



November 22, 2005

Ms. Debbie Baldwin  
Colorado Oil and Gas Conservation Commission  
1120 Lincoln Street, Suite 801  
Denver, Colorado 80203

RE: November 1, 2005 Methane Seep Survey  
Bondad, Colorado

Dear Ms. Baldwin:

LT Environmental, Inc. (LTE) is pleased to provide the Colorado Oil and Gas Conservation Commission (COGCC) with this letter summarizing the results of the fourth methane seep survey conducted at the Bondad Gas Seep Site (Site) located in Bondad, Colorado on November 1 and 2, 2005.

## **BACKGROUND**

At the request of the COGCC, LTE was tasked to conduct an initial methane gas seep survey on the Site in February 2005. The initial methane seep survey was performed in response to an explosion of a residence located at 4034 US Highway 550 (Yoakum Residence). During the period from February 21 through February 24, 2005, LTE conducted soil gas survey activities in the project area extending approximately 3,000 feet in all directions from the Nick Spatter Bryce Farm #1 (NSBF #1) production well (Figure 1). The results of the initial soil gas survey are presented in the *Methane Seep Survey Report* (March 2005). Additional soil gas surveys were performed on April 19, 2005 and June 10, 2005. All project reports are available on the COGCC website at [www.oil-gas.state.co.us](http://www.oil-gas.state.co.us).

Recent activity at the site has included continued operation and maintenance (O&M) of the methane detection systems located at the Weston well house, Fire Station, Wilson residence, Budhue residence, and Grant residence. LTE also conducted oversight during excavation and inspection of the Bryce 1-X abandoned well and sandstone bedrock surface, results of which are reported under separate cover.

## **SITE DESCRIPTION**

The Site is located in Bondad, Colorado, approximately 20 miles south of Durango, Colorado (Figure 1). The Site is located approximately 0.25 miles north of the confluence of the Animas River to the west and the Florida River to the east. The Site consists of several tracts of land covering more than 100 acres. The project area land use consists of residential properties, a fire station, US Highway 550, the Animas River, and the Florida River. The majority of land is privately owned. Figure 1 displays the Site layout.

LT Environmental, Inc.

Compliance • Engineering • Remediation

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## **METHANE GAS SEEP SURVEY**

### **Methodology**

On November 1, 2005, LTE was on site to conduct a fourth methane gas seep survey of the Site. The scope of the survey was similar to the previous surveys conducted at the Site. During the soil gas survey, tubing was lowered into each borehole and gas measurements were collected directly from the shallow surface soil approximately three feet below ground surface (bgs). LTE measured the concentration of methane, oxygen, hydrogen sulfide, and carbon monoxide at each sampling location.

LTE created a sampling grid to cover the mapping area systematically and to provide a means to delineate the extent of the gas seepage. The grid consisted of approximately 90 squares, each measuring approximately 10,000 square feet in area. LTE collected a soil gas measurement at the corners of each square in the grid. Each sample location was recorded using a Trimble GeoXT<sup>®</sup> global positioning system (GPS). When methane was detected along the edges of the grid, additional measurements were collected outside of the grid to better define the extent of the seep area. LTE also collected methane measurements around the exterior of the three houses located to the east of the former Yoakum residence, near the water wells associated with each of the three houses, and along the valley floor of both the Animas and Florida rivers.

### **Soil Gas Survey Results**

On November 1 and 2, 2005, LTE personnel advanced a total of 157 subsurface probes across the project area. Results of this survey indicated that elevated methane gas was detected in an elliptically-shaped area around the NSBF#1 and Bryce 1-X abandoned wells and covering approximately 11 acres. The distribution of the methane gas extends approximately 700 feet north of the wells, 300 feet south of the wells, and 200 feet both east and west of the wells. Detected methane concentrations in the elliptically-shaped seep area ranged from 500 parts per million (ppm) (0.05% methane) to 97% methane. Approximately one third of the measurements collected within this primary gas seep area reported concentrations greater than 50% methane. A total of 157 subsurface measurements were collected during the November 2005 survey event.

Outside of the elliptically-shaped seep area, methane was also detected in the vicinity of the Cain 31-2 coal bed methane (CBM) production well at concentrations ranging from 1,500 ppm (0.15% methane) to 64% methane. The area of gas seepage around the Cain 31-2 covers approximately 1.5 acres and extends southward along the Red Cedar Pipeline approximately 300 feet and eastward onto the Wilson property approximately 400 feet.

Methane was detected near the Budhue water well at concentrations ranging from 1,000 ppm (0.1% methane) to 100% methane. The highest concentration of methane detected during this survey was 100% methane and was identified adjacent to the Budhue well. Methane was



detected at a concentration 88% approximately 200 feet northeast of the Budhue well along the cliff bank beneath the sandstone bedrock layer.

Methane was not detected in the subsurface around the outside of the well located north of the Grant residence. However, based on historic groundwater sampling activities, methane has been detected in the groundwater from each of the six water wells located near the seep area. These wells include the Weston, Fire Station, Yoakum, Grant, Budhue, and Wilson water wells. The Fire Station and the Budhue water wells are currently equipped with treatment systems to remove methane from the water supply.

During this survey, LTE noted a new residence located on the Carole W. Kidd property approximately 300 to 600 feet north of the Cain 31-2 CBM well. According to Mark Weems, COGCC, the La Plata County Building department permitted the construction and required engineering controls to reduce the risk of explosive vapors accumulating in confined spaces. LTE attempted to conduct a soil gas survey around the exterior of the structure during this survey. However, the landowner was not at home, therefore no permission to conduct the survey could be obtained.

Figure 1 shows all methane concentrations recorded during the November 2005 methane seep survey. Field data from the November 2005 mapping event are presented in Attachment 1.

### **Methane Seep Survey Comparison**

With the exception of the February 2005 survey event which included the collection of 372 subsurface gas measurements, the number of subsurface measurements collected during the April 2005, June 2005, and November 2005 remained relatively consistent ranging from 134 to 157 points. The grid created for the April 2005 methane seep survey and used during the past three survey events allowed LTE to conduct field activities more efficiently and systematically.

LTE prepared a map illustrating the extent of methane seepage identified during the February 2005, April 2005, June 2005, and November 2005 survey events (Figure 2). Comparison of the data indicates that the primary seep area (elliptically shaped area around the NSBF #1 and Bryce 1-X abandoned wells) has remained relatively unchanged since the inception of the gas seep monitoring program. The comparison of the historical data with the November 2005 event also shows that the extent of methane seepage around the Cain 31-2 well and the Budhue water well is larger than previous events.

During the April 2005 event, LTE detected methane along the alluvial valley and cliff bank adjacent to the Animas River. Methane has not been detected in this area since that time. The most recent survey event detected methane along the cliff bank beneath the sandstone bedrock and in the alluvium adjacent to the Florida River. Methane has not been detected along the Florida River valley during the previous survey events.



In general, the concentrations of methane recorded throughout the monitoring period have remained relatively unchanged. However, LTE noted slightly higher concentrations during the most recent November 2005 survey in the area along the west side of US Highway 550, near the Cain 31-2 CBM well, and in the vicinity of the Budhue water well.

## **CONCLUSIONS AND RECOMMENDATIONS**

The extent of seep activity in the primary seep area has remained relatively unchanged since the initial sampling event. Seep activity currently appears to be associated with the Bryce 1-X abandoned well.

Based on the results of the most recent methane seep survey, the natural spring survey, and recent inspection of the bedrock surface adjacent to the Bryce 1-X well, it appears that an area of trapped methane gas is present beneath the sandstone layer. It is likely that the sandstone unit is acting as a vertical confining layer, forcing the methane gas to migrate outward horizontally and northward (updip) to create the elliptically-shaped gas seepage plume. Gas escapes vertically through existing fractures in the sandstone into the overlying gravel deposit creating the observed seepage. Gas recently detected beneath the sandstone layer along the Florida River cut bank, and gas previously detected beneath the sandstone layer along the Animas River, supports the hypothesis that gas is trapped beneath the sandstone layer and migrating horizontally directly beneath the sandstone.

Conceptually, it appears that gas is migrating vertically using the N Bryce 1-X wells as the primary conduit. Varying permeability of the subsurface soil layers allows for horizontal migration of seeping gas into porous layers above the Fruitland Formation. This is evident from the dissolved methane reported in the surrounding water wells and the surface gas seeps.

The new residential structure recently constructed on the Kidd property north of the Cain 31-2 CBM well does not appear to lie within the present defined boundary of the methane gas seep. While the current extent of gas seepage has been defined, insufficient data exists to define seasonal and long term changes in seep extent. The current level of gas seepage within the seep area has the potential to accumulate in confined areas overlying the seep and create an explosive environment. Future development on properties in the vicinity of the gas seepage should consider the potential for seeping gas to accumulate in confined spaces.

LTE recommends a soil gas survey around the perimeter of Kidd water well and new residence. In addition, the interior living space of the residence and the crawlspace beneath the structure should be inspected for the presence of explosive vapors. The area in close proximity to the water well, (assuming one is present) at the new residence should also be inspected and a water sample should be collected for analysis of dissolved methane concentration. LTE also recommends a review of the mitigation measures undertaken at the Kidd property by a qualified engineer.



LTE recommends continued monitoring of the methane seep at the Site as a safety precaution for the people living in the area. The grid mapping system will continue to be used during future seep surveys in an effort to remain consistent with the previous monitoring events. At your request, the next soil gas survey event is scheduled for December 1, 2005. LTE also recommends continued operation and maintenance (O&M) of the existing methane detection systems in the four houses and the fire station located within the project area. The monthly O&M will continue to be conducted by Standby Safety of Cortez, Colorado.

If the COGCC is interested in limiting the extent of the gas seep at the ground surface while identifying a remedy to address the Bryce 1-X conduit, LTE can design a venting system that penetrates the sandstone layer and provides a preferential conduit (passively or actively) for trapped gas to the ground surface. The migration of the gas through a preferential vertical pathway at engineered locations will likely reduce lateral migration of gas beneath the sandstone layer.

LTE appreciates the opportunity to provide environmental services to the COGCC. If you have any questions regarding this report or would like additional information, please contact us at (303) 433-9788.

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in black ink, appearing to read 'John D. Peterson', with a stylized flourish extending to the right.

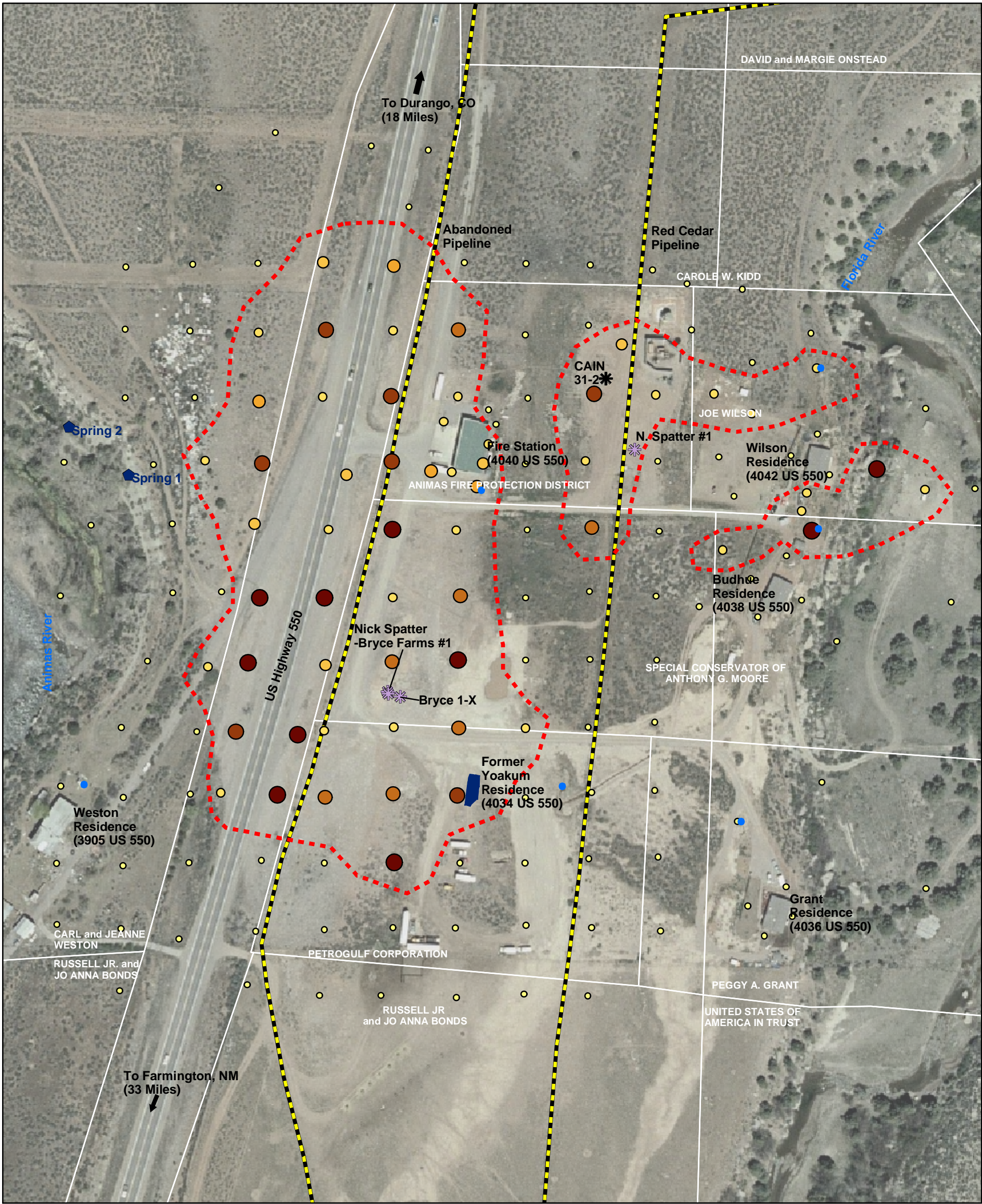
John D. Peterson, P.G.  
Project Manager

Attachments

## FIGURES

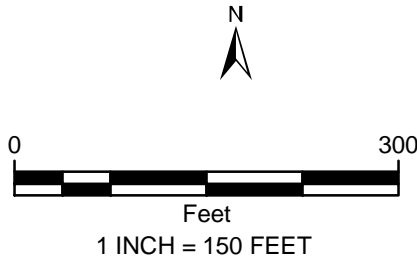






**LEGEND**

- |  |                                 |
|--|---------------------------------|
| ● Water Supply Well                                | Subsurface Methane Measurements |
| ◆ Springs  | ○ 0 ppm                         |
| ■ Yoakum Residence                                 | ○ 500 ppm - 5%                  |
| ✱ Gas Well   | ○ 6% - 15%                      |
| ✱ Former Oil and Gas Well                          | ○ 16% - 25%                     |
| Utilities  | ○ 26% - 50%                     |
| — Buried Gas Pipeline                              | ○ 51% - 75%                     |
| — Extent of Methane Seepage                        | ○ 76% - 100%                    |
| — November 2005                                    |                                 |
| Landowner and Property Boundaries Labeled in White |                                 |

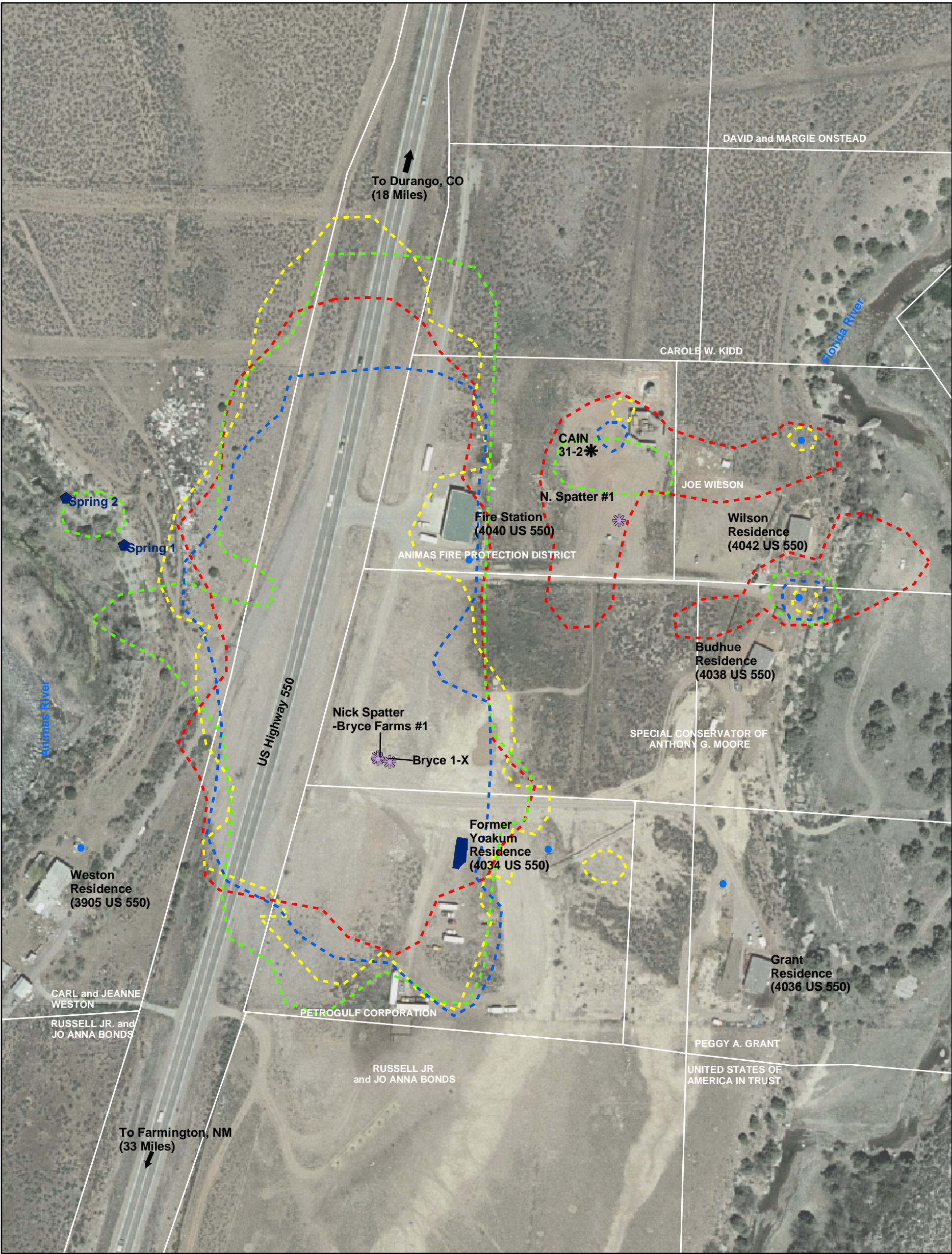


**FIGURE 1**  
**SUBSURFACE METHANE MEASUREMENTS**  
**NOVEMBER 2005**  
**BONDAD GAS SEEP**  
**BONDAD, CO**

COLORADO OIL AND GAS CONSERVATION COMMISSION



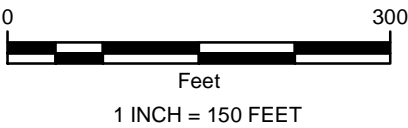




**LEGEND**

- Water Supply Well
- ◆ Springs
- Yoakum Residence
- ✱ Gas Well
- ✱ Former Oil and Gas Well
- Methane Seepage
  - February 2005
  - April 2005
  - June 2005
  - November 2005

Landowner and Property Boundaries Labeled in White



**FIGURE 2**  
**HISTORICAL SUBSURFACE**  
**METHANE MEASUREMENTS**  
**FEBURARY - NOVEMBER 2005**  
**BONDAD GAS SEEP**  
**BONDAD, CO**  
**COLORADO OIL AND GAS CONSERVATION COMMISSION**





**ATTACHMENT 1**

**NOVEMBER 2005 METHANE SURVEY SEEP DATA**



**Attachment 1**  
**November 2005**  
**Methane Seep Survey Data**

Point ID	Date	Northing	Easting	Elevation	Subsurface CH <sub>4</sub> (ppm)	Subsurface O <sub>2</sub> (%)	Subsurface H <sub>2</sub> S (ppm)	Subsurface CO (ppm)
1	11/2/2005	4104871.34	244721.49	5942.49	0.0	20	0	1
2	11/2/2005	4104843.69	244699.12	5944.70	820,000	4	0	1
3	11/2/2005	4104834.15	244721.08	5942.64	1,000	19	0	1
4	11/2/2005	4104834.48	244743.95	5944.64	0.0	20	0	0
5	11/2/2005	4104782.49	244732.82	5939.34	0.0	20	0	0
6	11/2/2005	4104764.64	244680.16	5941.40	0.0	20	0	0
7	11/2/2005	4104700.17	244673.16	5940.89	0.0	20	0	0
8	11/2/2005	4104651.22	244720.60	5944.54	0.0	20	0	0
1	11/1/2005	4104632.38	244598.78	5972.72	0.0	20	0	0
2	11/1/2005	4104666.32	244597.96	5976.48	0.0	20	0	0
3	11/1/2005	4104696.87	244596.56	5976.24	0.0	20	0	0
4	11/1/2005	4104728.17	244596.67	5973.92	0.0	20	0	0
5	11/1/2005	4104756.57	244597.71	5975.21	0.0	20	0	10
6	11/1/2005	4104785.92	244597.52	5978.20	0.0	16	0	24
7	11/1/2005	4104815.69	244599.06	5977.81	0.0	14	0	7
8	11/1/2005	4104847.66	244598.63	5977.87	0.0	15	0	14
9	11/1/2005	4104878.22	244597.92	5978.03	7,500	13	0	86
10	11/1/2005	4104907.93	244614.41	5983.27	0.0	20	0	41
11	11/1/2005	4104878.56	244624.54	5981.18	13,000	18	0	50
12	11/1/2005	4104849.49	244626.57	5981.19	0.0	18	0	7
13	11/1/2005	4104928.95	244612.51	5984.92	0.0	20	0	0
14	11/1/2005	4104926.39	244637.79	5985.02	0.0	20	0	26
15	11/1/2005	4104935.58	244596.66	5982.83	0.0	20	0	0
16	11/1/2005	4104937.94	244568.10	5984.20	0.0	20	0	31
17	11/1/2005	4104910.33	244567.10	5982.86	0.0	18	0	13
18	11/1/2005	4104901.43	244582.42	5996.73	150,000	16	0	46
19	11/1/2005	4104878.81	244569.58	5979.96	640,000	7	0	50
20	11/1/2005	4104848.07	244565.42	5979.98	50,000	16	0	41
21	11/1/2005	4104817.46	244568.23	5986.22	330,000	13	0	34
22	11/1/2005	4104788.19	244567.06	5979.07	0.0	25	0	0
23	11/1/2005	4104757.02	244566.99	5979.03	0.0	20	0	34
24	11/1/2005	4104725.95	244566.16	5978.78	0.0	19	0	0
25	11/1/2005	4104696.12	244567.48	5975.06	0.0	20	0	6
26	11/1/2005	4104665.72	244566.12	5975.46	0.0	20	0	52
27	11/1/2005	4104634.02	244567.13	5977.37	0.0	20	0	8
28	11/1/2005	4104635.27	244537.15	5980.08	0.0	20	0	9
29	11/1/2005	4104663.87	244536.80	5972.10	0.0	19	0	11
30	11/1/2005	4104693.76	244537.04	5977.23	0.0	17	0	19
31	11/1/2005	4104725.70	244537.41	5978.80	11,500	13	0	0
32	11/1/2005	4104756.88	244537.57	5980.16	0.0	20	0	0
33	11/1/2005	4104785.45	244537.64	5979.09	0.0	21	0	0
34	11/1/2005	4104816.58	244538.65	5976.81	0.0	19	0	0
35	11/1/2005	4104846.74	244537.90	5980.37	0.0	19	0	0
36	11/1/2005	4104877.00	244539.18	5982.68	0.0	19	0	1
37	11/1/2005	4104905.98	244538.07	5986.84	0.0	20	0	0
38	11/1/2005	4104938.70	244538.55	5988.40	0.0	20	0	47
39	11/1/2005	4104939.27	244510.32	5989.58	0.0	19	0	13
40	11/1/2005	4104908.46	244507.47	5990.21	450,000	5	0	32
41	11/1/2005	4104877.94	244507.19	5989.96	50,000	16	0	18
42	11/1/2005	4104843.34	244504.06	5988.70	50,000	20	0	15
43	11/1/2005	4104816.53	244506.05	5986.99	9,000	20	0	7
44	11/1/2005	4104786.38	244507.83	5982.44	450,000	15	0	28
45	11/1/2005	4104756.97	244506.49	5978.50	760,000	10	0	11
46	11/1/2005	4104725.80	244506.77	5974.69	340,000	15	0	9
47	11/1/2005	4104695.00	244505.88	5976.84	640,000	3	0	2
48	11/1/2005	4104664.04	244507.01	5978.81	0.0	19	0	24
49	11/1/2005	4104634.16	244504.71	5976.92	0.0	19	0	21
50	11/1/2005	4104634.48	244476.25	5982.28	0.0	20	0	0
51	11/1/2005	4104664.44	244476.93	5974.77	870,000	2	0	13
52	11/1/2005	4104695.83	244476.48	5982.63	490,000	15	0	58
53	11/1/2005	4104726.36	244476.99	5980.14	50,000	19	0	100
54	11/1/2005	4104756.32	244476.33	5984.19	380,000	19	0	20
55	11/1/2005	4104785.85	244476.81	5983.41	50,000	19	0	7
56	11/1/2005	4104817.00	244476.75	5985.46	770,000	5	0	30
57	11/1/2005	4104848.23	244476.65	5987.88	720,000	10	0	19
58	11/1/2005	4104878.23	244476.41	5988.46	590,000	13	0	24
59	11/1/2005	4104908.35	244477.53	5981.85	50,000	19	0	8
60	11/1/2005	4104937.93	244477.98	5989.76	160,000	15	0	24
61	11/1/2005	4104964.96	244485.14	5992.29	0.0	20	0	100
62	11/1/2005	4104991.06	244494.16	5991.81	0.0	20	0	40
63	11/1/2005	4104992.88	244468.05	6000.48	0.0	20	0	16
64	11/1/2005	4104939.78	244445.53	5986.06	60,000	12	0	5
65	11/1/2005	4104908.70	244446.79	5991.41	650,000	7	0	10
66	11/1/2005	4104878.02	244445.12	5990.40	15,000	19	0	86
67	11/1/2005	4104842.28	244455.89	5990.18	80,000	14	0	11
68	11/1/2005	4104817.07	244447.52	5984.41	35,000	18	0	43
69	11/1/2005	4104785.90	244445.49	5983.38	830,000	3	0	28
70	11/1/2005	4104754.97	244445.83	5984.86	90,000	17	0	26
71	11/1/2005	4104724.86	244444.96	5983.95	2,500	19	0	0
72	11/1/2005	4104694.36	244445.32	5970.47	260,000	15	0	100
73	11/1/2005	4104664.25	244444.87	5973.46	0.0	20	0	29
74	11/1/2005	4104633.82	244444.78	5978.28	0.0	19	0	0
75	11/1/2005	4104836.47	244515.62	5983.69	160,000	8	0	48



**Attachment 1**  
**November 2005**  
**Methane Seep Survey Data**

Point ID	Date	Northing	Easting	Elevation	Subsurface CH <sub>4</sub> (ppm)	Subsurface O <sub>2</sub> (%)	Subsurface H <sub>2</sub> S (ppm)	Subsurface CO (ppm)
77	11/1/2005	4104856.07	244521.01	5982.98	500	19	0	25
78	11/1/2005	4104871.77	244521.12	5988.62	0.0	20	0	10
79	11/1/2005	4104864.98	244524.46	5986.41	0.0	19	0	16
80	11/1/2005	4104866.29	244500.54	5994.76	44,000	19	0	46
81	11/1/2005	4104843.82	244494.65	5988.67	210,000	17	0	62
82	11/1/2005	4104847.11	244518.48	5991.64	120,000	15	0	100
83	11/1/2005	4104901.77	244283.06	5935.21	0.0	19	0	0
84	11/1/2005	4104848.53	244326.37	5937.16	0.0	20	0	0
85	11/1/2005	4104819.68	244338.63	5935.05	0.0	16	0	7
86	11/1/2005	4104787.40	244324.31	5929.77	0.0	19	0	6
87	11/1/2005	4104938.10	244355.18	5980.21	0.0	21	0	14
88	11/1/2005	4104939.06	244385.84	5978.54	0.0	20	0	5
89	11/1/2005	4104939.38	244415.59	5989.73	0.0	20	0	0
90	11/1/2005	4104999.29	244423.97	5988.19	0.0	21	0	9
91	11/1/2005	4104974.21	244398.02	5983.16	0.0	20	0	18
92	11/1/2005	4104909.54	244354.71	5977.04	0.0	20	0	6
93	11/1/2005	4104878.01	244354.63	5979.33	0.0	20	0	4
94	11/1/2005	4104847.32	244367.49	5977.85	0.0	20	0	0
95	11/1/2005	4104820.06	244375.86	5976.87	0.0	21	0	0
96	11/1/2005	4104788.44	244375.97	5977.40	0.0	21	0	0
97	11/1/2005	4104757.15	244364.32	5973.36	0.0	20	0	16
98	11/1/2005	4104726.86	244352.01	5967.16	0.0	20	0	7
99	11/1/2005	4104700.10	244324.13	5972.27	0.0	20	0	0
100	11/1/2005	4104664.73	244322.08	5974.81	0.0	20	0	57
101	11/1/2005	4104636.61	244322.08	5971.31	0.0	20	0	42
102	11/1/2005	4104606.13	244350.71	5972.85	0.0	21	0	66
103	11/1/2005	4104634.64	244351.44	5975.78	0.0	21	0	27
104	11/1/2005	4104663.47	244352.49	5973.97	0.0	20	0	22
105	11/1/2005	4104694.75	244352.84	5974.95	0.0	20	0	12
106	11/1/2005	4104696.24	244383.54	5972.15	0.0	20	0	5
107	11/1/2005	4104724.78	244386.70	5974.83	0.0	20	0	88
108	11/1/2005	4104754.44	244391.91	5981.62	20,000	17	0	100
109	11/1/2005	4104788.74	244398.26	5990.19	0.0	20	0	100
110	11/1/2005	4104819.88	244413.62	5986.69	60,000	19	0	100
111	11/1/2005	4104847.67	244417.13	5987.01	710,000	6	0	13
112	11/1/2005	4104876.06	244416.02	5990.83	230,000	17	0	7
113	11/1/2005	4104907.64	244415.77	5984.63	35,000	13	0	25
114	11/1/2005	4104908.59	244384.42	5980.46	0.0	20	0	5
115	11/1/2005	4104877.98	244386.45	5988.36	0.0	21	0	4
116	11/1/2005	4104849.07	244391.08	5986.13	28,500	20	0	21
117	11/1/2005	4104785.90	244415.84	5986.69	970,000	1	0	0
118	11/1/2005	4104756.24	244410.28	5978.39	780,000	5	0	100
119	11/1/2005	4104724.61	244404.53	5981.39	530,000	9	0	47
120	11/1/2005	4104696.68	244397.60	5975.55	8,500	16	0	59
121	11/1/2005	4104664.75	244382.68	5969.94	0.0	20	0	5
122	11/1/2005	4104629.74	244377.97	5966.91	0.0	20	0	32
123	11/1/2005	4104608.53	244409.23	5965.50	0.0	20	0	5
124	11/1/2005	4104603.49	244442.37	5985.83	0.0	21	0	48
125	11/1/2005	4104603.39	244470.49	5980.09	0.0	20	0	10
126	11/1/2005	4104602.29	244505.01	5974.43	0.0	20	0	48
127	11/1/2005	4104603.71	244536.12	5968.63	0.0	20	0	6
128	11/1/2005	4104602.79	244565.31	5970.98	0.0	20	0	44
129	11/1/2005	4104633.10	244413.31	5973.33	0.0	20	0	14
130	11/1/2005	4104665.59	244416.07	5969.81	0.0	21	0	19
131	11/1/2005	4104695.75	244423.49	5974.83	770,000	5	0	79
132	11/1/2005	4104723.14	244432.93	5982.25	880,000	7	0	54
133	11/1/2005	4104643.63	244638.92	5974.74	0.0	20	0	10
134	11/1/2005	4104629.83	244646.44	5972.46	0.0	20	0	25
135	11/1/2005	4104638.66	244659.36	5967.69	0.0	21	0	2
136	11/1/2005	4104652.24	244656.43	5969.76	0.0	21	0	0
138	11/1/2005	4104682.40	244634.37	5973.19	0.0	19	0	13
139	11/1/2005	4104776.21	244644.10	5976.82	0.0	20	0	0
140	11/1/2005	4104783.70	244664.34	5972.32	0.0	19	0	5
142	11/1/2005	4104815.58	244669.00	5975.57	1,000,000	1	0	0
143	11/1/2005	4104804.04	244657.43	5969.62	0.0	18	0	8
144	11/1/2005	4104793.77	244640.96	5974.95	0.0	19	0	6
145	11/1/2005	4104832.93	244666.83	5974.01	2,500	19	0	1
146	11/1/2005	4104824.69	244664.50	5971.32	34,000	19	0	1
147	11/1/2005	4104841.14	244677.16	5978.05	0.0	19	0	0
149	11/1/2005	4104890.04	244671.61	5970.09	12,500	12	0	4
150	11/1/2005	4104906.15	244669.22	5976.82	0.0	20	0	34
151	11/1/2005	4104859.94	244671.81	5978.27	0.0	20	0	21
152	11/1/2005	4104849.97	244659.67	5976.91	0.0	20	0	0
153	11/1/2005	4104892.80	244642.27	5983.21	0.0	20	0	16
154	11/1/2005	4104869.38	244641.91	5979.73	36,500	17	0	52
155	11/1/2005	4104831.54	244633.52	5976.68	0.0	20	0	4
156	11/1/2005	4104806.94	244628.20	5975.72	13,000	17	0	8
157	11/1/2005	4104780.99	244617.21	5975.62	0.0	20	0	11

**Notes:**

CH<sub>4</sub> - methane

O<sub>2</sub> - oxygen

H<sub>2</sub>S - hydrogen sulfide

CO - carbon monoxide