H_2S CONTINGENCY PLAN

Linam Ranch Gas Plant
and AGI Wellsite
Hobbs, New Mexico

DCP Midstream, LP.

November 9, 2009

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APPENDIX A
WORST CASE SCENARIO

The basis for Linam Ranch Plant worst case calculations is 5700 parts per million (ppm) or 0.57 mole percent of hydrogen sulfide in the inlet gas to the Linam Gas Plant and a maximum daily (24 hour) processing volume of 225,000 Mscf. The ROE assumes an uncontrolled instantaneous release from the area near the amine contact towers of the referenced volume and concentration. Calculations using the ROE formula pursuant to NMAC 19.15.1 1 are provided in **Appendix** B.

It should be noted that this rate, though used as worst case, would unlikely be released due to the Plant emergency shut down (ESD) systems that when activated shuts down the Plant. ESD valves on the inlet pipelines to prevent gas from entering the Plant. In addition, each inlet pipeline has field located shut down valves as follows:

- Eddy Co. Line – pipeline shut down valve, capable of remote or manual closing, 300 ft. north of Hwy 62/180. Second pipeline shut down valve, manual closing, 5 miles west of Linam Ranch Plant.
- Buckeye Line – pipeline shut down valve, manual closing, 300 ft. north of Hwy 62/180. Second pipeline shut down valve 7 miles northwest of Linam Ranch Plant.
- Shell 12' Line – pipeline shut down valve, manual closing at south fence line of Linam Ranch Plant. Second pipeline shut down valve 7 miles southwest of Linam Ranch Plant.

The secondary, "outside-of-the ROE" valve locations are shown with roads on Figure 2 in Appendix C. These valves, when closed, shut off all gas from the gathering systems flowing into Linam Ranch Plant.

These valves would be closed as directed by the IC in the event that Plant ESD valves failed to function properly.

The basis for AGI pipeline and wellsite for worst case calculations is 28.06 mole percent of hydrogen sulfide in the acid gas from the Linam Gas Plant and a maximum daily (24 hour) volume of 4,600 Mscf. The ROE assumes an uncontrolled instantaneous release from the wellsite or pipeline of the referenced volume and concentration. Calculations using the ROE formula pursuant to NMAC 19.15.11 are provided in **Appendix** B.

It should be noted that this rate, though used as worst case, would unlikely be released due to:

1. The AGI process shut down (PSD), which when activated, shuts down and isolates the AGI compressors and equipment and routes the acid gas safely to the plant acid gas flare.

2. The Plant emergency shut down (ESD) systems, that when activated shuts down the Plant and closes ESD valves on the inlet pipelines preventing all gas from entering the Plant.

APPENDIX B
RADIUS OF EXPOSURE CALCULATIONS

The formulas for calculating the two ROEs (as specified by the regulations) are as follows:

500-ppm RADIUS OF EXPOSURE CACULATION

$$X=[(0.4546)(\text{hydrogen sulfide conc.})(Q)]^{(0\ 6258)}$$

Where:
X = Radius of exposure in feet
Hydrogen Sulfide Conc = Decimal equivalent of mole or volume fraction of hydrogen sulfide in the gaseous mixture
Q = Escape rate expressed in cubic feet per day (corrected for standard conditions of 14.73 psi absolute and 60 degrees Fahrenheit)

LINAM RANCH PLANT

a) For existing facilities or operations, the escape rate (Q) is the maximum daily rate of the gaseous mixture produced or handled or the best estimate thereof. For the Linam Gas Plant the Company is using for contingency planning purposes an "escape rate" equal to the inlet gas volume of 225,000 MCFD. The inlet gas volume at the Plant is somewhat variable and is continuously metered. The Plant records daily inlet gas volumes and prepares a daily volume report. The volume of 225,000 MCFD of inlet gas has been selected as the escape rate since it is the highest volume that the Plant would handle under its current operations and is considered worst case interpretation of the volume of gas.

As to hydrogen sulfide concentration of the inlet gas, daily monitoring data indicates variable concentrations with an average for 2009 of 4700 ppm, however 5700 ppm (0.57 mole percent) is a worst case scenario. Thus, the Plant has used a hydrogen sulfide concentration of 5700 ppm for its contingency planning purposes.
Using:
Q = 225,000,000
H_2S conc = 5700 ppm or 0.57 mole%

$$[(0.4546)*(H_2S \text{ concentration})*(\text{gas volume } (Q))]\ 0.6258$$
$$[(0.4546)*(5700*.000001)*(225,000,000)]\ 0.6258$$

500-ppm ROE = 4,057 feet

100-ppm RADIUS OF EXPOSURE CALCULATION

[(1.589)*(H_2S concentration)*(gas volume (Q))] 0.6258
[(1.589)*(5700*.000001)*(225,000,000)] 0.6258

100-ppm ROE = 8,877 feet

AGI PIPELINE AND WELLSITE

a) For existing facilities or operations, the escape rate (Q) is the maximum daily rate of the gaseous mixture produced or handled or the best estimate thereof. For the Linam AGI pipeline and wellsite, the Company is using for contingency planning purposes an "escape rate" equal to the acid gas volume of 4,600 MCFD. The volume of 4,600 MCFD of acid gas has been selected as the escape rate since it is the highest volume that the Plant would handle under its current operations and is considered worst case interpretation of the volume of gas.

As to hydrogen sulfide concentration of the inlet gas, daily monitoring data indicates variable concentrations with an average for 2009 of 23.39 mole percent; however 28.06 mole percent is a worst case scenario. Thus, the Plant has used a hydrogen sulfide concentration of 28.06 mole percent for its contingency planning purposes.
Using:
Q = 4,600,000
H_2S conc = 28.06 mole%

[(0.4546)*(H_2S concentration)*(gas volume (Q))] 0.6258
[(0.4546)*(0.2806)*(4,600,000)] 0.6258

500-ppm ROE = 4,073 feet

100-ppm RADIUS OF EXPOSURE CALCULATION

[(1.589)*(H_2S concentration)*(gas volume (Q))] 0.6258
[(1.589)*(0.2806)*(4,600,000)] 0.6258

100-ppm ROE = 8,914 feet

APPENDIX C
100-PPM AND 500-PPM
RADIUS OF EXPOSURE MAP


AGI Well Site
H2S Contingency Plan
Radius of Exposure
100ppm-ROE
500ppm-ROE
T 18 S
R 36 E
T 18 S
R 37 E
Well Site Assembly Area
AGI Well Site
ROE of AGI Pipeline
DCP Hobbs Plant
Assembly Area 2
Assembly Area 3
Assembly Area 1
Linam Ranch
Carlin
Webber
Handley
T 19 S
R 36 E
T 19 S
R 37 E
State Hwy 483
Maddox Rd.
State Hwy 8
62
LEA
0
0.5
1
2 Miles
ROE
AGI Well Site
Assembly Areas
Road Blocks
H2S CautionSignals
Public Receptors
AGI Pipeline
DCP Plants
dcp Midstream