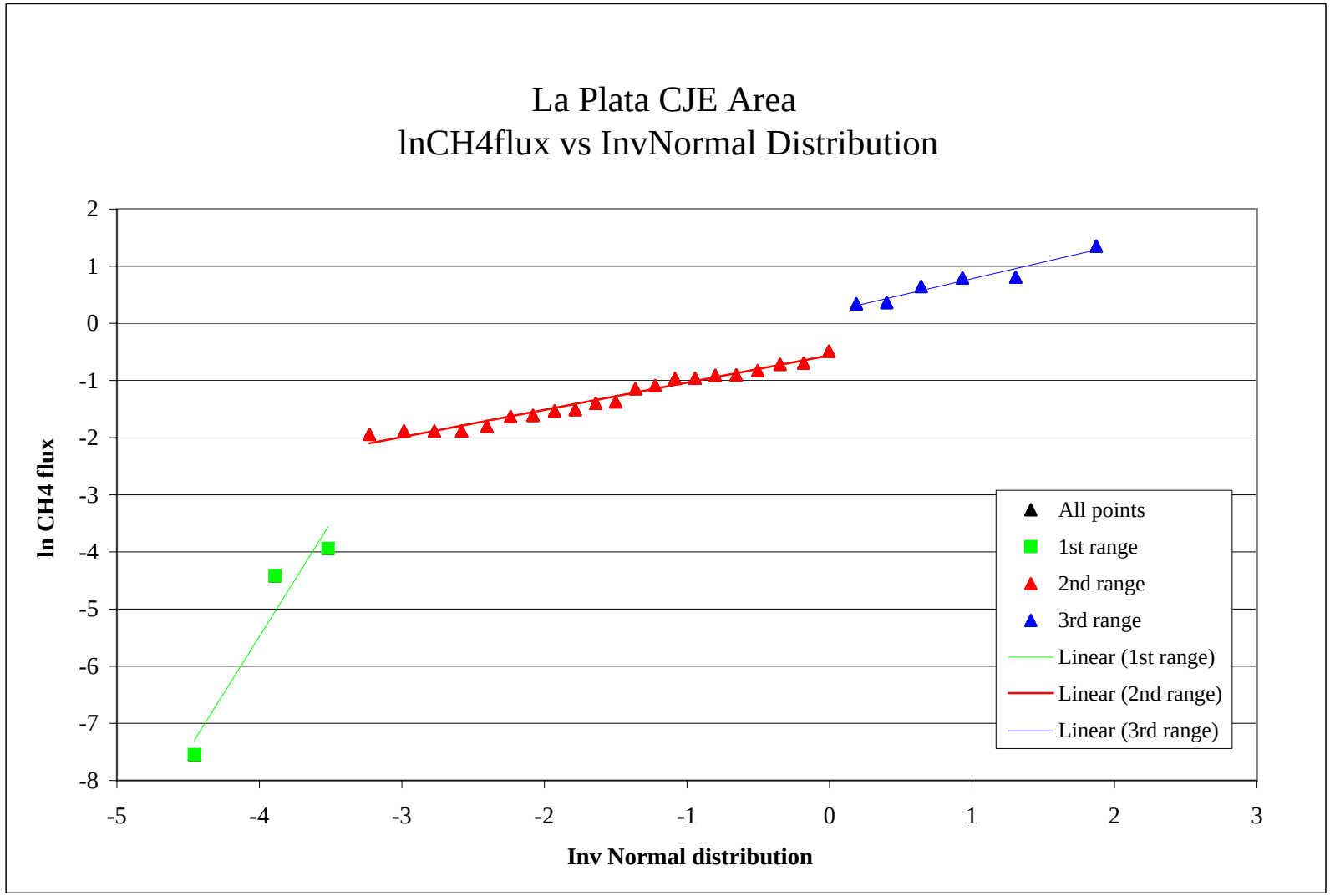
THE GROUP

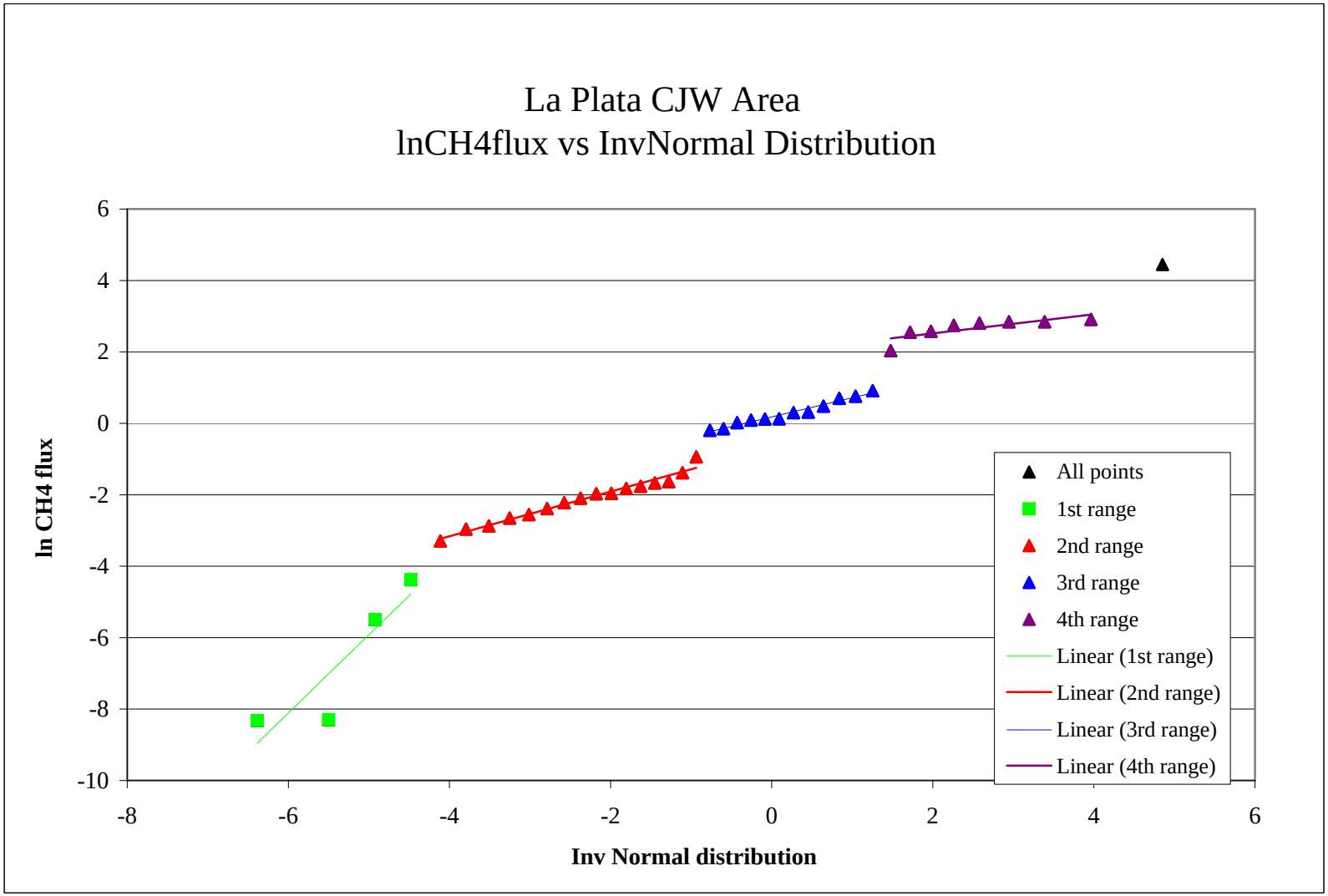
P:\San Juan Basin GIS\LaPlata\Fruitland_OMR\MXDs\Vers._8.3\2007\Fig 02_detail.mxd

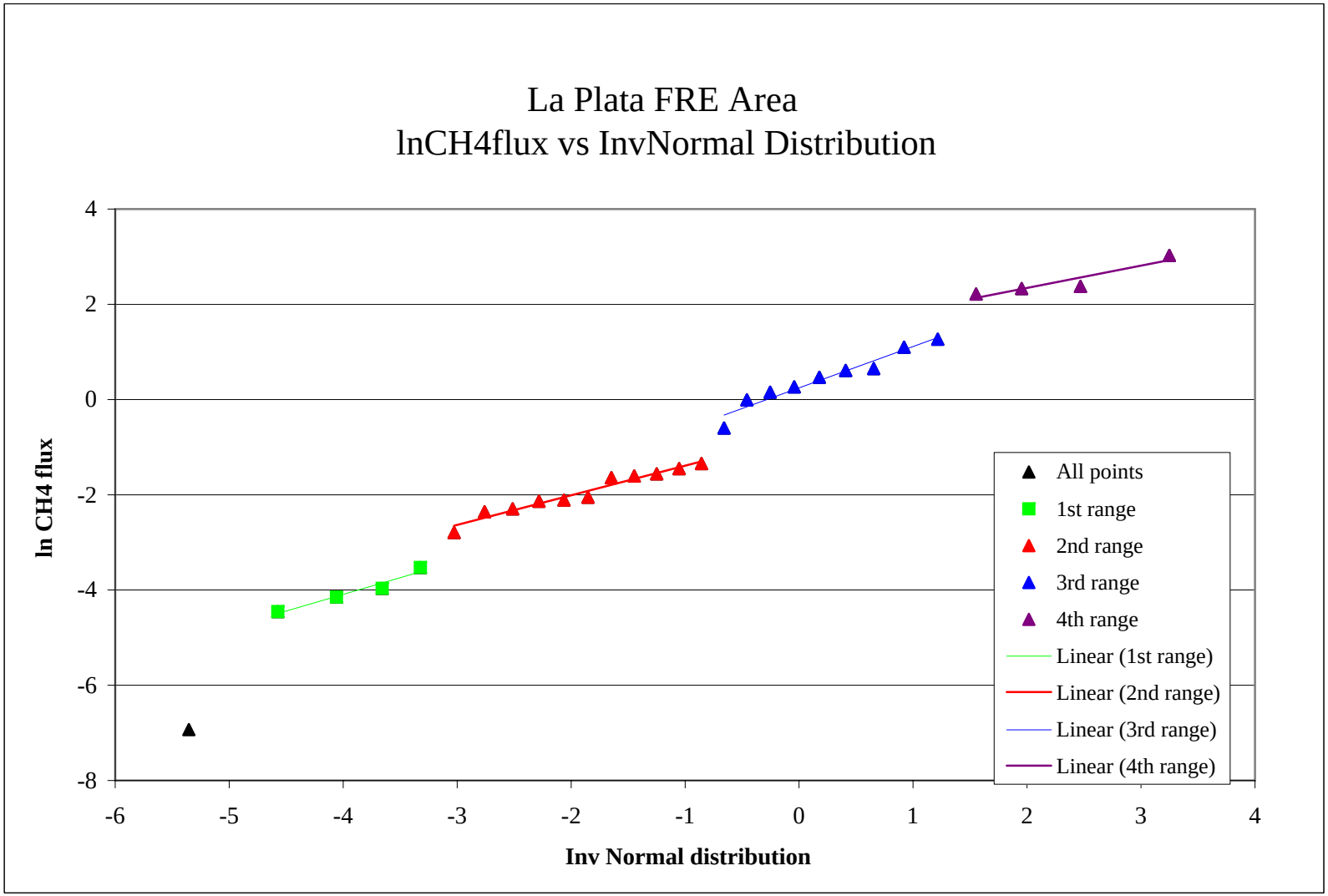
APPENDIX G

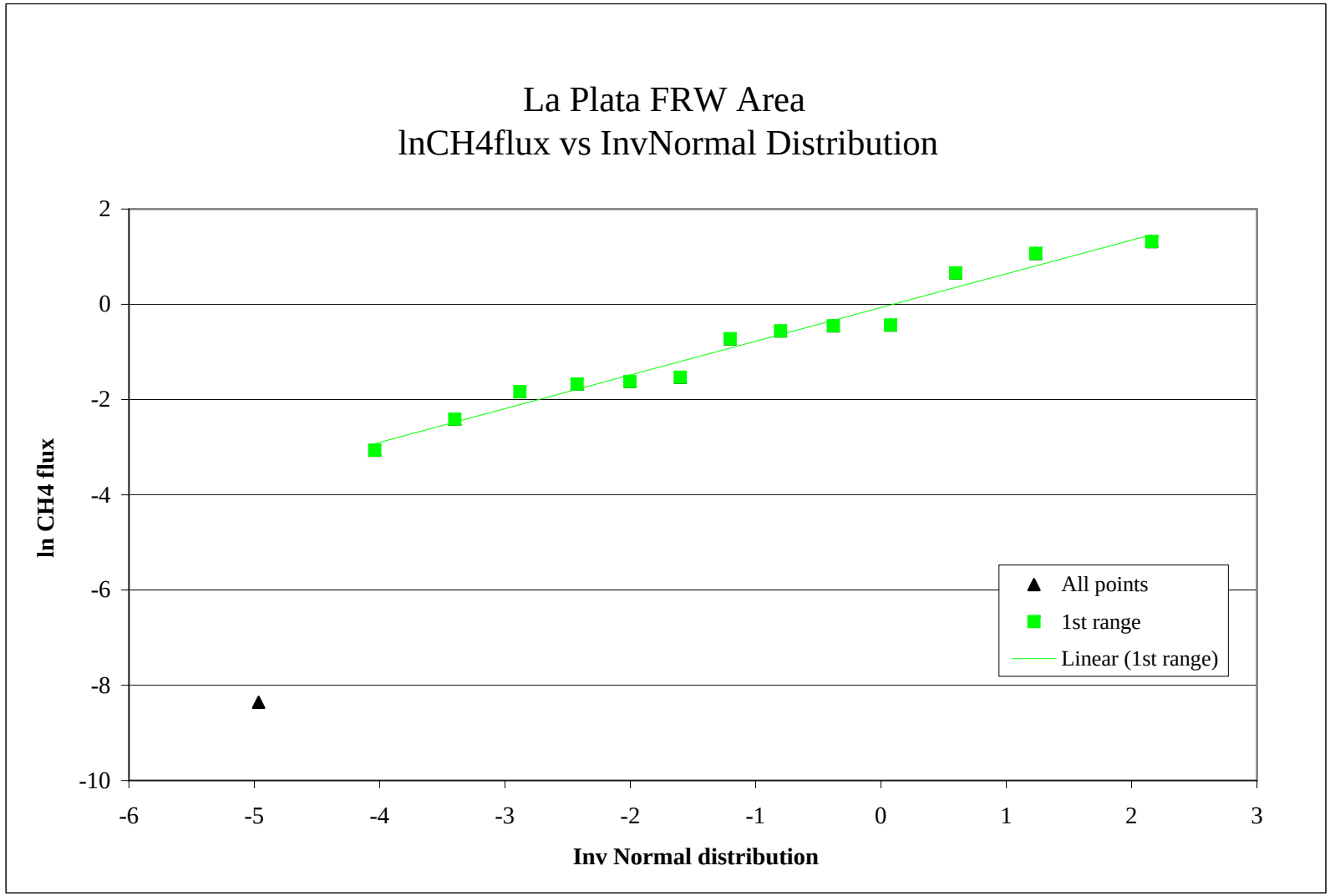
STATISTICAL ESTIMATION METHOD PLOTS

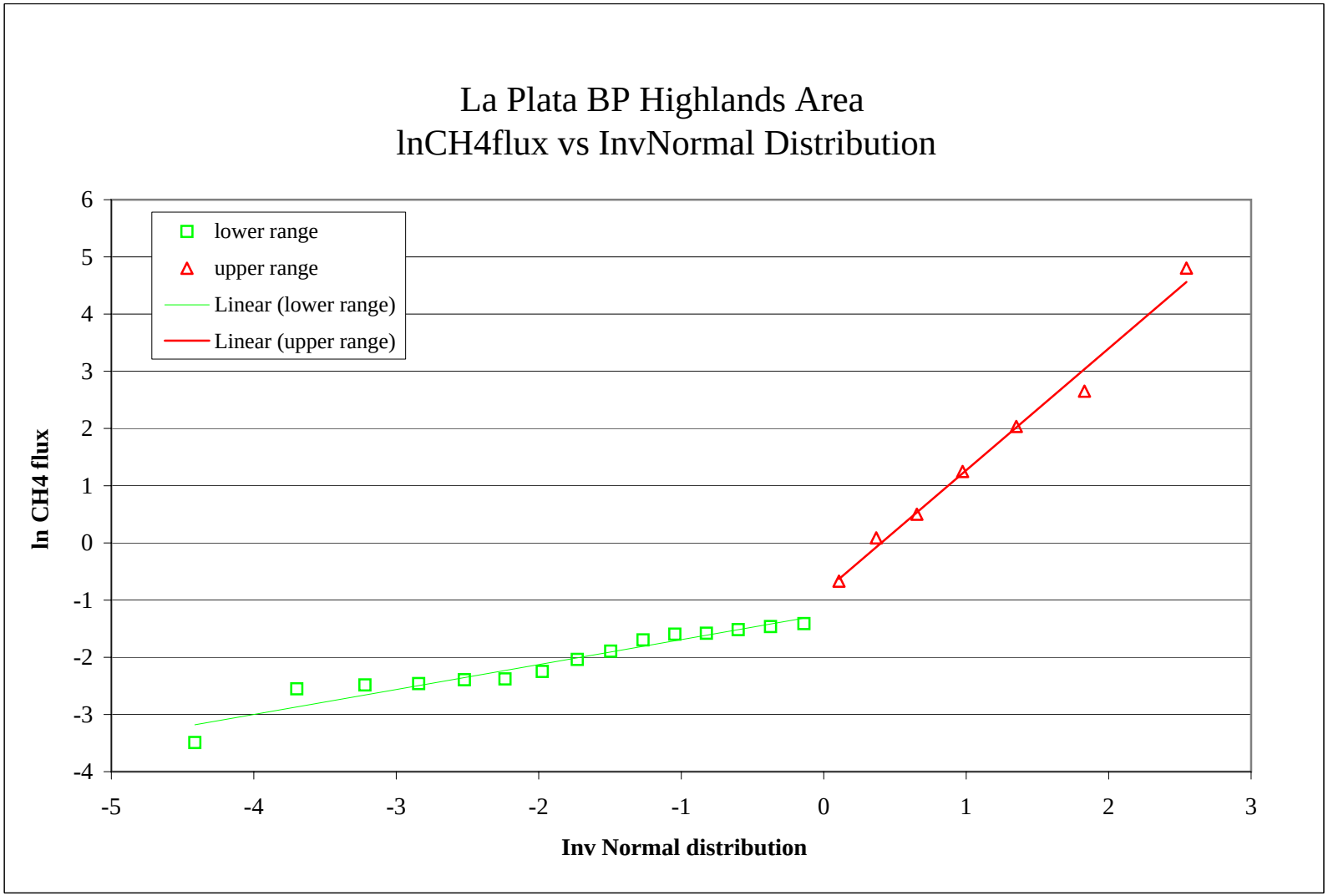

La Plata BC Area
lnCH4flux vs InvNormal Distribution
ln CH4 flux
4
2
0
-2
-4
-6
-8
-10
-8
-6
-4
-2
0
2
4
Inv Normal distribution
All points
1st range
2nd range
3rd range
Linear (1st range)
Linear (2nd range)
Linear (3rd range)

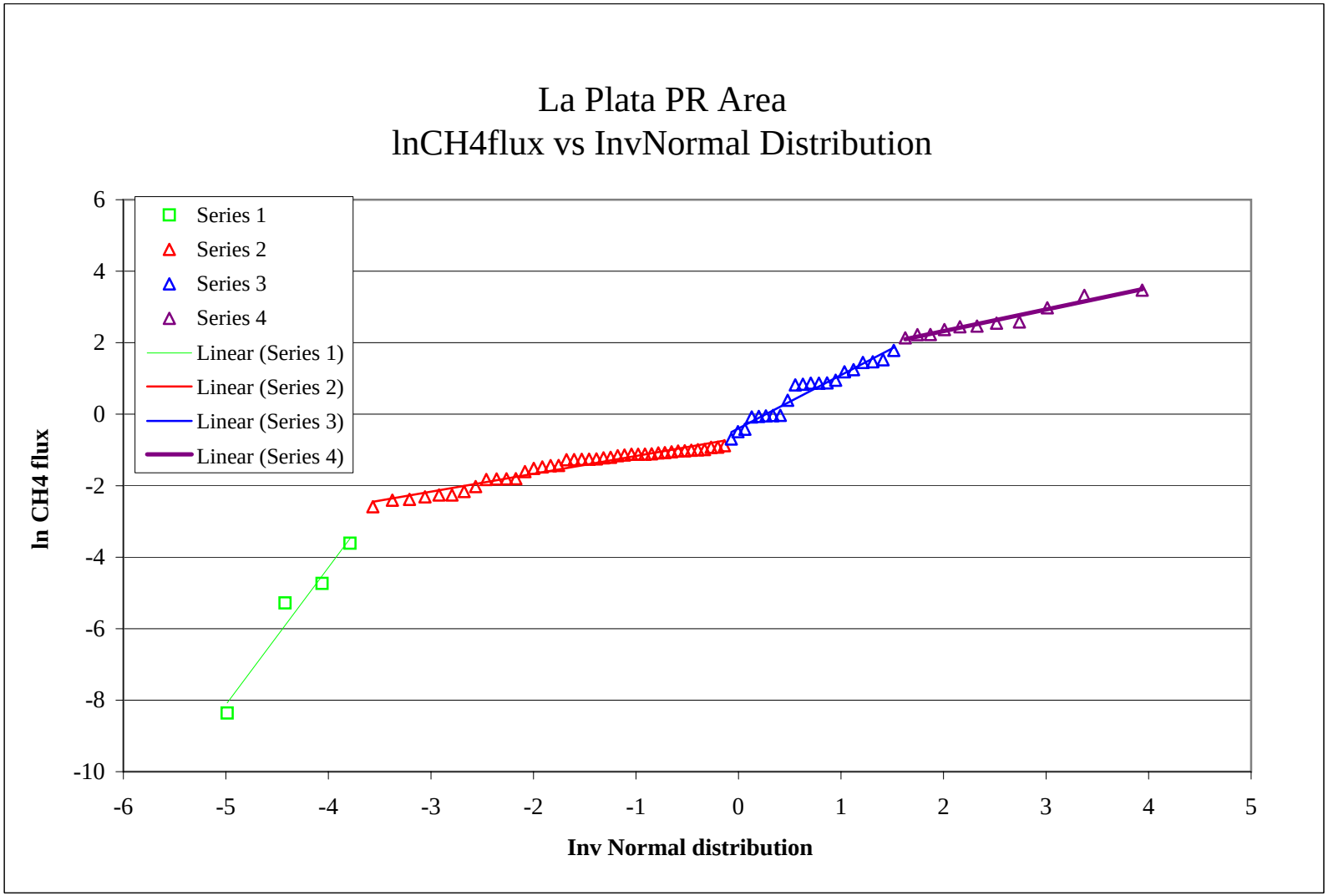

La Plata CJE Area
lnCH4flux vs InvNormal Distribution
ln CH4 flux
Inv Normal distribution
2
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-5
-4
-3
-2
-1
0
1
2
3
All points
1st range
2nd range
3rd range
Linear (1st range)
Linear (2nd range)
Linear (3rd range)

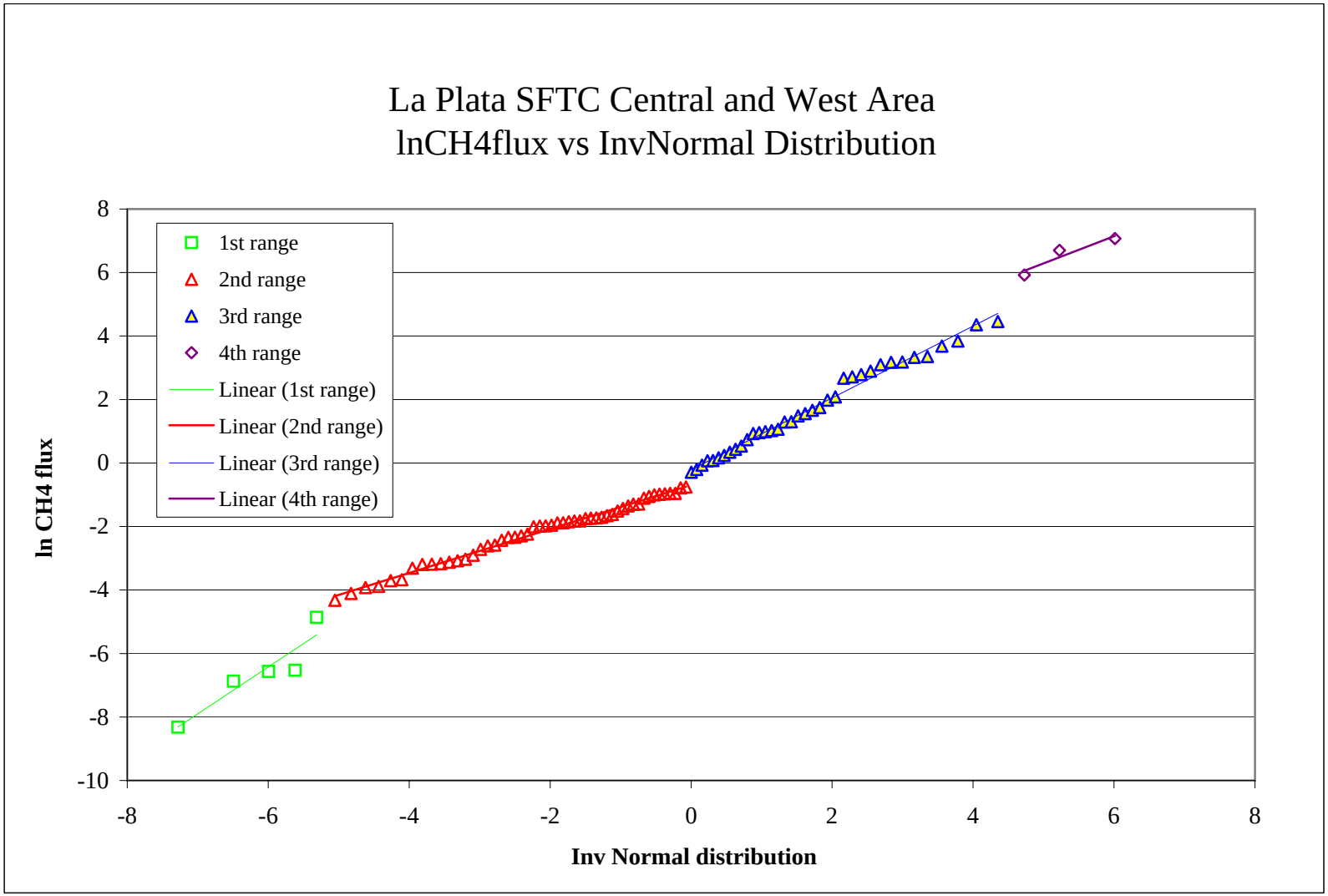

La Plata CJW Area
lnCH4flux vs InvNormal Distribution
ln CH4 flux
Inv Normal distribution
6
4
2
0
-2
-4
-6
-8
-10
-8
-6
-4
-2
0
2
4
6
All points
1st range
2nd range
3rd range
4th range
Linear (1st range)
Linear (2nd range)
Linear (3rd range)
Linear (4th range)

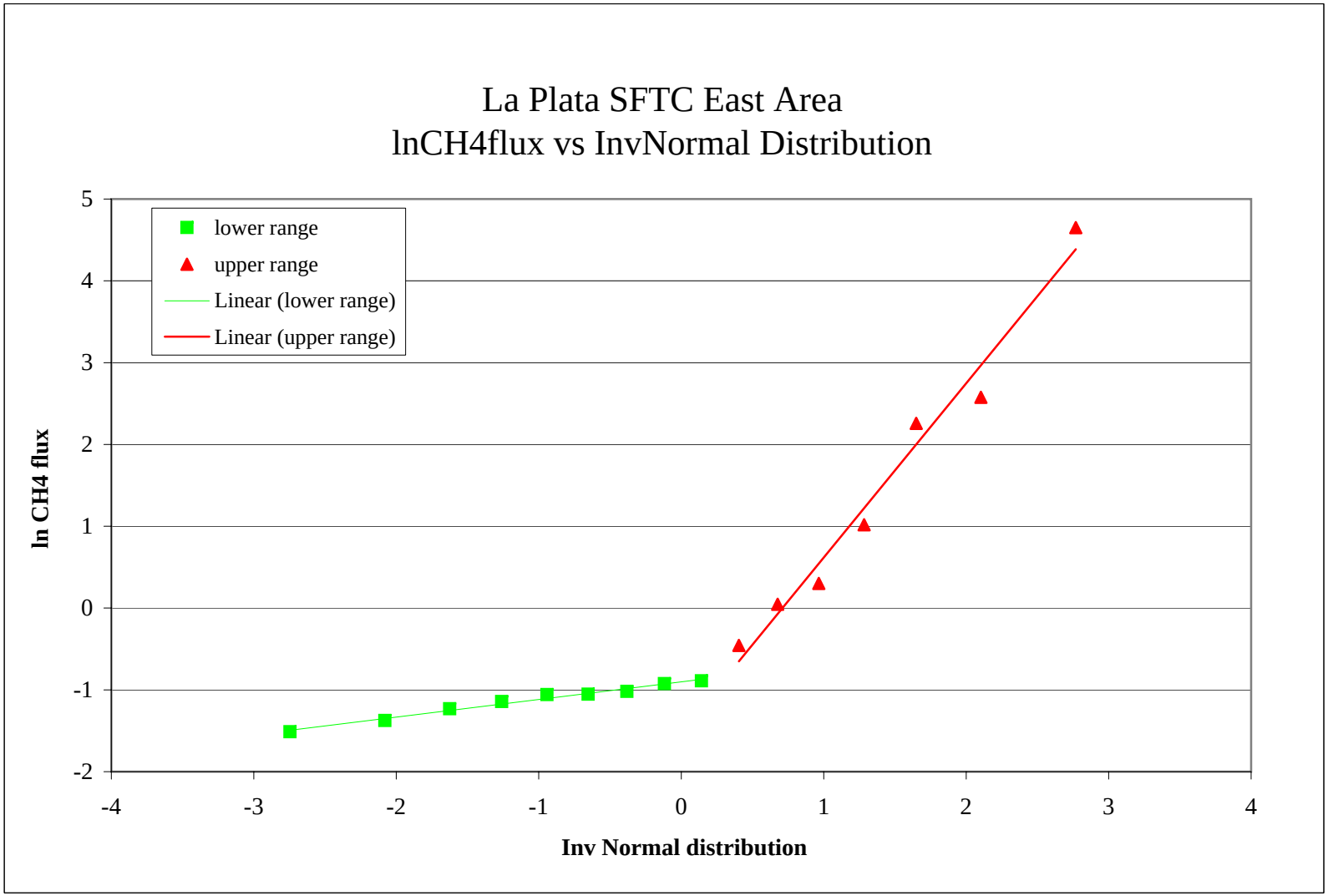

La Plata FRE Area
lnCH4flux vs InvNormal Distribution
ln CH4 flux
Inv Normal distribution
4
2
0
-2
-4
-6
-8
-6
-5
-4
-3
-2
-1
0
1
2
3
4
All points
1st range
2nd range
3rd range
4th range
Linear (1st range)
Linear (2nd range)
Linear (3rd range)
Linear (4th range)

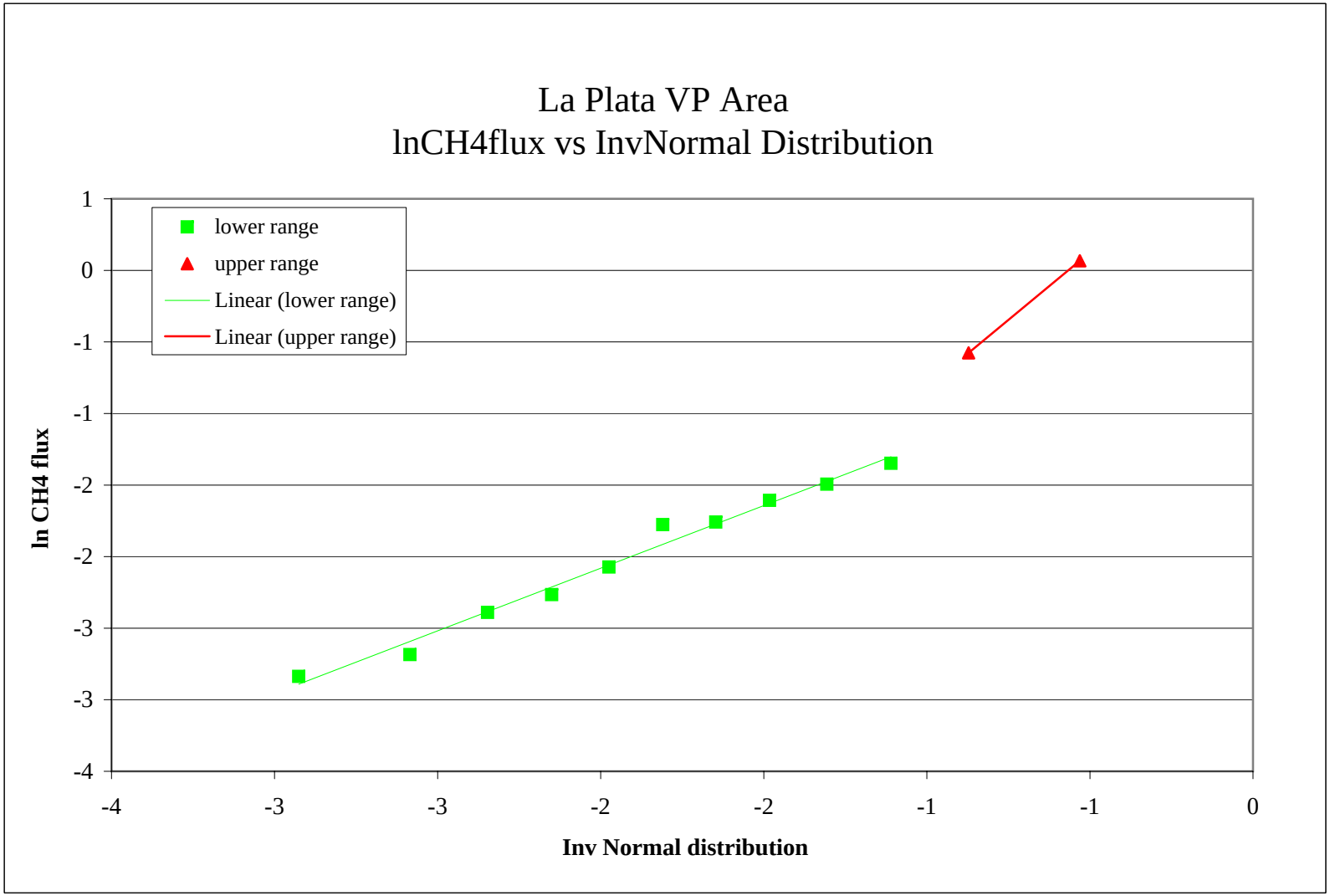

La Plata FRW Area
lnCH4flux vs InvNormal Distribution
ln CH4 flux
2
0
-2
-4
-6
-8
-10
-6
-5
-4
-3
-2
-1
0
1
2
3
Inv Normal distribution
All points
1st range
Linear (1st range)


La Plata BP Highlands Area
lnCH4flux vs InvNormal Distribution
lower range
upper range
Linear (lower range)
Linear (upper range)
ln CH4 flux
Inv Normal distribution
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
-4
-3
-2
-1
0
1
2
3


La Plata PR Area
lnCH4flux vs InvNormal Distribution
Series 1
Series 2
Series 3
Series 4
Linear (Series 1)
Linear (Series 2)
Linear (Series 3)
Linear (Series 4)
ln CH4 flux
Inv Normal distribution
6
4
2
0
-2
-4
-6
-8
-10
-6
-5
-4
-3
-2
-1
0
1
2
3
4
5


La Plata SFTC Central and West Area
lnCH4flux vs InvNormal Distribution
ln CH4 flux
Inv Normal distribution
1st range
2nd range
3rd range
4th range
Linear (1st range)
Linear (2nd range)
Linear (3rd range)
Linear (4th range)
8
6
4
2
0
-2
-4
-6
-8
-10
-8
-6
-4
-2
0
2
4
6
8


La Plata SFTC East Area
lnCH4flux vs InvNormal Distribution
lower range
upper range
Linear (lower range)
Linear (upper range)
ln CH4 flux
Inv Normal distribution
5
4
3
2
1
0
-1
-2
-4
-3
-2
-1
0
1
2
3
4


La Plata VP Area
lnCH4flux vs InvNormal Distribution
lower range
upper range
Linear (lower range)
Linear (upper range)
ln CH4 flux
Inv Normal distribution
1
0
-1
-1
-2
-2
-3
-3
-4
-4
-3
-3
-2
-2
-1
-1
0

APPENDIX H

DATA CORRELATION RESULTS

Data Correlation Results - Flux Meter Method vs. Traditional Method

Point	CH4 Flux Trad. (ml/min)	CH4 Flux Flux Meter (moles/m2/day)	ln CH4 Flux Trad	ln CH4 Flux Flux Meter	Distance
1	0.1378	14.46579348	-1.98195192	2.671786792	0.8
2	0.1525	0.274111896	-1.880590683	-1.294218878	1.3
3	0	0.197379925		-1.622624856	2.0
4	0	0.048289165		-3.030548081	2.0
5	0.0042	86.12918856	-5.472670754	4.455848362	2.2
6	3.184	1174.618222	1.158138268	7.068698456	2.3
7	0	0			2.3
8	0.0561	0	-2.880619466		2.3
9	0.0252	2.091754956	-3.680911284	0.738003405	2.4
10	0.0085	4.424541795	-4.767689115	1.487166724	2.4
11	0.00135	0.044059762	-6.607650687	-3.122208342	2.9
12	0.0645	23.90938072	-2.741090055	3.174270881	2.9
13	0	0.05472945		-2.905353323	3.1
14	1.2408	27.9446523	0.215756333	3.33022585	3.2
15	0.0144	1.071857372	-4.240527072	0.069393005	3.2
16	0.0336	28.60664523	-3.393229212	3.353639042	3.3
17	0	-0.028031071			3.3
18	0	0			3.5
19	0	0.013262007		-4.322851948	3.6
20	0	0			3.9
21	0.6314	3.633956244	-0.459815703	1.290321929	4.0
22	0	2.609560678		0.959181885	4.0
23	0.0096	39.6823867	-4.645992181	3.680907429	4.0
24	0.051	1.08153009	-2.975929646	0.078376788	4.2
25	0.1792	5.735433338	-1.719252778	1.746663308	4.2
26	0.0189	8.027208462	-3.968593357	2.082836829	4.7
27	0.0084	4.744564362	-4.779523573	1.556999618	4.7
28	0	0.238537258		-1.433229761	4.9
29	0	0.100788774		-2.294728299	4.9
30	0	0.180961915		-1.709468685	5.0
31	0	0			5.2
32	0.1403	46.69063684	-1.963972292	3.843543649	5.3
33	0.0168	0.380319543	-4.086376393	-0.966743477	5.6
34	14.823	812.7207003	2.696180029	6.700387509	5.6
35	0.0108	3.662191408	-4.528209145	1.298061714	5.8
36	0	0.07354561		-2.609849521	5.8
37	0.305	1.709297366	-1.187443502	0.536082389	5.9
38	0	0			6.0
39	0	0			6.1
40	0	0.176931657		-1.73199174	6.1
41	0	0			6.5
42	0	0.06597477		-2.718482883	6.6
43	1.7925	77.78790817	0.583611293	4.353985997	6.6
44	0	0.096141255		-2.341936762	7.3
45	0	0.001461866		-6.528041714	7.4

Data Correlation Results - Flux Meter Method vs. Traditional Method

Point	CH4 Flux Trad. (ml/min)	CH4 Flux Flux Meter (moles/m2/day)	ln CH4 Flux Trad	ln CH4 Flux Flux Meter	Distance
46	0.1064	2.903739003	-2.240549702	1.065999218	7.8
47	0.7722	18.05145356	-0.258511695	2.893226211	8.1
48	0	0			8.3
49	0	0			8.7
50	0	0			8.9
51	0	0.041382641		-3.184893778	9.1
52	0	0.137925032		-1.981044991	9.2
53	0	0			9.5
54	0.00026	0	-8.254828927		10.2
55	0.00102	15.07178913	-6.887952652	2.712824727	10.3
56	0	0			10.8
57	0.1188	13.13969097	-2.130313872	2.575637495	11.0
58	0.0186	-0.003989565	-3.984593698		11.5
59	0.0578	0.349512429	-2.850766503	-1.051216156	13.6
60	0	0			15.6
61	0	0.046122104		-3.076462969	20.2
62	0	0.042100969		-3.167684531	28.8
63	0	0			32.0
64	0	0			34.4