



August 12, 2014

Mr. Alex Fischer
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, Colorado 80203

Mr. Andy Hawk
BP America Production Company
380 A Airport Road
Durango, Colorado 81303

**RE: 4M Operations and Maintenance Report
July 2013 through June 2014**

Dear Mr. Fischer and Mr. Hawk:

LT Environmental, Inc. (LTE) is pleased to submit this Operations and Maintenance (O&M) Report for the 4M Outcrop Mitigation Project in La Plata County, Colorado, to BP America Production Company and the Colorado Department of Natural Resources (DNR) Colorado Oil and Gas Conservation Commission (COGCC). This report includes the reporting period of June 29, 2013, to June 25, 2014.

Background

The objective of the 4M methane mitigation system is to demonstrate the technical viability to recover and use the methane seepage at specific locations where it seeps to the surface along the Fruitland Formation Outcrop. An additional goal of the mitigation system is to help protect the environment, which includes reducing carbon emissions and improving plant growth. To accomplish this objective, LTE designed and installed vapor collection and barrier systems for methane collection at the South Fork Texas Creek (SFTC) site (Figure 1) and Pine River (PR) site (Figure 2). At the SFTC site, the recovered methane is being used to fuel a turbine, which is generating electricity to operate the collection system. The turbine is returning the excess generated power to the local electrical grid for credit as a renewable energy resource. Methane concentrations are too low to combust at the PR site, so recovered methane is vented to the atmosphere. The initial design, installation, and startup of the 4M methane mitigation systems were completed in 2008 and 2009. O&M operations beginning May 2009 are detailed in previous O&M reports completed by LTE.

During June 2010, the SFTC system was expanded in order to increase methane collection. A collection liner designed to direct vapors into the existing collection system was installed beneath the creek, and 32 diagonal well points were installed along the creek and piped into the existing manifold. In addition, gas from a COGCC monitoring well was piped to the collection



system. This source was not sustainable and the line was shut-in and the well returned to monitoring status in late 2010.

The PR system was changed to a passive venting system on July 6, 2012. The blower was shut down and valves adjusted to allow recovered methane within the subsurface piping to vent. A wind driven turbine ventilator was added to the system stack to assist with methane venting. Field instrumentation was used to monitor methane concentrations in the ventilation piping. The vegetation was observed for negative effects from methane seepage.

Mitigation System Operation and Maintenance

Routine system operations are conducted at both sites. O&M activities included maintaining the equipment per manufacturer instructions, collecting data used to evaluate system performance, and adjusting the operating parameters to optimize system effectiveness. Operational parameters were recorded and included methane and oxygen concentrations in the collected gas, operational hours for the blower and turbine generator, applied vacuum to the subsurface piping, and electrical generation by the turbine.

Activities conducted during the reporting period included:

- Routine O&M activities to monitor and adjust system performance;
- Field screening the inlet gas quality;
- Reviewing gas quality measurements stored in the data loggers and obtaining weather station data;
- Changing oil, oil filters, an oil separator, and a coalescing filter in the gas compressor system;
- Changing the air filter on the turbine; and
- Conducting non-routine O&M services and troubleshooting as described below.

Beginning at the end of April 2014, the SFTC system operation time decreased, resulting from operational issues with the methane sensor and the compressor. Troubleshooting the system discovered that the methane sensor was malfunctioning due to a bad heater plate located inside the sensor. A new heater plate was ordered and installed within 10 days of the initial discovery. During this time the turbine and compressor were shut down and the system was passively venting to the atmosphere. When an attempt was made to restart the system, the compressor seized and would not run. Troubleshooting revealed that the bearings on the compressor had worn and needed to be replaced. The compressor was removed, cleaned, and the bearings were replaced. This maintenance resulted in the system being shut down during all of May 2014.



Other problems that have decreased system efficiency at SFTC include periodic weather-related electrical grid power outages.

Operations Summary

During normal operation, gas composition and flow remained fairly consistent at both sites, with better gas quality recorded at the SFTC system. During the reporting period, methane concentrations remained relatively stable (averaging 97.6 percent [%]) at the SFTC site (Figure 3). At the PR site, methane concentrations averaged 2.12% during the reporting year. (Figure 4). O&M data are provided in Table 1 for the SFTC site and in Table 2 for the PR site.

The percentage of methane gas recovered was measured at both sites. At the SFTC site, a methane flow rate was calculated using the methane concentrations and total metered flow. The average flow rate and cumulative recovered methane are plotted over time on Figure 5 for the SFTC site. Average collected gas flow was approximately 375 cubic feet per hour (cfh).

The SFTC system produces the gas needed to operate the turbine, and excess gas is re-circulated within the compression system. The turbine generator was set at 11 kilowatt (kW) output following operational difficulties encountered during 2011. With optimum system operation utilizing approximately 6 kW of electrical power, the remaining 5 kW are distributed back into the electrical grid for a net gain.

The system operation commenced on May 5, 2009, with an electrical meter reading of 51,540 kilowatt-hours (kW-h). From startup to March 2011, the electrical meter reading was reduced to zero then the meter rolled to 99,999 kW-h. In October 2013, the electric meter was reduced to 0 and rolled over to 99,999 kW-h. On June 25, 2014, the reading was 74,118 kW-h. These readings indicate 177,422 kW-h have been returned to the grid since system operation commenced (Figure 6). The value of the electricity generated to date has been used to offset electrical usage at the PR site and to pay for administrative fees associated with the SFTC electrical service. The remainder of the net generation is held as a credit for the electrical service to the two facilities.

Vegetation Observations

Plant growth at both sites has occurred in areas previously devoid of vegetative growth. At the SFTC site, the edges of the liners are evident due to an absence of vegetation where excess methane seeps from beneath the liner. Increased precipitation in 2013 has led to an increase in plant growth from the prior year. At the PR site, the location of the vent piping is not obvious, as an overall decrease in methane seepage has been observed.

A report detailing the progress following the SFTC June 2010 system expansion was provided to the Army Corps of Engineers in December 2012, in accordance with the permit obtained to allow creek disturbance and installation of the methane barrier under the creek. During a site visit on June 13, 2012, LTE observed low-flow conditions in Texas Creek due to drought. By July 2012, and through December 2012, Texas Creek did not contain any surface flow. The lack of water affected vegetation not only in the area of temporary impact, but also in Texas Creek upstream



and downstream of the site. In late summer and fall of 2013, drought conditions in the area improved slightly allowing vegetation to rebound.

LTE believes the 0.021 acres of palustrine emergent wetlands and 0.025 acres of water below the ordinary high water mark (OHWM) of the South Fork of Texas Creek have been restored; and upon return of natural moisture, the vegetation at the site will recover to its pre-impact condition.

During June 2014, an improvement in drought conditions in the region allowed for some improved recovery in the vegetation at the SFTC site. The condition of the vegetation in the wetland area is consistent with vegetation all along the South Fork of Texas Creek showing signs of drought relief over the past year. Although drought conditions have improved and vegetation is stronger this year than previous drought years, the region has still received below average precipitation and vegetation has yet to achieve pre-impact conditions.

Weather Data

The weather station currently in use was installed in June 2010. The weather station was installed to monitor conditions that may affect methane recovery and system operation. Currently, the system operation does not appear to be limited by the volume of methane recovered or affected by variable weather conditions. The daily maximum and minimum temperatures (Figure 7), monthly precipitation (Figure 8), and the daily barometric pressure values (Figure 9) are provided.

Planned Activities

The electrical generation results, along with visual observations of vegetation growth, suggest the methane mitigation system is operating successfully. During the next reporting period, the SFTC system will continue operation to optimize electrical generation, continue close monitoring of moisture buildup within the system, and continued monitoring of hydrogen sulfide concentrations are planned.

Further investigation of ways to improve system performance will be accomplished. The PR system will continue to be monitored for methane concentrations in the lines and any changes to the vegetation.



LTE appreciates the opportunity to provide these services to the COGCC and BP America. Please call us at 303-433-9788 if you have any questions or comments regarding this report.

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in black ink, appearing to read 'Devin Hencmann', written over a light blue horizontal line.

Devin Hencmann
Staff Geologist

A handwritten signature in black ink, appearing to read 'Christopher E. Shephard', written over a light blue horizontal line.

Christopher E. Shephard, P.E.
Project Manager

Attachments:

Figure 1 – Mitigation System Layout South Fork Texas Creek

Figure 2 – Mitigation System Layout Pine River

Figure 3 – South Fork Texas Creek Methane Concentrations

Figure 4 – Pine River Methane Concentrations

Figure 5 – South Fork Texas Creek Methane Gas Flow

Figure 6 – South Fork Texas Creek Surplus Electricity Generated

Figure 7 – Daily Minimum and Maximum Temperature

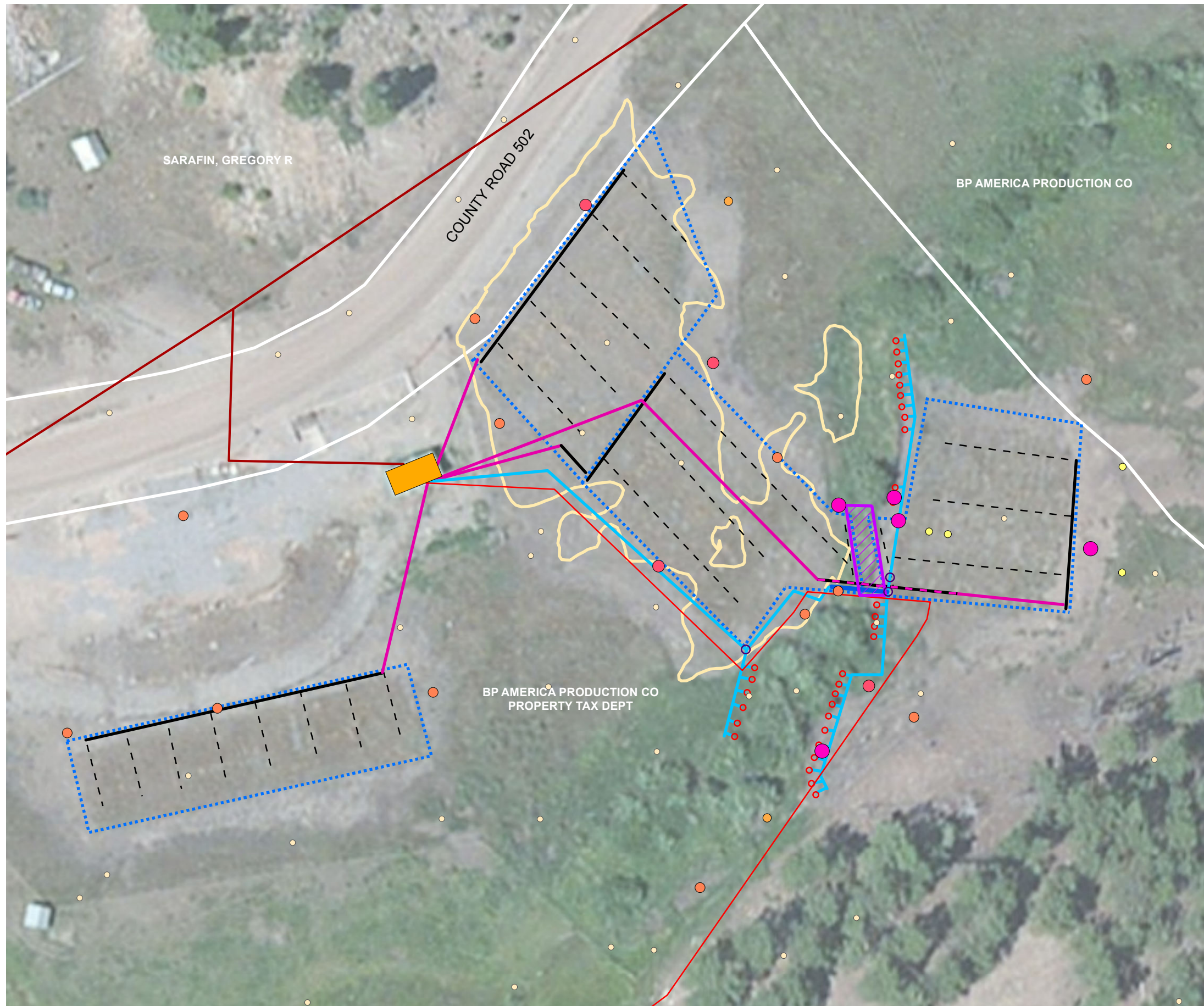
Figure 8 – Monthly Precipitation

Figure 9 – Daily Barometric Pressure

Table 1 – Operation and Maintenance Data South Fork Texas Creek

Table 2 – Gas Concentrations at Manifold Pine River

FIGURES



LEGEND

- DIAGONAL COLLECTION WELL
- VAULT
- ⋯ 20 MIL IMPERVIOUS MEMBRANE
- POWER LINE
- ▨ EXTENDED METHANE COLLECTION (20 MIL BARRIER)
- PROCESS EQUIPMENT FOOTPRINT
- STRESSED VEGETATION
- PARCEL BOUNDARY & OWNER (WHITE)

2013 METHANE FLUX MEASUREMENT (mol/m² · day)

- 0.0000 - 0.1999
- 0.2000 - 0.5000
- 0.5001 - 1.0000
- 1.0001 - 10.0000
- 10.0001 - 50.0000
- 50.0001 - 100.0000
- 100.0001 - 5,000.0000

PIPING

- 2" SCH 40 PVC
- 2" SCH 80 PVC
- 3" SCH 40 PVC
- 3" SCH 80 PVC
- - 4" ADS CORRUGATED PIPING (SLOTTED)
- 4" ADS CORRUGATED PIPING (SOLID)
- 1" HDPE

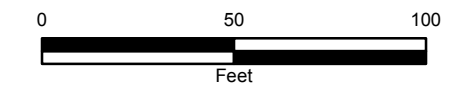


FIGURE 1
 MITIGATION SYSTEM LAYOUT
 SOUTH FORK TEXAS CREEK
 4M OUTCROP MITIGATION PROJECT
 DURANGO, COLORADO
 BP AMERICA PRODUCTION COMPANY
 COLORADO OIL AND GAS CONSERVATION COMMISSION





LEGEND

- VISIBLE METHANE SEEPS IN SURFACE WATER
 - + GAS MONITORING PROBES
 - ⊗ POWER POLE
 - PROCESS EQUIPMENT FOOTPRINT
 - STRESSED VEGETATION
 - ▭ PARCEL BOUNDARY & OWNER (WHITE)
 - POWER LINE
- 2013 METHANE FLUX MEASUREMENT (mol/m² · day)**
- 0.0000 - 0.1999
 - 0.2000 - 0.5000
 - 0.5001 - 1.0000
 - 1.0001 - 10.0000
 - 10.0001 - 50.0000
 - 50.0001 - 100.0000
 - 100.0001 - 5,000.0000
- PIPING**
- 3" SCH 40 PVC
 - - 4" ADS CORRUGATED PIPING (SLOTTED)
 - 4" ADS CORRUGATED PIPING (SOLID)

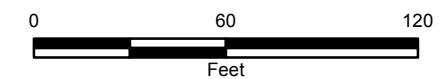


FIGURE 2
MITIGATION SYSTEM LAYOUT
PINE RIVER
4M OUTCROP MITIGATION PROJECT
DURANGO, COLORADO
BP AMERICA PRODUCTION COMPANY
COLORADO OIL AND GAS CONSERVATION COMMISSION



FIGURE 3
SOUTH FORK TEXAS CREEK METHANE CONCENTRATIONS
4M OUTCROP MITIGATION PROJECT
BP AMERICA PRODUCTION COMPANY & COLORADO OIL AND GAS CONSERVATION
COMMISSION

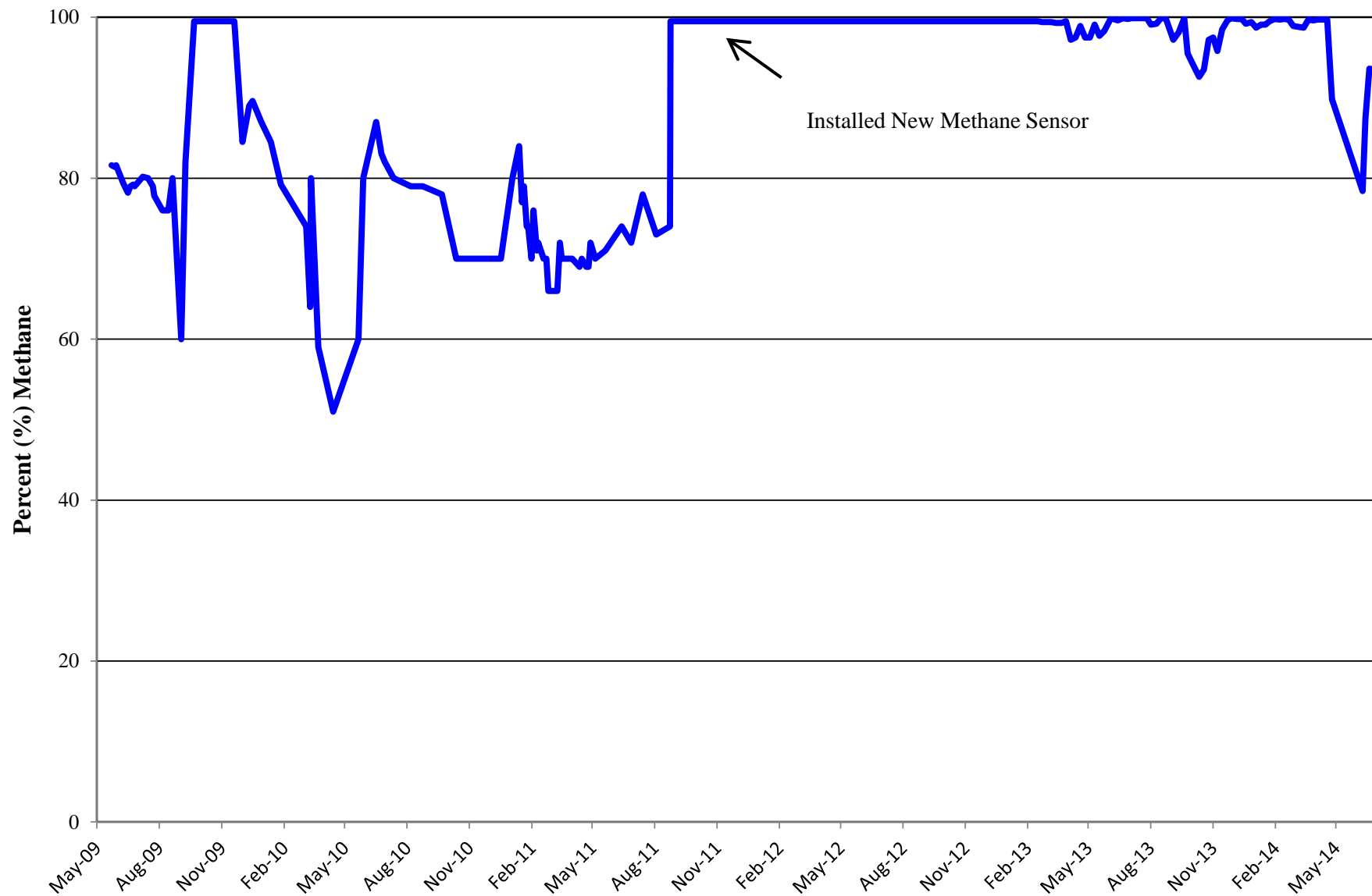


FIGURE 4
PINE RIVER METHANE CONCENTRATIONS
4M OUTCROP MITIGATION PROJECT
BP AMERICA PRODUCTION COMPANY & COLORADO OIL AND GAS CONSERVATION COMMISSION

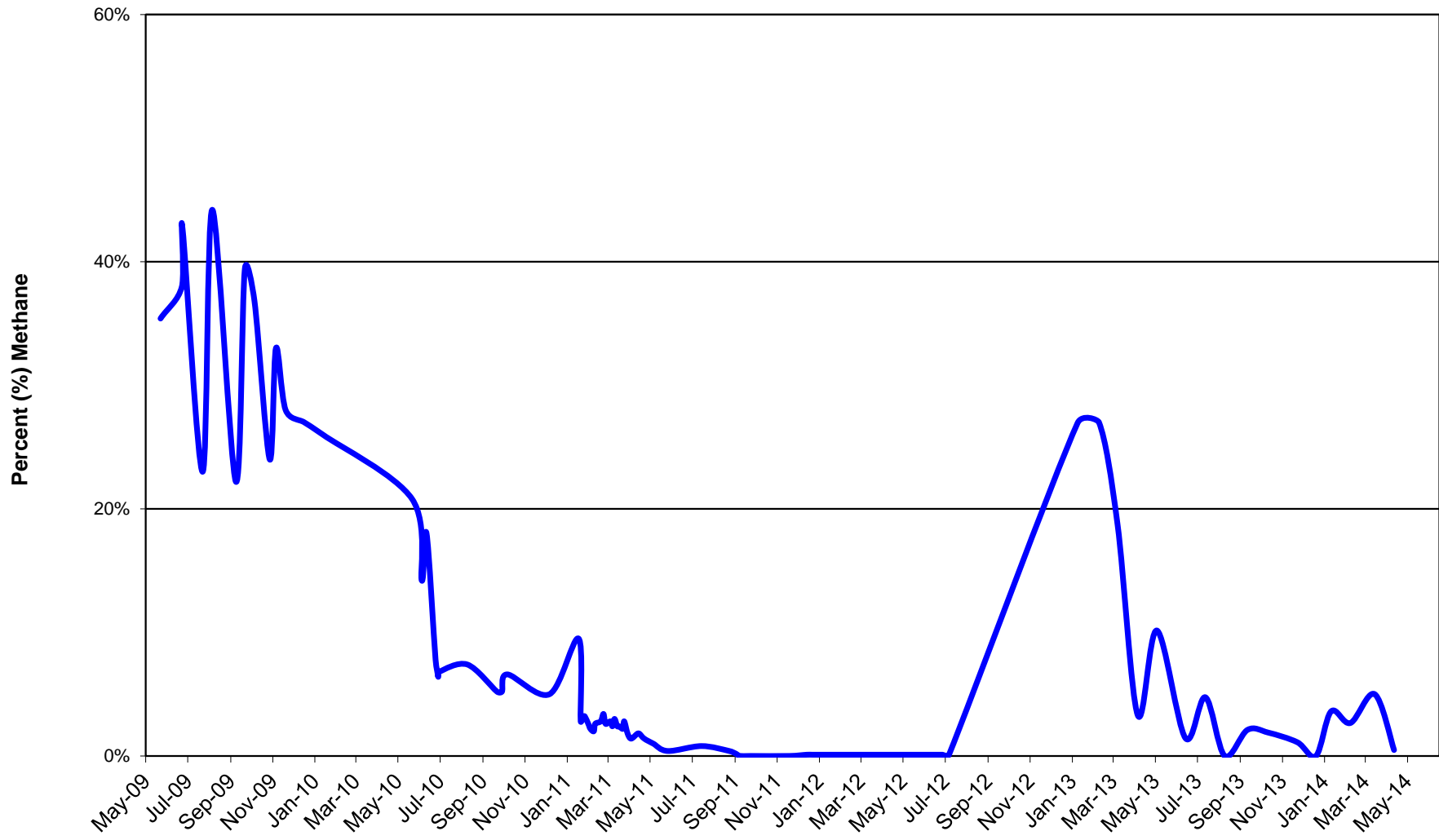


FIGURE 5
SOUTH FORK TEXAS CREEK METHANE GAS FLOW
4M OUTCROP MITIGATION PROJECT
BP AMERICA PRODUCTION COMPANY & COLORADO OIL AND GAS CONSERVATION COMMISSION

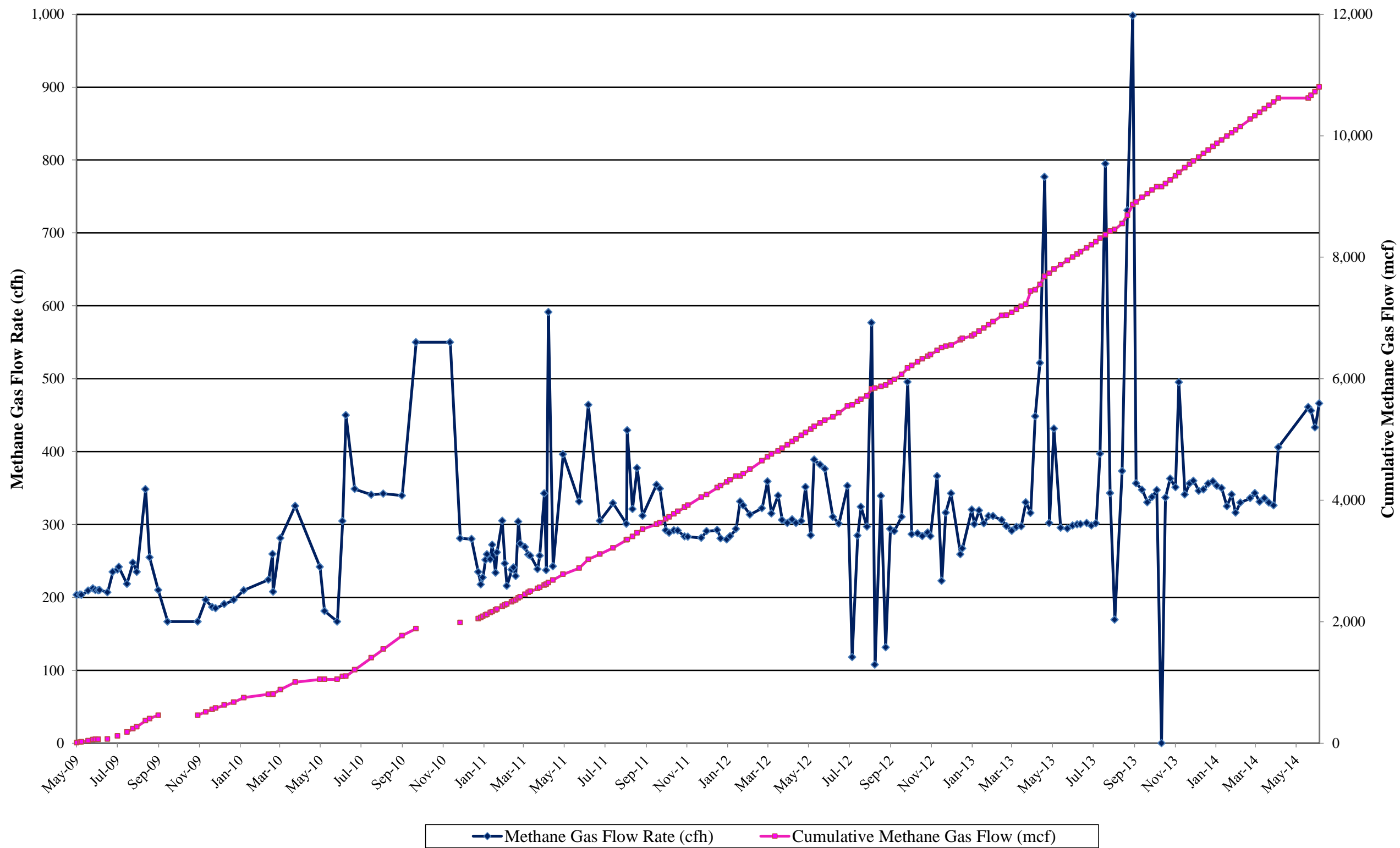


FIGURE 6
SOUTH FORK TEXAS CREEK
SURPLUS ELECTRICITY GENERATED
4M OUTCROP MITIGATION PROJECT
BP AMERICA PRODUCTION COMPANY & COLORADO OIL AND GAS CONSERVATION COMMISSION

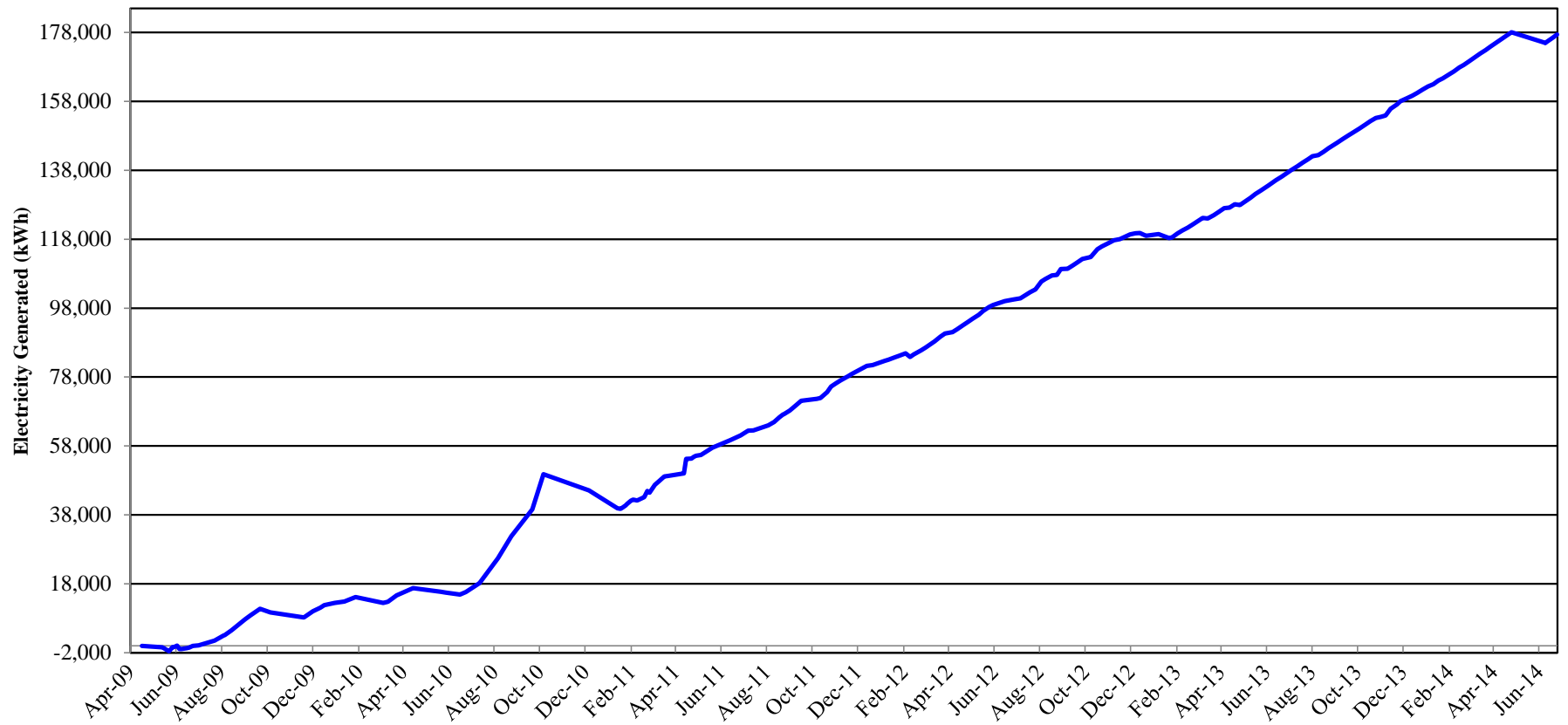


FIGURE 7
DAILY MINIMUM AND MAXIMUM TEMPERATURE
4M OUTCROP MITIGATION PROJECT
BP AMERICA PRODUCTION COMPANY & COLORADO OIL AND GAS CONSERVATION COMMISSION

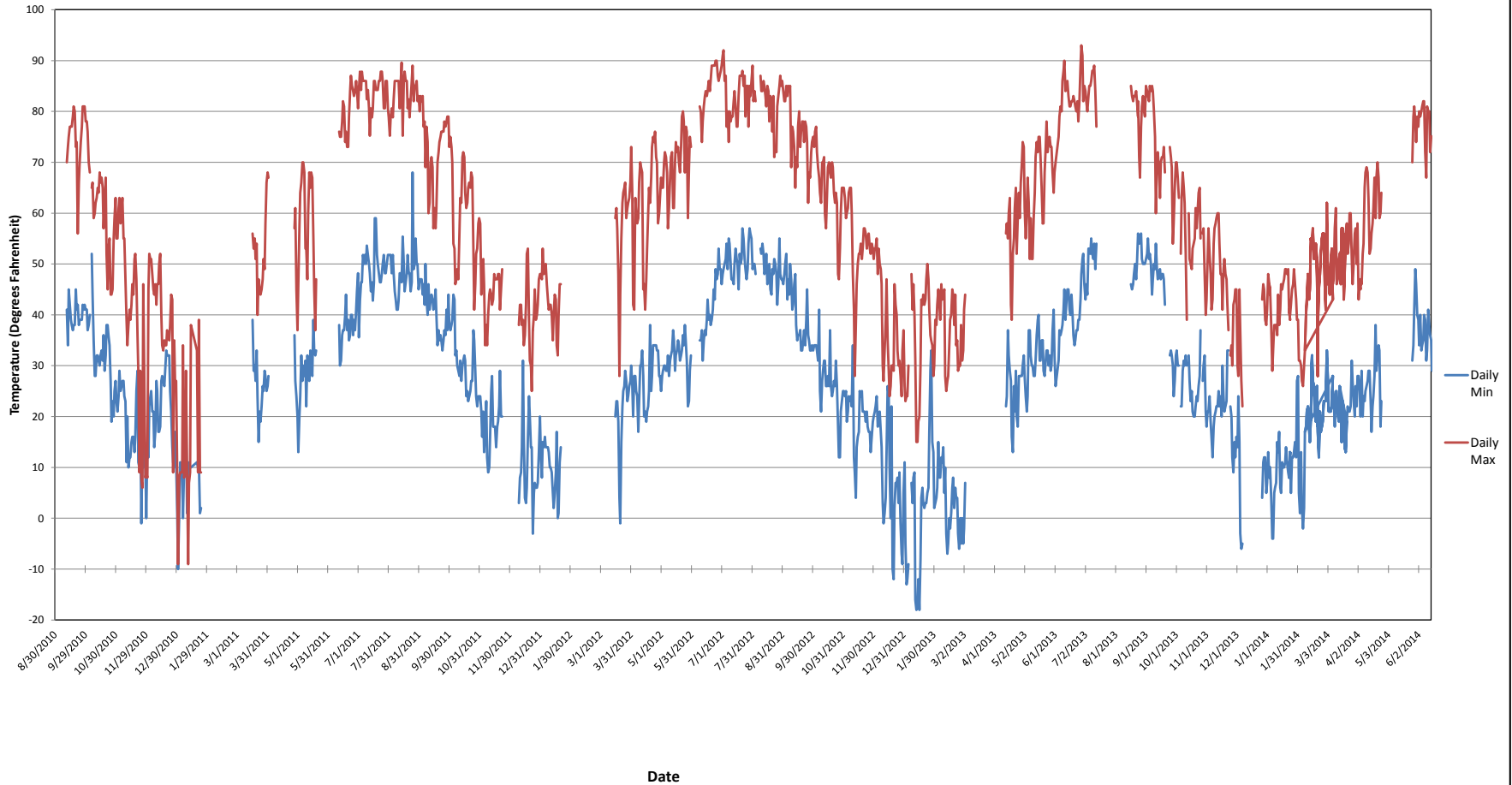


FIGURE 8
MONTHLY PRECIPITATION
4M OUTCROP MITIGATION PROJECT
BP AMERICA PRODUCTION COMPANY & COLORADO OIL AND GAS CONSERVATION COMMISSION

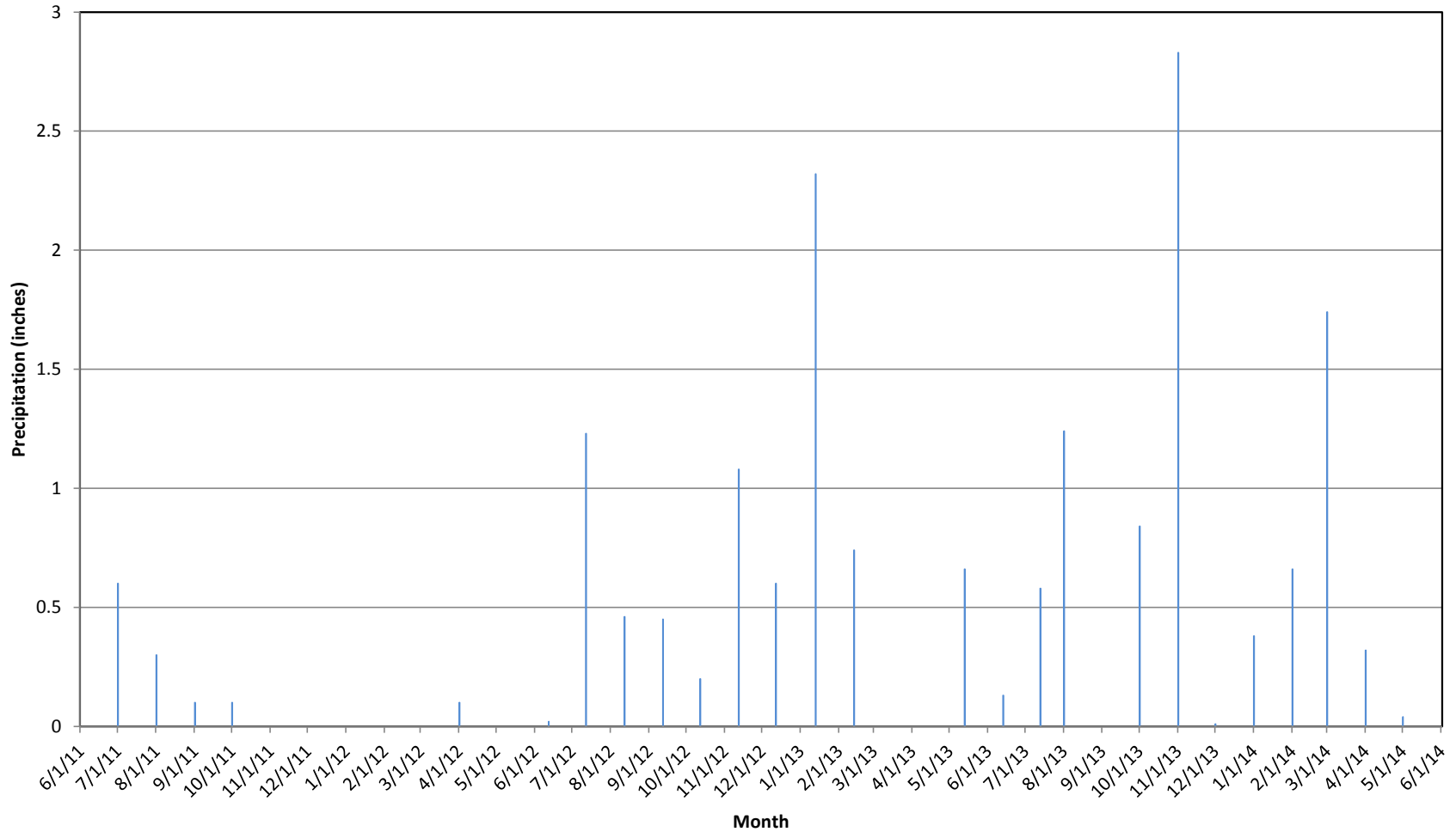
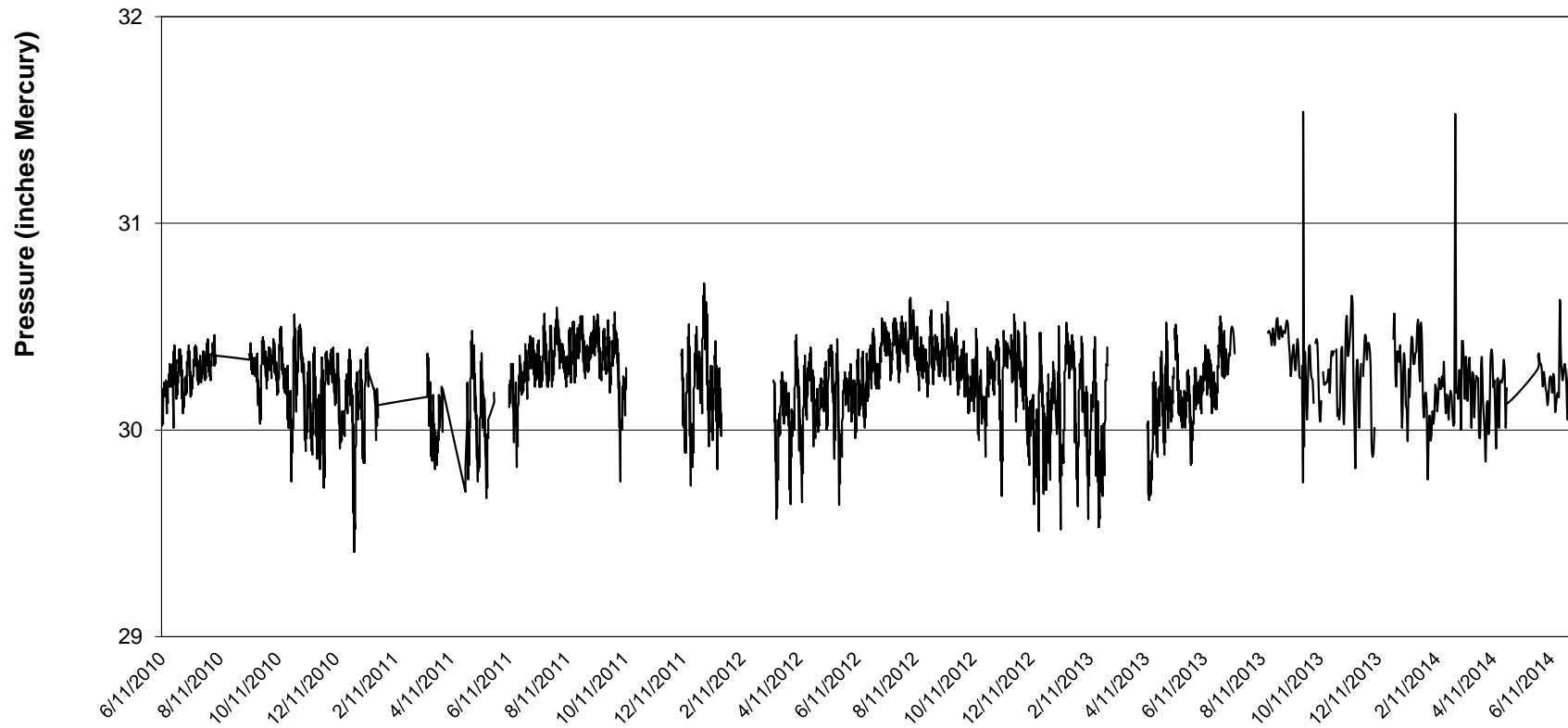


FIGURE 9
DAILY BAROMETRIC PRESSURE
4M OUTCROP MITIGATION PROJECT
BP AMERICA PRODUCTION COMPANY & COLORADO OIL AND GAS CONSERVATION
COMMISSION



TABLES

TABLE 1

**OPERATIONS AND MAINTENANCE DATA
SOUTH FORK TEXAS CREEK
4M OUTCROP MITIGATION PROJECT
BP AMERICA PRODUCTION COMPANY & COLORADO OIL AND GAS CONSERVATION COMMISSION**

Date	System Status Upon Arrival	Electric Meter (kW)	Turbine (hours)	Turbine Demand (kW)	From Chart, Btu/hr needed	Compressor (hours)	Methane (%)	Oxygen (% or ppm)	Calculated Methane Flow (scfh)	Cumulative Calculated Methane Recovered (mcf)
5/22/2009	OFF	51,540	34	10	166,000	--	81.6	130	203	7
5/27/2009	OFF	50,355	90	10	166,000	--	81.4	33	204	18
5/29/2009	OFF	50,368	113	10	166,000	--	81.6	15.2	203	23
6/8/2009	OFF	50,967	192	10	166,000	--	79.4	14.9	209	40
6/15/2009	OFF	50,683	286	10	166,000	289	78.2	83	212	59
6/19/2009	OFF	50,510	305	10	166,000	308	79.0	19.8	210	63
6/23/2009	OFF	50,004	310	10	166,000	402	79.2	0.16	210	65
6/25/2009	OFF	--	318	10	166,000	411	79.0	--	--	--
7/7/2009	OFF	50,983	338	10	166,000	431	80.2	51.2	207	69
7/15/2009	ON	--	523	10 to 12	188,000	620	--	--	--	--
7/22/2009	OFF	50,519	558	12	188,000	659	79.0	48	238	121
7/24/2009	OFF	50,365	600	12	188,000	700	--	--	--	--
8/5/2009	ON	46,840	891	10	166,000	993	76.0	5.25	218	185
8/14/2009	ON	45,536	1,106	12	188,000	1,208	76.0	3.25	247	238
8/20/2009	ON	44,501	1,251	12	188,000	1,353	80.0	4.25	235	272
9/2/2009	OFF	42,246	1,538	14	209,000	1,602	60.0	0.39	348	372
9/8/2009	ON	41,236	1,666	14	209,000	1,779	82.0	0.1	255	404
9/21/2009	ON	39,298	1,934	14 to 16	209,000	2,101	99.5	0.1	210	461
10/5/2009	OFF For Repairs	40,322	2,009	OFF	166,000	2,332	--	2.75	--	--
11/19/2009	ON	41,776	1	12	166,000	--	99.5	93 ppm	167	461
12/1/2009	ON	39,960	286	12	166,000	2,623	84.5	1.9 ppm	196	517
12/11/2009	OFF	38,941	495	12	166,000	2,866	89.0	2.0 ppm	187	556
12/16/2009	ON	38,235	615	12	166,000	2,986	89.6	1.8 ppm	185	578
12/29/2009	OFF	37,548	876	12	166,000	3,321	87.0	3.0 ppm	191	628
1/12/2010	OFF	37,127	1,109	12	166,000	3,632	84.5	3.25 ppm	196	674
1/27/2010	ON	35,875	1,469	12	166,000	3,993	79.2	0.1	210	749
3/5/2010	OFF	37,586	1,722	12	166,000	4,246	74.0	0.16	224	806
3/11/2010	OFF	37,217	1,723	12	166,000	4,247	64.0	130 ppm	259	806
3/12/2010	ON	37,172	1,747	12	166,000	4,271	80.0	23.2 ppm	208	811
3/23/2010	ON	35,364	2,009	12	166,000	4,533	59.0	0.1	281	885
4/14/2010	--	33,275	2,379	12	166,000	4,900	51.0	52 ppm	325	1,005
5/21/2010	OFF	34,290	2,573	8	145,000	5,099	60.0	--	242	1,052
5/28/2010	OFF	34,589	2,573	8	145,000	5,099	80.0	--	181	1,052
6/16/2010	ON	35,119	2,574	8	145,000	5,101	87.0	0.1	167	1,052



TABLE 1

OPERATIONS AND MAINTENANCE DATA
 SOUTH FORK TEXAS CREEK
 4M OUTCROP MITIGATION PROJECT
 BP AMERICA PRODUCTION COMPANY & COLORADO OIL AND GAS CONSERVATION COMMISSION

Date	System Status Upon Arrival	Electric Meter (kW)	Turbine (hours)	Turbine Demand (kW)	From Chart, Btu/hr needed	Compressor (hours)	Methane (%)	Oxygen (% or ppm)	Calculated Methane Flow (scfh)	Cumulative Calculated Methane Recovered (mcf)
6/24/2010	OFF *	34,436	2,720	18	253,000	5,249	83.0	0.1	305	1,097
6/29/2010	ON	34,412	2,733	20	274,000	5,262	82.0	0.1	450	1,102
7/12/2010	ON	31,780	3,035	20	274,000	5,576	80.0	0.1	349	1,208
8/6/2010	ON	24,587	3,613	19.2	265,000	6,171	79.0	0.1	341	1,405
8/24/2010	ON	18,172	4,035	19	265,000	6,605	79.0	0.1	342	1,549
9/21/2010	ON	10,437	4,690	18.1	253,000	7,279	78.0	0.1	340	1,771
10/1/2010	ON	8,260	4,900	18.0	253,000	8,154	70.0	0.1	1251	2,034
12/2/2010	--	3,290	--	--	--	--	--	--	--	--
12/17/2010	OFF	4,901	5,246	12.0	166,000	8,364	70.0	0.1	281	2,131
1/3/2011	--	7,820	--	--	--	--	--	--	--	--
1/13/2011	OFF	10,209	5,592	8.0	145,000	8,574	84.0	0.1	235	2,197
1/17/2011	ON	10,102	5,684	8.0	145,000	8,668	77.0	0.1	218	2,217
1/20/2011	ON	9,869	5,758	9.9	166,000	8,741	79.0	0.1	227	2,234
1/24/2011	ON	9,269	5,854	13.0	199,000	8,838	74.0	0.1	251	2,258
1/26/2011	ON	8,856	5,898	14.9	220,000	8,884	74.0	0.1	259	2,269
1/31/2011	ON	7,872	6,013	14.5	209,000	9,000	70.0	0.1	252	2,298
2/3/2011	OFF	7,549	6,075	12.9	199,000	9,079	76.0	0.1	272	2,315
2/8/2011	ON	6,846	6,191	12.9	199,000	9,194	71.0	0.1	234	2,342
2/10/2011	OFF	6,694	6,240	13.9	209,000	9,247	72.0	0.1	262	2,355
2/18/2011	OFF	5,712	6,386	13.9	209,000	9,412	70.0	0.1	305	2,400
2/22/2011	ON	5,157	6,476	14.0	209,000	9,506	70.0	0.1	247	2,422
2/25/2011	ON	4,581	6,550	13.0	199,000	9,580	66.0	0.1	216	2,438
3/4/2011	ON	3,243	6,707	13.0	199,000	9,747	66.0	0.1	238	2,475
3/7/2011	ON	--	6,776	13.0	199,000	9,817	66.0	0.1	241	2,492
3/10/2011	ON	2,138	6,846	12.3	188,000	9,888	66.0	0.1	229	2,508
3/14/2011	ON	1,397	6,941	13.0	199,000	9,984	72.0	0.1	304	2,537
3/17/2011	ON	873	7,008	12.9	199,000	10,051	70.0	0.1	274	2,555
3/24/2011	ON	99,288	7,170	12.9	199,000	10,218	70.0	0.1	269	2,599
3/29/2011	ON	98,294	7,288	12.9	199,000	10,338	70.0	0.1	259	2,629
4/1/2011	ON	97,517	7,362	9.9	166,000	10,414	70.0	0.1	257	2,648
4/12/2011	ON	96,305	7,553	10.9	177,000	10,674	69.0	0.1	239	2,694
4/15/2011	ON	95,767	7,626	10.9	177,000	10,747	70.0	0.1	257	2,713
4/22/2011	ON	95,629	7,740	8.0	145,000	10,915	69.0	0.1	343	2,752
4/25/2011	ON	95,164	7,797	8.0	145,000	11,012	69.0	0.1	237	2,765



TABLE 1

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SOUTH FORK TEXAS CREEK
4M OUTCROP MITIGATION PROJECT
BP AMERICA PRODUCTION COMPANY & COLORADO OIL AND GAS CONSERVATION COMMISSION**

Date	System Status Upon Arrival	Electric Meter (kW)	Turbine (hours)	Turbine Demand (kW)	From Chart, Btu/hr needed	Compressor (hours)	Methane (%)	Oxygen (% or ppm)	Calculated Methane Flow (scfh)	Cumulative Calculated Methane Recovered (mcf)
4/28/2011	ON	94,834	7,844	10.9	177,000	11,058	72.0	0.1	591	2,793
5/5/2011	ON	94,642	8,009	11.0	177,000	11,224	70.0	0.1	243	2,833
5/20/2011	ON	92,515	8,251	10.9	177,000	11,577	71.0	0.1	396	2,929
6/13/2011	ON	90,313	8,551	20.0	209,000	11,889	74.0	0.1	332	3,028
6/27/2011	ON	88,943	8,864	11.9	188,000	12,459	72.0	0.1	464	3,174
7/14/2011	ON	87502	9,148	13.0	199,000	12,866	78.0	0.1	305	3,260
8/3/2011	ON	86014	9,459	12.9	199,000	13,347	73.0	0.1	329	3,362
8/23/2011	ON	82,879	9,892	13.0	199,000	13,824	74.0	0.1	301	3,493
8/24/2011	ON	82753	9,908	12.9	199,000	13,831	99.5	0.1	429	3,500
9/1/2011	OFF	81745	10,062	13.0	199,000	14,036	99.5	0.1	321	3,549
9/8/2011	ON	80440	10,228	13.0	199,000	14,204	99.5	0.1	378	3,612
9/16/2011	ON	78926	10,419	13.0	199,000	14,396	99.5	0.1	312	3,671
10/7/2011	OFF	78343	10,646	13.0	199,000	14,893	99.5	0.1	355	3,752
10/12/2011	OFF	78065	10,713	10.0	166,000	15,012	99.5	0.1	349	3,775
10/21/2011	ON	77901	10,927	10.0	166,000	15,227	99.5	0.1	292	3,838
10/26/2011	ON	76,338	11,045	20.0	274,000	15,346	99.5	0.1	288	3,872
11/2/2011	ON	75,330	11,215	11.0	177,000	15,517	99.5	0.1	292	3,921
11/8/2011	ON	74,515	11,359	11.0	177,000	15,660	99.5	0.1	292	3,963
11/18/2011	ON	73,275	11,598	11.0	177,000	15,899	99.5	0.1	284	4,031
11/23/2011	ON	72,623	11,715	11.0	177,000	16,016	99.5	0.1	283	4,064
12/13/2011	ON	70,334	12,198	11.0	177,000	16,499	99.5	0.1	282	4,200
12/21/2011	OFF	70,062	12,338	11.0	177,000	16,691	99.5	0.1	291	4,241
1/6/2012	ON	68,872	12,721	11.0	177,000	17,075	99.5	0.1	292	4,353
1/11/2012	ON	68,481	12,840	11.0	177,000	17,193	99.5	0.1	281	4,386
1/20/2012	ON	67,814	13,057	11.0	177,000	17,410	99.5	0.1	279	4,447
1/25/2012	ON	67,382	13,179	11.0	177,000	17,532	99.5	0.1	284	4,482
2/3/2012	ON	66,646	13,391	11.0	177,000	17,744	99.5	0.1	294	4,544
2/9/2012	OFF	67,672	13,394	11.0	177,000	17,749	99.5	0.1	332	4,545
2/14/2012	ON	66,993	13,513	11.0	177,000	17,868	99.5	0.1	326	4,584
2/24/2012	ON	65,738	13,751	11.0	177,000	18,106	99.5	0.1	314	4,658
3/13/2012	ON	63,190	14,178	12.0	166,000	18,537	99.5	0.1	322	4,796
3/21/2012	ON	61,775	14,364	20.0	274,000	18,729	99.5	0.1	359	4,863
3/27/2012	ON	60,912	14,509	12.0	166,000	18,874	99.5	0.1	315	4,908
4/6/2012	OFF	60,519	14,657	11.0	177,000	19,111	99.5	0.1	340	4,959



TABLE 1

**OPERATIONS AND MAINTENANCE DATA
SOUTH FORK TEXAS CREEK
4M OUTCROP MITIGATION PROJECT
BP AMERICA PRODUCTION COMPANY & COLORADO OIL AND GAS CONSERVATION COMMISSION**

Date	System Status Upon Arrival	Electric Meter (kW)	Turbine (hours)	Turbine Demand (kW)	From Chart, Btu/hr needed	Compressor (hours)	Methane (%)	Oxygen (% or ppm)	Calculated Methane Flow (scfh)	Cumulative Calculated Methane Recovered (mcf)
4/12/2012	ON	59,661	14,800	11.0	177,000	19,254	99.5	0.1	306	5,002
4/20/2012	ON	58,486	14,993	11.0	177,000	19,447	99.5	0.1	302	5,061
4/27/2012	ON	57,475	15,161	11.0	177,000	19,615	99.5	0.1	307	5,112
5/3/2012	ON	56,611	15,306	11.0	177,000	19,760	99.5	0.1	302	5,156
5/11/2012	ON	55,460	15,499	11.0	177,000	19,953	99.5	0.1	305	5,215
5/17/2012	ON	54,358	15,634	11.0	177,000	20,094	99.5	0.1	352	5,262
5/25/2012	ON	53,228	15,826	11.0	177,000	20,287	99.5	0.1	285	5,317
5/30/2012	ON	52,627	15,945	11.0	177,000	20,405	99.5	0.1	389	5,363
6/8/2012	OFF	52,020	16,087	11.0	177,000	20,620	99.5	0.1	382	5,417
6/15/2012	OFF	51,512	16,210	11.0	177,000	20,789	99.5	0.1	376	5,464
6/27/2012	ON	51,039	16,392	10.0	166,000	21,070	99.5	0.1	311	5,520
7/6/2012	ON	50,712	16,611	11.0	177,000	21,289	99.5	0.1	301	5,586
7/19/2012	ON	48,930	16,923	11.0	177,000	21,601	99.5	0.1	453	5,727
7/26/2012	ON	48,136	17,092	11.0	177,000	21,770	99.5	0.1	18	5,730
8/3/2012	ON	45,832	17,293	11.0	177,000	21,961	99.5	0.1	285	5,788
8/8/2012	ON	45,132	17,402	11.0	177,000	22,080	99.5	0.1	324	5,823
8/17/2012	ON	44,033	17,592	11.0	177,000	22,270	99.5	0.1	297	5,879
8/24/2012	ON	43,879	17,785	11.0	177,000	22,463	99.5	0.1	577	5,991
8/29/2012	ON	42,152	17,928	11.0	177,000	22,606	99.5	0.1	108	6,006
9/7/2012	OFF	42,124	18,011	11.0	177,000	22,800	99.5	0.1	339	6,034
9/14/2012	ON	41,166	18,174	11.0	177,000	22,963	99.5	0.1	131	6,056
9/21/2012	ON	40,158	18,343	11.0	177,000	23,133	99.5	0.1	294	6,105
9/27/2012	ON	39,307	18,489	11.0	177,000	23,279	99.5	0.1	291	6,148
10/8/2012	ON	38,739	18,753	11.0	177,000	23,543	99.5	0.1	311	6,230
10/17/2012	ON	36,454	18,968	11.0	177,000	23,758	99.5	0.1	496	6,336
10/23/2012	ON	35,608	19,112	11.0	177,000	23,902	99.5	0.1	287	6,378
11/1/2012	ON	34,651	19,328	11.0	177,000	24,118	99.5	0.1	288	6,440
11/8/2012	ON	33,827	19,499	11.0	177,000	24,289	99.5	0.1	284	6,488
11/16/2012	OFF	33,502	19,644	11.0	177,000	24,481	99.5	0.1	289	6,530
11/20/2012	ON	33,142	19,739	11.0	177,000	24,576	99.5	0.1	284	6,557
11/30/2012	OFF	32,139	19,925	11.0	177,000	24,814	99.5	0.1	366	6,625
12/7/2012	ON	31,826	20,143	11.0	177,000	24,982	99.5	0.1	223	6,674



TABLE 1

**OPERATIONS AND MAINTENANCE DATA
SOUTH FORK TEXAS CREEK
4M OUTCROP MITIGATION PROJECT
BP AMERICA PRODUCTION COMPANY & COLORADO OIL AND GAS CONSERVATION COMMISSION**

Date	System Status Upon Arrival	Electric Meter (kW)	Turbine (hours)	Turbine Demand (kW)	From Chart, Btu/hr needed	Compressor (hours)	Methane (%)	Oxygen (% or ppm)	Calculated Methane Flow (scfh)	Cumulative Calculated Methane Recovered (mcf)
12/13/2012	OFF	31,763	20,216	11.0	177,000	25,126	99.5	0.1	316	6,697
12/21/2012	OFF	32,550	20,268	9.0	155,500	25,318	99.5	0.1	343	6,715
1/4/2013	ON	32,154	20,600	9.0	155,500	25,651	99.5	0.1	259	6,801
1/7/2013	ON	32,084	20,695	10.0	166,000	25,746	99.5	0.1	267	6,826
1/21/2013	OFF	33,216	20,814	11.0	177,000	25,993	99.5	0.1	320	6,864
1/25/2013	ON	33,024	20,911	11.0	177,000	26,089	99.5	0.1	301	6,894
2/1/2013	ON	31,930	21,073	11.5	177,000	26,255	99.5	0.1	319	6,945
2/8/2013	ON	31,044	21,241	11.5	177,000	26,423	99.5	0.1	301	6,996
2/15/2013	ON	30,155	21,411	12.0	188,000	26,593	99.5	0.1	311	7,049
2/22/2013	ON	29,261	21,577	12.0	188,000	26,759	99.4	0.1	311	7,101
3/7/2013	ON	27,392	21,914	12.0	188,000	27,096	99.4	0.1	306	7,204
3/14/2013	ON	27,502	21,923	11.0	177,000	27,105	99.3	0.1	298	7,206
3/22/2013	OFF	26,548	22,089	11.0	177,000	27,271	99.3	0.1	291	7,255
3/29/2013	ON	25,567	22,257	11.0	177,000	27,439	99.5	0.3	297	7,305
4/5/2013	ON	24,541	22,423	11.0	177,000	27,605	97.2	0.23	297	7,354
4/12/2013	OFF	24,374	22,518	11.1	177,000	27,775	97.5	0.31	330	7,385
4/19/2013	ON	23,359	22,688	11.1	177,000	27,944	98.9	0.3	316	7,439
4/26/2013	OFF	23,629	22,743	11.1	177,000	28,112	97.5	0.32	449	7,464
5/3/2013	ON	22,574	22,911	11.1	177,000	28,280	97.5	0.3	522	7,551
5/10/2013	ON	21,491	23,080	11.1	177,000	28,448	99.1	0.28	777	7,683
5/17/2013	ON	20,426	23,247	11.1	177,000	28,616	97.7	0.26	302	7,733
5/24/2013	ON	19,384	23,413	11.1	177,000	28,782	98.3	0.3	432	7,805
6/3/2013	ON	17,944	23,653	11.1	177,000	29,023	99.9	0.29	296	7,876
6/13/2013	ON	16,453	23,895	11.1	177,000	29,264	99.6	0.28	294	7,947
6/21/2013	ON	15,331	24,081	11.1	177,000	29,450	99.9	0.3	299	8,002
6/28/2013	ON	14,308	24,250	11.1	177,000	29,620	99.8	0.17	300	8,053
7/3/2013	ON	13,570	24,372	11.1	177,000	29,742	99.9	0.29	301	8,090
7/12/2013	ON	12,398	24,586	11.1	177,000	29,956	99.9	0.29	302	8,154
7/19/2013	ON	11,318	24,752	11.1	177,000	30,121	99.9	0.2	298	8,204
7/26/2013	ON	10,305	24,923	11.1	177,000	30,293	99.9	0.17	301	8,256
8/1/2013	ON	9,447	25,067	11.0	177,000	30,437	99.1	0.18	397	8,313
8/9/2013	ON	9,126	25,139	11.1	177,000	30,509	99.2	0.2	795	8,370



TABLE 1

**OPERATIONS AND MAINTENANCE DATA
SOUTH FORK TEXAS CREEK
4M OUTCROP MITIGATION PROJECT
BP AMERICA PRODUCTION COMPANY & COLORADO OIL AND GAS CONSERVATION COMMISSION**

Date	System Status Upon Arrival	Electric Meter (kW)	Turbine (hours)	Turbine Demand (kW)	From Chart, Btu/hr needed	Compressor (hours)	Methane (%)	Oxygen (% or ppm)	Calculated Methane Flow (scfh)	Cumulative Calculated Methane Recovered (mcf)
8/16/2013	ON	8,139	25,307	11.0	177,000	30,677	99.9	0.1	343	8,428
8/23/2013	ON	7,130	25,476	11.0	177,000	30,846	99.9	0.1	169	8,456
9/3/2013	ON	5,560	25,743	11.1	177,000	31,112	97.2	0.1	373	8,556
9/11/2013	ON	4,425	25,932	11.0	177,000	31,302	98.1	0.1	731	8,694
9/19/2013	OFF	3,304	26,104	11.0	177,000	31,474	99.9	0.1	998	8,866
9/24/2013	ON	2,666	26,227	11.0	177,000	31,597	95.5	0.1	356	8,909
10/3/2013	ON	1,414	26,442	11.0	177,000	31,812	94.0	0.1	348	8,984
10/11/2013	ON	257	26,632	11.0	177,000	32,062	92.6	0.1	330	9,047
10/18/2013	ON	99,265	26,799	10.9	177,000	32,169	93.5	0.1	338	9,103
10/25/2013	ON	98,342	26,965	11.0	177,000	32,335	97.2	0.1	347	9,161
11/1/2013	ON	97,992	27,131	10.9	177,000	32,501	97.5	0.1	0	9,161
11/7/2013	ON	97,642	27,280	10.9	177,000	32,650	95.8	0.1	337	9,211
11/14/2013	ON	95,637	27,445	11.0	177,000	32,815	98.5	0.19	363	9,271
11/22/2013	ON	94,483	27,642	11.0	177,000	33,012	99.6	0.1	351	9,340
11/27/2013	ON	93,488	27,758	20.0	209,000	33,131	99.9	0.1	495	9,398
12/6/2013	ON	92,568	27,974	11.0	177,000	33,347	99.8	0.1	341	9,471
12/13/2013	ON	91,854	28,141	11.0	177,000	33,515	99.8	0.1	356	9,531
12/19/2013	ON	91,104	28,286	11.0	177,000	33,659	99.2	0.1	360	9,583
12/27/2013	ON	90,108	28,478	11.0	177,000	33,851	99.4	0.1	346	9,649
1/3/2014	ON	89,226	28,644	11.0	177,000	34,017	98.7	0.13	348	9,707
1/10/2014	OFF	88,536	28,796	11.0	177,000	33,081	99.1	0.1	356	9,761
1/17/2014	ON	87,509	28,965	11.0	177,000	33,249	99.1	0.1	359	9,822
1/23/2014	ON	86,822	29,109	11.0	177,000	33,393	99.5	0.1	353	9,873
1/30/2014	ON	85,846	29,275	11.0	177,000	33,560	99.8	0.1	350	9,931
2/7/2014	ON	84,811	29,472	11.0	177,000	33,756	99.7	0.1	325	9,995
2/14/2014	ON	83,702	29,635	11.0	177,000	33,920	99.8	0.1	341	10,050
2/20/2014	ON	82,933	29,775	11.0	177,000	34,060	99.7	0.1	316	10,095
2/27/2014	ON	81,888	29,947	11.0	177,000	34,231	98.9	0.1	330	10,151
3/14/2014	ON	79,643	30,307	11.0	177,000	34,592	98.7	0.3	336	10,272
3/21/2014	ON	78,636	30,474	11.0	177,000	34,759	99.7	0.1	343	10,330
3/28/2014	ON	77,608	30,643	11.0	177,000	34,928	99.6	0.15	331	10,386
4/4/2014	ON	76,575	30,810	11.0	177,000	35,095	99.7	0.1	336	10,442



TABLE 1

**OPERATIONS AND MAINTENANCE DATA
SOUTH FORK TEXAS CREEK
4M OUTCROP MITIGATION PROJECT
BP AMERICA PRODUCTION COMPANY & COLORADO OIL AND GAS CONSERVATION COMMISSION**

Date	System Status Upon Arrival	Electric Meter (kW)	Turbine (hours)	Turbine Demand (kW)	From Chart, Btu/hr needed	Compressor (hours)	Methane (%)	Oxygen (% or ppm)	Calculated Methane Flow (scfh)	Cumulative Calculated Methane Recovered (mcf)
4/11/2014	ON	75,529	30,979	11.0	177,000	35,264	99.7	0.1	330	10,498
4/18/2014	ON	74,478	31,147	11.0	177,000	35,432	99.7	0.1	326	10,552
4/25/2014	ON	73,446	31,313	11.0	177,000	35,598	89.8	0.1	406	10,620
6/9/2014	ON	76,589	31,314	11.0	177,000	35,600	78.4	0.1	461	10,620
6/13/2014	ON	76,022	31,407	11.0	177,000	35,693	87.4	0.1	456	10,663
6/19/2014	ON	75,121	31,554	11.0	177,000	35,839	93.6	0.1	433	10,726
6/25/2014	ON	74,118	31,719	11.0	177,000	36,005	93.5	1.32	466	10,803

Notes:

kW - kilowatts

Btu/hr - British thermal units per hour

% - percent

mcf - 1,000 cubic feet

ppm - parts per million

scfh - standard cubic feet per hour

-- reading not collected/not applicable

* - new flow meter was installed

some kwh readings 1st qtr 2011 adjusted to correct meter readings compared to LPEA readings



TABLE 2

**GAS CONCENTRATIONS AT MANIFOLD
PINE RIVER
4M OUTCROP MITIGATION PROJECT
BP AMERICA PRODUCTION COMPANY & COLORADO OIL AND GAS CONSERVATION COMMISSION**

Date	Line 1			Line 2			Line 3			Line 4			Combined		
	CH ₄ (%)	H ₂ S (%)	O ₂ (%)	CH ₄ (%)	H ₂ S (%)	O ₂ (%)	CH ₄ (%)	H ₂ S (%)	O ₂ (%)	CH ₄ (%)	H ₂ S (%)	O ₂ (%)	CH ₄ (%)	H ₂ S (%)	O ₂ (%)
1/8/2013	5.0	0.0	14.5	19.0	0.0	13.4	80.0	0.0	7.6	3.8	0.0	18.3	NM	NM	NM
2/8/2013	4.0	0.0	14.0	22.0	0.0	12.6	78.0	0.0	8.0	4.0	0.0	20.0	NM	NM	NM
3/7/2013	25.0	0.0	14.0	15.0	0.0	12.9	31.0	0.0	7.7	3.8	0.0	19.0	25.0	0.0	19.0
4/5/2013	1.0	0.0	17.0	0.4	0.0	19.2	10.0	0.0	13.4	1.9	0.0	16.4	2.6	0.0	14.5
5/3/2013	1.1	0.0	16.8	0.5	0.0	19.0	21.0	0.0	12.4	18.0	0.0	14.1	3.6	0.0	15.0
6/13/2013	0.4	0.0	18.0	1.3	0.0	16.3	3.2	0.0	9.7	1.1	0.0	15.6	1.1	0.0	0.0
7/12/2013	8.0	0.0	20.9	0.0	0.0	17.4	11.0	0.0	14.3	0.0	0.0	18.0	3.0	0.0	17.2
8/9/2013	0.0	0.0	20.9	0.0	0.0	16.9	0.0	0.0	16.8	0.0	0.0	16.6	0.0	0.0	16.7
9/11/2013	2.5	0.0	9.9	0.4	0.0	13.5	5.0	0.0	7.2	0.6	0.0	13.0	2.3	0.0	11.9
10/11/2013	0.0	0.0	18.4	0.0	0.0	16.4	5.0	0.0	10.6	2.6	0.0	10.5	1.8	0.0	13.6
11/22/2013	0.0	0.0	13.1	0.5	0.0	17.2	4.0	0.0	8.0	0.0	0.0	15.0	2.0	0.0	16.9
12/19/2013	1.1	0.0	15.1	2.0	0.0	15.4	5.0	0.0	12.8	4.3	0.0	13.1	2.9	0.0	14.9
1/10/2014	0.3	0.0	13.4	4.2	0.0	12.0	5.0	0.0	9.3	5.0	0.0	7.5	2.4	0.0	12.3
2/7/2014	0.4	0.0	10.1	1.0	0.0	12.4	4.4	0.0	8.0	5.0	0.0	0.0	3.1	0.0	14.0
3/14/2014	5.0	0.0	6.9	5.0	0.0	0.0	5.0	0.0	0.0	5.0	4.4	0.0	5.0	0.0	0.0
4/11/2014	0.0	0.0	18.2	0.2	0.0	17.0	1.1	0.0	11.2	0.7	0.0	15.2	0.4	0.0	16.5
5/1/2014*	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
6/24/2014	0	0	16.6	0	0	18.2	0.83	0	11.3	0	0	16.8	7	0	15.2

Notes:

*May 2014 Data not collected due to operational shut down at Texas Creek

% - percent

CH₄ - Methane

H₂S - Hydrogen Sulfide

NM - Not Measured

O₂ - Oxygen

