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## Well Inspection Report

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### Instructions

- Complete all pages.
- Sign and submit electronically within 30 days of the well inspection to [orogo@gov.nt.ca](mailto:orogo@gov.nt.ca).
- If you wish to submit a hard copy, please use the courier address at [www.orogo.gov.nt.ca/contact-us](http://www.orogo.gov.nt.ca/contact-us).
- Refer to the [Well Suspension and Abandonment Guidelines and Interpretation Notes](#) (May 2022) for details on well inspection requirements.
- Report in metric units.

#### Required attachments:

- Photos of wellhead and well site (*Include descriptions*)  
# of photos attached: 2 (in GCHEM Report)
- Wellhead schematic
- Wellbore schematic

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### Well Information

Well name: L-29-60-10-117-15

4 digit WID: 2041

OROGO risk level: Level 2

Wellhead?  Yes  No

Pressure rating of all wellhead components: 900 / 1500 Ansi

Pumpjack?  Yes  No

Operator: Alvarez & Marsal Canada Inc., in its capacity as receiver of Strategic Oil & Gas's NWT Property  
Well status: Suspended

Coordinates (*In decimal degrees; verified onsite*)

Datum:  NAD 27  NAD 83  Unknown

Lat: 60.144993

Long: -117.594502

Completed in H<sub>2</sub>S zone? Yes

Estimated % of H<sub>2</sub>S: ~2 or

Measured % of H<sub>2</sub>S: 0

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### Inspection Date and Contact Information

Date of inspection: 2022-09-15

Date of previous inspection: 2021-10-14

Inspection conducted by:

Name: Brad Johnson

Company: G-Chem

Phone: 780-808-1927

Email: [brad.johnson@gchem.ca](mailto:brad.johnson@gchem.ca)

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### Environmental or Safety Concerns

(Report all incidents as required under section 75 of the Oil and Gas Drilling and Production Regulations)

Environmental or safety concerns?  Yes  No

If yes, provide details: [Click or tap here to enter text.](#)

## Inspection Results

### Site

Well site accessible for inspection and monitoring?  Yes  No

Equipment or debris on site?  Yes  No

Additional clean up required?  Yes  No

Provide details of all site accessibility concerns: This site is accessible with heavy equipment by winter access roads only. Year round access by Helicopter.

Brush cleared 25 m around wellhead?  Yes  No

Wind indicator present and functional?  Yes  No

### Wellhead

Wellhead accessible for inspection and monitoring?  Yes  No

Valves chained and locked?  Yes  No

Valves operate freely?  Yes  No

Pressure test well head seal assembly?  Yes  No

*(If yes, provide details in comments section with supporting documentation)*

Surface casing vent open, operable and accessible in all seasons?  Yes  No

Pumpjack secure?  Yes  No  N/A

Visible marker or fence in place?  Yes  No  
4-digit Well ID, operator and contact information up to date?  Yes  No

Date of previous well head seal assembly pressure test: [Click or tap to enter a date.](#)

### Surface Casing Vent Flow (SCVF) / Gas Migration (GM) testing

Evidence of SCVF?  Yes  No

SCVF test conducted?  Yes  No  
*(If yes, provide details in comments section with supporting documentation)*

Signs of GM?  Yes  No

GM test conducted?  Yes  No  
*(If yes, provide details in comments section with supporting documentation)*

Gas samples taken?  Yes  No  
*(If yes, provide details in comments section identifying location and anticipated date of submission of analysis to OROGO)*

### Shut-in pressures

Production casing pressure (kPa):  
9 PSI

Intermediate casing pressure (kPa):  
[Click or tap here to enter text.](#)

Production tubing pressures (kPa):  
0 PSI

Any other readings taken:  
[Click or tap here to enter text.](#)

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## Comments

- Details of:  SCVF/ GM testing (*Include source: SCV, wellbore or soil vapour*)  
 Shut-in pressures (*Include equipment used, results, any changes from previous inspections and previous inspection dates*)  
 Seal assembly testing (*Include maximum pressure tested and duration of test*)  
 Other comments

This inspection was specific to follow up testing after gas migration testing performed in 2021; this was not a full wellsite inspection completed by A&M personnel. Test results are attached in the G-Chem report dated September 15-18, 2022.

Additional supporting documentation attached?  Yes  No

If yes, list attached documentation: GCHEM Report, Wellbore and Wellhead Schmatics

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I certify based on personal knowledge of well inspection operations undertaken at the above named well that the above information is accurate.

Responsible Officer:

Date: 2022-11-16

Name: Duncan MacRae  
Title: Vice President  
Operator: Alvarez & Marsal Canada Inc., in its  
capacity as receiver of Strategic Oil & Gas's  
NWT Property

Signature:



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# Heli Source Ltd.

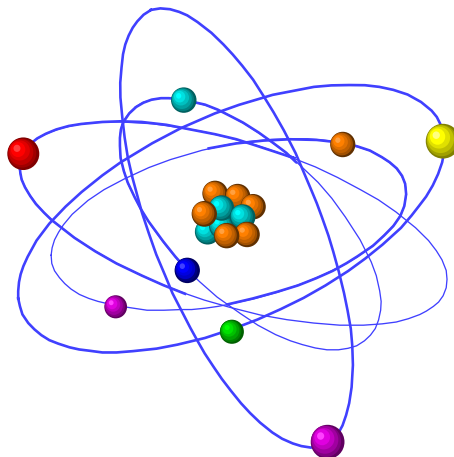
Work Order-Ref #: 22315

## Vapor Intrusion Assessment (VIA)

## Surface Casing Vent (SCV) Flow Test

### Cameron Hills L-29

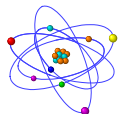
September 15 to 18, 2022



**GCHEM** Ltd.

BAY #1  
4810-62<sup>ND</sup> AVE.  
LLOYDMINSTER, AB  
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(780) 871-4668  
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FORENSIC SOLUTIONS FOR ENERGY CHALLENGES

**1.0 Vapor Intrusions Assessment (VIA) Summary**

**Operating Company:** Not Provided  
**Well Name:** L29  
**UWI:** L-29-60-10-117-15

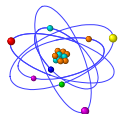
**License Number:** 2041  
**Test Date:** September 15 to 18, 2022  
**GCHEM Project Number:** 22315

**1.1 Production Casing Assessment Summary Table**

<b>Combustible Gas (CH<sub>4</sub>) (%LEL)</b>	nm		
<b>Hydrogen Sulphide (H<sub>2</sub>S) Gas (ppm v/v)</b>	nm		
<b>PC Flow Rate (m<sup>3</sup>/day)</b>	nm		
<b>P-T Date Logger Installed</b>	nm		
<b>P-T Data Logger Removed</b>	nm		
<b>P-T Data Logger Test Duration</b>	nm		
<b>MAX Pressure (kPa)</b>	nm		
<b>Gas Spls. Collection-Measurement</b>	<b>Total Collected</b>	<b>Analysis Requested*</b>	<b>Classification**</b>
<b>PC Samples (Total)</b>	0		
<b>PC Combustible Gas Class. Level-1 (Chemical)</b>		NA	NA
<b>PC Combustible Gas Class. Level-2 (δ<sup>13</sup>C)</b>		NA	NA
<b>PC Combustible Gas Class. Level-3 (δD)</b>		NA	NA
<b>PC Combustible Gas Class. Level-4 (<sup>14</sup>C)</b>		NA	NA

**1.2 Surface Casing Vent Flow (SCVF) Assessment Summary Table**

<b>SCV Ten-Minute Bubble Test Result</b>	PASS		
<b>SCV Flow Rate (m<sup>3</sup>/day)</b>	0		
<b>SCV Pressure-Temp Logger Installed</b>	NA		
<b>SCV Pressure-Temp Data Logger Removed</b>	NA		
<b>SCV Shut-In Time (hrs)</b>	NA		
<b>SCV MAX-Recorded Build Up Pressure (kPa)</b>	NA		
<b>SCV Stabilized Build-up Pressure (kPa):</b>	NA		
<b>SCV Stabilized Build-up Time (hours)</b>	NA		
<b>SCV Standpipe Max CH<sub>4</sub> Content (ppm v/v):</b>	1		
<b>SCV Standpipe Max H<sub>2</sub>S Content</b>	<1		
<b>SCV Gas Spls. Collection-Measurement</b>	<b>Total Collected</b>	<b>Analysis Requested*</b>	<b>Classification**</b>
<b>SCV Samples (Total)</b>	1		
<b>SCV Combustible Gas Class. Level-1 (Chemical)</b>		1	NON-IMPACTED
<b>SCV Combustible Gas Class. Level-2 (δ<sup>13</sup>C)</b>		NA	NA
<b>SCV Combustible Gas Class. Level-3 (δD)</b>		NA	NA
<b>SCV Combustible Gas Class. Level-4 (<sup>14</sup>C)</b>		NA	NA



**1.3 Soils Outside Casing (AGM) Assessment Summary Tables**

**A) Non-Intrusive CH<sub>4</sub> Surface Soil Scan (PMD) (Figure-1 and Table-1)**

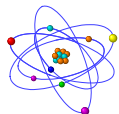
Well Casing Surface CH <sub>4</sub> Test Sites	28
MAX Surface CH <sub>4</sub> Reading	1 ppm v/v
MAX H <sub>2</sub> S Well Soil Reading (ppm v/v)	<1
Number of Background Sites	1
MAX Background CH <sub>4</sub> (ppm v/v)	1
Max H <sub>2</sub> S BKG Soil Reading (ppm v/v)	<1
<b>Surface CH<sub>4</sub>-PMD Gas Classification</b>	
NON-IMPACTED	

**B) Non-Intrusive Surface Enclosed Soil Vapor FLUX Chamber Test**

Surface SV-FC CH <sub>4</sub> Test Sites	nm		
MAX SV-FC CH <sub>4</sub> Reading	nm		
<b>SV-FC Gas Spl. Collection-Measurement</b>	<b>Total Collected</b>	<b>Analysis Requested*</b>	<b>Test Site</b>
SV-FC Samples (Total)	0		
SV-FC & Sites Requested for Level-1 Analysis		NA	NA
Combustible Gas Classification Level-1 (Chem.)		NA	
SV-FC & Sites Requested for Level-2 Analysis		NA	NA
Combustible Gas Classification Level-2 (δ <sup>13</sup> C)		NA	
SV-FC & Sites Requested for Level-3 Analysis		NA	NA
Combustible Gas Classification Level-3 (δD)		NA	
SV-FC & Sites Requested for Level-4 Analysis		NA	NA
Combustible Gas Classification Level-4 ( <sup>14</sup> C)		NA	

**C) Intrusive Auger Test Holes with Soil Vapor Probes (Figure 2 and Table 2)**

Number Soil Vapor Probe (SVP) Test Sites	16		
MAX SVP CH <sub>4</sub> Reading (ppm v/v)	19		
Max H <sub>2</sub> S SVP Field Reading (ppm v/v)	<1		
Number SVP BKG Test Sites	1		
MAX SVP CH <sub>4</sub> BKG Test Sites (ppm v/v)	134		
<b>SVPs Gas Spl. Collection &amp; Measurement</b>	<b>Total Collected</b>	<b>Analysis Requested*</b>	<b>Test Site</b>
Soil Vapor Probes (SVPs) AGM (Total)	4		
SVP & Sites Requested for Level-1 Analysis		4	N0.5, N3, E3 & E5
Combustible Gas Classification Level-1 (Chem.)		NON-IMPACTED	
SVP & Sites Requested for Level-2 Analysis		0	NA
Combustible Gas Classification Level-2 (δ <sup>13</sup> C)		NA	
SVP & Sites Requested for Level-3 Analysis		0	NA
Combustible Gas Classification Level-3 (δD)		NA	
SVP & Sites Requested for Level-4 Analysis		0	NA
Combustible Gas Classification Level-4 ( <sup>14</sup> C)		NA	



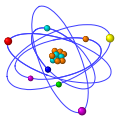
BKG Gas Spl. Collection-Measurement	Total Collected	Analysis Requested*	Test Site
<b>BKG Soil Vapor Probe (SVPs) (Total)</b>	1		
<b>BKG &amp; Sites Requested for Level-1 Analysis</b>		1	BKG SW20
<b>Combustible Gas Classification Level-1 (Chem.)</b>			BASELINE
<b>BKG &amp; Sites Requested for Level-2 Analysis</b>		0	NA
<b>Combustible Gas Classification Level-2 (<math>\delta^{13}C</math>)</b>			NA
<b>BKG &amp; Sites Requested for Level-3 Analysis</b>		0	NA
<b>Combustible Gas Classification Level-3 (<math>\delta D</math>)</b>			NA
<b>BKG &amp; Sites Requested for Level-4 Analysis</b>		0	NA
<b>Combustible Gas Classification Level-4 (<math>^{14}C</math>)</b>			NA

\* Sample selection for chemical and isotope analysis (geochemical analytical suite) selected by client/operator.

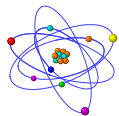
### 1.4 Interpreted Source of Migrating Gases

Sample Point	Geologic Formation	Depth Range	Source Depth
No samples submitted for stable isotope composition analysis.			

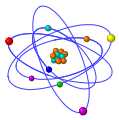




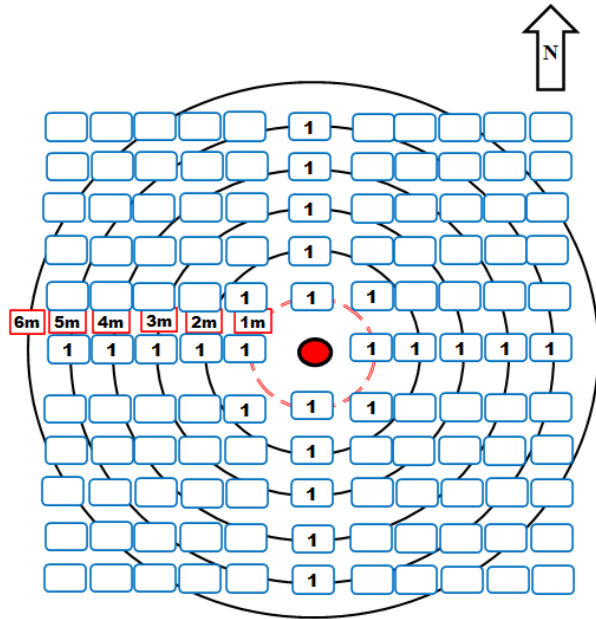


**3.0 Vapor Intrusion and Surface Casing Vent Flow Testing and Sampling Comments****Assessment-Collection Date: September 15 to 18, 2022**

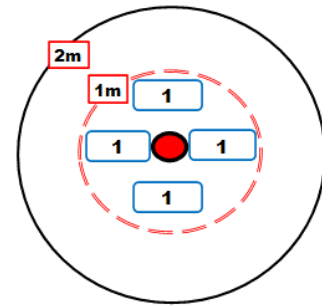
- 1) The Surface Casing Vent passed the ten-minute bubble test (1 ppm v/v methane) and no flow was observed.
- 2) A Ventbuster was installed on this well September 15, 2022 and the flow was monitored and data logged until September 18, 2022
- 3) Small flows (<math><0.01\text{ m}^3/\text{day}</math>) were measured when the gas temperature increased. The average flow rate was near  $0\text{ m}^3/\text{day}$  over the three-day test.
- 4) The flow increases coincide with increased gas temperatures which occur when the ambient air temperatures also increased. This indicates that gas expansion due to temperature change is likely the cause of the low flow rates and not natural gas actively flowing in the surface casing.
- 5) A surface combustible gas scan was performed near the wellbore using a Sensit Portable Methane Detector (PMD). All readings were low, (1 ppm v/v methane) compared to background (1 ppm v/v) established 20m southwest from the wellbore (Figure 1, Table 1).
- 6) An intrusive soil gas migration test was then performed by drilling test holes and inserting Soil Vapor Probes (SVPs). Combustible gas readings in the SVPs were slightly elevated (up to 19 ppm v/v at E5), compared to the background probe (1 ppm v/v methane) installed approximately 20m southwest of the wellbore to establish background levels in the area and for comparison to other samples collected during this investigation (Figure 2, Table 2).
- 7) Four soil gas samples from SVPs (N0.5, N3, E3 & E5) and gases from background (BKG SW20) were collected, contained, and preserved for geochemical analysis and characterization, classification, geologic origin (source) and depth measured from the KB (Table 3).
- 8) Light alkanes typically follow the concentration  $C1 \gg C2 > C3 > nC4 > nC5$ . The SCV and soil gases from this well are dominated by propane and heavier alkanes. This indicates that the gases originate from hydrocarbon or chemical contamination and/or the weathering and breakdown of hydrocarbon/chemical contamination and are not the result of leaking thermogenic natural gases from a geologic source at depth.
- 9) This well does not contain evidence of SCVF or gas migration at the time of this investigation.



**Figure 1. AGM Non-Intrusive Surface PMD**



**Figure 1A. Non-Intrusive CH<sub>4</sub> Surface Well Casing Detail VIEW**

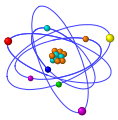


**Table 1. AGM Non-Intrusive Surface PMD**

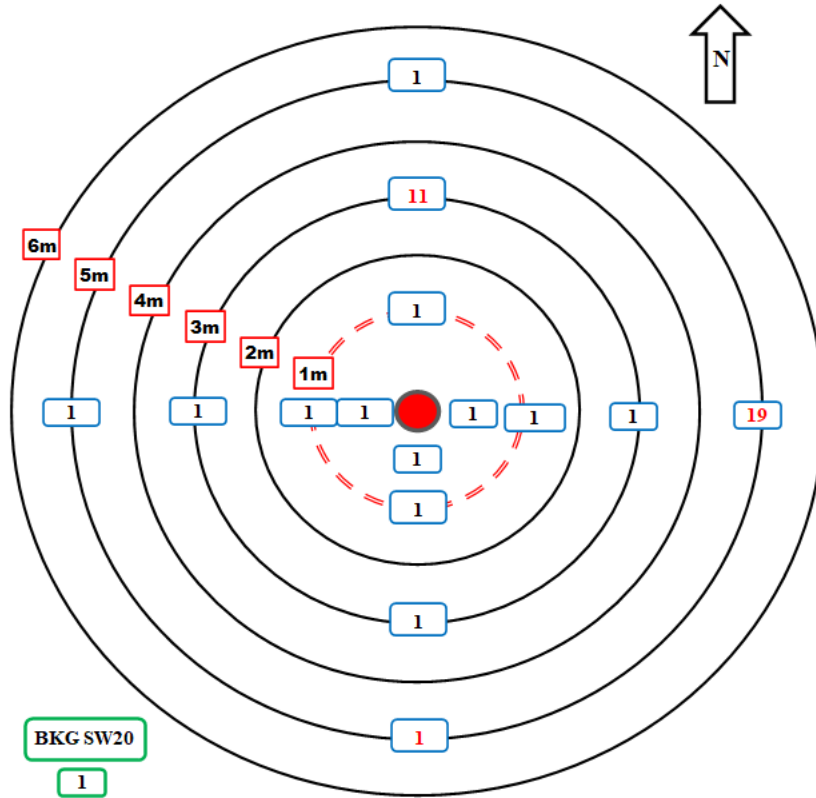
WELL CASING (AGM) Non-Intrusive Surface PMD (CH <sub>4</sub> ) Soil Scan							
Test Site (m)	PMD CH <sub>4</sub> (ppm v/v) (%)	Test Site (m)	PMD CH <sub>4</sub> (ppm v/v) (%)	Test Site (m)	PMD CH <sub>4</sub> (ppm v/v) (%)	Test Site (m)	PMD CH <sub>4</sub> (ppm v/v) (%)
N.5	1	E.5	1	S.5	1	W.5	1
N1	1	E1	1	S1	1	W1	1
N2	1	E2	1	S2	1	W2	1
N3	1	E3	1	S3	1	W3	1
N4	1	E4	1	S4	1	W4	1
N5	1	E5	1	S5	1	W5	1
N5-E1		E5-S1		S5-W1		W5-N1	
N4-E1		E5-S2		S4-W1		W5-N2	
N3-E1		E5-S3		S3-W1		W5-N3	
N2-E1		E5-S4		S2-W1		W5-N4	
N1-E1	1	E5-S5		S1-W1	1	W5-N5	
N1-E2		E4-S5		S1-W2		W4-N5	
N2-E2		E4-S4		S2-W2		W4-N4	
N3-E2		E4-S3		S3-W2		W4-N3	
N4-E2		E4-S2		S4-W2		W4-N2	
N5-E2		E4-S1		S5-W2		W4-N1	
N5-E3		E3-S1		S5-W3		W3-N1	
N4-E3		E3-S2		S4-W3		W3-N2	
N3-E3		E3-S3		S3-W3		W3-N3	
N2-E3		E3-S4		S2-W3		W3-N4	
N1-E3		E3-S5		S1-W3		W3-N5	
N1-E4		E2-S5		S1-W4		W2-N5	
N2-E4		E2-S4		S2-W4		W2-N4	
N3-E4		E2-S3		S3-W4		W2-N3	
N4-E4		E2-S2		S4-W4		W2-N2	
N5-E4		E2-S1		S5-W4		W2-N1	
N5-E5		E1-S1	1	S5-W5		W1-N1	1
N4-E5		E1-S2		S4-W5		W1-N2	
N3-E5		E1-S3		S3-W5		W1-N3	
N2-E5		E1-S4		S2-W5		W1-N4	
N1-E5		E1-S5		S1-W5		W1-N5	

BACKGROUND Non-Intrusive Surface PMD (CH <sub>4</sub> ) Soil Scan							
Test Site (m)	PMD CH <sub>4</sub> (ppm v/v) (%)	Test Site (m)	PMD CH <sub>4</sub> (ppm v/v) (%)	Test Site (m)	PMD CH <sub>4</sub> (ppm v/v) (%)	Test Site (m)	PMD CH <sub>4</sub> (ppm v/v) (%)
SW20	1						



**Figure 2. AGM Intrusive SVPs-**



**Table 2. AGM Intrusive SVPs**

Intrusive AGM -Test Hole-Install Soil Vapor Probes (SVPs) ATM-Isolated

Test Site (m)	Soil Vapor Probes			Soil Parameters			Gas Sample (Y-N)
	IR-CH <sub>4</sub> (ppm v/v)	(%LEL)	H <sub>2</sub> S (ppm v/v)	Type	Moist. (1-5)	HC-CONT (Y-N)	
N0.5	1		<1.0	Silt	3	No	Yes
N1	1		<1.0	Silt	3	No	No
N3	11		<1.0	Silt	3	No	Yes
N5	1		<1.0	Silt	3	No	No
E0.5	1		<1.0	Silt	3	No	No
E1	1		<1.0	Silt	3	No	No
E3	1		<1.0	Silt	3	No	Yes
E5	19		<1.0	Silt	3	No	Yes
S0.5	1		<1.0	Silt	3	No	No
S1	1		<1.0	Silt	3	No	No
S3	1		<1.0	Silt	3	No	No
S5	1		<1.0	Silt	3	No	No
W0.5	1		<1.0	Silt	3	No	No
W1	1		<1.0	Silt	3	No	No
W3	1		<1.0	Silt	3	No	No
W5	1		<1.0	Silt	3	No	No
Test Site (m)	Soil Vapor Probes			Soil Parameters			Gas Sample (Y-N)
	IR-CH <sub>4</sub> (ppm v/v)	(% Vol)	H <sub>2</sub> S (ppm v/v)	Type	Moist. (1-5)	HC-CONT (Y-N)	
BKG SW20	1		<1.0		3	No	Yes

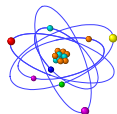
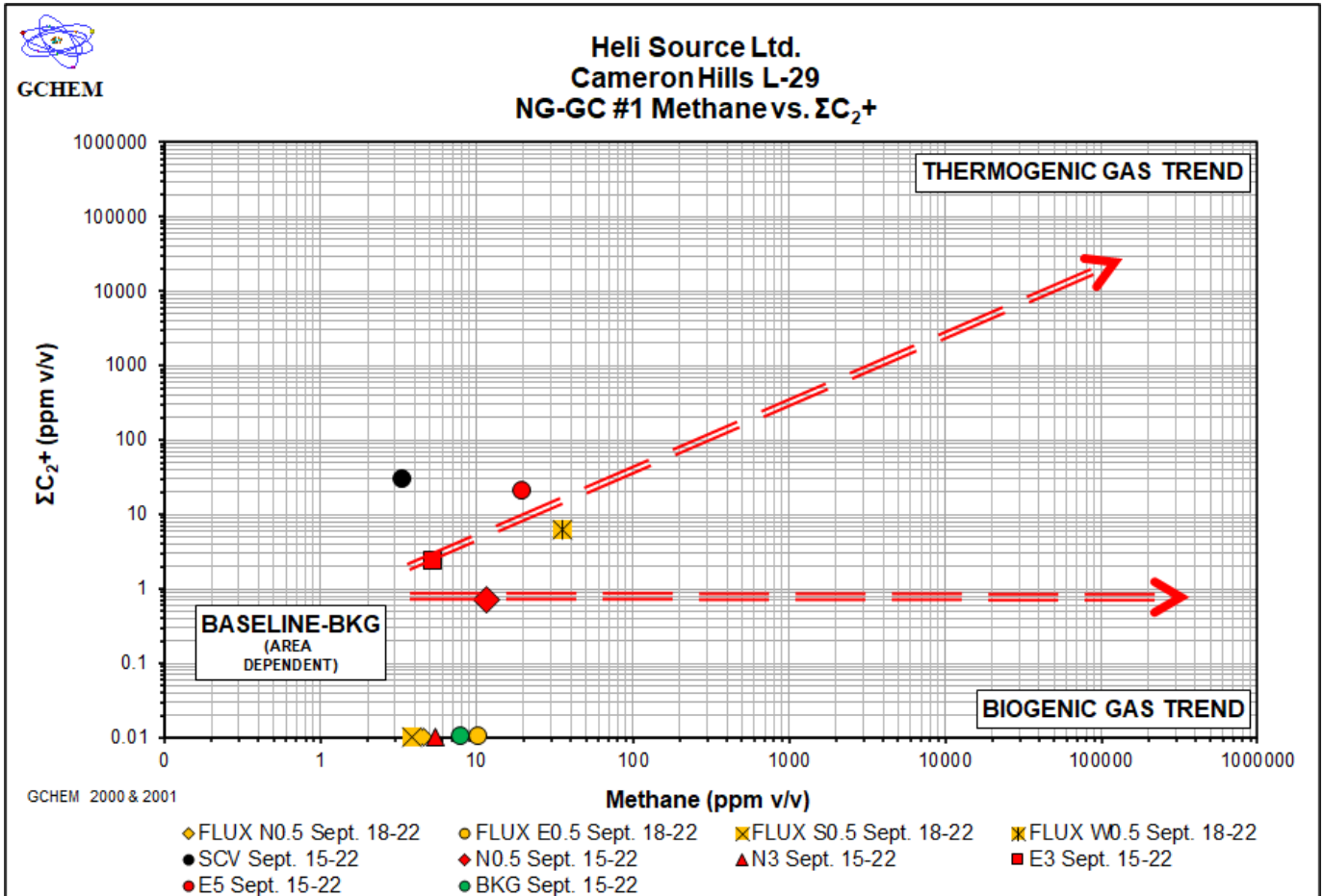
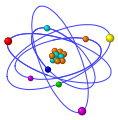


Table 3: High resolution molecular compositions of gas samples collected as part of the VIA Heli Source L-29.

Gas Component	Sample Point Date Collected	FLUX N0.5 Sept. 18-22 ppm v/v	FLUX E0.5 Sept. 18-22 ppm v/v	FLUX S0.5 Sept. 18-22 ppm v/v	FLUX W0.5 Sept. 18-22 ppm v/v	SCV Sept. 15-22 ppm v/v	N0.5 Sept. 15-22 ppm v/v	N3 Sept. 15-22 ppm v/v	E3 Sept. 15-22 ppm v/v	E5 Sept. 15-22 ppm v/v	BKG Sept. 15-22 ppm v/v
Neon		18.88	0.00	19.25	16.27	19.32	18.87	19.75	19.52	19.87	18.78
Hydrogen		2525	40983	2228	1247	686.9	1213	1054	1622	675.6	690.6
Helium		2.88	0.66	2.92	1.58	2.95	3.28	3.08	3.01	2.96	2.79
Nitrogen		773193	744348	774153	785358	776612	775512	773500	774172	774103	775459
Oxygen		222917	213890	222927	211677	221821	221696	222267	222201	222814	222466
Carbon Dioxide		1338	767.2	664.9	1657	816.7	1543	3150	1973	2320	1353
Methane		4.58	10.41	3.87	35.41	3.41	11.63	5.47	5.37	19.79	8.09
Ethane		<0.01	<0.01	<0.01	4.08	3.53	<0.01	<0.01	1.99	<0.01	<0.01
Ethene		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Propane		<0.01	<0.01	<0.01	1.74	12.92	0.29	<0.01	0.37	6.27	<0.01
Propene		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
iso-Butane		<0.01	<0.01	<0.01	0.57	2.88	0.26	0.22	0.21	12.75	<0.01
n-Butane		<0.01	<0.01	<0.01	0.42	8.88	0.23	<0.01	<0.01	9.80	<0.01
iso-Pentane		<0.01	<0.01	<0.01	0.20	3.06	0.21	<0.01	<0.01	11.10	<0.01
n-Pentane		<0.01	<0.01	<0.01	0.16	4.28	0.18	<0.01	<0.01	3.93	<0.01
C6+		0.16	1.03	1.49	0.12	1.95	0.51	0.52	1.83	1.23	1.43
C1 Index (C1/ΣC2+)		N/A	N/A	N/A	5.53	0.12	16.62	N/A	2.28	0.99	N/A
C2 Index (C2/ΣC3+)		N/A	N/A	N/A	1.76	0.14	N/A	N/A	5.43	N/A	N/A
C3 Index (C3/ΣC4+)		N/A	N/A	N/A	3.00	0.98	0.72	N/A	N/A	0.46	N/A
C4 Index (C4/C5)		N/A	N/A	N/A	2.60	2.07	1.26	N/A	N/A	2.49	N/A
ΣC2+		N/A	N/A	N/A	6.40	29.60	0.70	N/A	2.35	20.00	N/A
ATM Ratio (N2/O2)		3.47	3.48	3.47	3.71	3.50	3.50	3.48	3.48	3.47	3.49
Vol % CO2 of TG		0.13	0.08	0.07	0.17	0.08	0.15	0.32	0.20	0.23	0.14
Vol % Lt. Alk. of TG		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Vol % Lt. Alk. CH4		100.0	100.0	100.0	83.15	8.75	90.86	96.21	67.72	31.09	100.0
Vol % Lt. Alk. C2+		0.00	0.00	0.00	16.85	91.25	9.14	3.79	32.28	68.91	0.00
Vol % C2+ of TG		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Stable Carbon Isotope Compositions (‰ VPDB)</b>											
d13C CH4		n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m
d13C C2H6		n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m
d13C C2H4		n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m
d13C C3H8		n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m
d13C C3H6		n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m
d13C i-C4H10		n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m
d13C n-C4H10		n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m
d13C i-C5H12		n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m
d13C n-C5H12		n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m
d13C CO2		n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m
<b>Stable Hydrogen Isotopic Compositions (‰ VSMOW)</b>											
dD H2		n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m
dD CH4		n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m
dD C2H6		n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m
dD C3H8		n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m
dD i-C4H10		n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m
dD n-C4H10		n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m
<b>14C Concentration (pMC)</b>											
		n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m

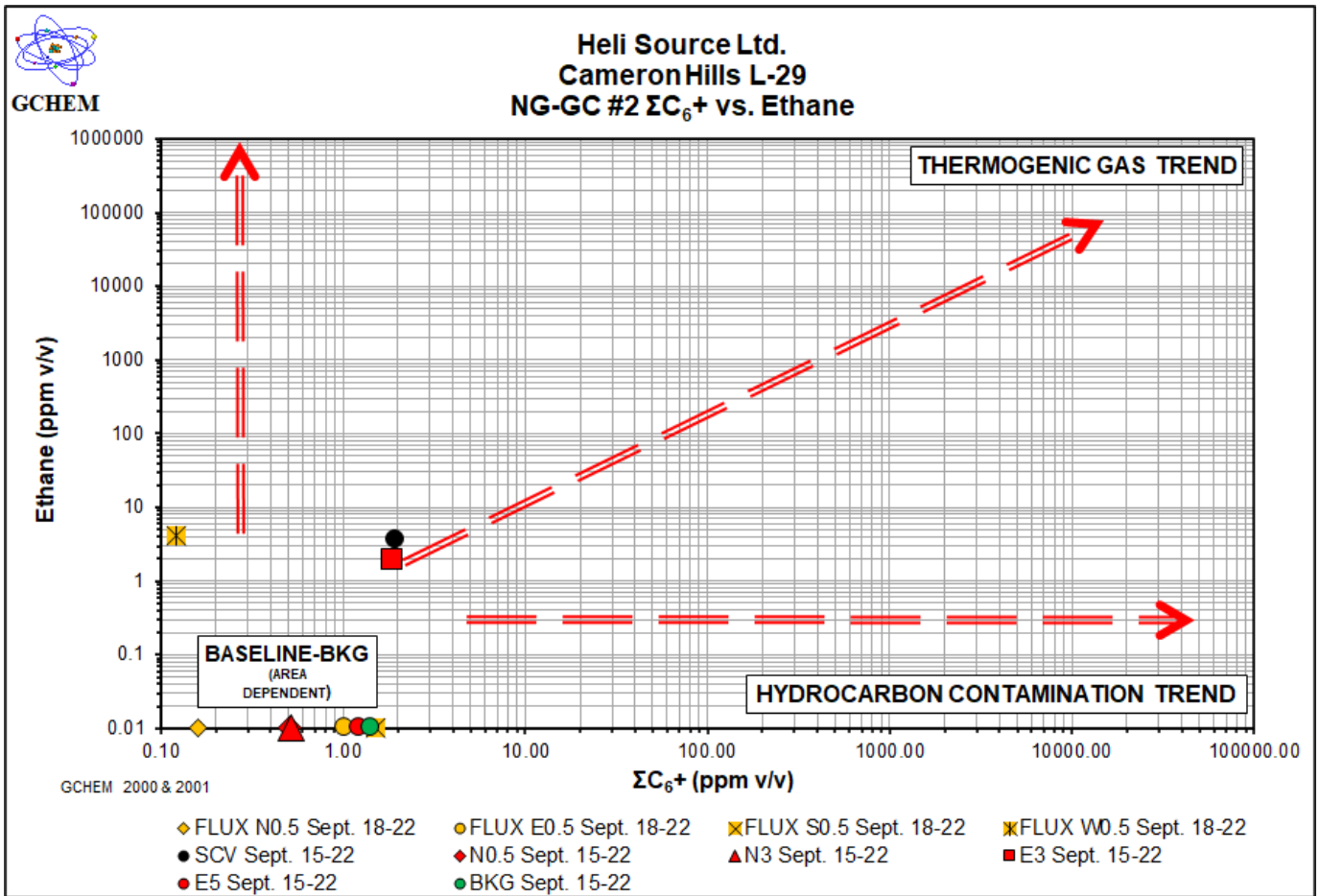
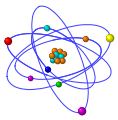


**Figure 3:  $\Sigma C_2+$  vs Methane.** Combustible gases detected in soils and SCVs at a wellhead may result from several origins. Natural gases indicative of SCVF or AGM are thermogenic in origin (natural gas in deep reservoirs), contain high methane and  $C_2+$  contents and plot in the Upper RH Quadrant. Low natural gas levels in background, off lease areas are naturally present in soils, vary from region to region and plot in the Lower LH Quadrant. Biogenic gases (swamp-gas) are produced by bacteria, are comprised of predominantly methane and plot in Lower RH Quadrant. Samples plotting in the Lower LH and RH do not contain SCVF or AGM and would not require down-hole remediation

NG-GC-1 Comments

**NG-GC-1 Comments**

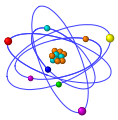
- 1) Natural gases in the SCV and soils near the wellbore contain low levels of  $C_2+$  gases indicating that this well is not impacted with leaking thermogenic natural gases.



**Figure 4: ΣC<sub>6</sub>+ vs Ethane.** C<sub>6</sub>+ gases are relatively large molecules that do not readily or easily migrate in large quantities from depth upwards through subsurface fractures or micro-fractures to surface. Contamination by oil spills, fuels, and solvents is indicated by soil vapor samples that have high contents of C<sub>6</sub>+ compounds and plot in the Lower RH Quadrant. Samples plotting in the Lower LH and RH Quadrants do not contain evidence of either SCVF or AGM and would not require downhole repair operations.

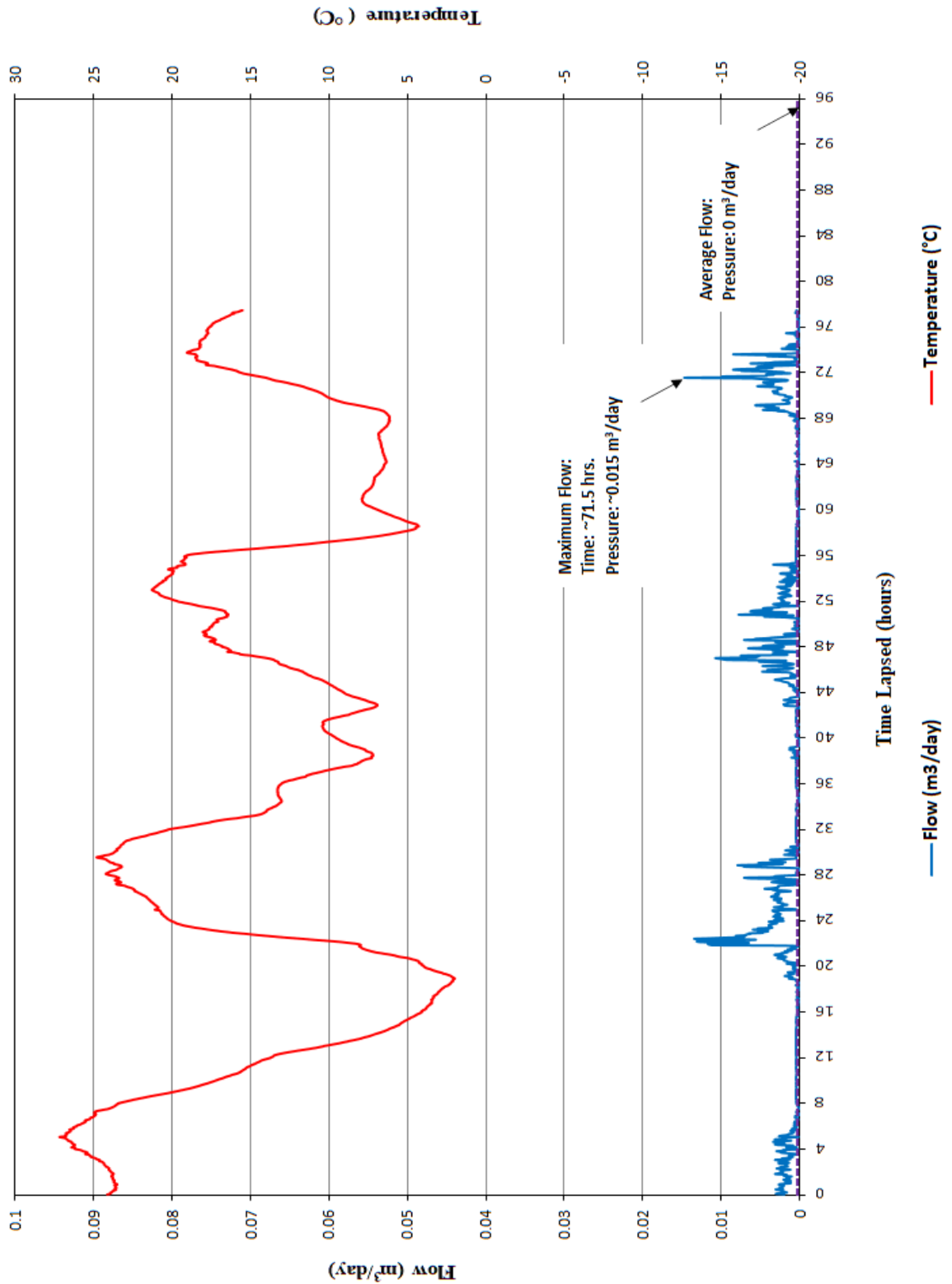
**NG-GC-2 Comments**

- 1) C<sub>6</sub>+ contents of the SCV and soil gas samples are low and are similar to expected baseline readings. Measured combustible gas levels are not the result of near surface hydrocarbon or chemical contamination.



SCV Flow Extended Monitoring

Heli Source Cameron Hills L-29  
SCV Flow Rate Monitoring  
September 15 to September 18, 2022

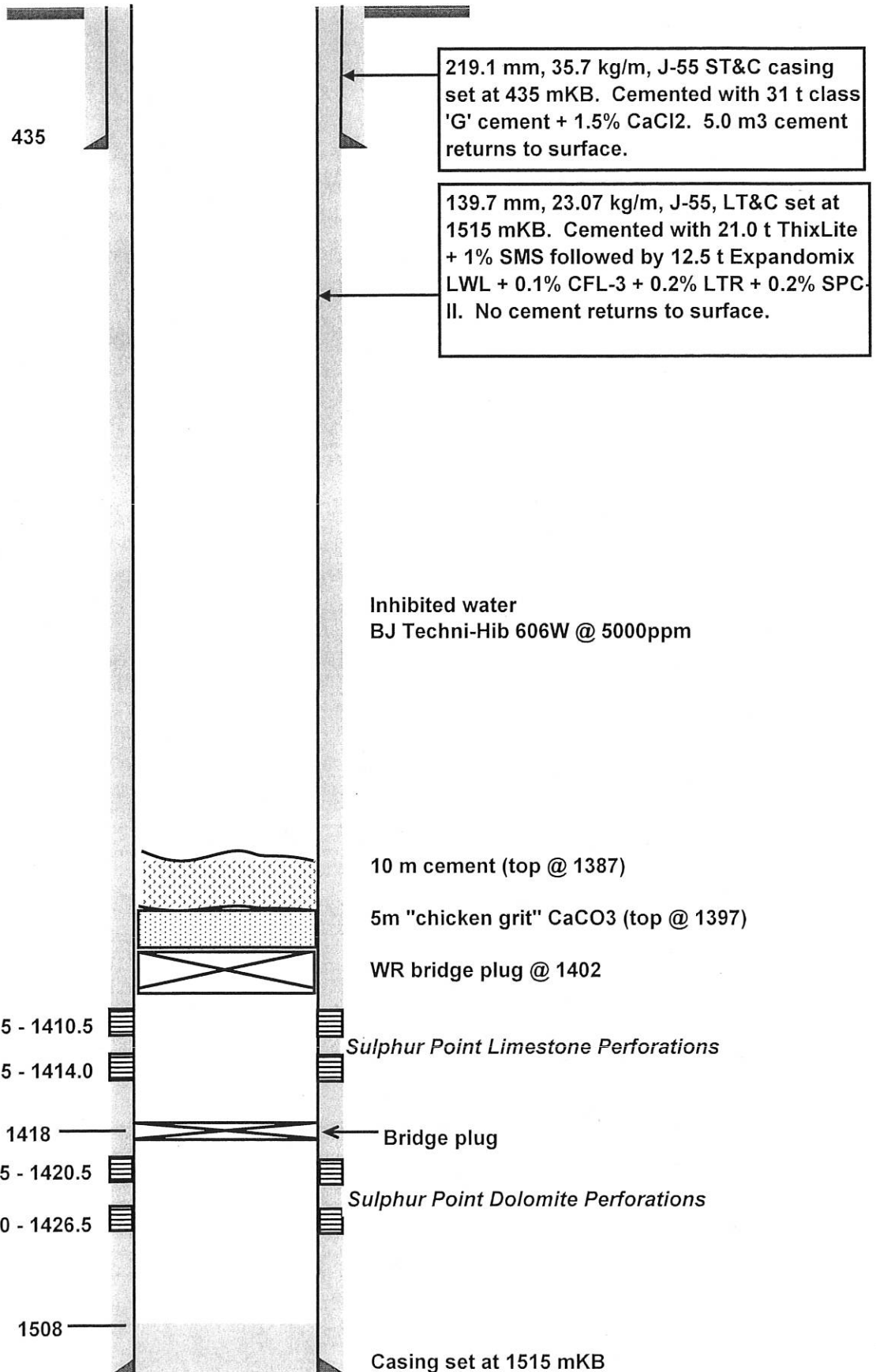


# PARA ET AL CAMERON L-29

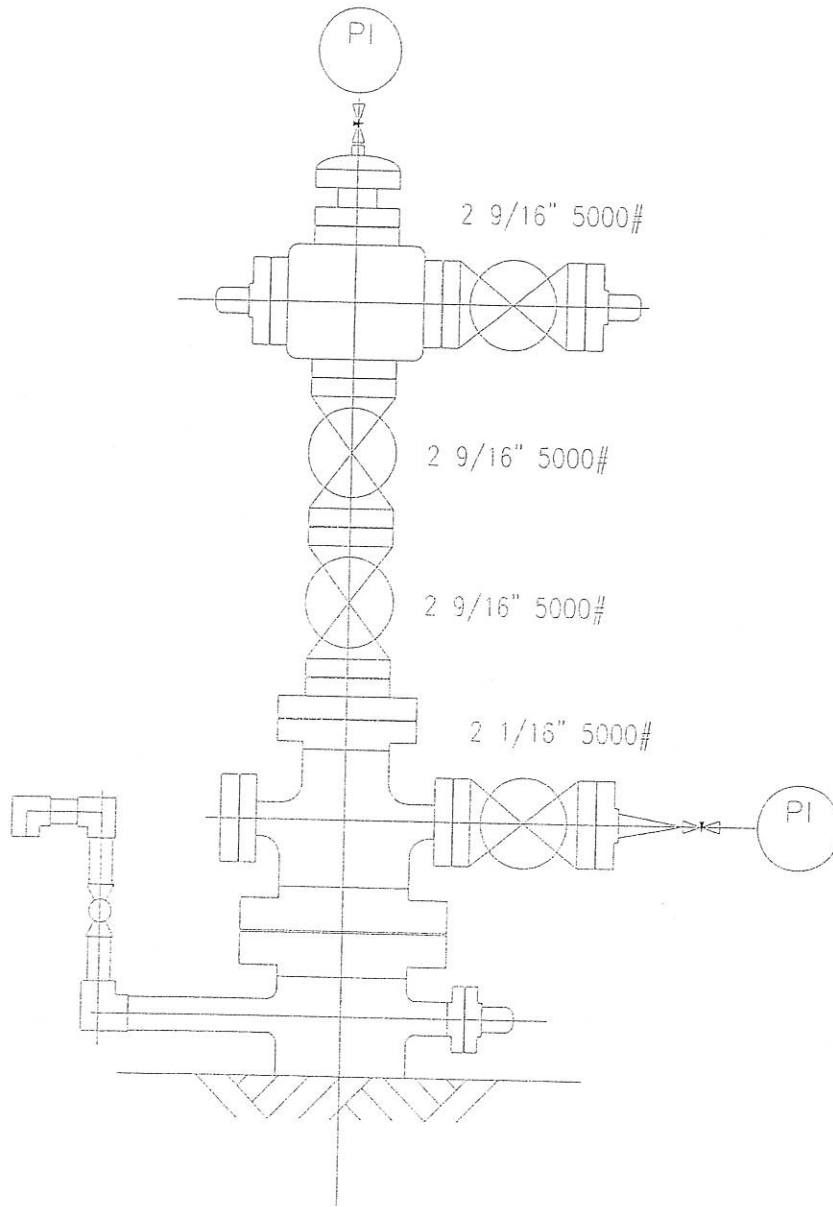
60° 10' N, 117° 30' W      WID: 2041

As suspended 20100305

KB: 759.51 m  
GL: 754.11 m







WELLHEAD DETAILS

WELL NAME \_\_\_\_\_  
 LOCATION   L-29  

Date: 090903  
 By: KW  
 Rev: A FOR INFO.

Wellhead  
 Last Review Date: