

2017 Bi-Annual Subsidence Report

Bowie Resources LLC

**Bowie No. 2 Mine
Permit No. C-1996-083**

Paonia, Colorado

March 5, 2018

Introduction

This report is for the period from July 1, 2017 through December 31, 2017. Mine Construction of the Bowie No. 2 Mine began during May of 1997, with coal production beginning during August 1997. The Bowie No. 2 Mine temporarily ceased production of coal effective February 26, 2016.

The mining permit application for the Bowie No. 2 Mine requires the operator to submit the results of the subsidence monitoring programs and the results of the visual inspections of known modern and historic landslides within the permit and adjacent area for stability in June and December of each year and report these results to the Division within 30 days of the end of the reporting period.

The Operator is also required to inspect these landslides, both modern and historic, monthly for six months immediately after retreat mining occurs. This same inspection routine is applied to any spring or pond in the immediate proximity of retreat mining.

There was no mining during the reporting period.

Visual Inspection of known historic and modern landslides.

The technician that performs hydrologic monitoring performs a visual inspection of all known historic and modern landslides. No movement in any slides was observed.

Increased Inspection activity associated with retreat mining.

Accessible subsidence cracks are repaired during coal exploration events and are monitored by both coal exploration supervisors and hydrologic monitoring technicians. No springs or ponds were potentially impacted during the reporting period because no mining occurred. No influence to any hydrologic monitoring points was observed during this period.

Results of Subsidence Survey Monitoring

The Pitkin Mesa Pipeline surveys were conducted in August and October. The Terror Creek and Terror Creek transmission line tower survey was also performed in August and October. Monitoring results are attached. As in the past, the survey was performed by Cragg Surveying using GPS methods.

Analysis of Subsidence Data

The following table presents an analysis of the subsidence survey data. Subsidence survey requirements are shown on PAP pages 2.05-177, 178 and 179. Following is a summary of the survey data collected during the period.

	Station	General Location	Result
√	37-A	East Side Terror Creek , South of 1 West Mains	No significant change
√	37-B	East Side Terror Creek, Over 1 West Mains	No significant change
√	37-C	East Side Terror Creek , North of 1 West Mains	No significant change
√	37-D	Transmission Line Tower - Panel B-17	No significant change
√	37-E	West Side Terror Creek, Over 1 West Mains	No significant change
√	37-F	Transmission Line Tower, South of 1 West Mains	No significant change
√	37-G	Transmission Line Tower, Panels B-17 and B-18	No significant change
√	37-H	Transmission Line Tower, Panels B-18 and B-19	No significant change
√	Surveyed during reporting period.		

	Station	General Location	Result
	PL-8	Pitkin Mesa Pipeline	Destroyed by Cabin Construction
√	PL-9	Pitkin Mesa Pipeline	No significant change
√	PL-10	Pitkin Mesa Pipeline + Stevens Gulch Road	No significant change
√	PL-11	Pitkin Mesa Pipeline + Stevens Gulch Road	No significant change
√	PL-12	Pitkin Mesa Pipeline + Stevens Gulch Road	No significant change
√	PL-13	Pitkin Mesa Pipeline + Stevens Gulch Road	No significant change
√	PL-14	Pitkin Mesa Pipeline + Stevens Gulch Road	No significant change
√	PL-15	Pitkin Mesa Pipeline + Stevens Gulch Road	No significant change
√	PL-16	Pitkin Mesa Pipeline + Stevens Gulch Road	No significant change
√	PL-17	Pitkin Mesa Pipeline + Stevens Gulch Road	No significant change
√	Surveyed during reporting period.		

**BOWIE RESOURCES - BOWIE NO. 2 MINE
SUBSIDENCE MONITORING DATA - 2017**

STATION : 37-A

Rebar + Cap

DATE	NORTHING	EASTING	ELEVATION	-DOWN/+UP
5/17/2010	25640.42	25738.27	7207.36	0.00
9/7/2010	25640.42	25738.31	7207.25	-0.11
11/3/2010	25640.42	25738.29	7207.28	0.03
5/23/2011	25640.39	25738.20	7207.45	0.17
8/24/2011	25640.38	25738.30	7207.20	-0.25
11/22/2011	25640.41	25738.26	7207.32	0.12
5/15/2012	25640.41	25738.23	7207.44	0.12
7/6/2012	25640.39	25738.28	7207.22	-0.22
10/3/2012	25640.39	25738.22	7207.32	0.10
6/15/2013	25640.37	25738.20	7207.37	0.05
8/22/2013	25640.40	25738.26	7207.41	0.04
11/15/2013	25640.39	25738.26	7207.36	-0.05
6/16/2014	25640.42	25738.21	7207.36	0.00
9/19/2014	25640.40	25738.28	7207.36	0.00
10/24/2014	25640.43	25738.27	7207.35	-0.01
6/8/2015	25640.44	25738.18	7207.42	0.07
5/12/2016	25640.42	25738.21	7207.40	-0.02
6/27/2016	25640.42	25738.20	7207.36	-0.04
8/29/2016	25640.43	25738.24	7207.38	0.02
10/10/2016	25640.46	25738.23	7207.34	-0.04
5/1/2017	25640.44	25738.19	7207.32	-0.02
6/28/2017	25640.42	25738.16	7207.32	0.00
8/31/2017	25640.43	25738.23	7207.36	0.04
10/17/2017	25640.42	25738.28	7207.29	-0.07
MAXIMUM	25640.46	25738.31	7207.45	0.17
MINIMUM	25640.37	25738.16	7207.20	-0.25
MOVEMENT	0.09	0.15	-0.07	

**BOWIE RESOURCES - BOWIE NO. 2 MINE
SUBSIDENCE MONITORING DATA - 2017**

STATION : 37-B

Rebar + Cap

DATE	NORTHING	EASTING	ELEVATION	-DOWN/+UP
5/17/2010	26136.20	25808.41	7219.01	0.00
9/7/2010	26136.17	25808.43	7218.88	-0.13
11/3/2010	26136.22	25808.43	7218.97	0.09
5/23/2011	26136.24	25808.38	7219.11	0.14
8/24/2011	26136.21	25808.44	7218.90	-0.21
11/22/2011	26136.22	25808.39	7219.00	0.10
5/15/2012	26136.21	25808.42	7219.07	0.07
7/6/2012	26136.21	25808.38	7218.93	-0.14
10/3/2012	26136.16	25808.37	7218.97	0.04
6/15/2013	26136.19	25808.34	7219.15	0.18
8/22/2013	26136.18	25808.38	7219.16	0.01
11/15/2013	26136.18	25808.41	7219.04	-0.12
6/16/2014	26136.27	25808.40	7219.08	0.04
9/19/2014	26136.20	25808.41	7219.03	-0.05
10/24/2014	26136.21	25808.40	7219.05	0.02
6/8/2015	26136.25	25808.40	7219.09	0.04
5/12/2016	26136.32	25808.40	7219.14	0.05
6/27/2016	26136.24	25808.41	7219.08	-0.06
8/29/2016	26136.21	25808.41	7219.10	0.02
10/10/2016	26136.29	25808.41	7219.06	-0.04
5/1/2017	26136.31	25808.41	7219.02	-0.04
6/28/2017	26136.34	25808.35	7219.10	0.08
8/31/2017	26136.19	25808.43	7219.01	-0.09
10/17/2017	26136.24	25808.43	7219.02	0.01
MAXIMUM	26136.34	25808.44	7219.16	0.18
MINIMUM	26136.16	25808.34	7218.88	-0.21
MOVEMENT	0.18	0.10	0.01	

**BOWIE RESOURCES - BOWIE NO. 2 MINE
SUBSIDENCE MONITORING DATA - 2017**

STATION : 37-C

Rebar + Cap

DATE	NORTHING	EASTING	ELEVATION	-DOWN/+UP
5/17/2010	26636.42	25772.28	7227.06	0.00
9/7/2010	26636.41	25772.27	7226.95	-0.11
11/3/2010	26636.47	25772.23	7226.93	-0.02
5/23/2011	26636.39	25772.27	7227.15	0.22
8/24/2011	26636.45	25772.26	7226.97	-0.18
11/22/2011	26636.43	25772.27	7227.01	0.04
5/15/2012	26636.43	25772.27	7227.09	0.08
7/6/2012	26636.43	25772.29	7226.94	-0.15
10/3/2012	26636.43	25772.26	7226.97	0.03
6/15/2013	26636.40	25772.25	7227.15	0.18
8/22/2013	26636.46	25772.29	7227.16	0.01
11/15/2013	26636.42	25772.27	7227.07	-0.09
6/16/2014	26636.46	25772.27	7227.09	0.02
9/19/2014	26636.45	25772.30	7227.08	-0.01
10/24/2014	26636.46	25772.30	7227.05	-0.03
6/8/2015	26636.41	25772.26	7227.11	0.06
5/12/2016	26636.40	25772.25	7227.16	0.05
6/27/2016	26636.42	25772.29	7227.15	-0.01
8/29/2016	26636.46	25772.26	7227.11	-0.04
10/10/2016	26636.45	25772.24	7227.06	-0.05
5/1/2017	26636.44	25772.26	7227.10	0.04
6/28/2017	26636.44	25772.22	7227.09	-0.01
8/31/2017	26636.47	25772.30	7227.03	-0.06
10/17/2017	26636.46	25772.28	7227.02	-0.01

MAXIMUM	26636.47	25772.30	7227.16	0.22
MINIMUM	26636.39	25772.22	7226.93	-0.18
MOVEMENT	0.08	0.08	-0.04	

**BOWIE RESOURCES - BOWIE NO. 2 MINE
SUBSIDENCE MONITORING DATA - 2017**

STATION : 37-D

Rebar + Cap

DATE	NORTHING	EASTING	ELEVATION	-DOWN/+UP
5/17/2010	25987.33	24629.22	7160.52	0.00
9/7/2010	25987.30	24629.18	7160.50	-0.02
11/3/2010	25987.31	24629.21	7160.47	-0.03
5/23/2011	25987.27	24629.22	7160.57	0.10
8/24/2011	25987.35	24629.20	7160.42	-0.15
11/22/2011	25987.29	24629.17	7160.51	0.09
5/15/2012	25987.31	24629.20	7160.56	0.05
7/6/2012	25987.31	24629.19	7160.42	-0.14
10/3/2012	25987.32	24629.15	7160.51	0.09
6/15/2013	25987.26	24629.16	7160.65	0.14
8/22/2013	25987.27	24629.20	7160.67	0.02
11/15/2013	25987.27	24629.19	7160.65	-0.02
6/16/2014	25987.27	24629.17	7160.55	-0.10
9/19/2014	25987.29	24629.20	7160.61	0.06
10/24/2014	25987.28	24629.19	7160.62	0.01
6/8/2015	25987.28	24629.21	7160.59	-0.03
5/12/2016	25987.28	24629.20	7160.62	0.03
6/27/2016	25987.26	24629.22	7160.62	0.00
8/29/2016	25987.30	24629.19	7160.60	-0.02
10/10/2016	25987.32	24629.22	7160.60	0.00
5/1/2017	25987.30	24629.21	7160.54	-0.06
6/28/2017	25987.30	24629.19	7160.56	0.02
8/31/2017	25987.29	24629.23	7160.57	0.01
10/17/2017	25987.30	24629.21	7160.56	-0.01
MAXIMUM	25987.35	24629.23	7160.67	0.14
MINIMUM	25987.26	24629.15	7160.42	-0.15
MOVEMENT	0.09	0.08	0.04	

**BOWIE RESOURCES - BOWIE NO. 2 MINE
SUBSIDENCE MONITORING DATA - 2017**

STATION : **37-E** **Rebar + Cap**

DATE	NORTHING	EASTING	ELEVATION	-DOWN/+UP
5/17/2010	25181.83	24470.56	7079.14	0.00
9/7/2010	25181.83	24470.54	7079.10	-0.04
11/3/2010	25181.81	24470.54	7079.07	-0.03
5/23/2011	25181.82	24470.55	7079.15	0.08
8/24/2011	25181.86	24470.51	7079.03	-0.12
11/22/2011	25181.81	24470.53	7079.10	0.07
5/15/2012	25181.80	24470.53	7079.16	0.06
7/6/2012	25181.81	24470.52	7079.01	-0.15
10/5/2012	25181.81	24470.49	7079.10	0.09
6/15/2013	25181.78	24470.51	7079.18	0.08
8/22/2013	25181.77	24470.52	7079.20	0.02
11/15/2013	25181.77	24470.54	7079.12	-0.08
6/16/2014	25181.80	24470.52	7079.13	0.01
9/19/2014	25181.78	24470.53	7079.15	0.02
10/24/2014	25181.78	24470.51	7079.10	-0.05
6/8/2015	25181.81	24470.51	7079.14	0.04
5/12/2016	25181.83	24470.56	7079.16	0.02
6/27/2016	25181.80	24470.56	7079.11	-0.05
8/29/2016	25181.81	24470.53	7079.12	0.01
10/10/2016	25181.85	24470.54	7079.15	0.03
5/1/2017	25181.84	24470.53	7079.05	-0.10
6/28/2017	25181.86	24470.55	7079.02	-0.03
8/31/2017	25181.81	24470.55	7079.06	0.04
10/17/2017	25181.81	24470.54	7079.04	-0.02
MAXIMUM	25181.86	24470.56	7079.20	0.09
MINIMUM	25181.77	24470.49	7079.01	-0.15
MOVEMENT	0.09	0.07	-0.10	

**BOWIE RESOURCES - BOWIE NO. 2 MINE
SUBSIDENCE MONITORING DATA - 2017**

STATION : **37-F** **Rebar + Cap**

DATE	NORTHING	EASTING	ELEVATION	-DOWN/+UP
5/17/2010	24706.83	24633.27	7094.65	0.00
9/7/2010	24706.83	24633.25	7094.57	-0.08
11/3/2010	24706.83	24633.26	7094.63	0.06
5/23/2011	24706.84	24633.26	7094.72	0.09
8/24/2011	24706.83	24633.24	7094.54	-0.18
11/22/2011	24706.82	24633.25	7094.66	0.12
5/15/2012	24706.81	24633.23	7094.67	0.01
7/6/2012	24706.77	24633.21	7094.57	-0.10
10/3/2012	24706.78	24633.19	7094.62	0.05
6/15/2013	24706.78	24633.22	7094.72	0.10
8/22/2013	24706.78	24633.24	7094.70	-0.02
11/15/2013	24706.81	24633.24	7094.65	-0.05
6/16/2014	24706.83	24633.24	7094.67	0.02
9/19/2014	24706.82	24633.26	7094.68	0.01
10/24/2014	24706.82	24633.25	7094.59	-0.09
6/8/2015	24706.83	24633.23	7094.71	0.12
5/12/2016	24706.82	24633.25	7094.72	0.01
6/27/2016	24706.83	24633.27	7094.62	-0.10
8/29/2016	24706.84	24633.25	7094.67	0.05
10/10/2016	24706.87	24633.26	7094.71	0.04
5/1/2017	24706.86	24633.24	7094.64	-0.07
6/28/2017	24706.86	24633.25	7094.63	-0.01
8/31/2017	24706.82	24633.26	7094.62	-0.01
10/17/2017	24706.84	24633.27	7094.65	0.03
MAXIMUM	24706.87	24633.27	7094.72	0.12
MINIMUM	24706.77	24633.19	7094.54	-0.18
MOVEMENT	0.10	0.08	0.00	

**BOWIE RESOURCES - BOWIE NO. 2 MINE
SUBSIDENCE MONITORING DATA - 2017**

STATION : **37-G** **Rebar**

DATE	NORTHING	EASTING	ELEVATION	-DOWN/+UP
8/1/2014	26847.71	24528.84	7264.50	0.00
9/1/2014	26847.66	24528.82	7264.58	0.08
10/1/2014	26847.65	24528.83	7264.55	-0.03
6/8/2015	26847.63	24528.84	7264.63	0.08
5/12/2016	26847.65	24528.83	7264.64	0.01
6/27/2016	26847.63	24528.85	7264.59	-0.05
8/29/2016	26847.68	24528.87	7264.60	0.01
10/10/2016	26847.66	24528.87	7264.64	0.04
5/1/2017	26847.69	24528.87	7264.58	-0.06
6/28/2017	26847.62	24528.87	7264.57	-0.01
8/31/2017	26847.61	24528.87	7264.61	0.04
10/17/2017	26847.62	24528.90	7264.54	-0.07
MAXIMUM	26847.71	24528.90	7264.64	0.08
MINIMUM	26847.61	24528.82	7264.50	-0.07
MOVEMENT	0.10	0.08	0.04	

**BOWIE RESOURCES - BOWIE NO. 2 MINE
SUBSIDENCE MONITORING DATA - 2017**

STATION : **37-H** **Rebar**

DATE	NORTHING	EASTING	ELEVATION	-DOWN/+UP
8/1/2014	27650.23	24475.60	7220.00	0.00
9/1/2014	27650.20	24475.61	7220.08	0.08
10/1/2014	27650.27	24475.59	7219.94	-0.14
6/8/2015	27650.23	24475.65	7220.10	0.16
5/12/2016	27650.23	24475.61	7220.19	0.09
6/27/2016	27650.20	24475.66	7220.11	-0.08
8/29/2016	27650.24	24475.58	7220.04	-0.07
10/10/2016	27650.20	24475.58	7220.08	0.04
5/1/2017	27650.24	24475.62	7220.06	-0.02
6/28/2017	27650.18	24475.64	7220.02	-0.04
8/31/2017	27650.22	24475.60	7219.99	-0.03
10/17/2017	27650.22	24475.58	7219.90	-0.09
MAXIMUM	27650.27	24475.66	7220.19	0.16
MINIMUM	27650.18	24475.58	7219.90	-0.14
MOVEMENT	0.09	0.08	-0.10	

**BOWIE RESOURCES - BOWIE NO. 2 MINE
SETTLEMENT MONITORING DATA - 2017**

STATION : PL-09 Rebar

DATE	NORTHING	EASTING	ELEVATION	-DOWN/+UP
Jul-12	22908.95	13852.17	7852.03	
Nov-12	22908.89	13852.16	7852.10	0.07
Jun-13	22908.98	13852.16	7852.21	0.11
Nov-13	22908.97	13852.18	7852.11	-0.10
Jan-14	22909.02	13852.19	7852.06	-0.05
Mar-14	22908.99	13852.24	7852.13	0.07
New Survey Control				
Jan-14	22908.28	13853.90	7852.98	
March 26, 2014	22908.28	13853.95	7852.96	-0.02
March 28, 2014	22908.30	13853.94	7853.01	0.05
April 15, 2014	22908.31	13853.95	7852.97	-0.04
April 25, 2014	22908.29	13853.96	7852.96	-0.01
May 9, 2014	22908.31	13854.00	7852.96	0.00
May 19, 2014	22908.30	13854.04	7852.95	-0.01
June 16, 2014	22908.33	13854.09	7852.91	-0.04
July 24, 2014	22908.29	13854.01	7852.95	0.04
Sept 24, 2014	22908.34	13854.03	7852.91	-0.04
October 30, 2014	22908.33	13854.02	7852.89	-0.02
June 2, 2015	22908.4	13854.13	7852.94	0.05
June 30, 2015	22908.37	13854.09	7852.96	0.02
Sept. 11, 2015	22908.4	13854.09	7852.9	-0.06
November 2, 2015	22908.41	13854.08	7852.91	0.01
May 11, 2016	22908.42	13854.15	7852.89	-0.02
June 15, 2016	22908.39	13854.12	7852.94	0.05
August 17, 2016	22908.42	13854.09	7852.93	-0.01
October 21, 2016	22908.4	13854.09	7852.93	0.00
April 28, 2017	22908.45	13854.11	7852.90	-0.03
June 22, 2017	22908.43	13854.12	7852.92	0.02
August 24, 2017	22908.41	13854.05	7852.93	0.01
October 20, 2017	22908.42	13854.09	7852.93	0.00
MAXIMUM	22908.45	13854.15	7853.01	0.05
MINIMUM	22908.28	13853.90	7852.89	-0.06
MOVEMENT	0.17	0.25	-0.05	

**BOWIE RESOURCES - BOWIE NO. 2 MINE
SETTLEMENT MONITORING DATA - 2017**

STATION : PL-10 Rebar

DATE	NORTHING	EASTING	ELEVATION	-DOWN/+UP
Jul-12	23401.33	14103.34	7900.27	
Nov-12	23401.31	14103.33	7900.33	0.06
Jun-13	23401.35	14103.32	7900.37	0.04
Nov-13	23401.33	14103.41	7900.30	-0.07
Jan-14	23401.36	14103.41	7900.34	0.04
Destroyed by Pipeline Construction				
March 31, 2014	23400.77	14093.08	7904.85	
March 31, 2014	23400.84	14093.03	7904.91	0.06
April 15, 2014	23400.83	14093.03	7904.86	-0.05
April 25, 2014	23400.79	14093.08	7904.88	0.02
May 9, 2014	23400.8	14093.07	7904.84	-0.04
May 19, 2014	23400.82	14093.11	7904.81	-0.03
June 16, 2014	23400.84	14093.2	7904.90	0.09
July 24, 2014	23400.81	14093.11	7904.88	-0.02
Sept 24, 2014	23400.81	14093.11	7904.85	-0.03
October 30, 2014	23400.82	14093.13	7904.73	-0.12
June 2, 2015	23400.95	14093.3	7904.78	0.05
June 30, 2015	23400.96	14093.25	7904.78	0.00
Sept. 11, 2015	23400.88	14093.3	7904.76	-0.02
November 2, 2015	23400.92	14093.2	7904.70	-0.06
May 11, 2016	23401.00	14093.31	7904.70	0.00
June 15, 2016	23400.96	14093.32	7904.88	0.18
August 17, 2016	23400.93	14093.3	7904.80	-0.08
October 21, 2016	23400.95	14093.24	7904.74	-0.06
April 28, 2017	23401.00	14093.28	7904.74	0.00
June 22, 2017	23400.98	14093.32	7904.76	0.02
August 24, 2017	23400.92	14093.29	7904.81	0.05
October 20, 2017	23400.96	14093.26	7904.71	-0.10
MAXIMUM	23401.00	14093.32	7904.91	0.18
MINIMUM	23400.77	14093.03	7904.70	-0.12
MOVEMENT	0.23	0.29	-0.14	

**BOWIE RESOURCES - BOWIE NO. 2 MINE
SETTLEMENT MONITORING DATA - 2017**

STATION : PL-11 Rebar

DATE	NORTHING	EASTING	ELEVATION	-DOWN/+UP
Jul-12	23920.56	13929.91	7945.46	
Nov-12	23920.48	13929.89	7945.45	-0.01
Jun-13	23920.46	13929.91	7945.63	0.18
Nov-13	23920.54	13929.93	7945.41	-0.22
Jan-14	23920.58	13929.98	7945.44	0.03
Mar-14	23920.52	13929.90	7945.52	0.08
New Survey Control				
Jan-14	23919.80	13931.52	7946.46	
March 26, 2014	23919.83	13931.52	7946.51	0.05
March 28, 2014	23919.81	13931.48	7946.48	-0.03
April 15, 2014	23919.81	13931.58	7946.47	-0.01
April 25, 2014	23919.76	13931.61	7946.40	-0.07
May 9, 2014	23919.77	13931.67	7946.27	-0.13
May 19, 2014	23919.74	13931.71	7946.25	-0.02
June 16, 2014	23919.80	13931.78	7946.19	-0.06
July 24, 2014	23919.76	13931.71	7946.14	-0.05
Sept 24, 2014	23919.75	13931.72	7946.11	-0.03
October 30, 2014	23919.78	13931.75	7946.09	-0.02
June 2, 2015	23919.87	13931.96	7945.99	-0.10
June 30, 2015	23919.84	13931.94	7946.06	0.07
Sept. 11, 2015	23919.88	13931.95	7945.98	-0.08
November 2, 2015	23919.89	13931.96	7946.01	0.03
May 11, 2016	23919.89	13931.97	7946.02	0.01
June 15, 2016	23919.89	13931.94	7946.06	0.04
August 17, 2016	23919.90	13931.96	7946.00	-0.06
October 21, 2016	23919.86	13931.95	7946.04	0.04
April 28, 2017	23919.92	13931.97	7946.02	-0.02
June 22, 2017	23919.89	13931.97	7945.98	-0.04
August 24, 2017	23919.90	13931.94	7946.02	0.04
October 20, 2017	23919.93	13931.97	7946.01	-0.01
MAXIMUM	23919.93	13931.97	7946.51	0.07
MINIMUM	23919.74	13931.48	7945.98	-0.13
MOVEMENT	0.19	0.49	-0.45	

**BOWIE RESOURCES - BOWIE NO. 2 MINE
SETTLEMENT MONITORING DATA - 2017**

STATION : PL-12 Rebar

DATE	NORTHING	EASTING	ELEVATION	-DOWN/+UP
Jul-12	24423.55	14051.49	7964.05	
Nov-12	24423.51	14051.50	7964.06	0.01
Jun-13	24423.51	14051.49	7964.17	0.11
Nov-13	24423.51	14051.53	7963.98	-0.19
Jan-14	24423.58	14051.55	7964.11	0.13
Mar-14	24423.54	14051.50	7964.08	-0.03
New Survey Control				
Jan-14	24422.82	14053.07	7965.14	
March 26, 2014	24422.83	14053.12	7965.03	-0.11
March 28, 2014	24422.81	14053.10	7965.08	0.05
April 15, 2014	24422.80	14053.11	7965.01	-0.07
April 25, 2014	24422.77	14053.11	7964.96	-0.05
May 9, 2014	24422.74	14053.18	7964.85	-0.11
May 19, 2014	24422.69	14053.19	7964.86	0.01
June 16, 2014	24422.74	14053.30	7964.83	-0.03
July 24, 2014	24422.66	14053.25	7964.84	0.01
Sept 24, 2014	24422.69	14053.25	7964.75	-0.09
October 30, 2014	24422.72	14053.28	7964.72	-0.03
June 2, 2015	24422.79	14053.48	7964.58	-0.14
June 30, 2015	24422.74	14053.47	7964.61	0.03
Sept. 11, 2015	24422.79	14053.47	7964.59	-0.02
November 2, 2015	24422.77	14053.42	7964.59	0.00
May 11, 2016	24422.80	14053.49	7964.63	0.04
June 15, 2016	24422.79	14053.46	7964.63	0.00
August 17, 2016	24422.76	14053.50	7964.64	0.01
October 21, 2016	24422.77	14053.49	7964.61	-0.03
April 28, 2017	24422.82	14053.46	7964.53	-0.08
June 22, 2017	24422.81	14053.49	7964.60	0.07
August 24, 2017	24422.76	14053.47	7964.62	0.02
October 20, 2017	24422.79	14053.47	7964.61	-0.01
MAXIMUM	24422.83	14053.50	7965.14	0.07
MINIMUM	24422.66	14053.07	7964.53	-0.14
MOVEMENT	0.17	0.43	-0.53	

**BOWIE RESOURCES - BOWIE NO. 2 MINE
SETTLEMENT MONITORING DATA - 2017**

STATION : PL-13 Rebar

DATE	NORTHING	EASTING	ELEVATION	-DOWN/+UP
Jul-12	24922.44	14175.16	7983.44	
Nov-12	24922.50	14175.19	7983.46	0.02
Jun-13	24922.51	14175.18	7983.56	0.10
Nov-13	24922.56	14175.25	7983.43	-0.13
Jan-14	24922.51	14175.26	7983.49	0.06
Mar-14	24922.52	14175.25	7983.49	0.00
New Survey Control				
Jan-14	24921.81	14176.79	7984.58	
March 26, 2014	24921.82	14176.79	7984.63	0.05
March 28, 2014	24921.81	14176.81	7984.66	0.03
April 15, 2014	24921.77	14176.79	7984.59	-0.07
April 25, 2014	24921.76	14176.78	7984.53	-0.06
May 9, 2014	24921.74	14176.78	7984.52	-0.01
May 19, 2014	24921.72	14176.77	7984.55	0.03
June 16, 2014	24921.73	14176.85	7984.50	-0.05
July 24, 2014	24921.71	14176.80	7984.53	0.03
Sept 24, 2014	24921.69	14176.78	7984.53	0.00
October 30, 2014	24921.69	14176.82	7984.45	-0.08
June 2, 2015	24921.77	14176.89	7984.60	0.15
June 30, 2015	24921.79	14176.88	7984.62	0.02
Sept. 11, 2015	24921.79	14176.87	7984.60	-0.02
November 2, 2015	24921.76	14176.90	7984.64	0.04
May 11, 2016	24921.80	14176.90	7984.55	-0.09
June 15, 2016	24921.76	14176.88	7984.59	0.04
August 17, 2016	24921.76	14176.88	7984.63	0.04
October 21, 2016	24921.77	14176.90	7984.65	0.02
April 28, 2017	24921.84	14176.89	7984.57	-0.08
June 22, 2017	24921.77	14176.92	7984.61	0.04
August 24, 2017	24921.80	14176.88	7984.60	-0.01
October 20, 2017	24921.81	14176.92	7984.59	-0.01
MAXIMUM	24921.84	14176.92	7984.66	0.15
MINIMUM	24921.69	14176.77	7984.45	-0.09
MOVEMENT	0.15	0.15	0.01	

**BOWIE RESOURCES - BOWIE NO. 2 MINE
SETTLEMENT MONITORING DATA - 2017**

STATION : PL-14 Rebar

DATE	NORTHING	EASTING	ELEVATION	-DOWN/+UP
Jul-12	25383.28	14329.63	8010.84	
Nov-12	25383.26	14329.58	8010.88	0.04
Jun-13	25383.23	14329.60	8010.95	0.07
Nov-13	25383.25	14329.64	8010.81	-0.14
Jan-14	25383.28	14329.65	8010.84	0.03
Destroyed by Pipeline Construction				
March 31, 2014	25382.55	14309.12	8018.02	
March 31, 2014	25382.55	14309.08	8018.00	-0.02
April 15, 2014	25382.52	14309.09	8018.01	0.01
April 25, 2014	25382.50	14309.10	8018.02	0.01
May 9, 2014	25382.52	14309.09	8017.99	-0.03
May 19, 2014	25382.47	14309.08	8017.95	-0.04
June 16, 2014	25382.51	14309.20	8017.96	0.01
July 24, 2014	25382.42	14309.08	8018.05	0.09
Sept 24, 2014	25382.48	14309.05	8017.97	-0.08
October 30, 2014	25382.44	14309.10	8017.90	-0.07
June 2, 2015	25382.47	14309.18	8017.84	-0.06
June 30, 2015	25382.47	14309.21	8017.89	0.05
Sept. 11, 2015	25382.47	14309.21	8017.87	-0.02
November 2, 2015	25382.46	14309.18	8017.86	-0.01
May 11, 2016	25382.45	14309.17	8017.80	-0.06
June 15, 2016	25382.48	14309.18	8017.84	0.04
August 17, 2016	25382.45	14309.18	8017.88	0.04
October 21, 2016	25382.45	14309.16	8017.84	-0.04
April 28, 2017	25382.51	14309.21	8017.78	-0.06
June 22, 2017	25382.45	14309.22	8017.86	0.08
August 24, 2017	25382.50	14309.16	8017.83	-0.03
October 20, 2017	25382.48	14309.14	8017.81	-0.02
MAXIMUM	25382.55	14309.22	8018.05	0.09
MINIMUM	25382.42	14309.05	8017.78	-0.08
MOVEMENT	0.13	0.17	-0.21	

**BOWIE RESOURCES - BOWIE NO. 2 MINE
SETTLEMENT MONITORING DATA - 2017**

STATION : PL-15 Rebar

DATE	NORTHING	EASTING	ELEVATION	-DOWN/+UP
Jul-12	25887.47	14284.94	8038.55	
Nov-12	25887.44	14284.95	8038.53	-0.02
Jun-13	25887.42	14284.93	8038.63	0.10
Nov-13	25887.51	14284.97	8038.58	-0.05
Jan-14	25887.49	14284.95	8038.69	0.11
Destroyed by Pipeline Construction				
March 31, 2014	25886.64	14270.32	8041.78	
March 31, 2014	25886.62	14270.34	8041.72	-0.06
April 15, 2014	25886.66	14270.33	8041.77	0.05
April 25, 2014	25886.63	14270.36	8041.79	0.02
May 9, 2014	25886.66	14270.33	8041.78	-0.01
May 19, 2014	25886.65	14270.33	8041.77	-0.01
June 16, 2014	25886.65	14270.41	8041.75	-0.02
July 24, 2014	25886.63	14270.27	8041.72	-0.03
Sept 24, 2014	25886.59	14270.28	8041.75	0.03
October 30, 2014	25886.58	14270.29	8041.69	-0.06
June 2, 2015	25886.61	14270.36	8041.72	0.03
June 30, 2015	25886.59	14270.37	8041.74	0.02
Sept. 11, 2015	25886.63	14270.33	8041.72	-0.02
November 2, 2015	25886.62	14270.39	8041.75	0.03
May 11, 2016	25886.62	14270.38	8041.70	-0.05
June 15, 2016	25886.60	14270.35	8041.73	0.03
August 17, 2016	25886.64	14270.34	8041.64	-0.09
October 21, 2016	25886.58	14270.34	8041.70	0.06
April 28, 2017	25886.65	14270.36	8041.70	0.00
June 22, 2017	25886.60	14270.38	8041.75	0.05
August 24, 2017	25886.63	14270.32	8041.71	-0.04
October 20, 2017	25886.60	14270.36	8041.68	-0.03
MAXIMUM	25886.66	14270.41	8041.79	0.06
MINIMUM	25886.58	14270.27	8041.64	-0.09
MOVEMENT	0.08	0.14	-0.10	

**BOWIE RESOURCES - BOWIE NO. 2 MINE
SETTLEMENT MONITORING DATA - 2017**

STATION : PL-16 Rebar

DATE	NORTHING	EASTING	ELEVATION	-DOWN/+UP
Jul-12	26415.27	14216.70	8066.23	
Nov-12	26415.22	14216.73	8066.40	0.17
Jun-13	26415.26	14216.69	8066.43	0.03
Nov-13	26415.25	14216.72	8066.41	-0.02
Jan-14	26415.30	14216.76	8066.47	0.06
Mar-14	26415.20	14216.72	8066.47	0.00
New Survey Control				
Jan-14	26414.49	14218.13	8067.71	
March 26, 2014	26414.43	14218.15	8067.74	0.03
March 28, 2014	26414.44	14218.14	8067.73	-0.01
April 15, 2014	26414.47	14218.14	8067.75	0.02
April 25, 2014	26414.45	14218.15	8067.73	-0.02
May 9, 2014	26414.44	14218.13	8067.70	-0.03
May 19, 2014	26414.44	14218.12	8067.73	0.03
June 16, 2014	26414.47	14218.16	8067.73	0.00
July 24, 2014	26414.44	14218.11	8067.71	-0.02
Sept 24, 2014	26414.44	14218.12	8067.70	-0.01
October 30, 2014	26414.44	14218.13	8067.68	-0.02
June 2, 2015	26414.45	14218.13	8067.70	0.02
June 30, 2015	26414.43	14218.14	8067.71	0.01
Sept. 11, 2015	26414.44	14218.12	8067.70	-0.01
November 2, 2015	26414.44	14218.11	8067.73	0.03
May 11, 2016	26414.43	14218.14	8067.70	-0.03
June 15, 2016	26414.44	14218.14	8067.72	0.02
August 17, 2016	26414.42	14218.17	8067.76	0.04
October 21, 2016	26414.45	14218.14	8067.75	-0.01
April 28, 2017	26414.47	14218.14	8067.75	0.00
June 22, 2017	26414.46	14218.15	8067.73	-0.02
August 24, 2017	26414.45	14218.15	8067.77	0.04
October 20, 2017	26414.46	14218.12	8067.73	-0.04
MAXIMUM	26414.49	14218.17	8067.77	0.04
MINIMUM	26414.42	14218.11	8067.68	-0.04
MOVEMENT	0.07	0.06	0.02	

**BOWIE RESOURCES - BOWIE NO. 2 MINE
SETTLEMENT MONITORING DATA - 2017**

STATION : PL-17 Rebar

DATE	NORTHING	EASTING	ELEVATION	-DOWN/+UP
Jul-12	26719.78	13927.69	8088.85	
Nov-12	26719.75	13927.71	8088.76	-0.09
Jun-13	26719.82	13927.70	8088.85	0.09
Nov-13	26719.77	13927.75	8088.85	0.00
Jan-14	26719.75	13927.71	8088.82	-0.03
Mar-14	26719.74	13927.71	8088.87	0.05
New Survey Control				
Jan-14	26718.94	13929.04	8090.17	
March 26, 2014	26718.96	13929.12	8090.18	0.01
March 28, 2014	26718.94	13929.11	8090.17	-0.01
April 15, 2014	26718.99	13929.09	8090.20	0.03
April 25, 2014	26718.98	13929.12	8090.16	-0.04
May 9, 2014	26718.97	13929.10	8090.15	-0.01
May 19, 2014	26718.97	13929.06	8090.17	0.02
June 16, 2014	26719.01	13929.16	8090.16	-0.01
July 24, 2014	26718.92	13929.10	8090.19	0.03
Sept 24, 2014	26718.97	13929.12	8090.19	0.00
October 30, 2014	26718.97	13929.11	8090.18	-0.01
June 2, 2015	26718.95	13929.07	8090.21	0.03
June 30, 2015	26718.93	13929.09	8090.25	0.04
Sept. 11, 2015	26718.97	13929.09	8090.20	-0.05
November 2, 2015	26718.96	13929.07	8090.21	0.01
May 11, 2016	26718.97	13929.07	8090.16	-0.05
June 15, 2016	26719.02	13929.07	8090.20	0.04
August 17, 2016	26719.01	13929.09	8090.25	0.05
October 21, 2016	26718.95	13929.10	8090.22	-0.03
April 28, 2017	26718.99	13929.11	8090.22	0.00
June 22, 2017	26718.97	13929.11	8090.22	0.00
August 24, 2017	26718.99	13929.09	8090.22	0.00
October 20, 2017	26718.98	13929.08	8090.19	-0.03
MAXIMUM	26719.02	13929.16	8090.25	0.05
MINIMUM	26718.92	13929.04	8090.15	-0.05
MOVEMENT	0.10	0.12	0.02	