JUDAH OIL, LLC

Cedar Lake Salt Water Disposal Project

Sections 28 and 29 T17S-R31E, Eddy Co. NM

Date : December 2011

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Table of Contents

Table of Contents **2**

List of Figures **3**

List of Tables **4**

Executive Summary **5**

- Preface 5
- Summary of Results 5

Scope and Objectives **6**

- Scope 6
- Objective 6

Cedar Lake SWD Project Review **7**

- Surface Facilities 7
  - Water Injection Facilities 7
  - Water Transportation System Between Injection Facility and Wellhead 7
  - Injection Location and Well 8
- Cedar Lake Geology 8
  - General Geology of Local Injection Intervals 8
  - Jamoca Fed SWD No 1 (A-29-T17S-R31E; API# 3001532265) Geology 10
  - Doc Slawin Fed No 2 (A-29-T17S*R31E; API# 30-015-32585) Geology 11
  - Dow "B" 28 Fed No 1 (P-28-T17S*R31E; API# 30-015-28676) Geology 14
- Cedar Lake Engineering; Dow "B" 28 No 1 and Skelly Unit No 161 17
  - Summary 17
  - Verification of Log Correlations and Injection Interval 17
  - Skelly Unit Well No 161 Wellbore Condition 19
  - Fill-Up Time Required to Reach SKU 161 20
  - True Velocity of Injection Water When It Reaches SKU 161 21
  - Permeability and Pressure Differential Required to Flow Water to SKU 161 22
  - Conclusions 23

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List of Figures

Figure 1: Location Map Sections 28 and 29 T17S-R31E 8
Figure 2: Correlations Canyon, Cisco and Wolfcamp Formations 9
Figure 3: Jamoca Fed No 1 Log and Injection Perforations. 10
Figure 4: Doc Slawin Fed No 2 Density/Neutron and Lateral Logs 12
Figure 5: Doc Slawin No 2 Mud Log 13
Figure 6: Location Map Dow "B" 28 Federal No 1 14
Figure 7: Dow "B" 28 No 1 Borehole Sonic and Duel Lateral Logs 15
Figure 8: Borehole Sonic Log Correlation SKU 161 and Dow B 16
Figure 9: Correlation Wells Skelly Unit Well 161 and Dow "B" 28-1 18
Figure 10: Current Wellbore Schematic Skelly Unit Well 161 19
Figure 11: Location Map Wells SKU 161 and Dow "B" 28-1 20

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List of Tables

Table 1: Top Wolfcamp by OCD in Doc Slawin Fed No 2 11
Table 2: Fill-Up Volume and Time To Reach SKU 161 21
Table 3: True Velocity of Injection Water When It Reaches SKU 161 22
Table 4: Permeability and Surface Pressures Required to Flow Water to SKU 161 22

Executive Summary

Preface

This review of the Cedar Lake SWD Project was prepared for **Judah Oil, LLC (Judah)** by **VSW2 E&P, LLC (VSW2)** of Duncan, Oklahoma. The project being developed includes installing SWD facilities (28-T17S-R31E) capable of injecting up to 30,000 BWPD. The project contemplates connecting three or four SWD wells to the injection facility. The current wells being considered are the Jamoca Federal SWD No 1 (Jamoca), Doc Slawin Federal No 2 (Doc 2) and Dow "B" 28 Federal No 1 (Dow B).

Disclaimer *– This document was prepared under the supervision of VSW2. VSW2 does not accept any responsibility for any decisions or actions taken by Judah Oil (its Partners, any associates of Judah Oil, third-parties or governmental agencies) relative to this "Project Review". Due to the many uncertainties, relative data available, individual wells and reservoirs, VSW2 cannot make any guarantees or warrantees as to the best practices for future reservoir performance of the SWD wells as presented in this document. All surface facility designs (wellhead, transportation and SWD injection facilities) are as specified by Judah Oil, LLC.*

Summary of Results

As discussed in the review, surface wellhead, transportation and injection facilities have significant environmental and safety protection mechanisms. All Federal and State Regulations have been complied with; in addition, several non-requirement environmental and safety mechanisms are designed to be installed, as filed with the Regulatory Permits. VSW2 has reviewed each of the three wells being considered for water disposal. Based on all available information, the injection intervals to be perforated in each well should not cause any loss in current or future reservoir hydrocarbon recovery or any damages to any surrounding wells or surface/shallow water reservoirs.

Scope and Objectives

Scope

This review of the Cedar Lake SWD Project is to summarize the basic surface facility design and outline the environmental and safety mechanisms to be installed. The surface facilities are currently under construction and the status of this work will be reviewed. Each of the three wells proposed for salt water disposal are discussed. The Jamoca Federal SWD No 1 has already been completed and awaiting connection to the central water injection facilities. The Doc Slawin Federal No 2 and Dow "B" 28 Federal No 1 are discussed relative to their proposed injection perforation, hydrocarbon potential within the injection interval and any possibilities to cause damage to surrounding wells and/or shallow/surface fresh water reservoirs.

Objective

The objective is to demonstrate that all required Federal and State Regulatory Regulations have been complied with and provide technical assurance that the proposed injection will protect any and all potential hydrocarbon recovery and preserve the integrity of shallow/surface fresh water sources.

Cedar Lake SWD Project Review

Surface Facilities

Water Injection Facilities

The Cedar Lake SWD Water Injection Facilities are located in A-29-T17S-R31E approximately one-quarter mile south of State Highway 82 on County Road 222. The facilities were permitted under Federal ROW Serial Number: NM 125972. The basic design facilities being constructed include:

a. The water and oil storage tanks and separation facilities are contained within a 125' X 235' "Tank Facility" area which is 6' below grade and is lined with 2-40 mil poly liners. The reservoir is capable of containing 100% of all storage capacity. It is a sump drainage system capable of removing any spillage and/or natural water accumulations. Should the fluid level rise over 12" inside this area, a high level shut-off will shut off all electricity in the "Tank Facility" area and will send an alarm to a Judah Oil, on call, employee.

b. Water collection and storage consists of six 500 barrel fiberglass tanks with internal grounding, ten 1000 barrel fiberglass tanks with internal grounding, four 500 barrel steel unloading tanks, two 1000 barrel gunbarrel separators with internal grounding, and two 500 barrel skim oil storage tanks.

c. The system will be run by various transfer pumps located inside the "Tank Facility" area. These pumps will be operated by electronic Head Sensors and will have manual Head Switches for safety backup. Any tank levels that are too high or too low will shut off the transfer pumps and will send an alarm to a Judah Oil, on-call employee.

d. There will be a total of 7 commercial truck off-loading stations at ground level. Each station will have a 20 X 25 cement pad. The pads are on a +3 % grade so any spills will run into a channel and down into a cement ditch located in the "Tank Facility" area. It will then be pumped by a sump pump into the steel unloading tanks.

e. Two Lightning Static Lines will be installed over the Tank Facility along with four Lightning Rods to help protect the facility from lightning strikes. Should there be a loss of electrical power to the facility, an alarm will be sent to a Judah Oil, on call employee.

Water Transportation System Between Injection Facility and Wellhead

The injection water will flow to the injection wells via a four-inch high pressure, non-corrosive fiberglass pipeline with an API rating of 2500 psi. This line will be buried four feet below the surface. A high or low pressure kill safety switch will automatically shut down the injection pump should the pressure exceed or drop below the pressure settings. An alarm will then be sent to a Judah Oil, on call employee.

Injection Location and Well

Each injection well will be completed in accordance with the Federal and State Injection Permits and with any Federal and/or State special conditions. Sub-surface evaluations and completions are discussed in later sections. Each injection well's casing-tubing annuals will be tested in accordance to federal and state regulations prior to any injection.

At each well location there will be a 210 barrel tank set in a lined reservoir capable of holding the total fluid capacity of the tank. This tank will be filled with approximately four feet of packer fluid. A two-inch line will connect the tank and the 5-½ casing valve at the well so the 5-1/2 casing annulus will be constantly kept full with packer fluid. There will be only hydrostatic pressure on the casing annulus. A tank sensor gauge will monitor any (±2 feet) gain or loss of the tank volume, if either a high or low level are indicated, the disposal pump will automatically be shut off at the central facility and an alarm will be sent to a Judah Oil, on call employee. If a casing, packer, or tubing leak is detected, all appropriate governmental agencies will be immediately notified as required.

Cedar Lake Geology

General Geology of Local Injection Intervals

The Cedar Lake Project is located in Section 28 and 29 of T17S-R31E, Eddy County New Mexico, as shown in the location map, **Figure 1**. Within these two sections, the Biscuit Hill (Tracey 29 Fed on map) and Jamoca Fed 1 have been permitted for water injection. The Wolfcamp is the primary target for water injection in this area, although the Jamoca Fed. No. 1 was permitted for injection into the Wolfcamp and Cisco formations (which will be discussed in more detail later).

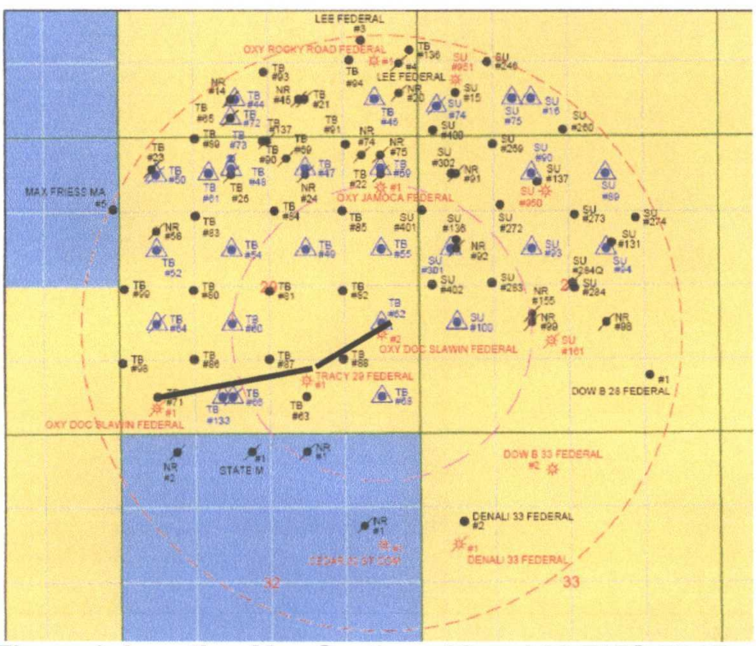

Figure 1: Location Map Sections 28 and 29 T17S-R31E

Figure 2, (x-sect Doc 1-Biscuit Hill-Doc 2), shows the top of the Wolfcamp is elusive to pick and within the review area it ranges from 8000 to 9000 feet. (Although, not technically studied, the Wolfcamp tops appear to be dependent on the geologist selecting the top and not on paleontology or faulting.) The Canyon and Cisco formations are easily correlated across the entire area as seen in **Figure 2**. (Note that the **red correlation lines** on figure 2 are drawn from gamma-ray to gamma-ray and not wellbore-to-wellbore.) Based on the major red gamma-ray correlation sections, the top of the Wolfcamp has been selected at three totally different stratigraphic events as compared to the Cisco and Canyon which are consistent.

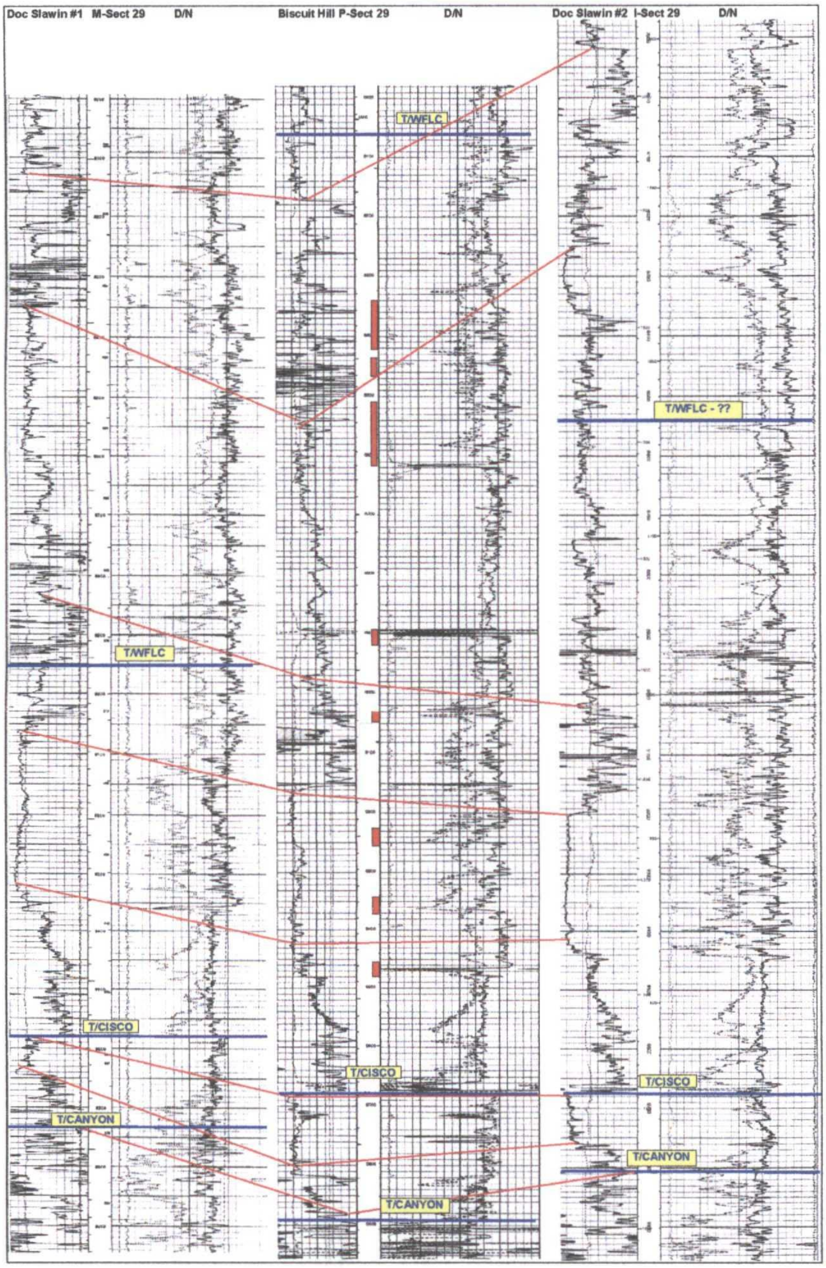

Figure 2: Correlations Canyon, Cisco and Wolfcamp Formations

Jamoca Fed SWD No 1 (A-29-T17S-R31E; API# 3001532265) Geology

At the time this report was published, the Jamoca Federal SWD No 1 (Jamoca) had been permitted, tested, completed (including mechanical integrity tested) and temporarily shut-in awaiting connection to injection facilities. Injection will commence prior to January 1st, 2012. **Figure 3** is the Density-Neutron log showing the perforated injection intervals.

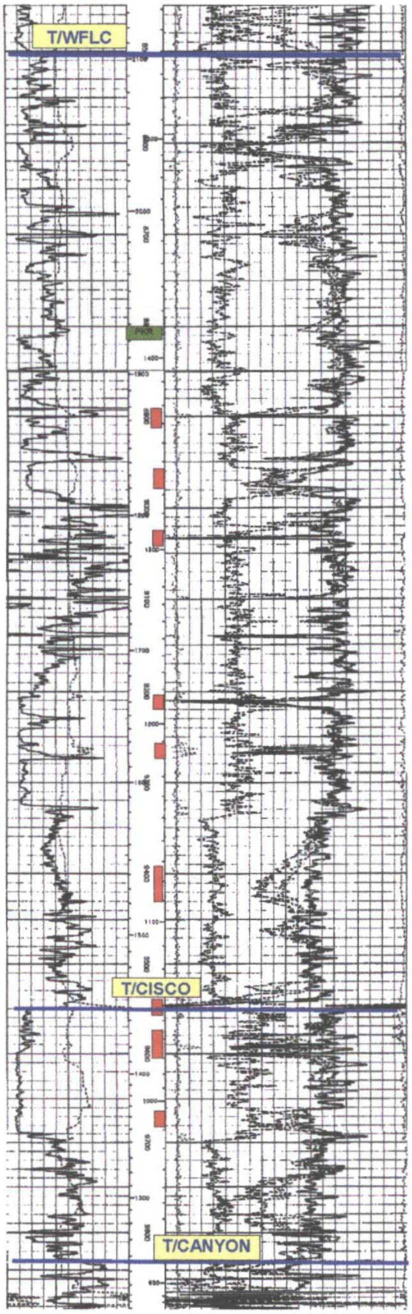

Figure 3: Jamoca Fed No 1 Log and Injection Perforations.

During completion, the Cisco formation was perforated and stimulated with 6000 gallons 28% FE acid and tested. The Cisco flowed slightly, gassy sulfur water and was isolated with a RBP. The Wolfcamp was perforated and stimulated with 6000 gallons 28% FE acid and didn't produce any fluids. The total perforated interval was step-rate-tested and showed a continuous straight-line pressure build-up with the rate ending at 5 BPM and 3000 psi. This testing confirmed that the well has low permeability and non-productive of hydrocarbons. The well is expected to have limited capacity and not impact any offsetting wells or potential hydrocarbon potential. Judah will be submitting a technical report to the BLM and OCD requesting a 2500 psi surface limiting pressure.

Doc Slawin Fed No 2 (A-29-T17S*R31E; API# 30-015-32585) Geology

Doc Slawin Fed No 2 Potential Upper Wolfcamp Interval

In the Doc Slawin Fed No. 2 (Doc 2) IIC's C-108 SWD Application, it was proposed to inject into the Wolfcamp interval from 8160-9440 feet. As shown in **Figure 2**, at the time the original application was made, it was recognized that the Wolfcamp top in the Biscuit Hill (Tracey 29) was stratigraphically, significantly higher (8083 ft) than the questionable top picked by Brian Arrant, OCD (ref **Table 1**) at 8544 (???) feet and that water was being injecting into the higher stratigraphic section. Judah had George Scott III (GS), Petroleum Geologist, who has previously provided expert testimony in various NMOCD hearings (in Santa Fe), reviewed the Doc 2 and other wells in the area and he concluded that picking the top of the Wolfcamp in the absence of paleontology analysis was very difficult and subjective (he observes that this formation top varies regionally due to in part to a regional unconformity). As a result of the variations in stratigraphic picks of the Wolfcamp formation top, Judah is confining the injection interval from 8740 feet (approximately 200 feet below the 8544 feet top) to 9440 feet.

Table 1: Top Wolfcamp by OCD in Doc Slawin Fed No 2

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

GEOLOGICAL TOPS

OXY USA WTP Limited Partnership
DOC Slawin Federal #2
Unit I, Sec. 29, T-17-S R-31-E
1780' FSL & 660' FEL
(G.L.-3749'; K.B.-3768')
Eddy Co., N.M.
30-015-32585

Geological Tops per/Bryan G. Arrant-OCD

Salado	707'
Base of Salt	1430'
Yates	1770'
Bowers	2577'
Queen	2814'
San Andres	3591'
Wolfcamp	8544'??
Strawn	10764'
Atoka	11007'
Morrow Clastics	11440'
Barnett	11742'

Oil Conservation Division * 1220 South St. Francis Drive * Santa Fe, New Mexico 87505
Phone: (505) 476-3440 * Fax (505) 476-3462 * http://www.emnrd.state.nm.us

Doc Slawin Fed No 2 Wolfcamp Injection Interval from 8740-9440 feet

The Doc 2 injection interval from 8740-9440 feet (ref. **Figure 4**) Density/Neutron and Lateral Log) and surrounding wells were reviewed by GS for production potential.

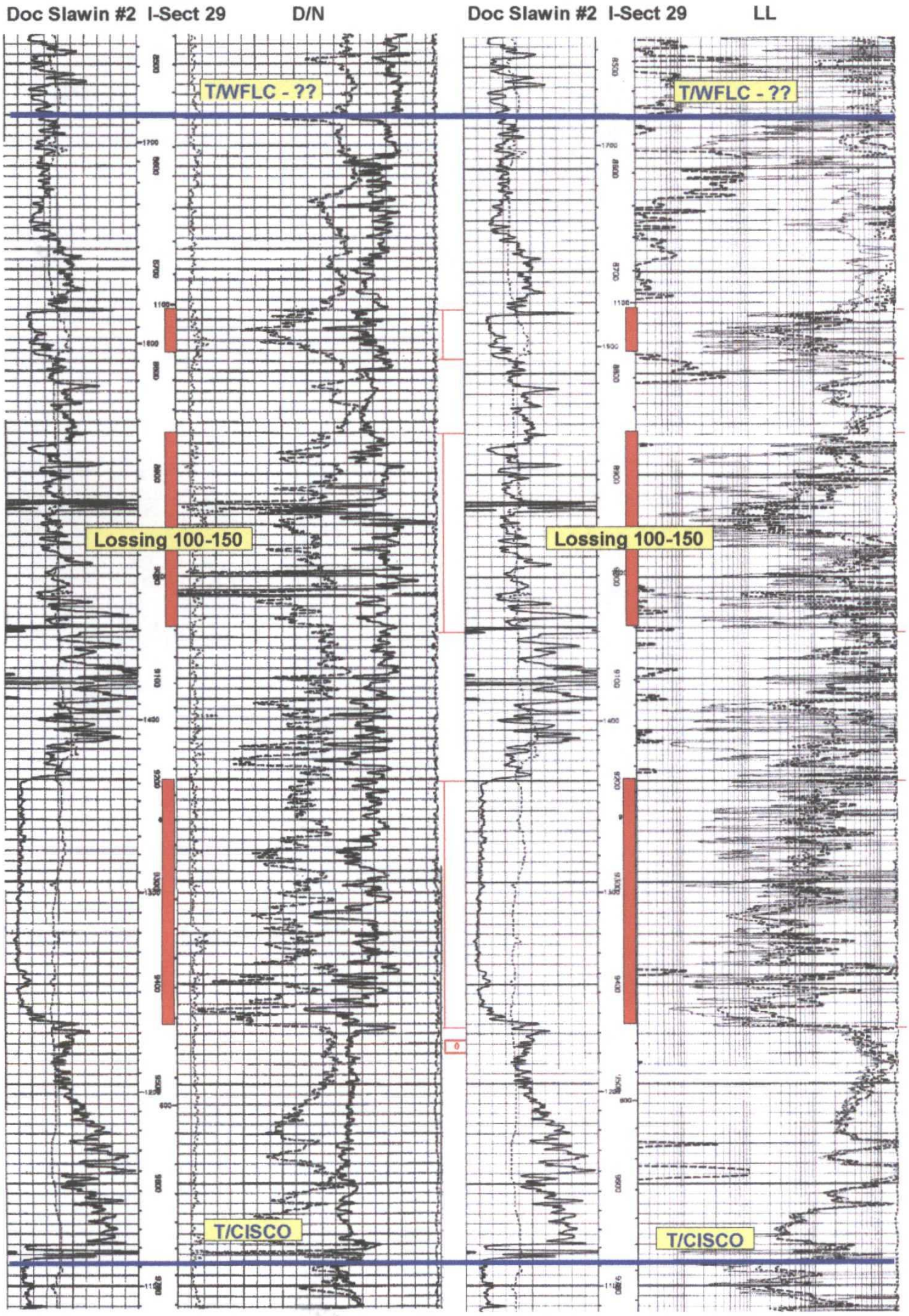

Figure 4: Doc Slawin Fed No 2 Density/Neutron and Lateral Logs

The Doc 2 Mud Log over the injection interval (ref. **Figure 5**) was reviewed. There was only one very minor gas show from 8920-8960 feet that averaged 50 total Gas Units. It had a sulfur water smell and didn't have any fluorescence or shows. GS ran log analysis to determine water saturation values over the proposed disposal interval 8740-9440 feet in the Wolfcamp formation.

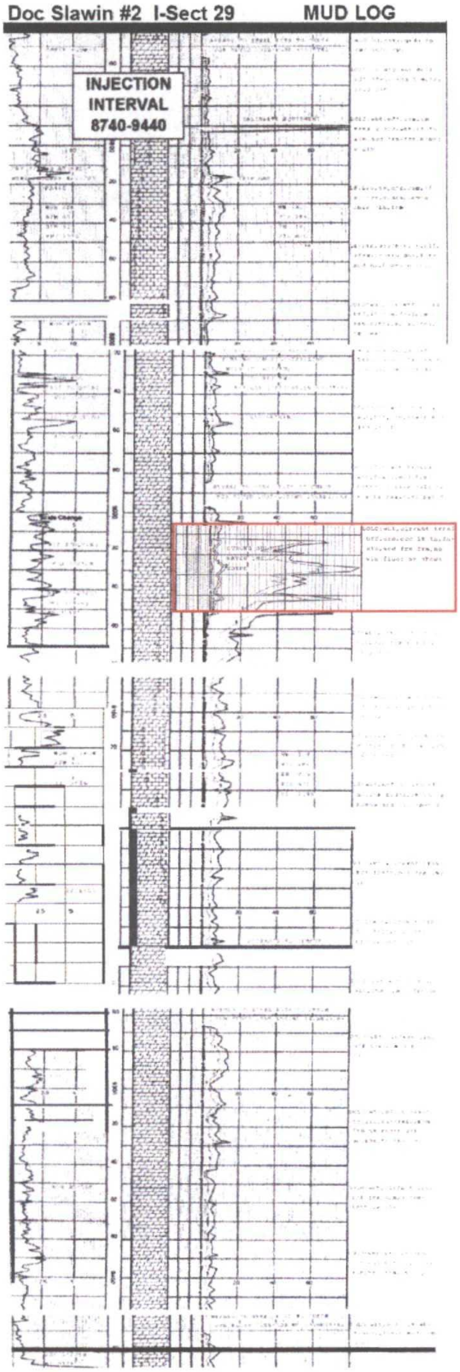

Figure 5: Doc Slawin No 2 Mud Log

This area is known to produce sulfur water throughout the Wolfcamp and Cisco formations. This is based on the mud log on Doc 2 (previously discussed), the Jamoca Cisco tested produced sulfur water and sulfur water was produced in DST #6 from 8180-8210 ft in the Turner 58 Well (API#30015-05445). Considering sulfur water corrections, a Rw value of 0.180 was used to calculate water saturations; however, this Rw value for known sulfur water is considered to be conservative; higher values will produce even higher water saturation values. Matrix porosities ranged from 4% to over 16% and water saturation values as determined from log analysis calculations from the Oxy Doc Slawin Federal #2 well for the proposed injection interval in the Wolfcamp range from approximately 70% to 90%. No DLL-msfl corrections were made for drilling fluid filtrate invasion that would further increase calculated water saturation that would indicate all intervals were water-productive. Due to drilling fluid invasion, a "'Tornado" chart correction should have been made to the deep resistivity measurements. An Rmf of 0.046 was reported on the logs at the time of logging and again, this would increase water saturation.

Dow "B" 28 Fed No 1 (P-28-T17S*R31E; API# 30-015-28676) Geology

As shown in **Figure 6**, the Dow "B" 28 Federal No 1(Dow B); API# 30-015-28676 is located in P-28-T17S-R31E.

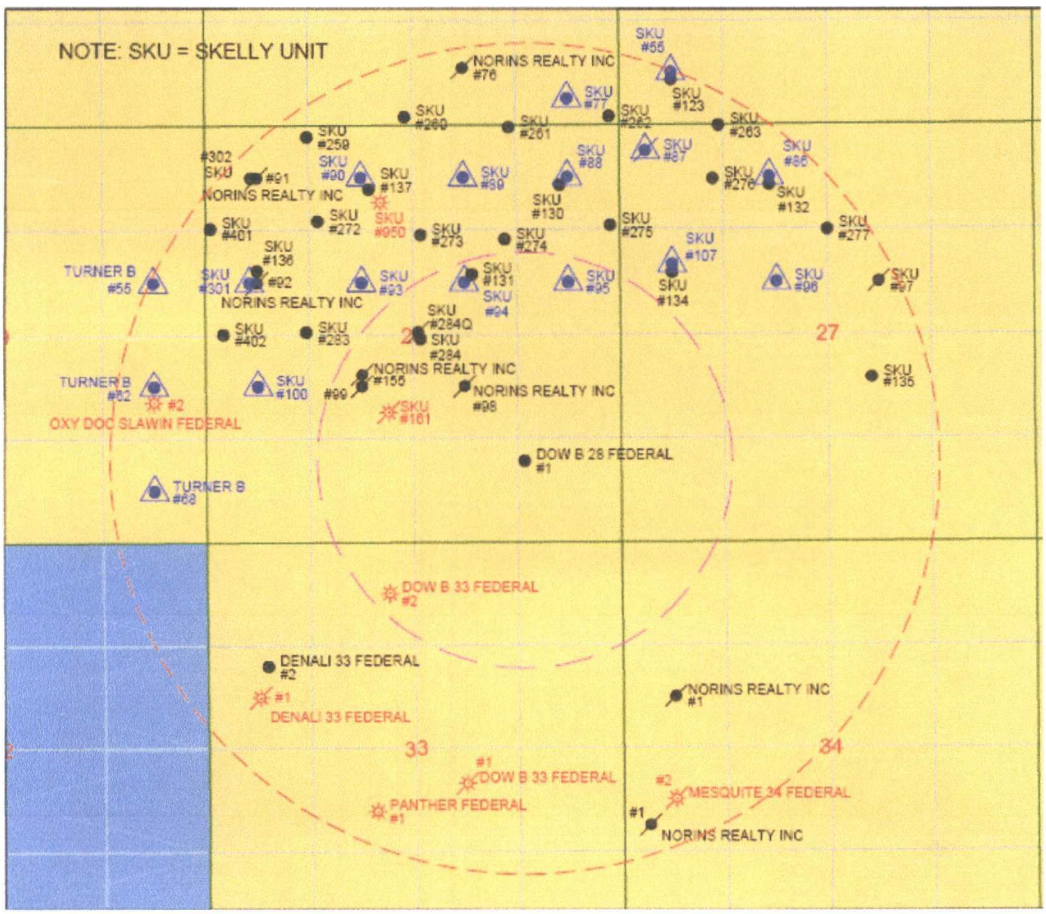

Figure 6: Location Map Dow "B" 28 Federal No 1

The proposed disposal interval on the C-108 Application is from 8725-9580 feet in the Wolfcamp formation and the proposed perforations are shown on **Figure 7**.

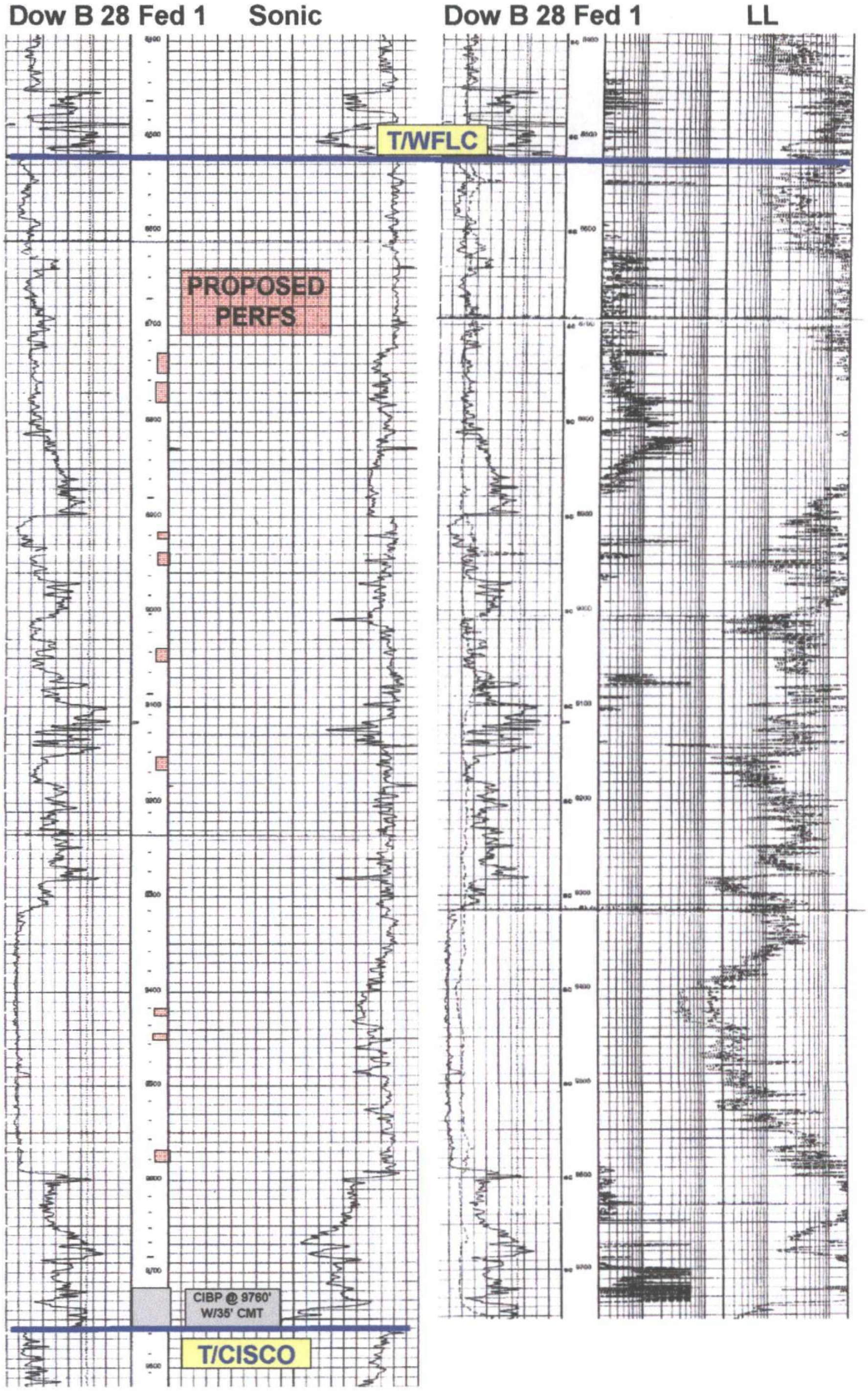

Figure 7: Dow "B" 28 No 1 Borehole Sonic and Duel Lateral Logs

George Scott (GS), Petroleum Geologist, calculated water saturation form the above logs. The log-apparent Wolfcamp porosities range from below 4% to as high as 16%. The best indicator of permeable section is acquired from DLL-msfl readings that from separation of deep, medium and near-wellbore resistivity curves reflect fair-good permeability in the interval from 8900-9580 feet. Using a Rw value of 0.04 (based on comparison of Rw values for this immediate region of Permian Basin) the water saturation values where matrix porosities are present, range from 72% to 92%, which indicates a water-productive formation. At 9022-24 feet for example, the measured Rt value is 30 (ohms-m) and Porosity is 4%, which yields a calculated water saturation value of 91%. And at 9316-18 feet; water saturation is 84.5%. The more porous section from 9400-9500 feet has an average water saturation value of 74%. In conclusion, the proposed Wolfcamp disposal interval has high water saturation values that are characteristic of water-productive formations.

As discussed in the next section and shown in **Figure 8**, there is concern that the injection perforations in the Dow B may impact the correlative interval in the abandoned Skelly Unit Well 161 (SKU 161); which doesn't have cement behind pipe over this interval. (Note: for correlation, the red correlation lines on figure 8 are drawn from gamma-ray to gamma-ray.)

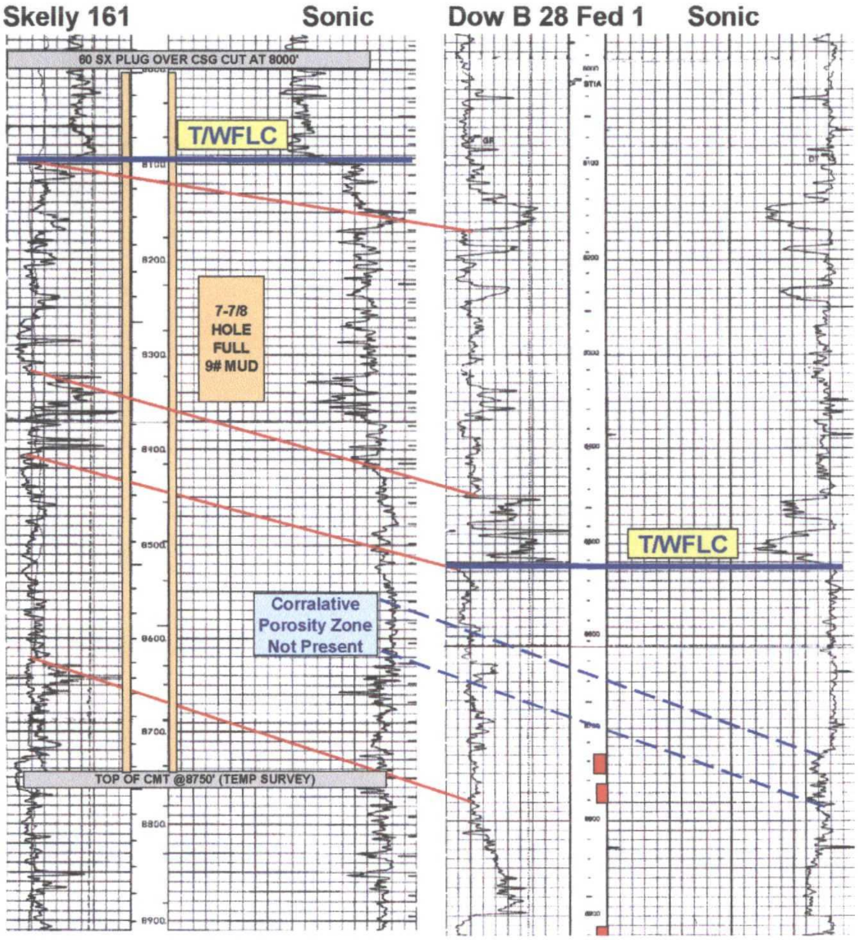

Figure 8: Borehole Sonic Log Correlation SKU 161 and Dow B

Also, as shown in **Figure 8**, GS correlated (**dashed blue lines)** the proposed porosity interval to be perforated in the Dow B with the adjacent, permanently abandoned SKU 161 Well (K-28-T17S-R31E). As shown on the figure, the porosity interval in the Dow B pinches-out and is not present in the SKU 161 Well. It was further noted that the major stratigraphic sections (**correlated by the red lines**) are very definitive, but the top of the Wolfcamp in the two wells were picked (**solid straight blue lines**) differently, further emphasizing that picking the top of Wolfcamp is very subjective in this area.

Cedar Lake Engineering; Dow "B" 28 No 1 and Skelly Unit No 161

Summary

The Skelly Unit Well 161 (K-28-T17S-R31E, API# 30-015-28140) is located approximately one-half mile from the Dow "B" 28 Federal No 1 (P-28-T17S-R31E, API# 30-015-28676) and was abandoned in 1995. There is a section (8054'-8750') in the SKU 161 wellbore which doesn't have cement behind casing. Both the wellbore and the annulus in SKU 161 are filled with 9# mud and this uncemented interval is sealed on top with a 60 sack cement plug (7820'-8054') and bonded cement behind casing at 8750' (there is a capped CIBP in the casing at 11165 ft. This technical section addresses all possibility for potential damage of SKU 161 by injection to the Dow B Well.

Verification of Log Correlations and Injection Interval

As discussed in the previous section, it doesn't appear that the upper 40 feet of proposed perforations the in the Dow B from 8730' to 8750' and from 8760' to 8780' are present in the SKU 161 Well. However, for this analysis it is hypothetically assumed that the 8730' to 8780' porosity interval in the Dow B is equivalent to the 8480' to 8530' interval in the SKU 161 which is 250 feet above the Dow B interval. This correlation is shown in **Figure 9**. The uncemented section in SKU 161 is from 8054 ft to 8750 ft. Currently the only proposed perforations for injection in the Dow "B" 28-1 are 20 feet from 8730' to 8750' and 20 feet from 8760' to 8780'. The major injection correlation (reservoir between major shale breaks) is from 8400 ft to 8625 ft in SKU 161 and 8520 ft to 8800 ft in Dow "B" 28-1.

Figure 9 shows the only potential correlation for communication between the SKU 161 and Dow B. The reality of any adverse communication and/or interference between the wells is directly dependent on the wellbore condition in SKU 161, the reservoir characteristics between the wells and the differential injection pressure in the Dow B and SKU 161. Each of these parameters is technically addressed.

Skelly 161 Sonic Dow B 28 Fed 1 Sonic

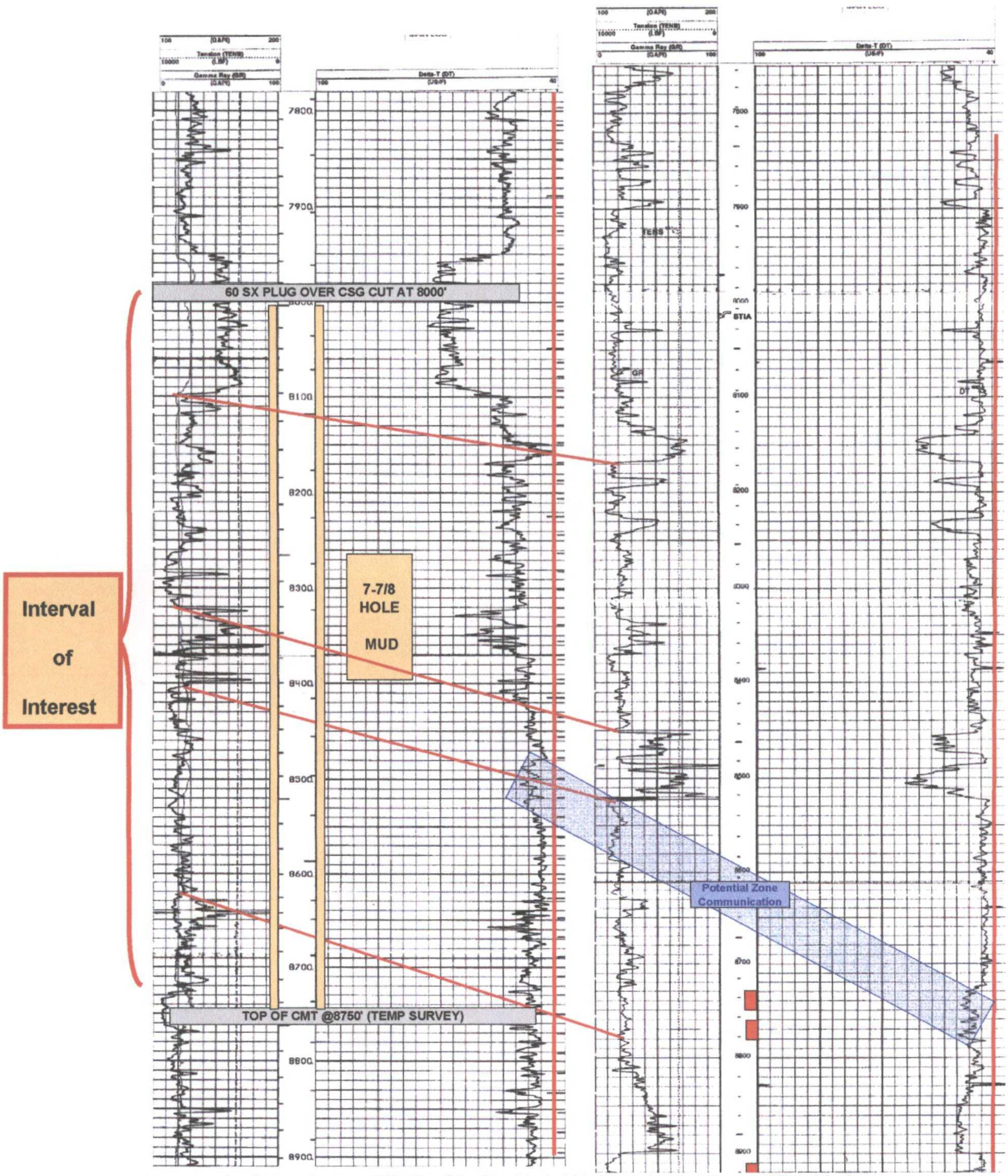

Figure 9: Correlation Wells Skelly Unit Well 161 and Dow "B" 28-1

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Skelly Unit Well No 161 Wellbore Condition

The well file on SKU 161 isn't very complete. The well was apparently drilled in January 1995 as an unsuccessful Atoka/Morrow completion. Five and one-half inch (5-1/2") casing was run to TD and cemented. The Cement Bond log shows the top of good cement at 8750 feet. After failing to complete the deep zones in 1995, the 5-1/2" casing was cut at 8000 ft. A 60 sack cement plug was set at 8054 feet and the top of the plug was tagged at 7820 ft. The result is 180 ft of cement in the open hole above the 5-1/2" casing and 54 ft of cement inside the casing. This plug should be an excellent barrier to prevent any mud or fluids from flowing up the 5-1/2" casing or the casing-hole annulus. **Figure 10** is the best representation of the final and current wellbore condition.

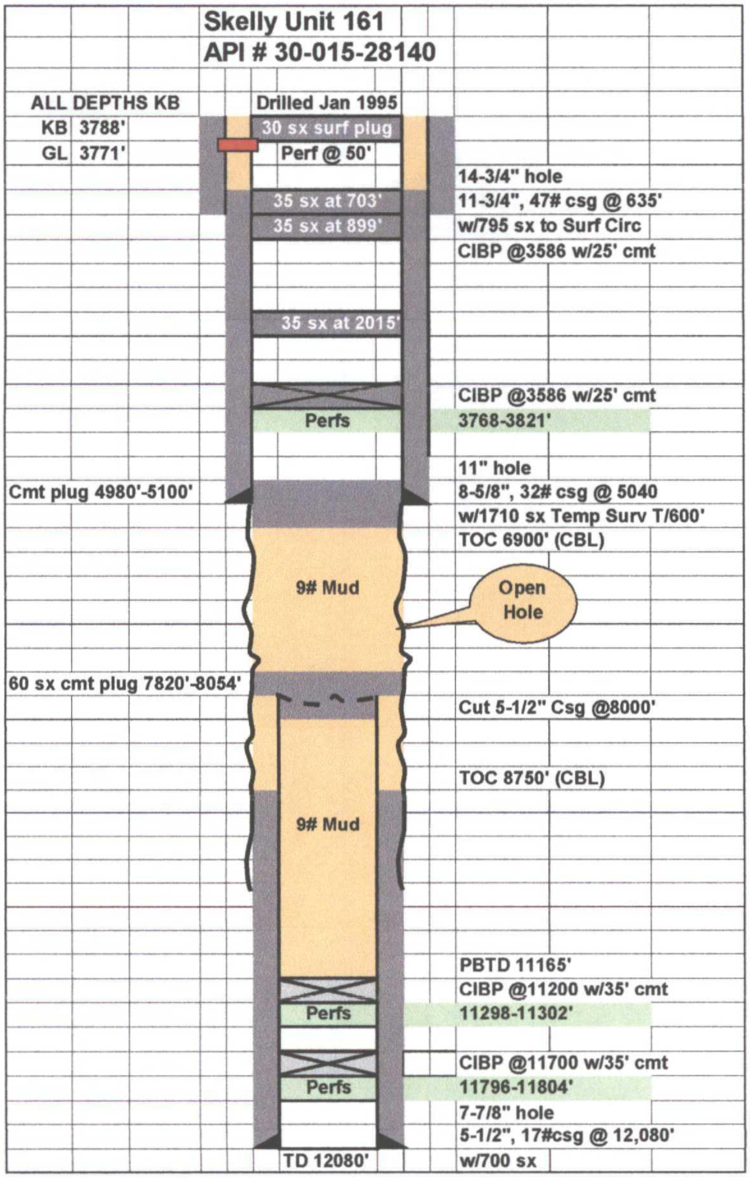

Figure 10: Current Wellbore Schematic Skelly Unit Well 161

Based on the wellbore conditions above, the 9# drilling mud is trapped by cement in the 5-1/2" casing and the 5-1/2" open-hole annulus and is completely sealed. The records available on the two wells do not reference any unusual presence of fractures and/or intervals of very high permeability (>1 Darcy) where any fluid losses occurred. From this, it is concluded that the reservoir has normal Wolfcamp porosity and permeability (as discussed in the geological section). The #9 drilling mud sealed-off the normal, expected wellbore permeability during drilling.

Drilling mud is used to drill with so that it will seal off any normal reservoir permeability and prevent any significant fluid losses. Barring extreme conditions (fractures, very high permeability, cavities/significant vuggs, etc), **drilling mud cannot flow through normal matrix permeability**. As such, no mud in the injection interval, annular space in the SKU 161 can be displaced, as it has nowhere to flow. It is simply trapped. Even if water from the Dow B were to flow to the SKU 161 wellbore, it would simply by-pass the wellbore since it cannot displace the mud.

In addition to the mud being essentially immobile, there are three reservoir conditions which further support the unlikelihood of the SKU 161 wellbore being impacted by water injection into the Dow B.

Fill-Up Time Required to Reach SKU 161

The first technical calculation is to estimate how long it will require water to reach SKU 161. **Figure 11** is a map showing the distance between the wellbores to be 1852 feet.

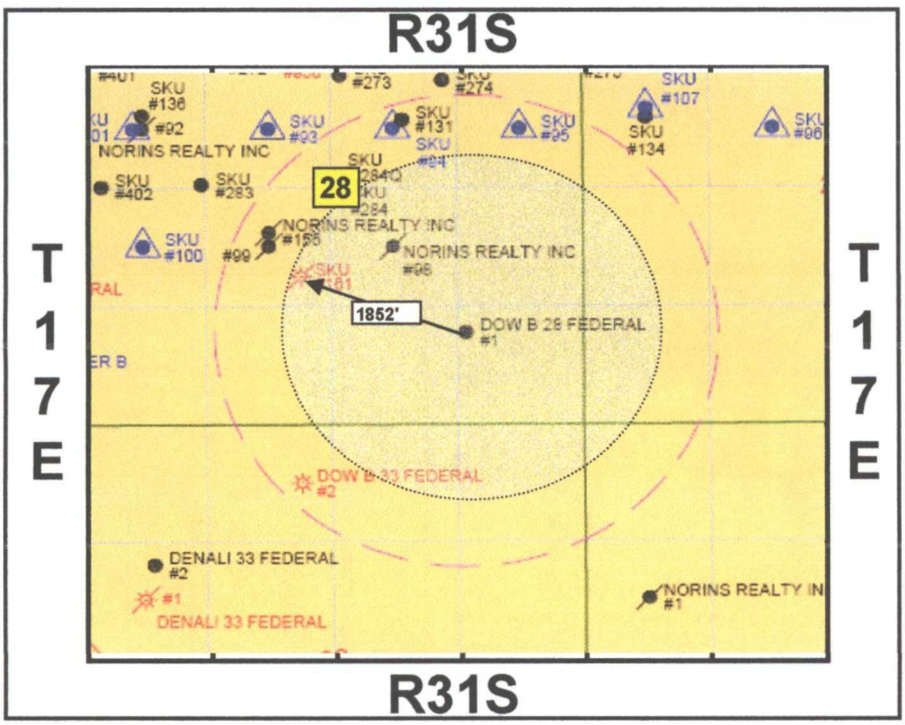

Figure 11: Location Map Wells SKU 161 and Dow "B" 28-1

For the following technical calculations, reasonable reservoir parameters have been assumed for the Wolfcamp in the interval of interest. As will be demonstrated, the reservoir parameters could be off by a factor of 1,000 and still not affect the conclusions drawn. The time required for water injected in the Dow "B" 28-1 to reach the SKU 161 is based on an injection of 50 BWPD into each one foot of pay open. In this example, the 40 feet of perorations will take (50 x 40) 2,000 BWPD. Using the 1852 ft radial flow area from the Dow "B" 28-1, with a porosity of 10% the reservoir fill-up volume to SKU 161 is 7,672,440 barrels. **Table 2** below shows all the calculations for this analysis.

Now let us consider the momentum (mass-velocity) that might be required to displace #9 mud in SKU 161, if the mud could be displaced. It is well documented that erosion by water has shaped much of the earth. One of the best examples is the Colorado River whose flow rate is 623 m^3/s ($15.5x10^6$ B/hr) varying from 5 to 40 mph. Now, think of the momentum of water moving at a rate of only 1 mile per hour. You're standing in the stream; do you feel its flow past your legs or feel it washing away the sand from under your feet? Keep in mind, water flowing at one mile per hour.

Assuming piston displacement of injection water to formation water, then the time for injection water to reach SKU 161 is (7,672,440 BW/2000 BWPD/365d) 10.5 years. Thus, the average velocity of fluid flowing over this 10.5 year period of time is 0.00000381 miles per hour or $3.7x10^{-3}$ m^3/s. This essentially implies the water has no real momentum to displace the mud in SKU 161.

Table 2: Fill-Up Volume and Time To Reach SKU 161

Fill-Up Volume and Time for Injection Water to Reach Skelly Unit #161			
Area = r x r x π / 43560 = Ac			
Inj H = 40 ft	R=	1852 Ft	
Por. = 0.1 frac	Area =	247.2428503 Ac	
Vol = 7758xAcxHxPorxSw=		7.672440131 MMBW	
Inj Rate Assume (50 BWPD/Ft) =		2000 BWPD	
Fillup Time = 3836.22 Days =		10.51019196 Yrs	
Avg Fluid Velocity Over 10.5 Yrs =		0.000003810 Mi/Hr	
True Velocity of Water Wen It Reaches Skelly #161 Well Location			

True Velocity of Injection Water When It Reaches SKU 161

The next calculation is to determine the true velocity at the time injection water reaches SKU 161. The same reservoir parameters apply. The true velocity is based on the flow rate through the last one-foot radius (from 1851' to 1852') of flow at 2000 BWPD. **Table 3** below shows all the calculations for this analysis. The last one-foot radial volume over the 40-foot injection interval is 82,860 barrels. At 2000 BWPD, this final volume is injected over a 41.4 day period, or a true velocity of 0.00000019 miles per hour. Even if the cumulative effect of all the parameters used in this estimate were off by a factor of 1,000 the true velocity would still only be 0.00019 miles per hour. The velocity of the water at this location can not displace the mud in SKU 161.

Table 3: True Velocity of Injection Water When It Reaches SKU 161

True Velocity of Water Wen It Reaches Skelly #161 Well Location			
	Inj Rate Assume (50 BWPD/Ft) =	2000 BWPD	
	Circumference= 2 x R x π =	11630.56 Ft	
	X-Sect Area at Skelly #161 =	465222.4 SqFt	
	X-Sect Area at Skelly #161 =	10.68003673 Ac	
	Last 1 Ft Radial Volume to SKU161	0.082855725 MMBW	
	Days to Displace 1 Ft Volume =	41.42786248 Days	
	Avg Velocity at Contact =	0.000000190 Mi/Hr	

Permeability and Pressure Differential Required to Flow Water to SKU 161

It is assumed that any contiguous permeable intervals between the two wells would be in hydrostatic equilibrium, although there is a 250 foot-head of water between the SKU 161 and the lower Dow B. The final calculations determine what reservoir permeability and surface injection pressure (excluding the 250 foot-head) is required to physically flow water from the Dow B to SKU 161. For this calculation, normal radial Darcy flow is used to calculate the surface injection pressure required to flow water to SKU based on assumed average reservoir permeability and vice versa. **Table 4** shows the calculations used in estimating these values.

As shown below, if the average permeability is only 10 Md, it would require a surface injection pressure of 5969 psi. Therefore, if the reservoir permeability is this low, water will never reach SKU 161 as this high an injection pressure would never be approved, as the reservoir would surely fracture at this pressure. Conversely, if the average permeability is 100 Md, then a surface pressure of only 597 psi would be required. It is unlikely that the Wolfcamp in this interval is 100 Md.

More realistically, if the surface injection pressure were 1000 to 2000 psi (and ignoring the 250 feet hydrostatic pressure differential), then an average permeability of 30 Md to 60 Md would be required to reach SKU 161. The 30 md value is probably most realistic and this would imply that injection water could eventually reach SKU 161, if the two zones were correlative. However, at this permeability, the water velocity (based on Darcy flow) at SKU 161 would be 0 miles per hour as this is the boundary flow limit at 2000 psi surface injection pressure.

Table 4: Permeability and Surface Pressures Required to Flow Water to SKU 161

Permeability and Pressure Differential to Flow to Skelly #161					
	Q = 7.07 x 10-3 x Md x H x dP / Visc / ln (re/rw)				
	Q = 2000 BWPD	Visc = 1 Cp			
	rw = 0.4	re = 1852	ln (re/rw	8.44031	
	Solve For		K - Md	dP - psi	
	Q= 2000	H= 40	10	5969	
			100	597	
			60	1000	
			30	2000	

Conclusions

In conclusion, it is possible that injection water can reach SKU 161, but if it does reach the SKU 161 wellbore, it is very unlikely that it can effect the wellbore condition and the injection water will almost positively move around the mud filled annulus, plus the mud has a higher density (higher pressure) and significantly higher viscosity which haven't been taken into account. Furthermore, as indicated by Petroleum Geologist, George Scott, from his studies of regional fracturing in this portion of the Permian Basin based on Formation Micro-Imaged well logging data and orientated post-fracture stimulation gamma tracer logs, the natural and hydraulically-induced fractures in this region trend in a northeast-to-southwest direction, which would further indicate that movement of injected water towards the SKU 161 wellbore is not geologically feasible.

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