



Thursday, 28 January 2016

Mr Stuart Ross,
Natural Resources Wales,
Chester Road,
Buckley,
Flintshire
CH7 3AJ

Dear Mr Ross,

Pen-Y-Bont Quarter 4 Environmental Report for 2015

Please find enclosed the report for routine environmental monitoring undertaken at our Pen-Y-Bont Landfill Site between 1st October and 31st December 2015.

We trust this is satisfactory, please do not hesitate to contact us should you require further clarification.

**Yours sincerely,
for FCC ENVIRONMENT**

**Geoff Forrest
Compliance Advisor, North Wales**



PEN-Y-BONT LANDFILL SITE

PPC PERMIT GP3830BG

QUARTERLY ENVIRONMENTAL MONITORING REPORT

1st October – 31st December 2015

28th January 2016

**FCC Environment,
Pen-Y-Bont Landfill Site,
Pentre,
LL11 5AR.**

1.0 Introduction

This report has been produced in accordance with the requirements of the PPC permit (GP3830BG) and subsequent variation notices PP3032LN (issued on the 27th June 2007) and GP3830BG/V007 (issued on 04/11/14), detailing the results of environmental monitoring undertaken in the first quarter of the year between the 1st October and 31st December 2015 at Pen-Y-Bont Landfill Site.

2.0 Landfill Gas Migration

Landfill gas monitoring has been undertaken on a monthly basis throughout the review period in accordance with Table S4.5 of the site Permit. All data collected is attached with this report.

There were no trigger breaches of the methane limit of 1% recorded during the review period.

Methane was detected just below 1% on 6 occasions during the reporting period, with readings of between 0.3% and 0.9% in boreholes T8. Borehole T10 is in close proximity to (and may be influenced by) T11 which consistently shows high volumes of methane which is not sourced from the landfill.

We will continue to monitor trends of Methane and CO2 in all boreholes for early signs of gas migration developing

Schedule 6 notifications of any methane breaches will continue to be submitted to Natural Resources Wales within 24 hours of monitoring taking place.

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3.0 Water Quality

Water quality is scheduled to be analysed at 27 groundwater monitoring boreholes, the discharge points to the River Dee and Grass Plots and at three clearly defined surface water monitoring locations, WP1 (upstream), WP2 (downstream) and WP3 (adjacent to the site) along the river.

3.1 Groundwater Quality

Groundwater samples were taken throughout the monitoring period in accordance with Tables S4.4 and S4.10 and results of the monitoring are attached with this report. Monthly sample suites were analysed during October and December with a quarterly suite of laboratory tests performed on samples collected during November.

Following the full suite of tests for hazardous substances performed on leachate samples in May, the substances which show positive detections were added to the bi-Annual suite of tests carried out on groundwater samples collected in November.

Additional boreholes required by Improvement Condition 1.4.1.1 were added to the monitoring schedule in March 2007, with trigger levels applied to them in 2010, in accordance with Improvement Condition 1.4.1.2.

There was one minor breach of the Ammoniacal Nitrogen trigger limit during the reporting period, recorded in borehole T10 with a reading of 2.1mg/l (trigger limit 1.9mg/l).

A schedule 6 notification was raised to notify NRW of the above event.

We will continue to review all laboratory data for the determinands tested for signs of any increasing trends.

Whenever possible groundwater sampling is all undertaken consistently and on the same day by our own in-house technician, however this is not always practical and some samples may be taken on a second day of monitoring.

Note: The Hydrogeological Risk Assessment first submitted to NRW in May was resubmitted (with amendments) in August and a response has now been received with some final minor amendments. The HRA now needs to be progressed with a final submission from FCC.

3.2 Surface Water Quality

Surface water sampling was carried out in accordance with Table S4.9 of the site permit during the review period. There are currently no trigger limits specified for surface water sampling points.

There were no elevated concentrations of the determinands tested for from the samples collected that would suggest any impact from the landfilling operations with Ammonium levels consistently below 1.0mg/l.

3.3 Surface Water Discharge Quality

Surface water emissions sampling was scheduled to be carried out the surface water discharge points, WP4 'Discharge to Grass Plots' and WP5 'Discharge to River Dee'. There was no discharge through these points during the review period.

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4.0 Leachate Monitoring

4.1 Leachate Quality

Leachate sampling has been carried out in accordance with the revised Table S4.8 of the latest Permit variation site Permit with leachate sampling reduced to quarterly, as previously agreed in writing with NRW in April 2013.

Leachate sampling (quarterly suite) therefore took place in November during the third quarter with results attached to this report.

4.2 Leachate Levels

Leachate levels are monitored on a monthly basis in accordance with the revised Table S4.1, of the recently issued (04/11/14) Permit variation GP3830BG/V007. However, leachate level monitoring at this frequency was agreed in writing with NRW in April 2013.

There were no breaches of the leachate compliance limit of 1m during this reporting period. The electric pumping system is currently powered by a generator which is situated close to the wells on top of the site as a temporary measure – a permanent cable will be installed (and buried to avoid theft) once the site closes.

The leachate pumping system repairs and maintenance plus the tankered export of leachate continue to be closely managed at the site in order to maintain full compliance.

Leachate level data for quarter 4 of 2015 is attached with this report.

5.0 Landfill Gas Management

Monitoring of the landfill gas extraction system has been completed in accordance with the requirements of Tables S4.2 and S4.7 of the site Permit.

5.1 Flare/Gas Engine Emissions

Annual monitoring of the flare and gas engine emissions for 2015 were carried out in the final quarter of the year in accordance with the IPPC permit. The results will be submitted to Natural Resources Wales in the Annual Monitoring Report in March 2016.

5.2 In Waste Gas Quality

In waste gas quality monitoring was completed in accordance with Table S4.7 of the site Permit during the review period.

There was a total of 504 gas well readings obtained with increased field balancing taking place in order to prevent the escape of fugitive odours from the uncapped, operational areas of the site.

Oxygen concentrations in excess of 5% were recorded on 60 occasions, however, 52 of these readings were from gas wells with their extraction valves closed or closed following field balancing. The remaining 6 were mostly 'cracked' open for 'environmental control' to prevent the release of fugitive emissions.

Total Carbon Dioxide and Methane concentrations of less than 80% were recorded on 112 occasions with 73 of these results recorded from wells with closed extraction valves or wells which had their valve positions closed down or switched off completely, post field balancing. Of the remaining 39 wells, 9 were 'cracked' open for 'environmental control' to prevent the release of fugitive emissions.

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There were no Carbon Monoxide values recorded in excess of 100ppm during this reporting period.

Assessments of air ingress into the system and any other 'Gas Operating Parameter' breaches are communicated to FCC by our gas contractors on a regular basis and subsequent remediations are carried out in accordance with the requirements of Table S4.7 of the site Permit.

A full set of gas field balancing data has been appended at the end of this report.

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APPENDIX 1

Field Logs

Field log report

Pen-Y-Bont

09-October-2015

Equipment 01 Calibration Due	21/10/2015
Equipment 01 Last Calibration	21/04/2015
Equipment 01 Serial No.	GA11581
Equipment 01 Type	GA2000plus
Personnel 01	L Terrace
Time OFF	11:45
Time ON	09:00
Weather	Sunny

Issued By:

Signed By :

Name :

Field log report

Pen-Y-Bont

23-October-2015

Equipment 01 Serial No.	72/62-08
Equipment 01 Type	Geotechnical Atex Dip Meter
Personnel 01	L Terrace
Time OFF	16:00
Time ON	14:45
Weather	o/c, showers

Issued By:

Signed By :

Name :

Field log report

Pen-Y-Bont

29-October-2015

Equipment 01 Last Calibration	01/10/2015
Equipment 01 Serial No.	LT1
Equipment 01 Type	Hannah Instruments HI98130
Equipment 02 Last Calibration	N/A
Equipment 02 Serial No.	30858
Equipment 02 Type	Dip Meter, In Situ Rugged Level tape 200
Personnel 01	L.Terrace
Time OFF	16:30
Time ON	09:00
Weather	Raining

Issued By:

Signed By :

Name :

Field log report

Pen-Y-Bont

03-November-2015

Equipment 01 Calibration Due	28/04/2016
Equipment 01 Last Calibration	28/10/2015
Equipment 01 Serial No.	GA11581
Equipment 01 Type	GA2000plus
Personnel 01	L Terrace
Time OFF	10:00
Time ON	08:20
Weather	Overcast

Issued By:

Signed By :

Name :

Field log report

Pen-Y-Bont

24-November-2015

Equipment 01 Serial No.	T62
Equipment 01 Type	Dip tape
Personnel 01	R. Clarke-Williams, J. Crawford
Time OFF	15:00
Time ON	07:30
Weather	Overcast/Sunny Intervals

Issued By:

Signed By :

Name :

Field log report

Pen-Y-Bont

27-November-2015

Equipment 01 Serial No.	72/62-08
Equipment 01 Type	Geotechnical Atex Dip Meter
Personnel 01	G Forrest
Time OFF	14:30
Time ON	13:00
Weather	o/c, showers

Issued By:

Signed By :

Name :

Field log report

Pen-Y-Bont

30-November-2015

Personnel 01	J.Crawford
Time OFF	15:30
Time ON	10:30
Weather	Rain

Issued By:

Signed By :

Name :

Field log report

Pen-Y-Bont

02-December-2015

Equipment 01 Calibration Due	28/04/2016
Equipment 01 Last Calibration	28/10/2015
Equipment 01 Serial No.	GA11581
Equipment 01 Type	GA2000plus
Personnel 01	L Terrace
Time OFF	11:40
Time ON	09:10
Weather	Overcast

Issued By:

Signed By :

Name :

Field log report

Pen-Y-Bont

15-December-2015

Equipment 01 Last Calibration	01/12/2015
Equipment 01 Serial No.	LT1
Equipment 01 Type	Hannah Instruments HI98130
Equipment 02 Last Calibration	N/A
Equipment 02 Serial No.	30858
Equipment 02 Type	Dip Meter, In Situ Rugged Level tape 200
Personnel 01	L.Terrace
Time OFF	16:45
Time ON	09:00
Weather	Overcast

Issued By:

Signed By :

Name :

Field log report

Pen-Y-Bont

23-December-2015

Equipment 01 Serial No.	72/62-08
Equipment 01 Type	Geotechnical Atex Dip Meter
Personnel 01	G Forrest
Time OFF	12:00
Time ON	09:30
Weather	windy, rain

Issued By:

Signed By :

Name :

Field log report

Pen-Y-Bont

29-December-2015

Equipment 01 Serial No.	72/62-08
Equipment 01 Type	Geotechnical Atex Dip Meter
Personnel 01	G Forrest
Time OFF	12:00
Time ON	09:30
Weather	windy, rain

Issued By:

Signed By :

Name :

Field log report

Pen-Y-Bont

30-December-2015

Equipment 01 Serial No.	72/62-08
Equipment 01 Type	Geotechnical Atex Dip Meter
Personnel 01	G Forrest
Time OFF	16:00
Time ON	13:30
Weather	rain

Issued By:

Signed By :

Name :

APPENDIX 2

Perimeter Borehole Gas Data

Pen-Y-Bont Perimeter Borehole Gas Data - Oct to Dec 2015



From : 09/10/2015

To : 02/12/2015

09/10/2015

Sample Point	AtPress (mBar)	CH4 (%v/v) (%)	CO2 (%v/v) (%)	H2S (ppm)	O2 (%v/v)	Rel Press (mBar)
PBGB00G1	1014	0	1.6	0	19.1	-0.01
PBGB00G2	1014	0	1.7	0	18.8	-0.02
PBGB00G3	1014	0	1.7	0	17.7	0
PBGB00G4	1014	0	3.9	0	16.8	-0.01
PBGB00G5	1014	0	1.4	0	19.8	-0.02
PBGB00G6	1014	0	0.6	0	19.4	1.09
PBGB00G7	1016	0	1.2	0	19.8	0
PBGB00G8	1014	0	6	0	12	-0.05
PBGB00G9	1012	0	4	0	14.3	-0.06
PBGB00G10	1013	0	1.1	0	19.8	-0.01
PBGB00G11	1013	0	4.1	0	2.1	0
PBGB00G12	1013	0	1.9	0	18.5	-0.01
PBGB00G13	1013	0	2.8	0	13.2	-0.02
PBGB00G14	1013	0	0.5	0	20.1	-0.02
PBGB00G15	1013	0	1.5	0	19.7	-0.03
PBGB00G16	1013	0	1.8	0	18.8	0.24
PBGB00G17	1014	0	1.5	0	19.6	-0.01
PBT00001	1017	0	6	0	14.7	0
PBT00002	1017	0	3.2	0	17.2	0
PBT00003	1017	0	4.7	0	13.9	0.01
PBT00004	1017	0	1	0	19.5	0.03
PBT00005	1017	0	1.2	0	19.1	0.04
PBT00006	1017	0	1.7	0	18.8	0.03
PBT00007	1017	0	1.7	0	19	0.02
PBT00008	1017	0.3	0.5	0	18.1	0.01
PBT00009	1017	0	1	0	19.3	-1
PBT00010	1016	0.5	0.8	0	18.8	-0.11
PBT00012	1016	0	0.4	0	20	-0.16
PBT00013	1017	0	0.8	0	20	-0.13

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Pen-Y-Bont Perimeter Borehole Gas Data - Oct to Dec 2015



From : 09/10/2015

To : 02/12/2015

03/11/2015

Sample Point	AtPress (mBar)	CH4 (%v/v) (%)	CO2 (%v/v) (%)	H2S (ppm)	O2 (%v/v)	Rel Press (mBar)
PBGB00G1	1006	0	1.9	0	19.2	0
PBGB00G2	1006	0	1.7	0	18.8	0
PBGB00G3	1006	0	1.5	0	18.8	0.01
PBGB00G4	1006	0	3.7	0	17	0
PBGB00G5	1006	0	1.3	0	20.4	0.03
PBGB00G6	1006	0	0.7	0	19.5	0.01
PBGB00G7	1008	0	1	0	20.4	0
PBGB00G8	1006	0	6.3	0	10.1	-0.05
PBGB00G9	1004	0	3.8	0	14.1	-0.04
PBGB00G10	1004	0	1	0	20.1	-0.06
PBGB00G11	1004	0.6	4.2	0	0.8	-0.04
PBGB00G12	1004	0	1.8	0	18.7	-0.04
PBGB00G13	1005	0	2.7	0	14.2	-0.02
PBGB00G14	1005	0	0.7	0	19.9	-0.02
PBGB00G15	1005	0	1.5	0	19.7	-0.02
PBGB00G16	1005	0	2	0	18.9	-0.02
PBGB00G17	1006	0	1.8	0	19.6	-0.01
PBT00001	1009	0	5.4	0	16.3	0.07
PBT00002	1009	0	1.8	0	19.1	0
PBT00003	1009	0	4.2	0	14.6	0.07
PBT00004	1009	0	0.9	0	20	-0.35
PBT00005	1009	0	1.5	0	19.1	0.08
PBT00006	1009	0	1.6	0	19.2	0.09
PBT00007	1009	0	1.7	0	19.7	0.1
PBT00008	1009	0.6	1.2	0	14.8	0.12
PBT00009	1009	0	3.3	0	16.2	2.25
PBT00010	1008	0.6	0.7	0	19.4	-0.01
PBT00012	1009	0	0.5	0	20.6	-0.45
PBT00013	1009	0	1.1	0	20.6	6.74

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Pen-Y-Bont Perimeter Borehole Gas Data - Oct to Dec 2015



From : 09/10/2015

To : 02/12/2015

02/12/2015

Sample Point	AtPress (mBar)	CH4 (%v/v) (%)	CO2 (%v/v) (%)	H2S (ppm)	O2 (%v/v)	Rel Press (mBar)
PBGB00G1	1006	0	1.1	0	19.6	0.04
PBGB00G2	1006	0	2.7	0	17.5	0.05
PBGB00G3	1006	0	1.8	0	18.6	22.02
PBGB00G4	1007	0	1.5	0	17.7	0.03
PBGB00G5	1007	0	1.1	0	18.4	0.05
PBGB00G6	1007	0	0.4	0	19.9	0.04
PBGB00G7	1009	0	1.2	0	19.8	0.09
PBGB00G8	1007	0	4.6	0	14.3	0.07
PBGB00G9	1005	0	3.5	0	13.6	0.09
PBGB0G10	1005	0	0.4	0	20.4	0.08
PBGB0G11	1005	0.9	3.4	0	4.4	0.04
PBGB0G12	1005	0	1.9	0	18.4	0.06
PBGB0G13	1005	0	2.9	0	15	0.02
PBGB0G14	1005	0	0.8	0	19.8	0.05
PBGB0G15	1006	0	2	0	19.3	0.06
PBGB0G16	1005	0	2	0	18.7	0.04
PBGB0G17	1006	0	2.1	0	19.2	0.05
PBT00001	1009	0	2.2	0	17.9	1.09
PBT00002	1009	0	0.4	0	20.6	-0.13
PBT00003	1009	0	0.5	0	20.7	-7.4
PBT00004	1009	0	1.1	0	19.8	0.09
PBT00005	1009	0	0.4	0	20.5	0.08
PBT00006	1009	0	1.7	0	18.8	0.07
PBT00007	1009	0	1.8	0	19	0.08
PBT00008	1009	0	5.2	0	14.6	0.5
PBT00009	1009	0	3.2	0	17.2	4.27
PBT00010	1009	0	4.8	0	16.8	0
PBT00012	1009	0	0	0	20.4	-0.01
PBT00013	1009	0	1.5	0	20.1	0

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APPENDIX 3

Landfill Gas Field Extraction and Balancing Data

PEN-Y-BONT LANDFILL SITE IN-WASTE GAS EXTRACTION AND BALANCING DATA - October to December 2015

Well ID	Date & Time	CH4 (%)	CO2 (%)	O2 (%)	Balance Gas (%)	Vacuum (mbar)	Atm Press (mbar)	CO (ppm)	H2S (ppm)	CH4 + CO2 (%)	Original Valve (%)	Depart Valve (%)
CHIW0098	01/10/2015 08:49	41.5	35	0.4	23.1	-5.13	1024	4	7	76.5	10	10
CHIR0073	01/10/2015 08:53	49.6	36.7	1.9	11.8	-6.82	1023	4	8	86.3	10	20
CHIR0073	01/10/2015 08:54	49.2	36.8	1.9	12.1	-16.69	1023	4	11	86	20	20
CHIR0091	01/10/2015 08:56	55.3	40.6	0.9	3.2	-2.3	1023	4	6	95.9	10	20
CHIR0091	01/10/2015 08:57	54.9	40.8	0.5	3.8	-10.8	1023	4	8	95.7	20	20
CHIW0103	01/10/2015 09:01	11.8	21	7	60.2	-19.09	1023	0	3	32.8	10	0
CHIW0103	01/10/2015 09:02	10.9	20.6	3.7	64.8	-4.42	1023	0	3	31.5	0	0
CHIW0003	01/10/2015 09:09	35.8	26.5	4.4	33.3	-5.19	1024	0	3	62.3	10	5
CHIW0003	01/10/2015 09:10	35.8	27.2	3.9	33.1	-4.36	1024	4	3	63	0	0
CHIW0007	01/10/2015 09:10	35.8	27.2	3.9	33.1	-4.36	1024	4	3	63	0	0
CHIW0003	01/10/2015 09:12	58	37	0.4	4.6	-8.06	1023	4	2	95	5	10
CHIW0003	01/10/2015 09:13	58	37.5	0.1	4.4	-10.05	1023	4	2	95.5	10	10
CHIW0001	01/10/2015 09:17	59	34.9	0.7	5.4	-4.13	1023	4	2	93.9	5	10
CHIW0001	01/10/2015 09:19	58.8	35.1	0.7	5.4	-5.29	1023	4	2	93.9	10	10
CHIW0078	06/10/2015 11:32	59.7	39.7	0.4	0.2	-27.15	985	4	7	99.4	10	20
CHIW0078	06/10/2015 11:34	57.6	40.7	0.4	1.3	-54.98	985	4	7	98.3	20	20
CHIW0092	06/10/2015 11:36	46.3	34.5	0.2	19	-31.37	985	4	6	80.8	30	30
CHIR2AR2	06/10/2015 11:39	56	42.5	0	1.5	-11.8	984	4	5	98.5	20	30
CHIR2AR2	06/10/2015 11:41	53.3	43.5	0	3.2	-38.54	984	4	8	96.8	30	30
CHIR0037	06/10/2015 11:43	59.3	42.2	0	0	-17.86	984	4	6	101.5	30	40
CHIR0037	06/10/2015 11:44	58.9	42.5	0	0	-52.24	984	4	6	101.4	30	30
CHIR0040	06/10/2015 11:48	52.6	40.4	0.1	6.9	-36.39	984	4	8	93	40	50
CHIR0040	06/10/2015 11:50	52.6	40.8	0	6.6	-55.85	984	4	9	93.4	50	50
CHIW0117	06/10/2015 12:21	58.2	43.2	0	0	-14.17	984	4	51	101.4	10	20
CHIW0117	06/10/2015 12:22	58	43.2	0	0	-33.67	984	4	74	101.2	20	20
CHIW0113	06/10/2015 12:25	57.1	43.6	0.2	0	-1.36	984	4	18	100.7	10	20
CHIW0113	06/10/2015 12:47	56.9	44.1	0	0	-16.48	984	4	21	101	20	20

Well ID	Date & Time	CH4 (%)	CO2 (%)	O2 (%)	Balance Gas (%)	Vacuum (mbar)	Atm Press (mbar)	CO (ppm)	H2S (ppm)	CH4 + CO2 (%)	Original Valve (%)	Depart Valve (%)
CHIW0111	06/10/2015 12:54	55	46.4	0.1	0	-6.1	984	4	4	101.4	5	10
CHIW0111	06/10/2015 12:55	54.6	46.8	0	0	-15.45	984	4	8	101.4	20	20
CHIR0072	06/10/2015 13:02	55.2	46.4	0	0	-59.31	984	4	9	101.6	20	20
CHIW0088	06/10/2015 13:04	53.9	41	0	5.1	-52.9	985	4	7	94.9	30	30
CHIW0089	06/10/2015 13:07	57.6	43	0	0	-36.45	985	4	19	100.6	20	30
CHIW0089	06/10/2015 13:08	57.6	43.3	0	0	-49.58	985	4	23	100.9	30	30
CHIR0080	06/10/2015 13:18	60.3	40.5	0	0	-1.06	985	4	4	100.8	10	20
CHIR0080	06/10/2015 13:19	59.9	40.6	0	0	-11.7	985	4	7	100.5	20	20
CHIR0069	06/10/2015 14:25	58.5	43	0.1	0	30.65	984	4	8	101.5	0	10
CHIR0069	06/10/2015 14:26	56.6	42.5	0	0.9	-9.48	984	4	12	99.1	10	10
CHIR0071	06/10/2015 14:37	54.4	47.2	0	0	17.12	983	4	17	101.6	0	10
CHIR0071	06/10/2015 14:38	54.7	46.9	0	0	-50.13	983	4	23	101.6	10	10
CHIW0090	06/10/2015 14:43	58	41.5	1.2	0	26.55	984	4	25	99.5	0	10
CHIW0090	06/10/2015 14:44	59.4	42.4	0	0	-11.68	984	4	56	101.8	10	10
CHIW0089	07/10/2015 15:32	56	40.9	0.3	2.8	7.76	1001	4	8	96.9	0	10
CHIW0089	07/10/2015 15:34	58.1	42.2	0	0	-10.05	1001	4	9	100.3	10	10
CHIW0088	07/10/2015 15:41	54.2	40.8	0	5	-41.29	1001	4	22	95	20	30
CHIW0088	07/10/2015 15:43	54	41.3	0	4.7	-54.76	1001	4	19	95.3	30	30
CHIR0072	07/10/2015 15:46	54.8	45.3	0	0	-53.6	1001	4	22	100.1	20	20
CHIR0071	07/10/2015 15:48	58.6	41.9	0.3	0	-49.86	1001	4	10	100.5	20	30
CHIR0069	08/10/2015 11:33	57.3	41.9	0	0.8	47.35	1014	11	4	99.2	0	10
CHIR0069	08/10/2015 11:35	57.3	42.4	0	0.3	-6.48	1014	13	10	99.7	10	10
CHIR0074	08/10/2015 11:40	52.8	42.5	0.4	4.3	-58.08	1014	12	2	95.3	10	10
CHIR0093	08/10/2015 14:20	14.5	11.6	14.4	59.5	-28.78	1017	4	0	26.1	100	0
CHIR0093	08/10/2015 14:21	12.4	9.4	16.1	62.1	-6.77	1017	4	0	21.8	0	0
CHIW0030	08/10/2015 14:38	40.2	33	0	26.8	-18.25	1018	5	0	73.2	20	20
CHIW0003	08/10/2015 14:44	45.2	34.3	0.2	20.3	-19.17	1014	7	0	79.5	20	20
CHIW0001	08/10/2015 14:50	47.2	31.6	1	20.2	-12.93	1017	6	0	78.8	10	10
CHIR2AR2	08/10/2015 14:56	37.8	38.1	0	24.1	-18.22	1011	17	1	75.9	20	20

Well ID	Date & Time	CH4 (%)	CO2 (%)	O2 (%)	Balance Gas (%)	Vacuum (mbar)	Atm Press (mbar)	CO (ppm)	H2S (ppm)	CH4 + CO2 (%)	Original Valve (%)	Depart Valve (%)
CHIR0081	09/10/2015 13:15	59.7	39.8	0	0.5	-0.45	1013	8	3	99.5	0	10
CHIR0081	09/10/2015 13:16	60.6	38.7	0	0.7	-7.79	1013	7	5	99.3	10	10
CHIW0090	09/10/2015 13:19	55	43.2	0	1.8	-54.48	1017	12	2	98.2	20	20
CHIR0071	09/10/2015 13:20	59.6	39.5	0.8	0.1	-70.39	1017	17	12	99.1	30	20
CHIR0071	09/10/2015 13:23	57.7	42.3	0	0	-53.17	1017	14	18	100	20	20
CHIR0074	09/10/2015 13:36	53.7	45.9	0	0.4	-4.77	1016	16	30	99.6	10	20
CHIR0074	09/10/2015 13:37	53.7	45.8	0	0.5	-40.52	1016	16	30	99.5	30	30
CHIR0069	09/10/2015 13:40	56.8	41.7	0.1	1.4	-73.39	1018	12	1	98.5	40	30
CHIR0069	09/10/2015 13:51	56.7	41.5	0	1.8	-57.65	1018	11	2	98.2	20	20
CHIR0070	09/10/2015 13:54	57.7	41.5	0	0.8	66.1	1017	12	16	99.2	0	10
CHIR0070	09/10/2015 13:56	57.4	41.5	0	1.1	-6	1017	13	4	98.9	10	10
CHIR0077	09/10/2015 14:10	55	43.8	0	1.2	-16.89	1016	13	18	98.8	20	30
CHIR0077	09/10/2015 14:12	54.1	45.1	0	0.8	-53.77	1016	15	9	99.2	30	30
CHIW0113	09/10/2015 14:19	55.5	43.9	0	0.6	-59.43	1017	17	20	99.4	30	30
CHIW0087	09/10/2015 14:22	52.5	42.7	0	4.8	-56.38	1017	15	11	95.2	50	50
CHIW0117	09/10/2015 14:25	50.1	41.4	0	8.5	-50.34	1014	17	23	91.5	40	40
CHIR0021	09/10/2015 14:27	38.6	39.5	0.4	21.5	-11.67	1014	10	2	78.1	30	30
CHIR0040	09/10/2015 14:30	47.2	39	0	13.8	-57.79	1014	11	1	86.2	20	20
CHIR0037	09/10/2015 14:33	57.7	40.5	0	1.8	-45.74	1013	14	1	98.2	40	40
CHIR2AR2	09/10/2015 14:35	56.1	41.2	0	2.7	0.28	1016	16	1	97.3	5	20
CHIR2AR2	09/10/2015 14:37	54.7	41.6	0	3.7	-8.89	1016	17	2	96.3	20	20
CHIW0112	09/10/2015 14:53	54.9	44.5	0	0.6	5.93	1017	17	3	99.4	0	10
CHIW0112	09/10/2015 14:55	53.9	45.7	0	0.4	-6.67	1017	21	4	99.6	10	10
CHIW0083	12/10/2015 11:43	29.8	29	0.2	41	-7.7	1015	12	1	58.8	10	0
CHIW0083	12/10/2015 11:44	29.5	30.4	0	40.1	-4.71	1015	13	1	59.9	0	0
CHIR0073	12/10/2015 11:47	35.4	28.4	5.7	30.5	-19.15	1016	6	1	63.8	10	0
CHIR0073	12/10/2015 11:49	33.3	26.9	6.4	33.4	-7.7	1016	5	1	60.2	0	0
CHIR2AR2	12/10/2015 12:15	50.9	39.6	0.2	9.3	-12.82	1013	9	1	90.5	40	50
CHIR2AR2	12/10/2015 12:17	47.8	41.7	0	10.5	-31.8	1013	10	1	89.5	50	50

Well ID	Date & Time	CH4 (%)	CO2 (%)	O2 (%)	Balance Gas (%)	Vacuum (mbar)	Atm Press (mbar)	CO (ppm)	H2S (ppm)	CH4 + CO2 (%)	Original Valve (%)	Depart Valve (%)
CHIW0122	12/10/2015 12:20	52.9	40.6	0	6.5	-7.22	1014	11	1	93.5	20	30
CHIW0122	12/10/2015 12:21	53.1	40.9	0	6	-23.84	1014	10	2	94	30	30
CHIW0113	12/10/2015 15:33	56.4	43.5	0	0.1	-21.85	1012	13	1	99.9	20	20
CHIR0077	12/10/2015 15:37	55.7	44.2	0	0.1	-14.74	1016	9	15	99.9	20	30
CHIW0066	15/10/2015 09:25	41	36.8	0	22.2	-16.79	1015	14	1	77.8	10	10
CHIR0041	15/10/2015 09:29	41.6	36.9	0	21.5	-45.76	1015	6	6	78.5	10	20
CHIR0041	15/10/2015 09:30	41.5	36.7	0.1	21.7	-52.64	1015	7	8	78.2	20	20
CHIW0067	15/10/2015 09:31	21.7	26.7	1.9	49.7	-16.87	1017	13	5	48.4	10	0
CHIW0067	15/10/2015 09:33	21.6	28.6	0	49.8	-13.15	1017	13	8	50.2	0	0
CHIW0068	15/10/2015 09:35	34.7	34	0	31.3	-42.8	1018	16	3	68.7	10	10
CHIW0115	15/10/2015 09:37	46.7	37.8	0	15.5	-16.01	1017	5	44	84.5	10	20
CHIW0115	15/10/2015 09:38	46.7	38.1	0	15.2	-26.97	1017	7	47	84.8	30	30
CHIW0114	15/10/2015 09:40	31.6	33.8	1.2	33.4	-41.74	1016	32	8	65.4	20	10
CHIW0114	15/10/2015 09:41	31	35.1	0.5	33.4	-24.92	1016	29	3	66.1	0	0
CHIR0081	15/10/2015 10:55	30	23.3	6.6	40.1	-13.48	1019	7	2	53.3	20	0
CHIR0081	15/10/2015 10:57	29.5	24.3	6.4	39.8	-6.81	1019	6	2	53.8	0	0
CHIR0079	15/10/2015 11:03	57.2	43.7	0	0	-5.74	1020	8	13	100.9	10	10
CHIW0078	15/10/2015 11:27	51.5	39.1	0	9.4	-52.74	1016	6	2	90.6	30	30
CHIW0092	15/10/2015 11:29	38.6	33.1	0.3	28	-37.28	1021	5	1	71.7	40	40
CHIR0055	15/10/2015 11:33	57.4	42.2	0	0.4	-46.24	1018	8	16	99.6	20	20
CHIW0119	15/10/2015 11:35	56.9	42.9	0	0.2	-37.5	1017	10	18	99.8	20	30
CHIW0119	15/10/2015 11:37	56.5	43.3	0	0.2	-49.97	1017	12	35	99.8	30	30
CHIW0086	15/10/2015 11:39	56	44.1	0	0	-39.71	1017	14	84	100.1	10	20
CHIW0086	15/10/2015 11:42	56	44.4	0	0	-57.29	1017	17	179	100.4	30	30
CHIR0074	15/10/2015 11:46	55	45.1	0	0	-75.52	1019	13	11	100.1	30	10
CHIR0074	15/10/2015 11:49	54.4	45.3	0	0.3	-56.89	1019	10	10	99.7	10	10
CHIR0069	15/10/2015 11:51	56	44	0	0	-23.1	1017	9	30	100	20	30
CHIR0069	15/10/2015 11:53	55.6	44.4	0	0	-34.42	1017	9	37	100	30	30
CHIR0070	15/10/2015 11:59	56.4	43	0	0.6	-58.5	1018	10	51	99.4	20	20

Well ID	Date & Time	CH4 (%)	CO2 (%)	O2 (%)	Balance Gas (%)	Vacuum (mbar)	Atm Press (mbar)	CO (ppm)	H2S (ppm)	CH4 + CO2 (%)	Original Valve (%)	Depart Valve (%)
CHIW0112	15/10/2015 12:02	56	43.7	0	0.3	-10.01	1019	23	8	99.7	10	20
CHIW0112	15/10/2015 12:03	55.8	44	0	0.2	-24.37	1019	21	8	99.8	30	30
CHIR0071	15/10/2015 12:06	57.6	41.8	0.3	0.3	-58.58	1018	10	10	99.4	10	10
CHIW0099	15/10/2015 14:14	49.7	33.3	0.1	16.9	-39.3	1019	5	1	83	40	40
CHIW0100	15/10/2015 14:16	43.7	35.6	0	20.7	-11.48	1021	6	2	79.3	30	30
CHIW0101	15/10/2015 14:18	52.7	39.1	1.2	7	-1.83	1024	7	1	91.8	1	1
CHIW0018	15/10/2015 14:26	33.4	31	0.3	35.3	-4.98	1018	6	2	64.4	5	0
CHIW0018	15/10/2015 14:27	32.8	32.7	0	34.5	-3.71	1018	6	3	65.5	0	0
CHIW0001	15/10/2015 14:44	46.4	31.9	0.8	20.9	-11.01	1019	5	1	78.3	10	10
CHIW0065	15/10/2015 14:47	31.8	30.1	0.9	37.2	-26.94	1015	8	1	61.9	20	1
CHIW0065	15/10/2015 14:49	31	32.4	0	36.6	-14.94	1015	7	1	63.4	0	0
CHIR17R2	15/10/2015 14:53	22.9	21.2	8.7	47.2	0	1016	8	2	44.1	0	0
CHIW0122	15/10/2015 14:55	42.7	39.1	0	18.2	-24.32	1016	11	3	81.8	20	20
CHIR0037	15/10/2015 14:58	56.4	41.1	0	2.5	-51.27	1019	10	1	97.5	50	50
CHIR2AR2	15/10/2015 15:00	50.6	41.8	0	7.6	-32.61	1018	11	1	92.4	50	60
CHIR2AR2	15/10/2015 15:02	47.4	43.7	0	8.9	-50.36	1018	12	3	91.1	60	60
CHIW0039	15/10/2015 15:05	52.7	43.5	0	3.8	-15.62	1018	8	12	96.2	10	20
CHIW0039	15/10/2015 15:06	48.2	43.6	0	8.2	-33.44	1018	16	11	91.8	20	20
CHIW0121	15/10/2015 15:07	39.9	35.6	0	24.5	-30.47	1018	11	6	75.5	20	20
CHIR252R	15/10/2015 15:14	56.7	42.8	0	0.5	-8.38	1020	19	2	99.5	10	10
CHIW0085	15/10/2015 15:17	46.2	37.3	0	16.5	-17.3	1019	11	1	83.5	10	10
CHIW0084	15/10/2015 15:19	55.9	35.3	1.7	7.1	-89.4	1020	7	0	91.2	20	5
CHIW0084	15/10/2015 15:20	53.2	38.7	1.4	6.7	-58.65	1020	8	1	91.9	10	10
CHIW0090	15/10/2015 15:46	56.4	42.3	0	1.3	-59.44	1017	10	9	98.7	20	20
CHIW0089	15/10/2015 15:49	45.9	38.3	0	15.8	-58.2	1019	18	1	84.2	20	20
CHIW0088	15/10/2015 15:51	54.6	43	0	2.4	5.57	1020	8	22	97.6	0	20
CHIW0088	15/10/2015 15:52	53.7	42.1	0	4.2	-19.42	1020	10	24	95.8	20	20
CHIR0072	15/10/2015 15:55	52.3	48	0	0	-49.81	1019	23	44	100.3	10	10
CHIW0110	15/10/2015 15:57	58.6	41.7	0	0	0.16	1020	11	24	100.3	0	10

Well ID	Date & Time	CH4 (%)	CO2 (%)	O2 (%)	Balance Gas (%)	Vacuum (mbar)	Atm Press (mbar)	CO (ppm)	H2S (ppm)	CH4 + CO2 (%)	Original Valve (%)	Depart Valve (%)
CHIW0114	15/10/2015 16:12	58.8	40.5	0	0.7	4.22	1017	12	12	99.3	0	10
CHIW0114	15/10/2015 16:14	56.8	42.7	0	0.5	-9.44	1017	15	14	99.5	10	10
CHIR0071	21/10/2015 14:03	59.8	39.5	0.8	0	-33.94	1010	15	2	99.3	5	10
CHIR0071	21/10/2015 14:05	56.6	43.5	0	0	-48.76	1010	18	21	100.1	10	10
CHIR0070	21/10/2015 14:07	57.3	42.6	0	0.1	-46.67	1010	7	32	99.9	20	30
CHIR0070	21/10/2015 14:09	57.2	42.9	0	0	-59.91	1010	9	48	100.1	30	30
CHIW0112	21/10/2015 14:11	54.9	45.4	0	0	-5.95	1008	17	36	100.3	10	20
CHIW0112	21/10/2015 14:13	54.6	45.6	0	0	-7.58	1008	21	61	100.2	20	20
CHIR0072	21/10/2015 14:36	54.1	45.3	0.1	0.5	-25.08	1005	20	6	99.4	20	20
CHIW0110	21/10/2015 14:40	56.4	44	0	0	42.07	1006	11	23	100.4	0	10
CHIW0110	21/10/2015 14:42	56.6	44.1	0	0	-0.14	1006	10	10	100.7	30	30
CHIW0088	21/10/2015 14:59	55.1	44.8	0	0.1	-49.03	1008	11	13	99.9	40	40
CHIW0110	21/10/2015 15:03	54.9	45.3	0	0	-55.64	1007	13	8	100.2	50	50
CHIW0114	21/10/2015 15:07	57.3	42.4	0	0.3	-10.19	1008	12	4	99.7	20	20
CHIR0040	21/10/2015 15:13	58.2	41.1	0	0.7	-8.82	1008	6	5	99.3	10	20
CHIR0040	21/10/2015 15:16	57.9	41.1	0	1	-30.08	1008	7	3	99	10	10
CHIR0037	21/10/2015 15:18	57.8	41.7	0	0.5	-47.64	1007	12	2	99.5	50	60
CHIR0037	21/10/2015 15:19	56.7	43	0	0.3	-55.5	1007	12	2	99.7	60	60
CHIR2AR2	21/10/2015 15:21	48.7	40.6	0	10.7	-41.73	1007	12	9	89.3	40	40
CHIR0069	22/10/2015 15:07	57.3	43	0	0	62.68	1010	6	0	100.3	0	10
CHIR0069	22/10/2015 15:11	56.4	44	0	0	-16.11	1010	6	0	100.4	20	20
CHIW0112	22/10/2015 15:14	56.4	43.7	0	0	-15.58	1011	12	0	100.1	20	30
CHIW0112	22/10/2015 15:17	56.4	43.7	0	0	-31.45	1011	10	0	100.1	30	30
CHIR0070	22/10/2015 15:21	58.4	41.8	0.1	0	-57.1	1013	2	0	100.2	30	30
CHIW0090	22/10/2015 15:23	58.3	41.8	0	0	-1.57	1013	4	2	100.1	5	10
CHIW0090	22/10/2015 15:24	57.5	42.4	0	0.1	-15.98	1013	5	2	99.9	20	20
CHIR0071	22/10/2015 15:26	56.6	43.3	0	0.1	-59.38	1012	10	0	99.9	20	20
CHILC01B	27/10/2015 09:19	56.7	34.9	3.5	4.9	28.68	1000	4	2	91.6	5	5
CHIW0066	27/10/2015 09:25	43.2	33.1	0.4	23.3	-14.74	999	13	1	76.3	20	20

Well ID	Date & Time	CH4 (%)	CO2 (%)	O2 (%)	Balance Gas (%)	Vacuum (mbar)	Atm Press (mbar)	CO (ppm)	H2S (ppm)	CH4 + CO2 (%)	Original Valve (%)	Depart Valve (%)
CHIW0118	27/10/2015 09:28	60.3	37.3	0.8	1.6	-11.46	999	6	0	97.6	10	20
CHIW0118	27/10/2015 09:29	56	42.5	0	1.5	-27.7	999	7	0	98.5	10	10
CHIW0076	27/10/2015 13:10	42.6	36.3	3.6	17.5	-30.33	996	10	0	78.9	10	0
CHIW0076	27/10/2015 13:12	47.2	41.1	1.5	10.2	-22.8	996	7	0	88.3	5	5
CHILC01B	27/10/2015 13:20	63.8	35.8	0.1	0.3	0.71	998	1	0	99.6	10	10
CHIW0056	27/10/2015 13:24	58.4	40.1	0.3	1.2	0.45	999	2	1	98.5	0	10
CHIW0056	27/10/2015 13:25	55.5	43.9	0	0.6	-4.31	999	10	0	99.4	10	10
CHIW0064	27/10/2015 13:28	43.9	33.1	3.3	19.7	-7.45	999	2	0	77	5	5
CHIW0044	27/10/2015 13:33	54.5	44.5	0	1	-3.65	996	2	0	99	5	10
CHIW0044	27/10/2015 13:34	54.5	44.7	0	0.8	-12.75	996	4	0	99.2	10	10
CHIR0010	27/10/2015 13:36	41.7	32.4	0.8	25.1	-5.95	998	9	0	74.1	10	10
CHIW0105	27/10/2015 13:41	53.9	32.1	1.2	12.8	-1.05	998	0	0	86	5	10
CHIW0105	27/10/2015 13:44	58.7	34.8	0	6.5	-2.07	998	3	1	93.5	10	10
CHIW0106	27/10/2015 13:46	60.3	35.8	0.4	3.5	-9.82	999	2	0	96.1	5	10
CHIW0107	27/10/2015 13:50	20.4	19.3	11.6	48.7	-0.28	996	2	0	39.7	1	1
CHILMP01	27/10/2015 13:52	63.3	36.1	0.2	0.4	-3.5	997	2	0	99.4	5	5
CHIW0108	27/10/2015 13:54	16.5	11.6	15	56.9	-2.28	999	2	0	28.1	1	1
CHIW0109	27/10/2015 13:56	18	16.8	12	53.2	-10.7	999	2	0	34.8	1	1
CHIP0111	27/10/2015 14:01	56.7	37.3	0.1	5.9	-22.85	999	2	0	94	10	10
CHIW0082	27/10/2015 14:07	59.1	40	0	0.9	-9.22	999	3	0	99.1	20	20
CHIW0094	27/10/2015 14:15	57.2	40.3	0.7	1.8	-9.48	1000	5	0	97.5	5	5
CHIW0095	27/10/2015 14:23	13.6	9.8	15	61.6	-0.02	1001	11	0	23.4	1	1
CHIW0096	27/10/2015 14:24	63.7	31.6	1.5	3.2	-0.02	1000	2	0	95.3	1	1
CHIW0097	27/10/2015 14:27	0	1.7	20.7	77.6	-0.03	1001	2	0	1.7	0	0
CHILRIS1	27/10/2015 14:30	35.7	10.5	10.7	43.1	-0.41	998	2	0	46.2	0	0
CHILRIS2	27/10/2015 14:32	31.9	14.7	9.2	44.2	-3.17	999	24	0	46.6	0	0
CHIR0010	27/10/2015 14:40	42.8	31.1	1.1	25	-9.67	1002	12	0	73.9	10	10
CHIW0029	27/10/2015 14:42	50.7	33.7	0.3	15.3	-6.2	1001	0	0	84.4	5	5
CHIW0028	27/10/2015 14:45	39.1	26.8	2.9	31.2	-0.67	1001	1	0	65.9	0	0

Well ID	Date & Time	CH4 (%)	CO2 (%)	O2 (%)	Balance Gas (%)	Vacuum (mbar)	Atm Press (mbar)	CO (ppm)	H2S (ppm)	CH4 + CO2 (%)	Original Valve (%)	Depart Valve (%)
CHIW0104	28/10/2015 14:52	6.1	5	18	70.9	-0.69	994	13	0	11.1	0	0
CHIR0010	28/10/2015 14:53	2.8	4.1	18.9	74.2	-0.14	997	6	0	6.9	0	0
CHILW07B	28/10/2015 14:56	27.8	11.9	17.1	43.2	-0.55	1000	4	0	39.7	0	0
CHILW07B	05/11/2015 11:14	3.7	4.2	19	73.1	-94.18	998	3	0	7.9	0	0
CHIR0073	05/11/2015 11:16	63.7	38.6	0.8	0	6.09	998	2	0	102.3	5	10
CHIR0073	05/11/2015 11:18	61.2	41.1	0	0	-5.6	998	3	0	102.3	10	10
CHIW0112	05/11/2015 11:34	57.4	44.4	0.4	0	5.46	996	13	0	101.8	5	10
CHIW0112	05/11/2015 11:35	56.5	45.3	0.1	0	-17.2	996	19	0	101.8	10	10
CHIR0074	05/11/2015 11:37	58.2	44.1	0.1	0	-56.37	996	9	1	102.3	10	10
CHIR2AR2	05/11/2015 11:40	53.2	42.1	0	4.7	-33.39	996	8	0	95.3	50	50
CHIR0037	05/11/2015 11:42	58.9	43.3	0	0	-48.52	996	7	0	102.2	60	60
CHIR0040	05/11/2015 11:45	57	41.5	0.1	1.4	-40.36	996	3	0	98.5	50	50
CHIW0122	05/11/2015 11:47	59.9	42.3	0	0	-26.86	996	7	0	102.2	40	50
CHIW0122	05/11/2015 11:48	59.6	42.5	0	0	-33.73	996	6	0	102.1	50	50
CHIR17R2	05/11/2015 11:49	60.7	41.8	0.1	0	0.81	996	1	0	102.5	0	10
CHIR17R2	05/11/2015 11:50	59.9	42.8	0	0	-2.42	996	5	0	102.7	10	10
CHIW0118	05/11/2015 11:53	57.6	42.2	0.1	0.1	-7.95	996	8	1	99.8	10	10
CHIR0041	05/11/2015 11:56	58.7	39.8	0.2	1.3	-12.16	996	7	1	98.5	0	20
CHIR0041	05/11/2015 11:57	58	40.3	0	1.7	-21.53	996	7	3	98.3	20	20
CHIW0092	05/11/2015 12:39	42.2	31.8	1	25	-34.92	997	0	0	74	40	40
CHIW0078	05/11/2015 12:42	46.4	37	0.1	16.5	-75.05	997	1	0	83.4	20	10
CHIW0078	05/11/2015 12:44	47.4	37.9	0	14.7	-41.66	997	2	0	85.3	10	10
CHIP0111	05/11/2015 12:45	57.7	36.2	1.2	4.9	-61.38	997	0	0	93.9	10	5
CHIP0111	05/11/2015 12:47	55.1	37.3	0.1	7.5	-53.58	997	0	0	92.4	5	5
CHIR0055	05/11/2015 12:50	52.6	38.9	0.7	7.8	-81.96	996	2	2	91.5	0	10
CHIR0055	05/11/2015 12:52	45.7	35.4	1.2	17.7	-59.87	996	2	1	81.1	10	10
CHIR0069	05/11/2015 12:54	61.4	40.9	0.1	0	97.19	996	5	0	102.3	0	10
CHIR0069	05/11/2015 12:56	59.7	42.7	0	0	3.43	996	5	0	102.4	10	10
CHIR0079	05/11/2015 12:58	60.2	42.1	0.2	0	-5.31	997	3	0	102.3	10	20

Well ID	Date & Time	CH4 (%)	CO2 (%)	O2 (%)	Balance Gas (%)	Vacuum (mbar)	Atm Press (mbar)	CO (ppm)	H2S (ppm)	CH4 + CO2 (%)	Original Valve (%)	Depart Valve (%)
CHIR0079	05/11/2015 13:00	56.6	41.5	0.7	1.2	-15.39	997	4	0	98.1	20	20
CHIR0080	05/11/2015 13:03	56	40.2	0.2	3.6	-2.2	997	2	1	96.2	5	10
CHIR0080	05/11/2015 13:04	55.1	39.9	0.2	4.8	-22.46	997	2	1	95	10	10
CHIR0070	05/11/2015 13:06	60.8	41.9	0.1	0	54.9	996	6	1	102.7	5	10
CHIR0070	05/11/2015 13:08	60.4	42.3	0	0	-5.86	996	6	3	102.7	10	10
CHIR0071	05/11/2015 13:10	59.3	42.8	0	0	-59.39	996	10	0	102.1	10	10
CHIW0090	05/11/2015 13:13	55.1	42.6	0	2.3	-67.66	996	5	0	97.7	20	10
CHIW0090	05/11/2015 13:24	55.1	42.5	0.6	1.8	-59.99	996	1	0	97.6	10	10
CHIR0081	05/11/2015 13:25	23.1	21.6	8.6	46.7	-49.79	996	1	0	44.7	20	0
CHIR0081	05/11/2015 13:26	23.3	20.8	8.4	47.5	-25.63	996	2	0	44.1	0	0
CHIW0089	05/11/2015 13:28	43.5	40.3	0.5	15.7	-48.87	996	6	0	83.8	10	10
CHIW0088	05/11/2015 13:30	53	40.3	0.1	6.6	-55.12	996	3	0	93.3	10	10
CHIW0082	05/11/2015 13:32	26.2	31.9	0.1	41.8	-11.8	996	2	1	58.1	10	0
CHIW0082	05/11/2015 13:33	26.1	32.4	0	41.5	-14.85	996	2	1	58.5	0	0
CHIW0098	06/11/2015 13:44	29.4	21.1	7.1	42.4	-4.84	997	5	0	50.5	10	0
CHIW0098	06/11/2015 13:45	27.5	28.1	1.6	42.8	-5.19	997	7	0	55.6	0	0
CHIW0098	06/11/2015 13:48	52.1	36.3	1.9	9.7	-43.08	997	7	1	88.4	100	100
CHILRIS1	06/11/2015 13:54	9.2	5.2	17.9	67.7	-0.1	998	3	0	14.4	-	-
CHILRIS2	06/11/2015 13:56	32	16.7	8.3	43	-0.23	998	16	0	48.7	-	-
CHIW0094	10/11/2015 13:17	60.3	35.7	0.8	3.2	1.46	1006	11	0	96	0	1
CHIW0094	10/11/2015 13:18	60.4	39	0	0.6	-0.22	1006	11	0	99.4	1	1
CHIW0095	10/11/2015 13:20	12.9	7.9	14.8	64.4	0.41	1006	17	0	20.8	0	0
CHIW0097	10/11/2015 13:23	20.2	11.2	13.9	54.7	-4.3	1007	6	0	31.4	5	0
CHIW0097	10/11/2015 13:24	19.2	10.7	14.2	55.9	-0.97	1007	6	0	29.9	0	0
CHIW0098	10/11/2015 13:25	21.4	17	6.3	55.3	-2.11	1008	8	0	38.4	0	0
CHIW0099	10/11/2015 13:27	55.2	37.2	0.1	7.5	-50.01	1007	8	0	92.4	50	50
CHIW0100	10/11/2015 13:30	55.3	38.7	0.2	5.8	-13.7	1006	7	0	94	20	30
CHIW0100	10/11/2015 13:32	54.4	39.1	0.1	6.4	-16.31	1006	8	0	93.5	30	30
CHIW0101	10/11/2015 13:34	55.9	39.2	1	3.9	-2.9	1006	7	0	95.1	0	20

Well ID	Date & Time	CH4 (%)	CO2 (%)	O2 (%)	Balance Gas (%)	Vacuum (mbar)	Atm Press (mbar)	CO (ppm)	H2S (ppm)	CH4 + CO2 (%)	Original Valve (%)	Depart Valve (%)
CHIW0101	10/11/2015 13:35	56.6	40.3	0.7	2.4	-6.46	1006	7	0	96.9	20	20
CHIW0103	10/11/2015 13:39	44.5	29.7	2.3	23.5	-3.75	1005	9	0	74.2	0	0
CHIW0104	10/11/2015 13:41	0.5	2.3	18.7	78.5	-4.28	1005	7	0	2.8	0	0
CHIR0010	10/11/2015 13:46	26.9	27.2	0.9	45	-9.74	1005	8	0	54.1	10	0
CHIR0010	10/11/2015 13:47	26.5	28.9	0.7	43.9	-7.21	1005	6	1	55.4	0	0
CHIW0018	10/11/2015 13:49	59.8	42.1	0.2	0	-7.35	1005	5	0	101.9	5	5
CHIW0029	10/11/2015 13:52	51.6	35.8	0.2	12.4	-19.05	1006	5	0	87.4	10	10
CHIW0028	10/11/2015 13:54	7.5	4.5	18	70	-9.53	1006	4	0	12	0	0
CHIW0003	10/11/2015 13:57	51.4	32.9	0.7	15	-21.77	1006	6	0	84.3	10	15
CHIW0003	10/11/2015 13:58	51.2	35.5	0.6	12.7	-22.71	1006	6	0	86.7	15	15
CHIW0001	10/11/2015 14:01	48.8	33.2	1.1	16.9	-15.58	1006	6	0	82	10	10
CHIW0105	10/11/2015 14:04	34.7	31.3	0.7	33.3	-5.01	1005	6	0	66	10	10
CHIW0106	10/11/2015 14:06	60.9	38.1	0.2	0.8	-0.53	1005	7	0	99	0	5
CHIW0106	10/11/2015 14:07	38.1	27.6	6	28.3	-6.7	1005	8	0	65.7	0	0
CHIW0120	10/11/2015 14:09	57.3	44.5	0	0	1.33	1004	8	0	101.8	-	10
CHIW0120	10/11/2015 14:10	57.8	43.7	0	0	-4	1004	16	0	101.5	10	10
CHIR252R	10/11/2015 14:13	49.5	40.6	0	9.9	-5.8	1004	13	0	90.1	20	20
CHIW0085	10/11/2015 14:16	53.1	41.9	0	5	-7.91	1005	8	0	95	20	20
CHIW0107	10/11/2015 14:18	0.1	2.2	19.8	77.9	-0.34	1005	4	0	2.3	1	1
CHILMP01	10/11/2015 14:20	63.4	37.9	0.3	0	-5.76	1006	5	0	101.3	5	5
CHIW0108	10/11/2015 14:22	14.7	9.8	15.3	60.2	-0.31	1006	5	0	24.5	1	1
CHIW0109	10/11/2015 14:24	18.1	13.2	13.9	54.8	-1.82	1006	4	0	31.3	1	1
CHIW0084	10/11/2015 14:26	60.4	41.8	0.1	0	-46.18	1006	6	0	102.2	20	20
CHIR0081	17/11/2015 09:02	59.4	40.4	0	0.2	4.22	991	6	0	99.8	0	10
CHIR0081	17/11/2015 09:04	60.5	39.4	0	0.1	-4.84	991	6	0	99.9	10	10
CHIW0090	17/11/2015 09:06	57.4	42.7	0	0	35.81	994	13	17	100.1	0	10
CHIW0090	17/11/2015 09:10	56.2	43.3	0	0.5	-17.84	994	6	1	99.5	10	10
CHIR0071	17/11/2015 09:12	57	43	0	0	25.49	995	16	0	100	0	10
CHIR0071	17/11/2015 09:13	56.7	43.3	0	0	-15.41	995	18	6	100	10	10

Well ID	Date & Time	CH4 (%)	CO2 (%)	O2 (%)	Balance Gas (%)	Vacuum (mbar)	Atm Press (mbar)	CO (ppm)	H2S (ppm)	CH4 + CO2 (%)	Original Valve (%)	Depart Valve (%)
CHIW0089	17/11/2015 09:15	56	41.3	0.6	2.1	-42.09	995	8	0	97.3	10	20
CHIW0089	17/11/2015 09:17	55.6	42.6	0	1.8	-51.21	995	9	0	98.2	20	20
CHIW0110	17/11/2015 09:24	59.2	41.1	0	0	188.26	992	9	1	100.3	0	20
CHIW0110	17/11/2015 09:27	57.3	43.1	0	0	38.11	992	9	3	100.4	20	20
CHIR0080	17/11/2015 14:03	52.6	35	1	11.4	-19.25	983	3	0	87.6	10	20
CHIR0080	17/11/2015 14:04	50.6	36.8	0.7	11.9	-23.85	983	4	0	87.4	20	20
CHIR0069	17/11/2015 14:11	57.6	40.6	0.3	1.5	-72.82	985	7	1	98.2	20	10
CHIR0069	17/11/2015 14:13	56	43.1	0	0.9	-57.88	985	7	1	99.1	10	10
CHIR0074	17/11/2015 14:16	56	43	0	1	-66.18	984	9	0	99	20	10
CHIR0074	17/11/2015 14:18	55.3	43.7	0	1	-51.86	984	10	0	99	10	10
CHIW0112	17/11/2015 14:20	56.5	43	0	0.5	-11.22	985	17	3	99.5	20	30
CHIW0112	17/11/2015 14:22	56.1	43.1	0	0.8	-18.56	985	15	3	99.2	30	30
CHIR0040	17/11/2015 14:36	55.8	38.8	0	5.4	-58.13	984	6	0	94.6	50	50
CHIW0122	17/11/2015 14:38	46.2	39.5	0	14.3	-34.37	982	8	2	85.7	40	40
CHIR17R2	17/11/2015 14:41	51.7	39.8	0.3	8.2	-1.28	985	6	2	91.5	10	20
CHIR17R2	17/11/2015 14:43	50.3	40	0.5	9.2	-6.39	985	6	4	90.3	20	20
CHIW0057	20/11/2015 13:46	58	41.1	0.9	0	2.1	995	7	2	99.1	0	5
CHIW0057	20/11/2015 13:47	56.7	43	0	0.3	-3.53	995	7	8	99.7	5	5
CHIW0118	20/11/2015 13:49	57	42.7	0	0.3	-25.89	994	10	0	99.7	20	20
CHIR0041	20/11/2015 13:52	59.6	40.8	0.2	0	15.6	996	2	0	100.4	0	10
CHIR0041	20/11/2015 13:53	58.5	41.9	0	0	-2.93	996	5	0	100.4	10	10
CHIW0115	20/11/2015 13:57	59.3	41	0	0	21.72	994	6	5	100.3	0	10
CHIW0115	20/11/2015 13:59	58.8	41.7	0	0	-6.34	994	7	6	100.5	10	10
CHIR0091	20/11/2015 14:04	56.7	40	0.3	3	-28.09	996	1	0	96.7	20	20
CHIW0086	24/11/2015 11:42	58.8	38.5	0.1	2.6	-46.72	1002	7	0	97.3	10	20
CHIW0086	24/11/2015 11:44	54.8	43.7	0	1.5	-59.2	1002	9	8	98.5	20	20
CHIW0119	24/11/2015 11:48	56.4	42.4	0	1.2	-60	1004	6	0	98.8	10	10
CHIW0121	24/11/2015 11:53	55	42.1	0	2.9	-5.03	1001	5	1	97.1	10	20
CHIW0121	24/11/2015 11:54	54.8	42	0	3.2	-8.36	1001	5	4	96.8	20	20

Well ID	Date & Time	CH4 (%)	CO2 (%)	O2 (%)	Balance Gas (%)	Vacuum (mbar)	Atm Press (mbar)	CO (ppm)	H2S (ppm)	CH4 + CO2 (%)	Original Valve (%)	Depart Valve (%)
CHIW0039	24/11/2015 11:58	58	41.5	0	0.5	-53.48	999	4	1	99.5	10	20
CHIW0039	24/11/2015 12:01	57.3	42.5	0	0.2	-57.94	999	4	0	99.8	20	20
CHIW0083	24/11/2015 12:16	57.4	41.6	0	1	-1.15	1000	5	0	99	10	10
CHIW0096	24/11/2015 12:20	55.4	37.7	0	6.9	-2.24	1005	9	0	93.1	1	1
CHIW0056	24/11/2015 14:10	56.1	35.9	0.1	7.9	-7.93	1000	6	0	92	10	10
CHIW0064	24/11/2015 14:13	45	35	0.4	19.6	-6.91	1000	2	0	80	10	10
CHIW0065	24/11/2015 14:15	58.8	40.7	0	0.5	-11.91	1002	3	0	99.5	10	10
CHIW0044	24/11/2015 14:18	42.8	33.8	0	23.4	-21.51	1002	3	0	76.6	20	20
CHIW0030	24/11/2015 14:21	59.8	33.6	0.1	6.5	-5.64	1002	1	0	93.4	10	10
CHIW0007	24/11/2015 14:23	48.5	33.5	0.1	17.9	-1.28	1000	1	0	82	1	1
CHIR2AR2	02/12/2015 09:06	57.7	42	0	0.3	0.05	1007	5	3	99.7	10	20
CHIR2AR2	02/12/2015 09:09	57.2	42.6	0	0.2	-7.89	1007	5	4	99.8	20	20
CHIR0037	02/12/2015 09:12	57.3	42.6	0	0.1	-56.43	1007	5	4	99.9	50	50
CHIR0040	02/12/2015 09:16	60.4	39.4	0.1	0.1	2.21	1004	3	0	99.8	10	20
CHIR0040	02/12/2015 09:18	58.8	41.2	0	0	-26.78	1004	3	0	100	20	20
CHIW0122	02/12/2015 09:21	57.9	41.8	0	0.3	0.1	1008	8	0	99.7	0	10
CHIW0122	02/12/2015 09:23	57.6	42.3	0	0.1	-6.22	1008	7	0	99.9	10	10
CHIR17R2	02/12/2015 09:26	47.6	36.5	2.2	13.7	-6.79	1006	0	0	84.1	10	10
CHIW0039	02/12/2015 09:29	57.6	41.9	0	0.5	-58.58	1007	2	0	99.5	10	10
CHIW0121	02/12/2015 09:56	51	40	0	9	-12.7	1004	4	0	91	10	20
CHIW0121	02/12/2015 09:57	50.7	40.7	0	8.6	-15.49	1004	4	1	91.4	20	20
CHIW0086	02/12/2015 10:01	56.8	43.1	0	0.1	-10.58	1006	8	4	99.9	10	20
CHIW0086	02/12/2015 10:03	55.8	44	0	0.2	-31.56	1006	7	13	99.8	20	20
CHIW0119	02/12/2015 10:05	54.2	40.5	0.9	4.4	-14.56	1008	5	10	94.7	20	20
CHIR0073	02/12/2015 10:07	56.4	43	0	0.6	-63.36	1006	5	2	99.4	20	10
CHIR0073	02/12/2015 10:09	56	43.6	0	0.4	-47.19	1006	5	0	99.6	10	10
CHIW0112	02/12/2015 10:11	57.4	42.3	0	0.3	-34.69	1007	9	1	99.7	30	40
CHIW0112	02/12/2015 10:13	57.2	42.7	0	0.1	-38.56	1007	8	6	99.9	40	40
CHIR0021	02/12/2015 10:31	63.5	34.2	1	1.3	0.07	1007	4	3	97.7	0	10

Well ID	Date & Time	CH4 (%)	CO2 (%)	O2 (%)	Balance Gas (%)	Vacuum (mbar)	Atm Press (mbar)	CO (ppm)	H2S (ppm)	CH4 + CO2 (%)	Original Valve (%)	Depart Valve (%)
CHIR0021	02/12/2015 10:33	57.5	42.5	0	0	-5.1	1007	5	8	100	10	10
CHIW0118	02/12/2015 10:36	56.5	41.4	0	2.1	-56.77	1007	13	0	97.9	40	40
CHIR0041	02/12/2015 10:38	59.4	40.5	0	0.1	6.64	1007	0	1	99.9	0	10
CHIR0041	02/12/2015 10:40	58.1	41.9	0	0	-17.05	1007	3	0	100	10	10
CHIW0117	02/12/2015 10:42	59.8	40.1	0	0.1	24.2	1007	2	3	99.9	0	10
CHIW0117	02/12/2015 10:44	58.5	41.5	0	0	-2.77	1007	5	2	100	10	10
CHIR0073	02/12/2015 13:36	63.6	34.3	0.6	1.5	-9.24	1009	3	0	97.9	10	20
CHIR0073	02/12/2015 13:38	59.4	39.9	0	0.7	-35.14	1009	3	0	99.3	20	20
CHIR0093	02/12/2015 14:03	57.2	40.4	0.2	2.2	14.6	1008	1	0	97.6	5	10
CHIR0093	02/12/2015 14:06	58.6	41.1	0	0.3	-14.05	1008	2	0	99.7	10	10
CHIW0057	02/12/2015 14:11	28.2	22.7	8.8	40.3	-6.15	1006	6	0	50.9	5	0
CHIW0057	02/12/2015 14:12	23.8	20	10.4	45.8	-5.98	1006	5	0	43.8	0	0
CHIW0104	02/12/2015 14:14	12.1	11.9	12.2	63.8	-3.31	1006	1	0	24	0	0
CHIW0103	02/12/2015 14:16	61.5	34.4	0.1	4	-1.96	1008	2	0	95.9	0	10
CHIW0102	02/12/2015 14:22	0.2	5.8	20.3	73.7	-0.12	1009	1	0	6	0	0
CHIW0101	02/12/2015 14:24	28.6	23.4	8.6	39.4	-5.34	1009	2	0	52	10	0
CHIW0101	02/12/2015 14:25	33.9	27.6	6.1	32.4	-3.93	1009	2	0	61.5	0	0
CHIW0100	02/12/2015 14:28	50.2	37.8	0	12	-17.92	1009	3	0	88	20	20
CHIW0099	02/12/2015 14:30	49.8	36	0	14.2	-49	1010	3	0	85.8	50	50
CHIW0098	02/12/2015 14:32	43.3	34	0.1	22.6	-5.02	1011	3	1	77.3	10	10
CHIW0083	02/12/2015 14:35	43.6	36.6	0	19.8	-9.17	1008	5	1	80.2	20	20
CHIW0088	02/12/2015 14:37	55.9	43.8	0	0.3	11.34	1007	5	3	99.7	0	10
CHIW0088	02/12/2015 14:38	55.3	44.7	0	0	-13.1	1007	4	1	100	10	10
CHIW0089	02/12/2015 14:40	55.6	43.9	0	0.5	-23.61	1007	6	0	99.5	10	20
CHIW0089	02/12/2015 14:42	55	44.7	0	0.3	-54.79	1007	5	0	99.7	20	20
CHILW07B	02/12/2015 15:28	12.9	10.2	16.7	60.2	0.95	1006	1	0	23.1	0	0
CHILW06R	02/12/2015 15:31	12.8	10	16.7	60.5	0.95	1007	1	0	22.8	0	0
CHIW0088	04/12/2015 09:31	56.3	41.2	0.7	1.8	-16.36	1013	7	1	97.5	10	10
CHIR0072	04/12/2015 09:33	54	45.1	0.4	0.5	-20.46	1013	16	0	99.1	10	10

Well ID	Date & Time	CH4 (%)	CO2 (%)	O2 (%)	Balance Gas (%)	Vacuum (mbar)	Atm Press (mbar)	CO (ppm)	H2S (ppm)	CH4 + CO2 (%)	Original Valve (%)	Depart Valve (%)
CHIW0113	04/12/2015 10:23	57.7	42.1	0.1	0.1	64.1	1011	12	5	99.8	0	10
CHIW0113	04/12/2015 10:30	57	42.8	0.2	0	-10.82	1015	8	2	99.8	20	20
CHIR0070	04/12/2015 11:17	61	39.6	0.1	0	99.76	1012	7	4	100.6	0	10
CHIR0070	04/12/2015 11:19	60.1	40.2	0	0	-4.93	1012	8	11	100.3	10	10
CHIW0112	04/12/2015 11:22	58.4	41.2	0	0.4	-4.5	1015	18	7	99.6	10	20
CHIW0112	04/12/2015 11:24	57.3	42.6	0	0.1	-22.82	1015	16	8	99.9	20	20
CHIR0074	04/12/2015 11:28	56.8	42.6	0	0.6	-56.69	1013	2	1	99.4	20	20
CHIR0069	04/12/2015 11:30	57.2	42.3	0	0.5	-62.32	1014	3	3	99.5	30	20
CHIR0069	04/12/2015 11:32	56.2	43.5	0	0.3	-59.17	1014	4	4	99.7	20	20
CHIR0055	04/12/2015 11:34	0.1	5.3	19.6	75	-35.8	1013	1	0	5.4	10	0
CHIR0055	04/12/2015 11:35	0	2.2	20.7	77.1	-35.32	1013	1	0	2.2	0	0
CHIW0092	04/12/2015 11:38	45.5	29.3	0.6	24.6	-34.66	1015	3	1	74.8	40	40
CHIW0078	04/12/2015 11:40	58.9	40.8	0	0.3	-37.42	1013	4	1	99.7	20	30
CHIW0078	04/12/2015 11:41	58.4	41.3	0	0.3	-58.69	1013	4	0	99.7	30	30
CHIR0079	04/12/2015 11:43	57.1	39.1	0.1	3.7	-58.44	1014	4	1	96.2	30	30
CHIR0080	04/12/2015 11:46	52	36.6	0.9	10.5	-45.69	1015	4	0	88.6	40	50
CHIR0080	04/12/2015 11:48	51.9	36.7	0.8	10.6	-55.07	1015	3	0	88.6	50	50
CHIR0081	04/12/2015 11:49	57.9	36.5	0.3	5.3	-20.08	1015	3	1	94.4	20	30
CHIR0081	04/12/2015 11:50	56.2	38.7	0	5.1	-33.9	1015	3	0	94.9	30	30
CHIW0089	04/12/2015 12:03	55.3	43.2	0	1.5	-58.93	1014	6	1	98.5	60	60
CHIW0082	07/12/2015 12:10	60.7	38.2	0	1.1	4.34	1011	3	0	98.9	0	10
CHIW0082	07/12/2015 12:11	59.4	38.7	0	1.9	-5.34	1011	4	0	98.1	10	10
CHIW0089	07/12/2015 12:14	56.2	42.3	0	1.5	-60.17	1010	7	0	98.5	10	10
CHIW0088	07/12/2015 12:16	55.9	42.8	0.1	1.2	-41.9	1012	6	0	98.7	10	20
CHIW0088	07/12/2015 12:17	55.7	43.2	0	1.1	-59.34	1012	6	0	98.9	20	20
CHIR0072	07/12/2015 12:20	52.2	47.1	0.1	0.6	-56.27	1011	17	0	99.3	20	20
CHIW0110	07/12/2015 12:22	57.3	43.2	0	0	-21.42	1011	10	1	100.5	20	30
CHIW0110	07/12/2015 12:24	56.6	43.9	0	0	-55.43	1011	9	1	100.5	30	30
CHIR0091	07/12/2015 12:26	59.6	41.2	0	0	-2.83	1011	1	2	100.8	10	20

Well ID	Date & Time	CH4 (%)	CO2 (%)	O2 (%)	Balance Gas (%)	Vacuum (mbar)	Atm Press (mbar)	CO (ppm)	H2S (ppm)	CH4 + CO2 (%)	Original Valve (%)	Depart Valve (%)
CHIR0091	07/12/2015 12:27	59.1	41.5	0	0	-25.18	1011	3	2	100.6	20	20
CHIR0093	07/12/2015 12:30	58.5	39.9	0	1.6	-37.12	1011	2	0	98.4	30	40
CHIR0093	07/12/2015 12:31	57.6	41.2	0	1.2	-44.78	1011	4	0	98.8	40	40
CHIW0114	07/12/2015 12:33	58	42.4	0	0	-31.18	1010	15	1	100.4	20	30
CHIW0114	07/12/2015 12:35	57.4	43.1	0	0	-46.33	1010	11	1	100.5	40	40
CHIW0113	07/12/2015 12:38	55.8	44.5	0	0	-57.84	1009	5	2	100.3	20	20
CHIW0117	07/12/2015 12:40	58.2	39.9	0.8	1.1	-46.78	1010	4	1	98.1	30	40
CHIW0117	07/12/2015 12:41	56.7	43.6	0	0	-54.52	1010	6	3	100.3	40	40
CHIR0021	07/12/2015 12:43	56.1	40.8	0.1	3	-9.36	1009	3	2	96.9	20	30
CHIR0021	07/12/2015 12:45	57.3	43.1	0	0	-23.7	1009	4	10	100.4	30	30
CHIR0040	07/12/2015 12:47	57.8	40.6	0	1.6	-59.74	1011	5	1	98.4	40	40
CHIR0037	07/12/2015 12:50	56.7	43.1	0	0.2	-57.76	1010	7	0	99.8	40	40
CHIR2AR2	07/12/2015 12:52	50.7	39.8	0	9.5	-13.77	1010	7	0	90.5	30	50
CHIR2AR2	07/12/2015 12:55	46.8	41.7	0	11.5	-26.8	1010	7	0	88.5	50	50
CHIW0109	07/12/2015 14:28	56.6	37.5	0	5.9	-2.05	1009	3	0	94.1	1	1
CHIW0108	07/12/2015 14:31	53.7	28.1	1.2	17	-0.1	1011	3	0	81.8	1	1
CHILMP01	07/12/2015 14:34	62	36.8	0	1.2	-19.23	1011	3	0	98.8	10	10
CHIW0107	07/12/2015 14:36	9.9	6.9	16.7	66.5	-7.39	1010	2	0	16.8	1	1
CHIW0084	07/12/2015 14:38	54.5	37.3	0.1	8.1	-46.85	1011	5	1	91.8	20	30
CHIW0084	07/12/2015 14:40	53.6	38.9	0	7.5	-55.5	1011	5	1	92.5	30	30
CHIW0085	07/12/2015 14:42	52.7	38	0.1	9.2	-13.84	1009	7	1	90.7	20	30
CHIW0085	07/12/2015 14:45	52.7	39	0	8.3	-22.15	1009	7	1	91.7	30	30
CHIW0106	07/12/2015 14:49	58.6	35.3	0.9	5.2	-1.72	1010	0	0	93.9	5	10
CHIW0106	07/12/2015 14:50	36.8	27	6.2	30	-8.2	1010	3	0	63.8	0	0
CHIW0105	07/12/2015 14:53	58	36.4	0	5.6	-5.07	1010	5	0	94.4	10	10
CHIW0056	07/12/2015 14:55	39	32.1	0	28.9	-16.91	1009	6	0	71.1	20	20
CHIW0064	07/12/2015 14:58	38	35.1	0.2	26.7	-5.96	1009	4	0	73.1	10	10
CHIW0065	07/12/2015 15:01	41.9	35.9	0	22.2	-16.15	1008	4	1	77.8	10	10
CHIW0044	07/12/2015 15:07	40.2	35.2	0.1	24.5	-24.46	1008	3	0	75.4	20	20

Well ID	Date & Time	CH4 (%)	CO2 (%)	O2 (%)	Balance Gas (%)	Vacuum (mbar)	Atm Press (mbar)	CO (ppm)	H2S (ppm)	CH4 + CO2 (%)	Original Valve (%)	Depart Valve (%)
CHIW0110	17/12/2015 09:33	63	36.7	0.7	0	-79.83	1003	16	2	99.7	20	10
CHIW0110	17/12/2015 09:35	60.6	40.6	0	0	-58.69	1003	11	5	101.2	10	10
CHIW0111	17/12/2015 09:41	55.6	46.1	0	0	68.56	1001	16	14	101.7	0	10
CHIW0111	17/12/2015 09:43	55.3	46.4	0	0	-0.43	1001	11	15	101.7	10	10
CHIW0112	17/12/2015 09:46	58.2	42.8	0	0	-18.13	1002	12	1	101	20	30
CHIW0112	17/12/2015 09:48	58.6	43.4	0	0	-34.44	1002	12	2	102	30	30
CHIR252R	17/12/2015 09:57	45.3	38.4	0	16.3	-13.86	1005	11	2	83.7	30	30
CHIW0120	17/12/2015 09:59	58.7	42.5	0	0	-0.12	1002	19	2	101.2	10	10
CHIW0001	17/12/2015 10:05	58.4	34.9	0.3	6.4	-12.32	999	0	0	93.3	5	10
CHIW0001	17/12/2015 10:07	57.4	36.4	0	6.2	-15.24	999	2	0	93.8	10	10
CHIW0003	17/12/2015 10:12	57.9	36.7	0.2	5.2	-16.41	1005	2	0	94.6	10	10
CHIW0028	17/12/2015 10:14	18.1	13	14.1	54.8	-8.48	1001	2	0	31.1	0	0
CHIW0029	17/12/2015 10:17	57.6	37.6	0	4.8	-23.89	1000	3	0	95.2	10	10
CHIW0007	17/12/2015 10:20	34.4	27.4	3.3	34.9	-7.89	1005	3	0	61.8	10	5
CHIW0007	17/12/2015 10:22	34.3	27.3	3.3	35.1	-7.45	1005	2	0	61.6	5	5
CHIW0030	17/12/2015 10:29	61	37.6	0	1.4	-9.12	1005	3	0	98.6	10	15
CHIW0030	17/12/2015 10:30	60.8	37.7	0	1.5	-14.31	1005	3	0	98.5	15	15
CHIR0010	17/12/2015 10:33	57.2	42.9	0	0	-6.24	1002	7	0	100.1	10	10
CHIW0018	17/12/2015 10:38	59.5	41.7	0	0	-7.22	1004	4	1	101.2	5	5
CHIW0115	17/12/2015 10:44	58.7	39.9	0.4	1	-0.14	1001	4	0	98.6	0	10
CHIW0115	17/12/2015 10:46	59.9	41.6	0	0	-9.65	1001	5	0	101.5	10	10
CHIW0048	17/12/2015 10:50	18.3	18.5	11.6	51.6	-10.43	1001	3	0	36.8	0	0
CHILRIS2	17/12/2015 10:53	14.7	14.3	13.4	57.6	-0.1	1002	4	0	29	0	0
CHILRIS1	17/12/2015 10:56	70.1	25.2	0.9	3.8	-0.03	1006	3	0	95.3	0	0
CHIW0097	17/12/2015 11:04	26.3	17	11.2	45.5	-1.86	1002	1	0	43.3	0	0
CHIW0096	17/12/2015 11:06	0	2.8	20	77.2	-0.28	1006	1	0	2.8	0	0
CHIW0095	17/12/2015 11:08	11.5	8.7	16	63.8	-3.45	1005	5	0	20.2	0	0
CHIW0094	17/12/2015 11:11	54.3	38.1	0	7.6	-3.21	1006	4	0	92.4	5	5
CHIW0090	17/12/2015 11:14	57	42.3	0	0.7	-42.42	1001	8	10	99.3	20	30

Well ID	Date & Time	CH4 (%)	CO2 (%)	O2 (%)	Balance Gas (%)	Vacuum (mbar)	Atm Press (mbar)	CO (ppm)	H2S (ppm)	CH4 + CO2 (%)	Original Valve (%)	Depart Valve (%)
CHIW0090	17/12/2015 11:15	58	43.6	0	0	-44.64	1001	7	14	101.6	30	30
CHIR0071	17/12/2015 11:17	57.9	43.5	0	0	-58.63	1004	12	5	101.4	20	20
CHIW0066	17/12/2015 13:07	54.4	37.1	1.6	6.9	-12.84	1002	11	1	91.5	10	20
CHIW0066	17/12/2015 13:09	55.1	38.6	1	5.3	-31.83	1002	12	1	93.7	20	20
CHIW0067	17/12/2015 13:13	21.3	13.2	11.5	54	-6.48	1005	0	0	34.5	0	0
CHIW0068	17/12/2015 13:16	36	27.5	6.5	30	-42.45	1006	5	1	63.5	10	0
CHIW0068	17/12/2015 13:18	43.6	34.7	2.7	19	-20.48	1006	6	1	78.3	0	0
CHILW5BR	17/12/2015 13:27	24.2	12.5	13.2	50.1	-69.44	1000	0	0	36.7	0	0
CHILW05A	17/12/2015 13:31	16.4	20.1	6.2	57.3	-9.08	1005	22	0	36.5	10	0
CHILW05A	17/12/2015 13:33	15.3	19.8	6.9	58	-66.87	1002	20	0	35.1	0	0
CHIW0083	17/12/2015 13:55	49.1	34.5	0.1	16.3	-10.94	1001	8	1	83.6	20	20
CHIR0072	17/12/2015 13:59	53.7	46.7	0	0	-79.26	999	18	1	100.4	30	20
CHIR0072	17/12/2015 14:01	53.5	47.1	0	0	-57.96	999	16	1	100.6	20	20
CHIW0110	17/12/2015 14:03	59.6	41	0	0	-52.4	1003	13	1	100.6	40	40
CHIR2AR2	17/12/2015 14:06	52	41.6	0	6.4	-9.27	1004	3	0	93.6	20	40
CHIR2AR2	17/12/2015 14:08	51.4	41.9	0	6.7	-17.98	1004	6	0	93.3	40	40
CHIR0037	17/12/2015 14:11	57.2	43.3	0	0	-59.34	1003	7	1	100.5	50	50
CHIR0040	17/12/2015 14:15	56.9	42.7	0	0.4	-55.69	1002	6	0	99.6	50	50
CHIR0021	17/12/2015 14:17	56.7	42.4	0	0.9	-33.99	1002	6	2	99.1	50	60
CHIR0021	17/12/2015 14:19	55.8	43.4	0	0.8	-43.62	1002	6	0	99.2	60	60
CHIP0110	17/12/2015 14:45	14	10.6	6.8	68.6	-48.57	1004	5	0	24.6	0	0
CHIP0111	17/12/2015 14:46	61.5	37.3	0.1	1.1	-77.61	1005	5	0	98.8	1	0
CHIP0111	17/12/2015 14:48	51.7	35.3	2.2	10.8	-78.42	1005	5	0	87	0	0
CHIR2AR2	21/12/2015 10:23	50.6	40.3	0.3	8.8	-20.98	994	7	0	90.9	50	60
CHIR2AR2	21/12/2015 10:25	49.9	40.9	0	9.2	-31.21	994	7	1	90.8	60	60
CHIR0040	21/12/2015 10:27	53.8	41.2	0.2	4.8	-63.25	995	5	0	95	50	40
CHIR0040	21/12/2015 10:28	53.7	41.5	0	4.8	-59.91	995	6	0	95.2	40	40
CHIR0040	21/12/2015 10:28	53.7	41.5	0	4.8	-59.91	995	6	0	95.2	40	40
CHIW0122	21/12/2015 10:31	49.2	40.4	0	10.4	-11.79	996	8	0	89.6	20	30

Well ID	Date & Time	CH4 (%)	CO2 (%)	O2 (%)	Balance Gas (%)	Vacuum (mbar)	Atm Press (mbar)	CO (ppm)	H2S (ppm)	CH4 + CO2 (%)	Original Valve (%)	Depart Valve (%)
CHIW0122	21/12/2015 10:33	49	40.4	0	10.6	-15.37	996	7	0	89.4	30	30
CHIR17R2	21/12/2015 10:35	53.9	39.4	0.8	5.9	-5.36	995	4	0	93.3	10	20
CHIR17R2	21/12/2015 10:37	54.3	39.9	0.5	5.3	-6.12	993	5	0	94.2	20	20
CHIR17R2	21/12/2015 10:37	54.3	39.9	0.5	5.3	-6.12	993	5	0	94.2	20	20
CHIW0121	21/12/2015 10:40	60.3	39.8	1.1	0	-0.12	995	4	7	100.1	10	20
CHIW0121	21/12/2015 10:41	58.9	41.8	0	0	-5.38	995	6	1	100.7	20	20
CHIW0121	21/12/2015 10:41	58.9	41.8	0	0	-5.38	995	6	1	100.7	20	20
CHIW0120	21/12/2015 10:44	46.5	38	0	15.5	-2.17	995	21	1	84.5	10	10
CHIR252R	21/12/2015 10:46	45.6	37.5	0.7	16.2	-11.69	995	7	2	83.1	20	20
CHIW0113	23/12/2015 13:24	57.3	42.6	0.5	0	-0.4	1003	11	0	99.9	0	10
CHIW0113	23/12/2015 13:25	57.3	44.5	0.1	0	-50.38	1003	14	0	101.8	10	10
CHIR0093	23/12/2015 13:32	12.2	9.7	16.6	61.5	-30.9	1004	2	0	21.9	20	0
CHIR0093	23/12/2015 13:33	16.4	12.2	15.5	55.9	-2.64	1004	4	0	28.6	0	0

APPENDIX 4

Leachate Level Data

Pen-Y-Bont Leachate Level Data - October to December 2015



From : 23/10/2015

To : 23/12/2015

23/10/2015

Sample Point	Depth of Liq (m)	Dip to Water (m)	TD (m)	Water Level (mAOD)
LC0003	0.50	5.89	6.36	64.51
LC01B	0.87	50.33	51.06	41.51
LM04B	0.64	49.32	49.95	41.27
LM05B	0.65	50.45	51.07	41.23
LM07B	0.84	39.57	40.44	40.44
PBLC004B	0.87	47.45	48.31	41.69
PBLC5B	0.90	47.37	48.25	42.13
PBLM6B	0.82	45.87	46.7	41.29

Issued By:

Pen-Y-Bont Leachate Level Data - October to December 2015



From : 23/10/2015

To : 23/12/2015

27/11/2015

Sample Point	Depth of Liq (m)	Dip to Water (m)	TD (m)	Water Level (mAOD)
LC0003	0.74	5.65	6.36	64.75
LC01B	0.99	50.21	51.06	41.63
LM04B	0.75	49.21	49.95	41.38
LM05B	0.71	50.39	51.07	41.29
LM07B	0.79	39.62	40.44	40.39
PBLC004B	0.75	47.57	48.31	41.57
PBLC5B	0.88	47.39	48.25	42.11
PBLM6B	0.80	45.89	46.7	41.27

Issued By:

Pen-Y-Bont Leachate Level Data - October to December 2015



From : 23/10/2015

To : 23/12/2015

23/12/2015

Sample Point	Depth of Liq (m)	Dip to Water (m)	TD (m)	Water Level (mAOD)
LC0003	0.88	5.51	6.36	64.89
LC01B	0.89	50.31	51.06	41.53
LM04B	0.87	51.12	52.05	41.50
LM05B	0.85	52.22	53.04	41.43
LM07B	0.75	39.66	40.44	40.35
PBLC004B	0.83	49.51	50.32	41.65
PBLC5B	0.84	49.44	50.25	42.07
PBLM6B	0.75	45.94	46.7	41.22

Issued By:

APPENDIX 5

Leachate Quality Data

Pen-Y-Bont Quarterly Leachate Quality Data - November 2015



From : 30/11/2015

To : 30/11/2015

30/11/2015

Sample Point	Alk (CaCO3:mg/l)	Amm-N (N:mg/l)	BOD (mg/l)	Ca(D) (mg/l)	Cd(D) (mg/l)	Chloride (mg/l)	Cr(D) (mg/l)
LC0003	15100	2820	467.8	<100	0.0015	787	0.08
LC01B	22200	3170	3280	<100	0.005	2480	0.415
LM04B	24200	4370	79230.4	<100	0.0012	2790	0.886
LM05B	22800	3580	82935.4	<100	0.001	2320	0.728
LM07B	18200	2790	6400	<100	0.0026	1850	0.605
PBLC004B	24100	3780	62510.4	<100	0.0014	2410	0.914
PBLC5B	22600	3660	45315.4	<100	0.0011	2320	0.835
PBLM6B	21100	2700	1852.9	<100	<0.001	1560	0.459

Sample Point	COD (mg/l)	Cond (uS / cm)	Cond(Fld) (uS / cm)	Cu(D) (mg/l)	Fe(D) (mg/l)	Mg(D) (mg/l)	Pb(D) (mg/l)
LC0003	1355	23900	>20000	0.012	<1.00	<100	<0.01
LC01B	6045	36300	>20000	0.019	4.21	<100	<0.01
LM04B	23050	40900	>20000	0.294	6.14	<100	0.218
LM05B	23675	39600	>20000	0.374	7.27	<100	0.233
LM07B	10650	32300	>20000	0.097	3.67	<100	0.052
PBLC004B	25150	40800	>20000	0.256	7.08	<100	0.236
PBLC5B	23400	39700	>20000	0.437	5.72	<100	0.274
PBLM6B	4405	30900	>20000	0.021	3.4	<100	0.014

Sample Point	Hg (mg/l)	MCPP (UG/L)	Mn(D) (mg/l)	Naphthalene (ug/l)	Ni(D) (mg/l)	pH (Lab)	pH(Fld)
LC0003	<0.001	<10	0.145	95.3	0.123	7.9	7.5
LC01B	<0.001	13.7	0.088	28.3	0.308	8.1	8.8
LM04B	<0.001	12.2	0.052	3.87	0.466	8.2	8
LM05B	<0.001	<4	0.05	7.07	0.426	8.2	7.9
LM07B	<0.001	19.38	0.194	5.53	0.309	7.9	7.9
PBLC004B	0.001	16.19	0.056	7	0.48	8.3	8.1
PBLC5B	<0.001	<10	0.052	6.93	0.444	8.2	8
PBLM6B	<0.001	15.35	0.166	5.12	0.29	8.1	7.6

Sample Point	K(D) (mg/l)	Na(D) (mg/l)	TOC (mg/l)	TON (mg/l)	Total S(D) SO4:mg/l	WtrTemp (Deg C)	Zn(D) (mg/l)
LC0003	244	631	450	<0.2	<300	19.1	0.037
LC01B	1100	2870	2600	6.9	<300	21.9	0.186
LM04B	922	2610	8800	<0.2	<300	33.9	0.463
LM05B	1040	2900	8200	1.3	<300	36.1	0.489
LM07B	719	1960	3800	<0.2	<300	33.6	0.244
PBLC004B	1040	2880	8500	2.8	<300	35.5	0.395
PBLC5B	800	2250	8300	2.6	<300	38.9	0.582
PBLM6B	501	1390	1900	29.9	<300	39.2	0.068

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APPENDIX 6

Groundwater Quality Data

Pen-Y-Bont Groundwater Quality & Level Data - Oct to Dec 2015



From : 29/10/2015

To : 15/12/2015

29/10/2015

Sample Point	Amm-N (N:mg/l)	BOD (mg/l)	Chloride (mg/l)	COD (mg/l)	Cond (uS / cm)	Cond(Fld) (uS / cm)	Dip to Water (m)
PBBH0001	0.4	<2.0	46	<5	608	640	16.04
PBBH0002	0.6	<2.0	21	<5	820	820	3.23
PBBH0003	0.3	<2.9	47	<5	1190	1190	7.99
PBBH0004	0.6	<2.9	124	10	1480	1570	1.36
PBBH0005	0.14	<2.0	33	<5	800	810	7.8
PBBH0007	0.4	<2.9	69	<5	968	980	20.8
PBBH0008	0.01	<2.0	22	<5	669	650	15.25
PBBH0009	0.01	<2.0	24	<5	1600	1570	23.58
PBBH0010	0.3	<2.9	20	<5	838	830	24.55
PBBH0011	0.17	<2.0	40	<5	1390	1400	3.25
PBBH0012	3.1	<2.9	390	15	6290	6400	0
PBBH0013	0.6	<2.0	162	12	2530	2510	2.39
PBBH0014	0.2	<2.9	177	<5	1760	1760	16.16
PBBH003A	0.2	<2.9	58	<5	1130	1140	7.39
PBT00001	0.03	<2.0	20	<5	723	7.8	2.1
PBT00002	0.02	<2.0	18	8	1650	1660	2.26
PBT00003	0.3	<2.0	47	11	1650	1850	2.92
PBT00004	0.01	<2.0	32	<5	1190	1210	2.41
PBT00005	<0.01	<2.0	37	<5	1160	1120	1.87
PBT00006	<0.01	<2.0	60	9	1450	1450	2.41
PBT00007	0.06	<2.9	46	525	908	930	2.16
PBT00008	0.5	<2.0	58	18	1840	1900	2.2
PBT00009	1.5	<2.9	55	14	1600	1690	2.63
PBT00010	2.1	<2.9	135	12	2730	2740	5.62
PBT00011	0.6	<3.6	61	12	884	960	7.88
PBT00012	0.16	<2.0	112	14	1900	1920	1.96
PBT00013	0.4	<2.0	70	10	1670	1690	1.63

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Pen-Y-Bont Groundwater Quality & Level Data - Oct to Dec 2015



From : 29/10/2015

To : 15/12/2015

29/10/2015

Sample Point	DO(Lab) (mg/l)	pH (Lab)	pH(Fld)	TD (m)	Water Level (mAOD)	WtrTemp (Deg C)
PBBH0001	4.7	7	6.28	27.75	59.36	12.3
PBBH0002	4.9	7.3	7.33	8.32	73.82	11.5
PBBH0003	3.7	8.6	8.67	16.26	47.01	10.3
PBBH0004	3.7	7.8	7.66	20.11	53.28	10.9
PBBH0005	4.6	7.2	7.21	12.04	46.10	10.9
PBBH0007	4	8.2	7.64	38.27	54.39	12.2
PBBH0008	4.9	7.3	7.11	47.46	69.11	10.9
PBBH0009	6.2	7.2	7.03	39.73	54.38	12.5
PBBH0010	3.8	7.4	7.41	36.83	49.69	11.2
PBBH0011	4.2	6.7	7.13	18.06	52.03	10.6
PBBH0012	2.3	7	6.82	16.95	54.09	11.6
PBBH0013	4.2	7.1	7.42	15.85	50.46	11
PBBH0014	3.4	7.1	6.88	35.44	56.35	12
PBBH003A	1.5	8.3	8.45	20.39	47.61	10.6
PBT00001	6.6	7	7.05	3.9	54.38	11
PBT00002	4.8	6.7	7.22	4.05	52.74	11.3
PBT00003	6.7	7.3	7.01	5.02	52.49	10.9
PBT00004	6.9	6.9	7.45	3.99	52.89	11.2
PBT00005	5.7	7.3	7.25	5.16	53.23	10.9
PBT00006	5.3	6.9	6.73	5.68	52.49	11
PBT00007	4.8	6.7	7.26	4.86	52.64	11
PBT00008	4.8	6.8	6.94	4.4	52.49	11.9
PBT00009	4.8	6.8	7.12	4.45	52.12	11.9
PBT00010	3.1	6.8	6.73	6.32	52.32	11.9
PBT00011	3.3	6.5	6.85	10.45	52.24	11.4
PBT00012	4.8	6.3	6.55	3.73	51.04	11.6
PBT00013	7.4	6.9	6.81	4.68	52.27	11.7

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Pen-Y-Bont Groundwater Quality & Level Data - Oct to Dec 2015



From : 29/10/2015
To : 15/12/2015

24/11/2015

Sample Point	Alk (CaCO ₃ :mg/l)	Amm-N (N:mg/l)	BOD (mg/l)	Ca(D) (mg/l)	Cd(D) (mg/l)	Chloride (mg/l)	Cr(D) (mg/l)
PBBH0001	170	<0.01	<2.0	73	<0.0001	43	<0.001
PBBH0002	380	0.11	3.6	111	<0.0001	20	<0.001
PBBH0003	534	0.02	<2.0	2	<0.0001	46	<0.001
PBBH0004	587	0.4	<2.0	15	<0.0001	121	<0.001
PBBH0005	351	0.18	<2.0	38	<0.0001	33	<0.001
PBBH0007	403	0.3	<2.0	4	<0.0001	68	<0.001
PBBH0008	317	0.04	<2.0	15	<0.0001	19	<0.001
PBBH0009	351	<0.01	<2.0	235	<0.0001	19	<0.001
PBBH0010	254	0.02	<2.0	116	<0.0001	17	<0.001
PBBH0011	294	0.07	<2.0	146	<0.0001	41	<0.001
PBBH0012	975	3	3	401	<0.0001	383	<0.001
PBBH0013	423	0.3	<2.0	144	0.0002	169	<0.001
PBBH0014	392	0.14	<2.0	220	0.0004	167	<0.001
PBBH003A	512	0.03	<2.0	4	<0.0001	60	<0.001
PBT00001	230	0.01	<2.0	128	<0.0001	14	<0.001
PBT00002	145	0.09	<2.0	226	<0.0001	13	<0.001
PBT00003	280	0.03	<2.0	232	<0.0001	38	<0.001
PBT00004	98	0.04	<2.0	143	<0.0001	19	<0.001
PBT00005	370	<0.01	<2.0	93	<0.0001	43	<0.001
PBT00006	401	0.01	<2.0	189	<0.0001	60	<0.001
PBT00007	228	0.02	<2.0	107	<0.0001	46	<0.001
PBT00008	303	1.3	<2.0	356	<0.0001	59	<0.001
PBT00009	383	1.3	<2.0	253	<0.0001	55	<0.001
PBT00010	8	0.06	<2.0	309	0.001	84	<0.001
PBT00011	380	0.5	5.2	44	<0.0001	62	<0.001
PBT00012	163	0.03	<2.0	378	<0.0001	78	<0.001
PBT00013	418	0.2	<2.0	190	<0.0001	71	<0.001

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Pen-Y-Bont Groundwater Quality & Level Data - Oct to Dec 2015



From : 29/10/2015

To : 15/12/2015

24/11/2015

Sample Point	COD (mg/l)	Cond (uS / cm)	Cond(Fld) (uS / cm)	Dip to Water (m)	DO(Lab) (mg/l)	Mg(D) (mg/l)	Pb(D) (mg/l)
PBBH0001	<5	579	463	17.06	9.7	21	<0.001
PBBH0002	12	840	681	3.72	2.7	24	<0.001
PBBH0003	5	1170	944	7.8	8.6	<1	<0.001
PBBH0004	11	1550	1329	1.21	4.5	2	<0.001
PBBH0005	<5	806	668	7.35	5.9	14	<0.001
PBBH0007	9	972	734	20.76	4.4	1	<0.001
PBBH0008	7	673	545	15.4	6	4	<0.001
PBBH0009	6	1850	1515	22.43	7.1	53	<0.001
PBBH0010	8	997	838	24.05	6.3	22	<0.001
PBBH0011	8	1382	1093	2.81	6.2	26	<0.001
PBBH0012	14	6750	5550	0	2.1	100	<0.001
PBBH0013	15	2460	1879	1.58	5.5	19	<0.001
PBBH0014	8	1970	1659	15.71	3.4	50	<0.001
PBBH003A	6	1120	938	7.04	1.5	<1	<0.001
PBT00001	10	705	573	1.97	6.1	15	<0.001
PBT00002	11	1710	1386	1.55	5.2	62	<0.001
PBT00003	13	1790	1468	2.04	5.7	43	<0.001
PBT00004	10	1150	946	2	8	37	<0.001
PBT00005	9	1350	1119	1.98	5.6	26	<0.001
PBT00006	10	1450	1137	2.3	6.4	29	<0.001
PBT00007	6	909	745	2.23	9.6	12	<0.001
PBT00008	21	2150	1834	0.81	9.9	43	<0.001
PBT00009	14	1640	1370	1.69	3.7	33	<0.001
PBT00010	<5	2160	1762	5.26	5.7	57	0.001
PBT00011	16	904	990	7.21	3.5	49	<0.001
PBT00012	15	2110	1782	1.21	8.9	38	<0.001
PBT00013	10	1700	1393	0.98	5.6	54	<0.001

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Pen-Y-Bont Groundwater Quality & Level Data - Oct to Dec 2015



From : 29/10/2015

To : 15/12/2015

24/11/2015

Sample Point	Hg (mg/l)	K(D) (mg/l)	MCP (UG/L)	Naphthalene (ug/l)	pH (Lab)	pH(Fld)	TD (m)
PBBH0001	<0.0001	7	<0.02	<0.02	7	11.2	19.81
PBBH0002	<0.0001	8	<0.02	<0.02	7	10.4	8.34
PBBH0003	<0.0001	3	<0.02	<0.02	8.5	9.4	16.29
PBBH0004	<0.0001	6	<0.02	<0.02	7.8	9.9	20.1
PBBH0005	<0.0001	6	<0.02	<0.02	7.1	9.5	12.03
PBBH0007	<0.0001	5	<0.02	0.05	8.1	11.1	38.42
PBBH0008	<0.0001	9	<0.02	<0.02	7.6	9.4	47.2
PBBH0009	<0.0001	12	<0.02	<0.02	7.2	11.3	39.87
PBBH0010	<0.0001	9	<0.02	<0.02	7.1	10.3	36.96
PBBH0011	<0.0001	9	<0.02	<0.02	6.8	9.6	8.17
PBBH0012	<0.0001	54	<0.02	<0.02	6.7	10.3	17.23
PBBH0013	<0.0001	12	<0.02	<0.02	7	10.7	15.86
PBBH0014	<0.0001	11	<0.02	<0.02	6.9	11.3	35.81
PBBH003A	<0.0001	3	<0.02	<0.02	8.2	9.6	20.45
PBT00001	<0.0001	5	<0.02	<0.02	6.6	9.7	4.09
PBT00002	<0.0001	14	<0.02	<0.02	6.9	9.8	4.06
PBT00003	<0.0001	11	<0.02	<0.02	6.7	9.9	4.98
PBT00004	<0.0001	9	<0.02	<0.02	6.9	9.9	4
PBT00005	<0.0001	11	<0.02	<0.02	7.2	9.9	5.12
PBT00006	<0.0001	7	<0.02	<0.02	7	9.9	5.75
PBT00007	<0.0001	5	<0.02	<0.02	6.8	9.7	4.9
PBT00008	<0.0001	13	<0.02	<0.02	6.9	10.9	4.39
PBT00009	<0.0001	6	<0.02	<0.02	6.9	10.6	4.47
PBT00010	<0.0001	15	<0.02	0.02	4.5	10.2	6.33
PBT00011	<0.0001	2	<0.02	<0.02	6.7	10.3	10.49
PBT00012	<0.0001	9	<0.02	<0.02	6.6	10.2	3.74
PBT00013	<0.0001	8	<0.02	<0.02	6.9	10	4.67

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Pen-Y-Bont Groundwater Quality & Level Data - Oct to Dec 2015



From : 29/10/2015
To : 15/12/2015

24/11/2015

Sample Point	TOC (mg/l)	TON (mg/l)	Total S(D) SO4:mg/l	Water Level (mAOD)	WtrTemp (Deg C)
PBBH0001	0.88	1.3	54	58.34	7.7
PBBH0002	3.6	<0.2	58	73.33	7.3
PBBH0003	0.93	0.4	32	47.20	8.9
PBBH0004	3.8	0.2	52	53.43	7.7
PBBH0005	0.99	<0.2	36	46.55	7.7
PBBH0007	1.1	<0.2	6	54.43	8.4
PBBH0008	1.1	0.4	18	68.96	7.6
PBBH0009	1.3	0.6	702	55.53	7.1
PBBH0010	2.5	0.4	252	50.19	7.4
PBBH0011	2.8	0.2	383	52.47	7.1
PBBH0012	7.3	<0.2	2620	54.09	6.4
PBBH0013	4.7	0.4	627	51.27	6.9
PBBH0014	2.6	<0.2	438	56.80	7
PBBH003A	0.83	0.4	<3	47.96	8.8
PBT00001	3.8	1.1	136	54.51	7.2
PBT00002	3.9	0.6	817	53.45	7.3
PBT00003	4.8	0.9	683	53.37	7.1
PBT00004	2.7	2.3	458	53.30	7.6
PBT00005	2.8	1.5	269	53.12	7.5
PBT00006	3.7	1.4	314	52.60	7
PBT00007	2.1	0.3	167	52.57	7.1
PBT00008	8.7	<0.2	884	53.88	7
PBT00009	7.6	0.4	488	53.06	6.7
PBT00010	1.7	1.1	1120	52.68	6.1
PBT00011	7.8	<0.2	23	52.91	7.2
PBT00012	5.7	1.6	967	51.79	7.7
PBT00013	4	0.5	439	52.92	7

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Pen-Y-Bont Groundwater Quality & Level Data - Oct to Dec 2015



From : 29/10/2015

To : 15/12/2015

15/12/2015

Sample Point	Amm-N (N:mg/l)	BOD (mg/l)	Chloride (mg/l)	COD (mg/l)	Cond (uS / cm)	Cond(Fld) (uS / cm)	Dip to Water (m)
PBBH0001	0.01	<2.0	16	<5	469	470	15.15
PBBH0002	0.4	<2.0	19	<5	822	810	3.32
PBBH0003	0.3	<2.0	43	<5	1130	1100	6.92
PBBH0004	0.3	<2.0	122	<5	1550	1560	0.77
PBBH0005	0.21	<2	34	<5	814	840	6.41
PBBH0007	0.4	2.1	68	<5	971	950	20.55
PBBH0008	0.03	<2.0	20	<5	682	650	13.99
PBBH0009	0.01	<2.0	17	<5	1730	1710	22.04
PBBH0010	0.3	<2.0	16	<5	909	900	22.61
PBBH0011	0.06	<2.0	30	<5	1250	1240	2.53
PBBH0012	2.9	<2.0	386	9	6790	6110	0
PBBH0013	0.7	<2.0	169	8	2560	2500	0.78
PBBH0014	0.08	<2.0	147	6	2270	2210	14.84
PBBH003A	0.12	<2.0	61	<5	1150	1140	6.55
PBT00001	0.02	<2.9	21	6	856	860	0.74
PBT00002	0.01	<2.0	11	<5	1410	1390	1.3
PBT00003	0.07	<2.0	35	6	1680	1630	1.67
PBT00004	0.01	3.2	15	<5	1070	1060	1.56
PBT00005	0.01	<2.9	26	<5	931	820	1.58
PBT00006	0.01	10	65	9	1750	1680	1.83
PBT00007	0.03	<2.0	40	<5	843	730	1.56
PBT00008	3.4	<2.9	58	21	2190	2160	0.45
PBT00009	1.1	<2.0	56	15	1720	1650	1.51
PBT00010	0.06	2.8	92	<5	2240	2350	4.94
PBT00011	0.9	<2.9	89	16	1150	1220	7.18
PBT00012	0.02	<2.0	70	13	1980	1840	0.8
PBT00013	1	2.5	75	7	1700	1730	1

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Pen-Y-Bont Groundwater Quality & Level Data - Oct to Dec 2015



From : 29/10/2015

To : 15/12/2015

15/12/2015

Sample Point	DO(Lab) (mg/l)	pH (Lab)	pH(Fld)	TD (m)	Water Level (mAOD)	WtrTemp (Deg C)
PBBH0001	9.3	6.7	6.06	27.75	60.25	11.1
PBBH0002	4.8	7.2	7.30	8.32	73.73	10.9
PBBH0003	3	8.6	8.39	16.27	48.08	10
PBBH0004	4.7	7.6	7.44	20.11	53.87	10.1
PBBH0005	5	7.2	7.27	12.04	47.49	10.2
PBBH0007	4	8.3	7.58	38.4	54.64	11.2
PBBH0008	5.5	7.4	7.15	47.23	70.37	10.1
PBBH0009	7.4	7	6.95	39.8	55.92	11.5
PBBH0010	5	7.3	7.14	36.91	51.63	10.3
PBBH0011	4.2	6.7	7.15	18.04	52.75	9.9
PBBH0012	0.8	6.6	6.21	16.98	54.09	10.2
PBBH0013	4.1	7	7.12	15.85	52.07	10.3
PBBH0014	4.8	6.9	6.41	35.5	57.67	11.2
PBBH003A	1	8.3	8.46	20.39	48.45	10
PBT00001	6.3	6.8	7.23	4.01	55.74	9.6
PBT00002	5.5	6.9	7.17	4.05	53.70	9.5
PBT00003	6.2	6.8	7.24	4.99	53.74	9.7
PBT00004	9.3	6.9	7.54	3.99	53.74	9.6
PBT00005	7.4	7.2	7.47	5.13	53.52	9.6
PBT00006	9.4	6.9	7	5.7	53.07	9.9
PBT00007	5.8	6.9	7.16	4.88	53.24	9.7
PBT00008	6.1	6.9	6.93	4.4	54.24	10
PBT00009	4.2	6.8	6.7	4.46	53.24	10.4
PBT00010	8	5.1	6.49	6.32	53.00	10.4
PBT00011	3.6	6.5	6.31	10.47	52.94	10.5
PBT00012	7.6	6.6	6.98	3.73	52.20	10.1
PBT00013	5.1	6.7	6.64	4.66	52.90	10.1

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APPENDIX 7

Surface Water Quality Data

Pen-Y-Bont Surface Water Quality Data - October to December 2015



From : 29/10/2015
To : 15/12/2015

29/10/2015

Sample Point	Amm-N (N:mg/l)	Chloride (mg/l)	COD (mg/l)	Cond (uS / cm)	Cond(Fld) (uS / cm)	DO(Lab) (mg/l)	pH(Fld)
PBWP0001	0.08	13	14	<100	50	9.5	7.63
PBWP0002	0.03	13	14	100	70	10.2	7.86
PBWP0003	0.02	13	13	<100	70	10	7.68

Sample Point	pH (Lab)	S.Solids (mg/l)	WtrTemp (Deg C)
PBWP0001	6.9	<5	11.6
PBWP0002	7	<5	11.5
PBWP0003	6.8	<5	11.6

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Pen-Y-Bont Surface Water Quality Data - October to December 2015



From : 29/10/2015

To : 15/12/2015

24/11/2015

Sample Point	Alk (CaCO3:mg/l)	Amm-N (N:mg/l)	Ca(D) (mg/l)	Cd(D) (mg/l)	Chloride (mg/l)	COD (mg/l)	Cr(D) (mg/l)
PBWP0001	18	0.01	9	<0.0001	14	16	<0.001
PBWP0002	20	0.01	9	<0.0001	14	15	<0.001
PBWP0003	18	0.01	10	<0.0001	14	15	<0.001

Sample Point	Cond (uS / cm)	Cond(Fld) (uS / cm)	Cu(D) (mg/l)	DO(Lab) (mg/l)	Fe(D) (mg/l)	Mg(D) (mg/l)	Pb(D) (mg/l)
PBWP0001	109	85	<0.001	10.8	0.13	2	<0.001
PBWP0002	107	91	<0.001	1.6	0.12	2	<0.001
PBWP0003	109	93	<0.001	10.7	0.13	2	<0.001

Sample Point	K(D) (mg/l)	Mn(D) (mg/l)	Na(D) (mg/l)	Ni(D) (mg/l)	o-Phosphate (P:mg/l)	pH (Lab)	pH(Fld)
PBWP0001	<1	0.01	7	<0.001	0.02	7.1	8.6
PBWP0002	<1	0.011	7	<0.001	0.01	7.1	7.8
PBWP0003	<1	0.009	7	<0.001	0.01	7	7.8

Sample Point	S.Solids (mg/l)	TOC (mg/l)	TON (mg/l)	Total S(D) SO4:mg/l	TPH-FTIR (mg/l)	WtrTemp (Deg C)	Zn(D) (mg/l)
PBWP0001	11	4.6	0.8	7	<0.3	8.2	0.004
PBWP0002	<5	4.6	0.9	7	<0.3	8.1	0.004
PBWP0003	7	4.7	0.9	7	<0.3	8.2	0.003

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Pen-Y-Bont Surface Water Quality Data - October to December 2015



From : 29/10/2015

To : 15/12/2015

15/12/2015

Sample Point	Amm-N (N:mg/l)	Chloride (mg/l)	COD (mg/l)	Cond (uS / cm)	Cond(Fld) (uS / cm)	DO(Lab) (mg/l)	pH(Fld)
PBWP0001	0.05	12	12	106	70	10.1	7.78
PBWP0002	0.04	12	11	100	80	9.7	7.66
PBWP0003	0.04	12	12	<100	60	10.2	7.72

Sample Point	pH (Lab)	S.Solids (mg/l)	WtrTemp (Deg C)
PBWP0001	7.3	9	9
PBWP0002	7.5	10	9
PBWP0003	7.3	10	8.9

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