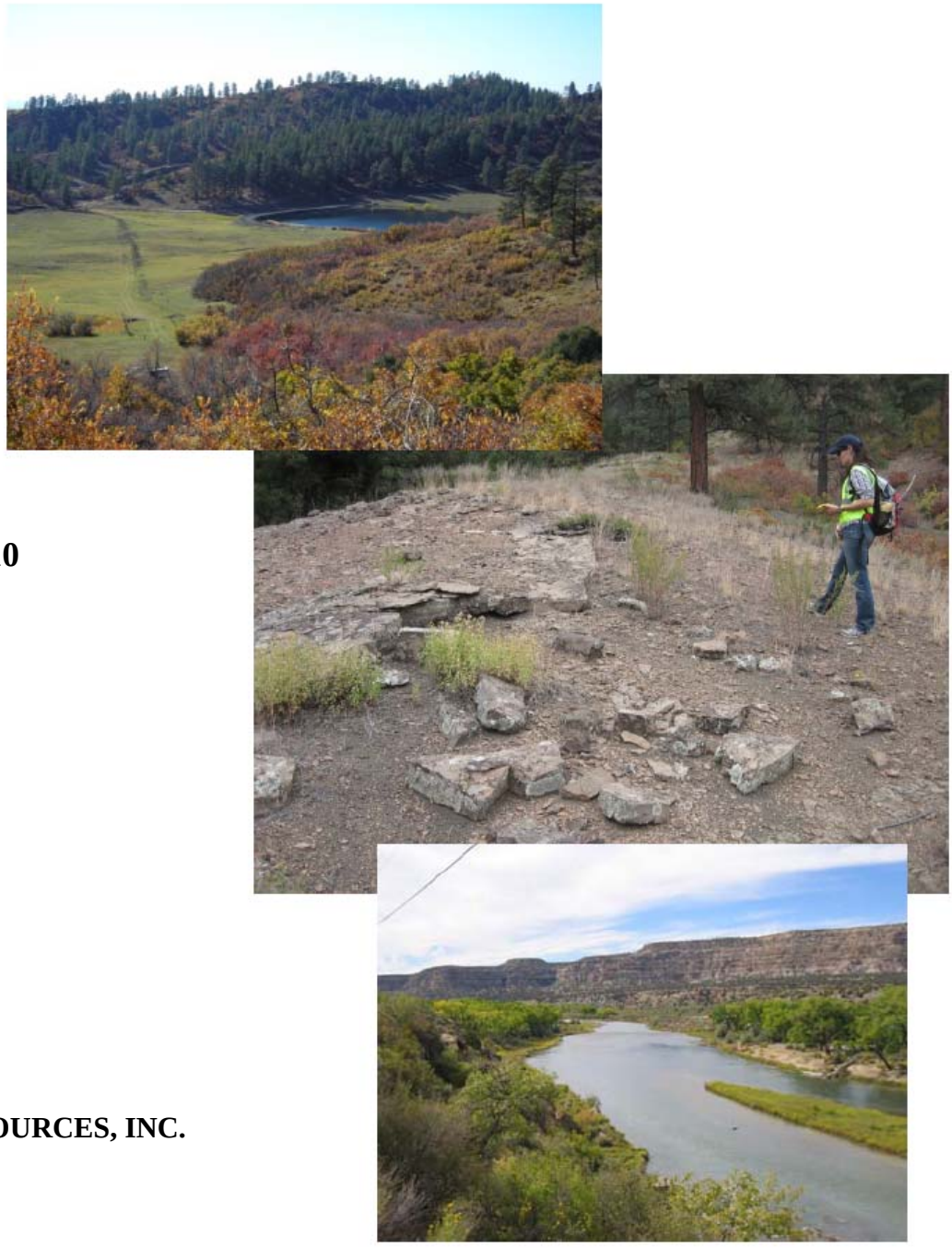
2009 FRUITLAND OUTCROP MONITORING REPORT

ARCHULETA COUNTY, COLORADO



FEBRUARY 2010

Prepared For:

ELM RIDGE RESOURCES, INC.
Dallas, Texas

And

PETROX RESOURCES, INC.
Meeker, Colorado

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Prepared For:

ELM RIDGE RESOURCES, INC.
12225 Greenville Avenue, Suite 950
Dallas, Texas 75243-0597

and

PETROX RESOURCES, INC.
39868 Highway 13
Meeker, Colorado 81641-9635

Prepared By:

LT ENVIRONMENTAL, INC.
Four Corners Office/Lodestar Services
813 Main Avenue
Durango, Colorado 82302
(970) 946-1093

TABLE OF CONTENTS

Page

TABLE OF CONTENTS (continued)

LIST OF FIGURES

TABLE OF CONTENTS (continued)

LIST OF TABLES

APPENDICES

EXECUTIVE SUMMARY

At the request of Elm Ridge Resources, Inc. and Petrox Resources, Inc., LT Environmental, Inc. (LTE) conducted a monitoring program for methane seepage from the Fruitland Formation (Kf) outcrop in Archuleta County, Colorado.

The monitoring program was designed to meet requirements of Sections 1, 2, and 6 of the Conditions for Approval for the Pargin Mountain 10U #3 production well permit (Permit), issued by the Colorado Oil and Gas Conservation Commission (COGCC, 2005). These permit requirements include a Kf outcrop reconnaissance, natural spring surveys, and a soil gas survey of the Big Horn-Schomburg #1 abandoned well site.

The project area extends approximately 18 miles along the Kf outcrop, starting at the La Plata County – Archuleta County boundary, and running southeast to the Southern Ute Indian Tribe (SUIT) Reservation boundary near the confluence of the Piedra River and Stollsteimer Creek. A similar program has been underway along the Kf outcrop in La Plata County, Colorado since 1997.

LTE conducted the initial monitoring of the Kf outcrop in Archuleta County in September 2004. This report presents the results of the sixth monitoring event conducted in the project area.

MONITORING RESULTS

The 2009 monitoring event consisted of three main components:

- Drainage transect survey;
- Big Horn-Schomburg #1 abandoned well site survey; and
- Natural springs survey.

Drainage Transects Survey

The drainage transect survey was subdivided into two portions, surface water inspections and soil gas flux surveys. Inspections at six locations where surface drainages transect the Kf outcrop revealed no methane discharge from surface water bodies. Previous annual inspections revealed a biogenic source of methane (swamp gas) and a possible natural gas pipeline leak at two of the drainage transects.

The concentrations of methane seeping from the ground surface at the six surface drainage transects were measured using a West Systems® portable gas flux meter (flux meter). The flux meter was used to survey six drainage transects: Beaver Creek, Little Squaw Creek, Peterson Gulch, Pole Gulch, Stollsteimer Creek, and Squaw Creek. Methane was only detected above the flux meter's reporting limit of 0.2 moles per square meter per day (moles/m^2·day) at 3 of 915 sample locations. The maximum methane flux recorded was 0.3382 moles/m^2·day, which equates to 0.3852 cubic feet per square meter per day (ft^3/m^2·day), and is similar to the 2008 maximum volume value of 0.39 ft^3/m^2·day.

Big Horn-Schomburg #1 Abandoned Well Site Survey

LTE collected soil gas flux measurements at the Big Horn-Schomburg #1 abandoned production well site. The well was drilled and abandoned in 1961.

Very low fluxes of methane were detected at two of five locations, with a maximum value of 0.0055 moles/m^2·day. In 2008, methane flux was detected at two sampled locations, with a maximum methane flux measurement of 0.07 moles/m^2·day. All detected methane fluxes in the past two years have been well below the 0.2 moles/m^2·day reporting limit of the flux meter.

Natural Springs Survey

Thirteen natural springs were accessible for sampling in 2009. At the request of the COGCC, the springs were sampled in both Spring and Fall of 2009 to observe any seasonal changes in the water quality. Due to access restrictions and dry conditions, not all of the identified natural springs were sampled in 2009. LTE collected and analyzed water samples from 11 natural springs in May 2009, while only three natural springs were sampled in October 2009. Dissolved methane in each of the water samples was below the laboratory method detection limit of 0.02 milligrams per liter (mg/L). Past results of methane concentration also indicated low or no dissolved methane in sampled natural spring waters.

Natural springs were sampled for the second time for standard water chemistry analysis. Classification using major ion analysis shows that 10 of 11 natural springs contain calcium bicarbonate water. Based on the water chemistry analysis, the Ramona Leonard Spring produces calcium sulfate water.

Natural springs discharge rates were measured at the time of sampling. Discharge rates were generally very low and consistent with past measured rates.

Subsurface soil gas was measured at 13 natural springs for the second time in 2009. Methane was not detected around any of the 13 natural springs surveyed.

RECOMMENDATIONS

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

- Conduct annual inspections for methane seeps at drainage transects across the Kf outcrop in Archuleta County. Inspection activities should include observations for methane bubbles in watercourses and measurements for soil gas seeps from the adjacent land areas;

- Continuing monitoring of the Big Horn-Schomburg #1 well site in 2009 is required under Section 6 of the Permit's Conditions of Approval;

- 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

This Fruitland Formation (Kf) Outcrop Monitoring Report has been prepared at the request of Elm Ridge Resources, Inc. (Elm Ridge) and Petrox Resources, Inc. (Petrox) for the eastern half of the northern rim of the San Juan Basin (SJB) in Archuleta County, Colorado. This monitoring program meets requirements 1, 2 and 6 of the Conditions of Approval for the Pargin Mountain 10U #3 production well permit (Permit), issued by the Colorado Oil and Gas Conservation Commission (COGCC). These requirements include a Kf outcrop reconnaissance, a natural spring survey, and a soil gas survey of the Big Horn-Schomburg #1 abandoned well site, respectively. The monitoring program also includes a survey of Kf methane emissions where drainages transect the outcrop.

1.1 PROJECT AREA DESCRIPTION

The project area includes approximately 18 miles of Kf outcrop starting on the west end at the La Plata County – Archuleta County boundary near Beaver Creek and extending southeast along the outcrop to the Southern Ute Indian Tribe (SUIT) Reservation boundary near the confluence of the Piedra River and Stollsteimer Creek. Figure 1A illustrates the project area. A detailed project area map is included as Figure 1B.

1.2 BACKGROUND

In July 2006, the United States Forest Service (USFS) and the Bureau of Land Management (BLM) issued the Final Northern San Juan Basin Coal Bed Methane Project Environmental Impact Statement (FEIS) pertaining to the oil and gas industry's request to conduct coal bed methane (CBM) development on Federal lands within the northern rim of the San Juan Basin (USFS/BLM, 2006). One of the potential impacts identified in the FEIS is methane seepage at the outcrop of the Kf, a phenomenon already observed in the western half of the northern rim in La Plata County (LTE, 2009). The FEIS recommend surveys of the Kf outcrop to monitor the potential for methane seepage and document changes over time and space.

As stated in the FEIS, methane seeps have been observed and reported in the SJB, particularly from the outcrop of the coal beds in the Kf within La Plata County since the late 1800s. While there are conflicting data regarding the cause of methane seepage, and changes in seepage over time, seeps may be monitored through detailed mapping, subsurface and surface methane measurements, natural spring surveys, and reconnaissance along the outcrop looking for areas of stressed and dead vegetation.

Since 1997, LTE has conducted methane seep monitoring on the Kf outcrop in La Plata County, Colorado. The monitoring program in Archuleta County has been modeled after the La Plata County monitoring program.

In September 2004, LTE conducted the initial investigation of the Kf outcrop in Archuleta County (LTE, 2004). The scope of the initial investigation included an aerial fly-over reconnaissance of the entire outcrop followed by field inspection of identified suspect areas.

Suspect areas are location where stressed and dead vegetation on the Kf outcrop are observed. Additionally, areas where surface water bodies, namely rivers and streams, transect the Kf outcrop were investigated. Using traditional subsurface soil gas sampling techniques, no methane seep activity was noted during the 2004 investigation. Areas of dead and stressed vegetation appeared to have been the result of the drought conditions and/or pine beetle infestation.

In September 2005, LTE conducted a second investigation of the Kf outcrop in Archuleta County (LTE, 2006a). The scope of the second investigation included aerial imagery acquisition using an infrared (IR) camera to identify suspect areas on the Kf outcrop. LTE visited each accessible suspect area, collected shallow subsurface gas concentration measurements, and inspected the vegetation to identify potential causes of mortality. LTE also performed the first survey of natural springs located on the outcrop in order to provide a baseline of natural spring water conditions on the outcrop. Results of the 2005 monitoring event indicated that methane was not detected in the shallow subsurface soil sample locations in Archuleta County. Relatively low concentrations of dissolved methane were detected in several of the natural springs sampled in the project area during the 2005 monitoring event.

In 2006, LTE conducted a third investigation of the Kf outcrop in Archuleta County (LTE, 2006b). This investigation included surface water inspections of seven drainages along the Kf outcrop, sampling natural springs identified by LTE and the BLM during past surveys, collecting subsurface gas measurements from four permanent gas monitoring probe lines, and conducting soil gas surveys on the Candelaria Ranch and the Big Horn-Schomburg #1 abandoned well site. Results of the 2006 monitoring event were similar to the results of the 2005 monitoring event; methane was not detected in the shallow subsurface soil in Archuleta County with the exception of a low concentration (20 parts per million [ppm]) recorded at one sample point in Pole Gulch. Low concentrations of dissolved methane were detected in several of the natural springs sampled during the 2006 investigation.

In 2007, LTE conducted the fourth investigation of the Kf outcrop in Archuleta County (LTE, 2008). The scope of work included surface water inspections and soil gas surveys of six water courses along the outcrop, conducting a soil gas survey at the Big Horn-Schomburg #1 abandoned well site, and sampling natural springs. This was the first year that the flux meter was used to detect methane seeps. Methane was detected at two water courses, although one was determined to be swamp gas, and the other was likely associated with an underground natural gas pipeline leak. Low levels of methane were detected at Big Horn-Schomburg #1 abandoned well site. Low concentrations of dissolved methane were detected in four natural springs.

In 2008, LTE conducted the fifth investigation of the Kf outcrop in Archuleta County (LTE, 2009). The scope of work included surface water inspections and soil gas surveys of six water courses along the outcrop, conducting a soil gas survey at the Big Horn Schomburg #1 abandoned well site, sampling natural springs, and conducting regional reconnaissance of the Kf outcrop using infrared aerial imagery and field verification techniques. Low methane fluxes were detected along the water courses and at the Big Horn Schomburg #1 abandoned well site. No methane was detected at any of the natural springs or any of the regional reconnaissance areas.

Equipment capable of detecting very low concentrations of methane seepage became available for the 2007 investigation. This equipment, which measures methane flux from the ground

surface was again used in 2009 at the Big Horn-Schomburg #1 abandoned well site and areas within the Kf outcrop at drainage transects. Traditional subsurface gas detection techniques used in these areas prior to 2007 were not capable of detecting methane at the low levels subsequently observed in 2007, 2008, and 2009. Therefore, the presence of methane observed using flux equipment during the 2007, 2008, and 2009 investigations at locations where methane had not been detected prior to 2007 using subsurface gas detection equipment does not necessarily represent an increase in methane seep conditions.

1.3 SCOPE OF WORK

The investigation scope of work included the following tasks:

- Obtaining permission to access private properties;
- Kf outcrop inspections at six drainage transects;
- Measuring soil gas at the Big Horn-Schomburg #1 abandoned well site;
- Surveying and sampling natural springs; and
- Preparing this report.

1.4 PROJECT OBJECTIVES

The objectives of the monitoring program meet requirements 1, 2, and 6 of the Permit, issued by the COGCC (COGCC, 2005). 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.

The Kf outcrop reconnaissance includes low altitude, high-resolution infrared aerial imagery to map the vegetation along the outcrop, identifying suspect areas for further field investigation, and surveying for the presence or absence of methane, carbon monoxide, and hydrogen sulfide in those suspect areas. The data are used to quantify changes in the amount of methane seepage, if any, over time along the Kf outcrop in Archuleta County.

The natural spring survey includes visiting the springs annually at approximately the same time of year, measuring spring flow, and collecting water samples for analysis of water chemistry and dissolved methane. The data collected may be used to document changes to water quality and quantity over time. The data may also be useful in various aspects of the Kf reservoir engineering models.

The Big Horn-Schomburg #1 survey requires an annual soil gas survey around the abandoned well and monitoring the permanent soil monitoring probe. The abandoned production well is located in the southeast quarter of the southeast quarter of Section 14U, Township 34N, Range 5W (Figure 15). The production well was drilled and abandoned in 1961. Reference information indicates that the Kf is close to, or outcrops, at this location (USFS/BLM, 2006). Geologic maps from the FEIS indicate that the abandoned production well is located in the transition zone

between the Kf and the Kirtland Formation (Kk). LTE conducted an initial subsurface soil gas survey and installed a permanent gas monitoring probe in the vicinity of the abandoned well in September 2005. LTE also surveyed the abandoned well site in May 2006, October 2007, and November 2008.

1.5 ORGANIZATION OF REPORT

This report is organized into five sections including this introduction as Section 1.0. The field methods are described in Section 2.0. Section 3.0 presents the results of the investigation. The conclusions and recommendations are summarized in Section 4.0. Section 5.0 presents references. Figures, tables, and appendices follow the text in separate sections.

SECTION 2.0

FIELD METHODS

This section describes the data collection methods used to conduct surface water inspections, soil gas flux surveys, subsurface soil gas surveys, global positioning system sample locating and logging, and natural spring surveys.

2.1 PROPERTY ACCESS

Prior to conducting 2009 field activities, LTE acquired land information from the Archuleta 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 Archuleta 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 and illustrated on Figure 2.

2.2 DETAILED MAPPING

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 aerial extent of seepage.

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.

2.2.1 Portable Flux Meter

LTE collected surface soil gas flux measurements during soil gas surveys. 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 the soil surface is obscured by decayed organic matter on the forest floor.

The methane sensor within the flux meter unit has a range of 60 parts per million (ppm) to 50,000 ppm. The methane flux measurement range is 0.2 to 300 moles/m^2·day. Methane fluxes below 0.2 moles/m^2·day are detectable with decreased accuracy. As a result, methane flux greater than 0.2 moles/m^2·day is considered reliable and discussed in the following sections.

The carbon dioxide sensor has a full-scale range of 0 to 20,000 parts per million (ppm) by volume (ppmV) 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.

2.2.2 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.

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.

2.3 NATURAL SPRING MONITORING

2.3.1 Subsurface Soil Gas Measurements

In 2009, subsurface gas measurements were collected next to the natural springs. Taditional 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.

2.3.2 Water Sampling

At each sampled natural spring, LTE collected spring water samples and monitored for subsurface soil gases near the springs using 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. Water samples were also submitted to Green Analytical Laboratories for general water chemistry analyses for the second time.

2.5 ABANDONED PRODUCTION WELL SOIL GAS MAPPING

As a stipulation of the permit, a soil gas survey surrounding the abandon production well Big Horn Schomburg #1 was conducted for the presence or absence of 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

MONITORING RESULTS

This section describes the results of the field activities conducted from September 9, 2009 to October 8, 2009.

3.1 DRAINAGE TRANSECTS SURVEY

LTE conducted inspections at the following six locations where surface water drainages transect the Kf outcrop in Archuleta County (Figure 1B):

- Beaver Creek;
- Squaw Creek;
- Little Squaw Creek;
- Pole Gulch;
- Peterson Gulch; and
- Stollsteimer Creek.

3.1.1 Water Surface Inspections

Methane was not observed to be discharging as bubbles on the water surface at any of the six streams inspected during the 2009 investigation.

3.1.2 Soil Gas Flux Measurements

Using the flux meter, LTE collected soil gas flux measurements at the six drainage transects during the 2009 investigation. Methane flux values ranged from 0.0002 moles/m^2·day (at all six drainages) to 0.3382 moles/m^2·day (at Stollsteimer Creek). The average methane flux value of all detections was 0.0164 moles/m^2·day, well below the reporting limit.

Most flux measurements fell below the lower limit of the flux meter's operating range of 0.2 moles/m^2·day. According to the manufacturer, these low measurements fall outside of the stated ±25% accuracy value. Of the 915 methane samples, 912 (99.6%) recorded methane flux values were below the reporting limit of the operating range of the flux meter. Therefore, the methane flux values recorded during 2009 are considered low.

Results of the soil gas flux measurement surveys indicate that methane is present at the ground surface along the Kf outcrop in Archuleta County. However, the methane flux values are low and appear to be within background levels. For a better perspective of the methane flux rates, LTE converted the mass flux measurements into volumetric flux. The unit conversion is based on the molecular weight and density of methane at approximately 7,000 feet above mean sea level. The calculation is as follows:

$$\frac{\text{mol } CH_4}{m^2 \cdot \text{day}} \times \frac{16.04276 \text{ g } CH_4}{\text{mol } CH_4} \times \frac{0.0698 \text{ ft}^3 CH_4}{\text{g } CH_4} = \frac{\text{ft}^3 CH_4{}^3}{m^2 \cdot \text{day}}$$

The maximum methane flux rate recorded in Archuleta County during the 2009 soil gas survey was 0.3852 cubic feet per square meter per day ($ft^3/m^2 \cdot day$).

The soil gas flux measurement survey results for the six drainages are presented on Figures 3 through 14. Minimum and maximum methane flux values by drainage are summarized in Table 2. Appendix B contains the gas flux measurement results for each sample location.

3.1.3 Total Methane Flux Estimations

LTE estimated the total flux of methane at each drainage transect using data collected with the flux meter. Flux data were interpolated and gridded at each of the six drainage transect areas, then contoured and processed to estimate total flux.

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,

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

Due to the limited number of sample points and the high number of points with no measurable flux, the volumetric flux values calculated are an estimate and may not represent actual values for the specific areas. Due to a limited number of methane flux values above the reporting limit, all methane flux values were utilized in estimating the total flux volume. As a result, the total methane flux volume calculated over the six transects was conservatively estimated at 13.7 MCFD. The total methane flux volume decreased from 2008 (30.7 MCFD) to 2009.

A discussion of the methods and calculations used to determine total methane flux is presented in Appendix C. Total methane flux estimates are summarized in Table 2.

3.2 BIG HORN-SCHOMBURG #1 ABANDONED WELL SITE SURVEY

LTE conducted the 2009 Big Horn Schomburg #1 abandoned well survey on September 4, 2009. LTE collected five gas flux measurements. Methane was reported at two of five points using the flux meter. The maximum methane flux measurement was 0.0055 moles/m^2·day, which is well below the reliable reporting limit of the flux meter of 0.2 moles/m^2·day and is considered very low. The gas flux measurement results are presented in Table 2. Figures 15 and 16 present the results of the Big Horn-Schomburg #1 abandoned well site soil gas survey.

3.3 NATURAL SPRING SURVEY

3.3.1 Sampling Status

During LTE's previous literature and interview research, a total of 27 potential natural springs were identified on the Kf outcrop in Archuleta County. All 27 natural springs were located in physically accessible areas. The locations of natural springs are presented on Figure 17 through 19. A summary of 2009 natural springs sampled, along with past sampling status, is presented in Table 3.

Six springs were not sampled due to access restrictions. Denial of access to the Candelaria Property in 2009 prevented sampling of four natural springs (Section 10U Spring, Spring 1212, Spring 3424, Candelaria A Spring, and Candelaria B Spring). LTE was not granted access to the Vaughn Spring property during 2009. LTE was denied access to the Grassy Spring located on the Security National Funding Trust property.

LTE was unable to field-locate two of the natural springs (Seep Spring and Ramona Spring).

Two springs (Townsend Spring and Walt Spring #1) were dry at the time of the May 2009 sampling. Ten springs (Wood/Corrigan Spring, Crain Spring, Thick Spring, Vance Meadow Spring, Willow Spring, NW John Grubb Spring, SE John Grubb Spring, and Section 14 Spring) were dry at the time of the October 2009 sampling.

The natural spring identified as Miser Spring and Pipeline was field-verified by LTE in 2006 and appears to be a hand-dug well used as a water supply for the residence located nearby. The spring was inaccessible due to surrounding infrastructure and could not be sampled in 2009.

LTE was able to collect water samples from the following natural springs in May 2009:

Natural Spring	Location	GPS Location (Northing)	GPS Location (Easting)
Ramona Leonard Spring	Section 13-T35N-R6W	1235850.805	2424244.257
Wood/Corrigan Spring	Section 13-T35N-R6W	1234864.402	2424895.710
Thick Spring	Section 5-T34N-R5WA	1215312.043	2436378.411
Watson Well Spring	Section 19-T35N-R5W	1232573.797	2428920.250
Crain Spring	Section 20-T35N-R5W	1229136.933	2432587.070
Vance Spring #1	Section 8-T35N-R5WA	1213690.159	2433944.129
Vance Meadow Spring	Section 8-T35N-R5WA	1211610.242	2434360.976
Willow Spring	Section 15-T34N-R5WA	1207206.498	2446331.295
Section 14 Spring	Section 14-T 34N-R5WA	1206894.748	2450487.926
NW John Grub Spring	Section 11U-T34N-R5W	1203606.349	2458338.090
SE John Grub Spring	Section 11U-T34N-R5W	1202851.482	2459214.598

Note: Northing and Easting coordinates are in Colorado State Plane South (feet) – NAD 83.

LTE was able to collect water samples from the following natural springs in October 2009:

Natural Spring	Location	GPS Location (Northing)	GPS Location (Easting)
Ramona Leonard Spring	Section 13-T35N-R6W	1235850.805	2424244.257
Watson Well Spring	Section 19-T35N-R5W	1232573.797	2428920.250
Vance Spring #1	Section 8-T35N-R5WA	1213690.159	2433944.129

Note: Northing and Easting coordinates are in Colorado State Plane South (feet) – NAD 83.

3.3.2 Field Observations and Measurements

Field observations and measurements of temperature, pH, and electrical conductivity (EC) were collected at the sampled natural springs. The 2009 field observations and measurements for the natural springs, including historical measurements, are summarized in Table 4.

Natural spring discharge rates were measured at 6 of the 11 water sampling locations in May of 2009. Discharge rates were measured at two of the three October, 2009 sampling locations. Measurements were calculated by dividing the known volume of a container by the time required to fill the container. Watson Well Spring, where water collected and discharged through a domestic system, was not measured. Natural spring discharge rates, including historical data, are presented in Table 5.

At natural springs with measureable flow, the maximum flow measured was 2.66 gallons per minute (gpm) at Crain Spring. The flow rates observed in 2009 are similar to the low flow rates observed historically in the Archuleta County Kf outcrop monitoring.

3.3.3 Natural Springs Sampling and Analysis

In 2009, natural spring water samples were collected in May and October and submitted to Four Corners Geoscience, Inc. for analysis of dissolved methane. Water samples from May 2009 were also submitted to Green Analytical Laboratories for general water chemistry analysis. Water samples from the October 2009 sampling event were not submitted for general water quality chemistry analysis.

The COGCC uses 2 mg/L as the threshold limit for methane in domestic water systems. No detected methane concentrations from the natural springs samples tested have exceeded the 2 mg/L threshold.

Laboratory analytical results for dissolved methane in natural spring waters, including historical results, are summarized in Table 6. In 2009, dissolved methane was detected in water from the SE John Grubb Spring (0.02 mg/L) and the NW John Grub Spring (0.07 mg/L).

The Ramona Leonard Spring is primarily a calcium sulfate water. All other natural springs sampled are calcium bicarbonate waters. Major ion chemistry of the natural springs is summarized in Table 7. Analytical results and stiff diagrams are presented in Appendix D.

3.3.4 Subsurface Soil Gas Measurements

One set of subsurface soil gas measurements using the multi-gas meter were collected at each of the 11 sampled natural springs in Spring 2009. Subsurface soil gas measurements were also collected at the same 11 natural springs in Fall 2009.

The results of the subsurface soil gas measurements are summarized in Table 8. Subsurface soil methane was not detected at the two natural springs where methane was detected in spring water (SE John Grubb Spring and NW John Grub Spring.)

SECTION 4.0

CONCLUSIONS AND RECOMMENDATIONS

4.1 CONCLUSIONS

4.1.1 Drainage Transect Survey

Surface Water Inspections

Surface water inspections were performed at six locations where drainages transect the Kf outcrop. Methane was not observed seeping as bubbles on the water surface at any of the six streams inspected. As a result, no stream water samples were collected for dissolved methane analysis.

In previous years, methane bubbles were observed at Squaw Creek and Stollsteimer Creek. In 2006, methane analysis determined that the Squaw Creek methane was near-surface microbial gas (swamp gas). Methane observed in 2007 and 2008 near Stollsteimer Creek coincided with the location of an underground natural gas pipeline. The methane source, potentially the pipeline, near-surface swamp gas or the Kf outcrop, was undeterminable. However, pipeline representatives inspected the area and concluded that it was likely not related to a leaking pipeline due to the limited flow observed.

Methane Flux Measurements

The 2009 monitoring event was the third year that methane flux measurements were collected. Table 2 presents the distribution of methane flux values within the six drainages in 2007, 2008, and 2009. The number of sample points increased from 84 in 2007 to 915 in 2009. The number of sample points with methane detected above the flux meter's reporting limit went from 5 in 2007 and 2008 to 3 in 2009. The average methane flux value (computed from all detections at six survey locations) decreased from 0.083 moles/m^2·day in 2007 to 0.064 moles/m^2·day in 2009. It is important to note that only three methane flux points in 2009 detected methane above the reporting limit of 0.2 moles/m^2·day and that the total volumetric flux has decreased by half from 2008 to 2009. Maximum values as well as average values indicate that methane seepage along the Kf outcrop in Archuleta County is very low and likely indicative of background conditions.

4.1.2 Big Horn-Schomburg #1 Abandoned Well Site Survey

Five soil gas methane flux measurement points were taken in 2009 at the Big-Horn Schomburg #1 Abandoned Well Site. Methane flux was detected at two measurement points. The average of values where methane flux was detected dropped from 0.0353 moles/m^2·day in 2008 to 0.0029 moles/m^2·day in 2009. Results of the survey continue to indicate there is essentially no seepage at the Big Horn-Schomburg #1 abandoned well site.

4.1.3 Natural Spring Survey

Water discharge rates from six natural springs were measured in May 2009. Discharge rates were only discernable from two of the natural springs sampled in October 2009. Low flow rates have been typically measured in previous years.

Of the 27 documented natural springs along the Archuleta Kf outcrop, 11 natural springs were sampled for methane in May 2009, and three springs were sampled for methane in October 2009. Methane was detected at very low concentrations (0.05 mg/L or less) in water from only two natural springs. The detected concentrations were below the 2 mg/L threshold limit for water systems established by the COGCC. Methane detections in previous years had also been well below the COGCC threshold.

General water chemistry of natural springs, including major ion concentrations, was analyzed for the second time in 2009. Ten of the 11 natural springs sampled show a calcium bicarbonate signature, while the one natural spring is a calcium sulfate water.

Subsurface soil gas was measured adjacent to 13 natural springs. Methane was not detected at any of the locations.

4.2 RECOMMENDATIONS

In order to maintain compliance with Sections 1, 2 and 6 of the COGCC Conditions of Approval for drilling permit, LTE makes the following recommendations.

- Continue annual monitoring at the six drainage transects for discharges of methane gas from watercourses and soil;
- Continue annual monitoring of the Big Horn-Schomburg #1 abandoned well site as required under Section 6 of the Permit's Conditions of Approval;
- Reduce monitoring of natural springs on the Kf outcrop to every other year;
- Discontinue subsurface soil gas measurements at each natural spring unless visual inspections indicate a need for one;
- Perform major ion analysis be conducted every three years, occurring next during the 2012 event; and
- Perform regional reconnaissance survey and field verification activity in 2011.

SECTION 5.0

REFERENCES

Armstrong, M and N. Champigny. 1988. *A Study on Kriging Small Blocks*.

Colorado Oil and Gas Conservation Commission (COGCC). 2005. *COGCC Conditions of Approval, Petrox Resources, Pargin Mountain 10U #3.* April 18, 2005.

Cressie, N.A.C.. 1993. *Statistics for Spatial Data.*

LT Environmental, Inc. (LTE). 2004. *Fruitland Outcrop Initial Reconnaissance Report, Archuleta County, Colorado*. November 2004.

-----. 2006a. *Fruitland Outcrop Monitoring Report, Archuleta County, Colorado*. January 2006.

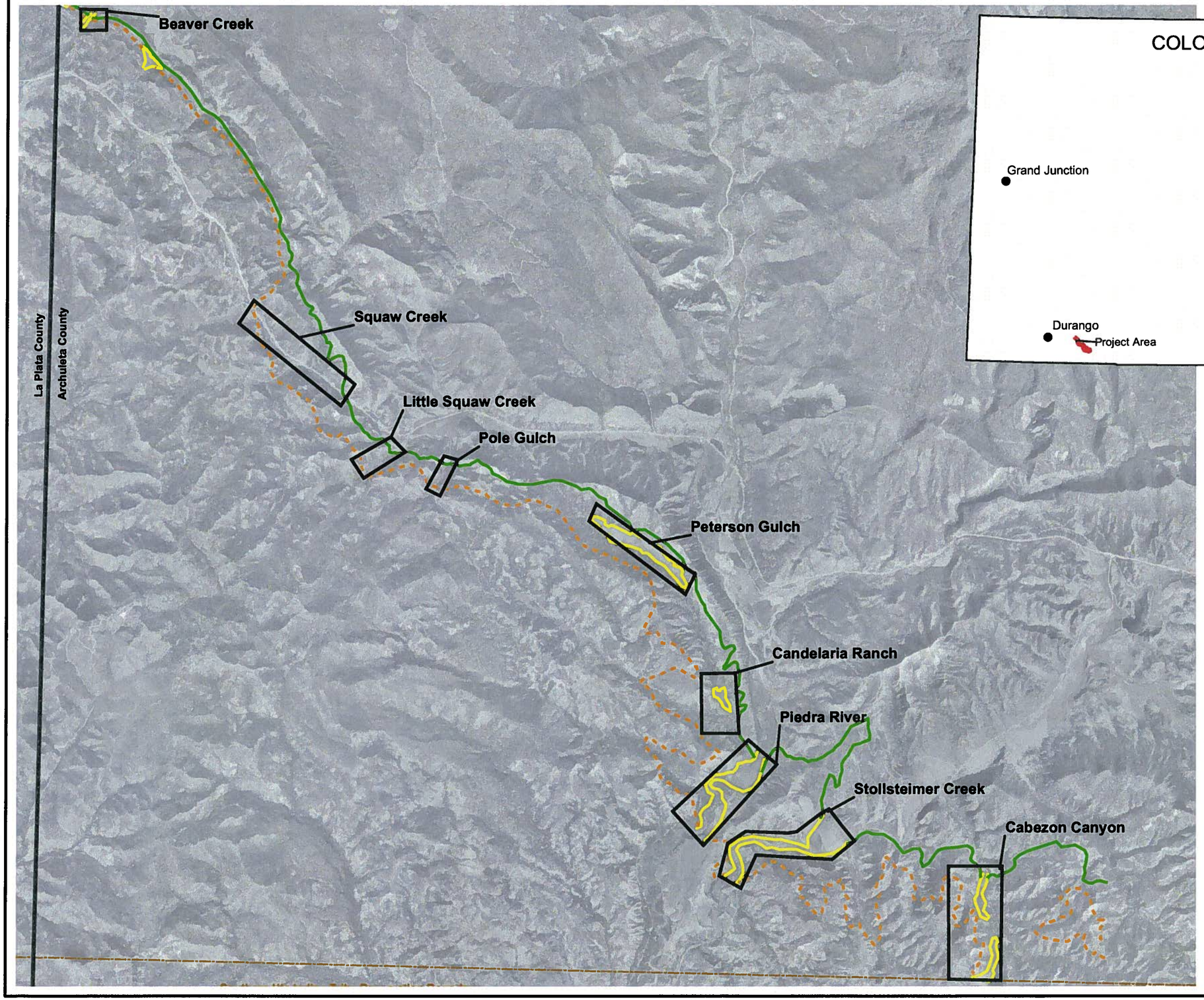
-----. 2006b. *Fruitland Outcrop Monitoring Report, Archuleta County, Colorado*. October 2006.

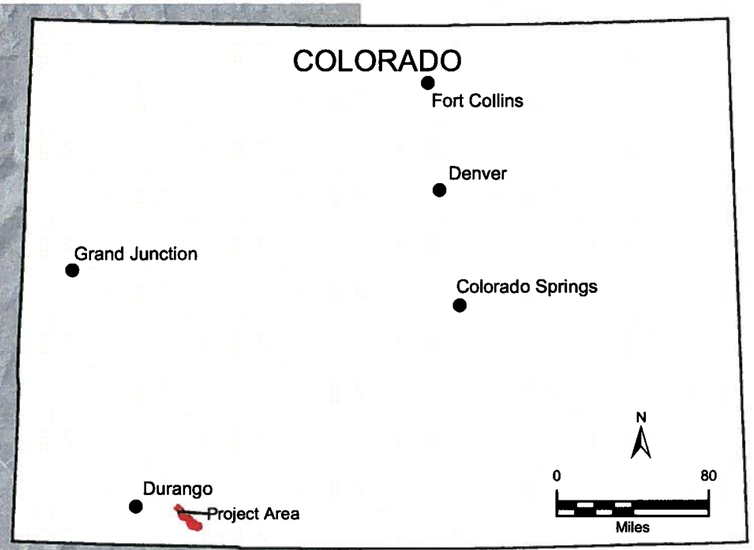
-----. 2008a. *2007 Fruitland Outcrop Monitoring Report, Archuleta County, Colorado*. March 2008.

-----. 2008b. *2007 Fruitland Outcrop Monitoring Report, La Plata County, Colorado*. June 2008.

U.S. Forest Service and Bureau of Land Management (USFS/BLM). 2006. *Final Environmental Impact Statement, Northern San Juan Basin Coal Bed Methane Project.* July 2006.

FIGURES





Legend

- Area of Interest

Geology

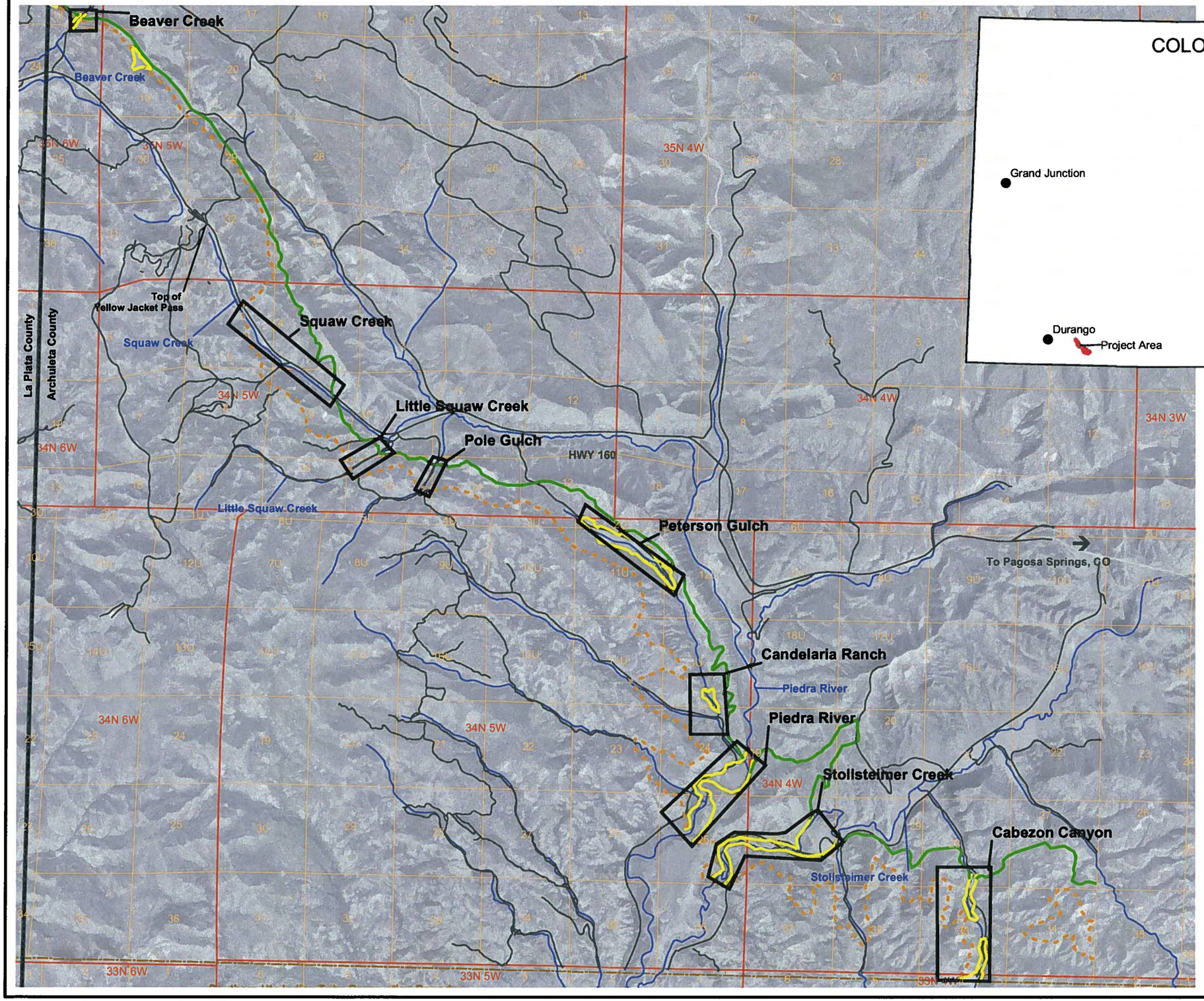
- Fruitland Formation (Kf)
- Fruitland Formation Tongue (Kft)
- Kirtland Formation (Kk)
- Pictured Cliffs Formation (Kpc)
- Pictured Cliffs Formation Tongue (Kpct)
- Quaternary Alluvium (Qa)
- Quaternary Gravel (Qg)
- County Boundary
- Southern Ute Indian Tribe Reservation Boundary

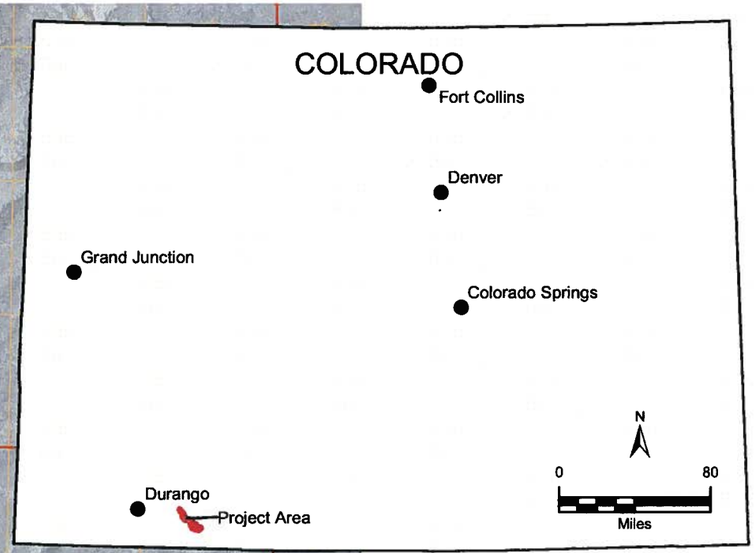
0 6,000 12,000
Feet

N

FIGURE 1A
PROJECT AREA MAP
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

ELM RIDGE RESOURCES AND PETROX RESOURCES





Legend

- Area of Interest

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)
- Roads
- Rivers
- County Boundary
- Southern Ute Indian Tribe Reservation Boundary
- Township Range
- Section

0 6,000 12,000
Feet

N

FIGURE 1B
PROJECT AREA MAP - DETAIL
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

ELM RIDGE RESOURCES AND PETROX RESOURCES

ID NUMBER	OWNER
3	HALVERSON HAROLD D ESTATE
4	EDWARDS DURWOOD
6	INN ABOVE ONION CREEK INC
7	COLORADO YELLOW JACKET LTD PTNSHP C/O TREMAINE RICHARD
8	STRICKLAND SCOTT L & NIOBRA J
9	WATSON DAVID LLOYD & WATSON DALE LLOYD
14	WRIGHT JEAN PAUL & SUSAN
15	SCHUCHARDT JOSEPH III & SIRI
16	UNITED STATES OF AMERICA T/F SOUTHERN UTE TRIBE
19	CHENAULT ROBERT G
20	LEISER SANDRA J
21	WOZNY THEODORE G TRUST ACCOUNT
23	MODISETTE JERRY L & BEVERLY A
24	PETSCH GLORIA A
25	SCHAEFER JAMES & NANCY
26	MODISETTE JERRY L & BEVERLY A
27	ADAM ROBERT J
28	HARRISON JERRY
33	CANDELARIA ROGER
34	VAUGHN LARRY C
35	MARTINEZ JOHN L & GILLIS CAROLYN M
36	CANDELARIA SY TRUSTEE & GILBERT CANDELARIA MEL & LEONARD & ANNET YOUNG LORRAINE & ABEYTA VILLA
37	CANDELARIA SUSIE
38	CANDELARIA ROGER
40	SHEPARD JOSEPH W & TERRI L
41	CANDELARIA LUCY S & GONZALES BERNADETTE M
44	CAZEDESSUS CAMILE E JR

Legend

- Rivers
- Roads

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)
- 9 No Access
- 6 No Response to Access Request

All other areas gave approval to access or are located on Public Lands.

Number listed on parcel refers to ownership listing in Table 1.

0 6,000 12,000
Feet

N

FIGURE 2
PROPERTY ACCESS MAP
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

ELM RIDGE RESOURCES AND PETROX RESOURCES

La Plata County

Archuleta County

Beaver Creek

Squaw Creek

Little Squaw Creek

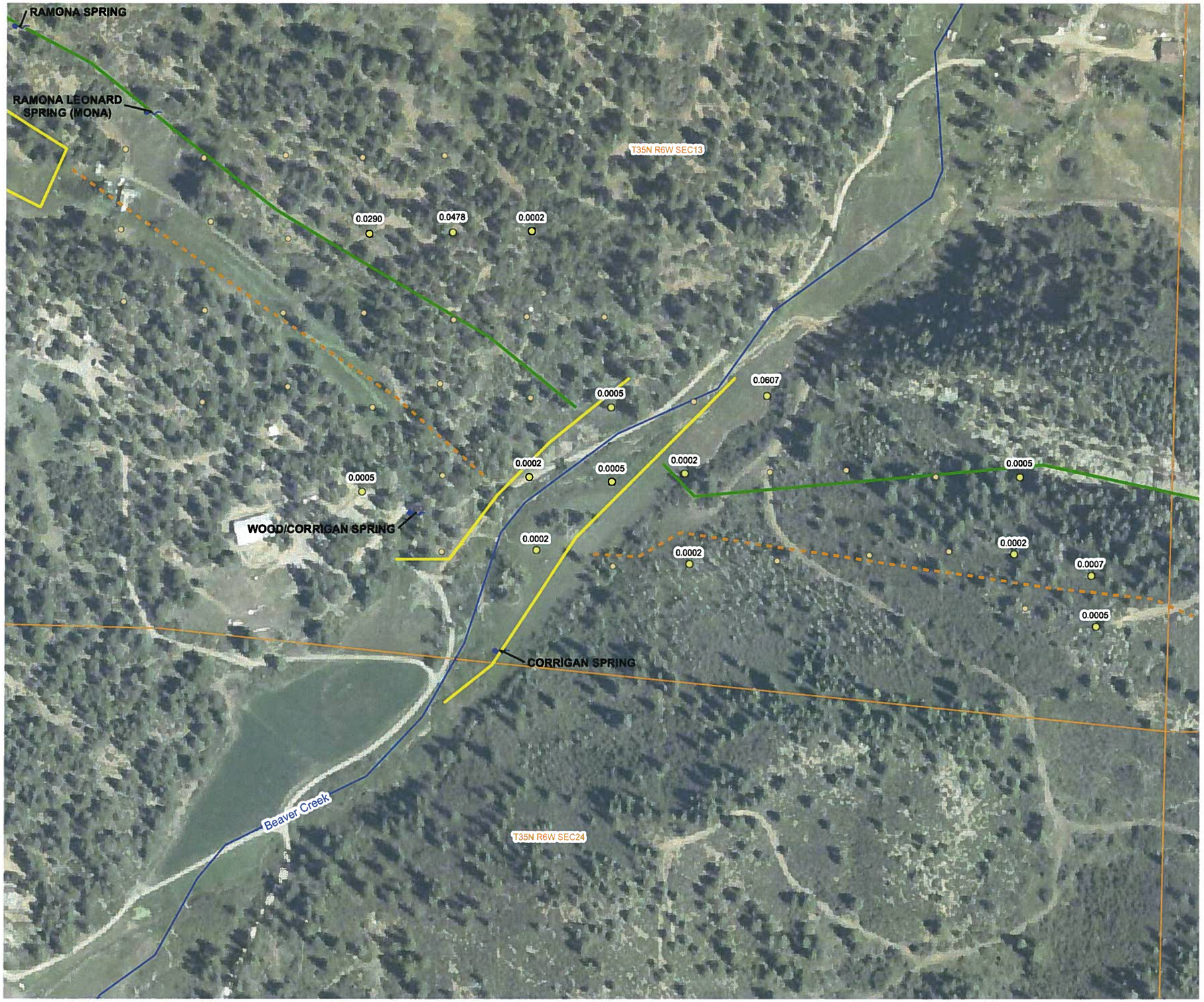
Piedra River

Stollsteimer Creek

HWY 160

US 160

To Pagosa Springs, CO



Legend

- Natural Spring Location

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

Points not labeled are 0.0000 mol/m^2 day Methane

- Surface Water

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)
- Township Range Section

IMAGE COURTESY OF USDA/NRCS, 2005

0 250 500
Feet

N

FIGURE 3
METHANE FLUX MEASUREMENTS
BEAVER CREEK
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO
ELM RIDGE RESOURCES AND PETROX RESOURCES

RAMONA SPRING

RAMONA LEONARD SPRING (MONA)

WOOD/CORRIGAN SPRING

CORRIGAN SPRING

Beaver Creek

T35N R6W SEC13

T35N R6W SEC24

0.1982 0.0642 0.1074 0.0916 0.1921

0.1748 0.0882 0.1363 0.2799 0.2109 0.2525

0.1354 0.4730 0.3755 0.2442 0.1825 0.2497 0.2154

0.2983 0.1316 1.0516 0.0742 0.3631 0.1842 0.4074 0.4020

0.1895 0.0709 0.0654 0.4796 0.0828 0.0430 0.1528 0.5088 0.2681

0.1848 0.2140 0.1505 0.7618 0.3052 0.2077 0.2818 0.2085 0.2975 0.2938

Legend

Natural Spring Location

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

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

Points not labeled are 0.0000 mol/m^2 day Carbon Dioxide

Surface Water

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)
- Township Range Section

IMAGE COURTESY OF USDA/NRCS, 2005

0 250 500

Feet

N

FIGURE 4
CARBON DIOXIDE FLUX MEASUREMENTS
BEAVER CREEK
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO
ELM RIDGE RESOURCES AND PETROX RESOURCES

Legend

- Natural Spring Location

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

Points not labeled are 0.0000 mol/m^2 day Methane

- Surface Water

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)
- Township Range Section

IMAGE COURTESY OF USDA/NRCS, 2005

0 400 800
Feet

N

FIGURE 5
METHANE FLUX MEASUREMENTS
SQUAW CREEK
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO
ELM RIDGE RESOURCES AND PETROX RESOURCES

Legend

Natural Spring Location

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

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

Points not labeled are 0.0000 mol/m^2 day Carbon Dioxide

Surface Water

Geology

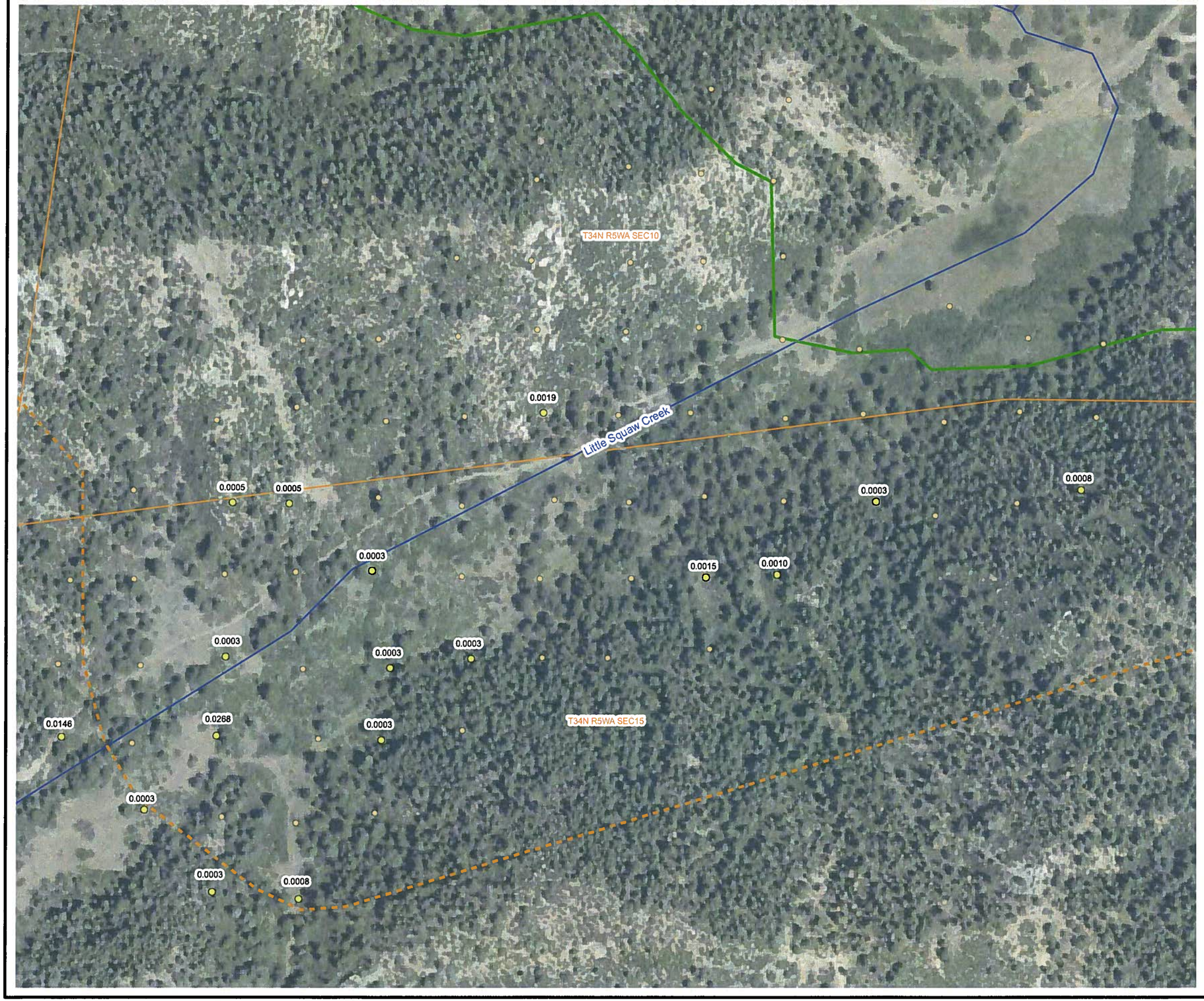
- Fruitland Formation (Kf)
- Fruitland Formation Tongue (Kft)
- Kirtland Formation (Kk)
- Pictured Cliffs Formation (Kpc)
- Pictured Cliffs Formation Tongue (Kpct)
- Quaternary Alluvium (Qa)
- Quaternary Gravel (Qg)
- Township Range Section

IMAGE COURTESY OF USDA/NRCS, 2005

0 400 800
Feet

N

FIGURE 6
CARBON DIOXIDE FLUX MEASUREMENTS
SQUAW CREEK
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO
ELM RIDGE RESOURCES AND PETROX RESOURCES



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

Points not labeled are 0.0000 mol/m^2 day Methane

Surface Water

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)
- Township Range Section

IMAGE COURTESY OF USDA/NRCS, 2005

0 250 500
Feet

N

FIGURE 7
METHANE FLUX MEASUREMENTS
LITTLE SQUAW CREEK
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO
ELM RIDGE RESOURCES AND PETROX RESOURCES

Legend

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

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

Points not labeled are 0.0000 mol/m^2 day Carbon Dioxide

Surface Water

Geology

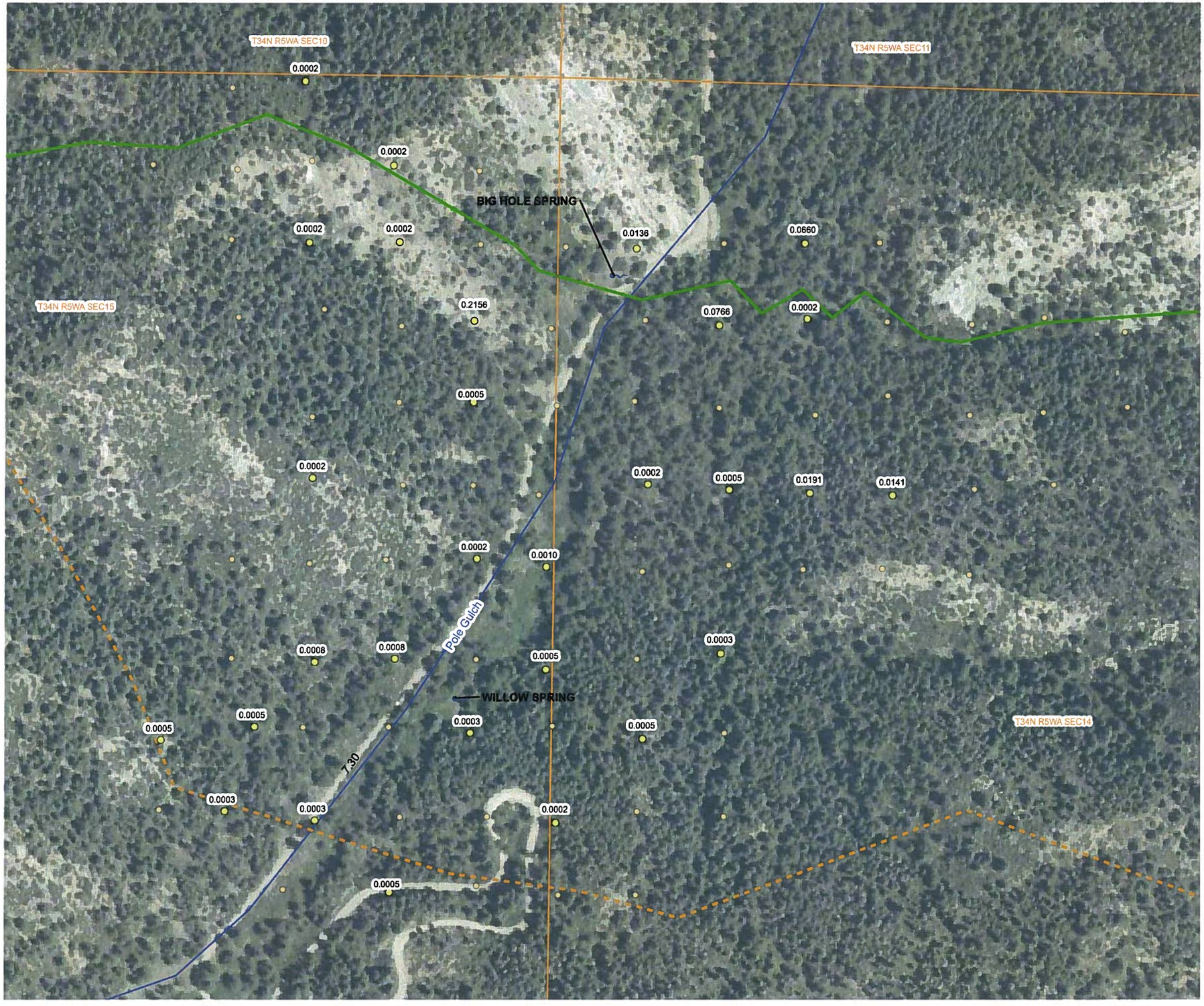
- Fruitland Formation (Kf)
- Fruitland Formation Tongue (Kft)
- Kirtland Formation (Kk)
- Pictured Cliffs Formation (Kpc)
- Pictured Cliffs Formation Tongue (Kpct)
- Quaternary Alluvium (Qa)
- Quaternary Gravel (Qg)
- Township Range Section

IMAGE COURTESY OF USDA/NRCS, 2005

0 250 500
Feet

N

FIGURE 8
CARBON DIOXIDE FLUX MEASUREMENTS
LITTLE SQUAW CREEK
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO
ELM RIDGE RESOURCES AND PETROX RESOURCES



Legend

Natural Spring Location

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

Points not labeled are 0.0000 mol/m^2 day Methane

Surface Water

Geology

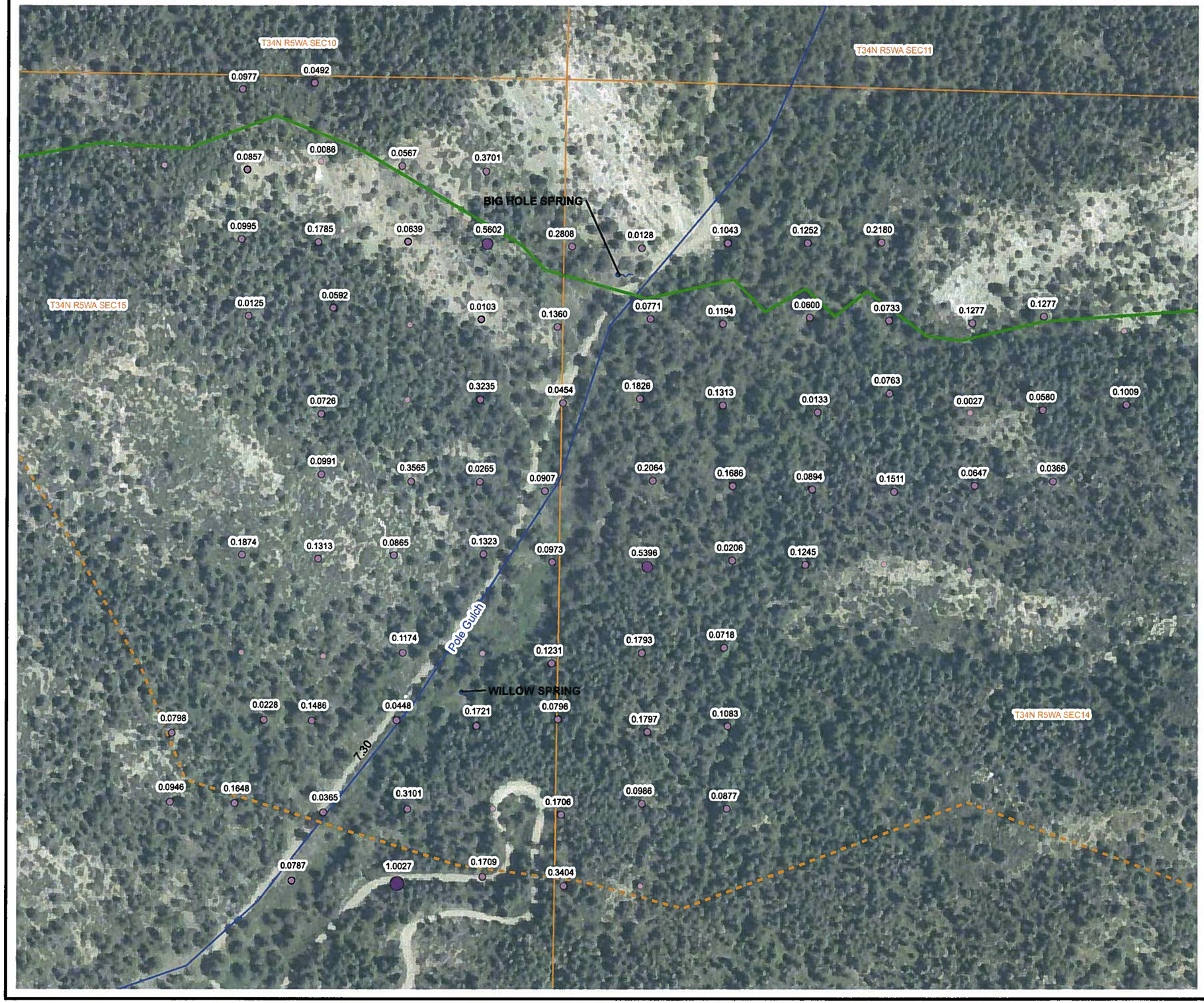
- Fruitland Formation (Kf)
- Fruitland Formation Tongue (Kft)
- Kirtland Formation (Kk)
- Pictured Cliffs Formation (Kpc)
- Pictured Cliffs Formation Tongue (Kpct)
- Quaternary Alluvium (Qa)
- Quaternary Gravel (Qg)
- Township Range Section

IMAGE COURTESY OF USDA/NRCS, 2005

0 250 500
Feet

N

FIGURE 9
METHANE FLUX MEASUREMENTS
POLE GULCH
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO
ELM RIDGE RESOURCES AND PETROX RESOURCES



Legend

Natural Spring Location

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

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

Points not labeled are 0.0000 mol/m^2 day Carbon Dioxide

Surface Water

Geology

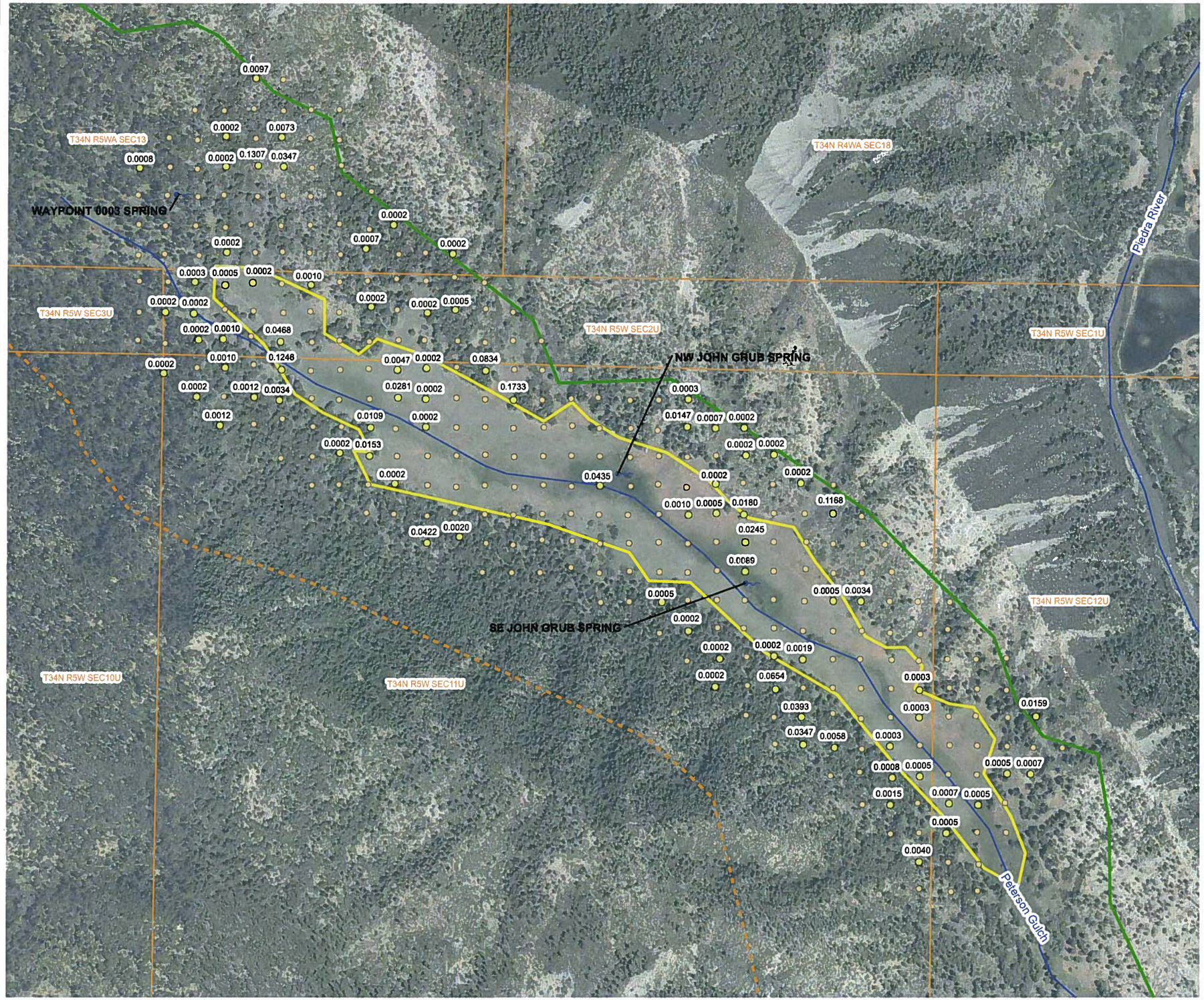
- Fruitland Formation (Kf)
- Fruitland Formation Tongue (Kft)
- Kirtland Formation (Kk)
- Pictured Cliffs Formation (Kpc)
- Pictured Cliffs Formation Tongue (Kpct)
- Quaternary Alluvium (Qa)
- Quaternary Gravel (Qg)
- Township Range Section

IMAGE COURTESY OF USDA/NRCS, 2005

0 250 500
Feet

N

FIGURE 10
CARBON DIOXIDE FLUX MEASUREMENTS
POLE GULCH
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO
ELM RIDGE RESOURCES AND PETROX RESOURCES



Legend

- Natural Spring Location

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

Points not labeled are 0.0000 mol/m^2 day Methane

- Surface Water

Geology

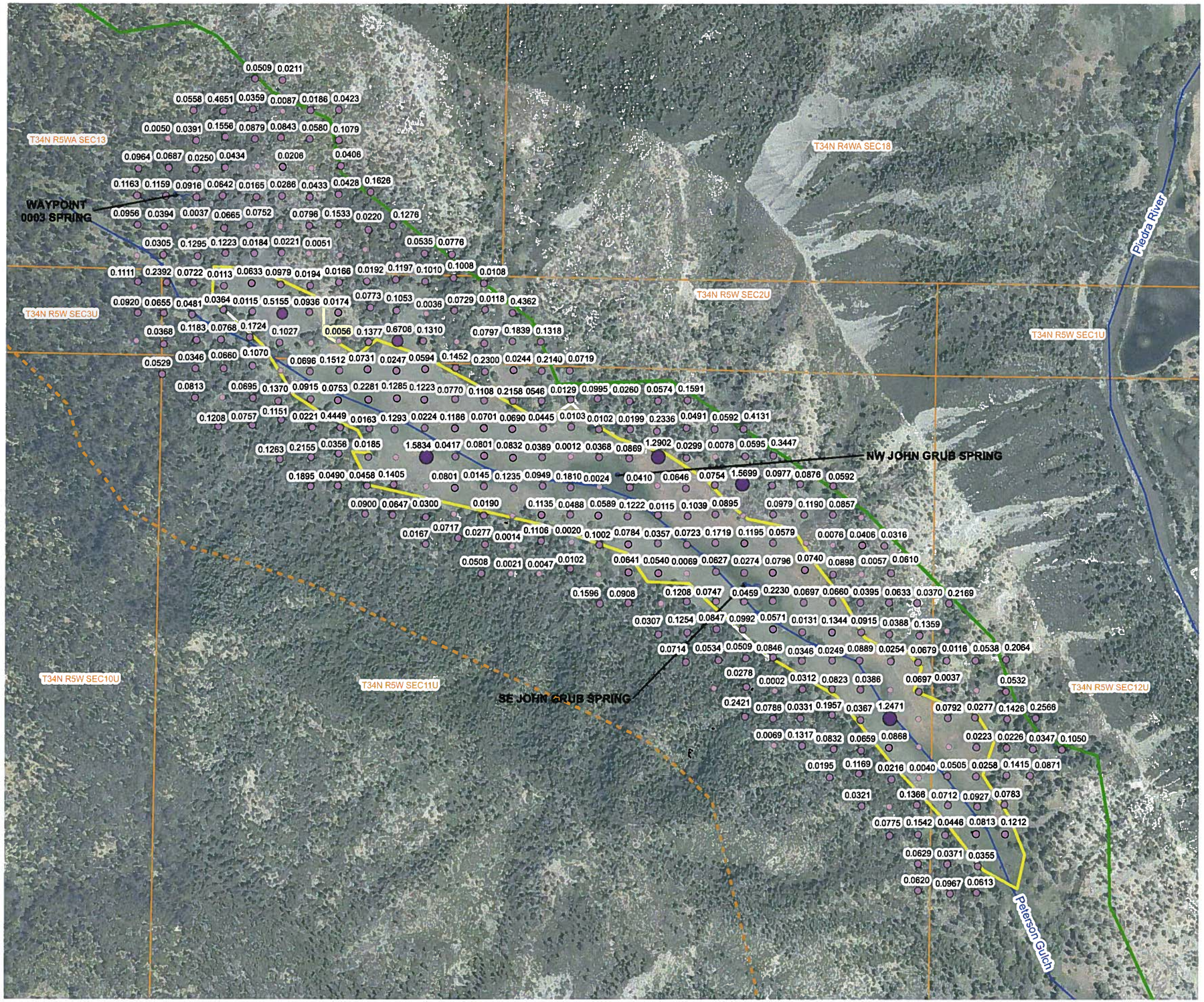
- Fruitland Formation (Kf)
- Fruitland Formation Tongue (Kft)
- Kirtland Formation (Kk)
- Pictured Cliffs Formation (Kpc)
- Pictured Cliffs Formation Tongue (Kpct)
- Quaternary Alluvium (Qa)
- Quaternary Gravel (Qg)
- Township Range Section

IMAGE COURTESY OF USDA/NRCS, 2005

0 700 1,400
Feet

N

FIGURE 11
METHANE FLUX MEASUREMENTS
PETERSON GULCH
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO
ELM RIDGE RESOURCES AND PETROX RESOURCES



Legend

- Natural Spring Location

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

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

Points not labeled are 0.0000 mol/m^2 day Carbon Dioxide

- Surface Water

Geology

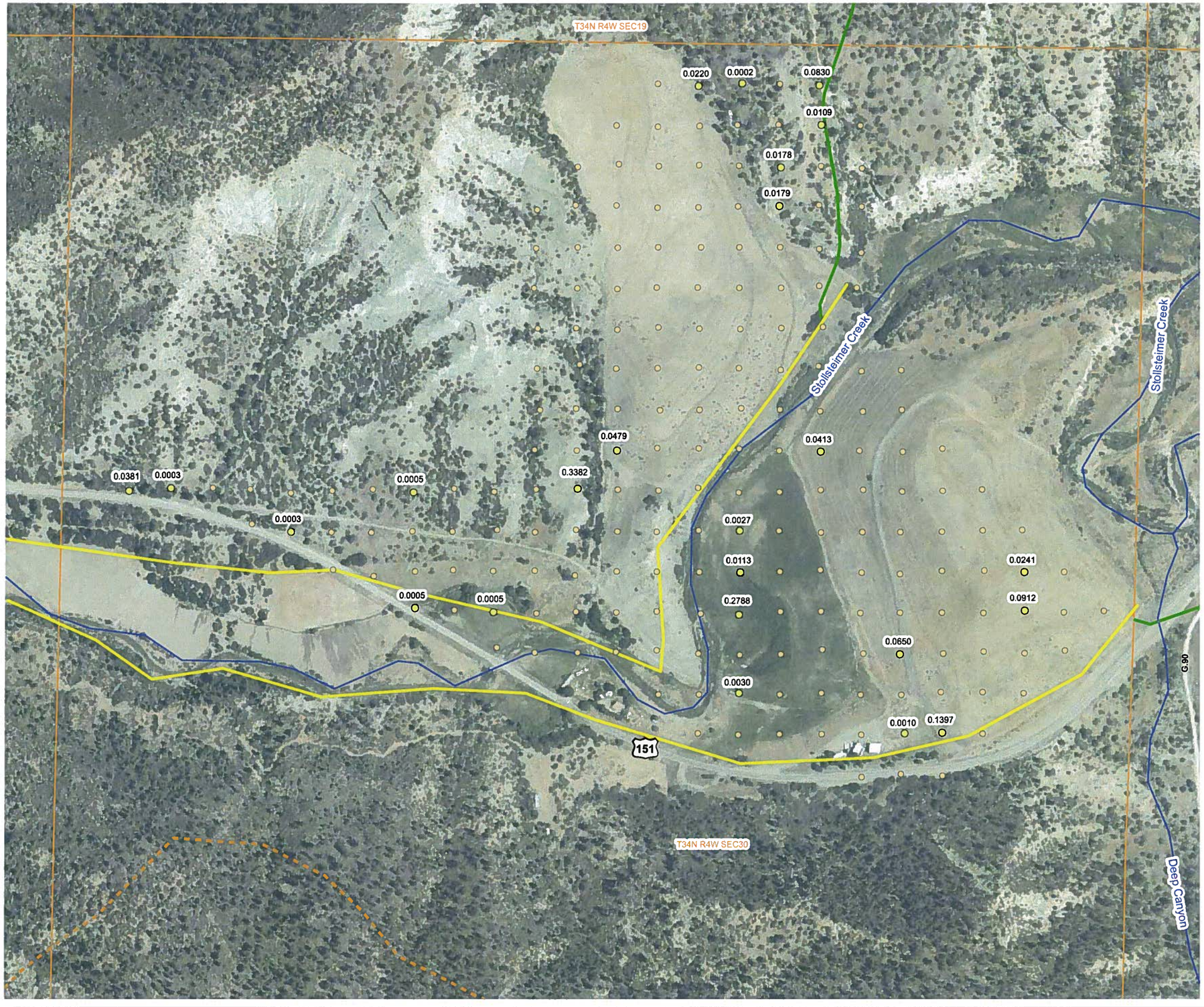
- Fruitland Formation (Kf)
- Fruitland Formation Tongue (Kft)
- Kirtland Formation (Kk)
- Pictured Cliffs Formation (Kpc)
- Pictured Cliffs Formation Tongue (Kpct)
- Quaternary Alluvium (Qa)
- Quaternary Gravel (Qg)
- Township Range Section

IMAGE COURTESY OF USDA/NRCS, 2005

0 700 1,400
Feet

N

FIGURE 12
CARBON DIOXIDE FLUX MEASUREMENTS
PETERSON GULCH
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO
ELM RIDGE RESOURCES AND PETROX RESOURCES



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

Points not labeled are 0.0000 mol/m^2 day Methane

Surface Water

Geology

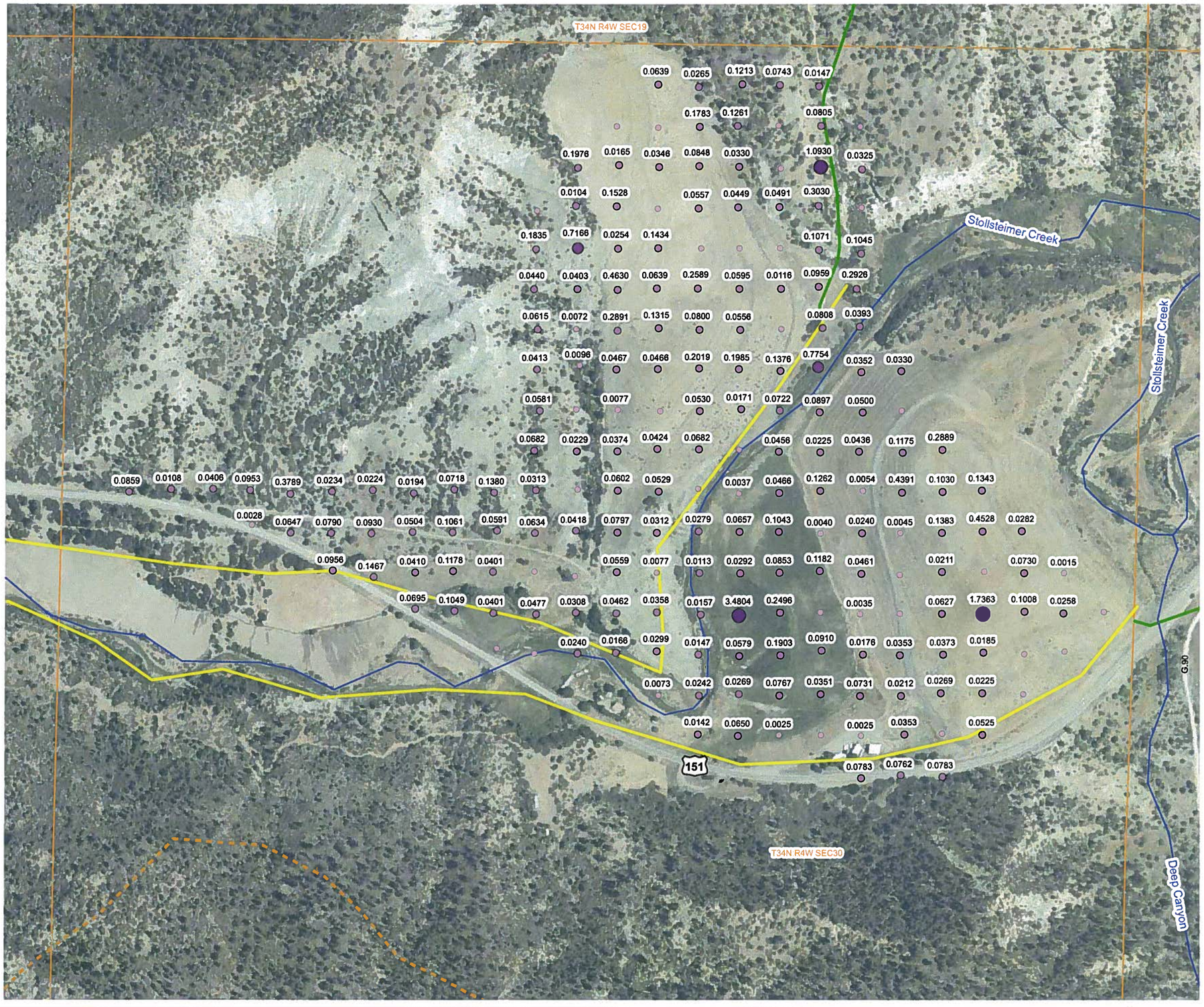
- Fruitland Formation (Kf)
- Fruitland Formation Tongue (Kft)
- Kirtland Formation (Kk)
- Pictured Cliffs Formation (Kpc)
- Pictured Cliffs Formation Tongue (Kpct)
- Quaternary Alluvium (Qa)
- Quaternary Gravel (Qg)
- Township Range Section

IMAGE COURTESY OF USDA/NRCS, 2005

0 500 1,000
Feet

N

FIGURE 13
METHANE FLUX MEASUREMENTS
STOLLSTEIMER CREEK
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO
ELM RIDGE RESOURCES AND PETROX RESOURCES



Legend

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

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

Points not labeled are 0.0000 mol/m^2 day Carbon Dioxide

- Surface Water

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)
- Township Range Section

IMAGE COURTESY OF USDA/NRCS, 2005

0 500 1,000
Feet

N

FIGURE 14
CARBON DIOXIDE FLUX MEASUREMENTS
STOLLSTEIMER CREEK
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO
ELM RIDGE RESOURCES AND PETROX RESOURCES

IMAGE COURTESY OF USDA/NRCS, 2005

Legend

- Abandoned Oil and Gas Well
- Permanent Monitoring Probe
- Surface Water
- Township Range Section

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

Geology

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

0 100 200
Feet

N

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

Points not labeled are 0.0000 mol/m^2 day Methane

FIGURE 15
METHANE FLUX MEASUREMENTS
BIG HORN-SCHOMBURG #1 ABANDONED WELL SITE
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO
ELM RIDGE RESOURCES AND PETROX RESOURCES

IMAGE COURTESY OF USDA/NRCS, 2005

Legend

- Abandoned Oil and Gas Well
- Permanent Monitoring Probe
- Surface Water
- Township Range Section

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

Geology

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

0 100 200
Feet

N

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

Points not labeled are 0.0000 mol/m^2 day Carbon Dioxide

FIGURE 16
CARBON DIOXIDE FLUX MEASUREMENTS
BIG HORN-SCHOMBURG #1 ABANDONED WELL SITE
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO
ELM RIDGE RESOURCES AND PETROX RESOURCES

RAMONA SPRING
RAMONA LEONARD SPRING (MONA)
WOOD/CORRIGAN SPRING
CORRIGAN SPRING
WATSON WELL SPRING
GRASSY SPRING
CRAIN SPRING
SEEP SPRING
THICK SPRING
WALT SPRING #1
TOWNSEND SPRING
VANCE SPRING #1
VANCE MEADOW SPRING
BIG HOLE SPRING
SECTION 14 SPRING (REICH)
WILLOW SPRING
WAYPOINT 0003 SPRING
NW JOHN GRUB SPRING
SE JOHN GRUB SPRING
SECTION 10U SPRING
SPRING 1212
SPRING 3424
CANDELARIA A SPRING
CANDELARIA B SPRING
MISER SPRING AND PIPELINE
VAUGHN SPRING
La Plata County
Archuleta County
35N 6W
35N 5W
35N 4W
34N 6W
34N 5W
34N 4W

Legend

Natural Spring Status - Spring 2009

- Sampled
- Field Parameters Only
- Dry
- Not Located
- No Access/No Sample Collected
- Roads
- Rivers
- Wetland Area, No Channel Flow
- County Boundary
- Southern Ute Indian Tribe Reservation Boundary
- Township and Ranges Lines
- Section

Geology

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

0 6,000 12,000
Feet

N

FIGURE 17
NATURAL SPRINGS STATUS - SPRING 2009
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

ELM RIDGE RESOURCES AND PETROX RESOURCES

RAMONA SPRING
RAMONA LEONARD SPRING (MONA)
WOOD/CORRIGAN SPRING
CORRIGAN SPRING
WATSON WELL SPRING
GRASSY SPRING
CRAIN SPRING
SEEP SPRING
THICK SPRING
WALT SPRING #1
TOWNSEND SPRING
VANCE SPRING #1
VANCE MEADOW SPRING
BIG HOLE SPRING
SECTION 14 SPRING (REICH)
WILLOW SPRING
WAYPOINT 0003 SPRING
NW JOHN GRUB SPRING
SE JOHN GRUB SPRING
SECTION 10U SPRING
SPRING 1212
SPRING 3424
CANDELARIA A SPRING
CANDELARIA B SPRING
MISER SPRING AND PIPELINE
VAUGHN SPRING
La Plata County
Archuleta County
35N 6W
35N 5W
35N 4W
34N 6W
34N 5W
34N 4W

Legend

Natural Spring Status - Fall 2009

- Sampled
- Field Parameters Only
- Dry
- Not Located
- No Access/No Sample Collected
- Roads
- Rivers
- Wetland Area, No Channel Flow
- County Boundary
- Southern Ute Indian Tribe Reservation Boundary
- Township and Ranges Lines
- Section

Geology

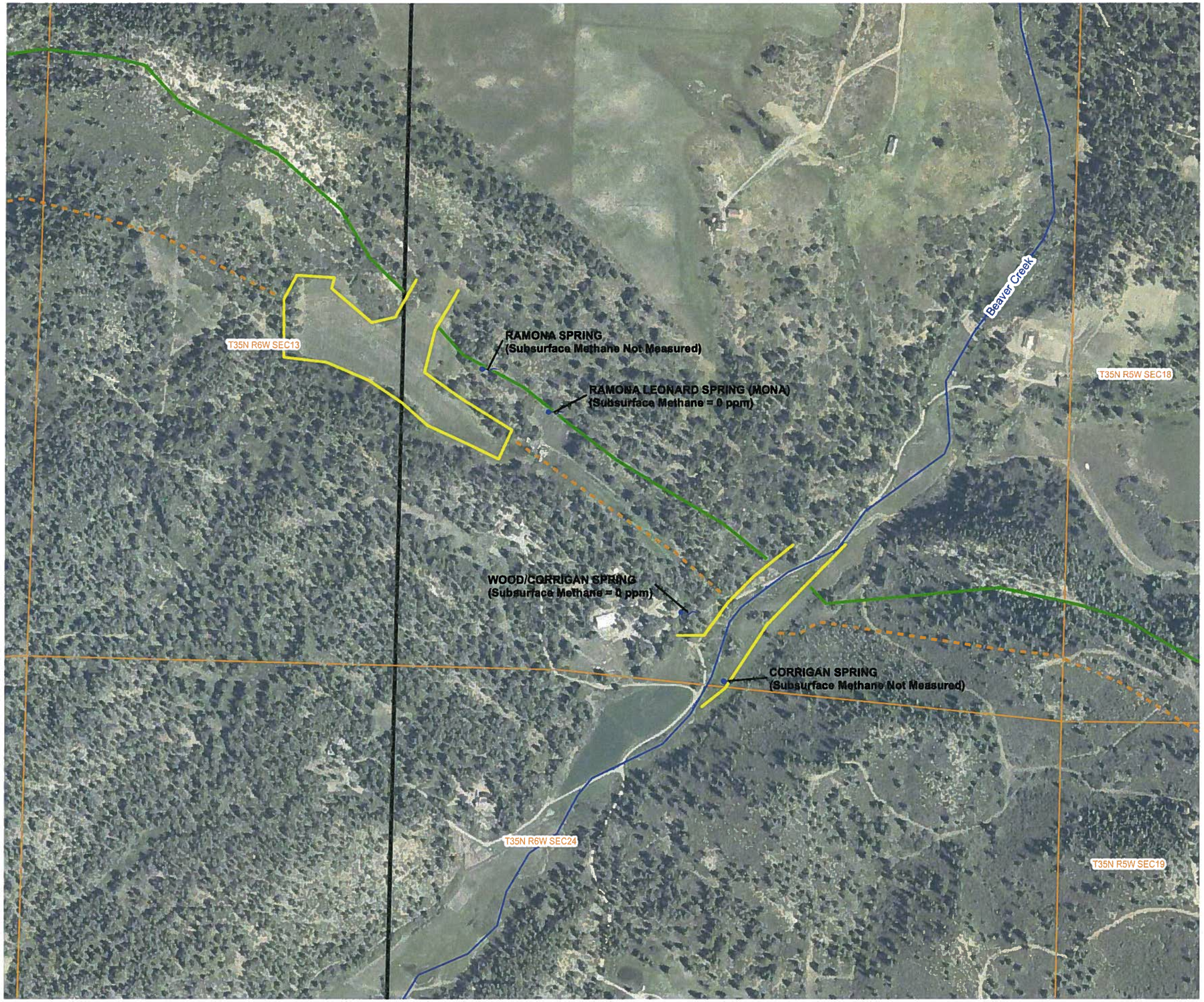
- Fruitland Formation (Kf)
- Fruitland Formation Tongue (Kft)
- Kirtland Formation (Kk)
- Pictured Cliffs Formation (Kpc)
- Pictured Cliffs Formation Tongue (Kpct)
- Quaternary Alluvium (Qa)
- Quaternary Gravel (Qg)

0 6,000 12,000
Feet

N

FIGURE 18
NATURAL SPRINGS STATUS - FALL 2009
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

ELM RIDGE RESOURCES AND PETROX RESOURCES



Legend

- Natural Spring Location

Subsurface methane measurements were collected from temporary soil probes advanced with slide hammer at springs noted on the map.

All subsurface methane measurements were collected during Spring and Fall 2009. Concentrations were 0 parts per million (ppm) Methane for all locations collected during both seasons.

- Surface Water
- County Boundary
- Township Range Section

Geology

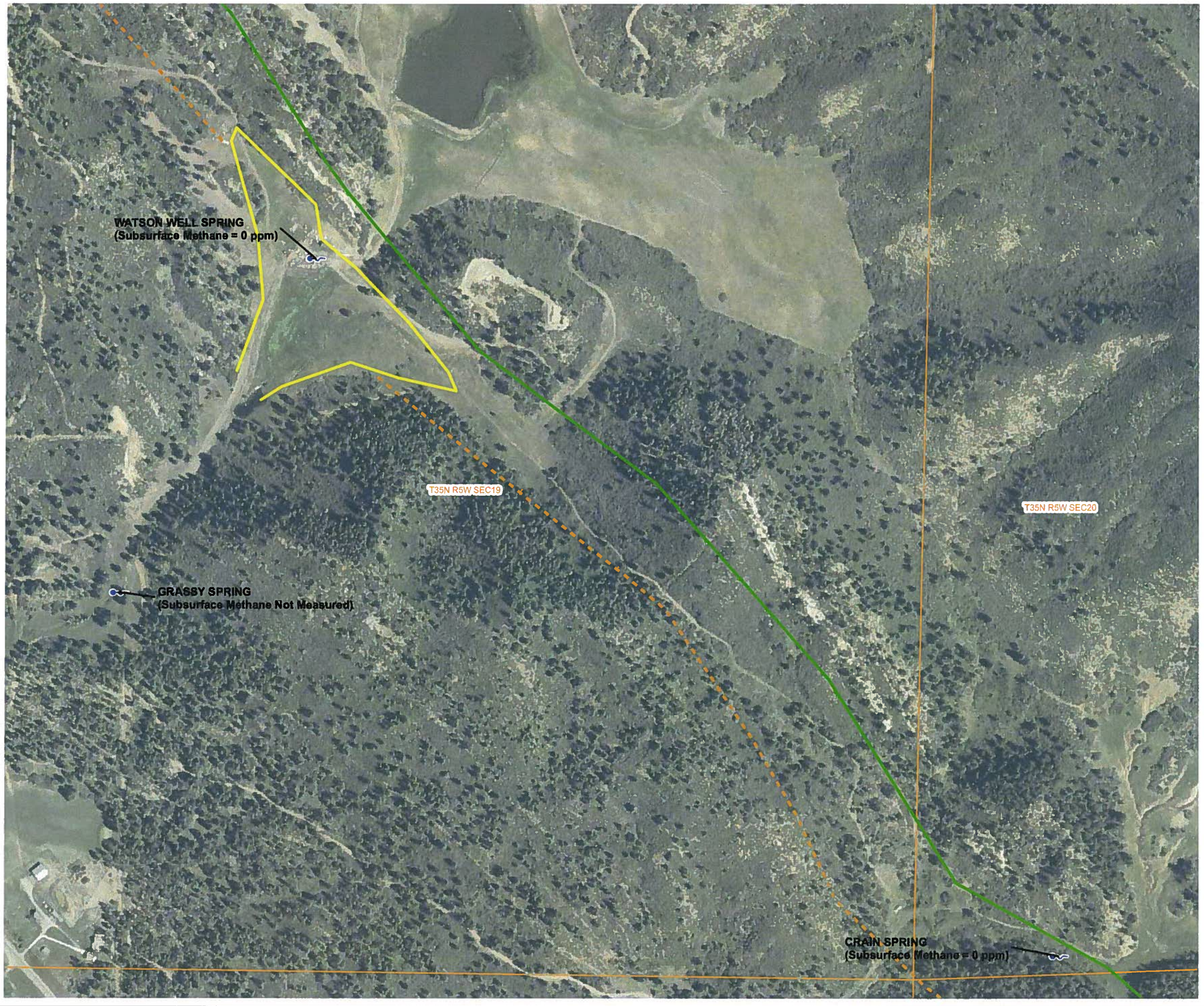
- Fruitland Formation (Kf)
- Fruitland Formation Tongue (Kft)
- Kirtland Formation (Kk)
- Pictured Cliffs Formation (Kpc)
- Pictured Cliffs Formation Tongue (Kpct)
- Quaternary Alluvium (Qa)
- Quaternary Gravel (Qg)

IMAGE COURTESY OF USDA/NRCS, 2005

0 500 1,000
Feet

N

FIGURE 19
DETAILED SPRINGS LOCATION MAP
SEC 13 T35N R6W
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO
ELM RIDGE RESOURCES AND PETROX RESOURCES



Legend

Natural Spring Location

Subsurface methane measurements were collected from temporary soil probes advanced with slide hammer at springs noted on the map.

All subsurface methane measurements were collected during Spring and Fall 2009. Concentrations were 0 parts per million (ppm) Methane for all locations collected during both seasons.

Township Range Section

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)

IMAGE COURTESY OF USDA/NRCS, 2005

0 500 1,000
Feet

N

FIGURE 20
DETAILED SPRINGS LOCATION MAP
SEC 19 & SEC 20 T35N R5W
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO
ELM RIDGE RESOURCES AND PETROX RESOURCES

Legend

- Natural Spring Location

Subsurface methane measurements were collected from temporary soil probes advanced with slide hammer at springs noted on the map.

All subsurface methane measurements were collected during Spring and Fall 2009. Concentrations were 0 parts per million (ppm) Methane for all locations collected during both seasons.

- Township Range Section

Geology

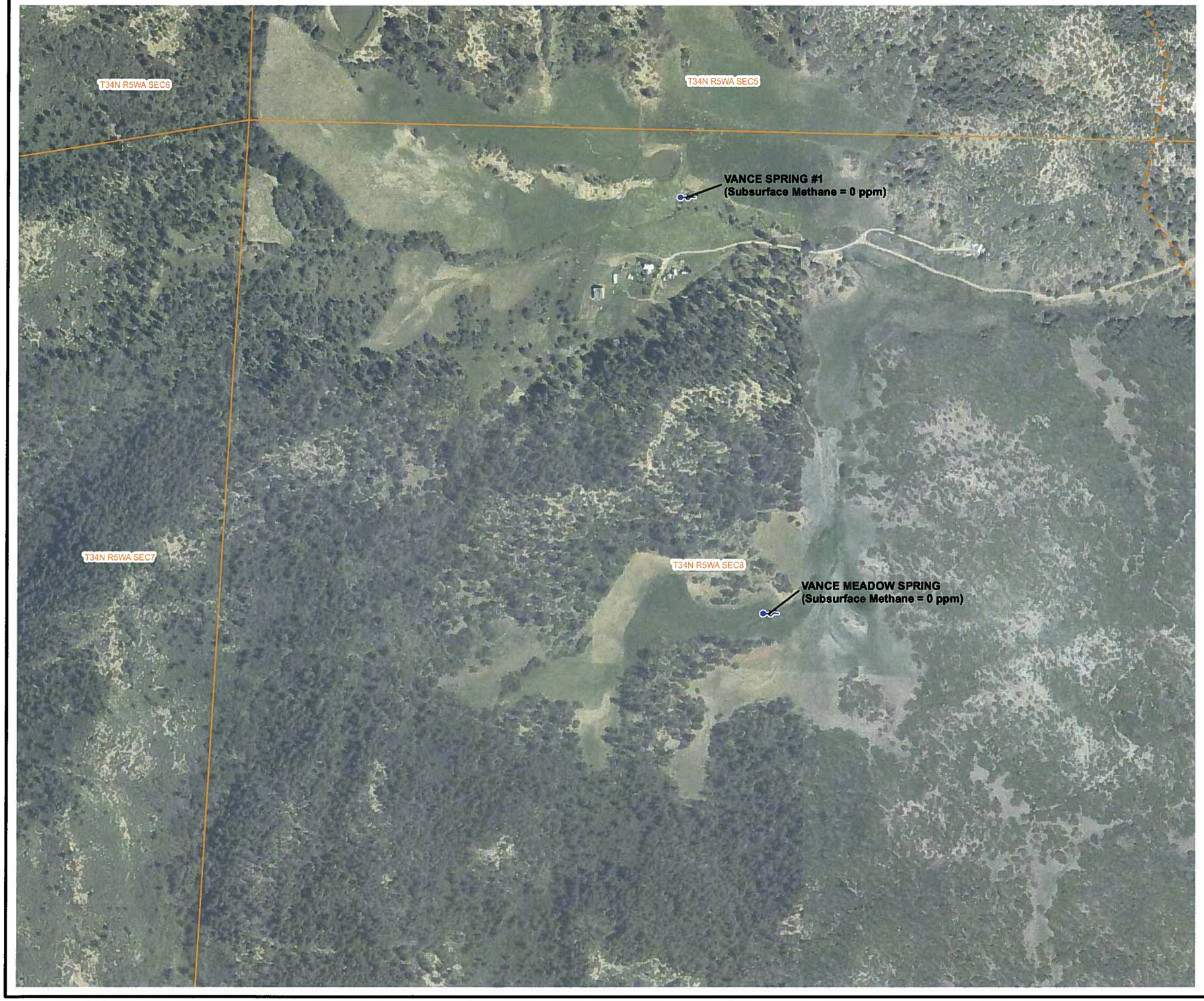
- Fruitland Formation (Kf)
- Fruitland Formation Tongue (Kft)
- Kirtland Formation (Kk)
- Pictured Cliffs Formation (Kpc)
- Pictured Cliffs Formation Tongue (Kpct)
- Quaternary Alluvium (Qa)
- Quaternary Gravel (Qg)

IMAGE COURTESY OF USDA/NRCS, 2005

0 500 1,000
Feet

N

FIGURE 21
DETAILED SPRINGS LOCATION MAP
SEC 4 & SEC 5 T34N R5WA
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO
ELM RIDGE RESOURCES AND PETROX RESOURCES



Legend

Natural Spring Location

Subsurface methane measurements were collected from temporary soil probes advanced with slide hammer at springs noted on the map.

All subsurface methane measurements were collected during Spring and Fall 2009. Concentrations were 0 parts per million (ppm) Methane for all locations collected during both seasons.

Township Range Section

Geology

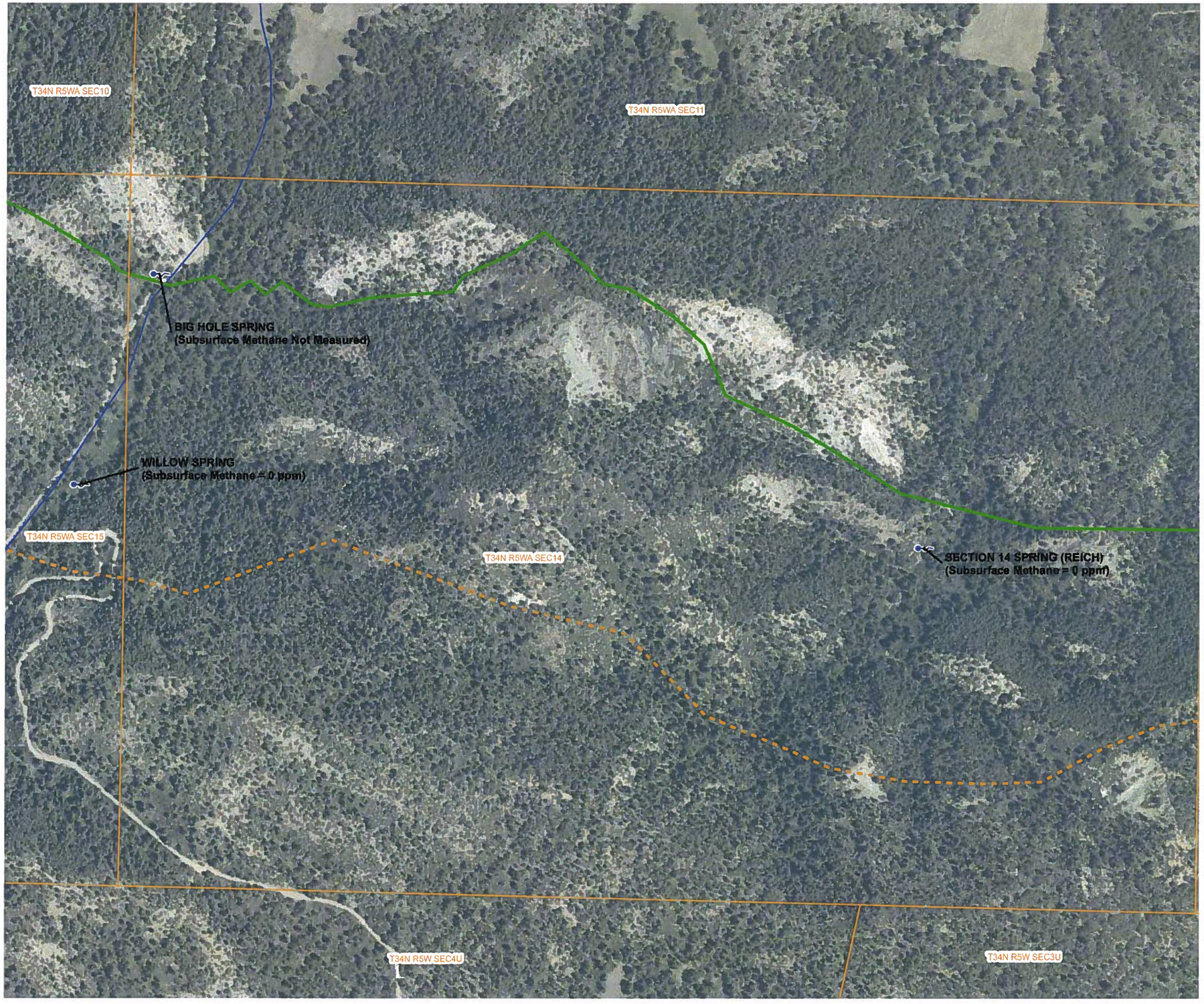
- Fruitland Formation (Kf)
- Fruitland Formation Tongue (Kft)
- Kirtland Formation (Kk)
- Pictured Cliffs Formation (Kpc)
- Pictured Cliffs Formation Tongue (Kpct)
- Quaternary Alluvium (Qa)
- Quaternary Gravel (Qg)

IMAGE COURTESY OF USDA/NRCS, 2005

0 500 1,000
Feet

N

FIGURE 22
DETAILED SPRINGS LOCATION MAP
SEC 8 T34N R5WA
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO
ELM RIDGE RESOURCES AND PETROX RESOURCES



Legend

Natural Spring Location

Subsurface methane measurements were collected from temporary soil probes advanced with slide hammer at springs noted on the map.

All subsurface methane measurements were collected during Spring and Fall 2009. Concentrations were 0 parts per million (ppm) Methane for all locations collected during both seasons.

Township Range Section

Geology

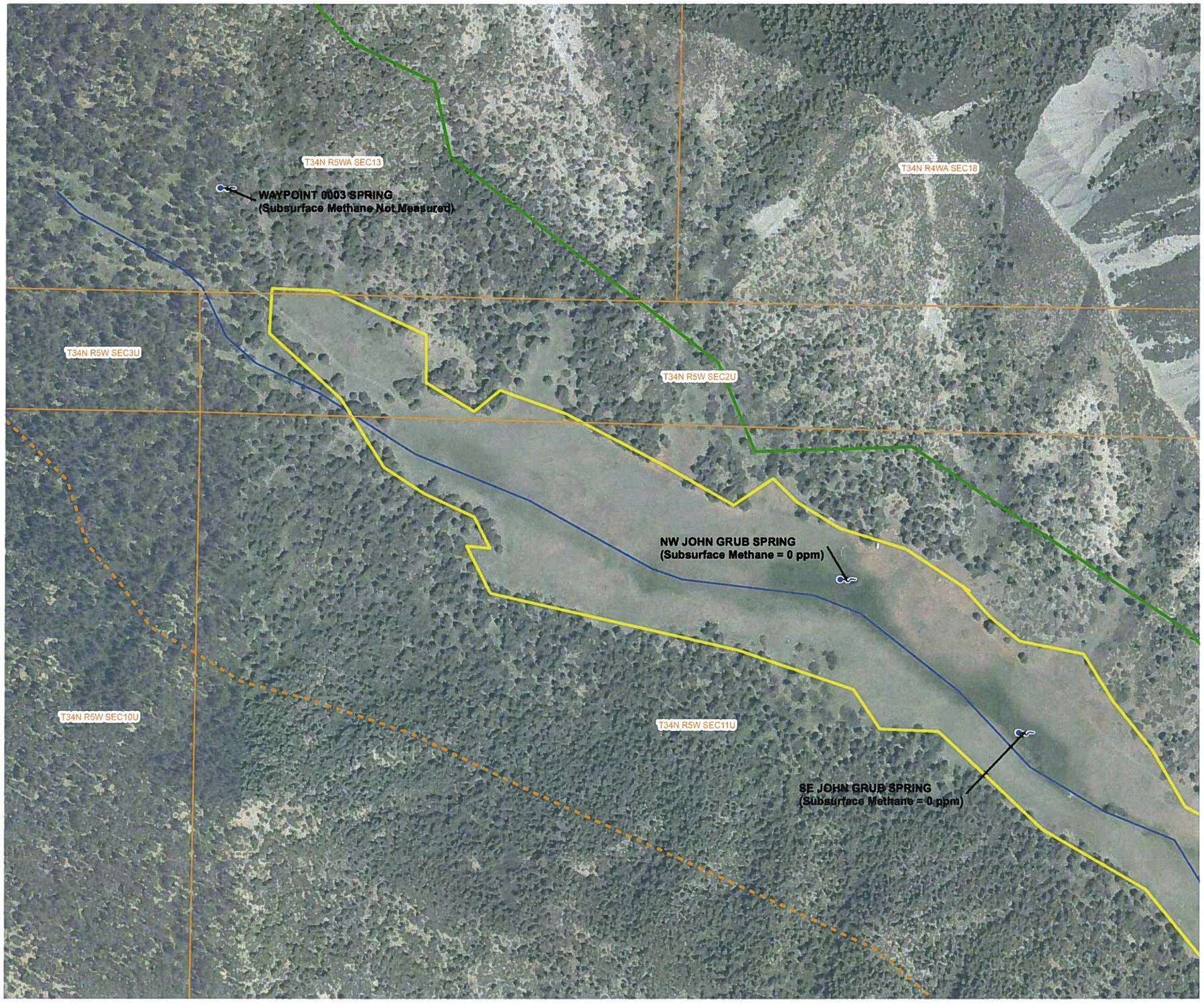
- Fruitland Formation (Kf)
- Fruitland Formation Tongue (Kft)
- Kirtland Formation (Kk)
- Pictured Cliffs Formation (Kpc)
- Pictured Cliffs Formation Tongue (Kpct)
- Quaternary Alluvium (Qa)
- Quaternary Gravel (Qg)

IMAGE COURTESY OF USDA/NRCS, 2005

0 500 1,000
Feet

N

FIGURE 23
DETAILED SPRINGS LOCATION MAP
SEC 14 & SEC 15 T34N R5WA
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO
ELM RIDGE RESOURCES AND PETROX RESOURCES



Legend

Natural Spring Location

Subsurface methane measurements were collected from temporary soil probes advanced with slide hammer at springs noted on the map.

All subsurface methane measurements were collected during Spring and Fall 2009. Concentrations were 0 parts per million (ppm) Methane for all locations collected during both seasons.

Township Range Section

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)

IMAGE COURTESY OF USDA/NRCS, 2005

0 500 1,000
Feet

N

FIGURE 24
DETAILED SPRINGS LOCATION MAP
SEC 13 T34N R5WA & SEC 11U T34N R5W
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO
ELM RIDGE RESOURCES AND PETROX RESOURCES

TABLES

TABLE 1
PROPERTY OWNER AND ACCESS INFORMATION
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

ELM RIDGE RESOURCES, INC. AND PETROX RESOURCES, INC.

ID Number	Parcel Number	LTE Access	Owner Name	Physical Address	Mailing Address	Mailing City	Mailing State and Zip	Legal Description	Parcel Size (Acres)	Latitude/Longitude
1	568301100001	YES	Federal						0.000	
2	568501100001	YES	Federal						0.000	
3	568333200010	NO	HALVERSON HAROLD D ESTATE	W HIGHWAY 160 X ESMT	23541 COUNTY RD S	DOLORES	CO 81323""	35-5W SEC 33	278.913	107.4276285W 37.2588724N
4	568510300009	NO RESPONSE	EDWARDS DURWOOD	W HIGHWAY 160 26410	710 E HOLLAND	ALPINE	TX 79830	34-5W SEC 10	12.495	107.4170414W 37.2288842N
5	568505100016	YES	WEISS GRETCHEN A	W HIGHWAY 160 28061	874 LOGGERHEAD LANE	SUMMERLAND KEY	FL 33042	34-5W SEC 5	8.277	107.4397366W 37.2475521N
6	568505200020	NO RESPONSE	INN ABOVE ONION CREEK INC	W HIGHWAY 160 28444	4444 HWY 150 WEST	KYLE	TX 78640	34-5W SEC 5	245.669	107.4488552W 37.2467916N
7	568332300040	NO RESPONSE	COLORADO YELLOW JACKET LTD PTNSHI	W HIGHWAY 160 28644	PO BOX 774525	STEAMBOAT SPRINGS	CO 80477	34-5W SEC 5	91.258	107.4471289W 37.2545177N
8	568332300009	NO RESPONSE	STRICKLAND SCOTT L & NIOBRA .	W HIGHWAY 160 28945	28945 E US HWY 160	BAYFIELD	CO 81122	35-5W SEC 32	16.709	107.4437179W 37.2564906N
9	568319200034	NO	WATSON DAVID LLOYD &	W HIGHWAY 160 30301A	30301 US HWY 160	BAYFIELD	CO 81122	35-5W SEC 19	1064.422	107.4633925W 37.2839436N
10	567913300015	YES	LEONARD RAMONA	W HIGHWAY 160 31861M	PO BOX 207	MAYER	AZ 86333	35-6W SEC 13	26.772	107.4807203W 37.2986948N
11	567913400016	YES	PEINADO EMILIO JR & KAREN R	W HIGHWAY 160 31861B	PO BOX 706	BAYFIELD	CO 81122	35-6W SEC 13	40.098	107.4751287W 37.2974749N
12	567913400017	YES	WOOD LEE THOMAS & PEGGY DARLENE	W HIGHWAY 160 31861L	31861 L W HWY 160	BAYFIELD	CO 81122	35-6W SEC 13	37.432	107.4772925W 37.2954878N
13	589701400003	YES	Federal						0.000	
14	589528400043	NO	WRIGHT JEAN PAUL & SUSAN	COUNTY RD 917 1023	1023 COUNTY ROAD 917	PAGOSA SPRINGS	CO 81147	34U-4W SEC 28	35.213	107.2895008W 37.1560879N
15	589528400051	NO RESPONSE	SCHUCHARDT JOSEPH III & SIR	COUNTY RD 917 1000A	511 STEVENS CIR	PAGOSA SPRINGS	CO 81147	34U-4W SEC 28	39.470	107.2827076W 37.1606722N
16	589511200003	NO RESPONSE	UNITED STATES OF AMERICA T/F	HIGHWAY 151 368	PO BOX 737	IGNACIO	CO 81137	34U-4W	3505.197	107.2846571W 37.1913186N
17	589528400042	YES	HALLOCK JAMES & NORA	COUNTY RD 917 1000	1000 COUNTY RD 917	PAGOSA SPRINGS	CO 81147	34U-4W SEC 28	35.086	107.2871869W 37.1588274N
18	589528400049	YES	MUHLIG BRITT & MAYUMI	COUNTY RD 917 1019	1019 COUNTY RD 917	PAGOSA SPRINGS	CO 81147	34U-4W SEC 28	34.963	107.2905460W 37.1573476N
19	589528300041	NO RESPONSE	CHENAULT ROBERT G	COUNTY RD 917 1001	1001 COUNTY RD 917	PAGOSA SPRINGS	CO 81147	34U-4W SEC 28	34.960	107.2917877W 37.1615535N
20	589528400050	NO	LEISER SANDRA J	COUNTY RD 917 1000	RR 1 BOX 100	MADISON	KS 66860	34U-4W SEC 28	35.036	107.2886189W 37.1615376N
21	589528400053	NO RESPONSE	WOZNY THEODORE G TRUST ACCOUNT	COUNTY RD 917	1601 COUNTY RD 917	PAGOSA SPRINGS	CO 81147	34U-4W SEC 28	35.375	107.2872467W 37.1534398N
22	589533200046	YES	LEON EUGENIA &	COUNTY RD 917 1601	1601 A CR 917	PAGOSA SPRINGS	CO 81147	34U-4W SEC 33	41.103	107.2902055W 37.1534003N
23	589533400048	NO RESPONSE	MODISETTE JERRY L & BEVERLY A	COUNTY RD 917 1859	17110 CYPRESS ROSE HILL DR	CYPRESS	TX 77429	34U-4W SEC 33	39.371	107.2873806W 37.1462336N
24	589533100045	NO	PETSCH GLORIA A	COUNTY RD 917 1590	1165 BEUCLER LANE	PAGOSA SPRINGS	CO 81147	34U-4W SEC 33	42.697	107.2833805W 37.1498740N
25	589533100047	No	SCHAEFER JAMES & NANCY	COUNTY RD 917 1589	2754 S LAS PALMAS	MESA	AZ 85202	34U-4W SEC 33	36.129	107.2874029W 37.1498359N
26	589533400033	NO RESPONSE	MODISETTE JERRY L & BEVERLY A	COUNTY RD 917 1818	17110 CYPRESS ROSE HILL RD	CYPRESS	TX 77429	34U-4W SEC 33	39.329	107.2828948W 37.1462775N
27	589533400034	NO RESPONSE	ADAM ROBERT J	COUNTY RD 917 2255	12611 JONES RD STE #200	HOUSTON	TX 77070	34U-4W SEC 33	39.331	107.2874383W 37.1426306N
28	568510300010	NO RESPONSE	HARRISON JERRY	W HIGHWAY 160 26260	PO BOX 611	BEACH GROVE	IN 46107-0611	34-5W SEC 10	17.346	107.4141421W 37.2285446N
29	589712400002	YES	RAFTER T LLC□□RAFTER T LLC	COUNTY RD 175 2117 & 2119 & 2121	340 SEABREEZE DR.	MARCO ISLAND	FL 34145	34U-5W SEC 12	792.487	107.3344796W 37.1930959N
30	589529300027	YES	EF COAL RESOURCES LIMITED PRTN	HIGHWAY 151 X	PO BOX 773457	STEAMBOAT SPRINGS	CO 80477	34U-4W SEC 29	157.152	107.3074462W 37.1570456N
31	589725400016	YES	MARTINEZ AMOS MEL	HIGHWAY 151 6971	2400 COUNTY RD 329	IGNACIO	CO 81137	34U-5W SEC 25	19.762	107.3412769W 37.1560602N
32	589711200001	YES	GRUBB JOHN W & PAMELA K	W HIGHWAY 160 24160	8325 OLD AZTEC HWY	FLORA VISTA	NM 87415	34U-5W SEC 11	159.274	107.3596091W 37.2093422N
33	589725100011	NO	CANDELARIA ROGER	COUNTY RD 193 5801	9105 SIXTH ST	LANHAM	MD 20706	34U-5W SEC 25	60.135	107.3412773W 37.1659743N
34	589725400015	No	VAUGHN LARRY C	HIGHWAY 151 6505A	6505A HWY 151	PAGOSA SPRINGS	CO 81147	34U-5W SEC 25	19.762	107.3412769W 37.1578502N
35	589725400013	NO	MARTINEZ JOHN L &	HIGHWAY 151 X	5768 HANSEN CIR	MURRAY	UT 84107	34U-5W SEC 25	39.523	107.3412770W 37.1605367N
36	589724400008	NO	CANDELARIA SY TRUSTEE & GILBERT	COUNTY RD 193 X	PO BOX 1771	ARBOLES	CO 81121	34U-5W SEC 24	59.991	107.3390038W 37.1713890N
37	589713300006	NO	CANDELARIA SUSIE	COUNTY RD 193 6551	PO BOX 1764	ARBOLES	CO 81121	34U-5W SEC 13	160.288	107.3436380W 37.1849042N
38	589724400010	NO	CANDELARIA ROGER	COUNTY RD 193 5801A	9105 SIXTH ST	LANHAM	MD 20706	34U-5W SEC 24	19.859	107.3412824W 37.1704889N
39	589726400024	YES	Federal						0.000	
40	589725400033	NO	SHEPARD JOSEPH W & TERRI L	HIGHWAY 151 X	10338 W EARLL DR	AVONDALE	AZ 85323	34U-5W SEC 25	107.950	107.3322090W 37.1605486N
41	589724400007	NO	CANDELARIA LUCY S &	COUNTY RD 193 5879	PO BOX 1812	ARBOLES	CO 81121	34U-5W SEC 24	39.283	107.3367759W 37.1750192N
42	589530100039	YES	MARTINEZ MEL	HIGHWAY 151 5461	5671 STATE HWY 151	PAGOSA SPRINGS	CO 81147	34U-4W SEC 30	79.285	107.3163700W 37.1642304N
43	589530100039	YES	MARTINEZ MEL	HIGHWAY 151 5671	5671 STATE HWY 151	PAGOSA SPRINGS	CO 81147	34U-4W SEC 30	248.000	107.3175202W 37.1642058N
44	589529100026	NO RESPONSE	CAZEDESSUS CAMILE E JR	HIGHWAY 151 X	PO BOX 2340	PAGOSA SPRINGS	CO 81147-2340	34U-4W SEC 29	15.597	107.3094626W 37.1633518N
45	589725100012	YES	Federal						0.000	

Notes:

Indicates property owner denied access

Indicates property owner did not respond to access request

TABLE 2
METHANE FLUX DATA
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

ELM RIDGE RESOURCES, INC. AND PETROX RESOURCES, INC.

Natural Spring	Total Number of Sample Points*			Number of Sample Points with Methane*			Measurable Methane Flux (moles/m^2·day)									Volumetric Methane Flux**			
							Minimum			Maximum			Average			(moles/day)		(MCFD)	
	2007	2008	2009	2007	2008	2009	2007	2008	2009	2007	2008	2009	2007	2008	2009	2008	2009	2008	2009
Beaver Creek	14	53	46	1	0	0	0.0500	0.0002	0.0002	0.2000	0.1579	0.0607	0.1300	0.0402	0.0095	2,958	703	3.5	0.8
Little Squaw Creek	21	77	78	2	2	0	0.0020	0.0002	0.0003	0.2300	0.2911	0.0268	0.0800	0.0498	0.0030	5,108	144	6.1	0.2
Yellow Jacket Pass/ Squaw Creek	10	208	170	0	0	0	0.0200	0.0002	0.0002	0.0700	0.0373	0.0970	0.0500	0.0070	0.0065	1,273	1,289	1.5	1.4
Pole Gulch	10	86	87	1	0	1	0.0200	0.0002	0.0002	0.3000	0.1775	0.2156	0.0900	0.0342	0.0143	3,832	1,479	4.6	1.7
Peterson Gulch	18	357	331	1	0	0	0.0090	0.0002	0.0002	0.2300	0.1925	0.1733	0.0800	0.0108	0.0137	4,637	4,327	5.6	4.8
Stollsteimer Creek	11	201	203	0	3	2	0.0200	0.0002	0.0002	0.1500	0.3440	0.3382	0.0700	0.0289	0.0515	7,768	4,313	9.3	4.8
TOTAL	**84**	**982**	**915**	**5**	**5**	**3**	**0.0020**	**0.0002**	**0.0002**	**0.3000**	**0.3440**	**0.3382**	**0.0833**	**0.0285**	**0.0164**	**25,576**	**12,255**	**30.7**	**13.7**
Abandoned Production Well																			
Big Horn-Schomburg #1	5	9	5	1	0	1	0.0338	0.0045	0.0003	0.2364	0.0661	0.0055	0.1295	0.0353	0.0029	--	--	--	--

Notes:

moles/m^2·day - moles per meter squared per day

MCFD - thousand cubic feet per day

-- - No data available

* - Only points where flux values were above the reporting limit of 0.2 moles/m^2·day

** - Calculated by using all methane flux values

TABLE 3
NATURAL SPRING SAMPLING STATUS
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

ELM RIDGE RESOURCES, INC. AND PETROX RESOURCES, INC.

NATURAL SPRING	DETAILED FIGURE REFERENCE	YEAR					
		2005	2006	2007	2008	2009 (May)	2009 (October)
Ramona Spring	19	NS	NS	NS	Dry	Not Located	Not Located
Ramona Leonard Spring	19	NS	Sampled	Sampled	Sampled	Sampled	Sampled
Wood Spring	19	NS	NS	NS	Dry	Sampled	Dry
Beaver Creek	19	NS	NS	NS	Sampled	NS	NS
Corrigan Spring	19	NS	NS	NS	Not Located	Sampled	Dry
Watson Well Spring	20	NS	Sampled	NS	Sampled	Sampled	Sampled
Grassy Spring	20	NS	Sampled	Sampled	No Access	No Access	No Access
Crain Spring	20	NS	Sampled	NS	Sampled	Sampled	Dry
Thick Spring	21	NS	Sampled	Sampled	Not Located	Sampled	Dry
Seep Spring	21	NS	NS	NS	Dry	Not Located	Not Located
Walt Spring #1	21	NS	Sampled	NS	Dry	Dry	Dry
Townsend Spring	21	NS	NS	NS	Dry	Dry	Dry
Vance Spring #1	22	NS	Sampled	Sampled	Sampled	Sampled	Sampled
Vance Meadow Spring	22	NS	Sampled	Sampled	Sampled	Sampled	Dry
Willow Spring	23	NS	Sampled	Sampled	Sampled	Sampled	Dry
Big Hole Spring	23	NS	Sampled		Dry	Not Located	Not Located
Section 14 (Reich) Spring	23	Sampled	Sampled	Sampled	Sampled	Sampled	Dry
Waypoint 0003 Spring	24	NS	NS	NS	Not Located	Not Located	Not Located
NW John Grubb Spring	24	Sampled	Sampled	Sampled	Sampled	Sampled	Dry
SE John Grubb Spring	24	Sampled	Sampled	Sampled	Sampled	Sampled	Dry
High Watson Spring	NA	NS	NS	NS	NS	NS	NS
Section 10U Spring	NA	Sampled	Sampled	NS	No Access	No Access	No Access
Spring 1212	NA	Sampled	Sampled	NS	No Access	No Access	No Access
Spring 3424	NA	Sampled	Sampled	NS	No Access	No Access	No Access
Candelaria A Spring	NA	NS		NS	No Access	No Access	No Access
Candelaria B Spring	NA	NS	Sampled	NS	No Access	No Access	No Access
Vaughn Spring	NA	NS	NS	NS	No Access	No Access	No Access
Miser Spring & Pipeline	NA	NS	NS	NS	No Access	No Access	No Access

Notes:
NA - Not Applicable
NS - Not Sampled

TABLE 4
NATURAL SPRINGS FIELD OBSERVATIONS AND MEASUREMENTS
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

ELM RIDGE RESOURCES, INC. AND PETROX RESOURCES, INC.

Natural Spring	2008 Field Observations / Notes	2009 Field Observations / Notes	Inspection Date	Water Quality Field Measurements				
				Conductivity (µS/cm)	pH (Units)	ORP (mV)	Temperature (ºC)	TDS (ppm)
Ramona Leonard Spring (Mona)	Spring on Ramona Leonard property, on outcrop near county border	Sampled in May and October	9/19/2005			NM		
			6/1/2006	768.4	6.35	107	13.5	522.4
			10/13/2007	793.5	7.68	42	11.8	413.4
			10/16/2008	879	6.99	185.6	9.67	571
			5/28/2009	793	6.97	NM	9.1	NM
			10/8/2009	825	7.24	NM	10	NM
Ramona Spring	Spring dry	Not Located	6/1/2006			NM		
			10/14/2007			NM		
			10/16/2008			NM		
			5/28/2009			NM		
			10/8/2009			NM		
Wood/Corrigan Spring	Spring dry	Sampled in May; Dry in October	6/1/2006			NM		
			10/14/2008			NM		
			10/16/2008			NM		
			5/14/2009	480	6.96	NM	7.5	NM
			10/8/2009			NM		
Corrigan Spring	Spring dry	Not Located	6/1/2006	170.3	6.08	122	17.7	109.7
			10/13/2007			NM		
			10/16/2008			NM		
			5/14/2009			NM		
			10/8/2009			NM		
Beaver Creek	Sample taken below confluence of Corrigan Spring and Beaver Creek	Not Sampled	10/13/2007	286.6	8.00	21	10.0	146.6
			10/16/2008	303.0	7.40	166.0	5.80	197
			5/14/2009			NM		
			10/8/2009			NM		
Watson Well Spring	Spring located and sampled; Owner would not allow a soil gas measurement	Sampled in May and October	6/1/2006	745.5	7.29	34	13.0	507.7
			10/14/2007			NM		
			10/16/2008	869.0	6.9	273.20	13.90	565
			5/28/2009	705	6.9	NM	9.9	NM
			10/8/2009	852	6.9	NM	13.4	NM
High Watson Spring	Spring located uphill from Watson Well Spring	Not Sampled - Dry in Spring and Fall	10/16/2008	743	7.25	159.5	10.98	483
			5/28/2009			NM		
			10/8/2009			NM		
Grassy Spring	No Access	No Access	6/1/2006	570.3	7.5	-115	29.1	375.3
			10/14/2007	88.37	8.18	16	8.6	44.32
			5/28/2009			NM		
			10/8/2009			NM		
Crain Spring	Wooden fence around spring with some infrastrucure	Sampled in May. Dry in October	6/1/2006	570.3	7.5	-115	29.1	375.3
			10/14/2007			NM		
			10/16/2008	526.0	7.47	273.00	8.80	342
			5/14/2009	811	6.87	NM	7.5	NM
			10/8/2009			NM		
Seep Spring	Spring located; Dry	Not Located	5/24/2006			NM		
			10/14/2007			NM		
			10/17/2008			NM		
			5/28/2009			NM		
			10/8/2009			NM		
Walt Spring #1	Spring located; Dry	Dry	5/24/2006	524	7.9	86	12.1	345.4
			10/14/2007			NM		
			10/17/2008			NM		
			5/28/2009			NM		
			10/8/2009			NM		

TABLE 4
NATURAL SPRINGS FIELD OBSERVATIONS AND MEASUREMENTS
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

ELM RIDGE RESOURCES, INC. AND PETROX RESOURCES, INC.

Natural Spring	2008 Field Observations / Notes	2009 Field Observations / Notes	Inspection Date	Water Quality Field Measurements				
				Conductivity (µS/cm)	pH (Units)	ORP (mV)	Temperature (°C)	TDS (ppm)
Townsend Spring	Spring pipe and trough located; Dry	Dry	5/24/2006			NM		
			10/14/2007			NM		
			10/17/2008			NM		
			5/28/2009			NM		
			10/8/2009			NM		
Thick Spring	Not Located	Sampled in May; Dry in October	5/24/2006	325.6	7.80	120	11.7	214.6
			10/13/2007	376.5	7.74	32	12.9	192.2
			10/16/2008			NM		
			5/28/2009	54.6	7.52		12.3	NM
			10/8/2009			NM		
Vance Spring #1	Sampled	Sampled in May and October	5/26/2006	404	7.75	-12	11.6	269.6
			10/14/2007	417.1	7.34	519	9.6	213.2
			10/16/2008	464.0	7.2	120.30	7.20	302
			6/1/2009	399	7.88	NM	12.8	NM
			10/8/2009	481	7.41	NM	6.8	NM
Vance Meadow Spring	Spring located and sampled.	Sampled in May. Dry in October	6/6/2006	459.9	7.2	-60	16.5	310.9
			10/14/2007	389.8	7.2	-67	12.2	195.1
			10/16/2008	476.0	7.9	249.60	8.00	308
			6/1/2009	455	7.23	NM	13.7	NM
			10/8/2009			NM		
Big Hole Spring	Spring located; Dry.	Not Located	5/24/2006	365.5	7.27	141	11.7	249.1
			10/13/2007			NM		
			10/18/2008			NM		
			6/1/2009			NM		
			10/8/2009			NM		
Willow Spring	Sampled	Sampled in May; Dry in October	5/24/2006	252.9	7.39	122	14.0	178.7
			10/13/2007	318.3	7.42	508	13.9	161.4
			10/18/2008	325.0	7.09	243.40	6.60	211
			6/1/2009	285	7.54	NM	10.4	NM
			10/8/2009			NM		
Section 14 Spring (Reich)	Spring located. Flow is directed through piping. Sample collected from adjacent pond.	Sampled in May; Dry in October	9/19/2005	412.2	7.93	NM	20.2	277.5
			5/24/2006	372.9	7.48	79	13.3	251.5
			10/14/2007	394.7	7.92	0	10.7	198.7
			10/18/2008	445.0	7.09	45.00	8.61	290
			6/5/2009	607	6.89	NM	9	NM
			10/8/2009			NM		
Waypoint 0003 Spring	Not Located	Not Located	5/26/2006			NM		
			10/14/2007			NM		
			10/18/2008			NM		
			6/5/2009			NM		
			10/8/2009			NM		
NW John Grub Spring	Sampled	Sampled in May; Dry in October	9/19/2005	415.8	6.97	NM	15.8	282.3
			5/26/2006	421.7	7.83	108	27	275.9
			10/14/2007	292.2	7.28	-162	17.1	254.8
			10/18/2008	425	7.07	-15	15.68	276
			6/5/2009	339	8.7	NM	14.5	NM
			10/8/2009			NM		
SE John Grub Spring	Sampled	Sampled in May; Dry in October	9/19/2005	524.5	7.04	NM	15.6	358.5
			5/26/2006	509.5	7.86	-49	24.4	336.9
			10/14/2007	980.1	7.29	-68	18.4	513
			10/18/2008	528	7.18	63.5	12.37	342
			6/5/2009	542	6.58	12	NM	NM
			10/8/2009			NM		

TABLE 4
NATURAL SPRINGS FIELD OBSERVATIONS AND MEASUREMENTS
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

ELM RIDGE RESOURCES, INC. AND PETROX RESOURCES, INC.

Natural Spring	2008 Field Observations / Notes	2009 Field Observations / Notes	Inspection Date	Water Quality Field Measurements				
				Conductivity (µS/cm)	pH (Units)	ORP (mV)	Temperature (°C)	TDS (ppm)
Section 10U Spring	No Access	No Access	9/19/2005	458.1	7.27	131	10.9	314.7
			6/6/2006	489.9	7.18	521	20.0	328.2
			10/14/2007			NM		
			6/5/2009			NM		
			10/8/2009			NM		
Spring 1212	No Access	No Access	10/7/2005	420	6.59	NM	9.1	NM
			6/6/2006	356.6	7.29	75	15.3	243.9
			10/14/2007			NM		
			6/5/2009			NM		
			10/8/2009			NM		
Spring 3424	No Access	No Access	9/14/2005	725.2	6.86	71	16.5	504
			5/26/2006	641.5	7.97	-98	17.3	436.7
			10/14/2007			NM		
			6/5/2009			NM		
			10/8/2009			NM		
Candelaria A Spring	No Access	No Access	5/26/2006			NM		
			10/14/2007			NM		
			6/5/2009			NM		
			10/8/2009			NM		
Candelaria B Spring	No Access	No Access	5/26/2006			NM		
			10/14/2007			NM		
			6/5/2009			NM		
			10/8/2009			NM		
Vaughn Spring	No Access	No Access	6/6/2006	730.7	7.55	521	20.1	509.5
			10/14/2007			NM		
			6/5/2009			NM		
			10/8/2009			NM		
Miser Spring and Pipeline	No Access	No Access	6/6/2006			NM		
			10/14/2007			NM		
			6/5/2009			NM		
			10/8/2009			NM		

Notes:

Blank cells indicate no measurement.
µS/cm - microSiemens per centimeter
ORP - oxidation reduction potential
mV - millivolts
°C - degrees celsius
TDS - total dissolved solids
ppm - parts per million
NM - Not Measured

TABLE 5
NATURAL SPRINGS WATER DISCHARGES
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

ELM RIDGE RESOURCES, INC. AND PETROX RESOURCES, INC.

NATURAL SPRING	FLOW RATES (Gallons/Minute)					
	2005	2006	2007	2008	2009 (May)	2009 (October)
Ramona Leonard Spring	NM	0.6	0.4	0.75	1.3	0.24
Beaver Creek	NM	NM	7	NM	NM	NM
Corrigan Spring	NM	1	NM	NM	0.75	NM
Grassy Spring	NM	NM	<0.25	NM	NM	NM
Crain Spring	NM	NM	NM	0.2	2.66	NM
Walt Spring #1	NM	NM	<1	NM	NM	NM
Thick Spring	NM	2	<1	NM	NM	NM
Vance Spring #1	NM	1	<0.5	0	1.9	0.2
Vance Meadow Spring	NM	<0.5	<0.5	0	NM	NM
Big Hole Spring	NM	<1	NM	NM	NM	NM
Willow Spring	NM	1	<0.25	0.03	0.6	NM
Section 14 Spring	NM	<1	<0.5	0	1.5	NM
NW John Grub Spring	0.1	<1	<0.5	0.9	NM	NM
SE John Grub Spring	0.25	<1	<0.25	0	NM	NM
Section 10U Spring	0.9	1	NM	NM	NM	NM
Spring 1212	NM	5.28	NM	NM	NM	NM
Spring 3424	1	1	NM	NM	NM	NM
Vaughn Spring	NM	<1	NM	NM	NM	NM

Notes:
NM - Not Measured
< - less than designated flow rate

TABLE 6
NATURAL SPRINGS ANALYTICAL RESULTS - DISSOLVED METHANE
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

ELM RIDGE RESOURCES, INC. AND PETROX RESOURCES, INC.

NATURAL SPRING	METHANE CONCENTRATIONS (mg/L)					
	2005	2006	2007	2008	May 2009	October 2009
Ramona Leonard Spring	<0.0005	<0.001	<0.02	<0.02	<0.02	<0.02
Beaver Creek	NS	NS	<0.02	<0.02	NS	NS
Corrigan Spring	NS	<0.001	NS	NS	<0.02	NS
Watson Well Spring	NS	0.016	NS	<0.02	<0.02	<0.02
Grassy Spring	NS	NS	<0.02	NS	NS	NS
Crain Spring	NS	0.0067	NS	<0.02	<0.02	NS
Walt Spring #1	NS	<0.001	NS	NS	NS	NS
Thick Spring	NS	<0.001	<0.02	NS	<0.02	NS
Vance Spring #1	NS	0.022	<0.02	0.05	<0.02	<0.02
Vance Meadow Spring	NS	0.011	0.06	<0.02	<0.02	NS
Big Hole Spring	NS	0.001	NS	NS	NS	NS
Willow Spring	NS	<0.001	<0.02	<0.02	<0.02	NS
Section 14 Spring	0.0006	<0.001	0.02	0.02	<0.02	NS
NW John Grub Spring	0.015	0.0016	0.30	0.03	0.07	NS
SE John Grub Spring	<0.0005	0.0025	0.65	<0.02	0.02	NS
Section 10U Spring	<0.0005	0.0062	NS	NS	NS	NS
Section 12U Spring	<0.0005	NS	NS	NS	NS	NS
Spring 1212	0.0005	<0.001	NS	NS	NS	NS
Spring 3424	0.0017	0.023	NS	NS	NS	NS
Vaughn Spring	NS	0.0037	NS	NS	NS	NS

Notes:

NS - Not Sampled

mg/L - milligrams per liter

< - indicates not detected above the detection limit

TABLE 7
NATURAL SPRINGS ANALYTICAL RESULTS - MAJOR IONS
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

ELM RIDGE RESOURCES, INC. AND PETROX RESOURCES, INC.

	Cations								Anions							
	Calcium (mg/L)		Magnesium (mg/L)		Sodium (mg/L)		Potassium (mg/L)		Carbonate (mg/L)		Bicarbonate (mg/L)		Sulfate (mg/L)		Chloride (mg/L)	
Natural Spring	October 2008	May 2009	October 2008	May 2009	October 2008	May 2009	October 2008	May 2009	October 2008	May 2009	October 2008	May 2009	October 2008	May 2009	October 2008	May 2009
Ramona Leonard Spring	138	120	27.7	23.1	9.6	8.5	1.6	1.3	<10	<10	200	181	340	250	<10	<10
Wood Spring	NA	65.7	NA	11.6	NA	10.7	NA	1.6	NA	<10	NA	142	NA	122	NA	<10
Thick Spring	NA	44.6	NA	8.2	NA	14.4	NA	0.8	NA	<10	NA	124	NA	28	NA	22
Beaver Creek	35.0	NA	10.7	NA	8.6	NA	1.9	NA	<10	NA	128	NA	33	NA	<10	NA
Watson Well Spring	109	86.8	38.7	30.7	25.5	20.5	2.4	1.9	<10	<10	394	288	134	94	<10	<10
Crain Spring	65.6	74.7	18.8	21.1	15.2	19.6	1.6	1.4	<10	<10	214	230	98	134	<10	<10
Vance Spring #1	52.5	57.8	6.6	7.7	13.1	14.3	5.9	4.2	<10	<10	182	208	19	<10	<10	<10
Vance Meadow Spring	68.3	66.7	9.0	8.2	14.4	14	2.6	2.7	<10	<10	244	236	11	11	<10	<10
Willow Spring	39.3	34.5	5.8	5.1	16.5	16.1	1.4	1.4	<10	<10	157	122	19	18	<10	<10
Section 14 Spring	48.8	62.8	6.0	6.7	27.0	24.5	0.6	1	<10	10	189	188	43	61	<10	<10
NW John Grub Spring	59.1	30.9	12.8	16	<0.5	11.3	0.6	0.6	<10	<10	187	117	54	67	<10	<10
SE John Grub Spring	65.3	72.2	16.9	16.6	14.0	14.3	0.7	0.6	<10	10	214	238	78	57	<10	<10

Notes:

mg/L - milligrams per liter

NA - Not Analyzed

< - less than the laboratory reporting limit

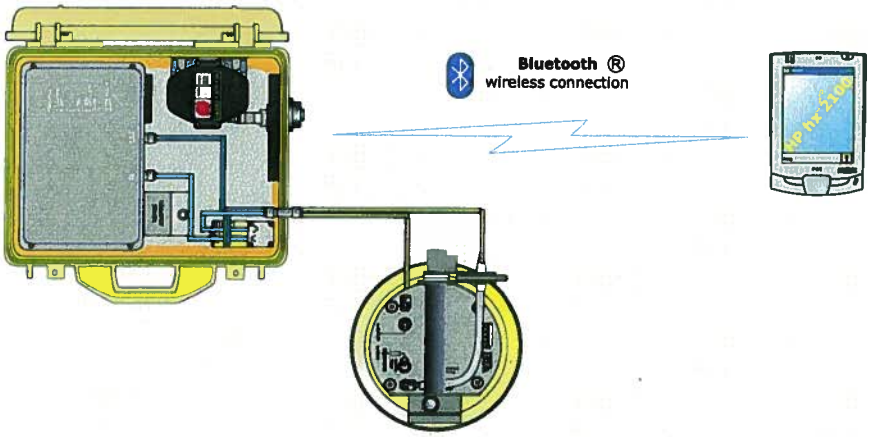
APPENDIX A

EQUIPMENT SPECIFICATIONS

WEST Systems portable soil flux meter

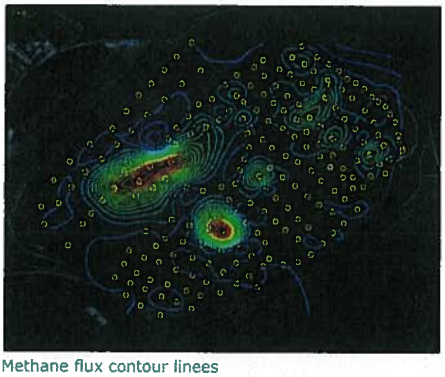
for Carbon dioxide, Methane and Hydrogen sulfide fluxes

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

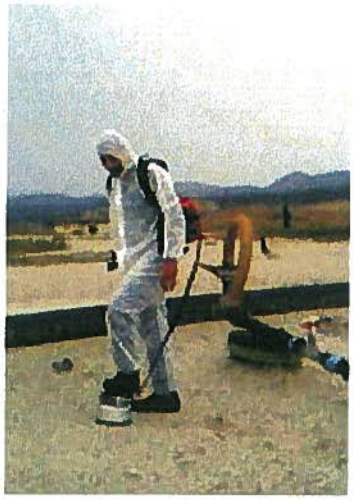
Palm top computer: PocketPC Color Display based on Windows Mobile operating system.
- PalmTop with cables, 0.3 Kg/0.7 lbs.
- Size 125mm (4.8") x 82mm (3.2") * 25 mm (1").

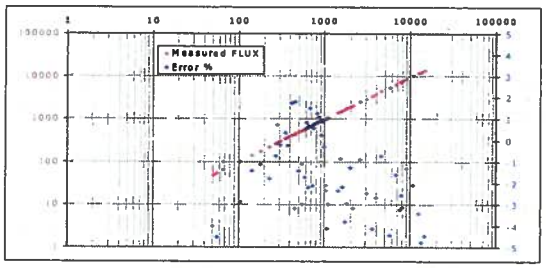
Software The instrument is supplied with a custom software, FluxManager, which allows recording and visualization of the increase in concentration of the target gas in the accumulation chamber, and then the flux calculations. The obtained measurements can be saved on the palmtop computer and then transferred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

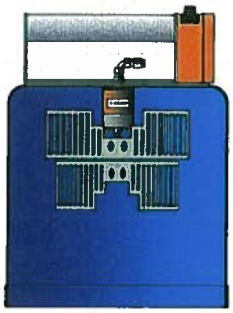
Finally we improved the connection between the instrument and the palmtop that now is based on BlueTooth wireless embedded device.





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 landfil.



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 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

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.

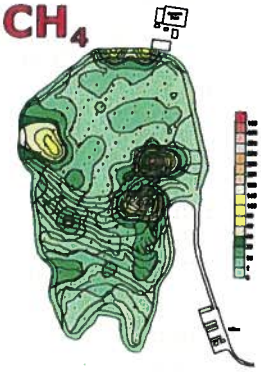
The precision depends on the measured flux:

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%)



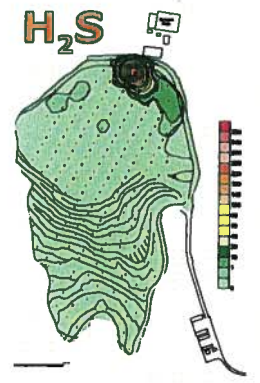
WS-HC CH^4

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)

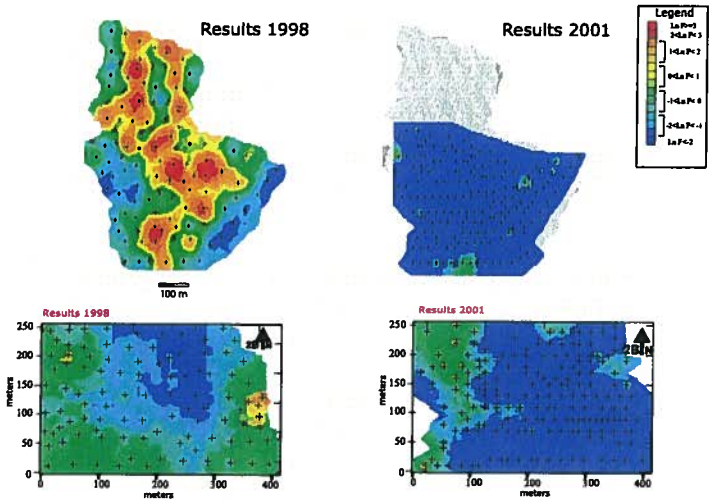
NOTE: The hydrogen sulphide flux evaluation can be affected by the presence of large quantities of water in both liquid and vapour phases.

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

WEST Systems
West Systems Srl
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

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.

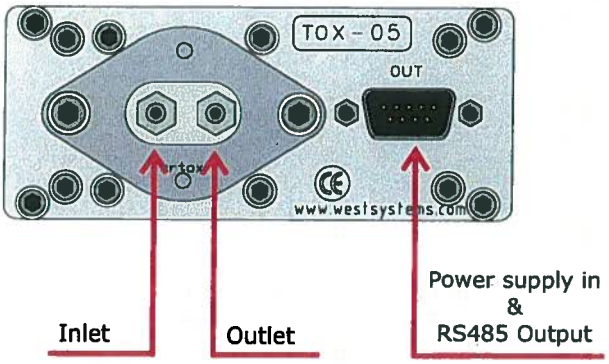
West Systems Srl
Via Molise 3 - Zona Ind. Gello - 56025 Pontedera (PI) Italy
Phone +39 0587 294216 www.westsystems.com (or .it)
Fax +39 0587 296068 g.virgili@westsystems.com (or .it)

Japan

SHOKO CO., LTD.
7-13,1-chome, Shibakoen, Minato-ku Tokyo
105-8432, Japan
TEL : 03-3459-5106 FAX : 03-3459-5081
WEB SITE http://www.shoko.co.jp
e-mail s-isotope@shoko.co.jp

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

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)

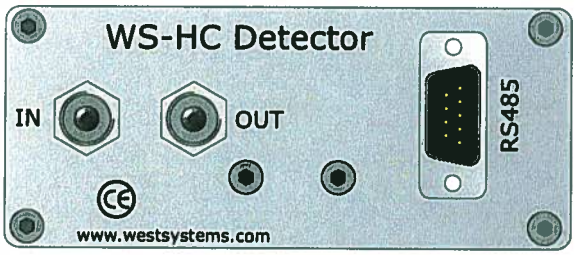
Full scale range is 50000 ppm of methane.

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

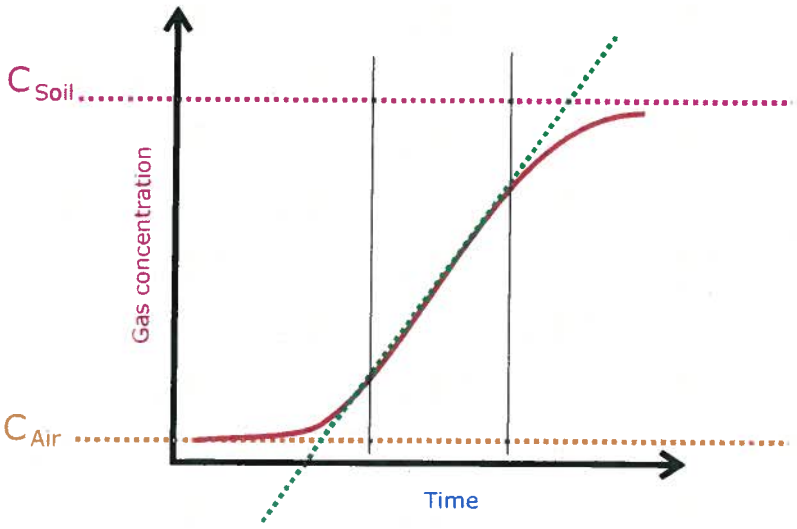
Relative Humidity Range: 0 to 95% RH, Non-Condensing

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 $L\,K^{-1}\,mol^{-1}$
- $\mathbf{T_k}$ 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:

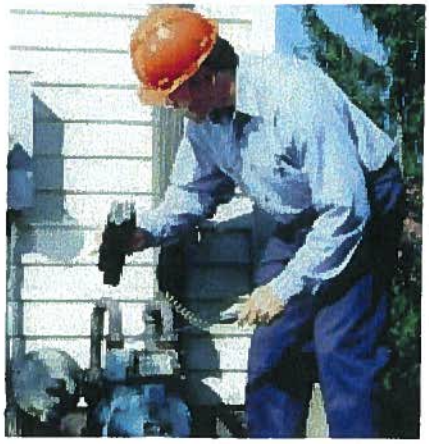
You're using the accumulation chamber B, the slope of the flux curve is 2.5 ppm/sec, the barometric pressure is 1008 mBar (HPa) and the air temperature is 22 °C.
From the table B get the value that correspond to the barometric pressure and temperature. In this case I get the value computed for 25°C and 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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Corporate Headquarters
P.O. Box 426
Pittsburgh, PA 15230 USA
Phone (412) 967-3000
www.MSAnet.com

U.S. Customer Service Center
1-800-MSA-2222

MSA International
Phone (412) 967-3354
FAX (412) 967-3451

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For further information:

MSA

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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.

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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.

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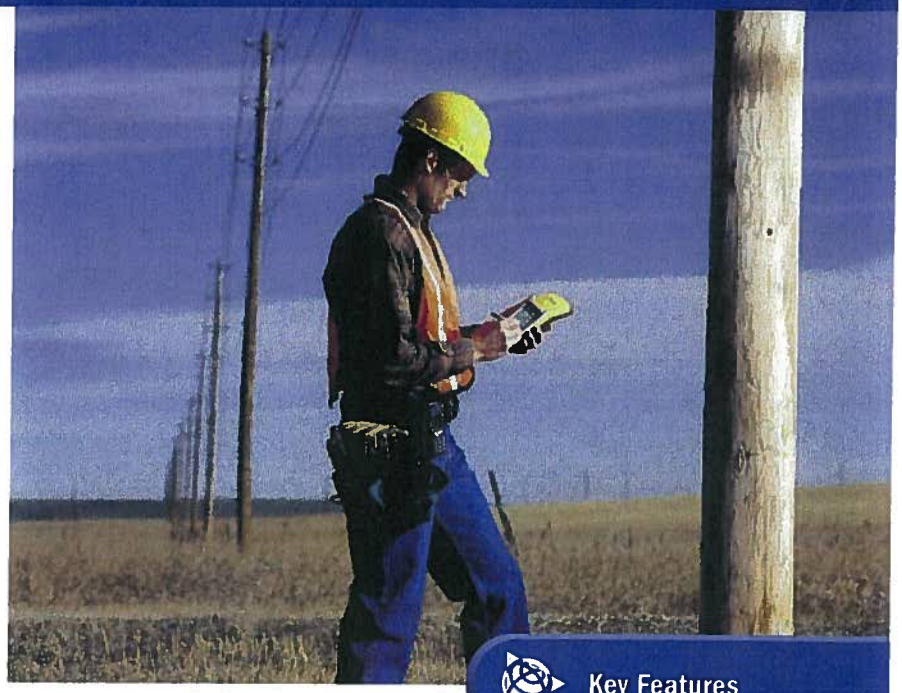
Go wireless with integrated Bluetooth®* for connection to other Bluetooth-enabled devices, including cell phones and PCs. You also have the option to use the USB support module to connect to a desktop computer, or use the optional serial clip for cabled connections in the field.

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

All the memory you need

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



Key Features

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

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

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

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

Trimble.

GeoXT

The total GPS platform for all your GIS field requirements

Standard features

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

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

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

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

Optional Features

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

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

Specifications subject to change without notice.

Technical specifications

Physical

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

Environmental

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

Input/output

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

GPS

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

Accuracy (RMS)[4] after differential correction

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

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

YOUR LOCAL TRIMBLE OFFICE OR REPRESENTATIVE

NORTH & SOUTH AMERICA
Trimble Navigation Limited
7403 Church Ranch Blvd • Suite 100
Westminster, CO 80021 • USA
+1-720-887-4374 Phone • +1-720-887-8019 Fax

EUROPE, AFRICA & MIDDLE EAST
Trimble GmbH
Am Prime Parc 11 • 65479 Raunheim • GERMANY
+49-6142-2100-0 Phone • +49-6142-2100-550 Fax

ASIA-PACIFIC
Trimble Navigation Australia Pty. Ltd
Level 1 • 123 Gotha St • Fortitude Valley
Queensland 4006 • AUSTRALIA
+61-7-3216-0044 Phone • +61-7-3216-0088 Fax

www.trimble.com

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: SS2OZ, 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

www.myronl.com

2450 Impala Drive
Carlsbad, California 92010-7226 USA
Tel: +1-760-438-2021
Fax: +1-800-869-7668 / +1-760-931-9189

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SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

UMIIB 03-08

APPENDIX B

FLUX METER DATA

APPENDIX B
METHANE FLUX MEASUREMENTS
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

Location	Site Point Identification	Northing	Easting	Date	CH4 Flux	H2S Flux	CO2 Flux	Pressure	Temperature (Degrees Celsius)	Date & Time of Measurement	CH4 Slope	H2S Slope	CO2 Slope
Beaver Creek	bc090909_01	1235539.22	2424580.74	09/09/09	0.0000	0.0059	0.1363	777.5	23.4	09-09-2009 09:41:48	-0.0030	0.0240	0.5560
Beaver Creek	bc090909_02	1235744.76	2424574.35	09/09/09	0.0000	0.0064	0.1074	777.7	24.2	09-09-2009 09:44:36	0.0000	0.0260	0.4390
Beaver Creek	bc090909_03	1235738.96	2424762.32	09/09/09	0.0000	0.0032	0.0916	775.9	24.8	09-09-2009 09:47:13	-0.1100	0.0130	0.3760
Beaver Creek	bc090909_04	1235743.28	2424964.07	09/09/09	0.0000	0.0051	0.1921	776.9	25.7	09-09-2009 09:50:43	0.0000	0.0210	0.7900
Beaver Creek	bc090909_08	1235356.02	2424568.98	09/09/09	0.0000	0.0039	0.3755	777.5	28.2	09-09-2009 10:04:18	0.0000	0.0160	1.5560
Beaver Creek	bc090909_09	1235355.90	2424766.22	09/09/09	0.0000	0.0034	0.2442	778.4	28.6	09-09-2009 10:06:45	0.0000	0.0140	1.0120
Beaver Creek	bc090909_10	1235339.63	2424987.19	09/09/09	0.0000	0.0031	0.1825	778.0	29.1	09-09-2009 10:09:32	0.0000	0.0130	0.7580
Beaver Creek	bc090909_11	1235346.78	2425167.76	09/09/09	0.0000	0.0082	0.2497	778.8	29.7	09-09-2009 10:14:20	0.0000	0.0340	1.0380
Beaver Creek	bc090909_12	1235346.22	2425358.44	09/09/09	0.0000	0.0050	0.2154	778.4	30.0	09-09-2009 10:16:39	-0.0350	0.0210	0.8970
Beaver Creek	bc090909_14	1235146.75	2425177.53	09/09/09	0.0000	0.0094	0.3631	779.6	30.7	09-09-2009 10:22:51	-0.0220	0.0390	1.5130
Beaver Creek	bc090909_15	1235181.57	2424954.27	09/09/09	0.0000	0.0050	0.0742	778.8	31.0	09-09-2009 10:25:55	0.0000	0.0210	0.3100
Beaver Creek	bc090909_16	1235123.65	2424788.29	09/09/09	0.0000	0.0038	1.0516	779.2	31.3	09-09-2009 10:28:08	0.0000	0.0160	4.3930
Beaver Creek	bc090909_17	1235174.30	2424580.65	09/09/09	0.0000	0.0050	0.1316	780.1	31.7	09-09-2009 10:31:00	0.0000	0.0210	0.5500
Beaver Creek	bc090909_18	1235135.93	2424369.77	09/09/09	0.0000	0.0029	0.2983	778.5	32.0	09-09-2009 10:33:22	-0.0030	0.0120	1.2500
Beaver Creek	bc090909_19	1235361.58	2424375.29	09/09/09	0.0000	0.0050	0.4730	778.9	32.4	09-09-2009 10:36:00	-0.0010	0.0210	1.9840
Beaver Creek	bc090909_20	1235580.93	2424389.31	09/09/09	0.0000	0.0125	0.0882	777.3	34.4	09-09-2009 11:10:32	0.0000	0.0530	0.3730
Beaver Creek	bc090909_21	1235737.56	2424371.94	09/09/09	0.0000	0.0035	0.0642	777.5	34.8	09-09-2009 11:14:56	0.0000	0.0150	0.2720
Beaver Creek	bc090909_22	1235758.84	2424179.37	09/09/09	0.0000	0.0092	0.1982	776.9	35.1	09-09-2009 11:17:05	0.0000	0.0390	0.8410
Beaver Creek	bc090909_23	1235561.76	2424168.03	09/09/09	0.0000	0.0139	0.1748	777.1	35.3	09-09-2009 11:19:14	0.0000	0.0590	0.7420
Beaver Creek	bc090909_24	1235383.48	2424175.96	09/09/09	0.0000	0.0049	0.1354	777.3	35.6	09-09-2009 11:21:24	0.0000	0.0210	0.5750
Beaver Creek	bc090909_25	1234766.95	2424959.01	09/09/09	0.0000	0.0096	0.1848	779.0	36.8	09-09-2009 11:34:42	0.0000	0.0410	0.7860
Beaver Creek	bc090909_27	1234954.96	2424961.14	09/09/09	0.0000	0.0075	0.0709	779.4	37.2	09-09-2009 11:40:14	0.0000	0.0320	0.3020
Beaver Creek	bc090909_31	1235137.62	2425578.29	09/09/09	0.0000	0.0089	0.4074	779.3	38.0	09-09-2009 11:49:50	0.0000	0.0380	1.7390
Beaver Creek	bc090909_33	1234963.59	2425766.40	09/09/09	0.0000	0.0077	0.0430	778.8	38.4	09-09-2009 11:55:41	0.0000	0.0330	0.1840
Beaver Creek	bc090909_34	1234968.89	2425954.60	09/09/09	0.0000	0.0058	0.1528	777.4	38.6	09-09-2009 11:58:27	-0.0250	0.0250	0.6550
Beaver Creek	bc090909_35	1234951.79	2426173.82	09/09/09	0.0000	0.0019	0.5086	776.2	38.9	09-09-2009 12:05:09	0.0000	0.0080	2.1860
Beaver Creek	bc090909_40	1234627.48	2426394.77	09/09/09	0.0000	0.0092	0.2975	770.1	38.9	09-09-2009 12:23:20	0.0000	0.0400	1.2890
Beaver Creek	bc090909_41	1234767.82	2426206.90	09/09/09	0.0000	0.0046	0.2818	771.2	38.9	09-09-2009 12:27:12	0.0000	0.0200	1.2190
Beaver Creek	bc090909_42	1234758.49	2426011.32	09/09/09	0.0000	0.0030	0.2077	772.7	39.0	09-09-2009 12:30:59	0.0000	0.0130	0.8970
Beaver Creek	bc090909_43	1234744.32	2425785.15	09/09/09	0.0000	0.0063	0.3052	775.3	39.1	09-09-2009 12:36:24	-0.0010	0.0270	1.3140
Beaver Creek	bc090909_45	1234731.16	2425380.90	09/09/09	0.0000	0.0016	0.1505	778.0	39.2	09-09-2009 12:42:26	0.0000	0.0070	0.6460
Beaver Creek	bc090909_37	1234761.12	2426367.41	09/09/09	0.0002	0.0039	0.0000	775.3	39.1	09-09-2009 12:14:12	0.0010	0.0170	-0.2560
Beaver Creek	bc090909_44	1234736.54	2425567.90	09/09/09	0.0002	0.0042	0.7618	777.1	39.2	09-09-2009 12:39:45	0.0010	0.0180	3.2740
Beaver Creek	bc090909_46	1234770.68	2425192.57	09/09/09	0.0002	0.0054	0.2140	778.6	39.3	09-09-2009 12:45:24	0.0010	0.0230	0.9180
Beaver Creek	bc090909_28	1234951.03	2425174.66	09/09/09	0.0002	0.0101	0.0654	778.6	37.5	09-09-2009 11:42:41	0.0010	0.0430	0.2790
Beaver Creek	bc090909_30	1234959.85	2425556.96	09/09/09	0.0002	0.0016	0.0828	779.9	37.9	09-09-2009 11:47:53	0.0010	0.0070	0.3530
Beaver Creek	bc090909_05	1235557.76	2425179.64	09/09/09	0.0002	0.0027	0.2525	777.0	26.5	09-09-2009 09:54:23	0.0010	0.0110	1.0410
Beaver Creek	bc090909_39	1234582.49	2426568.72	09/09/09	0.0005	0.0018	0.2938	771.4	39.0	09-09-2009 12:20:26	0.0020	0.0080	1.2710
Beaver Creek	bc090909_36	1234951.26	2426381.93	09/09/09	0.0005	0.0042	0.2681	774.7	39.0	09-09-2009 12:09:46	0.0020	0.0180	1.1550
Beaver Creek	bc090909_29	1234938.95	2425377.84	09/09/09	0.0005	0.0042	0.4796	780.9	37.7	09-09-2009 11:45:07	0.0020	0.0180	2.0410
Beaver Creek	bc090909_26	1234915.47	2424762.93	09/09/09	0.0005	0.0054	0.1895	779.7	37.1	09-09-2009 11:37:49	0.0020	0.0230	0.8060
Beaver Creek	bc090909_13	1235123.90	2425375.95	09/09/09	0.0005	0.0053	0.1842	778.4	30.4	09-09-2009 10:20:35	0.0020	0.0220	0.7680
Beaver Creek	bc090909_38	1234707.56	2426557.50	09/09/09	0.0007	0.0069	0.2085	772.3	39.0	09-09-2009 12:17:48	0.0030	0.0300	0.9010
Beaver Creek	bc090909_07	1235550.92	2424779.57	09/09/09	0.0290	0.0039	0.2799	777.8	27.6	09-09-2009 10:00:57	0.1200	0.0160	1.1570
Beaver Creek	bc090909_06	1235555.24	2424984.61	09/09/09	0.0478	0.0056	0.2109	778.2	27.1	09-09-2009 09:58:05	0.1970	0.0230	0.8700
Beaver Creek	bc090909_32	1235152.14	2425758.84	09/09/09	0.0607	0.0101	0.4020	780.8	38.2	09-09-2009 11:52:22	0.2590	0.0430	1.7140
Big Horn Schomburg	bhs090409_02	1194686.76	2459520.47	09/04/09	0.0000	0.0000	0.1438	800.3	22.6	04-09-2009 11:48:58	0.0000	-0.0020	0.5680
Big Horn Schomburg	bhs090409_03	1194630.73	2459464.82	09/04/09	0.0000	0.0020	0.1116	800.6	23.5	04-09-2009 11:50:52	0.0000	0.0080	0.4420
Big Horn Schomburg	bhs090409_04	1194586.04	2459530.59	09/04/09	0.0000	0.0030	0.1830	800.7	24.3	04-09-2009 11:52:59	0.0000	0.0120	0.7270
Big Horn Schomburg	bhs090409_01	1194629.05	2459521.70	09/04/09	0.0003	0.0000	0.2079	800.5	20.7	04-09-2009 11:44:44	0.0010	-0.0060	0.8160
Big Horn Schomburg	bhs090409_05	1194623.72	2459585.53	09/04/09	0.0055	0.0023	0.1514	800.6	25.1	04-09-2009 11:54:44	0.0220	0.0090	0.6030

APPENDIX B (continued)
METHANE FLUX MEASUREMENTS
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

Location	Site Point Identification	Northing	Easting	Date	CH4 Flux	H2S Flux	CO2 Flux	Pressure	Temperature (Degrees Celsius)	Date & Time of Measurement	CH4 Slope	H2S Slope	CO2 Slope
Pole Gulch	fg092209_100	1208529.40	2445963.64	09/22/09	0.0000	0.0007	0.0086	788.1	26.7	22-09-2009 16:34:16	-0.0130	0.0030	0.0350
Pole Gulch	fg092209_104	1208324.48	2446378.81	09/22/09	0.0000	0.0000	0.5602	792.6	27.1	22-09-2009 16:48:05	0.0000	-0.0060	2.2690
Pole Gulch	fg092209_105	1208505.64	2446375.35	09/22/09	0.0000	0.0000	0.3701	789.1	27.2	22-09-2009 16:51:56	-0.0020	0.0000	1.5060
Pole Gulch	fg092209_106	1208117.68	2446553.53	09/22/09	0.0000	0.0017	0.1360	789.1	27.4	22-09-2009 16:56:56	0.0000	0.0070	0.5540
Pole Gulch	fg092209_107	1206737.36	2445895.46	09/23/09	0.0000	0.0003	0.0787	789.0	18.4	23-09-2009 08:19:33	0.0000	0.0010	0.3110
Pole Gulch	fg092209_109	1206746.54	2446369.90	09/23/09	0.0000	0.0005	0.1709	787.0	20.2	23-09-2009 08:26:37	0.0000	0.0020	0.6810
Pole Gulch	fg092209_110	1206723.79	2446571.94	09/23/09	0.0000	0.0000	0.3404	786.9	20.7	23-09-2009 08:30:01	0.0000	-0.0010	1.3590
Pole Gulch	fg092209_111	1206724.33	2446762.14	09/23/09	0.0000	0.0000	0.0000	784.3	21.0	23-09-2009 08:33:30	-0.0200	0.0000	-2.1730
Pole Gulch	fg092209_112	1206915.85	2446976.96	09/23/09	0.0000	0.0000	0.0877	782.1	21.2	23-09-2009 08:37:37	-0.0010	-0.0010	0.3530
Pole Gulch	fg092209_113	1207120.94	2446979.16	09/23/09	0.0000	0.0000	0.1083	785.3	21.3	23-09-2009 08:41:05	0.0000	0.0000	0.4340
Pole Gulch	fg092209_115	1207303.24	2446764.85	09/23/09	0.0000	0.0000	0.1793	789.3	21.3	23-09-2009 08:46:35	0.0000	-0.0010	0.7150
Pole Gulch	fg092209_117	1207301.91	2446368.52	09/23/09	0.0000	0.0003	0.0000	789.4	21.3	23-09-2009 08:55:40	0.0000	0.0010	-0.5740
Pole Gulch	fg092209_120	1207304.99	2445768.03	09/23/09	0.0000	0.0003	0.0000	787.3	21.2	23-09-2009 09:06:44	0.0000	0.0010	-0.1060
Pole Gulch	fg092209_122	1206932.70	2445590.91	09/23/09	0.0000	0.0015	0.0946	786.1	21.3	23-09-2009 09:13:18	0.0000	0.0060	0.3790
Pole Gulch	fg092209_125	1207135.17	2445945.00	09/23/09	0.0000	0.0000	0.1486	788.3	21.5	23-09-2009 09:29:21	0.0000	0.0000	0.5940
Pole Gulch	fg092209_126	1207135.25	2446154.74	09/23/09	0.0000	0.0003	0.0448	788.3	21.6	23-09-2009 09:31:45	0.0000	0.0010	0.1790
Pole Gulch	fg092209_128	1207138.00	2446556.84	09/23/09	0.0000	0.0000	0.0796	788.7	21.7	23-09-2009 09:38:26	0.0000	0.0000	0.3180
Pole Gulch	fg092209_130	1206928.45	2446765.38	09/23/09	0.0000	0.0005	0.0986	784.6	21.7	23-09-2009 09:44:40	-0.0010	0.0020	0.3960
Pole Gulch	fg092209_132	1206915.28	2446395.28	09/23/09	0.0000	0.0000	0.0000	785.2	21.7	23-09-2009 09:50:29	-0.0420	-0.0010	-0.7210
Pole Gulch	fg092209_133	1206915.08	2446181.74	09/23/09	0.0000	0.0007	0.3101	786.5	21.7	23-09-2009 09:53:02	0.0000	0.0030	1.2430
Pole Gulch	fg092209_135	1207927.21	2446568.28	09/23/09	0.0000	0.0007	0.0454	790.0	23.3	23-09-2009 10:55:10	0.0000	0.0030	0.1820
Pole Gulch	fg092209_137	1207935.57	2446179.83	09/23/09	0.0000	0.0007	0.0000	789.7	23.7	23-09-2009 11:00:52	0.0000	0.0030	-0.3850
Pole Gulch	fg092209_138	1207899.94	2445966.05	09/23/09	0.0000	0.0005	0.0726	787.1	24.0	23-09-2009 11:04:50	0.0000	0.0020	0.2930
Pole Gulch	fg092209_140	1207548.41	2445768.65	09/23/09	0.0000	0.0007	0.1874	781.5	24.5	23-09-2009 11:12:52	0.0000	0.0030	0.7630
Pole Gulch	fg092209_141	1207538.23	2445959.31	09/23/09	0.0000	0.0007	0.1313	783.0	24.8	23-09-2009 11:16:04	0.0000	0.0030	0.5340
Pole Gulch	fg092209_142	1207547.20	2446146.92	09/23/09	0.0000	0.0022	0.0865	784.0	25.1	23-09-2009 11:19:03	-1.7100	0.0090	0.3520
Pole Gulch	fg092209_143	1207731.23	2446189.42	09/23/09	0.0000	0.0044	0.3565	785.9	25.4	23-09-2009 11:21:25	-1.0100	0.0180	1.4480
Pole Gulch	fg092209_144	1207730.94	2446360.93	09/23/09	0.0000	0.0020	0.0265	785.0	25.9	23-09-2009 11:24:53	0.0000	0.0080	0.1080
Pole Gulch	fg092209_147	1207707.04	2446523.52	09/23/09	0.0000	0.0012	0.0907	789.5	27.2	23-09-2009 11:34:50	0.0000	0.0050	0.3690
Pole Gulch	fg092209_148	1207937.99	2446759.19	09/23/09	0.0000	0.0000	0.1826	788.2	20.3	23-09-2009 14:36:54	0.0000	-0.0020	0.7270
Pole Gulch	fg092209_149	1207921.44	2446965.77	09/23/09	0.0000	0.0010	0.1313	788.2	21.6	23-09-2009 14:41:13	0.0000	0.0040	0.5250
Pole Gulch	fg092209_150	1207903.69	2447201.90	09/23/09	0.0000	0.0005	0.0133	795.5	22.7	23-09-2009 14:45:20	0.0000	0.0020	0.0530
Pole Gulch	fg092209_151	1207951.29	2447381.49	09/23/09	0.0000	0.0020	0.0763	786.3	23.7	23-09-2009 14:49:37	0.0000	0.0080	0.3080
Pole Gulch	fg092209_152	1207902.98	2447582.02	09/23/09	0.0000	0.0002	0.0027	794.4	24.6	23-09-2009 14:55:16	0.0000	0.0010	0.0110
Pole Gulch	fg092209_153	1207909.52	2447763.41	09/23/09	0.0000	0.0022	0.0579	783.8	25.4	23-09-2009 15:00:33	-0.0250	0.0090	0.2360
Pole Gulch	fg092209_154	1207923.05	2447970.73	09/23/09	0.0000	0.0027	0.1009	787.4	26.0	23-09-2009 15:05:01	0.0000	0.0110	0.4100
Pole Gulch	fg092209_155	1207731.55	2447789.96	09/23/09	0.0000	0.0007	0.0366	782.7	26.9	23-09-2009 15:11:44	0.0000	0.0030	0.1500
Pole Gulch	fg092209_156	1207720.76	2447593.70	09/23/09	0.0000	0.0000	0.0647	790.7	27.4	23-09-2009 15:16:33	0.0000	0.0000	0.2630
Pole Gulch	fg092209_159	1207524.83	2447367.90	09/23/09	0.0000	0.0019	0.0000	785.0	28.8	23-09-2009 15:34:40	0.0000	0.0080	-1.1990
Pole Gulch	fg092209_160	1207509.74	2447581.19	09/23/09	0.0000	0.0005	0.0000	788.9	29.0	23-09-2009 15:38:46	0.0000	0.0020	-0.0480
Pole Gulch	fg092209_161	1207523.20	2447172.40	09/23/09	0.0000	0.0012	0.1245	780.1	29.3	23-09-2009 15:43:18	0.0000	0.0050	0.5160
Pole Gulch	fg092209_162	1207533.65	2446990.04	09/23/09	0.0000	0.0012	0.0206	782.8	29.4	23-09-2009 15:46:40	0.0000	0.0050	0.0850
Pole Gulch	fg092209_163	1207518.37	2446777.61	09/23/09	0.0000	0.0019	0.5396	785.5	29.4	23-09-2009 15:49:39	0.0000	0.0080	2.2220
Pole Gulch	fg092209_79	1208326.71	2446977.13	09/22/09	0.0000	0.0030	0.1043	791.3	22.0	22-09-2009 14:28:57	0.0000	0.0120	0.4160
Pole Gulch	fg092209_81	1208328.40	2447360.75	09/22/09	0.0000	0.0010	0.2180	792.5	24.4	22-09-2009 14:40:33	0.0000	0.0040	0.8750
Pole Gulch	fg092209_82	1208126.53	2447586.99	09/22/09	0.0000	0.0015	0.1277	789.0	25.1	22-09-2009 14:46:49	0.0000	0.0060	0.5160
Pole Gulch	fg092209_83	1208143.39	2447766.55	09/22/09	0.0000	0.0005	0.1277	789.0	25.6	22-09-2009 14:54:06	-0.0050	0.0020	0.5170
Pole Gulch	fg092209_84	1208107.18	2447964.39	09/22/09	0.0000	0.0002	0.0000	787.7	25.9	22-09-2009 15:01:18	0.0000	0.0010	-0.5050
Pole Gulch	fg092209_85	1208133.13	2447379.70	09/22/09	0.0000	0.0015	0.0733	787.4	26.2	22-09-2009 15:09:50	-0.0050	0.0060	0.2980

APPENDIX B (continued)
METHANE FLUX MEASUREMENTS
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

Location	Site Point Identification	Northing	Easting	Date	CH4 Flux	H2S Flux	CO2 Flux	Pressure	Temperature (Degrees Celsius)	Date & Time of Measurement	CH4 Slope	H2S Slope	CO2 Slope
Pole Gulch	fg092209_88	1208137.47	2446784.91	09/22/09	0.0000	0.0007	0.0771	791.4	26.5	22-09-2009 15:23:24	-0.2830	0.0030	0.3120
Pole Gulch	fg092209_90	1208318.00	2446589.28	09/22/09	0.0000	0.0020	0.2808	789.8	26.8	22-09-2009 15:40:32	-0.0160	0.0080	1.1400
Pole Gulch	fg092209_92	1208122.83	2446185.83	09/22/09	0.0000	0.0002	0.0000	788.3	27.2	22-09-2009 15:52:52	0.0000	0.0010	-0.3800
Pole Gulch	fg092209_93	1208164.40	2445995.30	09/22/09	0.0000	0.0000	0.0592	791.7	27.2	22-09-2009 15:59:06	0.0000	0.0000	0.2400
Pole Gulch	fg092209_94	1208144.43	2445783.76	09/22/09	0.0000	0.0000	0.0125	787.9	27.1	22-09-2009 16:08:12	0.0000	0.0000	0.0510
Pole Gulch	fg092209_95	1208336.68	2445765.58	09/22/09	0.0000	0.0012	0.0995	784.2	27.0	22-09-2009 16:12:14	-0.0010	0.0050	0.4070
Pole Gulch	fg092209_96	1208520.36	2445572.84	09/22/09	0.0000	0.0002	0.0000	783.5	26.9	22-09-2009 16:17:12	0.0000	0.0010	-0.0440
Pole Gulch	fg092209_97	1208509.37	2445779.37	09/22/09	0.0000	0.0005	0.0857	782.8	26.7	22-09-2009 16:22:48	0.0000	0.0020	0.3510
Pole Gulch	fg092209_98	1208710.04	2445767.04	09/22/09	0.0000	0.0007	0.0977	790.9	26.7	22-09-2009 16:26:12	0.0000	0.0030	0.3960
Pole Gulch	fg092209_101	1208519.25	2446165.83	09/22/09	0.0002	0.0010	0.0567	783.5	26.7	22-09-2009 16:37:11	0.0010	0.0040	0.2320
Pole Gulch	fg092209_165	1207733.13	2446790.92	09/23/09	0.0002	0.0010	0.2064	793.3	29.5	23-09-2009 15:56:01	0.0010	0.0040	0.8420
Pole Gulch	fg092209_102	1208329.18	2445958.10	09/22/09	0.0002	0.0002	0.1785	787.5	26.8	22-09-2009 16:42:15	0.0010	0.0010	0.7270
Pole Gulch	fg092209_145	1207549.95	2446370.13	09/23/09	0.0002	0.0027	0.1323	788.5	26.2	23-09-2009 11:27:19	0.0010	0.0110	0.5370
Pole Gulch	fg092209_139	1207749.10	2445967.21	09/23/09	0.0002	0.0015	0.0991	783.9	24.2	23-09-2009 11:08:45	0.0010	0.0060	0.4020
Pole Gulch	fg092209_86	1208140.55	2447182.17	09/22/09	0.0002	0.0012	0.0600	790.5	26.3	22-09-2009 15:14:32	0.0010	0.0050	0.2430
Pole Gulch	fg092209_99	1208725.41	2445947.37	09/22/09	0.0002	0.0012	0.0492	792.0	26.7	22-09-2009 16:30:39	0.0010	0.0050	0.1990
Pole Gulch	fg092209_131	1206900.88	2446565.38	09/23/09	0.0002	0.0000	0.1706	784.2	21.7	23-09-2009 09:48:12	0.0010	0.0000	0.6860
Pole Gulch	fg092209_103	1208329.66	2446180.29	09/22/09	0.0002	0.0020	0.0639	798.3	27.0	22-09-2009 16:45:35	0.0010	0.0080	0.2570
Pole Gulch	fg092209_123	1206928.95	2445752.15	09/23/09	0.0002	0.0000	0.1648	786.5	21.4	23-09-2009 09:15:37	0.0010	-0.0010	0.6600
Pole Gulch	fg092209_134	1206906.33	2445973.99	09/23/09	0.0002	0.0000	0.0365	788.1	21.7	23-09-2009 09:56:58	0.0010	0.0000	0.1460
Pole Gulch	fg092209_114	1207316.68	2446969.80	09/23/09	0.0003	0.0000	0.0718	787.7	21.3	23-09-2009 08:43:21	0.0010	-0.0020	0.2870
Pole Gulch	fg092209_127	1207121.63	2446353.84	09/23/09	0.0003	0.0000	0.1721	789.3	21.6	23-09-2009 09:35:12	0.0010	0.0000	0.6870
Pole Gulch	fg092209_164	1207719.52	2446990.83	09/23/09	0.0005	0.0029	0.1686	793.9	29.5	23-09-2009 15:53:04	0.0020	0.0120	0.6870
Pole Gulch	fg092209_136	1207935.29	2446362.47	09/23/09	0.0005	0.0002	0.3235	790.5	23.5	23-09-2009 10:57:50	0.0020	0.0010	1.2980
Pole Gulch	fg092209_129	1207106.66	2446778.85	09/23/09	0.0005	0.0002	0.1797	787.8	21.7	23-09-2009 09:42:22	0.0020	0.0010	0.7190
Pole Gulch	fg092209_124	1207136.29	2445824.46	09/23/09	0.0005	0.0000	0.0228	787.5	21.4	23-09-2009 09:27:06	0.0020	0.0000	0.0910
Pole Gulch	fg092209_121	1207103.93	2445595.81	09/23/09	0.0005	0.0000	0.0798	787.0	21.2	23-09-2009 09:10:25	0.0020	-0.0040	0.3190
Pole Gulch	fg092209_116	1207277.68	2446541.52	09/23/09	0.0005	0.0000	0.1231	788.0	21.3	23-09-2009 08:52:25	0.0020	0.0000	0.4920
Pole Gulch	fg092209_108	1206730.83	2446156.63	09/23/09	0.0005	0.0000	1.0027	790.3	19.8	23-09-2009 08:24:29	0.0020	0.0000	3.9740
Pole Gulch	fg092209_119	1207295.54	2445972.80	09/23/09	0.0008	0.0000	0.0000	788.6	21.2	23-09-2009 09:03:29	0.0030	-0.0010	-1.7170
Pole Gulch	fg092209_118	1207304.26	2446169.45	09/23/09	0.0008	0.0005	0.1174	791.4	21.2	23-09-2009 08:59:43	0.0030	0.0020	0.4670
Pole Gulch	fg092209_146	1207529.99	2446542.18	09/23/09	0.0010	0.0005	0.0973	788.3	26.8	23-09-2009 11:31:47	0.0040	0.0020	0.3960
Pole Gulch	fg092209_89	1208313.81	2446762.80	09/22/09	0.0136	0.0000	0.0128	791.4	26.6	22-09-2009 15:36:31	0.0550	0.0000	0.0520
Pole Gulch	fg092209_157	1207705.38	2447392.78	09/23/09	0.0141	0.0010	0.1511	783.5	28.0	23-09-2009 15:23:07	0.0580	0.0040	0.6210
Pole Gulch	fg092209_158	1207711.74	2447188.59	09/23/09	0.0191	0.0007	0.0894	787.7	28.4	23-09-2009 15:27:54	0.0780	0.0030	0.3660
Pole Gulch	fg092209_80	1208326.66	2447176.70	09/22/09	0.0660	0.0007	0.1252	791.3	23.0	22-09-2009 14:33:34	0.2640	0.0030	0.5010
Pole Gulch	fg092209_87	1208124.40	2446965.78	09/22/09	0.0766	0.0002	0.1194	791.7	26.4	22-09-2009 15:20:06	0.3100	0.0010	0.4830
Pole Gulch	fg092209_91	1208135.63	2446364.22	09/22/09	0.2156	0.0007	0.0103	789.7	27.0	22-09-2009 15:47:03	0.8760	0.0030	0.0420
Little Squaw Creek	fg092209_01	1209515.78	2443391.50	09/21/09	0.0000	0.0002	0.1573	785.4	22.0	21-09-2009 09:08:22	0.0000	0.0010	0.6320
Little Squaw Creek	fg092209_02	1209543.41	2443196.93	09/21/09	0.0000	0.0000	0.0251	785.6	22.5	21-09-2009 09:13:15	0.0000	-0.0010	0.1010
Little Squaw Creek	fg092209_03	1209314.56	2443353.94	09/21/09	0.0000	0.0000	0.0746	785.8	23.3	21-09-2009 09:20:54	0.0000	-0.0020	0.3010
Little Squaw Creek	fg092209_04	1209333.05	2443171.84	09/21/09	0.0000	0.0000	0.1393	785.1	24.1	21-09-2009 09:29:32	0.0000	0.0000	0.5640
Little Squaw Creek	fg092209_05	1209350.00	2442991.13	09/21/09	0.0000	0.0000	0.2245	782.1	24.7	21-09-2009 09:35:28	0.0000	-0.0020	0.9140
Little Squaw Creek	fg092209_06	1209317.92	2442763.57	09/21/09	0.0000	0.0000	0.0824	781.5	25.9	21-09-2009 09:46:23	0.0000	-0.0010	0.3370
Little Squaw Creek	fg092209_07	1209122.22	2442563.97	09/21/09	0.0000	0.0000	0.0331	780.1	26.4	21-09-2009 09:55:13	0.0000	-0.0020	0.1360
Little Squaw Creek	fg092209_08	1209115.82	2442750.20	09/21/09	0.0000	0.0012	0.2624	780.6	26.8	21-09-2009 10:03:37	0.0000	0.0050	1.0780
Little Squaw Creek	fg092209_09	1209111.43	2442995.95	09/21/09	0.0000	0.0000	0.0000	779.7	27.1	21-09-2009 10:12:00	0.0000	-0.0010	-0.3080
Little Squaw Creek	fg092209_10	1209113.41	2443177.35	09/21/09	0.0000	0.0007	0.2643	783.4	27.7	21-09-2009 10:19:32	0.0000	0.0030	1.0850
Little Squaw Creek	fg092209_11	1209125.87	2443377.80	09/21/09	0.0000	0.0029	0.0667	784.2	28.1	21-09-2009 10:25:14	0.0000	0.0120	0.2740
Little Squaw Creek	fg092209_12	1208917.39	2443376.25	09/21/09	0.0000	0.0024	0.2145	786.3	28.5	21-09-2009 10:30:33	0.0000	0.0100	0.8800

APPENDIX B (continued)
METHANE FLUX MEASUREMENTS
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

Location	Site Point Identification	Northing	Easting	Date	CH4 Flux	H2S Flux	CO2 Flux	Pressure	Temperature (Degrees Celsius)	Date & Time of Measurement	CH4 Slope	H2S Slope	CO2 Slope
Little Squaw Creek	fg092209_13	1208893.46	2443568.55	09/21/09	0.0000	0.0000	0.3602	787.7	29.6	21-09-2009 10:41:39	0.0000	-0.0020	1.4800
Little Squaw Creek	fg092209_14	1208921.01	2443989.28	09/21/09	0.0000	0.0010	0.3000	796.0	30.6	21-09-2009 10:52:23	0.0000	0.0040	1.2240
Little Squaw Creek	fg092209_15	1208906.93	2444176.39	09/21/09	0.0000	0.0000	0.1404	790.5	30.6	21-09-2009 10:56:05	0.0000	0.0000	0.5770
Little Squaw Creek	fg092209_16	1208723.22	2444158.24	09/21/09	0.0000	0.0005	0.0223	788.1	30.3	21-09-2009 11:04:56	0.0000	0.0020	0.0920
Little Squaw Creek	fg092209_17	1208737.70	2443968.79	09/21/09	0.0000	0.0005	0.1152	786.3	30.0	21-09-2009 11:09:57	0.0000	0.0020	0.4750
Little Squaw Creek	fg092209_18	1208711.93	2443779.40	09/21/09	0.0000	0.0012	0.0306	786.5	29.8	21-09-2009 11:13:58	0.0000	0.0050	0.1260
Little Squaw Creek	fg092209_19	1208732.00	2443577.53	09/21/09	0.0000	0.0019	0.1125	786.7	29.7	21-09-2009 11:17:06	0.0000	0.0080	0.4630
Little Squaw Creek	fg092209_20	1208720.95	2443383.61	09/21/09	0.0000	0.0017	0.1953	787.1	29.6	21-09-2009 11:20:23	0.0000	0.0070	0.8030
Little Squaw Creek	fg092209_21	1208948.75	2443166.75	09/21/09	0.0000	0.0000	0.0140	787.9	32.2	21-09-2009 12:23:37	0.0000	-0.0010	0.0580
Little Squaw Creek	fg092209_22	1208938.00	2442985.56	09/21/09	0.0000	0.0014	0.0331	785.0	32.5	21-09-2009 12:27:58	0.0000	0.0060	0.1380
Little Squaw Creek	fg092209_23	1208942.46	2442765.54	09/21/09	0.0000	0.0010	0.1290	783.5	33.7	21-09-2009 12:40:05	0.0000	0.0040	0.5400
Little Squaw Creek	fg092209_24	1208926.01	2442567.96	09/21/09	0.0000	0.0052	0.0288	782.0	34.4	21-09-2009 12:44:51	0.0000	0.0220	0.1210
Little Squaw Creek	fg092209_25	1208919.11	2442369.62	09/21/09	0.0000	0.0000	0.0076	780.9	34.9	21-09-2009 12:49:25	0.0000	0.0000	0.0320
Little Squaw Creek	fg092209_26	1208916.46	2442181.06	09/21/09	0.0000	0.0038	0.0583	781.7	35.4	21-09-2009 12:53:46	0.0000	0.0160	0.2460
Little Squaw Creek	fg092209_27	1208717.16	2441966.22	09/21/09	0.0000	0.0026	0.1111	781.9	36.1	21-09-2009 12:59:50	0.0000	0.0110	0.4700
Little Squaw Creek	fg092209_28	1208749.13	2442165.82	09/21/09	0.0000	0.0035	0.0591	780.0	36.5	21-09-2009 13:05:51	0.0000	0.0150	0.2510
Little Squaw Creek	fg092209_29	1208714.32	2442388.20	09/21/09	0.0000	0.0019	0.0611	781.9	36.7	21-09-2009 13:09:45	0.0000	0.0080	0.2590
Little Squaw Creek	fg092209_30	1208725.97	2442584.37	09/21/09	0.0000	0.0026	0.0191	783.2	36.8	21-09-2009 13:13:25	0.0000	0.0110	0.0810
Little Squaw Creek	fg092209_32	1208729.03	2442967.17	09/21/09	0.0000	0.0026	0.0650	784.7	37.3	21-09-2009 13:21:00	0.0000	0.0110	0.2750
Little Squaw Creek	fg092209_33	1208734.90	2443145.67	09/21/09	0.0000	0.0012	0.1914	785.5	37.7	21-09-2009 13:30:17	0.0000	0.0050	0.8100
Little Squaw Creek	fg092209_34	1209001.28	2443793.08	09/22/09	0.0000	0.0000	0.0000	797.5	10.8	22-09-2009 07:54:27	0.0000	-0.0010	-0.0460
Little Squaw Creek	fg092209_36	1208508.86	2443961.60	09/22/09	0.0000	0.0008	0.0261	787.9	12.4	22-09-2009 08:10:46	0.0000	0.0030	0.1010
Little Squaw Creek	fg092209_37	1208477.50	2443757.43	09/22/09	0.0000	0.0008	0.0441	788.5	12.8	22-09-2009 08:17:19	-0.0010	0.0030	0.1710
Little Squaw Creek	fg092209_39	1208514.63	2443379.59	09/22/09	0.0000	0.0000	0.0585	791.7	13.1	22-09-2009 08:23:17	-1.8760	0.0000	0.2260
Little Squaw Creek	fg092209_40	1208526.45	2443180.80	09/22/09	0.0000	0.0005	0.2214	792.1	13.3	22-09-2009 08:25:26	-0.0720	0.0020	0.8560
Little Squaw Creek	fg092209_41	1208511.69	2442993.85	09/22/09	0.0000	0.0005	0.0308	793.0	13.4	22-09-2009 08:27:22	-1.1080	0.0020	0.1190
Little Squaw Creek	fg092209_42	1208518.17	2442808.58	09/22/09	0.0000	0.0005	0.5542	793.3	13.5	22-09-2009 08:29:25	-1.2940	0.0020	2.1410
Little Squaw Creek	fg092209_43	1208503.10	2442577.37	09/22/09	0.0000	0.0005	0.1637	793.0	13.6	22-09-2009 08:33:26	-1.2100	0.0020	0.6330
Little Squaw Creek	fg092209_44	1208523.62	2442369.48	09/22/09	0.0000	0.0000	0.0514	791.7	13.8	22-09-2009 08:36:29	0.0000	-0.0010	0.1990
Little Squaw Creek	fg092209_47	1208541.59	2441759.36	09/22/09	0.0000	0.0000	0.0249	788.2	14.4	22-09-2009 08:46:10	0.0000	-0.0030	0.0970
Little Squaw Creek	fg092209_48	1208316.83	2441602.64	09/22/09	0.0000	0.0005	0.2728	789.9	14.7	22-09-2009 08:49:08	-0.7490	0.0020	1.0630
Little Squaw Creek	fg092209_49	1208107.54	2441573.73	09/22/09	0.0000	0.0000	0.1548	788.6	15.1	22-09-2009 08:52:58	0.0000	-0.0020	0.6050
Little Squaw Creek	fg092209_51	1207910.55	2441756.54	09/22/09	0.0000	0.0003	0.4912	789.3	15.7	22-09-2009 08:58:01	0.0000	0.0010	1.9220
Little Squaw Creek	fg092209_53	1208104.47	2441777.97	09/22/09	0.0000	0.0003	0.1601	792.0	16.1	22-09-2009 09:02:57	-1.6820	0.0010	0.6250
Little Squaw Creek	fg092209_54	1208319.52	2441761.17	09/22/09	0.0000	0.0010	0.1195	791.6	16.3	22-09-2009 09:05:41	0.0000	0.0040	0.4670
Little Squaw Creek	fg092209_55	1208332.24	2441986.86	09/22/09	0.0000	0.0010	0.1298	790.3	16.7	22-09-2009 09:09:33	-0.0040	0.0040	0.5090
Little Squaw Creek	fg092209_56	1208337.01	2442164.76	09/22/09	0.0000	0.0005	0.4980	789.9	17.0	22-09-2009 09:11:53	0.0000	0.0020	1.9560
Little Squaw Creek	fg092209_58	1208325.89	2442578.01	09/22/09	0.0000	0.0000	0.0074	791.7	17.7	22-09-2009 09:17:16	0.0000	0.0000	0.0290
Little Squaw Creek	fg092209_59	1208320.09	2442772.42	09/22/09	0.0000	0.0010	0.1444	791.6	18.0	22-09-2009 09:19:45	0.0000	0.0040	0.5680
Little Squaw Creek	fg092209_60	1208321.06	2442999.44	09/22/09	0.0000	0.0000	0.1535	791.7	18.3	22-09-2009 09:22:25	0.0000	0.0000	0.6040
Little Squaw Creek	fg092209_63	1208145.67	2443194.13	09/22/09	0.0000	0.0000	0.1386	790.9	18.8	22-09-2009 09:30:11	0.0000	0.0000	0.5470
Little Squaw Creek	fg092209_64	1208122.87	2442940.98	09/22/09	0.0000	0.0000	0.3020	789.0	18.9	22-09-2009 09:33:07	0.0000	0.0000	1.1950
Little Squaw Creek	fg092209_65	1208123.67	2442778.53	09/22/09	0.0000	0.0000	0.2854	790.3	19.0	22-09-2009 09:35:45	0.0000	0.0000	1.1280
Little Squaw Creek	fg092209_68	1208095.66	2442182.60	09/22/09	0.0000	0.0008	0.0200	790.9	19.2	22-09-2009 09:43:03	0.0000	0.0030	0.0790
Little Squaw Creek	fg092209_71	1207727.08	2441981.21	09/22/09	0.0000	0.0000	0.1014	790.3	19.8	22-09-2009 09:50:50	0.0000	-0.0020	0.4020
Little Squaw Creek	fg092209_74	1207711.82	2442166.44	09/22/09	0.0000	0.0008	0.0000	789.1	20.6	22-09-2009 09:58:43	0.0000	0.0030	-1.8530
Little Squaw Creek	fg092209_75	1207735.96	2442362.17	09/22/09	0.0000	0.0000	0.0000	798.0	20.8	22-09-2009 10:01:19	0.0000	-0.0010	-3.8210
Little Squaw Creek	fg092209_76	1207921.12	2442220.99	09/22/09	0.0000	0.0005	0.1360	788.7	20.9	22-09-2009 10:04:13	0.0000	0.0020	0.5420
Little Squaw Creek	fg092209_78	1207942.03	2442579.57	09/22/09	0.0000	0.0005	0.0000	790.1	21.1	22-09-2009 10:09:04	0.0000	0.0020	-0.2220
Little Squaw Creek	fg092209_77	1207917.99	2442378.15	09/22/09	0.0003	0.0000	0.0284	790.2	21.0	22-09-2009 10:06:03	0.0010	0.0000	0.1130

APPENDIX B (continued)
METHANE FLUX MEASUREMENTS
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

Location	Site Point Identification	Northing	Easting	Date	CH4 Flux	H2S Flux	CO2 Flux	Pressure	Temperature (Degrees Celsius)	Date & Time of Measurement	CH4 Slope	H2S Slope	CO2 Slope
Little Squaw Creek	fg092209_72	1207539.92	2441957.01	09/22/09	0.0003	0.0008	0.1528	789.1	20.1	22-09-2009 09:53:24	0.0010	0.0030	0.6070
Little Squaw Creek	fg092209_69	1208126.24	2441989.23	09/22/09	0.0003	0.0018	0.2145	791.2	19.4	22-09-2009 09:45:40	0.0010	0.0070	0.8480
Little Squaw Creek	fg092209_66	1208121.20	2442600.86	09/22/09	0.0003	0.0000	0.1527	791.3	19.1	22-09-2009 09:38:04	0.0010	-0.0010	0.6030
Little Squaw Creek	fg092209_67	1208097.42	2442399.83	09/22/09	0.0003	0.0000	0.1294	791.6	19.2	22-09-2009 09:40:30	0.0010	0.0000	0.5110
Little Squaw Creek	fg092209_57	1208340.12	2442354.75	09/22/09	0.0003	0.0005	0.2615	790.7	17.3	22-09-2009 09:14:07	0.0010	0.0020	1.0270
Little Squaw Creek	fg092209_52	1207744.03	2441787.69	09/22/09	0.0003	0.0003	0.0793	790.1	15.9	22-09-2009 09:00:05	0.0010	0.0010	0.3100
Little Squaw Creek	fg092209_38	1208512.53	2443610.67	09/22/09	0.0003	0.0000	0.0959	790.6	13.0	22-09-2009 08:20:41	0.0010	0.0000	0.3710
Little Squaw Creek	fg092209_46	1208510.99	2442005.71	09/22/09	0.0005	0.0003	0.0000	788.9	14.1	22-09-2009 08:42:40	0.0020	0.0010	-0.8110
Little Squaw Creek	fg092209_45	1208508.66	2442147.45	09/22/09	0.0005	0.0005	0.1649	790.9	13.9	22-09-2009 08:39:42	0.0020	0.0020	0.6400
Little Squaw Creek	fg092209_73	1207523.13	2442173.15	09/22/09	0.0008	0.0000	0.0357	789.4	20.4	22-09-2009 09:56:36	0.0030	0.0000	0.1420
Little Squaw Creek	fg092209_35	1208541.90	2444121.19	09/22/09	0.0008	0.0005	0.5991	794.8	12.1	22-09-2009 08:06:54	0.0030	0.0020	2.2990
Little Squaw Creek	fg092209_62	1208330.33	2443362.96	09/22/09	0.0010	0.0000	0.0000	791.0	18.6	22-09-2009 09:26:42	0.0040	0.0000	-5.0330
Little Squaw Creek	fg092209_61	1208323.71	2443185.50	09/22/09	0.0015	0.0003	0.1225	799.3	18.5	22-09-2009 09:24:54	0.0060	0.0010	0.4780
Little Squaw Creek	fg092209_31	1208735.36	2442781.33	09/21/09	0.0019	0.0061	0.1389	783.6	37.0	21-09-2009 13:17:26	0.0080	0.0260	0.5880
Little Squaw Creek	fg092209_50	1207925.72	2441581.86	09/22/09	0.0146	0.0003	0.0496	788.6	15.4	22-09-2009 08:55:24	0.0570	0.0010	0.1940
Little Squaw Creek	fg092209_70	1207928.68	2441966.59	09/22/09	0.0268	0.0008	0.0890	790.9	19.5	22-09-2009 09:48:27	0.1060	0.0030	0.3520
Peterson Gulch	pg092409_03	1204932.09	2455184.08	09/24/09	0.0000	0.0000	0.2392	798.3	22.1	24-09-2009 09:29:28	0.0000	0.0000	0.9460
Peterson Gulch	pg092409_04	1204938.07	2454988.87	09/24/09	0.0000	0.0000	0.1111	798.3	22.6	24-09-2009 09:31:32	-1.7100	0.0000	0.4400
Peterson Gulch	pg092409_05	1205116.71	2454982.05	09/24/09	0.0000	0.0018	0.0000	798.1	23.0	24-09-2009 09:33:33	0.0000	0.0070	-0.1100
Peterson Gulch	pg092409_06	1205329.02	2454983.96	09/24/09	0.0000	0.0003	0.0956	795.5	23.4	24-09-2009 09:35:33	-0.0080	0.0010	0.3810
Peterson Gulch	pg092409_07	1205532.66	2454979.04	09/24/09	0.0000	0.0008	0.1163	797.4	23.8	24-09-2009 09:37:50	0.0000	0.0030	0.4630
Peterson Gulch	pg092409_09	1205926.25	2455188.95	09/24/09	0.0000	0.0000	0.0050	793.6	24.3	24-09-2009 09:42:55	0.0000	0.0000	0.0200
Peterson Gulch	pg092409_10	1205726.62	2455195.13	09/24/09	0.0000	0.0000	0.0687	795.5	24.5	24-09-2009 09:45:07	0.0000	-0.0020	0.2750
Peterson Gulch	pg092409_102	1203530.47	2456569.26	09/25/09	0.0000	0.0020	0.0458	790.2	26.9	25-09-2009 10:38:28	0.0000	0.0080	0.1860
Peterson Gulch	pg092409_103	1203333.34	2456558.13	09/25/09	0.0000	0.0020	0.0900	789.5	27.1	25-09-2009 10:41:03	0.0000	0.0080	0.3660
Peterson Gulch	pg092409_104	1203327.62	2456747.13	09/25/09	0.0000	0.0005	0.0647	789.4	27.2	25-09-2009 10:43:17	0.0000	0.0020	0.2630
Peterson Gulch	pg092409_106	1203725.62	2456767.64	09/25/09	0.0000	0.0002	0.0000	793.5	27.3	25-09-2009 10:47:57	0.0000	0.0010	-0.3390
Peterson Gulch	pg092409_107	1203916.62	2456758.62	09/25/09	0.0000	0.0012	0.1293	789.8	27.4	25-09-2009 10:50:00	0.0000	0.0050	0.5260
Peterson Gulch	pg092409_11	1205529.58	2455177.73	09/24/09	0.0000	0.0000	0.1159	788.3	24.6	24-09-2009 09:47:31	-0.3770	0.0000	0.4680
Peterson Gulch	pg092409_111	1204529.61	2456777.46	09/25/09	0.0000	0.0015	0.6706	789.4	28.2	25-09-2009 10:59:14	0.0000	0.0060	2.7370
Peterson Gulch	pg092409_113	1204939.41	2456562.21	09/25/09	0.0000	0.0017	0.0192	789.0	30.7	25-09-2009 11:19:02	0.0000	0.0070	0.0790
Peterson Gulch	pg092409_115	1205297.58	2456575.74	09/25/09	0.0000	0.0007	0.0220	787.8	31.0	25-09-2009 11:24:56	0.0000	0.0030	0.0910
Peterson Gulch	pg092409_116	1205557.22	2456587.68	09/25/09	0.0000	0.0007	0.1626	787.3	31.1	25-09-2009 11:27:43	0.0000	0.0030	0.6720
Peterson Gulch	pg092409_118	1205122.75	2456778.84	09/25/09	0.0000	0.0010	0.0000	787.1	31.3	25-09-2009 11:33:11	0.0000	0.0040	-0.0640
Peterson Gulch	pg092409_119	1204953.14	2456764.15	09/25/09	0.0000	0.0010	0.1197	787.3	31.3	25-09-2009 11:35:26	0.0000	0.0040	0.4950
Peterson Gulch	pg092409_12	1205320.59	2455165.06	09/24/09	0.0000	0.0007	0.0394	788.7	24.7	24-09-2009 09:49:47	-0.0010	0.0030	0.1590
Peterson Gulch	pg092409_120	1204739.13	2456769.39	09/25/09	0.0000	0.0005	0.1053	795.8	31.4	25-09-2009 11:37:30	0.0000	0.0020	0.4310
Peterson Gulch	pg092409_121	1204529.18	2456955.26	09/25/09	0.0000	0.0010	0.1310	793.0	31.4	25-09-2009 11:39:58	0.0000	0.0040	0.5380
Peterson Gulch	pg092409_123	1204939.46	2456967.62	09/25/09	0.0000	0.0005	0.1010	788.4	31.4	25-09-2009 11:44:41	0.0000	0.0020	0.4170
Peterson Gulch	pg092409_124	1205132.64	2456961.44	09/25/09	0.0000	0.0007	0.0535	787.9	31.4	25-09-2009 11:46:50	0.0000	0.0030	0.2210
Peterson Gulch	pg092409_126	1204965.87	2457161.68	09/25/09	0.0000	0.0015	0.1008	787.3	31.5	25-09-2009 11:51:56	0.0000	0.0060	0.4170
Peterson Gulch	pg092409_128	1204524.89	2457185.02	09/25/09	0.0000	0.0002	0.0000	787.9	31.6	25-09-2009 11:56:35	0.0000	0.0010	-0.3000
Peterson Gulch	pg092409_129	1204342.11	2457179.12	09/25/09	0.0000	0.0046	0.1452	788.6	31.7	25-09-2009 11:58:38	0.0000	0.0190	0.6000
Peterson Gulch	pg092409_13	1205124.89	2455160.96	09/24/09	0.0000	0.0000	0.0305	789.0	24.7	24-09-2009 09:51:46	0.0000	0.0000	0.1230
Peterson Gulch	pg092409_130	1203729.11	2456979.46	09/25/09	0.0000	0.0000	1.5834	788.2	23.8	25-09-2009 14:41:09	0.0000	-0.0020	6.3780
Peterson Gulch	pg092409_131	1203526.52	2456977.44	09/25/09	0.0000	0.0002	0.0000	788.2	24.9	25-09-2009 14:44:02	0.0000	0.0010	-0.0110
Peterson Gulch	pg092409_132	1203314.15	2456975.54	09/25/09	0.0000	0.0000	0.0300	789.0	26.5	25-09-2009 14:50:14	0.0000	0.0000	0.1220
Peterson Gulch	pg092409_135	1203333.17	2457170.79	09/25/09	0.0000	0.0000	0.0000	786.6	29.7	25-09-2009 15:05:29	0.0000	-0.0010	-0.0110
Peterson Gulch	pg092409_136	1203514.78	2457176.55	09/25/09	0.0000	0.0019	0.0801	787.0	30.2	25-09-2009 15:07:34	0.0000	0.0080	0.3300
Peterson Gulch	pg092409_137	1203730.46	2457179.05	09/25/09	0.0000	0.0007	0.0416	795.4	30.5	25-09-2009 15:09:40	0.0000	0.0030	0.1700

APPENDIX B (continued)
METHANE FLUX MEASUREMENTS
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

Location	Site Point Identification	Northing	Easting	Date	CH4 Flux	H2S Flux	CO2 Flux	Pressure	Temperature (Degrees Celsius)	Date & Time of Measurement	CH4 Slope	H2S Slope	CO2 Slope
Peterson Gulch	pg092409_138	1203924.41	2457176.11	09/25/09	0.0000	0.0012	0.1186	787.7	30.7	25-09-2009 15:11:29	0.0000	0.0050	0.4890
Peterson Gulch	pg092409_139	1204127.84	2457176.26	09/25/09	0.0000	0.0012	0.0770	787.5	31.0	25-09-2009 15:13:53	0.0000	0.0050	0.3180
Peterson Gulch	pg092409_14	1205114.12	2455397.49	09/24/09	0.0000	0.0000	0.1295	790.1	24.8	24-09-2009 09:55:18	-1.0320	-0.0010	0.5220
Peterson Gulch	pg092409_141	1204513.22	2457374.76	09/25/09	0.0000	0.0031	0.0797	786.5	32.5	25-09-2009 15:21:24	0.0000	0.0130	0.3310
Peterson Gulch	pg092409_142	1204744.78	2457380.94	09/25/09	0.0000	0.0002	0.0118	787.5	33.1	25-09-2009 15:25:36	0.0000	0.0010	0.0490
Peterson Gulch	pg092409_143	1204927.00	2457370.75	09/25/09	0.0000	0.0010	0.0108	785.5	33.6	25-09-2009 15:27:55	0.0000	0.0040	0.0450
Peterson Gulch	pg092409_144	1204722.11	2457568.89	09/25/09	0.0000	0.0014	0.4362	785.6	34.1	25-09-2009 15:31:15	0.0000	0.0060	1.8240
Peterson Gulch	pg092409_145	1204527.57	2457568.34	09/25/09	0.0000	0.0017	0.1839	786.2	34.4	25-09-2009 15:33:08	0.0000	0.0070	0.7690
Peterson Gulch	pg092409_146	1204325.95	2457579.07	09/25/09	0.0000	0.0007	0.0244	786.7	34.7	25-09-2009 15:35:49	0.0000	0.0030	0.1020
Peterson Gulch	pg092409_148	1203919.07	2457572.18	09/25/09	0.0000	0.0022	0.0690	788.2	35.4	25-09-2009 15:41:49	0.0000	0.0090	0.2890
Peterson Gulch	pg092409_149	1203720.68	2457575.32	09/25/09	0.0000	0.0012	0.0832	787.0	35.7	25-09-2009 15:43:54	0.0000	0.0050	0.3490
Peterson Gulch	pg092409_15	1205320.74	2455373.01	09/24/09	0.0000	0.0000	0.0037	789.5	24.8	24-09-2009 09:57:30	-0.0750	-0.0010	0.0150
Peterson Gulch	pg092409_150	1203514.83	2457581.48	09/25/09	0.0000	0.0036	0.1235	787.5	35.9	25-09-2009 15:46:32	0.0000	0.0150	0.5180
Peterson Gulch	pg092409_151	1203320.00	2457572.51	09/25/09	0.0000	0.0005	0.0000	788.1	36.1	25-09-2009 15:48:42	0.0000	0.0020	-0.1610
Peterson Gulch	pg092409_152	1203113.62	2457570.39	09/25/09	0.0000	0.0002	0.0014	787.1	36.3	25-09-2009 15:54:33	0.0000	0.0010	0.0060
Peterson Gulch	pg092409_153	1202921.84	2457561.58	09/25/09	0.0000	0.0007	0.0021	788.2	36.5	25-09-2009 15:57:04	0.0000	0.0030	0.0090
Peterson Gulch	pg092409_154	1202922.68	2457357.71	09/25/09	0.0000	0.0005	0.0508	785.6	36.6	25-09-2009 16:02:54	0.0000	0.0020	0.2140
Peterson Gulch	pg092409_155	1203123.90	2457385.05	09/25/09	0.0000	0.0012	0.0277	790.1	36.6	25-09-2009 16:05:17	0.0000	0.0050	0.1160
Peterson Gulch	pg092409_156	1203325.51	2457376.28	09/25/09	0.0000	0.0000	0.0190	786.6	36.6	25-09-2009 16:10:32	0.0000	0.0000	0.0800
Peterson Gulch	pg092409_157	1203524.80	2457375.21	09/25/09	0.0000	0.0000	0.0145	787.1	36.6	25-09-2009 16:12:31	0.0000	-0.0040	0.0610
Peterson Gulch	pg092409_158	1203735.26	2457376.41	09/25/09	0.0000	0.0005	0.0801	787.3	36.6	25-09-2009 16:14:37	0.0000	0.0020	0.3370
Peterson Gulch	pg092409_159	1203926.90	2457374.88	09/25/09	0.0000	0.0012	0.0701	787.4	36.6	25-09-2009 16:16:29	0.0000	0.0050	0.2950
Peterson Gulch	pg092409_16	1205520.32	2455386.40	09/24/09	0.0000	0.0002	0.0916	788.6	24.8	24-09-2009 09:59:46	0.0000	0.0010	0.3700
Peterson Gulch	pg092409_160	1204117.39	2457374.93	09/25/09	0.0000	0.0014	0.1108	787.3	36.6	25-09-2009 16:18:34	0.0000	0.0060	0.4660
Peterson Gulch	pg092409_161	1203926.46	2457784.11	09/28/09	0.0000	0.0000	0.0445	790.1	22.3	28-09-2009 14:25:56	0.0000	0.0000	0.1780
Peterson Gulch	pg092409_162	1203726.69	2457775.45	09/28/09	0.0000	0.0012	0.0389	790.1	23.5	28-09-2009 14:29:06	0.0000	0.0050	0.1560
Peterson Gulch	pg092409_163	1203528.28	2457780.51	09/28/09	0.0000	0.0012	0.0949	794.3	24.4	28-09-2009 14:31:09	0.0000	0.0050	0.3800
Peterson Gulch	pg092409_164	1203327.17	2457774.66	09/28/09	0.0000	0.0017	0.1135	790.2	25.2	28-09-2009 14:33:29	0.0000	0.0070	0.4580
Peterson Gulch	pg092409_165	1203146.79	2457772.26	09/28/09	0.0000	0.0010	0.1106	790.1	26.2	28-09-2009 14:36:22	0.0000	0.0040	0.4480
Peterson Gulch	pg092409_166	1202920.60	2457756.98	09/28/09	0.0000	0.0000	0.0047	793.0	27.6	28-09-2009 14:42:11	0.0000	-0.0010	0.0190
Peterson Gulch	pg092409_167	1202955.86	2457972.20	09/28/09	0.0000	0.0002	0.0102	787.9	28.9	28-09-2009 14:46:10	-0.1240	0.0010	0.0420
Peterson Gulch	pg092409_168	1203141.15	2457982.79	09/28/09	0.0000	0.0015	0.0020	788.7	29.4	28-09-2009 14:48:42	0.0000	0.0060	0.0080
Peterson Gulch	pg092409_169	1203328.71	2457972.39	09/28/09	0.0000	0.0015	0.0488	794.1	29.9	28-09-2009 14:51:26	0.0000	0.0060	0.1990
Peterson Gulch	pg092409_17	1205711.78	2455381.96	09/24/09	0.0000	0.0012	0.0250	788.5	24.8	24-09-2009 10:01:40	0.0000	0.0050	0.1010
Peterson Gulch	pg092409_170	1203519.53	2457974.52	09/28/09	0.0000	0.0015	0.1810	789.4	30.4	28-09-2009 14:53:53	0.0000	0.0060	0.7440
Peterson Gulch	pg092409_171	1203732.00	2457975.54	09/28/09	0.0000	0.0007	0.0012	796.6	30.9	28-09-2009 14:56:36	0.0000	0.0030	0.0050
Peterson Gulch	pg092409_172	1203937.06	2457977.25	09/28/09	0.0000	0.0005	0.0103	795.1	31.4	28-09-2009 14:58:40	0.0000	0.0020	0.0420
Peterson Gulch	pg092409_173	1204115.73	2457771.66	09/28/09	0.0000	0.0010	0.0546	789.1	35.1	28-09-2009 15:22:45	0.0000	0.0040	0.2280
Peterson Gulch	pg092409_174	1204322.39	2457772.21	09/28/09	0.0000	0.0007	0.2140	789.8	35.4	28-09-2009 15:25:04	0.0000	0.0030	0.8940
Peterson Gulch	pg092409_175	1204524.41	2457763.88	09/28/09	0.0000	0.0010	0.1318	788.3	35.7	28-09-2009 15:28:02	0.0000	0.0040	0.5520
Peterson Gulch	pg092409_176	1204323.31	2457965.17	09/28/09	0.0000	0.0002	0.0719	787.7	36.2	28-09-2009 15:31:32	0.0000	0.0010	0.3020
Peterson Gulch	pg092409_177	1204125.28	2457972.43	09/28/09	0.0000	0.0002	0.0129	788.5	36.5	28-09-2009 15:33:54	0.0000	0.0010	0.0540
Peterson Gulch	pg092409_178	1203919.02	2458167.44	09/28/09	0.0000	0.0007	0.0102	787.8	36.9	28-09-2009 15:36:57	-0.0180	0.0030	0.0430
Peterson Gulch	pg092409_179	1203725.83	2458169.97	09/28/09	0.0000	0.0002	0.0368	792.8	37.2	28-09-2009 15:39:25	-0.0660	0.0010	0.1540
Peterson Gulch	pg092409_18	1205910.83	2455382.43	09/24/09	0.0000	0.0000	0.0391	787.9	24.9	24-09-2009 10:03:56	0.0000	-0.0010	0.1580
Peterson Gulch	pg092409_181	1203323.18	2458166.37	09/28/09	0.0000	0.0026	0.0589	789.3	37.7	28-09-2009 15:44:07	0.0000	0.0110	0.2480
Peterson Gulch	pg092409_182	1203122.42	2458172.28	09/28/09	0.0000	0.0024	0.1002	789.0	37.8	28-09-2009 15:46:19	0.0000	0.0100	0.4220
Peterson Gulch	pg092409_183	1202919.87	2458167.89	09/28/09	0.0000	0.0012	0.0000	788.3	38.0	28-09-2009 15:49:09	0.0000	0.0050	-2.2680
Peterson Gulch	pg092409_184	1202715.48	2458177.17	09/28/09	0.0000	0.0012	0.1596	787.8	38.1	28-09-2009 15:51:38	0.0000	0.0050	0.6740
Peterson Gulch	pg092409_185	1202721.19	2458374.88	09/28/09	0.0000	0.0017	0.0908	787.5	38.2	28-09-2009 15:54:45	0.0000	0.0070	0.3840

APPENDIX B (continued)
METHANE FLUX MEASUREMENTS
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

Location	Site Point Identification	Northing	Easting	Date	CH4 Flux	H2S Flux	CO2 Flux	Pressure	Temperature (Degrees Celsius)	Date & Time of Measurement	CH4 Slope	H2S Slope	CO2 Slope
Peterson Gulch	pg092409_186	1202931.73	2458376.62	09/28/09	0.0000	0.0009	0.0641	787.9	38.3	28-09-2009 15:57:26	0.0000	0.0040	0.2710
Peterson Gulch	pg092409_187	1203124.79	2458372.86	09/28/09	0.0000	0.0002	0.0784	788.6	38.4	28-09-2009 15:59:22	0.0000	0.0010	0.3310
Peterson Gulch	pg092409_188	1203316.93	2458366.38	09/28/09	0.0000	0.0026	0.1222	789.0	38.5	28-09-2009 16:01:25	0.0000	0.0110	0.5160
Peterson Gulch	pg092409_189	1203518.72	2458383.58	09/28/09	0.0000	0.0009	0.0410	790.7	38.6	28-09-2009 16:03:40	0.0000	0.0040	0.1730
Peterson Gulch	pg092409_19	1206118.58	2455363.64	09/24/09	0.0000	0.0002	0.0558	786.7	24.9	24-09-2009 10:06:17	0.0000	0.0010	0.2260
Peterson Gulch	pg092409_190	1203718.64	2458377.77	09/28/09	0.0000	0.0012	0.0869	789.8	38.7	28-09-2009 16:06:00	0.0000	0.0050	0.3670
Peterson Gulch	pg092409_191	1203920.97	2458383.80	09/28/09	0.0000	0.0000	0.0199	790.4	38.8	28-09-2009 16:08:19	0.0000	-0.0010	0.0840
Peterson Gulch	pg092409_192	1204112.99	2458377.47	09/28/09	0.0000	0.0002	0.0260	788.6	39.0	28-09-2009 16:10:37	0.0000	0.0010	0.1100
Peterson Gulch	pg092409_193	1204132.52	2458158.76	09/28/09	0.0000	0.0000	0.0995	787.4	39.2	28-09-2009 16:12:57	0.0000	0.0000	0.4220
Peterson Gulch	pg092409_194	1203727.51	2458575.74	09/29/09	0.0000	0.0000	1.2902	792.1	21.2	29-09-2009 08:53:37	-0.0020	-0.0050	5.1260
Peterson Gulch	pg092409_195	1203905.89	2458567.75	09/29/09	0.0000	0.0000	0.2336	792.1	21.8	29-09-2009 08:55:47	0.0000	-0.0020	0.9300
Peterson Gulch	pg092409_196	1204116.04	2458574.22	09/29/09	0.0000	0.0000	0.0574	791.4	22.3	29-09-2009 08:58:02	0.0000	0.0000	0.2290
Peterson Gulch	pg092409_199	1203721.91	2458771.23	09/29/09	0.0000	0.0000	0.0299	790.6	23.7	29-09-2009 09:04:51	0.0000	0.0000	0.1200
Peterson Gulch	pg092409_20	1206112.78	2455566.30	09/24/09	0.0000	0.0000	0.4651	786.2	25.0	24-09-2009 10:09:22	0.0000	0.0000	1.8860
Peterson Gulch	pg092409_200	1203530.39	2458572.83	09/29/09	0.0000	0.0007	0.0000	792.4	24.1	29-09-2009 09:07:21	0.0000	0.0030	-0.0730
Peterson Gulch	pg092409_201	1203326.02	2458576.71	09/29/09	0.0000	0.0005	0.0115	792.3	24.4	29-09-2009 09:10:10	-0.0010	0.0020	0.0460
Peterson Gulch	pg092409_202	1203130.56	2458577.24	09/29/09	0.0000	0.0005	0.0357	799.9	24.6	29-09-2009 09:11:57	0.0000	0.0020	0.1420
Peterson Gulch	pg092409_203	1202925.23	2458581.30	09/29/09	0.0000	0.0005	0.0540	792.5	24.9	29-09-2009 09:13:53	0.0000	0.0020	0.2170
Peterson Gulch	pg092409_205	1202504.05	2458581.07	09/29/09	0.0000	0.0000	0.0307	791.4	25.4	29-09-2009 09:18:03	0.0000	0.0000	0.1240
Peterson Gulch	pg092409_206	1202312.81	2458769.99	09/29/09	0.0000	0.0002	0.0714	792.5	25.7	29-09-2009 09:20:25	0.0000	0.0010	0.2880
Peterson Gulch	pg092409_208	1202730.83	2458774.48	09/29/09	0.0000	0.0002	0.1208	792.0	26.1	29-09-2009 09:24:57	-0.0210	0.0010	0.4880
Peterson Gulch	pg092409_209	1202924.30	2458774.36	09/29/09	0.0000	0.0007	0.0069	791.7	26.3	29-09-2009 09:27:10	0.0000	0.0030	0.0280
Peterson Gulch	pg092409_210	1203121.06	2458774.46	09/29/09	0.0000	0.0007	0.0723	792.8	26.4	29-09-2009 09:28:56	0.0000	0.0030	0.2920
Peterson Gulch	pg092409_212	1203512.72	2458769.09	09/29/09	0.0000	0.0005	0.0646	792.9	26.6	29-09-2009 09:32:57	0.0000	0.0020	0.2610
Peterson Gulch	pg092409_213	1203731.77	2458969.75	09/29/09	0.0000	0.0015	0.0078	792.3	32.7	29-09-2009 10:30:25	0.0000	0.0060	0.0320
Peterson Gulch	pg092409_219	1203134.40	2458972.04	09/29/09	0.0000	0.0034	0.1719	791.7	33.9	29-09-2009 10:44:36	0.0000	0.0140	0.7130
Peterson Gulch	pg092409_220	1202934.22	2458976.64	09/29/09	0.0000	0.0007	0.0627	792.4	34.1	29-09-2009 10:46:30	0.0000	0.0030	0.2600
Peterson Gulch	pg092409_221	1202732.27	2458974.66	09/29/09	0.0000	0.0012	0.0747	792.0	34.2	29-09-2009 10:48:22	-0.0100	0.0050	0.3100
Peterson Gulch	pg092409_222	1202541.09	2458979.61	09/29/09	0.0000	0.0005	0.0847	791.6	34.4	29-09-2009 10:50:23	-0.0070	0.0020	0.3520
Peterson Gulch	pg092409_225	1201935.98	2459175.35	09/29/09	0.0000	0.0012	0.2421	789.8	34.7	29-09-2009 10:57:34	-1.7350	0.0050	1.0090
Peterson Gulch	pg092409_226	1202140.74	2459185.25	09/29/09	0.0000	0.0007	0.0278	790.2	34.8	29-09-2009 11:00:05	-0.2590	0.0030	0.1160
Peterson Gulch	pg092409_227	1202341.20	2459181.64	09/29/09	0.0000	0.0002	0.0509	790.4	34.9	29-09-2009 11:02:32	-0.0130	0.0010	0.2120
Peterson Gulch	pg092409_228	1202538.13	2459160.05	09/29/09	0.0000	0.0002	0.0992	791.3	34.9	29-09-2009 11:04:32	-0.0470	0.0010	0.4130
Peterson Gulch	pg092409_229	1202730.93	2459166.36	09/29/09	0.0000	0.0010	0.0459	792.3	34.9	29-09-2009 11:06:17	-0.1250	0.0040	0.1910
Peterson Gulch	pg092409_23	1205531.43	2455566.17	09/24/09	0.0000	0.0007	0.0642	787.7	25.3	24-09-2009 10:16:49	0.0000	0.0030	0.2600
Peterson Gulch	pg092409_233	1203541.34	2459156.45	09/29/09	0.0000	0.0005	1.5699	796.0	35.3	29-09-2009 11:14:20	0.0000	0.0020	6.5040
Peterson Gulch	pg092409_234	1203532.83	2459361.22	09/29/09	0.0000	0.0007	0.0977	790.2	35.5	29-09-2009 11:16:36	0.0000	0.0030	0.4080
Peterson Gulch	pg092409_237	1203332.37	2459367.05	09/29/09	0.0000	0.0012	0.0979	790.1	36.2	29-09-2009 11:24:09	-0.0870	0.0050	0.4100
Peterson Gulch	pg092409_238	1203132.54	2459366.84	09/29/09	0.0000	0.0005	0.0579	791.3	36.3	29-09-2009 11:25:59	0.0000	0.0020	0.2420
Peterson Gulch	pg092409_239	1202929.30	2459368.66	09/29/09	0.0000	0.0019	0.0796	791.6	36.5	29-09-2009 11:27:48	0.0000	0.0080	0.3330
Peterson Gulch	pg092409_24	1205309.27	2455577.77	09/24/09	0.0000	0.0010	0.0665	789.3	25.3	24-09-2009 10:18:51	-2.1750	0.0040	0.2690
Peterson Gulch	pg092409_240	1202734.50	2459365.14	09/29/09	0.0000	0.0017	0.2230	791.6	36.6	29-09-2009 11:29:47	0.0000	0.0070	0.9330
Peterson Gulch	pg092409_241	1202537.84	2459370.45	09/29/09	0.0000	0.0017	0.0571	792.1	36.7	29-09-2009 11:31:55	0.0000	0.0070	0.2390
Peterson Gulch	pg092409_26	1204740.26	2455576.11	09/24/09	0.0000	0.0030	0.0364	789.4	26.7	24-09-2009 11:10:37	0.0000	0.0120	0.1480
Peterson Gulch	pg092409_29	1204139.61	2455572.59	09/24/09	0.0000	0.0032	0.0000	789.5	27.1	24-09-2009 11:17:10	0.0000	0.0130	-0.0060
Peterson Gulch	pg092409_32	1204338.08	2455385.19	09/24/09	0.0000	0.0037	0.0346	789.3	27.3	24-09-2009 11:24:38	0.0000	0.0150	0.1410
Peterson Gulch	pg092409_36	1204506.67	2455164.29	09/24/09	0.0000	0.0005	0.0368	788.9	27.9	24-09-2009 11:32:30	0.0000	0.0020	0.1500
Peterson Gulch	pg092409_38	1204529.83	2454979.04	09/24/09	0.0000	0.0010	0.0000	788.3	28.3	24-09-2009 11:38:23	0.0000	0.0040	-0.0710
Peterson Gulch	pg092409_39	1204722.35	2454987.29	09/24/09	0.0000	0.0012	0.0920	789.4	28.5	24-09-2009 11:41:28	-0.0190	0.0050	0.3760
Peterson Gulch	pg092409_41	1204730.13	2455774.46	09/24/09	0.0000	0.0000	0.0115	788.6	28.9	24-09-2009 11:48:47	-0.4970	-0.0030	0.0470

APPENDIX B (continued)
METHANE FLUX MEASUREMENTS
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

Location	Site Point Identification	Northing	Easting	Date	CH4 Flux	H2S Flux	CO2 Flux	Pressure	Temperature (Degrees Celsius)	Date & Time of Measurement	CH4 Slope	H2S Slope	CO2 Slope
Peterson Gulch	pg092409_42	1204554.02	2455758.07	09/24/09	0.0000	0.0012	0.1724	796.8	29.1	24-09-2009 11:50:37	-0.4070	0.0050	0.6990
Peterson Gulch	pg092409_43	1204359.64	2455776.14	09/24/09	0.0000	0.0007	0.1070	789.5	29.1	24-09-2009 11:52:27	-0.3260	0.0030	0.4380
Peterson Gulch	pg092409_45	1203948.42	2455779.61	09/24/09	0.0000	0.0007	0.0757	789.4	29.3	24-09-2009 11:58:37	-0.0210	0.0030	0.3100
Peterson Gulch	pg092409_46	1203711.87	2455966.99	09/24/09	0.0000	0.0024	0.1263	788.6	29.4	24-09-2009 12:01:43	-0.0030	0.0100	0.5180
Peterson Gulch	pg092409_47	1203984.07	2455976.71	09/24/09	0.0000	0.0007	0.1151	788.6	29.4	24-09-2009 12:04:35	-0.0380	0.0030	0.4720
Peterson Gulch	pg092409_51	1205134.71	2455785.36	09/24/09	0.0000	0.0000	0.0184	786.5	23.2	24-09-2009 14:34:39	0.0000	-0.0010	0.0740
Peterson Gulch	pg092409_52	1205328.08	2455754.22	09/24/09	0.0000	0.0002	0.0752	786.5	24.3	24-09-2009 14:37:41	0.0000	0.0010	0.3040
Peterson Gulch	pg092409_53	1205523.91	2455799.36	09/24/09	0.0000	0.0000	0.0165	786.5	25.0	24-09-2009 14:41:26	0.0000	-0.0010	0.0670
Peterson Gulch	pg092409_55	1205922.80	2455789.31	09/24/09	0.0000	0.0012	0.0879	784.7	27.3	24-09-2009 14:50:47	0.0000	0.0050	0.3600
Peterson Gulch	pg092409_56	1206126.81	2455775.32	09/24/09	0.0000	0.0005	0.0359	791.0	28.1	24-09-2009 14:56:22	0.0000	0.0020	0.1460
Peterson Gulch	pg092409_58	1206328.45	2455978.16	09/24/09	0.0000	0.0005	0.0211	782.3	29.0	24-09-2009 15:05:15	0.0000	0.0020	0.0870
Peterson Gulch	pg092409_59	1206113.28	2455980.69	09/24/09	0.0000	0.0005	0.0087	781.2	29.4	24-09-2009 15:09:39	0.0000	0.0020	0.0360
Peterson Gulch	pg092409_62	1205530.38	2455976.89	09/24/09	0.0000	0.0000	0.0286	793.6	30.1	24-09-2009 15:27:05	0.0000	0.0000	0.1170
Peterson Gulch	pg092409_63	1205320.23	2455966.71	09/24/09	0.0000	0.0002	0.0000	794.9	30.2	24-09-2009 15:29:30	0.0000	0.0010	-0.0950
Peterson Gulch	pg092409_64	1205139.95	2455974.14	09/24/09	0.0000	0.0002	0.0221	798.3	30.3	24-09-2009 15:33:30	0.0000	0.0010	0.0900
Peterson Gulch	pg092409_65	1204917.97	2455971.16	09/24/09	0.0000	0.0012	0.0979	786.5	30.3	24-09-2009 15:35:42	0.0000	0.0050	0.4040
Peterson Gulch	pg092409_66	1204718.52	2455981.24	09/24/09	0.0000	0.0000	0.5155	786.7	30.3	24-09-2009 15:38:13	0.0000	-0.0010	2.1260
Peterson Gulch	pg092409_67	1204514.61	2456179.29	09/24/09	0.0000	0.0000	0.0000	789.7	30.7	24-09-2009 15:58:58	0.0000	0.0000	0.0000
Peterson Gulch	pg092409_68	1204727.63	2456168.15	09/24/09	0.0000	0.0005	0.0936	789.7	30.8	24-09-2009 16:01:28	0.0000	0.0020	0.3850
Peterson Gulch	pg092409_70	1205133.79	2456161.06	09/24/09	0.0000	0.0000	0.0051	787.1	31.0	24-09-2009 16:08:26	0.0000	-0.0010	0.0210
Peterson Gulch	pg092409_71	1205324.31	2456167.38	09/24/09	0.0000	0.0005	0.0796	863.1	31.0	24-09-2009 16:11:23	0.0000	0.0020	0.3000
Peterson Gulch	pg092409_72	1205522.80	2456169.78	09/24/09	0.0000	0.0005	0.0433	849.0	31.1	24-09-2009 16:14:31	0.0000	0.0020	0.1660
Peterson Gulch	pg092409_73	1205721.37	2456178.62	09/24/09	0.0000	0.0005	0.0000	787.0	31.2	24-09-2009 16:20:22	0.0000	0.0020	-0.0170
Peterson Gulch	pg092409_74	1205922.68	2456167.03	09/24/09	0.0000	0.0002	0.0580	787.0	31.4	24-09-2009 16:25:57	0.0000	0.0010	0.2400
Peterson Gulch	pg092409_75	1206119.63	2456170.80	09/24/09	0.0000	0.0000	0.0186	795.8	31.5	24-09-2009 16:33:06	0.0000	0.0000	0.0760
Peterson Gulch	pg092409_76	1206123.45	2456367.22	09/24/09	0.0000	0.0010	0.0423	786.3	31.4	24-09-2009 16:37:07	0.0000	0.0040	0.1750
Peterson Gulch	pg092409_77	1205911.59	2456367.50	09/24/09	0.0000	0.0005	0.1079	785.8	31.4	24-09-2009 16:41:42	0.0000	0.0020	0.4470
Peterson Gulch	pg092409_78	1205738.64	2456380.14	09/24/09	0.0000	0.0000	0.0406	842.3	31.4	24-09-2009 16:44:19	0.0000	0.0000	0.1570
Peterson Gulch	pg092409_79	1205542.16	2456367.79	09/24/09	0.0000	0.0000	0.0428	839.7	31.4	24-09-2009 16:47:44	0.0000	0.0000	0.1660
Peterson Gulch	pg092409_80	1205334.09	2456370.01	09/24/09	0.0000	0.0000	0.1533	803.7	31.3	24-09-2009 16:50:09	0.0000	-0.0010	0.6210
Peterson Gulch	pg092409_81	1205121.18	2456376.11	09/24/09	0.0000	0.0000	0.0000	814.5	31.2	24-09-2009 16:53:20	0.0000	0.0000	-0.0400
Peterson Gulch	pg092409_82	1204932.37	2456372.38	09/24/09	0.0000	0.0005	0.0166	831.6	31.2	24-09-2009 16:55:45	0.0000	0.0020	0.0650
Peterson Gulch	pg092409_83	1204721.48	2456370.28	09/24/09	0.0000	0.0000	0.0174	798.2	31.1	24-09-2009 16:57:46	0.0000	-0.0010	0.0710
Peterson Gulch	pg092409_84	1204526.44	2456372.44	09/24/09	0.0000	0.0002	0.0056	788.9	31.0	24-09-2009 16:59:45	0.0000	0.0010	0.0230
Peterson Gulch	pg092409_85	1204324.17	2456376.49	09/24/09	0.0000	0.0005	0.1512	790.4	31.0	24-09-2009 17:01:55	0.0000	0.0020	0.6220
Peterson Gulch	pg092409_86	1204118.00	2456368.72	09/24/09	0.0000	0.0000	0.0753	835.2	30.9	24-09-2009 17:03:57	0.0000	0.0000	0.2930
Peterson Gulch	pg092409_87	1204128.09	2456180.86	09/24/09	0.0000	0.0000	0.0915	792.8	30.8	24-09-2009 17:05:39	0.0000	0.0000	0.3750
Peterson Gulch	pg092409_88	1204316.91	2456173.72	09/24/09	0.0000	0.0000	0.0696	792.9	30.7	24-09-2009 17:07:41	0.0000	-0.0010	0.2850
Peterson Gulch	pg092409_89	1204520.62	2456576.40	09/25/09	0.0000	0.0000	0.1377	789.5	21.2	25-09-2009 09:50:23	-1.8890	-0.0040	0.5490
Peterson Gulch	pg092409_90	1204331.01	2456572.20	09/25/09	0.0000	0.0005	0.0731	789.5	21.7	25-09-2009 09:52:40	-0.0090	0.0020	0.2920
Peterson Gulch	pg092409_91	1204123.97	2456579.13	09/25/09	0.0000	0.0010	0.2281	790.4	22.1	25-09-2009 09:54:50	0.0000	0.0040	0.9110
Peterson Gulch	pg092409_92	1203931.19	2456385.47	09/25/09	0.0000	0.0002	0.4449	790.2	23.9	25-09-2009 10:07:28	0.0000	0.0010	1.7880
Peterson Gulch	pg092409_93	1203932.56	2456189.79	09/25/09	0.0000	0.0002	0.0221	790.2	24.4	25-09-2009 10:10:25	0.0000	0.0010	0.0890
Peterson Gulch	pg092409_94	1203723.99	2456185.31	09/25/09	0.0000	0.0000	0.2155	797.5	24.8	25-09-2009 10:12:37	0.0000	0.0000	0.8610
Peterson Gulch	pg092409_95	1203524.98	2456182.95	09/25/09	0.0000	0.0005	0.1895	789.7	25.1	25-09-2009 10:14:59	0.0000	0.0020	0.7650
Peterson Gulch	pg092409_96	1203530.31	2456369.35	09/25/09	0.0000	0.0005	0.0490	789.3	25.4	25-09-2009 10:17:29	0.0000	0.0020	0.1980
Peterson Gulch	pg093009_03	1203330.07	2459583.58	09/30/09	0.0000	0.0032	0.1190	781.3	25.8	30-09-2009 14:42:52	-0.0690	0.0130	0.4870
Peterson Gulch	pg093009_04	1203529.00	2459784.18	09/30/09	0.0000	0.0010	0.0592	780.8	26.7	30-09-2009 14:45:48	0.0000	0.0040	0.2430
Peterson Gulch	pg093009_06	1203119.33	2459780.02	09/30/09	0.0000	0.0024	0.0076	787.4	28.1	30-09-2009 14:50:37	0.0000	0.0100	0.0310
Peterson Gulch	pg093009_07	1202916.21	2459784.17	09/30/09	0.0000	0.0036	0.0898	780.8	28.5	30-09-2009 14:52:29	0.0000	0.0150	0.3710

APPENDIX B (continued)
METHANE FLUX MEASUREMENTS
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

Location	Site Point Identification	Northing	Easting	Date	CH4 Flux	H2S Flux	CO2 Flux	Pressure	Temperature (Degrees Celsius)	Date & Time of Measurement	CH4 Slope	H2S Slope	CO2 Slope
Peterson Gulch	pg093009_09	1202516.92	2459778.38	09/30/09	0.0000	0.0031	0.1344	781.7	29.3	30-09-2009 14:55:58	0.0000	0.0130	0.5560
Peterson Gulch	pg093009_10	1202323.66	2459777.98	09/30/09	0.0000	0.0000	0.0249	789.8	29.7	30-09-2009 14:57:46	0.0000	0.0000	0.1020
Peterson Gulch	pg093009_11	1202125.58	2459778.69	09/30/09	0.0000	0.0017	0.0823	782.7	30.0	30-09-2009 14:59:32	0.0000	0.0070	0.3410
Peterson Gulch	pg093009_12	1201947.57	2459777.43	09/30/09	0.0000	0.0019	0.1957	782.0	30.4	30-09-2009 15:01:54	0.0000	0.0080	0.8120
Peterson Gulch	pg093009_14	1201518.30	2459762.59	09/30/09	0.0000	0.0012	0.0195	781.5	31.0	30-09-2009 15:06:44	-0.2720	0.0050	0.0810
Peterson Gulch	pg093009_15	1201320.90	2459983.42	09/30/09	0.0000	0.0031	0.0321	780.9	31.4	30-09-2009 15:11:14	0.0000	0.0130	0.1340
Peterson Gulch	pg093009_16	1201544.32	2459964.85	09/30/09	0.0000	0.0010	0.1169	780.9	31.7	30-09-2009 15:13:58	0.0000	0.0040	0.4880
Peterson Gulch	pg093009_17	1201703.21	2459978.68	09/30/09	0.0000	0.0031	0.0659	781.5	31.9	30-09-2009 15:16:20	0.0000	0.0130	0.2750
Peterson Gulch	pg093009_18	1201912.17	2459974.88	09/30/09	0.0000	0.0000	0.0367	782.4	32.1	30-09-2009 15:18:40	0.0000	0.0000	0.1530
Peterson Gulch	pg093009_19	1202122.34	2459975.54	09/30/09	0.0000	0.0000	0.0386	782.5	32.3	30-09-2009 15:20:40	0.0000	-0.0020	0.1610
Peterson Gulch	pg093009_20	1202323.18	2459968.09	09/30/09	0.0000	0.0014	0.0889	783.2	32.4	30-09-2009 15:22:22	0.0000	0.0060	0.3710
Peterson Gulch	pg093009_21	1202520.96	2459978.90	09/30/09	0.0000	0.0012	0.0915	782.5	32.5	30-09-2009 15:24:04	0.0000	0.0050	0.3820
Peterson Gulch	pg093009_23	1202919.82	2459978.46	09/30/09	0.0000	0.0010	0.0057	781.5	32.8	30-09-2009 15:28:28	0.0000	0.0040	0.0240
Peterson Gulch	pg093009_24	1203116.08	2459985.08	09/30/09	0.0000	0.0000	0.0406	780.6	32.9	30-09-2009 15:31:10	0.0000	0.0000	0.1700
Peterson Gulch	pg093009_25	1203310.68	2459976.16	09/30/09	0.0000	0.0005	0.0000	787.0	33.0	30-09-2009 15:33:40	0.0000	0.0020	-0.1430
Peterson Gulch	pg093009_26	1203115.56	2460138.14	09/30/09	0.0000	0.0014	0.0316	778.6	33.1	30-09-2009 15:37:08	0.0000	0.0060	0.1330
Peterson Gulch	pg093009_27	1202926.45	2460183.98	09/30/09	0.0000	0.0007	0.0610	786.3	33.2	30-09-2009 15:39:12	0.0000	0.0030	0.2540
Peterson Gulch	pg093009_28	1202721.73	2460170.34	09/30/09	0.0000	0.0000	0.0633	780.0	33.3	30-09-2009 15:41:08	0.0000	0.0000	0.2660
Peterson Gulch	pg093009_29	1202505.93	2460171.86	09/30/09	0.0000	0.0014	0.0388	780.9	33.3	30-09-2009 15:43:09	0.0000	0.0060	0.1630
Peterson Gulch	pg093009_30	1202723.06	2459581.00	09/30/09	0.0000	0.0014	0.0697	781.9	33.4	30-09-2009 15:48:46	-0.0830	0.0060	0.2920
Peterson Gulch	pg093009_31	1202520.43	2459571.19	09/30/09	0.0000	0.0000	0.0131	782.4	33.5	30-09-2009 15:50:35	-0.0040	0.0000	0.0550
Peterson Gulch	pg093009_33	1202126.36	2459573.79	09/30/09	0.0000	0.0000	0.0312	781.9	33.7	30-09-2009 15:54:21	-0.1610	-0.0010	0.1310
Peterson Gulch	pg093009_36	1201738.95	2459375.96	09/30/09	0.0000	0.0012	0.0069	780.3	33.8	30-09-2009 16:01:10	-0.0820	0.0050	0.0290
Peterson Gulch	pg093009_37	1201921.58	2459370.04	09/30/09	0.0000	0.0009	0.0786	779.4	33.8	30-09-2009 16:03:07	-0.0050	0.0040	0.3310
Peterson Gulch	pg093009_39	1202318.82	2460184.53	10/01/09	0.0000	0.0008	0.0254	793.7	18.6	01-10-2009 09:31:16	0.0000	0.0030	0.1000
Peterson Gulch	pg093009_40	1202121.80	2460179.45	10/01/09	0.0000	0.0010	0.0000	793.7	19.4	01-10-2009 09:33:30	0.0000	0.0040	-0.1240
Peterson Gulch	pg093009_41	1201922.03	2460178.07	10/01/09	0.0000	0.0003	1.2471	799.8	20.1	01-10-2009 09:35:23	0.0000	0.0010	4.8890
Peterson Gulch	pg093009_45	1201119.45	2460176.46	10/01/09	0.0000	0.0003	0.0775	792.6	22.3	01-10-2009 09:43:16	0.0000	0.0010	0.3090
Peterson Gulch	pg093009_46	1200742.76	2460372.57	10/01/09	0.0000	0.0008	0.0620	791.8	22.9	01-10-2009 09:47:22	-0.7260	0.0030	0.2480
Peterson Gulch	pg093009_48	1201126.03	2460372.56	10/01/09	0.0000	0.0002	0.1542	791.3	23.4	01-10-2009 09:51:35	-0.0090	0.0010	0.6180
Peterson Gulch	pg093009_49	1201330.75	2460363.74	10/01/09	0.0000	0.0015	0.1366	792.5	23.6	01-10-2009 09:53:38	0.0000	0.0060	0.5470
Peterson Gulch	pg093009_51	1201728.35	2460377.71	10/01/09	0.0000	0.0002	0.0000	792.6	23.9	01-10-2009 09:57:21	0.0000	0.0010	-0.0040
Peterson Gulch	pg093009_54	1202312.05	2460371.36	10/01/09	0.0000	0.0008	0.0679	799.7	24.3	01-10-2009 10:03:00	-0.0090	0.0030	0.2700
Peterson Gulch	pg093009_55	1202496.63	2460381.34	10/01/09	0.0000	0.0005	0.1359	792.3	24.5	01-10-2009 10:04:52	0.0000	0.0020	0.5460
Peterson Gulch	pg093009_56	1202721.12	2460363.85	10/01/09	0.0000	0.0010	0.0370	791.4	24.9	01-10-2009 10:08:15	0.0000	0.0040	0.1490
Peterson Gulch	pg093009_57	1202717.54	2460582.31	10/01/09	0.0000	0.0010	0.2169	790.0	25.3	01-10-2009 10:10:59	-0.0010	0.0040	0.8760
Peterson Gulch	pg093009_58	1202529.10	2460568.86	10/01/09	0.0000	0.0000	0.0000	790.8	25.6	01-10-2009 10:13:17	-1.0170	0.0000	-0.2780
Peterson Gulch	pg093009_59	1202324.47	2460568.20	10/01/09	0.0000	0.0005	0.0116	791.0	25.9	01-10-2009 10:15:54	-0.0520	0.0020	0.0470
Peterson Gulch	pg093009_60	1202124.71	2460581.46	10/01/09	0.0000	0.0002	0.0037	790.9	26.0	01-10-2009 10:17:55	-0.0360	0.0010	0.0150
Peterson Gulch	pg093009_61	1201926.25	2460577.57	10/01/09	0.0000	0.0017	0.0792	792.0	26.2	01-10-2009 10:19:47	-0.4180	0.0070	0.3200
Peterson Gulch	pg093009_62	1201727.77	2460582.61	10/01/09	0.0000	0.0017	0.0000	792.9	26.3	01-10-2009 10:22:20	0.0000	0.0070	-0.0060
Peterson Gulch	pg093009_63	1201529.39	2460573.93	10/01/09	0.0000	0.0015	0.0505	793.0	26.3	01-10-2009 10:24:08	-0.0080	0.0060	0.2040
Peterson Gulch	pg093009_66	1200924.54	2460573.38	10/01/09	0.0000	0.0015	0.0371	793.2	26.5	01-10-2009 10:29:42	-0.1390	0.0060	0.1500
Peterson Gulch	pg093009_67	1200719.99	2460592.48	10/01/09	0.0000	0.0005	0.0967	792.6	26.6	01-10-2009 10:31:49	0.0000	0.0020	0.3910
Peterson Gulch	pg093009_68	1200727.75	2460773.82	10/01/09	0.0000	0.0007	0.0613	792.5	26.6	01-10-2009 10:33:57	0.0000	0.0030	0.2480
Peterson Gulch	pg093009_69	1200910.17	2460783.52	10/01/09	0.0000	0.0012	0.0355	794.5	26.6	01-10-2009 10:35:47	0.0000	0.0050	0.1430
Peterson Gulch	pg093009_70	1201130.59	2460772.20	10/01/09	0.0000	0.0017	0.0813	794.0	26.6	01-10-2009 10:37:54	0.0000	0.0070	0.3280
Peterson Gulch	pg093009_72	1201526.87	2460770.71	10/01/09	0.0000	0.0010	0.0258	794.1	26.7	01-10-2009 10:41:38	0.0000	0.0040	0.1040
Peterson Gulch	pg093009_73	1201725.66	2460771.46	10/01/09	0.0000	0.0005	0.0223	793.0	26.8	01-10-2009 10:43:30	0.0000	0.0020	0.0900
Peterson Gulch	pg093009_74	1201930.98	2460763.47	10/01/09	0.0000	0.0007	0.0277	800.5	26.9	01-10-2009 10:45:25	0.0000	0.0030	0.1110

APPENDIX B (continued)
METHANE FLUX MEASUREMENTS
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

Location	Site Point Identification	Northing	Easting	Date	CH4 Flux	H2S Flux	CO2 Flux	Pressure	Temperature (Degrees Celsius)	Date & Time of Measurement	CH4 Slope	H2S Slope	CO2 Slope
Peterson Gulch	pg093009_75	1202118.40	2460773.11	10/01/09	0.0000	0.0017	0.0000	792.4	27.0	01-10-2009 10:47:18	0.0000	0.0070	-0.3070
Peterson Gulch	pg093009_76	1202323.68	2460765.20	10/01/09	0.0000	0.0012	0.0538	792.0	27.2	01-10-2009 10:49:42	0.0000	0.0050	0.2180
Peterson Gulch	pg093009_77	1202330.59	2460976.08	10/01/09	0.0000	0.0000	0.2064	791.8	27.5	01-10-2009 10:51:50	0.0000	-0.0010	0.8380
Peterson Gulch	pg093009_78	1202108.68	2460975.82	10/01/09	0.0000	0.0005	0.0532	792.2	27.7	01-10-2009 10:53:54	0.0000	0.0020	0.2160
Peterson Gulch	pg093009_79	1201920.08	2460984.15	10/01/09	0.0000	0.0032	0.1426	791.4	27.9	01-10-2009 10:55:39	0.0000	0.0130	0.5800
Peterson Gulch	pg093009_80	1201722.68	2460980.33	10/01/09	0.0000	0.0005	0.0226	792.4	28.1	01-10-2009 10:57:42	-0.2460	0.0020	0.0920
Peterson Gulch	pg093009_83	1201713.41	2461162.93	10/01/09	0.0000	0.0007	0.0347	792.9	28.3	01-10-2009 11:03:53	-0.1630	0.0030	0.1410
Peterson Gulch	pg093009_85	1201709.78	2461363.72	10/01/09	0.0000	0.0005	0.1050	790.9	28.4	01-10-2009 11:09:57	-0.0930	0.0020	0.4280
Peterson Gulch	pg093009_86	1201332.27	2460965.56	10/01/09	0.0000	0.0007	0.0783	791.4	28.4	01-10-2009 11:13:32	-0.1200	0.0030	0.3190
Peterson Gulch	pg093009_87	1201128.25	2460972.93	10/01/09	0.0000	0.0015	0.1212	792.5	28.4	01-10-2009 11:16:06	-0.4680	0.0060	0.4930
Peterson Gulch	pg093009_01b	0.00	0.00	09/30/09	0.0000	0.0007	0.0000	782.2	25.0	30-09-2009 14:40:18	0.0000	0.0030	-0.2580
Peterson Gulch	pg093009_02b	0.00	0.00	09/30/09	0.0000	0.0032	0.1190	781.3	25.8	30-09-2009 14:42:48	-0.0690	0.0130	0.4870
Peterson Gulch	pg093009_01	1202946.38	2459590.39	09/30/09	0.0000	0.0000	0.0740	782.2	23.5	30-09-2009 14:37:19	0.0000	-0.0020	0.3000
Peterson Gulch	pg093009_02	1203134.17	2459594.17	09/30/09	0.0000	0.0007	0.0000	782.2	25.0	30-09-2009 14:40:21	0.0000	0.0030	-0.2580
Peterson Gulch	pg092409_236	1203542.92	2459554.01	09/29/09	0.0002	0.0012	0.0876	788.9	36.0	29-09-2009 11:21:35	0.0010	0.0050	0.3670
Peterson Gulch	pg092409_242	1202344.29	2459370.63	09/29/09	0.0002	0.0002	0.0846	792.3	36.8	29-09-2009 11:34:18	0.0010	0.0010	0.3540
Peterson Gulch	pg092409_235	1203738.46	2459368.91	09/29/09	0.0002	0.0002	0.3447	790.4	35.7	29-09-2009 11:19:01	0.0010	0.0010	1.4400
Peterson Gulch	pg092409_224	1202133.47	2458963.83	09/29/09	0.0002	0.0007	0.0000	790.1	34.6	29-09-2009 10:54:58	0.0010	0.0030	-3.4160
Peterson Gulch	pg092409_217	1203535.32	2458967.36	09/29/09	0.0002	0.0007	0.0754	789.7	33.6	29-09-2009 10:40:19	0.0010	0.0030	0.3130
Peterson Gulch	pg092409_216	1203732.70	2459174.23	09/29/09	0.0002	0.0007	0.0595	790.0	33.4	29-09-2009 10:37:26	0.0010	0.0030	0.2470
Peterson Gulch	pg092409_223	1202327.30	2458994.84	09/29/09	0.0002	0.0017	0.0534	794.1	34.5	29-09-2009 10:52:43	0.0010	0.0070	0.2210
Peterson Gulch	pg092409_215	1203922.17	2459162.76	09/29/09	0.0002	0.0005	0.4131	790.9	33.2	29-09-2009 10:35:17	0.0010	0.0020	1.7110
Peterson Gulch	pg092409_117	1205326.70	2456742.68	09/25/09	0.0002	0.0010	0.1276	786.2	31.2	25-09-2009 11:30:46	0.0010	0.0040	0.5280
Peterson Gulch	pg092409_125	1205127.39	2457150.46	09/25/09	0.0002	0.0007	0.0776	787.1	31.5	25-09-2009 11:49:12	0.0010	0.0030	0.3210
Peterson Gulch	pg092409_122	1204717.58	2456975.21	09/25/09	0.0002	0.0010	0.0036	789.4	31.4	25-09-2009 11:42:18	0.0010	0.0040	0.0150
Peterson Gulch	pg092409_40	1204926.46	2455770.63	09/24/09	0.0002	0.0012	0.0633	788.6	28.8	24-09-2009 11:46:50	0.0010	0.0050	0.2590
Peterson Gulch	pg092409_112	1204759.29	2456589.76	09/25/09	0.0002	0.0000	0.0773	789.1	28.6	25-09-2009 11:01:54	0.0010	0.0000	0.3160
Peterson Gulch	pg092409_37	1204298.12	2455155.09	09/24/09	0.0002	0.0005	0.0529	789.0	28.1	24-09-2009 11:34:44	0.0010	0.0020	0.2160
Peterson Gulch	pg092409_35	1204719.41	2455164.98	09/24/09	0.0002	0.0007	0.0655	789.0	27.7	24-09-2009 11:30:33	0.0010	0.0030	0.2670
Peterson Gulch	pg092409_33	1204533.94	2455392.59	09/24/09	0.0002	0.0005	0.1183	789.1	27.5	24-09-2009 11:26:40	0.0010	0.0020	0.4820
Peterson Gulch	pg092409_34	1204711.45	2455358.14	09/24/09	0.0002	0.0027	0.0481	789.4	27.6	24-09-2009 11:28:42	0.0010	0.0110	0.1960
Peterson Gulch	pg092409_110	1204333.51	2456968.85	09/25/09	0.0002	0.0012	0.0594	790.6	28.0	25-09-2009 10:56:56	0.0010	0.0050	0.2420
Peterson Gulch	pg092409_31	1204136.34	2455382.42	09/24/09	0.0002	0.0005	0.0813	789.0	27.3	24-09-2009 11:22:26	0.0010	0.0020	0.3310
Peterson Gulch	pg092409_109	1204122.10	2456964.06	09/25/09	0.0002	0.0015	0.1223	790.1	27.7	25-09-2009 10:54:51	0.0010	0.0060	0.4980
Peterson Gulch	pg092409_108	1203928.31	2456967.41	09/25/09	0.0002	0.0017	0.0224	790.2	27.5	25-09-2009 10:52:53	0.0010	0.0070	0.0910
Peterson Gulch	pg092409_105	1203537.24	2456755.22	09/25/09	0.0002	0.0012	0.1405	790.0	27.2	25-09-2009 10:45:51	0.0010	0.0050	0.5710
Peterson Gulch	pg092409_21	1205935.05	2455581.33	09/24/09	0.0002	0.0002	0.1556	786.7	25.2	24-09-2009 10:12:41	0.0010	0.0010	0.6310
Peterson Gulch	pg092409_22	1205728.01	2455580.04	09/24/09	0.0002	0.0005	0.0434	787.1	25.2	24-09-2009 10:14:52	0.0010	0.0020	0.1760
Peterson Gulch	pg092409_25	1205134.91	2455587.02	09/24/09	0.0002	0.0010	0.1223	788.7	25.3	24-09-2009 10:21:00	0.0010	0.0040	0.4950
Peterson Gulch	pg092409_97	1203748.87	2456375.19	09/25/09	0.0002	0.0000	0.0356	789.7	25.6	25-09-2009 10:20:19	0.0010	0.0000	0.1440
Peterson Gulch	pg092409_207	1202517.39	2458780.17	09/29/09	0.0002	0.0002	0.1254	790.8	25.9	29-09-2009 09:23:02	0.0010	0.0010	0.5070
Peterson Gulch	pg093009_52	1201919.88	2460373.11	10/01/09	0.0002	0.0007	0.0000	792.8	24.0	01-10-2009 09:59:07	0.0010	0.0030	-0.1530
Peterson Gulch	pg093009_53	1202108.50	2460375.87	10/01/09	0.0002	0.0005	0.0697	793.7	24.2	01-10-2009 10:01:03	0.0010	0.0020	0.2790
Peterson Gulch	pg092409_197	1204120.17	2458776.59	09/29/09	0.0002	0.0002	0.1591	790.4	22.8	29-09-2009 09:00:06	0.0010	0.0010	0.6370
Peterson Gulch	pg092409_02	1204931.35	2455368.04	09/24/09	0.0003	0.0000	0.0722	789.8	21.6	24-09-2009 09:27:26	0.0010	-0.0020	0.2880
Peterson Gulch	pg093009_42	1201721.47	2460172.00	10/01/09	0.0003	0.0008	0.0868	792.6	20.6	01-10-2009 09:37:08	0.0010	0.0030	0.3440
Peterson Gulch	pg092409_218	1203332.43	2458970.79	09/29/09	0.0005	0.0007	0.0895	789.7	33.8	29-09-2009 10:42:32	0.0020	0.0030	0.3720
Peterson Gulch	pg092409_127	1204737.97	2457170.81	09/25/09	0.0005	0.0012	0.0729	793.9	31.6	25-09-2009 11:54:02	0.0020	0.0050	0.2990
Peterson Gulch	pg093009_08	1202725.57	2459781.85	09/30/09	0.0005	0.0015	0.0660	789.0	28.9	30-09-2009 14:54:14	0.0020	0.0060	0.2700
Peterson Gulch	pg093009_81	1201532.50	2460979.20	10/01/09	0.0005	0.0020	0.1415	792.9	28.2	01-10-2009 10:59:51	0.0020	0.0080	0.5750

APPENDIX B (continued)
METHANE FLUX MEASUREMENTS
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

Location	Site Point Identification	Northing	Easting	Date	CH4 Flux	H2S Flux	CO2 Flux	Pressure	Temperature (Degrees Celsius)	Date & Time of Measurement	CH4 Slope	H2S Slope	CO2 Slope
Peterson Gulch	pg093009_65	1201123.93	2460561.07	10/01/09	0.0005	0.0010	0.0446	793.3	26.5	01-10-2009 10:27:48	0.0020	0.0040	0.1800
Peterson Gulch	pg093009_71	1201317.08	2460780.36	10/01/09	0.0005	0.0015	0.0927	794.0	26.6	01-10-2009 10:39:40	0.0020	0.0060	0.3740
Peterson Gulch	pg092409_204	1202718.35	2458598.08	09/29/09	0.0005	0.0000	0.0000	792.2	25.1	29-09-2009 09:15:51	0.0020	0.0000	-0.1680
Peterson Gulch	pg093009_50	1201514.87	2460378.34	10/01/09	0.0005	0.0017	0.0040	792.3	23.7	01-10-2009 09:55:26	0.0020	0.0070	0.0160
Peterson Gulch	pg092409_01	1204909.40	2455578.93	09/24/09	0.0005	0.0000	0.0113	789.8	20.9	24-09-2009 09:24:50	0.0020	-0.0020	0.0450
Peterson Gulch	pg092409_214	1203919.05	2458963.36	09/29/09	0.0007	0.0005	0.0592	791.2	32.9	29-09-2009 10:32:41	0.0030	0.0020	0.2450
Peterson Gulch	pg092409_114	1205160.36	2456551.75	09/25/09	0.0007	0.0002	0.0000	788.1	30.9	25-09-2009 11:22:37	0.0030	0.0010	-0.0180
Peterson Gulch	pg093009_82	1201529.77	2461142.69	10/01/09	0.0007	0.0010	0.0871	792.8	28.3	01-10-2009 11:01:32	0.0030	0.0040	0.3540
Peterson Gulch	pg093009_64	1201326.66	2460579.14	10/01/09	0.0007	0.0015	0.0712	794.1	26.4	01-10-2009 10:25:54	0.0030	0.0060	0.2870
Peterson Gulch	pg092409_08	1205719.50	2454988.83	09/24/09	0.0008	0.0000	0.0964	795.4	24.1	24-09-2009 09:40:05	0.0030	-0.0040	0.3850
Peterson Gulch	pg093009_43	1201503.93	2460189.41	10/01/09	0.0008	0.0000	0.0216	798.6	21.3	01-10-2009 09:39:12	0.0030	0.0000	0.0850
Peterson Gulch	pg092409_27	1204538.00	2455560.60	09/24/09	0.0010	0.0000	0.0768	789.4	26.9	24-09-2009 11:12:45	0.0040	0.0000	0.3120
Peterson Gulch	pg092409_28	1204336.99	2455579.21	09/24/09	0.0010	0.0002	0.0660	790.1	27.0	24-09-2009 11:15:09	0.0040	0.0010	0.2680
Peterson Gulch	pg092409_211	1203321.01	2458778.73	09/29/09	0.0010	0.0007	0.1039	792.6	26.5	29-09-2009 09:30:50	0.0040	0.0030	0.4200
Peterson Gulch	pg092409_69	1204911.21	2456172.96	09/24/09	0.0010	0.0000	0.0194	808.5	30.9	24-09-2009 16:05:44	0.0040	0.0000	0.0780
Peterson Gulch	pg092409_44	1204133.57	2455781.04	09/24/09	0.0012	0.0034	0.0695	790.8	29.2	24-09-2009 11:54:25	0.0050	0.0140	0.2840
Peterson Gulch	pg092409_30	1203937.69	2455543.87	09/24/09	0.0012	0.0005	0.1208	790.1	27.2	24-09-2009 11:19:36	0.0050	0.0020	0.4910
Peterson Gulch	pg093009_44	1201318.89	2460174.52	10/01/09	0.0015	0.0000	0.0000	792.5	21.8	01-10-2009 09:41:03	0.0060	0.0000	-0.1090
Peterson Gulch	pg093009_32	1202320.73	2459569.48	09/30/09	0.0019	0.0017	0.0346	782.3	33.6	30-09-2009 15:52:23	0.0080	0.0070	0.1450
Peterson Gulch	pg092409_134	1203168.56	2457199.41	09/25/09	0.0020	0.0012	0.0717	790.0	28.7	25-09-2009 14:57:59	0.0080	0.0050	0.2930
Peterson Gulch	pg093009_22	1202723.87	2459972.25	09/30/09	0.0034	0.0010	0.0395	782.5	32.6	30-09-2009 15:26:03	0.0140	0.0040	0.1650
Peterson Gulch	pg092409_48	1204112.99	2455957.14	09/24/09	0.0034	0.0024	0.1370	788.9	29.5	24-09-2009 12:06:59	0.0140	0.0100	0.5620
Peterson Gulch	pg093009_47	1200927.07	2460373.54	10/01/09	0.0040	0.0000	0.0629	790.8	23.2	01-10-2009 09:49:21	0.0160	-0.0030	0.2520
Peterson Gulch	pg092409_98	1204320.39	2456770.77	09/25/09	0.0047	0.0012	0.0247	789.5	26.1	25-09-2009 10:28:06	0.0190	0.0050	0.1000
Peterson Gulch	pg093009_13	1201711.97	2459789.00	09/30/09	0.0058	0.0031	0.0832	781.6	30.7	30-09-2009 15:04:15	0.0240	0.0130	0.3460
Peterson Gulch	pg092409_60	1205930.44	2455968.09	09/24/09	0.0073	0.0005	0.0843	788.5	29.6	24-09-2009 15:14:43	0.0300	0.0020	0.3460
Peterson Gulch	pg092409_230	1202927.70	2459169.45	09/29/09	0.0089	0.0026	0.0274	792.3	35.0	29-09-2009 11:08:12	0.0370	0.0110	0.1140
Peterson Gulch	pg092409_57	1206336.31	2455787.45	09/24/09	0.0097	0.0002	0.0509	782.3	28.6	24-09-2009 15:00:55	0.0400	0.0010	0.2100
Peterson Gulch	pg092409_100	1203925.48	2456586.91	09/25/09	0.0109	0.0000	0.0163	790.9	26.6	25-09-2009 10:33:49	0.0440	-0.0010	0.0660
Peterson Gulch	pg092409_198	1203928.32	2458770.47	09/29/09	0.0147	0.0002	0.0491	789.8	23.3	29-09-2009 09:02:26	0.0590	0.0010	0.1970
Peterson Gulch	pg092409_101	1203729.03	2456578.66	09/25/09	0.0153	0.0020	0.0185	789.8	26.8	25-09-2009 10:35:59	0.0620	0.0080	0.0750
Peterson Gulch	pg093009_84	1201926.41	2461181.88	10/01/09	0.0159	0.0000	0.2566	791.0	28.4	01-10-2009 11:06:10	0.0650	0.0000	1.0460
Peterson Gulch	pg092409_232	1203321.81	2459160.28	09/29/09	0.0180	0.0002	0.0000	792.1	35.1	29-09-2009 11:11:57	0.0750	0.0010	-0.0360
Peterson Gulch	pg092409_231	1203130.98	2459172.40	09/29/09	0.0245	0.0005	0.1195	792.0	35.0	29-09-2009 11:10:07	0.1020	0.0020	0.4970
Peterson Gulch	pg092409_99	1204132.09	2456775.99	09/25/09	0.0281	0.0010	0.1285	790.2	26.4	25-09-2009 10:31:02	0.1140	0.0040	0.5210
Peterson Gulch	pg092409_61	1205728.60	2455982.73	09/24/09	0.0347	0.0002	0.0206	786.0	29.9	24-09-2009 15:19:34	0.1430	0.0010	0.0850
Peterson Gulch	pg093009_35	1201735.77	2459569.85	09/30/09	0.0347	0.0005	0.1317	780.3	33.8	30-09-2009 15:58:36	0.1460	0.0020	0.5540
Peterson Gulch	pg093009_34	1201924.33	2459558.07	09/30/09	0.0393	0.0000	0.0331	781.1	33.8	30-09-2009 15:56:12	0.1650	0.0000	0.1390
Peterson Gulch	pg092409_133	1203126.66	2456976.51	09/25/09	0.0422	0.0005	0.0167	788.7	27.8	25-09-2009 14:53:53	0.1720	0.0020	0.0680
Peterson Gulch	pg092409_180	1203523.53	2458172.87	09/28/09	0.0435	0.0012	0.0024	790.0	37.5	28-09-2009 15:41:53	0.1830	0.0050	0.0100
Peterson Gulch	pg092409_50	1204517.74	2455962.54	09/24/09	0.0468	0.0015	0.1027	789.5	29.7	24-09-2009 12:11:14	0.1920	0.0060	0.4210
Peterson Gulch	pg093009_38	1202114.31	2459380.64	09/30/09	0.0654	0.0014	0.0002	780.4	33.7	30-09-2009 16:05:18	0.2750	0.0060	0.0010
Peterson Gulch	pg092409_140	1204316.40	2457378.97	09/25/09	0.0834	0.0005	0.2300	795.1	31.7	25-09-2009 15:18:36	0.3420	0.0020	0.9430
Peterson Gulch	pg093009_05	1203330.53	2459779.93	09/30/09	0.1168	0.0029	0.0857	786.7	27.4	30-09-2009 14:48:05	0.4770	0.0120	0.3500
Peterson Gulch	pg092409_49	1204324.64	2455970.25	09/24/09	0.1246	0.0012	0.0000	789.4	29.6	24-09-2009 12:09:12	0.5110	0.0050	-0.2590
Peterson Gulch	pg092409_54	1205734.15	2455804.87	09/24/09	0.1307	0.0000	0.0000	786.2	26.2	24-09-2009 14:46:57	0.5320	0.0000	-0.2680
Peterson Gulch	pg092409_147	1204115.98	2457573.32	09/25/09	0.1733	0.0026	0.2158	786.7	35.1	25-09-2009 15:38:36	0.7260	0.0110	0.9040
Stollsteimer Creek	sc100109_01	1185532.32	2470570.12	10/01/09	0.0000	0.0000	0.0000	803.4	21.5	01-10-2009 14:47:43	0.0000	-0.0070	-0.2710
Stollsteimer Creek	sc100109_02	1185337.15	2470379.26	10/01/09	0.0000	0.0003	0.0000	803.4	22.7	01-10-2009 14:51:11	0.0000	0.0010	-0.0260
Stollsteimer Creek	sc100109_03	1185526.71	2470373.34	10/01/09	0.0000	0.0003	0.0258	802.6	23.4	01-10-2009 14:53:28	0.0000	0.0010	0.1020

APPENDIX B (continued)
METHANE FLUX MEASUREMENTS
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

Location	Site Point Identification	Northing	Easting	Date	CH4 Flux	H2S Flux	CO2 Flux	Pressure	Temperature (Degrees Celsius)	Date & Time of Measurement	CH4 Slope	H2S Slope	CO2 Slope
Stollsteimer Creek	sc100109_04	1185723.92	2470375.20	10/01/09	0.0000	0.0000	0.0015	810.1	24.0	01-10-2009 14:55:44	0.0000	0.0000	0.0060
Stollsteimer Creek	sc100109_05	1185931.89	2470168.97	10/01/09	0.0000	0.0005	0.0282	810.2	24.8	01-10-2009 14:58:53	0.0000	0.0020	0.1110
Stollsteimer Creek	sc100109_08	1185323.87	2470179.53	10/01/09	0.0000	0.0000	0.0000	809.2	26.4	01-10-2009 15:06:10	-0.0630	-0.0010	-0.0910
Stollsteimer Creek	sc100109_09	1185127.36	2470175.02	10/01/09	0.0000	0.0008	0.0000	810.1	26.7	01-10-2009 15:08:41	0.0000	0.0030	-0.0730
Stollsteimer Creek	sc100109_10	1184927.88	2469973.59	10/01/09	0.0000	0.0015	0.0525	810.4	27.0	01-10-2009 15:11:05	0.0000	0.0060	0.2080
Stollsteimer Creek	sc100109_100	1185723.97	2468580.73	10/02/09	0.0000	0.0000	0.0113	803.6	33.7	02-10-2009 16:05:57	-0.2530	-0.0030	0.0460
Stollsteimer Creek	sc100109_101	1185519.42	2468586.31	10/02/09	0.0000	0.0012	0.0157	803.2	33.9	02-10-2009 16:08:27	0.0000	0.0050	0.0640
Stollsteimer Creek	sc100109_102	1185322.25	2468574.71	10/02/09	0.0000	0.0000	0.0147	803.2	34.0	02-10-2009 16:11:00	0.0000	0.0000	0.0600
Stollsteimer Creek	sc100109_103	1185121.12	2468578.38	10/02/09	0.0000	0.0000	0.0242	803.0	34.1	02-10-2009 16:13:01	0.0000	-0.0010	0.0990
Stollsteimer Creek	sc100109_104	1184929.07	2468574.11	10/02/09	0.0000	0.0005	0.0142	803.3	34.1	02-10-2009 16:15:25	-0.0760	0.0020	0.0580
Stollsteimer Creek	sc100109_105	1185707.52	2467968.53	10/05/09	0.0000	0.0000	0.0000	798.3	22.2	05-10-2009 10:51:45	0.0000	-0.0020	-0.1080
Stollsteimer Creek	sc100109_106	1185731.69	2467769.81	10/05/09	0.0000	0.0000	0.0000	798.6	22.5	05-10-2009 10:54:17	-0.2090	-0.0010	-0.0120
Stollsteimer Creek	sc100109_107	1185521.49	2467778.79	10/05/09	0.0000	0.0003	0.0477	798.5	22.8	05-10-2009 10:56:59	-0.0030	0.0010	0.1890
Stollsteimer Creek	sc100109_108	1185327.72	2467769.66	10/05/09	0.0000	0.0003	0.0000	799.8	23.1	05-10-2009 11:00:57	0.0000	0.0010	-0.0280
Stollsteimer Creek	sc100109_109	1185328.44	2467982.62	10/05/09	0.0000	0.0008	0.0240	799.7	23.3	05-10-2009 11:03:38	0.0000	0.0030	0.0950
Stollsteimer Creek	sc100109_11	1185133.62	2469973.45	10/01/09	0.0000	0.0003	0.0225	802.9	27.2	01-10-2009 15:12:57	0.0000	0.0010	0.0900
Stollsteimer Creek	sc100109_110	1185530.02	2467973.73	10/05/09	0.0000	0.0003	0.0308	806.8	23.6	05-10-2009 11:07:05	0.0000	0.0010	0.1210
Stollsteimer Creek	sc100109_111	1185727.25	2468173.56	10/05/09	0.0000	0.0000	0.0559	798.9	23.8	05-10-2009 11:10:16	0.0000	0.0000	0.2220
Stollsteimer Creek	sc100109_112	1185526.76	2468172.39	10/05/09	0.0000	0.0000	0.0462	797.8	24.0	05-10-2009 11:13:09	0.0000	0.0000	0.1840
Stollsteimer Creek	sc100109_113	1185331.42	2468169.59	10/05/09	0.0000	0.0000	0.0166	799.1	24.2	05-10-2009 11:16:26	0.0000	0.0000	0.0660
Stollsteimer Creek	sc100109_114	1185121.76	2468379.24	10/05/09	0.0000	0.0000	0.0073	799.4	24.6	05-10-2009 11:24:16	0.0000	-0.0010	0.0290
Stollsteimer Creek	sc100109_115	1185339.94	2468370.75	10/05/09	0.0000	0.0000	0.0299	799.5	24.8	05-10-2009 11:27:35	0.0000	-0.0010	0.1190
Stollsteimer Creek	sc100109_116	1185531.90	2468369.94	10/05/09	0.0000	0.0003	0.0358	798.4	25.0	05-10-2009 11:30:10	0.0000	0.0010	0.1430
Stollsteimer Creek	sc100109_117	1185726.53	2468370.60	10/05/09	0.0000	0.0000	0.0077	797.6	25.3	05-10-2009 11:33:43	0.0000	0.0000	0.0310
Stollsteimer Creek	sc100109_118	1185922.98	2468371.13	10/05/09	0.0000	0.0000	0.0312	797.9	25.5	05-10-2009 11:38:21	0.0000	0.0000	0.1250
Stollsteimer Creek	sc100109_119	1185924.24	2468176.33	10/05/09	0.0000	0.0000	0.0797	795.7	25.7	05-10-2009 11:40:37	0.0000	0.0000	0.3200
Stollsteimer Creek	sc100109_12	1185332.37	2469979.09	10/01/09	0.0000	0.0000	0.0185	803.0	27.3	01-10-2009 15:14:49	-0.0020	-0.0010	0.0740
Stollsteimer Creek	sc100109_120	1185932.87	2467974.13	10/05/09	0.0000	0.0000	0.0418	805.0	25.9	05-10-2009 11:47:36	-0.1560	-0.0010	0.1660
Stollsteimer Creek	sc100109_121	1185920.47	2467772.47	10/05/09	0.0000	0.0008	0.0634	805.0	26.0	05-10-2009 11:48:41	0.0000	0.0030	0.2520
Stollsteimer Creek	sc100109_122	1186133.04	2467776.52	10/05/09	0.0000	0.0002	0.0313	798.4	27.2	05-10-2009 12:27:44	0.0000	0.0010	0.1260
Stollsteimer Creek	sc100109_124	1186131.11	2468178.38	10/05/09	0.0000	0.0000	0.0602	796.8	27.5	05-10-2009 12:35:45	0.0000	-0.0010	0.2430
Stollsteimer Creek	sc100109_125	1186125.53	2468378.15	10/05/09	0.0000	0.0000	0.0529	797.9	27.5	05-10-2009 12:37:52	0.0000	0.0000	0.2130
Stollsteimer Creek	sc100109_126	1186139.64	2468572.93	10/05/09	0.0000	0.0000	0.0000	802.9	27.4	05-10-2009 12:40:47	0.0000	0.0000	-0.2130
Stollsteimer Creek	sc100109_127	1186333.36	2468775.80	10/05/09	0.0000	0.0002	0.0000	802.9	27.3	05-10-2009 12:44:39	0.0000	0.0010	-0.2860
Stollsteimer Creek	sc100109_128	1186333.97	2468577.67	10/05/09	0.0000	0.0000	0.0682	799.4	27.3	05-10-2009 12:47:59	0.0000	0.0000	0.2740
Stollsteimer Creek	sc100109_129	1186336.45	2468372.26	10/05/09	0.0000	0.0000	0.0424	796.6	27.2	05-10-2009 12:49:57	0.0000	-0.0010	0.1710
Stollsteimer Creek	sc100109_13	1185523.67	2469976.38	10/01/09	0.0000	0.0000	1.7363	803.2	27.5	01-10-2009 15:17:15	0.0000	0.0000	6.9490
Stollsteimer Creek	sc100109_131	1186325.02	2467977.70	10/05/09	0.0000	0.0005	0.0229	797.5	27.1	05-10-2009 12:54:28	0.0000	0.0020	0.0920
Stollsteimer Creek	sc100109_132	1186328.06	2467768.31	10/05/09	0.0000	0.0005	0.0682	796.0	27.0	05-10-2009 12:57:50	0.0000	0.0020	0.2750
Stollsteimer Creek	sc100109_133	1186524.08	2467796.04	10/05/09	0.0000	0.0002	0.0581	796.7	27.0	05-10-2009 13:00:44	0.0000	0.0010	0.2340
Stollsteimer Creek	sc100109_134	1186532.00	2467973.87	10/05/09	0.0000	0.0007	0.0000	800.5	26.9	05-10-2009 13:05:20	0.0000	0.0030	-0.0220
Stollsteimer Creek	sc100109_135	1186529.87	2468176.96	10/05/09	0.0000	0.0002	0.0077	795.9	26.9	05-10-2009 13:08:00	0.0000	0.0010	0.0310
Stollsteimer Creek	sc100109_136	1186522.08	2468384.57	10/05/09	0.0000	0.0000	0.0000	796.0	26.9	05-10-2009 13:10:27	0.0000	-0.0010	-0.0620
Stollsteimer Creek	sc100109_137	1186524.66	2468581.14	10/05/09	0.0000	0.0000	0.0530	794.8	27.0	05-10-2009 13:13:04	0.0000	-0.0010	0.2140
Stollsteimer Creek	sc100109_138	1186533.45	2468785.00	10/05/09	0.0000	0.0002	0.0171	795.6	27.0	05-10-2009 13:15:07	0.0000	0.0010	0.0690
Stollsteimer Creek	sc100109_139	1186525.76	2468974.57	10/05/09	0.0000	0.0005	0.0722	796.4	27.1	05-10-2009 13:17:50	0.0000	0.0020	0.2910
Stollsteimer Creek	sc100109_14	1185730.68	2469981.32	10/01/09	0.0000	0.0005	0.0000	806.8	27.7	01-10-2009 15:20:25	0.0000	0.0020	-0.0870
Stollsteimer Creek	sc100109_140	1186738.96	2469163.61	10/05/09	0.0000	0.0002	0.7754	798.6	27.2	05-10-2009 13:25:50	0.0000	0.0010	3.1180
Stollsteimer Creek	sc100109_141	1186720.56	2468978.53	10/05/09	0.0000	0.0005	0.1376	797.8	27.3	05-10-2009 13:29:44	0.0000	0.0020	0.5540
Stollsteimer Creek	sc100109_142	1186728.85	2468773.86	10/05/09	0.0000	0.0002	0.1985	795.2	27.4	05-10-2009 13:31:47	0.0000	0.0010	0.8020

APPENDIX B (continued)
METHANE FLUX MEASUREMENTS
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

Location	Site Point Identification	Northing	Easting	Date	CH4 Flux	H2S Flux	CO2 Flux	Pressure	Temperature (Degrees Celsius)	Date & Time of Measurement	CH4 Slope	H2S Slope	CO2 Slope
Stollsteimer Creek	sc100109_143	1186733.32	2468577.61	10/05/09	0.0000	0.0002	0.2019	794.5	27.5	05-10-2009 13:34:31	0.0000	0.0010	0.8170
Stollsteimer Creek	sc100109_144	1186729.37	2468374.00	10/05/09	0.0000	0.0005	0.0466	793.0	27.6	05-10-2009 13:37:48	0.0000	0.0020	0.1890
Stollsteimer Creek	sc100109_145	1186727.18	2468170.23	10/05/09	0.0000	0.0005	0.0467	795.2	27.6	05-10-2009 13:39:09	0.0000	0.0020	0.1890
Stollsteimer Creek	sc100109_146	1186748.00	2467989.92	10/05/09	0.0000	0.0000	0.0096	795.2	27.7	05-10-2009 13:42:12	0.0000	-0.0010	0.0390
Stollsteimer Creek	sc100109_147	1186727.96	2467779.52	10/05/09	0.0000	0.0002	0.0413	795.6	27.8	05-10-2009 13:44:36	0.0000	0.0010	0.1670
Stollsteimer Creek	sc100109_148	1186925.87	2467783.31	10/05/09	0.0000	0.0012	0.0615	794.1	27.8	05-10-2009 13:47:03	0.0000	0.0050	0.2490
Stollsteimer Creek	sc100109_149	1186927.85	2467974.34	10/05/09	0.0000	0.0005	0.0072	794.3	27.9	05-10-2009 13:49:27	0.0000	0.0020	0.0290
Stollsteimer Creek	sc100109_15	1185929.63	2469972.97	10/01/09	0.0000	0.0003	0.4528	806.8	28.0	01-10-2009 15:22:51	0.0000	0.0010	1.8070
Stollsteimer Creek	sc100109_150	1186918.96	2468176.15	10/05/09	0.0000	0.0002	0.2891	794.8	28.0	05-10-2009 13:52:11	0.0000	0.0010	1.1710
Stollsteimer Creek	sc100109_151	1186930.90	2468377.13	10/05/09	0.0000	0.0000	0.1315	793.0	28.1	05-10-2009 13:54:08	0.0000	0.0000	0.5340
Stollsteimer Creek	sc100109_152	1186925.14	2468578.65	10/05/09	0.0000	0.0000	0.0800	793.2	28.2	05-10-2009 13:55:55	0.0000	-0.0010	0.3250
Stollsteimer Creek	sc100109_153	1186922.79	2468780.39	10/05/09	0.0000	0.0000	0.0556	792.8	28.2	05-10-2009 13:58:21	0.0000	-0.0010	0.2260
Stollsteimer Creek	sc100109_154	1186928.47	2468982.63	10/05/09	0.0000	0.0000	0.0000	801.3	28.3	05-10-2009 14:00:28	0.0000	0.0000	-0.0370
Stollsteimer Creek	sc100109_155	1186932.61	2469185.55	10/05/09	0.0000	0.0002	0.0807	795.9	28.3	05-10-2009 14:02:40	0.0000	0.0010	0.3270
Stollsteimer Creek	sc100109_156	1186938.72	2469369.21	10/05/09	0.0000	0.0010	0.0393	797.1	28.3	05-10-2009 14:04:42	0.0000	0.0040	0.1590
Stollsteimer Creek	sc100109_157	1187126.98	2469353.80	10/05/09	0.0000	0.0002	0.2926	797.9	28.3	05-10-2009 14:07:21	0.0000	0.0010	1.1820
Stollsteimer Creek	sc100109_158	1187136.33	2469166.52	10/05/09	0.0000	0.0002	0.0959	796.7	28.2	05-10-2009 14:11:36	0.0000	0.0010	0.3880
Stollsteimer Creek	sc100109_159	1187126.49	2468980.98	10/05/09	0.0000	0.0000	0.0116	795.9	28.2	05-10-2009 14:13:56	0.0000	0.0000	0.0470
Stollsteimer Creek	sc100109_16	1186130.67	2469971.00	10/01/09	0.0000	0.0000	0.1343	801.1	28.2	01-10-2009 15:24:50	0.0000	-0.0020	0.5400
Stollsteimer Creek	sc100109_160	1187126.20	2468775.19	10/05/09	0.0000	0.0000	0.0595	795.2	28.2	05-10-2009 14:16:20	0.0000	0.0000	0.2410
Stollsteimer Creek	sc100109_161	1187127.30	2468570.12	10/05/09	0.0000	0.0000	0.2589	793.2	28.3	05-10-2009 14:18:21	0.0000	-0.0030	1.0520
Stollsteimer Creek	sc100109_162	1187127.31	2468368.70	10/05/09	0.0000	0.0000	0.0639	792.0	28.3	05-10-2009 14:20:04	0.0000	-0.0010	0.2600
Stollsteimer Creek	sc100109_163	1187122.00	2468176.15	10/05/09	0.0000	0.0000	0.4630	792.0	28.3	05-10-2009 14:21:59	0.0000	-0.0010	1.8840
Stollsteimer Creek	sc100109_164	1187123.88	2467978.07	10/05/09	0.0000	0.0007	0.0403	792.1	28.3	05-10-2009 14:24:33	0.0000	0.0030	0.1640
Stollsteimer Creek	sc100109_165	1187125.35	2467765.23	10/05/09	0.0000	0.0000	0.0440	792.5	28.2	05-10-2009 14:27:11	0.0000	0.0000	0.1790
Stollsteimer Creek	sc100109_166	1187321.77	2467775.09	10/06/09	0.0000	0.0000	0.1835	799.9	22.9	06-10-2009 11:28:31	0.0000	0.0000	0.7260
Stollsteimer Creek	sc100109_167	1187326.87	2467979.79	10/06/09	0.0000	0.0000	0.7166	800.6	23.7	06-10-2009 11:30:50	0.0000	-0.0030	2.8410
Stollsteimer Creek	sc100109_168	1187325.31	2468177.67	10/06/09	0.0000	0.0000	0.0254	799.6	24.3	06-10-2009 11:32:34	0.0000	-0.0010	0.1010
Stollsteimer Creek	sc100109_169	1187325.41	2468375.70	10/06/09	0.0000	0.0000	0.1434	801.7	24.8	06-10-2009 11:34:12	0.0000	-0.0020	0.5700
Stollsteimer Creek	sc100109_17	1186332.95	2469775.78	10/01/09	0.0000	0.0000	0.2889	800.1	28.4	01-10-2009 15:27:10	0.0000	0.0000	1.1640
Stollsteimer Creek	sc100109_170	1187326.15	2468586.23	10/06/09	0.0000	0.0000	0.0000	801.0	25.3	06-10-2009 11:36:04	-0.0600	0.0000	-0.0610
Stollsteimer Creek	sc100109_171	1187325.82	2468775.71	10/06/09	0.0000	0.0000	0.0000	801.4	25.9	06-10-2009 11:38:04	0.0000	-0.0020	-0.1480
Stollsteimer Creek	sc100109_172	1187327.02	2468975.01	10/06/09	0.0000	0.0000	0.0000	802.9	26.3	06-10-2009 11:39:59	0.0000	-0.0010	-0.1050
Stollsteimer Creek	sc100109_173	1187317.67	2469167.27	10/06/09	0.0000	0.0000	0.1071	804.8	26.9	06-10-2009 11:42:26	0.0000	-0.0010	0.4270
Stollsteimer Creek	sc100109_174	1187534.87	2469166.03	10/06/09	0.0000	0.0003	0.3030	804.4	27.5	06-10-2009 11:46:10	0.0000	0.0010	1.2110
Stollsteimer Creek	sc100109_175	1187726.19	2469175.18	10/06/09	0.0000	0.0005	1.0930	802.1	27.9	06-10-2009 11:48:04	0.0000	0.0020	4.3860
Stollsteimer Creek	sc100109_178	1187924.32	2469370.09	10/06/09	0.0000	0.0005	0.0000	801.8	29.1	06-10-2009 11:55:27	0.0000	0.0020	-0.4710
Stollsteimer Creek	sc100109_179	1187714.72	2469378.69	10/06/09	0.0000	0.0000	0.0325	802.5	29.6	06-10-2009 11:58:19	0.0000	0.0000	0.1310
Stollsteimer Creek	sc100109_18	1186124.38	2469776.58	10/01/09	0.0000	0.0000	0.1030	800.5	28.6	01-10-2009 15:29:16	0.0000	0.0000	0.4150
Stollsteimer Creek	sc100109_180	1187526.53	2469377.31	10/06/09	0.0000	0.0000	0.0000	803.6	30.0	06-10-2009 12:01:38	0.0000	0.0000	-0.0160
Stollsteimer Creek	sc100109_181	1187298.87	2469375.66	10/06/09	0.0000	0.0000	0.1045	819.3	30.4	06-10-2009 12:04:01	-0.7410	-0.0010	0.4140
Stollsteimer Creek	sc100109_184	1187928.98	2468967.78	10/06/09	0.0000	0.0005	0.0000	816.2	31.2	06-10-2009 12:12:53	0.0000	0.0020	-0.2190
Stollsteimer Creek	sc100109_185	1188129.41	2468974.31	10/06/09	0.0000	0.0000	0.0743	801.4	31.5	06-10-2009 12:14:42	0.0000	-0.0020	0.3020
Stollsteimer Creek	sc100109_187	1187927.81	2468764.86	10/06/09	0.0000	0.0000	0.1261	801.5	31.9	06-10-2009 12:18:31	0.0000	-0.0040	0.5130
Stollsteimer Creek	sc100109_188	1187727.38	2468773.55	10/06/09	0.0000	0.0000	0.0330	804.1	32.2	06-10-2009 12:20:25	-0.0050	0.0000	0.1340
Stollsteimer Creek	sc100109_189	1187527.72	2468769.34	10/06/09	0.0000	0.0000	0.0449	806.4	32.4	06-10-2009 12:22:25	0.0000	-0.0010	0.1820
Stollsteimer Creek	sc100109_19	1185922.58	2469774.47	10/01/09	0.0000	0.0000	0.1383	800.1	28.7	01-10-2009 15:31:15	-0.8090	-0.0010	0.5580
Stollsteimer Creek	sc100109_190	1187522.86	2468572.88	10/06/09	0.0000	0.0000	0.0557	802.2	32.6	06-10-2009 12:24:57	0.0000	-0.0010	0.2270
Stollsteimer Creek	sc100109_191	1187731.00	2468576.62	10/06/09	0.0000	0.0000	0.0848	801.7	32.8	06-10-2009 12:26:49	0.0000	0.0000	0.3460
Stollsteimer Creek	sc100109_192	1187923.17	2468578.99	10/06/09	0.0000	0.0002	0.1783	802.6	32.9	06-10-2009 12:28:39	-0.7420	0.0010	0.7270

APPENDIX B (continued)
METHANE FLUX MEASUREMENTS
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

Location	Site Point Identification	Northing	Easting	Date	CH4 Flux	H2S Flux	CO2 Flux	Pressure	Temperature (Degrees Celsius)	Date & Time of Measurement	CH4 Slope	H2S Slope	CO2 Slope
Stollsteimer Creek	sc100109_194	1188131.24	2468373.60	10/06/09	0.0000	0.0000	0.0639	802.1	33.2	06-10-2009 12:32:14	-0.0630	-0.0030	0.2610
Stollsteimer Creek	sc100109_195	1187920.17	2468374.42	10/06/09	0.0000	0.0000	0.0000	800.5	33.4	06-10-2009 12:34:06	-0.2630	-0.0010	-0.0190
Stollsteimer Creek	sc100109_196	1187725.39	2468378.53	10/06/09	0.0000	0.0005	0.0346	800.1	33.6	06-10-2009 12:36:12	-0.1350	0.0020	0.1420
Stollsteimer Creek	sc100109_197	1187522.00	2468372.72	10/06/09	0.0000	0.0007	0.0000	802.1	33.8	06-10-2009 12:38:39	0.0000	0.0030	-0.0560
Stollsteimer Creek	sc100109_198	1187532.64	2468171.11	10/06/09	0.0000	0.0000	0.1528	800.1	33.9	06-10-2009 12:40:44	0.0000	-0.0010	0.6270
Stollsteimer Creek	sc100109_199	1187735.77	2468181.39	10/06/09	0.0000	0.0000	0.0165	799.0	34.0	06-10-2009 12:42:24	0.0000	-0.0010	0.0680
Stollsteimer Creek	sc100109_20	1185729.65	2469773.87	10/01/09	0.0000	0.0000	0.0211	800.9	28.9	01-10-2009 15:35:22	0.0000	0.0000	0.0850
Stollsteimer Creek	sc100109_200	1187925.80	2468170.17	10/06/09	0.0000	0.0000	0.0000	799.1	34.1	06-10-2009 12:44:16	0.0000	-0.0040	-0.0410
Stollsteimer Creek	sc100109_201	1187723.11	2467980.32	10/06/09	0.0000	0.0000	0.1976	799.0	34.3	06-10-2009 12:46:35	-0.0020	0.0000	0.8130
Stollsteimer Creek	sc100109_202	1187533.78	2467969.74	10/06/09	0.0000	0.0000	0.0104	798.7	34.4	06-10-2009 12:48:29	0.0000	-0.0020	0.0430
Stollsteimer Creek	sc100109_203	1187510.42	2467780.03	10/06/09	0.0000	0.0000	0.0000	797.4	34.5	06-10-2009 12:50:33	0.0000	-0.0020	-0.3410
Stollsteimer Creek	sc100109_21	1185523.98	2469773.16	10/01/09	0.0000	0.0000	0.0627	809.9	29.0	01-10-2009 15:42:31	-0.0850	0.0000	0.2500
Stollsteimer Creek	sc100109_22	1185322.38	2469780.45	10/01/09	0.0000	0.0000	0.0373	803.7	29.1	01-10-2009 15:44:21	-0.0610	-0.0020	0.1500
Stollsteimer Creek	sc100109_23	1185133.59	2469768.45	10/01/09	0.0000	0.0005	0.0269	803.8	29.1	01-10-2009 15:46:32	-0.0320	0.0020	0.1080
Stollsteimer Creek	sc100109_26	1185119.48	2469573.85	10/01/09	0.0000	0.0000	0.0212	805.0	29.4	01-10-2009 15:56:00	-0.0190	0.0000	0.0850
Stollsteimer Creek	sc100109_28	1185525.34	2469566.86	10/01/09	0.0000	0.0010	0.0000	805.5	29.6	01-10-2009 16:00:13	0.0000	0.0040	-0.1160
Stollsteimer Creek	sc100109_29	1185714.04	2469566.85	10/01/09	0.0000	0.0002	0.0000	804.1	29.7	01-10-2009 16:02:11	0.0000	0.0010	-0.5750
Stollsteimer Creek	sc100109_30	1185921.82	2469569.17	10/01/09	0.0000	0.0005	0.0045	804.0	29.8	01-10-2009 16:04:51	0.0000	0.0020	0.0180
Stollsteimer Creek	sc100109_31	1185921.79	2469381.98	10/01/09	0.0000	0.0000	0.0240	802.6	30.1	01-10-2009 16:08:18	0.0000	-0.0020	0.0970
Stollsteimer Creek	sc100109_32	1185721.67	2469378.10	10/01/09	0.0000	0.0000	0.0461	804.4	30.2	01-10-2009 16:10:09	0.0000	0.0000	0.1860
Stollsteimer Creek	sc100109_33	1185522.58	2469372.13	10/01/09	0.0000	0.0010	0.0035	804.7	30.3	01-10-2009 16:12:30	0.0000	0.0040	0.0140
Stollsteimer Creek	sc100109_34	1185322.54	2469386.67	10/01/09	0.0000	0.0000	0.0176	806.0	30.4	01-10-2009 16:14:32	0.0000	-0.0010	0.0710
Stollsteimer Creek	sc100109_35	1185119.70	2469374.02	10/01/09	0.0000	0.0002	0.0731	806.7	30.4	01-10-2009 16:16:30	0.0000	0.0010	0.2940
Stollsteimer Creek	sc100109_36	1184922.28	2469377.46	10/01/09	0.0000	0.0000	0.0025	806.3	30.5	01-10-2009 16:19:36	0.0000	0.0000	0.0100
Stollsteimer Creek	sc100109_37	1184728.80	2469572.75	10/01/09	0.0000	0.0007	0.0762	805.1	30.4	01-10-2009 16:23:26	0.0000	0.0030	0.3070
Stollsteimer Creek	sc100109_38	1184715.04	2469378.04	10/01/09	0.0000	0.0002	0.0783	804.5	30.5	01-10-2009 16:25:01	0.0000	0.0010	0.3160
Stollsteimer Creek	sc100109_39	1184721.25	2469777.34	10/01/09	0.0000	0.0002	0.0783	804.9	30.5	01-10-2009 16:27:24	0.0000	0.0010	0.3160
Stollsteimer Creek	sc100109_40	1186126.07	2466773.87	10/02/09	0.0000	0.0000	0.0234	807.6	17.2	02-10-2009 09:37:15	-1.6630	-0.0080	0.0900
Stollsteimer Creek	sc100109_41	1186114.91	2466570.20	10/02/09	0.0000	0.0000	0.3789	807.6	17.9	02-10-2009 09:39:35	-0.0290	0.0000	1.4600
Stollsteimer Creek	sc100109_42	1186133.71	2466371.26	10/02/09	0.0000	0.0005	0.0953	814.5	18.5	02-10-2009 09:41:38	0.0000	0.0020	0.3650
Stollsteimer Creek	sc100109_43	1186139.11	2466189.33	10/02/09	0.0000	0.0000	0.0406	807.0	19.0	02-10-2009 09:43:35	0.0000	-0.0020	0.1570
Stollsteimer Creek	sc100109_46	1185960.57	2466380.94	10/02/09	0.0000	0.0005	0.0028	807.6	21.5	02-10-2009 09:53:53	0.0000	0.0020	0.0110
Stollsteimer Creek	sc100109_48	1185920.44	2466769.51	10/02/09	0.0000	0.0008	0.0790	807.7	22.3	02-10-2009 09:57:42	0.0000	0.0030	0.3090
Stollsteimer Creek	sc100109_49	1186132.48	2466973.52	10/02/09	0.0000	0.0003	0.0224	813.0	22.7	02-10-2009 10:00:31	0.0000	0.0010	0.0870
Stollsteimer Creek	sc100109_51	1186136.29	2467373.86	10/02/09	0.0000	0.0005	0.0718	807.2	23.2	02-10-2009 10:05:20	0.0000	0.0020	0.2820
Stollsteimer Creek	sc100109_52	1186121.18	2467570.31	10/02/09	0.0000	0.0000	0.1380	807.3	23.3	02-10-2009 10:07:27	0.0000	0.0000	0.5420
Stollsteimer Creek	sc100109_53	1185933.69	2467586.13	10/02/09	0.0000	0.0003	0.0591	806.4	24.1	02-10-2009 10:18:44	-0.7070	0.0010	0.2330
Stollsteimer Creek	sc100109_54	1185729.50	2467564.72	10/02/09	0.0000	0.0010	0.0401	807.2	24.5	02-10-2009 10:21:30	0.0000	0.0040	0.1580
Stollsteimer Creek	sc100109_56	1185352.39	2467583.66	10/02/09	0.0000	0.0013	0.0000	808.7	25.0	02-10-2009 10:25:08	0.0000	0.0050	-0.0280
Stollsteimer Creek	sc100109_57	1185538.44	2467375.27	10/02/09	0.0000	0.0025	0.1049	808.4	25.3	02-10-2009 10:27:17	0.0000	0.0100	0.4140
Stollsteimer Creek	sc100109_59	1185704.14	2466978.02	10/02/09	0.0000	0.0008	0.1467	808.0	26.1	02-10-2009 10:32:39	0.0000	0.0030	0.5810
Stollsteimer Creek	sc100109_60	1185735.39	2466779.47	10/02/09	0.0000	0.0025	0.0956	808.0	26.5	02-10-2009 10:34:49	0.0000	0.0100	0.3790
Stollsteimer Creek	sc100109_61	1185919.42	2466967.36	10/02/09	0.0000	0.0015	0.0930	807.6	27.4	02-10-2009 10:39:47	0.0000	0.0060	0.3700
Stollsteimer Creek	sc100109_62	1185925.75	2467167.94	10/02/09	0.0000	0.0008	0.0504	807.0	27.8	02-10-2009 10:41:41	0.0000	0.0030	0.2010
Stollsteimer Creek	sc100109_63	1185924.30	2467365.88	10/02/09	0.0000	0.0008	0.1061	807.6	28.1	02-10-2009 10:43:31	0.0000	0.0030	0.4230
Stollsteimer Creek	sc100109_64	1185734.70	2467367.86	10/02/09	0.0000	0.0013	0.1178	806.9	28.5	02-10-2009 10:46:00	0.0000	0.0050	0.4710
Stollsteimer Creek	sc100109_65	1185727.49	2467181.68	10/02/09	0.0000	0.0013	0.0410	807.7	28.7	02-10-2009 10:47:54	0.0000	0.0050	0.1640
Stollsteimer Creek	sc100109_66	1184927.01	2469180.02	10/02/09	0.0000	0.0000	0.0000	804.1	21.7	02-10-2009 14:30:50	0.0000	-0.0020	-0.2840
Stollsteimer Creek	sc100109_67	1185128.32	2469179.22	10/02/09	0.0000	0.0010	0.0351	804.1	22.5	02-10-2009 14:33:37	0.0000	0.0040	0.1380
Stollsteimer Creek	sc100109_68	1185342.75	2469183.68	10/02/09	0.0000	0.0005	0.0910	804.1	23.5	02-10-2009 14:35:58	0.0000	0.0020	0.3590

APPENDIX B (continued)
METHANE FLUX MEASUREMENTS
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

Location	Site Point Identification	Northing	Easting	Date	CH4 Flux	H2S Flux	CO2 Flux	Pressure	Temperature (Degrees Celsius)	Date & Time of Measurement	CH4 Slope	H2S Slope	CO2 Slope
Stollsteimer Creek	sc100109_69	1185532.00	2469176.61	10/02/09	0.0000	0.0000	0.0000	803.8	24.2	02-10-2009 14:38:01	0.0000	0.0000	-0.7340
Stollsteimer Creek	sc100109_70	0.00	0.00	10/02/09	0.0000	0.0010	0.0598	804.0	25.0	02-10-2009 14:40:21	0.0000	0.0040	0.2370
Stollsteimer Creek	sc100109_71	1185734.38	2469174.16	10/02/09	0.0000	0.0005	0.1182	807.1	29.5	02-10-2009 14:59:06	0.0000	0.0020	0.4740
Stollsteimer Creek	sc100109_72	1185920.27	2469176.51	10/02/09	0.0000	0.0005	0.0040	803.3	29.9	02-10-2009 15:01:27	0.0000	0.0020	0.0160
Stollsteimer Creek	sc100109_73	1186129.13	2469175.05	10/02/09	0.0000	0.0000	0.1262	803.3	30.4	02-10-2009 15:03:42	0.0000	-0.0010	0.5100
Stollsteimer Creek	sc100109_75	1186322.28	2469366.65	10/02/09	0.0000	0.0015	0.0436	802.4	31.5	02-10-2009 15:09:46	0.0000	0.0060	0.1770
Stollsteimer Creek	sc100109_76	1186130.10	2469384.66	10/02/09	0.0000	0.0002	0.0054	800.2	31.9	02-10-2009 15:11:58	0.0000	0.0010	0.0220
Stollsteimer Creek	sc100109_77	1186121.24	2469577.17	10/02/09	0.0000	0.0002	0.4391	799.9	32.2	02-10-2009 15:14:45	0.0000	0.0010	1.7920
Stollsteimer Creek	sc100109_78	1186318.03	2469581.06	10/02/09	0.0000	0.0000	0.1175	801.7	32.5	02-10-2009 15:16:44	0.0000	-0.0030	0.4790
Stollsteimer Creek	sc100109_79	1186523.83	2469575.54	10/02/09	0.0000	0.0005	0.0000	802.6	32.7	02-10-2009 15:19:33	0.0000	0.0020	-0.0460
Stollsteimer Creek	sc100109_80	1186517.01	2469383.39	10/02/09	0.0000	0.0000	0.0500	802.6	32.9	02-10-2009 15:21:46	0.0000	-0.0010	0.2040
Stollsteimer Creek	sc100109_81	1186719.39	2469572.03	10/02/09	0.0000	0.0000	0.0330	800.6	33.0	02-10-2009 15:23:43	0.0000	-0.0020	0.1350
Stollsteimer Creek	sc100109_82	1186714.15	2469377.31	10/02/09	0.0000	0.0012	0.0352	800.5	33.1	02-10-2009 15:26:39	0.0000	0.0050	0.1440
Stollsteimer Creek	sc100109_83	1186517.53	2469171.98	10/02/09	0.0000	0.0000	0.0897	802.5	33.2	02-10-2009 15:28:43	0.0000	-0.0010	0.3660
Stollsteimer Creek	sc100109_84	1186322.12	2468972.47	10/02/09	0.0000	0.0005	0.0456	802.9	33.3	02-10-2009 15:32:00	0.0000	0.0020	0.1860
Stollsteimer Creek	sc100109_85	1186118.92	2468974.36	10/02/09	0.0000	0.0037	0.0466	803.0	33.3	02-10-2009 15:34:19	0.0000	0.0150	0.1900
Stollsteimer Creek	sc100109_86	1185927.37	2468971.73	10/02/09	0.0000	0.0000	0.1043	807.7	33.3	02-10-2009 15:36:03	0.0000	-0.0050	0.4230
Stollsteimer Creek	sc100109_87	1185725.83	2468975.96	10/02/09	0.0000	0.0002	0.0853	803.2	33.3	02-10-2009 15:37:50	-0.1530	0.0010	0.3480
Stollsteimer Creek	sc100109_88	1185529.52	2468978.13	10/02/09	0.0000	0.0042	0.2496	803.4	33.3	02-10-2009 15:39:41	0.0000	0.0170	1.0180
Stollsteimer Creek	sc100109_89	1185319.45	2468979.83	10/02/09	0.0000	0.0022	0.1903	803.3	33.3	02-10-2009 15:41:34	0.0000	0.0090	0.7760
Stollsteimer Creek	sc100109_90	1185121.06	2468975.02	10/02/09	0.0000	0.0000	0.0767	803.3	33.3	02-10-2009 15:43:29	0.0000	-0.0050	0.3130
Stollsteimer Creek	sc100109_91	1184926.18	2468973.51	10/02/09	0.0000	0.0002	0.0025	803.0	33.3	02-10-2009 15:46:09	0.0000	0.0010	0.0100
Stollsteimer Creek	sc100109_92	1184922.46	2468772.08	10/02/09	0.0000	0.0032	0.0650	803.0	33.2	02-10-2009 15:48:25	-0.3170	0.0130	0.2650
Stollsteimer Creek	sc100109_94	1185316.91	2468778.22	10/02/09	0.0000	0.0022	0.0579	803.3	33.2	02-10-2009 15:52:43	0.0000	0.0090	0.2360
Stollsteimer Creek	sc100109_98	1186116.27	2468774.23	10/02/09	0.0000	0.0002	0.0037	803.0	33.5	02-10-2009 16:01:43	-0.1720	0.0010	0.0150
Stollsteimer Creek	sc100109_99	1185929.95	2468577.69	10/02/09	0.0000	0.0020	0.0279	803.2	33.6	02-10-2009 16:04:02	-0.0580	0.0080	0.1140
Stollsteimer Creek	sc100109_186	1188133.31	2468788.10	10/06/09	0.0002	0.0000	0.1213	800.2	31.7	06-10-2009 12:16:37	0.0010	-0.0010	0.4940
Stollsteimer Creek	sc100109_47	1185922.61	2466572.59	10/02/09	0.0003	0.0000	0.0647	807.1	21.9	02-10-2009 09:55:51	0.0010	0.0000	0.2530
Stollsteimer Creek	sc100109_44	1186137.30	2465981.44	10/02/09	0.0003	0.0023	0.0108	807.7	19.7	02-10-2009 09:46:10	0.0010	0.0090	0.0420
Stollsteimer Creek	sc100109_58	1185547.11	2467181.63	10/02/09	0.0005	0.0000	0.0695	808.0	25.8	02-10-2009 10:30:29	0.0020	-0.0020	0.2750
Stollsteimer Creek	sc100109_55	1185528.62	2467567.30	10/02/09	0.0005	0.0003	0.0401	808.1	24.8	02-10-2009 10:23:21	0.0020	0.0010	0.1580
Stollsteimer Creek	sc100109_50	1186118.67	2467173.21	10/02/09	0.0005	0.0000	0.0194	807.1	23.0	02-10-2009 10:02:50	0.0020	-0.0100	0.0760
Stollsteimer Creek	sc100109_25	1184930.30	2469590.79	10/01/09	0.0010	0.0000	0.0353	804.0	29.4	01-10-2009 15:54:11	0.0040	-0.0010	0.1420
Stollsteimer Creek	sc100109_97	1185928.61	2468779.18	10/02/09	0.0027	0.0002	0.0657	802.9	33.3	02-10-2009 15:59:55	0.0110	0.0010	0.2680
Stollsteimer Creek	sc100109_93	1185128.35	2468775.67	10/02/09	0.0030	0.0005	0.0269	807.2	33.2	02-10-2009 15:50:23	0.0120	0.0020	0.1090
Stollsteimer Creek	sc100109_176	1187928.32	2469176.52	10/06/09	0.0109	0.0000	0.0805	816.2	28.3	06-10-2009 11:50:39	0.0430	0.0000	0.3180
Stollsteimer Creek	sc100109_96	1185723.27	2468782.28	10/02/09	0.0113	0.0002	0.0292	803.0	33.3	02-10-2009 15:58:03	0.0460	0.0010	0.1190
Stollsteimer Creek	sc100109_183	1187719.05	2468979.48	10/06/09	0.0178	0.0007	0.0000	803.4	31.0	06-10-2009 12:10:43	0.0720	0.0030	-0.3180
Stollsteimer Creek	sc100109_182	1187529.72	2468972.61	10/06/09	0.0179	0.0000	0.0491	805.7	30.7	06-10-2009 12:08:29	0.0720	0.0000	0.1980
Stollsteimer Creek	sc100109_193	1188119.10	2468572.92	10/06/09	0.0220	0.0000	0.0265	802.1	33.1	06-10-2009 12:30:17	0.0900	-0.0010	0.1080
Stollsteimer Creek	sc100109_06	1185724.50	2470179.76	10/01/09	0.0241	0.0000	0.0730	808.9	25.4	01-10-2009 15:01:12	0.0950	-0.0010	0.2880
Stollsteimer Creek	sc100109_45	1186124.73	2465775.18	10/02/09	0.0381	0.0000	0.0859	807.7	20.5	02-10-2009 09:49:40	0.1480	0.0000	0.3340
Stollsteimer Creek	sc100109_74	1186320.38	2469176.07	10/02/09	0.0413	0.0002	0.0225	803.0	30.9	02-10-2009 15:06:01	0.1670	0.0010	0.0910
Stollsteimer Creek	sc100109_130	1186324.13	2468175.21	10/05/09	0.0479	0.0010	0.0374	796.3	27.2	05-10-2009 12:51:39	0.1930	0.0040	0.1510
Stollsteimer Creek	sc100109_27	1185319.91	2469567.83	10/01/09	0.0650	0.0000	0.0353	805.3	29.5	01-10-2009 15:58:01	0.2610	-0.0010	0.1420
Stollsteimer Creek	sc100109_177	1188122.78	2469167.49	10/06/09	0.0830	0.0000	0.0147	801.4	28.6	06-10-2009 11:52:26	0.3340	-0.0020	0.0590
Stollsteimer Creek	sc100109_07	1185534.68	2470181.75	10/01/09	0.0912	0.0000	0.1008	808.3	26.0	01-10-2009 15:03:58	0.3610	-0.0030	0.3990
Stollsteimer Creek	sc100109_24	1184932.11	2469774.62	10/01/09	0.1397	0.0005	0.0000	804.1	29.3	01-10-2009 15:51:42	0.5620	0.0020	-0.0200
Stollsteimer Creek	sc100109_95	1185515.06	2468775.48	10/02/09	0.2788	0.0032	3.4804	803.2	33.2	02-10-2009 15:55:13	1.1370	0.0130	14.1930
Stollsteimer Creek	sc100109_123	1186136.47	2467982.07	10/05/09	0.3382	0.0002	0.0000	797.9	27.4	05-10-2009 12:30:59	1.3620	0.0010	-0.0140

APPENDIX B (continued)
METHANE FLUX MEASUREMENTS
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

Location	Site Point Identification	Northing	Easting	Date	CH4 Flux	H2S Flux	CO2 Flux	Pressure	Temperature (Degrees Celsius)	Date & Time of Measurement	CH4 Slope	H2S Slope	CO2 Slope
Yellow Jacket Pass/Squaw Creek	yjp091009_01	1214138.88	2438366.22	09/10/09	0.0000	0.0019	0.0426	785.9	37.3	10-09-2009 12:14:13	0.0000	0.0080	0.1800
Yellow Jacket Pass/Squaw Creek	yjp091009_03	1214517.46	2438366.68	09/10/09	0.0000	0.0014	0.0589	785.5	38.6	10-09-2009 12:22:06	0.0000	0.0060	0.2500
Yellow Jacket Pass/Squaw Creek	yjp091009_04	1214724.72	2438363.25	09/10/09	0.0000	0.0012	0.1312	782.8	39.4	10-09-2009 12:26:55	0.0000	0.0050	0.5600
Yellow Jacket Pass/Squaw Creek	yjp091009_05	1214928.41	2438546.63	09/10/09	0.0000	0.0014	0.0522	778.5	40.5	10-09-2009 12:34:00	-0.2380	0.0060	0.2250
Yellow Jacket Pass/Squaw Creek	yjp091009_06	1214935.18	2438748.04	09/10/09	0.0000	0.0018	0.1536	780.0	45.1	10-09-2009 13:05:26	0.0000	0.0080	0.6700
Yellow Jacket Pass/Squaw Creek	yjp091009_08	1214911.92	2439162.13	09/10/09	0.0000	0.0014	0.6392	782.3	45.4	10-09-2009 13:34:37	0.0000	0.0060	2.7830
Yellow Jacket Pass/Squaw Creek	yjp091009_09	1214925.01	2439365.64	09/10/09	0.0000	0.0023	0.0000	782.6	45.2	10-09-2009 13:38:30	0.0000	0.0100	-0.2800
Yellow Jacket Pass/Squaw Creek	yjp091009_11	1214886.86	2439767.39	09/10/09	0.0000	0.0034	0.0481	778.8	44.6	10-09-2009 13:45:18	0.0000	0.0150	0.2100
Yellow Jacket Pass/Squaw Creek	yjp091009_13	1214750.45	2439800.67	09/10/09	0.0000	0.0032	0.3545	778.1	43.8	10-09-2009 13:52:45	0.0000	0.0140	1.5440
Yellow Jacket Pass/Squaw Creek	yjp091009_14	1214737.24	2439591.50	09/10/09	0.0000	0.0035	0.1406	778.8	43.4	10-09-2009 13:56:00	0.0000	0.0150	0.6110
Yellow Jacket Pass/Squaw Creek	yjp091009_15	1214736.47	2439369.49	09/10/09	0.0000	0.0037	0.0821	779.5	43.0	10-09-2009 13:59:33	0.0000	0.0160	0.3560
Yellow Jacket Pass/Squaw Creek	yjp091009_16	1214729.28	2439201.13	09/10/09	0.0000	0.0000	0.0830	781.4	42.8	10-09-2009 14:01:48	0.0000	0.0000	0.3590
Yellow Jacket Pass/Squaw Creek	yjp091009_17	1214732.37	2438987.12	09/10/09	0.0000	0.0014	0.0067	782.4	42.6	10-09-2009 14:05:06	0.0000	0.0060	0.0290
Yellow Jacket Pass/Squaw Creek	yjp091009_18	1214744.48	2438766.04	09/10/09	0.0000	0.0009	0.0731	782.4	41.1	10-09-2009 14:35:43	0.0000	0.0040	0.3140
Yellow Jacket Pass/Squaw Creek	yjp091009_19	1214711.18	2438601.18	09/10/09	0.0000	0.0005	0.1364	783.5	41.1	10-09-2009 14:38:34	0.0000	0.0020	0.5850
Yellow Jacket Pass/Squaw Creek	yjp091009_20	1214525.18	2438577.73	09/10/09	0.0000	0.0005	0.0000	782.0	40.9	10-09-2009 14:41:49	0.0000	0.0020	-0.0160
Yellow Jacket Pass/Squaw Creek	yjp091009_22	1214133.92	2438565.10	09/10/09	0.0000	0.0000	0.1463	784.8	40.5	10-09-2009 14:46:30	-0.8990	-0.0030	0.6250
Yellow Jacket Pass/Squaw Creek	yjp091009_23	1214118.13	2438781.17	09/11/09	0.0000	0.0007	0.0380	784.8	28.1	11-09-2009 10:27:20	0.0000	0.0030	0.1560
Yellow Jacket Pass/Squaw Creek	yjp091009_24	1214316.02	2438775.68	09/11/09	0.0000	0.0022	0.1159	785.1	28.5	11-09-2009 10:29:50	0.0000	0.0090	0.4760
Yellow Jacket Pass/Squaw Creek	yjp091009_25	1214520.61	2438782.00	09/11/09	0.0000	0.0032	0.0397	785.1	28.7	11-09-2009 10:32:18	0.0000	0.0130	0.1630
Yellow Jacket Pass/Squaw Creek	yjp091009_26	1214537.18	2438967.42	09/11/09	0.0000	0.0010	0.1295	784.7	29.0	11-09-2009 10:34:37	0.0000	0.0040	0.5330
Yellow Jacket Pass/Squaw Creek	yjp091009_27	1214532.35	2439171.41	09/11/09	0.0000	0.0007	0.1405	784.7	29.2	11-09-2009 10:38:31	0.0000	0.0030	0.5790
Yellow Jacket Pass/Squaw Creek	yjp091009_29	1214515.74	2439553.64	09/11/09	0.0000	0.0019	0.1138	782.1	29.6	11-09-2009 10:44:01	0.0000	0.0080	0.4710
Yellow Jacket Pass/Squaw Creek	yjp091009_31	1214528.74	2439965.62	09/11/09	0.0000	0.0019	0.0509	782.3	30.0	11-09-2009 10:51:19	0.0000	0.0080	0.2110
Yellow Jacket Pass/Squaw Creek	yjp091009_32	1214513.15	2440193.23	09/11/09	0.0000	0.0019	0.0000	781.2	30.3	11-09-2009 10:55:03	-0.0280	0.0080	-1.2410
Yellow Jacket Pass/Squaw Creek	yjp091009_33	1214346.13	2440150.89	09/11/09	0.0000	0.0000	0.1216	778.9	32.5	11-09-2009 11:31:26	0.0000	0.0000	0.5100
Yellow Jacket Pass/Squaw Creek	yjp091009_36	1214338.41	2439591.03	09/11/09	0.0000	0.0022	0.1345	782.5	33.1	11-09-2009 11:41:41	0.0000	0.0090	0.5630
Yellow Jacket Pass/Squaw Creek	yjp091009_37	1214326.91	2439382.17	09/11/09	0.0000	0.0033	0.1282	781.9	33.3	11-09-2009 11:45:06	0.0000	0.0140	0.5370
Yellow Jacket Pass/Squaw Creek	yjp091009_38	1214332.73	2439170.39	09/11/09	0.0000	0.0012	0.0380	783.1	33.5	11-09-2009 11:47:56	0.0000	0.0050	0.1590
Yellow Jacket Pass/Squaw Creek	yjp091009_39	1214310.54	2439002.26	09/11/09	0.0000	0.0041	0.4173	782.7	33.7	11-09-2009 11:50:34	0.0000	0.0170	1.7490
Yellow Jacket Pass/Squaw Creek	yjp091009_40	1214132.79	2438995.21	09/11/09	0.0000	0.0050	0.2456	784.7	34.0	11-09-2009 11:53:20	0.0000	0.0210	1.0280
Yellow Jacket Pass/Squaw Creek	yjp091009_41	1214091.33	2439184.13	09/11/09	0.0000	0.0012	0.1486	784.4	34.4	11-09-2009 11:56:17	-1.3390	0.0050	0.6230
Yellow Jacket Pass/Squaw Creek	yjp091009_42	1214115.88	2439357.47	09/11/09	0.0000	0.0024	0.0520	783.8	35.4	11-09-2009 12:27:29	0.0000	0.0100	0.2190
Yellow Jacket Pass/Squaw Creek	yjp091009_46	1214108.08	2440185.38	09/11/09	0.0000	0.0012	0.2664	777.0	35.6	11-09-2009 12:42:18	0.0000	0.0050	1.1320
Yellow Jacket Pass/Squaw Creek	yjp091009_48	1213936.27	2439978.87	09/11/09	0.0000	0.0016	0.0616	777.0	36.0	11-09-2009 12:48:54	0.0000	0.0070	0.2620
Yellow Jacket Pass/Squaw Creek	yjp091009_49	1213911.75	2439784.57	09/11/09	0.0000	0.0016	0.1054	778.4	36.2	11-09-2009 12:51:57	0.0000	0.0070	0.4480
Yellow Jacket Pass/Squaw Creek	yjp091009_50	1213723.35	2439955.90	09/11/09	0.0000	0.0028	0.0775	782.3	36.4	11-09-2009 12:55:34	0.0000	0.0120	0.3280
Yellow Jacket Pass/Squaw Creek	yjp091009_54	1213926.51	2439179.11	09/11/09	0.0000	0.0040	0.1816	783.4	37.5	11-09-2009 13:07:41	0.0000	0.0170	0.7700
Yellow Jacket Pass/Squaw Creek	yjp091009_55	1213925.00	2438982.59	09/11/09	0.0000	0.0035	0.2760	784.0	37.7	11-09-2009 13:10:22	0.0000	0.0150	1.1700
Yellow Jacket Pass/Squaw Creek	yjp091009_57	1213755.68	2438984.63	09/11/09	0.0000	0.0019	0.0210	783.9	38.3	11-09-2009 13:16:13	0.0000	0.0080	0.0890
Yellow Jacket Pass/Squaw Creek	yjp091009_58	1213723.66	2439167.18	09/11/09	0.0000	0.0024	0.0005	784.4	38.5	11-09-2009 13:18:48	0.0000	0.0100	0.0020
Yellow Jacket Pass/Squaw Creek	yjp091009_59	1213737.27	2439362.88	09/11/09	0.0000	0.0035	0.2255	784.0	38.7	11-09-2009 13:21:20	0.0000	0.0150	0.9590
Yellow Jacket Pass/Squaw Creek	yjp091009_61	1214346.49	2438205.62	09/15/09	0.0000	0.0046	0.0734	783.1	26.3	15-09-2009 10:23:40	0.0000	0.0190	0.3000
Yellow Jacket Pass/Squaw Creek	yjp091009_62	1214520.73	2438181.19	09/15/09	0.0000	0.0002	0.0853	780.8	27.3	15-09-2009 10:27:51	0.0000	0.0010	0.3510
Yellow Jacket Pass/Squaw Creek	yjp091009_63	1214719.69	2438187.24	09/15/09	0.0000	0.0015	0.0136	778.9	27.9	15-09-2009 10:30:22	0.0000	0.0060	0.0560
Yellow Jacket Pass/Squaw Creek	yjp091009_65	1214918.12	2438364.12	09/15/09	0.0000	0.0002	0.0406	775.7	29.0	15-09-2009 10:36:27	0.0000	0.0010	0.1690
Yellow Jacket Pass/Squaw Creek	yjp091009_66	1215155.84	2438201.06	09/15/09	0.0000	0.0012	0.0000	774.6	30.9	15-09-2009 11:03:15	0.0000	0.0050	-0.3790
Yellow Jacket Pass/Squaw Creek	yjp091009_71	1215350.15	2437405.57	09/15/09	0.0000	0.0019	0.0430	778.5	32.0	15-09-2009 11:56:29	0.0000	0.0080	0.1800
Yellow Jacket Pass/Squaw Creek	yjp091009_73	1215547.81	2437170.06	09/15/09	0.0000	0.0014	0.1333	776.6	32.5	15-09-2009 12:05:52	0.0000	0.0060	0.5610
Yellow Jacket Pass/Squaw Creek	yjp091009_74	1215729.46	2436982.89	09/15/09	0.0000	0.0036	0.1568	775.8	32.7	15-09-2009 12:09:06	0.0000	0.0150	0.6610

APPENDIX B (continued)
METHANE FLUX MEASUREMENTS
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

Location	Site Point Identification	Northing	Easting	Date	CH4 Flux	H2S Flux	CO2 Flux	Pressure	Temperature (Degrees Celsius)	Date & Time of Measurement	CH4 Slope	H2S Slope	CO2 Slope
Yellow Jacket Pass/Squaw Creek	yjp091009_75	1215692.17	2436753.74	09/15/09	0.0000	0.0007	0.1096	776.2	32.9	15-09-2009 12:12:10	0.0000	0.0030	0.4620
Yellow Jacket Pass/Squaw Creek	yjp091009_77	1215759.36	2436391.58	09/15/09	0.0000	0.0026	0.0112	780.4	33.4	15-09-2009 12:19:39	0.0000	0.0110	0.0470
Yellow Jacket Pass/Squaw Creek	yjp091009_79	1215334.48	2436764.15	09/15/09	0.0000	0.0012	0.1134	781.3	33.5	15-09-2009 12:25:20	0.0000	0.0050	0.4760
Yellow Jacket Pass/Squaw Creek	yjp091009_83	1214712.58	2437593.47	09/15/09	0.0000	0.0005	0.0894	782.3	33.8	15-09-2009 12:39:06	0.0000	0.0020	0.3750
Yellow Jacket Pass/Squaw Creek	yjp091009_85	1214722.98	2437991.22	09/15/09	0.0000	0.0033	0.0000	780.4	34.2	15-09-2009 12:46:16	0.0000	0.0140	-0.0450
Yellow Jacket Pass/Squaw Creek	yjp091009_86	1214549.71	2437973.19	09/15/09	0.0000	0.0000	0.0000	778.6	34.6	15-09-2009 12:50:48	0.0000	-0.0040	-1.4790
Yellow Jacket Pass/Squaw Creek	yjp091009_87	1214504.62	2437755.47	09/16/09	0.0000	0.0000	0.0760	783.5	24.9	16-09-2009 09:41:51	-0.0080	-0.0010	0.3090
Yellow Jacket Pass/Squaw Creek	yjp091009_88	1214913.77	2437986.22	09/16/09	0.0000	0.0007	0.0834	783.9	26.6	16-09-2009 09:50:20	0.0000	0.0030	0.3410
Yellow Jacket Pass/Squaw Creek	yjp091009_89	1214936.41	2437761.40	09/16/09	0.0000	0.0005	0.0000	779.6	27.2	16-09-2009 09:53:33	0.0000	0.0020	-3.3740
Yellow Jacket Pass/Squaw Creek	yjp091009_90	1214926.67	2437599.29	09/16/09	0.0000	0.0010	0.0606	779.7	27.6	16-09-2009 09:56:24	0.0000	0.0040	0.2500
Yellow Jacket Pass/Squaw Creek	yjp091009_91	1214943.38	2437379.73	09/16/09	0.0000	0.0002	0.0491	780.9	28.8	16-09-2009 10:08:34	-0.2850	0.0010	0.2030
Yellow Jacket Pass/Squaw Creek	yjp091009_92	1215114.64	2437566.03	09/16/09	0.0000	0.0005	0.2749	781.7	29.2	16-09-2009 10:11:34	-0.2040	0.0020	1.1370
Yellow Jacket Pass/Squaw Creek	yjp091009_93	1215132.92	2437374.02	09/16/09	0.0000	0.0010	0.0779	780.4	29.5	16-09-2009 10:15:00	0.0000	0.0040	0.3230
Yellow Jacket Pass/Squaw Creek	yjp091009_94	1215145.05	2437176.49	09/16/09	0.0000	0.0010	0.1081	781.7	29.8	16-09-2009 10:17:26	0.0000	0.0040	0.4480
Yellow Jacket Pass/Squaw Creek	yjp091009_95	1215311.59	2437176.97	09/16/09	0.0000	0.0000	0.1062	782.3	30.0	16-09-2009 10:20:28	0.0000	0.0000	0.4400
Yellow Jacket Pass/Squaw Creek	yjp091009_97	1215507.89	2436974.19	09/16/09	0.0000	0.0005	0.0507	780.8	32.0	16-09-2009 10:55:38	0.0000	0.0020	0.2120
Yellow Jacket Pass/Squaw Creek	yjp091009_98	1215532.83	2436788.19	09/16/09	0.0000	0.0062	0.0000	779.3	32.3	16-09-2009 10:58:33	-0.0040	0.0260	-0.8910
Yellow Jacket Pass/Squaw Creek	yjp091609_02	1215530.80	2436351.43	09/16/09	0.0000	0.0007	0.0277	781.5	33.5	16-09-2009 11:09:26	0.0000	0.0030	0.1160
Yellow Jacket Pass/Squaw Creek	yjp091609_05	1214942.52	2436954.95	09/16/09	0.0000	0.0012	0.0410	783.4	34.5	16-09-2009 11:18:37	0.0000	0.0050	0.1720
Yellow Jacket Pass/Squaw Creek	yjp091609_07	1214546.66	2437370.47	09/16/09	0.0000	0.0017	0.0388	783.2	34.9	16-09-2009 11:25:49	0.0000	0.0070	0.1630
Yellow Jacket Pass/Squaw Creek	yjp091609_08	1214529.52	2437576.08	09/16/09	0.0000	0.0007	0.0697	784.3	35.0	16-09-2009 11:28:16	-0.0400	0.0030	0.2930
Yellow Jacket Pass/Squaw Creek	yjp091609_09	1214337.08	2437575.32	09/16/09	0.0000	0.0031	0.0930	783.4	35.0	16-09-2009 11:31:02	0.0000	0.0130	0.3910
Yellow Jacket Pass/Squaw Creek	yjp091609_10	1214326.57	2437796.82	09/16/09	0.0000	0.0007	0.0585	784.4	35.1	16-09-2009 11:33:55	-0.3820	0.0030	0.2460
Yellow Jacket Pass/Squaw Creek	yjp091609_11	1214296.84	2437989.18	09/16/09	0.0000	0.0002	0.0164	783.2	35.1	16-09-2009 11:37:58	0.0000	0.0010	0.0690
Yellow Jacket Pass/Squaw Creek	yjp091609_13	1213938.94	2438572.92	09/16/09	0.0000	0.0000	0.6481	783.7	29.3	16-09-2009 13:20:19	0.0000	-0.0100	2.6740
Yellow Jacket Pass/Squaw Creek	yjp091609_16	1213496.51	2439161.43	09/16/09	0.0000	0.0005	0.1317	785.2	32.5	16-09-2009 13:35:33	0.0000	0.0020	0.5480
Yellow Jacket Pass/Squaw Creek	yjp091609_17	1213365.74	2439372.54	09/16/09	0.0000	0.0031	0.3179	784.6	32.9	16-09-2009 13:38:28	0.0000	0.0130	1.3260
Yellow Jacket Pass/Squaw Creek	yjp091609_18	1213321.70	2439570.58	09/16/09	0.0000	0.0007	0.0451	785.4	33.2	16-09-2009 13:40:46	0.0000	0.0030	0.1880
Yellow Jacket Pass/Squaw Creek	yjp091609_19	1213499.44	2439578.61	09/16/09	0.0000	0.0002	0.5043	785.4	33.5	16-09-2009 13:44:35	-0.6930	0.0010	2.1050
Yellow Jacket Pass/Squaw Creek	yjp091609_21	1214331.91	2437398.39	09/17/09	0.0000	0.0010	0.0324	785.8	23.9	17-09-2009 10:43:55	-0.0040	0.0040	0.1310
Yellow Jacket Pass/Squaw Creek	yjp091609_23	1213927.23	2437374.25	09/17/09	0.0000	0.0035	0.0626	786.2	25.0	17-09-2009 10:49:53	0.0000	0.0140	0.2540
Yellow Jacket Pass/Squaw Creek	yjp091609_24	1213739.51	2437361.17	09/17/09	0.0000	0.0000	0.1961	785.5	25.5	17-09-2009 10:53:52	-0.3810	-0.0010	0.7970
Yellow Jacket Pass/Squaw Creek	yjp091609_27	1214316.78	2437176.71	09/17/09	0.0000	0.0010	0.0572	783.8	26.5	17-09-2009 11:14:29	0.0000	0.0040	0.2340
Yellow Jacket Pass/Squaw Creek	yjp091609_28	1214348.96	2436968.36	09/17/09	0.0000	0.0029	0.1324	782.5	28.0	17-09-2009 11:50:39	-0.2120	0.0120	0.5450
Yellow Jacket Pass/Squaw Creek	yjp091609_30	1214685.44	2436565.40	09/17/09	0.0000	0.0007	0.1646	779.6	29.0	17-09-2009 11:59:15	0.0000	0.0030	0.6820
Yellow Jacket Pass/Squaw Creek	yjp091609_31	1214913.35	2436379.34	09/17/09	0.0000	0.0017	0.0580	781.1	30.4	17-09-2009 12:38:52	0.0000	0.0070	0.2410
Yellow Jacket Pass/Squaw Creek	yjp091609_32	1215093.58	2436179.68	09/17/09	0.0000	0.0007	0.1730	779.2	30.5	17-09-2009 12:42:41	0.0000	0.0030	0.7210
Yellow Jacket Pass/Squaw Creek	yjp091609_33	1214146.44	2436762.42	09/17/09	0.0000	0.0012	0.0459	780.3	30.8	17-09-2009 13:04:02	-0.0260	0.0050	0.1910
Yellow Jacket Pass/Squaw Creek	yjp091609_34	1214255.09	2436757.74	09/17/09	0.0000	0.0014	0.1876	780.4	30.8	17-09-2009 13:08:18	0.0000	0.0060	0.7810
Yellow Jacket Pass/Squaw Creek	yjp091609_35	1214143.80	2436973.84	09/17/09	0.0000	0.0065	0.0631	783.0	30.9	17-09-2009 13:11:59	0.0000	0.0270	0.2620
Yellow Jacket Pass/Squaw Creek	yjp091609_36	1213936.12	2436971.85	09/17/09	0.0000	0.0065	0.3171	782.3	31.0	17-09-2009 13:14:22	-0.1550	0.0270	1.3180
Yellow Jacket Pass/Squaw Creek	yjp091609_37	1214136.88	2437578.91	09/17/09	0.0000	0.0036	0.2860	783.0	31.8	17-09-2009 13:35:21	0.0000	0.0150	1.1910
Yellow Jacket Pass/Squaw Creek	yjp091609_38	1213924.75	2437582.89	09/18/09	0.0000	0.0020	0.0631	785.4	23.6	18-09-2009 10:02:53	-0.5080	0.0080	0.2550
Yellow Jacket Pass/Squaw Creek	yjp091609_40	1213545.30	2437786.98	09/18/09	0.0000	0.0000	0.1018	783.0	25.3	18-09-2009 10:10:37	-0.4550	-0.0010	0.4150
Yellow Jacket Pass/Squaw Creek	yjp091609_42	1213338.66	2438162.36	09/18/09	0.0000	0.0005	0.0158	779.9	26.3	18-09-2009 10:19:06	-0.5370	0.0020	0.0650
Yellow Jacket Pass/Squaw Creek	yjp091609_43	1213298.58	2438369.22	09/18/09	0.0000	0.0002	0.0812	779.0	26.6	18-09-2009 10:22:24	-0.0120	0.0010	0.3340
Yellow Jacket Pass/Squaw Creek	yjp091609_44	1213293.20	2438549.37	09/18/09	0.0000	0.0010	0.1749	780.3	26.8	18-09-2009 10:25:39	-1.3890	0.0040	0.7190
Yellow Jacket Pass/Squaw Creek	yjp091609_46	1213299.65	2438979.28	09/18/09	0.0000	0.0000	0.0796	784.4	27.4	18-09-2009 10:36:04	-0.0620	-0.0010	0.3260
Yellow Jacket Pass/Squaw Creek	yjp091609_51	1213549.22	2438167.45	09/18/09	0.0000	0.0007	0.0276	781.6	29.3	18-09-2009 11:18:03	0.0000	0.0030	0.1140
Yellow Jacket Pass/Squaw Creek	yjp091609_52	1213719.53	2438186.25	09/18/09	0.0000	0.0002	0.0821	779.4	29.6	18-09-2009 11:22:31	-1.3620	0.0010	0.3410

APPENDIX B (continued)
METHANE FLUX MEASUREMENTS
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

Location	Site Point Identification	Northing	Easting	Date	CH4 Flux	H2S Flux	CO2 Flux	Pressure	Temperature (Degrees Celsius)	Date & Time of Measurement	CH4 Slope	H2S Slope	CO2 Slope
Yellow Jacket Pass/Squaw Creek	yjp091609_53	1213727.65	2437977.20	09/18/09	0.0000	0.0005	0.0904	782.7	29.8	18-09-2009 11:26:06	-0.2520	0.0020	0.3740
Yellow Jacket Pass/Squaw Creek	yjp091609_54	1213712.98	2437779.31	09/18/09	0.0000	0.0027	0.2846	781.7	30.0	18-09-2009 11:29:44	-0.0180	0.0110	1.1800
Yellow Jacket Pass/Squaw Creek	yjp091609_57	1213918.21	2438189.44	09/18/09	0.0000	0.0012	0.2171	784.4	30.3	18-09-2009 11:37:59	0.0000	0.0050	0.8980
Yellow Jacket Pass/Squaw Creek	yjp091609_58	1213875.69	2438379.22	09/18/09	0.0000	0.0034	0.1313	784.6	30.3	18-09-2009 11:41:44	0.0000	0.0140	0.5430
Yellow Jacket Pass/Squaw Creek	yjp091609_59	1213736.45	2438377.81	09/18/09	0.0000	0.0002	0.0257	785.9	30.4	18-09-2009 11:45:30	-0.0270	0.0010	0.1060
Yellow Jacket Pass/Squaw Creek	yjp091609_60	1213685.90	2438588.23	09/18/09	0.0000	0.0022	0.1089	783.9	30.5	18-09-2009 11:48:25	-0.0020	0.0090	0.4510
Yellow Jacket Pass/Squaw Creek	yjp091609_62	1214102.47	2437776.67	09/18/09	0.0000	0.0010	0.2649	784.0	30.8	18-09-2009 11:58:12	-0.1010	0.0040	1.0980
Yellow Jacket Pass/Squaw Creek	yjp091609_64	1214544.48	2436983.13	09/18/09	0.0000	0.0002	0.1123	783.4	30.9	18-09-2009 12:50:24	0.0000	0.0010	0.4660
Yellow Jacket Pass/Squaw Creek	yjp091609_66	1214730.22	2436779.79	09/18/09	0.0000	0.0000	0.1231	782.1	31.0	18-09-2009 12:56:59	-3.3640	-0.0010	0.5120
Yellow Jacket Pass/Squaw Creek	yjp091609_67	1214931.43	2436587.21	09/18/09	0.0000	0.0005	0.1392	780.3	31.0	18-09-2009 13:00:11	-0.3710	0.0020	0.5800
Yellow Jacket Pass/Squaw Creek	yjp091609_68	1215097.13	2436355.66	09/18/09	0.0000	0.0005	0.0857	780.8	31.1	18-09-2009 13:02:46	0.0000	0.0020	0.3570
Yellow Jacket Pass/Squaw Creek	yjp091609_69	1215273.46	2436206.51	09/18/09	0.0000	0.0012	0.2697	780.6	31.1	18-09-2009 13:05:51	0.0000	0.0050	1.1240
Yellow Jacket Pass/Squaw Creek	yjp091609_70	1215275.67	2436388.90	09/18/09	0.0000	0.0031	0.2198	781.5	31.2	18-09-2009 13:09:46	0.0000	0.0130	0.9150
Yellow Jacket Pass/Squaw Creek	yjp091609_72	1214940.81	2436762.19	09/18/09	0.0000	0.0010	0.1493	782.1	31.5	18-09-2009 13:16:20	0.0000	0.0040	0.6220
Yellow Jacket Pass/Squaw Creek	yjp091009_12	1214729.32	2439981.08	09/10/09	0.0002	0.0009	0.0000	777.5	44.1	10-09-2009 13:49:05	0.0010	0.0040	-0.1170
Yellow Jacket Pass/Squaw Creek	yjp091009_10	1214919.19	2439560.22	09/10/09	0.0002	0.0011	0.1042	780.3	44.9	10-09-2009 13:42:00	0.0010	0.0050	0.4540
Yellow Jacket Pass/Squaw Creek	yjp091009_21	1214327.67	2438568.90	09/10/09	0.0002	0.0000	0.0357	784.0	40.7	10-09-2009 14:44:03	0.0010	0.0000	0.1530
Yellow Jacket Pass/Squaw Creek	yjp091009_47	1213931.37	2440161.82	09/11/09	0.0002	0.0023	0.0749	775.8	35.8	11-09-2009 12:46:09	0.0010	0.0100	0.3190
Yellow Jacket Pass/Squaw Creek	yjp091009_51	1213748.88	2439764.04	09/11/09	0.0002	0.0052	0.1660	780.0	36.6	11-09-2009 12:58:16	0.0010	0.0220	0.7050
Yellow Jacket Pass/Squaw Creek	yjp091009_56	1213927.31	2438782.54	09/11/09	0.0002	0.0028	0.4430	784.4	38.0	11-09-2009 13:13:24	0.0010	0.0120	1.8790
Yellow Jacket Pass/Squaw Creek	yjp091009_43	1214132.81	2439554.73	09/11/09	0.0002	0.0014	0.1099	782.7	35.4	11-09-2009 12:31:26	0.0010	0.0060	0.4630
Yellow Jacket Pass/Squaw Creek	yjp091609_12	1214148.75	2438181.00	09/16/09	0.0002	0.0007	0.1237	784.2	35.2	16-09-2009 11:40:41	0.0010	0.0030	0.5200
Yellow Jacket Pass/Squaw Creek	yjp091609_06	1214753.25	2437153.54	09/16/09	0.0002	0.0007	0.1054	783.0	34.7	16-09-2009 11:21:54	0.0010	0.0030	0.4430
Yellow Jacket Pass/Squaw Creek	yjp091009_78	1215533.68	2436532.59	09/15/09	0.0002	0.0019	0.0000	780.4	33.5	15-09-2009 12:22:09	0.0010	0.0080	-0.0780
Yellow Jacket Pass/Squaw Creek	yjp091009_67	1215152.62	2437975.77	09/15/09	0.0002	0.0021	0.6527	774.3	31.0	15-09-2009 11:07:05	0.0010	0.0090	2.7410
Yellow Jacket Pass/Squaw Creek	yjp091009_80	1215132.47	2436969.30	09/15/09	0.0002	0.0045	0.1065	780.8	33.5	15-09-2009 12:28:26	0.0010	0.0190	0.4470
Yellow Jacket Pass/Squaw Creek	yjp091009_81	1214919.00	2437171.21	09/15/09	0.0002	0.0019	0.1689	782.3	33.6	15-09-2009 12:31:58	0.0010	0.0080	0.7080
Yellow Jacket Pass/Squaw Creek	yjp091009_68	1215139.07	2437787.31	09/15/09	0.0002	0.0021	0.2563	776.6	31.2	15-09-2009 11:10:51	0.0010	0.0090	1.0740
Yellow Jacket Pass/Squaw Creek	yjp091009_69	1215313.04	2437817.78	09/15/09	0.0002	0.0014	0.2228	777.3	31.3	15-09-2009 11:14:34	0.0010	0.0060	0.9330
Yellow Jacket Pass/Squaw Creek	yjp091609_71	1215137.57	2436583.20	09/18/09	0.0002	0.0007	0.2637	782.4	31.3	18-09-2009 13:12:24	0.0010	0.0030	1.0970
Yellow Jacket Pass/Squaw Creek	yjp091609_65	1214710.38	2436974.42	09/18/09	0.0002	0.0002	0.1071	782.7	30.9	18-09-2009 12:53:08	0.0010	0.0010	0.4450
Yellow Jacket Pass/Squaw Creek	yjp091009_30	1214533.80	2439747.38	09/11/09	0.0002	0.0022	0.1957	780.5	29.8	11-09-2009 10:47:13	0.0010	0.0090	0.8120
Yellow Jacket Pass/Squaw Creek	yjp091009_28	1214511.72	2439394.00	09/11/09	0.0002	0.0019	0.1203	782.7	29.4	11-09-2009 10:41:02	0.0010	0.0080	0.4970
Yellow Jacket Pass/Squaw Creek	yjp091609_61	1214092.65	2437939.90	09/18/09	0.0002	0.0007	0.1160	787.0	30.7	18-09-2009 11:55:26	0.0010	0.0030	0.4790
Yellow Jacket Pass/Squaw Creek	yjp091609_29	1214531.64	2436772.08	09/17/09	0.0002	0.0039	0.0126	781.3	28.3	17-09-2009 11:54:07	0.0010	0.0160	0.0520
Yellow Jacket Pass/Squaw Creek	yjp091609_50	1213530.13	2438382.33	09/18/09	0.0002	0.0005	0.1695	784.3	29.0	18-09-2009 11:14:13	0.0010	0.0020	0.6980
Yellow Jacket Pass/Squaw Creek	yjp091609_49	1213544.43	2438584.51	09/18/09	0.0002	0.0000	0.1098	786.2	28.8	18-09-2009 11:09:54	0.0010	-0.0030	0.4510
Yellow Jacket Pass/Squaw Creek	yjp091609_39	1213727.75	2437592.48	09/18/09	0.0002	0.0005	0.0000	783.9	24.5	18-09-2009 10:06:31	0.0010	0.0020	-0.1900
Yellow Jacket Pass/Squaw Creek	yjp091609_22	1214132.96	2437368.20	09/17/09	0.0002	0.0025	0.0829	792.4	24.6	17-09-2009 10:47:25	0.0010	0.0100	0.3330
Yellow Jacket Pass/Squaw Creek	yjp091009_07	1214929.90	2438972.91	09/10/09	0.0005	0.0016	0.0000	782.3	45.5	10-09-2009 13:31:30	0.0020	0.0070	-0.1000
Yellow Jacket Pass/Squaw Creek	yjp091009_44	1214106.50	2439767.66	09/11/09	0.0005	0.0026	0.0978	783.4	35.4	11-09-2009 12:35:58	0.0020	0.0110	0.4120
Yellow Jacket Pass/Squaw Creek	yjp091609_01	1215728.27	2436188.18	09/16/09	0.0005	0.0010	0.0880	778.9	33.0	16-09-2009 11:06:06	0.0020	0.0040	0.3700
Yellow Jacket Pass/Squaw Creek	yjp091009_35	1214338.33	2439769.01	09/11/09	0.0005	0.0005	0.0766	780.6	32.9	11-09-2009 11:38:39	0.0020	0.0020	0.3210
Yellow Jacket Pass/Squaw Creek	yjp091009_82	1214740.66	2437355.86	09/15/09	0.0005	0.0000	0.0930	782.5	33.6	15-09-2009 12:34:30	0.0020	-0.0010	0.3900
Yellow Jacket Pass/Squaw Creek	yjp091609_15	1213551.09	2438968.59	09/16/09	0.0005	0.0017	0.4277	785.4	31.9	16-09-2009 13:32:30	0.0020	0.0070	1.7760
Yellow Jacket Pass/Squaw Creek	yjp091609_63	1214502.78	2437221.67	09/18/09	0.0005	0.0014	0.4965	784.0	30.8	18-09-2009 12:46:33	0.0020	0.0060	2.0580
Yellow Jacket Pass/Squaw Creek	yjp091609_14	1213754.93	2438773.87	09/16/09	0.0005	0.0031	0.2896	784.3	30.6	16-09-2009 13:26:01	0.0020	0.0130	1.1990
Yellow Jacket Pass/Squaw Creek	yjp091609_41	1213537.33	2437979.86	09/18/09	0.0005	0.0005	0.0980	781.3	25.9	18-09-2009 10:14:15	0.0020	0.0020	0.4010
Yellow Jacket Pass/Squaw Creek	yjp091009_72	1215512.18	2437382.37	09/15/09	0.0007	0.0005	0.0000	778.9	32.3	15-09-2009 12:01:45	0.0030	0.0020	-0.1850
Yellow Jacket Pass/Squaw Creek	yjp091609_47	1213319.38	2439147.63	09/18/09	0.0007	0.0002	1.0560	786.2	27.6	18-09-2009 10:40:07	0.0030	0.0010	4.3190

APPENDIX B (continued)
METHANE FLUX MEASUREMENTS
2009 FRUITLAND OUTCROP MONITORING
ARCHULETA COUNTY, COLORADO

Location	Site Point Identification	Northing	Easting	Date	CH4 Flux	H2S Flux	CO2 Flux	Pressure	Temperature (Degrees Celsius)	Date & Time of Measurement	CH4 Slope	H2S Slope	CO2 Slope
Yellow Jacket Pass/Squaw Creek	yjp091009_45	1214104.58	2439986.42	09/11/09	0.0009	0.0021	0.2051	779.6	35.5	11-09-2009 12:39:01	0.0040	0.0090	0.8680
Yellow Jacket Pass/Squaw Creek	yjp091009_34	1214316.04	2439973.90	09/11/09	0.0014	0.0021	0.2210	778.8	32.7	11-09-2009 11:34:23	0.0060	0.0090	0.9280
Yellow Jacket Pass/Squaw Creek	yjp091609_48	1213516.63	2438776.09	09/18/09	0.0017	0.0017	0.1608	787.7	27.8	18-09-2009 10:44:48	0.0070	0.0070	0.6570
Yellow Jacket Pass/Squaw Creek	yjp091009_60	1213709.96	2439557.00	09/11/09	0.0019	0.0016	1.2253	783.4	39.3	11-09-2009 13:30:21	0.0080	0.0070	5.2250
Yellow Jacket Pass/Squaw Creek	yjp091609_45	1213299.66	2438795.63	09/18/09	0.0022	0.0012	0.3002	780.9	27.1	18-09-2009 10:31:27	0.0090	0.0050	1.2340
Yellow Jacket Pass/Squaw Creek	yjp091609_56	1213915.72	2438003.71	09/18/09	0.0024	0.0010	0.2161	784.8	30.2	18-09-2009 11:35:18	0.0100	0.0040	0.8930
Yellow Jacket Pass/Squaw Creek	yjp091609_04	1215127.96	2436771.23	09/16/09	0.0029	0.0012	0.0267	782.0	34.2	16-09-2009 11:15:01	0.0120	0.0050	0.1120
Yellow Jacket Pass/Squaw Creek	yjp091609_03	1215328.72	2436576.09	09/16/09	0.0031	0.0019	0.1481	782.8	33.9	16-09-2009 11:12:24	0.0130	0.0080	0.6210
Yellow Jacket Pass/Squaw Creek	yjp091009_70	1215338.62	2437555.60	09/15/09	0.0059	0.0017	0.1278	774.9	31.5	15-09-2009 11:19:01	0.0250	0.0070	0.5370
Yellow Jacket Pass/Squaw Creek	yjp091009_84	1214713.49	2437774.28	09/15/09	0.0088	0.0026	0.0891	780.1	33.9	15-09-2009 12:41:47	0.0370	0.0110	0.3750
Yellow Jacket Pass/Squaw Creek	yjp091609_55	1213916.25	2437769.65	09/18/09	0.0092	0.0005	0.1709	782.7	30.1	18-09-2009 11:32:32	0.0380	0.0020	0.7080
Yellow Jacket Pass/Squaw Creek	yjp091009_76	1215730.10	2436561.82	09/15/09	0.0095	0.0019	0.1209	778.0	33.2	15-09-2009 12:16:43	0.0400	0.0080	0.5090
Yellow Jacket Pass/Squaw Creek	yjp091009_02	1214313.16	2438383.72	09/10/09	0.0118	0.0009	0.1670	787.8	37.9	10-09-2009 12:17:40	0.0500	0.0040	0.7050
Yellow Jacket Pass/Squaw Creek	yjp091609_20	1213548.51	2439381.16	09/16/09	0.0129	0.0005	0.0251	783.2	33.8	16-09-2009 13:47:52	0.0540	0.0020	0.1050
Yellow Jacket Pass/Squaw Creek	yjp091009_53	1213949.32	2439380.71	09/11/09	0.0177	0.0061	0.2452	783.1	37.2	11-09-2009 13:04:41	0.0750	0.0260	1.0390
Yellow Jacket Pass/Squaw Creek	yjp091009_64	1214916.65	2438170.14	09/15/09	0.0219	0.0014	0.0000	777.3	28.4	15-09-2009 10:33:26	0.0910	0.0060	-0.4800
Yellow Jacket Pass/Squaw Creek	yjp091009_52	1213910.50	2439561.74	09/11/09	0.0278	0.0033	0.1589	780.4	36.9	11-09-2009 13:01:38	0.1180	0.0140	0.6750
Yellow Jacket Pass/Squaw Creek	yjp091009_96	1215336.91	2436963.08	09/16/09	0.0477	0.0010	0.1260	780.9	31.8	16-09-2009 10:51:48	0.1990	0.0040	0.5260
Yellow Jacket Pass/Squaw Creek	yjp091609_25	1213927.54	2437194.28	09/17/09	0.0657	0.0000	0.1880	784.3	26.2	17-09-2009 11:08:30	0.2680	-0.0010	0.7670
Yellow Jacket Pass/Squaw Creek	yjp091609_26	1214126.94	2437176.40	09/17/09	0.0970	0.0007	0.0284	784.6	26.4	17-09-2009 11:10:53	0.3960	0.0030	0.1160

APPENDIX C

VOLUMETRIC METHANE FLUX CALCULATIONS

Grid Volume Computations

Fri Oct 30 12:17:00 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\ArchuletaFlux\2009\Surfer\FGv4.grd
Grid Size:	84 rows x 100 columns
X Minimum:	2445572.83
X Maximum:	2447970.73
X Spacing:	24.221212121211
Y Minimum:	1206723.79
Y Maximum:	1208725.41
Y Spacing:	24.115903614456
Z Minimum:	-0.015337097566078
Z Maximum:	0.19102254315713

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	1352.6765984464
Simpson's Rule:	1353.1177978888
Simpson's 3/8 Rule:	1354.4982477203

Cut & Fill Volumes

Positive Volume [Cut]:	1478.8185135825
Negative Volume [Fill]:	126.14191513614
Net Volume [Cut-Fill]:	1352.6765984464

Areas

Planar Areas

Positive Planar Area [Cut]:	2473393.218256
Negative Planar Area [Fill]:	1186096.1338758
Blanked Planar Area:	1140195.2458677
Total Planar Area:	4799684.5979995

Surface Areas

Positive Surface Area [Cut]:	2473393.2187521
Negative Surface Area [Fill]:	1186096.1338897

Grid Volume Computations

Fri Oct 30 12:20:13 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\ArchuletaFlux\2009\Surfer\PGv4.grd
Grid Size:	226 rows x 256 columns
X Minimum:	2454979.03
X Maximum:	2461363.72
X Spacing:	25.038000000002
Y Minimum:	1200719.98
Y Maximum:	1206336.3
Y Spacing:	24.961422222223
Z Minimum:	-0.0090525763187518
Z Maximum:	0.15926686093812

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	4037.4478041432
Simpson's Rule:	4041.0358158671
Simpson's 3/8 Rule:	4037.2494121264

Cut & Fill Volumes

Positive Volume [Cut]:	4326.9666493899
Negative Volume [Fill]:	289.51884524668
Net Volume [Cut-Fill]:	4037.4478041432

Areas

Planar Areas

Positive Planar Area [Cut]:	7952233.5007613
Negative Planar Area [Fill]:	6069284.5494158
Blanked Planar Area:	21836944.090626
Total Planar Area:	35858462.140803

Surface Areas

Positive Surface Area [Cut]:	7952233.5015874
Negative Surface Area [Fill]:	6069284.5494241

Grid Volume Computations

Fri Oct 30 12:43:44 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\ArchuletaFlux\2009\Surfer\SCv4.grd
Grid Size:	138 rows x 193 columns
X Minimum:	2465775.17
X Maximum:	2470570.11
X Spacing:	24.973645833333
Y Minimum:	1184715.03
Y Maximum:	1188133.3
Y Spacing:	24.950875912409
Z Minimum:	-0.018828535393764
Z Maximum:	0.31046570613459

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	3941.6859250237
Simpson's Rule:	3941.8318100485
Simpson's 3/8 Rule:	3942.0975716794

Cut & Fill Volumes

Positive Volume [Cut]:	4312.7415342243
Negative Volume [Fill]:	371.05560920064
Net Volume [Cut-Fill]:	3941.6859250236

Areas

Planar Areas

Positive Planar Area [Cut]:	3961306.4071055
Negative Planar Area [Fill]:	4592184.1142985
Blanked Planar Area:	7836909.0323959
Total Planar Area:	16390399.5538

Surface Areas

Positive Surface Area [Cut]:	3961306.4091737
Negative Surface Area [Fill]:	4592184.1143334

Grid Volume Computations

Fri Oct 30 11:57:05 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\ArchuletaFlux\2009\Surfer\BCv4.grd
Grid Size:	50 rows x 100 columns
X Minimum:	2424168.02
X Maximum:	2426568.72
X Spacing:	24.249494949497
Y Minimum:	1234582.49
Y Maximum:	1235758.84
Y Spacing:	24.007142857145
Z Minimum:	-0.0030801925436039
Z Maximum:	0.058083624899963

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	674.10811581508
Simpson's Rule:	674.56989156981
Simpson's 3/8 Rule:	674.04460651945

Cut & Fill Volumes

Positive Volume [Cut]:	702.6322604688
Negative Volume [Fill]:	28.524144666909
Net Volume [Cut-Fill]:	674.1081158019

Areas

Planar Areas

Positive Planar Area [Cut]:	1151403.718869
Negative Planar Area [Fill]:	703652.59271502
Blanked Planar Area:	969007.13341646
Total Planar Area:	2824063.4450004

Surface Areas

Positive Surface Area [Cut]:	1151403.7189214
Negative Surface Area [Fill]:	703652.59271616

Grid Volume Computations

Fri Oct 30 12:05:46 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\ArchuletaFlux\2009\Surfer\YJPv4.grd
Grid Size:	100 rows x 162 columns
X Minimum:	2436179.67
X Maximum:	2440193.22
X Spacing:	24.928881987579
Y Minimum:	1213293.19
Y Maximum:	1215759.36
Y Spacing:	24.91080808081
Z Minimum:	-0.0062231971014581
Z Maximum:	0.086021892746726

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	1208.7523786836
Simpson's Rule:	1210.119477579
Simpson's 3/8 Rule:	1209.0700862551

Cut & Fill Volumes

Positive Volume [Cut]:	1289.2083847718
Negative Volume [Fill]:	80.456006088188
Net Volume [Cut-Fill]:	1208.7523786836

Areas

Planar Areas

Positive Planar Area [Cut]:	4616057.0663906
Negative Planar Area [Fill]:	2419236.0147981
Blanked Planar Area:	2862803.5223126
Total Planar Area:	9898096.6035013

Surface Areas

Positive Surface Area [Cut]:	4616057.0665175
Negative Surface Area [Fill]:	2419236.0147998

Grid Volume Computations

Fri Oct 30 12:13:08 2009

Upper Surface

Grid File Name:	C:\DatabaseBackup\MethaneFlux\ArchuletaFlux\2009\Surfer\LSQv4.grd
Grid Size:	78 rows x 100 columns
X Minimum:	2441573.72
X Maximum:	2444176.38
X Spacing:	26.289494949492
Y Minimum:	1207523.13
Y Maximum:	1209543.41
Y Spacing:	26.237402597403
Z Minimum:	-0.00047065310357379
Z Maximum:	0.018502880131667

Lower Surface

Level Surface defined by Z = 0

Volumes

Z Scale Factor:	0.0929

Total Volumes by:

Trapezoidal Rule:	138.96851903876
Simpson's Rule:	138.85919857751
Simpson's 3/8 Rule:	138.97194101642

Cut & Fill Volumes

Positive Volume [Cut]:	144.34179170116
Negative Volume [Fill]:	5.3732726624021
Net Volume [Cut-Fill]:	138.96851903876

Areas

Planar Areas

Positive Planar Area [Cut]:	1937076.1013521
Negative Planar Area [Fill]:	1406574.5843904
Blanked Planar Area:	1914451.2590569
Total Planar Area:	5258101.9447994

Surface Areas

Positive Surface Area [Cut]:	1937076.1013564
Negative Surface Area [Fill]:	1406574.5843904

APPENDIX D

NATURAL SPRINGS LABORATORY ANALYTICAL RESULTS

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

Methane Analysis Report

Archuleta County Springs Sampling

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

Project Name Archuleta County springs
Project Numb MS0904
Report Date: 6/3/2009
Sampled By: Travis Laverty

Analysis: Lynn Fechter

FCGeo #	Sample Date	Sample Time (Hrs)	Site ID-Location	Results: CH4 (mg/L)	Limit (mg/L)	C2
060109-L1	6/1/2009	Unknown	Vance Meadow Spring	**<0.02**	0.02	ND
060109-L2	6/1/2009	Unknown	Vance Spring	**<0.02**	0.02	ND
060109-L3	6/1/2009	Unknown	Willow spring	**<0.02**	0.02	ND

Notes:
Samples delivered to FCGeoscience.
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

Report submitted by
Lynn M. Fechter, B.S. Geology
6/3/2009

Client Name:	LT Environmental
Address:	PO Box 874
City, St Zip:	Bayfield, CO 81122
Attention:	Travis Laverty
Date Received:	05/14/09
Date Reported:	06/10/09
Lab I.D.:	905-076
Project Name:	Arch. Springs 09
Project Number:	MS0904 / MS0903
Sample I.D.:	
Sample Date:	05/14/09
Sample Time:	
Date Extracted:	
Date Analyzed:	
ADHS No.	
Sample Units	
Sample Matrix	Water

Default for ND

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

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

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

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

GAL I.D.: 905-076-02
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.: 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

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

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

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

GAL ID No.: 906-038

June 18, 2009

LTE
Travis Laverty
PO Box 374
Attention: Bayfield, CO 81122

Project Name: MS0904
Project Number:
Date Received: 06/05/09

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 06/05/09.

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, Inc.
75 Suttle Street
Durango, CO 81303

LTE
Travis Laverty
PO Box 374
Attention: Bayfield, CO 81122

GAL I.D.: 906-038-01
Date Received: 06/05/09
Date Reported: 06/18/09
QC Batches:

PROJECT NAME: MS0904
PROJECT NUMBER:
SAMPLE I.D.: NW John Grubb

Sample Date: 06/05/09
Sample Matrix: Water

Laboratory Report

RESULTS

PARAMETER	METHOD	REPORT LIMIT	RESULT	DIL	UNITS	Maximum Contamination Level
Alkalinity, Total	2320B	10	119	1	mg/L	
Alkalinity, Bicarbonate	2320B	10	117	1	mg/L	
Alkalinity, Carbonate	2320B	10	<10	1	mg/L	
Alkalinity, Hydroxide	2320B	10	<10	1	mg/L	
Bromide	300	0.10	<0.10	1	mg/L	
Calcium	200.7	0.5	30.9	1	mg/L	
Chloride	4500CL	10	<10	1	mg/L	
Conductivity	2510B	1.0	341	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	0.18	1	mg/L	
Magnesium	200.7	0.5	16.0	1	mg/L	
Manganese	200.8	0.0005	0.0306	1	mg/L	
Nitrate/Nitrite as N	353.3	0.02	<0.02	1	mg/L	
pH	150.1	NA	8.15	NA	SU	
Potassium	200.7	0.5	0.6	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	67	1	mg/L	
Sulfide	4500S_	0.05	<0.05	1	mg/L	
TDS	2540C	10	120	1	mg/L	
Hardness	Calc	10	143	1	mg/L	
CAB	Calc		0.52		%	

Debbie Zufelt, Laboratory Manager

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

LTE
Travis Laverty
PO Box 374
Attention: Bayfield, CO 81122

GAL I.D.: 906-038-02
Date Received: 06/05/09
Date Reported: 06/18/09
QC Batches:

PROJECT NAME: MS0904
PROJECT NUMBER:
SAMPLE I.D.: SE John Grubb

Sample Date: 06/05/09
Sample Matrix: Water

Laboratory Report

RESULTS

PARAMETER	METHOD	REPORT LIMIT	RESULT	DIL	UNITS	Maximum Contamination Level
Alkalinity, Total	2320B	10	238	1	mg/L	
Alkalinity, Bicarbonate	2320B	10	238	1	mg/L	
Alkalinity, Carbonate	2320B	10	10	1	mg/L	
Alkalinity, Hydroxide	2320B	10	<10	1	mg/L	
Bromide	300	0.10	<0.10	1	mg/L	
Calcium	200.7	0.5	72.2	1	mg/L	
Chloride	4500CL	10	<10	1	mg/L	
Conductivity	2510B	1.0	540	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	0.17	1	mg/L	
Magnesium	200.7	0.5	16.6	1	mg/L	
Manganese	200.8	0.0005	0.0204	1	mg/L	
Nitrate/Nitrite as N	353.3	0.02	<0.02	1	mg/L	
pH	150.1	NA	7.15	NA	SU	
Potassium	200.7	0.5	0.6	1	mg/L	
Selenium	200.8	0.001	<0.001	1	mg/L	0.05
Sodium	200.7	0.5	14.3	1	mg/L	
Sulfate	4500SO4	10	57	1	mg/L	
Sulfide	4500S_	0.05	<0.05	1	mg/L	
TDS	2540C	10	295	1	mg/L	
Hardness	Calc	10	249	1	mg/L	
CAB	Calc		4.49		%	

Debbie Zufelt, Laboratory Manager

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

LTE
Travis Laverty
PO Box 374
Attention: Bayfield, CO 81122

GAL I.D.: 906-038-03
Date Received: 06/05/09
Date Reported: 06/18/09
QC Batches:

PROJECT NAME: MS0904
PROJECT NUMBER:
SAMPLE I.D.: Section 14

Sample Date: 06/05/09
Sample Matrix: Water

Laboratory Report

RESULTS

PARAMETER	METHOD	REPORT LIMIT	RESULT	DIL	UNITS	Maximum Contamination Level
Alkalinity, Total	2320B	10	198	1	mg/L	
Alkalinity, Bicarbonate	2320B	10	188	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	62.8	1	mg/L	
Chloride	4500CL	10	<10	1	mg/L	
Conductivity	2510B	1.0	459	1	uS/cm	
Fluoride	4500F C	0.2	0.4	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	6.7	1	mg/L	
Manganese	200.8	0.0005	0.0019	1	mg/L	
Nitrate/Nitrite as N	353.3	0.02	<0.02	1	mg/L	
pH	150.1	NA	7.20	NA	SU	
Potassium	200.7	0.5	1.0	1	mg/L	
Selenium	200.8	0.001	0.002	1	mg/L	0.05
Sodium	200.7	0.5	24.5	1	mg/L	
Sulfate	4500SO4	10	61	1	mg/L	
Sulfide	4500S_	0.05	<0.05	1	mg/L	
TDS	2540C	10	225	1	mg/L	
Hardness	Calc	10	184	1	mg/L	
CAB	Calc		0.44		%	

Debbie Zufelt, Laboratory Manager

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

Project Name: Archuleta County springs
Project Number: MS0904
Report Date: 5/29/2009
Sampled By: Travis Laverty

Analysis: Lynn Fechter

FCGeo #	Sample Date	Sample Tim (Hrs)	Site ID-Location	Results: CH4 (mg/L)	Limit (mg/L)	C2
052809-L1	5/28/2009	10:15	Ramona Leonard Spring	**<0.02**	0.02	ND
052809-L2	5/28/2009	11:15	Watson Spring	**<0.02**	0.02	ND
052809-L3	5/28/2009	13:00	Thick spring	**<0.02**	0.02	ND

Notes:
Samples delivered to FCGeoscience.
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

Report submitted by
Lynn M. Fechter, B.S. Geology
5/29/2009

Four Corners Geoscience,Inc.
P.O. Box 4224
Durango, CO 81302
970-247-5046

12/23/2009

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

Methane Analysis Report

Project Name: La Plata and Archuleta County Monitoring -Spring May 2009
Project Number: Unknown
Report Date: 5/21/2009
Sampled By: Travis Laverty

Analysis: **Brant Landers** **Results:**

FCGeo #	Sample Date	Sample Time (Hrs)	Site ID-Location	CH4 (mg/L)	Limit (mg/L)	C2
051209-L1	5/12/2009	1010	Ranch Durango LTD	<0.02	0.02	ND
051209-L2	5/12/2009	1105	Ranch Durango North	<0.02	0.02	ND
051209-L3	5/12/2009	1340	Darwin Rather #1	<0.02	0.02	ND
051209-L4	5/12/2009	1600	Darwin Rather #2	<0.02	0.02	ND
051409-L1	5/14/2009	1030	Wood Spring	<0.02	0.02	ND
051409-L2	5/14/2009	1245	Crain Spring	<0.02	0.02	ND
051409-L3	5/14/2009	1515	Hoier Spring	<0.02	0.02	ND

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

Lynn M. Fechter, B.S. Geology

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

Methane Analysis Report

Archuleta County Springs Sampling

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

Project Name: N/A
Project Numb MS0904
Report Date: 6/8/2009
Sampled By: Travis Laverty

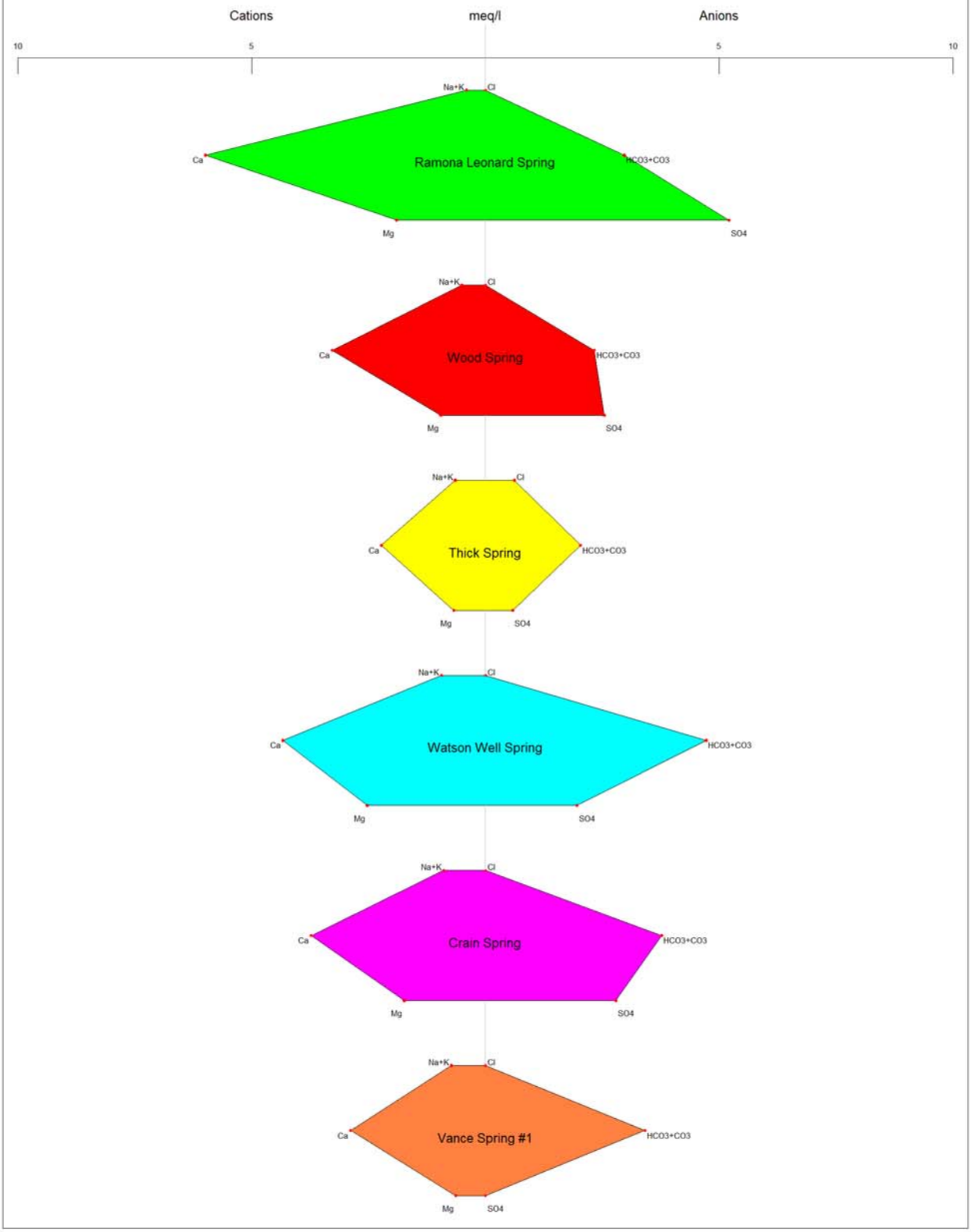
Analysis: Lynn Fechter

FCGeo #	Sample Date	Sample Time (Hrs)	Site ID-Location	Results: CH4 (mg/L)	Limit (mg/L)	C2
060509-L1	6/5/2009	9:30 a.m.	NW John Grubb Spring	**0.07**	0.02	ND
060509-L2	6/5/2009	10:00 a.m.	SE John Grubb Spring	**0.02**	0.02	ND
060509-L3	6/5/2009	11:00 a.m.	Section 14 Spring	**<0.02**	0.02	ND

Notes:
Samples delivered to FCGeoscience.
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

Report submitted by
Lynn M. Fechter, B.S. Geology
6/8/2009

Stiff Diagrams



Stiff Diagrams (Continued)