Submit 1 Copy To Appropriate District Office
District I – (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II – (575) 748-1283
811 S. First St., Artesia, NM 88210
District III – (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV – (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-103
Revised July 18, 2013

HOBBS OCD
NOV 20 2018
RECEIVED

WELL API NO. 30-025-20567	
5. Indicate Type of Lease STATE ☑ FEE ☐	
6. State Oil & Gas Lease No. B-9188	
SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)	7. Lease Name or Unit Agreement Name Northeast Drinkard Unit [22503]
1. Type of Well: Oil Well ☐ Gas Well ☐ Other Injection	8. Well Number 612
2. Name of Operator Apache Corporation	9. OGRID Number 873
3. Address of Operator 303 Veterans Airpark Lane, Suite 1000 Midland, TX 79705	10. Pool name or Wildcat Eunice; B-T-D, North (22900)
4. Well Location Unit Letter A : 660 feet from the North line and 660 feet from the East line Section 15 Township 21S Range 37E NMPM County Lea	
11. Elevation *(Show whether DR, RKB, RT, GR, etc.)* 3444' GL	

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☑	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☐	COMMENCE DRILLING OPNS. ☐	P AND A ☐
PULL OR ALTER CASING ☐	MULTIPLE COMPL ☐	CASING/CEMENT JOB ☐	
DOWNHOLE COMMINGLE ☐			
CLOSED-LOOP SYSTEM ☐			
OTHER: ☐		OTHER: ☐	

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Apache intends to isolate the Drinkard for injection, per the attached. We are still evaluating which scenario will be the most operational and cost effective.

Spud Date: 11/22/1963 Rig Release Date: 12/10/1963

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Reesa Fisher TITLE Sr. Staff Reg Analyst DATE 11/15/2018

Type or print name Reesa Fisher E-mail address: Reesa.Fisher@apachecorp.com PHONE: (432) 818-1062

For State Use Only

APPROVED BY: TITLE Petroleum Engineer DATE 11/21/18

Conditions of Approval (if any):

NEDU 612W: (API: 30-025-20567)

OBJECTIVE: ISOLATE DRINKARD FOR INJECTION

Scenario 1: Dual Packer Isolation

1. POOH w 2-3/8" injection tubing and 5-1/2" injection packer
2. PU workstring and RIH w bit and clean out well to PBTD at ~6693'.
3. Make casing scraper run to around 6700' (Below Bottom Perf). POOH
4. Run casing inspection log and cement bond log from top of Drinkard to surface. POOH.
5. RIH to perforate Drinkard formation f/ 6500-6650'. POOH.
6. RIH w/ workstring and treating packer to acid stimulate Drinkard formation w/ 5000 gals 15% HCl using rock salt for diversion. POOH.
7. MIRU wireline. RIH w/ 5-1/2" permanent packer and set in good casing between Blinebry and Drinkard (Depth dependent on casing inspection log)
8. PU 700-800' of 2-3/8" IPC externally coated tubing w/ 5-1/2" hydraulic packer on top and tie into permanent packer. Ensure hydraulic packer is at or within 100' of top perf. Pressure up tubing to set hydraulic packer. Test casing to 500 psi.
9. Perform MIT for NMOCD and return well on injection.

Scenario 2: Cement 4" FJ liner from Blinebry to TD

1. POOH w 2-3/8" injection tubing and 5-1/2" injection packer
2. PU workstring and RIH w/ bit and clean out well to PBTD at ~6693'.
3. MIRU cement and casing crew and PU 1500' of 4" casing (including float shoe, float collar, landing collar and liner hanger) using 2-7/8" L-80 workstring.
4. RIH and tag TD. PU and set TOL around 250-300' above top Blinebry perf. Pump spacer followed by 50-100 SX of cement. Flush with fresh water.
5. Release workstring from liner. Reverse circulate to clean hole. POOH
6. If no cement circulated to surface, PU packer and attempt to squeeze liner top or RIH w/ liner packer and sting into tie back tool. Set liner packer and test casing.
7. PU bit and drill out cement to float collar. Pressure test casing. Continue drilling out cement if needed to perforate. POOH.
8. MIRU wireline. Run CBL from PBTD to surface
9. PU wireline guns and perforate Drinkard formation f/6500'-6650'. POOH
10. PU 4" treating packer w/ ~40 jts of 2-3/8" followed by remaining 2-7/8" workstring to surface. Set packer ~100' above top perf and load backside.
11. Acid stimulate Drinkard formation w/ 5000 gals 15% HCl using 1.1 SG ball sealers for diversion. Release packer and knock off balls. POOH.
12. RIH w 4" injection packer and ~6500' of 2-3/8" IPC tubing. Set packer within 20' of top perf. Circulate packer fluid and test backside to 500 psi
13. Perform MIT for NMOCD

Current WBD

Apache

Downhole Well Profile w Cement

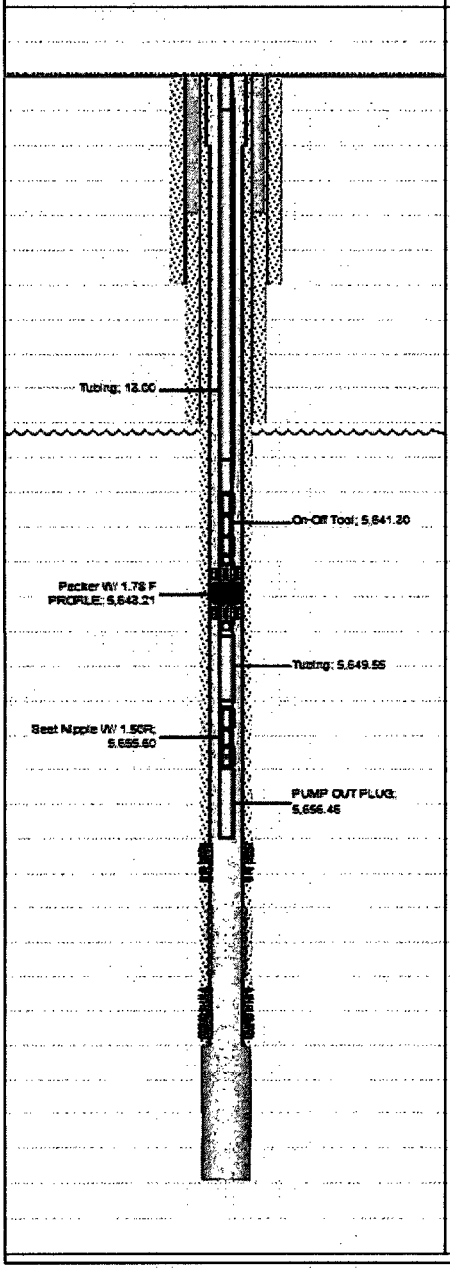
Well Name: NEDU 612W

API/Surface Loc	Surface Legal Location	Field Name	State/Province
3002520567	660' FNL, 660' FEL, Unit A, Sec 15, T-21S, R-37E	Eunice North	New Mexico

Spud Date	Original KB Elevation (ft)	Ground Elevation (ft)	KB-Ground Distance (ft)
11/22/1963	3,456.0	3,443.0	13.0

PBTD (All) (ftKB)	Total Depth (ftKB)	Comment
	6,700.0	

Injection, NE DRINKARD UNIT #612 - Original Hole, 10/18/2018 7:25:20 PM



Casing Strings

Csg Des	OD (in)	Wt/Len (lb/ft)	Grade	Set Depth (ftKB)
Surface	13 3/8	36.00	H-40	342.00
Inter 1	8 5/8	24.00	J-55	3,015.00
Prod 1	5 1/2	17.00	J-55	6,693.00

Cement

String	Description	Top Depth (ftKB)	Bottom Depth (ftKB)	Top Meas Meth	Start Date
Surface, 342.00ftKB, 13 3/8	Surface - 325 sx	13.00	342.00	Returns at Surface	11/24/1963
Inter 1, 3,015.00ftKB, 8 5/8	Intermediate - 935 sx	100.00	3,015.00	Temperture Survey	11/29/1963
Prod 1, 6,693.00ftKB, 5 1/2	Production - 1180 sx	13.00	6,693.00	Returns at Surface	12/11/1963
Prod 1, 6,693.00ftKB, 5 1/2	Csg Leak - 250 sx	6,402.00	6,440.00		12/15/1963

Perforations

Date	Type	Prop?	Top (ftKB)	Btm (ftKB)	Shot Dens (shots/ft)	Entered Shot Total
1/31/1989	Blinebry	No	5,707	5,710	1.0	4
1/31/1989	Blinebry	No	5,714	5,722	0.5	4
1/31/1989	Blinebry	No	5,729	5,731	1.0	3
1/31/1989	Blinebry	No	5,733	5,733	1.0	1
1/31/1989	Blinebry	No	5,760	5,761	1.0	2
1/31/1989	Blinebry	No	5,764	5,766	1.0	3
1/31/1989	Blinebry	No	5,769	5,770	1.0	2
1/31/1989	Blinebry	No	5,776	5,776	1.0	1
1/31/1989	Blinebry	No	5,781	5,783	1.0	3
4/22/1988	Blinebry	No	5,787	5,787	1.0	1
4/22/1988	Blinebry	No	5,789	5,789	1.0	1
4/22/1988	Blinebry	No	5,791	5,791	1.0	1
4/22/1988	Blinebry	No	5,793	5,793	1.0	1
1/1/1964	Blinebry	No	5,795	5,907	2.0	92
4/22/1988	Blinebry	No	5,795	5,795	1.0	1
4/22/1988	Blinebry	No	5,797	5,797	1.0	1
4/22/1988	Blinebry	No	5,805	5,805	1.0	1
4/22/1988	Blinebry	No	5,807	5,807	1.0	1
4/22/1988	Blinebry	No	5,809	5,809	1.0	1
4/22/1988	Blinebry	No	5,813	5,813	1.0	1
4/22/1988	Blinebry	No	5,814	5,814	1.0	1
4/22/1988	Blinebry	No	5,820	5,820	1.0	1
4/22/1988	Blinebry	No	5,821	5,821	1.0	1
4/22/1988	Blinebry	No	5,832	5,832	1.0	1
4/22/1988	Blinebry	No	5,834	5,834	1.0	1
4/22/1988	Blinebry	No	5,836	5,836	1.0	1
4/22/1988	Blinebry	No	5,848	5,848	1.0	1
4/22/1988	Blinebry	No	5,850	5,850	1.0	1
4/22/1988	Blinebry	No	5,855	5,855	1.0	1
4/22/1988	Blinebry	No	5,857	5,857	1.0	1
4/22/1988	Blinebry	No	5,879	5,879	1.0	1
4/22/1988	Blinebry	No	5,881	5,881	1.0	1
4/22/1988	Blinebry	No	5,902	5,902	1.0	1
4/22/1988	Blinebry	No	5,904	5,904	1.0	1
4/22/1988	Blinebry	No	5,913	5,913	1.0	1

Current WBD

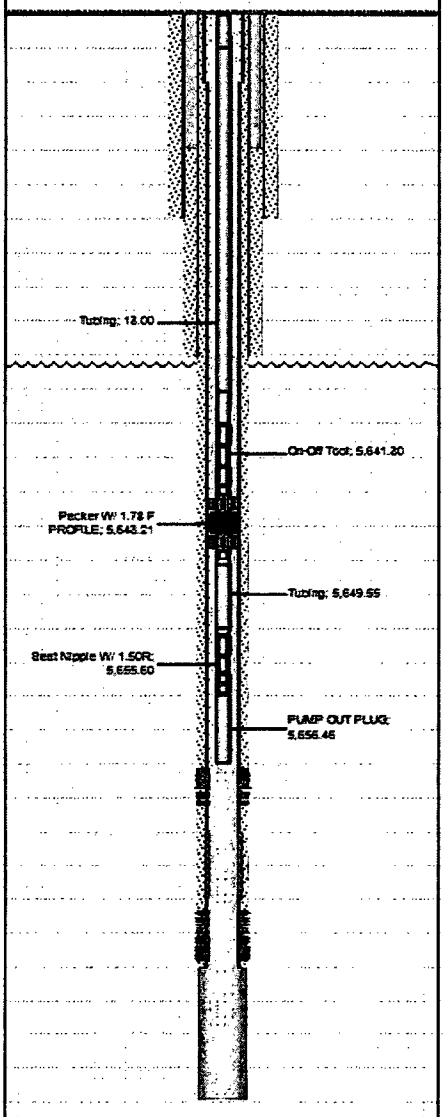
Apache

Downhole Well Profile w Cement

Well Name: NEDU 612W

Injection, NE DRINKARD UNIT #612 - Original Hole, 10/12/2018 7:25:25 PM

Vertical schematic (actual)



incl (°)

Perforations

Date	Type	Prop?	Top (ftKB)	Btm (ftKB)	Shot Dens (shots/ft)	Entered Shot Total
4/22/1988	Blinebry	No	5,914	5,914	1.0	1
4/22/1988	Blinebry	No	5,916	5,916	1.0	1
4/22/1988	Blinebry	No	5,917	5,917	1.0	1
4/22/1988	Blinebry	No	5,918	5,918	1.0	1
4/22/1988	Blinebry	No	5,972	5,972	1.0	1
4/22/1988	Blinebry	No	5,973	5,973	1.0	1
4/22/1988	Blinebry	No	5,977	5,983	1.0	7
4/22/1988	Blinebry	No	5,985	5,989	1.0	4
4/22/1988	Blinebry	No	5,992	5,994	1.0	3
4/22/1988	Blinebry	No	6,000	6,002	1.0	3
1/31/1989	Tubb	No	6,017	6,019	1.0	3
1/31/1989	Tubb	No	6,065	6,066	1.0	2
1/31/1989	Tubb	No	6,070	6,073	1.0	4
1/31/1989	Tubb	No	6,081	6,082	1.0	2
1/31/1989	Tubb	No	6,087	6,097	0.5	5
1/31/1989	Tubb	No	6,100	6,102	1.0	3
4/22/1988	Drinkard	No	6,489	6,489	1.0	1
4/22/1988	Drinkard	No	6,490	6,490	1.0	1
4/22/1988	Drinkard	No	6,491	6,491	1.0	1
4/22/1988	Drinkard	No	6,492	6,492	1.0	1
4/22/1988	Drinkard	No	6,493	6,493	1.0	1
4/22/1988	Drinkard	No	6,507	6,507	1.0	1
4/22/1988	Drinkard	No	6,508	6,508	1.0	1
12/27/1963	Drinkard	No	6,517	6,520	2.0	8
4/22/1988	Drinkard	No	6,518	6,518	1.0	1
4/22/1988	Drinkard	No	6,519	6,519	1.0	1
12/27/1963	Drinkard	No	6,523	6,526	2.0	8
12/27/1963	Drinkard	No	6,536	6,539	2.0	8
4/22/1988	Drinkard	No	6,537	6,537	1.0	1
4/22/1988	Drinkard	No	6,538	6,538	1.0	1
4/22/1988	Drinkard	No	6,549	6,549	1.0	1
4/22/1988	Drinkard	No	6,556	6,559	1.0	4
4/22/1988	Drinkard	No	6,564	6,564	1.0	1
4/22/1988	Drinkard	No	6,566	6,566	1.0	1
4/22/1988	Drinkard	No	6,568	6,568	1.0	1
12/13/1963	Drinkard	No	6,569	6,576	1.0	8
4/22/1988	Drinkard	No	6,580	6,580	1.0	1
4/22/1988	Drinkard	No	6,582	6,582	1.0	1
4/22/1988	Drinkard	No	6,584	6,584	1.0	1
4/22/1988	Drinkard	No	6,587	6,587	1.0	1
4/22/1988	Drinkard	No	6,588	6,588	1.0	1
4/22/1988	Drinkard	No	6,590	6,590	1.0	1
4/22/1988	Drinkard	No	6,592	6,592	1.0	1
4/22/1988	Drinkard	No	6,594	6,594	1.0	1
4/22/1988	Drinkard	No	6,596	6,596	1.0	1
4/22/1988	Drinkard	No	6,598	6,598	1.0	1
4/22/1988	Drinkard	No	6,600	6,600	1.0	1
4/22/1988	Drinkard	No	6,602	6,602	1.0	1
4/22/1988	Drinkard	No	6,604	6,604	1.0	1
4/22/1988	Drinkard	No	6,614	6,614	1.0	1
4/22/1988	Drinkard	No	6,616	6,616	1.0	1
4/22/1988	Drinkard	No	6,618	6,618	1.0	1
4/22/1988	Drinkard	No	6,620	6,620	1.0	1

Current WBD

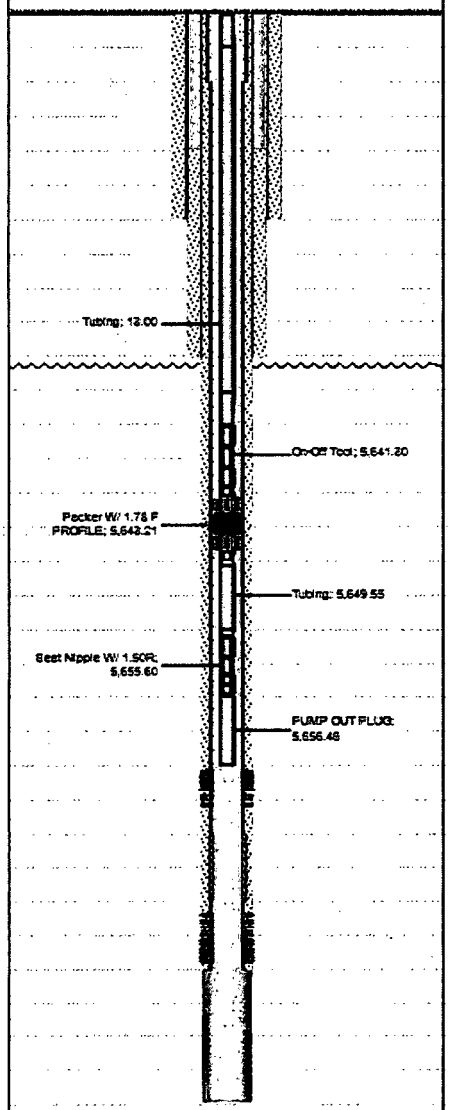
Apache

Downhole Well Profile w Cement

Well Name: NEDU 612W

Injection, NE DRINKARD UNIT #612 - Original Hole, 10/18/2018 7:26:53 PM

Vertical schematic (actual) | Incl (°)



Perforations

Date	Type	Prop?	Top (ftKB)	Btm (ftKB)	Shot Dens (shots/ft)	Entered Shot Total
4/22/1988	Drinkard	No	6,622	6,622	1.0	1
4/22/1988	Drinkard	No	6,624	6,624	1.0	1
4/22/1988	Drinkard	No	6,626	6,626	1.0	1
4/22/1988	Drinkard	No	6,628	6,628	1.0	1
4/22/1988	Drinkard	No	6,630	6,630	1.0	1
4/22/1988	Drinkard	No	6,632	6,632	1.0	1
4/22/1988	Drinkard	No	6,634	6,634	1.0	1
4/22/1988	Drinkard	No	6,636	6,636	1.0	1
4/22/1988	Drinkard	No	6,638	6,638	1.0	1
4/22/1988	Drinkard	No	6,640	6,640	1.0	1
4/22/1988	Drinkard	No	6,642	6,642	1.0	1
4/22/1988	Drinkard	No	6,644	6,644	1.0	1
4/22/1988	Drinkard	No	6,646	6,646	1.0	1
4/22/1988	Drinkard	No	6,648	6,648	1.0	1
4/22/1988	Drinkard	No	6,650	6,650	1.0	1
4/22/1988	Drinkard	No	6,652	6,652	1.0	1
4/22/1988	Drinkard	No	6,654	6,654	1.0	1
4/22/1988	Drinkard	No	6,656	6,656	1.0	1
4/22/1988	Drinkard	No	6,658	6,658	1.0	1
4/22/1988	Drinkard	No	6,660	6,660	1.0	1
4/22/1988	Drinkard	No	6,662	6,662	1.0	1
4/22/1988	Drinkard	No	6,664	6,664	1.0	1
4/22/1988	Drinkard	No	6,666	6,666	1.0	1
4/22/1988	Drinkard	No	6,668	6,668	1.0	1

Proposed Perforations

Date	Type	Prop?	Top (ftKB)	Btm (ftKB)	Shot Dens (shots/ft)	Entered Shot Total

Tubing Strings

Tubing Description	Run Date	String Length (ft)	Set Depth (ftKB)
Tubing - Injection	2/4/1989	5,650.00	5,663.0

Item Des	Jts	Make	Model	OD (in)	Wt (lb/ft)	Grade	Len (ft)
Tubing	200		1505 IPC - NonUpset	2 3/8	4.70	J-55	5,628.30
On-Off Tool	1			2 3/8			1.91
Packer W/ 1.78 F PROFILE	1			2 3/8			6.34
Tubing	1		101 Nylon - NonUpset	2 3/8	4.70	J-55	6.05
Seat Nipple W/ 1.50R	1			2 3/8	5.10	SS	0.86
PUMP OUT PLUG	1		TK-99	2 3/8			6.54

Rod Strings

Rod Description	Run Date	String Length (ft)	Set Depth (ftKB)

Item Des	Jts	Make	Model	OD (in)	Wt (lb/ft)	Grade	Len (ft)

Other In Hole

Description	OD (in)	Top (ftKB)	Run Date

Plug Back Total Depths

Date	Type	Depth (ftKB)	Depth (TVD) (ftKB)

Comments

Comment

12/15/1963: perf 6569-6576' w/ 1 JSPF - perf 6517-6539' - az w/ 500 gal 15% NE acid - sqz leak @ 6402-6440' w/ 250 sx cmt - reperf 6517-6539' w/ 2 JSPF - frac w/ 185 BO w/ sand + 171 BFD + 12 BAW + 45000# 20/40 sand - az w/ 1500 gal 15% NE acid

Current WBD

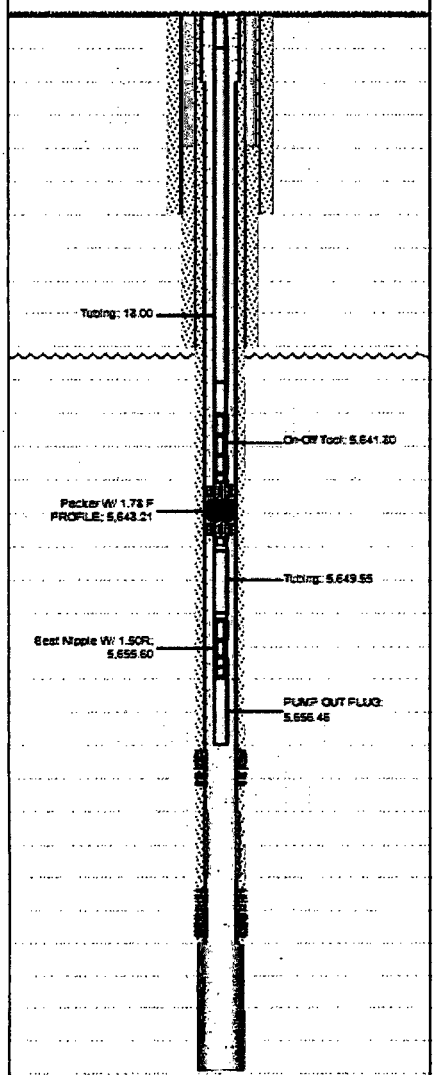
Apache

Downhole Well Profile w Cement

Well Name: NEDU 612W

Injection, NE DRINKARD UNIT #612 - Original Hole, 10/18/2018 7:27:50 PM

Vertical schematic (actual) | Incl (°)



Comments

Comment
2/12/1964: perf Blinebry 5795-5907' w/ 2 JSPF - az Drinkard w/ 2500 gal NE acid + 76,410 gal lease crude

Comment
4/4/1988: perf Blinebry 5787-6002' w/ 1 JSPF & Drinkard 6489-6668' - az perfs 6489-6668' w/ 6300 gal 15% NEFE acid + 750# RS - az perfs 5972-6002' w/ 1680 gal 15% NEFE acid - communicated w/ upper perfs - az perfs 5787-6002' w/ 2940 gal 15% NEFE acid + 1000# RS

Comment
1/30/1989: convert to WIW - perf Blinebry & Tubb 5707-6102' w/ 1 JSPF (33 holes) - perf 5714-6097' w/ 1 JSP2F (11 holes) - spot 275 gal 15% HCL - az Drinkard w/ 2100 gal acid - spot 275 gal 15% HCL - az Blinebry w/ 2100 gal acid

Scenario 1: Dual Packer Proposed WBD ([redacted])

Proposed

Apache

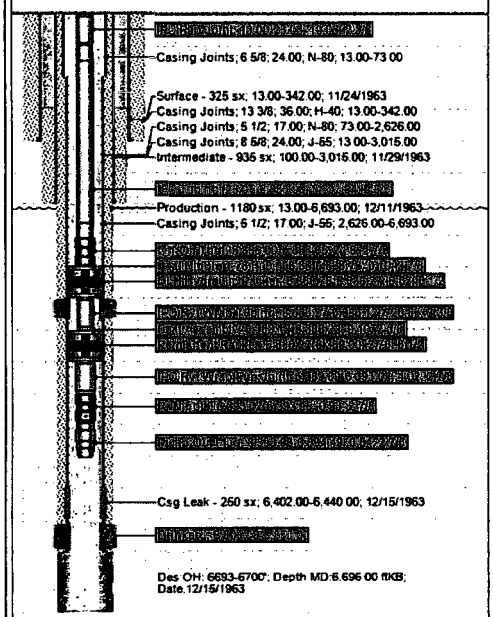
Well Name: NEDU 612W

Legal Well Name	Common Well Name	API/Surface Loc
NORTHEAST DRINKARD UNIT 612W	NEDU 612W	3002520667

Ground Elevation (ft)	Original KB Elevation (ft)	Surface Legal Location	Field (Afi) (bbl)	Total Depth (ftKB)
3,443.0	3,456.0	680' FNL, 660' FEL, Unit A, Sec 15, T-21S, R-37E	[redacted]	6,700.0

Injection, NE DRINKARD UNIT #612 - Original Hole, 10/23/2018 10:58:36 AM

Vertical schematic (proposed)



Current Wellbore Sections

Section Des	Size (in)	Act Top (ftKB)	Act Btm (ftKB)	Start Date
Surface	17 1/2	13.0	342.0	11/22/1963
Inter 1	12 1/4	342.0	3,015.0	11/25/1963
Prod 1	7 7/8	3,015.0	6,700.0	11/30/1963

Casing Strings

Casing Description	String Nominal OD (in)	Weight/Length (lb/ft)	String Grade	Set Depth (ftKB)
Surface	13 3/8	36.00	H-40	342.00
Inter 1	8 5/8	24.00	J-55	3,015.00
Prod 1	5 1/2	17.00	J-55	6,693.00

Proposed Casing Strings

Casing Description	String Nominal OD (in)	Weight/Length (lb/ft)	String Grade	Set Depth (ftKB)

Existing Cement

String	Des	Top (ftKB)	Btm (ftKB)	Top Meas Meth
Surface, 342.00ftKB, 13 3/8	Primary Cement	13.00	342.00	Returns at Surface
Inter 1, 3,015.00ftKB, 8 5/8	Primary Cement	100.00	3,015.00	Temperture Survey
Prod 1, 6,693.00ftKB, 5 1/2	Primary Cement	13.00	6,693.00	Returns at Surface
Prod 1, 6,693.00ftKB, 5 1/2	Cement Squeeze	6,402.00	6,440.00	

Proposed Tubing String

Tubing Description		Set Depth (ftKB)	
Tubing - Injection		6,394.5	
Item Description	Length (ft)	OD Nominal (in)	Joints
IPC Pup Joint	10.06	2 3/8	1
IPC Tubing	5,632.94	2 3/8	174
On-Off Tool	2.65	2 7/8	1
Seal Nipple 1.78 F	0.10	2 7/8	1
DLH Hydraulic Packer	6.52	5 1/2	1
IPC Ryt Wrap Tubing	720.86	2 3/8	22
Seal Assembly	0.10	2 3/8	1
Permanent Packer	2.78	5 1/2	1
IPC Ryt Wrap Pup Joint	4.02	2 7/8	1
R Nipple	0.93	2 7/8	1

Scenario 1: Dual Packer Proposed WBD ([redacted])

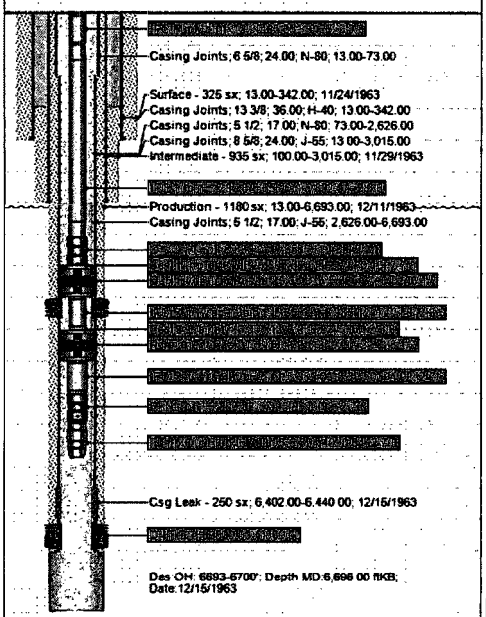
Proposed

Apache

Well Name: NEDU 612W

Injection, NE DRINKARD UNIT #612 - Original Hole, 10/23/2018 10:58:52 AM

Vertical schematic (proposed)



Item Description	Length (ft)	OD Nominal (in)	Joints
Pump Out Plug	0.54	2 7/8	1

Existing Perforations

Type	Top Depth (ftKB)	Bottom Depth (ftKB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,707	5,710	1.0	4
Blinebry	5,714	5,722	0.5	4
Blinebry	5,729	5,731	1.0	3
Blinebry	5,733	5,733	1.0	1
Blinebry	5,760	5,761	1.0	2
Blinebry	5,764	5,766	1.0	3
Blinebry	5,769	5,770	1.0	2
Blinebry	5,776	5,776	1.0	1
Blinebry	5,781	5,783	1.0	3
Blinebry	5,787	5,787	1.0	1
Blinebry	5,789	5,789	1.0	1
Blinebry	5,791	5,791	1.0	1
Blinebry	5,793	5,793	1.0	1
Blinebry	5,795	5,907	2.0	92
Blinebry	5,795	5,795	1.0	1
Blinebry	5,797	5,797	1.0	1
Blinebry	5,805	5,805	1.0	1
Blinebry	5,807	5,807	1.0	1
Blinebry	5,809	5,809	1.0	1
Blinebry	5,813	5,813	1.0	1
Blinebry	5,814	5,814	1.0	1
Blinebry	5,820	5,820	1.0	1
Blinebry	5,821	5,821	1.0	1
Blinebry	5,832	5,832	1.0	1

Scenario 1: Dual Packer Proposed WBD ([redacted])

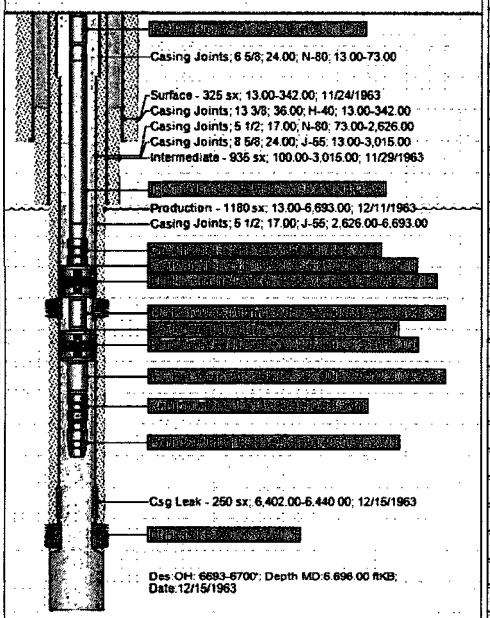
Proposed

Apache

Well Name: NEDU 612W

Injection, NE DRINKARD UNIT #612 - Original Hole, 10/23/2018 10:58:59 AM

Vertical schematic (proposed)



Existing Perforations

Type	Top Depth (ftKB)	Bottom Depth (ftKB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,834	5,834	1.0	1
Blinebry	5,836	5,836	1.0	1
Blinebry	5,848	5,848	1.0	1
Blinebry	5,850	5,850	1.0	1
Blinebry	5,855	5,855	1.0	1
Blinebry	5,857	5,857	1.0	1
Blinebry	5,879	5,879	1.0	1
Blinebry	5,881	5,881	1.0	1
Blinebry	5,902	5,902	1.0	1
Blinebry	5,904	5,904	1.0	1
Blinebry	5,913	5,913	1.0	1
Blinebry	5,914	5,914	1.0	1
Blinebry	5,916	5,916	1.0	1
Blinebry	5,917	5,917	1.0	1
Blinebry	5,918	5,918	1.0	1
Blinebry	5,972	5,972	1.0	1
Blinebry	5,973	5,973	1.0	1
Blinebry	5,977	5,983	1.0	7
Blinebry	5,985	5,989	1.0	4
Blinebry	5,992	5,994	1.0	3
Blinebry	6,000	6,002	1.0	3
Tubb	6,017	6,019	1.0	3
Tubb	6,065	6,066	1.0	2
Tubb	6,070	6,073	1.0	4
Tubb	6,081	6,082	1.0	2

Scenario 1: Dual Packer Proposed WBD ([redacted])

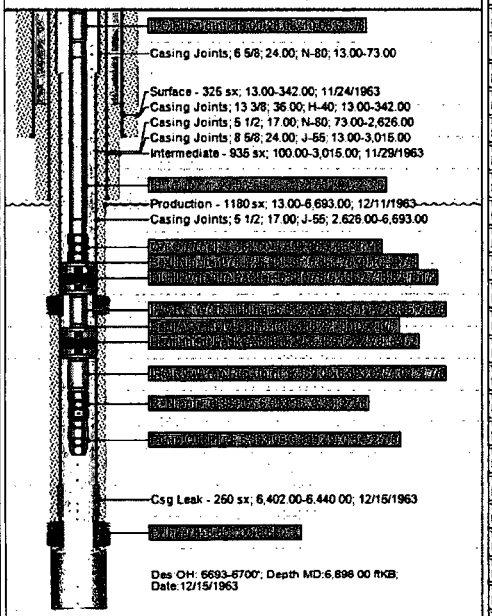
Proposed

Apache

Well Name: NEDU 612W

Injection, NE DRINKARD UNIT #612 - Original Hole, 10/23/2018 10:59:06 AM

Vertical schematic (proposed)



Existing Perforations

Type	Top Depth (ftKB)	Bottom Depth (ftKB)	Shot Density (shots/ft)	Entered Shot Total
Tubb	6,087	6,097	0.5	5
Tubb	6,100	6,102	1.0	3
Drinkard	6,489	6,489	1.0	1
Drinkard	6,490	6,490	1.0	1
Drinkard	6,491	6,491	1.0	1
Drinkard	6,492	6,492	1.0	1
Drinkard	6,493	6,493	1.0	1
Drinkard	6,507	6,507	1.0	1
Drinkard	6,508	6,508	1.0	1
Drinkard	6,517	6,520	2.0	8
Drinkard	6,518	6,518	1.0	1
Drinkard	6,519	6,519	1.0	1
Drinkard	6,523	6,526	2.0	8
Drinkard	6,536	6,539	2.0	8
Drinkard	6,537	6,537	1.0	1
Drinkard	6,538	6,538	1.0	1
Drinkard	6,549	6,549	1.0	1
Drinkard	6,556	6,559	1.0	4
Drinkard	6,564	6,564	1.0	1
Drinkard	6,566	6,566	1.0	1
Drinkard	6,568	6,568	1.0	1
Drinkard	6,569	6,576	1.0	8
Drinkard	6,580	6,580	1.0	1
Drinkard	6,582	6,582	1.0	1
Drinkard	6,584	6,584	1.0	1

Scenario 1: Dual Packer Proposed WBD ([redacted])

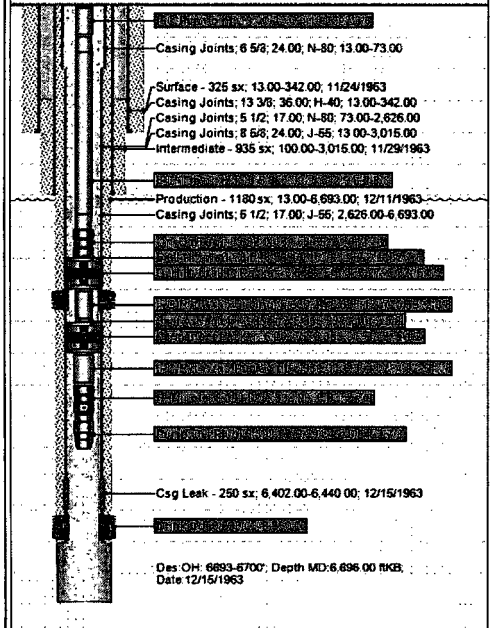
Proposed

Apache

Well Name: NEDU 612W

Injection, NE DRINKARD UNIT #612 - Original Hole, 10/23/2018 10:59:13 AM

Vertical schematic (proposed)



Existing Perforations

Type	Top Depth (ftKB)	Bottom Depth (ftKB)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,587	6,587	1.0	1
Drinkard	6,588	6,588	1.0	1
Drinkard	6,590	6,590	1.0	1
Drinkard	6,592	6,592	1.0	1
Drinkard	6,594	6,594	1.0	1
Drinkard	6,596	6,596	1.0	1
Drinkard	6,598	6,598	1.0	1
Drinkard	6,600	6,600	1.0	1
Drinkard	6,602	6,602	1.0	1
Drinkard	6,604	6,604	1.0	1
Drinkard	6,614	6,614	1.0	1
Drinkard	6,616	6,616	1.0	1
Drinkard	6,618	6,618	1.0	1
Drinkard	6,620	6,620	1.0	1
Drinkard	6,622	6,622	1.0	1
Drinkard	6,624	6,624	1.0	1
Drinkard	6,626	6,626	1.0	1
Drinkard	6,628	6,628	1.0	1
Drinkard	6,630	6,630	1.0	1
Drinkard	6,632	6,632	1.0	1
Drinkard	6,634	6,634	1.0	1
Drinkard	6,636	6,636	1.0	1
Drinkard	6,638	6,638	1.0	1
Drinkard	6,640	6,640	1.0	1
Drinkard	6,642	6,642	1.0	1

Scenario 1: Dual Packer Proposed WBD ([redacted])

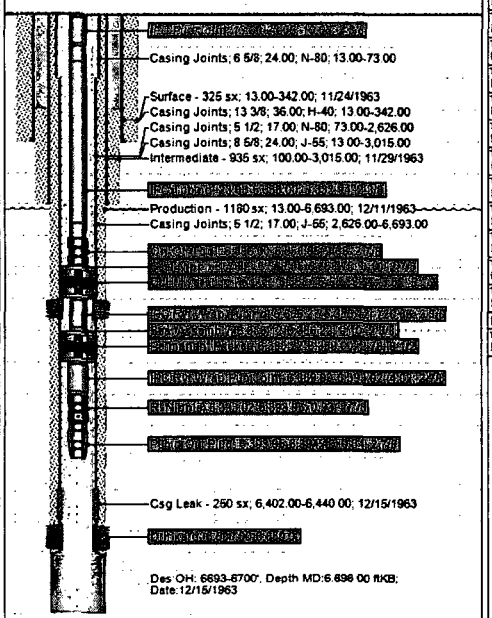
Proposed

Apache

Well Name: NEDU 612W

Injection, NE DRINKARD UNIT #612 - Original Hole, 10/23/2018 10:59:20 AM

Vertical schematic (proposed)



Existing Perforations

Type	Top Depth (ftKB)	Bottom Depth (ftKB)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,644	6,644	1.0	1
Drinkard	6,646	6,646	1.0	1
Drinkard	6,648	6,648	1.0	1
Drinkard	6,650	6,650	1.0	1
Drinkard	6,652	6,652	1.0	1
Drinkard	6,654	6,654	1.0	1
Drinkard	6,656	6,656	1.0	1
Drinkard	6,658	6,658	1.0	1
Drinkard	6,660	6,660	1.0	1
Drinkard	6,662	6,662	1.0	1
Drinkard	6,664	6,664	1.0	1
Drinkard	6,666	6,666	1.0	1
Drinkard	6,668	6,668	1.0	1

Proposed Perforations

Type	Top Depth (ftKB)	Bottom Depth (ftKB)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,500	6,650	2.0	150

Scenario 2: FJ Liner Proposed WBD ([redacted])

Proposed

Apache

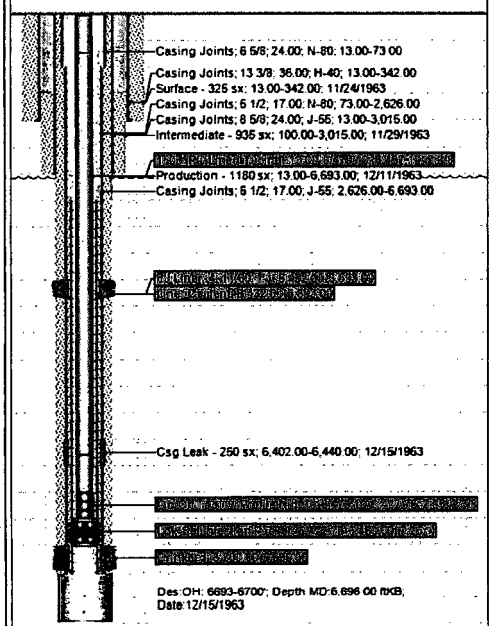
Well Name: NEDU 612W

Legal Well Name	Common Well Name	API/Surface Loc
NORTHEAST DRINKARD UNIT 612W	NEDU 612W	3002520567

Ground Elevation (ft)	Original KB Elevation (ft)	Surface Legal Location	Spud (All) (ftKB)	Total Depth (ftKB)
3,443.0	3,456.0	660' FNL, 660' FEL, Unit A, Sec 15, T-21S, R-37E	[redacted]	6,700.0

Injection, NE DRINKARD UNIT #612 - Original Hole, 10/23/2018 11:09:10 AM

Vertical schematic (proposed)



Current Wellbore Sections

Section Des	Size (in)	Act Top (ftKB)	Act Btm (ftKB)	Start Date
Surface	17 1/2	13.0	342.0	11/22/1963
Inter 1	12 1/4	342.0	3,015.0	11/26/1963
Prod 1	7 7/8	3,015.0	6,700.0	11/30/1963

Casing Strings

Casing Description	String Nominal OD (in)	Weight/Length (lb/ft)	String Grade	Set Depth (ftKB)
Surface	13 3/8	36.00	H-40	342.00
Inter 1	8 5/8	24.00	J-55	3,015.00
Prod 1	5 1/2	17.00	J-55	6,693.00

Proposed Casing Strings

Casing Description	String Nominal OD (in)	Weight/Length (lb/ft)	String Grade	Set Depth (ftKB)
Prod Lnr 1	4	11.60	FJ	6,693.00

Existing Cement

String	Des	Top (ftKB)	Btm (ftKB)	Top Meas Meth
Surface, 342.00ftKB, 13 3/8	Primary Cement	13.00	342.00	Returns at Surface
Inter 1, 3,015.00ftKB, 8 5/8	Primary Cement	100.00	3,015.00	Temperture Survey
Prod 1, 6,693.00ftKB, 5 1/2	Primary Cement	13.00	6,693.00	Returns at Surface
Prod 1, 6,693.00ftKB, 5 1/2	Cement Squeeze	6,402.00	6,440.00	

Proposed Cement

String	Description	Top Depth (ftKB)	Bottom Depth (ftKB)	Top Measurement Method
Prod Lnr 1, 6,693.00ftKB, 4	Primary Liner Cement	5,432.00	6,693.00	Returns at Surface

Proposed Tubing String

Tubing Description		Set Depth (ftKB)	
Tubing - Injection		6,394.5	
Item Description	**Length (ft)**	**OD Nominal (in)**	**Joints**
IPC Pup Joint	10.06	2 3/8	1
IPC Tubing	5,632.94	2 3/8	174
On-Off Tool	2.65	2 7/8	1
Seal Nipple 1.78 F	0.10	2 7/8	1
DLH Hydraulic Packer	6.52	5 1/2	1
IPC Ryt Wrap Tubing	720.85	2 3/8	22
Seal Assembly	0.10	2 3/8	1
Permanent Packer	2.78	5 1/2	1

Scenario 2: FJ Liner Proposed WBD ([redacted])

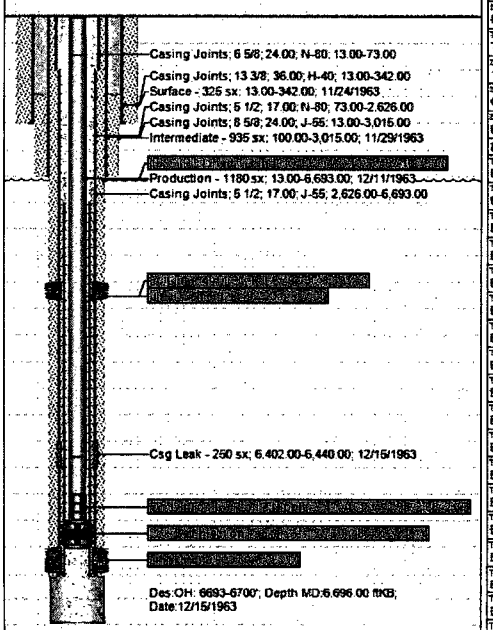
Proposed

Apache

Well Name: NEDU 612W

Injection, NE DRINKARD UNIT #612 - Original Hole, 10/23/2018 11:09:29 AM

Vertical schematic (proposed)



Item Description	Length (ft)	OD Nominal (in)	Joints
IPC Ryt Wrap Pup Joint	4.02	2 7/8	1
R Nipple	0.93	2 7/8	1
Pump Out Plug	0.64	2 7/8	1

Tubing Description	Set Depth (ftKB)
Tubing - Injection	6,480.0

Item Description	Length (ft)	OD Nominal (in)	Joints
1505 IPC Lined Tubing	6,457.10	2 3/8	200
On/Off Tool w/ Profile Nipple	2.66	2 3/8	1
Lok-Set Injection Packer	7.25	4	1

Existing Perforations

Type	Top Depth (ftKB)	Bottom Depth (ftKB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,707	5,710	1.0	4
Blinebry	5,714	5,722	0.5	4
Blinebry	5,729	5,731	1.0	3
Blinebry	5,733	5,733	1.0	1
Blinebry	5,760	5,761	1.0	2
Blinebry	5,764	5,766	1.0	3
Blinebry	5,769	5,770	1.0	2
Blinebry	5,776	5,776	1.0	1
Blinebry	6,781	5,783	1.0	3
Blinebry	5,787	5,787	1.0	1
Blinebry	5,789	5,789	1.0	1
Blinebry	5,791	5,791	1.0	1
Blinebry	5,793	5,793	1.0	1
Blinebry	5,795	5,907	2.0	92
Blinebry	5,795	5,795	1.0	1
Blinebry	5,797	5,797	1.0	1
Blinebry	5,805	5,805	1.0	1
Blinebry	5,807	5,807	1.0	1

Scenario 2: FJ Liner Proposed WBD ([redacted])

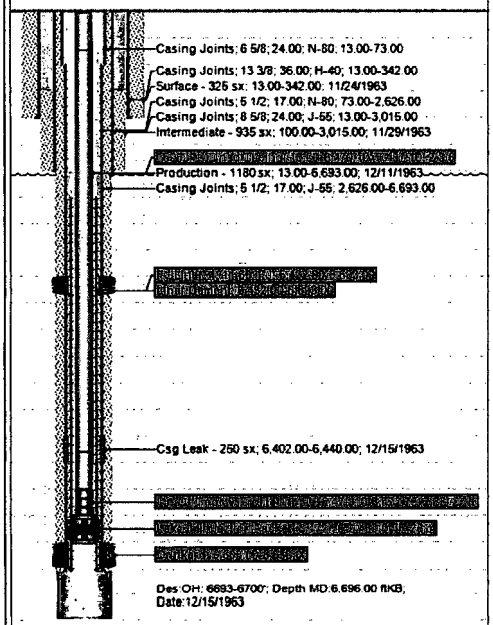
Proposed

Apache

Well Name: NEDU 612W

Injection, NE DRINKARD UNIT #612 - Original Hole, 10/23/2018 11:09:35 AM

Vertical schematic (proposed)



Existing Perforations

Type	Top Depth (ftKB)	Bottom Depth (ftKB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,809	5,809	1.0	1
Blinebry	5,813	5,813	1.0	1
Blinebry	5,814	5,814	1.0	1
Blinebry	5,820	5,820	1.0	1
Blinebry	5,821	5,821	1.0	1
Blinebry	5,832	5,832	1.0	1
Blinebry	5,834	5,834	1.0	1
Blinebry	5,836	5,836	1.0	1
Blinebry	5,848	5,848	1.0	1
Blinebry	5,850	5,850	1.0	1
Blinebry	5,855	5,855	1.0	1
Blinebry	5,857	5,857	1.0	1
Blinebry	5,879	5,879	1.0	1
Blinebry	5,881	5,881	1.0	1
Blinebry	5,902	5,902	1.0	1
Blinebry	5,904	5,904	1.0	1
Blinebry	5,913	5,913	1.0	1
Blinebry	5,914	5,914	1.0	1
Blinebry	5,916	5,916	1.0	1
Blinebry	5,917	5,917	1.0	1
Blinebry	5,918	5,918	1.0	1
Blinebry	5,972	5,972	1.0	1
Blinebry	5,973	5,973	1.0	1
Blinebry	5,977	5,983	1.0	7
Blinebry	5,985	6,989	1.0	4

Scenario 2: FJ Liner Proposed WBD ([redacted])

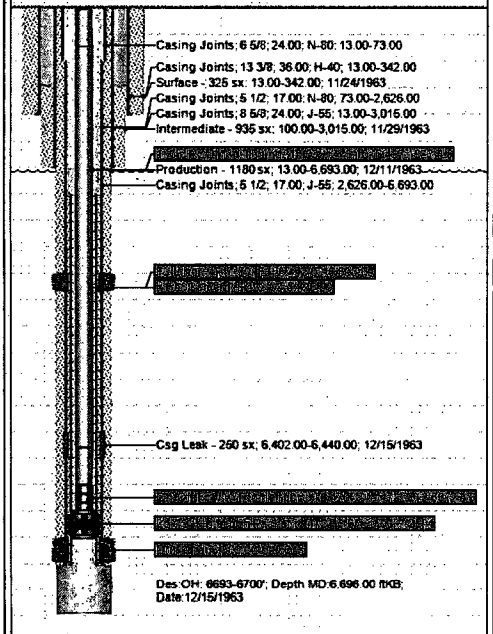
Proposed

Apache

Well Name: NEDU 612W

Injection, NE DRINKARD UNIT #612 - Original Hole, 10/23/2018 11:09:42 AM

Vertical schematic (proposed)



Existing Perforations

Type	Top Depth (ftKB)	Bottom Depth (ftKB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,992	5,994	1.0	3
Blinebry	6,000	6,002	1.0	3
Tubb	6,017	6,019	1.0	3
Tubb	6,065	6,066	1.0	2
Tubb	6,070	6,073	1.0	4
Tubb	6,081	6,082	1.0	2
Tubb	6,087	6,097	0.5	5
Tubb	6,100	6,102	1.0	3
Drinkard	6,489	6,489	1.0	1
Drinkard	6,490	6,490	1.0	1
Drinkard	6,491	6,491	1.0	1
Drinkard	6,492	6,492	1.0	1
Drinkard	6,493	6,493	1.0	1
Drinkard	6,507	6,507	1.0	1
Drinkard	6,508	6,508	1.0	1
Drinkard	6,517	6,520	2.0	8
Drinkard	6,518	6,518	1.0	1
Drinkard	6,519	6,519	1.0	1
Drinkard	6,523	6,526	2.0	8
Drinkard	6,536	6,539	2.0	8
Drinkard	6,537	6,537	1.0	1
Drinkard	6,538	6,538	1.0	1
Drinkard	6,549	6,549	1.0	1
Drinkard	6,556	6,559	1.0	4
Drinkard	6,564	6,564	1.0	1

Scenario 2: FJ Liner Proposed WBD ([redacted])

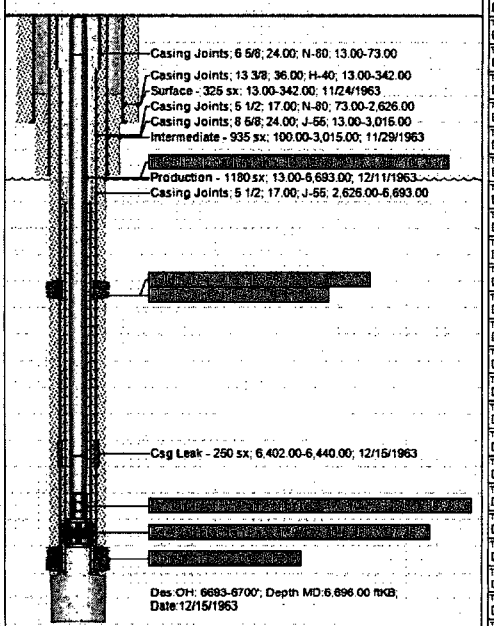
Proposed

Apache

Well Name: NEDU 612W

Injection, NE DRINKARD UNIT #612 - Original Hole, 10/23/2018 11:09:48 AM

Vertical schematic (proposed)



Existing Perforations

Type	Top Depth (ftKB)	Bottom Depth (ftKB)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,566	6,566	1.0	1
Drinkard	6,568	6,568	1.0	1
Drinkard	6,569	6,576	1.0	8
Drinkard	6,580	6,580	1.0	1
Drinkard	6,582	6,582	1.0	1
Drinkard	6,584	6,584	1.0	1
Drinkard	6,587	6,587	1.0	1
Drinkard	6,588	6,588	1.0	1
Drinkard	6,590	6,590	1.0	1
Drinkard	6,592	6,592	1.0	1
Drinkard	6,594	6,594	1.0	1
Drinkard	6,596	6,596	1.0	1
Drinkard	6,598	6,598	1.0	1
Drinkard	6,600	6,600	1.0	1
Drinkard	6,602	6,602	1.0	1
Drinkard	6,604	6,604	1.0	1
Drinkard	6,614	6,614	1.0	1
Drinkard	6,616	6,616	1.0	1
Drinkard	6,618	6,618	1.0	1
Drinkard	6,620	6,620	1.0	1
Drinkard	6,622	6,622	1.0	1
Drinkard	6,624	6,624	1.0	1
Drinkard	6,626	6,626	1.0	1
Drinkard	6,628	6,628	1.0	1
Drinkard	6,630	6,630	1.0	1

Scenario 2: FJ Liner Proposed WBD ([redacted])

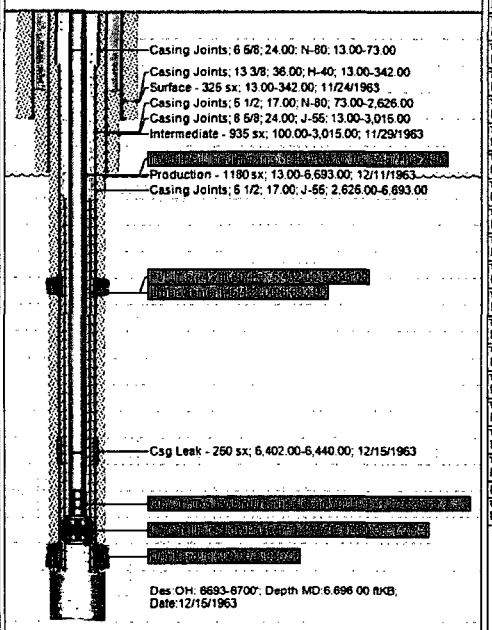
Proposed

Apache

Well Name: NEDU 612W

Injection, NE DRINKARD UNIT #612 - Original Hole, 10/23/2018 11:09:54 AM

Vertical schematic (proposed)



Existing Perforations

Type	Top Depth (ftKB)	Bottom Depth (ftKB)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,632	6,632	1.0	1
Drinkard	6,634	6,634	1.0	1
Drinkard	6,636	6,636	1.0	1
Drinkard	6,638	6,638	1.0	1
Drinkard	6,640	6,640	1.0	1
Drinkard	6,642	6,642	1.0	1
Drinkard	6,644	6,644	1.0	1
Drinkard	6,646	6,646	1.0	1
Drinkard	6,648	6,648	1.0	1
Drinkard	6,650	6,650	1.0	1
Drinkard	6,652	6,652	1.0	1
Drinkard	6,654	6,654	1.0	1
Drinkard	6,656	6,656	1.0	1
Drinkard	6,658	6,658	1.0	1
Drinkard	6,660	6,660	1.0	1
Drinkard	6,662	6,662	1.0	1
Drinkard	6,664	6,664	1.0	1
Drinkard	6,666	6,666	1.0	1
Drinkard	6,668	6,668	1.0	1

Proposed Perforations

Type	Top Depth (ftKB)	Bottom Depth (ftKB)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,500	6,650	2.0	150