Trihydro
CORPORATION

October 20, 2009

Mr. Robert Chesson
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, CO 80203

RE: Soil Gas Survey, Evans Property, 7987 West County Road 19, Weld County, Colorado

Dear Mr. Chesson:

Trihydro Corporation (Trihydro) been working with the Colorado Oil and Gas Conservation Commission (COGCC) to conduct a soil gas vapor survey of the Evans Property, located at 7987 West County Road 19, in Weld County, Colorado (Property). The purpose of this letter is to submit the results of field soil gas survey and the analytical results for methane vapor sampling.

1.0 SITE HISTORY AND BACKGROUND INFORMATION

The Property is located at the southwest corner of the intersection of County Road 19 and County Road 18 in Weld County, Colorado (Figure 1). The Property is surrounded by agricultural fields with underground natural gas pipelines running along the east edge of the Property, and to the north of the Property along the north side of County Road 18.

A natural gas leak was reportedly identified near the natural gas pipeline easement to the north of the Property. In June 2007, the property owners to the south of the natural gas line requested that the COGCC conduct an investigation of potential impacts to their property from the natural gas pipeline leak. In November 2007, LT Environmental, Inc. (LTE) installed 23 soil borings around the Property to investigate soil vapor methane concentrations (Figure 1). In addition, LTE collected one soil gas sample for laboratory analysis from the north eastern portion of the Property. No methane was detected during field screening or in the laboratory air sample.

The Property owners reported concern regarding continuing impacts to vegetation. The owners subsequently requested additional sampling be conducted to determine if the release from the natural gas pipeline was impacting their property.

2.0 SOIL VAPOR SURVEY

On September 22, 2009, Trihydro installed a total of 13 soil vapor push-probe sampling points (Figure 1) in the investigation area. Two of the sampling locations (TP-1 and TP-7) were located north of CR 18

along the natural gas pipeline easement; the remainder of the sampling locations were located on Evans property. The investigation was targeted at addressing potential landowner concerns regarding distressed vegetation, and was not focused on evaluating potential methane intrusion in to structures.

Soil vapor probes were installed using an AMS Gas Vapor Probe kit equipped with a slide hammer and soil vapor sampling tips. Soil probes were to be installed to a total depth of 4-feet below ground surface (ft bgs), but due to equipment issues, soil probe locations TP-2 through TP-13 were installed to an approximate depth of 2- to 3-ft bgs. A soil vapor probe tip with a length of polyethylene tubing was used to sample the soil vapor from soil probe TP-1. Soil probe locations TP-2 through TP-13 were sampled by inserting the tubing down through the center of the hollow probe rod.

Soil vapor samples were analyzed insitu using a Landtec GEM 2000 combustible gas meter. The Landtec GEM 2000 was used to collect measurements of methane, carbon dioxide, and oxygen in subsurface soils. Soil sample locations were collected using a Trimble GeoXT global positioning system (GPS).

In addition to collecting field soil gas vapor measurements, two soil gas vapor samples were collected for laboratory analysis of methane (TP-2 and TP-10). Soil gas vapor samples were collected into laboratory provided Tedlar bags. Three volumes of soil vapor were drawn into the Tedlar bag using a hand pump and evacuated. The fourth volume of soil vapor was sealed in the Tedlar bag and submitted to Air Toxics Laboratory (Folsom, CA) for analysis of methane.

3.0 RESULTS

Results of the September 2009 field screening for methane, carbon dioxide and oxygen levels are shown in Table 1. Carbon dioxide levels were elevated above background levels at all but two sampling locations, with concentrations ranging from 0.0% to 7.4%. Oxygen levels ranged from 11.4% to 21.4% during field measurements, which are at or below atmospheric conditions (21.5%). Methane was not detected in the majority of the field screened soil vapor samples. However, two soil vapor field screened locations (TP-1 and TP-2) had initially detectable concentration of methane of 12.3% and 14.6%, respectively. Once the initial reading was collected, the methane concentration measured from TP-1 and TP-2 soil probes dropped to 0.0%.

Low levels of methane were detected in the air samples submitted for laboratory analysis from probe locations TP-2 and TP-10. Laboratory results are included in Table 1. Methane was detected at a maximum concentration of 0.00047%. Note, methane is a naturally occurring component of the atmosphere and comprises approximately 0.0001745% by volume of normal air. Based on the laboratory analytical results for methane, it appears that the detected concentrations are approximately equivalent to normal air concentrations.

Trihydro Corporation appreciates the opportunity to assist COGCC with this project. If you have any questions or require additional information, please feel free to contact us at (307) 745-7474.

Sincerely,
Trihydro Corporation

Nicole Twing, P.G.
Project Manager

George Mathes, P.E.
Vice President

08K-001-001

TABLE

TABLE 1. FIELD SCREENING AND LABORATORY METHANE ANALYTICAL RESULTS
EVANS PROPERTY METHANE INVESTIGATION
7987 WEST COUNTY ROAD 19 WELD COUNTY, COLORADO

Soil Probe ID	Field Measurements			
	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Methane (%)
TP-1	12.3*	13.0	4.1	NA
TP-2	14.6*	11.4	7.4	0.00047
TP-3	0.0	20.4	0.2	NA
TP-4	0.0	20.9	0.1	NA
TP-5	0.0	21.0	0.0	NA
TP-6	0.0	21.1	0.0	NA
TP-7	0.0	20.9	0.3	NA
TP-8	0.0	21.4	0.1	NA
TP-9	0.0	19.9	1.9	NA
TP-10	0.0	19.8	2.1	0.00019
TP-11	0.0	17.6	5.5	NA
TP-12	0.0	21.0	1.1	NA
TP-13	0.0	21.0	0.9	NA

Abbreviations
NA - Not Analyzed

Notes
* - Initial reading, dropped to 0.00%

FIGURE

EXPLANATION

TP-1 ▲ TRIHYDRO SOIL PROBE LOCATION & DESIGNATION

1 ▲ LTE SOIL VAPOR SAMPLE LOCATION & DESIGNATION

Aerial imagery captured September, 2007

N

0 100'

Trihydro CORPORATION
1252 Commerce Drive
Laramie, WY 82070
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(P) 307/745.7474 (F) 307/745.7729

FIGURE 1

SOIL VAPOR PORBE LOCATION MAP

WELD CO. METHANE INVESTIGATION

Drawn By: SL	Checked By: NT	Scale: 1" = 100'	Date: 10/06/09	File: Site_Location_Working.mxd

ATTACHMENT A

LABORATORY ANALYTICAL REPORT

Air Toxics LTD.
Laboratory Services Since 1989

10/2/2009
Ms. Nicole Twing
Trihydro Corporation
1252 Commerce Drive

Laramie WY 82070

Project Name: Evans Investigation
Project #: 08K-001-001
Workorder #: 0909488

Dear Ms. Nicole Twing

The following report includes the data for the above referenced project for sample(s) received on 9/23/2009 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1946 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner
Project Manager

Air Toxics LTD.
Laboratory Services Since 1989

WORK ORDER #: 0909488

Work Order Summary

CLIENT:	Ms. Nicole Twing Trihydro Corporation 1252 Commerce Drive Laramie, WY 82070	**BILL TO:**	Ms. Nicole Twing Trihydro Corporation 1252 Commerce Drive Laramie, WY 82070
PHONE:	307-745-7474	**P.O. #**	
FAX:	307-745-7729	**PROJECT #**	08K-001-001 Evans Investigation
DATE RECEIVED:	09/23/2009	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	10/02/2009		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	TP-2	Modified ASTM D-1946	Tedlar Bag	Tedlar Bag
02A	TP-10	Modified ASTM D-1946	Tedlar Bag	Tedlar Bag
02AA	TP-10 Lab Duplicate	Modified ASTM D-1946	Tedlar Bag	Tedlar Bag
03A	Lab Blank	Modified ASTM D-1946	NA	NA
04A	LCS	Modified ASTM D-1946	NA	NA

CERTIFIED BY: Linda D. Truman DATE: 10/02/09

Laboratory Director

Certfication numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/10
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified ASTM D-1946
Trihydro Corporation
Workorder# 0909488

Two 1 Liter Tedlar Bag samples were received on September 23, 2009. The laboratory performed analysis via Modified ASTM Method D-1946 for Methane in air using GC/FID. The method involves direct injection of 1.0 mL of sample.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	*ASTM D-1946*	*ATL Modifications*
Calibration	A single point calibration is performed using a reference standard closely matching the composition of the unknown.	A 3-point calibration curve is performed. Quantitation is based on a daily calibration standard which may or may not resemble the composition of the associated samples.
Reference Standard	The composition of any reference standard must be known to within 0.01 mol % for any component.	The standards used by ATL are blended to a >/= 95% accuracy.
Sample Injection Volume	Components whose concentrations are in excess of 5 % should not be analyzed by using sample volumes greater than 0.5 mL.	The sample container is connected directly to a fixed volume sample loop of 1.0 mL on the GC. Linear range is defined by the calibration curve. Bags are loaded by vacuum.
Normalization	Normalize the mole percent values by multiplying each value by 100 and dividing by the sum of the original values. The sum of the original values should not differ from 100% by more than 1.0%.	Results are not normalized. The sum of the reported values can differ from 100% by as much as 15%, either due to analytical variability or an unusual sample matrix.
Precision	Precision requirements established at each concentration level.	Duplicates should agree within 25% RPD for detections > 5 X's the RL.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:

B - Compound present in laboratory blank greater than reporting limit.

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the detection limit.

M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Air Toxics LTD.
Laboratory Services Since 1989

Summary of Detected Compounds
NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

Client Sample ID: TP-2

Lab ID#: 0909488-01A

Compound	Rpt. Limit (%)	Amount (%)
Methane	0.00010	0.00047

Client Sample ID: TP-10

Lab ID#: 0909488-02A

Compound	Rpt. Limit (%)	Amount (%)
Methane	0.00010	0.00019

Client Sample ID: TP-10 Lab Duplicate

Lab ID#: 0909488-02AA

Compound	Rpt. Limit (%)	Amount (%)
Methane	0.00010	0.00019

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Client Sample ID: TP-2

Lab ID#: 0909488-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9092407**	**Date of Collection: 9/22/09 10:13:00 AM**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/24/09 10:21 AM**	

Compound	Rpt. Limit (%)	Amount (%)
Methane	0.00010	0.00047

Container Type: 1 Liter Tedlar Bag

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Client Sample ID: TP-10

Lab ID#: 0909488-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9092408**	**Date of Collection:**	**9/22/09 12:55:00 PM**
Dil. Factor:	**1.00**	**Date of Analysis:**	**9/24/09 11:14 AM**

Compound	Rpt. Limit (%)	Amount (%)
Methane	0.00010	0.00019

Container Type: 1 Liter Tedlar Bag

Air Toxics LTD.
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Client Sample ID: TP-10 Lab Duplicate

Lab ID#: 0909488-02AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9092409**	**Date of Collection:**	**9/22/09 12:55:00 PM**
Dil. Factor:	**1.00**	**Date of Analysis:**	**9/24/09 11:36 AM**

Compound	Rpt. Limit (%)	Amount (%)
Methane	0.00010	0.00019

Container Type: 1 Liter Tedlar Bag

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Client Sample ID: Lab Blank

Lab ID#: 0909488-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9092403**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/24/09 08:09 AM**	

Compound	Rpt. Limit (%)	Amount (%)
Methane	0.00010	Not Detected

Container Type: NA - Not Applicable

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 0909488-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9092428**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/24/09 10:36 PM**	

Compound	%Recovery
Methane	100

Container Type: NA - Not Applicable

RECEIVED
OCT 21 2009

Air Toxics LTD.

CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice
Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Page 1 of 1

Project Manager: Allison Riffle
Collected by: (Print and Sign) Nicole Ewing [signature]
Company: Trihydro Corporation Email: ariffle@trihydro.com
Address: 252 Commerce Dr. City: Laramie State: WY Zip: 82070
Phone: 307-745-7474 Fax: 307-745-7729

Project Info:
P.O. #
Project #: 186-201-001
Project Name: Evans Investigation

Turn Around Time: ☒ Normal ☐ Rush ______ specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
01A	TP-2	–	092209	1013	Methane				
02A	TP-10	–	092209	1255	Methane				

End of Record

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
[signature]	092209 5pm	FedEx (UPS NP.)	092209
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
		Monica Gregersen ATL	9/23/09 1020
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes:

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	UPS	1Z7X9021015376 4835	NA	Good	Yes No (None)	0909488

Form 1293 rev.11