

**Petroglyph Operating Company  
December 2008/ January 2009  
Monthly Report**

**Covering the period of 12/15/08 through 1/22/09**

**Prepared for  
Colorado Oil and Gas Conservation Commission**

**January 30, 2009**

**Prepared by  
Norwest Corporation  
950 S. Cherry, Suite 800  
Denver, CO 80246**

**Table of Contents**

1.0	Phase 1 Remediation System .....	1
2.0	Ongoing Investigation.....	2
	Aquifer Characterization.....	2
	Dissolved Methane Sampling .....	3
	Water Quality Sampling .....	3
	Methane Source Investigation.....	3
3.0	Monitoring .....	3
	Down-hole Pressure and Fluid Level Monitoring .....	3
	Gas Flow Monitoring.....	4
	Fluid Levels in Petroglyph Production Wells.....	5
	Bi-Weekly and Monthly Water Well Monitoring.....	5
	Hand Held Measurements.....	6
	Helicopter Survey .....	6
4.0	Mitigation.....	6
	Methane Alarms.....	6
	Water Supply .....	6
	Other .....	6
	Public Outreach.....	6
	Health and Safety/Emergency Planning .....	6
5.0	Schedule.....	7
Figure 1	Measured Gas Flow in Domestic Wells.....	8
Table 1:	Recovery and Injection Rates associated with Phase 1 MIMMP.....	9
Table 2:	Sampling of Dissolved Gases in Water Wells during December, 2008.....	10
Table 3	Water Well Measurements for the Period of December 15 to January 22, 2009.....	11
Table 4	Methane Readings Schedule .....	31
Table 5	Residences Receiving Water .....	38
Attachment 1 -	Gas Flow in Monitoring Well POCI 55, Recovery 1 Kittleson, Recovery 3 PEI, and Recovery 4 Barrett.....	39
Attachment 2	Graphs of Pressure and Fluid Level Data From POCI 55, Barrett, Bergman, Bruington, Coleman, Evendon, Garza-Vela and Meyer.....	44
Attachment 3 -	Gas Flow Measurements at Bruington, Coleman, Angely, Bounds, and Smith .....	58
Attachment 4	Fluid Levels in Petroglyph Production Wells .....	64
Attachment 5	Dissolved Gas Concentrations in Private Water Wells near the Mitigation Project.....	80

**Petroglyph Operating Company, Inc.**  
**Monthly Report – December 2008/January 2009**

Petroglyph Operating Company, Inc. (Petroglyph) is submitting this monthly report for the activities that have occurred at their Little Creek Field in the Raton Basin from the last date of data collection for the November Monthly Report (December 15, 2008) through January 22, 2009. Along with this monthly report, Petroglyph is submitting an electronic copy of all data including Microsoft Excel spreadsheets from which the attached summaries and graphs were created.

**1.0 Phase 1 Remediation System**

The Phase 1 remediation system associated with the Methane Investigation, Monitoring and Mitigation Program (MIMMP) was put into operation on December 8<sup>th</sup>. The system was started with pumping from only Recovery 1 Kittleson and Recovery 3 PEI on 12/8/08. (As agreed to by Petroglyph, Recovery 4 Barrett will be cleaned out prior to use as a pumping well.) Injection wells 01 and 04 were started on 12/9/08 and Injection wells 02, 03, 05, 06 and 07 were started on 12/10/08 (Table 1).

It took approximately 2 days for the recovery and injection water lines to be filled. Recovery 3 PEI was pumped for approximately 2.5 hours and the pump shut off. There is intermittent pumping at 4 gpm, averaging 1 gpm over the total period of pumping. Recovery 1 pump also went down near the end of the previous reporting period. The pump has been replaced and pumping averages 16.3 gpm (Table 1).

Injection rates vary for the individual injection wells and range from 0.49 gpm to 4.7 gpm. The two wells on the Rohr property (Injection 04 and 05) have accepted the most water. Injection 08 Haeffner has not accepted water very well. All of the approximately 800,000 gallons of water that have been recovered have been re-injected following methane off gassing. Meter readings between recovery and injection flow rates have resulted in a less than 10% difference in total volumes. Work will be completed during the next reporting period to recalibrate the meters and evaluate the potential for air bubbles to resolve the differences in recovery and injection volumes.

There have been only modest changes in responses since mitigation start-up on 12/8/08. The POCI 55 water level is decreasing. The Barrett well water level started going up but on 1/3/09 flattened and started to go down slightly (Attachment 2). The gas flow in the Recovery 1 Kittleson and Recovery 3 PEI increased but has since shown a gradual downward trend. These responses can be seen on the respective pressure and gas flow charts (Attachment 1). The gas flow in the Coleman well may be showing some response (Attachment 2). The last three pumping events at the Coleman well showed one event with a 5-minute gas flow duration and the other two events were less than 5 minutes (see Coleman gas chart 1-16 to 1-20-09).

Attachment 4 includes charts of twice-weekly gas monitoring of fourteen water wells near the mitigation system. Petroglyph started monitoring the Lively 10-02, (which is a CBM well plugged and abandoned in 1998 and reopened to check for gas in 2007). It exhibited an increase in gas concentration about the same time as the mitigation start up but is not clear that this is related to the mitigation system. The remaining water wells in this attachment do not indicate a response.

Petroglyph submitted the Phase II Methane Remediation System Class V Underground Injection Control (UIC) permit application to Region 8 of the EPA on January 7, 2009. This application included predictive modeling, which showed that methane removal and confinement of the methane plume would be enhanced using a recovery and injection system that resulted in a hydraulic barrier, rather than allowing passive methane removal through off gassing in private wells. Water quality data from both the Poison Canyon and Vermejo formations were also provided to exhibit their similarity. A Colorado Division of Water Resources application for the Phase II Injection well is in progress and will be filed in the near future.

## **2.0 Ongoing Investigation**

### Aquifer Characterization

Petroglyph continues to monitor gas production from the recovery wells. POCI 55 is no longer producing gas at the surface. Attachment 1 shows the changes in gas production at POCI 55 and each of the recovery wells. Actual measurements for each well are included in the data disk. The gas flow in the Recovery 1 Kittleson and Recovery 3 PEI increased at the start of pumping on December 8<sup>th</sup> but remain on a downward trend. The Recovery 1 Kittleson well had declining readings throughout the period reaching a low of 3.85 mcf/day during the period. Flows increased and ended the period of 19.18 mcf/day on 1/20/08 (the last reading available for this reporting period).

Recovery 3 PEI showed a low of 0.2464 mcf/day just before the start of pumping. At the end of the previous reporting period, gas flow was 0.3462 mcf/day. It increased to 1.4172 mcf/day and has been dropping slowly to end the period at 1.3132 mcf/day (the last reading available for this reporting period).

Recovery 4 Barrett is not being pumped until further well development is complete. The water level increased 3 feet during the period to 6259 feet. The gas reading the day the MIMMP system started was 0.3615 mcf/day. Gas production has varied during the current reporting period but is generally below 0.5 mcf/d. The high reading for the period occurred on 1/17/09 and was 0.586 mcf/day; gas production ended the period on 1/20/09 at 0.564 mcf/day. Petroglyph will be completing additional well development on this well in the near future. Water pumped during well development will be hauled off site for disposal. Once the well development has been completed Petroglyph will notify the EPA and COGCC of the intent to activate this well.

### Dissolved Methane Sampling

Petroglyph sampled dissolved methane in wells during the reporting period. The results are shown in Table 2. Ethane concentrations were below detection limits on 8 of the 10 samples; the Burge well had 2.3 µg/L and the Coleman well exhibited 65 µg/L. Ethene concentrations were below the detection limits. Methane concentrations ranged from 0.8 µg/L to 5.9 mg/L. The most elevated concentration was in the V. Coleman well. The Burge well at 3.6 mg/L was lower than the previous result of 3.9 mg/L. Four other wells (Goodwin, Hopke, Kerman, and Searle) showed a decrease in concentrations from values previously measured. Methane in the Conley well increased from non-detect to 1.5 µg/L, methane in the English well increased from non-detect to 0.8 µg/L, methane in the Wolahan well increased from 75 to 210 µg/L, and methane in the McPherson increased from 54 to 950 µg/L.

### Water Quality Sampling

Water samples are available in the electronic disk for drinking water parameters from Coleman, McPherson, Wolahan, Conley, Kerman, English, Searle, Goodwin, Burge and Hopke. This effort expanded the data set used to characterize the Poison Canyon formation per the agency request. Some of this data was available at the time the EPA Phase II application was prepared, and is included there. This month five samples were sent to the laboratory for analysis.

### Methane Source Investigation

In an ongoing effort to understand the source of the methane which has migrated from the Vermejo Formation and the zones in which migration is occurring (as well as the potential role of dikes in the methane movement), Petroglyph has applied to the Bureau of Land Management (BLM) for permission to drill an exploratory hole on BLM land in the vicinity of the Bounds property. This hole will be located to determine if gas is present, at what level the gas occurs and whether or not additional venting or treatment is needed at that location. The hole should provide additional information on gas that may be contributing to the Bounds well. A decision from the BLM is expected in the near future. Draft permit stipulations have been presented to Petroglyph for review prior to issuance of the final permit.

An application was filed with the Colorado Division of Water Resources for the hole on BLM land. Drilling will commence once all permit approvals have been received and the weather conditions permit.

## **3.0 Monitoring**

### Down-hole Pressure and Fluid Level Monitoring

Barrett, Bergman, Bruington, Coleman, Evendon, Garza-Vela and Meyer have continuous pressure monitoring for fluid levels that have been installed by Petroglyph. Information from these wells is downloaded monthly by Petroglyph, graphed, and included in electronic format with this monthly report. The POCI 55 Monitoring Well also has a pressure gage. Attachment 2 shows graphically the changes in pressure for

each of these wells. As can be seen on the graphs, some wells have pressure and associated water levels trending downward (POCI 55, Bergman, Bruington, Coleman), while other wells have pressure and associated water levels trending slightly upward (Barrett and Meyer) or remaining relatively steady (Evendon). The Barrett well showed a declining trend in values during the last 14 days of the period from 1/6/09 through 1/20/09. In general the slopes are low indicating a leveling off of water levels and pressures. Water levels have dropped almost 4 feet for POCI 55 and increased approximately 2 feet for Barrett and Meyer. There are no significant changes from previous monthly reports.

#### Gas Flow Monitoring

Gas flow monitors have been installed by Petroglyph at the Angely, Bounds, Bruington, Coleman, and Smith wells. Continuous gas flow monitoring occurs at Coleman and Smith, while gas flow is spot monitored with a gage and orifice tester at Angely, Bounds, and Bruington. Gas pressure at Bounds and Angely wells is currently monitored by COGCC or their consultant; however the data is presented in this report. The data from this monitoring is provided in Attachment 3.

While gas flow can be variable, in general gas flow has shown an overall decrease in all wells ranging from over the last year to over the last several months. However, measurements taken just after the start of the remediation system pumping have shown a slight increase in methane levels in the Angely and Bruington wells, which then decreased quickly to zero from 0.168 mcf/day and 0.747 mcf/day respectively. Gas flow from the Smith well has been at zero for a sustained period of time and has shown no changes during the reporting period. It appears that there was no long-term effect to these two wells from the remedial pumping.

The Bounds well ended the previous reporting period at 0.747 mcf/day. The last readings during this recording period are at 0.648 mcf/day. The methane readings in this well have been somewhat variable between 3.19 mcf/day 12/5/07 and 0.168 mcf/day 10/29/08. Pressures began to increase in November before the pumping started so the increases do not appear to be tied to the remedial pumping.

The Coleman well only shows gas flows when the well is pumped. The well was tested 12/29/08 for the first time since the start of remedial pumping, and exhibited 69 mcf/day. Later monitoring on 1/18/09 showed a return to pre-pumping levels at 34 mcf/day. Measurements during this reporting period are within the range of previously recorded values, with gas flows varying between 34 and 69 mcf/day for a durations ranging between 5 and 25 minutes. There might have been a short-term increase in association with the pumping, but results could have also been a consequence of the length of time between sampling.

Figure 1 shows the monitored gas flows in each well and the timing for drilling and testing of Petroglyph remediation system wells as well as start up of the remediation system. As shown on this figure, the drop in gas flow in the domestic wells appears to have occurred in correlation with the drilling of remediation system wells and venting of

gas through these wells. This would indicate that the remediation system has been correctly located to remediate the area of largest gas concentration in the domestic wells.

#### Fluid Levels in Petroglyph Production Wells

Fourteen Petroglyph production wells are currently monitored for fluid level and casing pressure: Lively 02-02, Lively 02-12, Lively 02-03, Lively 03-01, Lively 03-10, Lively 03-12, Lively 10-04, Rohr 04-10, Rohr 09-10, State 36-02, State 36-05, State 36-11. There is no data provided for the Rohr 09-05 well because the power in the well is off and waiting some repair work. Two monitoring wells are also monitored continuously for water levels (Lively 03-03, and Lively 10-12). The monitoring occurs in the formation into which the wells are completed, the Vermejo Formation. Changes in fluid levels in Petroglyph's production wells are shown graphically in Attachment 4.

Since Petroglyph is no longer pumping these wells to draw down water levels, pressure is equalizing within the Vermejo coals. Consequently, water levels are rising in all wells as would be expected, although the rate of rise is slowing.

#### Bi-Weekly and Monthly Water Well Monitoring

Petroglyph currently monitors approximately 78 wells in the vicinity of the site. No new wells were added during this reporting period. Table 3 shows all of the wells that have ever been sampled, the sampling start date, the date of the last sample, the number of samples since the last reporting period and a description of the sampling results and any changes from the previous reporting period. Attachment 5 consists of graphs of selected gas readings.

Of the 81 wells, 8 were not sampled during this reporting period due to a lack of access. These wells will continue to be sampled when access is available. Sampling may vary during any one reporting period due to a variety of reasons. During this reporting period 5 wells were sampled once, 14 wells were sampled twice, 32 wells were sampled three times, 1 well was sampled four, five, seven and ten times, 6 wells were sampled seven times, 2 wells were sampled eleven times, and nine wells were sampled twelve times.

As shown on Table 1, the monitoring results for the 73 wells sampled showed that 51 wells had no or minimal change from the previous monitoring period measurements. Changes in % LEL, % by volume CH<sub>4</sub>, and % volume O<sub>2</sub> were evaluated to determine if the wells were showing an indication of increasing or decreasing methane gas content. Of the remaining 22 wells, 6 showed increases in methane, with 4 of those only slight increases and 16 showed decreases with 11 of those well showing slight decrease.

Table 2 shows the current monitoring schedule including which wells are monitored bi-weekly and which wells are monitored monthly or at a different frequency. The schedule also includes those wells which will be monitored semi-weekly or weekly at the start up of the injection system for any changes as a result of system start up.

#### Hand Held Measurements

Petroglyph conducts periodic ground surveys using a hand held methane detector at locations where gas has previously been detected, at locations where a property owner requests such a survey or at locations where previous surveys such as the helicopter survey have detected gas seepage. These surveys are conducted based on need or urgency so can range from several times a week to a one time survey based on concerns from a property owner.

During the reporting period, only one series of hand held measurements were taken at the Jack Fisher residence on 1/20/09.

#### Helicopter Survey

Petroglyph completed a helicopter survey for methane seepage (May 16, 17, and 18, 2008) and provided that data to the COGCC under separate cover. Hand held methane detector ground surveys have been conducted for areas where the helicopter survey indicated a potential new presence of methane or to confirm other helicopter readings. These hand held surveys have been completed for the May helicopter survey.

### **4.0 Mitigation**

#### Methane Alarms

There are currently a total of 14 homes with alarm systems provided by Petroglyph and that number has not changed from previous reports. Petroglyph's contractor has completed the updating of alarm systems for 9 homeowners who requested the updated system with both visual and audible alarms. No alarms have ever been triggered by the presence of methane.

#### Water Supply

Petroglyph is currently providing water to 15 homes. No new names were added to the list during this reporting period. Table 5 provides a list of the homes currently receiving water. Water is delivered as needed and can vary from month to month due to residential water use and whether or not the homes are occupied.

#### Other

#### Public Outreach

Craig Saldin attended a River Ridge Board of Manager's Meeting on January 24, 2009.

#### Health and Safety/Emergency Planning

No changes to Petroglyph's health, safety and emergency planning occurred during the reporting period. Petroglyph did replace a 2" pvc vent valve with 2" steel valve on the Bruington well on 1/8/09, and modified the well cap, and installed a new well vent tube at the Fitzner well on 1/22/09.

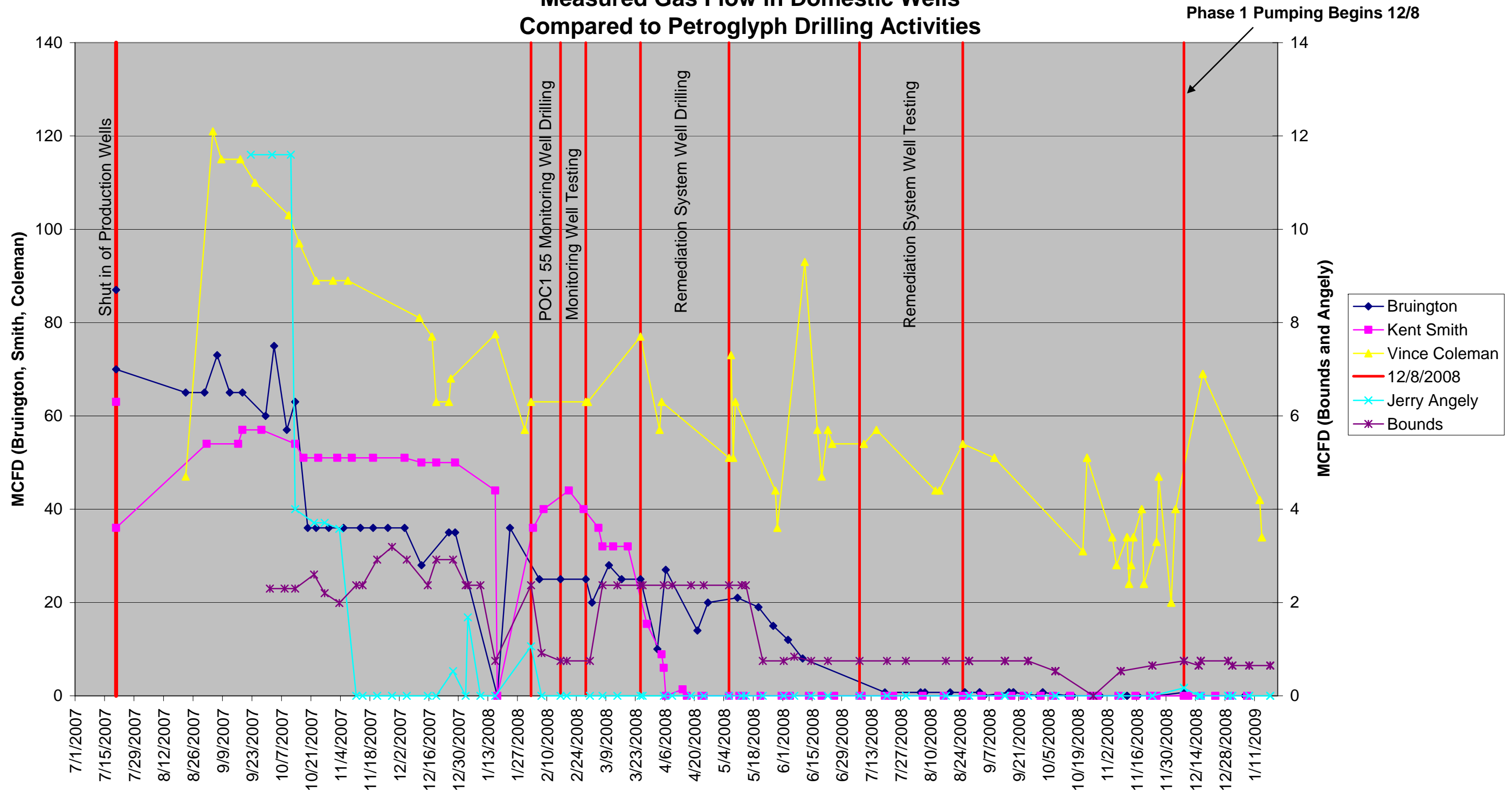


## **5.0 Schedule**

The following is the currently anticipated schedule for Phase I and Phase II of the Methane Investigation Monitoring and Mitigation Program.

- Continued pumping and injection of the Phase I system with ongoing monitoring to evaluate the response in surrounding wells.
- Additional well development for Recovery 4 Barrett will occur in mid to late February.
- Publication of the draft Phase II UIC permit by EPA is expected to occur in mid-to late February.
- Filing through the Colorado Division of Water Resources for a change in the permitted pumping and injection wells to allow for the injection of Vermejo Formation water under Phase II will occur in early to mid February.
- Routine bi-weekly and monthly sampling will continue with new sampling sites added as needed. Sampling will be adjusted based on the monitoring results in accordance with the Petroglyph Monitoring and Response Plan submitted to the COGCC on April 7, 2008 and commitments made to COGCC and EPA for monitoring during injection start up.
- Hand held seep monitoring will continue as needed.
- Drilling of the hole on BLM land will occur once all regulatory approvals have been obtained and the weather permits.

**Figure 1**  
**Measured Gas Flow in Domestic Wells**  
**Compared to Petroglyph Drilling Activities**



**Table 1: Recovery and Injection Rates associated with Phase 1 MIMMP**

<b>Well Number</b>	<b>TD</b>	<b>PBTD</b>	<b>Injection Tubing Depth</b>	<b>Start-up Date</b>	<b>Average Injection Rate (gpm)</b>	<b>Water Totals as of 1/21/09 (gal)</b>	<b>Notes</b>
Injection 01 Pascual	600	526	458	12/9/2008	1.5	52,220	
Injection 02 Gonzales	600	575	362	12/10/2008	0.87	49,730	
Injection 03 Benevides	725	629	454	12/10/2008	0.71	41,040	
Injection 04 Rohr	675	667	455	12/9/2008	4.40	213,900	
Injection 05 Rohr	750	735	458	12/10/2008	4.70	231,900	
Injection 06 Masters	725	695	438	12/10/2008	3.20	158,300	
Injection 07 Walden	750	713	457	12/10/2008	0.49	22,000	
Injection 08 Haeffner	650	713	365	12/10/2008	see note	560	Well does not accept water very well. Total water injected as of 1/21/09 is 560 gallons.
			<b>Pump Depth</b>		<b>Average Pump Rate (gpm)</b>		
Recovery 1 Kittleson	715	705	686	12/8/2008	16.30	785,000	
Recovery 3 PEI	625	591	575	12/8/2008	1 (see note)	49,220	Intermittent pumping at 4 gpm. Rate over 24 hrs is approx 1 gpm
Recovery 4 Barrett	500	484	463	see note			Waiting on electrical inspection

**Table 2: Sampling of Dissolved Gases in Water Wells during December, 2008**

Sample Name	Date	Parameter	Result	Unit	Lab ID
Burge, K. WW	12/18/2008	Ethane, dissolved	0.0023	mg/L	08-9702-01
Burge, K. WW	12/18/2008	Ethene, dissolved	<0.048	mg/L	08-9702-01
Burge, K. WW	12/18/2008	Methane, dissolved	3.6	mg/L	08-9702-01
Coleman V. WW	12/4/2008	Ethane, dissolved	0.065	mg/L	GAS121610
Coleman V. WW	12/4/2008	Ethene, dissolved	<0.048	mg/L	GAS121610
Coleman V. WW	12/4/2008	Methane, dissolved	5.9	mg/L	GAS121610
Conley, J. WW	12/4/2008	Ethane, dissolved	<0.0016	mg/L	GAS121614
Conley, J. WW	12/4/2008	Ethene, dissolved	<0.0024	mg/L	GAS121614
Conley, J. WW	12/4/2008	Methane, dissolved	0.0015	mg/L	GAS121614
English, B. WW	12/8/2008	Ethane, dissolved	<0.0016	mg/L	GAS121617
English, B. WW	12/8/2008	Ethene, dissolved	<0.0024	mg/L	GAS121617
English, B. WW	12/8/2008	Methane, dissolved	0.0008	mg/L	GAS121617
Goodwin, R. WW	12/15/2008	Ethane, dissolved	<0.0016	mg/L	GAS121617
Goodwin, R. WW	12/15/2008	Ethene, dissolved	<0.0024	mg/L	GAS121617
Goodwin, R. WW	12/15/2008	Methane, dissolved	0.0008	mg/L	GAS121617
Hopke, B. WW	12/29/2008	Ethane, dissolved	<0.008	mg/L	08-9835-01
Hopke, B. WW	12/29/2008	Ethene, dissolved	<0.012	mg/L	08-9835-01
Hopke, B. WW	12/29/2008	Methane, dissolved	0.66	mg/L	08-9835-01
Kerman, T. WW	12/4/2008	Ethane, dissolved	<0.0016	mg/L	GAS121615
Kerman, T. WW	12/4/2008	Ethene, dissolved	<0.0024	mg/L	GAS121615
Kerman, T. WW	12/4/2008	Methane, dissolved	0.0011	mg/L	GAS121615
McPherson, P. WW	12/4/2008	Ethane, dissolved	<0.048	mg/L	GAS121612
McPherson, P. WW	12/4/2008	Ethene, dissolved	<0.012	mg/L	GAS121612
McPherson, P. WW	12/4/2008	Methane, dissolved	0.95	mg/L	GAS121612
Searle, S. WW	12/8/2008	Ethane, dissolved	<0.0016	mg/L	GAS121616
Searle, S. WW	12/8/2008	Ethene, dissolved	<0.0024	mg/L	GAS121616
Searle, S. WW	12/8/2008	Methane, dissolved	0.0058	mg/L	GAS121616
Wolahan E. WW	12/4/2008	Ethane, dissolved	<0.0016	mg/L	GAS121613
Wolahan E. WW	12/4/2008	Ethene, dissolved	<0.0024	mg/L	GAS121613
Wolahan E. WW	12/4/2008	Methane, dissolved	0.21	mg/L	GAS121613

Note: Results are reported as mg/L; µg/L concentrations are derived by multiplying mg/L by 1000.

**Table 3: Water Well Measurements for the Period of December 15, 2008 to January 22, 2009**

Permit Number	Name	Sampling Start Date	Last Sample	Samples Since Last Monthly Report	If sampled, comparison of results from this period to last period
20783	Goemmer Cattle	9/24/2007	10/20/2008	Not sampled during this reporting period	
230572	Willis	7/11/2007	1/13/2009	12/17/08, 12/30/08, and 1/13/09	No change from previous measurements with no detectable methane and O <sub>2</sub> % volume at 20.9
84106	Rohr	7/6/2007	1/13/2009	1/13/2009	No change from previous measurements with no detectable methane and O <sub>2</sub> % volume at 20.9
93386	Lowry	7/12/2007	10/20/2008	Not sampled during this reporting period	
203536	Hurley	8/2/2007	1/13/2009	12/17/08, 12/30/08, and 1/13/09	<p>At the well head:</p> <ul style="list-style-type: none"> <li>· No change in LEL at &gt;100</li> <li>· CH<sub>4</sub> % volume decreased from 31 to 20 (12/17/08) to 11 (12/30/08) and then increased to 24 (1/13/09), the period maximum.</li> <li>· H<sub>2</sub>S increased from 0 to 6.5 (12/17/08), the period maximum, decreased to 1.5 (12/30/08), and exhibited a light odor on 1/13/09.</li> <li>· O<sub>2</sub> % volume increased from 17.4% (the period maximum) and ended the period at 15.9 %.</li> <li>· CO remained at 0</li> </ul> <p>No change at the cistern with no detectable methane and O<sub>2</sub> % volume at 20.9</p>

**Table 3: Water Well Measurements for the Period of December 15, 2008 to January 22, 2009**

Permit Number	Name	Sampling Start Date	Last Sample	Samples Since Last Monthly Report	If sampled, comparison of results from this period to last period
121013	Schafer	8/15/2007	1/12/2009	1/12/2009	No change from previous measurements with no detectable methane and O <sub>2</sub> % volume at 20.9
123144	Searle	7/11/2007	1/12/2009	12/30/08, and 1/12/09	No change from previous measurements with no detectable methane and O <sub>2</sub> % volume at 20.9
169043	Burge	7/11/2007	1/19/2009	12/17/08, 12/22/08, 12/30/08, 1/8/09, 1/13/09 and 1/19/09	No change from previous measurements with 0% LEL, no detectable methane and H <sub>2</sub> S was 0 ppm. O <sub>2</sub> % volume decreased from 20.9 to 15.7 on the last sampling on 1/19/09
181278	Bounds	7/12/2007	12/10/2008	12/17/08, 12/23/08, 12/31/08, 1/7/09, 1/14/09 and 1/21/09	No change from previous sampling with %LEL at 100; O <sub>2</sub> % at 0, and CO at 0, except CH <sub>4</sub> % dropped from 100 to 93 in the first three samples before increasing back to 100. H <sub>2</sub> S increased from 0.1 to 6.5 ppm 12/23/08 and then dropped to 0 ppm.
191079	Brian Dale	8/15/2007	1/14/2009	12/17/08 and 1/14/09	At well #1: <ul style="list-style-type: none"> <li>· %LEL decreased from &gt;100 to 0.</li> <li>· CH<sub>4</sub> % volume decreased from 5 to 0.</li> <li>· O<sub>2</sub> % volume increased from 8.4 to 20.9.</li> <li>· CO remained at 0 ppm</li> <li>· H<sub>2</sub>S decreased from 2 to 0 ppm.</li> </ul> At Well #2: <ul style="list-style-type: none"> <li>· %LEL decreased from 33 to 0.</li> </ul>

**Table 3: Water Well Measurements for the Period of December 15, 2008 to January 22, 2009**

Permit Number	Name	Sampling Start Date	Last Sample	Samples Since Last Monthly Report	If sampled, comparison of results from this period to last period
					<ul style="list-style-type: none"> <li>· CH<sub>4</sub> % volume decreased from 2 to 0.</li> <li>· O<sub>2</sub> % volume increased from 13.9 to 18.4 (12/17/08) and then 20.9 (1/14/09).</li> <li>· CO and H<sub>2</sub>S remained at 0 ppm. There was a light odor associated of H<sub>2</sub>S on 12/17/08.</li> </ul>
192144	Snow	8/2/2007	1/14/2009	12/15/08 and 1/14/09	No change from previous measurements with 0% LEL, no detectable methane and O <sub>2</sub> % volume at 20.9. H <sub>2</sub> S was 0 ppm
192203	Rankins	7/12/2007	1/14/2009	1/14/2009	No change from previous measurements with 0% LEL, no detectable methane and O <sub>2</sub> % volume at 20.9. H <sub>2</sub> S was 0 ppm
193520X	McEntee	8/2/2007	1/14/2009	12/17/08, 12/23/08, and 1/14/09	<ul style="list-style-type: none"> <li>· No changes from the previous month's measurements with %LEL, CH<sub>4</sub>, CO and H<sub>2</sub>S % at 0. O<sub>2</sub> % increased from 20.3 to 20.9.</li> <li>· At east wellhead there were no changes from the previous month's measurements with %LEL and CH<sub>4</sub> % at 0, O<sub>2</sub> % at 20.9, and CO and H<sub>2</sub>S remained at 0</li> </ul>
196371	Lyon	8/15/2007	1/12/2009	12/15/08, and 1/12/09	No change from previous measurements with 0% LEL, no detectable methane and O <sub>2</sub> % volume at 20.9. H <sub>2</sub> S was 0 ppm

**Table 3: Water Well Measurements for the Period of December 15, 2008 to January 22, 2009**

Permit Number	Name	Sampling Start Date	Last Sample	Samples Since Last Monthly Report	If sampled, comparison of results from this period to last period
197472	Williams/Bartlett	8/15/2007	11/19/2008	Not sampled during reporting period	Previous results showed 0% LEL, no detectable methane and O <sub>2</sub> % volume at 20.9. H <sub>2</sub> S was 0 ppm
205195	Johnson	8/15/2007	1/14/2009	12/17/08, 12/31/08, and 1/14/09	<p>No change from previous measurements with 0% LEL, no detectable methane and O<sub>2</sub>% volume at 20.9. H<sub>2</sub>S was 0 ppm</p> <p>Values at the cistern have remained unchanged with no detectable methane and O<sub>2</sub>% volume at 20.9.</p> <p>The second wellhead exhibited decreases from &gt;100 to zero for %LEL, decreases from 5 to 0.00 for CH<sub>4</sub>%, increases from 0 to 20.9 for O<sub>2</sub> %, steady CO at 0 ppm and H<sub>2</sub>S increasing from light odor to 3.5, and then decreasing to 0 for the rest of the period.</p>
210526	Bruington	8/7/2007	1/20/2009	12/15/08, 12/23/08, 12/30/08, 1/8/09, 1/13/09, 1/20/09	<ul style="list-style-type: none"> <li>· %LEL has not changed at &gt;100</li> <li>· CH<sub>4</sub>% has been variable decreasing from 91 to 30 and ultimately ending the period at 76 % CH<sub>4</sub>.</li> <li>· O<sub>2</sub> % has increased from 0.4 to a high of 16.6 %, ending the period at 7.7 %.</li> <li>· CO increased from 0 ppm to a high of 62 ppm, ending the period at 0 ppm.</li> </ul>



**Table 3: Water Well Measurements for the Period of December 15, 2008 to January 22, 2009**

Permit Number	Name	Sampling Start Date	Last Sample	Samples Since Last Monthly Report	If sampled, comparison of results from this period to last period
					<ul style="list-style-type: none"> <li>· H2S initially increased from 2.5 to 5 ppm and ended the period at 2.0 ppm following variable readings.</li> </ul> Values at the cistern were unchanged at 0 for all except O2 which was 20.9.
215706	Brice	7/12/2007	1/12/2009	12/22/08 and 1/12/09	No change from previous measurements with no detectable methane and O2% volume at 20.9
219376	White	8/2/2007	1/14/2009	12/15/08 and 1/14/09	<ul style="list-style-type: none"> <li>· %LEL was steady at 0 %</li> <li>· CH4 % was steady at 0 %</li> <li>· O2 % was steady at 20.9 %</li> <li>· CO increased from 0 to a maximum of 0.5 ppm, and ended the period at 0 ppm.</li> <li>· H2S was steady at 0 %</li> </ul>
221465	Evenden	8/2/2007	1/12/2009	12/15/08, 12/29/08, and 1/12/09	<ul style="list-style-type: none"> <li>· %LEL was variable, increasing 5 to 7 ppm, dropping to 5 ppm, then increasing to &gt;100 ppm at the last reading</li> <li>· CH4 % increased from 0.25 to 5.00% at the last reading</li> <li>· O2 % decreased from 20.9 to 12</li> <li>· CO stayed the same at 0 ppm</li> <li>· H2S stayed the same at 0 ppm</li> </ul>
222294	Cramer	8/3/2007	1/14/2009	1/15/2008 and 1/14/09	No change from previous measurements with no detectable methane and O2% volume at 20.9
222539	Lively	7/6/2007	1/13/2009	12/16/08, 12/29/08, and	No change from previous measurements with no detectable methane and O2% volume at 20.9

**Table 3: Water Well Measurements for the Period of December 15, 2008 to January 22, 2009**

Permit Number	Name	Sampling Start Date	Last Sample	Samples Since Last Monthly Report	If sampled, comparison of results from this period to last period
				1/13/09	
35292	Kerman/Hanson	7/6/2007	1/19/2009	12/16/08, 12/18/08, 12/22/08, 12/30/08, 1/6/09, 1/13/09, and 1/19/09	No change at wellhead from before the period to the end of period with 0% LEL, 0.00 CH4 % Vol, 20.9 O2 % Vol, 0 ppm CO and H2S. However % LEL exhibited a single maximum of >100%, CH4 % had a maximum of 14 %, O2 % decreased to 9.8% and 16 % before increasing back to 20.9 %.  No change at the cistern with all values at 0 except O2% which is 20.9.
235516	Colorado Switzer	7/12/2007	1/22/2009	12/15/08, 12/22/08, 12/24/08, 12/30/08, 12/31/08, 1/6/09, 1/9/09, 1/12/09, 1/14/09, 1/19/09 and 1/22/09	No change from previous measurements with no detectable methane and O2% volume at 20.9
236272	Houghtling	7/6/2007	1/22/2009	12/16/08, 12/18/08, 12/22/08, 12/24/08, 12/30/08, 12/31/08, 1/6/09, 1/8/09, 1/12/09, 1/14/09, 1/1/09 and 1/22/09	· % LEL remains unchanged at >100 · CH4 % volume was variable with a period maximum of 100 % and ending the period with a 90 % · O2% volume increased from 2.5% to a period maximum of 20.9 %, decreasing to end the period at 0 %.

**Table 3: Water Well Measurements for the Period of December 15, 2008 to January 22, 2009**

Permit Number	Name	Sampling Start Date	Last Sample	Samples Since Last Monthly Report	If sampled, comparison of results from this period to last period
					<ul style="list-style-type: none"> <li>· CO was 0 ppm for most of the period, increasing once to 27 ppm on 1/1/09.</li> <li>· H2S was predominantly 0 ppm but had a period maximum of 1.5 ppm.</li> </ul> Cistern exhibited 0% LEL, no detectable methane and O2% volume at 20.9. CO and H2S were 0 ppm
238689	Angely	7/5/2007	1/21/2009	12/17/08, 12/23/08, 12/31/08, 1/7/09, 1/14/09, and 1/21/09	<ul style="list-style-type: none"> <li>· %LEL decreased from 100 to 0% during the period, ending at 3 %.</li> <li>· CH4 % volume has decreased from 5 to 0 at the end of the period</li> <li>· O2% volume increased from 19.8 to 20.9 at the end of the period.</li> <li>· CO had a period high of 29 ppm, but was zero the rest of the period. H2S remained unchanged at 0 ppm</li> </ul>
239657	Smith	7/5/2007	1/22/2009	12/16/08, 12/18/08, 12/22/08, 12/24/08, 12/30/08, 12/31/08, 1/6/09, 1/8/09, 1/13/09, 1/14/09	At Wellhead: All values at 0 except O2% which is at 20.9 At Well Vent: <ul style="list-style-type: none"> <li>· % LEL no change from &gt;100</li> <li>· CH4 % was variable, but decreased from 43 to 11 during the period, and ended at 22 %</li> </ul>

**Table 3: Water Well Measurements for the Period of December 15, 2008 to January 22, 2009**

Permit Number	Name	Sampling Start Date	Last Sample	Samples Since Last Monthly Report	If sampled, comparison of results from this period to last period
					<ul style="list-style-type: none"> <li>· O2% volume was variable, but increased from 6.1 to 18.6%, ending the period at 15.1 %</li> <li>· H2S and CO remain at 0 ppm</li> </ul> The cistern showed unchanged values with 0%LEL, no detectable methane, O2% at 20.9, and CO and H2S were 0 ppm.
240947	Wolahan	7/12/2007	1/19/2009	12/16/08, 12/22/08, 12/31/08, 1/6/09, 1/12/09, 1/19/09	No change from previous measurements with 0 % LEL, no detectable methane, CO and H2S at 0 ppm. O2 % increased from 16 to 20.9. There was no change at the cistern with no detectable methane and O2% at 20.9.
244403	Bergman	7/6/2007	12/11/2008	12/16/08, 12/18/08, 12/22/08, 12/24/08, 12/30/08, 12/31/08, 1/6/09, 1/8/09, 1/13/09, 1/14/09, 1/19/09 and 1/20/09	<ul style="list-style-type: none"> <li>· % LEL decreased from &gt;100 to 73 % 12/16/08, returning to &gt;100 for the rest of the period.</li> <li>· CH4 % volume has decreased from 50 to 4 % and then exhibited variable behavior, ending the period with 13.6 %</li> <li>· O2% volume has increased 3.5 to a high of 20.5 % and ending the period at 13.6 %.</li> <li>· H2S and CO were predominantly unchanged at 0 ppm, with a single CO spike of 2 ppm on 1/6/09.</li> </ul>

**Table 3: Water Well Measurements for the Period of December 15, 2008 to January 22, 2009**

Permit Number	Name	Sampling Start Date	Last Sample	Samples Since Last Monthly Report	If sampled, comparison of results from this period to last period
246775	Sharp	9/9/2007	1/13/2009	12/17/08, 12/31/08, and 1/13/09	No change from previous measurements with no detectable methane and O2% volume at 20.9
248680	Campbell	8/14/2007	1/13/2009	1/13/2009	No change from previous measurements with no detectable methane and O2% volume at 20.9
248862	Meyer	8/14/2007	1/13/2009	12/17/08, 12/31/08, and 1/13/09	<ul style="list-style-type: none"> <li>· % LEL stayed the same at &gt;100%</li> <li>· CH4 % volume increased from 75 to 79 %, before ending the period at 69 %</li> <li>· O2% volume has increased from 0 to 13.5 and dropped to 5.5 at the end of the period</li> <li>· CO was zero and increased to 15 ppm at the end of the period.</li> <li>· H2S has decreased from a slight odor to 0.</li> </ul>
248983	Tobias	8/3/2007	1/13/2009	12/17/08, 12/30/08, and 1/13/09	<ul style="list-style-type: none"> <li>· % LEL decreased from 85 to 40 % with a high during the period of &gt;100 %.</li> <li>· CH4 % volume has decreased from 4.25 to 2.00 at the end of the period with a maximum value of 5.00 % 12/30/08</li> <li>· O2 has decreased from 19.4 to 18.4, increasing at the end of the period to 20.7%.</li> <li>· No change for CO or H2S at 0 ppm</li> </ul>
249181	Hentschel	9/9/2007	1/13/2009	12/17/08, 12/31/08, and 1/13/09	No change from previous measurements with no detectable methane and O2% volume at 20.9 %.

**Table 3: Water Well Measurements for the Period of December 15, 2008 to January 22, 2009**

Permit Number	Name	Sampling Start Date	Last Sample	Samples Since Last Monthly Report	If sampled, comparison of results from this period to last period
250369	Martin	7/12/2007	1/12/2009	12/16/08 and 1/12/09	No change from previous measurements with no detectable methane and O2% volume at 20.9
252931	Derowitsch	7/6/2007	12/11/2008	12/15/08, 12/19/08, 12/22/08, 12/24/08, 12/29/08, 12/31/08, 1/6/09, 1/8/09, 1/12/09, 1/14/09, 1/19/09 and 1/22/09	<p>No change from previous measurements at wellhead with no detectable methane and O2% at 20.9.</p> <p>At well vent:</p> <ul style="list-style-type: none"> <li>· %LEL increased from 5 to 16 and then decreased to 0%.</li> <li>· CH4 % was variable, decreasing from 1.2% to 0. The period maximum was 0.8.</li> <li>· O2 % remained at 20.9</li> <li>· CO and H2S remained at 0</li> </ul> <p>At the cistern:</p> <ul style="list-style-type: none"> <li>· %LEL increased from 5 to 12, decreasing to 0 % for the end of the period</li> <li>· CH4 % increased from 0.25 to 0.6 %, decreasing to zero for the rest of the period</li> <li>· O2 % remained at 20.9</li> <li>· CO remained at 0 and H2S was variable, decreasing from 4.5 to a light odor to 0 ppm.</li> </ul>

**Table 3: Water Well Measurements for the Period of December 15, 2008 to January 22, 2009**

Permit Number	Name	Sampling Start Date	Last Sample	Samples Since Last Monthly Report	If sampled, comparison of results from this period to last period
253317	Gonzalez	7/12/2007	1/12/2009	12/16/08 12/31/08 and 1/12/09	No change from previous measurements with 0 % LEL, no detectable methane and O2% volume at 20.9, and 0 ppm CO and H2S, except that O2% volume decreased in one sampling from 20.9 to 20.6 11/4/08 before returning to 20.9 ppm.
254577	Ryerson	9/9/2007	1/13/2009	12/17/08 12/31/08 and 1/13/09	No change from previous measurements with no detectable methane and O2% volume at 20.9
255929	Conley	7/11/2007	1/12/2009	12/30/08 and 1/12/09	No change from previous measurements with 0 % LEL, no detectable methane, 20.9 O2 % volume, and CO and H2S at 0 ppm.
256504	Hopke	7/5/2007	1/20/2009	12/16/08, 12/18/08, 12/22/08, 12/24/08, 12/30/08, 12/31/08, 1/6/09, 1/8/09, 1/13/09, 1/14/09, 1/19/09 and 1/20/09	<p>At wellhead:</p> <ul style="list-style-type: none"> <li>· % LEL at &gt;100 % except for 1/8/09 when it was 68 %.</li> <li>· CH4 % volume variable between 3 and 32 %. The period ended at 25 %.</li> <li>· O2% volume variable with values between 8.1 and 16.9%. The period ended at 14.8 %.</li> <li>· CO remains at 0 except for one value on 1/19/09 of 27 ppm.</li> <li>· H2S increased from 0 to 2.5 ppm at the beginning of the period and then decreased to 0.0 ppm or light odor.</li> </ul> <p>No change at cistern with no detectable methane and O2% volume at 20.9</p>

**Table 3: Water Well Measurements for the Period of December 15, 2008 to January 22, 2009**

Permit Number	Name	Sampling Start Date	Last Sample	Samples Since Last Monthly Report	If sampled, comparison of results from this period to last period
257113	Masters #2	7/6/2007	1/22/2009	12/16/08, 12/22/08, 12/24/08, 12/30/08, 12/31/08, 1/6/09, 1/8/09, 1/13/09, 1/14/09, 1/19/09 and 1/22/09	No change from previous measurements with no detectable methane and O2% volume at 20.9
257994	Barrett	7/12/2007	1/22/2009	12/15/08, 12/19/08, 12/22/08, 12/24/08, 12/29/08, 12/30/08, 1/6/09, 1/8/09, 1/12/09, 1/14/09, 1/19/09, and 1/22/09	<ul style="list-style-type: none"> <li>· % LEL remained at &gt;100</li> <li>· CH4 % volume was variable with a range of 5.00 to 28.00%. It ended the period at 16.00 %</li> <li>· O2% volume variable between 15.1 and 19.7 %. It ended the period at 16.9 %.</li> <li>· CO and H2S remained at 0 ppb</li> </ul>
259122	Higgins	9/26/2007	1/13/2009	12/17/08, 12/30/08, and 1/13/09	No change from previous measurements with no detectable methane and O2% volume at 20.9
260097	Dee	7/5/2007	1/12/08	12/31/08 and 1/12/08	No change from previous measurements with no detectable methane and O2% volume at 20.9.
264581	Ireland	7/12/2007	1/19/2009	12/15/08, 12/22/08, 12/30/08, 1/6/09, 1/12/09 and 1/19/09	No change between the beginning and end of the period with 0 % LEL, no detectable methane O2% volume at 20.9, 0 ppm CO and 0 PPM H2S. Mid period, the % LEL was >100 % twice, the maximum for CH4% was 20.9, and CO had a max of 22 ppm. H2S was 0.



**Table 3: Water Well Measurements for the Period of December 15, 2008 to January 22, 2009**

Permit Number	Name	Sampling Start Date	Last Sample	Samples Since Last Monthly Report	If sampled, comparison of results from this period to last period
267694	Coleman	7/5/2007	12/11/2008	12/16/08, 12/18/08, 12/22/08, 12/24/08, 12/29/08, 12/30/08, 1/6/09, 1/8/09, 1/12/09, 1/14/09, 1/19/09 and 1/22/09	No changes from previous measurements for wellhead with no detectable methane and O2% volume at 20.9.  At well vent: <ul style="list-style-type: none"> <li>· %LEL ranged from 0 to 100, ending the period at 11%.</li> <li>· CH4 % was variable ranging from 0 to 28.00 % ending the period with 0.55 %</li> <li>· O2 % was variable with a low of 8.1 and a high and the ending reading of 20.9 %</li> <li>· CO and H2S remained at 0 with H2S reading of 1.0 ppm on 12/18</li> </ul>
267695	Speh	9/4/2007	1/13/2009	12/15/08, 12/30/08 and 1/13/09	No change from previous measurements with no detectable methane and O2% volume at 20.9. A slight odor of H2S was noted 12/2/08.
269435	Goacher	7/11/2007	10/6/2008	Not sampled during this reporting period	
270552	Chaves	9/9/2007	1/13/2009	12/17/08, 12/31/08 and 1/13/09	No change from previous measurements with no detectable methane and O2% at 20.9.
271136	May	7/12/2007	1/12/2009	12/22/08 and 1/12/09	No change from previous measurements with no detectable methane and O2% volume at 20.9
274468	Roloff	9/9/2007	11/18/2008	Not sampled during this reporting period	Readings attempted 12/16, 12/30, and 1/12 but gate was locked so no access

**Table 3: Water Well Measurements for the Period of December 15, 2008 to January 22, 2009**

Permit Number	Name	Sampling Start Date	Last Sample	Samples Since Last Monthly Report	If sampled, comparison of results from this period to last period
235515	English	8/16/2007	12/1/2008	Not sampled during this reporting period	Reading attempted 1/12/09 but gate was locked so no access
258815	Goodwin	7/12/2007	1/19/2009	12/15/08, 12/22/08, 12/30/08, 1/6/09, 1/12/09 and 1/19/09	At wellhead, <ul style="list-style-type: none"> <li>· %LEL ranged from 0 to 11 and ended the period at 0 %</li> <li>· %CH4 ranged from 0 to 0.6 ending the period at 0.0 %</li> <li>· O2% ranged from 20.1 to 20.9 ending the period at 20.9</li> <li>· CO an H2S stayed the same at 0 ppm</li> </ul> No change at cistern from previous measurements with no detectable methane and O2% volume at 20.9 except that H2S increased to 2.5 ppm before returning to 0 ppm
16861-F	Golden Cycle Land	7/12/2007	1/22/2009	12/15/08, 12/19/08, 12/22/08, 12/24/08, 12/29/08, 12/31/08, 1/6/09, 1/8/09, 1/12/09, 1/14/09, 1/19/09 and 1/22/09	In last reading at wellhead: <ul style="list-style-type: none"> <li>· %LEL predominantly &gt;100, although there was a single low of 0 during period (12/29/08)</li> <li>· %CH4 ranged from 0 to 100 ending the period at 68 %</li> <li>· O2% ranged from 0 to 20.9 ending the period at 0</li> <li>· CO ranged from 0 to 471 ppm ending the period at 106 ppm.</li> </ul>

**Table 3: Water Well Measurements for the Period of December 15, 2008 to January 22, 2009**

Permit Number	Name	Sampling Start Date	Last Sample	Samples Since Last Monthly Report	If sampled, comparison of results from this period to last period
					· H2S ranged from 0 to 65 ppm ending the period at 3.5 ppm.
84108-A	McPherson	7/6/2007	1/19/2009	12/16/08, 12/22/08, 12/31/08, 1/6/09, 1/13/09 and 1/19/09	No change from previous measurements with no detectable methane and O2% volume at 20.9.
16861-F	Masters #1	8/13/2007	1/22/2009	12/16/08, 12/19/08, 12/22/08, 12/24/08, 12/30/08, 12/31/08, 1/6/09, 1/8/09, 1/13/09, 1/14/09, 1/19/09 and 1/22/09	No change from previous measurements with no detectable methane and O2% volume at 20.9, except that the H2S rose on the last reading to 5 ppm from 0 ppm
	Andreatta	8/14/2007	1/13/2009	12/17/08, 12/30/08 and 1/13/09	No change from previous measurements with no detectable methane and O2% volume at 20.9
	Dernell	8/15/2007	1/12/2009	12/17/08 and 1/12/09	No change from previous measurements with no detectable methane and O2% volume at 20.9
	Lang	10/29/2007	7/28/2008	Not sampled during this reporting period	Sampling attempted 12/29/08 and 1/12/09 but gate was locked preventing access.
220100	Cordova	10/30/2007	1/12/2009	12/15/08, 12/30/08 and 1/12/09	· %LEL increased from 0 to 6%, ending the period at 5 % · CH4% ranged from 0.00 to 0.3 % ending the period at 0.25 % · O2 % Vol ranged from 20 to 20.9

**Table 3: Water Well Measurements for the Period of December 15, 2008 to January 22, 2009**

Permit Number	Name	Sampling Start Date	Last Sample	Samples Since Last Monthly Report	If sampled, comparison of results from this period to last period
					ending the period at 20.7. · CO and H2S remained at 0 ppm throughout the period
234836	White, Jim	1/4/2008	1/12/2009	12/15/08, 12/29/08 and 1/12/09	At wellhead · % LEL decreased from 9 to 0 with 0% throughout the period · CH4 % volume decreased from 0.45 to 0 % throughout the period · O2% volume increased from 16.5 to 20.9, where the level stayed for the period · CO remains at 0 ppm · H2S remained at 0 ppm No change at cistern with no detectable methane and O2% at 20.9.
192509	Eddleman, Paul	1/17/2008	1/12/2009	12/15/08, 12/29/08 and 1/12/09	At the wellhead: · % LEL stayed at 0 % · CH4 % volume stayed at 0% · O2% volume ranged from 20.6 to 20.9% ending the period at 20.9 % · CO stayed at 0 ppm · H2S stayed at 0 ppm during the period
226536	Eddleman, Todd	1/17/2008	1/12/2009	12/15/08, 12/29/08 and 1/12/09	· %LEL decreased from 7 to 6% with a low of 0 %

**Table 3: Water Well Measurements for the Period of December 15, 2008 to January 22, 2009**

Permit Number	Name	Sampling Start Date	Last Sample	Samples Since Last Monthly Report	If sampled, comparison of results from this period to last period
					<ul style="list-style-type: none"> <li>· CH4 % decreased from 0.3 to 0% ending the period at 0%</li> <li>· O2 % increased from 12.8% to 20.9%, ending the period at 20.9%</li> <li>· CO remained steady at 0 ppm</li> <li>· H2S remained steady at 0 ppm</li> </ul>
31935	Garza-Vela	1/30/2008	1/12/2009	12/15/08, 12/29/08 and 1/12/09	<ul style="list-style-type: none"> <li>· %LEL, %CH4 were at 0 % during the period, CO and H2S were at 0 ppm during the period; %O2 was at 20.9 during the period</li> </ul>
271524-A	Modlish	1/30/2008	1/12/2009	12/15/08, 12/29/08 and 1/12/09	<ul style="list-style-type: none"> <li>· %LEL was steady at 0%</li> <li>· CH4 % was steady at 0.0%</li> <li>· O2 % ranged between 16 and 20.9 % ending the period at 16 %</li> <li>· CO remains at 0 ppm</li> <li>· H2S remained at 0.0 ppm</li> </ul>
271748	Sample	3/10/2008	1/12/2009	12/15/08, 12/29/08 and 1/12/09	<p>No change at the wellhead with no detectable methane and O2% at 20.9.</p> <p>No change at cistern with no detectable methane and O2% at 20.9.</p>
197128	Roberts	4/8/2008	1/12/2009	12/15/08, 12/29/08 and 1/12/09	Unable to access on 12/15/08 due to locked gate; other readings showed no detectable methane and O2 % at 20.9 %
258651	Gonzalez	1/13/2009	12/2/2008	12/17/08, 12/30/08, 1/13/09	<p>At wellhead:</p> <ul style="list-style-type: none"> <li>· %LEL did not change at &gt;100</li> </ul>

**Table 3: Water Well Measurements for the Period of December 15, 2008 to January 22, 2009**

Permit Number	Name	Sampling Start Date	Last Sample	Samples Since Last Monthly Report	If sampled, comparison of results from this period to last period
					<ul style="list-style-type: none"> <li>· CH4 % volume decreased from 37 to 27 %, and ended the period at 0 %</li> <li>· O2 % increased from 9.7 to 14.5%, ending the period at 18.4%.</li> <li>· CO remained at 0 ppm</li> <li>· H2S ranged from 0 to 1.5 ppm, ending the period at 0.0 ppm</li> </ul> Measurements at the cistern showed no change with all values with no detectable methane and O2% at 20.9 %.
246350	Gumpert	7/29/2008	1/12/2009	12/15/08, 12/29/08 and 1/12/09	No change from previous measurements with no detectable methane and all values at 0 except for O2 % Vol at 20.9
268180	Billstrand	8/12/2008	1/12/2009	12/15/08, 12/29/08 and 1/12/09	No change from previous measurements with no detectable methane and all values at 0 except for O2 % Vol at 20.9
213070	Stephens	8/12/2008	1/12/2009	12/15/08, 12/29/08 and 1/12/09	No change from previous measurements with no detectable methane with all values at 0 except O2% Vol increased from 16.5 to 20.9 % ending the period at 20.9%  and H2S decreased from 3 to 0 ppm ending the period at 0 ppm.

**Table 3: Water Well Measurements for the Period of December 15, 2008 to January 22, 2009**

Permit Number	Name	Sampling Start Date	Last Sample	Samples Since Last Monthly Report	If sampled, comparison of results from this period to last period
190327	Palmer	8/12/2008	1/12/2009	12/15/08, 12/29/08 and 1/12/09	No change from previous measurements with no detectable methane and all values at 0 except O2% at 20.9 except that H2S ranged from 0 to 2 ppm ending the period with a light odor.
196372	Geiselbrecht	8/12/2008	1/12/2009	12/15/08, 12/29/08 and 1/12/09	No detectable methane with all values at 0 except O2% at 20.9. Also H2S decreased from 1.5 to 0 ppm.
234839	Waltz	8/12/2008	1/12/2009	12/29/08 and 1/12/09	No change from previous measurements with no detectable methane and all values at 0 except O2% at 20.9
193092	Degan	8/25/2008	1/14/2009	12/17/08, 12/31/08 and 1/14/09	<ul style="list-style-type: none"> <li>· %LEL ranged from 5 to &gt;100, ending the period at 11 %</li> <li>· CH4 % ranged from 0.25 to 5%, ending the period at 0.55 %</li> <li>· CO and H2S remain at 0 ppm</li> </ul>
28093MH	Morine	9/10/2008	1/12/2009	12/15/2008 and 1/12/09	% LEL increased from 0 to 5 %; CH4% increased from 0 to 0.25%; O2% decreased from 20.9 to 18.4 %; CO and H2S were at 0 ppm.
35227MH	Morris	10/8/2008	10/8/2008	Not sampled during this reporting period.	Will start sampling again in spring.
214145-A	Fitzner, Paul	11/18/2008	1/12/2009	11/18/2008, 12/1/2008, 12/15/2008, 12/29/2008 and 1/12/2009	% LEL ranged from 0 to >100 %, ending the period at 0%; CH4% ranged from 0 to 5%, ending the period at 0.00%; O2% ranged from 0 to 20.9%, ending the period at 20.9 %; CO ranged from 0 to 5, ending the period at 0 ppm;

**Table 3: Water Well Measurements for the Period of December 15, 2008 to January 22, 2009**

Permit Number	Name	Sampling Start Date	Last Sample	Samples Since Last Monthly Report	If sampled, comparison of results from this period to last period
					and H2S was at 0 ppm.
215807	Brown, Elmo	12/8/2008	1/12/2009	12/8/2008, 12/15/2008, 12/29/2008 and 1/12/2009	No detectable methane and all values at 0 except O <sub>2</sub> % at 20.9
	Lively 10-02	12/22/2008	10/8/2008	12/22/08, 12/24/08, 12/29/08, 12/31/08, 1/6/09, 1/8/09, 1/12/09, 1/14/09, 1/19/09 and 1/22/09	%LEL ranged from 0 to > 100% ending the period at >100 %; CH <sub>4</sub> % ranged from 0 to 15 %, ending the period at 15 %; O <sub>2</sub> % ranged from 0 to 20.9 % ending the period at 0 %; CO ranged from 0 to 700 ppm, ending the period at 700 ppm; H2S ranged from 0 to 36.8 ppm ending the period at 36.8 %.
8719	Goza, Charles and Ruth Anne	1/14/2009	1/14/2009	1/14/2009	No detectable methane and all values at 0 except O <sub>2</sub> % at 20.6



**Table 4**  
**Methane Readings Schedule**  
 (to be Implemented at start of injection as per Petroglyph commitment)  
 Updated Dec. 15, 2008

<u>Landowner</u>	<u>Subdivision</u>	<u>Water Level</u>	<u>Cistern</u>	<u>Semi-Weekly</u>	<u>Weekly</u>	<u>Bi-Weekly</u>	<u>Monthly</u>	<u>Quarterly</u>
<b>Kathy Dee</b>	River Ridge						X	
<b>Wolahan</b>	River Ridge		X		X	X		
<b>R. Gonzalez</b>	River Ridge					X		
<b>Martin</b>	River Ridge						X	
<b>McPherson</b>	River Ridge				X	X		
<b>Rohr</b>	River Ridge							X
<b>Houghtling</b>	River Ridge		X	X		X		
<b>Kent Smith</b>	River Ridge		X	X		X		
<b>Bergman</b>	River Ridge			X		X		
<b>Lively</b>	River Ridge					X		
<b>Kerman</b>	River Ridge		X		X	X		
<b>Speh</b>	River Ridge					X		

<b>Table 4</b> <b>Methane Readings Schedule</b> (to be Implemented at start of injection as per Petroglyph commitment) Updated Dec. 15, 2008								
<u>Landowner</u>	<u>Subdivision</u>	<u>Water Level</u>	<u>Cistern</u>	<u>Semi-Weekly</u>	<u>Weekly</u>	<u>Bi-Weekly</u>	<u>Monthly</u>	<u>Quarterly</u>
<b>Lang</b>	River Ridge		X				X	
<b>Conley</b>	River Ridge						X	
<b>Searle</b>	River Ridge						X	
<b>Roloff</b>	River Ridge	X				X		
<b>Hoppe (Goacher)</b>	River Ridge					X		
<b>Deroswitsch</b>	River Ridge		X	X		X		
<b>Colorado-Switzer</b>	River Ridge			X		X		
<b>Bobby English</b>	River Ridge		X				X	
<b>May</b>	River Ridge						X	
<b>Brice</b>	River Ridge						X	
<b>Richard Goodwin</b>	River Ridge		X		X	X		
<b>Ireland</b>	River Ridge				X	X		
<b>Golden Cycle Land</b>	River Ridge			X		X		

<b>Table 4</b> <b>Methane Readings Schedule</b> (to be Implemented at start of injection as per Petroglyph commitment) Updated Dec. 15, 2008								
<u>Landowner</u>	<u>Subdivision</u>	<u>Water Level</u>	<u>Cistern</u>	<u>Semi-Weekly</u>	<u>Weekly</u>	<u>Bi-Weekly</u>	<u>Monthly</u>	<u>Quarterly</u>
<b>(Goemmer)</b>								
<b>Burge</b>	LaVeta Pines				X	X		
<b>Barrett</b>	River Ridge			X		X		
<b>Bruce Hopke</b>	River Ridge		X	X		X		
<b>Masters # 1</b>	River Ridge			X		X		
<b>Masters # 2</b>	River Ridge	X		X		X		
<b>Coleman</b>	River Ridge			X		X		
<b>Sharp</b>	River Ridge		X			X		
<b>Ryerson</b>	River Ridge					X		
<b>Meyers</b>	River Ridge					X		
<b>Chaves</b>	River Ridge					X		
<b>Hentschel</b>	River Ridge					X		
<b>Rankins</b>	River Ridge							X

<b>Table 4</b> <b>Methane Readings Schedule</b> (to be Implemented at start of injection as per Petroglyph commitment) Updated Dec. 15, 2008								
<u>Landowner</u>	<u>Subdivision</u>	<u>Water Level</u>	<u>Cistern</u>	<u>Semi-Weekly</u>	<u>Weekly</u>	<u>Bi-Weekly</u>	<u>Monthly</u>	<u>Quarterly</u>
Lowry	River Ridge							X
Goemmer Cattle	River Ridge							X
T. Gonzalez	City Ranch		X			X		
Michael Hurley	City Ranch	X	X			X		
Tobias	City Ranch					X		
Higgins	River Ridge	X				X		
Andreatta	Bear Creek						X	
Carsella	Bear Creek						X	
Willis	LaVeta Pines						X	
Janet Campbell	River Ridge						X	
Dale	City Ranch						X	
McEntee	City Ranch					X		
Johnson	City Ranch		X			X		

<b>Table 4</b> <b>Methane Readings Schedule</b> (to be Implemented at start of injection as per Petroglyph commitment) Updated Dec. 15, 2008								
<u>Landowner</u>	<u>Subdivision</u>	<u>Water Level</u>	<u>Cistern</u>	<u>Semi-Weekly</u>	<u>Weekly</u>	<u>Bi-Weekly</u>	<u>Monthly</u>	<u>Quarterly</u>
<b>Cordova</b>	City Ranch		X			X		
<b>Dernell</b>	City Ranch						X	
<b>Schaefer</b>	City Ranch							X
<b>Bruington</b>	WEEKLY							
<b>Orlie White</b>	Silver Spurs	X					X	
<b>Evenden</b>	Silver Spurs					X		
<b>Roberts</b>	Silver Spurs					X		
<b>Snow</b>	Silver Spurs	X					X	
<b>Cramer</b>	Silver Spurs	X	X				X	
<b>Lyon</b>	Silver Spurs						X	
<b>Jim White</b>	Silver Spurs		X			X		
<b>Garza-Vela</b>	Silver Spurs					X		
<b>Modlish</b>	Silver Spurs					X		

<b>Table 4</b> <b>Methane Readings Schedule</b> (to be Implemented at start of injection as per Petroglyph commitment) Updated Dec. 15, 2008								
<u>Landowner</u>	<u>Subdivision</u>	<u>Water Level</u>	<u>Cistern</u>	<u>Semi-Weekly</u>	<u>Weekly</u>	<u>Bi-Weekly</u>	<u>Monthly</u>	<u>Quarterly</u>
<b>Todd Eddleman</b>	Silver Spurs					X		
<b>Paul Eddleman</b>	Silver Spurs					X		
<b>Mitch Sample</b>	Silver Spurs		X			X		
<b>Gumpert</b>	Silver Spurs					X		
<b>Scott Billstrand</b>	Silver Spurs					X		
<b>Lawrence Waltz</b>	Silver Spurs						X	
<b>Stephens</b>	Silver Spurs					X		
<b>Palmer (G/S)</b>	Silver Spurs					X		
<b>Geiselbrecht</b>	Silver Spurs					X		
<b>Rhoades</b>	River Ridge						X	
<b>Morine</b>	Silver Spurs						X	
<b>Bartlett</b>	City Ranch							X
<b>Elmo Brown</b>	Silver Spurs	X						X

<b>Table 4</b> <b>Methane Readings Schedule</b> (to be Implemented at start of injection as per Petroglyph commitment) Updated Dec. 15, 2008								
<u>Landowner</u>	<u>Subdivision</u>	<u>Water Level</u>	<u>Cistern</u>	<u>Semi-Weekly</u>	<u>Weekly</u>	<u>Bi-Weekly</u>	<u>Monthly</u>	<u>Quarterly</u>
Paul Fitzner	Silver Spurs					X		
Lively 10-02	River Ridge			X		X		
Andexler	River Ridge					X		
Charles Goza	Black Hawk					X		
Deagan	City Ranch					X		

**Notes:**

- Semi-Weekly & Weekly monitoring will start once the injection/recovery wells are in operation.**
- Rohr will be checked Quarterly with Rankin, Lowry, and Goemmer Cattle.**
- The Andreatta & Carsella wells are the same well.**
- Garbs & Salazar have been removed at request of homeowner.**
- Betty Morris WW - Will not check over the winter, per request of landowner.**

**Table 5**  
**Residences Receiving Water**

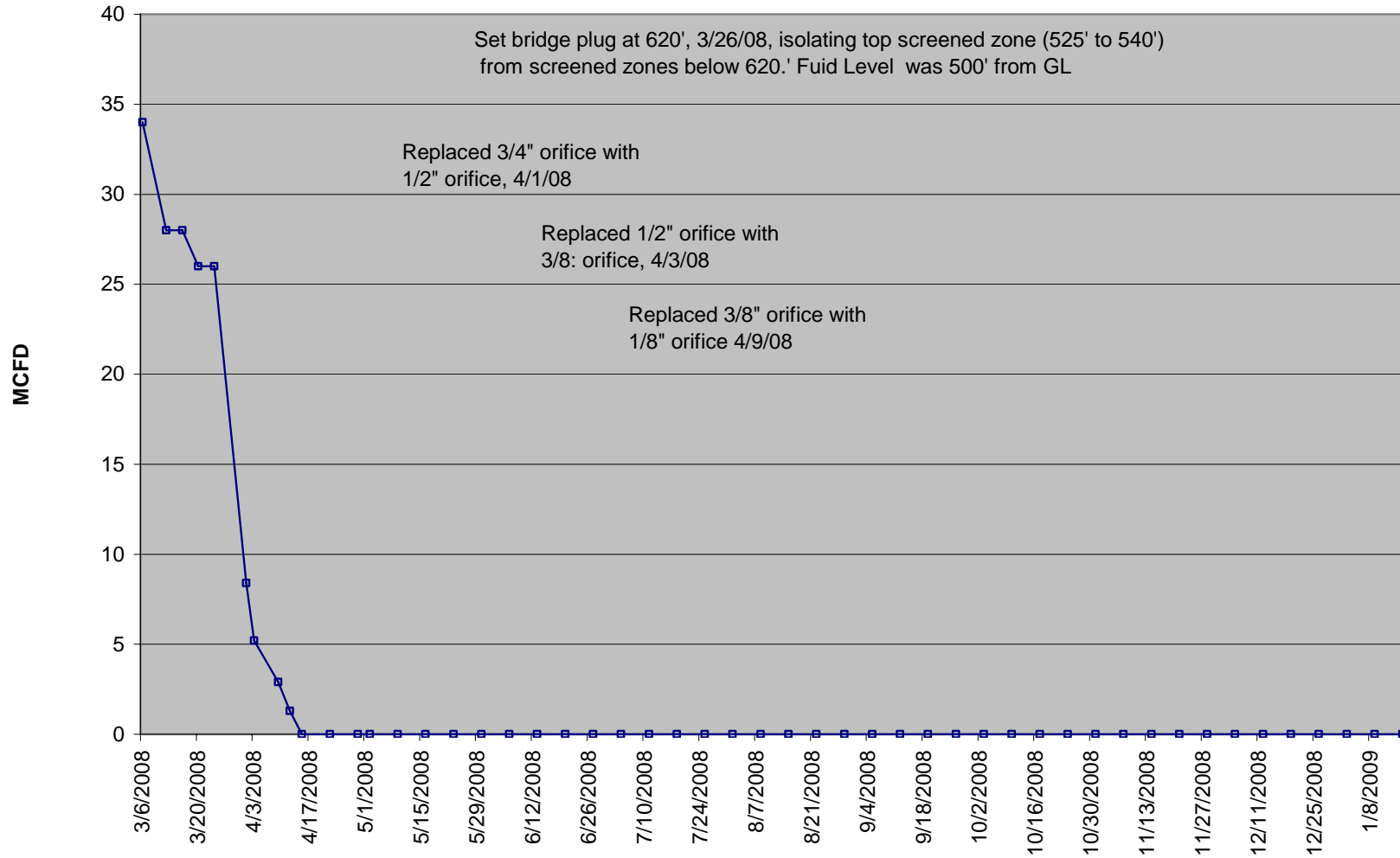
Jerry Angely	Has received water provided by PEI
Kent Smith	Has received water provided by PEI
Alan Cramer	Has received water provided by PEI
Tom Gonzales	Has received water provided by PEI
Spencer/Carol Snow	Has received water provided by PEI
Bruington	Has received water provided by PEI
Todd Eddleman	Has received water provided by PEI
Paul Eddleman	Has received water provided by PEI
Jim White	Has received water provided by PEI
Edward Lyon	New to list as of 3/12/08
Donald Sharp	New to list as of 3/14/08
Edward Johnson	New to list as of 6/6/08
Richard McEntee	New to list as of 7/08/08
P.C. Roberts	New to list as of 8/8/08
Ireland-Murphy	New to list as of 8/18/08

**Note no changes from November Monthly Report.**

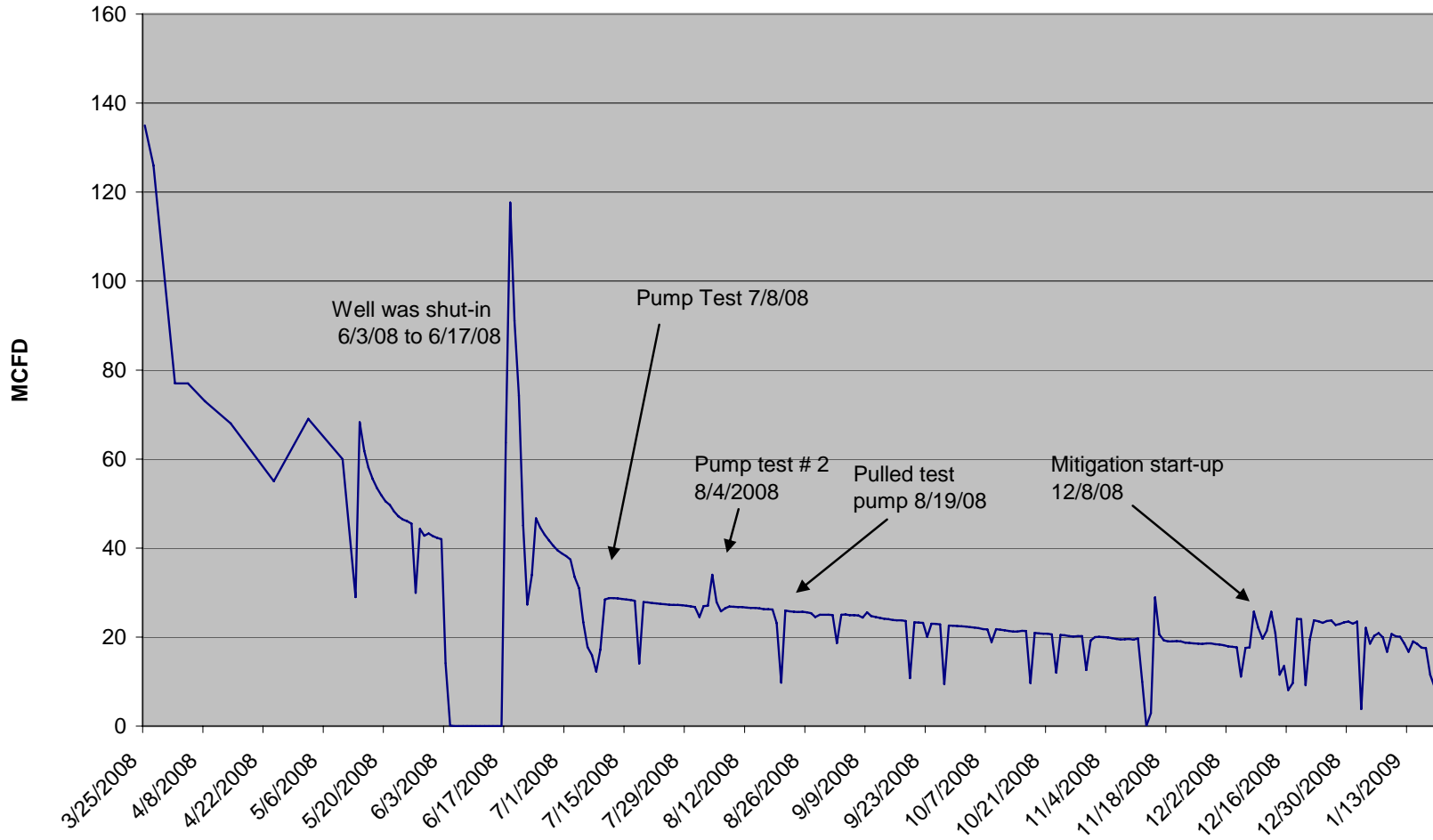


**Attachment 1**  
**Gas Flow in Monitoring Well POCI 55, Recovery 1 Kittleson,**  
**Recovery 3 PEI and Recovery 4 Barrett**

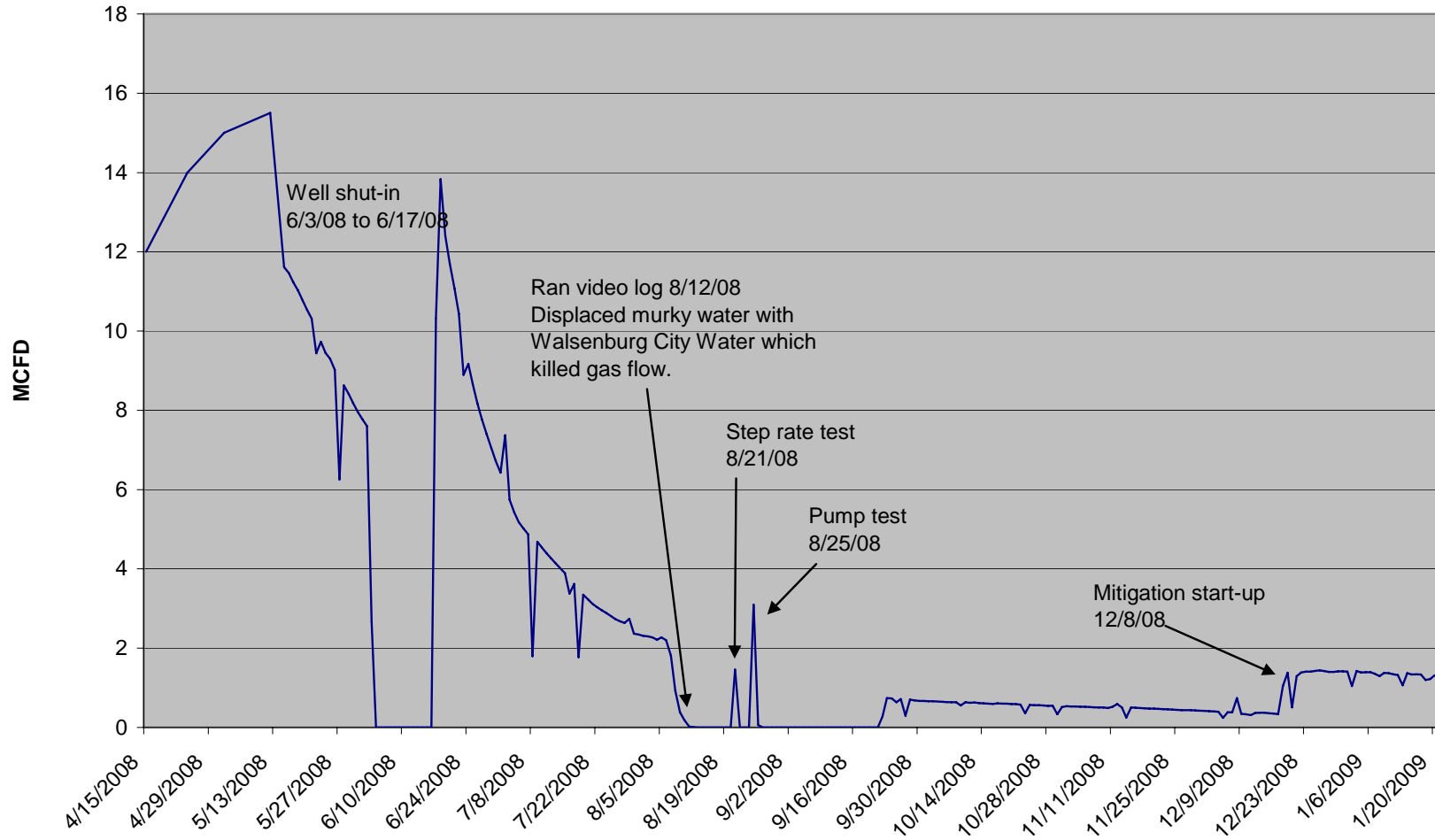
### POCI 55 MW Gas Flow from 3/6/08 to 1/16/09



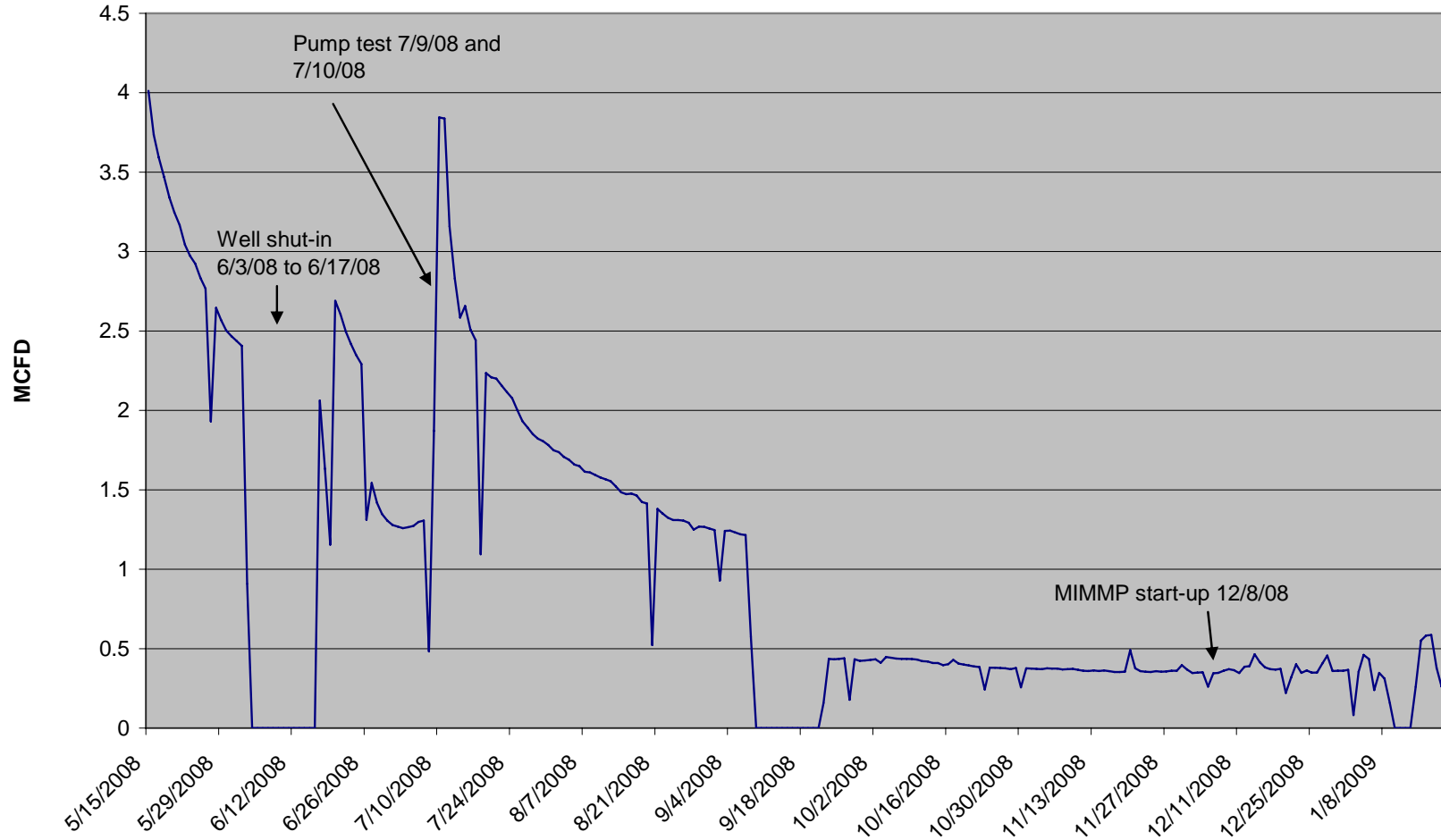
### Recovery 1 Kittleson Gas Flow from 3/25/08 to 1/20/09



### Recovery 3 PEI Gas Flow from 4/15/08 to 1/20/09

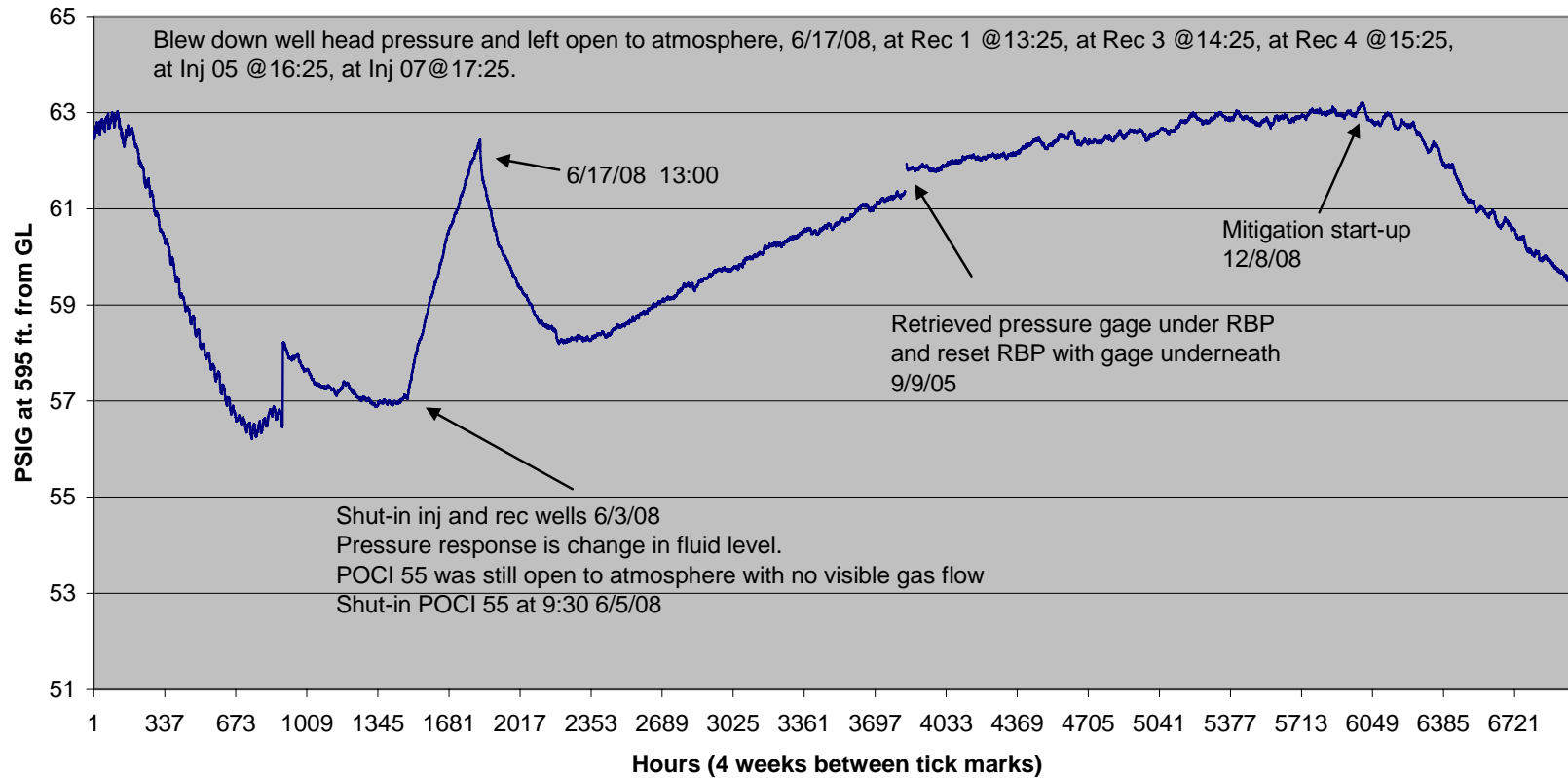


### Recovery 4 Barrett Gas Flow from 5/15/08 to 1/20/09

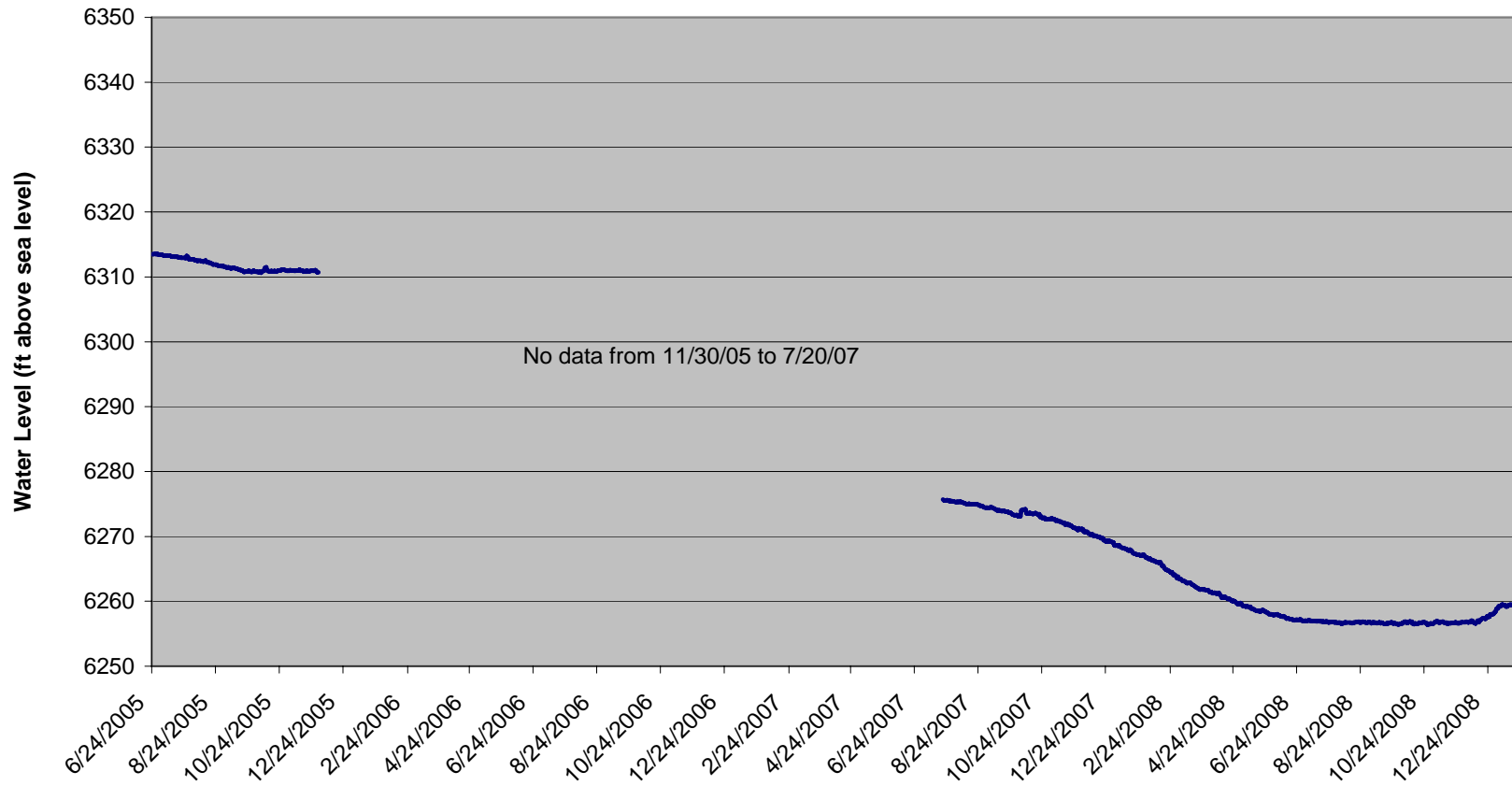


**Attachment 2**  
**Graphs of Pressure and Fluid Level Data From**  
**POCI 55, Barrett, Bergman, Bruington, Coleman, Evendon, Garza-Vela and Meyer**

**POCI 55 Monitor Well from 4/2/08 to 1/20/09**  
**Permit # 275819**  
**Lot 55 RRR**  
**SE SW Sec 3 29S 67W**  
**GL elev. 6690'**

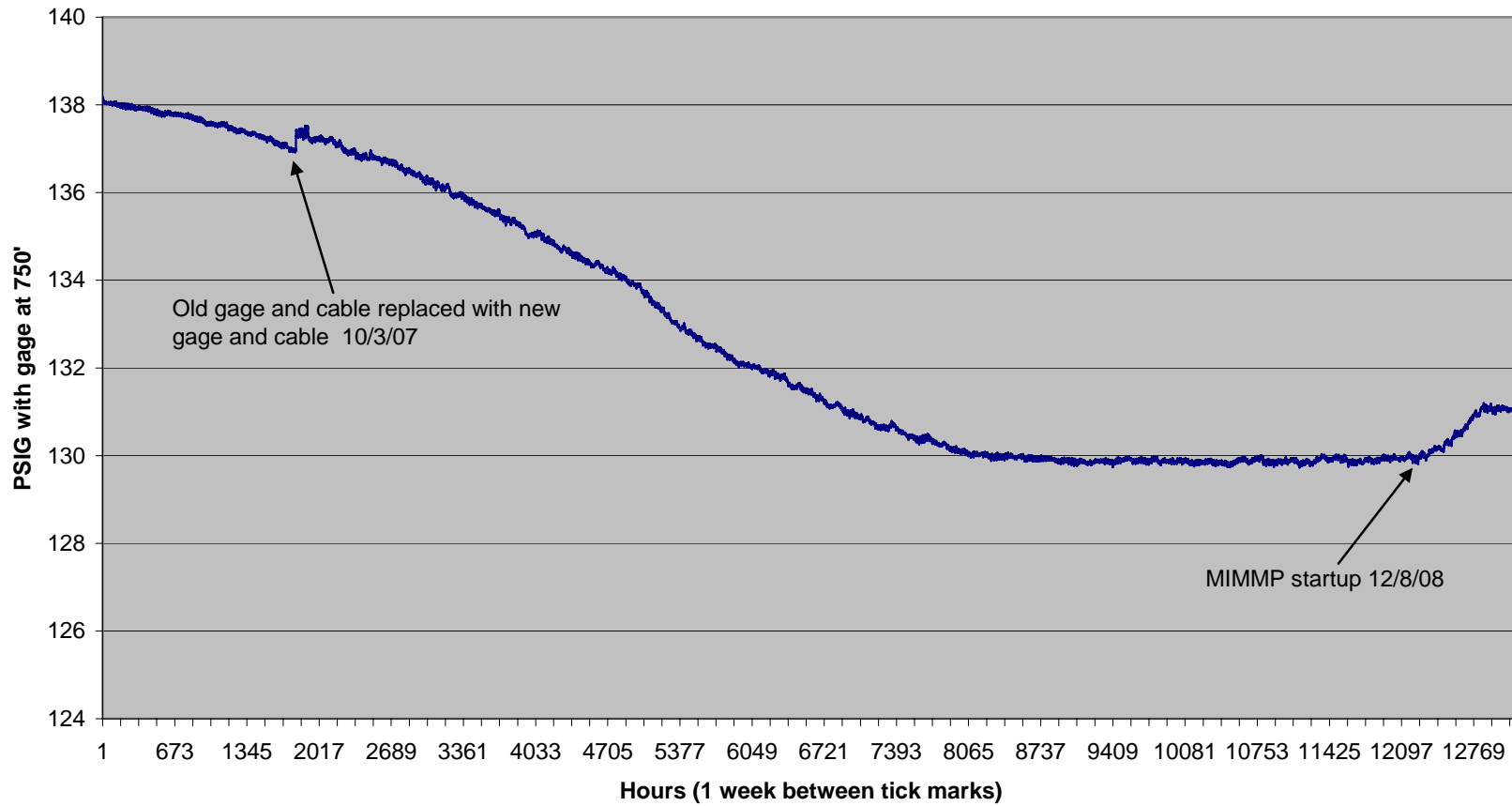


**Barrett WW**  
**Water Level from 6/24/05 to 1/20/09**  
**Permit # 257994**  
**Lot 57 RRR**  
**NW, SE Sec 3, T29S R67W**

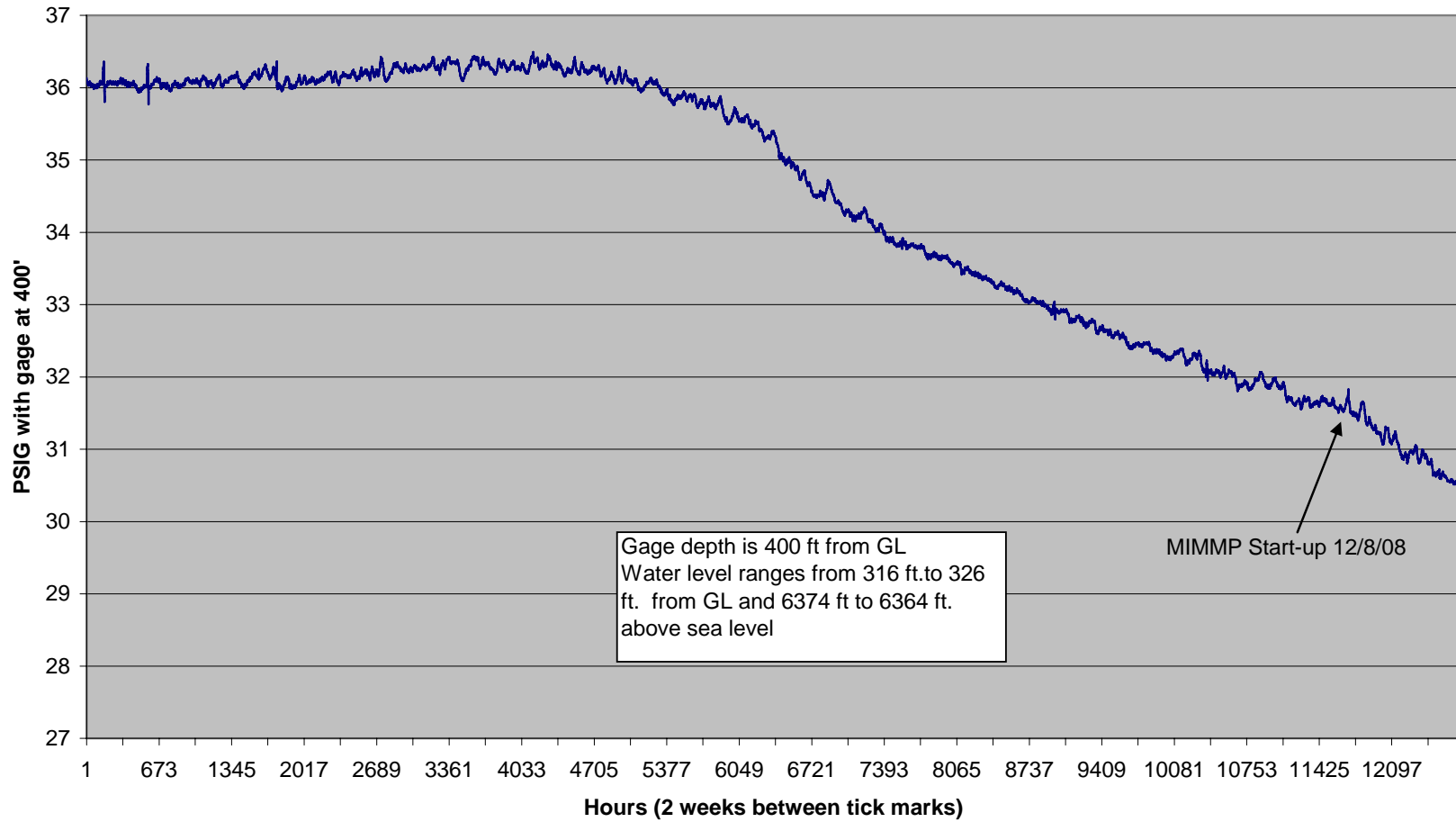




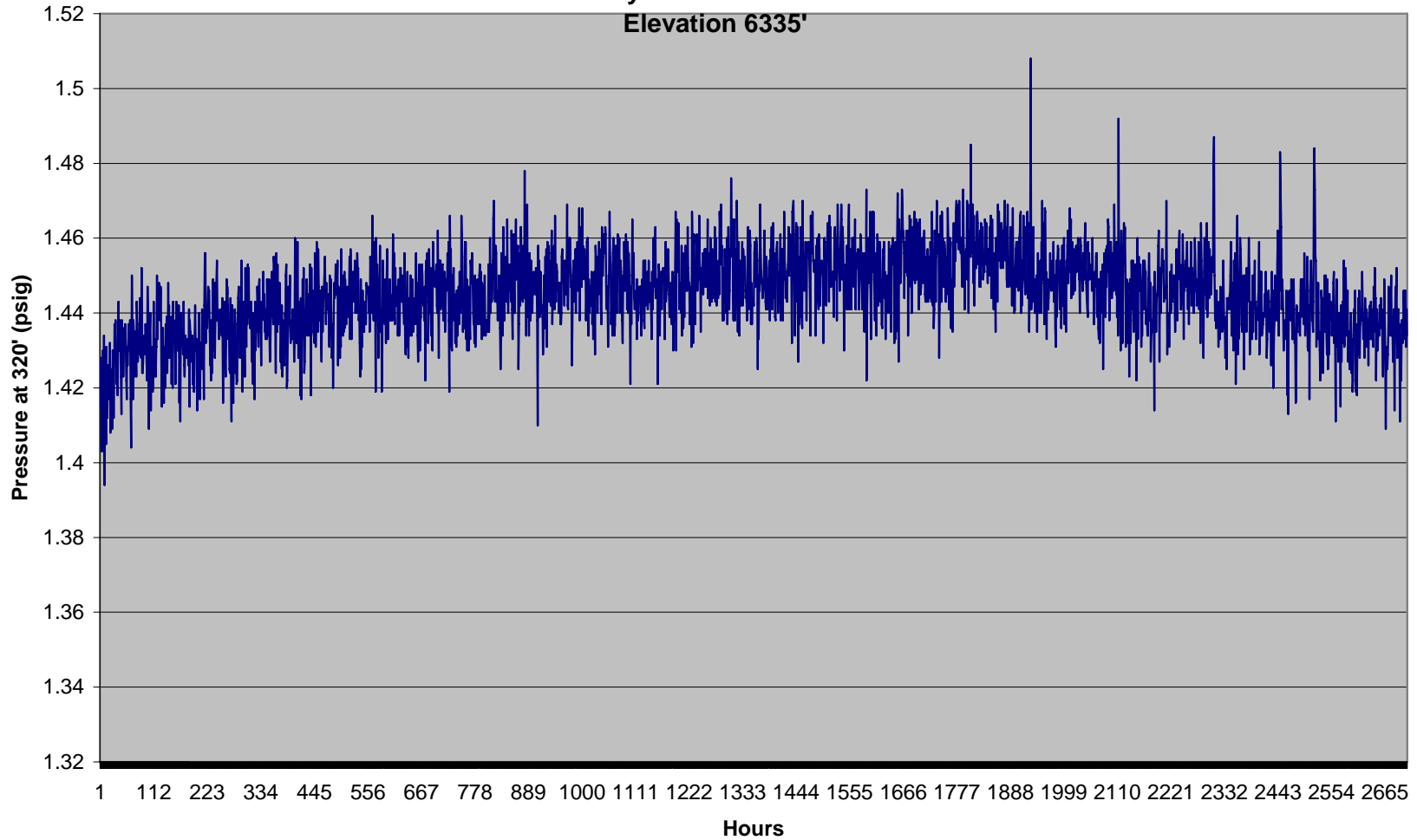
**Barrett WW from 7/20/07 to 1/20/09**  
**Permit # 257994**  
**Lot 57 RRR**  
**NW, SE Sec 3, T29S R67W**  
**G.L. elev. 6707'**



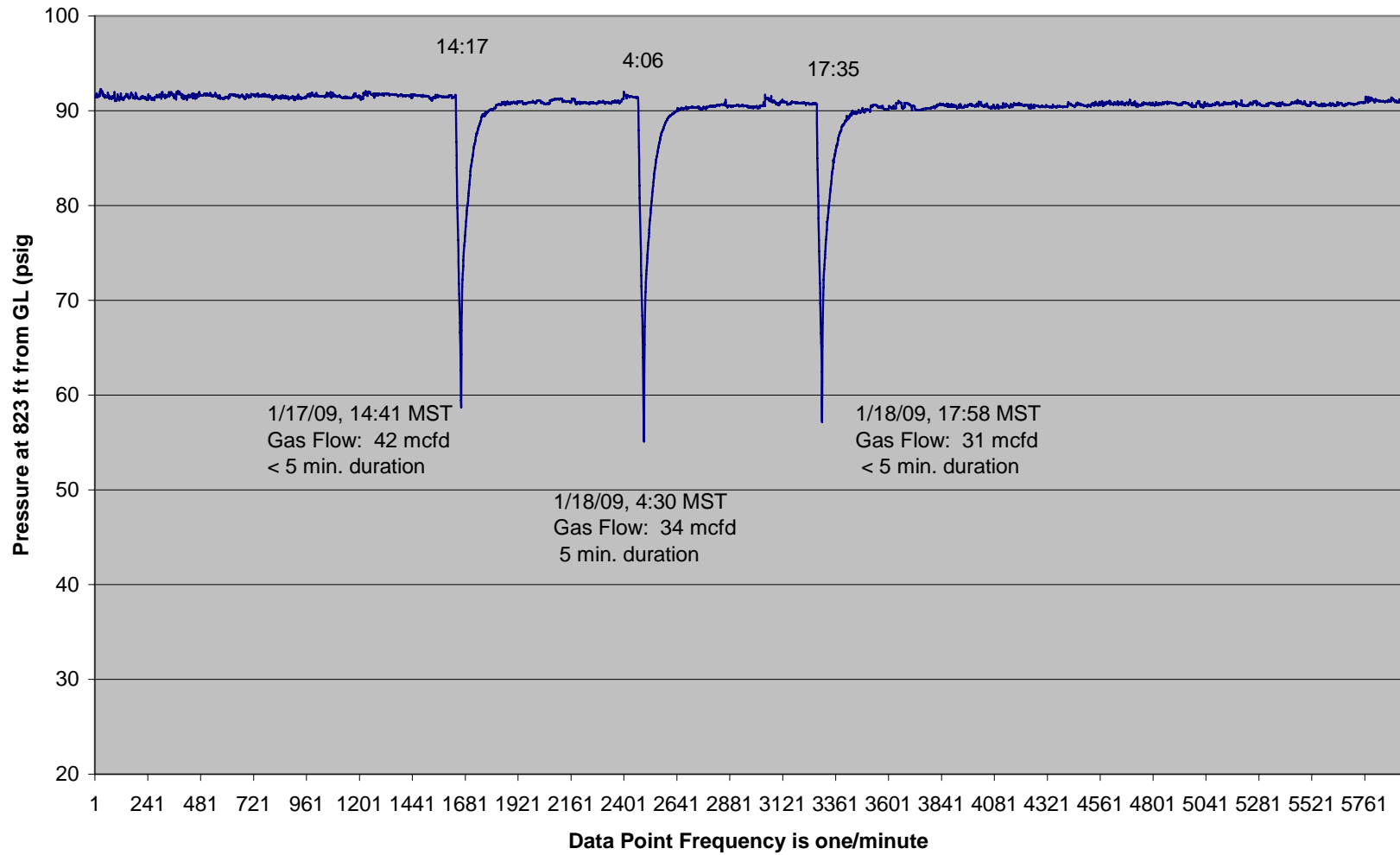
**Bergman WW pressure data from 8/9/07 to 1/20/09**  
**Permit # 24403, SW NW Sec 3 29S 67W**  
**Lot 48 RRR**



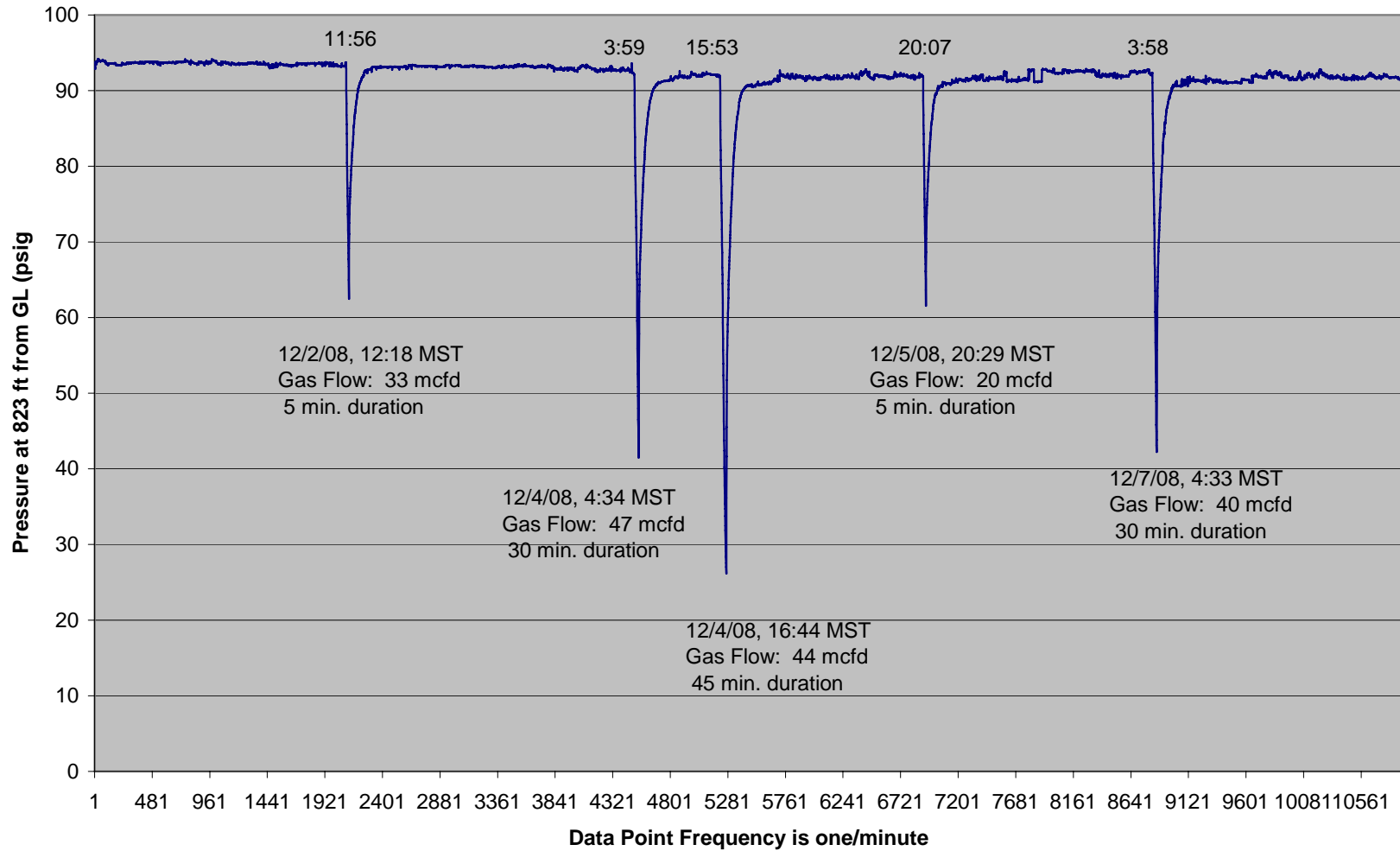
**Pressure at 320' from 9/29/08 to 1/20/09**  
**Bruington WW, Permit # 210526**  
**City Ranches Lot 15**



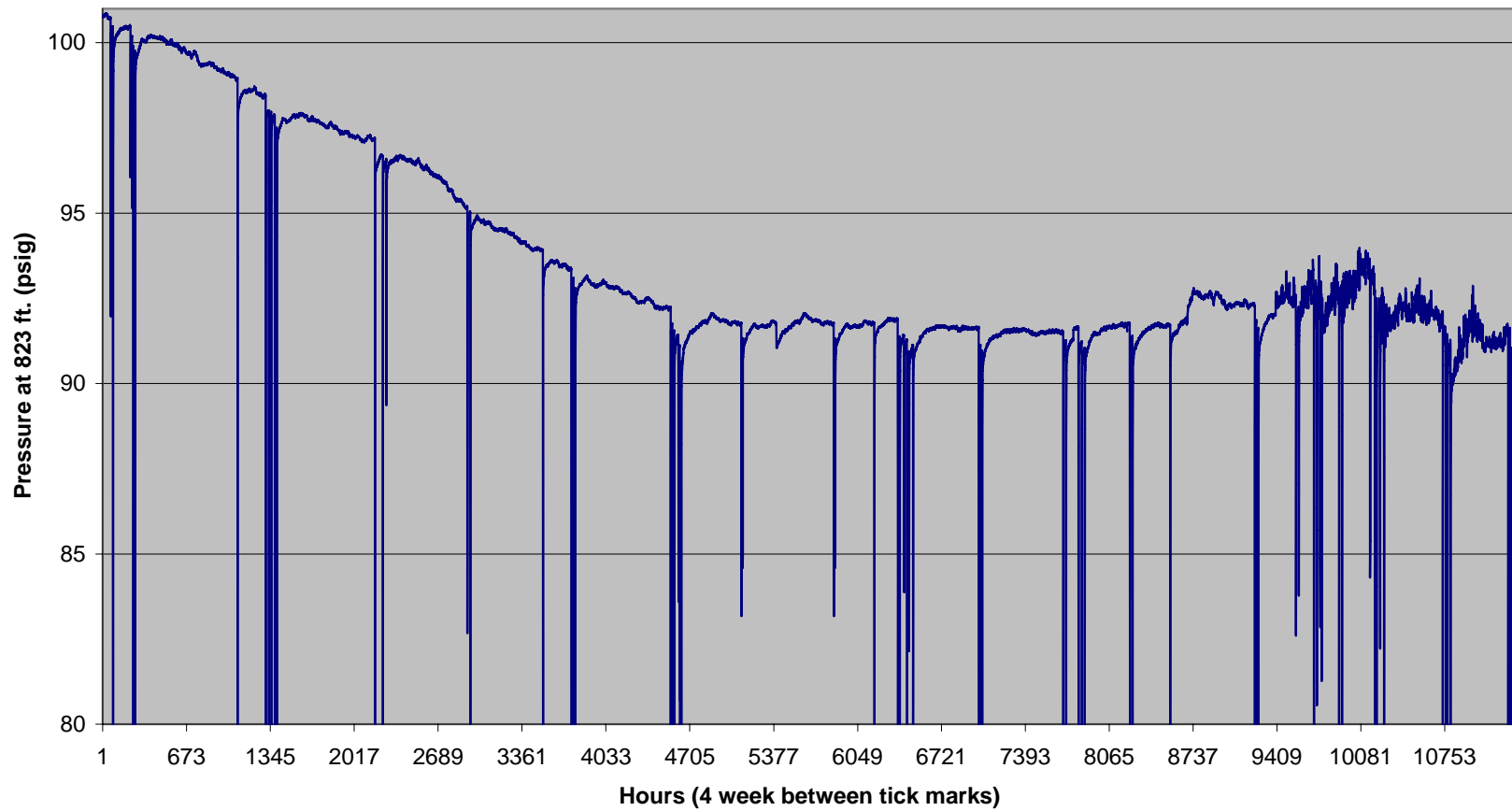
**Coleman WW (GL elev. 6848') Pressure Data from 1/16/09 to 1/20/09**



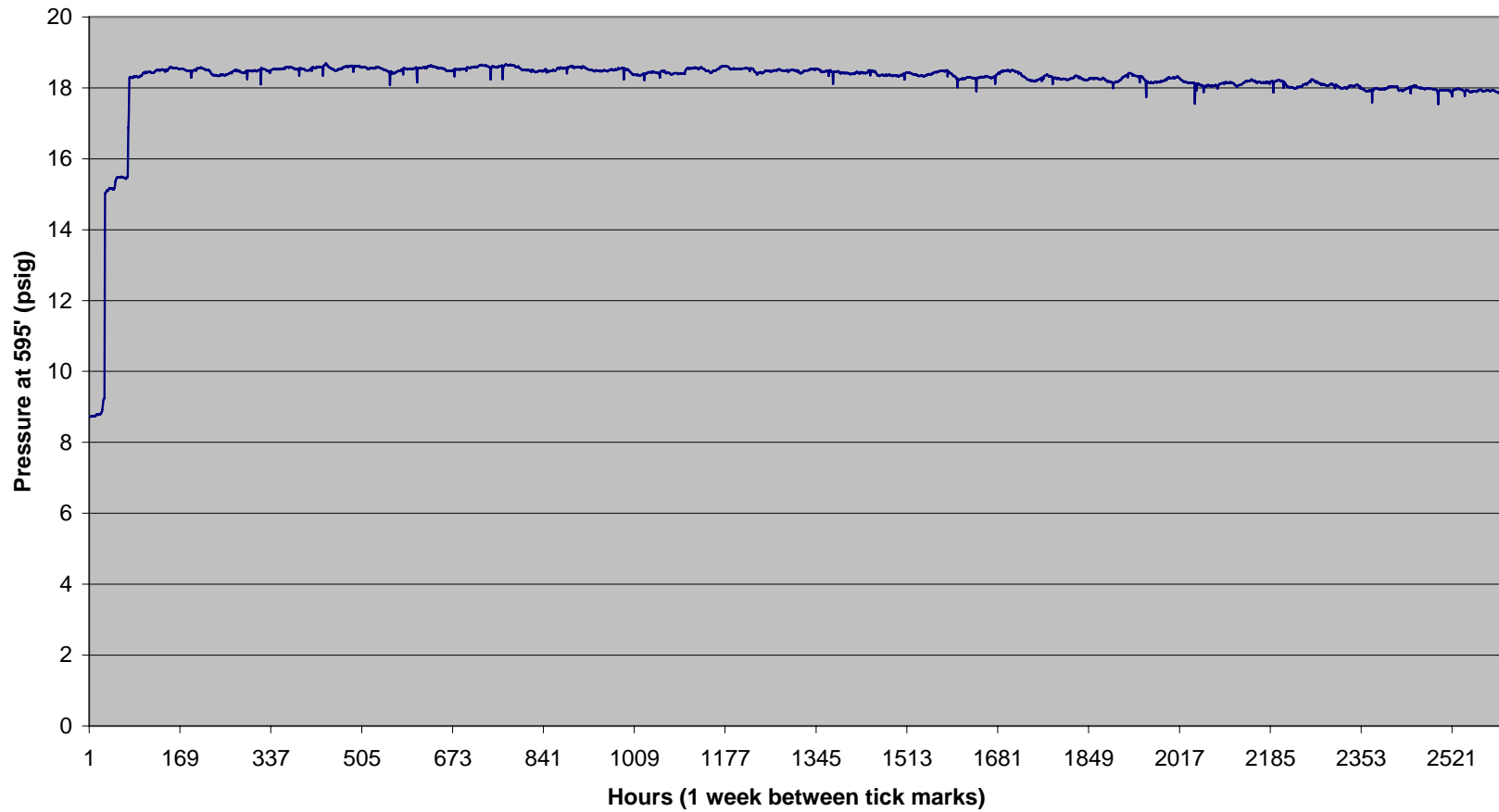
**Coleman WW (GL elev. 6848') Pressure Data from 12/1/08 to 12/8/08**



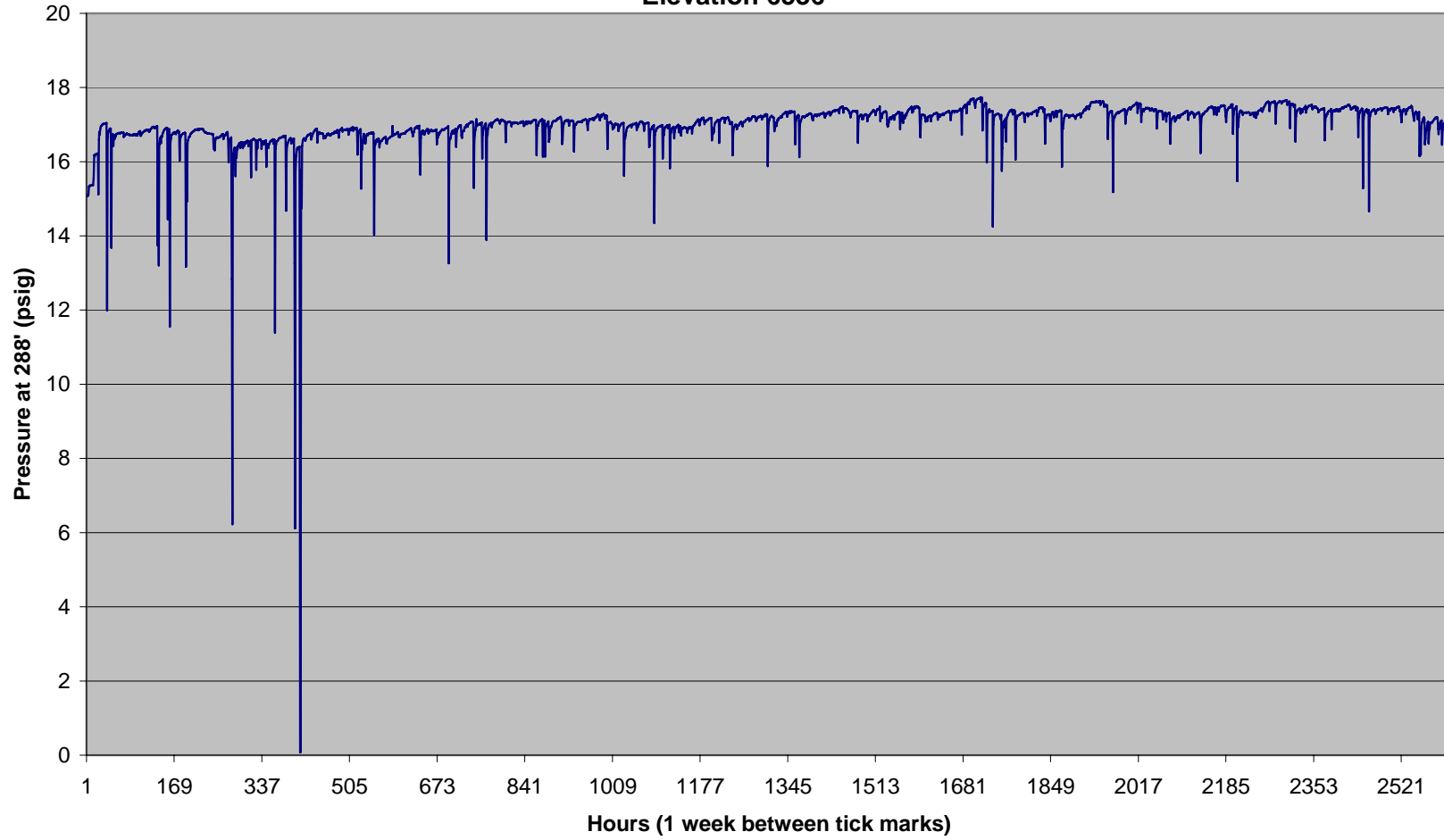
**Coleman WW Pressure Data from 10/31/07 to 1/20/09**  
**Permit # 267964 NE SW Sec 10 29S 67W**  
**Lot 70 RRR**  
**G.L. elev. 6848'**



**Pressure at 595' from 10/3/08 to 1/20/09**  
**Evenden WW, Permit # 221465**  
**Lot 117 Silver Spurs Ranch**  
**Elevation 6712'**

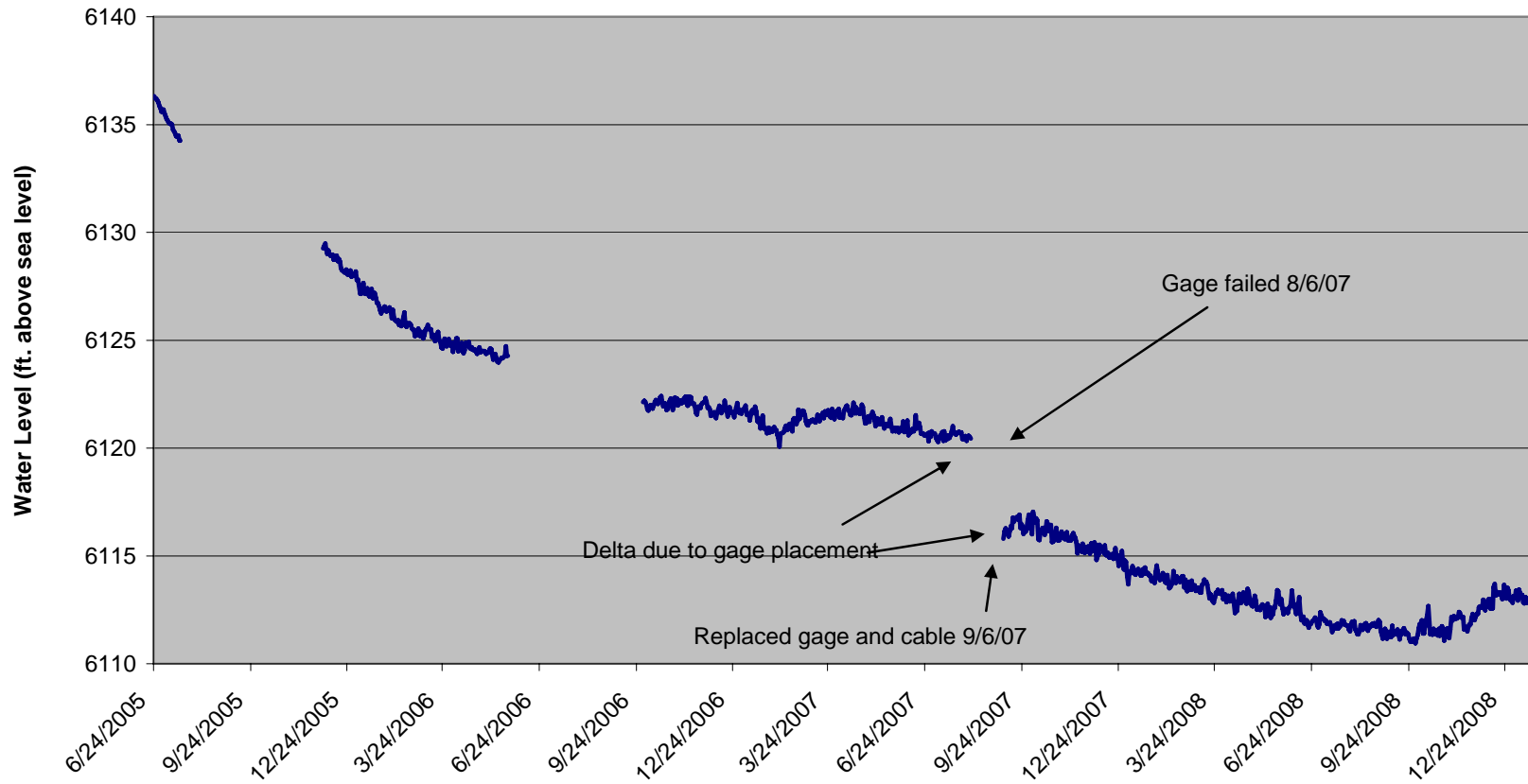


**Pressure at 288' from 10/3/08 to 1/20/09**  
**Garza WW, Permit # 206886**  
**Silver Spurs Ranch, Lot 60**  
**Elevation 6536'**

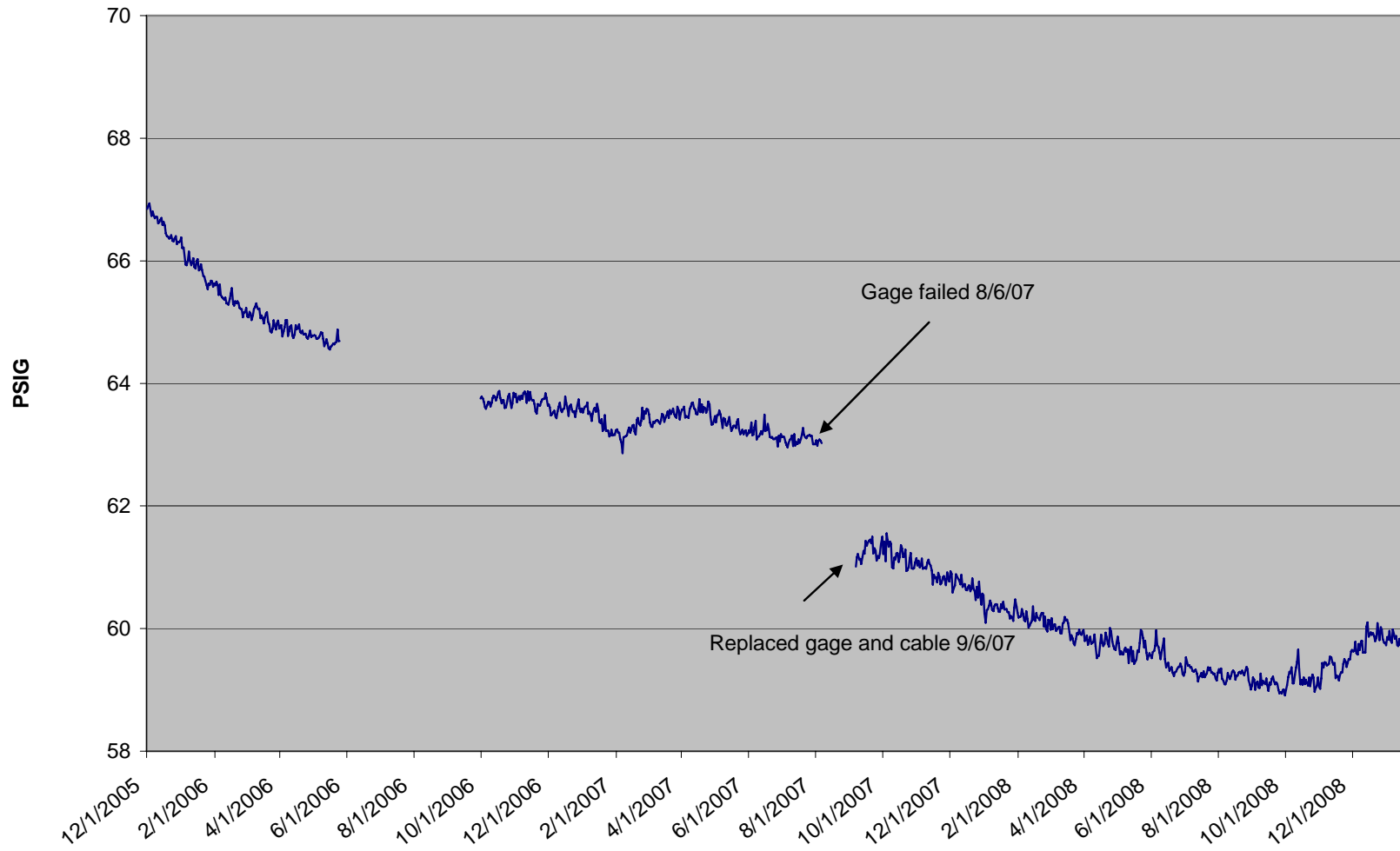




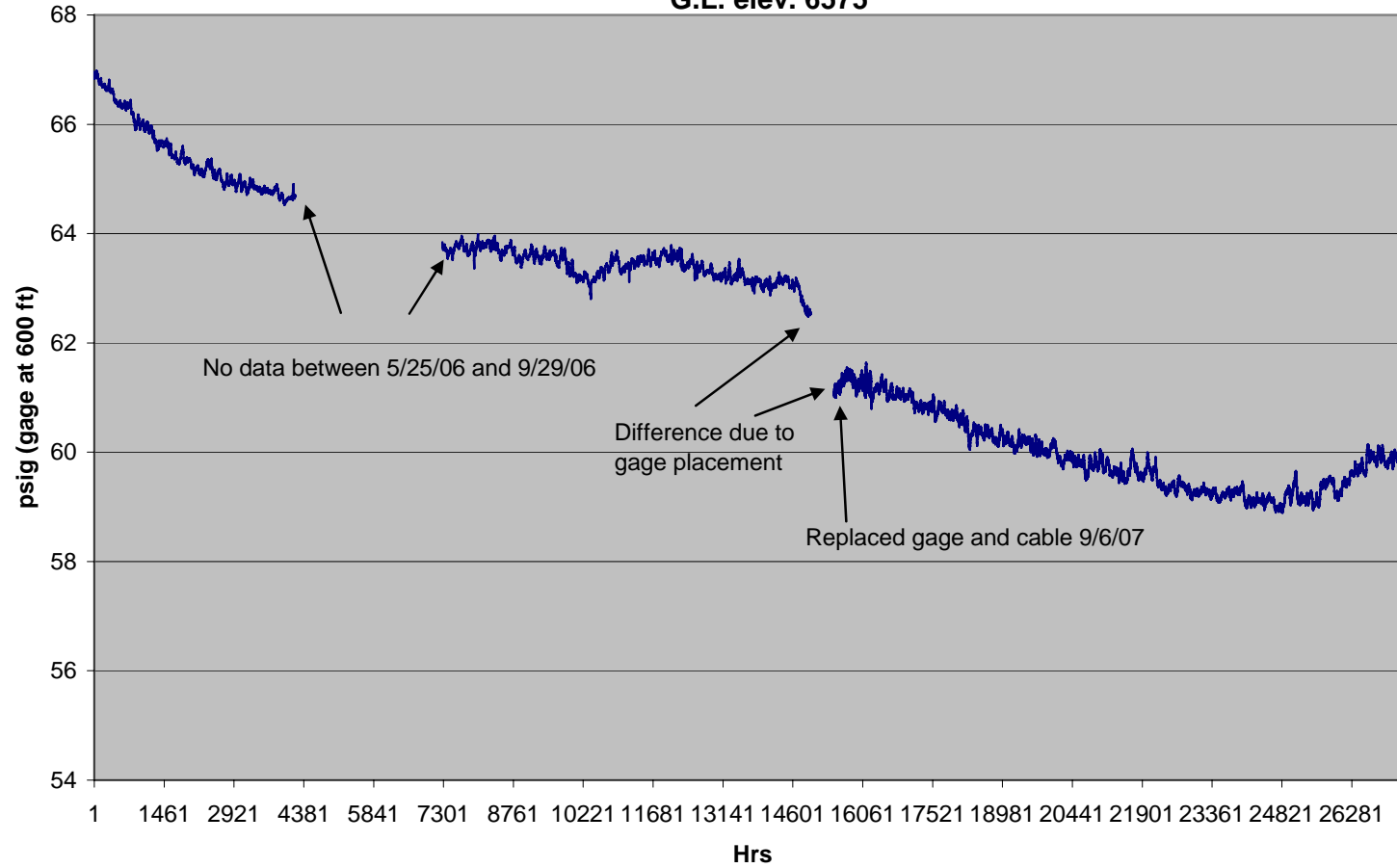
**Meyer WW Water Level from 6/24/05 to 1/20/09**  
**Permit # 248862**  
**Lot 120 RRR**  
**SW, NE Sec 30 T28S R66W**



**Meyers WW BHP from 12/1/05 to 1/20/09**

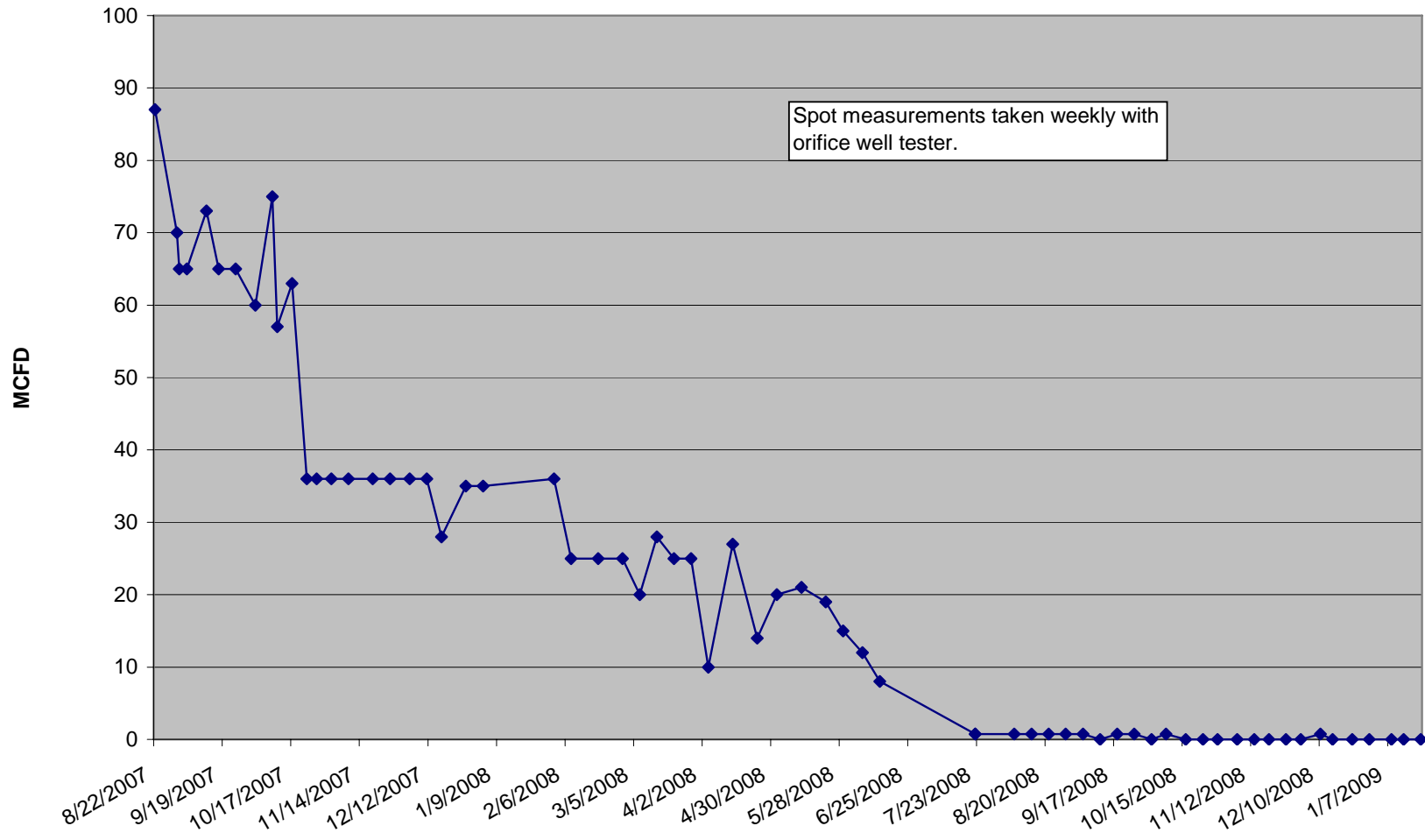


**Meyers WW 11/30/05 to 1/20/09**  
**Permit # 248862**  
**Lot 120 RRR**  
**SW, NE Sec 30 T28S R66W**  
**G.L. elev. 6575'**

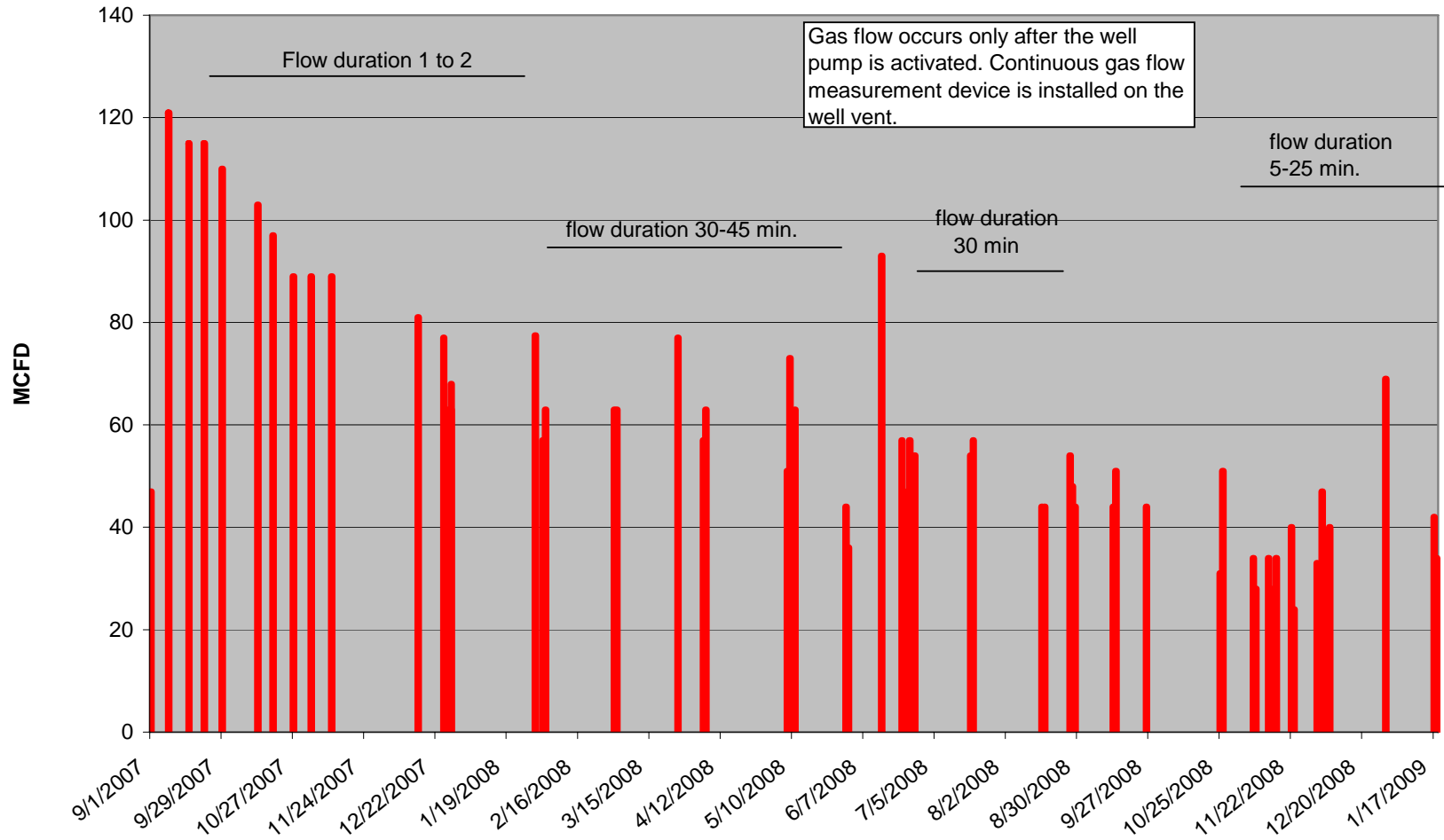


**Attachment 3**  
**Gas Flow Measurements at Bruington, Coleman, Angely, Bounds, and Smith**

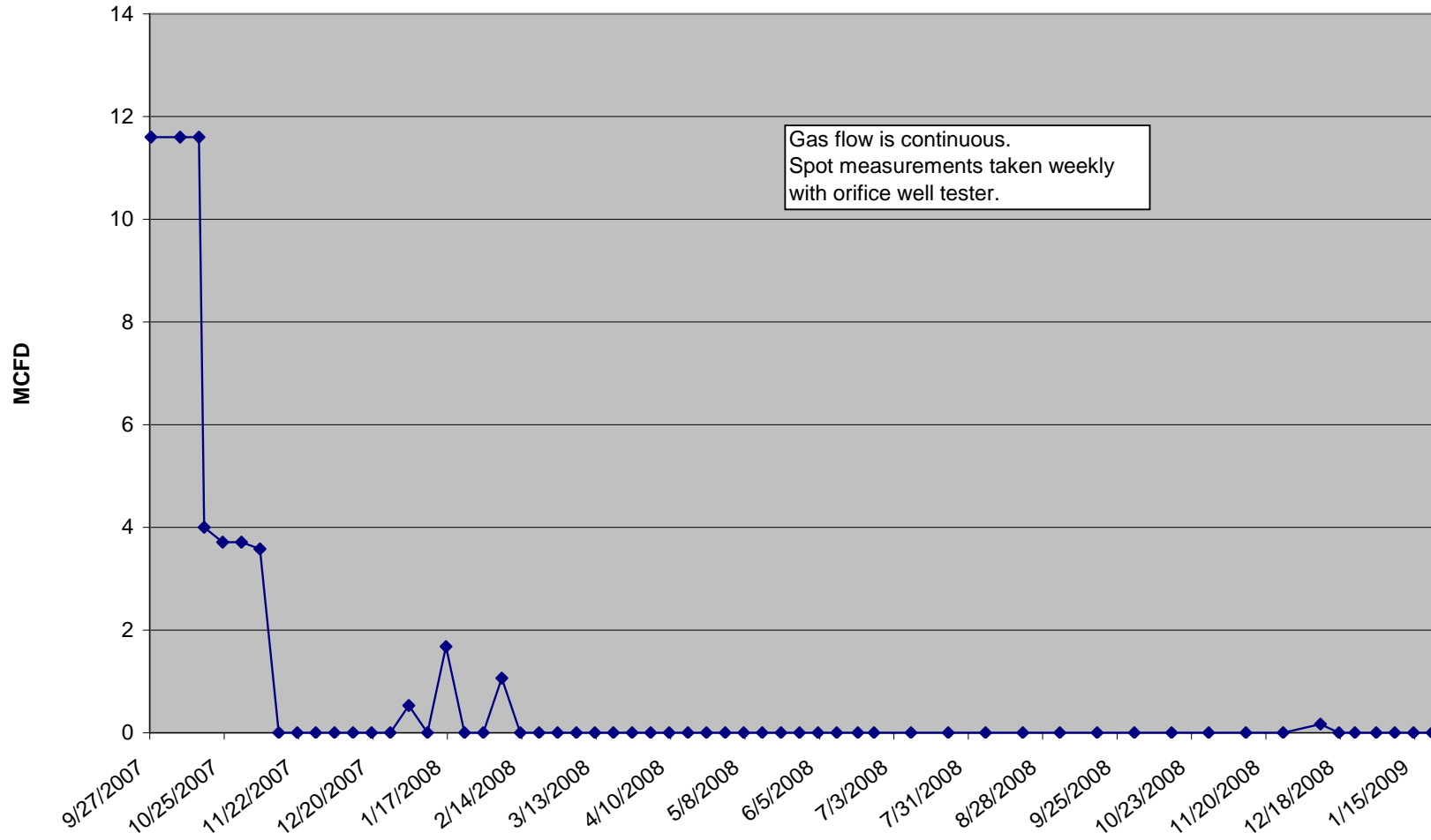
**Bruington WW # 210526 Measured Gas Flow  
from 8/22/07 to 1/20/09**



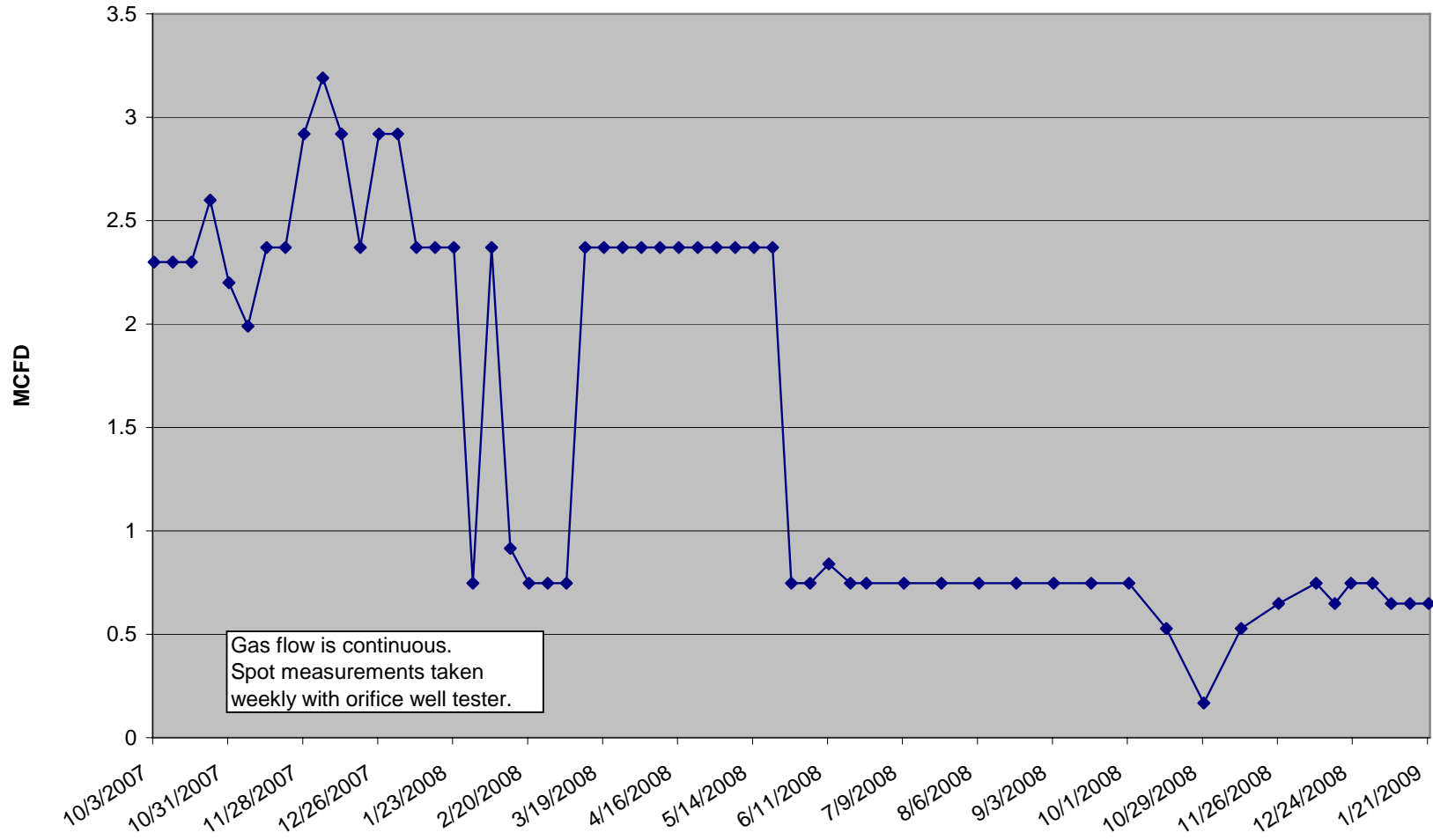
**Coleman WW #267294 Measured Gas Flow  
from 9/1/07 to 1/20/09**



**Angely WW # 238689 Measured Gas Flow  
from 9/27/07 to 1/21/09**

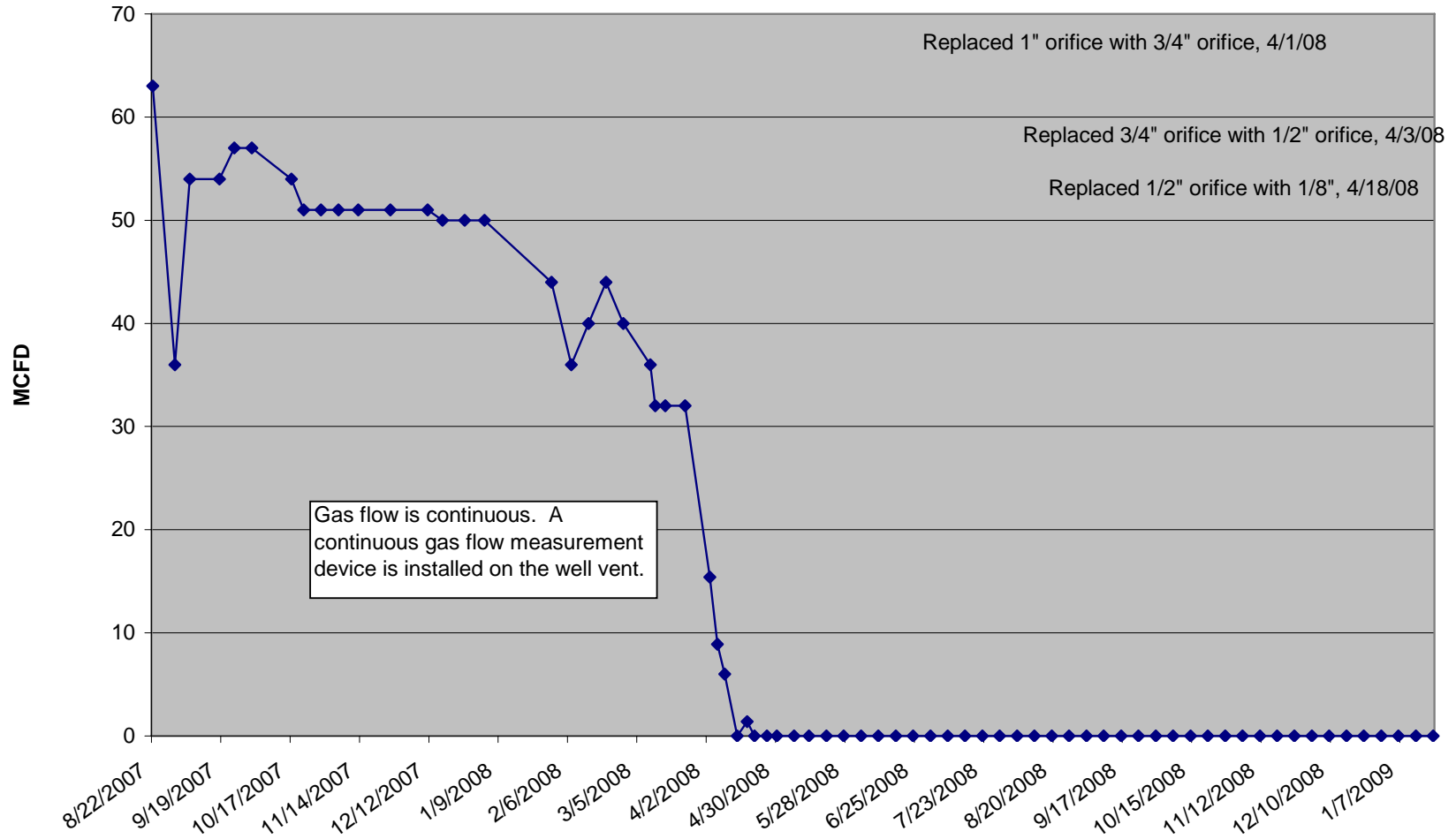


**Bounds WW #181278 Measured Gas Flow  
from 10/3/07 to 1/21/09**



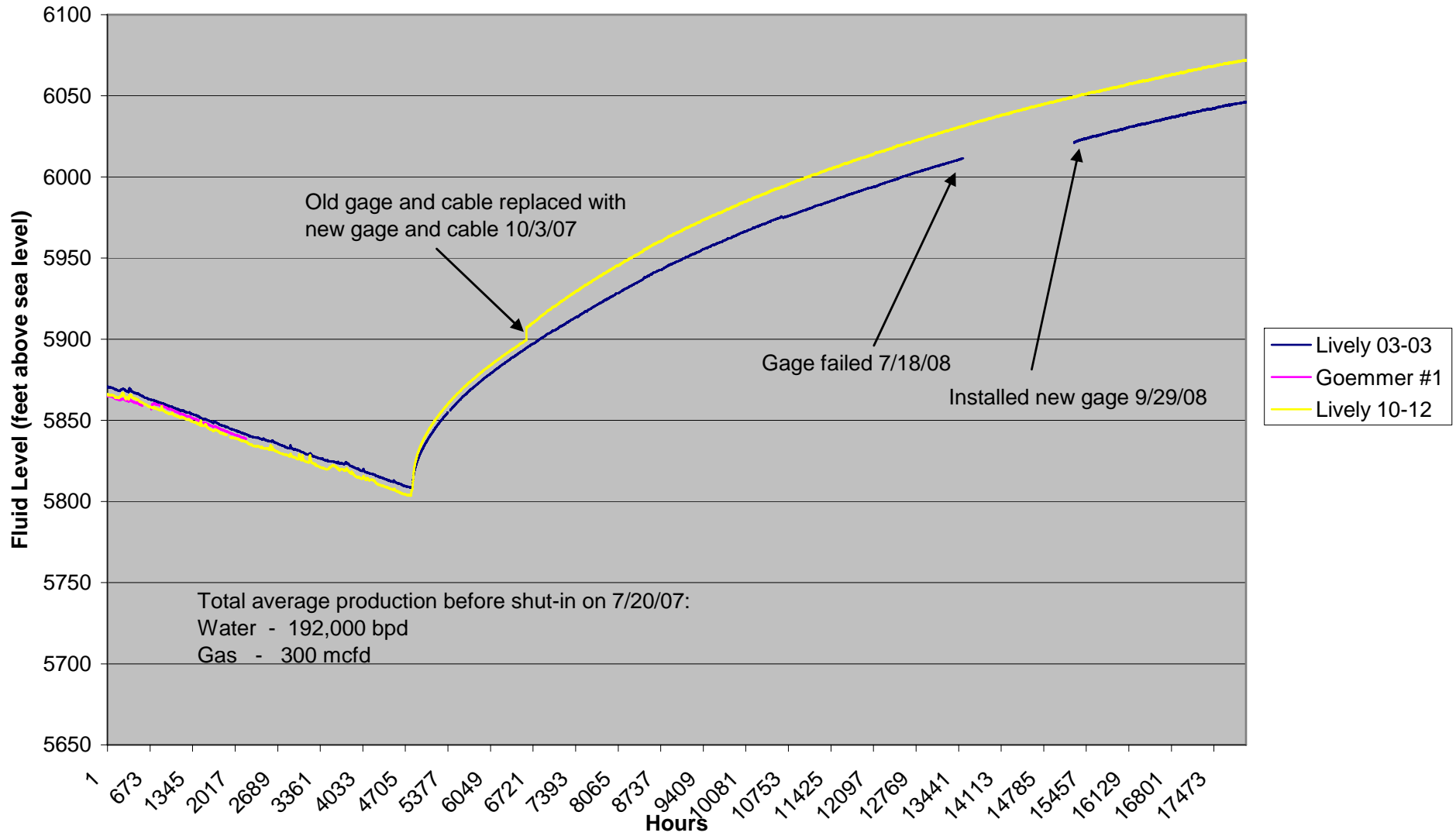


**Smith WW # 239657 Measured Gas Flow  
from 8/22/07 to 1/20/09**

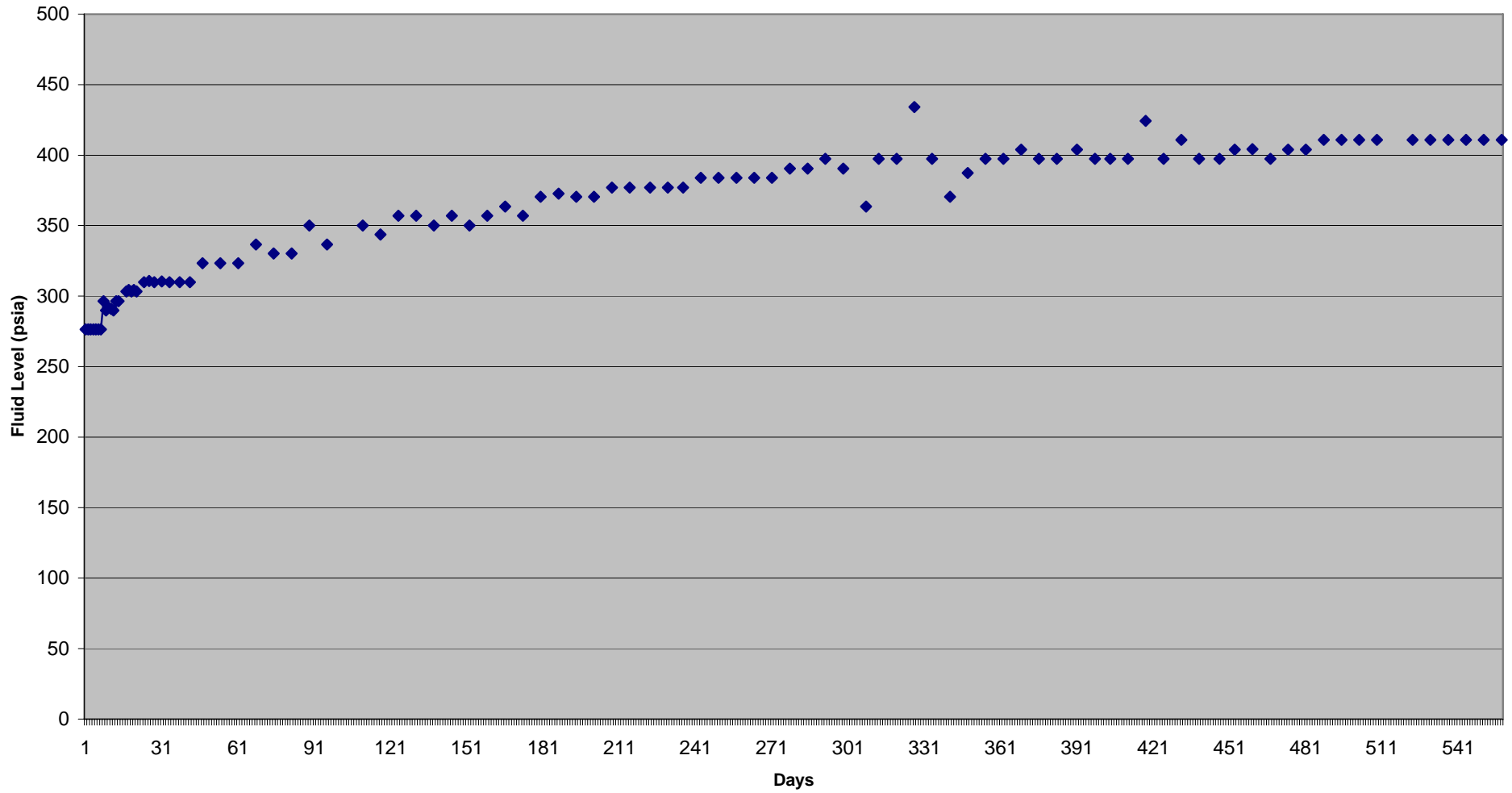


**Attachment 4**  
**Fluid Levels in Petroglyph Production Wells**

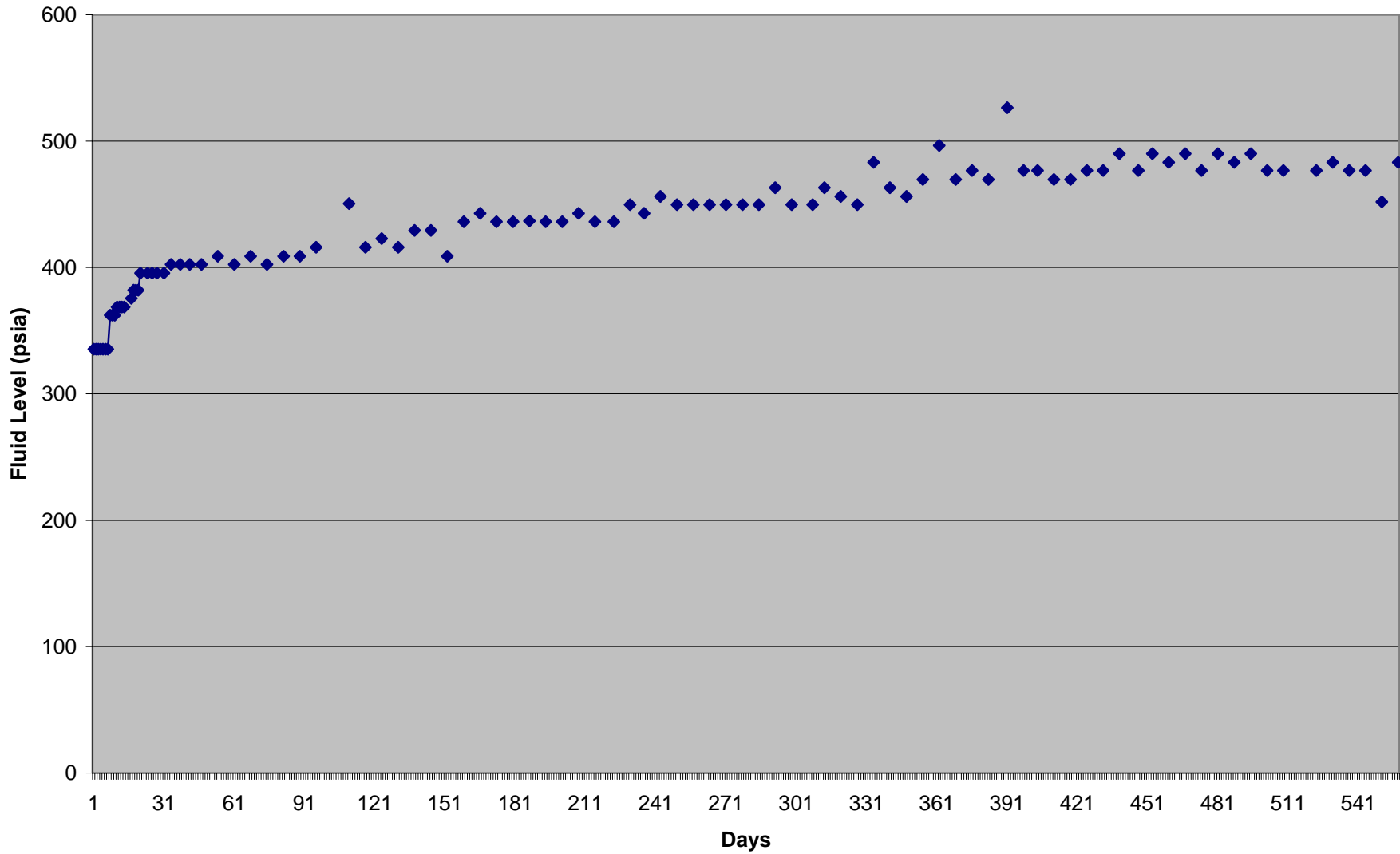
### Monitor Well Fluid Levels PBU from 1/1/07 to 1/20/09



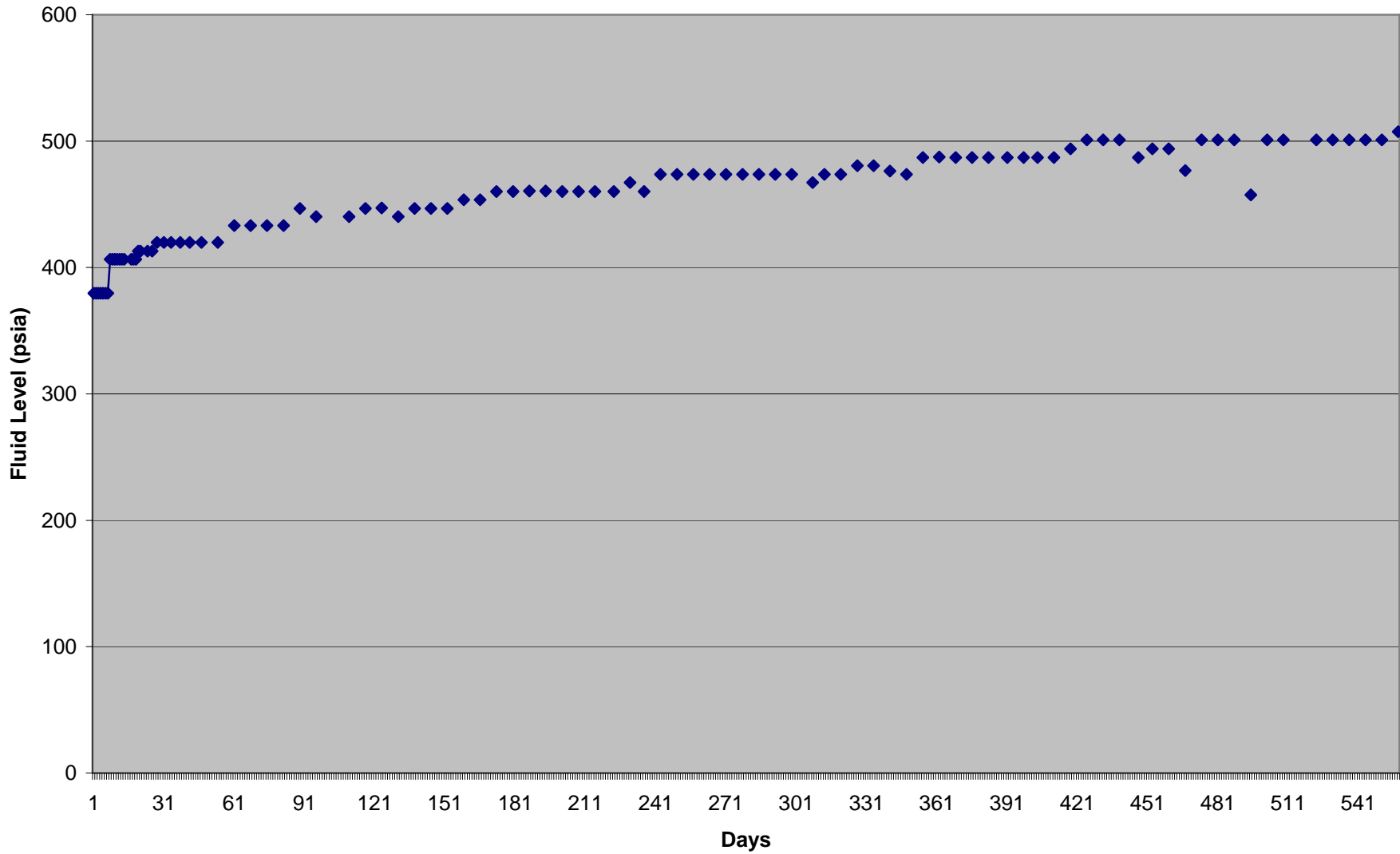
### Lively 02-02



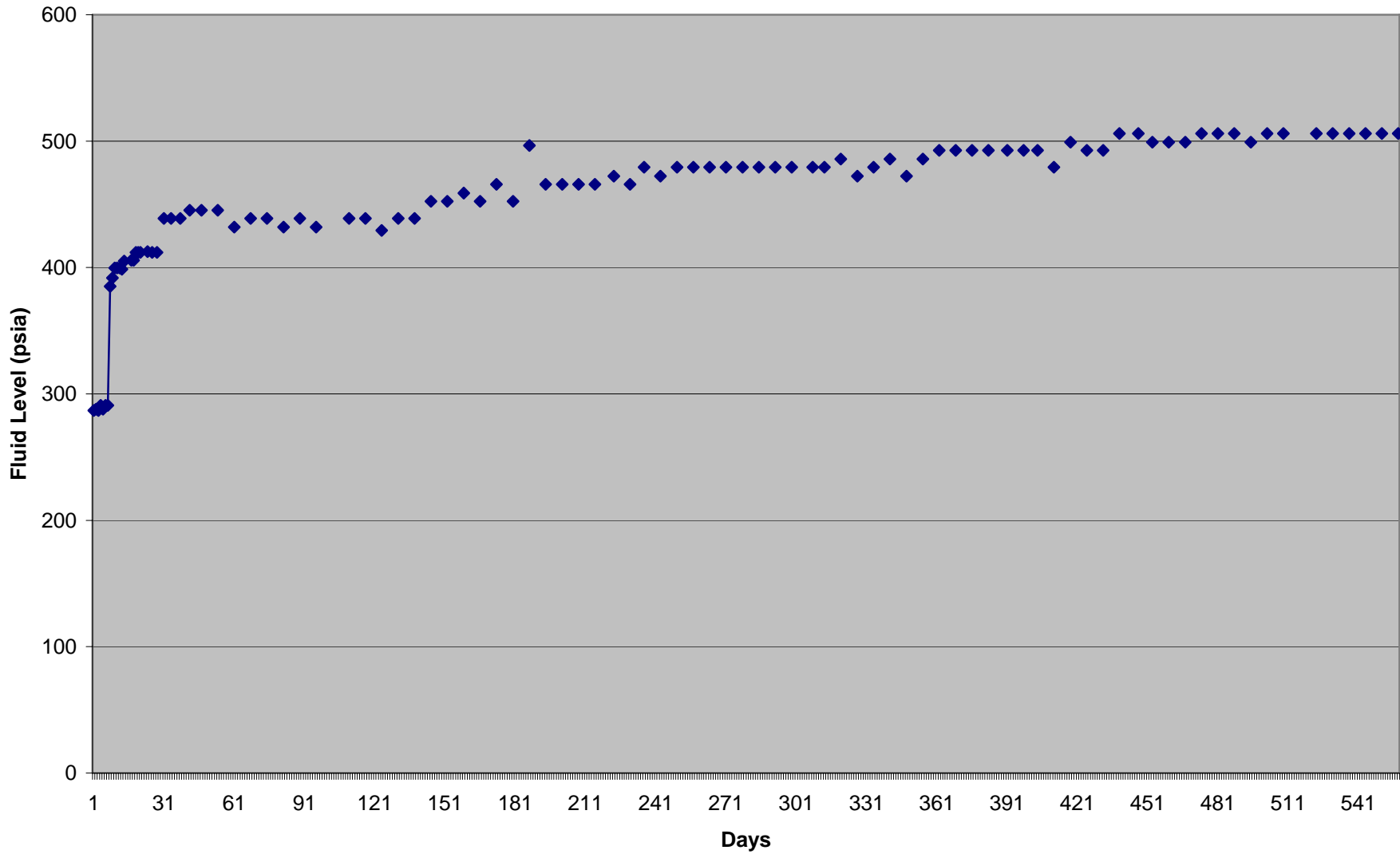
### Lively 02-12



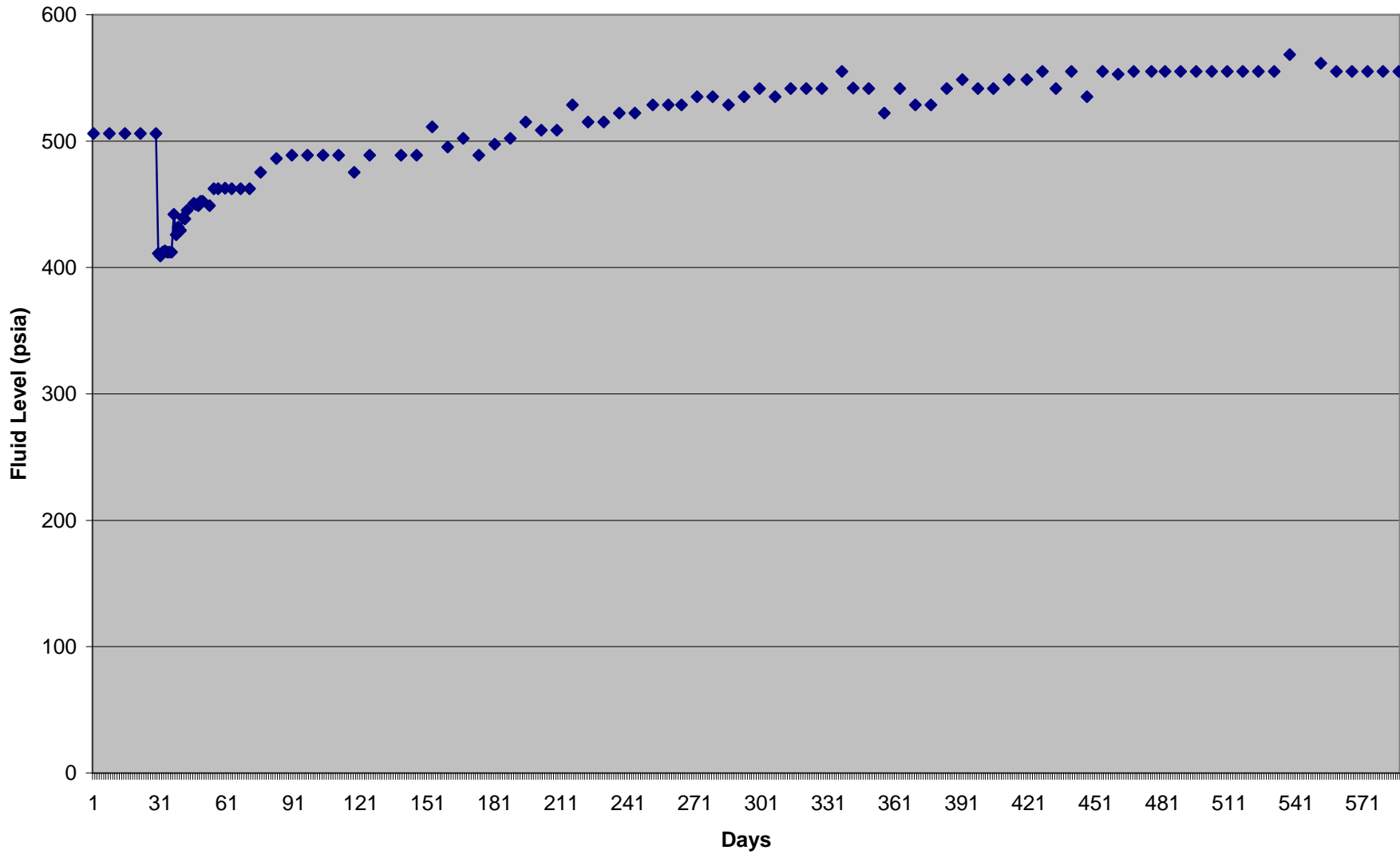
### Lively 03-01



### Lively 03-10

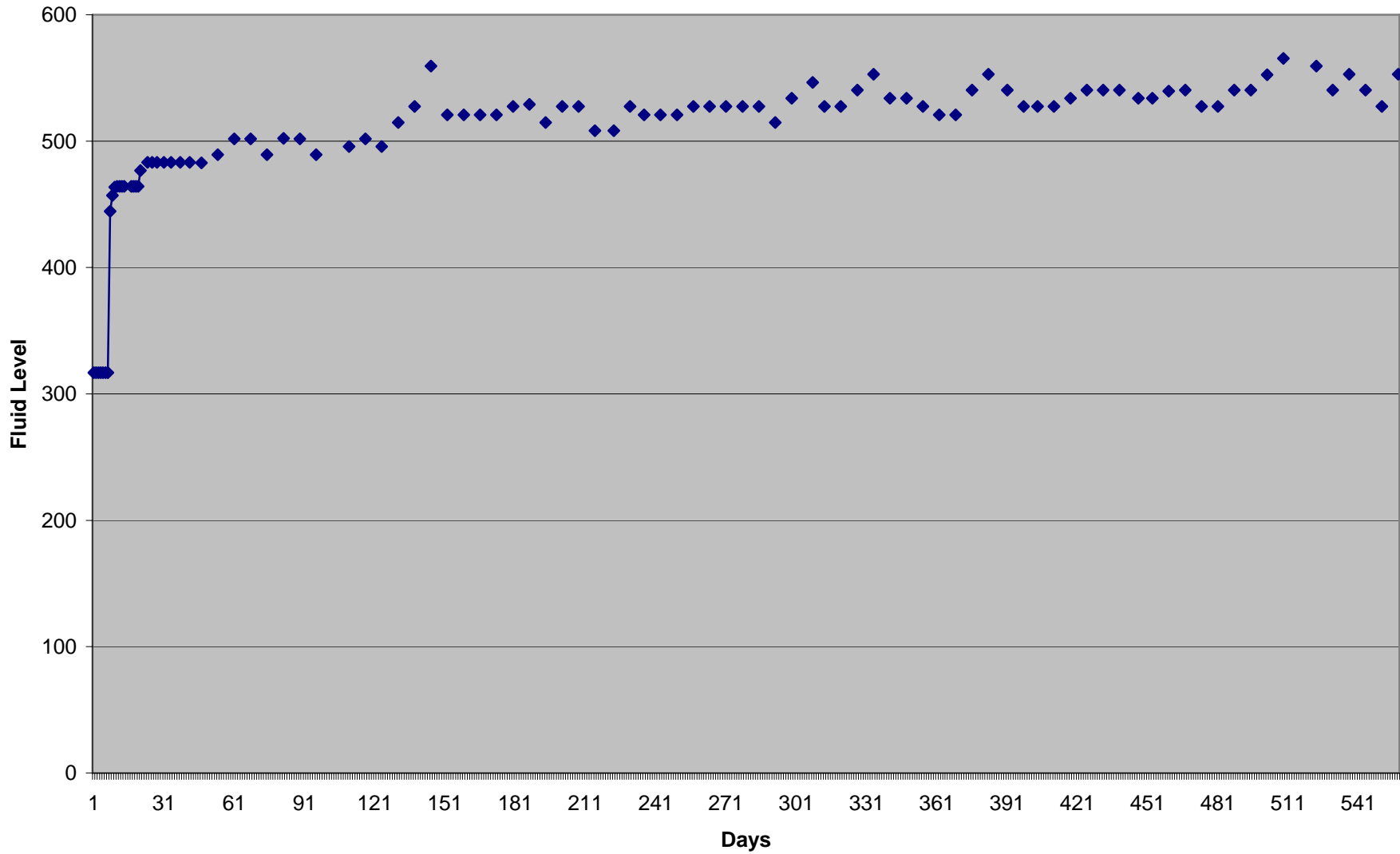


### Lively 03-12

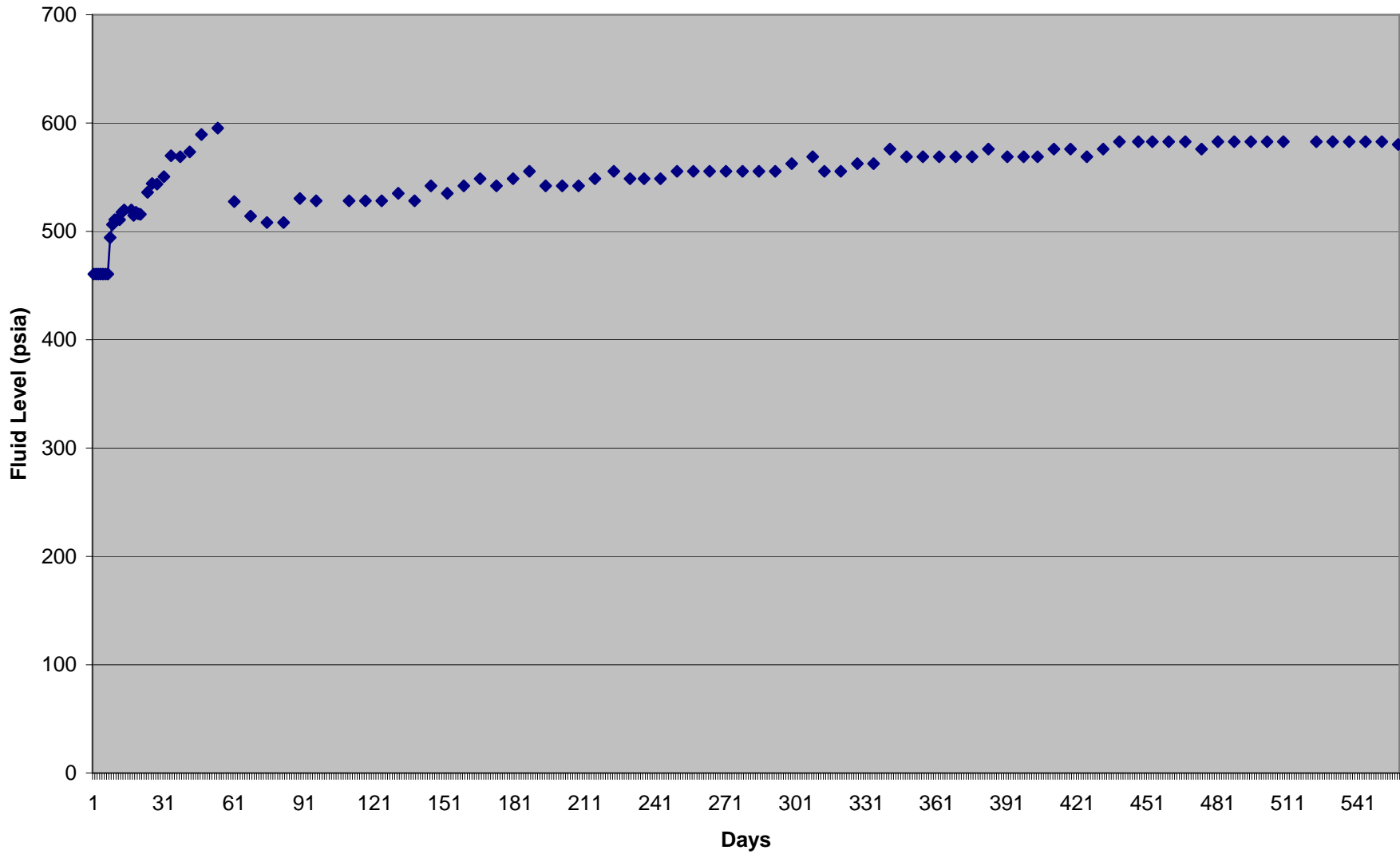




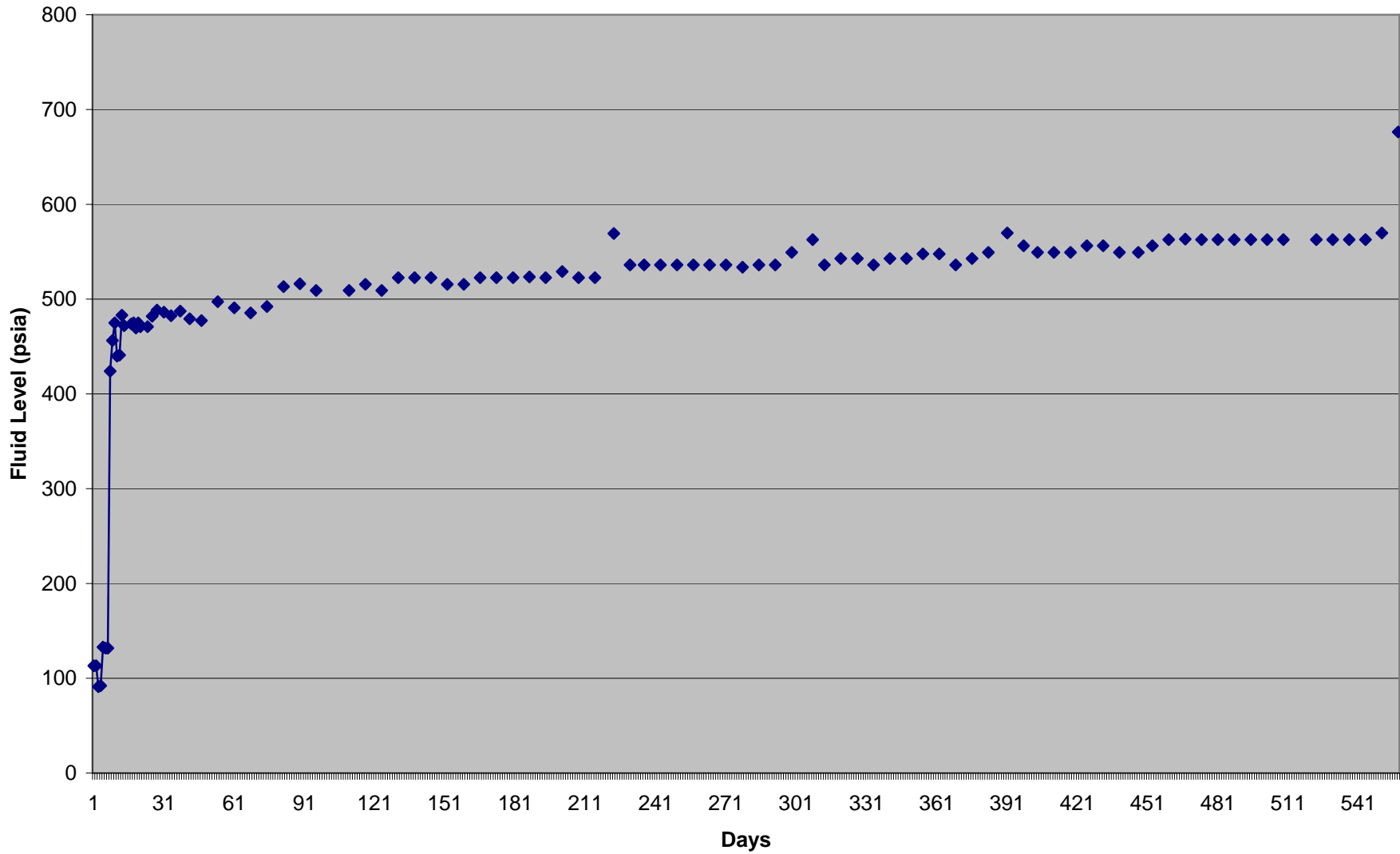
### Lively 10-04



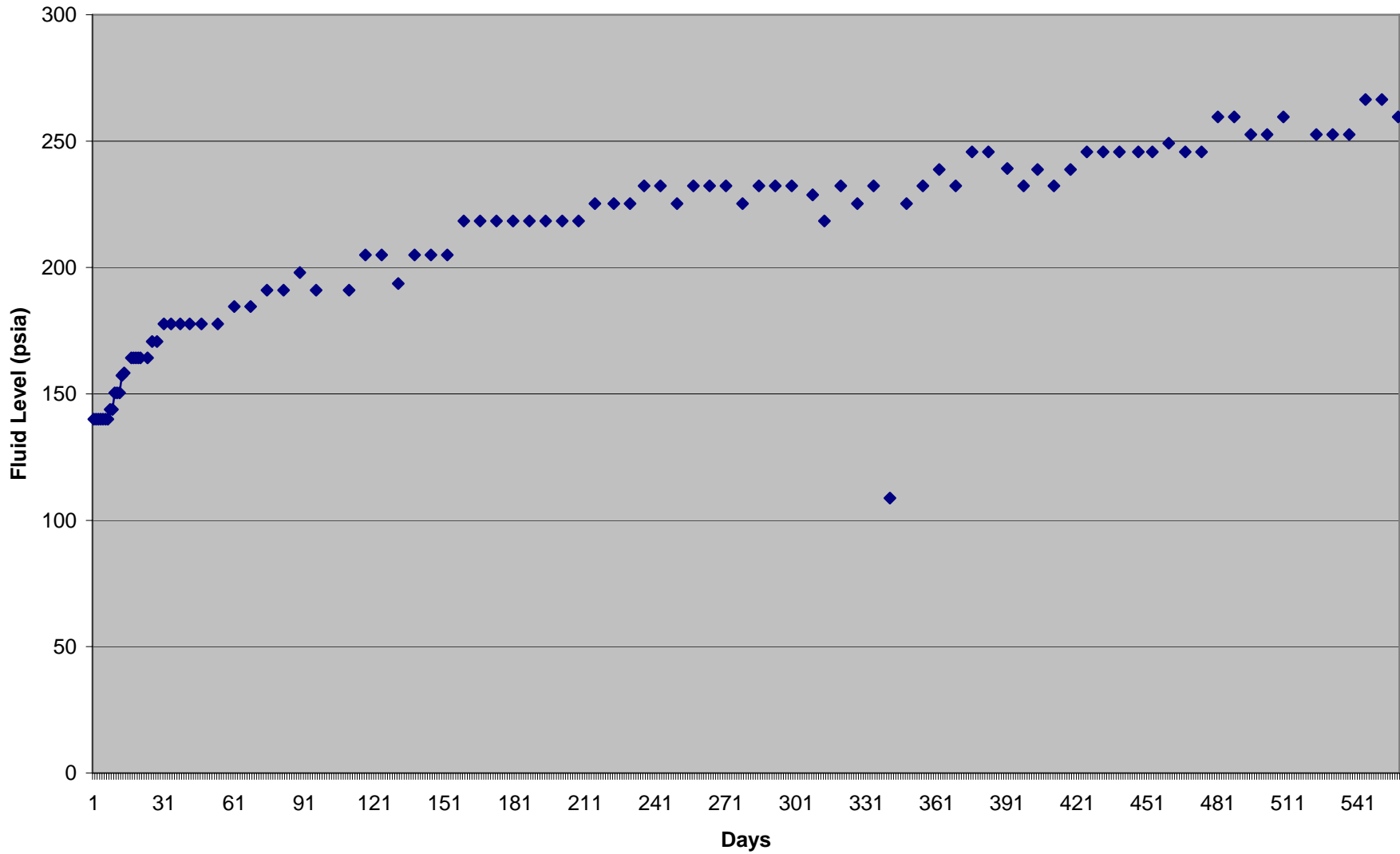
### Rohr 04-10



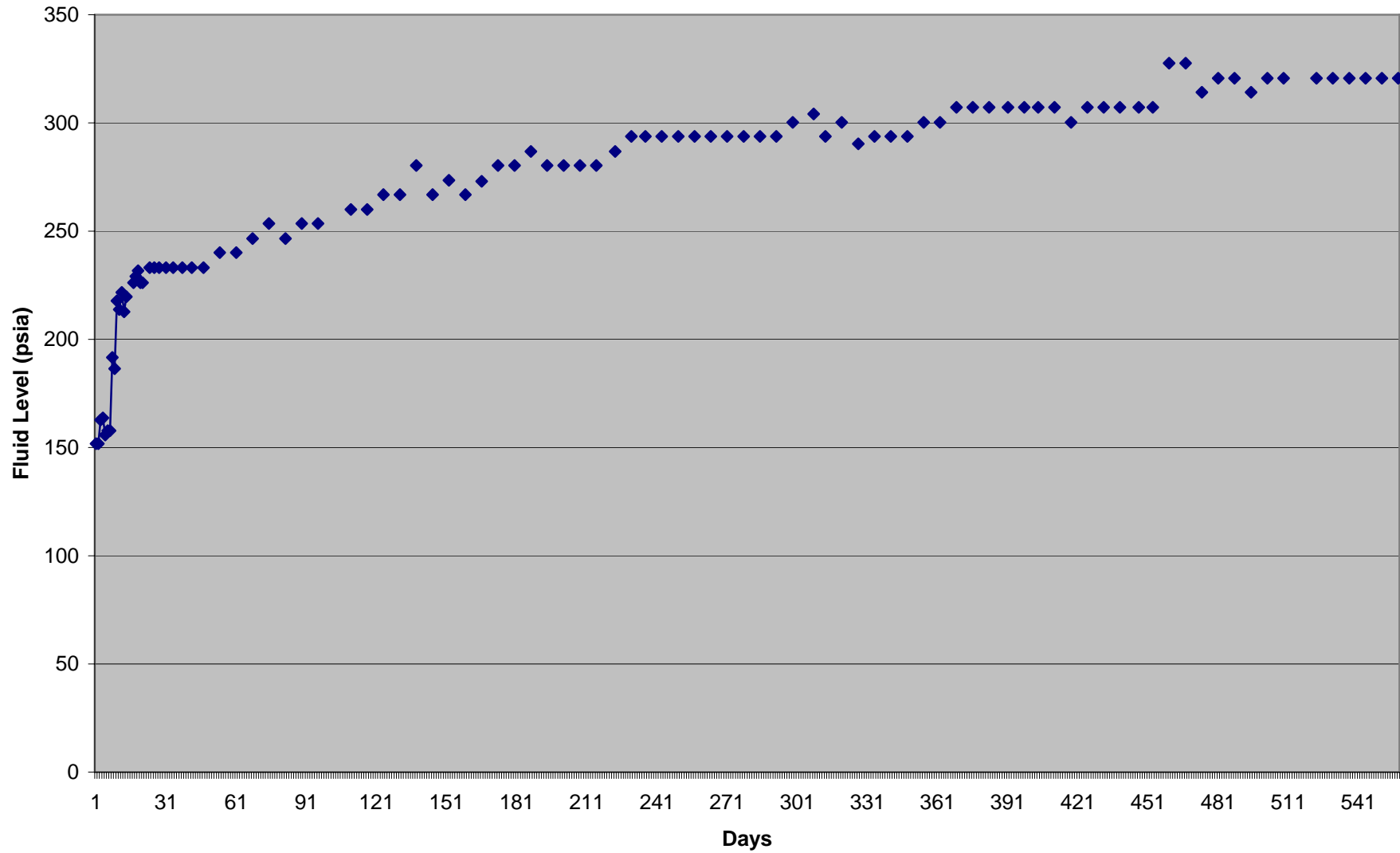
### Rohr 09-10



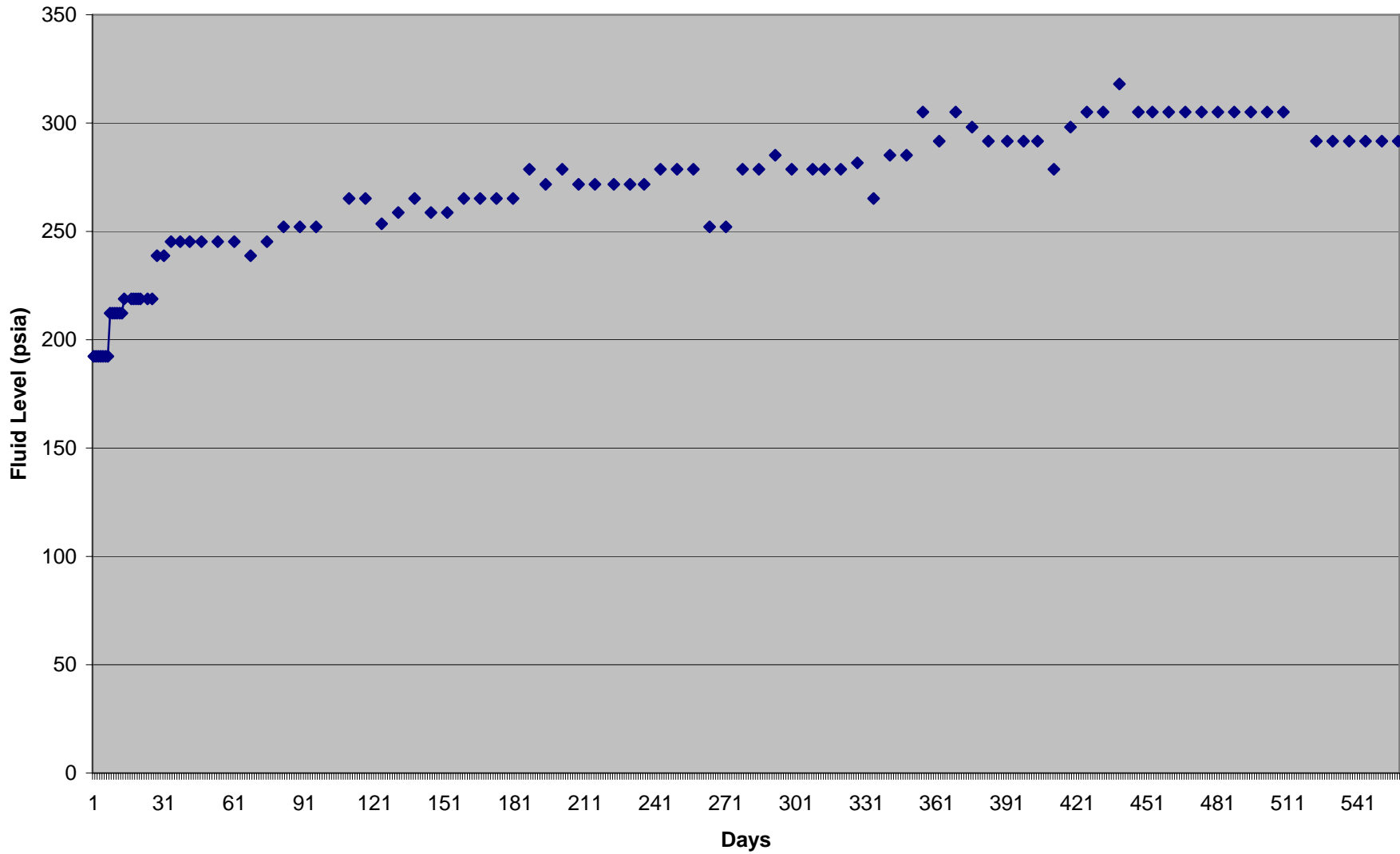
**State 36-02**



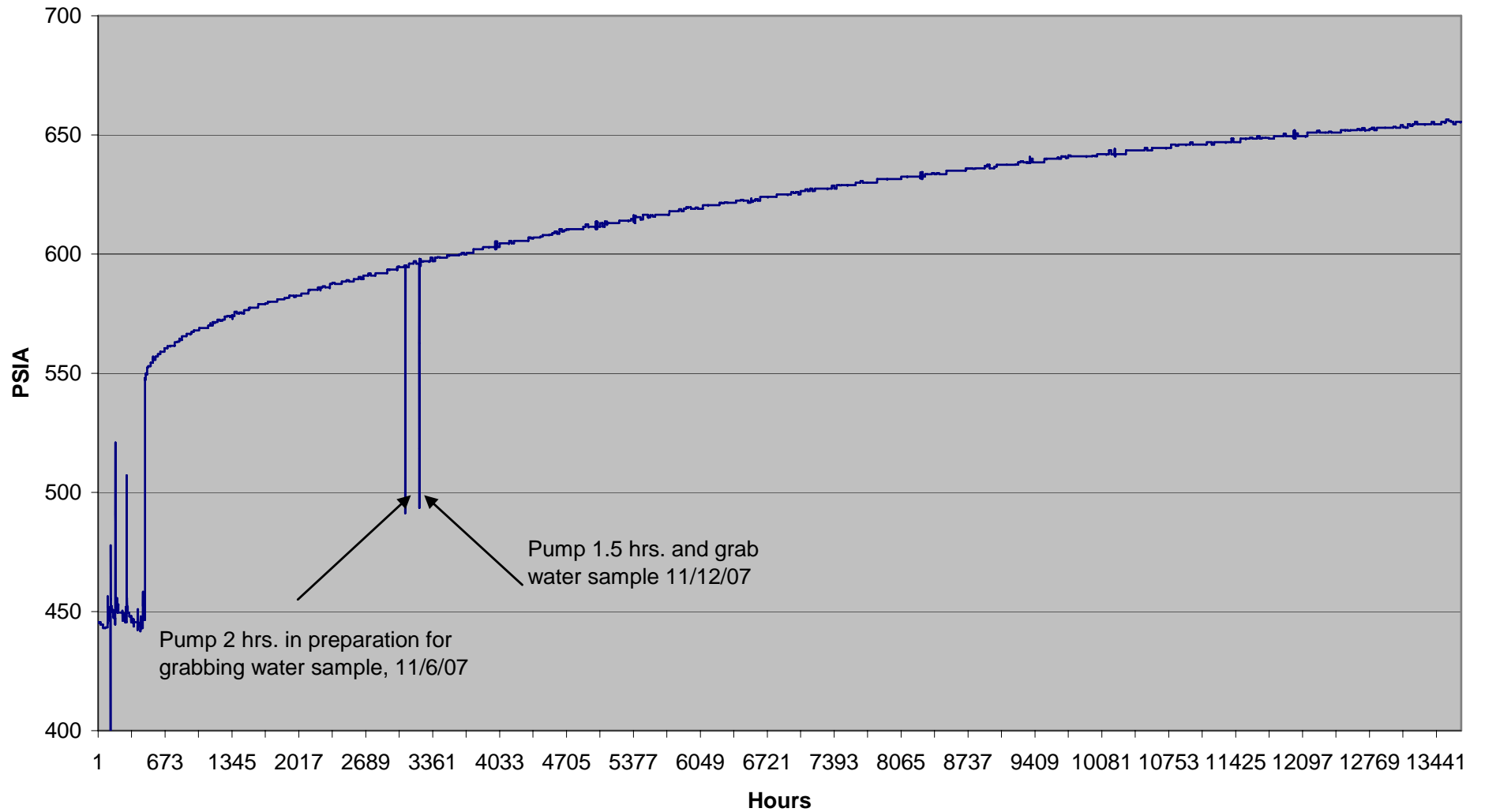
### State 36-05



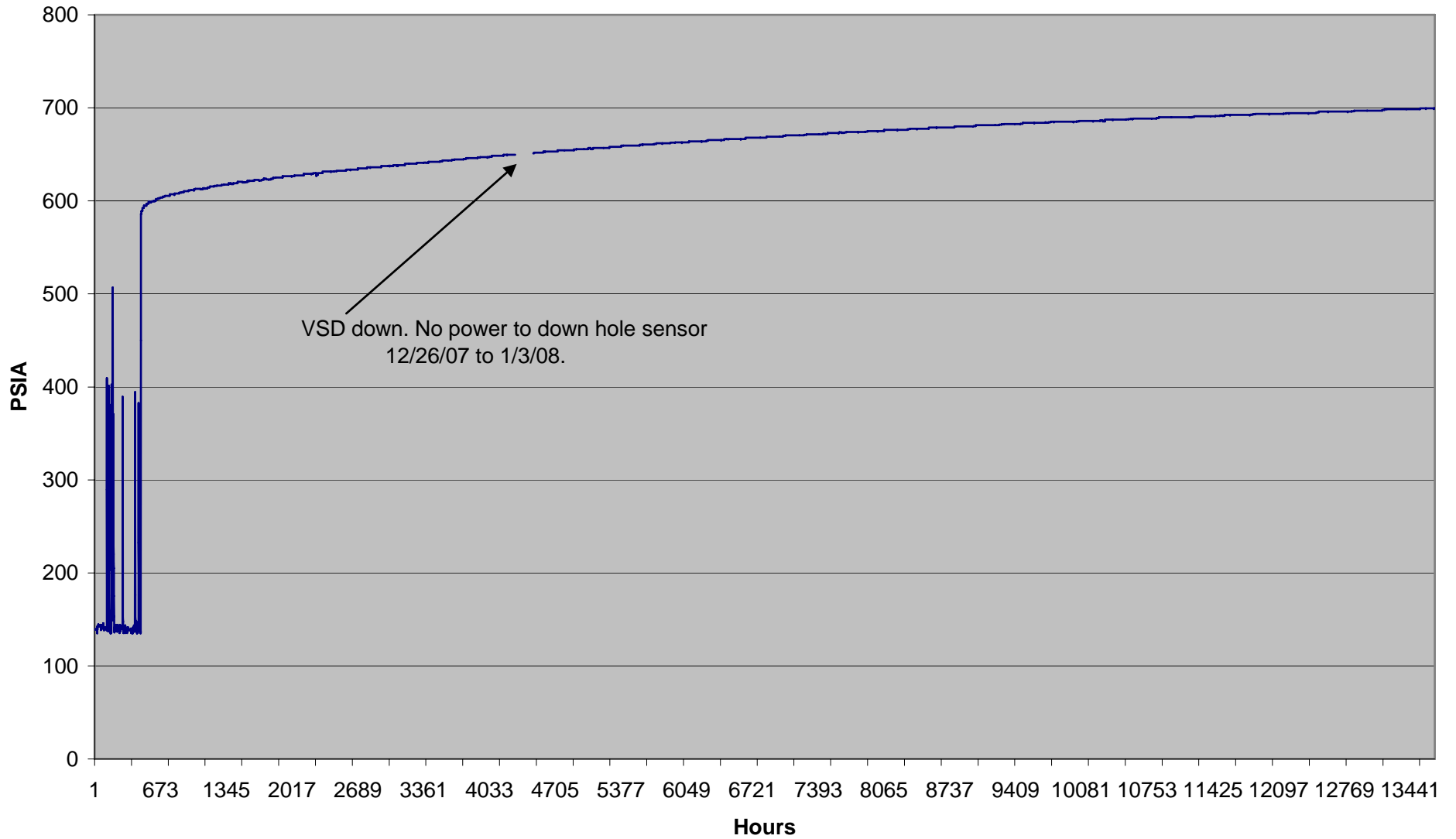
### State 36-11



**Rohr 04-14 PBU**  
**from 7/1/07 to 1/21/09**

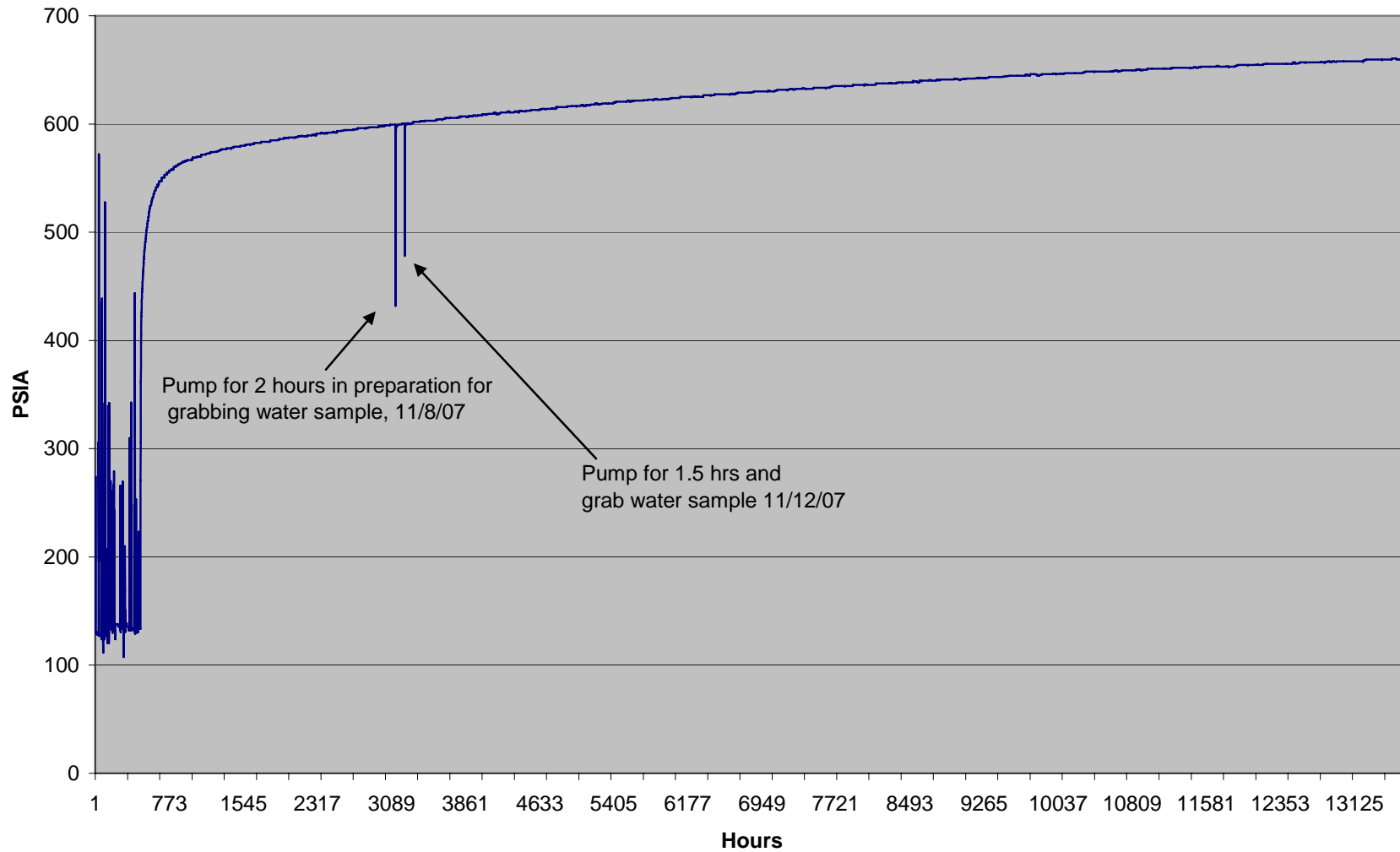


**Rohr 08-01 PBU**  
**from 7/1/07 to 1/21/09**





Rohr 09-04 PBU data (psia) 7/1/07 to 1/21/09



**Attachment 5**  
**Dissolved Gas Concentrations in**  
**Private Water Wells near the Mitigation Project**

