



Department of Energy
 Carlsbad Field Office
 P. O. Box 3090
 Carlsbad, New Mexico 88221
JAN 13 2012



Mr. John Kieling, Acting Chief
 Hazardous Waste Bureau
 New Mexico Environment Department
 2905 Rodeo Park Drive East, Building 1
 Santa Fe, New Mexico 87505-6303

Subject: Notification of Results of Evaluation of Sampling Line Loss, Waste Isolation Pilot Plant-Revised

Dear Mr. Kieling:

As required under Permit Part 4, Condition 4.6.5.5, the Permittees are hereby notifying the New Mexico Environment Department (NMED) of the results of the evaluation of a loss of a hydrogen and methane monitoring sampling line. The sampling line involved was in Panel 4 Room 6. This line is identified as 6E (exhaust side). This line loss was previously reported to the NMED on December 16, 2011.

The evaluation was performed per the specifications in Permit Attachment N1, Section N1-5b. The evaluation indicates that the line can be grouped with adjacent lines for methane. The evaluation further indicates that line 6E can be grouped with line 7E or 5E for hydrogen. The previous concentration measurement for hydrogen was also below Action Level 1. These results indicate that no further action is necessary and, per Permit Attachment N1, Section N1-5b, monitoring in Panel 4 will continue.

The results of the evaluation indicate that there is no impact on the hydrogen and methane monitoring program as a result of the loss of the sampling line. The complete evaluation is enclosed.

We certify under penalty of law that this document was prepared under our direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on our inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of our knowledge and belief true, accurate and complete. We are aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.




JAN 13 2012

Mr. John Kieling

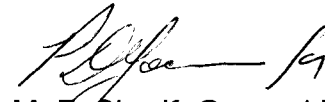
-2-

Please feel free to contact Ms. Susan E. McCauslin at (575) 234-7349, if you have any questions regarding this notification.

Sincerely,



Edward Ziemianski, Interim Manager
Carlsbad Field Office



M. F. Sharif, General Manager
Washington TRU Solutions LLC

Enclosure

cc:

T. Hall, NMED	*ED
S. Holmes, NMED	ED
T. Kliphuis, NMED	ED
R. Maestas, NMED	ED
C. Walker, Trinity Engineering	ED

CBFO M&RC

*ED denotes electronic distribution

Evaluation of Inability to Purge a Sample Line
Panel 4, Line 6E (Exhaust Side)

Line 6E

Can Panel 4 line 6E be purged? No, the sample line on the exhaust side of Panel 4, Room 6 (Line 6E) was determined to be unusable on December 13, 2011.

Is the line a Bulkhead Line? No, the line is not a Bulkhead line.

Are adjacent lines working? Yes, adjacent lines 7E, 5E, and 6I are working.

Can this line be grouped with another line?

Hydrogen: When grouped with 6I, the answer is no. When grouped with either 7E or 5E, the answer is yes. The information obtained from the statistical evaluation using the Student's "t" test to evaluate differences (Attachments 1&2) indicate that the sampling results for hydrogen is not statistically similar with adjacent sample line 6I, but is statistically similar with adjacent sample lines 7E and 5E.

Methane: Yes. All the methane results are non-detectable (Attachment 4). The adjacent monitoring lines had identical results with the failed line, yielding good confidence that the lines are similar but the Student's "t" cannot be performed because of the zero measurement variability between lines.

Was the most recent sample above the first action level (4,000 ppm for hydrogen and 5,000 ppm for methane)? No. For hydrogen, the most recent sample results for Line 6E was 661.62 ppmv (Attachment 3), only 16.5% of the first action level of 4,000 ppmv. For methane the most recent sample results from Line 6E were non-detectable (Attachment 4).

Do the results of the evaluation require any further action other than reporting of the results? No, no action necessary.

Line-Loss Evaluation using Hydrogen Data

(Note: No Methane detected in any sample over the sampling period. Therefore, no meaningful difference-testing possible.)

Line determined as plugged

Room 6 Exhaust

Date	H ₂ (ppmv)
5/27/2009	190.82
6/8/2009	114.46
7/21/2009	177.58
8/11/2009	247.88
9/15/2009	159.46
10/5/2009	117.88
11/9/2009	341.80
12/30/2009	466.88
1/20/2010	576.72
2/10/2010#	15.17
3/17/2010	599.50
4/13/2010	741.36
5/17/2010	234.98
6/15/2010	207.18
7/27/2010#	7.00
8/25/2010	880.34
9/14/2010	902.54
10/20/2010	1012.68
11/16/2010	991.58
12/8/2010	768.08
1/12/2011	619.40
2/7/2011	911.52
3/2/2011	946.96
4/5/2011	616.24
5/3/2011	720.54
6/16/2011	543.56
7/12/2011	648.56
8/9/2011	692.68
9/14/2011	656.56
10/11/2011	679.30
11/1/2011	661.62

Compared to:

Room 6 Inlet

Date	H ₂ (ppmv)
5/27/2009	67.96
6/9/2009#	14.93
7/20/2009	247.58
8/11/2009	230.00
9/14/2009	247.62
10/5/2009	324.08
11/11/2009#	15.17
12/30/2009	419.66
1/19/2010	199.04
2/9/2010	85.18
3/16/2010	647.86
4/14/2010	528.88
5/17/2010	613.98
6/14/2010	613.10
7/26/2010	555.22
8/24/2010	750.22
9/13/2010	713.28
10/19/2010	902.74
11/15/2010	760.56
12/7/2010	740.56
1/11/2011	740.30
2/1/2011	704.76
3/1/2011	736.38
4/5/2011	648.88
5/2/2011	512.20
6/15/2011	531.00
7/11/2011	494.48
8/9/2011	397.04
9/13/2011	461.88
10/10/2011	323.52
11/1/2011	370.18

R6E - R6I

delta
122.86
99.53
-70.00
17.88
-88.16
-206.20
326.63
47.22
377.68
-70.01
-48.36
212.48
-379.00
-405.92
-548.22
130.12
189.26
109.94
231.02
27.52
-120.90
206.76
210.58
-32.64
208.34
12.56
154.08
295.64
194.68
355.78
291.44

= the analytical results for this date was non-detect or was less than method detection limit (MDL) corrected for a 2X dilution; the values used for this statistical analysis are 1/2 the dilution corrected MDL

d-bar (Avg.) = 59.761
s (Std. Dev.) = 224.244
n (Obs.) = 31

H₀: Average difference over time, μ_d = 0.0

R6E - R6I (Reject H₀; t >= 1.31)

$$t = \frac{|\text{d-bar}|}{s/\sqrt{n}}$$

$$t = \frac{|59.761|}{224.244/\sqrt{31}}$$

t = 1.484
(Not Similar t >= 1.31)

α = Probability level for a Two-tailed confidence Interval

n-1 = 30

T_{crit(α=0.20)}¹ = 1.310

¹ As required by N1-5b of Permit Attachment N1

Line-Loss Evaluation using Hydrogen Data

(Note: No Methane detected in any sample over the sampling period. Therefore, no meaningful difference-testing possible.)

Line determined as plugged		Compared to:		Compared to:			
Room 6 Exhaust		Room 7 Exhaust		Room 5 Exhaust		R6E - R7E	R6E- R5E
Date	H ₂ (ppmv)	Date	H ₂ (ppmv)	Date	H ₂ (ppmv)	delta	delta
5/27/2009	190.82	5/27/2009	214.50	5/27/2009	143.28	-23.68	47.54
6/8/2009	114.46	6/9/2009	81.40	6/8/2009	65.66	33.06	48.80
7/21/2009	177.58	7/21/2009#	15.17	7/21/2009	175.06	162.41	2.52
8/11/2009	247.88	8/11/2009#	15.17	8/11/2009	33.02	232.71	214.86
9/15/2009	159.46	9/15/2009	52.08	9/15/2009	172.86	107.38	-13.40
10/5/2009	117.88	10/5/2009#	15.17	10/5/2009	129.82	102.71	-11.94
11/9/2009	341.80	11/9/2009	376.32	11/9/2009	406.36	-34.52	-64.56
12/30/2009	466.88	12/30/2009	732.38	12/30/2009	468.60	-265.50	-1.72
1/20/2010	576.72	1/20/2010	230.68	1/20/2010	408.40	346.04	168.32
2/10/2010#	15.17	2/10/2010#	15.17	2/10/2010#	15.17	0.00	0.00
3/17/2010	599.50	3/17/2010	538.04	3/17/2010	575.58	61.46	23.92
4/13/2010	741.36	4/13/2010	470.54	4/13/2010	510.30	270.82	231.06
5/17/2010	234.98	5/17/2010	432.10	5/17/2010	747.14	-197.12	-512.16
6/15/2010	207.18	6/15/2010	923.52	6/15/2010#	7.00	-716.34	200.18
7/27/2010#	7.00	7/26/2010	291.14	7/27/2010	601.06	-284.14	-594.06
8/25/2010	880.34	8/24/2010	257.50	8/25/2010	688.94	622.84	191.40
9/14/2010	902.54	9/13/2010	867.36	9/14/2010	792.94	35.18	109.60
10/20/2010	1012.68	10/20/2010	873.20	10/20/2010	655.86	139.48	356.82
11/16/2010	991.58	11/16/2010	868.52	11/16/2010	756.48	123.06	235.10
12/8/2010	768.08	12/7/2010	983.72	12/8/2010	583.38	-215.64	184.70
1/12/2011	619.40	1/11/2011	938.74	1/12/2011	709.40	-319.34	-90.00
2/7/2011	911.52	2/7/2011	785.90	2/7/2011	677.24	125.62	234.28
3/2/2011	946.96	3/1/2011	841.20	3/2/2011	683.92	105.76	263.04
4/5/2011	616.24	4/5/2011	739.96	4/5/2011	608.70	-123.72	7.54
5/3/2011	720.54	5/3/2011	920.04	5/3/2011	731.70	-199.50	-11.16
6/16/2011	543.56	6/16/2011	854.28	6/16/2011	689.48	-310.72	-145.92
7/12/2011	648.56	7/12/2011	775.72	7/12/2011	640.36	-127.16	8.20
8/9/2011	692.68	8/9/2011	837.04	8/9/2011	646.18	-144.36	46.50
9/14/2011	656.56	9/14/2011	823.62	9/14/2011	671.18	-167.06	-14.62
10/11/2011	679.30	10/11/2011	856.32	10/11/2011	673.00	-177.02	6.30
11/1/2011	661.62	11/1/2011	793.36	11/1/2011	604.10	-131.74	57.52

= the analytical results for this date was non-detect or was less than

method detection limit (MDL) corrected for a 2X dilution;

the values used for this statistical analysis are 1/2 the dilution corrected MDL

$$\bar{d} \text{ (Avg.)} = -31.259$$

$$s \text{ (Std. Dev.)} = 247.637$$

$$n \text{ (Obs.)} = 31$$

$$\bar{d} \text{ (Avg.)} = 38.021$$

$$s \text{ (Std. Dev.)} = 197.726$$

$$n \text{ (Obs.)} = 31$$

H₀: Average difference

over time, $\mu_d = 0.0$

R6E - R7E	(Accept H ₀ ; t < 1.31)
-----------	------------------------------------

R6E- R5E	(Accept H ₀ ; t < 1.31)
----------	------------------------------------

$$t = \frac{|\bar{d}\text{-bar}|}{s/\sqrt{n}}$$

$$t = \frac{|\bar{d}\text{-bar}|}{s/\sqrt{n}}$$

$$t = \frac{|-31.259|}{247.637/\sqrt{31}}$$

$$t = 0.703$$

(Similar t < 1.31)

$$t = \frac{|38.021|}{197.726/\sqrt{31}}$$

$$t = 1.071$$

(Similar t < 1.31)

α = Probability level for a Two-tailed confidence Interval

$$n-1 = 30$$

$$T_{\text{crit}(\alpha=0.20)}^1 = 1.310$$

¹ As required by N1-5b of

Permit Attachment N1

Hydrogen Data-Panel 4

All samples were sampled at sub-atmospheric pressure, then diluted 2x by the lab prior to analysis to achieve a pressurized sample
 MDL (Method Detection Limit) = the sample quantitation limit determined in accordance with 40 CFR Part 136; will be corrected for any sample dilutions

8/21/07-7/24/08 MDL = 10.79 ppmv

7/25/08-6/16/09 MDL = 14.93 ppmv

6/17/09-6/8/10 MDL = 15.17 ppmv

6/9/10-12/28/10 MDL = 7.00 ppmv

12/29/10-11/30/11 MDL = 14.03 ppmv

PQL (Practical Quantitation Limit) = 25 ppmv; must be corrected for any sample dilutions. For all analysis results here, it is 50 ppmv.

MRL/CRQL = 150 ppmv; must be corrected for any sample dilutions. For all analysis results here, it is 300 ppmv.

U = Assigned data flag to show that the results of the analytical sample was not detected above the PQL (i.e. < 50 ppmv)

J = Assigned data flag to show that the results of the analytical sample was not detected above the MRL/CRQL (i.e. < 300 ppmv)

N.D. = Not detected

* = When the Reported Results is N.D. or < dilution corrected MDL, the reported results are adjusted for statistical evaluations as indicated

Hydrogen (H₂)

Location	Sample ID	Sample Date	Reported Results (ppmv)	Reported Data Flags	Analyte	CAS #	Dilution corrected MDL (ppmv)	*Value for line loss evaluation (ppmv)
Panel 4 Room 7e	4032	5/27/2009	214.50	J	Hydrogen	1333-74-0	29.86	214.50
Panel 4 Room 7e	4069	6/9/2009	81.40	J	Hydrogen	1333-74-0	29.86	81.40
Panel 4 Room 7e	4139	7/21/2009	N.D.	U	Hydrogen	1333-74-0	30.34	15.17
Panel 4 Room 7e	4200	8/11/2009	N.D.	U	Hydrogen	1333-74-0	30.34	15.17
Panel 4 Room 7e	4274	9/15/2009	52.08	J	Hydrogen	1333-74-0	30.34	52.08
Panel 4 Room 7e	4315	10/5/2009	29.58	U	Hydrogen	1333-74-0	30.34	15.17
Panel 4 Room 7e	4404	11/9/2009	376.32		Hydrogen	1333-74-0	30.34	376.32
Panel 4 Room 7e	4531	12/30/2009	732.38		Hydrogen	1333-74-0	30.34	732.38
Panel 4 Room 7e	4595	1/20/2010	230.68	J	Hydrogen	1333-74-0	30.34	230.68
Panel 4 Room 7e	4680	2/10/2010	N.D.	U	Hydrogen	1333-74-0	30.34	15.17
Panel 4 Room 7e	4833	3/17/2010	538.04		Hydrogen	1333-74-0	30.34	538.04
Panel 4 Room 7e	4915	4/13/2010	470.54		Hydrogen	1333-74-0	30.34	470.54
Panel 4 Room 7e	5050	5/17/2010	432.10		Hydrogen	1333-74-0	30.34	432.10
Panel 4 Room 7e	5175	6/15/2010	923.52		Hydrogen	1333-74-0	14.00	923.52

Hydrogen (H₂)

Location	Sample ID	Sample Date	Reported Results (ppmv)	Reported Data Flags	Analyte	CAS #	Dilution corrected MDL (ppmv)	*Value for line loss evaluation (ppmv)
Panel 4 Room 7e	5310	7/26/2010	291.14	J	Hydrogen	1333-74-0	14.00	291.14
Panel 4 Room 7e	5396	8/24/2010	257.50	J	Hydrogen	1333-74-0	14.00	257.50
Panel 4 Room 7e	5450	9/13/2010	867.36		Hydrogen	1333-74-0	14.00	867.36
Panel 4 Room 7e	5569	10/20/2010	873.20		Hydrogen	1333-74-0	14.00	873.20
Panel 4 Room 7e	5661	11/16/2010	868.52		Hydrogen	1333-74-0	14.00	868.52
Panel 4 Room 7e	5718	12/7/2010	983.72		Hydrogen	1333-74-0	14.00	983.72
Panel 4 Room 7e	5816	1/11/2011	938.74		Hydrogen	1333-74-0	28.06	938.74
Panel 4 Room 7e	5892	2/7/2011	785.90		Hydrogen	1333-74-0	28.06	785.90
Panel 4 Room 7e	5980	3/1/2011	841.20		Hydrogen	1333-74-0	28.06	841.20
Panel 4 Room 7e	6083	4/5/2011	739.96		Hydrogen	1333-74-0	28.06	739.96
Panel 4 Room 7e	6182	5/3/2011	920.04		Hydrogen	1333-74-0	28.06	920.04
Panel 4 Room 7e	6333	6/16/2011	854.28		Hydrogen	1333-74-0	28.06	854.28
Panel 4 Room 7e	6409	7/12/2011	775.72		Hydrogen	1333-74-0	28.06	775.72
Panel 4 Room 7e	6477	8/9/2011	837.04		Hydrogen	1333-74-0	28.06	837.04
Panel 4 Room 7e	6553	9/14/2011	823.62		Hydrogen	1333-74-0	28.06	823.62
Panel 4 Room 7e	6627	10/11/2011	856.32		Hydrogen	1333-74-0	28.06	856.32
Panel 4 Room 7e	6700	11/1/2011	793.36		Hydrogen	1333-74-0	28.06	793.36
Panel 4 Room 6e	4031	5/27/2009	190.82	J	Hydrogen	1333-74-0	29.86	190.82
Panel 4 Room 6e	4068	6/8/2009	114.46	J	Hydrogen	1333-74-0	29.86	114.46
Panel 4 Room 6e	4140	7/21/2009	177.58	J	Hydrogen	1333-74-0	30.34	177.58
Panel 4 Room 6e	4201	8/11/2009	247.88	J	Hydrogen	1333-74-0	30.34	247.88
Panel 4 Room 6e	4275	9/15/2009	159.46	J	Hydrogen	1333-74-0	30.34	159.46
Panel 4 Room 6e	4316	10/5/2009	117.88	J	Hydrogen	1333-74-0	30.34	117.88
Panel 4 Room 6e	4403	11/9/2009	341.80		Hydrogen	1333-74-0	30.34	341.80
Panel 4 Room 6e	4532	12/30/2009	466.88		Hydrogen	1333-74-0	30.34	466.88
Panel 4 Room 6e	4596	1/20/2010	576.72		Hydrogen	1333-74-0	30.34	576.72
Panel 4 Room 6e	4681	2/10/2010	N.D.	U	Hydrogen	1333-74-0	30.34	15.17
Panel 4 Room 6e	4834	3/17/2010	599.50		Hydrogen	1333-74-0	30.34	599.50
Panel 4 Room 6e	4916	4/13/2010	741.36		Hydrogen	1333-74-0	30.34	741.36
Panel 4 Room 6e	5051	5/17/2010	234.98	J	Hydrogen	1333-74-0	30.34	234.98
Panel 4 Room 6e	5176	6/15/2010	207.18	J	Hydrogen	1333-74-0	14.00	207.18
Panel 4 Room 6e	5311	7/27/2010	N.D.	U	Hydrogen	1333-74-0	14.00	7.00

Hydrogen (H₂)

Location	Sample ID	Sample Date	Reported Results (ppmv)	Reported Data Flags	Analyte	CAS #	Dilution corrected MDL (ppmv)	*Value for line loss evaluation (ppmv)
Panel 4 Room 6e	5397	8/25/2010	880.34		Hydrogen	1333-74-0	14.00	880.34
Panel 4 Room 6e	5451	9/14/2010	902.54		Hydrogen	1333-74-0	14.00	902.54
Panel 4 Room 6e	5570	10/20/2010	1012.68		Hydrogen	1333-74-0	14.00	1012.68
Panel 4 Room 6e	5662	11/16/2010	991.58		Hydrogen	1333-74-0	14.00	991.58
Panel 4 Room 6e	5719	12/8/2010	768.08		Hydrogen	1333-74-0	14.00	768.08
Panel 4 Room 6e	5817	1/12/2011	619.40		Hydrogen	1333-74-0	28.06	619.40
Panel 4 Room 6e	5893	2/7/2011	911.52		Hydrogen	1333-74-0	28.06	911.52
Panel 4 Room 6e	5981	3/2/2011	946.96		Hydrogen	1333-74-0	28.06	946.96
Panel 4 Room 6e	6084	4/5/2011	616.24		Hydrogen	1333-74-0	28.06	616.24
Panel 4 Room 6e	6183	5/3/2011	720.54		Hydrogen	1333-74-0	28.06	720.54
Panel 4 Room 6e	6334	6/16/2011	543.56		Hydrogen	1333-74-0	28.06	543.56
Panel 4 Room 6e	6410	7/12/2011	648.56		Hydrogen	1333-74-0	28.06	648.56
Panel 4 Room 6e	6478	8/9/2011	692.68		Hydrogen	1333-74-0	28.06	692.68
Panel 4 Room 6e	6554	9/14/2011	656.56		Hydrogen	1333-74-0	28.06	656.56
Panel 4 Room 6e	6628	10/11/2011	679.30		Hydrogen	1333-74-0	28.06	679.30
Panel 4 Room 6e	6701	11/1/2011	661.62		Hydrogen	1333-74-0	28.06	661.62
Panel 4 Room 6i	4027	5/27/2009	67.96	J	Hydrogen	1333-74-0	29.86	67.96
Panel 4 Room 6i	4072	6/9/2009	N.D.	U	Hydrogen	1333-74-0	29.86	14.93
Panel 4 Room 6i	4131	7/20/2009	247.58	J	Hydrogen	1333-74-0	30.34	247.58
Panel 4 Room 6i	4192	8/11/2009	230.00	J	Hydrogen	1333-74-0	30.34	230.00
Panel 4 Room 6i	4266	9/14/2009	247.62	J	Hydrogen	1333-74-0	30.34	247.62
Panel 4 Room 6i	4307	10/5/2009	324.08		Hydrogen	1333-74-0	30.34	324.08
Panel 4 Room 6i	4412	11/11/2009	N.D.	U	Hydrogen	1333-74-0	30.34	15.17
Panel 4 Room 6i	4523	12/30/2009	419.66		Hydrogen	1333-74-0	30.34	419.66
Panel 4 Room 6i	4587	1/19/2010	199.04	J	Hydrogen	1333-74-0	30.34	199.04
Panel 4 Room 6i	4672	2/9/2010	85.18	J	Hydrogen	1333-74-0	30.34	85.18
Panel 4 Room 6i	4825	3/16/2010	647.86		Hydrogen	1333-74-0	30.34	647.86
Panel 4 Room 6i	4926	4/14/2010	528.88		Hydrogen	1333-74-0	30.34	528.88
Panel 4 Room 6i	5042	5/17/2010	613.98		Hydrogen	1333-74-0	30.34	613.98
Panel 4 Room 6i	5167	6/14/2010	613.10		Hydrogen	1333-74-0	14.00	613.10
Panel 4 Room 6i	5302	7/26/2010	555.22		Hydrogen	1333-74-0	14.00	555.22
Panel 4 Room 6i	5388	8/24/2010	750.22		Hydrogen	1333-74-0	14.00	750.22

Hydrogen (H₂)

Location	Sample ID	Sample Date	Reported Results (ppmv)	Reported Data Flags	Analyte	CAS #	Dilution corrected MDL (ppmv)	*Value for line loss evaluation (ppmv)
Panel 4 Room 6i	5442	9/13/2010	713.28		Hydrogen	1333-74-0	14.00	713.28
Panel 4 Room 6i	5561	10/19/2010	902.74		Hydrogen	1333-74-0	14.00	902.74
Panel 4 Room 6i	5653	11/15/2010	760.56		Hydrogen	1333-74-0	14.00	760.56
Panel 4 Room 6i	5710	12/7/2010	740.56		Hydrogen	1333-74-0	14.00	740.56
Panel 4 Room 6i	5808	1/11/2011	740.30		Hydrogen	1333-74-0	28.06	740.30
Panel 4 Room 6i	5882	2/1/2011	704.76		Hydrogen	1333-74-0	28.06	704.76
Panel 4 Room 6i	5972	3/1/2011	736.38		Hydrogen	1333-74-0	28.06	736.38
Panel 4 Room 6i	6075	4/5/2011	648.88		Hydrogen	1333-74-0	28.06	648.88
Panel 4 Room 6i	6174	5/2/2011	512.20		Hydrogen	1333-74-0	28.06	512.20
Panel 4 Room 6i	6325	6/15/2011	531.00		Hydrogen	1333-74-0	28.06	531.00
Panel 4 Room 6i	6401	7/11/2011	494.48		Hydrogen	1333-74-0	28.06	494.48
Panel 4 Room 6i	6469	8/9/2011	397.04		Hydrogen	1333-74-0	28.06	397.04
Panel 4 Room 6i	6545	9/13/2011	461.88		Hydrogen	1333-74-0	28.06	461.88
Panel 4 Room 6i	6619	10/10/2011	323.52		Hydrogen	1333-74-0	28.06	323.52
Panel 4 Room 6i	6692	11/1/2011	370.18		Hydrogen	1333-74-0	28.06	370.18
Panel 4 Room 5e	4030	5/27/2009	143.28	J	Hydrogen	1333-74-0	29.86	143.28
Panel 4 Room 5e	4067	6/8/2009	65.66	J	Hydrogen	1333-74-0	29.86	65.66
Panel 4 Room 5e	4141	7/21/2009	175.06	J	Hydrogen	1333-74-0	30.34	175.06
Panel 4 Room 5e	4202	8/11/2009	33.02	J	Hydrogen	1333-74-0	30.34	33.02
Panel 4 Room 5e	4276	9/15/2009	172.86	J	Hydrogen	1333-74-0	30.34	172.86
Panel 4 Room 5e	4317	10/5/2009	129.82	J	Hydrogen	1333-74-0	30.34	129.82
Panel 4 Room 5e	4402	11/9/2009	406.36		Hydrogen	1333-74-0	30.34	406.36
Panel 4 Room 5e	4533	12/30/2009	468.60		Hydrogen	1333-74-0	30.34	468.60
Panel 4 Room 5e	4597	1/20/2010	408.40		Hydrogen	1333-74-0	30.34	408.40
Panel 4 Room 5e	4682	2/10/2010	N.D.	U	Hydrogen	1333-74-0	30.34	15.17
Panel 4 Room 5e	4835	3/17/2010	575.58		Hydrogen	1333-74-0	30.34	575.58
Panel 4 Room 5e	4917	4/13/2010	510.30		Hydrogen	1333-74-0	30.34	510.30
Panel 4 Room 5e	5052	5/17/2010	747.14		Hydrogen	1333-74-0	30.34	747.14
Panel 4 Room 5e	5177	6/15/2010	N.D.	U	Hydrogen	1333-74-0	14.00	7.00
Panel 4 Room 5e	5312	7/27/2010	601.06		Hydrogen	1333-74-0	14.00	601.06
Panel 4 Room 5e	5398	8/25/2010	688.94		Hydrogen	1333-74-0	14.00	688.94
Panel 4 Room 5e	5452	9/14/2010	792.94		Hydrogen	1333-74-0	14.00	792.94

Hydrogen (H₂)

Location	Sample ID	Sample Date	Reported Results (ppmv)	Reported Data Flags	Analyte	CAS #	Dilution corrected MDL (ppmv)	*Value for line loss evaluation (ppmv)
Panel 4 Room 5e	5571	10/20/2010	655.86		Hydrogen	1333-74-0	14.00	655.86
Panel 4 Room 5e	5663	11/16/2010	756.48		Hydrogen	1333-74-0	14.00	756.48
Panel 4 Room 5e	5720	12/8/2010	583.38		Hydrogen	1333-74-0	14.00	583.38
Panel 4 Room 5e	5818	1/12/2011	709.40		Hydrogen	1333-74-0	28.06	709.40
Panel 4 Room 5e	5894	2/7/2011	677.24		Hydrogen	1333-74-0	28.06	677.24
Panel 4 Room 5e	5982	3/2/2011	683.92		Hydrogen	1333-74-0	28.06	683.92
Panel 4 Room 5e	6085	4/5/2011	608.70		Hydrogen	1333-74-0	28.06	608.70
Panel 4 Room 5e	6184	5/3/2011	731.70		Hydrogen	1333-74-0	28.06	731.70
Panel 4 Room 5e	6335	6/16/2011	689.48		Hydrogen	1333-74-0	28.06	689.48
Panel 4 Room 5e	6411	7/12/2011	640.36		Hydrogen	1333-74-0	28.06	640.36
Panel 4 Room 5e	6479	8/9/2011	646.18		Hydrogen	1333-74-0	28.06	646.18
Panel 4 Room 5e	6557	9/14/2011	671.18		Hydrogen	1333-74-0	28.06	671.18
Panel 4 Room 5e	6629	10/11/2011	673.00		Hydrogen	1333-74-0	28.06	673.00
Panel 4 Room 5e	6702	11/1/2011	604.10		Hydrogen	1333-74-0	28.06	604.10

Methane Data-Panel 4

All samples were sampled at sub-atmospheric pressure, then diluted 2x by the lab prior to analysis to achieve a pressurized sample
 MDL (Method Detection Limit) = the sample quantitation limit determined in accordance with 40 CFR Part 136; will be corrected for any sample dilutions

8/21/07-7/24/08 MDL = 17.99 ppmv

7/25/08-6/16/09 MDL = 23.74 ppmv

6/17/09-6/8/10 MDL = 22.21 ppmv

6/9/10-12/28/10 MDL = 21.39 ppmv

12/29/10-11/30/11 MDL = 23.97 ppmv

PQL (Practical Quantitation Limit) = 25 ppmv; must be corrected for any sample dilutions. For all analysis results here, it is 50 ppmv.

MRL/CRQL = 150 ppmv; must be corrected for any sample dilutions. For all analysis results here, it is 300 ppmv.

U = Assigned data flag to show that the results of the analytical sample was not detected above the PQL (i.e. < 50 ppmv)

J = Assigned data flag to show that the results of the analytical sample was not detected above the MRL/CRQL (i.e. < 300 ppmv)

N.D. = Not detected

* = When the Reported Results is N.D. or < dilution corrected MDL, the reported results are adjusted for statistical evaluations as indicated

Methane (CH₄)

Location	Sample ID	Sample Date	Reported Results (ppmv)	Reported Data Flags	Analyte	CAS #	Dilution corrected MDL (ppmv)	*Value for line loss evaluation (ppmv)
Panel 4 Room 7e	4032	5/27/2009	N.D.	U	Methane	74-82-8	47.48	23.74
Panel 4 Room 7e	4069	6/9/2009	N.D.	U	Methane	74-82-8	47.48	23.74
Panel 4 Room 7e	4139	7/21/2009	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 7e	4200	8/11/2009	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 7e	4274	9/15/2009	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 7e	4315	10/5/2009	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 7e	4404	11/9/2009	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 7e	4531	12/30/2009	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 7e	4595	1/20/2010	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 7e	4680	2/10/2010	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 7e	4833	3/17/2010	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 7e	4915	4/13/2010	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 7e	5050	5/17/2010	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 7e	5175	6/15/2010	N.D.	U	Methane	74-82-8	42.78	21.39

Methane (CH₄)

Location	Sample ID	Sample Date	Reported Results (ppmv)	Reported Data Flags	Analyte	CAS #	Dilution corrected MDL (ppmv)	*Value for line loss evaluation (ppmv)
Panel 4 Room 7e	5310	7/26/2010	N.D.	U	Methane	74-82-8	42.78	21.39
Panel 4 Room 7e	5396	8/24/2010	N.D.	U	Methane	74-82-8	42.78	21.39
Panel 4 Room 7e	5450	9/13/2010	N.D.	U	Methane	74-82-8	42.78	21.39
Panel 4 Room 7e	5569	10/20/2010	N.D.	U	Methane	74-82-8	42.78	21.39
Panel 4 Room 7e	5661	11/16/2010	N.D.	U	Methane	74-82-8	42.78	21.39
Panel 4 Room 7e	5718	12/7/2010	N.D.	U	Methane	74-82-8	42.78	21.39
Panel 4 Room 7e	5816	1/11/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 7e	5892	2/7/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 7e	5980	3/1/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 7e	6083	4/5/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 7e	6182	5/3/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 7e	6333	6/16/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 7e	6409	7/12/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 7e	6477	8/9/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 7e	6553	9/14/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 7e	6627	10/11/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 7e	6700	11/1/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 6e	4031	5/27/2009	N.D.	U	Methane	74-82-8	47.48	23.74
Panel 4 Room 6e	4068	6/8/2009	N.D.	U	Methane	74-82-8	47.48	23.74
Panel 4 Room 6e	4140	7/21/2009	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 6e	4201	8/11/2009	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 6e	4275	9/15/2009	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 6e	4316	10/5/2009	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 6e	4403	11/9/2009	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 6e	4532	12/30/2009	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 6e	4596	1/20/2010	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 6e	4681	2/10/2010	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 6e	4834	3/17/2010	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 6e	4916	4/13/2010	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 6e	5051	5/17/2010	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 6e	5176	6/15/2010	N.D.	U	Methane	74-82-8	42.78	21.39
Panel 4 Room 6e	5311	7/27/2010	N.D.	U	Methane	74-82-8	42.78	21.39

Methane (CH₄)

Location	Sample ID	Sample Date	Reported	Reported	Analyte	CAS #	Dilution	*Value for line loss evaluation (ppmv)
			Results (ppmv)	Data Flags			corrected MDL (ppmv)	
Panel 4 Room 6e	5397	8/25/2010	N.D.	U	Methane	74-82-8	42.78	21.39
Panel 4 Room 6e	5451	9/14/2010	N.D.	U	Methane	74-82-8	42.78	21.39
Panel 4 Room 6e	5570	10/20/2010	N.D.	U	Methane	74-82-8	42.78	21.39
Panel 4 Room 6e	5662	11/16/2010	N.D.	U	Methane	74-82-8	42.78	21.39
Panel 4 Room 6e	5719	12/8/2010	N.D.	U	Methane	74-82-8	42.78	21.39
Panel 4 Room 6e	5817	1/12/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 6e	5893	2/7/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 6e	5981	3/2/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 6e	6084	4/5/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 6e	6183	5/3/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 6e	6334	6/16/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 6e	6410	7/12/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 6e	6478	8/9/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 6e	6554	9/14/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 6e	6628	10/11/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 6e	6701	11/1/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 6i	4027	5/27/2009	N.D.	U	Methane	74-82-8	47.48	23.74
Panel 4 Room 6i	4072	6/9/2009	N.D.	U	Methane	74-82-8	47.48	23.74
Panel 4 Room 6i	4131	7/20/2009	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 6i	4192	8/11/2009	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 6i	4266	9/14/2009	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 6i	4307	10/5/2009	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 6i	4412	11/11/2009	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 6i	4523	12/30/2009	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 6i	4587	1/19/2010	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 6i	4672	2/9/2010	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 6i	4825	3/16/2010	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 6i	4926	4/14/2010	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 6i	5042	5/17/2010	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 6i	5167	6/14/2010	N.D.	U	Methane	74-82-8	42.78	21.39
Panel 4 Room 6i	5302	7/26/2010	N.D.	U	Methane	74-82-8	42.78	21.39
Panel 4 Room 6i	5388	8/24/2010	N.D.	U	Methane	74-82-8	42.78	21.39

Methane (CH₄)

Location	Sample ID	Sample Date	Reported Results (ppmv)	Reported Data Flags	Analyte	CAS #	Dilution corrected MDL (ppmv)	*Value for line loss evaluation (ppmv)
Panel 4 Room 6i	5442	9/13/2010	N.D.	U	Methane	74-82-8	42.78	21.39
Panel 4 Room 6i	5561	10/19/2010	N.D.	U	Methane	74-82-8	42.78	21.39
Panel 4 Room 6i	5653	11/15/2010	N.D.	U	Methane	74-82-8	42.78	21.39
Panel 4 Room 6i	5710	12/7/2010	N.D.	U	Methane	74-82-8	42.78	21.39
Panel 4 Room 6i	5808	1/11/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 6i	5882	2/1/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 6i	5972	3/1/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 6i	6075	4/5/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 6i	6174	5/2/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 6i	6325	6/15/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 6i	6401	7/11/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 6i	6469	8/9/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 6i	6545	9/13/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 6i	6619	10/10/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 6i	6692	11/1/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 5e	4030	5/27/2009	N.D.	U	Methane	74-82-8	47.48	23.74
Panel 4 Room 5e	4067	6/8/2009	N.D.	U	Methane	74-82-8	47.48	23.74
Panel 4 Room 5e	4141	7/21/2009	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 5e	4202	8/11/2009	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 5e	4276	9/15/2009	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 5e	4317	10/5/2009	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 5e	4402	11/9/2009	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 5e	4533	12/30/2009	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 5e	4597	1/20/2010	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 5e	4682	2/10/2010	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 5e	4835	3/17/2010	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 5e	4917	4/13/2010	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 5e	5052	5/17/2010	N.D.	U	Methane	74-82-8	44.42	22.21
Panel 4 Room 5e	5177	6/15/2010	N.D.	U	Methane	74-82-8	42.78	21.39
Panel 4 Room 5e	5312	7/27/2010	N.D.	U	Methane	74-82-8	42.78	21.39
Panel 4 Room 5e	5398	8/25/2010	N.D.	U	Methane	74-82-8	42.78	21.39
Panel 4 Room 5e	5452	9/14/2010	N.D.	U	Methane	74-82-8	42.78	21.39

Methane (CH₄)

Location	Sample ID	Sample Date	Reported Results (ppmv)	Reported Data Flags	Analyte	CAS #	Dilution corrected MDL (ppmv)	*Value for line loss evaluation (ppmv)
Panel 4 Room 5e	5571	10/20/2010	N.D.	U	Methane	74-82-8	42.78	21.39
Panel 4 Room 5e	5663	11/16/2010	N.D.	U	Methane	74-82-8	42.78	21.39
Panel 4 Room 5e	5720	12/8/2010	N.D.	U	Methane	74-82-8	42.78	21.39
Panel 4 Room 5e	5818	1/12/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 5e	5894	2/7/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 5e	5982	3/2/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 5e	6085	4/5/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 5e	6184	5/3/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 5e	6335	6/16/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 5e	6411	7/12/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 5e	6479	8/9/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 5e	6557	9/14/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 5e	6629	10/11/2011	N.D.	U	Methane	74-82-8	47.94	23.97
Panel 4 Room 5e	6702	11/1/2011	N.D.	U	Methane	74-82-8	47.94	23.97