Operator Copy

Form 3160-5
(September 2001)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No 1004-0135
Expires: January 31, 2004

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160 - 3 (APD) for such proposals.

SUBMIT IN TRIPLICATE- Other instructions on reverse side.

5. Lease Serial No.
LC 029509B

6. If Indian, Allottee or Tribe Name
N/A

7. If Unit or CA/Agreement, Name and/or No.
N/A

1. Type of Well
☐ Oil Well ☐ ☐ Gas Well ☐ ☑ Other

8. Well Name and No.
Maljamar AGI #1

2. Name of Operator **Frontier Field Services**

9. API Well No.
3002540420

3a. Address
4200 Skelly Dr., St. 700, Tulsa OK 74135

3b. Phone No. *(include area code)*
918-388-8408

10. Field and Pool, or Exploratory Area
Exploratory (Lower Wolfcamp)

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
130' FSL, 1813' FEL Sec. 21, T 17 S, R 32 E, NMPM, Lea Co. NM
Acid Gas Injection Well, Unorthodox Location

11. County or Parish, State
Lea

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☑ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☑ Other **perforation/complete per approved APD**
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

On Monday September 24, operator will rig up to perforate, test and complete this well per the approved APD. The detailed completion plan is attached to this form. This completion is consistent with the approved APD and this 3160-5 just alerts BLM that perforation and completion operations will begin on September 24, 2012.

APPROVED
SEP 25 2012
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

SEE ATTACHED FOR CONDITIONS OF APPROVAL

14. I hereby certify that the foregoing is true and correct
Name *(Printed/Typed)*
Alberto A. Gutierrez, RG | Title **Consultant to Frontier Field Services/AkA Energy**

Signature | Date **09/21/2012**

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by	Title	Date
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	Office	

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

SEP 26 2012

CONDITIONS OF APPROVAL

WELL COMPLETION

OPERATOR'S NAME:	**Frontier Field Services**
LEASE NO.:	**LC029509B**
WELL NAME & NO.:	**Maljimar AGI #1**
SURFACE HOLE FOOTAGE:	**130' FSL & 1813' FEL**
LOCATION:	**Section 21, T. 17 S., R 32 E., NMPM**
COUNTY:	**Lea County, New Mexico**

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

CIT / MIT tests

☒ **Lea County**
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,
(575) 393-3612

1. **Surface disturbance beyond the existing pad must have prior approval.**

2. **Closed loop system required.**

3. **Hydrogen Sulfide has been reported as a hazard in formations in the area. It is recommended that monitoring equipment be onsite for potential Hydrogen Sulfide. If Hydrogen Sulfide is encountered, please report measurements and formations to the BLM.**

4. **3000 3M BOP to be used. All blowout preventer (BOP) and related equipment (BOPE) shall comply with reasonable well control requirements. A two ram system with a blind ram and a pipe ram designed for the work string shall be adequate. Tapered work strings will require an additional pipe ram. The manifold shall comply with Onshore Oil and Gas Order #2 (3M diagrams of choke manifold equipment). The accumulator system shall have an immediately available power source to close the rams and retain 200 psi above pre-charge. The pre-charge test shall follow requirements in Onshore Order #2.**

5. **AT 1600 hours on 09/24/2012 BLM gave verbal approval to Rig up completion rig on well and drill out DV tools and run a Segmented Cement Bond Log. The Cement Bond log shall be submitted to the BLM and evaluated by the BLM; before continuing on with completion operations.**

6. **After the Bond Log is approved by the BLM; the operator shall run a Casing Integrity Test on the 5-1/5" casing. The minimum test pressure shall be the approved wellhead injection pressure of 2973psi. Document the pressure test on a calibrated recorder chart for 30 minutes.**

7. **Operator to provide a statement indicating that they have followed NMOCD Order R-13443 item number 2; summarize this on a subsequent report sundry.**

8. **Continue with operator's completion procedure step 11 and perforate Wolfcamp. Continue on with steps 12 & 13.**

9. **Revised Step 14; Swab Well until operator has recovered formation fluids and or well has swabbed dry. Notify results to BLM**

10. **Operator to continue on the completion procedure**

11. **Operator not allowed to stimulate or frac well without prior approval from the BLM via Sundry NOI.**

12. **Subsequent sundry with well test and wellbore schematic required and BLM completion report required.**

WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

EGF 092412

Operator Name: Frontier Field Services, LLC
Well: Maljamar AGI #1
Field: Wildcat
County: Lea
Lease Name: Maljamar AGI
BLM District: PECOS (Carlsbad)

Permit No.: P-4137
API #: 30-025-40420
Section: 21
Township: 17S
Range: 32E
OCD District: Artesia

WELLBORE CONFIGURATION AND CASING PROGRAM

Current Wellbore Configuration:

20" Conductor Pipe: 0 – 80 ft (Augered)
13-3/8" Surface Casing: 0 – 890 ft (17-1/2" Hole)
8-5/8" Intermediate Casing: 0 – 4,215 ft (12-1/4" Hole)
5-1/2" Production Casing: 0 – 10,183 ft (7-5/8" Hole)
Corrosion Resistant Alloy (CRA) Joint at 9,474 – 9,518 ft
Total Depth: 10,183 ft (Cased Hole)

Proposed Wellbore Completion:
2-7/8", 6.4#, L-80 ULTRA FJ Tubing: 0 – 250 ft (Cased Hole)
Halliburton 2 7/8" Subsurface Safety Valve (SSSV) set at 250 ft
2 7/8", 6.4#, L-80 ULTRA FJ Tubing: 250 – 9,496 ft
Halliburton "BWD" Perma-Series Packer at 9,496 ft
Perforation Intervals: 9,579 – 9,632 ft (Upper Wolfcamp)
9,768 – 9,821 ft (Middle Wolfcamp)
9,850 – 9,917 ft (Middle Wolfcamp)
9,979 – 9,997 ft (Middle Wolfcamp)
10,009 – 10,025 ft (Lower Wolfcamp)
10,090 – 10,130 ft (Lower Wolfcamp)

INTRODUCTION

This program presents the proposed steps for completing the Maljamar AGI #1 in Lea County, New Mexico that was drilled to a total depth of 10,183 ft in June 2012.

The objectives of this workover are:

1. Re-enter and drill out existing DV tools and shoe track
2. Run a Segmented Bond Log (SBT) on the 5 ½" production casing
3. Perforate the Wolfcamp Injection Zone according to Geolex, Inc and PBESS recommendations
4. Conduct injection tests using Schlumberger Fiber Optic slickline
5. Run 2 7/8" ULTRA FJ tubing, set permanent packer and install SSSV

* See COA

6. Pump packer fluid (red dye diesel #2) to fill annulus and land tubing
7. Install injection tree and perform MIT test for NMOCD
8. Rig down and remediate location as necessary

PROCEDURE

1. Notify the NMOCD Artesia office and the BLM Carlsbad Office of plans to begin work.
2. Unload:
   - 7 1/16", 5M hydraulic BOP, reverse unit, power swivel, 2 7/8" 8rd TIW valve, 10, 300 ft of 6.5 lb/ft, 2 7/8", L-80 workstring, 2 sets of pipe racks, catwalk and 2 rig mats
     - Unload 2 7/8" workstring on pipe racks near wellhead
   - 2 frac tanks (500 bbls brine), 1 circulation tank (130 bbl)
   - 1 freshwater tank (100 bbl), 1 frac tank (500 bbl return tank)
3. Fill (2) 500 bbl frac tanks with 9.5 ppg brine water.
4. MIRU Nabors Well Services. Nabors to provide tongs and handling tools for 2 7/8", 6.5 lb/ft, 8rd workstring.
5. Remove night cap and connect lines to circulate through the flow pit.
6. NU 7 1/16", 5M hydraulic BOP and function test.
7. Install 7 1/16", 3M stripper head with BIW rubber.
8. PU workstring with 4 3/4" bit and RIH to drill out existing DV tools at 9,344 ft and 9,753 ft. Pressure test 5 ½" casing to 500 psi and hold. Verify there are no leaks in the casing and continue to GIH and drill shoe track to approximately 10,160 ft. POOH. See COA
9. RU Baker Hughes wireline and run GR/CCL and SBT from TD to surface. Verify cement was circulated to surface behind the production casing. RD wireline.
10. RU Halliburton wireline to perforate.
11. GIH and perforate the lower Wolfcamp with 4 spf at 90 degree phasing according to the attached specification. Monitor for flow.
12. RIH w/ junk basket and 5 ½", 17 lb/ft gauge ring. POOH and RD wireline.
13. PU 5 ½" RTTS packer, 4 joints of tail pipe, seating nipple (with wireline guide) and RIH. Set packer at 9,496 ft. See COA
14. Swab well through tubing to recover tubing volume (.00579 bbls/ft x 9,454 ft = 55 bbls) and casing volume below packer (.0232 bbls/ft x 687 ft = 16 bbls). Approximately 70 bbls total. Recover water sample at surface or with wireline bailer.
15. RIH with pressure gauges on Fiber Optic slickline to TD and prepare for injection test.
16. RU acidizers and pump 2 gals/perf (247 ft x 4 spf = 988 perfs x 2 gals/perf = 1,976 gals = 47 bbls) followed by approximately 70 bbls of 9.5 ppg brine (55 bbls to displace to bottom of tubing + 16 bbls to flush casing). Establish and maintain 2-5 bpm injection rate or higher, if possible.
17. Run injection tests according to attached testing program.
    - Note: Ensure that a C-103 has been submitted (and approved) to the NMOCD prior to injection test.

See COA

18. If no stimulation work is required, RD testers and POOH laying down work string. Release RTTS.
19. NU annular preventer and function test rubbers.
20. PU Halliburton packer assembly (already made up) and RIH on wireline. Set packer at 9,496 ft (83 ft above top perf). RD wireline.

Description	ID (in.)	OD (in.)	Length (ft.)
Halliburton "BWD" Perma-Series™ Packer	3.000	4.540	3.50
Seal bore Extension 3 5/8" 10UNS PXP Incoloy 925	3.000	3.780	10.00
Reduce Adpt 3 5/8 10-Uns Box x 2 7/8 6.4# Ultra-FJ Pin Incoloy 925	2.418	4.300	1.00
Pup Joint 2 7/8" 6.5# L-80 Ultra-FJ	2.441	2.889	6.00
Landing Nipple 2.313 X 2 7/8" 6.4# Ultra-FJ BXP 925 Material	2.313	3.135	1.55
Production Tubing, 2 7/8" 6.5# L-80 Ultra-FJ	2.441	2.889	30.00
Landing Nipple 2.313 X 2 7/8" 6.4# Ultra-FJ BXP 925 Material	2.313	3.135	1.55
Pup Joint 2 7/8" 6.5 # L-80 Ultra-FJ X 2 7/8" 6.4# Fox-K BXP	2.441	2.889	6.00
WL-Rentry Guide, 2 7/8 6.4# Fox-K Box	2.426	3.150	0.50

21. PU Halliburton seal assembly (already made up) and RIH on 2 7/8", 6.4 lb/ft, L-80 ULTRA FJ tubing.
    - Note: Verify one way check valve is installed in the landing nipple above the seal assembly prior to running in the hole.

Description	ID (in.)	OD (in.)	Length (ft.)
Landing Nipple 2.313 X 2 7/8" 6.4# Ultra-FJ BXP 925 Material	2.313	3.135	1.55
Production Tubing, 2 7/8", 6.5#, L-80 Ultra-FJ	2.441	2.889	30.00
Pup Joint 2 7/8" 6.5# L-80 Ultra-FJ	2.441	2.889	6.00
Straight Slot 2 7/8" 6.4# Ultra-FJ x 2 11/16 12UNS B-P 925 material	2.330	3.430	0.50
Seal Assy, 3.00 X 2 11/16 12UNS 12in makeup 925 material	2.330	3.000	1.00
Seal Extension, 3.00 X 2 11/16 12UNS 24in makeup 925 material	2.330	2.970	2.00
Seal Assy, 3.00 X 2 11/16 12UNS 12in makeup 925 material	2.330	3.000	2.00
Seal Extension, 3.00 X 2 11/16 12UNS 24 in makeup 925 material	2.330	2.970	2.00
Seal Assy,3.00 X 2 11/16 12UNS 12in makeup 925 material	2.330	3.000	4.00
Mule Shoe Guide, 2 11/16 12UNS 925 Material	2.330	2.970	0.50

22. Continue to run 2 7/8" Ultra FJ tubing in the hole pressure testing every 500 ft to 1,000 psi.
23. PU subsurface safety valve (SSSV) to place approximately 250 ft from surface.
    - Note: Strap ¼" Inconel control line to backside of 2 7/8" Ultra FJ tubing up to surface.

Description	ID (in.)	OD (in.)	Length (ft.)
X- Over Pup, 2 7/8 6.5# L-80 Ultra-FJ Box x 2 7/8" Fox K Pin	2.441	2.889	6.00
Halliburton "NE" Tubing Retrievable Safety Valve, 10,000# Pressure	2.313	4.650	4.00

Rtg, Eq. Type, Nickel Alloy 925, "X" Profile, 2 7/8" Fox-K Box x Pin			
X- Over Pup, 2 7/8 6.5# L-80 Fox-K Box x 2 7/8" Ultra-FJ Pin	2.441	2.889	6.00
Control Line, .065" Wall, Incoloy 825, 1/4" x 400'			

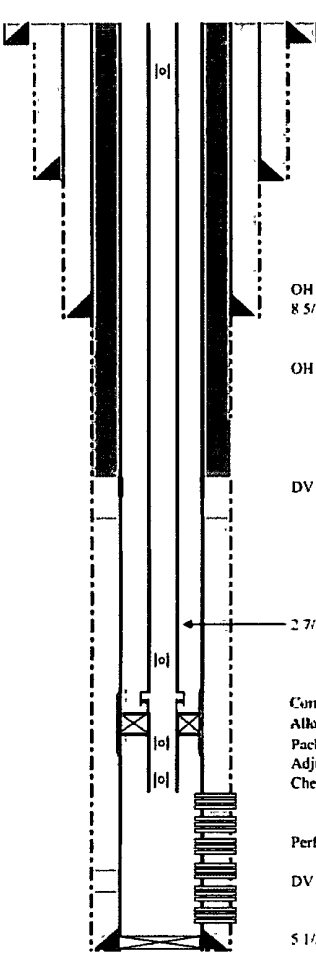
24. Tag seal assembly and space out tubing string with pup joints.
25. Lock the SSSV in the open position using a hydraulic pump at the surface.
26. RU Schlumberger slickline and GIH to remove one way check valve in landing nipple above the seal assembly. RD slickline.
27. Circulate the well with fresh water.
28. Pickle the tubing with 2,310 gals (55 bbls) of 15% HCl acid, slowly displace the acid to the bottom of the tubing and then slowly reverse back to the frac tanks with 55 bbls of brine.
29. Mix 55 gallons of Bactron K-139 in 50 bbls of brine (biocide pill) and mix 1 gallon of Cortron RU-160 in 200 gallons of methanol.
    - Note: There will be three separate mixtures that will be pumped in separate phases but at a continuous rate so ensure that all equipment and hoses are hooked up appropriately.
30. Pump a 50 bbl biocide pill down the tubing followed by 200 gallons of methanol treated with Cortron RU-160 and finally 200 bbls (8,400 gals) of diesel treated with 140 gallons of Cortron R-2525 (on the fly) down the tubing to place a diesel/corrosion inhibitor mixture behind the 2 7/8" tubing as the packer fluid. Calculated tubing volume at 9,496 ft is 55 bbls and calculated annulus volume at 9,496 ft is 145 bbls.
31. Land tubing hanger and thread ¼" Inconel control line through the tubing head adapter.
32. ND BOP's and NU injection tree. Ensure all bolts on the wellhead and tree have a minimum of 2 full threads showing; also Wood Group will nipple up the additional annulus valve on the tubing head adapter.
33. Make final connections on the SSSV ¼" control line to hydraulic control panel according to the attached instructions and function test to verify that the SSSV is working properly.
34. RU Schlumberger slickline services and pull the PXX plug out of the lower landing nipple in the packer assembly and replace with check valve. RD wireline.
    - Note: Ensure that the SSSV is locked in the "OPEN" position prior to slickline work.
35. Bullhead brine into the formation to gauge the effectiveness of the completion.
36. Call NMOCD and perform initial MIT on tubing/casing annulus. Pressure up to 500 psi and hold for 30 minutes. Pressure should not deviate more than 50 psi (10%).
37. RDMO Nabors Well Services workover unit.
38. Prepare C-105 completion report and end of well report for Aka Energy Group, LLC and the NMOCD.

See COA

WELLBORE SCHEMATIC

FRONTIER MALJAMAR AGI #1
PROPOSED WELLBORE

Location: 130' FSL & 1831' FEL
STR S21-T17S-R32E
County, St.: LEA, NEW MEXICO



CONDUCTOR CASING
20", 94#/ft, J55, STC at 80 ft (Augered and set)

SURFACE CASING
13 3/8", 48.00#/ft, H40, STC at 875'

INTERMEDIATE CASING:
8 5/8", 32.0 #/ft, J55, LTC at 4220'

PRODUCTION CASING:
5 1/2", 17 #/ft, L80, LTC at 10,183'

TUBING:
Subsurface Safety Valve at 250 ft
2 7/8", 6.5#/ft, L80, Premium thread at 9496'

PACKER FLUID
Red dye diesel from top of packer to surface

PACKER:
Permanent Production Packer
Adjustable Choke (optional) in nipple below packer
Check valve (optional) in nipple below packer

PERFORATIONS: 4spf, 90 deg.

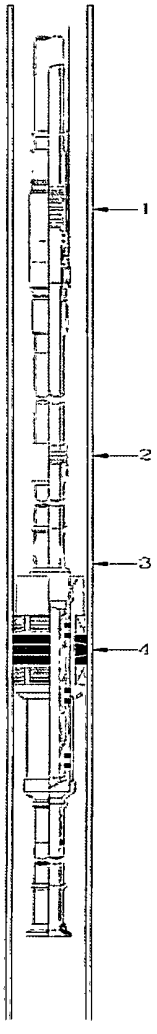
Primary Target		Secondary Target
9579-9632	U. Wolfcamp	Lower Leonard #1
9768-9821	M. Wolfcamp	
9850-9917	M. Wolfcamp	
9979-9997	M. Wolfcamp	Lower Leonard #2
10009-10025	L. Wolfcamp	
10090-10130	L. Wolfcamp	

SEE ATTACHED FOR CONDITIONS OF APPROVAL

HALLIBURTON

Permanent Packer

Prepared For: PB Energy Storage Services	***HBD File Name***
Field Name: Frontier Maljamer	287017
Lease. S21-T17S-R32E	Version 2/ Option A
Well Number: AGI #1	287017V2A
Well Location: Lea County, NM	



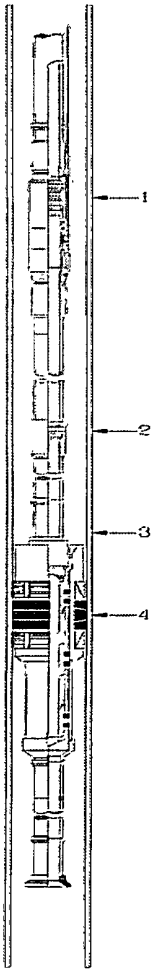
ITEM	DESCRIPTION	I.D.	O.D.	LENGTH	DEPTH
A	Production Tubing, 2 7/8 6.5# L-80 Ultra-FJ	2.441	2.889	244 00	0.00
1	**Safety Valve Assembly**				
a	X- Over Pup, 2 7/8 6.5# L-80 Ultra-FJ Box x 2 7/8" Fox K Pin **Halliburton Provided**	2.441	2 889	6.00	244.00
b	Halliburton "NE" Tubing Retrievable Safety Valve, 10,000# Pressure Rating, Equalizing Type,Nickel Alloy925, "X" Profile, 2 7/8" Fox-K Box x Pin (781HXE23226-F) (101571540)	2.313	4 650	4.00	250.00
c	X- Over Pup, 2 7/8 6.5# L-80 Fox-K Box x 2 7/8" Ultra-FJ Pin **Halliburton Provided**	2.441	2.889	6 00	254 00
d	Control Line, 065" Wall Incoloy 825, 1/4" x 400' (22SNS54040) (101309359)				
B	Production Tubing, 2 7/8 6.5# L-80 Ultra-FJ	2.441	2.889	9,452 46	260.00
2	**Landing Nipple Assembly**				
a	Landing Nipple 2.313 X 2 7/8" 6.4# Ultra-FJ BXP 925 Material (711X23328) (101940738)	2.313	3 135	1.55	9,712.46
C	Production Tubing, 2 7/8 6.5# L-80 Ultra-FJ	2 441	2.889	30.00	9,714 00
3	**Seal Assembly**				
a	Pup Joint 2 7/8" 6 5 # L-80 Ultra-FJ **Halliburton Provided**	2 441	2.889	6.00	9,744 00
b	Straight Slot 2 7/8 6.4# Ultra-FJ x 2 11/16 12UNS B-P 925 Material (212S3001-D) (101944475)	2.330	3.430	0.50	9,750.00
c	Seal Assy,3 00 X 2 11/16 12UNS 12in makeup 925 material Molded Aflas seal, Pressure rating 8000psi (212MSA30000-D) (101485576) Qty (1)	2.330	3 000	1.00	9,750.50
d	Seal Extension ,3.00 X 2 11/16 12UNS 24 in makeup 925 material Pressure rating 9900psi (212X3006-D) (101944250) Qty (1)	2.330	2 970	2.00	9,751.50
e	Seal Assy,3.00 X 2 11/16 12UNS 12in makeup 925 material Molded Aflas seal, Pressure rating 8000psi (212MSA30000-D) (101485576) Qty (2)	2 330	3 000	2.00	9,753.50
f	Seal Extension ,3 00 X 2 11/16 12UNS 24 in makeup 925 material Pressure rating 9900psi (212X3006-D) (101944250) Qty (1)	2.330	2.970	2.00	9,755.50
g	Seal Assy,3 00 X 2 11/16 12UNS 12in makeup 925 material Molded Aflas seal, Pressure rating 8000psi (212MSA30000-D) (101485576) Qty (4)	2.330	3 000	4 00	9,757.50
h	MS Guide,2 11/16 12UNS 925 Material (212G30000-D)(101303313)	2.330	2.970	0 50	9,761.50 9,762 00

PREPARED BY	DATE	REVIEWED BY	DATE
CEW			

HALLIBURTON

Permanent Packer

Prepared For: PB Energy Storage Services	*HBD File Name* 287017
Field Name: Frontier Maljamer	Version 2/ Option A
Lease: S21-T17S-R32E	287017V2A
Well Number: AGI #1	
Well Location: Lea County, NM	

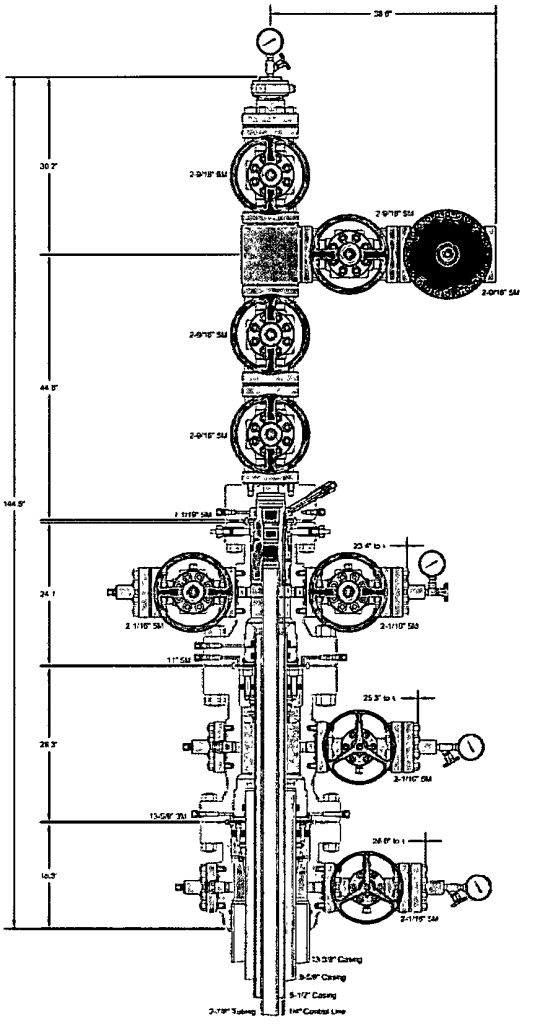


ITEM	DESCRIPTION	I.D.	O.D.	LENGTH	DEPTH
4	**Packer Assembly**				
a	Halliburton "BWD" Perma-Series™ Packer 5 1/2" 14-20#,3.00 ,3 5/8" 10-UNS Pin 925 Material (Fluroel Elements) Pressure Rating 9,060psi (212BWD55351-D) (101939855)	3 000	4.540	3.50	**9,750.00**
b	Seal bore Extension 3 5/8" 10UNS PXP Incoloy 925 (212N30052) (101535476)	3.000	3.780	10.00	9,753.50
	* O-ring (91QVF1341-H) (101081144)				
	* Back up Rings (2ea) (91QBP1343-C) (101080457)				
c	Reducing Adpt 3 5/8 10-Uns Box x 2 7/8 6.4# Ultra-FJ Pin Incoloy 925 (212N100423) (101944288)	2 418	4 300	1.00	9,763 50
d	Pup Joint 2 7/8" 6.5 # L-80 Ultra-FJ **Halliburton Provided**	2.441	2.889	6.00	9,764.50
e	Landing Nipple 2 313 X 2 7/8" 6 4# Ultra-FJ BXP 925 Material (711X23328) (101940738)	**2.313**	3 135	1.55	9,770 50
f	Production Tubing, 2 7/8 6.5# L-80 Ultra-FJ (PB Energy)	2.441	2.889	30 00	9,772 05
g	Landing Nipple 2 313 X 2 7/8" 6 4# Ultra-FJ BXP 925 Material (711X23328) (101940738)	**2.313**	3 135	1.55	9,802.05
h	Pup Joint 2 7/8" 6.5 # L-80 Ultra-FJ X 2 7/8" 6.4# Fox-K BXP **Halliburton Provided**	2.441	2 889	6 00	9,803 59
i	WL-Rentry Guide, 2 7/8 6.4# Fox-K Box (212M402) (101044116)	2.426	3.150	0 50	9,809.59
					9,810.09

PREPARED BY	DATE	REVIEWED BY	DATE
CEW			

INJECTION TREE SCHEMATIC

GE Oil & Gas



PB ENERGY STORAGE SERVICE
FRONTIER MALJAMAR AGI #1

13-3/8" x 8-5/8" x 5-1/2" x 2-7/8" 5M Conventional Wellhead Assembly, With T-EBS-F Tubing Head, T-M40-CCL Tubing Hanger and Adapter Flange

DRAWN	JGR	06MAR12
APPRV	VJK	06MAR12

FOR REFERENCE ONLY
DRAWING NO. AE21569

PREPARED BY	DATE	REVIEWED BY	DATE
CEW			

OPERATIONAL INSTRUCTIONS FOR MALJAMAR AGI WELL #1 CONTROL PANEL

The Hydraulic Control panel is used to control the Subsurface Safety Valve (SSSV) and Wing Valve (WV). The SSSV is located at approximately 250 ft depth and prevents backflow up the tubing from that depth. The SSSV serves as a check valve; fluid can be injected past the SSSV even when the SSSV has been closed. The Wing valve is located at the surface and is used to control whether or not fluid can enter the well.

For emergency shutdown. (This shuts the SSSV and the wing valve)

1. Push in Red ESD/TSE handle on front of panel.
   - ESD/TSE holding pressure will immediately go to 0 PSI.
   - Wing Valve will close over 90 seconds and the output pressure should slowly drop to 0 PSI.
   - After 90 second delay, SSSV will close and SSSV output pressure will drop to 0 PSI (Hydraulic supply pressure will also drop, but may not reach 0 PSI).

To re-open SSSV and Wing Valve

1. Pull out Red ESD/TSE handle and hold for several seconds.
   - ESD/TSE holding pressure will increase to set level (~60 PSI).
   - Hydraulic pump will engage and SSSV output pressure will increase. At ~2000 PSI, the pressure will bobble (rise and fall) as the sleeve on the SSSV slides down opening the valve. Once the sleeve is in place, the SSSV output pressure will rapidly climb to just below the set pressure (~3000-3500 PSI). The pump will then slow down pump to the set level over the next several minutes.
2. Pull out Black Wing Valve handle and hold for several seconds.
   - Wing Valve output pressure will increase to set level (100 PSI). The wing valve will slowly open until the valve is completely open.

Normal operation

Red ESD/TSE pull handle & Black wing valve pull handle
Handles should be out during normal operation.

Panel supply pressure
Panel is controlled pneumatically, Panel Supply pressure should be >30 PSI and <125 PSI. We suggest ~75 PSI. This level depends on air supply pressure and is controlled by regulator closest to panel supply (B-1 on diagram).

ESD/TSE holding pressure
Pressure must be >20 PSI for the proper operation of the panel. The preset is for 60 PSI. This level can be controlled using the regulator on the right hand side of the panel interior.

Output pressure to SSSV
Pressure should be >2500 PSI and <5000 PSI. We recommend 3000-3500 PSI. This level will fluctuate due to temperature changes (both atmospheric and injection fluid) and is controlled by the regulator next to the hydraulic pump (C-2 on diagram). While the panel supply pressure is between 30 and 125 PSI, the hydraulic pump (S-1 on diagram) should automatically engage to maintain pressure to SSSV. The pump can be manually operated (should the panel supply pressure drops below ~30 PSI), using the handle attached to the back door of the control panel.

Output pressure to wing valve

The Wing Valve output pressure should be >60 PSI and <175 PSI. This level is determined by the wing valve and should not require adjustment as long as the panel supply pressure is sufficient for operation.

Hydraulic supply pressure valve.
The hydraulic supply pressure is linked to the operation of the SSSV and should equal the SSSV output pressure. The sight glass shows the level of hydraulic fluid and should be maintained at ~3/4 full. Fluid can be added through the fill cap on the top of the panel just above the sight glass. Use H-32 hydraulic oil.

In-Service/Bypass/Wing Valve handle
Handle should be set to In-Service during normal operation.

Maintenance

The SSSV sleeve should be exercised (activated) roughly once a month to prevent scale build-up on the SSSV and to check performance. Currently, in order to accomplish this, the panel is configured such that if the pressure is bled off the SSSV, the pressure at the Wing Valve goes to zero also – shutting in the well. A modification to the panel is proposed to bypass the Wing Valve in order to make the SSSV check easier to accomplish.

1. Push in the red ESD/TSE handle and wait ~90 seconds until the SSSV closes (output pressure goes to 0 PSI).
2. Pull out and hold the ESD/TSE handle for several seconds. Watch the SSSV output pressure and make certain that the pressure bobbles (rises and falls) at ~2000 PSI before climbing to the set pressure. (If the pressure does not bobble, it may mean the sleeve has become stuck in the up position. Repeat the process. If it appears that the sleeve still does not descend, contact 1) Halliburton Completions Tool (HCT) Manager, 432-571-8600; 2) Russell Bentley, PB Energy Storage Services.: 281-589-5829; 3) Alberto Gutierrez, Geolex: 505-842-8000.

For Help with Panel

Call RSI Global – Louis Lesage 504-340-1992
Job number:

APPROVED VENDOR LIST as of 9/20/2012
795A AKA Energy Group, LLC
Maljamar Acid Gas Injection (AGI) #1
1001 Conoco Road
Maljamar, NM 88264
Lea County
Well API# or SN#

PO/SFC Shaded signed	Vendor / Description	Contact	Phone/fax/email	Insurance Certificate on File
795A	Nabors Well Services (workover rig)	Roy Cole	281-775-5128	
795A	Standard Tube Company (302 jts 2 7/8", 6.5#, L-80 FJ R2)	Linda Oldham	713-822-3797	
795A007 PO 3/12/12	GE Oil & Gas Pressure Control, LP (wellhead & hardware)	Jonathan Breaux	832-325-4214 832-325-4298 jonathan.breaux@ge.com	Y
795A	Smith Drilling & Evaluation (reverse unit, power swivel, 4 ¾" bit)	Tony Friese	432-894-2137 tfriese@slb.com	Y
795A	Thomas Tools (rental equipment)	David Botkin	432-296-3399 dbotkin@slb.com	
795A011 SFC 3/14/12	EOS Rentals (frac tank, brine, trash trailer)	Jason Emrick	575-397-0100 575-390-0044 cell	
795A	SaniTech Rentals (portable toilets)	Joe Spaulding	575-393-2351	N/A
795A	Allen's Casing Crews, Inc. (casing crew services & pickup/lay down machine)	Del Clothier	800-658-2734 575-392-7636 575-392-3228 fax	Y
795A017 WO 3/16/12	Baker Atlas – Baker Hughes (wireline and cased hole logging)	Mort Houston Contact:, Sam Aguirre	713-879-1276 713-202-3773 cell 281-582-6266 mort.houston@bakerhughes.com 432-563-1275	Y
	Baker Hughes (perforating)	John Johnson	713-879-1297 Office 713-412-8625 Cell john.johnson2@bakerhug	

			hes.com	
	Ultra (thread makeup & inspection, lift nubbins)	Clint Cave	432-813-6805 ccave@tmk-ipsco.com	
	Champion Technologies (biocide & corrosion inhibitors)	Andy Frerman	432-563-0142 Office 432-556-2960 Cell andy.frerman@champ-tech.com	
	Weatherford (tension packer)	Tommy Temple	575-390-3597 tommy.temple@weatherford.com	
	Cudd Energy Services (pump truck)	Brooks Connally	575-393-4113 bconnally@cudd.com	
	C & C Transport, LLC (miscellaneous trucking)	Maria Chacon	575-393-0422 575-391-7832 fax r.chacon@cctrnsp.com	R

PREPARED BY	DATE	REVIEWED BY	DATE
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EVALUATION OF GEOPHYSICAL LOGS, SIDEWALL CORE AND FORMATION MICROIMAGING RESULTS, AND INJECTION POTENTIALS: AKA ENERGY GROUP MALJAMAR AGI #1

Sec. 21-Twp. 17S-32E

Lea County, New Mexico

Prepared for
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Frontier Field Services, LLC

by
Geolex, Inc.
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Albuquerque, NM 87102

August 8, 2012

SUMMARY OF FACTORS TO CONSIDER IN RESERVOIR AND CAP ROCK EVALUATION

- The successful evaluation of reservoir and cap rock characteristics using sidewall cores requires the careful consideerations oof the limitations of the samples obtained since each actual sidewall is only representative of 1- 1 ½ inches of the sampled formation. The overall evaluation of the cap rock and reservoir requires the simultaneous consideration of various data types and sources in order to arrive at a reasonable conceptual model of predicted injection performance. These additional data types are evaluated and considered in this analysis and include the complete geophysical log suite for the well including the triple combo, porosity, resistivity and formation microimager (FMI) logs, mudlogs, drilling condition reports and on-site observations. The overall evaluation and recommendations included herein for completion is the result of the analyses and evaluation of these multiple data types.

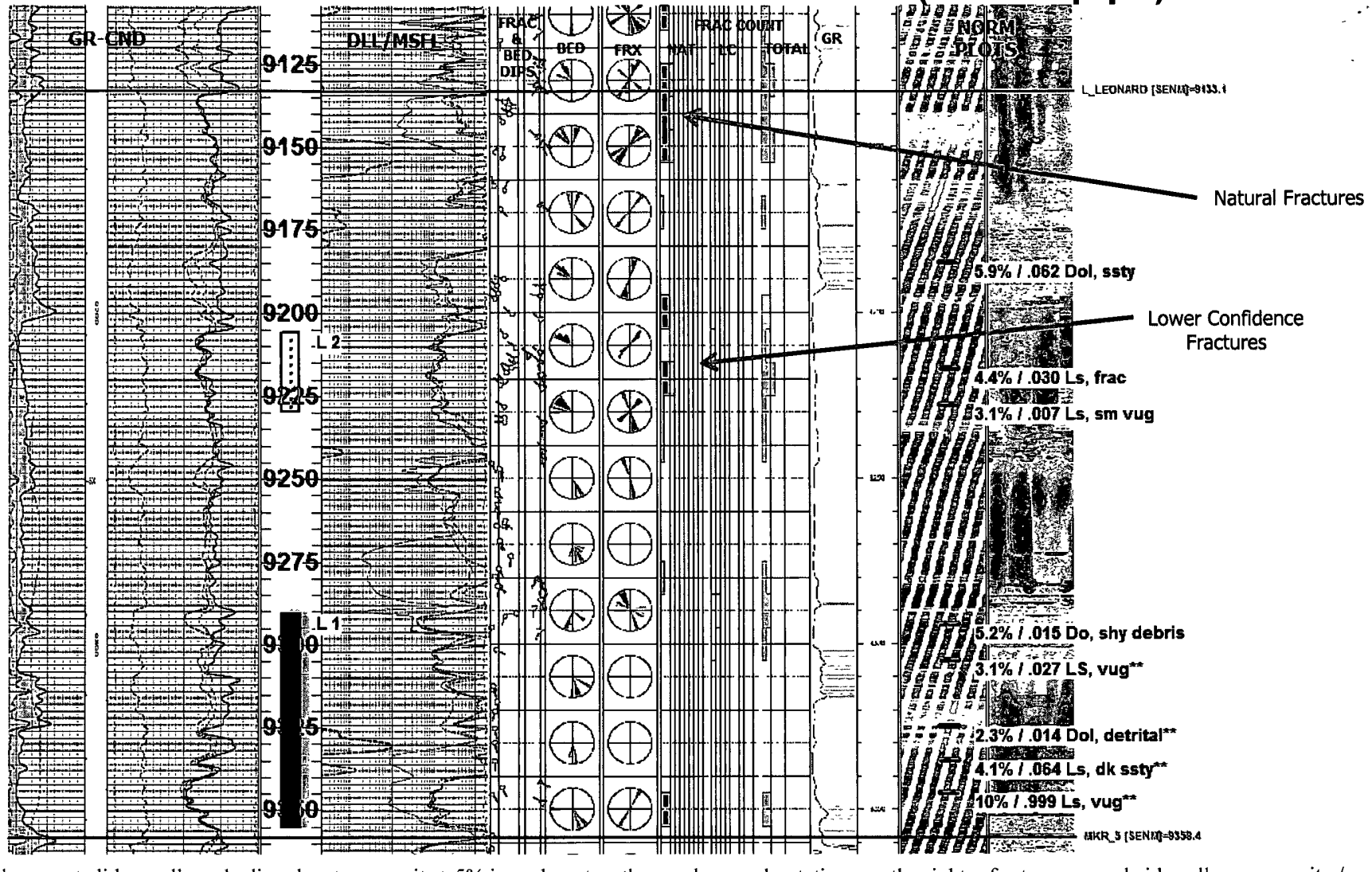
- The facies that were sampled in the lower Leonard to Wolfcamp are dominated by shelf margin detrital carbonates, which are variously composed of lithoclasts and bioclasts in either a carbonate or, more typically, shaley or silty matrix.

- Because of the nature of the facies being sampled, it is not always certain whether the sidewall core has sampled tighter clasts, the matrix, or a combination of both. Some of these detrital carbonates contain lithoclasts that are larger than the size of the sampled core, and porosity is more commonly found in the interparticle matrix.

- Therefore, porosity-permeability measurements of sidewall cores do not always "see" the true parameters of the rock being sampled, and generally result in pessimistically low porosity and permeability measurements when considered in isolation. For this reason it is equally important to consider the corresponding log signatures and drilling notes and experience. In addition, log-indicated porosity may be influenced by the directional nature of some porosity, like isolated vugs or fractures, and may not always read true on a single logging pass. This is aided by the utilization of the FMI log to evaluate strike and dip and fracture orientation.

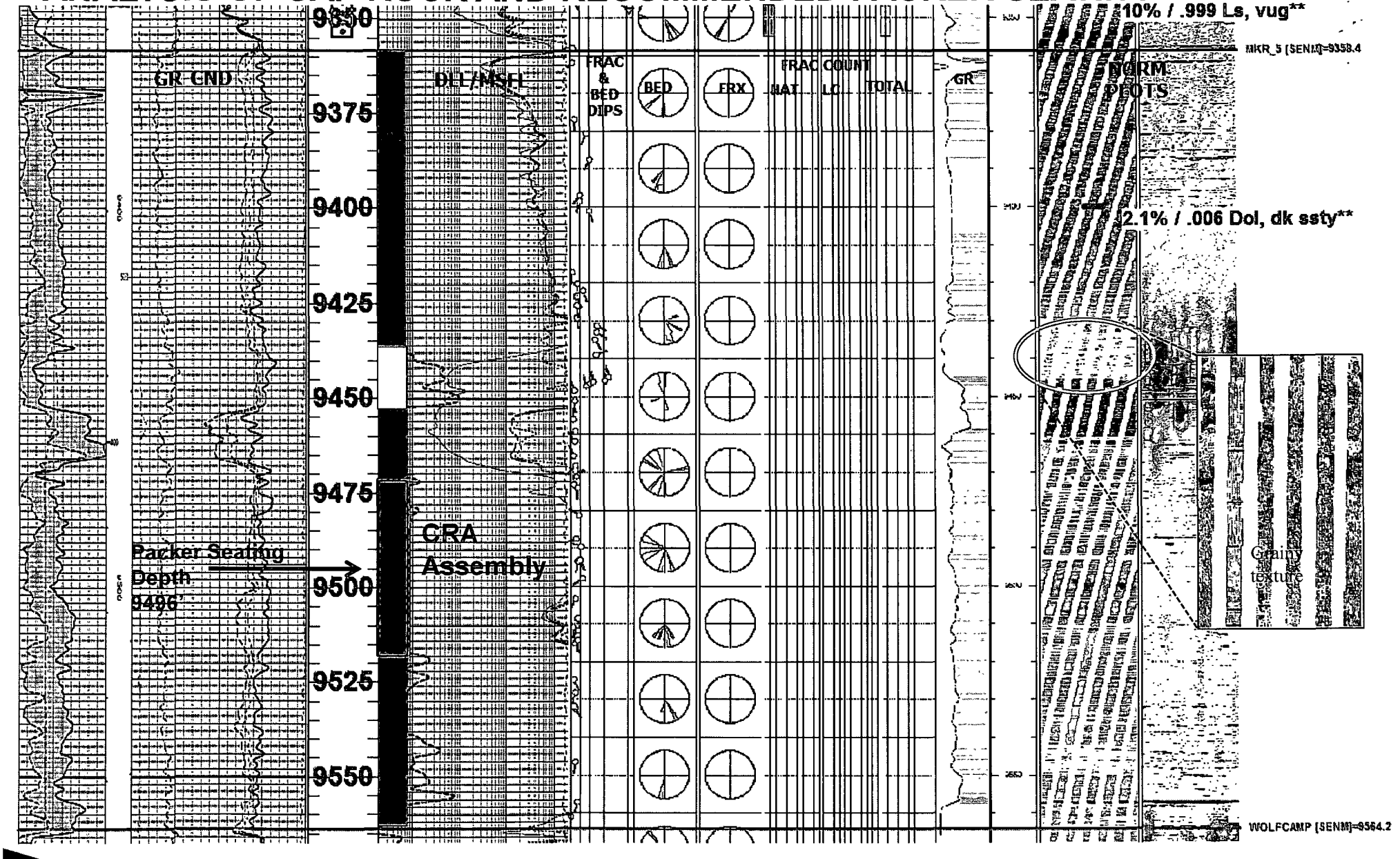
- In the following slides, I have indicated which core samples sampled obvious detrital carbonate, based upon the white and blue-light core photographs, direct examination and (to a lesser extent), the lithologic descriptions provided by Weatherford Labs. It is critical to note that this does not rule out the fact that other cores may include detrital carbonate since any particular sidewall core may have simply sampled only the tighter, clastic fraction of the rock, or perhaps, a locally tighter slope facies. The borehole image processed log is also included on each log composite, to identify major fractured zones. Its value in identifying rock textures is possible in most cases by examining the normalized image tracks.

ANALYSES OF LOWER LEONARD FORMATION (behind pipe)



On this and subsequent slides, yellow shading denotes porosity >5% in carbonates; the numbers and notations on the right refer to measured sidewall core porosity / permeability (% and md, respectively) and a brief lithologic description. Core points with double asterisks calculated Sws of greater than 40%, which is generally considered water productive in this area. The solid blue bars denote the preferred injection intervals. The lower part of the lower Leonard section (L1) reads almost consistently wet, with porosity up to 10%. Anything with porosity over 4% should be adequate for injection purposes. Some of the lower porosity rock may be in the clastic fraction of these detrital carbonates. This portion of the section will be behind pipe and not perforated. The CRA joint was set at 9474' and initial injection intervals will be below this level.

ANALYSIS OF CAP ROCK AND RECOMMENDED PACKER SEATING DEPTH



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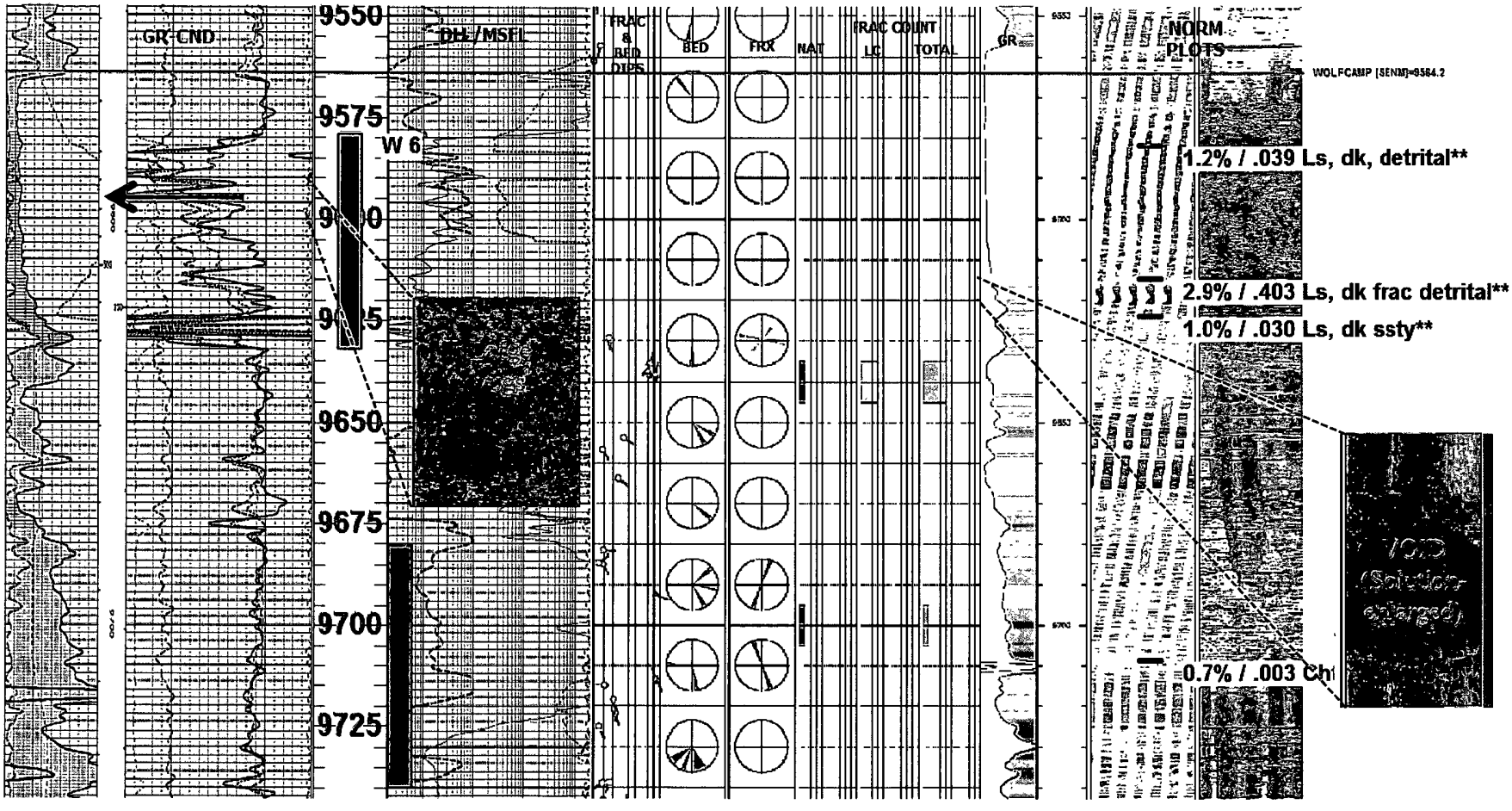
The intervals indicated by the brown bars appear to be dominated by dark, silty and shaley slope facies, with very low to trace permeability. The green bar denotes a tight lime grainstone, which can be seen on the image plot (green circle) This interval will make an excellent caprock for injection zones below which is why CRA assembly was set here and packer will be set at 9496'.

ANALYSIS OF UPPERMOST RECOMMENDED INJECTION ZONE – W 6



Upper Wolfcamp zone W6 is the uppermost recommended injection zone. This zone was washed out (see caliper log-blue arrow). The FMI image here indicates large voids (black) in the rock which could have caused it to slough. Tracking of the density and neutron curves support that interpretation because a simple washout would not cause the neutron log to go off-scale with the density log. One core sample through this interval recovered fractured (large fracture), detrital carbonate with good permeability, The image log there shows up as a large void, probably a solution-enlarged vug or small sinkhole. All the core samples calculated wet. The cherty zone below (brown bar) represents another caprock interval separating W6 from the underlying Wolfcamp zones.

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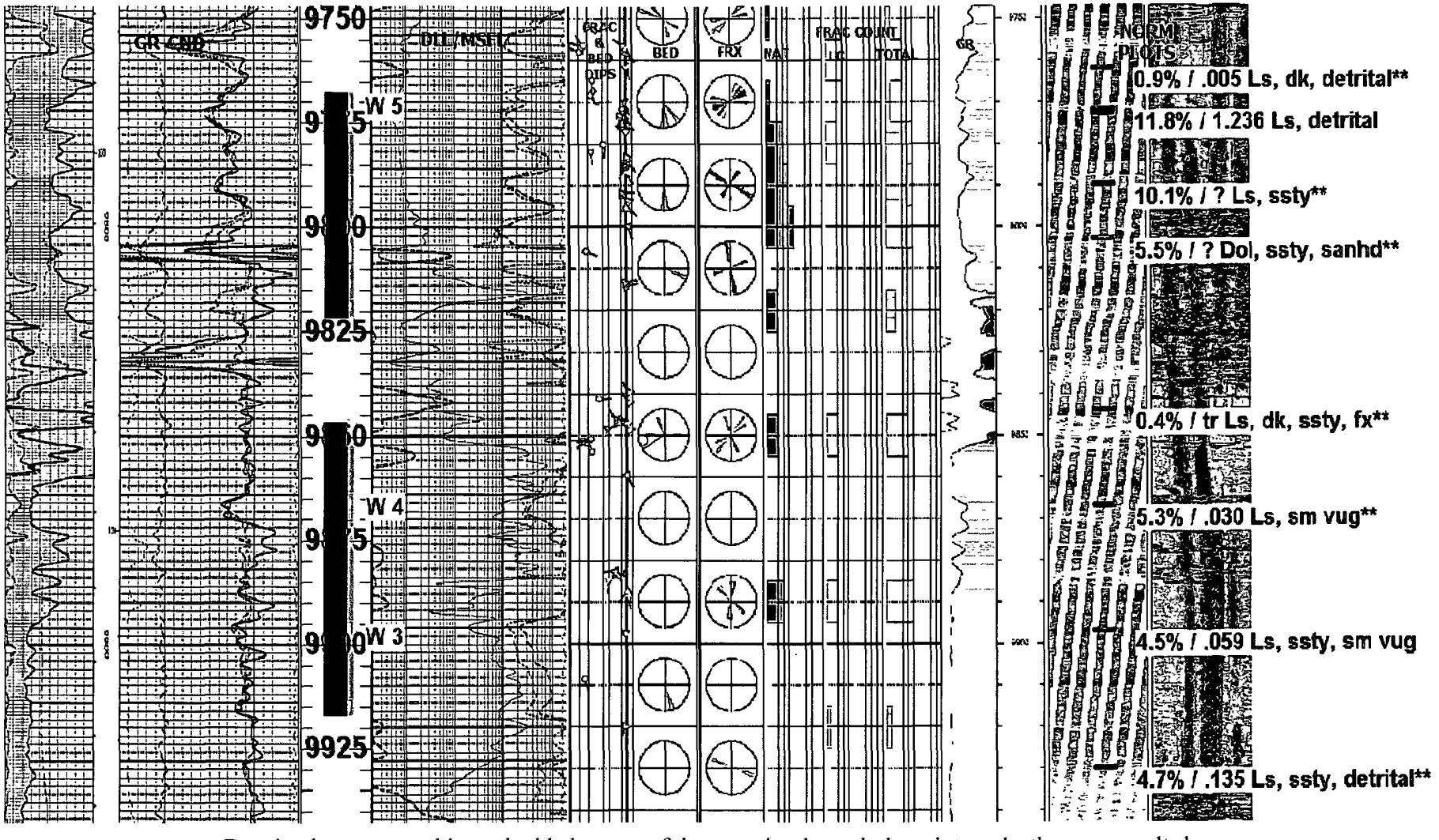
ANALYSIS OF MIDDLE RECOMMENDED INJECTION ZONES – W 5, W 4 AND W 3



Despite the apparent thinner-bedded nature of the porosity through these intervals, the core results here gave the best, consistent porosity readings over 4%. The FMI shows pervasive fracturing that ties the porous beds together. Zones W5, W4 and W3 should all be perforated by shooting across the entire intervals indicated in blue.

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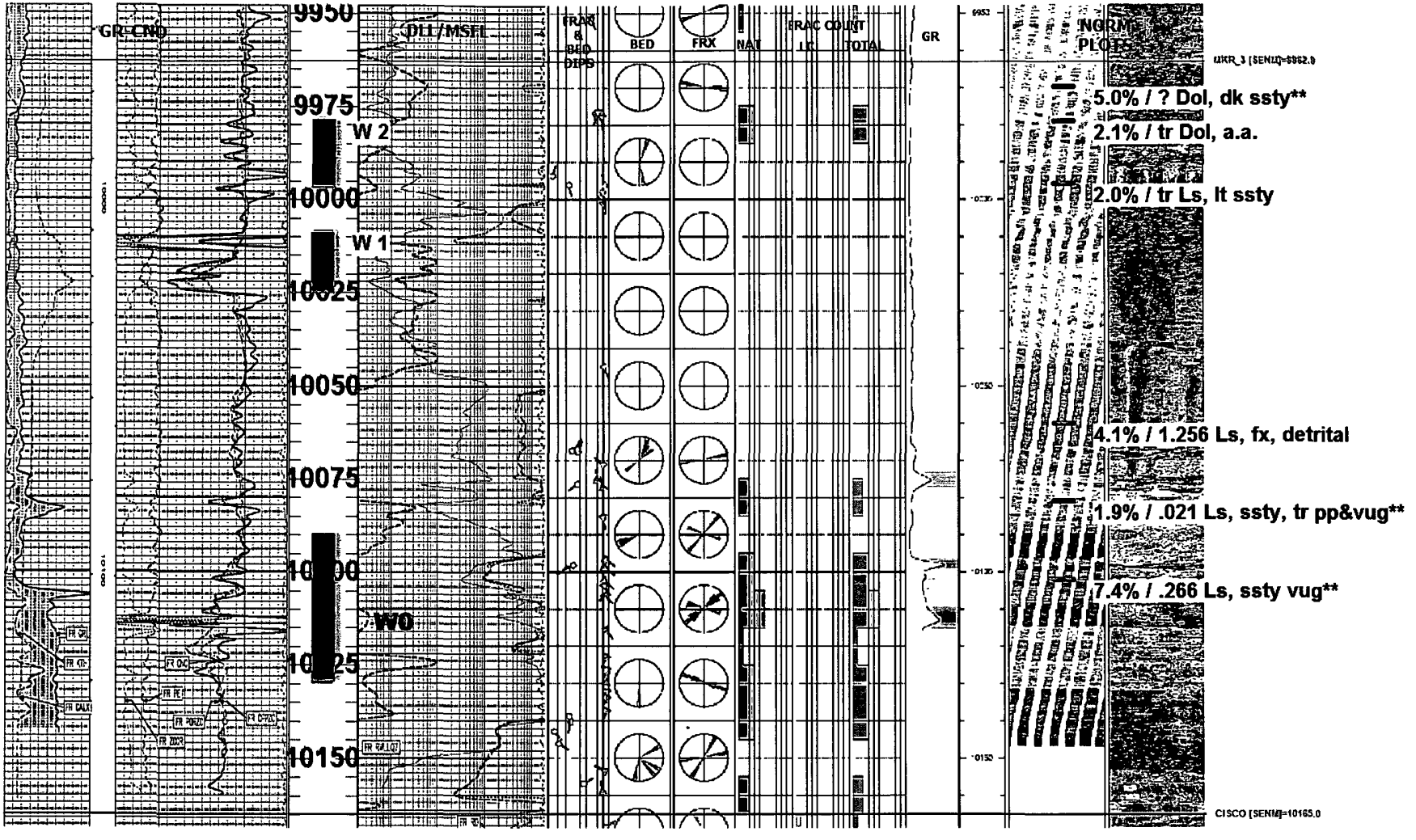
ANALYSIS OF LOWERMOST RECOMMENDED INJECTION ZONES – W 2, W 1, AND W 0



Similarly, these lower Wolfcamp zones should be perforated across the three intervals with the blue bars. The lowest recommended perforation interval (W0) has been added on the basis of the density of fracturing, and primary porosities in core up to 7.4%. The fractures would serve to effectively inter-connect porosity across the interval.

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SUMMARY OF RECOMMENDED PERFORATIONS

9579'-9632'	**Upper Wolfcamp (W 6); good caprock**
9768'-9821'	**Middle Wolfcamp (W 5); good fracturing**
9850'-9917'	**Middle Wolfcamp (W 3, W 4); some fracturing**
9979'-9997'	**Middle Wolfcamp (W 2); some fracturing**
10009'-10025'	**Lower Wolfcamp (W 1); good primary porosity**
10090'-10130'	**Lowest Wolfcamp; (W 0); heavily fractured**

All zones perforated 4spf at 90°

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CONCLUSIONS AND RECOMMENDATIONS

- Sidewall core results are expectedly mixed, but indicate that the predominant facies types over the intervals of interest are detrital carbonates with locally high matrix porosity and permeability and significant fracture porosity and permeability.
- Core measurements, compared with log-indicated porosity and permeability and FMI-measured fractures, indicate the following perforating and testing priority for the various units of the Wolfcamp. The lower Leonard will be left behind pipe as a potential injection zone if needed in the future:

1. The W3 through W5 intervals are the best overall, potential injection zones, and are capped by at least 75-85 feet of tight, shaley and cherty facies.

2. The lower Wolfcamp section, which includes zones W1 and W2 and W 0, could be added to the first intervals, and collectively perforated and tested.

3. Zone W6 is probably a sequence of solution-enlarged porosity, and should be perforated and used even if the first lower Wolfcamp zones test adequately for injection purposes in order to comply with OCD's requirement that the uppermost perforations be no more than 100' below the packer. It is capped by a suitably thick section of tight, shaley and silty carbonates.

4. The lower Leonard L1 zone should make a suitable injection zone, but it lacks the thick caprock that would separate it from potentially productive rocks above. In addition, it is located below the CRA section and should only be considered as a last resort. Anything above that zone would tap into more heavily fractured rock that could communicate to the overlying potentially-productive lower Abo carbonates.