FRONTIER FIELD SERVICES LLC
MALJAMAR AGI #2 - API#30-25-42628
REVISED NINE POINT DRILLING PLAN

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MALJAMAR AGI #2 NINE POINT DRILLING PLAN FOR BLM APD

EXECUTIVE SUMMARY

On behalf of Frontier Field Services, LLC (Frontier), Geolex®, Inc. (Geolex) and Red Willow Production Company have prepared and is hereby submitting a completed Application for Permit to Drill (APD) and Nine Point Drilling Plan for a combined acid gas injection and CO_2 sequestration well (Maljamar AGI #2) 215' to the east of the office building of the Frontier Gas Plant and 90' east northeast of the flare fence. Both AGI #1 and AGI #2 wells are located on approximately 19 acres near Maljamar in Lea County, New Mexico (Figure 1 & Figure 5). This well is being drilled as a redundant backup well for Maljamar AGI #1. This is the 9-point drilling plan supporting the APD which also contains the 12-Point Surface Use Plan of Operation (SUPO), and all other required attachments.

NAME OF WELL: Maljamar AGI #2

LEGAL DESCRIPTION: Surface Location: 400' FSL, 2100' FEL, Section 21, T17S, R32E, Bottom Hole Location: 350' FSL, 650' FWL, Sec 21, T17S, R32E, NMPM, Lea County, New Mexico.

The Maljamar AGI #2 is planned as a directional well with a total measured depth (TMD) of approximately 11,129' and a total vertical depth (TVD) of 10,300'; and completed in the Wolfcamp series along the northern margin of the Delaware Basin (Permian). The primary proposed injection zone will be within a porous debris and algal mound carbonate facies in the Wolfcamp. These injection zones are between approximately 9745' TVD (10,430' TMD) and 10,230' TVD (11,041' TMD) from the surface. Analysis of the reservoir characteristics of these units confirms that these act as excellent closed-system reservoirs that should easily accommodate the future needs of Frontier for disposal of acid gas and sequestration of CO_2 from the plant. Frontier needs to safely inject up to 3.5 million standard cubic feet (MMSCF) per day of treated acid gas (TAG) for 30 years and cannot rely on one well to operate continuously for the 30 year period, therefore, a second AGI well is being drilled to allow for maintenance on Maljamar AGI #1 without impairing plant operations. Geologic studies conducted for the selection of this location demonstrate that the proposed injection zone is capable of accepting and containing the proposed acid gas and CO_2 injection volumes well within NMOCD's recommended maximum injection pressures and that no hydrocarbons are present in the proposed injection zone (see Section IX of this plan).

In preparing this Drilling Plan a detailed evaluation was conducted of the nine points that BLM's Onshore Oil and Gas Order #1 outlines as required for submission of such a plan. These include:

I.	Estimated Formation Tops
II.	Depth to Zones that Contain Water, Oil, Gas and/or Mineral Bearing Formations
III.	Pressure Control
IV.	Casing
V.	Cement
VI.	Circulation Medium
VII.	Testing, Coring, Logging
VIII.	Pressures, Temperatures, LCZ's, H2S
IX.	Other Aspects of the Proposal

I. ESTIMATED FORMATION TOPS

Formation	Anticipated Vertical Depth to Top (ft)
Alluvium/Ogallala	0
Dockum/Rustler	200
Yates	2,067
Seven Rivers	2,207
Queen	3,176
Grayburg	3,537
San Andres	3,931
Glorieta	5,571
Yeso	6,300
Tubbs	7,036
Abo	7,667
Lower Leonard	9,206
Wolfcamp	9,648
Cisco	10,238

II. DEPTHS TO ZONES THAT CONTAIN OIL AND GAS, WATER AND/OR MINERAL BEARING FORMATIONS

In the area of the Frontier Gas Plant, the surficial deposits are relatively thin layers of aeolian sands and both active and stabilized dunes. These materials are described in the *Soil Survey-Lea County, New Mexico* (United States Department of Agriculture, 1974) as the Kermit Dune Lands and the Maljamar Fine Sands. Under these sandy deposits lie the "redbeds" of the Triassic Dockum Group, in which groundwater locally occurs in sandier beds of the mudrocks characterizing the Dockum. Local depth to groundwater in the Dockum is reported to be approximately 200'. The only significant aquifer in the area is the Pliocene Ogallala Formation, which crops out in the Mescalero Ridge, a prominent landform seen near Maljamar, approximately 3.25 miles northeast of the Plant (Nicholson and Clebsh, 1961).

The anticipated vertical and measured depths to formations tops and kick-off point (KOP) are shown on Table 1. Depths are shown as vertical depths and as measured depths since AGI #2 will be drilled vertically to a kick-off point depth at approximately 6600'. Starting at approximately 6,600', the borehole angle will be built to approximately 37.4° for a total vertical section of approximately 2,532' and a total measured depth (TMD) of 11,129' with a total vertical depth (TVD) of 10,300' (Table 1). All depths are estimated depths and are subject to change based on geological information obtained at the time of drilling.

TABLE 1
Depths to Formation Tops
and Other Important and Relevant Depths

Formation	Vertical Depth to Top (ft)	Measured Depth to Top (ft)	Horizontal Distance From SPUD Location (ft)	Resource
Alluvium/Ogallala	0	0	0	Fresh Water
Dockum/Rustler	200	200	0	Freshwater
Yates	2,067	2,067	0	None
Seven Rivers	2,207	2,207	0	Oil/Gas
Queen	3,176	3,176	0	Oil/Gas
Grayburg	3,537	3,537	0	Oil/Gas
San Andres	3,931	3,931	0	Oil/Gas
Glorieta	5,571	5,571	0	Oil/Gas
Yeso	6,300	6,300	0	Oil/Gas
Kick-Off Point	***6,600***	***6,600***	0	NA
Tubbs	7,036	7,047	86	Oil/Gas
Abo	7,667	7,815	519	Oil/Gas
Center of Cement Diverter Tool	**9,137**	**9,665**	**1,643**	**NA**
Lower Leonard	9,206	9,752	1,695	Barren
Top of CRA	**9,400**	**9,896**	**1,800**	**NA**
Packer Set Depth	**9,600**	**10,248**	**1,997**	**NA**
Top of Wolfcamp	9,648	10,308	2033	Locally Barren
Bottom of CRA	**9,662**	**10,327**	**2044**	**NA**
Top Perf	**9,745**	**10,430**	**2,107**	**NA**
Bottom Perf	**10,230**	**11,041**	**2,478**	**NA**
Cisco	10,238	11,051	2,484	Locally Barren
PBTD	**10,260**	**11,079**	**2,501**	**NA**
Total Depth	**10,300**	**11,129**	**2,532**	**NA**

Water Wells and Fresh Water Resources in the Vicinity

The only significant aquifer in the area is the Pliocene Ogallala Formation, which crops out in the Mescalero Ridge, a prominent landform seen near Maljamar, approximately 3.25 miles northeast of the Plant.

One water well is reported within one mile of the Plant, with a total depth of 158' (Figure 2). The nearest well for which groundwater analysis exists is in Section 3, T17S, R32E, approximately 3 miles north of the plant. This well is completed in the Ogallala Formation, and has a Total Dissolved Solids of approximately 500 mg/L. There are no reported natural bodies of surface water within 5 miles of the Plant; however, there is an artificial pond built by the BLM that uses groundwater to fill the pond for nature preservation and recreation that is located approximately one mile to the east of the plant.

Oil and Gas Resources in the Maljamar AGI #2 Area of Review and Vicinity

A summary of potential oil and gas bearing zones in the area is included in Table 1. Attachment 1 contains a complete list based on NMOCD records of all active, temporarily abandoned, abandoned and plugged oil and gas wells within ½-mile and two miles (Figures 8 & 9 and Attachment 1). There are 805 recorded wells within two miles of the Plant, of which 288 are active and 163 are listed as plugged and abandoned, and 185 are listed as not completed and there are two wells that do not have a status. There are 56 wells that are within ½-mile of the injection interval surface location, of which 36 are active and 7 are plugged and abandoned. These wells are shown in Figure 8, Attachment 1, and Table 2.

A review of the available NMOCD data regarding the wells within ½- mile of the proposed AGI well shows that of the 56 total wells, only 2 intersect and/or penetrate the proposed injection zone in the Wolfcamp (Table 2). All reported depths are vertical depths. Of the total 56 wells, 32 are less than 6,000' deep. These wells are or were targeted into the Grayburg/San Andres formations. An additional 24 wells are drilled between 6,000' and 8,000', targeting the Yeso formations. All of these wells' total depths are well above the Wolfcamp, which lies from 9,650' to 10,240' TVD in this area. Zones which contain potentially economic minerals or oil and gas in the area of review include: San Andres, Grayburg, Glorieta/Paddock and Abo Formations above the targeted injection zone and the Cisco, Strawn, Morrow and Devonian below the targeted injection zone.

Maljamar AGI #2 is to be completed in the same formation as Maljamar AGI #1 and the Cimarex Energy Company "Pearsall Federal SWD #1" water disposal well (SW / NW 28 – 17S – 32E). There were no indications of recoverable oil and gas observed during geological evaluations conducted during drilling, mud logging, e-logging, or testing Maljamar AGI #1 or the Pearsall well, both of which are just outside ½ mile from the Maljamar AGI #2 injection zone. The formation fluid sample results for the sample collected from Maljamar AGI #1 did not indicate the presence of recoverable hydrocarbons (Attachment 6). The geology and hydrocarbon content is anticipated to be the same for Maljamar AGI #2 as it is for the nearby evaluated offset wells; however, the Wolfcamp shall be proved to be non-productive or non-commercial prior to completing this well for injection.

Status of Wolfcamp-Penetrating Wells Within One-Mile

As shown in Table 2 in red, there is only one (1) well penetrating the Wolfcamp "deep wells" in the ½ mile radius area of review. Information on the one well in the ½-mile area of review includes total depth, production or injection interval and current status and is found in Attachment 1. Maljamar AGI #1 is not

included on the list of penetrating wells because the Maljamar AGI #1 injection zone is over ½-mile away from Maljamar AGI #2 injection zone location. Maljamar AGI #2 is to be drilled directionally at an angle of 37.4° that places its injection zone approximately ½ mile west of the Maljamar AGI #1 injection location.

A review of the available data on Queen B 036 (also known as MCA Unit #133) is shown in Table 2 and in Attachment 1. **Queen B 036 well was plugged.** Plugging reports for Queen B 036/MCA Unit #133 are included in Attachment 3.

TABLE 2
Wells Within the ½ Mile Radius Area of Review
That Penetrate the AGI #2 Injection Depths

Map ID	API	OPERATOR	Well Name	Status	Well Type	Production Formation	TD	Miles
7	30-025-00751	CONOCOPHILLIPS COMPANY	QUEEN B 036	Plugged	Oil	P&A	10005	0.17

As part of the work performed to support this application, a detailed investigation of the structure, stratigraphy and hydrogeology of the area surrounding the proposed Maljamar AGI #2 injection well has been performed. The investigation included the analysis of available geologic data and hydrogeological data from wells and literature identified in Sections 3, 4 and 5 of the C-108 application including related appendices. Based on this investigation and analysis of these data, it is clear that there are no open fractures, faults or other structures which could potentially result in the communication of proposed injection zone with any known sources of drinking water in the vicinity as described above. The proposed injection zone is a closed system and over 8,000 vertical feet from fresh water-bearing zones.

Geolex's analysis of the impact of injection of TAG from the proposed Maljamar AGI #2 completed in the Wolfcamp porosity zones would not negatively impact the production of any economic hydrocarbons within a one-mile radius of the Maljamar AGI #2 injection zone. This opinion is based upon test and production results, seismic identification of porosity zone limits, experience with the depositional systems of the lower Permian rocks, and Wolfcamp structure. Any injected fluid would be confined to an area significantly less than a one-mile radius away from the Maljamar AGI #2, and would be unlikely to break through to any producing wells updip of the site.

III. PRESSURE CONTROL

A 2,000 psi annular preventer with 5,000 psi HCR valve will be installed on the 20" surface casing for drilling the 17½" 1st intermediate hole. The BOP for the 12¼", 2nd intermediate hole will consist of a 13⅝" x 5,000 psi dual ram BOPE with mud cross, choke manifold, chokes and hydril per Figure 3 (5,000 psi WP). The BOPE when installed on the 13⅝" intermediate casing spool will consist of a 13⅝" x 5,000 psi annular, pipe and blind rams with choke manifold and chokes as in Figure 3 and will be tested to 300 psig and 3,000 psig. These tests will be performed upon installation, after any component changes and as required by well conditions. The BOPE will be tested to 300 psi and 5,000 psi upon installation to the 9⅝" intermediate casing; the BOPE will be retested within 500' of the top of the Wolfcamp formation if the time between setting the 9⅝" intermediate casing and reaching this depth exceeds 20 days. A function test to insure that the preventers are operating correctly will be performed on each trip.

IV. CASING

The casing specifications for Maljamar AGI #2 were specially developed to be more resistant to the anticipated TAG stream. There are two lines of defense against TAG corrosion. The first line of defense is provided by approximately 430'of corrosion resistant alloy (CRA) casing surrounded with TAG resistant cement (Thermalock) (Tables 3, 4, and 5)(Figure 4). The second line of defense against corrosion is the 300' of CRA (G3-110 or equivalent) 2⅞" tubing placed directly above the packer. Both of these material upgrades will assist in reducing corrosion, improve the reliability of operations and increase the life of the wellbore.

TABLE 3
Casing Design Specifications

TYPE	COLLAR TYPE	INTERVAL (MD)	HOLE SIZE	PURPOSE	CONDITION
30", 99#/ft	Welded	0' – 40'	36"	Conductor	Contractor Discretion
20", 94#/ft, J-55	BTC	0' – 890'	26"	Surface	New
13⅜", 61#/ft, J-55	BTC	0' – 2,550'	17½"	1st Intermediate	New
9⅝", 40#/ft, HCL-80	LTC	0' – 6,500'	12¼"	2nd Intermediate	New
7", 29#/ft, L-80	LTC	0' – 9,896' 10,327' – 11,129'	8¾"	Production	New
7", 32#/ft, CRA G3-110 or equivalent	Premium Connection	9,896' – 10,327'	8¾"	Production	New

The design criteria and casing loading assumptions are shown in Table 4 and discussed below for each casing string.

TABLE 4
Casing Design Safety Factors

TYPE	TENSION	COLLAPSE	BURST
20", 94#/ft, J-55	9.36	1.20	1.92
13⅜", 61#/ft, J-55	3.83	1.14	1.31
9⅝", 40#/ft, HCL-80	3.32	1.42	1.46
7", 29#/ft, L-80	1.97	1.41	2.07

The surface casing design criteria and assumptions are as follows:

SURFACE CASING – (20")

Tension A 1.8 design factor calculating the weight of the casing in air.

Collapse — A 1.125 design factor with full internal evacuation and a collapse force in the annulus equal to the mud gradient in which the casing will be run (0.49 psi/ft).

Burst — A 1.1 design factor with a surface pressure equal to the fracture gradient at setting depth. Internal burst force at the shoe will be cement hydrostatic pressure at that depth. The effects of tension on burst will not be utilized.

The design criteria and casing load assumptions for the intermediate string are as follows:

1st INTERMEDIATE CASING – (13⅜")

Tension — A 1.8 design factor calculating the weight of the casing in air.

Collapse — A 1.125 design factor with full internal evacuation and a collapse force in the annulus equal to the mud gradient in which the casing will be run (0.53 psi/ft).

Burst — A 1.1 design factor with a surface pressure equal to the fracture gradient at setting depth. Internal burst force at the shoe will be cement hydrostatic pressure at that depth. The effects of tension on burst will not be utilized.

The design criteria and casing load assumptions for the intermediate string are as follows:

2nd INTERMEDIATE CASING – (9⅝")

Tension — A 1.8 design factor calculating the weight of the casing in air.

Collapse — A 1.125 design factor with full internal evacuation and a collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft).

Burst — A 1.1 design factor with a surface pressure equal to the fracture gradient at setting depth. Internal burst force at the shoe will be cement hydrostatic pressure at that depth. The effects of tension on burst will not be utilized.

The design criteria and casing load assumptions for the production casing are as follows:

PRODUCTION CASING – (7") (Even though section from 9,925' – 10,226' is G3-110, 32#/ft or equivalent CRA with higher strength, the entire string is assumed to be L-80 29#/ft)

Tension — A 1.8 design factor calculating the weight of the casing in air.

Collapse — A 1.125 design factor with full internal evacuation and a collapse force equal to the mud gradient in which the casing will be run (0.48 psi/ft).

Burst — A 1.1 design factor with a surface pressure equal to the fracture gradient at setting depth. Internal burst force at the shoe will be cement hydrostatic pressure at that depth. The effects of tension on burst will not be utilized.

The Well Design Schematic for AGI #2 is included as Figure 4.

V. CEMENT

The borehole for the surface casing will be drilled with a 26" bit to a depth of approximately 890', and 20", 94.0 ppf, J-55, BTC casing will be installed and cemented to the surface with approximately 1,730 sacks of cement (or amount adequate to circulate the cement to the surface). The borehole for the 1st intermediate casing will be drilled with a 17½" bit to a depth of approximately 2,550', and 13⅜", 61.0 ppf, J-55, BTC casing will be installed and cemented to the surface with approximately 1,800 sacks of cement (or amount adequate to circulate the cement to the surface). The 2nd intermediate hole will be drilled with a 12¼" bit to a depth of approximately 6,500' and 9⅝", 40.0 ppf, HCL-80, LTC casing string will be run and cemented to surface with approximately 1,000 sacks of cement or the amount adequate to circulate the cement to the surface (Table 5). Visual inspections of cement returns to the surface will be noted in each casing job. Casing and cement integrity will be demonstrated by pressure-testing after each cement job.

The cementing of the production string will be accomplished in two stages (Table 5). The first stage will seal the annular space from total depth (~11,129') to a level about 200' above the upper most Corrosion Resistant Alloy joint where the cement diverter tool is located at 9,665' (MD). This stage will employ acid-resistant cement (Thermalock™ or equivalent). For the second stage, a DV Tool previously inserted in the casing (at ~9,665') will be used to pump the lead cement to the surface. The lead cement (EconoCem™ - H or equivalent) will be followed with Class H tail cement (CorrosaCem™ or equivalent). To help achieve good cement bonding and filling the pipe-hole annulus throughout the inclined wellbore section, at least one centralizer suitable for horizontal wells will be placed on each joint of casing in the inclined section.

TABLE 5
Cement Program Design Specifications

INTERVAL	AMOUNT (sx)	FEET	EXCESS	TYPE	ADDITIVES	GALS/SX	PPG	FT³/SX
Surface	825	590	100%		Poly-E-Flake	9.83	12.9	1.83
	625	890	100%	Class C (Tail)	1% CaCl	6.39	14.8	1.34
1st Intermediate	1,385	890	100%	Class C (Lead)	5% Salt	10.52	12.7	1.94
	475	2,550	100%	Class C (Tail)		6.34	14.8	1.33
2nd Intermediate	1,350	2,500	50%	Class C (Lead)		13.93	11.9	2.44
	400	6,400	50%	Class C (Tail)		5.4	14.4	1.22
Production (Stage 1)	400	850	25%	ThermaLock (Tail)		3.32	15.5	0.87
Production (Stage 2)	650	9,265	25%	EconoCem (Lead) Class H	Poly-E-Flake	14.39	11.8	2.53
Production (Stage 2)	100	1,000	25%	CorrosaCem (Tail) Class H		4.78	14.8	1.14

VI. CIRCULATING MEDIUM (MUD PROGRAM)

A closed loop system for the handling of drilling fluids and cuttings will be utilized in the drilling of this well (Figure 6). The C-144 describing this system is included as Attachment 2 to this drilling plan.

The viscosity may be increased for logging and hole conditioning purposes. However, lessons learned from the installation of Maljamar AGI # 1 indicate the mud weight should be monitored carefully once deeper than 5,000' due to differential pressures that can cause the drill stem to stick at mud weights above 9 ppg (Table 6).

TABLE 6
Mud Program Specifications

DEPTH (TMD)	MUD TYPE	WEIGHT	FV	PV	YP	FL	pH
0' – 890'	FW Spud Mud	8.4 – 8.6	30-32	1-6	1-6	NC	8.8-9.4
890' – 2,550'	Brine	10.0	29-30	1-3	1-3	NC	9.0-10.5
2,550'– 6,500'	FW/ Cut Brine	8.6 – 9.4	29-30	1-3	1-3	NC	9.0-10.5
6,500'–11,129'	FW/ Cut Brine	8.8 – 9.4	38-42	10-20	10-20	NC	9.0-10.5

VII. TESTING, CORING, LOGGING

Mud logging will commence at approximately 4,000'. The proposed open hole logging suite for the TD run consists of a Dual Induction, Density-Neutron-Gamma Ray Porosity and Fracture Matrix Identification (FMI) log in the lower Leonard and the Wolfcamp and a portion of the caprock and basal seal formations. Conventional coring and rotary sidewall coring will not be performed since cores from Maljamar AGI #1 have provided the necessary information to evaluate the caprock and proposed injection zone intervals.

A 360° cement bond log will be run to ascertain the quality of the cement bond of each casing string. It is important that a good bond be established around the injection interval as well as below the corrosion resistant casing to assure that acid gas mixed with formation water does not travel up the outside of the casing and negatively impact its integrity. Prior to perforating the injection intervals a casing evaluation log of the 7" production casing will be run to provide a baseline of its mechanical condition.

A comprehensive injection and step rate testing program will be conducted after perforation in order to establish the injection parameters for final design of the surface facilities. A separate NOI will be submitted to and approved by the BLM prior to performing this testing program.

VIII. PRESSURES, TEMPERATURES, LOST CIRCULATION ZONES, H_2S

The conditions in the reservoir are anticipated to be a reservoir pressure of approximately 4,800 psi with a bottom hole temperature of approximately 132 ° F. There are no anticipated lost circulations zones or H_2S bearing formations in the area to the total proposed depth. However, H_2S alarms were triggered

numerous times while drilling AGI #1 at depths deeper than 5,000' and similar encounters should be expected and planned for with AGI #2 (Attachment 5: H2S Contingency Plan).

IX. OTHER ASPECTS OF THE PROPOSAL

Additional information relative to the proposed completion of the proposed Maljamar AGI #2 which relates to its proposed use as an acid gas injection and CO_2 sequestration well is included in the C-108 application that was submitted to the NMOCD and BLM. Some of this information has been summarized and included in this section of the 9-point drilling plan for easy reference. No interim remediation is required and is discussed in Attachment 4, 12-Point SUPO.

Additional Completion Information

A NOI sundry providing the procedure to complete this well in compliance with BLM and NMOCD requirements will be submitted and approved prior to commencing completion work.

Once the integrity of the cement job has been determined, the selected injection intervals will be perforated with approximately six shots per foot. At this location, a total up to 650' of target areas may be perforated. A temporary string of removable packer and tubing will be run, and injection tests (step tests) will be performed to determine the final injection pressures and volumes. Once the reservoirs have been tested, the final tubing string including a permanent packer, approximately 10,250' (MD) of 2⅞", 6.5 ppf, L80 premium thread tubing with corrosion resistant alloy (G3) at bottom 300' and SSSV will be run into the well. A ¼" Inconel steel line will connect the SSSV to a hydraulic control panel at the surface.

The National Association of Corrosion Engineers (NACE) issues guidelines for metals exposed to various corrosive gases like those to be introduced into this well. For a H_2S/CO_2 stream of acid gas that is de-watered at the surface through successive stages of compression, downhole components such as the SSSV and packer need to be constructed of Inconel 625, 925 or equivalent. The casing installed across the injection packer setting depth will be made of a CRA meeting or exceeding this NACE recommendation.

The gates, bonnets and valve stems within the Christmas tree will be nickel coated as well. The rest of the Christmas tree will be made of standard carbon steel components and outfitted with annular pressure gauges that report operating pressure conditions in real time to a gas control center located remotely from the wellhead. In the case of abnormal pressures or any other situation requiring immediate action, the acid gas injection process can be stopped at the compressor and the wellhead shut-in using a hydraulically operated wing valve on the Christmas tree. The SSV provides a redundant safety feature to shut in the well in case the wing valve does not close properly.

After the AGI well is drilled and tested to assure that it will be able to accept the volume of injection fluid (without using acid gas), it will be completed with the approved injection equipment for the acid gas stream. The Rule 11 Plan will be finalized when the compression facility design and well connection design is complete and will be submitted for NMOCD review and approval prior to commencement of TAG injection into the Maljamar AGI #2 well.

Calculated Areas of Fluid Injection

The range of injection areas for the anticipated ranges of injection volume over an estimated 30-year life of the AGI well are calculated based on the geology, anticipated range of injection volumes, and the

injection pressures and temperatures in the reservoir. These calculations are shown in Table 7, and the results of the calculations are plotted on Figure 7.

TABLE 7
Calculations for Area of Injection at Estimated Rate of 2.0 MMSCFD (Anticipated Normal Injection Rate)

PROPOSED INJECTION STREAM CHARACTERISTICS

TAG	H_2S	CO_2	H_2S	CO_2	TAG
Gas vol MMSCFD	conc. mol %	conc. mol %	inject rate lb/day	inject rate lb/day	inject rate lb/day
3.5	30.00	70.00	99669	300312	399981

CONDITIONS AT WELL HEAD

Well Head Conditions		TAG							
Temp F	Pressure psi	Gas vol MMSCFD	Comp CO_2:H_2S	Inject Rate lb/day	Density[1] kg/m^3	SG[2]	density lb/gal	volume ft^3	volume bbl
100	2800	3.5	70:30	399981	839.00	0.79	7.01	7633	1359

CONDITIONS AT BOTTOM OF WELL

Injection Zone Conditions					TAG				
Temp F	Pressure[3] psi	$Depth_{top}$ ft	$Depth_{bottom}$ ft	Ave. Thick. ft	Density[1] kg/m^3	SG[2]	density lb/gal	volume ft^3	volume bbl
132	5620	9745	10230	137	903.00	0.93	7.54	7092	1263

CONDITIONS IN RESERVOIR AT EQUILIBRIUM

Injection Reservoir Conditions					TAG				
Temp[5] F	Pressure[3] psi	Ave. Por. %	Swr	Porosity[6] ft	Density[1] kg/m^3	SG[2]	density lb/gal	volume ft^3	volume bbl
132	4800	10.3	0.45	7.76	868.00	0.89	7.25	7378	1314

CONSTANTS

	SCF/mol	
Molar volume at STD	0.7915	
	g/mol	lb/mol
Molar weight of H_2S	34.0809	0.0751
Molar weight of CO_2	44.0096	0.0970
Molar weight of H_2O	18.015	0.0397

[1] Density calculated using AQUAlibrium software
[2] Specific gravity calculated assuming a constant density for water
[3] PP is extrapolated using successful Drill Stem Tests at nearby wells
[4] Thickness is the ave. total thickness of coarse sand units in the reservoir zone
[5] Reservoir temp. is extrapolated from bottomhole temp. measured at nearby wells
[6] Porosity is estimated using geophysical logs from nearby wells

CALCULATION OF MAXIMUM INJECTION PRESSURE LIMITATION

SG_{TAG}	0.86
$PG = 0.2 + 0.433\ (1.04\text{-}SG_{TAG})$	0.278 psi/ft
$IP_{max} = PG * Depth$	2709 psi

Where: SG_{TAG} is specific gravity of TAG; PG is calculated pressure gradient; and IP_{max} is calculated maximum injection pressure.

CALCULATION OF 30 YEAR AREA OF INJECTION

Cubic Feet/day (5.6146 ft^3/bbl)	7378 ft^3/day
Cubic Feet/30 years	70064003 ft^3/30 years
Area = V/Net Porosity (ft)	9028866 ft^2/30 years
Area = V/Net Porosity (ft) (43560 ft^2/ac	207.3 acres/30 years
Radius =	1695 ft
	0.32 miles

Each standard million cubic feet (MMSCF) of TAG at the surface will be compressed to approximately 1,488 barrels of supercritical fluid at reservoir pressures and temperature. Hence, a 30-year lifetime of injection will result in 15.8 million barrels in the reservoir per MMSCFD of TAG. As shown in the Table 7, the Wolfcamp alone is capable of holding up to 1.5 times the anticipated injection rate for 30 years.

As shown in Figure 7, the proposed maximum injection rate of 3.5 MMSCFD will generate a "footprint" with an area of approximately 207 acres after considering the effect of irreducible water. This footprint will not impact any of the nearby active wells.

TABLE 8
Calculated Volumes and Areas of TAG in Wolfcamp Reservoir

Daily TAG Injection Volume (MMSCF)	Daily Volume of TAG in Reservoir (BBLS/D)	Total TAG Volume in Reservoir after 30 Years (BBLS)	Calculated Reservoir Volume in Wolfcamp (BBLS)	Percentage of Reservoir Occupied	Calculated Radii of Affected Area of Reservoir (Miles)	Affected Area of Reservoir (Acres)
3.5	1,488	15.8 Million	24 Million	66 %	0.32	207

Formation Fluid Chemistry

Formation fluid chemistry for the Wolfcamp is available from two nearby wells: Baish A 012 (API # 3002520568) located in Sec. 21, T17S, R32E, approximately 1 mile southwest of the Frontier gas plant, Baish B 001 (API# 3002500637) located in Sec. 22, T17S, R32E, approximately 1.25 miles northeast of the Frontier gas plant, and the recent Maljamar AGI #1, located on the plant. Analyses show that the formation waters are sodium/chloride brines.

TABLE 9
Formation Fluid Chemistry for Nearby Offset Wells

Parameter	BAISH A 012	BAISH B 001	Maljamar AGI #1
Mg^{++}	972	680	401
Na^{+}	52,298	34,704	84,400
$CO_3^{=}$	ND	ND	ND
$HCO_3^{=}$	1,220	481	195
$SO_4^{=}$	4,400	3,900	3340
Cl^{-}	50,000	33,000	132,000
Fe (free)	11	14	ND
pH	7.6	7.4	7.70
$CaCO_3$	1.4	0.9	ND

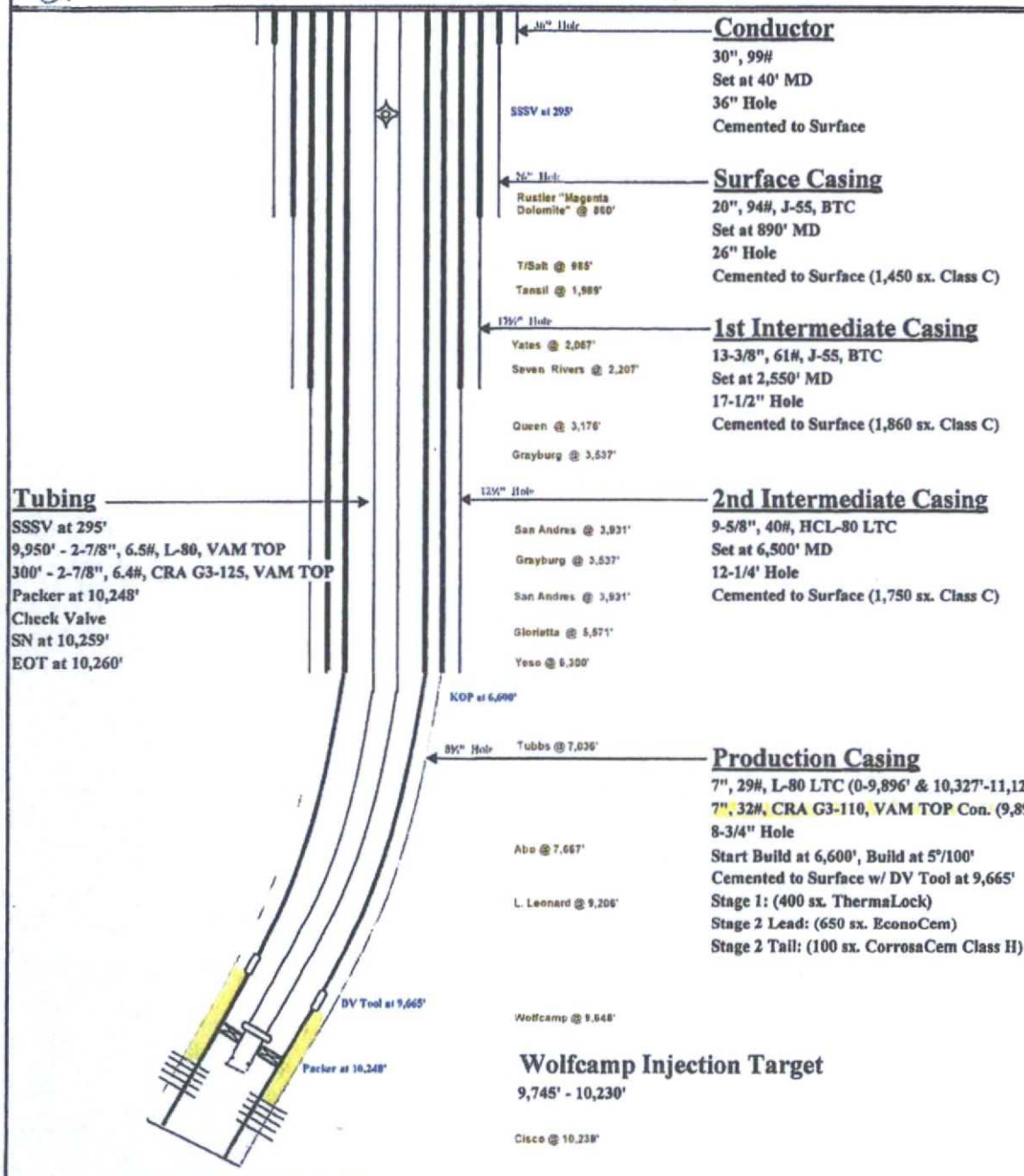
Analyses show that the formation waters are sodium/chloride brines.

Frontier Field Services, LLC
Maljamar AGI #2

SHL: 400 FSL, 2,100' FEL Section 21, T17S, R32E
BHL: 350' FSL, 650' FWL Section 21, T17S, R32E
COUNTY: Lea, New Mexico
API#: 30-025-42628

TARGET: Exp. Wolfcamp Injection
G.L.: 4,019'
RKB: 18'
SPUD DATE: January 10, 2016

PROPOSED WELLBORE SCHEMATIC



Conductor
30", 99#
Set at 40' MD
36" Hole
Cemented to Surface

Surface Casing
20", 94#, J-55, BTC
Set at 890' MD
26" Hole
Cemented to Surface (1,450 sx. Class C)

1st Intermediate Casing
13-3/8", 61#, J-55, BTC
Set at 2,550' MD
17-1/2" Hole
Cemented to Surface (1,860 sx. Class C)

2nd Intermediate Casing
9-5/8", 40#, HCL-80 LTC
Set at 6,500' MD
12-1/4' Hole
Cemented to Surface (1,750 sx. Class C)

Tubing
SSSV at 295'
9,950' - 2-7/8", 6.5#, L-80, VAM TOP
300' - 2-7/8", 6.4#, CRA G3-125, VAM TOP
Packer at 10,248'
Check Valve
SN at 10,259'
EOT at 10,260'

Production Casing
7", 29#, L-80 LTC (0-9,896' & 10,327'-11,129')
7", 32#, CRA G3-110, VAM TOP Con. (9,896'-10,327')
8-3/4" Hole
Start Build at 6,600', Build at 5°/100'
Cemented to Surface w/ DV Tool at 9,665'
Stage 1: (400 sx. ThermaLock)
Stage 2 Lead: (650 sx. EconoCem)
Stage 2 Tail: (100 sx. CorrosaCem Class H)

Wolfcamp Injection Target
9,745' - 10,230'

Well TD @ 11,129' MD
10,300' TVD
Inclination 37°

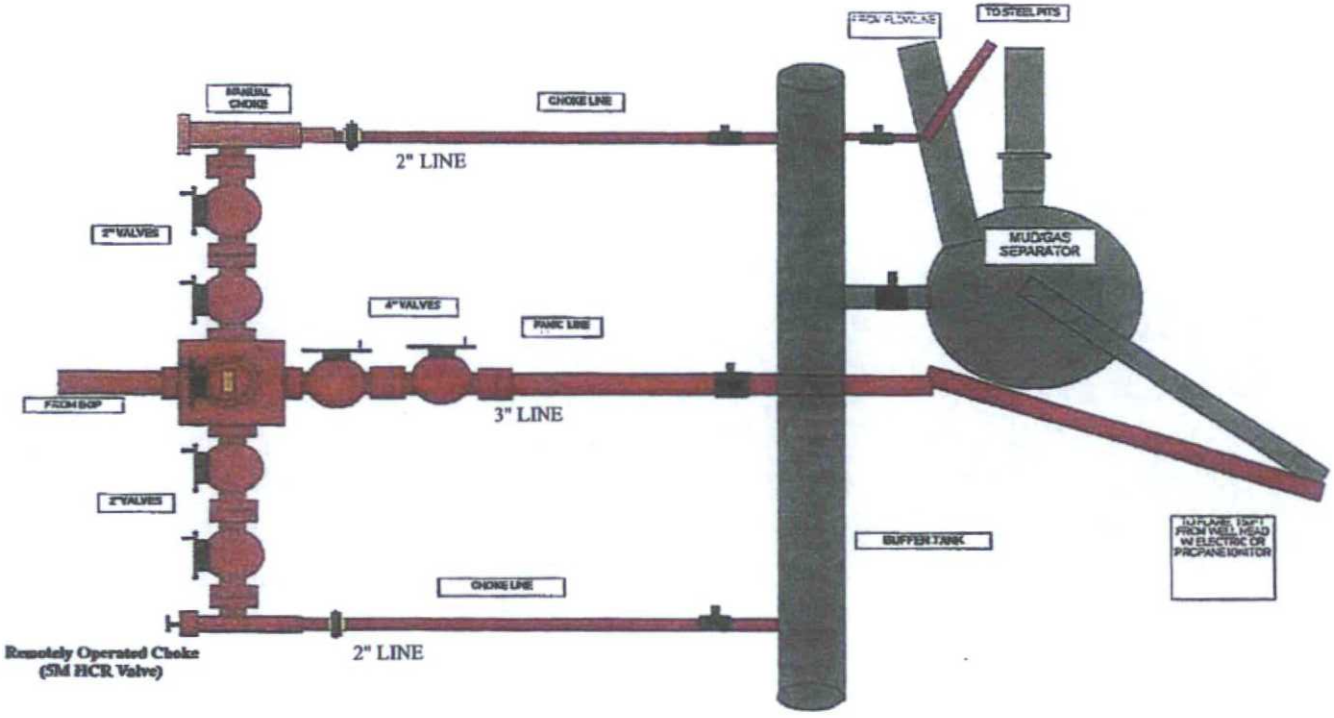
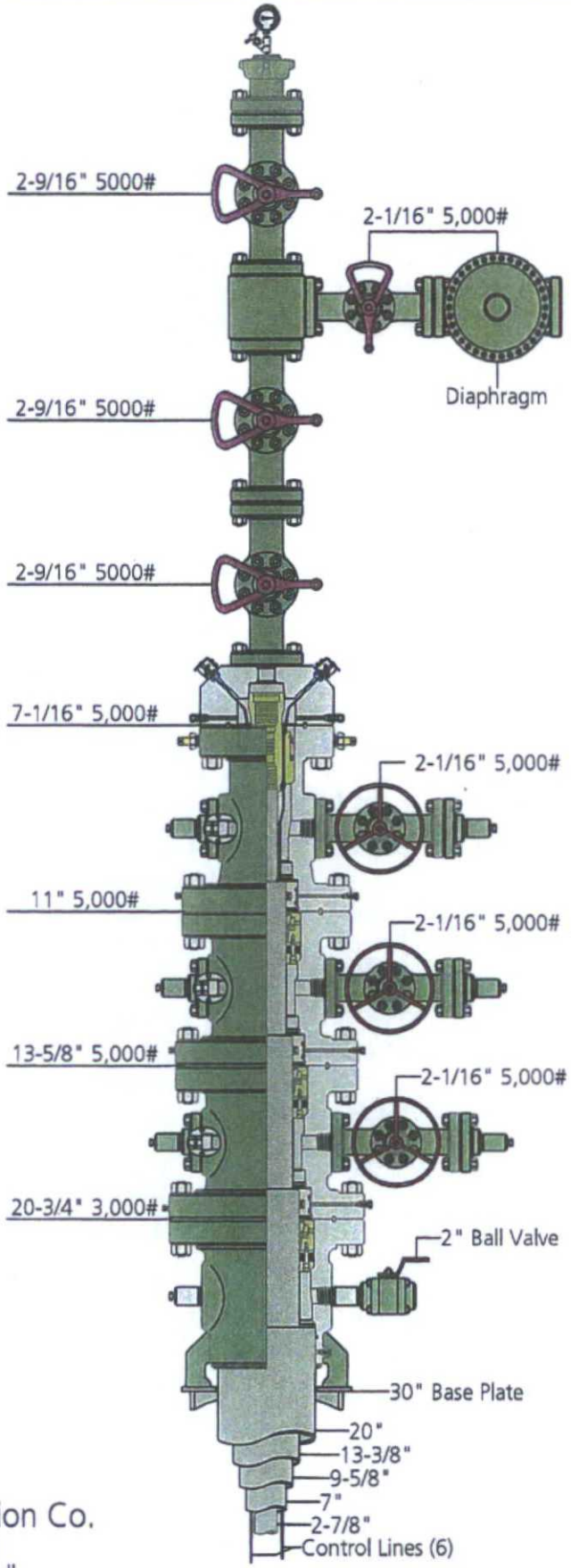


Figure 12 (Revised): BOP Manifold Schematic



Red Willow Production Co.
Maljamar Gas Plant
Acid Gas Injection Well
AGI #2

CAMERON

Name:	Jeanette	Date:	9-30-15	Working Pressure:	#	1293839-B