2009 FRUITLAND OUTCROP MONITORING REPORT

LA PLATA COUNTY COLORADO

FEBRUARY 2010

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 in La Plata County, Colorado (Figure 1). The study area is located along the north rim of the San Juan Basin, north of the Southern Ute Indian Tribe (SUIT) Reservation boundary.

This monitoring program is 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, collectively referred to as "The Group".

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. In total, the scope of work provides an efficient and repeatable means to characterize subsurface gas seepage, if any, in the project area by inspecting those areas with the greatest potential for seeps based on geological characteristics.

During the 2009 monitoring event, LTE used a West Systems, LLC portable flux meter capable of detecting the presence of methane, carbon dioxide, and hydrogen sulfide at very low levels. This is the third event the flux meter has been used to conduct detailed mapping on the Kf outcrop. Two natural spring sampling events and an abandoned production well soil gas survey were also included as part of the 2009 monitoring event.

DETAILED FLUX MAPPING

The 2009 mapping area was similar to those areas mapped in 2008 with exception to the Horse Gulch area, which was excluded due to very low methane values detected in 2008. LTE mapped 1,097 acres during the period from June 11, 2009 through September 2, 2009. Results of the detailed mapping activities indicate that methane continues to seep in the same areas along the Kf outcrop within the project area.

The highest individual methane mass flux value was recorded in the South Fort Texas Creek (SFTC) area. SFTC area also exhibited the highest total volumetric flux. The 2009 total estimated volumetric flux for the mapped Kf outcrop was approximately 4,150 thousand cubic feet per day (MCFD).

Measurable carbon dioxide flux values were recorded at 96 percent (%) of the sample locations during 2009. It is reasonable to assume that carbon dioxide seepage exists within all portions of the project area, including areas where methane seepage does not exist; however, the data does indicate that carbon dioxide flux values are higher in areas of measured methane seepage.

Measurable hydrogen sulfide flux values detected within the project area were very low and are not considered to be a threat to human health at this time.

NATURAL SPRINGS MONITORING

A total of six natural springs were accessible for sampling in 2009. At the request of the COGCC, the natural springs were sampled in both Spring and Fall of 2009 to observe any seasonal changes in water quality that may be present. Of the six natural springs accessible during 2009, five natural springs were sampled in May 2009, while three were sampled in October 2009. All natural springs that were dry or had an insufficient volume of water were not sampled.

The dissolved methane concentration in each of the water samples collected in Spring and Fall of 2009 was below the laboratory method detection limit of 0.02 milligrams per liter (mg/L). Past results of methane concentrations also indicated low or no dissolved methane in sampled natural springs.

General water chemistry analyses were performed for the second time in May 2009. Major ion concentrations indicate that all natural spring waters exhibit a calcium bicarbonate character.

Natural springs discharge rates were measured at the time of sampling. Discharge rates were generally low, within ranges of past measurements and without an apparent seasonal trend.

During the 2009 sampling event, subsurface soil gas was measured at all six natural springs. Methane was not detected in the vicinity of any natural spring surveyed.

ABANDONED PRODUCTION WELL SOIL GAS SURVEYS

At the request of the COGCC, the areas surrounding abandoned production wells 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) were inspected for subsurface methane. No subsurface methane was detected at any of the abandoned production well locations.

RECOMMENDATIONS

Based on the results of the 2009 Kf outcrop monitoring event, LTE recommends the following:

- Conduct detailed methane seep mapping and flux estimation using the portable flux meter in June 2010. LTE will return to the sample locations visited during the 2009 field activities;
- Reduce the frequency of natural springs sampling to every other year to assess any changes in the number of springs, the flow rates, and/or the chemistry of natural springs. The next natural spring sampling event would be the spring of 2011;
- Discontinue subsurface gas measurements at all natural spring locations unless analytical results indicate detectable dissolved methane in collected water samples and/or gas seepage is visible at the time of water sampling; and
- Conduct the next regional reconnaissance infrared imagery (IR) aerial survey in 2011.

SECTION 1.0

INTRODUCTION

Since 1997, LT Environmental, Inc. (LTE) has conducted methane seep monitoring along the Fruitland Formation (Kf) outcrop in La Plata County, Colorado (Figure 1). The project area is located along the north rim of the San Juan Basin, north of the Southern Ute Indian Tribe (SUIT) Reservation boundary.

This monitoring program is 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 organizations are collectively referred to as "The Group".

1.1 OBJECTIVE

The objective of the methane seep monitoring program is to observe and document the relative change in methane seepage from the Kf outcrop over time and space. In total, the scope of work provides an efficient and repeatable means to characterize subsurface gas seepage, if any, in the project area by inspecting those areas with the greatest potential for seeps based on geological characteristics and historical field observations.

1.2 PROJECT AREA

The project area consists of approximately 23 miles of the Kf outcrop extending from the northern boundary of the SUIT Reservation near Basin Creek (southwest of Durango), northeastward to the boundary between La Plata and Archuleta Counties (Figure 1).

1.3 BACKGROUND INFORMATION

There have been a number of previous and continuing 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;
- A reconnaissance survey by Stonebrooke in 1995, on behalf of several oil and gas operators and with assistance of the BLM. The survey consisted of over 1,100 surface and 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 of six flux chambers in the primary seep areas and periodic monitoring of the flux chambers from 1998 to 2005. The flux chambers measured gas flow on 10-minute intervals and have since been removed;
- Annual pedestrian reconnaissance surveys of the Kf 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 IR imagery is useful in identifying suspect areas based on stressed vegetation, which can be subsequently field verified for the presence or absence of methane;
- Detailed methane seep mapping in the known seep areas in October 2002, May 2003, May 2004, June 2005, May 2006, September 2007, and June through September 2008;
- Regional reconnaissance of the 23-mile section of Kf outcrop in the project area in July 2003, September 2005, and October 2008. The regional reconnaissance included the collection of infrared imagery, identification of suspect areas, and field verification;
- Natural spring surveys along the 23-mile outcrop in La Plata County, north of the SUIT Reservation boundary, in September 2005, May 2006, October 2007, June and October 2008; and
- Private Airborne Natural Gas Emission Lidar (ANGEL) data acquisition by ITT Corporation (ITT) during the Summer of 2008.

1.4 SCOPE OF WORK

The scope of work for the 2009 methane seep monitoring included the following tasks:

1) Obtaining permission to access private properties;
2) Detailed seep mapping at four key areas of interest;
3) Monitoring natural springs in both Spring and Fall conditions;
4) Measuring soil gas at three abandoned gas well locations; and
5) Preparing this report.

1.5 ORGANIZATION OF THE REPORT

This report is organized into seven sections, including this introduction (Section 1.0), which presents the objectives of the study and discusses background information related to the project. The field methods and equipment are described in Section 2.0. Section 3.0 summarizes the results of the detailed flux mapping. The natural springs monitoring results are presented in Section 4.0. Section 5.0 presents the results of the abandoned wells soil methane monitoring. Section 6.0 presents the conclusions of this survey and recommendations. Section 7.0 lists the report references. Tables, figures, and appendices follow the text in separate sections.

SECTION 2.0

FIELD METHODS

2.1 PROPERTY ACCESS

Prior to conducting 2009 field activities, LTE acquired land owner information from the La Plata County Assessor's Office. LTE cross-referenced parcel data and the Kf outcrop geometry to identify owners of parcels located on the Kf outcrop. Much of the outcrop land is federal land with unrestricted access. LTE attempted to contact private landowners along the Kf outcrop in La Plata County. LTE was denied access to several properties; and as a result, no investigation activities were conducted on these properties during the 2009 monitoring event. The 2009 status of access to parcels is presented in Table 1.

2.2 PROJECT AREA

LTE conducted detailed flux surveys at the following four locations of interest along the Kf outcrop in La Plata County (Figure 1):

- Basin Creek to Carbon Junction;
- Florida River;
- Vosburg Pike; and
- SFTC to Pine River.

During previous years, detailed survey efforts for these four main areas of interest were further divided into seven areas: Basin Creek (subdivided into Basin Creek and Basin Creek North); Carbon Junction; Florida River; Vosburg Pike; SFTC (subdivided into West, Central, and East); BP Highlands; and Pine River. In an attempt to standardize the flux comparison process from year to year, these seven areas have now been grouped according to geographical location along the Kf outcrop and where prominent methane seepage is occurring. However, notable observations and field results within the seven subdivided areas are still discussed below.

The Horse Gulch area was not mapped in 2009. This area was excluded in 2009 due to the very low or absent methane values detected during the comprehensive survey of the Horse Gulch area in 2008.

2.3 DETAILED MAPPING

2.3.1 Flux Measurements

The flux of soil gases moving across the soil surface to the atmosphere was measured using a West Systems, LLC (West Systems) portable gas flux meter. The flux meter has been used to measure soil gas seepage on the Kf outcrop since 2007. The meter measures the flux of methane, hydrogen sulfide, and carbon dioxide by employing individual gas-specific sensors that records

the increases, if any, of gas concentrations over time for a given surface area. These increases are proportional to the flux of each gas.

The flux meter components include an accumulation chamber connected by circulation tubes to the gas detector unit. At each sampling point, the accumulation chamber was placed on the ground surface to capture gas seeping from the ground. A fan in the chamber continuously mixes the gases in the chamber during the measurement process. A pump moves gases in the accumulation chamber to the detector unit. After passing through the detector unit, gases are returned to the chamber. This closed loop process allows soil gases discharging to the chamber to increase over time. Any increases in concentrations are measured and recorded automatically. No gas is allowed to escape the system. However, a vacuum is not created during the process. This enables measurement of natural seep conditions, if present. The result for each gas is reported as a mass flux in units of moles per square meter per day (moles/m^2·day).

Flux measurement accuracy can be limited by surface conditions. One of the most important factors is the quality of the seal between the accumulation chamber base and the ground surface. To ensure a proper seal between the ground surface and the chamber, LTE personnel chose relatively flat surfaces where possible and placed loose soil around the base of the chamber to reduce the potential for gas loss at the base of the chamber. In addition, LTE attempted to minimize ground disturbance during the measurement process in order to maintain the natural seep conditions. In areas with heterogeneous surfaces, the seal was sometimes difficult to achieve. This scenario was evident at locations with poorly developed soil or where the soil surface is obscured by decayed organic matter on the forest floor.

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.

The methane sensor within the flux meter unit has a range of 60 parts per million (ppm) to 50,000 ppm. The flux meter methane measurement range is 0.2 to 300 moles/m^2·day. Methane fluxes below 0.2 moles/m^2·day are detectable and reported, although with decreased accuracy.

The carbon dioxide sensor has a full-scale range of 0 to 20,000 ppm and flux measurement range of 0 to 600 moles/m^2·day at an accuracy of ±25%.

The hydrogen sulfide detector has a full-scale range of 0 to 20 ppm and a flux measurement range of 0.0025 to 0.5 moles/m^2·day at an accuracy of ±25%. The sensor is an electrochemical cell that measures hydrogen sulfide through a chemical oxidation process. The sensing process consumes a small amount of the hydrogen sulfide, which is not returned to the flux meter's accumulation chamber. Therefore, the flux meter can underestimate hydrogen sulfide flux by as much as 10%. Information on the West Systems portable gas flux meter is provided in Appendix A.

During the measurement process, gas concentrations are recorded at one-second intervals and directly downloaded via Bluetooth® connection to a portable digital assistant (PDA) integrated

with the Trimble GeoXT® global positioning system (GPS) unit (described below). Other measurements recorded include barometric pressure, temperature, date, and time.

Integrated West Systems Flux Manager® software on the GPS unit recorded 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.

2.3.2 Subsurface Soil Gas Measurements

Traditional mapping methods using a slide-hammer, GPS, and multi-gas meter were utilized during the natural spring sampling phase of the project.

LTE used a Mine Safety Appliances (MSA) GasPort® multi-gas meter to measure the concentrations of methane, carbon monoxide, hydrogen sulfide, and oxygen in the subsurface soil. Subsurface soil gas measurements were collected by using a hand-driven slide hammer to drive a ½-inch diameter steel rod into the ground to depths ranging from one foot below ground surface (bgs) to 3 feet bgs. Occasionally, advancement of boreholes in consolidated outcrop materials was limited. Where probe refusal occurred, measurements were taken at the depth bored.

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. Once the temporary tubing was in place and the borehole was sealed with native soil, LTE attached the multi-gas meter to the tubing. The multi-gas meter's internal pump pulled gas from the soil, through the tubing, and into the meter's gas sensors.

LTE recorded the maximum concentrations of methane, carbon monoxide, and hydrogen sulfide; and the minimum concentration of oxygen at each sampling location. Data were recorded in a field notebook.

The multi-gas meter is capable of detecting methane in concentrations from 0 to 100%, oxygen concentrations from 0 to 25%, carbon monoxide concentrations from 0 to 1,000 ppm, and hydrogen sulfide concentrations from 0 to 100 ppm. Specifications for the multi-gas meter are included in Appendix A.

2.4 GLOBAL POSITIONING SYSTEM DATA MANAGEMENT

Each sample location was recorded using a GPS unit. Soil gas sampling grids were created in ArcView® and pre-loaded into the GPS unit so field personnel could quickly and accurately position detection equipment along the project area. Soil gas measurements and other relevant field data were then stored as attributes in the GPS unit along with the associated location data. The data stored in the GPS unit were later downloaded for processing and reporting.

Grids for detailed mapping areas consisted of varying numbers of squares, ranging in area from 2,500 square feet (ft^2) to 40,000 ft^2. In general, 50-foot and 200-foot grid spacings were used, depending on site specific needs. The smaller grid spacing was used to map known methane seep

areas of relatively small extent. The grid mapping system has proven to be systematic, consistent, repeatable, and successful in delineating the areal extent of seepage.

The GPS unit location data were collected in the World Geodetic System 1984 (WGS 84) and projected in Universal Transverse Mercator (UTM) Zone 13 North, North American Datum 1983 (NAD 83) for use in an ArcView® project file. On average, 25 GPS log points were collected for each point feature in order to obtain more accurate positioning.

Readings collected with the GPS unit can be located with one-meter accuracy. However, the terrain along the Kf outcrop can adversely impact GPS unit accuracy. North-facing slopes and heavily wooded areas can distort or block satellite signals. When satellite signals are limited, positioning accuracy decreases. In locations where the GPS unit could not obtain a signal, LTE field personnel noted measurement data on their field reference maps. Specifications of the GPS unit are included in Appendix A.

LTE collected a flux measurement at the corner of each grid square. When methane was detected along the outer edges of the mapping area, additional grid points were developed and measured to determine the extent of methane seepage.

Full color spectrum aerial photographs used as base maps for field use and figures for this report are dated 2005 and 2007 and do not necessarily indicate present surface conditions. 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 is reduced when aerial photographs are viewed at a smaller scale.

2.5 NATURAL SPRING MONITORING

At each sampled natural spring, LTE collected spring water samples and monitored for subsurface soil gases near the springs using traditional subsurface soil-gas sampling techniques and the multi-gas meter. At each natural spring, LTE located the position and elevation using the GPS. A water discharge rate was measured using a graduated cylinder and stop-watch. Water quality measurements, including pH, electrical conductivity (EC), and temperature were collected at each sampled natural spring.

Water samples were collected at each accessible and flowing natural spring in bottles and containers prepared by the subcontracted analytical laboratories. Each sample bottle was labeled, indicating the project and sample identification, and the date and time of sample collection. Samples were delivered directly or shipped to the laboratories under chain-of-custody controls.

In 2009, natural spring water samples were collected and submitted to Four Corners Geoscience, Inc. for analysis of dissolved methane. General water chemistry samples were submitted to Green Analytical Laboratories in 2008 as a well as in 2009.

2.6 ABANDONED PRODUCTION WELL SOIL GAS MAPPING

At the request of the COGCC, the areas surrounding abandoned production wells 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) were inspected for subsurface methane.

LTE mapped the collected methane flux points next to each abandoned production well and in the vicinity utilizing the flux meter. If methane was detected in soil, the seep area was then delineated in all four directions.

SECTION 3.0

DETAILED MAPPING RESULTS

This section describes the results of the detailed flux mapping conducted from June 11, 2009 through September 2, 2009 in the four key mapping areas. Previous soil gas mapping events were conducted in October 2002, May 2003, May 2004, June 2005, May/June 2006, September 2007, and June through September 2008. Events through 2006 were conducted exclusively using the multi-gas meter. Beginning in 2007, the flux meter was utilized to conduct detailed soil gas mapping. A total of 1,120 flux measurements were collected at the four detailed mapping areas.

LTE has reported flux measurements in this document as mass flux with the units of moles/m^2·day. Conversion to a volumetric flux in units of thousands of cubic feet per day (MCFD) has been provided as a reference for the natural gas production industry, which typically uses volumetric flow rates. The conversion of mass flux units to volumetric flux is discussed in Section 3.4, with calculation details provided in Appendix C.

Methane, carbon dioxide, and hydrogen sulfide flux measurements are summarized by Kf outcrop areas of interest in Table 2. Methane and carbon dioxide measurements are presented on Figures 2 through 21. Flux data are included as Appendix B.

3.1 OVERALL METHANE RESULTS

The 2009 monitoring event resulted in detectable methane flux recorded at 337 of the 1,120 sample locations. Detected methane flux values of each measured location area for the entire project area ranged from 0.0 moles/m^2·day to a maximum of 753 moles/m^2·day. Methane flux results for each location of interest are discussed in Section 3.5.

3.2 OVERALL CARBON DIOXIDE RESULTS

The 2009 monitoring event resulted in detecting carbon dioxide flux at 1,070 sample locations. Carbon dioxide flux values of each measured location area for the entire project area ranged from 0.0 moles/m^2·day to a maximum 9.2 moles/m^2·day throughout the entire project area. Carbon dioxide flux results for each location of interest are discussed in Section 3.5.

3.3 OVERALL HYDROGEN SULFIDE RESULTS

Hydrogen sulfide flux (though barely above sensor detection limits) was recorded at 1,042 sample locations. The flux meter is a highly sensitive field meter capable of detecting very low flux rates of hydrogen sulfide. Thus, it is not surprising that hydrogen sulfide flux was detected at a large number (1,042) of the sampling points during the 2009 detailed mapping event. However, only 412 points were slightly above the unit's reliable detection limit of 0.0025 moles/m^2·day. Given the flux meter's accuracy of ±25%, the majority of these measured values are not considered to pose a threat to human health.

Elevated levels of hydrogen sulfide have been identified in the Carbon Junction and SFTC areas since the inception of the monitoring program but concentrations in the atmosphere above the

ground surface have not been detected at levels that pose a risk to human health. Elevated hydrogen sulfide concentrations have been detected in the shallow subsurface soil but were found to dissipate quickly to below detectable limits above the ground surface. The source of the hydrogen sulfide detected along the Kf outcrop is believed to be from local, near surface, anaerobic microbial activity as hydrogen sulfide is not present within the coalbed methane production gas developed within the northern San Juan Basin.

Due to the very low values of hydrogen sulfide measured during the 2009 detailed mapping program, maps of hydrogen sulfide measurements were not deemed useful and therefore, not prepared.

3.4 TOTAL FLUX VOLUME ESTIMATIONS

LTE estimated the total volumetric flux of methane and carbon dioxide by combining generally contiguous areas of interest of the Kf outcrop in La Plata County. Flux data were interpolated and gridded, then contoured and processed to estimate total volumetric flux.

The results were converted to volumetric flux rates common to the natural gas production industry in units of MCFD. 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,

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

The volumetric flux values calculated herein are estimates and may not represent actual values for the specific areas. Interpolation calculation techniques are highly sensitive to data skewness and can result in large changes in calculated flux values based on measurements made at only a few locations. A discussion of the methods and calculations used to determine total methane flux is presented in Appendix C.

The total estimated methane flux volume for the Kf outcrop in La Plata County was 4,150 MCFD. The total estimated carbon dioxide flux volume for the Kf outcrop in La Plata County was 1,503 MCFD.

3.5 SPECIFIC PROJECT AREA RESULTS

3.5.1 Basin Creek to Carbon Junction

The Basin Creek and Carbon Junction survey areas are located just south of the city of Durango and consist of approximately 6.9 miles of the Kf outcrop. A summary of the 513 flux measurements is presented in Table 2.

The detailed flux mapping of the Basin Creek area was conducted between June 11, 2009 and September 2, 2009. The mapping area was centered on Basin Creek just east of the recently constructed Animas-La Plata Project's Basin Ridge dam. Figures 2 through 5 illustrate methane and carbon dioxide flux results of the detailed mapping in the Basin Creek area.

The Carbon Junction area was mapped between June 11, 2009 and July 7, 2009. The mapping area at Carbon Junction is centered on the Animas River near the Wal-Mart shopping center on Highway 160. Figures 6 and 7 illustrate methane and carbon dioxide flux results of the detailed mapping in the Carbon Junction area.

The Basin Creek to Carbon Junction survey area has an estimated methane seepage area of 312 acres with a total volumetric flux of 798 MCFD. The carbon dioxide seepage area is approximately 506 acres with a total volumetric flux of 747 MCFD.

3.5.2 Florida River

The survey area at Florida River extended approximately 1.5 miles along the Kf outcrop. The Florida River mapping was conducted on July 8, 2009. A total of 59 flux sample points were measured. The Florida River mapping area has an estimated methane seepage area of 39 acres with a total volumetric flux of 626 MCFD. The carbon dioxide seepage area is approximately 55 acres with a total volumetric flux of 119 MCFD.

A summary of the flux measurements is presented in Table 2. Figures 8 and 9 illustrate the methane and carbon dioxide flux results of the Florida River area, respectively.

3.5.3 Vosburg Pike

The mapping area at Vosburg Pike is an upland portion of the Kf outcrop, located approximately half-way between the Florida River and SFTC mapping areas. The Vosburg Pike mapping area covered approximately 1.3 miles along the Kf outcrop. Flux mapping occurred on July 9, 2009.

A total of 53 flux sample points were measured. The Vosburg Pike mapping area has an estimated methane seepage area of 34 acres with a total volumetric flux of 19 MCFD. The carbon dioxide seepage area is approximately 41 acres with a total volumetric flux of 56 MCFD.

A summary of the flux measurements is presented in Table 2. Figures 10 and 11 illustrate the methane and carbon dioxide flux results for the Vosburg Pike area, respectively.

3.5.4 Texas Creek to Pine River

The Texas Creek to Pine River mapping area consists of 5 individual areas including: Texas Creek West, Texas Creek Central, Texas Creek West, BP Highlands, and Pine River. The entire mapping area is approximately 4.4 miles of the Kf outcrop. A summary of the 1,120 flux measurements is presented in Table 2.

The survey area collectively known as SFTC (Texas Creek West, Texas Creek Central, and Texas Creek East) is located where the creek transects the Kf outcrop (Figures 12 through 17). A large alluvial grass-covered valley parallels the strike of the outcrop but eventually turns northward and transects the contact between the Kf and Pictured Cliffs Formation (Kpc). The main seep area within SFTC and the Ward and Kurtz properties has been designated SFTC Central (Figures 14 and 15). The seep area located approximately 0.25 miles east of the creek has been labeled SFTC East (Figures 16 and 17). Areas west of the creek are designated Texas Creek West.

The seep at SFTC is considered to be one of the most active and prolific methane seeps within the project area and is currently undergoing a pilot study funded by the COGCC to evaluate mitigation technologies for the methane seepage. A decrease of methane seepage in 2009 in the SFTC Central area appears to be a result of a newly installed mitigation system funded by COGCC. The 2009 flux survey at SFTC occurred between June 19, 2009 and August 4, 2009. The location of the mitigation system can be seen in both figures.

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 (Figures 18 and 19). 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 flux survey within the BP Highlands area was performed on August 4, 2009.

The mapping area at Pine River is located where the Pine River transects the Kf outcrop. The 2009 survey event occurred between July 16, 2008 and July 28, 2009. The seep at Pine River is also currently undergoing a pilot study funded by the COGCC to evaluate mitigation technologies for the methane seepage. As with the SFTC Central area, the Pine River area appears to be positively influenced by the mitigation system due to the decrease in methane flux values measured during the 2009 monitoring survey. Figures 20 and 21 illustrate the methane and carbon dioxide flux results for the survey performed at Pine River. The location of the mitigation system can be seen in both figures.

The Texas Creek to Pine River survey area has an estimated methane seepage area of 259 acres with a total volumetric flux of 2727 MCFD. The carbon dioxide seepage area is approximately 452 acres with a total volumetric flux of 580 MCFD.

3.6 HISTORICAL FLUX DATA COMPARISON

From 2007 to 2008, LTE expanded the area of detailed survey from 554 acres to 1,951 acres, roughly 3.5 times the area of the previous survey. The increase in survey area was due largely to the addition of the Horse Gulch area of interest. However, in 2008 very little seepage was measured in the Horse Gulch area and the area was therefore not considered an active seep area. As a result, the 2009 survey excluded the Horse Gulch area. The 2009 survey area included 1,097 acres of the Kf outcrop. Figure 22 illustrates an overlay of survey areas mapped from 2007 through 2009.

In 2007, LTE estimated the total methane flux over the accessible Kf outcrop in La Plata County north of the SUIT boundary at 6,120 MCFD. Results of the 2008 survey estimated a total volumetric methane flux of 5,355 MCFD while the results of the 2009 survey estimated a total volumetric methane flux of 4,150 MCFD.

While the survey area increased by nearly 3.5 times in acreage between 2007 and 2008, the total volumetric methane flux decreased. Total volumetric methane flux from 2007 to 2009 appears to have decreased, inferring that the methane seep along the Kf Outcrop in La Plata County has contracted.

In general decreases in methane flux from 2007 to 2009 were noted in the Basin Creek to Carbon Junction area and the SFTC sub-area. Fluctuations of methane flux have been observed in the Florida River Vosberg Pike areas and the BP Highlands and Pine River sub-areas during the past three years.

A review of the data from seep areas that had an increase in methane flux over the past three years revealed that only a small number of the data points within the sampling grid account for the changes in estimated methane flux. For example, in Pine River, order of magnitude increases of methane flux at three measurement points are responsible for the four-fold increase in estimated flux from the area.

Table 3 summarizes the changes in the seepage extent and the volumetric methane flux from 2007 through 2009. Figure 23 depicts methane seepage extent compared to survey area from 2007 through 2009. In order to compare methane fluxes for each year, the figure depicts methane flux measurements that are greater than 0.500 moles/m^2·day. This visual representation of methane flux is able to show areas of significant methane seepage throughout the Kf outcrop and an understanding as to why these specific areas are investigated.

SECTION 4.0

NATURAL SPRINGS MONITORING

Nine natural springs have been previously identified on the Kf outcrop in La Plata County north of the SUIT boundary. Due to access restrictions, the following six natural springs were accessible in 2009:

- Darwin Rather Spring #1;
- Darwin Rather Spring #2;
- Rancho Durango LTD Spring;
- Rancho Durango North Spring;
- Rancho Durango East Spring; and
- Hoier Spring.

The locations of natural springs are presented on Figures 24 through 26. A summary of 2009 natural springs sampled, along with past natural spring sampling status, is presented in Table 4.

4.1 FIELD OBSERVATIONS

4.1.1 Spring 2009

Discharge rates and field parameters were measured at five natural springs sampled in May 2009. The Rancho Durango East Spring was dry at the time of sampling and as a result, no water discharge rate was measured. As a result, field parameters and water samples for analysis were not collected.

4.1.2 Fall 2009

Three of the six natural springs (Rancho Durango North, Rancho Durango LTD Spring, and Darwin Rather Spring #1) were measured for discharge rates and field parameters during the October 2009 sampling event. The remaining three natural springs were either dry or had insufficient volume of water to collect parameters. As a result, field parameters and water samples for analysis were not collected.

The 2009 field observations and measurements for all applicable natural springs, including historical measurements, are summarized in Table 5.

4.2 NATURAL SPRINGS SAMPLING AND ANALYSIS

The COGCC uses 2 milligrams per liter (mg/L) as the threshold limit for methane in domestic water systems. The COGCC holds that water systems containing dissolved methane

concentrations above 2 mg/L have an increased risk of desorption from the water and create potentially explosive conditions in confined spaces.

In 2009, no methane was detected in any natural spring water samples. Historically, methane had been detected at Rancho Durango LTD Spring, Darwin Rather Spring #2, and Hoier Spring at concentrations below the 2009 methane detection limit of 0.02 mg/L and below the COGCC 2 mg/L threshold.

Laboratory analytical results for dissolved methane, including historical results, are summarized in Table 6. Major ion chemistry of the natural spring samples is summarized in Table 7. Analytical results are presented in Appendix E.

4.3 SUBSURFACE SOIL GAS MEASUREMENTS

During the May and October 2009 natural spring sampling events, one subsurface soil gas measurement was collected at Rancho Durango LTD, Rancho Durango North, Rancho Durango East, Darwin Rather #1, Darwin Rather #2, and Hoier natural springs using traditional subsurface soil-gas sampling techniques and the multi-gas meter. Subsurface methane was not detected in any of the subsurface soil gas probes at the measured natural springs.

SECTION 5.0

ABANDONED WELLS SOIL GAS MONITORING RESULTS

LTE conducted detailed methane, carbon dioxide, and hydrogen sulfide subsurface mapping utilizing the flux meter at three abandoned gas well sites: 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). Monitoring was conducted to determine whether methane seepage exists within the vicinity of the sites at the request of the COGCC.

A total of 17 soil gas measurements, utilizing the flux meter, were collected at Pole Barn Monitor Well #1 (Figure 27) and Federal 34-1/2-34-1 (Figure 28). A total of 18 soil gas measurements were collected at Baird 1-25 (Figure 29). Methane was not detected at any sample locations.

SECTION 6.0

CONCLUSIONS AND RECOMMENDATIONS

6.1 DETAILED FLUX MAPPING

The 2009 methane seep survey was performed from June 11, 2009 through September 2, 2009. This was the third survey event the portable flux meter has been used to conduct methane seep mapping. Mapping was performed at four key areas (divided into seven sub-areas) of interest along the Kf outcrop in La Plata County north of the SUIT Reservation boundary. The detailed flux mapping program included the same areas mapped in 2008 with the exception of the Horse Gulch area.

From 2007 to 2008, LTE expanded the area of detailed survey from 554 acres to 1,951 acres, roughly 3.5 times the area of the previous survey. The increase in survey area was due largely to the addition of the Horse Gulch area of interest. However, in 2008 very little seepage was measured in the Horse Gulch area and the area was therefore not considered an active seep area. As a result, the 2009 survey excluded the Horse Gulch area. The 2009 survey area included 1,097 acres of the Kf outcrop. Figure 22 illustrates an overlay of survey areas mapped from 2007 through 2009.

In 2007, LTE estimated the total methane flux over the accessible Kf outcrop in La Plata County north of the SUIT boundary at 6,120 MCFD. Results of the 2008 survey estimated a total volumetric methane flux of 5,355 MCFD while the results of the 2009 survey estimated a total volumetric methane flux of 4,150 MCFD.

While the survey area increased by nearly 3.5 times in acreage between 2007 and 2008, the total volumetric methane flux decreased. Total volumetric methane flux from 2007 to 2009 appears to have decreased, inferring that the methane seep along the Kf Outcrop in La Plata County has contracted.

Carbon dioxide seepage exists within all monitored areas of interest, with greater areal extent than methane seepage. Since the focus of the detailed flux mapping program is to delineate the extent of methane seepage, it is reasonable to expect that carbon dioxide seepage may exist in locations where there is no methane seepage along the Kf outcrop. LTE calculated a total volumetric carbon dioxide flux of 1,503 MCFD in 2009.

Hydrogen sulfide flux values along the Kf outcrop were very low and most were reported only slightly above the detection limit of the flux meter. Data indicate that hydrogen sulfide is present in the subsurface at measurable levels in only a few locations. Measured values above the ground surface are very low, if not detected, and are not considered to be a threat to human health. The source of the hydrogen sulfide is believed to be local, near surface, anaerobic microbial activity. LTE did not determine the total volumetric flux of hydrogen sulfide for 2009.

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. The volumetric flux values calculated for this report are estimates and may not represent actual values for the specific areas. Interpolation calculation techniques are highly sensitive to data skewness and can result in large changes in calculated flux values based on measurements made at only a few locations.

6.2 NATURAL SPRING SURVEY

Five natural springs were sampled in May 2009, followed by the sampling of three natural springs in October 2009. The seasonal difference in sampling times allowed LTE to assess any changes in the number of springs, the flow rates, and/or the chemistry of the natural springs. No significant seasonal differences were noted.

The dissolved methane concentration in each of the water samples collected during 2009 was below the laboratory method detection limit of 0.02 mg/L. These results were consistent to the results of previous sample results.

Natural spring samples were also analyzed for general water chemistry for the second time in 2009. Results of all samples indicated waters of calcium bicarbonate character.

6.3 ABANDONED WELLS SOIL GAS MONITORING

At the request of the COGCC, the areas surrounding abandoned production wells 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) were inspected for subsurface methane. No methane was detected at any of the abandoned production wells.

6.4 RECOMMENDATIONS

Based on the results of the 2009 Kf outcrop monitoring event, LTE recommends the following:

- Conduct detailed methane seep mapping and flux estimation using the portable flux meter in June 2010. LTE will return to the sample locations visited during the 2009 field activities;
- Reduce the frequency of natural springs sampling to every other year assess any changes in the number of springs, the flow rates, and/or the chemistry of natural springs. The next natural spring sampling event would be the spring of 2011;
- Discontinue subsurface gas measurements at natural spring locations unless analytical results indicate detectable dissolved methane in collected water samples and/or gas seepage is visible at the time of water sampling; and
- Conduct the next regional reconnaissance IR aerial survey in 2011.

SECTION 7.0

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TABLES

TABLE 1
PROPERTY ACCESS STATUS
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO

THE GROUP

Parcel Number	Mapping Area	Mailing City/State/Zip Code	Property Owner	Access Granted
567508200326	TEXAS CREEK	BAYFIELD, CO 81122	BRETT CLARK	No Response
566905400806, 566905400032	CARBON JUNCTION	MESQUITE, TX 75187	DURANGO CROSSING II LLC, C/O KE ANDREWS & COMPANY	No Response
567509300144, 567508400169	TEXAS CREEK	BAY CITY, TX 77414	E WARD PROPERTIES NO 2 LTD, LLP	No Response
566904300003	CARBON JUNCTION	DURANGO, CO 81301	EMERY WILLMETT ETALS	No Response
567514201017	PINE RIVER	HERRIMAM, UT 84065	WILLIAM EARL GOMER	No Response
567508100265	TEXAS CREEK	CHERRYHILL, NJ 08034	VICTORIA ANNE HUYCK & TIMOTHY YALE DEAL	No Response
567508200328	TEXAS CREEK	BAYFIELD, CO 81122	RONALD L & CHERYL A & JARRETTE IRELAND	No Response
567509200167	TEXAS CREEK	BAYFIELD, CO 81122	H RICHARD KURTZ	No Response
566905400024	CARBON JUNCTION	DURANGO, CO 81301	LA PLATA COUNTY HUMANE SOCIETY	Yes
567514201001	PINE RIVER	BAYFIELD, CO 81122	VICKY A MULLINS TRUST	No Response
566733100801	CARBON JUNCTION	WICHITA FALLS, TX 76302	OAK RIDGE ENERGY INC	Yes
567514201002	PINE RIVER	DALLAS, TX 75206	CARY ALLEN RAY & MITZIE CORBIN	No Response
567514100002, 567514100015	PINE RIVER	STEAMBOAT SPRINGS, CO 80477	REMMOW LAND CO LIMITED PARTNERSHIP	Yes
567514300009	PINE RIVER	DURANGO, CO 81302	HERMAN SCHUTZ, C/O LA PLATA COUNTY ASSESSORS	No Response
566907100035	BASIN CREEK	DENVER, CO 80216	STATE OF COLORADO, BENEFIT OF DIV OF WILDLIFE	Yes
566301200139	BASIN CREEK	SALT LAKE CITY, UT 84138	USA ACTING THROUGH BUREAU OF RECLAMATION	Yes
566905100003	CARBON JUNCTION	DENVER, CO 80222	STATE OF COLORADO, DEPARTMENT OF TRANSPORTATION	Yes
567509300188, 567509400231	TEXAS CREEK	COMMERCE TWP, MI 48390	ROY VARCOE & MICHAEL GORETSKI & MARK MARION	No Response
567508100113, 567508100165	TEXAS CREEK	BAYFIELD, CO 81122	C GLEN & IVY K WALKER	Yes
566905400805	CARBON JUNCTION	BENTONVILLE, AR 72712	WAL MART STORES INC, #DIVISION-STORE PROP TAX #0555	Yes
567119200267	FLORIDA RIVER	SANTA FE, NM 87508	MARSHALL A. & MARY P. BEACH TRUSTEES & ZACHARIAH A. BEACH	No
567514201009, 567514201014	PINE RIVER	WILDWOOD, MO 63005	JOEL AND CORY LYNNE BRAME	No Response
567508300307	TEXAS CREEK	BAYFIELD, CO 81122	PHILIP JAMES AND LUCY T BRYSON	Yes
567514201020	PINE RIVER	METAIRIE, LA 70002	JOSEPH AND HELEN CALLENDER	No
566905100028	CARBON JUNCTION	DURANGO, CO 81301	DONALD L CARLENO AND MARY ELIZABETH VON FELDT	Yes
566905100002	CARBON JUNCTION	DURANGO, CO 81301	CARVON LLC	Yes
566905400803, 566904200021	CARBON JUNCTION	DURANGO, CO 81301	CITY OF DURANGO	Yes
567111300824	VOSBERG PIKE	GILBERT, AZ 85297	D&G INVESTMENTS	No Response
567509200132, 567509200284	TEXAS CREEK	BAYFIELD, CO 81122	RONALD C. & DARLENE A. FINCHER	Yes
567514201003	PINE RIVER	TUCSON, AZ 85705	ALAN R. & GAY W. FRIEDMAN	Yes
567514201018	PINE RIVER	ALBUQUERQUE, NM 87114	BRYAN F. & JULIE A. GREEN	No
567509100179	TEXAS CREEK	HOUSTON, TX 77001	HARRY DILLASHAW LIVING TRUST	No Response
567508200327	TEXAS CREEK	BAYFIELD, CO 81122	DIANA M WILKENING AND BECKY JO HITCHCOCK	No
567509100178	TEXAS CREEK	LAKE JACKSON, TX 77566	KELLY ROBERTS PARTNERSHIP	Yes
567508400192	TEXAS CREEK	BAY CITY, TX 77414	LEWIS CHRISTOPHER CHARLSIE AND PAULA LEA NYGUARD	Yes
566524100054	FLORIDA RIVER	OJAI, CA 93023	WILLIAM AND SHERRY LOEHR	Yes
566524100806, 567118300800	FLORIDA RIVER	DURANGO, CO 81301	MACHO FAMILY TRUST	No Response
567514300016	PINE RIVER	BLOOMFIELD, NM 87413	GERALD D. & AVON D. MAGEE	Yes
567119200266	FLORIDA RIVER	DURANGO, CO 81301	WILLIAM BUSH AND ELIZABETH W. MARSH	No Response
567508400264	TEXAS CREEK	DURANGO, CO 81301	DENNIS AND DUANE McCOY	No Response
567110300889	VOSBERG PIKE	CAPE CANAVERAL, FL 32920	BARBARA DILLOW NICHOLS	No Response

TABLE 1 (CONTINUED)
PROPERTY ACCESS STATUS
2008 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO

THE GROUP

Parcel Number	Mapping Area	Mailing City/State/Zip Code	Property Owner	Access Granted
567514201015	PINE RIVER	BAYFIELD, CO 81122	OSCAR D. & BETTY PERRY	Yes
567118400806	FLORIDA RIVER	DURANGO, CO 81301	PALMER RANCH LIMITED II	Yes
567509400065	BP HIGHLANDS	BAYFIELD, CO 81122	RVM LLC	Yes
567508100168	TEXAS CREEK	DURANGO, CO 81302-2754	GREGORY R. SARAFIN	No
566524400813	FLORIDA RIVER	DURANGO, CO 81301	SUBSURFACE MACHINE & MFG INC	No Response
567508300309, 567508300308	TEXAS CREEK	RAMONA, CA 92065	WILLIAM AND ELIZABETH TULLOCH CO TRUSTEES	Yes
567119200197	FLORIDA RIVER	DURANGO, CO 81301	STEPHAN TURNER AND REGINA TURNER-ANDEREGG	No
567514400008	PINE RIVER	BAYFIELD, CO 81122	ROBERT H & GWENDOLYN S WILLIAMS TRUSTEES	No Response
567514201019	PINE RIVER	PLACENTIA, CA 92870	JENNIFER SUE YOUNG	Yes
567117101001	EDGEMONT RANCH	CARSLBAD, CA 92011	WILLIAM J. & DONNA M. HERRICK TRUSTEES	No Response
567110300887, 567110300892	VOSBERG PIKE	DURANGO, CO 81301	RISE AND WALK LP	No Response
567513300017	PINE RIVER	NAPERVILLE, IL 60563	YIANNAKIS LINE LLC	No Response
567115200335	VOSBERG PIKE	SAN CLEMENTE, CA 92672	ROBERT M. & RENEE M JT STRONG LIVING TRUST	No Response
567112100261	TEXAS CREEK	ALBUQUERQUE, NM 87110	KANE RANCH LLC	No Response
567515100018, 567111200305	PINE RIVER, VOSBERG PIKE		BLM	Yes

TABLE 2
FLUX MEASUREMENTS
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO

THE GROUP

Mapping Area	Total Number of Sample Points	Methane Flux				Carbon Dioxide Flux			
		Number of Sample Points w/ CH_4	Minumum	Maximum	Average	Number of Sample Points w/ CO_2	Minumum	Maximum	Average
Basin Creek to Carbon Junction	513	166	0.0002	35.0645	1.1175	477	0.0002	9.0956	0.3367
Florida River	59	23	0.0012	102.1760	4.7091	59	0.0030	9.0744	0.4256
Vosburg Pike	53	20	0.0002	3.1120	0.2196	53	0.0416	1.0782	0.2814
Texas Creek to Pine River	495	128	0.0002	753.1720	7.9293	481	0.0021	3.8850	0.3284
Total	**1,120**	**337**				**1,070**			

Notes:

Flux measurements are in units of moles/square meter • day ($mol/m^2 \cdot day$)

CH_4 - Methane

CO_2 - Carbon dioxide

H_2S - Hydrogen sulfide

TABLE 3
COMPARISON OF 2007 THROUGH 2009 METHANE AND CARBON DIOXIDE FLUX
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO

THE GROUP

Mapping Area Name	Methane					
	2007		2008		2009	
	Seepage Area Mapped (acres)	Volumetric Flux (MCFD)	Seepage Area Mapped (acres)	Volumetric Flux (MCFD)	Seepage Area Mapped (acres)	Volumetric Flux (MCFD)
Basin Creek to Carbon Junction	94	654	406	1,048	312	798
Florida River	30	135	52	44	39	626
Vosburg Pike	14	6	43	22	34	19
Texas Creek to Pine River	162	5,325	359	4,056	259	2,707
TOTAL	**300**	**6,120**	**859**	**5,170**	**644**	**4,150**

Mapping Area Name	Carbon Dioxide					
	2007		2008		2009	
	Seepage Area Mapped (acres)	Volumetric Flux (MCFD)	Seepage Area Mapped (acres)	Volumetric Flux (MCFD)	Seepage Area Mapped (acres)	Volumetric Flux (MCFD)
Basin Creek to Carbon Junction	137	231	582	740	506	747
Florida River	48	68	61	73	55	119
Vosburg Pike	28	44	55	52	41	56
Texas Creek to Pine River	173	715	537	1,161	452	580
TOTAL	**386**	**1,058**	**1,235**	**2,026**	**1,054**	**1,502**

Note:

MCFD - thousand cubic feet per day

TABLE 4
NATURAL SPRINGS SAMPLING STATUS
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO

THE GROUP

Natural Spring	2005	2006	2007	2008		2009	
				June	November	May	October
Rancho Durango North Spring	NS	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
Rancho Durango East Spring	NS	NS	Sampled	NS	Sampled	Dry	Dry
Rancho Durango LTD Spring	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
Darwin Rather Spring #1	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
Darwin Rather Spring #2	Sampled	Sampled	NS	Sampled	Sampled	Sampled	Dry
Wilbourn Spring #1	NS	NS	NS	NS	NS	No Access	No Access
Wilbourn Spring #2	NS	NS	NS	NS	NS	No Access	No Access
Wilbourn Spring #6	NS	NS	NS	NS	NS	No Access	No Access
Hoier Spring	NS	Sampled	Sampled	Sampled	Sampled	Sampled	Dry

Note:

NS - Not Sampled

TABLE 5
NATURAL SPRINGS FIELD MEASUREMENTS
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO

THE GROUP

Natural Spring Name	Date	Temperature (degrees C)	pH	Electrical Conductivity (µS/cm)	TDS (mg/L)	ORP (mV)	Flow (GPM)	Subsurface Methane
Rancho Durango North Spring	5/24/2006	13.4	7.67	533.2	360.7	87	2.0	NM
	10/8/2007	19.2	7.28	514.8	263.9	43	<0.5	NM
	6/23/2008	19	6.93	728	510.8	51	0.38	No
	10/15/2008	11.4	6.9	617	401	112.8	1.5	No
	5/12/2009	9.7	7.1	591	NM	NM	2.82	No
	10/6/2009	12.1	7.25	651	NM	NM	0.6	No
Rancho Durango East Spring	10/15/2008	7.8	6.5	510	0.334	87.2	0.19	No
	5/12/2009	Dry - Not Measured						No
	10/6/2009	Dry - Not Measured						No
Rancho Durango LTD Spring	9/14/2005	14.6	8.05	494.1	338.0	66	>1	NM
	5/24/2006	19.3	7.38	524.5	345.9	77	1.5	NM
	10/8/2007	19.0	7.29	499.7	245.8	529	<0.25	NM
	6/23/2008	12.4	8.02	526	376	20	0.48	No
	10/15/2008	12.4	7.4	561	365	126.9	1.5	No
	5/12/2009	10.9	7.36	593	NM	NM	1.47	No
	10/6/2009	7.1	7.25	635	NM	NM	0.4	No
Darwin Rather Spring #1	9/17/2005	10.6	7.20	479.9	329.2	59	0.50	NM
	5/24/2006	12.3	7.76	425.9	288.4	52	1.0	NM
	10/8/2007	15.2	8.05	399.5	210.6	55	1.0	NM
	6/23/2008	12.6	7.34	432.0	308.9	81	NM	No
	10/15/2008	Dry - Not Measured					9	No
	5/12/2009	7.9	7.16	437.0	NM	NM	0.23	No
	10/6/2009	8.4	7.18	475	NM	NM	NM	No
Darwin Rather Spring #2	9/17/2005	14.4	7.50	271.4	178.3	45	<0.25	NM
	5/24/2006	13.0	7.69	344	222.9	-62	<1.0	NM
	10/8/2007	Dry - Not Measured						NM
	6/26/2008	18	7.31	261.4	180.5	76	0.63	No
	10/15/2008	10.9	6.9	289	188	3	0.25	No
	5/12/2009	10.5	7.43	270	NM	NM	1.80	No
	10/6/2009	Dry - Not Measured						No
Hoier Spring	5/24/2006	17.5	7.24	670.5	453.9	35	NM	NM
	10/8/2007	21.0	8.23	221.6	111.9	20	<0.25	NM
	6/23/2008	20.8	8.2	257.0	173.0	52.0	0.042	NM
	10/15/2008	12.33	7.78	254	165	90.4	0.031	No
	5/14/2009	18.1	6.9	380.0	NM	NM	0.050	No
	10/6/2009	Dry - Not Measured						No

Notes:

C - Celcius
µS/cm - microSiemens per centimeter
mg/L - milligrams per liter
mV - millivolts
GPM - gallons per minute
TDS - total dissolved solids
ORP - oxidation reduction potential
< - less than
NM - Not Measured

TABLE 6
NATURAL SPRINGS SAMPLING LABORATORY METHANE CONCENTRATIONS
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO

THE GROUP

	METHANE (mg/L)						
	2005	2006	2007	2008		2009	
NATURAL SPRING NAME	September	May	October	June	October	May	October
Rancho Durango North Spring	Not Sampled	<0.0010	<0.02	<0.02	<0.02	<0.02	<0.02
Rancho Durango East Spring	Not Sampled				<0.02	Not Sampled	
Rancho Durango LTD Spring	<0.0005	0.0016	<0.02	<0.02	<0.02	<0.02	<0.02
Darwin Rather Spring #1	<0.0005	<0.0010	<0.02	<0.02	<0.02	<0.02	<0.02
Darwin Rather Spring #2	0.002	0.0017	Not Sampled	<0.02	<0.02	<0.02	Not Sampled
Hoier Spring	Not Sampled	0.0017	<0.02	<0.02	<0.02	<0.02	Not Sampled

Notes:

mg/L - milligrams per liter

< - less than the stated laboratory method detection limit

TABLE 7
NATURAL SPRINGS MAJOR IONS CONCENTRATIONS
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO

THE GROUP

Natural Spring Name	Sample Date	Cations				Anions				TDS (mg/L)
		Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Carbonate (mg/L)	Bicarbonate (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	
Darwin Rather Spring #1	6/23/2008	65.0	21.4	9.0	1.3	<10	212	39	<10	230
	10/15/2008	56.7	18.6	7.5	0.9	<10	208	34	11	230
	5/12/2009	54.7	17.6	7.8	1.1	<10	200	33	10	205
Darwin Rather Spring #2	6/23/2008	39.3	6.1	13.6	<0.5	<10	138	19	<10	130
	10/15/2008	33.7	6.6	10.9	0.5	<10	133	16	<10	170
	5/12/2009	35.3	6.7	11.3	0.8	<10	123	22	<10	150
Rancho Durango LTD Spring	6/23/2008	79.5	20.1	16.7	0.9	<10	252	69	<10	305
	10/15/2008	69.7	17.5	14.9	1.0	<10	252	71	<10	300
	5/12/2009	79.8	19.1	16.4	1.2	<10	258	80	<10	305
Rancho Durango North Spring	6/23/2008	108	31.9	14.5	2.0	<10	332	122	<10	460
	10/15/2008	77.1	22.0	13.7	1.1	<10	276	79	<10	355
	5/12/2009	80.1	19.3	15.5	1.1	<10	262	71	<10	335
Rancho Durango East Spring	10/15/2008	60.5	12.9	14.8	0.7	<10	206	42	<10	250
	5/12/2009	Not Sampled								
Hoier Spring	6/23/2008	25.8	12.4	13.9	1.3	<10	144	<10	<10	105
	10/15/2008	23.7	11.8	13.7	1.4	<10	138	<10	<10	135
	5/14/2009	24.0	11.2	11.9	1.2	<10	133	<10	<10	100

Notes:
mg/L - milligrams per liter
TDS - total dissolved solids

FIGURES

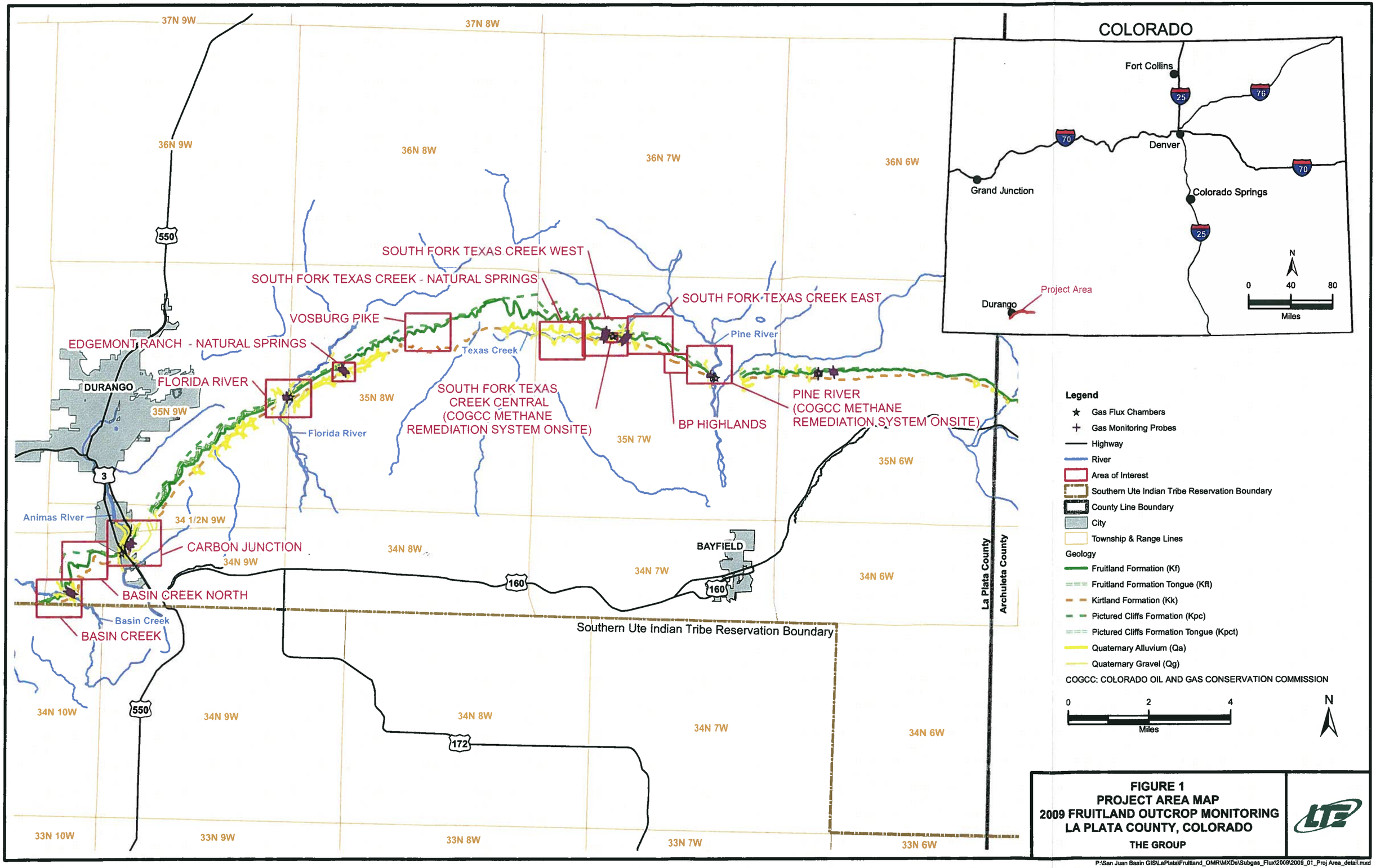

FIGURE 1
PROJECT AREA MAP
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO
THE GROUP

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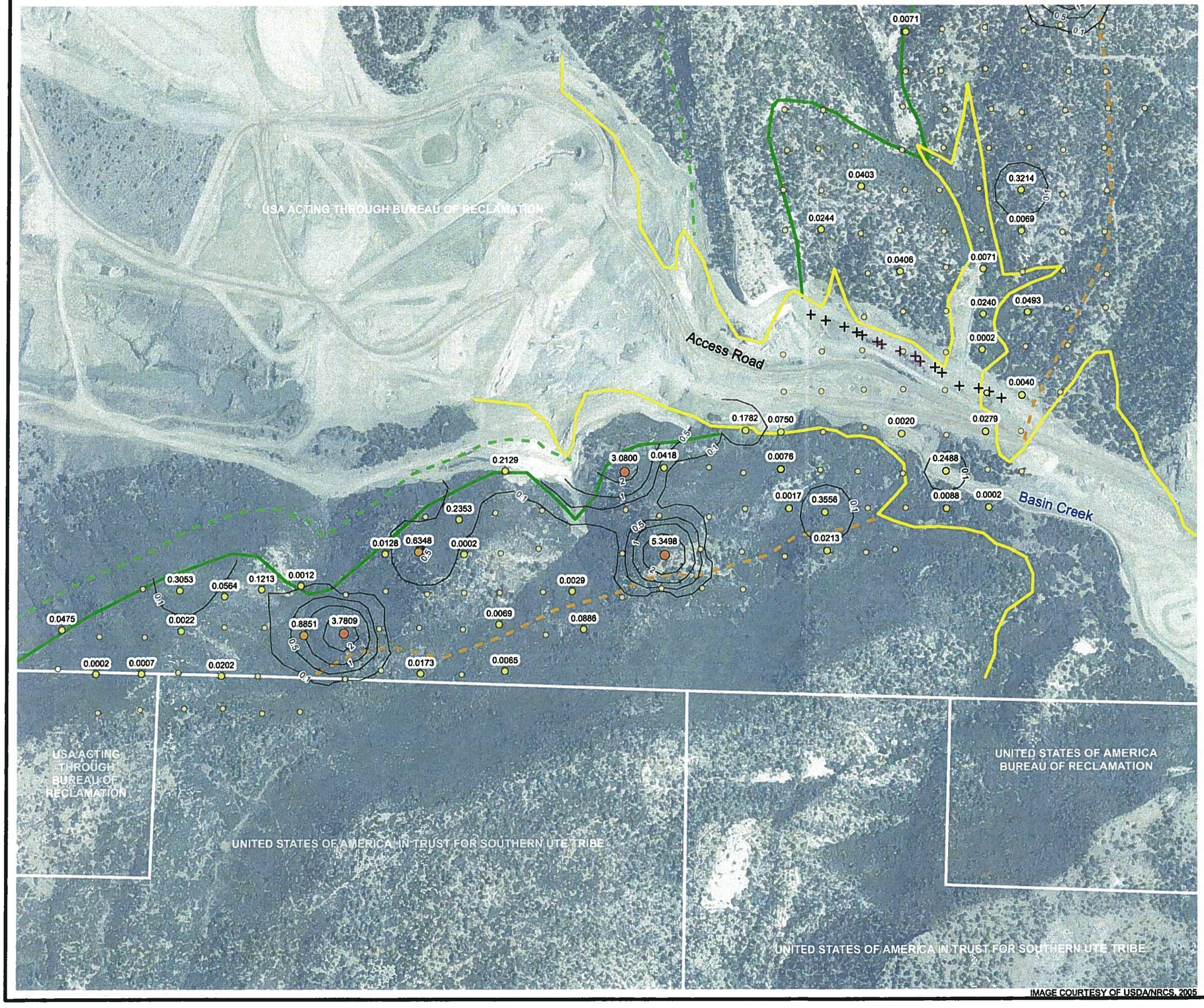

LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Parcel Boundary & Owner (white)

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

- 0.0000
- 0.0001 - 0.5000
- 0.5001 - 1.0000
- 1.0001 - 10.0000
- 10.0001 - 50.0000
- 50.0001 - 100.0000
- 100.0001 - 775.0000
- Methane Flux Contour in mol/m^2 • day (Interval Varies)

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)

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

Flux points not labeled are 0.0000 mol/m^2 • day Carbon Dioxide

* Subsurface methane measurements were collected from temporary soil probes advanced with a slide hammer at each spring location. The concentration of subsurface methane was 0 parts per million for all measurements taken.

0 500 1,000
Feet

N

FIGURE 2
METHANE FLUX CONTOURS
BASIN CREEK
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO
THE GROUP

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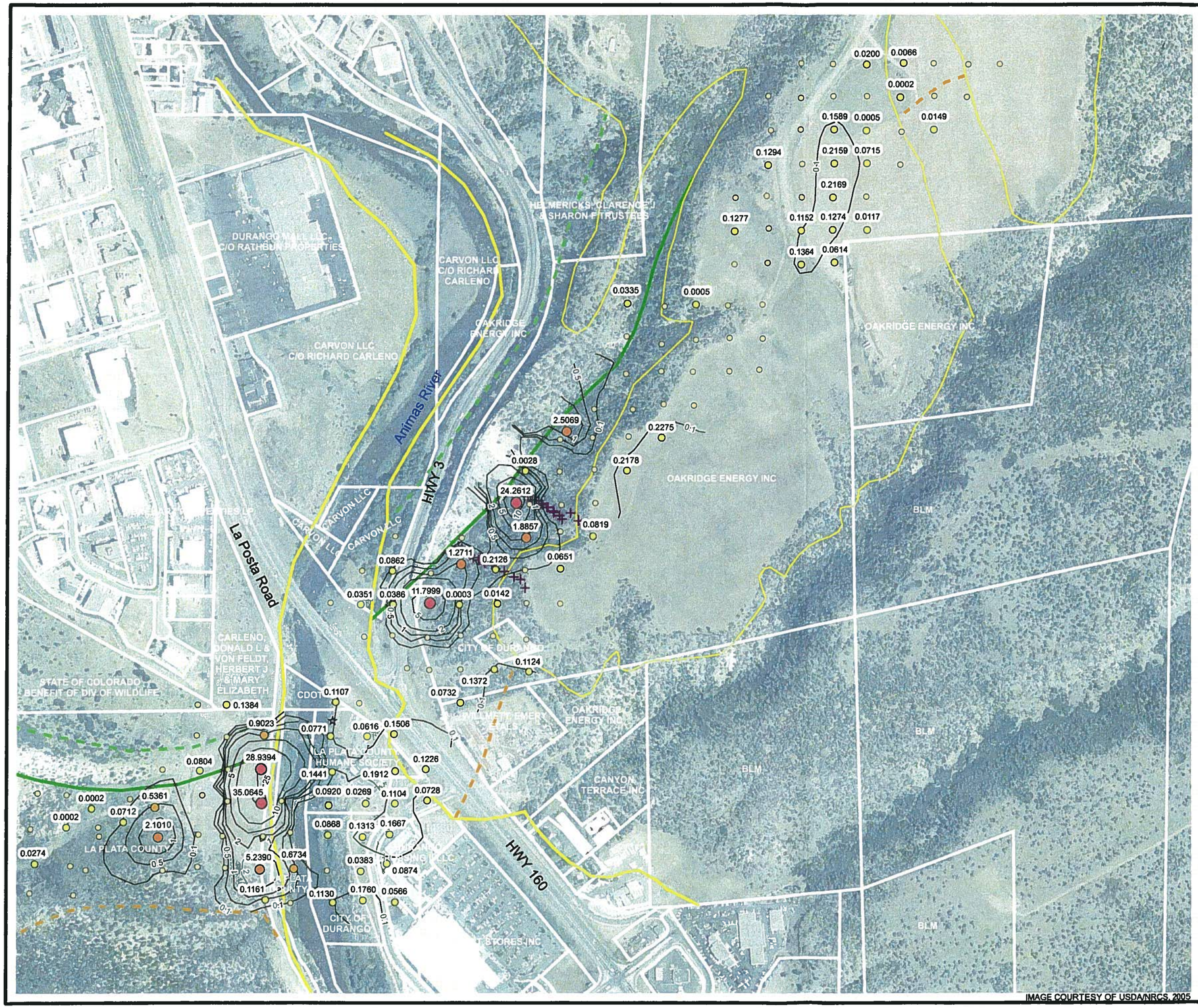

IMAGE COURTESY OF USDA/NRCS, 2005

LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Parcel Boundary & Owner (white)

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

- 0.0000
- 0.0001 - 0.5000
- 0.5001 - 1.0000
- 1.0001 - 10.0000
- 10.0001 - 50.0000
- 50.0001 - 100.0000
- 100.0001 - 775.0000
- Methane Flux Contour in mol/m^2 • day (Interval Varies)

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)

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

Flux points not labeled are 0.0000 mol/m^2 • day Carbon Dioxide

* Subsurface methane measurements were collected from temporary soil probes advanced with a slide hammer at each spring location. The concentration of subsurface methane was 0 parts per million for all measurements taken.

0 600 1,200
Feet

N

FIGURE 6
METHANE FLUX CONTOURS
CARBON JUNCTION
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO
THE GROUP

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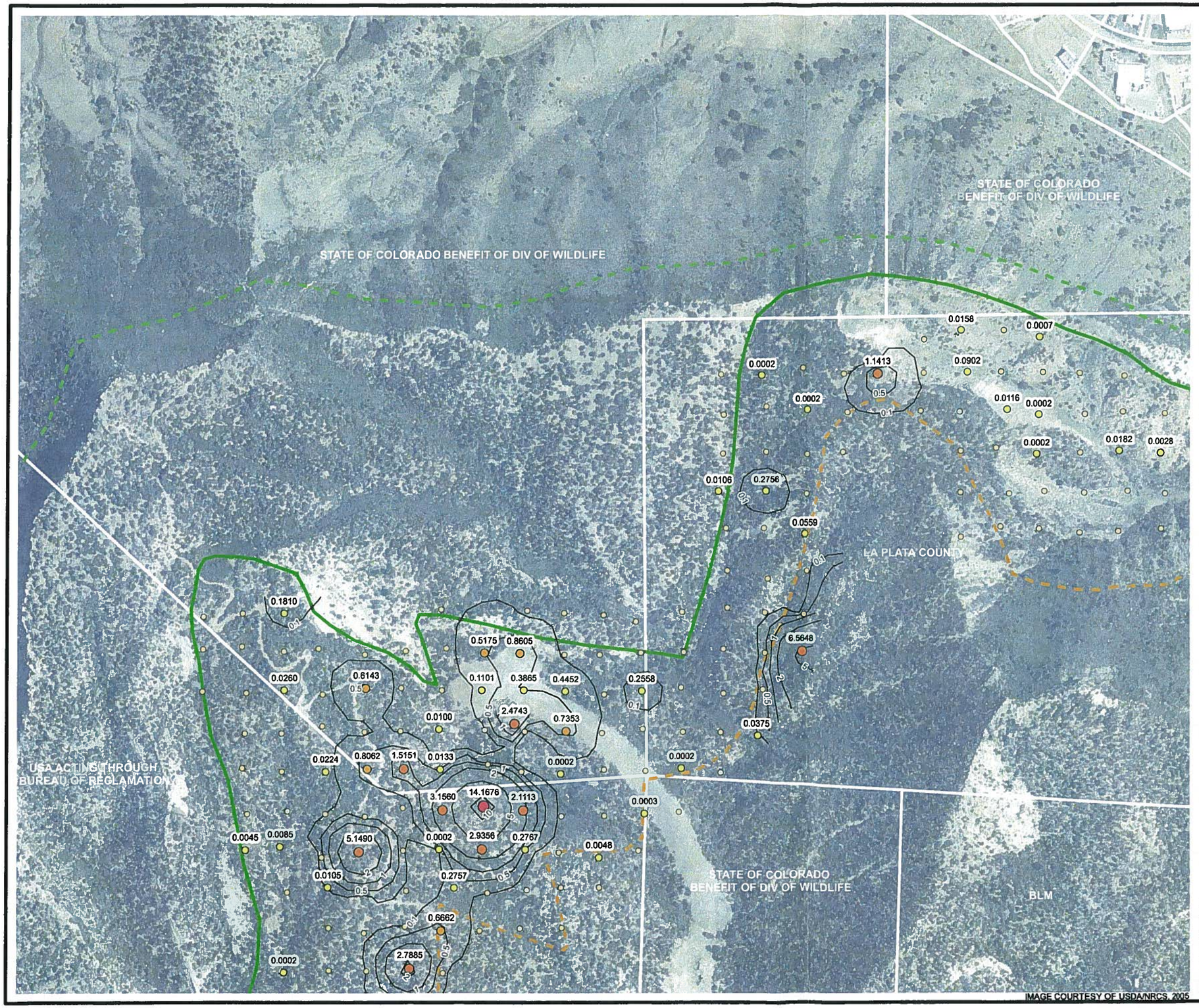

LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Parcel Boundary & Owner (white)

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

- 0.0000
- 0.0001 - 0.5000
- 0.5001 - 1.0000
- 1.0001 - 10.0000
- 10.0001 - 50.0000
- 50.0001 - 100.0000
- 100.0001 - 775.0000
- Methane Flux Contour In mol/m^2 • day (Interval Varies)

Geology

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

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

Flux points not labeled are 0.0000 mol/m^2 • day Carbon Dioxide

* Subsurface methane measurements were collected from temporary soil probes advanced with a slide hammer at each spring location. The concentration of subsurface methane was 0 parts per million for all measurements taken.

0 500 1,000
Feet

N

FIGURE 4
METHANE FLUX CONTOURS
BASIN CREEK NORTH
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO
THE GROUP

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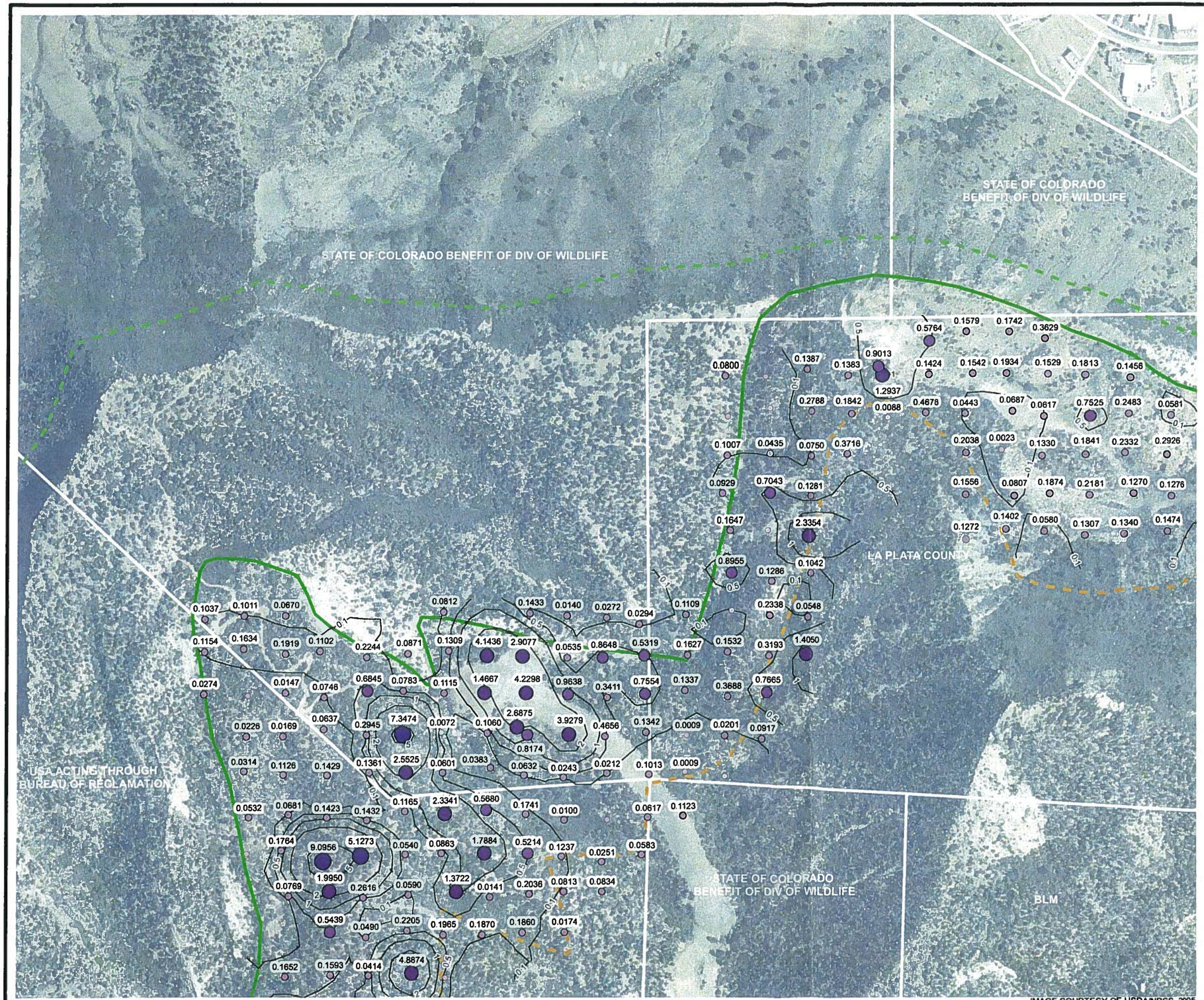

LEGEND

- \+ Gas Monitoring Probes
- ☆ Gas Flux Chambers
- Parcel Boundary & Owner (white)

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

- 0.0000 - 0.0100
- 0.0101 - 0.5000
- 0.5001 - 1.0000
- 1.0001 - 5.0000
- 5.0001 - 10.0000

Carbon Dioxide Flux Contour in mol/m^2 • day (Interval Varies)

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)

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

Flux points not labeled are 0.0000 mol/m^2 • day Carbon Dioxide

* Subsurface methane measurements were collected from temporary soil probes advanced with a slide hammer at each spring location. The concentration of subsurface methane was 0 parts per million for all measurements taken.

0 500 1,000
Feet

N

FIGURE 5
CARBON DIOXIDE FLUX CONTOURS
BASIN CREEK NORTH
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO
THE GROUP

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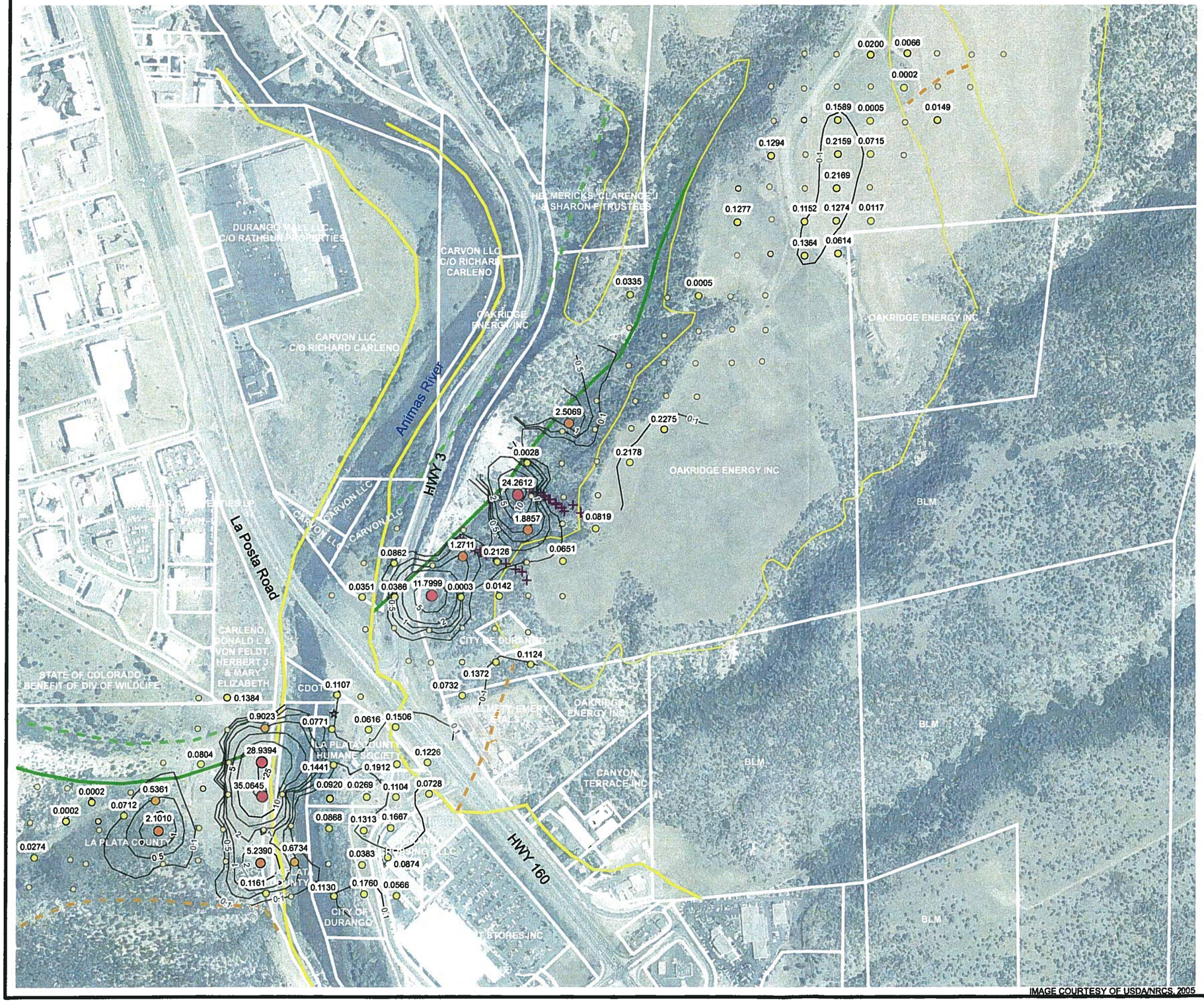

IMAGE COURTESY OF USDA/NRCS, 2005

LEGEND

- \+ Gas Monitoring Probes
- ☆ Gas Flux Chambers
- Parcel Boundary & Owner (white)

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

- 0.0000
- 0.0001 - 0.5000
- 0.5001 - 1.0000
- 1.0001 - 10.0000
- 10.0001 - 50.0000
- 50.0001 - 100.0000
- 100.0001 - 775.0000

Methane Flux Contour in mol/m^2 • day (Interval Varies)

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)

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

Flux points not labeled are 0.0000 mol/m^2 • day Carbon Dioxide

* Subsurface methane measurements were collected from temporary soil probes advanced with a slide hammer at each spring location. The concentration of subsurface methane was 0 parts per million for all measurements taken.

0 600 1,200
Feet

N

FIGURE 6
METHANE FLUX CONTOURS
CARBON JUNCTION
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO
THE GROUP

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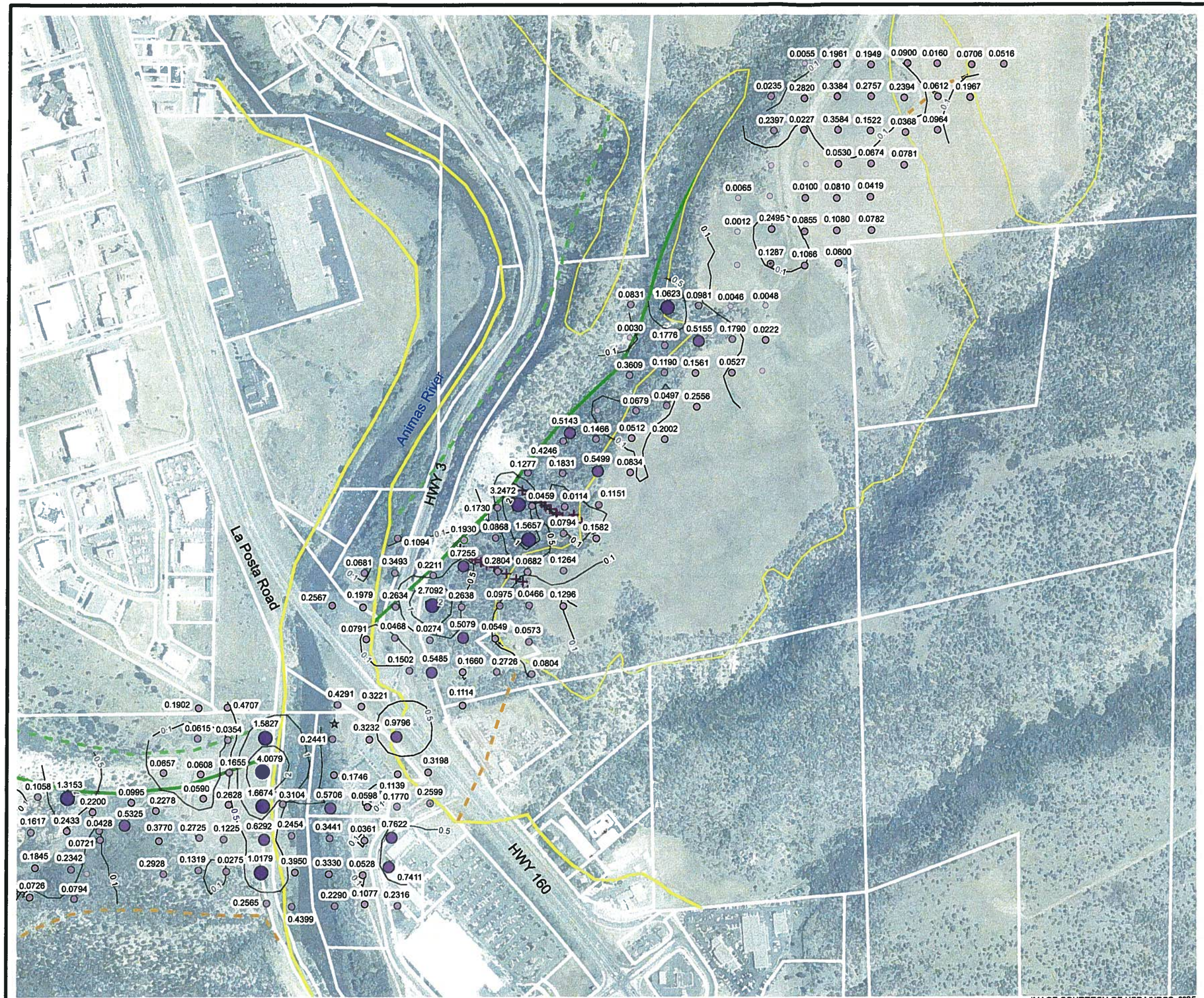

IMAGE COURTESY OF USDA/NRCS, 2005

LEGEND

- \+ Gas Monitoring Probes
- ☆ Gas Flux Chambers
- Parcel Boundary & Owner (white)

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

- ○ 0.0000 - 0.0100
- ○ 0.0101 - 0.5000
- ● 0.5001 - 1.0000
- ● 1.0001 - 5.0000
- ● 5.0001 - 10.0000

Carbon Dioxide Flux Contour in mol/m^2 • day (Intervai Varies)

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)

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

Flux points not labeled are 0.0000 mol/m^2 • day Carbon Dioxide

* Subsurface methane measurements were collected from temporary soil probes advanced with a slide hammer at each spring location. The concentration of subsurface methane was 0 parts per million for all measurements taken.

0 600 1,200
Feet

N

FIGURE 7
CARBON DIOXIDE FLUX CONTOURS
CARBON JUNCTION
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO
THE GROUP

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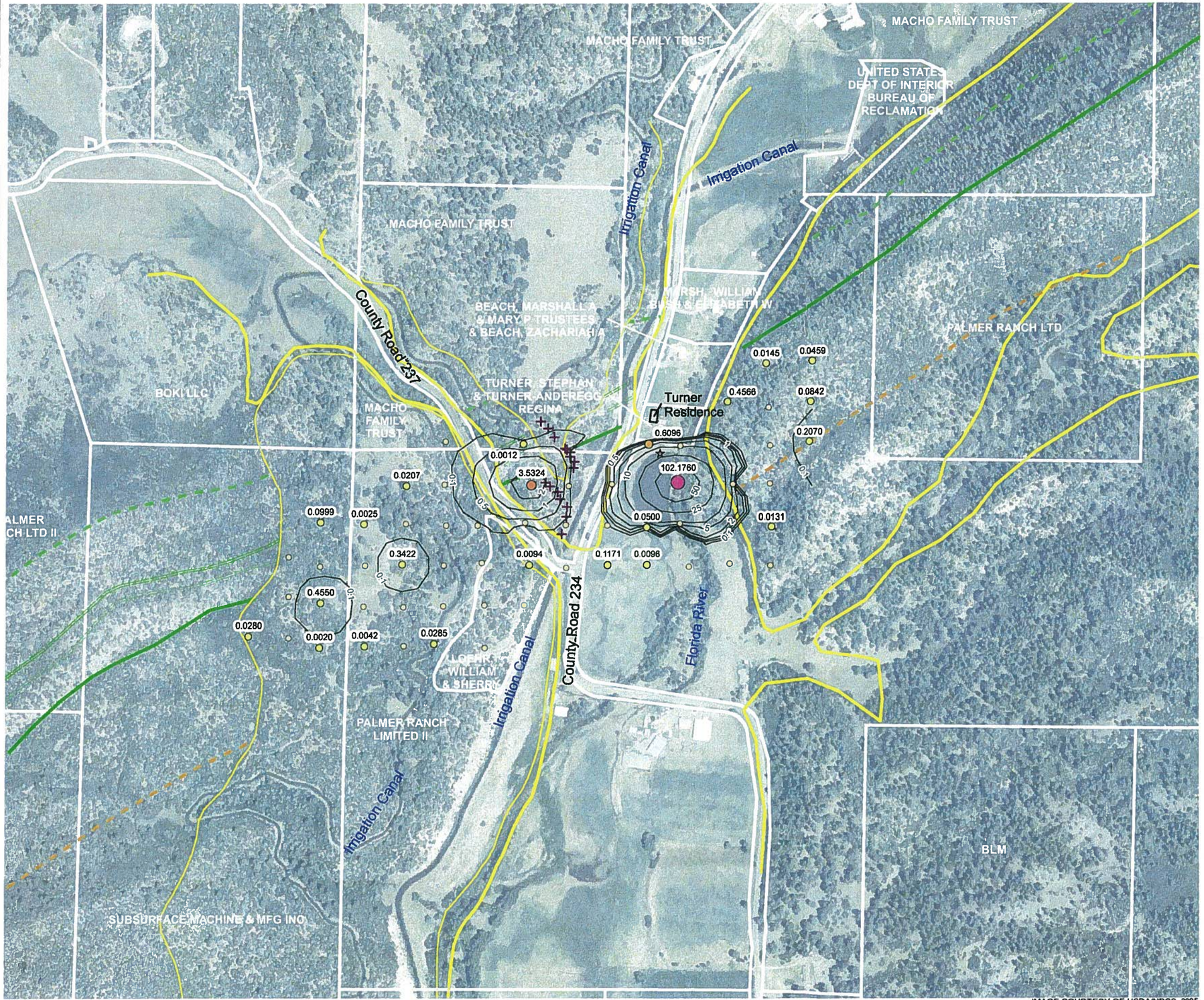

LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Parcel Boundary & Owner (white)

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

- 0.0000
- 0.0001 - 0.5000
- 0.5001 - 1.0000
- 1.0001 - 10.0000
- 10.0001 - 50.0000
- 50.0001 - 100.0000
- 100.0001 - 775.0000
- Methane Flux Contour in mol/m^2 • day (Interval Varies)

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)

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

Flux points not labeled are 0.0000 mol/m^2 • day Carbon Dioxide

* Subsurface methane measurements were collected from temporary soil probes advanced with a slide hammer at each spring location. The concentration of subsurface methane was 0 parts per million for all measurements taken.

0 500 1,000
Feet

N

FIGURE 8
METHANE FLUX CONTOURS
FLORIDA RIVER
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO
THE GROUP

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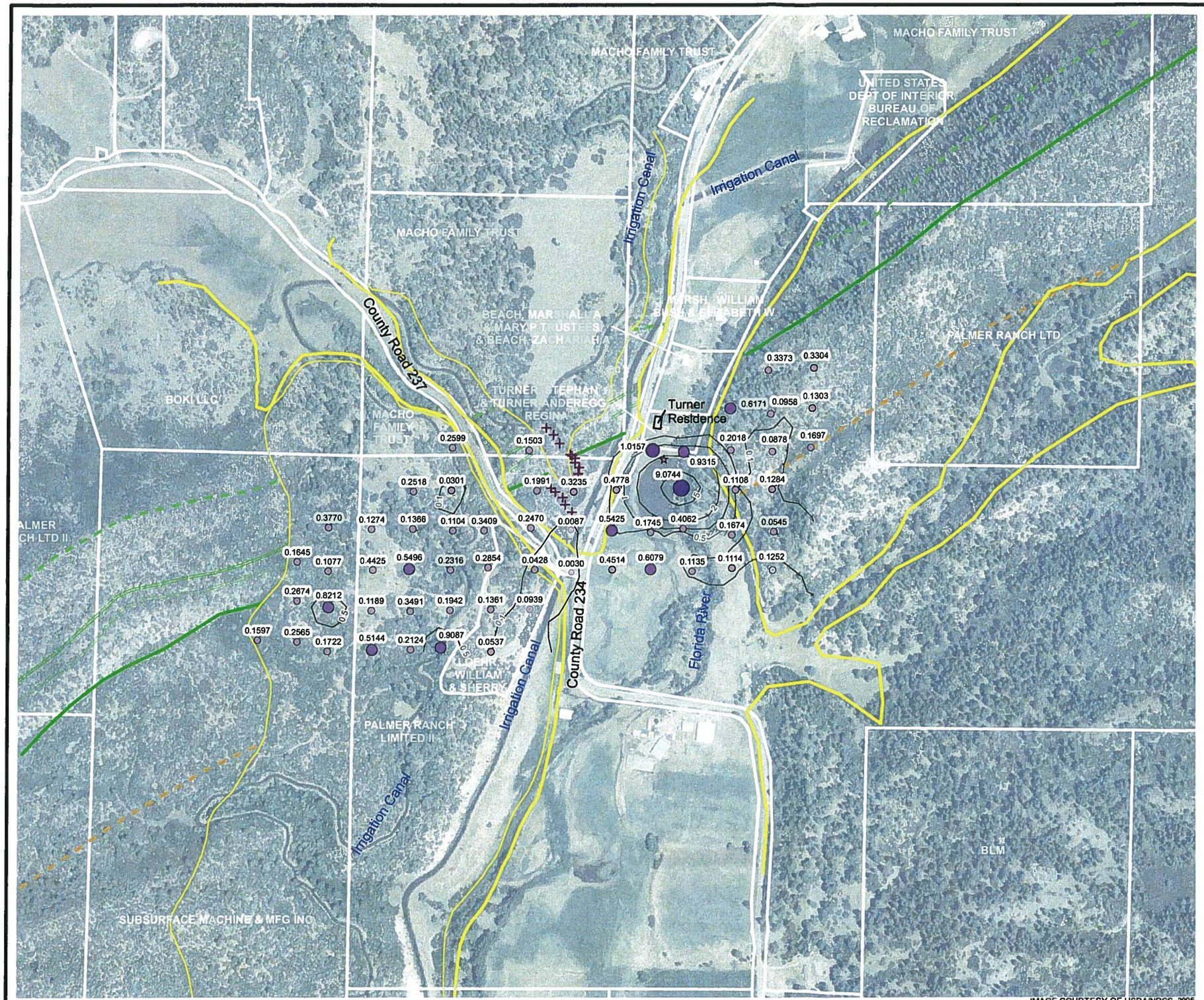

LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Parcel Boundary & Owner (white)

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

- 0.0000 - 0.0100
- 0.0101 - 0.5000
- 0.5001 - 1.0000
- 1.0001 - 5.0000
- 5.0001 - 10.0000

Carbon Dioxide Flux Contour in mol/m^2 • day (Interval Varies)

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)

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

Flux points not labeled are 0.0000 mol/m^2 • day Carbon Dioxide

* Subsurface methane measurements were collected from temporary soil probes advanced with a slide hammer at each spring location. The concentration of subsurface methane was 0 parts per million for all measurements taken.

0 500 1,000
Feet

N

FIGURE 9
CARBON DIOXIDE FLUX CONTOURS
FLORIDA RIVER
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO

THE GROUP

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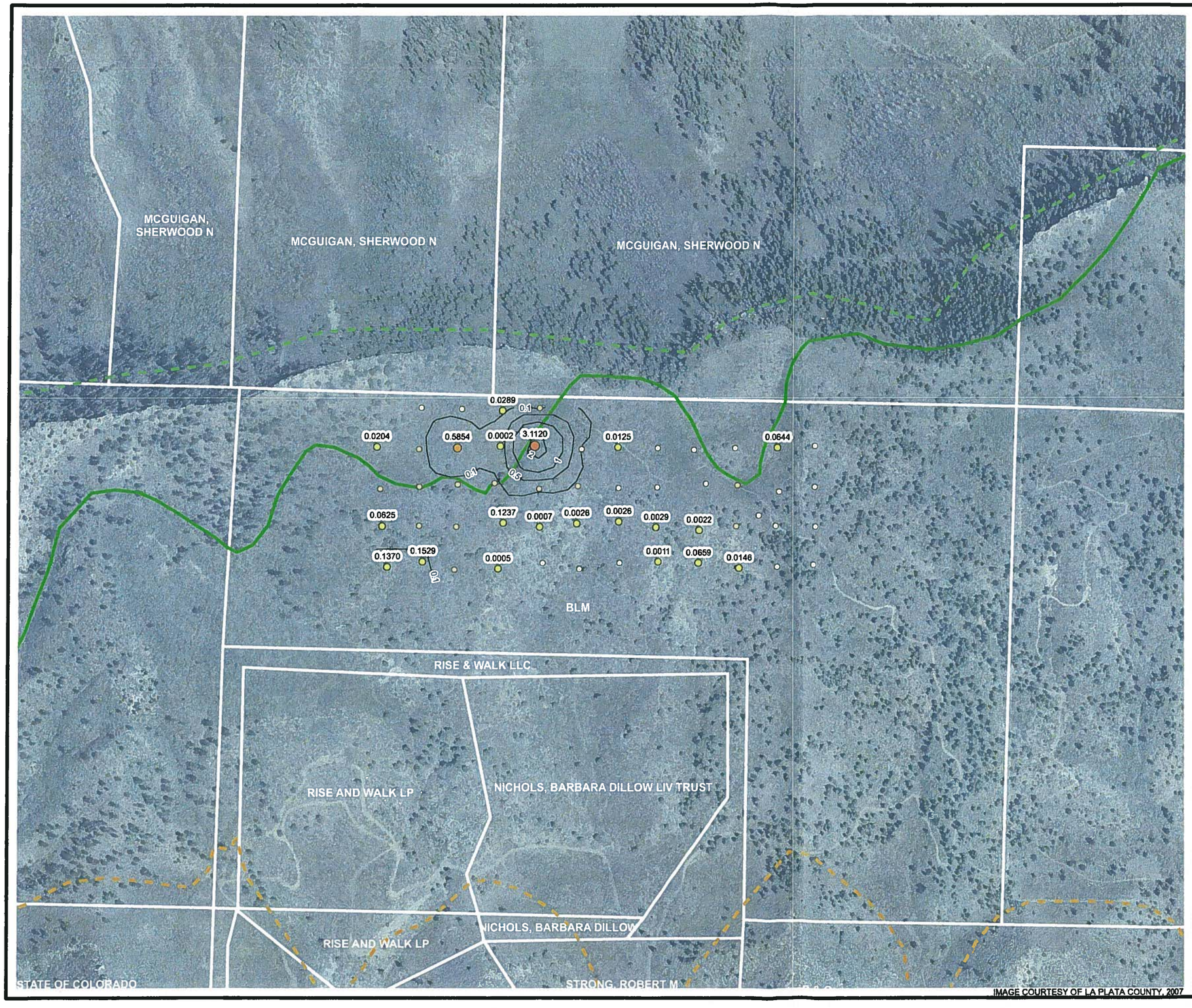

IMAGE COURTESY OF LA PLATA COUNTY, 2007

LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Parcel Boundary & Owner (white)

Methane Flux Location (mol/m^2 • day)

- 0.0000
- 0.0001 - 0.5000
- 0.5001 - 1.0000
- 1.0001 - 10.0000
- 10.0001 - 50.0000
- 50.0001 - 100.0000
- 100.0001 - 775.0000
- Methane Flux Contour in mol/m^2 • day (Interval Varies)

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)

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

Flux points not labeled are 0.0000 mol/m^2 • day Carbon Dioxide

* Subsurface methane measurements were collected from temporary soil probes advanced with a slide hammer at each spring location. The concentration of subsurface methane was 0 parts per million for all measurements taken.

0 500 1,000
Feet

N

FIGURE 10
METHANE FLUX CONTOURS
VOSBURG PIKE
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO
THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMRM\XDs\Subgas_Flux\2009\2009_02_CH4_FLUX_CONTOURS.mxd

IMAGE COURTESY OF LA PLATA COUNTY, 2007

LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Parcel Boundary & Owner (white)

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

- 0.0000 - 0.0100
- 0.0101 - 0.5000
- 0.5001 - 1.0000
- 1.0001 - 5.0000
- 5.0001 - 10.0000
- Carbon Dioxide Flux Contour in mol/m^2 • day (Interval Varies)

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)

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

Flux points not labeled are 0.0000 mol/m^2 • day Carbon Dioxide

* Subsurface methane measurements were collected from temporary soil probes advanced with a slide hammer at each spring location. The concentration of subsurface methane was 0 parts per million for all measurements taken.

0 500 1,000
Feet

N

FIGURE 11
CARBON DIOXIDE FLUX CONTOURS
VOSBURG PIKE
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO
THE GROUP

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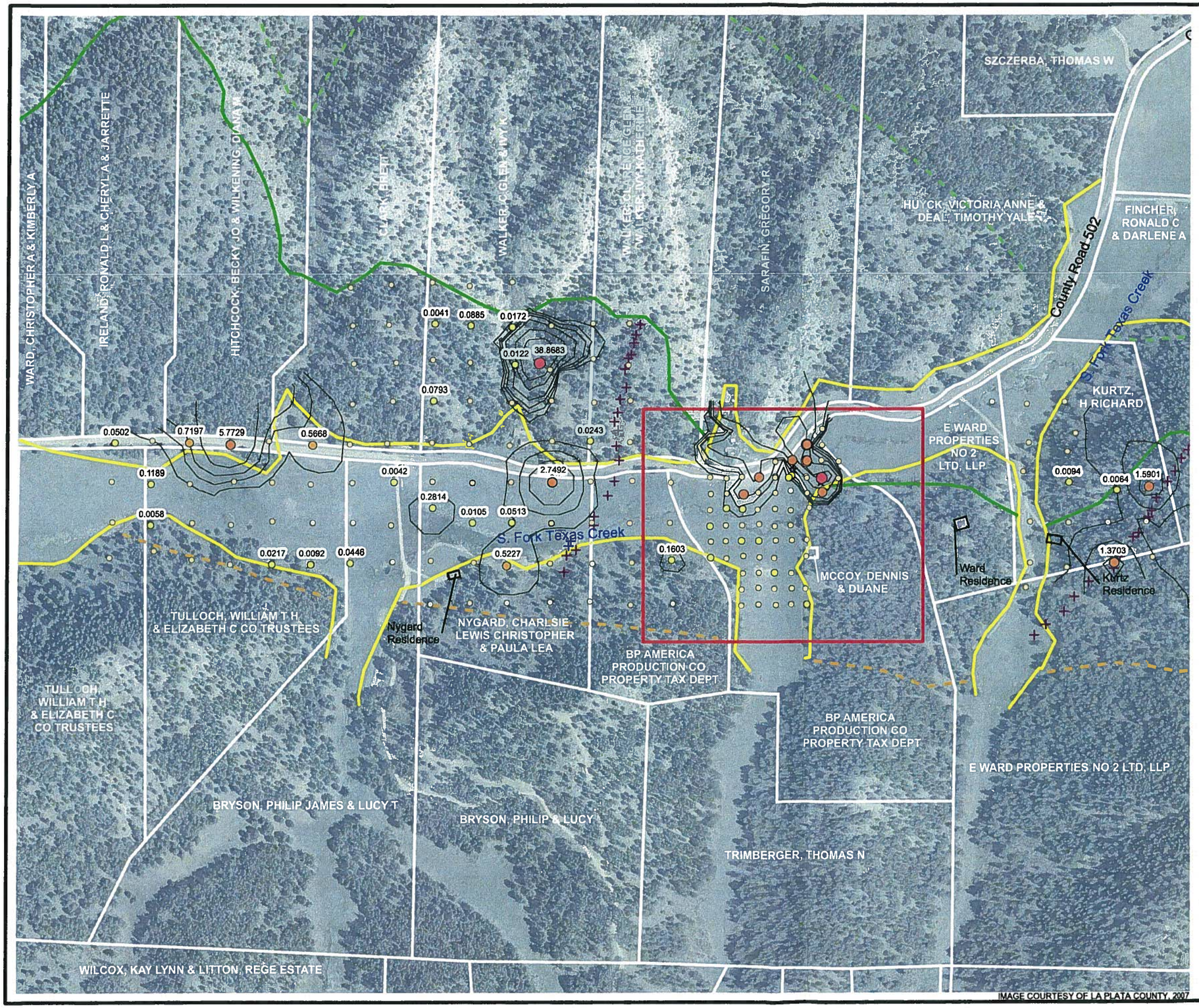

LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Parcel Boundary & Owner (white)
- South Fork Texas Creek Central

Methane Flux Location (mol/m^2 • day)

- 0.0000
- 0.0001 - 0.5000
- 0.5001 - 1.0000
- 1.0001 - 10.0000
- 10.0001 - 50.0000
- 50.0001 - 100.0000
- 100.0001 - 775.0000
- Methane Flux Contour in mol/m^2 • day (Interval Varies)

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)

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

Flux points not labeled are 0.0000 mol/m^2 • day Carbon Dioxide

* Subsurface methane measurements were collected from temporary soil probes advanced with a slide hammer at each spring location. The concentration of subsurface methane was 0 parts per million for all measurements taken.

0 500 1,000
Feet

N

IMAGE COURTESY OF LA PLATA COUNTY, 2007

FIGURE 12
METHANE FLUX CONTOURS
SOUTH FORK TEXAS CREEK WEST
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO
THE GROUP

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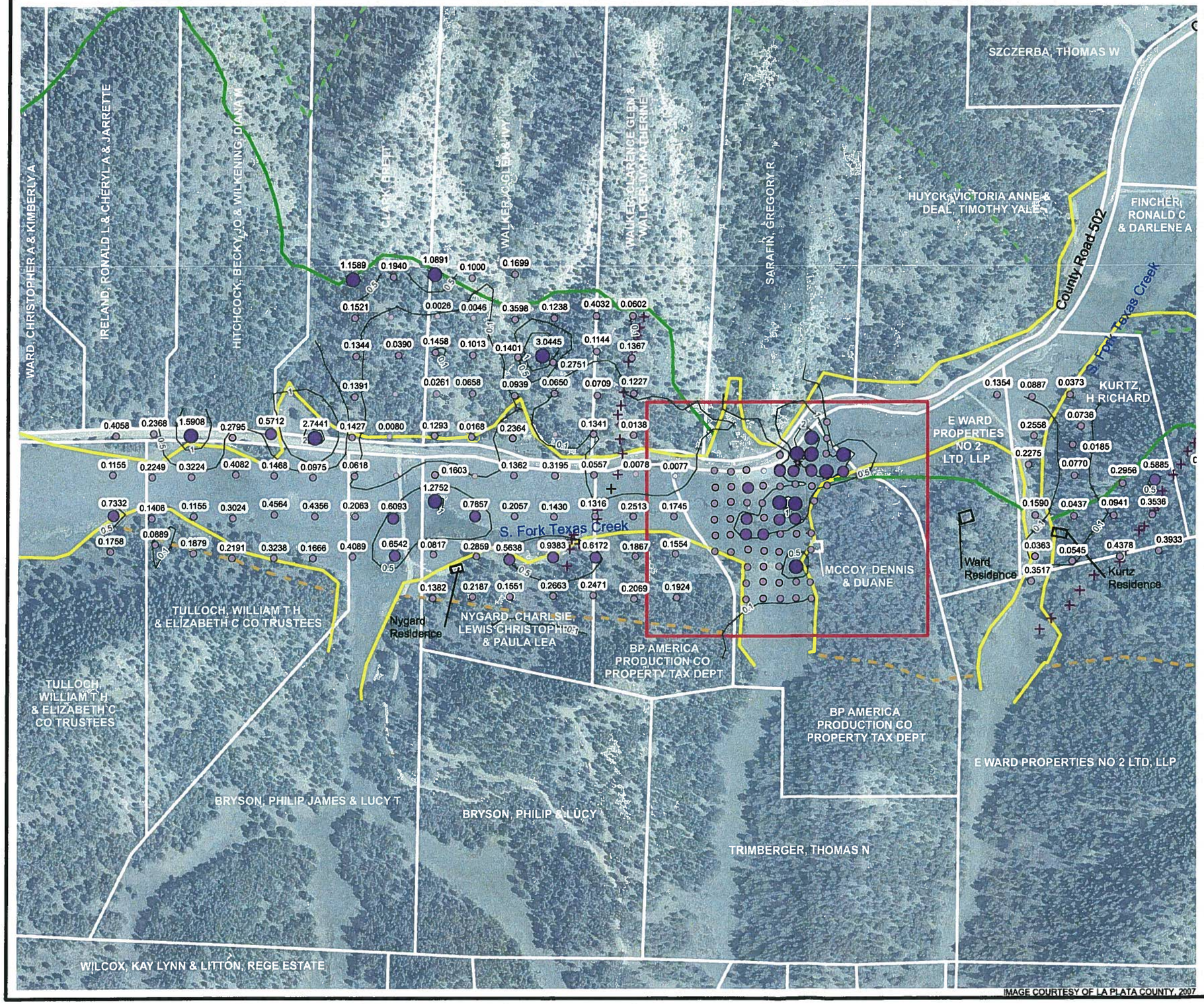

LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Parcel Boundary & Owner (white)
- South Fork Texas Creek Central

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

- 0.0000 - 0.0100
- 0.0101 - 0.5000
- 0.5001 - 1.0000
- 1.0001 - 5.0000
- 5.0001 - 10.0000

Carbon Dioxide Flux Contour in mol/m^2 • day (Interval Varies)

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)

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

Flux points not labeled are 0.0000 mol/m^2 • day Carbon Dioxide

* Subsurface methane measurements were collected from temporary soil probes advanced with a slide hammer at each spring location. The concentration of subsurface methane was 0 parts per million for all measurements taken.

0 500 1,000
Feet

N

FIGURE 13
CARBON DIOXIDE FLUX CONTOURS
SOUTH FORK TEXAS CREEK WEST
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO
THE GROUP

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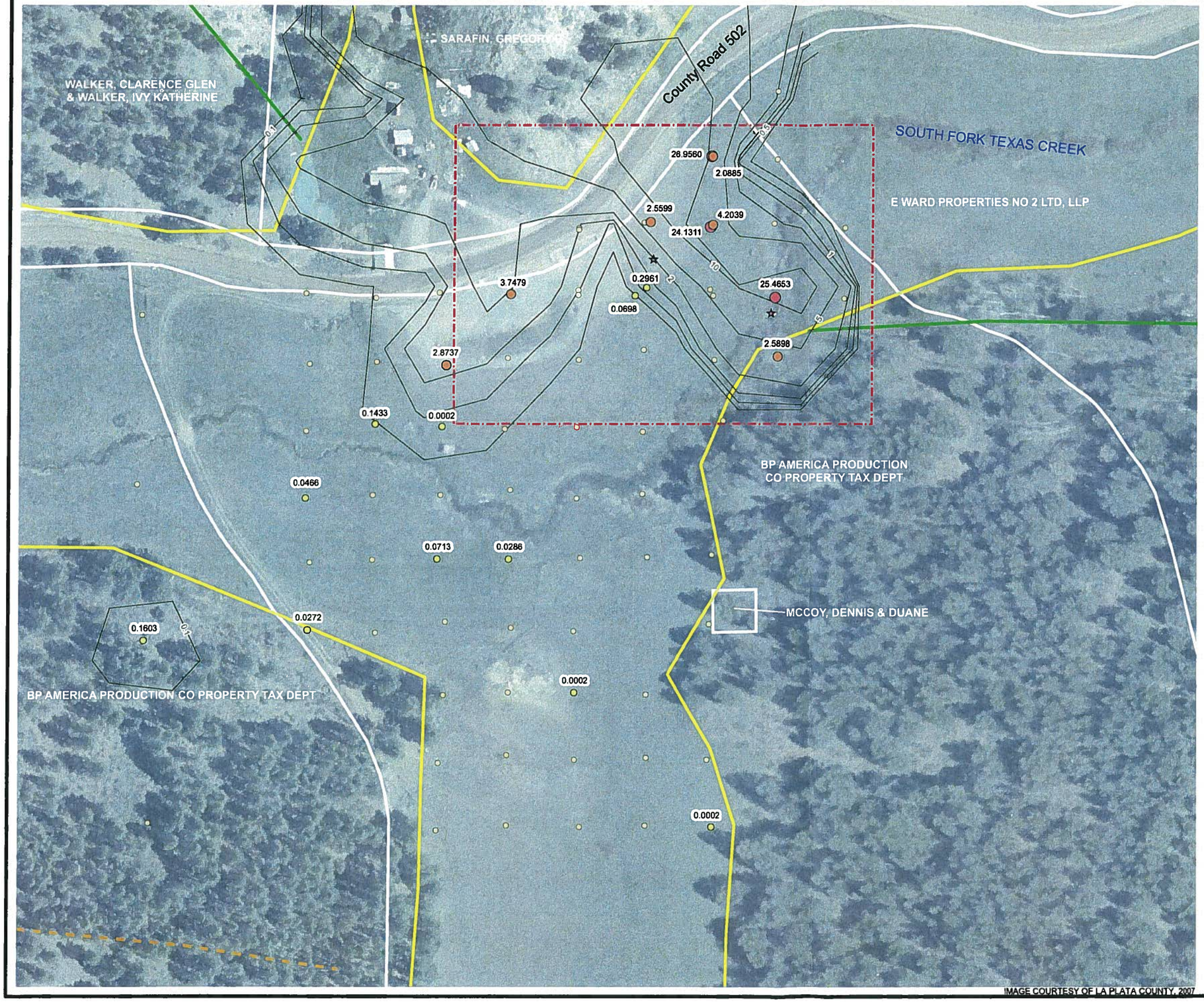

LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Parcel Boundary & Owner (white)
- Approximate COGCC Methane Remediation System Area
- COGCC: Colorado Oil and Gas Conservation Commission

Methane Flux Location (mol/m^2 • day)

- 0.0000
- 0.0001 - 0.5000
- 0.5001 - 1.0000
- 1.0001 - 10.0000
- 10.0001 - 50.0000
- 50.0001 - 100.0000
- 100.0001 - 775.0000
- Methane Flux Contour in mol/m^2 • day (Interval Varies)

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)

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

Flux points not labeled are 0.0000 mol/m^2 • day Carbon Dioxide

* Subsurface methane measurements were collected from temporary soil probes advanced with a slide hammer at each spring location. The concentration of subsurface methane was 0 parts per million for all measurements taken.

0 120 240
Feet

N

FIGURE 14
METHANE FLUX CONTOURS
SOUTH FORK TEXAS CREEK CENTRAL
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO
THE GROUP

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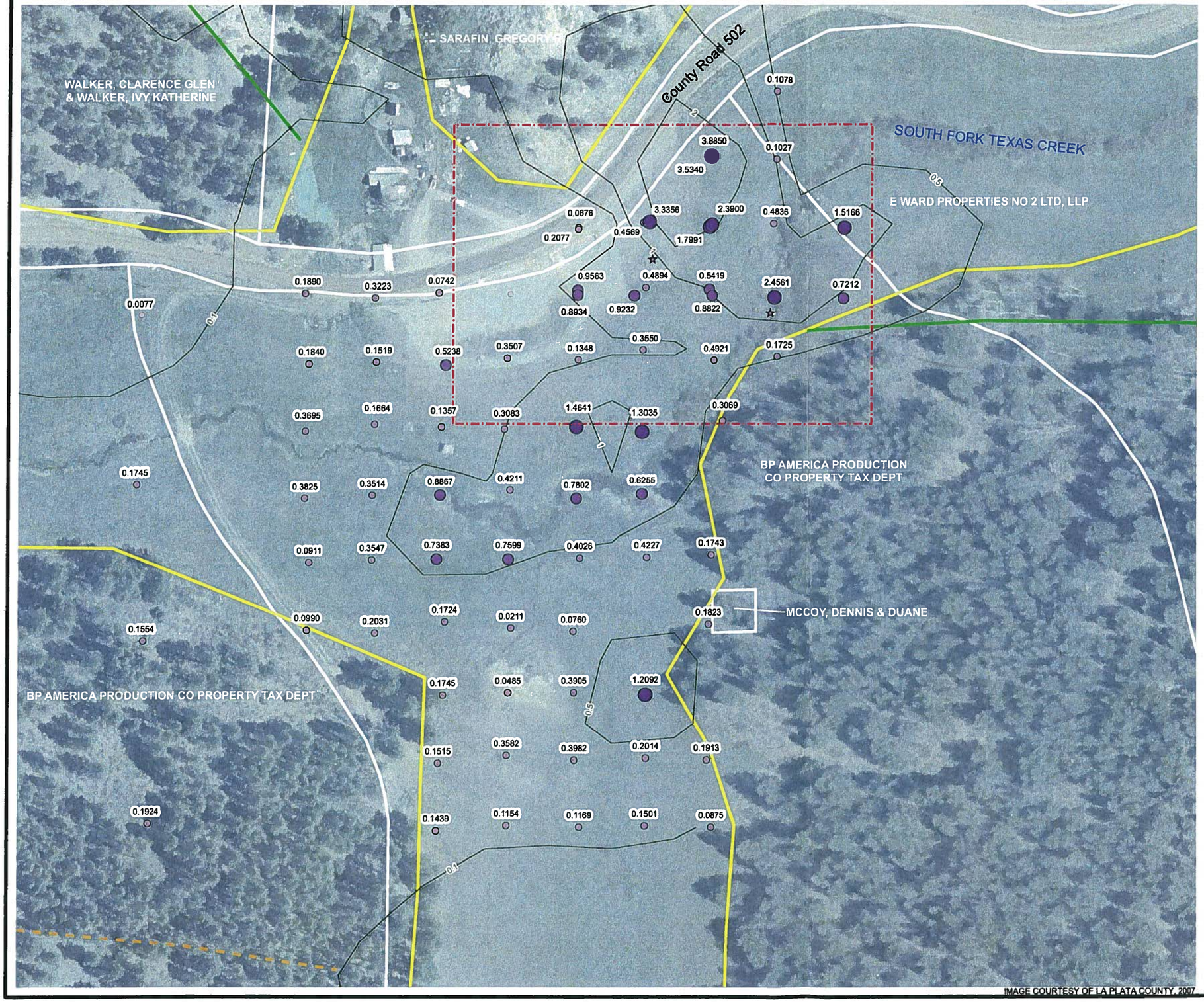

LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Parcel Boundary & Owner (white)
- Approximate COGCC Methane Remediation System Area
- COGCC: Colorado Oil and Gas Conservation Commission

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

- 0.0000 - 0.0100
- 0.0101 - 0.5000
- 0.5001 - 1.0000
- 1.0001 - 5.0000
- 5.0001 - 10.0000

Carbon Dioxide Flux Contour in mol/m^2 • day (Interval Varies)

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)

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

Flux points not labeled are 0.0000 mol/m^2 • day Carbon Dioxide

* Subsurface methane measurements were collected from temporary soil probes advanced with a slide hammer at each spring location. The concentration of subsurface methane was 0 parts per million for all measurements taken.

0 120 240
Feet

N

FIGURE 15
CARBON DIOXIDE FLUX CONTOURS
SOUTH FORK TEXAS CREEK CENTRAL
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO
THE GROUP

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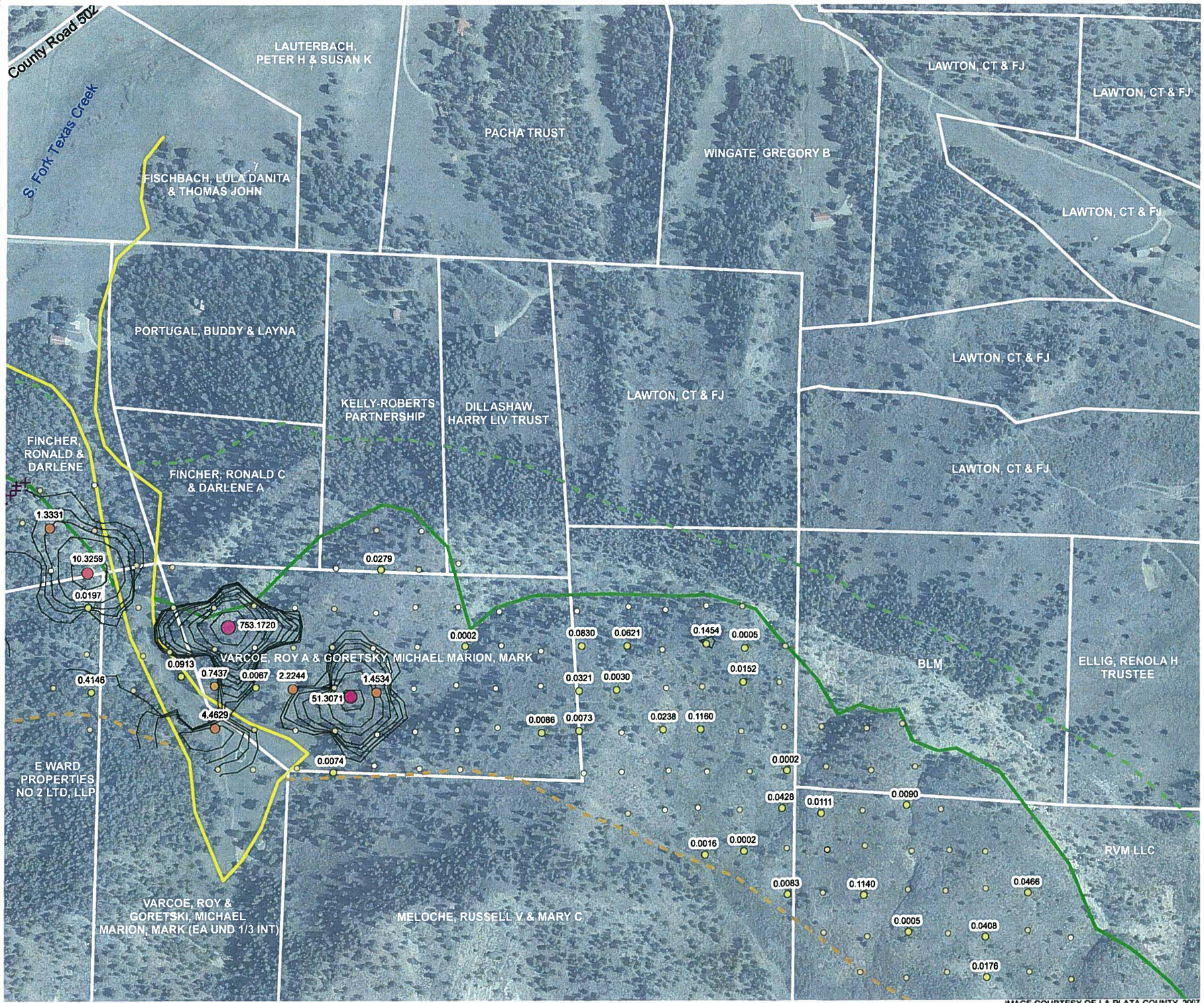

LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Parcel Boundary & Owner (white)

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

- 0.0000
- 0.0001 - 0.5000
- 0.5001 - 1.0000
- 1.0001 - 10.0000
- 10.0001 - 50.0000
- 50.0001 - 100.0000
- 100.0001 - 775.0000
- Methane Flux Contour in mol/m^2 • day (Interval Varies)

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)

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

Flux points not labeled are 0.0000 mol/m^2 • day Carbon Dioxide

* Subsurface methane measurements were collected from temporary soil probes advanced with a slide hammer at each spring location. The concentration of subsurface methane was 0 parts per million for all measurements taken.

0 500 1,000
Feet

N

FIGURE 16
METHANE FLUX CONTOURS
SOUTH FORK TEXAS CREEK EAST
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO
THE GROUP

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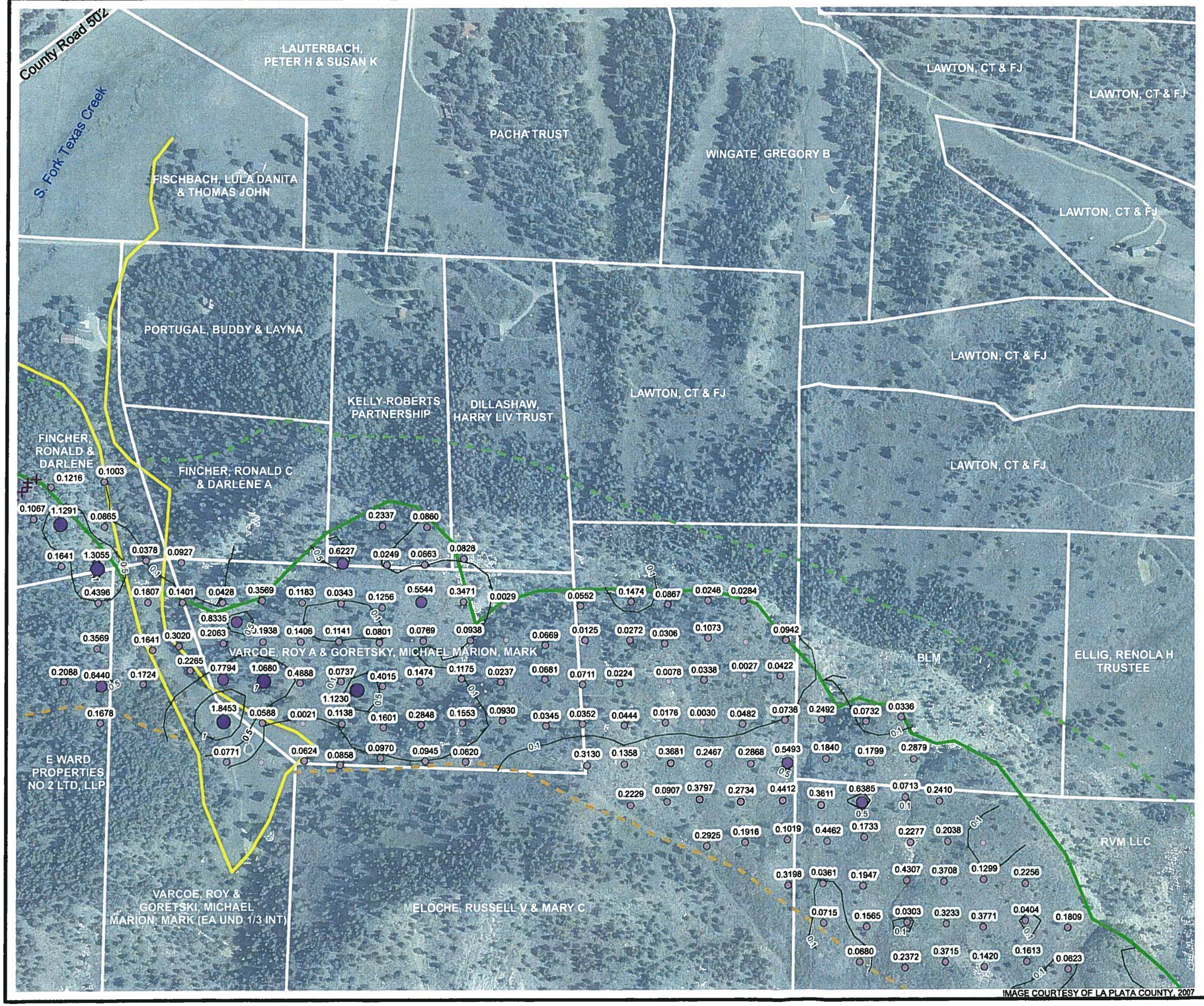

LEGEND

- \+ Gas Monitoring Probes
- ★ Gas Flux Chambers
- Parcel Boundary & Owner (white)

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

- 0.0000 - 0.0100
- 0.0101 - 0.5000
- 0.5001 - 1.0000
- 1.0001 - 5.0000
- 5.0001 - 10.0000

Carbon Dioxide Flux Contour in mol/m^2 • day (Interval Varies)

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)

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

Flux points not labeled are 0.0000 mol/m^2 • day Carbon Dioxide

* Subsurface methane measurements were collected from temporary soil probes advanced with a slide hammer at each spring location. The concentration of subsurface methane was 0 parts per million for all measurements taken.

0 500 1,000
Feet

N

FIGURE 17
CARBON DIOXIDE FLUX CONTOURS
SOUTH FORK TEXAS CREEK EAST
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO
THE GROUP

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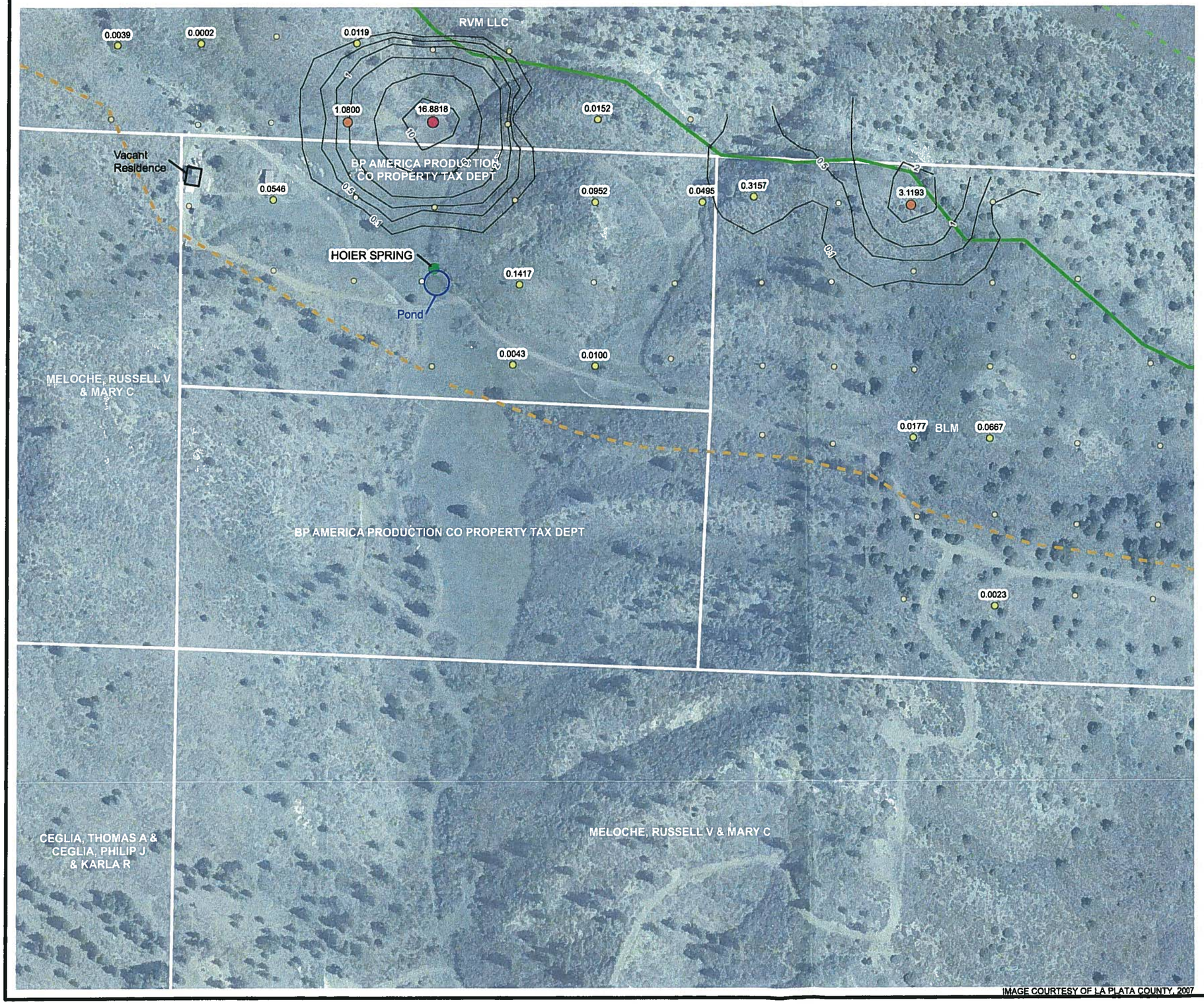

LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Parcel Boundary & Owner (white)

Natural Spring Location

- Sampled
- Field Parameters Only
- Dry
- Not Located
- No Access

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

- 0.0000
- 0.0001 - 0.5000
- 0.5001 - 1.0000
- 1.0001 - 10.0000
- 10.0001 - 50.0000
- 50.0001 - 100.0000
- 100.0001 - 775.0000

Methane Flux Contour in mol/m^2 • day (Interval Varies)

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)

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

Flux points not labeled are 0.0000 mol/m^2 • day Carbon Dioxide

* Subsurface methane measurements were collected from temporary soil probes advanced with a slide hammer at each spring location. The concentration of subsurface methane was 0 parts per million for all measurements taken.

0 250 500
Feet

N

FIGURE 18
METHANE FLUX CONTOURS
BP HIGHLANDS
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO
THE GROUP

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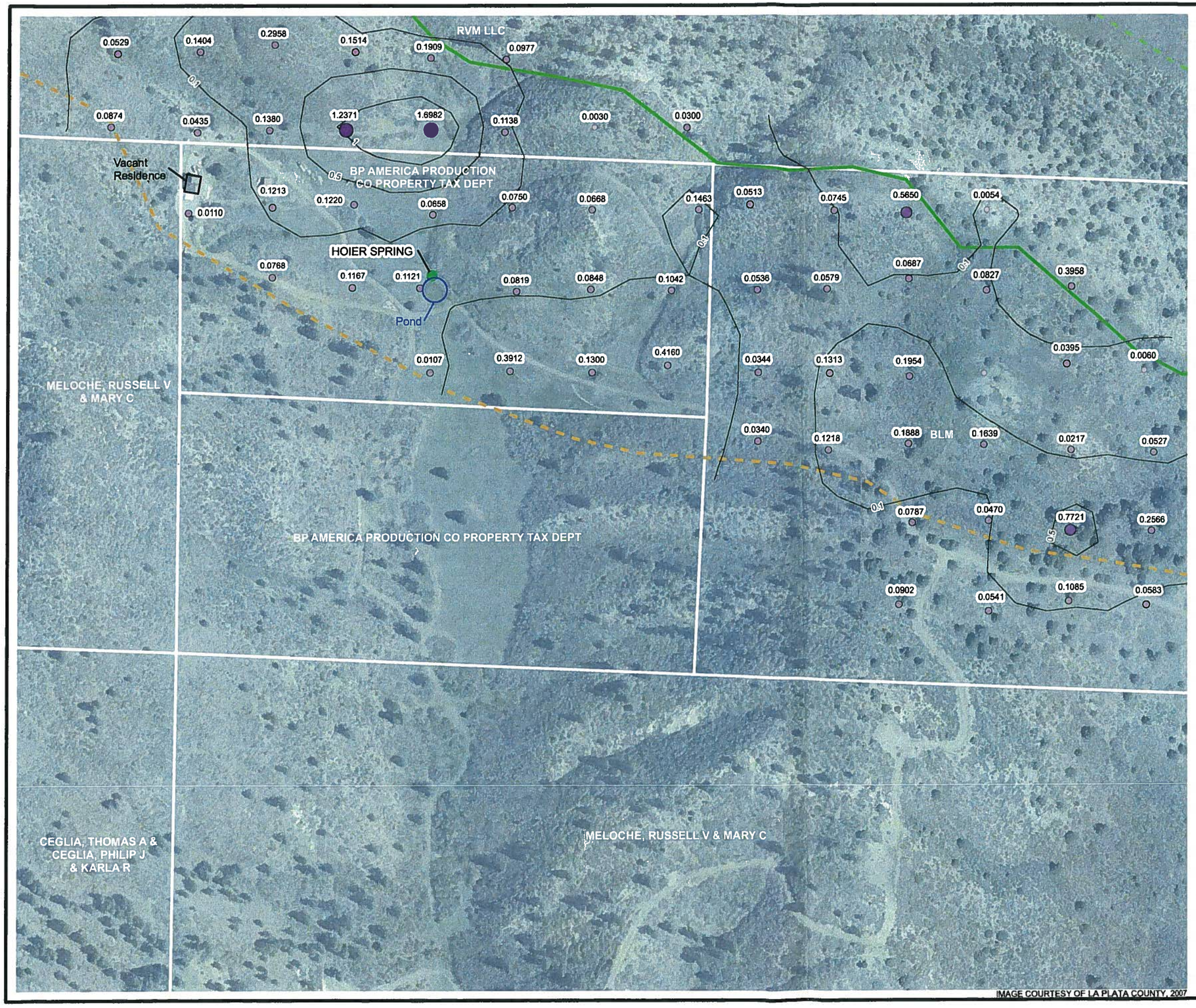

LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Parcel Boundary & Owner (white)

Natural Spring Location

- Sampled
- Field Parameters Only
- Dry
- Not Located
- No Access

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

- 0.0000 - 0.0100
- 0.0101 - 0.5000
- 0.5001 - 1.0000
- 1.0001 - 5.0000
- 5.0001 - 10.0000
- Carbon Dioxide Flux Contour in mol/m^2 • day (Interval Varies)

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)

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

Flux points not labeled are 0.0000 mol/m^2 • day Carbon Dioxide

* Subsurface methane measurements were collected from temporary soil probes advanced with a slide hammer at each spring location. The concentration of subsurface methane was 0 parts per million for all measurements taken.

0 250 500
Feet

N

FIGURE 19
CARBON DIOXIDE FLUX CONTOURS
BP HIGHLANDS
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO
THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMRM\MXDs\Subgas_Flux\2009\2009_03_CO2_FLUX_CONTOURS.mxd

LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Parcel Boundary & Owner (white)
- Approximate COGCC Methane Remediation System Area
- COGCC: Colorado Oil and Gas Conservation Commission

Methane Flux Location (mol/m^2 • day)

- 0.0000
- 0.0001 - 0.5000
- 0.5001 - 1.0000
- 1.0001 - 10.0000
- 10.0001 - 50.0000
- 50.0001 - 100.0000
- 100.0001 - 775.0000
- Methane Flux Contour in mol/m^2 • day (Interval Varies)

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)

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

Flux points not labeled are 0.0000 mol/m^2 • day Carbon Dioxide

* Subsurface methane measurements were collected from temporary soil probes advanced with a slide hammer at each spring location. The concentration of subsurface methane was 0 parts per million for all measurements taken.

0 500 1,000
Feet

N

FIGURE 20
METHANE FLUX CONTOURS
PINE RIVER
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO
THE GROUP

P:\San Juan Basin GIS\LaPlata\Fruitland_OMRMXDs\Subgas_Flux\2009\2009_02_CH4_FLUX_CONTOURS.mxd

LEGEND

- Gas Monitoring Probes
- Gas Flux Chambers
- Parcel Boundary & Owner (white)
- Approximate COGCC Methane Remediation System Area
- COGCC: Colorado Oil and Gas Conservation Commission

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

- 0.0000 - 0.0100
- 0.0101 - 0.5000
- 0.5001 - 1.0000
- 1.0001 - 5.0000
- 5.0001 - 10.0000
- Carbon Dioxide Flux Contour in mol/m^2 • day (Interval Varies)

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)

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

Flux points not labeled are 0.0000 mol/m^2 • day Carbon Dioxide

* Subsurface methane measurements were collected from temporary soil probes advanced with a slide hammer at each spring location. The concentration of subsurface methane was 0 parts per million for all measurements taken.

IMAGE COURTESY OF LA PLATA COUNTY, 2007

FIGURE 21
CARBON DIOXIDE FLUX CONTOURS
PINE RIVER
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO
THE GROUP

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VOSBURG PIKE

FLORIDA RIVER

SOUTH FORK TEXAS CREEK
TO PINE RIVER

VOSBURG PIKE

FLORIDA RIVER

SOUTH FORK TEXAS CREEK
TO PINE RIVER

BASIN CREEK TO
CARBON JUNCTION

BASIN CREEK
TO CARBON
JUNCTION

3

160

550

LEGEND

- 2007 Survey Area
- 2008 Survey Area
- 2009 Survey Area
- Area of Interest
- Highway

IMAGES COURTESY OF USDA/NRCS, 2005

0 1.5 3
Miles

N

FIGURE 22
SURVEY AREA COMPARISON 2007-2009
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO

THE GROUP

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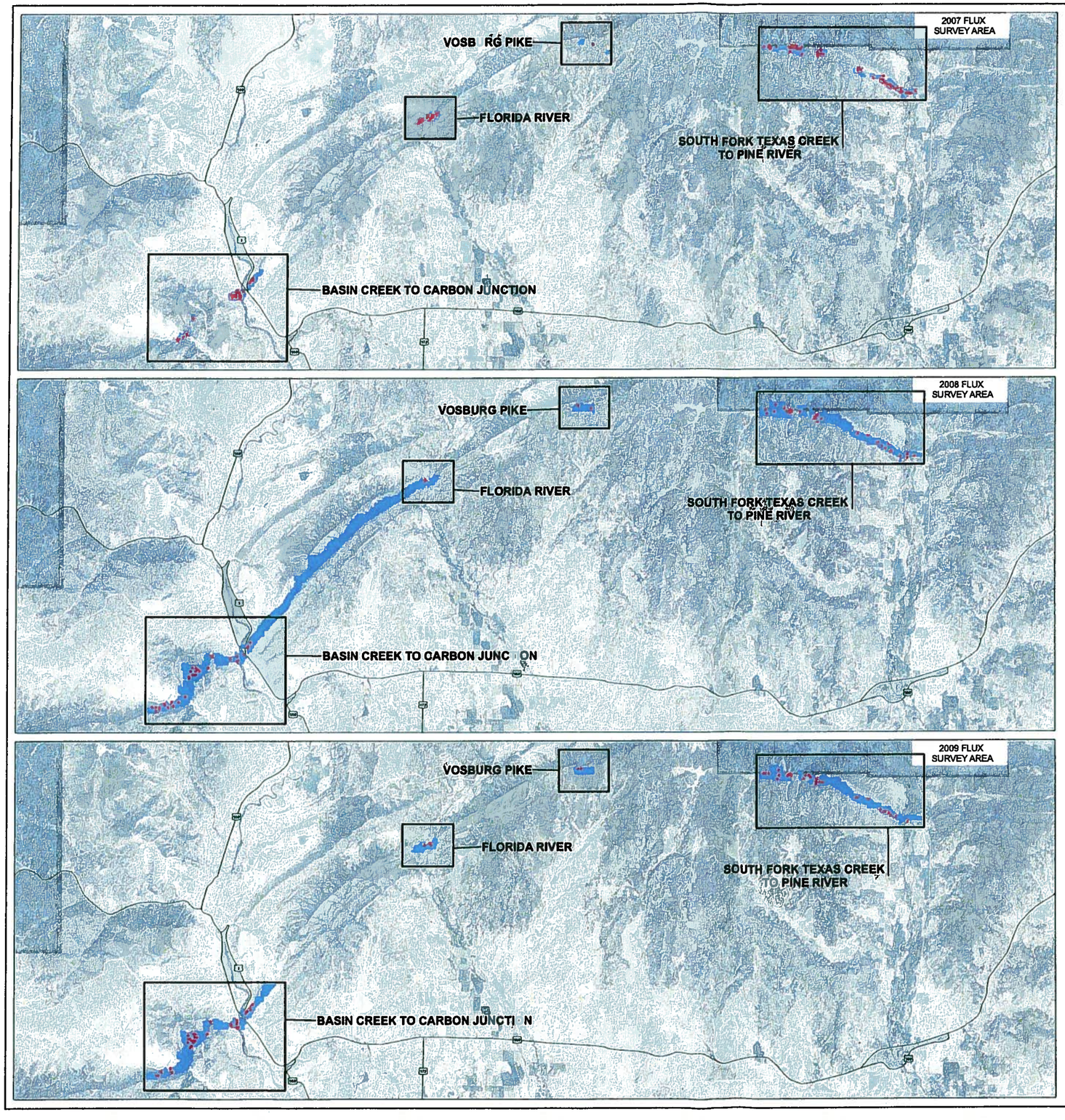

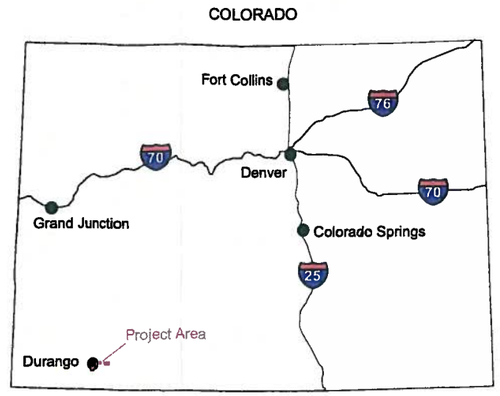

Will be on "E Size" Paper for Final Report (1"=4,000')

LEGEND

- Methane Detected Greater than 0.5000 mol/m ^{2} • day
- Survey Boundary
- Area of Interest
- Highway

IMAGES COURTESY OF USDA/NRCS, 2005 & 2006 AND LA PLATA COUNTY, 2007

0 4,000 8,000 12,000
Feet

N

FIGURE 23
METHANE FLUX COMPARISON 2007-2009
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO

THE GROUP

IMAGE COURTESY OF LA PLATA COUNTY, 2007

LEGEND

Parcel Boundary & Owner (white)

Natural Spring Location - Spring 2009 Status

- Sampled
- Field Parameters Only
- Dry
- Not Located
- No Access

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)

* Subsurface methane measurements were collected from temporary soil probes advanced with a slide hammer at each spring location. The concentration of subsurface methane was 0 parts per million for all measurements taken.

0 250 500

Feet

N

FIGURE 24
DETAILED SPRINGS LOCATION MAP
EDGEMONT RANCH
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO
THE GROUP

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LEGEND

Parcel Boundary & Owner (white)

Natural Spring Location - Spring 2009 Status

- Sampled
- Field Parameters Only
- Dry
- Not Located
- No Access

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)

* Subsurface methane measurements were collected from temporary soil probes advanced with a slide hammer at each spring location. The concentration of subsurface methane was 0 parts per million for all measurements taken.

0 500 1,000
Feet

N

FIGURE 25
DETAILED SPRINGS LOCATION MAP
SOUTH FORK TEXAS CREEK
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO
THE GROUP

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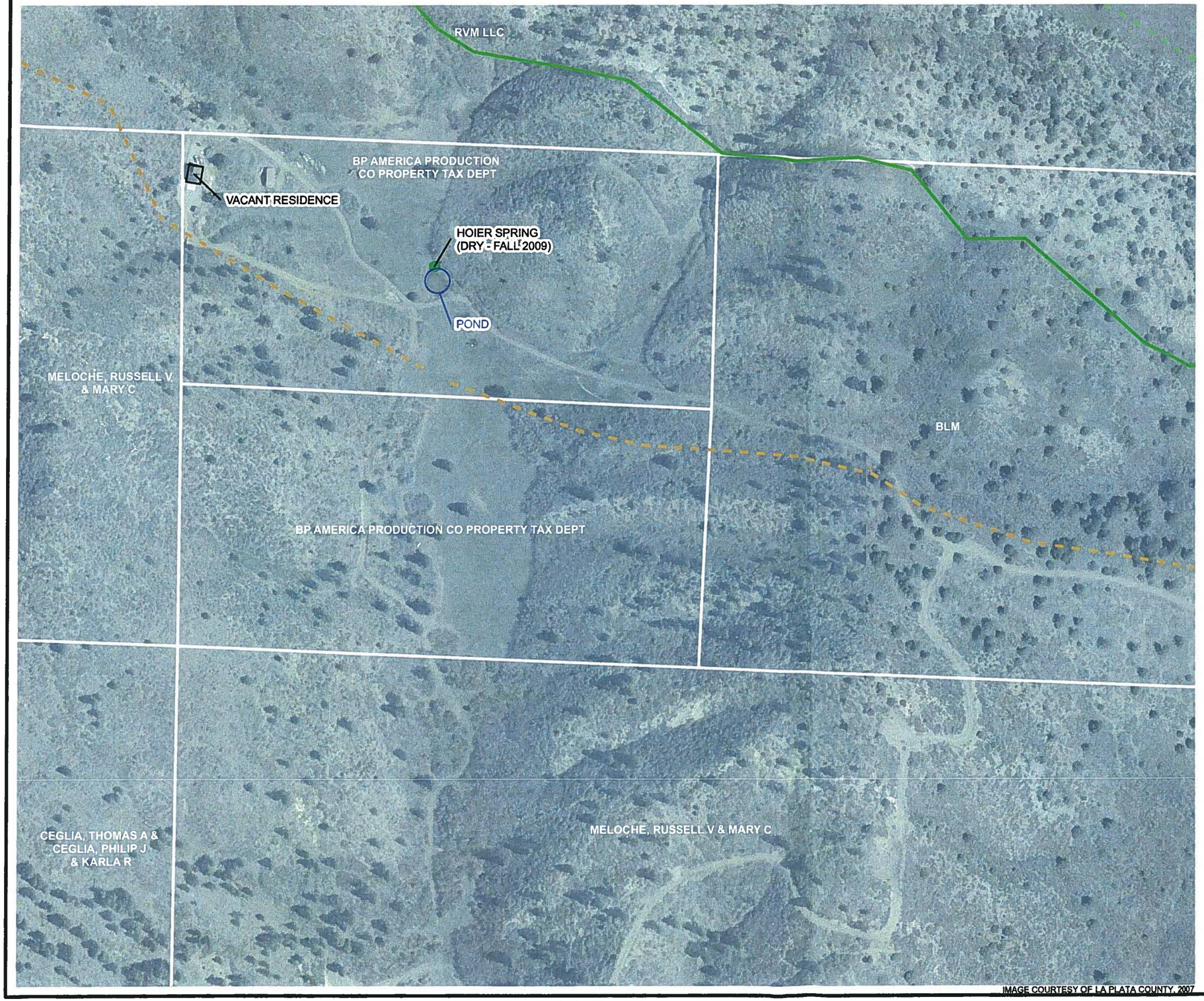

LEGEND

Parcel Boundary & Owner (white)

Natural Spring Location - Spring 2009 Status

- Sampled
- Field Parameters Only
- Dry
- Not Located
- No Access

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)

* Subsurface methane measurements were collected from temporary soil probes advanced with a slide hammer at each spring location. The concentration of subsurface methane was 0 parts per million for all measurements taken.

0 250 500
Feet

N

FIGURE 26
DETAILED SPRING LOCATION MAP
BP HIGHLANDS
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO
THE GROUP

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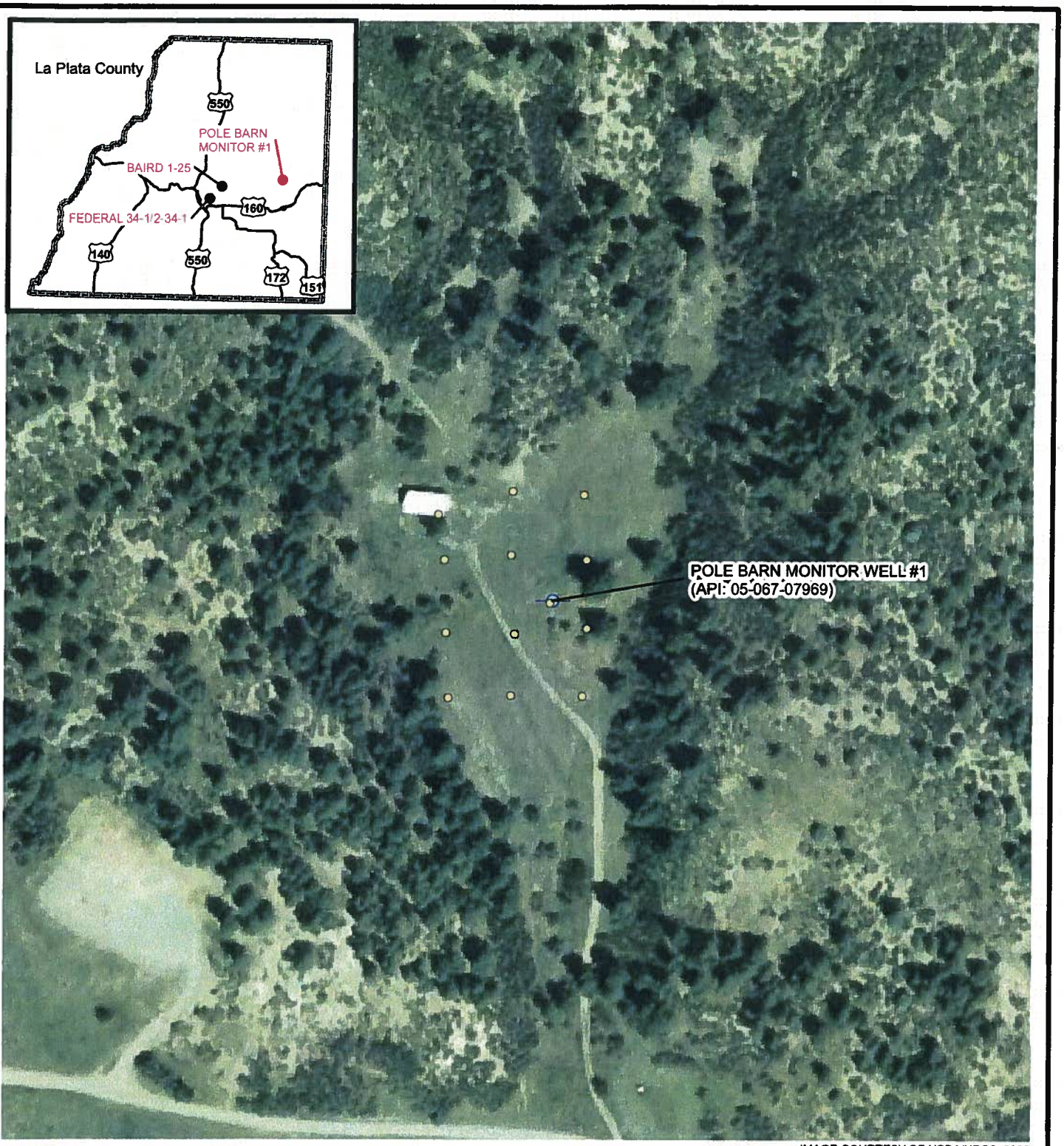

IMAGE COURTESY OF USDA/NRCS, 2006

LEGEND

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

- 0.0000
- 0.0001 - 0.5000
- 0.5001 - 1.0000
- 1.0001 - 10.0000
- 10.0001 - 50.0000
- 50.0001 - 100.0000
- 100.0001 - 775.0000

Shut-In Well Location

mol/m^2 • day - moles per square meter per day
Flux points not labeled are 0.0000 mol/m^2 • day Methane

0 200 400
Feet

N

FIGURE 27
METHANE FLUX MEASUREMENTS
POLE BARN MONITOR WELL #1
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO
THE GROUP

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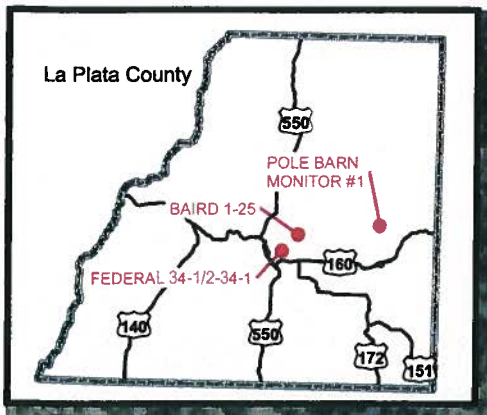

FEDERAL 34-1/2-34-1
(API: 05-067-07514)

IMAGE COURTESY OF USDA/NRCS, 2006

LEGEND

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

- 0.0000
- 0.0001 - 0.5000
- 0.5001 - 1.0000
- 1.0001 - 10.0000
- 10.0001 - 50.0000
- 50.0001 - 100.0000
- 100.0001 - 775.0000

mol/m^2 • day - moles per square meter per day
Flux points not labeled are 0.0000 mol/m^2 • day Methane

Abandoned Well Location

0 200 400
Feet

N

FIGURE 28
METHANE FLUX MEASUREMENTS
FEDERAL 34-1/2-34-1
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO
THE GROUP

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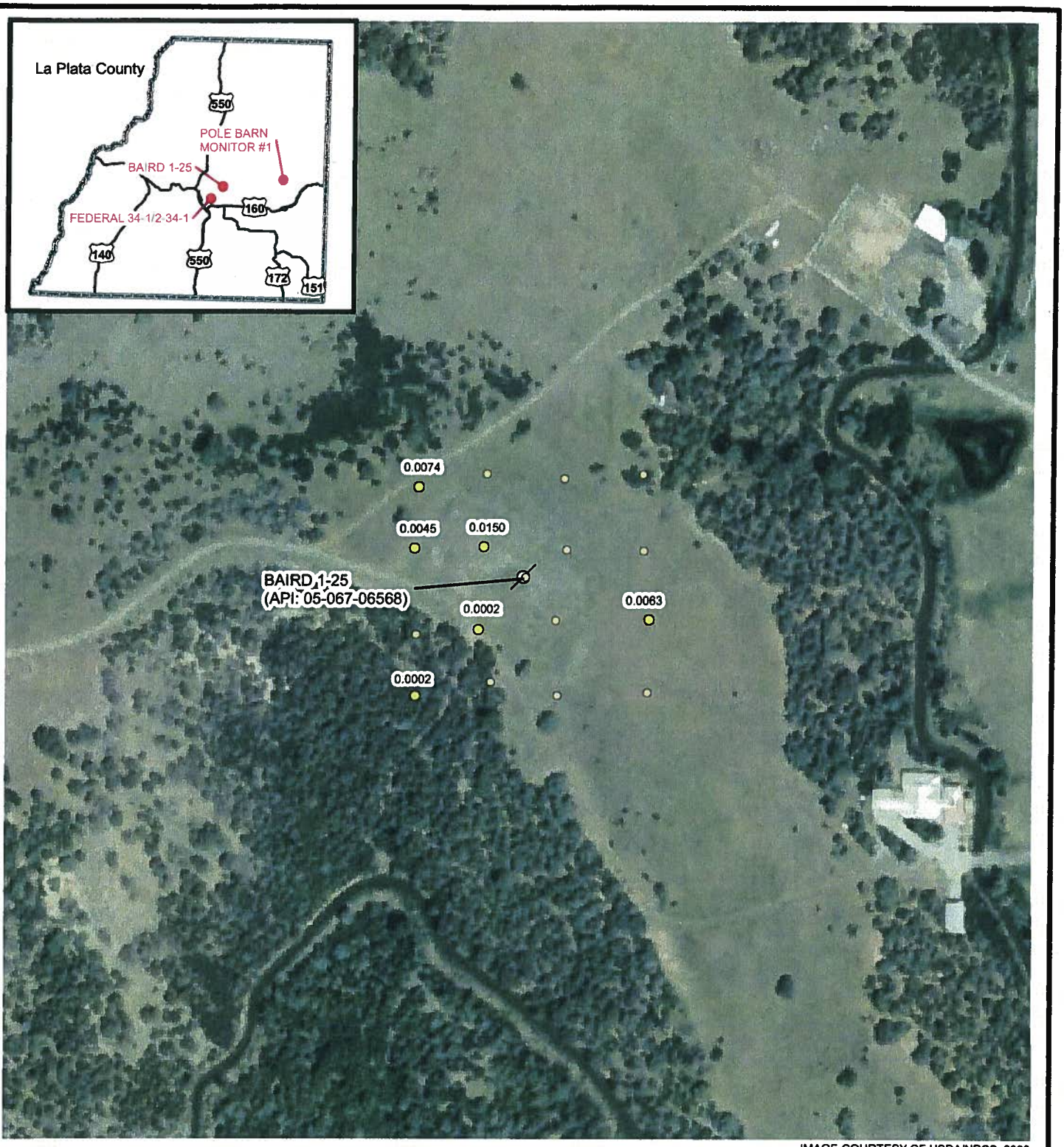

IMAGE COURTESY OF USDA/NRCS, 2006

LEGEND

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

- 0.0000
- 0.0001 - 0.5000
- 0.5001 - 1.0000
- 1.0001 - 10.0000
- 10.0001 - 50.0000
- 50.0001 - 100.0000
- 100.0001 - 775.0000

mol/m^2 • day - moles per square meter per day
Flux points not labeled are 0.0000 mol/m^2 • day Methane

Abandoned Well Location

0 200 400
Feet

N

FIGURE 29
METHANE FLUX MEASUREMENTS
BAIRD 1-25
2009 FRUITLAND OUTCROP MONITORING
LA PLATA COUNTY, COLORADO
THE GROUP

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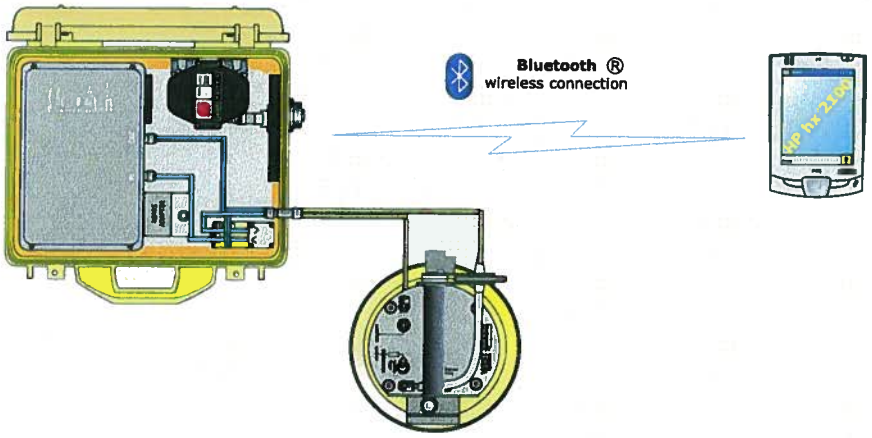
APPENDIX A

EQUIPMENT SPECIFICATIONS

WEST Systems portable soil flux meter

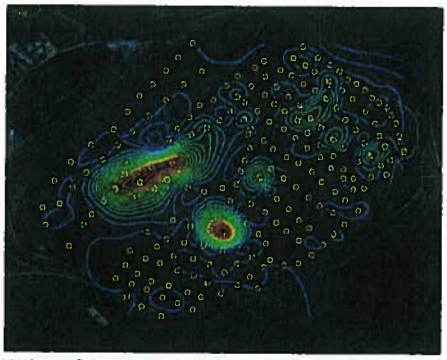
for Carbon dioxide, Methane and Hydrogen sulfide fluxes

The WEST Systems Fluxmeter is a portable instrument for the measurement of soil gas diffuse degassing phenomena that uses the accumulation chamber method.



This method studied for soil respiration in agronomy (Parkinson) and for soil degassing in volcanic areas (R. Cioni et al.), has been designed by WEST Systems to obtain a portable instrument that allows the performance of measurements with very good accuracy in a short time. The instrument allows a wide range evaluation of the amount of soil gas flux and can be utilized for the evaluation of biogas degassing (landfills), for the survey of non visible degassing phenomena in volcanic and geothermal areas as well as soil respiration rate in agronomy. In the picture below, the results of the degassing survey of a landfill.

Portable fluxmeter



Methane flux contour linees

a group of researchers during a flux mapping fieldwork, using the WS-LI820 flux meter

Courtesy of United States Geological Survey

WEST Systems

West Systems Srl
Via Molise 3 - Zona Ind. Gello - 56025 Pontedera (PI) Italy
Phone +39 0587 294216 www.westsystems.com
Fax +39 0587 296068 g.virgili@westsystems.com

Portable soil flux meter

Common physical characteristics:
Total Weight = 8.3 Kg/16 lbs. to be carried on the back using the backpack-like support vest. The field operator will also have to carry one of the accumulation chambers and the palmtop:

Warm Up
Only at instrument cold start-up a warm-up time of 20 minutes is required. The typical measurement time ranges from 2 to 4 minutes and the autonomy of the instrument is about 4 hours with a single NiMH 14.4 Volts, 2.6 A/h battery. The instrument comes with two interchangeable batteries.

Accumulation Chamber specifications:
- Accumulation chamber A diameter : 200 mm / Height: 100 mm / weight: 1.5 Kg/3.3 lbs
- Accumulation chamber B diameter : 200 mm / Height: 200mm / weight : 2.2 Kg /4.84 lbs

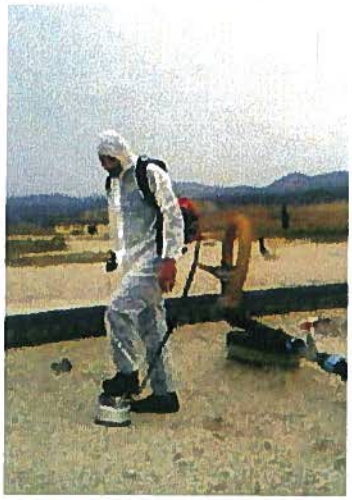
Palm top computer: PocketPC Color Display based on Windows Mobile operating system.
- PalmTop with cables, 0.3 Kg/0.7 lbs.
- Size 125mm (4.8") x 82mm (3.2") * 25 mm (1").

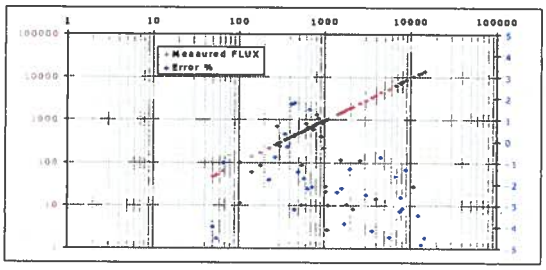
Software The instrument is supplied with a custom software, FluxManager, which allows recording and visualization of the increase in concentration of the target gas in the accumulation chamber, and then the flux calculations. The obtained measurements can be saved on the palmtop computer and then transferred to a desktop PC with a USB connection or using a SD card.

The instrument is supplied complete with:
- backpack-like support vest
- Carrying case for transport and storage
- 2 batteries NiMH 14.4 Volts 2.6 A/h and 1 NiMH battery charger Accumulation chamber A and B
- Palmtop Pocket PC
- User Manual, in English
- FLUX Manager Software for Windows Mobile, in English

The standard flux meter configuration is supplied with a single gas detector, normally the carbon dioxide detector. The fluxmeter can host two sensors by the way special releases, based on specific customer request, it can be supplied with a maximum of 3 sensors.

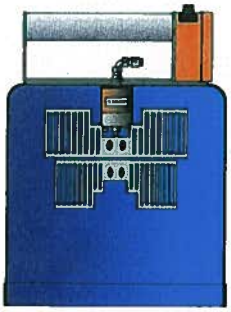
Finally we improved the connection between the instrument and the palmtop that now is based on BlueTooth wireless embedded device.





The measured carbon dioxide flux vs imposed flux (grams m^{-2} day^{-1});
The error % vs imposed flux (in blue).

The instrument is extremely versatile and allows measurement of flux in 2/4 minutes. In the picture: Soil bio-gas flux monitoring in a landifll.



Accumulation Chamber Type B

The accumulation chambers

In the normal use of instrument only the chamber B is used. To extend the instrument sensitivity to very low fluxes the accumulation chamber A is supplied.

	Type A	Type B
net area m^2	0.0314	
net volume m^3	0.003	0.006

WEST Systems
West Systems Srl
Via Molise 3 - Zona Ind. Gello - 56025 Pontedera (PI) Italy
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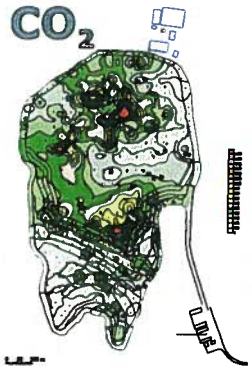
Fax +39 0587 296068 g.virgili@westsystems.com



CO_2 - LI820

LI820 based Carbon dioxide fluxmeter

The CO_2 Fluxmeter is equipped with the LICOR LI-820 the most accurate and reliable portable carbon dioxide detector. The LI-820 is a double beam infrared sensor compensated for temperature variation in the range from -10 to 45°C and for atmospheric pressure variation in the range 660-1060 HPa. Accuracy 2% repeatability ±5ppm. The full scale range can be set to 1000 , 2000, 5000 or 20000 ppmV of carbon dioxide. The characteristics of precision refer to the sensor set to a full scale range of 20000 ppmV. If a very high sensitivity is required, the detector can be set to 1000 or 2000 ppm full scale value to measure with very high precision fluxes in the range from 0 to 10 moles m^{-2} day^{-1}

CO_2 FLUX Measurement range:
from 0 up 600 moles m^{-2} day^{-1}

The accuracy depends on the measured flux:

0 to 0.5 moles m^{-2} day^{-1}	25% (Acc.ch.A)
0.5 to 1 moles m^{-2} day^{-1}	15% (Acc.ch.A or B)
1 to 150 moles m^{-2} day^{-1}	10% (Acc.ch.B)
150 to 300 moles m^{-2} day^{-1}	10% (Acc.ch.B)
300 to 600 moles m^{-2} day^{-1}	20% (Acc.ch.B)

WS-DRAGER CO_2

WS-DRAGER: CO_2 Flux measurement:

A double beam infrared sensor compensated for temperature variation in the range from -20 to 65°C. Accuracy 3%. The full scale value can be set from 2,000 to 300,000 ppm of carbon dioxide. Carbon Dioxide flux measurement range from 0.5 to 1500 moles/m^2 per day.

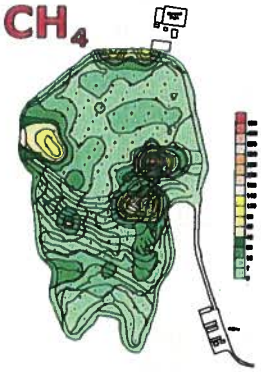
The precision depends on the measured flux:

range:0.5 – 5 moles/m^2 per day 25% (Acc. chamber A)

5-350 moles/m^2/day 10% (Acc. chamber B)

350-600 moles/ m^2/day 25% (Acc. chamber B)

600-1500 moles/ m^2/day 25% (Acc.Ch.B / F.S.=10%)



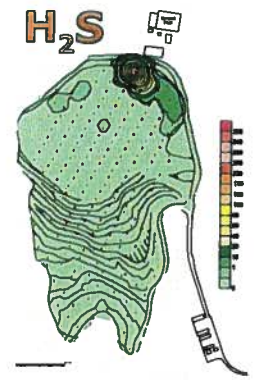
WS-HC CH^4

Methane fluxmeter

The methane sensor is an IR spectrometer. The full-scale range is 50000ppm, accuracy of 5% of reading, and repeatability is 2% of span. Detection limit 60 ppm, resolution 22 ppm. The detector was designed to measure the not controlled emissions of landfill, but it can be used to detect methane emission from coal or wherever the 0.2 moles/m^2/day detection limit is acceptable.

Methane Flux measurement range
from 0.2 up 300 moles m^{-2} day^{-1}
The fluxmeter is provided with 2 accumulation chambers and the accuracy depends on the measured flux:

0.2 to 10 moles m^{-2} day^{-1}	25% (Acc.Ch.A)
10 to 150 moles m^{-2} day^{-1}	15% (Acc.Ch.A)
150 to 300 moles m^{-2} day^{-1}	20% (Acc.Ch.B)



H_2S - WEST

Hydrogen sulfide

The hydrogen sulphide detector is a electrochemical cell with the following specifications:
The full-scale range is 20ppm, with a precision of 3% of reading, and the repeatability is 1.5% of span with a zero offset of 0.3%.

H_2S Flux measurement range: from 0.0025 to 0.5 moles/m^2 per day.
The precision depends on the measured flux:
0.0025 – 0.05 moles/m^2 per day ±25% (Acc. Chamber A)
0.05 – 0.5 moles/m^2 per day ±10% (Acc. Chamber B)

NOTE: The hydrogen sulphide flux evaluation can be affected by the presence of large quantities of water in both liquid and vapour phases.

We thanks to N.Lima et al. for the maps.

WEST Systems

West Systems Srl
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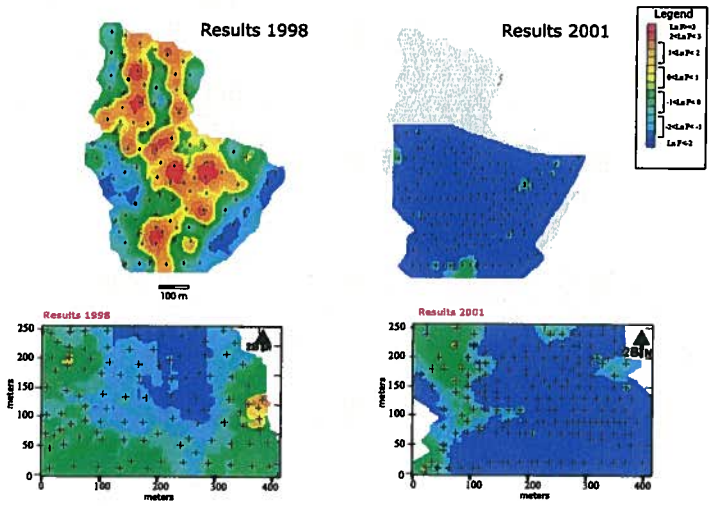
Application on a landfill: mapping the biogas non controlled emissions.

The figure shows the compare between the results of the measurement regime of a land/fill undertaken in 1998 and 2001: the mapping performed in 1998 gave clear indications of the areas which required intervention to improve the cover and the capture system.
The interventions were performed only where necessary with a significant economic savings.
The measurement regime of 2001 indicates without any doubt that the intervensions were efficient and state-of-the-art.



The obtained results:

- Minor atmospheric emissions;
- Higher quantity and better quality of biogas for cogeneration;
- Optimisation of management costs.

Continuous soil flux monitoring

WEST Systems produces a soil gas station for the continuous monitoring of carbon dioxide and hydrogen sulfide flux, soil temperature , soil water content, soil pressure gradient, soil heat flux and meteorological parameters.
For more information contact your local representative, visit our web site or e-mail to: g.virgili@westsystems.com

Local sales representative

H.Q.

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WEST Systems
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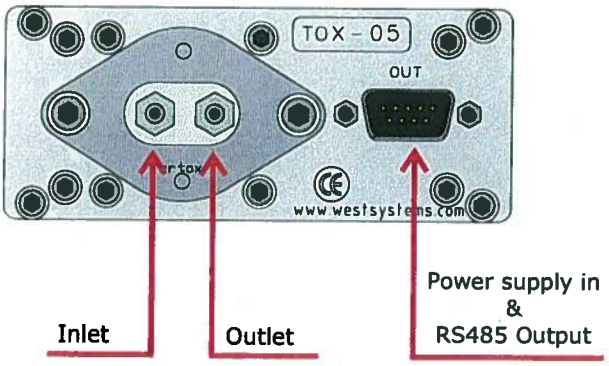
Hydrogen Sulfide Detector



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)

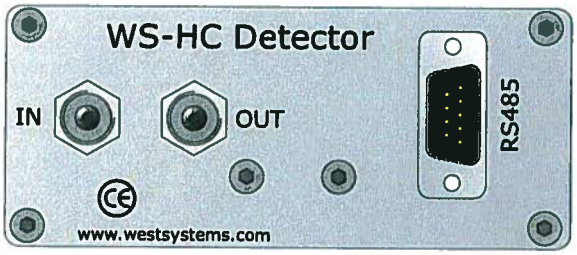
Full scale range is 50000 ppm of methane.

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

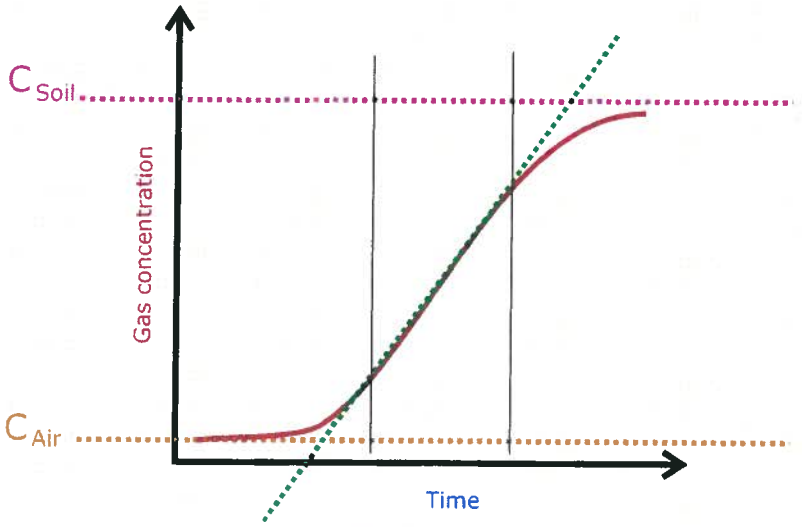
Relative Humidity Range: 0 to 95% RH, Non-Condensing

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

Weight: 2.2 lbs (1 kg)

Quantifying the flux

How explained in the chapter 3 the flux is proportional to the concentration increase ratio ppm/sec. The proportionality factor depends on the chamber volume/surface ratio as well as the barometric pressure and the air temperature inside the accumulation chamber.



There are two methods to carry out the field work, in both cases for each measurement you have to record the type of accumulation chamber used, the barometric pressure, and the air temperature.
The variation of few mBar of the pressure and or few degrees of temperature do not affect the evaluation of flux very much, then you can use a mean value for both parameters. Of course that depends on the accuracy you want to reach for the evaluation of flux.
The instrument measures the barometric pressure, using the embedded pressure sensor of the LICOR, with a good accuracy. A platinum Pt100 or a thermo-couple thermometer can be used to measure the air temperature as well as the soil temperature.

Choosing the flux measurement unit

The first measurements made, 10 years ago, with the accumulation chamber was expressed in cm/sec which is a speed, the speed of carbon dioxide flowing out from the soil. During the last ten years several units have been used by volcanologist and by geochemistry researchers. The most common unit is grams/squaremeter per day, but using the same instrument for two gas species to express the flux using this unit means to have two different conversion factors. Actually we use the unit **moles/squaremeter per day** that has two advantages: A single conversion factor for every gas specie and an easy conversion of the flux in grams/sm per day simply multiplying the result expressed in moles/sm per day for the molecular weight of the target gas.

From the [tools][settings] menu you can set the accumulation chamber factor in the "A.c.K." field.

If this factor is set to 1 the instrument will give you results expressed in ppm/sec, that's simply the slope of the curve in the selected interval.

If you set the A.c.K to a value different from 1 the instrument will give you the results expressed in moles per square meter per day.

Please see next page.

Quantifying the flux

Method 1: Measuring the slope

Set the Accumulation Chamber factor to 1 in order to have the flux measurement expressed in the slope unit "ppm/sec" and translate it in the desired unit with a post processing.
Using this method you can focus only on the accumulation chamber interfacing with the soil, the flux curve shape and the other aspects of the measurement, putting off choosing the correct accumulation chamber factor.

Method 2: Measuring the flux directly in moles/sm/day.

To get the results directly in moles/sm/day you have to set the Accumulation Chamber factor to the correct value, taking it from the tables.
For each measurement, if there are variations in the air temperature, or of the barometric pressure, or if you changed the accumulation chamber you have to select the [tools][settings] menu and put the correct accumulation chamber factor in the "A.c.K." field. This operation can be "critical". In any case on the saved files you'll find the results of flux evaluation expressed in both units , the raw ppm/sec and the moles/sm/day computed with the A.c.K. you set.

The accumulation chamber factors

Here following the formula used to compute the A.c.K.:

$$K = \frac{86400 \cdot P}{10^6 \cdot R \cdot T_k} \cdot \frac{V}{A}$$

Where

- **P** is the barometric pressure expressed in mBar (HPa)
- **R** is the gas constant 0.08314510 bar L K^{-1} mol^{-1}
- **T_k** is the air temperature expressed in Kelvin degree
- **V** is the chamber net volume in cubic meters
- **A** is the chamber inlet net area in square meters.

The dimensions of the A.c.K. are

$$K = \frac{moles \cdot meter^{-2} \cdot day^{-1}}{ppm \cdot sec^{-1}}$$

In the table the conversion factors vs temperaure and barometric pressure for the Accumulation Chamber Type A and B are reported.

An example:

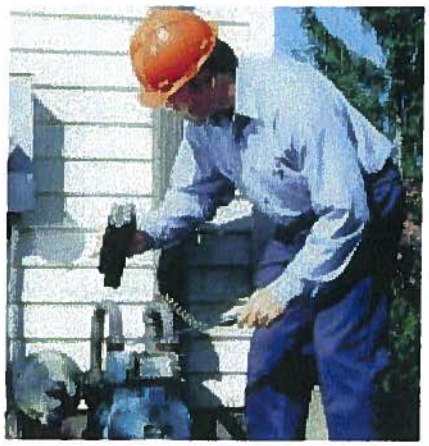
You're using the accumulation chamber B, the slope of the flux curve is 2.5 ppm/sec, the barometric pressure is 1008 mBar (HPa) and the air temperature is 22 °C.
From the table B get the value that correspond to the barometric pressure and temperature. In this case I get the value computed for 25°C and 1013 mBar : 0.696.

Then the flux is: 2.5 x 0.696= 1.74 moles per square meter per day.

Gasport® Gas Tester

MSA

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	O_2
812389	CO
812390	H_2S

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 H_2S
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).**

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MSA International
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FAX (412) 967-3451

Offices and representatives worldwide
For further information:

MSA

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.

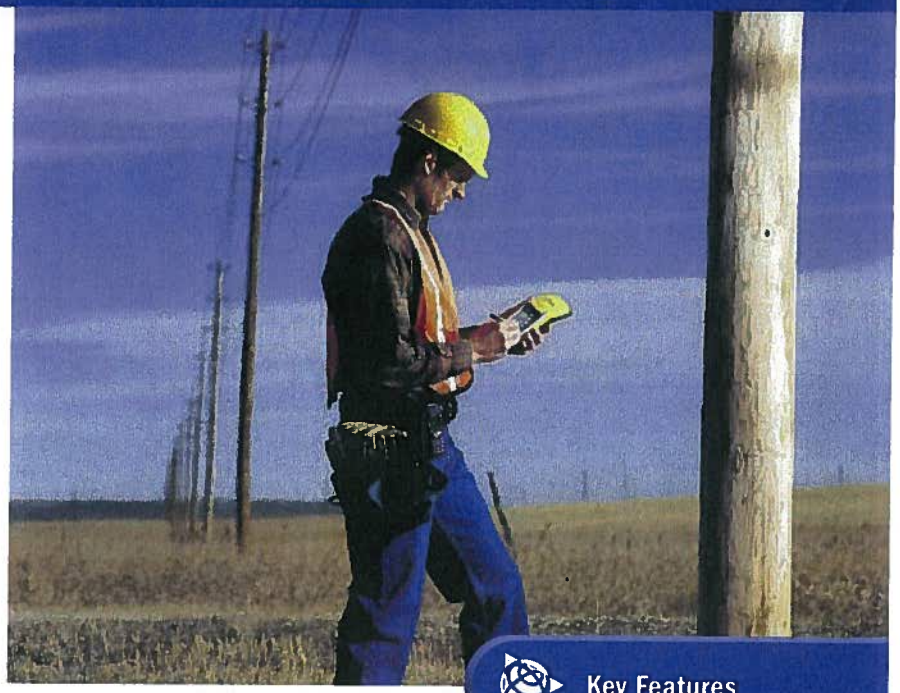
Windows Mobile includes familiar Microsoft productivity tools, including Pocket Word, Pocket Excel, and Pocket Outlook®. Pocket Outlook lets you synchronize e-mails, contacts, appointments, and data with your office computer, so whether you're in the office or in the field, you're always up to date.

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 vie 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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ULTRAMETER II™

OVER 50 YEARS

MYRON L COMPANY

Water Quality Instrumentation

Accuracy • Reliability • Simplicity

ULTRAMETER II™

Advanced Design • Superior Performance

MADE IN USA

OVER 50 YEARS

pH/ORP Sensor protective cap

Four-digit display for full 9999 readings, with autoranging capability up to 200 mS/200 ppt

Powerful microprocessor based surface-mount circuitry

Display prompts for simple pH calibration

Memory for 100 readings with Date & Time Stamp

Real Time Clock

Factory calibrations stored in microprocessor

Conductivity

Resistivity

TDS

Temperature

pH

ORP

CE

ULTRA-FAST
ULTRA-EASY
ULTRA-POWERFUL

Since 1957, the Myron L Company has designed and manufactured highly reliable analytical instruments for a wide variety of applications. Thousands of professionals around the world rely every day on the performance of our instruments. Demanding uses range from boiler water testing to ultrapure water control to medical instruments for artificial kidney machines.

We are proud of the trust our handheld instruments and monitor/controllers have earned in the past. Our product line has evolved to a new level of outstanding performance and value in analytical instruments: the Ultrameter II series. While priced like affordable single-parameter instruments, the Ultrameter II does the job of three, four or even six instruments.

Accuracy You Can Trust

Both Ultrameter II models deliver performance of ±1% of reading (not merely full scale). This high level of accuracy has been achieved through advanced four-electrode conductivity cell technology, a unique pH/ORP sensor and powerful microprocessor-based circuitry. With displayed values of up to 9999, the full four-digit LCD ensures resolution levels never before possible in such affordable instruments. Factory calibrated with NIST traceable solutions, each Ultrameter II may be supplied with both certification of traceability and NIST traceable solutions for definitive calibration.

Fast and accurate in the laboratory, both Ultrameter II models are rugged enough for daily in-line controller checks in hostile process applications.

Innovative Engineering

The Ultrameter II is a prime example of how high-tech engineering can greatly simplify and streamline a task. Whether in the lab, industrial plant, or in a remote field location, merely:

1. Fill the cell cup
2. Push a parameter key
3. Take the reading

Temperature compensation and range selection are both rapid and automatic. The Ultrameter II is a true one-hand operation instrument.

Easy to Calibrate

All calibrations are quickly accomplished by pressing the ☒ or ☒ keys to agree with our NIST traceable Standard Solution. When calibration is necessary, display prompts simplify pH calibration and make sure the correct buffer is being used. Plus, all parameters (excluding factory-set temperature) have an internal electronic setting that can be used for field calibration and as a check on pH/ORP sensor life.

Advanced Features

- Fully automatic temperature compensation
- User adjustable temperature compensation (up to 9.99%/°C) which also allows TC to be disabled for applications requiring non-compensated readings.
- User adjustable conductivity/TDS conversion ratio for greater accuracy when measuring solutions not contained in the microprocessor.
- Auto-shutoff maximizes the life of the single 9V battery to more than 100 hours/5000 tests.
- Non-volatile microprocessor provides data back-up, even when the battery is changed. This assures all calibrations and memory data will be retained.
- Extended life pH/ORP sensor is user replaceable in the field.

High Performance at a Low Cost

Beyond their affordable purchase price, Ultra-Fast, Ultra-Easy, Ultra-Powerful Ultrameter II's save both time and money. Measure for measure, Ultrameter II's give you a better return on your investment than any other handheld instrument. To see for yourself, contact your distributor or the Myron L Company today.

Multiple Applications

Irrigation Water

Hydroponics

Laboratories

Homeland Security

Reverse Osmosis

Deionization

Wastewater

Cooling Towers

Environmental

Desalination

Fountain Solutions

BENEFITS DESIGNED TO SAVE YOU TIME & MONEY

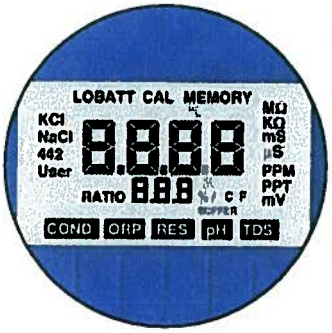
Built-in IR Port allows you to conveniently download your data to a computer. **(Requires Myron L uDock™ Accessory Package)**

Ample memory provides increased flexibility to record and store 100 separate readings.

Real Time Clock with Date & Time Stamp allows you to maintain the integrity of each individual reading.

The advanced four-electrode cell for conductivity/resistivity/TDS eliminates polarization, allowing greater accuracy and stability with minimal maintenance.

The pH/ORP sensor chamber provides protection to a unique porous liquid-junction.



The large capacity KCl reservoir guarantees extended life.

A custom LCD helps simplify calibration and operation by using annunciators and prompts to indicate various conditions.

IP67/NEMA 6 rated Ultrameter II's are waterproof and buoyant and can be fully immersed to 3 feet/1 meter.

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 1957, 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.

MYRON L COMPANY
Water Quality Instrumentation
Accuracy • Reliability • Simplicity

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UMIIB 03-08

APPENDIX B

FLUX METER DATA

Appendix B - Individual Flux Measurements and Calculations

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
bc082509_117	1208389	2300805	A	787.4	39.1	8/28/2009	-0.058	0.005	0.625	0.2358544	0.000000	0.001179	0.147409
bc082509_109	1208393	2299987	A	784.7	36.1	8/28/2009	0	-0.001	-0.034	0.2373259	0.000000	0.000000	0.000000
bc082509_118	1208397	2300996	A	787.7	39.4	8/28/2009	0	0.029	0.386	0.2357178	0.000000	0.006836	0.090987
bc082509_110	1208408	2300197	A	785.2	36.2	8/28/2009	-0.009	0.024	0.17	0.2374003	0.000000	0.005698	0.040358
bc082509_113	1208412	2300418	A	786.6	37.0	8/28/2009	0	0.009	0.107	0.2372102	0.000000	0.002135	0.025381
bc082509_114	1208414	2300610	A	787.4	37.3	8/28/2009	0	0.007	0.399	0.2372219	0.000000	0.001661	0.094652
bc081809_08	1208560	2301220	A	784.0	33.6	8/18/2009	0	0.012	1.129	0.2390466	0.000000	0.002869	0.269884
bc082509_116	1208575	2300783	A	788.9	38.3	8/28/2009	0	-0.003	-1.668	0.2369107	0.000000	0.000000	0.000000
bc082509_115	1208576	2300601	A	788.5	37.7	8/28/2009	0.085	0.004	0.354	0.2372477	0.020166	0.000949	0.083986
bc081809_05	1208583	2301798	A	786.9	31.8	8/18/2009	0	0.003	0.275	0.2413471	0.000000	0.000724	0.066370
bc082509_108	1208585	2299976	A	787.3	35.4	8/28/2009	0.001	0.008	0.683	0.2386524	0.000239	0.001909	0.163000
bc082509_111	1208587	2300204	A	785.9	36.3	8/28/2009	0.003	0.012	0.764	0.2375352	0.000713	0.002850	0.181477
bc082509_119	1208587	2301001	A	790.8	39.7	8/28/2009	0	0.009	0.165	0.2364186	0.000000	0.002128	0.039009
bc081809_06	1208588	2301593	A	784.8	32.5	8/18/2009	0.072	0.014	0.275	0.2401517	0.017291	0.003362	0.066042
bc082509_112	1208593	2300388	A	786.3	36.6	8/28/2009	-1.646	0.012	0.56	0.2374259	0.000000	0.002849	0.132959
bc081809_04	1208599	2302013	A	787.4	31.1	8/18/2009	0.027	0.004	0.163	0.242056	0.006536	0.000968	0.039455
bc081809_07	1208603	2301398	A	785.2	33.1	8/18/2009	0	0.015	0.625	0.2398034	0.000000	0.003597	0.149877
bc082509_107	1208613	2299785	A	788.5	34.9	8/28/2009	0	0.011	0.52	0.2394041	0.000000	0.002633	0.124490
bc082509_104	1208769	2300220	A	788.7	32.0	8/28/2009	0	0.003	0.308	0.2417406	0.000000	0.000725	0.074456
bc082509_105	1208773	2299994	A	790.0	33.2	8/28/2009	0	0.006	0.247	0.2411906	0.000000	0.001447	0.059574
bc082509_100	1208778	2301014	A	794.7	29.1	8/28/2009	3.599	0.003	1.745	0.2459167	0.885054	0.000738	0.429125
bc081809_03	1208780	2302217	A	787.4	30.4	8/18/2009	0	0.005	0.272	0.2426142	0.000000	0.001213	0.065991
bc081809_09	1208787	2301214	A	782.7	34.8	8/18/2009	15.905	0.005	1.246	0.2377203	3.780941	0.001189	0.296199
bc082509_103	1208799	2300401	A	788.1	30.9	8/28/2009	0.009	0.003	0.214	0.2424306	0.002182	0.000727	0.051880

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
bc081809_12	1208807	2301804	A	785.4	36.5	8/18/2009	0	0.017	0.357	0.2372307	0.000000	0.004033	0.084691
bc082509_106	1208807	2299805	A	791.7	33.9	8/28/2009	0.197	0.014	0.693	0.2411585	0.047508	0.003376	0.167123
bc081809_02	1208807	2302406	A	790.5	29.7	8/18/2009	0.363	0.006	0.229	0.2441324	0.088620	0.001465	0.055906
bc081809_10	1208810	2301389	A	786.2	35.5	8/18/2009	0	0.003	-0.017	0.2382417	0.000000	0.000715	0.000000
bc081809_11	1208816	2301587	A	784.8	35.7	8/18/2009	-0.003	0.006	0.383	0.2376635	0.000000	0.001426	0.091025
bc082509_101	1208817	2300816	A	793.6	29.7	8/28/2009	0	0.023	1.669	0.2450898	0.000000	0.005637	0.409055
bc082509_102	1208818	2300616	A	793.5	30.1	8/28/2009	0	0.009	-0.427	0.2447356	0.000000	0.002203	0.000000
bc081809_13	1208833	2301984	A	787.0	37.1	8/18/2009	0.029	-0.005	0.158	0.2372543	0.006880	0.000000	0.037486
bc081109_38	1208967	2302597	A	794.3	31.9	8/13/2009	0	0.001	0.132	0.2435368	0.000000	0.000244	0.032147
bc061109_10	1208972	2300617	A	783.8	36.2	6/11/2009	0.238	0.028	3.485	0.236977	0.056401	0.006635	0.825865
bc061109_07	1208981	2301222	A	784.6	33.2	6/11/2009	0	0.007	0.815	0.2395419	0.000000	0.001677	0.195227
bc081809_16	1208984	2301626	A	786.4	38.7	8/18/2009	0	-0.002	0.788	0.2358571	0.000000	0.000000	0.185855
bc081809_15	1208990	2301810	A	788.9	38.2	8/18/2009	0	0.014	0.723	0.2369868	0.000000	0.003318	0.171341
bc081809_14	1208991	2301987	A	788.1	37.8	8/18/2009	0	0.012	0.456	0.237051	0.000000	0.002845	0.108095
bc081109_110	1208994	2302203	A	792.1	26.7	8/18/2009	0	0.002	0.05	0.247074	0.000000	0.000494	0.012354
bc081809_01	1208997	2302348	A	792.0	28.9	8/18/2009	0.012	0.002	0.076	0.2452435	0.002943	0.000490	0.018639
bc061109_06	1208998	2301420	A	786.6	33.1	6/11/2009	0	-0.002	1.077	0.2402309	0.000000	0.000000	0.258729
bc061109_11	1209002	2300394	A	781.1	36.7	6/11/2009	1.295	0.013	3.833	0.2357796	0.305335	0.003065	0.903743
bc081109_41	1209005	2303200	A	796.4	32.7	8/13/2009	0	0.003	0.11	0.243542	0.000000	0.000731	0.026790
bc061109_09	1209007	2300802	A	791.3	35.1	6/11/2009	0.505	0.032	8.676	0.2400984	0.121250	0.007683	2.083093
bc061109_12	1209011	2300210	A	781.1	36.9	6/11/2009	-0.042	-0.003	0.092	0.2356275	0.000000	0.000000	0.021678
bc081109_39	1209011	2302792	A	793.2	32.2	8/13/2009	0	0.001	0.489	0.2429606	0.000000	0.000243	0.118808
bc081109_40	1209013	2302995	A	793.0	32.5	8/13/2009	0	0.002	0.28	0.242661	0.000000	0.000485	0.067945
bc061109_08	1209025	2300999	A	791.3	33.9	6/11/2009	0.005	0.024	4.756	0.2410367	0.001205	0.005785	1.146371

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
bc081109_25	1209170	2303408	A	801.2	41.5	8/11/2009	0	0.007	0.252	0.2381575	0.000000	0.001667	0.060016
bc081109_36	1209178	2302809	A	795.5	30.8	8/13/2009	21.855	0.001	2.595	0.2447875	5.349830	0.000245	0.635223
bc081809_18	1209182	2301809	A	787.0	40.5	8/18/2009	0.001	0.008	0.041	0.2346824	0.000235	0.001877	0.009622
bc061109_05	1209184	2301418	A	787.5	32.8	6/11/2009	0.053	0.005	0.901	0.2407416	0.012759	0.001204	0.216908
bc081109_37	1209186	2302598	A	794.3	31.4	8/13/2009	0	0.004	0.382	0.2439367	0.000000	0.000976	0.093184
bc081809_19	1209188	2301992	A	785.5	40.7	8/18/2009	0	0.015	-0.009	0.2340859	0.000000	0.003511	0.000000
bc081109_23	1209189	2303818	A	803.3	39.6	8/11/2009	0	0	0.203	0.2402324	0.000000	0.000000	0.048767
bc081109_34	1209193	2303194	A	797.9	29.9	8/13/2009	0	0.002	0.391	0.2462551	0.000000	0.000493	0.096286
bc081809_17	1209194	2301583	A	785.8	39.7	8/18/2009	2.702	-0.007	2.738	0.2349238	0.634764	0.000000	0.643221
bc081109_24	1209198	2303623	A	801.2	40.3	8/11/2009	0.089	0.004	0.243	0.2390693	0.021277	0.000956	0.058094
bc081109_22	1209202	2303961	A	805.0	39.2	8/11/2009	0	0.005	0.468	0.2410491	0.000000	0.001205	0.112811
bc081109_35	1209206	2302987	A	797.4	30.4	8/13/2009	0	0.001	0.116	0.2456954	0.000000	0.000246	0.028501
bc081109_109	1209210	2302181	A	793.2	24.5	8/18/2009	0	0.005	0.452	0.2492459	0.000000	0.001246	0.112659
bc061109_03	1209356	2301784	A	786.7	30.8	6/11/2009	0.972	0.01	2.638	0.2420796	0.235301	0.002421	0.638606
bc081109_32	1209369	2303030	A	793.7	29.0	8/13/2009	0	0.002	0.38	0.2456885	0.000000	0.000491	0.093362
bc061109_04	1209370	2301616	A	786.7	32.0	6/11/2009	0	0.003	1.032	0.2411276	0.000000	0.000723	0.248844
bc081109_31	1209374	2302782	A	795.2	28.6	8/13/2009	0	0	0.213	0.2464792	0.000000	0.000000	0.052500
bc061109_02	1209389	2301965	A	791.4	27.7	6/11/2009	0	0.012	2.612	0.2460351	0.000000	0.002952	0.642644
bc081109_27	1209390	2303612	A	802.8	43.2	8/11/2009	1.498	0.01	0.165	0.2373508	0.355551	0.002374	0.039163
bc081109_108	1209401	2302198	A	793.2	23.3	8/18/2009	0	0.009	0.379	0.2502548	0.000000	0.002252	0.094847
bc081109_30	1209403	2302616	A	795.2	28.2	8/13/2009	0	0.001	7.007	0.2468063	0.000000	0.000247	1.729372
bc081109_33	1209408	2303209	A	796.1	29.4	8/13/2009	0	0	0.36	0.2461056	0.000000	0.000000	0.088598
bc081109_19	1209409	2304213	A	807.5	37.2	8/11/2009	0.036	0.003	0.126	0.2433559	0.008761	0.000730	0.030663
bc081109_21	1209410	2303826	A	805.9	38.9	8/11/2009	0	0.005	-0.021	0.2415506	0.000000	0.001208	0.000000

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
bc081109_26	1209410	2303428	A	802.3	42.8	8/11/2009	0.007	0.004	0.808	0.2375032	0.001663	0.000950	0.191903
bc081109_20	1209412	2304012	A	808.3	38.7	8/11/2009	0	0.001	0.551	0.2424253	0.000000	0.000242	0.133576
bc081109_18	1209414	2304426	A	806.7	36.7	8/11/2009	0.001	0.002	0.104	0.2435071	0.000244	0.000487	0.025325
bc081109_14	1209584	2303998	A	805.1	35.5	8/11/2009	-0.012	0	0.066	0.243969	0.000000	0.000000	0.016102
bc081109_10	1209589	2303201	A	803.2	33.1	8/11/2009	0	0.003	-0.016	0.2453007	0.000000	0.000736	0.000000
bc081109_17	1209593	2304591	A	806.4	36.4	8/11/2009	0	0.001	-0.041	0.2436525	0.000000	0.000244	0.000000
bc081109_29	1209593	2302610	A	797.9	27.4	8/13/2009	12.404	0	3.576	0.2483035	3.079957	0.000000	0.887933
bc081109_13	1209594	2303776	A	804.1	35.2	8/11/2009	0	0.002	0.52	0.243903	0.000000	0.000488	0.126830
bc081109_15	1209596	2304209	A	805.8	35.8	8/11/2009	1.02	0.002	0.334	0.243944	0.248823	0.000488	0.081477
bc061109_01	1209599	2302013	A	791.4	25.9	6/11/2009	0.86	0.016	0.198	0.247516	0.212864	0.003960	0.049008
bc081109_16	1209602	2304420	A	806.6	36.1	8/11/2009	0	0.001	0.004	0.2439493	0.000000	0.000244	0.000976
bc081109_12	1209602	2303590	A	803.5	34.6	8/11/2009	0	0.003	0.028	0.2441962	0.000000	0.000733	0.006837
bc081109_11	1209607	2303388	A	803.3	34.1	8/11/2009	0.031	0.001	0.079	0.2445327	0.007581	0.000245	0.019318
bc081109_28	1209614	2302804	A	802.5	26.5	8/13/2009	0.166	0	0.451	0.2504851	0.041581	0.000000	0.112969
bc081109_09	1209616	2303029	A	803.0	31.5	8/11/2009	0	0	0.035	0.2465276	0.000000	0.000000	0.008628
bc081109_03	1209775	2304212	A	805.6	25.1	8/11/2009	0	0	0.01	0.252633	0.000000	0.000000	0.002526
bc081109_04	1209782	2303992	A	806.1	25.9	8/11/2009	0.008	0.001	0.009	0.2521136	0.002017	0.000252	0.002269
bc081109_06	1209791	2303603	A	805.9	28.1	8/11/2009	0	0	0.146	0.2502103	0.000000	0.000000	0.036531
bc081109_07	1209792	2303387	A	806.1	29.3	8/11/2009	0.301	0.001	0.197	0.2492794	0.075033	0.000249	0.049108
bc081109_02	1209793	2304408	A	814.8	24.5	8/11/2009	0.109	0	-0.016	0.2560332	0.027908	0.000000	0.000000
bc081109_01	1209794	2304587	A	806.6	23.7	8/11/2009	0	0	0.042	0.2541396	0.000000	0.000000	0.010674
bc081109_08	1209800	2303211	A	806.3	29.8	8/11/2009	0.716	0	0.199	0.2489298	0.178234	0.000000	0.049537
bc081109_05	1209814	2303810	A	806.7	27.1	8/11/2009	0	0.001	0	0.2512929	0.000000	0.000251	0.000000
bc081109_43	1209974	2304591	A	811.3	33.2	8/13/2009	0.016	0.003	0.88	0.2476936	0.003963	0.000743	0.217970

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
bc081109_42	1209986	2304413	A	801.7	33.1	8/13/2009	0	0.007	0.026	0.2448426	0.000000	0.001714	0.006366
bc081109_44	1209988	2304784	A	803.0	33.3	8/13/2009	0	0.004	0.452	0.2450795	0.000000	0.000980	0.110776
bc081109_53	1209993	2303402	A	802.4	36.7	8/13/2009	0	0.003	0.071	0.2422091	0.000000	0.000727	0.017197
bc081109_54	1209994	2303593	A	818.0	37.0	8/13/2009	0	0.004	0.386	0.2466793	0.000000	0.000987	0.095218
bc081109_57	1209999	2304204	A	802.0	38.3	8/13/2009	0	0.003	0.166	0.2408447	0.000000	0.000723	0.039980
bc081109_55	1210003	2303805	A	803.0	37.5	8/13/2009	0	0.009	1.727	0.241766	0.000000	0.002176	0.417530
bc081109_56	1210004	2303999	A	803.0	37.9	8/13/2009	0	0.011	1.305	0.2414551	0.000000	0.002656	0.315099
bc081109_52	1210179	2303397	A	802.6	36.2	8/13/2009	0	0.004	0.319	0.2426611	0.000000	0.000971	0.077409
bc081109_48	1210189	2304208	A	801.3	34.0	8/13/2009	0	0.001	0.816	0.2440033	0.000000	0.000244	0.199107
bc081109_51	1210193	2303595	A	801.7	35.9	8/13/2009	0	0.003	0.126	0.2426243	0.000000	0.000728	0.030571
bc081109_49	1210193	2303998	A	803.7	34.4	8/13/2009	0	0.004	0.34	0.2444158	0.000000	0.000978	0.083101
bc081109_50	1210199	2303797	A	801.7	35.3	8/13/2009	0	0.002	0.1	0.2430962	0.000000	0.000486	0.024310
bc081109_47	1210203	2304390	A	801.1	33.8	8/13/2009	0.001	0.001	6.228	0.2441014	0.000244	0.000244	1.520263
bc081109_46	1210217	2304609	A	800.1	33.6	8/13/2009	0	0.001	-0.318	0.2439556	0.000000	0.000244	0.000000
bc081109_45	1210222	2304820	A	801.7	33.5	8/13/2009	0	0.002	0.2	0.2445232	0.000000	0.000489	0.048905
bc081109_71	1210365	2303805	A	799.8	44.6	8/13/2009	0	0.008	0.536	0.235422	0.000000	0.001883	0.126186
bc081109_70	1210380	2304394	A	798.2	44.0	8/13/2009	0.102	0.003	0.549	0.2353955	0.024010	0.000706	0.129232
bc081109_69	1210390	2304619	A	798.6	43.6	8/13/2009	0.209	0.005	0.46	0.2358109	0.049284	0.001179	0.108473
bc081109_59	1210392	2303997	A	801.2	40.5	8/13/2009	0	0.003	1.053	0.2389168	0.000000	0.000717	0.251579
bc081109_58	1210395	2304209	A	800.4	40.3	8/13/2009	0	0.008	0.275	0.2388306	0.000000	0.001911	0.065678
bc081109_68	1210405	2304817	A	797.4	43.4	8/13/2009	0	0.01	0.296	0.2356053	0.000000	0.002356	0.069739
bc081109_67	1210410	2305005	A	796.2	43.2	8/13/2009	0	0.011	0.443	0.2353995	0.000000	0.002589	0.104282
bc081109_66	1210577	2305010	A	798.8	42.9	8/13/2009	0	0.01	1.118	0.2363923	0.000000	0.002364	0.264287
bc081109_60	1210584	2303823	A	796.6	41.0	8/13/2009	0	0.006	0.303	0.237167	0.000000	0.001423	0.071862

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
bc081109_64	1210591	2304593	A	800.0	42.3	8/13/2009	0	0.01	-0.11	0.2371978	0.000000	0.002372	0.000000
bc081109_61	1210594	2303982	A	813.4	41.4	8/13/2009	0.168	0.005	-0.003	0.2418609	0.040633	0.001209	0.000000
bc081109_65	1210595	2304797	A	799.0	42.6	8/13/2009	0	0.003	0.053	0.2366762	0.000000	0.000710	0.012544
bc081109_63	1210606	2304394	A	801.9	42.0	8/13/2009	0.03	0.006	0.176	0.2379874	0.007140	0.001428	0.041886
bc081109_62	1210613	2304207	A	797.0	41.7	8/13/2009	0	0.003	0.384	0.2367586	0.000000	0.000710	0.090915
bc081109_84	1210783	2303787	A	796.2	41.1	8/17/2009	0	0.005	-0.006	0.2369725	0.000000	0.001185	0.000000
bc081109_89	1210788	2304793	A	796.9	43.0	8/17/2009	0	0.03	0.067	0.2357555	0.000000	0.007073	0.015796
bc081109_72	1210789	2304999	A	795.9	26.2	8/17/2009	0	0.006	0.724	0.248674	0.000000	0.001492	0.180040
bc081109_86	1210794	2304197	A	796.0	41.8	8/17/2009	0	0.008	0.114	0.2363864	0.000000	0.001891	0.026948
bc081109_88	1210796	2304587	A	800.2	42.7	8/17/2009	0.029	0.012	0.823	0.2369566	0.006872	0.002843	0.195015
bc081109_85	1210797	2303980	A	795.6	41.4	8/17/2009	0	0.01	0.171	0.2365681	0.000000	0.002366	0.040453
bc081109_82	1210800	2303405	A	793.2	40.1	8/17/2009	0	0.004	0.001	0.2368333	0.000000	0.000947	0.000237
bc081109_87	1210801	2304385	A	797.3	42.2	8/17/2009	0	0.005	-0.847	0.2364722	0.000000	0.001182	0.000000
bc081109_83	1210802	2303589	A	795.8	40.6	8/17/2009	0.103	0.005	-0.003	0.2372309	0.024435	0.001186	0.000000
bc081109_74	1210975	2304793	A	801.7	29.2	8/17/2009	0	0.001	0.245	0.2480008	0.000000	0.000248	0.060760
bc081109_73	1210993	2305010	A	796.8	27.5	8/17/2009	0	0.002	0.102	0.2478787	0.000000	0.000496	0.025284
bc081109_80	1210996	2303589	A	794.0	38.6	8/17/2009	0	0.009	-0.26	0.2382128	0.000000	0.002144	0.000000
bc081109_77	1210998	2304174	A	799.3	34.0	8/17/2009	0	0.002	0.154	0.2433943	0.000000	0.000487	0.037483
bc081109_75	1210999	2304584	A	794.7	31.2	8/17/2009	1.316	0.001	1.008	0.2442199	0.321393	0.000244	0.246174
bc081109_78	1211000	2304005	A	798.3	35.6	8/17/2009	0	0	0.025	0.2418301	0.000000	0.000000	0.006046
bc081109_81	1211001	2303395	A	792.8	39.2	8/17/2009	0	0.004	0.076	0.2373959	0.000000	0.000950	0.018042
bc081109_76	1211005	2304371	A	796.6	32.4	8/17/2009	0	0.001	0.11	0.2438423	0.000000	0.000244	0.026823
bc081109_79	1211018	2303788	A	796.1	37.2	8/17/2009	0.168	0.003	0.017	0.2399203	0.040307	0.000720	0.004079
bc081109_92	1211197	2304794	A	792.5	50.9	8/17/2009	0	0.015	0.056	0.228738	0.000000	0.003431	0.012809

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
bc081109_96	1211198	2303989	A	797.7	48.9	8/17/2009	0	0.012	0.953	0.2316687	0.000000	0.002780	0.220780
bc081109_99	1211198	2303413	A	789.6	47.8	8/17/2009	0	0.002	1.584	0.2301023	0.000000	0.000460	0.364482
bc081109_98	1211205	2303573	A	792.5	47.9	8/17/2009	0	0.005	0.935	0.2308754	0.000000	0.001154	0.215869
bc081109_91	1211206	2304996	A	805.9	51.0	8/17/2009	0	0.015	0.18	0.2325339	0.000000	0.003488	0.041856
bc081109_94	1211208	2304421	A	793.1	49.7	8/17/2009	0	0.012	0.396	0.229762	0.000000	0.002757	0.090986
bc081109_95	1211209	2304193	A	796.4	49.3	8/17/2009	0	0.017	0.255	0.2310043	0.000000	0.003927	0.058906
bc081109_93	1211210	2304624	A	791.9	50.6	8/17/2009	0	0.015	0.294	0.2287766	0.000000	0.003432	0.067260
bc081109_97	1211219	2303760	A	799.1	48.2	8/17/2009	0	0.004	-0.417	0.2325808	0.000000	0.000930	0.000000
bc081109_105	1211386	2304585	A	793.8	47.3	8/17/2009	0	0.003	1.073	0.2316871	0.000000	0.000695	0.248600
bc081109_106	1211395	2304804	A	791.7	47.5	8/17/2009	0	-0.005	0.653	0.2309301	0.000000	0.000000	0.150797
bc081109_101	1211397	2303597	A	788.2	47.3	8/17/2009	0	-0.01	0.459	0.2300527	0.000000	0.000000	0.105594
bc081109_103	1211399	2304199	A	794.3	47.1	8/17/2009	0	-0.001	0.525	0.2319779	0.000000	0.000000	0.121788
bc081109_100	1211401	2303399	A	788.5	47.6	8/17/2009	0	0.001	0.031	0.229925	0.000000	0.000230	0.007128
bc081109_104	1211403	2304431	A	795.0	47.2	8/17/2009	0	-0.003	0.157	0.2321098	0.000000	0.000000	0.036441
bc081109_90	1211403	2305187	A	790.7	50.6	8/17/2009	0	0.012	0.062	0.22843	0.000000	0.002741	0.014163
bc081109_107	1211403	2305013	A	790.4	47.6	8/17/2009	0	0.002	0.114	0.230479	0.000000	0.000461	0.026275
bc081109_102	1211415	2303992	A	790.4	47.1	8/17/2009	0	-0.005	0.253	0.2308389	0.000000	0.000000	0.058402
bc081809_20	1211587	2305001	A	787.7	39.5	8/18/2009	0	0.013	0.301	0.2356424	0.000000	0.003063	0.070928
bc081809_21	1211589	2304819	A	787.8	39.6	8/18/2009	0	0.009	0.427	0.235597	0.000000	0.002120	0.100600
bc081809_25	1211590	2304006	A	790.5	40.8	8/18/2009	0	0.017	0.193	0.2355009	0.000000	0.004004	0.045452
bc081809_24	1211594	2304179	A	791.3	40.4	8/18/2009	0	0.007	0.294	0.2360399	0.000000	0.001652	0.069396
bc081809_23	1211604	2304402	A	789.9	40.1	8/18/2009	0	0.034	0.106	0.235848	0.000000	0.008019	0.025000
bc081809_22	1211618	2304600	A	786.9	39.8	8/18/2009	0	0.01	-0.009	0.2351775	0.000000	0.002352	0.000000
bc081809_26	1211788	2304005	A	796.2	41.2	8/18/2009	0.03	0.015	0.594	0.2368971	0.007107	0.003553	0.140717

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
bc081809_29	1211792	2304593	A	788.4	41.9	8/18/2009	0	-0.004	0.386	0.2340552	0.000000	0.000000	0.090345
bc081809_27	1211801	2304184	A	792.35	41.6	8/18/2009	0	0.007	0.044	0.235452	0.000000	0.001648	0.010360
bc081809_28	1211809	2304398	A	788.5	41.8	8/18/2009	0	0	0.41	0.2341592	0.000000	0.000000	0.096005
bc081809_31	1211813	2304982	A	785.9	42.2	8/18/2009	0	0.001	0.324	0.233091	0.000000	0.000233	0.075521
bc081809_30	1211820	2304778	A	786.5	42.0	8/18/2009	0	-0.002	0.842	0.233417	0.000000	0.000000	0.196537
bc081809_32	1211989	2304999	A	785.4	42.3	8/18/2009	0	0	0	0.2328689	0.000000	0.000000	0.000000
bc081809_36	1211993	2304201	A	785.8	42.8	8/18/2009	0.001	0.006	0.71	0.2326188	0.000233	0.001396	0.165159
bc081809_34	1211999	2304614	A	784.6	42.7	8/18/2009	0	0.008	0.178	0.2323371	0.000000	0.001859	0.041356
bc081809_35	1212002	2304426	A	784.5	42.8	8/18/2009	0	0.008	0.686	0.2322339	0.000000	0.001858	0.159312
bc081809_33	1212011	2304830	A	784.5	42.5	8/18/2009	11.996	0.009	21.025	0.2324547	2.788526	0.002092	4.887359
bc081809_74	1212189	2304602	A	781.8	41.5	8/19/2009	0	0.007	0.211	0.2323909	0.000000	0.001627	0.049034
bc081809_38	1212201	2305185	A	789.3	17.4	8/19/2009	0	0	0.736	0.2540811	0.000000	0.000000	0.187004
bc081809_37	1212201	2304989	A	783.0	16.4	8/19/2009	2.634	-0.002	0.777	0.2529236	0.666201	0.000000	0.196522
bc081809_39	1212213	2305385	A	784.9	18.2	8/19/2009	0	0.005	0.738	0.2519709	0.000000	0.001260	0.185955
bc081809_73	1212214	2304424	A	782.7	41.4	8/19/2009	-0.001	0.004	2.337	0.2327324	0.000000	0.000931	0.543895
bc081809_40	1212215	2305593	A	786.8	18.9	8/19/2009	0	0	0.069	0.2519755	0.000000	0.000000	0.017386
bc081809_75	1212222	2304808	A	782.0	41.6	8/19/2009	0	0.006	0.949	0.2323765	0.000000	0.001394	0.220525
bc081809_70	1212386	2304588	A	780.8	40.4	8/19/2009	0	0.007	1.123	0.2329078	0.000000	0.001630	0.261556
bc081809_67	1212389	2305223	A	784.9	39.1	8/19/2009	0	0.005	0.06	0.2351056	0.000000	0.001176	0.014106
bc081809_72	1212393	2304219	A	788.0	41.2	8/19/2009	0	0.001	0.328	0.2344574	0.000000	0.000234	0.076902
bc081809_69	1212400	2304815	A	781.0	39.9	8/19/2009	-0.07	0.006	0.253	0.2333396	0.000000	0.001400	0.059035
bc081809_66	1212404	2305419	A	785.1	38.8	8/19/2009	0	0.01	0.865	0.2353917	0.000000	0.002354	0.203614
bc081809_68	1212415	2305055	A	784.9	39.4	8/19/2009	1.174	0.003	5.842	0.2348799	0.275749	0.000705	1.372169
bc081809_65	1212416	2305590	A	785.3	38.6	8/19/2009	0	0.006	0.345	0.2356027	0.000000	0.001414	0.081283

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
bc081809_71	1212417	2304420	A	780.1	40.9	8/19/2009	0.045	0.008	8.587	0.2323285	0.010455	0.001859	1.995005
bc081809_41	1212417	2305778	A	786.7	19.6	8/19/2009	0	0.002	0.332	0.251341	0.000000	0.000503	0.083445
bc081809_42	1212565	2305776	A	787.0	20.2	8/19/2009	0.019	0.005	0.1	0.2509226	0.004768	0.001255	0.025092
bc081809_58	1212566	2304389	A	781.4	36.7	8/19/2009	0	0.006	38.562	0.2358702	0.000000	0.001415	9.095626
bc081809_64	1212591	2305578	A	783.2	38.4	8/19/2009	0	0.009	0.526	0.2351235	0.000000	0.002116	0.123675
bc081809_59	1212593	2304576	A	780.0	36.9	8/19/2009	21.883	0.008	21.791	0.2352957	5.148976	0.001882	5.127329
bc081809_43	1212600	2305974	A	786.8	21.2	8/19/2009	0	0.002	0.233	0.2500066	0.000000	0.000500	0.058252
bc081809_60	1212601	2304798	A	778.9	37.0	8/19/2009	0	0.006	0.23	0.2348881	0.000000	0.001409	0.054024
bc081809_56	1212603	2304010	A	777.7	35.5	8/19/2009	0.019	0.009	-0.794	0.235666	0.004478	0.002121	0.000000
bc081809_63	1212606	2305412	A	789.5	38.3	8/19/2009	1.167	0.004	2.199	0.2370909	0.276685	0.000948	0.521363
bc081809_61	1212607	2304980	A	781.5	37.8	8/19/2009	0.001	0.005	0.367	0.2350658	0.000235	0.001175	0.086269
bc081809_62	1212607	2305196	A	784.6	38.0	8/19/2009	12.447	0.009	7.583	0.2358466	2.935582	0.002123	1.788425
bc081809_57	1212620	2304181	A	780.4	36.0	8/19/2009	0.036	0.022	0.747	0.2361017	0.008500	0.005194	0.176368
bc081809_52	1212770	2304606	A	779.3	32.2	8/19/2009	0	0.004	0.6	0.238703	0.000000	0.000955	0.143222
bc081809_47	1212773	2305592	A	786.9	27.7	8/19/2009	0	0.002	0.041	0.2446361	0.000000	0.000489	0.010030
bc081809_46	1212775	2305804	A	787.8	24.7	8/19/2009	0	0.002	0	0.2473828	0.000000	0.000495	0.000000
bc081809_55	1212783	2304019	A	778.8	35.1	8/19/2009	0	0.006	0.225	0.2363056	0.000000	0.001418	0.053169
bc081809_53	1212784	2304409	A	778.3	33.8	8/19/2009	0	0.006	0.6	0.237154	0.000000	0.001423	0.142292
bc081809_44	1212786	2306004	A	789.5	22.4	8/19/2009	0.001	0.001	0.247	0.2498459	0.000250	0.000250	0.061712
bc081809_45	1212794	2306179	A	788.1	23.0	8/19/2009	0	0.011	0.451	0.2488976	0.000000	0.002738	0.112253
bc081809_54	1212798	2304218	A	778.5	34.6	8/19/2009	-0.029	0.004	0.288	0.2365983	0.000000	0.000946	0.068140
bc081809_48	1212801	2305402	A	786.9	28.7	8/19/2009	8.659	0.002	0.714	0.2438257	2.111287	0.000488	0.174092
bc081809_50	1212802	2304998	A	782.5	31.1	8/19/2009	13.12	0.004	9.703	0.2405497	3.156012	0.000962	2.334054
bc081809_51	1212814	2304796	A	780.0	31.7	8/19/2009	-0.015	0.002	0.487	0.2393093	0.000000	0.000479	0.116544

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
bc081809_49	1212821	2305204	A	782.5	30.3	8/19/2009	58.742	0.003	2.355	0.2411839	14.167630	0.000724	0.567988
bc081809_84	1212984	2305587	A	789.4	36.6	8/20/2009	0.001	0.004	0.102	0.2383619	0.000238	0.000953	0.024313
bc081809_88	1212989	2306390	A	792.0	38.5	8/20/2009	0	0.007	-0.059	0.237689	0.000000	0.001664	0.000000
bc081809_78	1212993	2304410	A	780.6	32.9	8/20/2009	0.094	0.001	0.599	0.2385543	0.022424	0.000239	0.142894
bc081809_83	1212994	2305393	A	787.7	36.0	8/20/2009	0	0.002	0.265	0.2383102	0.000000	0.000477	0.063152
bc081809_77	1212995	2304191	A	778.9	32.2	8/20/2009	0	0.001	0.472	0.2385805	0.000000	0.000239	0.112610
bc081809_86	1212998	2306009	A	788.8	37.9	8/20/2009	0	0.003	0.427	0.2371853	0.000000	0.000712	0.101278
bc081809_85	1213004	2305802	A	790.0	37.6	8/20/2009	0	0.001	0.089	0.2377755	0.000000	0.000238	0.021162
bc081809_81	1213006	2304986	A	780.8	34.5	8/20/2009	0.056	0	0.253	0.2373745	0.013293	0.000000	0.060056
bc081809_79	1213007	2304618	A	779.9	33.4	8/20/2009	3.388	0.002	0.572	0.2379517	0.806180	0.000476	0.136108
bc081809_80	1213007	2304801	A	779.6	34.0	8/20/2009	6.382	0.004	10.752	0.2373955	1.515058	0.000950	2.552476
bc081809_87	1213012	2306192	A	789.9	38.1	8/20/2009	0.001	0.004	0.004	0.2373635	0.000237	0.000949	0.000949
bc081809_76	1213013	2303995	A	778.9	30.7	8/20/2009	0	0.001	0.131	0.2397583	0.000000	0.000240	0.031408
bc081809_82	1213031	2305226	A	784.7	35.2	8/20/2009	0	0.005	0.161	0.2380186	0.000000	0.001190	0.038321
bc081809_89	1213176	2306573	A	793.1	39.2	8/20/2009	0.158	0.006	0.386	0.2374858	0.037523	0.001425	0.091669
bc081809_103	1213185	2304007	A	777.9	41.9	8/20/2009	0	0.008	0.098	0.230938	0.000000	0.001848	0.022632
bc081809_102	1213186	2304190	A	777.9	41.3	8/20/2009	-0.004	0.003	0.073	0.2313786	0.000000	0.000694	0.016891
bc081809_93	1213188	2305793	A	789.5	41.2	8/20/2009	0	0.006	1.982	0.2349037	0.000000	0.001409	0.465579
bc081809_90	1213192	2306390	A	793.0	39.9	8/20/2009	0	0.009	0.085	0.2369248	0.000000	0.002132	0.020139
bc081809_100	1213192	2304604	A	778.5	39.1	8/20/2009	0	0.001	1.263	0.2331886	0.000000	0.000233	0.294517
bc081809_91	1213193	2306200	A	792.0	40.5	8/20/2009	0	0.006	0.004	0.2361734	0.000000	0.001417	0.000945
bc081809_95	1213195	2305409	A	786.9	41.9	8/20/2009	0	0.008	3.499	0.2336099	0.000000	0.001869	0.817401
bc081809_94	1213197	2305614	A	787.0	41.4	8/20/2009	3.142	0.007	16.785	0.2340109	0.735262	0.001638	3.927874
bc081809_99	1213198	2304785	A	784.6	43.8	8/20/2009	0	0.029	31.734	0.2315307	0.000000	0.006714	7.347396

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
bc081809_97	1213202	2305210	A	786.5	42.6	8/20/2009	0	0.004	0.455	0.2329735	0.000000	0.000932	0.106003
bc081809_98	1213207	2304980	A	785.8	43.3	8/20/2009	0.043	0.005	0.031	0.2322512	0.009987	0.001161	0.007200
bc081809_92	1213207	2305995	A	790.3	40.8	8/20/2009	0	0.005	0.57	0.2354413	0.000000	0.001177	0.134202
bc081809_101	1213222	2304392	A	778.8	40.2	8/20/2009	0	0.005	0.274	0.2324595	0.000000	0.001162	0.063694
bc081809_96	1213233	2305358	A	786.9	42.3	8/20/2009	10.605	0.006	11.519	0.2333136	2.474291	0.001400	2.687540
bc081809_107	1213381	2304395	A	776.0	43.9	8/20/2009	0	0.007	0.326	0.2289207	0.000000	0.001602	0.074628
bc082509_07	1213381	2305804	A	788.1	28.3	8/25/2009	0	0.013	1.395	0.2445216	0.000000	0.003179	0.341108
bc082509_10	1213386	2306404	A	794.8	30.6	8/25/2009	0	0.009	1.507	0.2447331	0.000000	0.002203	0.368813
bc081809_105	1213388	2304014	A	776.1	42.7	8/20/2009	0	0.009	-0.01	0.22982	0.000000	0.002068	0.000000
bc081809_104	1213396	2303795	A	777.0	42.4	8/20/2009	0	0.011	0.119	0.2303053	0.000000	0.002533	0.027406
bc082509_06	1213397	2305610	A	788.1	27.5	8/25/2009	1.816	0.019	3.931	0.2451722	0.445233	0.004658	0.963772
bc082509_08	1213398	2305991	A	791.3	28.9	8/25/2009	1.044	0.027	3.083	0.2450267	0.255808	0.006616	0.755417
bc082509_03	1213402	2304994	A	784.6	24.9	8/25/2009	0	0.021	0.453	0.2462126	0.000000	0.005170	0.111534
bc081809_106	1213403	2304202	A	777.0	43.3	8/20/2009	0.113	0.007	0.064	0.2296503	0.025950	0.001608	0.014698
bc082509_05	1213404	2305403	A	788.1	26.5	8/25/2009	1.571	0.019	17.195	0.2459904	0.386451	0.004674	4.229805
bc082509_04	1213404	2305196	A	784.6	25.5	8/25/2009	0.448	0.029	5.969	0.245718	0.110082	0.007126	1.466690
bc082509_11	1213407	2306597	A	802.8	31.3	8/25/2009	0	0.027	3.108	0.2466281	0.000000	0.006659	0.766520
bc082509_01	1213412	2304610	A	781.1	22.5	8/25/2009	2.486	0.034	2.77	0.247104	0.614301	0.008402	0.684478
bc082509_02	1213413	2304788	A	784.6	23.8	8/25/2009	0	0.009	0.317	0.2471247	0.000000	0.002224	0.078339
bc082509_09	1213416	2306191	A	791.4	29.7	8/25/2009	0	0.01	0.547	0.2444103	0.000000	0.002444	0.133692
bc082509_17	1213580	2305781	A	793.3	34.7	8/25/2009	0	0.027	3.588	0.241018	0.000000	0.006507	0.864772
bc082509_18	1213580	2305606	A	791.2	35.3	8/25/2009	0	0.014	0.223	0.2399124	0.000000	0.003359	0.053500
bc082509_23	1213581	2304606	A	784.7	37.2	8/25/2009	0	0.011	0.949	0.2364847	0.000000	0.002601	0.224424
bc082509_19	1213587	2305385	A	790.4	35.7	8/25/2009	3.595	0.026	12.148	0.2393594	0.860497	0.006223	2.907738

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
bc082509_20	1213590	2305208	A	787.8	36.1	8/25/2009	2.172	0.034	17.391	0.2382634	0.517508	0.008101	4.143640
bc082509_16	1213590	2305987	A	794.4	34.3	8/25/2009	0	0.02	2.201	0.2416662	0.000000	0.004833	0.531907
bc082509_13	1213591	2306609	A	792.3	32.7	8/25/2009	0	0.021	1.318	0.2422882	0.000000	0.005088	0.319336
bc082509_15	1213593	2306204	A	793.7	34.0	8/25/2009	0	0.007	0.673	0.241689	0.000000	0.001692	0.162657
bc082509_25	1213597	2304201	A	777.9	38.1	8/25/2009	0	0.011	0.821	0.2337575	0.000000	0.002571	0.191915
bc082509_12	1213597	2306795	A	794.7	32.1	8/25/2009	26.96	0.009	5.77	0.2434998	6.564755	0.002191	1.404994
bc082509_22	1213600	2304812	A	784.2	36.9	8/25/2009	0	0.026	0.368	0.2365627	0.000000	0.006151	0.087055
bc082509_28	1213608	2303798	A	775.3	40.4	8/25/2009	0	0.014	0.499	0.2312672	0.000000	0.003238	0.115402
bc082509_14	1213609	2306404	A	792.4	33.1	8/25/2009	0	0.013	0.633	0.2420023	0.000000	0.003146	0.153187
bc082509_24	1213611	2304374	A	779.3	37.6	8/25/2009	0	0.025	0.47	0.234555	0.000000	0.005864	0.110241
bc082509_21	1213612	2305017	A	786.5	36.5	8/25/2009	0	0.003	0.551	0.237563	0.000000	0.000713	0.130897
bc082509_29	1213622	2303993	A	777.6	40.2	8/25/2009	0	0.023	0.704	0.2321014	0.000000	0.005338	0.163399
bc082509_82	1213747	2305962	A	800.1	24.3	8/27/2009	0	0.016	0.117	0.2515831	0.000000	0.004025	0.029435
bc082509_27	1213771	2303800	A	776.5	40.7	8/25/2009	0	0.016	0.448	0.2314038	0.000000	0.003702	0.103669
bc082509_81	1213780	2305801	A	791.6	23.4	8/27/2009	0	0.006	0.109	0.2496658	0.000000	0.001498	0.027214
bc082509_86	1213783	2306803	A	792.1	28.6	8/27/2009	0	0.001	0.223	0.2455183	0.000000	0.000246	0.054751
bc082509_26	1213787	2303996	A	776.2	40.8	8/25/2009	0	0.024	0.437	0.2312407	0.000000	0.005550	0.101052
bc082509_77	1213789	2304202	A	777.1	17.6	8/27/2009	0.724	-0.001	0.268	0.2499817	0.180987	0.000000	0.066995
bc082509_80	1213789	2305605	A	789.7	22.5	8/27/2009	0	0.006	0.056	0.2498247	0.000000	0.001499	0.013990
bc082509_85	1213792	2306611	A	793.6	28.1	8/27/2009	0	0.011	0.949	0.2463915	0.000000	0.002710	0.233826
bc082509_83	1213795	2306196	A	794.0	25.4	8/27/2009	0	0.007	0.446	0.2487451	0.000000	0.001741	0.110940
bc082509_79	1213802	2305422	A	787.0	21.2	8/27/2009	0	0.001	0.573	0.2500701	0.000000	0.000250	0.143290
bc082509_78	1213808	2304991	A	787.0	19.8	8/27/2009	0	0.006	0.323	0.2512652	0.000000	0.001508	0.081159
bc082509_84	1213816	2306424	A	797.2	27.0	8/27/2009	0	0.002	-0.122	0.2484163	0.000000	0.000497	0.000000

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
bc082509_98	1213963	2306623	A	791.2	35.4	8/27/2009	0	0.006	0.536	0.2398346	0.000000	0.001439	0.128551
bc082509_87	1214002	2306819	A	792.1	29.6	8/27/2009	0	0.005	0.426	0.2447073	0.000000	0.001224	0.104245
bc082509_99	1214003	2306424	A	793.5	35.8	8/27/2009	0		3.728	0.2402204	0.000000		0.895542
cj061709_28	1214151	2310339	A	804.8	38.3	6/17/2009	0	0.028	1.82	0.2416856	0.000000	0.006767	0.439868
cj061709_10	1214154	2310594	A	806.5	38.5	6/17/2009	0.467	0.024	0.946	0.2420407	0.113033	0.005809	0.228970
cj061709_08	1214157	2310965	A	806.0	38.3	6/17/2009	0.234	0.024	0.957	0.242046	0.056639	0.005809	0.231638
cj061709_09	1214168	2310771	A	806.2	38.4	6/17/2009	0.727	0.03	0.445	0.2420283	0.175955	0.007261	0.107703
cj061709_27	1214170	2310187	A	805.1	38.3	6/17/2009	0.48	0.017	1.061	0.2417757	0.116052	0.004110	0.256524
bc090209_01	1214171	2307597	A	804.3	27.8	9/2/2009	0	0.02	0.509	0.2499625	0.000000	0.004999	0.127231
bc082509_88	1214188	2306809	A	791.3	30.1	8/27/2009	0.229	0.003	9.569	0.2440571	0.055889	0.000732	2.335383
bc090209_26	1214191	2308190	A	793.1	43.5	9/3/2009	0	0.01	0.558	0.2342608	0.000000	0.002343	0.130718
bc090209_27	1214197	2308376	A	795.1	43.8	9/3/2009	-0.001	0.006	0.571	0.2346292	0.000000	0.001408	0.133973
bc090209_16	1214200	2309040	A	800.3	33.1	9/3/2009	0	0.037	0.325	0.244415	0.000000	0.009043	0.079435
bc090209_28	1214209	2308590	A	796.9	45.4	9/3/2009	0	0.016	0.63	0.2339792	0.000000	0.003744	0.147407
bc090209_29	1214211	2308775	A	796.3	45.9	9/3/2009	0	0.012	0.311	0.2334367	0.000000	0.002801	0.072599
bc090209_25	1214211	2307989	A	790.8	43.1	9/3/2009	0	0.027	0.248	0.2338769	0.000000	0.006315	0.058001
bc082509_89	1214216	2306604	A	790.4	30.5	8/27/2009	0	0.008	-0.222	0.2434584	0.000000	0.001948	0.000000
bc082509_97	1214217	2306418	A	791.4	34.7	8/27/2009	0	0.016	0.685	0.2404407	0.000000	0.003847	0.164702
bc090209_24	1214223	2307796	A	791.2	40.4	9/3/2009	-0.038	0.058	0.594	0.2360101	0.000000	0.013689	0.140190
cj061709_19	1214342	2310760	A	806.2	38.1	6/17/2009	0.158	0.008	0.218	0.2422616	0.038277	0.001938	0.052813
cj061709_11	1214346	2310560	A	807.7	38.6	6/17/2009	0	0.008	1.374	0.2423231	0.000000	0.001939	0.332952
bc082509_42	1214346	2309572	A	808.7	27.3	8/26/2009	0	0.008	1.163	0.2517482	0.000000	0.002014	0.292783
bc090209_15	1214350	2309113	A	802.5	31.7	9/3/2009	-0.326	0.007	-0.249	0.2462124	0.000000	0.001723	0.000000
cj061709_26	1214353	2310154	A	805.1	38.3	6/17/2009	21.669	0.02	4.21	0.2417757	5.239038	0.004836	1.017876

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
cj061709_29	1214357	2310358	A	806	38.3	6/17/2009	2.782	0.017	1.632	0.242046	0.673372	0.004115	0.395019
bc082509_38	1214361	2309946	A	813.9	23.0	8/26/2009	0	0.003	0.107	0.2570457	0.000000	0.000771	0.027504
bc082509_41	1214368	2309781	A	811.1	26.5	8/26/2009	0	0.034	0.521	0.2531694	0.000000	0.008608	0.131901
bc090209_17	1214376	2309021	A	797.0	34.6	9/3/2009	0	0.008	0.967	0.2422208	0.000000	0.001938	0.234227
bc090209_18	1214386	2308807	A	799.3	35.2	9/3/2009	0.113	0.024	0.761	0.2424471	0.027397	0.005819	0.184502
bc090209_19	1214387	2308610	A	799.8	35.7	9/3/2009	0	0.016	0.527	0.242206	0.000000	0.003875	0.127643
cj061709_07	1214388	2310914	A	806.2	38.2	6/17/2009	0.361	0.017	3.06	0.2421838	0.087428	0.004117	0.741082
bc090209_23	1214389	2307838	A	799.4	39.9	9/3/2009	0	0.018	0.338	0.238837	0.000000	0.004299	0.080727
bc082509_91	1214390	2306819	A	791.3	31.8	8/27/2009	0	0.01	0.528	0.2426966	0.000000	0.002427	0.128144
bc090209_21	1214392	2308212	A	798.5	38.8	9/3/2009	0	0.008	0.911	0.2394093	0.000000	0.001915	0.218102
bc090209_02	1214395	2307595	A	789.3	28.6	9/2/2009	0	0.004	0.636	0.2446504	0.000000	0.000979	0.155598
bc090209_22	1214400	2308015	A	796.5	39.3	9/3/2009	0	0.004	0.786	0.2384275	0.000000	0.000954	0.187404
bc090209_20	1214400	2308422	A	799.8	36.2	9/3/2009	0	0.006	0.525	0.2418145	0.000000	0.001451	0.126953
bc082509_96	1214403	2306379	A	791.3	34.3	8/27/2009	0.044	0.014	0.386	0.2407231	0.010592	0.003370	0.092919
bc082509_90	1214403	2306614	A	791.4	31.1	8/27/2009	1.133	0.004	2.895	0.2432857	0.275643	0.000973	0.704312
bc082509_43	1214545	2309544	A	804.5	27.8	8/26/2009	8.403	0.023	1.508	0.2500246	2.100957	0.005751	0.377037
cj061709_18	1214547	2310770	A	806.4	38.2	6/17/2009	0.542	0.012	0.149	0.2422439	0.131296	0.002907	0.036094
cj061709_25	1214550	2310173	A	805.6	38.3	6/17/2009	-1.703	0.023	2.601	0.2419258	0.000000	0.005564	0.629249
bc090209_14	1214551	2309192	A	808.5	29.8	9/3/2009	0	0.011	0.289	0.249609	0.000000	0.002746	0.072137
bc082509_37	1214552	2309930	A	810.8	22.2	8/26/2009	0	0.01	0.477	0.2567603	0.000000	0.002568	0.122475
cj061709_12	1214558	2310564	A	808.3	38.6	6/17/2009	0.358	0.011	1.419	0.2425031	0.086816	0.002668	0.344112
bc082509_40	1214561	2309786	A	811.1	25.6	8/26/2009	0	0.024	1.073	0.2539321	0.000000	0.006094	0.272469
cj061709_06	1214563	2310931	A	806.5	38.1	6/17/2009	0.688	0.029	3.145	0.2423517	0.166738	0.007028	0.762196
cj061709_30	1214574	2310338	A	806	38.3	6/17/2009	0	0.022	1.014	0.242046	0.000000	0.005325	0.245435

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
bc082509_69	1214588	2307976	A	789.7	42.3	8/26/2009	0.001	0.017	0.568	0.2341438	0.000234	0.003980	0.132994
bc082509_93	1214589	2306822	A	786.3	32.9	8/27/2009	0	0.014	0.312	0.2402963	0.000000	0.003364	0.074972
bc082509_95	1214592	2306401	A	790.8	33.9	8/27/2009	0	0.025	0.418	0.2408844	0.000000	0.006022	0.100690
bc082509_72	1214594	2308587	A	800.0	42.7	8/26/2009	0.012	0.021	1.235	0.2368974	0.002843	0.004975	0.292568
bc082509_70	1214594	2308193	A	792.3	42.4	8/26/2009	0	0.014	0.784	0.2348403	0.000000	0.003288	0.184115
bc082509_73	1214596	2308781	A	800.9	42.8	8/26/2009	0	0.033	0.682	0.2370888	0.000000	0.007824	0.161695
bc082509_92	1214598	2307003	A	786.2	32.4	8/27/2009	0	0.005	1.544	0.2406589	0.000000	0.001203	0.371577
bc082509_94	1214600	2306615	A	787.7	33.6	8/27/2009	0	0.009	0.181	0.2401748	0.000000	0.002162	0.043472
bc082509_71	1214604	2308380	A	799.1	42.5	8/26/2009	0.077	0.031	0.985	0.2367808	0.018232	0.007340	0.233229
bc082509_67	1214604	2307596	A	788.5	42.0	8/26/2009	0	0.056	0.871	0.2340106	0.000000	0.013105	0.203823
bc082509_74	1214605	2308995	A	801.3	42.9	8/26/2009	0.001	0.019	1.026	0.2371322	0.000237	0.004506	0.243298
bc082509_75	1214605	2309186	A	803.5	43.0	8/26/2009	-0.002	0.017	0.18	0.237708	0.000000	0.004041	0.042787
bc082509_68	1214619	2307775	A	789.1	42.2	8/26/2009	0	0.003	0.01	0.2340401	0.000000	0.000702	0.002340
bc082509_76	1214637	2309339	A	804.7	43.0	8/26/2009	0.299	0.031	2.237	0.238063	0.071181	0.007380	0.532547
bc082509_47	1214718	2309148	A	807.2	34.0	8/26/2009	0.001	0.014	0.895	0.2457999	0.000246	0.003441	0.219991
bc082509_44	1214724	2309526	A	806.5	28.5	8/26/2009	2.144	0.023	0.911	0.2500646	0.536138	0.005751	0.227809
cj061709_13	1214737	2310569	A	814.7	38.4	6/17/2009	0.376	0.015	2.333	0.2445801	0.091962	0.003669	0.570605
cj061709_05	1214746	2310962	A	805.7	38.0	6/17/2009	0.456	0.019	0.731	0.2421891	0.110438	0.004602	0.177040
cj061709_17	1214748	2310788	A	806.6	38.4	6/17/2009	0.111	0.005	0.247	0.2421484	0.026878	0.001211	0.059811
cj061709_24	1214750	2310164	A	805.6	38.3	6/17/2009	144.939	0.015	6.892	0.2419258	35.064490	0.003629	1.667353
bc082509_36	1214760	2309960	A	811.0	21.8	8/26/2009	0	0.003	1.022	0.2571719	0.000000	0.000772	0.262830
cj061709_31	1214762	2310284	A	805.7	38.3	6/17/2009	0	0.008	1.283	0.2419559	0.000000	0.001936	0.310429
cj061709_04	1214766	2311159	A	807.1	37.9	6/17/2009	0.3	0.015	1.071	0.242688	0.072806	0.003640	0.259919
bc082509_46	1214774	2309378	A	807.3	33.3	8/26/2009	0	0.017	0.404	0.2463919	0.000000	0.004189	0.099542

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
bc090209_03	1214782	2307202	A	788.6	30.3	9/2/2009	0	0.002	0.036	0.2430641	0.000000	0.000486	0.008750
bc090209_07	1214787	2306405	A	786.2	33.3	9/2/2009	0	0.004	-0.141	0.2399521	0.000000	0.000960	0.000000
bc082509_60	1214787	2307986	A	792.3	40.3	8/26/2009	0.001	0.027	0.261	0.2364136	0.000236	0.006383	0.061704
bc082509_53	1214788	2308214	A	796.7	37.6	8/26/2009	-0.001	0.065	3.138	0.239792	0.000000	0.015586	0.752467
bc082509_50	1214790	2308608	A	803.4	35.9	8/26/2009	0	0.032	0.239	0.2431388	0.000000	0.007780	0.058110
bc082509_39	1214797	2309809	A	810.4	24.9	8/26/2009	0	-0.001	0.232	0.2543088	0.000000	0.000000	0.059000
bc082509_48	1214799	2308998	A	805.9	34.6	8/26/2009	0	0.007	5.37	0.2449256	0.000000	0.001714	1.315251
bc090209_04	1214799	2307024	A	784.2	31.0	9/2/2009	-0.094	0.008	0.764	0.2411516	0.000000	0.001929	0.184240
bc082509_52	1214800	2308398	A	797.6	36.9	8/26/2009	-0.396	0.028	1.032	0.2406049	0.000000	0.006737	0.248304
bc082509_66	1214802	2307591	A	785.5	41.9	8/26/2009	0	0.016	0.19	0.2331942	0.000000	0.003731	0.044307
bc082509_65	1214805	2307390	A	787.6	41.8	8/26/2009	0	0.008	2	0.2338919	0.000000	0.001871	0.467784
bc082509_49	1214808	2308821	A	804.1	35.4	8/26/2009	0	0.041	0.434	0.243745	0.000000	0.009994	0.105785
bc082509_59	1214813	2307828	A	793.8	40.1	8/26/2009	0.049	0.063	0.29	0.2370124	0.011614	0.014932	0.068734
bc090209_05	1214814	2306822	A	785.0	32.1	9/2/2009	0.001	0.012	1.159	0.2405277	0.000241	0.002886	0.278772
bc090209_06	1214827	2306616	A	786.2	32.8	9/2/2009	0	0.026	-0.49	0.2403442	0.000000	0.006249	0.000000
cj061709_14	1214937	2310590	A	807.9	38.4	6/17/2009	0.594	0.028	0.72	0.2425387	0.144068	0.006791	0.174628
bc082509_35	1214942	2309793	A	823.0	20.8	8/26/2009	0.307	0.004	0.232	0.261865	0.080393	0.001047	0.060753
cj061709_20	1214942	2310968	A	806.9	38.3	6/17/2009	0.789	0.02	0.47	0.2423162	0.191187	0.004846	0.113889
bc082509_45	1214951	2309570	A	820.0	29.2	8/26/2009	0	0.032	0.259	0.2536618	0.000000	0.008117	0.065698
bc082509_30	1214951	2309963	A	811.3	15.7	8/26/2009	0	0.008	0.63	0.2627001	0.000000	0.002102	0.165501
cj061709_23	1214953	2310161	A	805.0	38.3	6/17/2009	119.71	0.033	16.579	0.2417456	28.939370	0.007978	4.007901
cj061709_03	1214953	2311150	A	807.1	37.7	6/17/2009	0.505	0.024	1.317	0.2428441	0.122636	0.005828	0.319826
bc082509_51	1214980	2308405	A	799.3	36.4	8/26/2009	0	0.065	0.603	0.2415072	0.000000	0.015698	0.145629
bc090209_09	1214986	2306591	A	787.4	34.1	9/2/2009	0.001	0.002	-4.479	0.2396926	0.000240	0.000479	0.000000

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
bc090209_08	1214990	2306391	A	788.4	33.7	9/2/2009	0	0.005	0.333	0.2403099	0.000000	0.001202	0.080023
bc090209_11	1214992	2307006	A	786.6	34.8	9/2/2009	-0.032	0.004	0.579	0.2389048	0.000000	0.000956	0.138326
bc090209_12	1214993	2307174	A	783.6	35.1	9/2/2009	4.8	0.007	5.441	0.237762	1.141258	0.001664	1.293663
bc082509_54	1214995	2308189	A	795.8	38.4	8/26/2009	0	0.005	0.759	0.2389061	0.000000	0.001195	0.181330
bc082509_64	1214997	2307405	A	798.7	41.6	8/26/2009	-0.001	0.066	0.6	0.237339	0.000000	0.015664	0.142403
bc082509_55	1214999	2308007	A	793.9	39.7	8/26/2009	0	0.025	0.644	0.2373454	0.000000	0.005934	0.152850
bc082509_61	1215002	2307628	A	794.4	40.6	8/26/2009	0.381	0.042	0.651	0.2368136	0.090226	0.009946	0.154166
bc082509_58	1215003	2307798	A	792.7	40.0	8/26/2009	0	0.023	0.817	0.2367596	0.000000	0.005445	0.193433
bc090209_10	1215024	2306798	A	785.0	34.5	9/2/2009	0	0.006	0.581	0.2386513	0.000000	0.001432	0.138656
bc090209_13	1215037	2307155	A	786.9	36.1	9/2/2009	-0.004	0.007	3.787	0.2379912	0.000000	0.001666	0.901273
bc082509_31	1215145	2309954	A	811.9	16.6	8/26/2009	0	0.005	0.135	0.2620778	0.000000	0.001310	0.035381
cj061709_16	1215148	2310798	A	807.9	38.5	6/17/2009	0.254	0.012	1.333	0.2424608	0.061585	0.002910	0.323200
cj061709_15	1215150	2310580	A	807.5	38.4	6/17/2009	0.318	0.007	1.007	0.2424186	0.077089	0.001697	0.244116
bc082509_34	1215153	2309774	A	811.6	19.4	8/26/2009	0	0.005	0.237	0.2594735	0.000000	0.001297	0.061495
cj061709_22	1215156	2310178	A	805.0	38.5	6/17/2009	3.735	0.016	6.551	0.2415905	0.902340	0.003865	1.582659
bc082509_63	1215164	2307407	A	794.2	41.4	8/26/2009	0	0.027	2.441	0.2361518	0.000000	0.006376	0.576447
cj061709_02	1215164	2310960	A	807.2	37.2	6/17/2009	0.619	0.027	4.027	0.2432655	0.150581	0.006568	0.979630
bc082509_56	1215177	2307990	A	794.0	39.7	8/26/2009	0.003	0.042	1.529	0.2373753	0.000712	0.009970	0.362947
bc082509_57	1215210	2307810	A	794.3	39.8	8/26/2009	0	0.023	0.734	0.2373891	0.000000	0.005460	0.174244
bc082509_62	1215212	2307596	A	791.7	41.0	8/26/2009	0.067	0.012	0.67	0.2357082	0.015792	0.002828	0.157925
bc082509_33	1215336	2309779	A	812.2	18.4	8/26/2009	0	0.003	0.73	0.260556	0.000000	0.000782	0.190206
bc082509_32	1215340	2309952	A	811.4	17.4	8/26/2009	0.53	0.012	1.802	0.2611952	0.138433	0.003134	0.470674
cj061709_01	1215346	2310751	A	807.4	36.1	6/17/2009	0	0.016	1.319	0.2441913	0.000000	0.003907	0.322088
cj061709_47	1215352	2311358	A	803.9	27.9	6/18/2009	0.293	0.001	0.446	0.2497552	0.073178	0.000250	0.111391

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
cj061709_21	1215355	2310609	A	806.1	38.0	6/17/2009	0.457	0.014	1.771	0.2423094	0.110735	0.003392	0.429130
cj061709_49	1215538	2311770	A	802.8	29.5	6/18/2009	0.453	0.014	0.324	0.2480949	0.112387	0.003473	0.080383
cj061709_46	1215548	2311171	A	803.1	26.1	6/18/2009	0	0.007	2.185	0.2510074	0.000000	0.001757	0.548451
cj061709_45	1215552	2311359	A	801.9	26.0	6/18/2009	-0.577	0.005	0.662	0.2507161	0.000000	0.001254	0.165974
cj061709_48	1215553	2311562	A	803.9	28.9	6/18/2009	0.551	0.017	1.095	0.2489283	0.137159	0.004232	0.272577
cj061709_32	1215559	2311037	A	805.1	15.7	6/18/2009	0	0.007	0.576	0.2606925	0.000000	0.001825	0.150159
cj061709_50	1215732	2311754	A	800.8	30.2	6/18/2009	0	0.011	0.232	0.2469057	0.000000	0.002716	0.057282
cj061709_41	1215743	2311159	A	805.1	24.2	6/18/2009	0	0.001	0.108	0.2532404	0.000000	0.000253	0.027350
cj061709_34	1215749	2310780	A	805.0	17.3	6/18/2009	0	-0.001	0.305	0.2592242	0.000000	0.000000	0.079063
cj070709_01	1215754	2311555	A	805.6	31.8	7/7/2009	0	0.009	0.222	0.2470825	0.000000	0.002224	0.054852
cj061709_44	1215757	2311361	A	802.1	25.8	6/18/2009	0	0.014	2.024	0.2509465	0.000000	0.003513	0.507916
cj061709_33	1215757	2310950	A	804.7	16.5	6/18/2009	0	0	0.18	0.2598433	0.000000	0.000000	0.046772
cj061709_43	1215942	2311352	A	805.7	25.6	6/18/2009	0.001	0.012	1.046	0.2522415	0.000252	0.003027	0.263845
cj061709_35	1215943	2310759	A	806.6	18.8	6/18/2009	0.136	0.019	0.766	0.258405	0.035143	0.004910	0.197938
cj061709_40	1215943	2310954	A	806.3	23.7	6/18/2009	0.152	0.015	1.037	0.254045	0.038615	0.003811	0.263445
cj061709_51	1215948	2311958	A	799.0	30.7	6/18/2009	0	0.008	0.527	0.2459454	0.000000	0.001968	0.129613
cj070709_02	1215949	2311582	A	800.7	33.4	7/7/2009	0.058	0.005	0.399	0.2442978	0.014169	0.001221	0.097475
cj061709_127	1215951	2311756	A	800.9	36.9	6/24/2009	0	0.004	0.193	0.2416004	0.000000	0.000966	0.046629
cj061709_42	1215951	2311174	A	804.2	24.5	6/18/2009	46.695	0.004	10.721	0.2527024	11.799940	0.001011	2.709222
cj061709_36	1215952	2310578	A	806.8	19.6	6/18/2009	0	0.004	0.996	0.2577627	0.000000	0.001031	0.256732
cj061709_105	1216131	2311179	A	808.6	19.0	6/24/2009	0	0.007	0.854	0.2588683	0.000000	0.001812	0.221074
cj061709_37	1216147	2310768	A	807.3	20.8	6/18/2009	0	0.003	0.265	0.2568695	0.000000	0.000771	0.068070
cj061709_38	1216147	2310950	A	807.0	22.0	6/18/2009	0.337	0.012	1.366	0.2557301	0.086181	0.003069	0.349327
cj061709_126	1216152	2311747	A	800.9	36.7	6/24/2009	0	0.003	0.282	0.2417564	0.000000	0.000725	0.068175

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
cj070709_03	1216154	2311570	A	799.5	34.9	7/7/2009	0.876	0.024	1.155	0.2427439	0.212644	0.005826	0.280369
cj061709_52	1216160	2311960	A	796.7	31.1	6/18/2009	0.266	0.015	0.516	0.244915	0.065147	0.003674	0.126376
cj070709_09	1216186	2311363	A	803.5	42.8	7/7/2009	5.344	0.021	3.05	0.2378585	1.271116	0.004995	0.725468
cj061709_106	1216344	2311366	A	808.8	20.0	6/24/2009	-0.17	0.015	0.748	0.2580491	0.000000	0.003871	0.193021
cj070709_05	1216345	2311754	A	803.6	39.5	7/7/2009	7.844	0.021	6.513	0.240399	1.885689	0.005048	1.565719
cj061709_53	1216354	2312153	A	796.7	31.6	6/18/2009	0.335	0.009	0.647	0.2445131	0.081912	0.002201	0.158200
cj061709_39	1216354	2310966	A	806.5	22.7	6/18/2009	0	0.004	0.429	0.254967	0.000000	0.001020	0.109381
cj070709_04	1216356	2311557	A	800.7	36.6	7/7/2009	0	0.013	0.359	0.241774	0.000000	0.003143	0.086797
cj061709_125	1216383	2311959	A	803.2	36.1	6/24/2009	0	0.005	0.327	0.242921	0.000000	0.001215	0.079435
cj061709_107	1216538	2311568	A	807.8	20.8	6/24/2009	0	0.014	0.673	0.2570286	0.000000	0.003598	0.172980
cj061709_124	1216543	2311966	A	800.6	35.6	6/24/2009	0	0.009	0.047	0.2425268	0.000000	0.002183	0.011399
cj070709_06	1216548	2311772	A	799.8	41.6	7/7/2009	0	0.009	0.193	0.2376658	0.000000	0.002139	0.045870
cj061709_54	1216556	2312168	A	796.8	31.9	6/18/2009	0	0.006	0.471	0.2443033	0.000000	0.001466	0.115067
cj070709_08	1216556	2311693	A	800.0	42.6	7/7/2009	102.38	0.009	13.703	0.2369724	24.261230	0.002133	3.247233
cj070709_07	1216745	2311954	A	802.5	42.0	7/7/2009	0	0.023	0.769	0.2381655	0.000000	0.005478	0.183149
cj061709_108	1216750	2311748	A	807.9	21.6	6/24/2009	0.011	0.01	0.498	0.2563627	0.002820	0.002564	0.127669
cj061709_55	1216751	2312356	A	796.2	32.2	6/18/2009	0.893	0.029	0.342	0.2438795	0.217784	0.007073	0.083407
cj061709_123	1216757	2312162	A	801.5	35.1	6/24/2009	-0.226	0.013	2.261	0.2431933	0.000000	0.003162	0.549860
cj061709_109	1216939	2311956	A	807.0	22.5	6/24/2009	0	-0.003	1.663	0.2552976	0.000000	0.000000	0.424560
cj061709_122	1216950	2312151	A	801.5	34.7	6/24/2009	0	0.01	0.602	0.2435093	0.000000	0.002435	0.146593
cj061709_57	1216950	2312563	A	795.9	32.5	6/18/2009	0.934	0.03	0.822	0.2435484	0.227474	0.007306	0.200197
cj061709_56	1216956	2312365	A	796.2	32.4	6/18/2009	0	0.008	0.21	0.2437199	0.000000	0.001950	0.051181
cj061709_110	1216986	2311996	A	805.5	22.9	6/24/2009	9.851	0.009	2.021	0.2544788	2.506871	0.002290	0.514302
cj061709_121	1217120	2312390	A	799.5	34.0	6/24/2009	0	0.003	0.279	0.2434552	0.000000	0.000730	0.067924

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
cj061709_111	1217122	2312159	A	804.5	23.4	6/24/2009	0	0.004	-0.05	0.2537343	0.000000	0.001015	0.000000
cj061709_59	1217146	2312758	A	796.3	32.8	6/18/2009	0	0.031	1.05	0.2434318	0.000000	0.007546	0.255603
cj061709_58	1217151	2312574	A	795.9	32.7	6/18/2009	0	0.008	0.204	0.2433891	0.000000	0.001947	0.049651
cj061709_112	1217334	2312350	A	803.8	23.9	6/24/2009	0	0.005	1.426	0.2530868	0.000000	0.001265	0.360902
cj061709_60	1217347	2312750	A	795.5	32.9	6/18/2009	0	0.032	0.642	0.2431078	0.000000	0.007779	0.156075
cj061709_61	1217350	2312968	A	795.4	33.2	6/18/2009	0	0.011	0.217	0.2428392	0.000000	0.002671	0.052696
cj061709_120	1217351	2312559	A	802.8	33.5	6/24/2009	0	0.011	0.486	0.2448587	0.000000	0.002693	0.119001
cj061709_62	1217358	2313147	A	795.1	33.4	6/18/2009	0	0.008	-0.005	0.2425893	0.000000	0.001941	0.000000
cj061709_113	1217514	2312561	A	803.4	27.3	6/24/2009	0	0	0.71	0.2500983	0.000000	0.000000	0.177570
cj061709_114	1217539	2312768	A	801.0	28.0	6/24/2009	0	0.001	2.072	0.2487716	0.000000	0.000249	0.515455
cj061709_63	1217545	2313167	A	794.5	35.0	6/18/2009	0	0.002	0.092	0.2411475	0.000000	0.000482	0.022186
cj061709_115	1217551	2312968	A	800.1	28.3	6/24/2009	0	0.005	0.721	0.2482448	0.000000	0.001241	0.178984
cj061709_119	1217561	2312352	A	801.7	31.8	6/24/2009	0	0	0.012	0.2458863	0.000000	0.000000	0.002951
cj061709_117	1217741	2312578	A	799.4	29.3	6/24/2009	0	0.003	4.297	0.2472075	0.000000	0.000742	1.062251
cj061709_65	1217747	2312958	A	794.3	35.1	6/18/2009	0	0.005	0.019	0.2410086	0.000000	0.001205	0.004579
cj061709_64	1217752	2313165	A	794.5	35.0	6/18/2009	0	0.005	0.02	0.2411475	0.000000	0.001206	0.004823
cj061709_116	1217753	2312767	A	799.4	28.6	6/24/2009	0.002	-0.003	0.396	0.247781	0.000496	0.000000	0.098121
cj061709_118	1217759	2312356	A	802.1	31.0	6/24/2009	0.136	0.028	0.337	0.2466561	0.033545	0.006906	0.083123
cj061709_82	1217994	2313401	A	794.2	36.8	6/18/2009	0.569	0.013	0.445	0.2396566	0.136365	0.003116	0.106647
cj061709_66	1217995	2312996	A	795.5	35.3	6/18/2009	0	0.007	-0.15	0.2412162	0.000000	0.001689	0.000000
cj061709_81	1218003	2313196	A	793.9	37.2	6/18/2009	0	0.016	0.538	0.2392573	0.000000	0.003828	0.128720
cj061709_84	1218005	2313606	A	793.1	37.1	6/18/2009	0.257	0.026	0.251	0.2390932	0.061447	0.006216	0.060012
cj061709_67	1218194	2312997	A	794.4	35.3	6/18/2009	0.53	0.004	0.005	0.2408827	0.127668	0.000964	0.001204
cj061709_83	1218199	2313399	A	794.2	36.9	6/18/2009	0.481	0.024	0.357	0.2395793	0.115238	0.005750	0.085530

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
cj061709_85	1218202	2313595	A	793.2	37.2	6/18/2009	0.533	0.022	0.452	0.2390463	0.127412	0.005259	0.108049
cj061709_104	1218203	2313800	A	792.3	36.6	6/19/2009	0.049	0.015	0.327	0.2392376	0.011723	0.003589	0.078231
cj061709_80	1218210	2313202	A	801.1	37.1	6/18/2009	0	0.024	1.033	0.241505	0.000000	0.005796	0.249475
cj061709_68	1218395	2313001	A	794.4	35.7	6/18/2009	0	0.006	0.027	0.2405707	0.000000	0.001443	0.006495
cj061709_86	1218396	2313596	A	793.1	37.4	6/18/2009	0.908	0.032	0.339	0.2388623	0.216887	0.007644	0.080974
cj061709_79	1218400	2313403	A	793.2	37.2	6/18/2009	0	0.009	0.042	0.2390463	0.000000	0.002151	0.010040
cj061709_103	1218402	2313795	A	792.8	36.3	6/19/2009	0	0.02	0.175	0.2396207	0.000000	0.004792	0.041934
cj061709_69	1218404	2313188	A	795.4	36.0	6/18/2009	0	0.007	-0.047	0.2406398	0.000000	0.001684	0.000000
cj061709_70	1218590	2313196	A	794.6	36.3	6/18/2009	0.539	0.007	-0.064	0.2401647	0.129449	0.001681	0.000000
cj061709_102	1218594	2313995	A	791.8	36.0	6/19/2009	0	0.033	0.326	0.2395507	0.000000	0.007905	0.078094
cj061709_87	1218601	2313603	A	793.1	37.5	6/18/2009	0.904	0.037	0.222	0.2387854	0.215862	0.008835	0.053010
cj061709_101	1218601	2313797	A	791.8	35.6	6/19/2009	0.298	0.039	0.281	0.239861	0.071479	0.009355	0.067401
cj061709_78	1218602	2313406	A	792.8	37.2	6/18/2009	0	0.008	-0.006	0.2389258	0.000000	0.001911	0.000000
cj061709_99	1218791	2314003	A	791.7	35.0	6/19/2009	0	0.008	0.153	0.2402977	0.000000	0.001922	0.036766
cj061709_71	1218798	2313212	A	794.6	36.6	6/18/2009	0	0.025	0.999	0.2399321	0.000000	0.005998	0.239692
cj061709_100	1218799	2313794	A	791.6	35.3	6/19/2009	0.002	0.023	0.634	0.2400336	0.000480	0.005521	0.152181
cj061709_98	1218804	2314194	A	791.0	34.7	6/19/2009	0.062	0.006	0.401	0.2403192	0.014900	0.001442	0.096368
cj061709_88	1218804	2313601	A	792.8	37.6	6/18/2009	0.666	0.033	1.502	0.2386182	0.158920	0.007874	0.358405
cj061709_77	1218806	2313395	A	793.3	37.2	6/18/2009	0	0.011	0.095	0.2390765	0.000000	0.002630	0.022712
cj061709_73	1218997	2313395	A	793.9	36.8	6/18/2009	-0.002	0.038	1.177	0.239566	0.000000	0.009104	0.281969
cj061709_97	1218999	2313995	A	791.6	34.3	6/19/2009	0.001	0.009	0.994	0.2408144	0.000241	0.002167	0.239369
cj061709_95	1219001	2314394	A	790.0	33.7	6/19/2009	0	0.008	0.817	0.2407975	0.000000	0.001926	0.196732
cj061709_76	1219004	2313595	A	792.5	37.2	6/18/2009	0	0.029	1.417	0.2388354	0.000000	0.006926	0.338430
cj061709_72	1219004	2313195	A	793.8	36.7	6/18/2009	-0.001	0.019	0.098	0.2396132	0.000000	0.004553	0.023482

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
cj061709_96	1219005	2314196	A	791.3	34.0	6/19/2009	0	0.007	0.254	0.2409582	0.000000	0.001687	0.061203
cj061709_89	1219005	2313796	A	792.0	29.1	6/19/2009	0	0.028	1.125	0.2450812	0.000000	0.006862	0.275716
cj061709_90	1219196	2313795	A	791.2	30.6	6/19/2009	0.082	0.014	0.8	0.2436246	0.019977	0.003411	0.194900
cj061709_93	1219196	2314401	A	791.3	33.0	6/19/2009	0	0.024	0.292	0.2417453	0.000000	0.005802	0.070590
cj061709_75	1219197	2313593	A	793.3	37.1	6/18/2009	0	0.039	0.82	0.2391535	0.000000	0.009327	0.196106
cj061709_94	1219198	2314594	A	790.2	33.4	6/19/2009	0	0.01	0.214	0.2410942	0.000000	0.002411	0.051594
cj061709_92	1219202	2314191	A	792.8	32.3	6/19/2009	0	0.01	0.066	0.2427586	0.000000	0.002428	0.016022
cj061709_91	1219204	2314014	A	792.3	31.6	6/19/2009	0.027	0.015	0.37	0.2431628	0.006565	0.003647	0.089970
cj061709_74	1219204	2313396	A	792.9	36.9	6/18/2009	0	0.012	0.023	0.2391871	0.000000	0.002870	0.005501
federal_34_080609_13	1219670	2320194	A	988.9	40.3	8/6/2009	0	0.005	1.006	0.2950769	0.000000	0.001475	0.296847
federal_34_080609_14	1219672	2320093	A	1206.0	40.5	8/6/2009	0	0.006	0.82	0.3596277	0.000000	0.002158	0.294895
federal_34_080609_04	1219678	2319888	A	794.8	38.7	8/6/2009	0	0.003	0.139	0.2383764	0.000000	0.000715	0.033134
federal_34_080609_05	1219679	2319995	A	792.5	38.8	8/6/2009	0	0.003	0.276	0.2376104	0.000000	0.000713	0.065580
federal_34_080609_15	1219778	2320102	A	1205.6	40.6	8/6/2009	0	0.003	2.091	0.3593938	0.000000	0.001078	0.751493
federal_34_080609_12	1219779	2320192	A	983.8	40.1	8/6/2009	0	0.01	1.324	0.2937425	0.000000	0.002937	0.388915
federal_34_080609_06	1219780	2319992	A	794.1	38.8	8/6/2009	0	0.004	0.319	0.2380901	0.000000	0.000952	0.075951
federal_34_080609_03	1219781	2319891	A	792.0	38.6	8/6/2009	0	0.002	0.23	0.2376128	0.000000	0.000475	0.054651
federal_34_080609_02	1219878	2319891	A	791.8	38.6	8/6/2009	0	0.003	0.153	0.2375528	0.000000	0.000713	0.036346
federal_34_080609_16	1219880	2320090	A	1205.8	40.8	8/6/2009	0	-0.01	2.211	0.3592245	0.000000	0.000000	0.794245
federal_34_080609_11	1219883	2320192	A	858.1	39.8	8/6/2009	0	-0.001	0.074	0.2564567	0.000000	0.000000	0.018978

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
federal_34_080609_07	1219886	2319993	A	792.4	38.9	8/6/2009	0	0.001	0.221	0.2375043	0.000000	0.000238	0.052488
federal_34_080609_10	1219970	2320182	A	800.6	39.5	8/6/2009	0	0.005	0.109	0.2395015	0.000000	0.001198	0.026106
federal_34_080609_09	1219971	2320089	A	791.8	39.2	8/6/2009	0	0.001	0.267	0.2370965	0.000000	0.000237	0.063305
federal_34_080609_08	1219978	2319994	A	791.8	39.0	8/6/2009	0	0.003	0.264	0.2372484	0.000000	0.000712	0.062634
federal_34_080609_01	1219990	2319894	A	791.8	38.4	8/6/2009	0	0.01	0.437	0.2377053	0.000000	0.002377	0.103877
baird_080609_12	1230525	2330596	A	789.5	34.9	8/6/2009	0.001	0.002	0.625	0.2397077	0.000240	0.000479	0.149817
baird_080609_09	1230526	2330795	A	788.2	33.4	8/6/2009	-0.017	0.01	0.544	0.240484	0.000000	0.002405	0.130823
baird_080609_08	1230530	2330922	A	788.3	33.0	8/6/2009	0	0.003	0.305	0.2408288	0.000000	0.000722	0.073453
baird_080609_11	1230545	2330701	A	797.5	34.4	8/6/2009	0	0.006	0.589	0.2425303	0.000000	0.001455	0.142850
baird_080609_13	1230612	2330597	A	788.7	35.4	8/6/2009	0	0.001	0.369	0.2390768	0.000000	0.000239	0.088219
baird_080609_14	1230619	2330684	A	787.4	35.7	8/6/2009	0.001	0.002	0.291	0.2384509	0.000238	0.000477	0.069389
baird_080609_10	1230632	2330793	A	788.5	33.9	8/6/2009	0	0.004	0.096	0.2401838	0.000000	0.000961	0.023058
baird_080609_07	1230634	2330925	A	787.9	32.5	8/6/2009	0.026	0.004	0.336	0.2411003	0.006269	0.000964	0.081010
baird_080609_02	1230693	2330750	A	787.5	28.4	8/6/2009	0	-0.001	0.265	0.2442544	0.000000	0.000000	0.064727
baird_080609_06	1230731	2330917	A	787.9	31.9	8/6/2009	0	0.001	0.166	0.2415746	0.000000	0.000242	0.040101
baird_080609_03	1230732	2330808	A	787.5	29.9	8/6/2009	0	0.003	0.052	0.2430454	0.000000	0.000729	0.012638
baird_080609_18	1230734	2330595	A	787.8	36.5	8/6/2009	0.019	0.007	0.422	0.2379556	0.004521	0.001666	0.100417
baird_080609_15	1230736	2330691	A	787.9	35.9	8/6/2009	0.063	0.003	0.587	0.2384479	0.015022	0.000715	0.139969
baird_080609_17	1230821	2330600	A	788.6	36.3	8/6/2009	0.031	0.002	0.382	0.2383512	0.007389	0.000477	0.091050
baird_080609_04	1230833	2330804	A	789.1	30.6	8/6/2009	-0.024	0.002	0.399	0.2429779	0.000000	0.000486	0.096948
baird_080609_05	1230839	2330916	A	787.8	31.4	8/6/2009	0	0.002	0.297	0.2419405	0.000000	0.000484	0.071856
baird_080609_16	1230839	2330695	A	788.6	36.2	8/6/2009	-0.028	0.002	0.354	0.2384283	0.000000	0.000477	0.084404

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
fr070809_33	1234543	2331563	A	787.7	42.4	7/8/2009	0	0.011	0.23	0.2334768	0.000000	0.002568	0.053700
fr070809_52	1234544	2330748	A	786.7	25.6	7/9/2009	0.008	0.002	0.699	0.2462932	0.001970	0.000493	0.172159
fr070809_51	1234552	2330968	A	786.9	25.0	7/9/2009	0.017	0.001	2.084	0.2468515	0.004196	0.000247	0.514439
fr070809_43	1234553	2331161	A	786.5	44.4	7/8/2009	0	0.019	0.917	0.2316529	0.000000	0.004401	0.212426
fr070809_42	1234564	2331310	A	785.8	44.3	7/8/2009	0.123	0.027	3.925	0.2315196	0.028477	0.006251	0.908715
fr070809_58	1234592	2330597	A	786.5	30.8	7/9/2009	-0.002	0.005	1.06	0.242018	0.000000	0.001210	0.256539
fr070809_59	1234600	2330400	A	786.5	31.4	7/9/2009	0.116	0.004	0.661	0.2415412	0.028019	0.000966	0.159659
fr070809_44	1234745	2331158	A	788.3	20.6	7/9/2009	0	0	1.391	0.2509948	0.000000	0.000000	0.349134
fr070809_50	1234748	2330963	A	786.6	24.4	7/9/2009	0	0.003	0.481	0.247255	0.000000	0.000742	0.118930
fr070809_41	1234751	2331357	A	785.4	44.2	7/8/2009	0	0.016	0.839	0.2314747	0.000000	0.003704	0.194207
fr070809_34	1234754	2331561	A	786.6	42.6	7/8/2009	0	0.006	0.584	0.2330031	0.000000	0.001398	0.136074
fr070809_32	1234756	2331755	A	788.2	42.3	7/8/2009	0	0.007	0.402	0.2336991	0.000000	0.001636	0.093947
fr070809_53	1234766	2330754	A	786.7	27.0	7/9/2009	1.856	0.002	3.35	0.2451444	0.454988	0.000490	0.821234
fr070809_57	1234797	2330598	A	786.6	30.3	7/9/2009	0	0.005	1.103	0.2424476	0.000000	0.001212	0.267420
fr070809_01	1234939	2331959	A	789.0	18.1	7/8/2009	0	0	0.012	0.2533741	0.000000	0.000000	0.003040
fr070809_04	1234944	2332566	A	794.6	21.6	7/8/2009	0	0.004	0.45	0.2521424	0.000000	0.001009	0.113464
fr070809_54	1234945	2330752	A	786.0	27.8	7/9/2009	0	0.002	0.441	0.2442752	0.000000	0.000489	0.107725
fr070809_49	1234950	2330970	A	787.5	24.0	7/9/2009	0	0.004	1.785	0.2478711	0.000000	0.000991	0.442450
fr070809_06	1234951	2332968	A	789.5	23.6	7/8/2009	0	-0.002	0.503	0.2488356	0.000000	0.000000	0.125164
fr070809_40	1234951	2331360	A	786.1	44.0	7/8/2009	-0.028	0.022	0.999	0.2318271	0.000000	0.005100	0.231595
fr070809_31	1234953	2331780	A	788.5	42.1	7/8/2009	0.04	0.008	0.183	0.2339364	0.009357	0.001871	0.042810
fr070809_02	1234953	2332163	A	791.6	19.6	7/8/2009	0.463	0.014	1.785	0.2529065	0.117096	0.003541	0.451438
fr070809_03	1234955	2332355	A	789.7	20.4	7/8/2009	0.038	0.002	2.416	0.2516119	0.009561	0.000503	0.607894
fr070809_45	1234956	2331152	A	788.3	21.6	7/9/2009	1.368	0.002	2.197	0.2501433	0.342196	0.000500	0.549565

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
fr070809_05	1234961	2332765	A	790.2	22.7	7/8/2009	0	0.003	0.446	0.2498139	0.000000	0.000749	0.111417
fr070809_35	1234963	2331548	A	786.4	42.8	7/8/2009	0	0.011	1.226	0.2327964	0.000000	0.002561	0.285408
fr070809_56	1234992	2330598	A	786.6	29.6	7/9/2009	0	0.003	0.677	0.2430082	0.000000	0.000729	0.164517
fr070809_18	1235127	2332764	A	787.4	33.5	7/8/2009	0	0.003	0.697	0.2401616	0.000000	0.000720	0.167393
fr070809_20	1235139	2332356	A	789.4	34.0	7/8/2009	0.208	0.021	0.726	0.2403797	0.049999	0.005048	0.174516
fr070809_07	1235143	2332974	A	788.3	24.3	7/8/2009	0.053	0	0.22	0.2478727	0.013137	0.000000	0.054532
fr070809_36	1235148	2331527	A	787.0	43.0	7/8/2009	-0.021	0.007	1.464	0.2328266	0.000000	0.001630	0.340858
fr070809_21	1235149	2332160	A	795.1	37.5	7/8/2009	0	0.018	2.266	0.2393875	0.000000	0.004309	0.542452
fr070809_38	1235149	2331371	A	785.8	43.7	7/8/2009	-0.325	0.02	0.476	0.231958	0.000000	0.004639	0.110412
fr070809_26	1235151	2331958	A	789.4	39.5	7/8/2009	0	0.012	0.037	0.236151	0.000000	0.002834	0.008738
fr070809_48	1235155	2330965	A	787.5	23.4	7/9/2009	0.01	0.001	0.513	0.2483726	0.002484	0.000248	0.127415
fr070809_46	1235157	2331171	A	788.3	22.2	7/9/2009	0	0.008	0.547	0.2496351	0.000000	0.001997	0.136550
fr070809_19	1235158	2332521	A	789.4	33.7	7/8/2009	0	0.005	1.688	0.2406147	0.000000	0.001203	0.406158
fr070809_30	1235162	2331760	A	786.5	41.6	7/8/2009	0	0.04	1.057	0.2337137	0.000000	0.009349	0.247035
fr070809_55	1235163	2330753	A	786.0	28.5	7/9/2009	0.41	0.002	1.547	0.2437083	0.099920	0.000487	0.377017
fr070809_27	1235343	2331972	A	788.6	40.1	7/8/2009	0	0.008	1.374	0.2354598	0.000000	0.001884	0.323522
fr070809_47	1235344	2331173	A	787.7	22.9	7/9/2009	0.083	0.004	1.012	0.2488553	0.020655	0.000995	0.251842
fr070809_28	1235349	2331790	A	787.6	40.6	7/8/2009	15.045	0.009	0.848	0.2347865	3.532363	0.002113	0.199099
fr070809_39	1235351	2331364	A	785.5	43.8	7/8/2009	0	0.006	0.13	0.2317963	0.000000	0.001391	0.030134
fr070809_25	1235353	2332183	A	790.0	38.9	7/8/2009	0	0.002	2.018	0.2367849	0.000000	0.000474	0.477832
fr070809_17	1235353	2332783	A	787.4	33.3	7/8/2009	0	0.005	0.461	0.2403183	0.000000	0.001202	0.110787
fr070809_08	1235356	2332965	A	788.3	24.9	7/8/2009	0	-0.002	0.519	0.2473737	0.000000	0.000000	0.128387
fr070809_22	1235362	2332511	A	789.5	38.0	7/8/2009	430.54	0.016	38.237	0.2373195	102.175500	0.003797	9.074387
fr070809_23	1235542	2332524	A	789.9	38.3	7/8/2009	0	0.014	3.927	0.237211	0.000000	0.003321	0.931528

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
fr070809_09	1235544	2332966	A	787.3	25.5	7/8/2009	0	-0.001	0.356	0.2465635	0.000000	0.000000	0.087777
fr070809_24	1235550	2332365	A	790.0	38.5	7/8/2009	2.571	0.005	4.284	0.2370888	0.609555	0.001185	1.015688
fr070809_16	1235551	2332758	A	787.4	33.1	7/8/2009	0	0.004	0.839	0.2404753	0.000000	0.000962	0.201759
fr070809_29	1235552	2331751	A	787.3	40.9	7/8/2009	0.005	0.009	0.641	0.2344729	0.001172	0.002110	0.150297
fr070809_37	1235563	2331369	A	785.9	43.3	7/8/2009	0	0.01	1.119	0.2322808	0.000000	0.002323	0.259922
fr070809_10	1235564	2333160	A	787.3	27.5	7/8/2009	0.845	0.003	0.693	0.2449233	0.206960	0.000735	0.169732
fr070809_14	1235732	2332958	A	786.0	32.3	7/8/2009	0	0.003	0.398	0.2406764	0.000000	0.000722	0.095789
fr070809_15	1235760	2332756	A	785.2	32.8	7/8/2009	1.902	0.002	2.571	0.2400385	0.456553	0.000480	0.617139
fr070809_11	1235763	2333166	A	785.5	29.6	7/8/2009	0.347	0.002	0.537	0.2426684	0.084206	0.000485	0.130313
fr070809_13	1235950	2332945	A	786.0	31.5	7/8/2009	0.06	0.004	1.398	0.2413084	0.014479	0.000965	0.337349
fr070809_12	1235963	2333173	A	783.5	30.5	7/8/2009	0.19	0.001	1.369	0.2413331	0.045853	0.000241	0.330385
pb_080609_08	1236832	2384451	A	784.0	41.3	8/6/2009	0	0.008	0.742	0.233193	0.000000	0.001866	0.173029
pb_080609_12	1236835	2384639	A	793.6	41.4	8/6/2009	0	0.015	0.258	0.2359734	0.000000	0.003540	0.060881
pb_080609_09	1236836	2384538	A	784.3	41.4	8/6/2009	0	0.008	0.242	0.2332081	0.000000	0.001866	0.056436
pb_080609_10	1236922	2384544	A	783.9	41.4	8/6/2009	0	0.007	0.449	0.2330892	0.000000	0.001632	0.104657
pb_080609_07	1236924	2384447	A	794.4	41.3	8/6/2009	-0.14	0.014	0.451	0.2362864	0.000000	0.003308	0.106565
pb_080609_11	1236930	2384645	A	784.6	41.4	8/6/2009	0	0.015	0.691	0.2332973	0.000000	0.003499	0.161208
pb_080609_02	1236966	2384593	A	784.0	41.2	8/6/2009	0	0.023	0.778	0.2332672	0.000000	0.005365	0.181482
pb_080609_13	1237027	2384644	A	783.5	41.5	8/6/2009	0	0.034	0.597	0.2328962	0.000000	0.007918	0.139039
pb_080609_06	1237028	2384445	A	783.6	41.3	8/6/2009	0	0.011	0.673	0.2330741	0.000000	0.002564	0.156859
pb_080609_03	1237034	2384538	A	784.6	41.2	8/6/2009	0	0.009	0.439	0.2334457	0.000000	0.002101	0.102483
pb_080609_05	1237092	2384436	A	783.5	41.3	8/6/2009	0	0.003	0.186	0.2330443	0.000000	0.000699	0.043346
pb_080609_14	1237119	2384640	A	783.4	41.5	8/6/2009	0	0.022	0.586	0.2328665	0.000000	0.005123	0.136460
pb_080609_04	1237124	2384540	A	789.9	41.3	8/6/2009	0	0.007	0.141	0.2349479	0.000000	0.001645	0.033128

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
pr071609_36	1237762	2386760	A	793.0	39.5	7/17/2009	0.041	0.008	0.693	0.237228	0.009726	0.001898	0.164399
pr071609_35	1237941	2386770	A	792.8	39.1	7/17/2009	0.066	0.037	3.237	0.2374719	0.015673	0.008786	0.768697
pr071609_05	1237943	2387151	A	791.5	40.8	7/16/2009	0	0.035	1.758	0.2357988	0.000000	0.008253	0.414534
pr071609_04	1237952	2386971	A	791.3	40.5	7/16/2009	0	0.008	3.745	0.2359647	0.000000	0.001888	0.883688
pr071609_10	1237965	2387561	A	790.5	42.5	7/16/2009	2.982	0.007	1.73	0.2342325	0.698481	0.001640	0.405222
pr071609_16	1238143	2388760	A	790.7	43.9	7/16/2009	0	0.08	6.074	0.2332572	0.000000	0.018661	1.416804
pr071609_18	1238146	2389166	A	790.9	44.0	7/16/2009	0	0.014	1.195	0.2332426	0.000000	0.003265	0.278725
pr071609_06	1238146	2387166	A	790.9	41.0	7/16/2009	0	0.055	1.619	0.23547	0.000000	0.012951	0.381226
pr071609_17	1238148	2388966	A	791.9	43.9	7/16/2009	0	0.023	7.359	0.2336112	0.000000	0.005373	1.719145
pr071609_11	1238152	2387753	A	790.9	42.9	7/16/2009	0	0.027	3.068	0.2340544	0.000000	0.006319	0.718079
pr071609_13	1238152	2388171	A	790.7	43.5	7/16/2009	0.023	0.036	2.147	0.2335519	0.005372	0.008408	0.501436
pr071609_03	1238153	2386961	A	790.8	40.1	7/16/2009	0	0.008	0.745	0.2361167	0.000000	0.001889	0.175907
pr071609_15	1238155	2388558	A	790.8	43.8	7/16/2009	0	0.061	4.338	0.2333603	0.000000	0.014235	1.012317
pr071609_37	1238156	2386762	A	793.0	40.0	7/17/2009	0	0.007	2.263	0.2368492	0.000000	0.001658	0.535990
pr071609_12	1238156	2387955	A	790.7	43.3	7/16/2009	0	0.012	1.184	0.2336995	0.000000	0.002804	0.276700
pr071609_14	1238156	2388362	A	790.7	43.7	7/16/2009	0	0.074	5.722	0.2334045	0.000000	0.017272	1.335540
pr071609_09	1238157	2387567	A	791.7	42.2	7/16/2009	0	0.006	0.675	0.2348113	0.000000	0.001409	0.158498
pr071609_41	1238157	2386575	A	789.8	26.9	7/23/2009	0	0.01	0.175	0.2461924	0.000000	0.002462	0.043084
pr071609_46	1238163	2386376	A	786.3	32.9	7/23/2009	0	0.016	0.479	0.2402963	0.000000	0.003845	0.115102
pr071609_19	1238167	2387359	A	793.3	24.5	7/17/2009	0	0	1.278	0.2492773	0.000000	0.000000	0.318576
pr071609_38	1238348	2386760	A	793.0	40.3	7/17/2009	0	0	0.478	0.2366225	0.000000	0.000000	0.113106
pr071609_25	1238348	2388965	A	793.3	29.9	7/17/2009	0.183	0.016	0.752	0.2448354	0.044805	0.003917	0.184116
pr071609_26	1238349	2389168	A	793.0	30.4	7/17/2009	0	0.011	3.7	0.2443397	0.000000	0.002688	0.904057
pr071609_07	1238351	2387156	A	790.8	41.3	7/16/2009	0	0.009	1.823	0.2352156	0.000000	0.002117	0.428798

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
pr071609_42	1238352	2386558	A	789.8	28.0	7/23/2009	0	0.022	0.667	0.2452931	0.000000	0.005396	0.163611
pr071609_01	1238353	2386969	A	791.1	38.9	7/16/2009	0	0.044	0.848	0.2371146	0.000000	0.010433	0.201073
pr071609_24	1238353	2388767	A	793.9	29.4	7/17/2009	0.116	0.02	1.624	0.2454255	0.028469	0.004909	0.398571
pr071609_31	1238355	2387770	A	793.2	34.9	7/17/2009	-0.003	0.007	1.065	0.2408311	0.000000	0.001686	0.256485
pr071609_20	1238355	2387961	A	793.3	27.2	7/17/2009	1.631	0.021	3.797	0.2470364	0.402916	0.005188	0.937997
pr071609_21	1238359	2388168	A	793.7	27.9	7/17/2009	0	0.021	2.259	0.2465862	0.000000	0.005178	0.557038
pr071609_23	1238359	2388565	A	793.5	29.0	7/17/2009	0	0.016	1.105	0.2456266	0.000000	0.003930	0.271417
pr071609_22	1238359	2388367	A	793.9	28.5	7/17/2009	0	0.009	1.015	0.2461578	0.000000	0.002215	0.249850
pr071609_47	1238359	2386154	A	786.5	33.5	7/23/2009	-0.003	0.017	0.154	0.2398871	0.000000	0.004078	0.036943
pr071609_50	1238360	2385962	A	783.8	35.1	7/23/2009	0	0.005	0.834	0.2378227	0.000000	0.001189	0.198344
pr071609_08	1238361	2387554	A	791.2	41.8	7/16/2009	0	0.01	3.149	0.234961	0.000000	0.002350	0.739892
pr071609_45	1238364	2386366	A	786.7	32.2	7/23/2009	0	0.014	1.953	0.2409696	0.000000	0.003374	0.470614
pr071609_34	1238488	2387372	A	792.8	37.7	7/17/2009	0	0.002	0.648	0.2385415	0.000000	0.000477	0.154575
pr072809_67	1238527	2385533	A	781.1	39.1	7/30/2009	0	0.003	0.397	0.2339674	0.000000	0.000702	0.092885
pr071609_43	1238539	2386537	A	788.2	28.8	7/23/2009	-0.267	0.011	1.966	0.2441476	0.000000	0.002686	0.479994
pr071609_52	1238541	2385562	A	783.5	36.3	7/23/2009	0	0.011	0.168	0.2368098	0.000000	0.002605	0.039784
pr071609_33	1238541	2387560	A	793.0	37.1	7/17/2009	-0.046	0.003	1.543	0.2390631	0.000000	0.000717	0.368874
pr071609_32	1238542	2387733	A	793.6	35.6	7/17/2009	0.582	-0.001	0.519	0.2404063	0.139916	0.000000	0.124771
pr071609_02	1238544	2386936	A	792.1	39.3	7/16/2009	0	0.055	0.857	0.2371104	0.000000	0.013041	0.203204
pr071609_49	1238546	2385959	A	784.3	34.6	7/23/2009	1.993	0.003	0.896	0.238361	0.475054	0.000715	0.213571
pr071609_48	1238548	2386168	A	786.6	34.1	7/23/2009	4.283	0.016	1.849	0.2394491	1.025560	0.003831	0.442741
pr071609_27	1238551	2388551	A	793.1	31.0	7/17/2009	0	0.016	4.313	0.2438885	0.000000	0.003902	1.051891
pr071609_29	1238553	2388159	A	792.9	32.2	7/17/2009	0.415	0.031	3.161	0.2428687	0.100791	0.007529	0.767708
pr071609_28	1238556	2388359	A	793.1	31.5	7/17/2009	0	0.018	1.059	0.2434882	0.000000	0.004383	0.257854

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
pr071609_30	1238557	2387959	A	793.0	33.1	7/17/2009	0	0.008	0.791	0.2421855	0.000000	0.001937	0.191569
pr071609_51	1238559	2385758	A	783.9	35.7	7/23/2009	0.001	0.007	0.314	0.237391	0.000237	0.001662	0.074541
pr071609_44	1238561	2386369	A	787.9	31.7	7/23/2009	0	0.008	0.065	0.241733	0.000000	0.001934	0.015713
pr071609_39	1238563	2386762	A	792.8	40.7	7/17/2009	0	0.02	1.435	0.2362613	0.000000	0.004725	0.339035
pr071609_62	1238715	2385585	A	784.3	40.4	7/23/2009	2.433	0.008	2.966	0.2339519	0.569205	0.001872	0.693901
pr071609_40	1238725	2386711	A	798.6	41.0	7/17/2009	0	0.01	1.252	0.2377625	0.000000	0.002378	0.297679
pr072809_66	1238741	2385567	A	779.2	39.2	7/30/2009	0	0.003	1.941	0.2333235	0.000000	0.000700	0.452881
pr072809_65	1238742	2385357	A	780.3	39.2	7/30/2009	0	0.004	0.344	0.2336529	0.000000	0.000935	0.080377
pr071609_67	1238748	2385975	A	782.3	41.0	7/23/2009	0	0.003	0.32	0.2329096	0.000000	0.000699	0.074531
pr071609_53	1238756	2385374	A	782.3	38.9	7/23/2009	0	0.002	1.345	0.234477	0.000000	0.000469	0.315372
pr071609_63	1238762	2385742	A	783.4	40.5	7/23/2009	0.034	0.018	3.938	0.2336089	0.007943	0.004205	0.919952
pr071609_68	1238772	2386164	A	784.6	41.0	7/23/2009	0	0.014	0.462	0.2335944	0.000000	0.003270	0.107921
pr072809_01	1238773	2385161	A	777.8	33.4	7/28/2009	0	0.003	-0.217	0.2373109	0.000000	0.000712	0.000000
pr072809_64	1238924	2385353	A	778.9	39.0	7/30/2009	0	0.004	2.964	0.2333831	0.000000	0.000934	0.691748
pr071609_54	1238934	2385356	A	782.7	39.0	7/23/2009	4.178	0.001	7.094	0.2345217	0.979832	0.000235	1.663697
pr071609_64	1238942	2385767	A	784.5	40.6	7/23/2009	0.142	0.006	0.528	0.2338624	0.033208	0.001403	0.123479
pr071609_61	1238945	2385577	A	781.6	40.1	7/23/2009	0	0.012	0.383	0.2333698	0.000000	0.002800	0.089381
pr072809_04	1238955	2384774	A	778.0	35.7	7/28/2009	0	0.01	0.285	0.2356042	0.000000	0.002356	0.067147
pr072809_02	1238955	2385171	A	778.6	34.6	7/28/2009	0	0.019	5.725	0.2366287	0.000000	0.004496	1.354699
pr072809_05	1238957	2384559	A	778.0	37.1	7/28/2009	0	0.007	0.232	0.2345411	0.000000	0.001642	0.054414
pr072809_03	1238957	2384947	A	780.1	35.1	7/28/2009	0.005	0.005	0.439	0.2367	0.001184	0.001184	0.103911
pr071609_66	1238960	2385969	A	781.0	40.9	7/23/2009	0	0.009	0.327	0.2325966	0.000000	0.002093	0.076059
pr072809_09	1239129	2384562	A	785.2	40.1	7/28/2009	0	0.011	0.694	0.2344446	0.000000	0.002579	0.162705
pr071609_55	1239132	2385365	A	784.5	39.1	7/23/2009	0.002	0.021	0.393	0.2349858	0.000470	0.004935	0.092349

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
pr072809_06	1239135	2384375	A	797.0	38.1	7/28/2009	0	0.012	0.662	0.239497	0.000000	0.002874	0.158547
pr072809_12	1239139	2385165	A	789.6	40.9	7/28/2009	0	0.008	0.226	0.2351578	0.000000	0.001881	0.053146
pr071609_60	1239148	2385568	A	780.0	39.9	7/23/2009	0.004	0.005	0.184	0.2330408	0.000932	0.001165	0.042880
pr072809_11	1239149	2384958	A	789.0	40.6	7/28/2009	2.922	0.006	5.741	0.2352038	0.687266	0.001411	1.350305
pr072809_10	1239149	2384754	A	776.6	40.3	7/28/2009	50.613	0.007	4.074	0.2317289	11.728500	0.001622	0.944064
pr071609_65	1239153	2385751	A	782.7	40.8	7/23/2009	0.296	0.011	0.318	0.2331771	0.069020	0.002565	0.074150
pr072809_63	1239156	2385361	A	777.6	38.6	7/30/2009	0	0.001	0.043	0.2332926	0.000000	0.000233	0.010032
pr072809_13	1239332	2385166	A	780.1	41.2	7/28/2009	0	0.008	0.494	0.2321068	0.000000	0.001857	0.114661
pr072809_62	1239333	2385362	A	774.7	38.3	7/30/2009	0	0.004	-0.04	0.2326464	0.000000	0.000931	0.000000
pr072809_08	1239335	2384358	A	785.0	39.7	7/28/2009	5.091	0.01	3.584	0.2346846	1.194779	0.002347	0.841110
pr071609_59	1239344	2385566	A	778.9	39.8	7/23/2009	0	0.025	1.242	0.2327865	0.000000	0.005820	0.289121
pr071609_56	1239346	2385363	A	782.3	39.2	7/23/2009	0	0.008	0.242	0.2342518	0.000000	0.001874	0.056689
pr072809_16	1239354	2384570	A	779.7	42.1	7/28/2009	0	0.011	3.754	0.2313255	0.000000	0.002545	0.868396
pr072809_14	1239356	2384972	A	777.9	41.6	7/28/2009	0	0.003	-0.008	0.2311581	0.000000	0.000693	0.000000
pr072809_07	1239358	2384180	A	773.9	39.0	7/28/2009	0.059	0.008	0.389	0.231885	0.013681	0.001855	0.090203
pr072809_15	1239371	2384750	A	778.0	41.9	7/28/2009	0.036	0.022	1.14	0.2309677	0.008315	0.005081	0.263303
pr071609_58	1239512	2385553	A	778.4	39.6	7/23/2009	0	0.002	0.459	0.2327859	0.000000	0.000466	0.106849
pr072809_31	1239540	2383167	A	772.4	36.9	7/29/2009	0.01	0.004	0.232	0.2330031	0.002330	0.000932	0.054057
pr072809_61	1239542	2385163	A	774.7	37.8	7/30/2009	0	-0.002	4.791	0.2330205	0.000000	0.000000	1.116401
pr072809_34	1239544	2383755	A	773.4	37.4	7/29/2009	0	0.004	0.096	0.2329291	0.000000	0.000932	0.022361
pr072809_17	1239545	2384570	A	777.7	42.2	7/28/2009	0	0.007	0.301	0.230659	0.000000	0.001615	0.069428
pr072809_35	1239548	2383959	A	773.2	37.4	7/29/2009	0	0.005	2.582	0.2328689	0.000000	0.001164	0.601267
pr071609_57	1239548	2385359	A	779.9	39.4	7/23/2009	0.001	0.01	0.72	0.2333837	0.000233	0.002334	0.168036
pr072809_18	1239551	2384358	A	777.6	42.4	7/28/2009	0	0.01	1.422	0.2304831	0.000000	0.002305	0.327747

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
pr072809_33	1239555	2383557	A	773.7	37.4	7/29/2009	0	0.001	0.25	0.2330195	0.000000	0.000233	0.058255
pr072809_21	1239555	2384756	A	774.5	32.1	7/29/2009	0	0.001	0.18	0.2373105	0.000000	0.000237	0.042716
pr072809_30	1239557	2382939	A	772.3	36.6	7/29/2009	0	0.006	0.387	0.2331985	0.000000	0.001399	0.090248
pr072809_20	1239560	2384959	A	787.1	31.7	7/29/2009	0	0.003	0.565	0.2414876	0.000000	0.000724	0.136440
pr072809_32	1239564	2383367	A	773.0	37.4	7/29/2009	0	0.003	0.466	0.2328086	0.000000	0.000698	0.108489
pr072809_19	1239571	2384166	A	778.5	42.5	7/28/2009	0	0.009	3.569	0.2306768	0.000000	0.002076	0.823286
pr072809_25	1239713	2383758	A	773.6	34.9	7/29/2009	0	0.012	1.212	0.2348802	0.000000	0.002819	0.284675
pr072809_22	1239731	2384369	A	776.1	32.7	7/29/2009	0	0.004	0.22	0.2373342	0.000000	0.000949	0.052214
pr072809_26	1239741	2383570	A	773.5	35.3	7/29/2009	0	0.006	1.094	0.2345453	0.000000	0.001407	0.256593
pr072809_27	1239743	2383371	A	773.8	35.6	7/29/2009	0	0.004	3.294	0.2344082	0.000000	0.000938	0.772141
pr072809_23	1239763	2384164	A	776.5	33.4	7/29/2009	0	0.009	2.748	0.2369143	0.000000	0.002132	0.651040
pr072809_29	1239763	2382972	A	772.2	36.2	7/29/2009	0	0.004	0.337	0.2334698	0.000000	0.000934	0.078679
pr072809_28	1239768	2383167	A	772.8	35.9	7/29/2009	0	0.003	0.201	0.2338781	0.000000	0.000702	0.047009
pr072809_24	1239771	2383959	A	775.8	34.0	7/29/2009	0.024	0.007	2.902	0.2362383	0.005670	0.001654	0.685564
pr072809_60	1239937	2384390	A	775.1	38.3	7/30/2009	0	0.004	0.167	0.2327665	0.000000	0.000931	0.038872
pr072809_37	1239938	2383575	A	775.7	26.9	7/30/2009	0	0	0.218	0.2417972	0.000000	0.000000	0.052712
pr072809_38	1239945	2383373	A	775.1	27.8	7/30/2009	0	0	0.09	0.2408876	0.000000	0.000000	0.021680
pr072809_41	1239946	2382764	A	773.8	29.3	7/30/2009	0	0.002	0.509	0.2392909	0.000000	0.000479	0.121799
pr072809_36	1239956	2383768	A	775.7	26.0	7/30/2009	0	0	0.522	0.2425247	0.000000	0.000000	0.126598
pr072809_59	1239959	2384171	A	775.1	38.1	7/30/2009	0	0	0.059	0.2329161	0.000000	0.000000	0.013742
pr072809_39	1239959	2383155	A	773.5	28.3	7/30/2009	0.278	-0.001	0.683	0.2399916	0.066718	0.000000	0.163914
pr072809_40	1239962	2382963	A	773.9	28.9	7/30/2009	0.074	0.001	0.788	0.2396388	0.017733	0.000240	0.188835
pr072809_58	1239966	2383991	A	774.1	37.9	7/30/2009	0	0.004	0.34	0.2327652	0.000000	0.000931	0.079140
pr072809_42	1239968	2382586	A	774.9	29.7	7/30/2009	0	0	0.142	0.2393146	0.000000	0.000000	0.033983

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
pr072809_53	1240132	2382966	A	774.0	38.0	7/30/2009	0	0.014	0.84	0.2326603	0.000000	0.003257	0.195435
pr072809_54	1240139	2383155	A	772.3	37.9	7/30/2009	0	0.001	-0.258	0.2322239	0.000000	0.000232	0.000000
pr072809_52	1240140	2382767	A	772.2	37.7	7/30/2009	-0.003	0.001	0.565	0.2323432	0.000000	0.000232	0.131274
pr072809_43	1240142	2382586	A	775.3	32.5	7/30/2009	0	0.007	0.145	0.2372447	0.000000	0.001661	0.034400
pr072809_71	1240142	2381760	A	779.3	32.5	7/31/2009	0	0.002	0.045	0.2384687	0.000000	0.000477	0.010731
pr072809_69	1240143	2382167	A	777.8	31.3	7/31/2009	0.042	0.021	0.544	0.2389478	0.010036	0.005018	0.129988
pr072809_57	1240145	2383551	A	772.3	37.8	7/30/2009	0	0.014	0.026	0.2322986	0.000000	0.003252	0.006040
pr072809_70	1240146	2381962	A	777.8	32.0	7/31/2009	0.018	0.019	1.641	0.2383997	0.004291	0.004530	0.391214
pr072809_68	1240161	2382356	A	778.2	30.4	7/31/2009	0	0.014	1.735	0.2397795	0.000000	0.003357	0.416018
pr072809_56	1240163	2383362	A	771.5	37.7	7/30/2009	0	0.003	0.17	0.2321326	0.000000	0.000696	0.039463
pr072809_74	1240347	2381977	A	778.7	34.7	7/31/2009	0.599	0.026	0.346	0.2365822	0.141713	0.006151	0.081857
pr072809_49	1240349	2383161	A	770.3	36.2	7/30/2009	0	0.003	0.355	0.2328954	0.000000	0.000699	0.082678
pr072809_76	1240349	2382366	A	775.7	35.9	7/31/2009	0	0.008	0.444	0.2347557	0.000000	0.001878	0.104232
pr072809_44	1240350	2382583	A	774.0	33.3	7/30/2009	0	0.003	0.227	0.2362286	0.000000	0.000709	0.053624
pr072809_75	1240352	2382164	A	776.9	35.2	7/31/2009	0	0.004	0.36	0.2356526	0.000000	0.000943	0.084835
pr072809_51	1240352	2382760	A	771.8	37.2	7/30/2009	0	0.008	0.249	0.232597	0.000000	0.001861	0.057917
pr072809_73	1240356	2381734	A	779.1	33.8	7/31/2009	0	0.022	0.472	0.2373978	0.000000	0.005223	0.112052
pr072809_72	1240357	2381565	A	778.6	33.3	7/31/2009	0	0.026	0.491	0.2376325	0.000000	0.006178	0.116678
pr072809_55	1240358	2383373	A	772.6	37.8	7/30/2009	0	0.005	1.703	0.2323888	0.000000	0.001162	0.395758
pr072809_50	1240378	2382964	A	771.2	36.7	7/30/2009	0	0.004	0.295	0.2327912	0.000000	0.000931	0.068673
pr072809_92	1240383	2381365	A	778.9	35.2	8/4/2009	0	0.002	0.325	0.2362593	0.000000	0.000473	0.076784
pr072809_81	1240541	2381766	A	778.5	28.0	8/4/2009	0	0.001	0.272	0.2417836	0.000000	0.000242	0.065765
pr072809_47	1240544	2382957	A	770.3	35.7	7/30/2009	13.372	0.005	2.422	0.2332724	3.119319	0.001166	0.564986
pr072809_94	1240545	2381152	A	777.5	36.6	8/4/2009	0	0.002	0.047	0.2347687	0.000000	0.000470	0.011034

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
pr072809_46	1240550	2382778	A	775.3	35.3	7/30/2009	0	0.004	0.317	0.2350911	0.000000	0.000940	0.074524
pr072809_48	1240551	2383161	A	769.2	36.0	7/30/2009	0	0.005	0.023	0.2327133	0.000000	0.001164	0.005352
pr072809_80	1240553	2382166	A	772.9	37.4	7/31/2009	0.409	0.009	0.287	0.2327785	0.095206	0.002095	0.066807
pr072809_77	1240553	2382435	A	776.6	36.2	7/31/2009	0.211	0.008	0.623	0.2348002	0.049543	0.001878	0.146281
pr072809_82	1240558	2381966	A	777.1	29.2	8/4/2009	0	0.001	0.312	0.2403909	0.000000	0.000240	0.075002
pr072809_93	1240560	2381363	A	777.5	35.7	8/4/2009	0.232	0.004	0.515	0.2354528	0.054625	0.000942	0.121258
pr072809_45	1240565	2382563	A	773.8	34.5	7/30/2009	1.342	0.002	0.218	0.2352464	0.315701	0.000470	0.051284
pr072809_91	1240566	2381569	A	778.1	34.6	8/4/2009	-0.095	0.005	0.516	0.2364768	0.000000	0.001182	0.122022
bp080409_01	1240748	2381173	A	776.2	39.0	8/4/2009	0	0.004	0.187	0.2325741	0.000000	0.000930	0.043491
pr072809_83	1240748	2381947	A	781.5	29.9	8/4/2009	0	0	0.472	0.2411936	0.000000	0.000000	0.113843
pr072809_89	1240753	2381357	A	777.4	33.6	8/4/2009	0	0.002	0.582	0.2370342	0.000000	0.000474	0.137954
pr072809_90	1240753	2381548	A	777.5	34.1	8/4/2009	4.563	0.002	5.227	0.2366789	1.079966	0.000473	1.237121
pr072809_84	1240754	2381761	A	777.7	30.5	8/4/2009	70.474	0.001	7.089	0.2395466	16.881800	0.000240	1.698146
pr072809_78	1240759	2382405	A	775.3	36.5	7/31/2009	0	0.054	0.128	0.23418	0.000000	0.012646	0.029975
pr072809_79	1240760	2382172	A	773.2	37.0	7/31/2009	0.065	0.003	0.013	0.2331692	0.015156	0.000700	0.003031
bp080409_09	1240762	2380957	A	774.8	42.1	8/4/2009	0	0.005	0.38	0.2298718	0.000000	0.001149	0.087351
pr072809_86	1240931	2381950	A	787.3	31.4	8/4/2009	0	0.002	0.404	0.2417869	0.000000	0.000484	0.097682
pr072809_85	1240935	2381760	A	776.9	30.9	8/4/2009	0	0.003	0.799	0.2389853	0.000000	0.000717	0.190949
bp080409_08	1240946	2380971	A	774.4	41.9	8/4/2009	0.017	0.003	0.23	0.2298989	0.003908	0.000690	0.052877
bp080409_02	1240950	2381180	A	776.4	39.3	8/4/2009	0.001	0.005	0.604	0.2324107	0.000232	0.001162	0.140376
pr072809_87	1240951	2381571	A	775.7	32.1	8/4/2009	0.05	0.001	0.637	0.2376781	0.011884	0.000238	0.151401
pr072809_88	1240968	2381369	A	783.2	32.7	8/4/2009	0	0.001	1.235	0.2395054	0.000000	0.000240	0.295789
bp080409_03	1241120	2381179	A	775.2	39.7	8/4/2009	0	0.004	0.269	0.2317548	0.000000	0.000927	0.062342
bp080409_11	1241131	2380363	A	783.1	28.8	8/7/2009	0	0.007	0.978	0.2425679	0.000000	0.001698	0.237231

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
bp080409_13	1241133	2380763	A	770.3	29.8	8/7/2009	0.074	0.022	0.597	0.2378154	0.017598	0.005232	0.141976
bp080409_12	1241158	2380565	A	770.0	29.5	8/7/2009	0	0.016	1.561	0.2379585	0.000000	0.003807	0.371453
bp080409_07	1241159	2380975	A	772.9	41.5	8/4/2009	-0.144	0.002	0.702	0.2297453	0.000000	0.000459	0.161281
bp080409_10	1241159	2380139	A	771.4	28.0	8/7/2009	0	0.013	0.284	0.2395785	0.000000	0.003115	0.068040
bp080409_04	1241327	2381177	A	775.6	40.1	8/4/2009	0	0	0.781	0.2315783	0.000000	0.000000	0.180863
bp080409_14	1241331	2380757	A	769.3	30.2	8/7/2009	0.172	0.011	1.59	0.2371935	0.040797	0.002609	0.377138
bp080409_17	1241335	2380174	A	771.4	31.2	8/7/2009	0	0.016	0.66	0.2370595	0.000000	0.003793	0.156459
bp080409_15	1241348	2380570	A	768.4	30.5	8/7/2009	0	0.036	1.366	0.236682	0.000000	0.008521	0.323308
bp080409_18	1241354	2379961	A	781.9	31.6	8/7/2009	0	0.026	0.298	0.2399709	0.000000	0.006239	0.071511
bp080409_16	1241356	2380374	A	769.1	30.8	8/7/2009	0.002	0.026	0.128	0.2366638	0.000473	0.006153	0.030293
bp080409_06	1241362	2380967	A	770.8	41.1	8/4/2009	0	0.004	0.176	0.2294127	0.000000	0.000918	0.040377
bp080409_21	1241537	2380157	A	769.1	32.8	8/7/2009	0.485	0.03	0.828	0.2351167	0.114032	0.007054	0.194677
bp080409_19	1241541	2379782	A	771.1	32.0	8/7/2009	0.035	0.031	1.353	0.2363461	0.008272	0.007327	0.319776
bp080409_05	1241547	2380968	A	769.9	40.6	8/4/2009	0.203	0.002	0.983	0.22951	0.046591	0.000459	0.225608
bp080409_20	1241550	2379957	A	770.5	32.3	8/7/2009	-0.005	0.018	0.153	0.2359302	0.000000	0.004247	0.036097
bp080409_23	1241557	2380558	A	766.5	33.7	8/7/2009	-0.305	0.021	1.587	0.2336346	0.000000	0.004906	0.370778
bp080409_22	1241564	2380372	A	768.7	33.3	8/7/2009	0	0.015	1.836	0.234611	0.000000	0.003519	0.430746
bp080409_24	1241567	2380759	A	765.7	33.9	8/7/2009	0	0.021	0.557	0.2332387	0.000000	0.004898	0.129914
bp080409_32	1241736	2379376	A	770.1	37.6	8/7/2009	0.007	0.033	1.262	0.2317859	0.001623	0.007649	0.292514
bp080409_25	1241749	2380757	A	766.2	34.0	8/7/2009	0	0.02	-0.271	0.233315	0.000000	0.004666	0.000000
bp080409_27	1241753	2380390	A	764.9	34.7	8/7/2009	0	0	0.98	0.2323896	0.000000	0.000000	0.227742
bp080409_31	1241754	2379568	A	768.1	37.3	8/7/2009	0.001	0.014	0.828	0.2314074	0.000231	0.003240	0.191605
bp080409_26	1241757	2380578	A	764.9	34.4	8/7/2009	0	0.045	0.876	0.2326162	0.000000	0.010468	0.203772
bp080409_29	1241760	2379979	A	767.6	36.4	8/7/2009	0	0.035	1.924	0.2319291	0.000000	0.008118	0.446232

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
bp080409_30	1241767	2379778	A	767.6	36.8	8/7/2009	0	0.018	0.44	0.2316298	0.000000	0.004169	0.101917
bp080409_28	1241779	2380163	A	767.3	35.8	8/7/2009	0	0.028	0.746	0.2322887	0.000000	0.006504	0.173287
bp080409_33	1241939	2378994	A	770.0	42.2	8/7/2009	0	0.051	0.976	0.2283752	0.000000	0.011647	0.222894
bp080409_38	1241939	2379949	A	765.0	43.5	8/7/2009	0.049	0.03	1.598	0.2259608	0.011072	0.006779	0.361085
bp080409_39	1241952	2380152	A	763.6	43.5	8/7/2009	-0.012	0.022	2.831	0.2255473	0.000000	0.004962	0.638524
bp080409_36	1241956	2379547	A	773.8	43.2	8/7/2009	0	0.046	1.195	0.2287768	0.000000	0.010524	0.273388
bp080409_34	1241957	2379176	A	776.9	42.6	8/7/2009	-0.269	0.057	0.394	0.2301298	0.000000	0.013117	0.090671
bp080409_41	1241957	2380536	A	763.2	43.5	8/7/2009	-0.017	0.024	1.069	0.2254291	0.000000	0.005410	0.240984
bp080409_37	1241964	2379755	A	766.7	43.5	8/7/2009	0.189	0.048	1.948	0.2264629	0.042801	0.010870	0.441150
bp080409_35	1241968	2379341	A	777.0	43.0	8/7/2009	0	0.034	1.652	0.2298682	0.000000	0.007816	0.379742
bp080409_40	1241977	2380365	A	763.6	43.5	8/7/2009	0.04	0.015	0.316	0.2255473	0.009022	0.003383	0.071273
bp080409_50	1242137	2378777	A	764.1	43.8	8/7/2009	0	0.018	1.388	0.2254813	0.000000	0.004059	0.312968
tc072709_37	1242141	2377549	A	770.6	40.1	7/29/2009	0.032	0.01	0.373	0.2300854	0.007363	0.002301	0.085822
bp080409_49	1242143	2378962	A	765.5	43.7	8/7/2009	0	0.021	0.601	0.2259657	0.000000	0.004745	0.135805
bp080409_47	1242145	2379386	A	765.2	43.6	8/7/2009	-1.15	0.041	1.092	0.2259485	0.000000	0.009264	0.246736
bp080409_46	1242145	2379596	A	766.5	43.6	8/7/2009	0	0.026	1.267	0.2263324	0.000000	0.005885	0.286763
bp080409_45	1242148	2379779	A	762.4	43.6	8/7/2009	0.001	0.04	2.44	0.2251217	0.000225	0.009005	0.549297
bp080409_43	1242149	2380194	A	760.7	43.6	8/7/2009	0	0.031	0.801	0.2246197	0.000000	0.006963	0.179920
bp080409_48	1242149	2379194	A	765.2	43.6	8/7/2009	0	0.028	1.629	0.2259485	0.000000	0.006327	0.368070
tc072709_27	1242156	2377159	A	773.0	37.5	7/29/2009	0	0.004	-0.027	0.2327337	0.000000	0.000931	0.000000
tc080409_20	1242156	2378173	A	772.7	26.6	8/10/2009	0	0.001	0.257	0.2411031	0.000000	0.000241	0.061964
tc072709_26	1242157	2376985	A	773.1	37.4	7/29/2009	0	0.007	0.331	0.2328387	0.000000	0.001630	0.077070
tc080409_19	1242161	2377971	A	772.5	45.6	8/4/2009	0	0.005	0.417	0.2266728	0.000000	0.001133	0.094523
tc072709_36	1242162	2377372	A	771.5	40.0	7/29/2009	0	0.006	0.271	0.2304277	0.000000	0.001383	0.062446

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
bp080409_42	1242166	2380407	A	762.8	43.6	8/7/2009	0	0.054	1.278	0.2252398	0.000000	0.012163	0.287856
bp080409_44	1242168	2379975	A	768.4	43.6	8/7/2009	0	0.037	0.811	0.2268934	0.000000	0.008395	0.184011
tc080409_01	1242176	2377749	A	773.9	37.4	8/4/2009	0	0.004	0.416	0.2330797	0.000000	0.000932	0.096961
tc080409_02	1242328	2377763	A	774.2	38.1	8/4/2009	0	0.004	0.688	0.2326456	0.000000	0.000931	0.160060
tc080409_27	1242335	2378573	A	770.5	29.6	8/10/2009	0.036	0.002	0.145	0.2380343	0.008569	0.000476	0.034515
tc080409_34	1242336	2378962	A	769.9	33.7	8/10/2009	0	0.001	0.189	0.2346709	0.000000	0.000235	0.044353
tc080409_18	1242341	2377950	A	772.7	45.6	8/4/2009	0	0.006	1.256	0.2267315	0.000000	0.001360	0.284775
tc080409_45	1242342	2379555	A	767.5	41.1	8/10/2009	0	0.022	0.211	0.2284306	0.000000	0.005025	0.048199
tc080409_33	1242344	2378754	A	769.1	33.0	8/10/2009	0.031	0.002	0.15	0.2349631	0.007284	0.000470	0.035244
tc072709_38	1242346	2377557	A	770.3	40.3	7/29/2009	0	0.008	0.495	0.2298491	0.000000	0.001839	0.113775
tc072709_35	1242348	2377365	A	770.7	39.7	7/29/2009	-0.093	0.002	0.009	0.2304095	0.000000	0.000461	0.002074
tc080409_21	1242349	2378158	A	772.7	27.0	8/10/2009	0	0.003	0.645	0.2407818	0.000000	0.000722	0.155304
tc080409_44	1242350	2379167	A	769.0	41.2	8/10/2009	0.104	0.005	0.077	0.2288042	0.023796	0.001144	0.017618
tc080409_43	1242351	2379354	A	766.9	40.9	8/10/2009	0.508	0.001	0.013	0.2283973	0.116026	0.000228	0.002969
tc072709_28	1242352	2377164	A	771.9	37.6	7/29/2009	0	0.005	0.253	0.2323277	0.000000	0.001162	0.058779
tc072709_03	1242354	2376352	A	775.1	24.5	7/27/2009	0	0.013	0.689	0.2435583	0.000000	0.003166	0.167812
tc080409_48	1242355	2380172	A	766.3	41.3	8/10/2009	0	0.013	0.321	0.2279283	0.000000	0.002963	0.073165
tc072709_25	1242358	2376970	A	772.9	37.2	7/29/2009	19.16	0.012	7.922	0.2329285	4.462910	0.002795	1.845260
tc080409_26	1242361	2378358	A	770.4	28.4	8/10/2009	-0.027	0.001	0.389	0.2389506	0.000000	0.000239	0.092952
tc080409_46	1242363	2379767	A	767.5	41.1	8/10/2009	0	0.014	0.322	0.2284306	0.000000	0.003198	0.073555
tc080409_47	1242364	2379953	A	766.1	41.1	8/10/2009	0	0.015	1.093	0.2280139	0.000000	0.003420	0.249219
tc080409_49	1242378	2380345	A	764.4	41.5	8/10/2009	0	0.01	0.148	0.2272187	0.000000	0.002272	0.033628
tc072709_39	1242513	2377634	A	770.3	40.3	7/29/2009	223.221	0.006	4.886	0.2298491	51.307130	0.001379	1.123042
tc080409_03	1242534	2377760	A	776.2	39.7	8/4/2009	6.263	0.01	1.73	0.2320538	1.453353	0.002321	0.401453

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
tc072709_02	1242536	2376358	A	777.5	23.6	7/27/2009	1.692	0.013	2.628	0.2450534	0.414630	0.003186	0.644000
tc080409_32	1242541	2378754	A	777.1	32.6	8/10/2009	0.135	0.002	0.299	0.2377177	0.032092	0.000475	0.071078
tc072709_01	1242545	2376565	A	777.7	22.6	7/27/2009	0	0.01	0.701	0.2459453	0.000000	0.002459	0.172408
tc080409_35	1242546	2378938	A	768.0	34.8	8/10/2009	0.013	0	0.096	0.2332556	0.003032	0.000000	0.022393
tc072709_34	1242550	2377352	A	769.1	39.4	7/29/2009	9.665	0.006	2.124	0.2301518	2.224417	0.001381	0.488842
tc080409_17	1242553	2377944	A	770.3	45.5	8/4/2009	0	0.004	0.652	0.2260982	0.000000	0.000904	0.147416
tc080409_25	1242554	2378349	A	770.3	28.1	8/10/2009	0	0.001	0.099	0.2391575	0.000000	0.000239	0.023677
tc080409_42	1242555	2379183	A	766.1	40.4	8/10/2009	0	0.006	0.034	0.2285229	0.000000	0.001371	0.007770
tc072709_40	1242558	2377554	A	769.2	40.3	7/29/2009	-2.799	0.005	0.321	0.2295208	0.000000	0.001148	0.073676
tc072709_29	1242559	2377171	A	772.5	37.7	7/29/2009	0.029	0.013	4.595	0.2324335	0.006741	0.003022	1.068032
tc072709_04	1242559	2376173	A	775.3	25.2	7/27/2009	0	0.01	0.859	0.2430496	0.000000	0.002430	0.208780
tc080409_41	1242562	2379362	A	763.9	40.0	8/10/2009	0	0.01	0.148	0.2281577	0.000000	0.002282	0.033767
tc080409_28	1242565	2378569	A	769.9	30.4	8/10/2009	0	0.002	0.287	0.2372221	0.000000	0.000474	0.068083
tc072709_24	1242566	2376967	A	772.4	37.1	7/29/2009	3.194	0.023	3.347	0.2328529	0.743732	0.005356	0.779359
tc080409_22	1242570	2378153	A	772.1	27.4	8/10/2009	0	0.001	0.489	0.2402746	0.000000	0.000240	0.117494
tc080409_51	1242584	2379744	A	761.1	42.2	8/10/2009	0	0.008	0.187	0.2257356	0.000000	0.001806	0.042213
tc080409_52	1242584	2379564	A	763.6	42.5	8/10/2009	0.067	0.005	0.012	0.2262618	0.015160	0.001131	0.002715
tc072709_17	1242613	2376802	A	775.1	26.1	7/28/2009	0.377	0.004	0.935	0.2422561	0.091331	0.000969	0.226509
tc072709_16	1242715	2376613	A	784.7	35.4	7/27/2009	0	0.022	0.69	0.2378643	0.000000	0.005233	0.164126
tc072709_05	1242725	2376336	A	776.2	25.7	7/27/2009	0	0.037	1.469	0.2429246	0.000000	0.008988	0.356856
tc071309_117	1242734	2373718	A	787.7	41.3	7/15/2009	0	0.011	0.614	0.2342936	0.000000	0.002577	0.143856
tc072709_18	1242735	2376744	A	775.1	28.1	7/28/2009	0	0.01	1.255	0.2406477	0.000000	0.002406	0.302013
tc071309_80	1242736	2373160	A	776.2	42.7	7/14/2009	0	0.013	0.9	0.2298497	0.000000	0.002988	0.206865
tc080409_29	1242737	2378570	A	769.3	31.0	8/10/2009	0	0	0.283	0.2365696	0.000000	0.000000	0.066949

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
tc071309_138	1242738	2374046	A	782.3	39.7	7/15/2009	0.001	0.009	0.374	0.2338774	0.000234	0.002105	0.087470
tc071309_136	1242738	2373890	A	780.5	39.7	7/15/2009	0	0.006	0.501	0.2333393	0.000000	0.001400	0.116903
tc071309_76	1242739	2372158	A	775.8	42.4	7/14/2009	0	0.023	0.601	0.2299496	0.000000	0.005289	0.138200
tc071309_137	1242740	2373967	A	785.7	39.7	7/15/2009	0	0.01	0.639	0.2348939	0.000000	0.002349	0.150097
tc071309_118	1242740	2373803	A	781.0	41.4	7/15/2009	0	0.018	0.497	0.2322269	0.000000	0.004180	0.115417
tc071309_81	1242742	2373374	A	775.4	42.8	7/14/2009	0	0.007	0.838	0.2295401	0.000000	0.001607	0.192355
tc080409_39	1242744	2379164	A	764.8	38.1	8/10/2009	0	0.004	0.133	0.229821	0.000000	0.000919	0.030566
tc071309_75	1242747	2372358	A	777.9	42.3	7/14/2009	0	0.013	0.948	0.2306452	0.000000	0.002998	0.218652
tc072709_23	1242748	2376968	A	777.5	37.0	7/29/2009	0	0.01	0.88	0.2344659	0.000000	0.002345	0.206330
tc071309_77	1242748	2372544	A	776.6	42.5	7/14/2009	0	0.017	0.674	0.2301138	0.000000	0.003912	0.155097
tc071309_78	1242751	2372759	A	775.7	42.6	7/14/2009	0	0.024	1.159	0.2297743	0.000000	0.005515	0.266308
tc080409_53	1242751	2379572	A	764.1	42.7	8/10/2009	0.002	0.006	-0.029	0.2262666	0.000453	0.001358	0.000000
tc080409_04	1242752	2377744	A	780.7	40.6	8/4/2009	0	0.011	0.344	0.2327296	0.000000	0.002560	0.080059
tc071309_79	1242754	2372957	A	776.0	42.6	7/14/2009	0	0.017	1.075	0.2298632	0.000000	0.003908	0.247103
tc072709_33	1242756	2377355	A	767.2	39.1	7/29/2009	0	0.01	0.612	0.2298038	0.000000	0.002298	0.140640
tc072709_30	1242756	2377166	A	771.9	37.9	7/29/2009	0	0.014	0.835	0.2321036	0.000000	0.003249	0.193807
tc072709_41	1242757	2377543	A	769.0	40.2	7/29/2009	0	0.015	0.497	0.2295344	0.000000	0.003443	0.114079
tc080409_16	1242758	2377961	A	770.3	45.5	8/4/2009	0	0.007	0.34	0.2260982	0.000000	0.001583	0.076873
tc080409_50	1242761	2379773	A	761.1	41.9	8/10/2009	0	0.01	0.417	0.2259505	0.000000	0.002260	0.094221
tc080409_15	1242761	2378198	A	768.0	45.5	8/4/2009	0.001	0.005	0.416	0.2254231	0.000225	0.001127	0.093776
tc080409_31	1242762	2378767	A	767.0	32.1	8/10/2009	0.353	0	0.053	0.2350124	0.082959	0.000000	0.012456
tc080409_36	1242762	2378989	A	767.7	35.8	8/10/2009	0.267	0.004	0.117	0.2324098	0.062053	0.000930	0.027192
tc080409_24	1242764	2378377	A	770.0	27.9	8/10/2009	0	0.001	-0.242	0.2392232	0.000000	0.000239	0.000000
tc080409_40	1242772	2379383	A	765.7	39.1	8/10/2009	0.634	0.004	0.468	0.2293545	0.145411	0.000917	0.107338

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
tc071309_116	1242814	2373720	A	781.1	41.2	7/15/2009	0	0.018	0.652	0.2324044	0.000000	0.004183	0.151528
tc071309_135	1242818	2373884	A	781.4	39.6	7/15/2009	0	0.007	1.704	0.233683	0.000000	0.001636	0.398196
tc071309_140	1242818	2374041	A	780.4	39.7	7/15/2009	0	0.016	0.82	0.2333094	0.000000	0.003733	0.191314
tc071309_139	1242820	2373969	A	780.5	39.7	7/15/2009	-0.003	0.016	0.863	0.2333393	0.000000	0.003733	0.201372
tc071309_174	1242822	2375148	A	782.2	38.9	7/16/2009	0	0.006	1.5	0.234447	0.000000	0.001407	0.351671
tc071309_119	1242824	2373803	A	781.0	41.5	7/15/2009	0	0.011	1.543	0.2321531	0.000000	0.002554	0.358212
tc072709_22	1242856	2377034	A	771.4	36.9	7/29/2009	3236.645	0.006	3.582	0.2327014	753.171900	0.001396	0.833536
tc071309_115	1242895	2373726	A	782.7	41.0	7/15/2009	0	0.007	0.749	0.2330287	0.000000	0.001631	0.174538
tc071309_141	1242896	2373968	A	781.9	39.6	7/15/2009	0	0.028	5.171	0.2338326	0.000000	0.006547	1.209148
tc071309_134	1242898	2373883	A	781.2	39.5	7/15/2009	0.001	0.013	1.671	0.233698	0.000234	0.003038	0.390509
tc071309_120	1242899	2373805	A	781.5	41.7	7/15/2009	0	0.003	0.209	0.2321541	0.000000	0.000696	0.048520
tc071309_173	1242923	2375351	A	776.8	38.8	7/16/2009	0	0.004	0.234	0.2329031	0.000000	0.000932	0.054499
tc080409_05	1242926	2377757	A	772.5	41.5	8/4/2009	0	0.007	0.547	0.2296264	0.000000	0.001607	0.125606
tc080409_23	1242931	2378366	A	769.5	27.7	8/10/2009	0	0.001	0.012	0.2392267	0.000000	0.000239	0.002871
tc071309_74	1242933	2372543	A	779.1	42.2	7/14/2009	2.262	0.005	2.44	0.2310742	0.522690	0.001155	0.563821
tc080409_30	1242934	2378744	A	768.5	31.6	8/10/2009	0	0.002	0.234	0.2358584	0.000000	0.000472	0.055191
tc071309_69	1242939	2371560	A	776.8	41.8	7/14/2009	0.04	0.014	0.722	0.2306847	0.009227	0.003230	0.166554
tc071309_67	1242940	2371157	A	775.3	41.6	7/14/2009	0	0.005	0.951	0.2303855	0.000000	0.001152	0.219097
tc071309_68	1242940	2371365	A	776.4	41.7	7/14/2009	0.094	0.017	1.404	0.2306391	0.021680	0.003921	0.323817
tc080409_38	1242940	2379180	A	765.2	37.4	8/10/2009	0	0.003	0.376	0.2304595	0.000000	0.000691	0.086653
tc071309_54	1242944	2372968	A	777.7	38.1	7/14/2009	0	0.009	2.641	0.2336974	0.000000	0.002103	0.617195
tc071309_55	1242944	2372758	A	777.6	38.6	7/14/2009	0	0.02	4.022	0.2332926	0.000000	0.004666	0.938303
tc071309_175	1242945	2375169	A	782.2	39.1	7/16/2009	0	0.006	0.155	0.2342969	0.000000	0.001406	0.036316
tc071309_169	1242945	2375581	A	780.3	37.4	7/16/2009	5.831	0.01	1.863	0.2350072	1.370327	0.002350	0.437818

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
tc071309_70	1242947	2371757	A	777.9	42.0	7/14/2009	0.193	0.05	1.771	0.2308647	0.044557	0.011543	0.408861
tc080409_12	1242948	2377553	A	769.1	45.9	8/4/2009	0	0.006	0.152	0.2254629	0.000000	0.001353	0.034270
tc071309_53	1242948	2373166	A	778.7	37.7	7/14/2009	0	0.012	0.797	0.234299	0.000000	0.002812	0.186736
tc071309_73	1242950	2372378	A	778.0	42.2	7/14/2009	0	0.016	1.239	0.230748	0.000000	0.003692	0.285897
tc072709_32	1242952	2377362	A	770.3	38.7	7/29/2009	0	0.003	0.512	0.2310283	0.000000	0.000693	0.118287
tc072709_21	1242952	2376963	A	775.3	36.8	7/29/2009	0	0.005	0.183	0.2339533	0.000000	0.001170	0.042813
tc071309_71	1242952	2371967	A	778.1	42.1	7/14/2009	0	0.041	2.834	0.2308508	0.000000	0.009465	0.654231
tc072709_06	1242953	2376341	A	780.0	26.4	7/27/2009	0.081	0.02	1.805	0.2435434	0.019727	0.004871	0.439596
tc080409_13	1242954	2377952	A	771.6	45.8	8/4/2009	0	0.007	2.45	0.2262667	0.000000	0.001584	0.554354
tc072709_19	1242954	2376763	A	773.1	35.9	7/29/2009	0	0.007	0.599	0.2339689	0.000000	0.001638	0.140147
tc080409_14	1242954	2378164	A	770.8	45.7	8/4/2009	0	0.008	1.535	0.226103	0.000000	0.001809	0.347068
tc080409_37	1242954	2378996	A	766.8	36.7	8/10/2009	0	0.007	0.637	0.2314631	0.000000	0.001620	0.147442
tc072709_15	1242955	2376588	A	781.2	35.0	7/27/2009	0	0.011	0.762	0.2371107	0.000000	0.002608	0.180678
tc080409_54	1242957	2379561	A	761.5	43.1	8/10/2009	-0.012	0.01	0.126	0.2252115	0.000000	0.002252	0.028377
tc071309_72	1242958	2372162	A	778.4	42.2	7/14/2009	0	0.006	0.354	0.2308666	0.000000	0.001385	0.081727
tc080409_55	1242959	2379382	A	762.5	43.4	8/10/2009	0	0.009	0.109	0.2252935	0.000000	0.002028	0.024557
tc071309_52	1242961	2373368	A	778.8	36.7	7/14/2009	0.682	0.004	0.661	0.2350853	0.160328	0.000940	0.155391
tc072709_31	1242962	2377162	A	770.7	38.1	7/29/2009	0	0.006	1.541	0.2315939	0.000000	0.001390	0.356886
tc071309_66	1242965	2370964	A	777.2	41.3	7/14/2009	0	0.011	0.813	0.2311704	0.000000	0.002543	0.187942
tc071309_105	1242970	2373645	A	781.4	38.8	7/15/2009	0	0.011	0.867	0.2342823	0.000000	0.002577	0.203123
tc071309_133	1242972	2373882	A	781.2	39.4	7/15/2009	0	0.007	0.325	0.2337727	0.000000	0.001636	0.075976
tc071309_170	1242973	2375771	A	780.3	37.7	7/16/2009	0	0.017	1.675	0.2347804	0.000000	0.003991	0.393257
tc071309_104	1242974	2373564	A	781.9	38.5	7/15/2009	0.116	0.008	0.422	0.2346579	0.027220	0.001877	0.099026
tc071309_08	1242975	2370550	A	779.7	37.5	7/13/2009	0	0.013	0.749	0.2347509	0.000000	0.003052	0.175828

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
tc071309_121	1242976	2373808	A	781.4	41.8	7/15/2009	0	0.01	0.091	0.2320507	0.000000	0.002321	0.021117
tc071309_142	1242981	2374044	A	781.4	39.6	7/15/2009	0	0.006	0.78	0.233683	0.000000	0.001402	0.182273
tc071309_114	1242983	2373728	A	781.9	40.8	7/15/2009	0	0.017	0.74	0.2329388	0.000000	0.003960	0.172375
tc071309_09	1243008	2370774	A	778.0	38.0	7/13/2009	0	0.01	0.38	0.2338627	0.000000	0.002339	0.088868
tc071309_103	1243055	2373567	A	781.9	38.3	7/15/2009	-0.006	0.008	0.388	0.2348086	0.000000	0.001878	0.091106
tc071309_106	1243058	2373641	A	781.6	39.1	7/15/2009	0	0.036	1.515	0.2341171	0.000000	0.008428	0.354687
tc071309_122	1243059	2373805	A	782.8	42.0	7/15/2009	0.123	0.041	3.271	0.2323189	0.028575	0.009525	0.759915
tc071309_113	1243059	2373719	A	781.8	40.5	7/15/2009	0.306	0.051	3.167	0.2331318	0.071338	0.011890	0.738328
tc071309_132	1243060	2373890	A	789.9	39.2	7/15/2009	0	0.02	1.702	0.2365275	0.000000	0.004731	0.402570
tc071309_143	1243061	2373970	A	780.7	39.7	7/15/2009	0	0.007	1.811	0.2333991	0.000000	0.001634	0.422686
tc071309_144	1243064	2374047	A	780.7	39.8	7/15/2009	0	0.007	0.747	0.2333245	0.000000	0.001633	0.174293
tc072709_07	1243124	2376337	A	774.9	27.8	7/27/2009	42.877	0.025	5.421	0.2408255	10.325870	0.006021	1.305515
tc071309_131	1243132	2373886	A	780.8	39.0	7/15/2009	0	0.031	3.335	0.2339524	0.000000	0.007253	0.780231
tc071309_102	1243132	2373561	A	782.6	38.0	7/15/2009	0.198	0.026	1.626	0.2352454	0.046579	0.006116	0.382509
tc071309_107	1243136	2373642	A	782.0	39.3	7/15/2009	0	0.035	1.501	0.234087	0.000000	0.008193	0.351365
tc071309_112	1243136	2373723	A	782.4	40.3	7/15/2009	-0.085	0.032	3.798	0.2334596	0.000000	0.007471	0.886679
tc072709_08	1243137	2376158	A	775.4	29.2	7/27/2009	0	0.008	0.684	0.239865	0.000000	0.001919	0.164068
tc071309_145	1243137	2373964	A	780.5	40.0	7/15/2009	0	0.026	2.683	0.2331157	0.000000	0.006061	0.625450
tc071309_60	1243139	2371960	A	778.3	40.0	7/14/2009	0	0.052	2.621	0.2324587	0.000000	0.012088	0.609274
tc071309_10	1243139	2370757	A	776.8	38.4	7/13/2009	0.025	0.008	0.603	0.2332022	0.005830	0.001866	0.140621
tc080409_06	1243140	2377781	A	771.6	42.3	8/4/2009	0.122	0.008	0.109	0.2287772	0.027911	0.001830	0.024937
tc071309_64	1243140	2371161	A	778.5	40.8	7/14/2009	0	0.03	1.304	0.2319259	0.000000	0.006958	0.302431
tc080409_10	1243141	2377968	A	768.5	45.5	8/4/2009	0	0.007	0.294	0.2255699	0.000000	0.001579	0.066318
tc071309_123	1243142	2373807	A	782.2	42.2	7/15/2009	0	0.042	1.815	0.2319936	0.000000	0.009744	0.421068

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
tc080409_11	1243146	2377562	A	768.5	45.8	8/4/2009	0	0.006	2.763	0.2253577	0.000000	0.001352	0.622663
tc071309_176	1243148	2375359	A	789.3	39.3	7/16/2009	0	0.006	0.185	0.2362722	0.000000	0.001418	0.043710
tc071309_56	1243148	2372762	A	778.7	39.0	7/14/2009	0	0.011	0.613	0.2333232	0.000000	0.002567	0.143027
tc071309_51	1243148	2373360	A	778.6	35.7	7/14/2009	0	0.008	0.74	0.2357859	0.000000	0.001886	0.174482
tc071309_50	1243149	2373156	A	778.6	34.9	7/14/2009	0	0.021	1.063	0.2363983	0.000000	0.004964	0.251291
tc071309_58	1243149	2372372	A	778.7	39.5	7/14/2009	0.045	0.031	3.287	0.2329501	0.010483	0.007221	0.765707
tc071309_62	1243149	2371570	A	778.0	40.4	7/14/2009	0	0.024	1.877	0.2320726	0.000000	0.005570	0.435600
tc071309_61	1243149	2371770	A	778.3	40.2	7/14/2009	0	0.014	0.888	0.2323103	0.000000	0.003252	0.206292
tc071309_65	1243149	2370966	A	777.7	41.0	7/14/2009	0	0.004	0.499	0.2315401	0.000000	0.000926	0.115539
tc071309_168	1243150	2375551	A	780.3	37.0	7/16/2009	0	0.005	0.4	0.2353103	0.000000	0.001177	0.094124
tc071309_49	1243150	2372966	A	778.1	33.8	7/14/2009	0	0.009	0.555	0.2370931	0.000000	0.002134	0.131587
tc071309_57	1243151	2372569	A	778.4	39.3	7/14/2009	0.22	0.014	0.883	0.2330094	0.051262	0.003262	0.205747
tc071309_178	1243152	2375169	A	781.0	39.8	7/16/2009	0	0.011	0.681	0.2334142	0.000000	0.002568	0.158955
tc072709_20	1243153	2376756	A	773.1	36.6	7/29/2009	0	0.008	0.397	0.2334401	0.000000	0.001868	0.092676
tc071309_171	1243154	2375740	A	780.0	38.0	7/16/2009	0	0.009	1.508	0.2344639	0.000000	0.002110	0.353572
tc071309_07	1243154	2370565	A	778.8	36.9	7/13/2009	0	0.034	3.121	0.2349337	0.000000	0.007988	0.733228
tc071309_63	1243158	2371367	A	777.9	40.6	7/14/2009	0	0.036	1.968	0.2318949	0.000000	0.008348	0.456369
tc072709_14	1243164	2376578	A	778.1	34.8	7/27/2009	0	0.006	0.16	0.2363232	0.000000	0.001418	0.037812
tc080409_09	1243169	2378164	A	765.2	45.0	8/4/2009	0	0.008	0.367	0.2249542	0.000000	0.001800	0.082558
tc071309_146	1243212	2373964	A	781.1	40.1	7/15/2009	0	0.011	5.589	0.2332205	0.000000	0.002565	1.303469
tc071309_101	1243212	2373562	A	781.6	37.7	7/15/2009	0	0.024	1.571	0.2351716	0.000000	0.005644	0.369455
tc071309_124	1243215	2373800	A	783.1	42.3	7/15/2009	0	0.042	1.328	0.2321869	0.000000	0.009752	0.308344
tc071309_130	1243218	2373886	A	780.8	38.7	7/15/2009	0	0.002	6.252	0.2341775	0.000000	0.000468	1.464078
tc071309_111	1243218	2373724	A	782.0	40.1	7/15/2009	0.001	0.006	0.581	0.2334892	0.000233	0.001401	0.135657

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
tc071309_108	1243221	2373644	A	789.2	39.5	7/15/2009	0.607	0.019	0.705	0.2360912	0.143307	0.004486	0.166444
tc071309_59	1243225	2372169	A	779.1	39.7	7/14/2009	1.208	0.056	5.475	0.2329207	0.281368	0.013044	1.275241
tc071309_161	1243225	2374060	A	783.6	31.8	7/16/2009	0	0.007	1.277	0.2403349	0.000000	0.001682	0.306908
tc071309_110	1243292	2373729	A	781.6	39.9	7/15/2009	12.306	0.004	2.243	0.2335189	2.873683	0.000934	0.523783
tc071309_100	1243293	2373566	A	781.5	37.5	7/15/2009	0	0.011	0.782	0.2352929	0.000000	0.002588	0.183999
tc071309_109	1243296	2373646	A	781.5	39.7	7/15/2009	0	0.004	0.65	0.2336382	0.000000	0.000935	0.151865
tc071309_153	1243298	2374049	A	784.0	26.2	7/16/2009	0	0.014	2.009	0.2449559	0.000000	0.003429	0.492116
tc071309_129	1243299	2373888	A	780.9	38.4	7/15/2009	0	0.005	0.575	0.234433	0.000000	0.001172	0.134799
tc071309_125	1243301	2373803	A	781.6	42.4	7/15/2009	0	0.01	1.514	0.2316688	0.000000	0.002317	0.350747
tc071309_160	1243302	2374126	A	783.8	31.2	7/16/2009	10.752	0.006	0.716	0.2408702	2.589836	0.001445	0.172463
tc071309_147	1243310	2373965	A	780.8	40.4	7/15/2009	0	0.011	1.524	0.2329078	0.000000	0.002562	0.354952
tc071309_167	1243311	2375594	A	782.3	36.5	7/16/2009	0.027	0.008	1.251	0.2362944	0.006380	0.001890	0.295604
tc071309_172	1243328	2375753	A	778.3	38.3	7/16/2009	6.803	0.008	2.518	0.2337275	1.590048	0.001870	0.588526
tc080409_08	1243329	2377980	A	766.3	44.2	8/4/2009	0	0.006	0.381	0.2258455	0.000000	0.001355	0.086047
tc072709_13	1243335	2376371	A	778.5	34.1	7/27/2009	0	0.014	0.365	0.2369833	0.000000	0.003318	0.086499
tc080409_07	1243335	2377760	A	767.1	43.4	8/4/2009	0	0.006	1.031	0.2266526	0.000000	0.001360	0.233679
tc071309_15	1243344	2371560	A	779.1	39.2	7/13/2009	0	0.003	0.418	0.2332936	0.000000	0.000700	0.097517
tc072709_09	1243346	2376153	A	772.8	30.1	7/27/2009	5.593	0.032	4.737	0.2383512	1.333099	0.007627	1.129070
tc071309_11	1243346	2370759	A	778.5	38.6	7/13/2009	0.509	0.013	0.963	0.2335626	0.118883	0.003036	0.224921
tc071309_12	1243346	2370954	A	779.3	38.8	7/13/2009	0	0.022	1.38	0.2336527	0.000000	0.005140	0.322441
tc071309_177	1243351	2375361	A	782.3	39.5	7/16/2009	0.04	0.009	0.329	0.234027	0.009361	0.002106	0.076995
tc071309_34	1243351	2371766	A	778.1	42.4	7/13/2009	0	0.002	0.268	0.2306314	0.000000	0.000461	0.061809
tc071309_37	1243351	2372370	A	778.4	42.6	7/13/2009	0	0.001	-0.491	0.2305741	0.000000	0.000231	0.000000
tc071309_42	1243352	2373365	A	866.3	43.0	7/13/2009	0	0	0.03	0.2562868	0.000000	0.000000	0.007689

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
tc071309_39	1243353	2372766	A	778.0	42.7	7/13/2009	11.933	0.001	1.387	0.2303827	2.749156	0.000230	0.319541
tc071309_14	1243354	2371366	A	779.3	39.1	7/13/2009	0	0.004	0.629	0.2334282	0.000000	0.000934	0.146826
tc071309_38	1243354	2372564	A	778.1	42.6	7/13/2009	0	0	0.591	0.2304853	0.000000	0.000000	0.136217
tc071309_35	1243355	2371974	A	778.3	42.4	7/13/2009	0.018	0.001	-0.005	0.2306906	0.004152	0.000231	0.000000
tc071309_36	1243357	2372168	A	778.3	42.5	7/13/2009	0	0	0.695	0.2306176	0.000000	0.000000	0.160279
tc071309_40	1243358	2372960	A	778.0	42.8	7/13/2009	-1.652	0.005	0.242	0.2303098	0.000000	0.001152	0.055735
tc071309_13	1243358	2371175	A	779.3	39.0	7/13/2009	0	0.003	1.748	0.233503	0.000000	0.000701	0.408163
tc071309_06	1243358	2370561	A	778.5	36.5	7/13/2009	0	0.017	0.491	0.2351466	0.000000	0.003997	0.115457
tc071309_41	1243361	2373169	A	779.6	42.9	7/13/2009	0	0.001	0.034	0.2307104	0.000000	0.000231	0.007844
tc071309_159	1243372	2374206	A	783.6	30.4	7/16/2009	-0.307	0.007	2.987	0.2414434	0.000000	0.001690	0.721191
tc071309_98	1243373	2373645	A	781.2	37.0	7/15/2009	0	0.004	1.368	0.2355817	0.000000	0.000942	0.322276
tc071309_154	1243373	2374122	A	783.5	26.7	7/16/2009	104.199	0.006	10.05	0.2443915	25.465350	0.001466	2.456134
tc072709_10	1243374	2376019	A	773.2	31.3	7/27/2009	0	0.026	0.449	0.2375347	0.000000	0.006176	0.106653
tc071309_148	1243375	2373955	A	781.4	40.8	7/15/2009	0.3	0.008	3.966	0.2327898	0.069837	0.001862	0.923245
tc071309_152	1243376	2374047	A	785.0	25.7	7/16/2009	0	0.018	3.591	0.2456787	0.000000	0.004422	0.882232
tc071309_128	1243376	2373887	A	780.4	37.8	7/15/2009	0	0.007	4.074	0.234735	0.000000	0.001643	0.956310
tc071309_126	1243377	2373807	A	781.8	42.5	7/15/2009	16.179	0.003	-0.006	0.2316546	3.747941	0.000695	0.000000
tc071309_99	1243378	2373561	A	781.1	37.2	7/15/2009	0	0.014	0.803	0.2353998	0.000000	0.003296	0.189026
tc071309_97	1243379	2373721	A	777.5	36.7	7/15/2009	0	0.002	0.316	0.2346929	0.000000	0.000469	0.074163
sftc061909_02	1243382	2373887	A	774.2	37.6	6/19/2009	0	0.018	3.834	0.23302	0.000000	0.004194	0.893399
sftc061909_06	1243383	2374044	A	775.0	39.2	6/19/2009	0	0.018	2.335	0.2320659	0.000000	0.004177	0.541874
sftc061909_05	1243385	2373968	A	774.7	39.1	6/19/2009	1.276	0.001	2.109	0.2320503	0.296096	0.000232	0.489394
tc071309_179	1243405	2375135	A	783.5	40.0	7/16/2009	0	0.005	0.972	0.2340118	0.000000	0.001170	0.227459
tc071309_127	1243455	2373888	A	780.4	37.1	7/15/2009	0	0.008	0.883	0.2352646	0.000000	0.001882	0.207739

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
tc071309_158	1243457	2374207	A	783.6	29.6	7/16/2009	0	0.005	6.265	0.2420814	0.000000	0.001210	1.516640
sftc061909_03	1243457	2373888	A	773.8	38.4	6/19/2009	0	0.011	0.291	0.2323015	0.000000	0.002555	0.067600
sftc061909_07	1243458	2374044	A	775.0	39.3	6/19/2009	104.017	0.019	7.755	0.2319916	24.131070	0.004408	1.799095
tc071309_150	1243461	2374047	A	783.0	23.8	7/16/2009	17.046	0.002	9.691	0.2466207	4.203897	0.000493	2.390001
tc071309_155	1243462	2374121	A	785.0	27.3	7/16/2009	0	0.009	1.979	0.2443704	0.000000	0.002199	0.483609
sftc061909_04	1243463	2373965	A	773.8	38.9	6/19/2009	0	0.015	1.97	0.2319293	0.000000	0.003479	0.456901
tc071309_149	1243464	2373972	A	781.5	41.0	7/15/2009	11.002	0.007	14.336	0.2326714	2.559851	0.001629	3.335577
tc071309_166	1243505	2375353	A	784.0	35.8	7/16/2009	0	0.007	0.078	0.2373444	0.000000	0.001661	0.018513
vp070909_46	1243534	2349337	A	759.6	38.5	7/10/2009	0	0.004	0.354	0.2279654	0.000000	0.000912	0.080700
tc072709_11	1243535	2376105	A	771.4	32.4	7/27/2009	0	0.023	0.515	0.2361285	0.000000	0.005431	0.121606
vp070909_49	1243538	2349966	A	775.8	39.2	7/10/2009	0	0.008	1.117	0.2323054	0.000000	0.001858	0.259485
tc071309_44	1243538	2372557	A	849.2	43.4	7/13/2009	0	0.006	0.942	0.2509105	0.000000	0.001505	0.236358
vp070909_47	1243538	2349559	A	759.9	38.8	7/10/2009	0.002	0.004	0.358	0.2278361	0.000456	0.000911	0.081565
tc071309_156	1243539	2374124	A	784.3	28.2	7/16/2009	0	0.008	0.422	0.2434233	0.000000	0.001947	0.102725
tc071309_16	1243541	2371569	A	779.5	39.4	7/13/2009	2.43	0.019	11.764	0.233264	0.566832	0.004432	2.744118
vp070909_53	1243542	2350772	A	764.0	40.3	7/10/2009	0.064	0.007	0.192	0.2279692	0.014590	0.001596	0.043770
tc071309_151	1243543	2374046	A	790.9	24.8	7/16/2009	8.412	0.003	15.648	0.2482729	2.088471	0.000745	3.884974
sftc061909_08	1243543	2374045	A	774.6	39.3	6/19/2009	116.254	0.01	15.241	0.2318719	26.956030	0.002319	3.533959
tc071309_02	1243543	2371157	A	778.8	33.6	7/13/2009	24.311	0.008	1.177	0.2374611	5.772917	0.001900	0.279492
tc071309_48	1243545	2371753	A	778.7	43.7	7/13/2009	0	0.009	0.621	0.2298622	0.000000	0.002069	0.142744
vp070909_44	1243547	2348998	A	759.4	37.5	7/10/2009	0.599	0.01	0.576	0.228639	0.136955	0.002286	0.131696
tc071309_45	1243547	2372353	A	776.9	43.5	7/13/2009	0	0.009	0.073	0.2294757	0.000000	0.002065	0.016752
vp070909_27	1243549	2350965	A	759.1	42.8	7/9/2009	0	0.008	1.782	0.2247148	0.000000	0.001798	0.400442
tc071309_47	1243550	2371940	A	778.7	43.7	7/13/2009	0	0.007	0.035	0.2298622	0.000000	0.001609	0.008045

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
tc071309_180	1243550	2375163	A	784.9	40.2	7/16/2009	0	0.006	1.092	0.2342803	0.000000	0.001406	0.255834
tc071309_46	1243553	2372167	A	777.7	43.6	7/13/2009	0	0.011	0.563	0.2296395	0.000000	0.002526	0.129287
tc071309_03	1243554	2370951	A	778.5	34.3	7/13/2009	3.039	0.006	6.717	0.2368292	0.719724	0.001421	1.590782
tc071309_05	1243554	2370575	A	778.4	35.6	7/13/2009	0.213	0.013	1.721	0.2358017	0.050226	0.003065	0.405815
tc071309_32	1243556	2373157	A	783.8	40.4	7/13/2009	0	0.005	0.059	0.2338027	0.000000	0.001169	0.013794
vp070909_26	1243558	2351151	A	758.3	42.8	7/9/2009	0	0.02	0.763	0.224478	0.000000	0.004490	0.171277
tc072709_12	1243559	2376369	A	775.1	33.4	7/27/2009	-0.126	0.006	0.424	0.2364871	0.000000	0.001419	0.100271
tc071309_43	1243561	2372767	A	778.9	43.2	7/13/2009	0	-0.002	-0.016	0.2302846	0.000000	0.000000	0.000000
tc071309_33	1243561	2372957	A	831.9	40.7	7/13/2009	0.098	0.004	0.541	0.2479135	0.024296	0.000992	0.134121
tc071309_01	1243562	2371349	A	778.8	32.8	7/13/2009	0	0.008	2.399	0.238082	0.000000	0.001905	0.571159
tc071309_04	1243564	2370765	A	778.5	35.0	7/13/2009	0	0.002	1.002	0.2362912	0.000000	0.000473	0.236764
vp070909_52	1243567	2350566	A	760.3	40.0	7/10/2009	0.29	0.015	0.73	0.2270825	0.065854	0.003406	0.165770
vp070909_50	1243568	2350167	A	761.0	39.5	7/10/2009	0	0.008	0.646	0.2276551	0.000000	0.001821	0.147065
vp070909_48	1243568	2349783	A	760.1	39.0	7/10/2009	-0.002	0.019	0.509	0.2277501	0.000000	0.004327	0.115925
vp070909_51	1243573	2350362	A	760.1	39.8	7/10/2009	0.005	0.002	0.183	0.2271679	0.001136	0.000454	0.041572
vp070909_45	1243574	2349175	A	760.5	38.1	7/10/2009	0.669	0.004	0.697	0.2285288	0.152886	0.000914	0.159285
tc071309_165	1243598	2375394	A	784.0	34.8	7/16/2009	0	0.005	0.309	0.2381151	0.000000	0.001191	0.073578
tc071309_157	1243620	2374125	A	783.6	28.7	7/16/2009	0	0.006	0.444	0.2428032	0.000000	0.001457	0.107805
vp070909_29	1243732	2350570	A	759.5	23.1	7/10/2009	0.009	0.044	0.375	0.2397842	0.002158	0.010551	0.089919
tc071309_163	1243745	2375152	A	783.8	32.7	7/16/2009	0	0.006	0.37	0.2396889	0.000000	0.001438	0.088685
vp070909_30	1243747	2350351	A	758.4	25.1	7/10/2009	0.012	0.007	0.46	0.2378313	0.002854	0.001665	0.109402
tc071309_17	1243748	2371766	A	779.1	39.6	7/13/2009	0	0.007	0.597	0.2329952	0.000000	0.001631	0.139098
vp070909_33	1243750	2349766	A	757.7	30.8	7/10/2009	0.003	0.005	0.31	0.2331558	0.000699	0.001166	0.072278
vp070909_35	1243750	2349346	A	759.4	32.3	7/10/2009	0	0.002	0.657	0.2325314	0.000000	0.000465	0.152773

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
vp070909_25	1243751	2351162	A	756.1	42.8	7/9/2009	0	0.007	0.862	0.2238268	0.000000	0.001567	0.192939
vp070909_02	1243753	2350759	A	759.1	31.3	7/9/2009	0	0.019	0.403	0.233203	0.000000	0.004431	0.093981
vp070909_37	1243754	2348974	A	758.0	34.1	7/10/2009	0.271	0.001	0.517	0.2307429	0.062531	0.000231	0.119294
tc071309_83	1243754	2372567	A	777.4	24.1	7/15/2009	0	0.002	0.384	0.2446098	0.000000	0.000489	0.093930
tc071309_30	1243755	2372977	A	774.5	39.6	7/13/2009	0	0.008	0.306	0.2316196	0.000000	0.001853	0.070876
vp070909_28	1243755	2350958	A	759.6	42.8	7/9/2009	0	0.008	0.378	0.2248628	0.000000	0.001799	0.084998
vp070909_36	1243755	2349158	A	758.4	33.2	7/10/2009	0	0.001	0.356	0.2315429	0.000000	0.000232	0.082429
tc071309_162	1243756	2374978	A	783.8	31.6	7/16/2009	0	0.007	0.563	0.240554	0.000000	0.001684	0.135432
tc071309_164	1243756	2375339	A	789.8	33.6	7/16/2009	0	0.009	0.155	0.2408151	0.000000	0.002167	0.037326
tc071309_86	1243762	2371968	A	778.0	26.5	7/15/2009	0	0	-0.002	0.2428379	0.000000	0.000000	0.000000
tc071309_85	1243763	2372174	A	779.0	25.5	7/15/2009	0.325	0	0.107	0.2439642	0.079288	0.000000	0.026104
tc071309_84	1243764	2372357	A	779.0	24.8	7/15/2009	0	0	0.269	0.2445373	0.000000	0.000000	0.065781
tc071309_82	1243764	2372764	A	777.4	23.2	7/15/2009	0	0.002	0.265	0.2453526	0.000000	0.000491	0.065018
tc071309_31	1243764	2373157	A	790.1	40.0	7/13/2009	0	0.005	0.52	0.235983	0.000000	0.001180	0.122711
vp070909_32	1243767	2349953	A	757.7	27.1	7/10/2009	0.011	0.009	4.568	0.236029	0.002596	0.002124	1.078181
vp070909_34	1243770	2349584	A	757.7	31.6	7/10/2009	0.532	0.006	0.988	0.2325438	0.123713	0.001395	0.229753
vp070909_31	1243776	2350164	A	757.7	27.1	7/10/2009	0.011	0.009	4.568	0.236029	0.002596	0.002124	1.078181
vp070909_01	1243808	2350871	A	758.3	29.8	7/9/2009	0	0	2.894	0.2341107	0.000000	0.000000	0.677516
tc071309_96	1243921	2372756	A	777.7	32.2	7/15/2009	0	0.005	1.155	0.2382129	0.000000	0.001191	0.275136
vp070909_21	1243928	2350975	A	757.5	42.8	7/9/2009	0	0.015	1.524	0.2242412	0.000000	0.003364	0.341744
vp070909_42	1243942	2349765	A	763.6	36.0	7/10/2009	0	0.01	1.251	0.231019	0.000000	0.002310	0.289005
vp070909_38	1243942	2348963	A	758.0	35.3	7/10/2009	0	0	1.388	0.2298453	0.000000	0.000000	0.319025
tc071309_28	1243943	2373147	A	789.3	39.1	7/13/2009	0	0.001	0.578	0.2364236	0.000000	0.000236	0.136653
vp070909_18	1243946	2350162	A	753.5	41.5	7/9/2009	0	0.011	1.184	0.2239787	0.000000	0.002464	0.265191

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
tc071309_94	1243947	2372582	A	777.6	31.1	7/15/2009	0.051	0.002	0.586	0.2390434	0.012191	0.000478	0.140079
vp070909_19	1243950	2350358	A	754.0	41.7	7/9/2009	0	0.018	1.418	0.2239849	0.000000	0.004032	0.317611
tc071309_18	1243951	2371772	A	778.0	39.7	7/13/2009	0	0.007	0.578	0.2325919	0.000000	0.001628	0.134438
vp070909_24	1243952	2351159	A	756.1	42.8	7/9/2009	0	0.01	0.862	0.2238268	0.000000	0.002238	0.192939
vp070909_39	1243953	2349159	A	758.0	35.4	7/10/2009	0	0	1.264	0.2297708	0.000000	0.000000	0.290430
tc071309_95	1243954	2372704	A	784.2	31.8	7/15/2009	161.602	0.004	12.658	0.240519	38.868350	0.000962	3.044489
tc071309_87	1243956	2371984	A	778.0	27.3	7/15/2009	0	0	0.161	0.2421913	0.000000	0.000000	0.038993
tc071309_92	1243957	2372358	A	776.3	30.0	7/15/2009	0	0.001	0.423	0.2395097	0.000000	0.000240	0.101313
vp070909_43	1243957	2349958	A	757.7	36.5	7/10/2009	0	0.006	1.066	0.2288639	0.000000	0.001373	0.243969
vp070909_03	1243959	2350765	A	758.3	32.6	7/9/2009	0	0.016	0.952	0.2319667	0.000000	0.003711	0.220832
vp070909_40	1243965	2349353	A	757.2	35.6	7/10/2009	0	0.006	1.317	0.2293796	0.000000	0.001376	0.302093
vp070909_20	1243968	2350604	A	756.0	42.0	7/9/2009	0	0.026	0.813	0.2243652	0.000000	0.005833	0.182409
tc071309_91	1243970	2372170	A	774.9	29.6	7/15/2009	0	0.003	0.609	0.2393937	0.000000	0.000718	0.145791
vp070909_41	1243971	2349541	A	757.4	35.8	7/10/2009	0	0.004	0.633	0.2292916	0.000000	0.000917	0.145142
tc071309_29	1243975	2372971	A	789.3	39.3	7/13/2009	0	0.006	0.484	0.2362722	0.000000	0.001418	0.114356
tc071309_93	1244135	2372568	A	776.3	30.6	7/15/2009	0.072	0.002	1.505	0.2390366	0.017211	0.000478	0.359750
vp070909_05	1244139	2350544	A	756.1	34.4	7/9/2009	0	0.028	2.036	0.22994	0.000000	0.006438	0.468158
tc071309_25	1244142	2372762	A	775.8	39.2	7/13/2009	0	0.006	0.533	0.2323054	0.000000	0.001394	0.123819
vp070909_08	1244142	2349977	A	753.3	37.1	7/9/2009	0	0.01	0.926	0.2270948	0.000000	0.002271	0.210290
tc071309_19	1244143	2371767	A	775.8	39.7	7/13/2009	0	0.007	0.656	0.2319342	0.000000	0.001624	0.152149
tc071309_90	1244143	2372360	A	774.7	28.9	7/15/2009	0.369	0	0.019	0.2398865	0.088518	0.000000	0.004558
vp070909_14	1244143	2349157	A	753.7	41.0	7/9/2009	0	0.017	0.953	0.2243947	0.000000	0.003815	0.213848
tc071309_88	1244147	2371946	A	774.9	27.8	7/15/2009	-0.008	0	-0.28	0.2408255	0.000000	0.000000	0.000000
vp070909_04	1244147	2350752	A	757.1	33.5	7/9/2009	0	0.013	2.169	0.2309199	0.000000	0.003002	0.500865

Appendix B - Individual Flux Measurements and Calculations (Continued)

Site Point ID	Northing	Easting	Accum Chambe	Pressure (HPa)	Temp (DegC)	Date	CH4 slope	H2S slope	CO2 slope	AcK factor	CH4 flux (moles/day/m^2)	H2S flux (moles/day/m^2)	CO2 flux (moles/day/m^2)
vp070909_06	1244148	2350360	A	754.0	35.5	7/9/2009	0	0.007	0.581	0.2284842	0.000000	0.001599	0.132749
vp070909_15	1244149	2349351	A	753.9	41.0	7/9/2009	2.608	0.025	1.955	0.2244542	0.585377	0.005611	0.438808
vp070909_22	1244150	2350967	A	755.6	42.9	7/9/2009	0.288	0.009	2.352	0.223608	0.064399	0.002012	0.525926
tc071309_89	1244152	2372180	A	774.9	28.4	7/15/2009	0.017	0	0.011	0.2403463	0.004086	0.000000	0.002644
vp070909_07	1244152	2350159	A	754.0	36.3	7/9/2009	0.055	0.015	1.432	0.2278935	0.012534	0.003418	0.326344
tc071309_26	1244152	2372970	A	776.1	39.2	7/13/2009	0	0.007	1.735	0.2323953	0.000000	0.001627	0.403206
tc071309_27	1244152	2373151	A	773.4	39.1	7/13/2009	0	0.003	0.26	0.2316609	0.000000	0.000695	0.060232
vp070909_13	1244155	2348947	A	752.5	40.6	7/9/2009	0.091	0.016	0.835	0.224323	0.020413	0.003589	0.187310
vp070909_16	1244158	2349569	A	753.6	41.1	7/9/2009	0.001	0.026	1.166	0.2242935	0.000224	0.005832	0.261526
vp070909_23	1244158	2351158	A	754.3	42.9	7/9/2009	0	0.021	1.04	0.2232233	0.000000	0.004688	0.232152
vp070909_17	1244160	2349742	A	754.5	41.3	7/9/2009	13.867	0.009	3.229	0.2244186	3.112012	0.002020	0.724648
tc071309_20	1244334	2371755	A	774.9	39.6	7/13/2009	0	0.005	5.001	0.2317392	0.000000	0.001159	1.158928
vp070909_10	1244338	2349580	A	752.8	38.8	7/9/2009	0.128	0.015	0.961	0.2257074	0.028891	0.003386	0.216905
tc071309_23	1244343	2372354	A	775.0	39.2	7/13/2009	0	0.004	0.431	0.2320659	0.000000	0.000928	0.100020
vp070909_11	1244346	2349374	A	754.5	39.4	7/9/2009	0	0.008	0.763	0.2257828	0.000000	0.001806	0.172272
tc071309_21	1244348	2371957	A	775.7	39.5	7/13/2009	0	0.004	0.836	0.2320526	0.000000	0.000928	0.193996
vp070909_09	1244352	2349767	A	753.05	38.1	7/9/2009	0	0.029	4.312	0.2262901	0.000000	0.006562	0.975763
vp070909_12	1244353	2349170	A	752.4	40.1	7/9/2009	0	0.023	1.586	0.2246512	0.000000	0.005167	0.356297
tc071309_22	1244360	2372166	A	774.1	39.3	7/13/2009	0	0.011	4.7	0.2317222	0.000000	0.002549	1.089094
tc071309_24	1244362	2372567	A	775.8	39.1	7/13/2009	0	0.005	0.731	0.2323798	0.000000	0.001162	0.169870

APPENDIX C

VOLUMETRIC FLUX CALCULATIONS

2008 BC to CJ like 2009 Methane Grid Volume Computations

Mon Nov 02 07:18:28 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\2008FarLeft_like2009.grd
Grid Size:	276 rows x 376 columns
X Minimum:	2299700.16
X Maximum:	2314700.75
X Spacing:	40.001573333333
Y Minimum:	1208288.36
Y Maximum:	1219305.18
Y Spacing:	40.061163636363
Z Minimum:	-4.2218256322818
Z Maximum:	67.818173255841

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	874884.92619744
Simpson's Rule:	873747.04539096
Simpson's 3/8 Rule:	875087.98119379

Cut & Fill Volumes

Positive Volume [Cut]:	935526.36823603
Negative Volume [Fill]:	60641.442038581
Net Volume [Cut-Fill]:	874884.92619745

Areas

Planar Areas

Positive Planar Area [Cut]:	17673745.512937
Negative Planar Area [Fill]:	5592289.7519705
Blanked Planar Area:	141992764.65889
Total Planar Area:	165258799.9238

Surface Areas

Positive Surface Area [Cut]:	17673812.398396
Negative Surface Area [Fill]:	5592290.8722836

2008 FR like 2009 Methane
Grid Volume Computations

Mon Nov 02 07:22:30 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\2008MidLeft_like2009.grd
Grid Size:	50 rows x 70 columns
X Minimum:	2330496.15
X Maximum:	2333258.02
X Spacing:	40.027101449277
Y Minimum:	1234085.38
Y Maximum:	1236046.83
Y Spacing:	40.029591836738
Z Minimum:	-0.24862076084937
Z Maximum:	4.3620365528166

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	38303.76852742
Simpson's Rule:	38254.036253858
Simpson's 3/8 Rule:	38321.909491849

Cut & Fill Volumes

Positive Volume [Cut]:	39013.541256419
Negative Volume [Fill]:	709.77272899887
Net Volume [Cut-Fill]:	38303.76852742

Areas

Planar Areas

Positive Planar Area [Cut]:	2260836.0676298
Negative Planar Area [Fill]:	120936.10730247
Blanked Planar Area:	3035497.7365685
Total Planar Area:	5417269.9115007

Surface Areas

Positive Surface Area [Cut]:	2260836.2966116
Negative Surface Area [Fill]:	120936.11136547

2008 VP like 2009 Methane
Grid Volume Computations

Mon Nov 02 07:26:58 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\2008MidRight.grd
Grid Size:	26 rows x 61 columns
X Minimum:	2348757.75
X Maximum:	2351166.22
X Spacing:	40.14116666667
Y Minimum:	1243336.25
Y Maximum:	1244351.04
Y Spacing:	40.591600000001
Z Minimum:	-0.087048930264429
Z Maximum:	1.7130708162441

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	19047.884738059
Simpson's Rule:	19055.885306449
Simpson's 3/8 Rule:	19033.272173115

Cut & Fill Volumes

Positive Volume [Cut]:	19483.205857334
Negative Volume [Fill]:	435.3211192755
Net Volume [Cut-Fill]:	19047.884738059

Areas

Planar Areas

Positive Planar Area [Cut]:	1858743.0970021
Negative Planar Area [Fill]:	400411.93476984
Blanked Planar Area:	184936.23952839
Total Planar Area:	2444091.2713003

Surface Areas

Positive Surface Area [Cut]:	1858743.1428091
Negative Surface Area [Fill]:	400411.93496403

2008 TC to PR like 2009 Methane Grid Volume Computations

Mon Nov 02 07:29:33 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\2008right.grd
Grid Size:	171 rows x 471 columns
X Minimum:	2370451.31
X Maximum:	2389266.71
X Spacing:	40.032765957447
Y Minimum:	1237447.03
Y Maximum:	1244249.3
Y Spacing:	40.013352941177
Z Minimum:	-103.36562802527
Z Maximum:	269.72086695458

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	2385974.2932482
Simpson's Rule:	2396874.7983161
Simpson's 3/8 Rule:	2400360.1197744

Cut & Fill Volumes

Positive Volume [Cut]:	3621712.9369643
Negative Volume [Fill]:	1235738.6437161
Net Volume [Cut-Fill]:	2385974.2932482

Areas

Planar Areas

Positive Planar Area [Cut]:	15621611.789217
Negative Planar Area [Fill]:	5866340.5585435
Blanked Planar Area:	106499478.61024
Total Planar Area:	127987430.958

Surface Areas

Positive Surface Area [Cut]:	15623403.300658
Negative Surface Area [Fill]:	5866611.9833438

2009 BC to CJ Methane
Grid Volume Computations

Mon Nov 02 06:56:19 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\left.grd
Grid Size:	271 rows x 371 columns
X Minimum:	2299685.21
X Maximum:	2314693.82
X Spacing:	40.56381081081
Y Minimum:	1208289.37
Y Maximum:	1219304.07
Y Spacing:	40.795185185185
Z Minimum:	-2.1516591111946
Z Maximum:	31.198090746657

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.092

Total Volumes by:

Trapezoidal Rule:	670529.07724872
Simpson's Rule:	671198.43190927
Simpson's 3/8 Rule:	670880.50408723

Cut & Fill Volumes

Positive Volume [Cut]:	712939.95593574
Negative Volume [Fill]:	42410.878687016
Net Volume [Cut-Fill]:	670529.07724872

Areas

Planar Areas

Positive Planar Area [Cut]:	13580605.293215
Negative Planar Area [Fill]:	9535410.0872093
Blanked Planar Area:	142199321.18657
Total Planar Area:	165315336.567

Surface Areas

Positive Surface Area [Cut]:	13580631.792177
Negative Surface Area [Fill]:	9535410.3213687

2009 FR Methane
Grid Volume Computations

Mon Nov 02 07:02:07 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\midleft.grd
Grid Size:	42 rows x 75 columns
X Minimum:	2330300
X Maximum:	2333273.49
X Spacing:	40.1822972973
Y Minimum:	1234443.34
Y Maximum:	1236063.44
Y Spacing:	39.514634146338
Z Minimum:	-10.976327570615
Z Maximum:	96.603901093978

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	481540.01991218
Simpson's Rule:	483100.56957696
Simpson's 3/8 Rule:	482498.47722431

Cut & Fill Volumes

Positive Volume [Cut]:	558506.2056812
Negative Volume [Fill]:	76966.185769019
Net Volume [Cut-Fill]:	481540.01991218

Areas

Planar Areas

Positive Planar Area [Cut]:	1702833.2219181
Negative Planar Area [Fill]:	826514.29962344
Blanked Planar Area:	2288003.6274584
Total Planar Area:	4817351.1489999

Surface Areas

Positive Surface Area [Cut]:	1702934.5917733
Negative Surface Area [Fill]:	826517.77565821

2009 VP Methane
Grid Volume Computations

Mon Nov 02 07:04:24 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\midright.grd
Grid Size:	26 rows x 61 columns
X Minimum:	2348846.84
X Maximum:	2351262.05
X Spacing:	40.253499999999
Y Minimum:	1243433.93
Y Maximum:	1244453.01
Y Spacing:	40.763200000003
Z Minimum:	-0.23707196786598
Z Maximum:	2.8438661569454

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	16128.590047776
Simpson's Rule:	16166.314756382
Simpson's 3/8 Rule:	16165.284056258

Cut & Fill Volumes

Positive Volume [Cut]:	17362.070815672
Negative Volume [Fill]:	1233.4807678954
Net Volume [Cut-Fill]:	16128.590047776

Areas

Planar Areas

Positive Planar Area [Cut]:	1466761.1043363
Negative Planar Area [Fill]:	688510.43808505
Blanked Planar Area:	306020.66437882
Total Planar Area:	2461292.2068001

Surface Areas

Positive Surface Area [Cut]:	1466761.1986596
Negative Surface Area [Fill]:	688510.44051009

2009 TC to PR Methane
Grid Volume Computations

Mon Nov 02 07:07:10 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\right.grd
Grid Size:	40 rows x 40 columns
X Minimum:	2370450.01
X Maximum:	2389267.52
X Spacing:	482.50025641026
Y Minimum:	1237662.37
Y Maximum:	1244461.71
Y Spacing:	174.34205128205
Z Minimum:	-67.511289656868
Z Maximum:	67.567919243798

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	219695.23488193
Simpson's Rule:	367672.93169086
Simpson's 3/8 Rule:	-148759.91609759

Cut & Fill Volumes

Positive Volume [Cut]:	1110787.3140934
Negative Volume [Fill]:	891092.07921145
Net Volume [Cut-Fill]:	219695.23488193

Areas

Planar Areas

Positive Planar Area [Cut]:	10627131.466507
Negative Planar Area [Fill]:	5565984.7894791
Blanked Planar Area:	111753532.18741
Total Planar Area:	127946648.4434

Surface Areas

Positive Surface Area [Cut]:	10627299.472091
Negative Surface Area [Fill]:	5566059.9669526

2009 BC Methane
Grid Volume Computations

Fri Oct 09 13:19:41 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\BC_CH4_bln.grd
Grid Size:	145 rows x 198 columns
X Minimum:	2299785.21
X Maximum:	2314593.82
X Spacing:	75.170609137055
Y Minimum:	1208389.37
Y Maximum:	1219204.07
Y Spacing:	75.102083333333
Z Minimum:	-0.11956164503078
Z Maximum:	0.75991136868356

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	2920.1077946352
Simpson's Rule:	2678.9707329871
Simpson's 3/8 Rule:	2655.2436430973

Cut & Fill Volumes

Positive Volume [Cut]:	3386.6825856927
Negative Volume [Fill]:	466.57479105756
Net Volume [Cut-Fill]:	2920.1077946352

Areas

Planar Areas

Positive Planar Area [Cut]:	653126.19560964
Negative Planar Area [Fill]:	498549.55212258
Blanked Planar Area:	158998998.81927
Total Planar Area:	160150674.567

Surface Areas

Positive Surface Area [Cut]:	653126.19873641
Negative Surface Area [Fill]:	498549.55245247

2009 BCN Methane
Grid Volume Computations

Mon Oct 12 14:50:34 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\BCN_CH4_bln.grd
Grid Size:	145 rows x 198 columns
X Minimum:	2299785.21
X Maximum:	2314593.82
X Spacing:	75.170609137055
Y Minimum:	1208389.37
Y Maximum:	1219204.07
Y Spacing:	75.102083333333
Z Minimum:	-0.20213660179268
Z Maximum:	2.4408130642971

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	14269.83868174
Simpson's Rule:	13586.56895176
Simpson's 3/8 Rule:	13829.818388936

Cut & Fill Volumes

Positive Volume [Cut]:	14955.421904752
Negative Volume [Fill]:	685.58322301249
Net Volume [Cut-Fill]:	14269.83868174

Areas

Planar Areas

Positive Planar Area [Cut]:	299431.85887712
Negative Planar Area [Fill]:	70346.38365455
Blanked Planar Area:	159780896.32447
Total Planar Area:	160150674.567

Surface Areas

Positive Surface Area [Cut]:	299431.94126266
Negative Surface Area [Fill]:	70346.384854582

2009 CJE Methane
Grid Volume Computations

Mon Oct 12 14:53:42 2009

Upper Surface

Grid File Name:
C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\CJE_CH4_bln.grd
Grid Size: 145 rows x 198 columns

X Minimum: 2299785.21
X Maximum: 2314593.82
X Spacing: 75.170609137055

Y Minimum: 1208389.37
Y Maximum: 1219204.07
Y Spacing: 75.102083333333

Z Minimum: -0.78074920947942
Z Maximum: 17.320080148484

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor: 0.0929

Total Volumes by:

Trapezoidal Rule: 127530.32964603
Simpson's Rule: 127540.73342759
Simpson's 3/8 Rule: 128108.11377791

Cut & Fill Volumes

Positive Volume [Cut]: 136334.63079506
Negative Volume [Fill]: 8804.3011490323
Net Volume [Cut-Fill]: 127530.32964603

Areas

Planar Areas

Positive Planar Area [Cut]:	1589027.0195584
Negative Planar Area [Fill]:	1095393.6571409
Blanked Planar Area:	157466253.8903
Total Planar Area:	160150674.567

Surface Areas

Positive Surface Area [Cut]:	1589032.1078257
Negative Surface Area [Fill]:	1095393.7005097

2009 CJW Methane
Grid Volume Computations

Mon Oct 12 14:51:56 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\CJW_CH4_bln.grd
Grid Size:	145 rows x 198 columns
X Minimum:	2299785.21
X Maximum:	2314593.82
X Spacing:	75.170609137055
Y Minimum:	1208389.37
Y Maximum:	1219204.07
Y Spacing:	75.102083333333
Z Minimum:	-1.3026970424654
Z Maximum:	31.706172490033

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	299308.69214937
Simpson's Rule:	298732.3499958
Simpson's 3/8 Rule:	296946.37433544

Cut & Fill Volumes

Positive Volume [Cut]:	310400.60000971
Negative Volume [Fill]:	11091.907860342
Net Volume [Cut-Fill]:	299308.69214937

Areas

Planar Areas

Positive Planar Area [Cut]:	1741784.0793876
Negative Planar Area [Fill]:	750690.63935636
Blanked Planar Area:	157658199.84825
Total Planar Area:	160150674.567

Surface Areas

Positive Surface Area [Cut]:	1741800.2425651
Negative Surface Area [Fill]:	750690.71896794

2009 FRE Methane
Grid Volume Computations

Mon Oct 12 15:19:41 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\FRE_CH4_bln.grd
Grid Size:	20 rows x 35 columns
X Minimum:	2330597.45
X Maximum:	2333173.49
X Spacing:	75.765882352942
Y Minimum:	1234543.34
Y Maximum:	1235963.44
Y Spacing:	74.742105263151
Z Minimum:	-14.616648438258
Z Maximum:	90.822354972198

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	466155.80421134
Simpson's Rule:	459139.51049054
Simpson's 3/8 Rule:	473276.06279025

Cut & Fill Volumes

Positive Volume [Cut]:	549240.90742769
Negative Volume [Fill]:	83086.85682819
Net Volume [Cut-Fill]:	466154.0505995

Areas

Planar Areas

Positive Planar Area [Cut]:	793025.71644071
Negative Planar Area [Fill]:	486790.03480376
Blanked Planar Area:	2378418.6527552
Total Planar Area:	3658234.4039997

Surface Areas

Positive Surface Area [Cut]:	793121.48130265
Negative Surface Area [Fill]:	486794.58535125

2009 FRW Methane
Grid Volume Computations

Wed Oct 14 10:53:38 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\FRW_CH4_bln.grd
Grid Size:	20 rows x 38 columns
X Minimum:	2330400
X Maximum:	2333173.49
X Spacing:	74.959189189195
Y Minimum:	1234543.34
Y Maximum:	1235963.44
Y Spacing:	74.742105263151
Z Minimum:	-0.049103491300125
Z Maximum:	0.39055170900164

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	3727.9999820155
Simpson's Rule:	3784.1974402021
Simpson's 3/8 Rule:	3748.0609535095

Cut & Fill Volumes

Positive Volume [Cut]:	3963.5510283501
Negative Volume [Fill]:	235.55104633466
Net Volume [Cut-Fill]:	3727.9999820155

Areas

Planar Areas

Positive Planar Area [Cut]:	704064.28564008
Negative Planar Area [Fill]:	195154.23557541
Blanked Planar Area:	3039414.6277844
Total Planar Area:	3938633.1489999

Surface Areas

Positive Surface Area [Cut]:	704064.28922248
Negative Surface Area [Fill]:	195154.23570979

2009 HP Methane
Grid Volume Computations

Mon Oct 12 16:07:53 2009

Upper Surface

Grid File Name: C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\HP_CH4_bln.grd
Grid Size: 89 rows x 249 columns

X Minimum: 2370550.01
X Maximum: 2389167.52
X Spacing: 75.070604838711

Y Minimum: 1237762.37
Y Maximum: 1244361.71
Y Spacing: 74.992499999998

Z Minimum: -1.6285227404556
Z Maximum: 14.179249174869

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor: 0.0929

Total Volumes by:

Trapezoidal Rule: 60158.465167926
Simpson's Rule: 60675.199636944
Simpson's 3/8 Rule: 59865.731089802

Cut & Fill Volumes

Positive Volume [Cut]: 69586.635416866
Negative Volume [Fill]: 9428.1702489397
Net Volume [Cut-Fill]: 60158.465167926

Areas

Planar Areas

Positive Planar Area [Cut]:	410733.1941179
Negative Planar Area [Fill]:	509728.04238759
Blanked Planar Area:	121942817.20689
Total Planar Area:	122863278.4434

Surface Areas

Positive Surface Area [Cut]:	410735.67606797
Negative Surface Area [Fill]:	509728.10105226

2009 PR Methane
Grid Volume Computations

Mon Oct 12 15:32:34 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\PR_CH4_bln.grd
Grid Size:	89 rows x 249 columns
X Minimum:	2370550.01
X Maximum:	2389167.52
X Spacing:	75.070604838711
Y Minimum:	1237762.37
Y Maximum:	1244361.71
Y Spacing:	74.992499999998
Z Minimum:	-1.2904662335146
Z Maximum:	8.9348943118091

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	61215.962320286
Simpson's Rule:	61357.149568583
Simpson's 3/8 Rule:	61054.609256052

Cut & Fill Volumes

Positive Volume [Cut]:	74559.485875415
Negative Volume [Fill]:	13343.523555129
Net Volume [Cut-Fill]:	61215.962320286

Areas

Planar Areas

Positive Planar Area [Cut]:	2937781.5240932
Negative Planar Area [Fill]:	2309129.0106047
Blanked Planar Area:	117616367.9087
Total Planar Area:	122863278.4434

Surface Areas

Positive Surface Area [Cut]:	2937782.7292301
Negative Surface Area [Fill]:	2309129.0591099

2009 TCandTCWnoMSA Methane Grid Volume Computations

Mon Oct 12 15:26:51 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\TCandTCWnoMSA.grd
Grid Size:	89 rows x 249 columns
X Minimum:	2370550.01
X Maximum:	2389167.52
X Spacing:	75.070604838711
Y Minimum:	1237762.37
Y Maximum:	1244361.71
Y Spacing:	74.992499999998
Z Minimum:	-5.2879976885031
Z Maximum:	24.342473743522

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	213251.59739279
Simpson's Rule:	219104.72084804
Simpson's 3/8 Rule:	216186.59918718

Cut & Fill Volumes

Positive Volume [Cut]:	255112.00780049
Negative Volume [Fill]:	41860.410407694
Net Volume [Cut-Fill]:	213251.59739279

Areas

Planar Areas

Positive Planar Area [Cut]:	3057711.5773616
Negative Planar Area [Fill]:	2329942.2656705
Blanked Planar Area:	117475624.60037
Total Planar Area:	122863278.4434

Surface Areas

Positive Surface Area [Cut]:	3057722.0775371
Negative Surface Area [Fill]:	2329942.5920911

2009 TCE Methane
Grid Volume Computations

Mon Oct 12 15:29:28 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\TCE_CH4_bln.grd
Grid Size:	89 rows x 249 columns
X Minimum:	2370550.01
X Maximum:	2389167.52
X Spacing:	75.070604838711
Y Minimum:	1237762.37
Y Maximum:	1244361.71
Y Spacing:	74.992499999998
Z Minimum:	-82.282000692763
Z Maximum:	548.92815556064

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	1503483.4861516
Simpson's Rule:	1441230.8321498
Simpson's 3/8 Rule:	1524053.394658

Cut & Fill Volumes

Positive Volume [Cut]:	1843534.5553975
Negative Volume [Fill]:	340051.06924594
Net Volume [Cut-Fill]:	1503483.4861516

Areas

Planar Areas

Positive Planar Area [Cut]:	522547.283177
Negative Planar Area [Fill]:	448581.54432878
Blanked Planar Area:	121892149.61589
Total Planar Area:	122863278.4434

Surface Areas

Positive Surface Area [Cut]:	526627.33959044
Negative Surface Area [Fill]:	448674.90384898

2009 TCmsa Methane
Grid Volume Computations

Mon Oct 12 15:27:55 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\TCmsa.grd
Grid Size:	89 rows x 249 columns
X Minimum:	2370550.01
X Maximum:	2389167.52
X Spacing:	75.070604838711
Y Minimum:	1237762.37
Y Maximum:	1244361.71
Y Spacing:	74.992499999998
Z Minimum:	-6.785266690821
Z Maximum:	19.139050418123

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	28066.744195206
Simpson's Rule:	21990.55103201
Simpson's 3/8 Rule:	27013.033753677

Cut & Fill Volumes

Positive Volume [Cut]:	75943.244676893
Negative Volume [Fill]:	47876.500481686
Net Volume [Cut-Fill]:	28066.744195206

Areas

Planar Areas

Positive Planar Area [Cut]:	198194.61474678
Negative Planar Area [Fill]:	178997.4515888
Blanked Planar Area:	122486086.37706
Total Planar Area:	122863278.4434

Surface Areas

Positive Surface Area [Cut]:	198202.45770225
Negative Surface Area [Fill]:	178997.81345873

2008 BC to CJ like 2009 CO2 Grid Volume Computations

Wed Oct 21 16:40:11 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\2008FarLeft_like2009CO2.grd
Grid Size:	271 rows x 371 columns
X Minimum:	2299800.16
X Maximum:	2314600.75
X Spacing:	40.001594594594
Y Minimum:	1208388.36
Y Maximum:	1219198.86
Y Spacing:	40.038888888889
Z Minimum:	-2.0735974135122
Z Maximum:	19.838283994599

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	644210.31756192
Simpson's Rule:	643451.13101541
Simpson's 3/8 Rule:	644069.99674869

Cut & Fill Volumes

Positive Volume [Cut]:	660548.41323396
Negative Volume [Fill]:	16339.744295094
Net Volume [Cut-Fill]:	644208.66893887

Areas

Planar Areas

Positive Planar Area [Cut]:	25370884.222199
Negative Planar Area [Fill]:	1430614.8400144
Blanked Planar Area:	133200279.13279
Total Planar Area:	160001778.195

Surface Areas

Positive Surface Area [Cut]:	25370891.078321
Negative Surface Area [Fill]:	1430614.9149073

2008 FR like 2009 CO2
Grid Volume Computations

Wed Oct 21 16:39:22 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\2008MidLeft_like2009CO2.grd
Grid Size:	45 rows x 65 columns
X Minimum:	2330596.15
X Maximum:	2333158.02
X Spacing:	40.029218750002
Y Minimum:	1234185.38
Y Maximum:	1235946.83
Y Spacing:	40.032954545459
Z Minimum:	-0.2992366738387
Z Maximum:	2.5976167315635

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	65300.187974164
Simpson's Rule:	65275.553647878
Simpson's 3/8 Rule:	65253.022727119

Cut & Fill Volumes

Positive Volume [Cut]:	65623.269672122
Negative Volume [Fill]:	323.08169795845
Net Volume [Cut-Fill]:	65300.187974163

Areas

Planar Areas

Positive Planar Area [Cut]:	2639581.7940399
Negative Planar Area [Fill]:	31765.526440097
Blanked Planar Area:	1841258.5910207
Total Planar Area:	4512605.9115007

Surface Areas

Positive Surface Area [Cut]:	2639581.8959272
Negative Surface Area [Fill]:	31765.529775242

2008 VP like 2009 CO2
Grid Volume Computations

Wed Oct 21 16:38:21 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\2008MidRightCO2.grd
Grid Size:	26 rows x 61 columns
X Minimum:	2348757.75
X Maximum:	2351166.22
X Spacing:	40.14116666667
Y Minimum:	1243336.25
Y Maximum:	1244351.04
Y Spacing:	40.591600000001
Z Minimum:	-0.015085797030686
Z Maximum:	1.6868417279609

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	46789.297789123
Simpson's Rule:	46799.055192864
Simpson's 3/8 Rule:	46784.516535751

Cut & Fill Volumes

Positive Volume [Cut]:	46792.241364436
Negative Volume [Fill]:	0.55061779810429
Net Volume [Cut-Fill]:	46791.690746638

Areas

Planar Areas

Positive Planar Area [Cut]:	2415845.1543318
Negative Planar Area [Fill]:	1361.1129842347
Blanked Planar Area:	26885.003984303
Total Planar Area:	2444091.2713003

Surface Areas

Positive Surface Area [Cut]:	2415845.1913045
Negative Surface Area [Fill]:	1361.1129949788

2008 TC to PR like 2009 CO2
Grid Volume Computations

Wed Oct 21 16:35:44 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\2008rightCO2.grd
Grid Size:	176 rows x 466 columns
X Minimum:	2370551.31
X Maximum:	2389166.71
X Spacing:	40.03311827957
Y Minimum:	1237547.03
Y Maximum:	1244549.3
Y Spacing:	40.012971428572
Z Minimum:	-1.0535194923186
Z Maximum:	7.0457013920564

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	1032527.2244605
Simpson's Rule:	1030968.5711721
Simpson's 3/8 Rule:	1031208.4375949

Cut & Fill Volumes

Positive Volume [Cut]:	1036417.9507607
Negative Volume [Fill]:	3890.7263002372
Net Volume [Cut-Fill]:	1032527.2244605

Areas

Planar Areas

Positive Planar Area [Cut]:	24975814.898469
Negative Planar Area [Fill]:	342130.72671845
Blanked Planar Area:	105032111.33281
Total Planar Area:	130350056.958

Surface Areas

Positive Surface Area [Cut]:	24975816.688385
Negative Surface Area [Fill]:	342130.74825371

2009 BC to CJ CO2
Grid Volume Computations

Fri Nov 06 14:25:41 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\leftCO2xls.grd
Grid Size:	271 rows x 371 columns
X Minimum:	2299785.21
X Maximum:	2314593.822
X Spacing:	40.023275675676
Y Minimum:	1208389.377
Y Maximum:	1219204.073
Y Spacing:	40.05442962963
Z Minimum:	-0.79520057731286
Z Maximum:	8.5038084010672

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	659506.43773648
Simpson's Rule:	659619.3585041
Simpson's 3/8 Rule:	659329.56912904

Cut & Fill Volumes

Positive Volume [Cut]:	667247.46670767
Negative Volume [Fill]:	7741.0289711973
Net Volume [Cut-Fill]:	659506.43773647

Areas

Planar Areas

Positive Planar Area [Cut]:	22022894.287124
Negative Planar Area [Fill]:	892754.161852
Blanked Planar Area:	137234988.51298
Total Planar Area:	160150636.96195

Surface Areas

Positive Surface Area [Cut]:	22022896.919589
Negative Surface Area [Fill]:	892754.19143627

2009 FR CO2
Grid Volume Computations

Fri Nov 06 14:40:42 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\midleftCO2XLS.grd
Grid Size:	37 rows x 70 columns
X Minimum:	2330400
X Maximum:	2333173.492
X Spacing:	40.195536231885
Y Minimum:	1234543.344
Y Maximum:	1235963.448
Y Spacing:	39.447333333335
Z Minimum:	-0.074245840703517
Z Maximum:	7.9880240506595

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	106393.04672795
Simpson's Rule:	106521.97831422
Simpson's 3/8 Rule:	106425.4941325

Cut & Fill Volumes

Positive Volume [Cut]:	106413.4789078
Negative Volume [Fill]:	20.432179852879
Net Volume [Cut-Fill]:	106393.04672795

Areas

Planar Areas

Positive Planar Area [Cut]:	2414710.5573113
Negative Planar Area [Fill]:	961.27489753213
Blanked Planar Area:	1522975.2509594
Total Planar Area:	3938647.0831683

Surface Areas

Positive Surface Area [Cut]:	2414711.297508
Negative Surface Area [Fill]:	961.27508916361

2009 VP CO2
Grid Volume Computations

Fri Nov 06 14:39:13 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\midrightCO2XLS.grd
Grid Size:	21 rows x 56 columns
X Minimum:	2348946.847
X Maximum:	2351162.053
X Spacing:	40.276472727269
Y Minimum:	1243533.93
Y Maximum:	1244353.01
Y Spacing:	40.954000000004
Z Minimum:	0.037138694320715
Z Maximum:	1.0546825090915

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	50432.787311894
Simpson's Rule:	50501.095370441
Simpson's 3/8 Rule:	50529.532984267

Cut & Fill Volumes

Positive Volume [Cut]:	50433.390062443
Negative Volume [Fill]:	0
Net Volume [Cut-Fill]:	50433.390062443

Areas

Planar Areas

Positive Planar Area [Cut]:	1764946.4505578
Negative Planar Area [Fill]:	0
Blanked Planar Area:	49484.479922181
Total Planar Area:	1814430.93048

Surface Areas

Positive Surface Area [Cut]:	1764946.4746364
Negative Surface Area [Fill]:	0

2009 TC to PR CO2
Grid Volume Computations

Fri Nov 06 14:37:44 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\right CO2XLS.grd
Grid Size:	166 rows x 466 columns
X Minimum:	2370550.015
X Maximum:	2389167.528
X Spacing:	40.037662365591
Y Minimum:	1237762.37
Y Maximum:	1244361.716
Y Spacing:	39.996036363636
Z Minimum:	-0.34763413781131
Z Maximum:	3.3296710238901

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	513840.58587442
Simpson's Rule:	513017.02408277
Simpson's 3/8 Rule:	514444.53091022

Cut & Fill Volumes

Positive Volume [Cut]:	517963.34366042
Negative Volume [Fill]:	4122.7577859959
Net Volume [Cut-Fill]:	513840.58587442

Areas

Planar Areas

Positive Planar Area [Cut]:	19700031.700948
Negative Planar Area [Fill]:	591446.94534735
Blanked Planar Area:	102571931.3002
Total Planar Area:	122863409.94649

Surface Areas

Positive Surface Area [Cut]:	19700032.448105
Negative Surface Area [Fill]:	591446.95658998

2009 BC CO2
Grid Volume Computations

Fri Nov 06 14:49:52 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\BC_CO2_bln.grd
Grid Size:	271 rows x 371 columns
X Minimum:	2299785.21
X Maximum:	2314593.822
X Spacing:	40.023275675676
Y Minimum:	1208389.377
Y Maximum:	1219204.073
Y Spacing:	40.05442962963
Z Minimum:	-0.011359482899031
Z Maximum:	1.4163674990219

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	15337.878059907
Simpson's Rule:	15189.456665047
Simpson's 3/8 Rule:	15262.981594058

Cut & Fill Volumes

Positive Volume [Cut]:	15339.356011275
Negative Volume [Fill]:	1.4779513671323
Net Volume [Cut-Fill]:	15337.878059907

Areas

Planar Areas

Positive Planar Area [Cut]:	1226823.8799947
Negative Planar Area [Fill]:	1157.9809948583
Blanked Planar Area:	158922655.10096
Total Planar Area:	160150636.96195

Surface Areas

Positive Surface Area [Cut]:	1226823.8995593
Negative Surface Area [Fill]:	1157.9809968554

2009 BCN CO2
Grid Volume Computations

Fri Nov 06 15:02:08 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\BCN_CO2_bln.grd
Grid Size:	271 rows x 371 columns
X Minimum:	2299785.21
X Maximum:	2314593.822
X Spacing:	40.023275675676
Y Minimum:	1208389.377
Y Maximum:	1219204.073
Y Spacing:	40.05442962963
Z Minimum:	-0.2554147220165
Z Maximum:	4.3564810568478

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	27729.682634208
Simpson's Rule:	27107.452275733
Simpson's 3/8 Rule:	27648.8749283

Cut & Fill Volumes

Positive Volume [Cut]:	28189.005292116
Negative Volume [Fill]:	459.32265790797
Net Volume [Cut-Fill]:	27729.682634208

Areas

Planar Areas

Positive Planar Area [Cut]:	380715.94026604
Negative Planar Area [Fill]:	28878.531643659
Blanked Planar Area:	159741042.49004
Total Planar Area:	160150636.96195

Surface Areas

Positive Surface Area [Cut]:	380716.20551341
Negative Surface Area [Fill]:	28878.532694515

2009 CJE CO2
Grid Volume Computations

Fri Nov 06 15:05:05 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\CJE_CO2_bln.grd
Grid Size:	271 rows x 371 columns
X Minimum:	2299785.21
X Maximum:	2314593.822
X Spacing:	40.023275675676
Y Minimum:	1208389.377
Y Maximum:	1219204.073
Y Spacing:	40.05442962963
Z Minimum:	-0.20777972462666
Z Maximum:	2.7139454300742

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	72121.802244467
Simpson's Rule:	72064.855724458
Simpson's 3/8 Rule:	71943.852739411

Cut & Fill Volumes

Positive Volume [Cut]:	72168.398077844
Negative Volume [Fill]:	46.59583337655
Net Volume [Cut-Fill]:	72121.802244467

Areas

Planar Areas

Positive Planar Area [Cut]:	2868174.4178725
Negative Planar Area [Fill]:	19827.308723737
Blanked Planar Area:	157262635.23536
Total Planar Area:	160150636.96195

Surface Areas

Positive Surface Area [Cut]:	2868174.5969678
Negative Surface Area [Fill]:	19827.308905244

2009 CJW CO2
Grid Volume Computations

Fri Nov 06 15:03:48 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\CJW_CO2_bln.grd
Grid Size:	271 rows x 371 columns
X Minimum:	2299785.21
X Maximum:	2314593.822
X Spacing:	40.023275675676
Y Minimum:	1208389.377
Y Maximum:	1219204.073
Y Spacing:	40.05442962963
Z Minimum:	-0.015026847901644
Z Maximum:	3.7802357132979

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	110988.37891159
Simpson's Rule:	110965.66449706
Simpson's 3/8 Rule:	111038.36284901

Cut & Fill Volumes

Positive Volume [Cut]:	110993.61780893
Negative Volume [Fill]:	5.2388973410143
Net Volume [Cut-Fill]:	110988.37891159

Areas

Planar Areas

Positive Planar Area [Cut]:	2622068.4987823
Negative Planar Area [Fill]:	9435.7111581159
Blanked Planar Area:	157519132.75201
Total Planar Area:	160150636.96195

Surface Areas

Positive Surface Area [Cut]:	2622068.6801145
Negative Surface Area [Fill]:	9435.7111686054

2009 FRE CO2
Grid Volume Computations

Fri Nov 06 15:08:55 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\FRE_CO2_bln.grd
Grid Size:	37 rows x 70 columns
X Minimum:	2330400
X Maximum:	2333173.492
X Spacing:	40.195536231885
Y Minimum:	1234543.344
Y Maximum:	1235963.448
Y Spacing:	39.447333333335
Z Minimum:	-0.074245840703517
Z Maximum:	7.9880240506595

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	80145.337172928
Simpson's Rule:	80163.653139538
Simpson's 3/8 Rule:	80150.15341485

Cut & Fill Volumes

Positive Volume [Cut]:	80156.995554691
Negative Volume [Fill]:	11.658381763392
Net Volume [Cut-Fill]:	80145.337172928

Areas

Planar Areas

Positive Planar Area [Cut]:	1283055.5795557
Negative Planar Area [Fill]:	493.05724969183
Blanked Planar Area:	2655098.4463628
Total Planar Area:	3938647.0831683

Surface Areas

Positive Surface Area [Cut]:	1283056.3095826
Negative Surface Area [Fill]:	493.05738507382

2009 FRW CO2
Grid Volume Computations

Fri Nov 06 15:07:45 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\FRW_CO2_bln.grd
Grid Size:	37 rows x 70 columns
X Minimum:	2330400
X Maximum:	2333173.492
X Spacing:	40.195536231885
Y Minimum:	1234543.344
Y Maximum:	1235963.448
Y Spacing:	39.447333333335
Z Minimum:	0.017948452663953
Z Maximum:	0.82079584641907

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	23840.647401634
Simpson's Rule:	23873.842131142
Simpson's 3/8 Rule:	23872.294376163

Cut & Fill Volumes

Positive Volume [Cut]:	23840.647401634
Negative Volume [Fill]:	0
Net Volume [Cut-Fill]:	23840.647401634

Areas

Planar Areas

Positive Planar Area [Cut]:	924408.71557452
Negative Planar Area [Fill]:	0
Blanked Planar Area:	3014238.3675937
Total Planar Area:	3938647.0831683

Surface Areas

Positive Surface Area [Cut]:	924408.72480153
Negative Surface Area [Fill]:	0

2009 HP CO2
Grid Volume Computations

Fri Nov 06 15:16:35 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\HP_CO2_bln.grd
Grid Size:	166 rows x 466 columns
X Minimum:	2370550.015
X Maximum:	2389167.528
X Spacing:	40.037662365591
Y Minimum:	1237762.37
Y Maximum:	1244361.716
Y Spacing:	39.996036363636
Z Minimum:	-0.15283726949323
Z Maximum:	1.6282939167765

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	22080.904388157
Simpson's Rule:	22098.097722556
Simpson's 3/8 Rule:	22046.05696613

Cut & Fill Volumes

Positive Volume [Cut]:	22231.961381245
Negative Volume [Fill]:	151.05699308752

Net Volume [Cut-Fill]:	22080.904388157

Areas

Planar Areas

Positive Planar Area [Cut]:	981436.53713947
Negative Planar Area [Fill]:	24209.881190919
Blanked Planar Area:	121857763.52816
Total Planar Area:	122863409.94649

Surface Areas

Positive Surface Area [Cut]:	981436.57234755
Negative Surface Area [Fill]:	24209.881363044

2009 PR CO2
Grid Volume Computations

Fri Nov 06 15:17:52 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\PR_CO2_bln.grd
Grid Size:	166 rows x 466 columns
X Minimum:	2370550.015
X Maximum:	2389167.528
X Spacing:	40.037662365591
Y Minimum:	1237762.37
Y Maximum:	1244361.716
Y Spacing:	39.996036363636
Z Minimum:	-0.34763413781131
Z Maximum:	1.6483647917335

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	173227.71706974
Simpson's Rule:	172686.23125215
Simpson's 3/8 Rule:	173698.47277904

Cut & Fill Volumes

Positive Volume [Cut]:	176439.85380546
Negative Volume [Fill]:	3212.1367357244
Net Volume [Cut-Fill]:	173227.71706974

Areas

Planar Areas

Positive Planar Area [Cut]:	5172036.9359874
Negative Planar Area [Fill]:	349410.27803037
Blanked Planar Area:	117341962.73248
Total Planar Area:	122863409.94649

Surface Areas

Positive Surface Area [Cut]:	5172037.0681555
Negative Surface Area [Fill]:	349410.28126074

2009 TCandTCW CO2
Grid Volume Computations

Fri Nov 06 15:11:54 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\TCandTCW_CO2_bln.grd
Grid Size:	166 rows x 466 columns
X Minimum:	2370550.015
X Maximum:	2389167.528
X Spacing:	40.037662365591
Y Minimum:	1237762.37
Y Maximum:	1244361.716
Y Spacing:	39.996036363636
Z Minimum:	-0.29175792867128
Z Maximum:	3.3296710238901

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	179221.75340769
Simpson's Rule:	178947.75460964
Simpson's 3/8 Rule:	179315.05664599

Cut & Fill Volumes

Positive Volume [Cut]:	179580.92931537
Negative Volume [Fill]:	359.17590767973
Net Volume [Cut-Fill]:	179221.75340769

Areas

Planar Areas

Positive Planar Area [Cut]:	6077271.0342152
Negative Planar Area [Fill]:	99928.1038572
Blanked Planar Area:	116686210.80842
Total Planar Area:	122863409.94649

Surface Areas

Positive Surface Area [Cut]:	6077271.5254267
Negative Surface Area [Fill]:	99928.111184541

2009 TCE CO2
Grid Volume Computations

Fri Nov 06 15:14:34 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\LaPlataFlux\LaPlataFlux2009\Surfer\TCE_CO2_bln.grd
Grid Size:	166 rows x 466 columns
X Minimum:	2370550.015
X Maximum:	2389167.528
X Spacing:	40.037662365591
Y Minimum:	1237762.37
Y Maximum:	1244361.716
Y Spacing:	39.996036363636
Z Minimum:	-0.025936478344626
Z Maximum:	1.7522704653639

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	35190.510520935
Simpson's Rule:	35214.753068839
Simpson's 3/8 Rule:	35165.906873936

Cut & Fill Volumes

Positive Volume [Cut]:	35194.725167291
Negative Volume [Fill]:	4.2146463560387
Net Volume [Cut-Fill]:	35190.510520935

Areas

Planar Areas

Positive Planar Area [Cut]:	1014278.2730811
Negative Planar Area [Fill]:	976.23204862209
Blanked Planar Area:	121848155.44137
Total Planar Area:	122863409.94649

Surface Areas

Positive Surface Area [Cut]:	1014278.3161183
Negative Surface Area [Fill]:	976.23205234897

APPENDIX D

NATURAL SPRINGS ANALYTICAL RESULTS

GAL ID No.: 905-067

May 28, 2009

LT Environmental
PO Box 874
Bayfield, CO 81122
Attention: Travis Laverty

Project Name: La Plata Monitoring
Project Number:
Date Received: 05/13/09

This is to transmit the attached analytical report. The analytical data and information contained therein was generated using specified or selected methods contained in references, such as Standard Methods for the Examination of Water and Wastewater, 18th & 19th editions, and Methods for Determination of Organic Compounds in Drinking Water, EPA-600/4-79-020.

Samples were received by Green Analytical Laboratories, Inc. in good condition on 05/13/09.

If you should have any questions or comments regarding this report, please do not hesitate to call.

Sincerely,

Jacob L. Miller
Technical Director

Enclosure

Green Analytical Laboratories, Inc.
75 Suttle Street
Durango, CO 81303

GAL I.D.: 905-067-01
Date Received: 05/13/09
Date Reported: 05/28/09
QC Batches:

LT Environmental
PO Box 874
Bayfield, CO 81122
Attention: Travis Laverty

PROJECT NAME: La Plata Monitoring
PROJECT NUMBER:
SAMPLE I.D.: Ranch Durango LTD

Sample Date: 05/12/09
Sample Matrix: Water

Laboratory Report

RESULTS

PARAMETER	METHOD	REPORT LIMIT	RESULT	DIL	UNITS	Maximum Contamination Level
Alkalinity, Total	2320B	10	258	1	mg/L	
Alkalinity, Bicarbonate	2320B	10	258	1	mg/L	
Alkalinity, Carbonate	2320B	10	<10	1	mg/L	
Alkalinity, Hydroxide	2320B	10	<10	1	mg/L	
Bromide	300	0.10	0.50	1	mg/L	
Calcium	200.7	0.5	79.8	1	mg/L	
Chloride	4500CL	10	<10	1	mg/L	
Conductivity	2510B	1.0	572	1	uS/cm	
Fluoride	4500F C	0.2	0.3	1	mg/L	4.0
H2 S	Calc.	0.05	<0.05	1	mg/L	
Iron	200.7	0.05	1.59	1	mg/L	
Magnesium	200.7	0.5	19.1	1	mg/L	
Manganese	200.8	0.0005	0.0478	1	mg/L	
Nitrate/Nitrite as N	353.3	0.02	0.18	1	mg/L	
pH	150.1	NA	7.55	NA	SU	
Potassium	200.7	0.5	1.2	1	mg/L	
Selenium	200.8	0.001	0.001	1	mg/L	0.05
Sodium	200.7	0.5	16.4	1	mg/L	
Sulfate	4500SO4	10	80	1	mg/L	
Sulfide	4500S_	0.05	<0.05	1	mg/L	
TDS	2540C	10	305	1	mg/L	
Hardness	Calc	10	278	1	mg/L	
CAB	Calc		3.37		%	

Jacob L. Miller, Technical Director

Green Analytical Laboratories, Inc.
75 Suttle Street
Durango, CO 81303

GAL I.D.: 905-067-03
Date Received: 05/13/09
Date Reported: 05/28/09
QC Batches:

LT Environmental
PO Box 874
Bayfield, CO 81122
Attention: Travis Laverty

PROJECT NAME: La Plata Monitoring
PROJECT NUMBER:
SAMPLE I.D.: Darwin Rather #1

Sample Date: 05/12/09
Sample Matrix: Water

Laboratory Report

RESULTS

PARAMETER	METHOD	REPORT LIMIT	RESULT	DIL	UNITS	Maximum Contamination Level
Alkalinity, Total	2320B	10	200	1	mg/L	
Alkalinity, Bicarbonate	2320B	10	200	1	mg/L	
Alkalinity, Carbonate	2320B	10	<10	1	mg/L	
Alkalinity, Hydroxide	2320B	10	<10	1	mg/L	
Bromide	300	0.10	0.39	1	mg/L	
Calcium	200.7	0.5	54.7	1	mg/L	
Chloride	4500CL	10	10	1	mg/L	
Conductivity	2510B	1.0	437	1	uS/cm	
Fluoride	4500F C	0.2	<0.2	1	mg/L	4.0
H2 S	Calc.	0.05	<0.05	1	mg/L	
Iron	200.7	0.05	<0.05	1	mg/L	
Magnesium	200.7	0.5	17.6	1	mg/L	
Manganese	200.8	0.0005	0.0007	1	mg/L	
Nitrate/Nitrite as N	353.3	0.02	0.91	1	mg/L	
pH	150.1	NA	7.20	NA	SU	
Potassium	200.7	0.5	1.1	1	mg/L	
Selenium	200.8	0.001	<0.001	1	mg/L	0.05
Sodium	200.7	0.5	7.8	1	mg/L	
Sulfate	4500SO4	10	33	1	mg/L	
Sulfide	4500S_	0.05	<0.05	1	mg/L	
TDS	2540C	10	205	1	mg/L	
Hardness	Calc	10	209	1	mg/L	
CAB	Calc		3.22		%	

Jacob L. Miller, Technical Director

Green Analytical Laboratories, Inc.
75 Suttle Street
Durango, CO 81303

GAL I.D.: 905-067-04
Date Received: 05/13/09
Date Reported: 05/28/09
QC Batches:

LT Environmental
PO Box 874
Bayfield, CO 81122
Attention: Travis Laverty

PROJECT NAME: La Plata Monitoring
PROJECT NUMBER:
SAMPLE I.D.: Darwin Rather #2

Sample Date: 05/12/09
Sample Matrix: Water

Laboratory Report

RESULTS

PARAMETER	METHOD	REPORT LIMIT	RESULT	DIL	UNITS	Maximum Contamination Level
Alkalinity, Total	2320B	10	123	1	mg/L	
Alkalinity, Bicarbonate	2320B	10	123	1	mg/L	
Alkalinity, Carbonate	2320B	10	<10	1	mg/L	
Alkalinity, Hydroxide	2320B	10	<10	1	mg/L	
Bromide	300	0.10	0.23	1	mg/L	
Calcium	200.7	0.5	35.3	1	mg/L	
Chloride	4500CL	10	<10	1	mg/L	
Conductivity	2510B	1.0	277	1	uS/cm	
Fluoride	4500F C	0.2	<0.2	1	mg/L	4.0
H2 S	Calc.	0.05	<0.05	1	mg/L	
Iron	200.7	0.05	0.74	1	mg/L	
Magnesium	200.7	0.5	6.7	1	mg/L	
Manganese	200.8	0.0005	0.0646	1	mg/L	
Nitrate/Nitrite as N	353.3	0.02	<0.02	1	mg/L	
pH	150.1	NA	7.44	NA	SU	
Potassium	200.7	0.5	0.8	1	mg/L	
Selenium	200.8	0.001	<0.001	1	mg/L	0.05
Sodium	200.7	0.5	11.3	1	mg/L	
Sulfate	4500SO4	10	22	1	mg/L	
Sulfide	4500S_	0.05	<0.05	1	mg/L	
TDS	2540C	10	150	1	mg/L	
Hardness	Calc	10	116	1	mg/L	
CAB	Calc		5.96		%	

Jacob L. Miller, Technical Director

GAL ID No.: 905-076

June 10, 2009

LT Environmental
PO Box 874
Bayfield, CO 81122
Attention: Travis Laverty

Project Name: Arch. Springs 09
Project Number: MS0904 / MS0903
Date Received: 05/14/09

This is to transmit the attached analytical report. The analytical data and information contained therein was generated using specified or selected methods contained in references, such as Standard Methods for the Examination of Water and Wastewater, 18th & 19th editions, and Methods for Determination of Organic Compounds in Drinking Water, EPA-600/4-79-020.

Samples were received by Green Analytical Laboratories in good condition on 05/14/09.

If you should have any questions or comments regarding this report, please do not hesitate to call.

Sincerely,

Debbie Zufelt
Laboratory Manager

Enclosure

Green Analytical Laboratories
75 Suttle Street
Durango, CO 81303

GAL I.D.: 905-076-01
Date Received: 05/14/09
Date Reported: 06/10/09
QC Batches:

LT Environmental
PO Box 874
Bayfield, CO 81122
Attention: Travis Laverty

PROJECT NAME: Arch. Springs 09
PROJECT NUMBER: MS0904 / MS0903
SAMPLE I.D.: Wood

Sample Date: 05/14/09
Sample Matrix: Water

Laboratory Report

RESULTS

PARAMETER	METHOD	REPORT LIMIT	RESULT	DIL	UNITS	Maximum Contamination Level
Alkalinity, Total	2320B	10	142	1	mg/L	
Alkalinity, Bicarbonate	2320B	10	142	1	mg/L	
Alkalinity, Carbonate	2320B	10	<10	1	mg/L	
Alkalinity, Hydroxide	2320B	10	<10	1	mg/L	
Bromide	4500 Br	0.10	0.28	1	mg/L	
Calcium	200.7	0.5	65.7	1	mg/L	
Chloride	4500CL	10	<10	1	mg/L	
Conductivity	2510B	1.0	477	1	uS/cm	
Fluoride	4500F C	0.2	<0.2	1	mg/L	4.0
H2 S	Calc.	0.05	<0.05	1	mg/L	
Iron	200.7	0.05	<0.05	1	mg/L	
Magnesium	200.7	0.5	11.6	1	mg/L	
Manganese	200.8	0.0005	0.158	1	mg/L	
Nitrate/Nitrite as N	353.3	0.02	<0.02	1	mg/L	
pH	150.1	NA	7.18	NA	SU	
Potassium	200.7	0.5	1.6	1	mg/L	
Selenium	200.8	0.001	<0.001	1	mg/L	0.05
Sodium	200.7	0.5	10.7	1	mg/L	
Sulfate	4500SO4	10	122	1	mg/L	
Sulfide	4500S_	0.05	<0.05	1	mg/L	
TDS	2540C	10	240	1	mg/L	
Hardness	Calc	10	212	1	mg/L	
CAB	Calc		1.34		%	

Debbie Zufelt, Laboratory Manager

Green Analytical Laboratories
75 Suttle Street
Durango, CO 81303

LT Environmental
PO Box 874
Bayfield, CO 81122
Attention: Travis Laverty

GAL I.D.: 905-076-02
Date Received: 05/14/09
Date Reported: 06/10/09
QC Batches:

PROJECT NAME: Arch. Springs 09
PROJECT NUMBER: MS0904 / MS0903
SAMPLE I.D.: Crain

Sample Date: 05/14/09
Sample Matrix: Water

Laboratory Report

RESULTS

PARAMETER	METHOD	REPORT LIMIT	RESULT	DIL	UNITS	Maximum Contamination Level
Alkalinity, Total	2320B	10	230	1	mg/L	
Alkalinity, Bicarbonate	2320B	10	230	1	mg/L	
Alkalinity, Carbonate	2320B	10	<10	1	mg/L	
Alkalinity, Hydroxide	2320B	10	<10	1	mg/L	
Bromide	4500 Br	0.10	0.44	1	mg/L	
Calcium	200.7	0.5	74.7	1	mg/L	
Chloride	4500CL	10	<10	1	mg/L	
Conductivity	2510B	1.0	606	1	uS/cm	
Fluoride	4500F C	0.2	<0.2	1	mg/L	4.0
H2 S	Calc.	0.05	<0.05	1	mg/L	
Iron	200.7	0.05	<0.05	1	mg/L	
Magnesium	200.7	0.5	21.1	1	mg/L	
Manganese	200.8	0.0005	0.0041	1	mg/L	
Nitrate/Nitrite as N	353.3	0.02	0.03	1	mg/L	
pH	150.1	NA	7.28	NA	SU	
Potassium	200.7	0.5	1.4	1	mg/L	
Selenium	200.8	0.001	0.001	1	mg/L	0.05
Sodium	200.7	0.5	19.6	1	mg/L	
Sulfate	4500SO4	10	134	1	mg/L	
Sulfide	4500S_	0.05	<0.05	1	mg/L	
TDS	2540C	10	310	1	mg/L	
Hardness	Calc	10	273	1	mg/L	
CAB	Calc		1.61		%	

Debbie Zufelt, Laboratory Manager

Green Analytical Laboratories
75 Suttle Street
Durango, CO 81303

GAL I.D.: 905-076-03
Date Received: 05/14/09
Date Reported: 06/10/09
QC Batches:

LT Environmental
PO Box 874
Bayfield, CO 81122
Attention: Travis Laverty

PROJECT NAME: Arch. Springs 09
PROJECT NUMBER: MS0904 / MS0903
SAMPLE I.D.: Hoier

Sample Date: 05/14/09
Sample Matrix: Water

Laboratory Report

RESULTS

PARAMETER	METHOD	REPORT LIMIT	RESULT	DIL	UNITS	Maximum Contamination Level
Alkalinity, Total	2320B	10	137	1	mg/L	
Alkalinity, Bicarbonate	2320B	10	133	1	mg/L	
Alkalinity, Carbonate	2320B	10	<10	1	mg/L	
Alkalinity, Hydroxide	2320B	10	<10	1	mg/L	
Bromide	4500 Br	0.10	<0.10	1	mg/L	
Calcium	200.7	0.5	24.0	1	mg/L	
Chloride	4500CL	10	<10	1	mg/L	
Conductivity	2510B	1.0	261	1	uS/cm	
Fluoride	4500F C	0.2	<0.2	1	mg/L	4.0
H2 S	Calc.	0.05	<0.05	1	mg/L	
Iron	200.7	0.05	0.19	1	mg/L	
Magnesium	200.7	0.5	11.2	1	mg/L	
Manganese	200.8	0.0005	0.0057	1	mg/L	
Nitrate/Nitrite as N	353.3	0.02	<0.02	1	mg/L	
pH	150.1	NA	8.21	NA	SU	
Potassium	200.7	0.5	1.2	1	mg/L	
Selenium	200.8	0.001	<0.001	1	mg/L	0.05
Sodium	200.7	0.5	11.9	1	mg/L	
Sulfate	4500SO4	10	<10	1	mg/L	
Sulfide	4500S_	0.05	<0.05	1	mg/L	
TDS	2540C	10	100	1	mg/L	
Hardness	Calc	10	106	1	mg/L	
CAB	Calc		6.64		%	

Debbie Zufelt, Laboratory Manager

Methane Analysis Report

Four Corners Geoscience,Inc.
P.O. Box 4224
Durango, CO 81302

Client
L T Environmental,Inc.
15 West Mill Street
Bayfield,CO 81122
Mark Yalom
970-884-5215

Project Name: La Plata Spring Sampling
Project Numb MSO813
Report Date: 10/22/2008
Sampled By: Lindsay Voss

Analysis: Brant Landers

FCGeo #	Sample Date	Sample Time (Hrs)	Site ID-Location	Results: CH4 (mg/L)	Limit (mg/L)	C2
101508-LB1	10/15/2008	11:15	Ranch Durango East	<0.02	0.02	ND
101508-LB2	10/15/2008	11:30	Ranch Durango North	<0.02	0.02	ND
101508-LB3	10/15/2008	12:10	Ranch Durango LTD	<0.02	0.02	ND
101508-LB4	10/15/2008	14:15	Darwin Rather #1	<0.02	0.02	ND
101508-LB5	10/15/2008	15:00	Darwin Rather #2	<0.02	0.02	ND
101508-LB6	10/15/2008	17:00	Hoier Spring	<0.02	0.02	ND

Notes:
Samples delivered to FCGeo 12:00 p.m. 10/17/08
Analyses were conducted on SRI gas chromatograph w/ FID within 24 hours of delivery.
Conducted Methane analysis per protocol and method established by BLM San Juan Resource Area 1993 and USGS method.
Laboratory calibration quality control conducted the same day as sample runs.
Blanks and duplicated runs conducted for each sample set.
No field blanks received at FCGeo Lab
ND- Non Detected

Lynn M. Fechter, B.S. Geology

Four Corners Geoscience,Inc.
P.O. Box 4224
Durango, CO 81302

Methane Analysis Report

Client
L T Environmental,Inc.
15 West Mill Street
Bayfield,CO 81122
Travis Laverty
970-884-5215

October 10/2009

Project Name: MS0903/MS0904
Project Number: MS0903/MS0904
Report Date: 10/10/2009
Sampled By: Travis Laverty

Analysis: Lynn Fechter

FCGeo #	**Sample Date**	**Sample Time (Hrs)**	**Site ID-Location**	**Results: *CH4 (mg/L)***	***Limit (mg/L)***
100609-LB1	10/6/2009	920	Rancho Durango LTD	<0.02	0.02
100609-LB2	10/6/2009	940	Rancho Durango North	<0.02	0.02
100609-LB3	10/6/2009	1100	Darwin Rather	<0.02	0.02
100809-LB1	10/8/2009	820	Ramona Leonard Spring	<0.02	0.02
100809-LB2	10/8/2009	845	Watson	<0.02	0.02
100809-LB3	10/8/2009	940	Vance #1	<0.02	0.02

Notes:
Samples delivered to FCGeo10/6/2009 and 10/8/2009
Analyses were conducted on SRI gas chromatograph w/ FID within 24 hours of delivery.
Conducted Methane analysis per protocol and method established by BLM San Juan Resource Area 1993 and USGS method.
Laboratory calibration quality control conducted the same day as sample runs.
Blanks and duplicated runs conducted for each sample set.
No field blanks received at FCGeo Lab
ND- Non Detected

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