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

HOBBS OCD
NOV 20 2018
RECEIVED

Form C-103
Revised July 18, 2013

WELL API NO. 30-025-06532	
5. Indicate Type of Lease STATE ☐ FEE ☑	
6. State Oil & Gas Lease No.	
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 (NEDU) / 22503
1. Type of Well: Oil Well ☐ Gas Well ☐ Other Injection	8. Well Number 511
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 M : 660 feet from the South line and 660 feet from the West line Section 11 Township 21S Range 37E NMPM County Lea	
	11. Elevation *(Show whether DR, RKB, RT, GR, etc.)* 3423' 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: 7/15/1950 Rig Release Date: 8/24/1950

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 511W: (API: 30-025-06532)

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 6690'.
3. Make casing scraper run to around 6650' (Proposed bottom perf). POOH.
4. Run casing inspection log and cement bond log from top of Drinkard to surface. POOH.
5. RIH w/ wireline and perforate Drinkard formation f/ 6550'-6650' (actual depths TBD). 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 place 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 6690'. POOH.
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. 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 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/6550'—6650' (Depths TBD). 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

Downhole Well Profile w Cement

Well Name: NEDU 511W

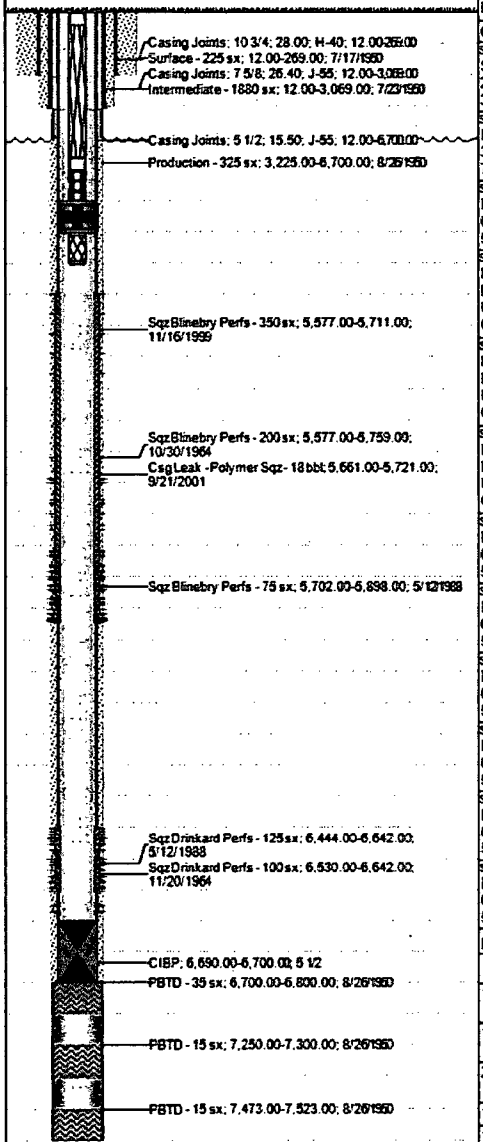
API/Surface Loc	Surface Legal Location	Field Name	State/Province
3002506532	660' FSL, 660' FWL, Unit M, Sec 11, T-21S, R-37E	Eunice (North) Btd	New Mexico

Spud Date	Original KB Elevation (ft)	Ground Elevation (ft)	KB-Ground Distance (ft)
7/15/1950	3,424.0	3,412.0	12.0

PBTD (All) (ftKB)	Total Depth (ftKB)	Comment
Original Hole - 6,592	7,623.0	

Injection, NORTHEAST DRINKARD UNIT 511 - Original Hole, 10/25/2018 10:05 PM

Vertical schematic (proposed)



Casing Strings

Csg Des	OD (in)	ID (in)	Wt/Len (lb/ft)	Grade	Set Depth (ftKB)
Surface	10 3/4	10.25	28.00	H-40	269.00
Inter 1	7 5/8	6.97	26.40	J-55	3,069.00
Prod 1	5 1/2	4.95	15.50	J-55	6,700.00

Cement

String	Description	Top Depth (ftKB)	Bottom Depth (ftKB)	Top Meas Meth	Start Date
Surface, 269.00ftKB, 10 3/4	Surface - 225 sx	12.00	269.00	Returns at Surface	7/17/1950
Inter 1, 3,069.00ftKB, 7 5/8	Intermediate - 1880 sx	12.00	3,069.00	Returns at Surface	7/23/1950
Prod 1, 6,700.00ftKB, 5 1/2	Production - 325 sx	3,225.00	6,700.00	Temperture Survey	8/26/1950
NORTHEAST DRINKARD UNIT 511 - Original Hole	PBTD - 15 sx	7,473.00	7,523.00		8/26/1950
NORTHEAST DRINKARD UNIT 511 - Original Hole	PBTD - 15 sx	7,250.00	7,300.00		8/26/1950
NORTHEAST DRINKARD UNIT 511 - Original Hole	PBTD - 35 sx	6,700.00	6,800.00		8/26/1950
Prod 1, 6,700.00ftKB, 5 1/2	Sqz Blinebry Perfs - 200 sx	5,577.00	5,759.00		10/30/1964
Prod 1, 6,700.00ftKB, 5 1/2	Sqz Drinkard Perfs - 100 sx	6,530.00	6,642.00		11/20/1964
Prod 1, 6,700.00ftKB, 5 1/2	Sqz Drinkard Perfs - 125 sx	6,444.00	6,642.00		5/12/1988
Prod 1, 6,700.00ftKB, 5 1/2	Sqz Blinebry Perfs - 75 sx	5,702.00	5,898.00		5/12/1988
Prod 1, 6,700.00ftKB, 5 1/2	Sqz Blinebry Perfs - 350 sx	5,577.00	5,711.00		11/16/1999
Prod 1, 6,700.00ftKB, 5 1/2	Csg Leak - Polymer Sqz - 18 bbl	5,661.00	5,721.00		9/21/2001

Perforations

Date	Type	Prop?	Top (ftKB)	Btm (ftKB)	Shot Dens (shots/ft)	Entered Shot Total
10/9/1956	Blinebry Sqz'd	No	5,577	5,647	2.0	140
10/9/1956	Blinebry Sqz'd	No	5,668	5,715	2.0	94
2/22/1989	Blinebry Sqz'd	No	5,696	5,697	1.0	1
11/22/1999	Blinebry	No	5,696	5,716	2.0	42
11/16/1964	Blinebry Sqz'd	No	5,702	5,702	1.0	1

Current WBD

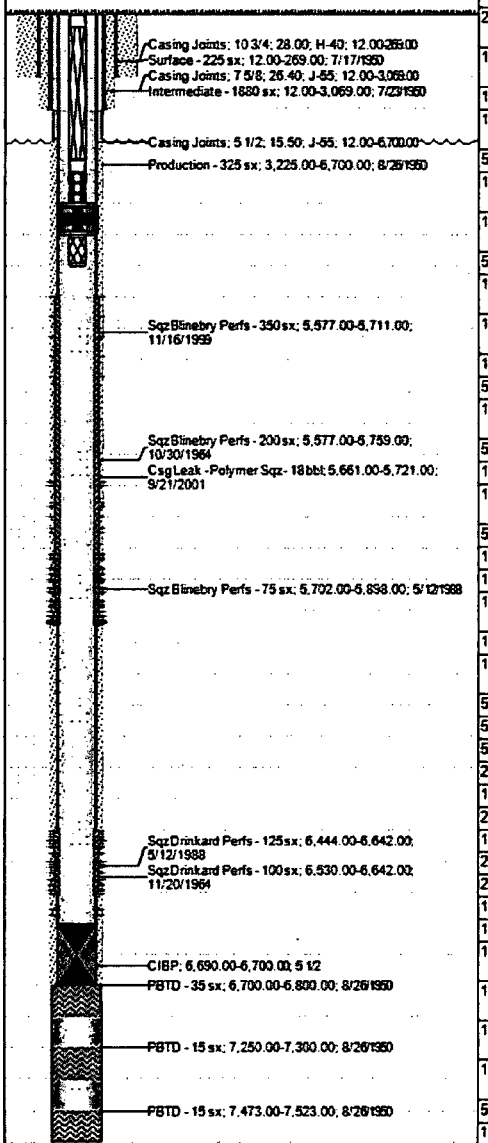
Apache

Downhole Well Profile w Cement

Well Name: NEDU 511W

Injection, NORTHEAST DRINKARD UNIT 511 - Original Hole, 10/25/2018 1:01:09 PM

Vertical schematic (proposed)



Perforations

Date	Type	Prop?	Top (ftKB)	Btm (ftKB)	Shot Dens (shots/ft)	Entered Shot Total
2/22/1989	Blinebry Sqz'd	No	5,702	5,703	1.0	2
2/22/1989	Blinebry Sqz'd	No	5,707	5,708	1.0	2
11/16/1964	Blinebry Sqz'd	No	5,711	5,711	1.0	1
11/22/1999	Blinebry	No	5,728	5,764	2.0	74
10/9/1956	Blinebry Sqz'd	No	5,730	5,759	2.0	58
5/18/1988	Blinebry	No	5,733	5,747	0.5	7
11/16/1964	Blinebry Sqz'd	No	5,735	5,735	1.0	1
11/16/1964	Blinebry Sqz'd	No	5,745	5,745	1.0	1
5/18/1988	Blinebry	No	5,751	5,769	0.5	9
11/16/1964	Blinebry Sqz'd	No	5,754	5,754	1.0	1
11/16/1964	Blinebry Sqz'd	No	5,773	5,773	1.0	1
11/22/1999	Blinebry	No	5,794	5,800	2.0	14
5/18/1988	Blinebry	No	5,795	5,803	1.0	9
11/16/1964	Blinebry Sqz'd	No	5,800	5,800	1.0	1
5/18/1988	Blinebry	No	5,814	5,822	1.0	9
11/22/1999	Blinebry	No	5,816	5,820	2.0	10
11/16/1964	Blinebry Sqz'd	No	5,822	5,822	1.0	1
5/18/1988	Blinebry	No	5,855	5,899	0.5	22
11/22/1999	Blinebry	No	5,858	5,862	2.0	10
11/22/1999	Blinebry	No	5,870	5,874	2.0	10
11/16/1964	Blinebry Sqz'd	No	5,876	5,876	1.0	1
11/22/1999	Blinebry	No	5,886	5,900	2.0	30
11/16/1964	Blinebry Sqz'd	No	5,898	5,898	1.0	1
5/18/1988	Blinebry	No	5,954	5,960	1.0	7
5/18/1988	Blinebry	No	5,968	5,974	1.0	7
5/18/1988	Blinebry	No	5,978	5,981	1.0	4
2/22/1989	Blinebry	No	6,025	6,033	1.0	9
11/22/1999	Blinebry	No	6,026	6,032	2.0	14
2/22/1989	Blinebry	No	6,040	6,048	1.0	9
11/22/1999	Blinebry	No	6,044	6,048	2.0	10
2/22/1989	Blinebry	No	6,056	6,058	1.0	3
2/22/1989	Blinebry	No	6,063	6,079	1.0	17
11/22/1999	Blinebry	No	6,066	6,076	2.0	22
11/22/1999	Blinebry	No	6,096	6,102	2.0	14
11/3/1964	Drinkard Sqz'd	No	6,444	6,444	1.0	1
11/3/1964	Drinkard Sqz'd	No	6,452	6,452	1.0	1
11/3/1964	Drinkard Sqz'd	No	6,461	6,461	1.0	1
11/3/1964	Drinkard Sqz'd	No	6,466	6,466	1.0	1
5/18/1988	Drinkard	No	6,470	6,478	1.0	9
11/3/1964	Drinkard Sqz'd	No	6,473	6,473	1.0	1

Current WBD

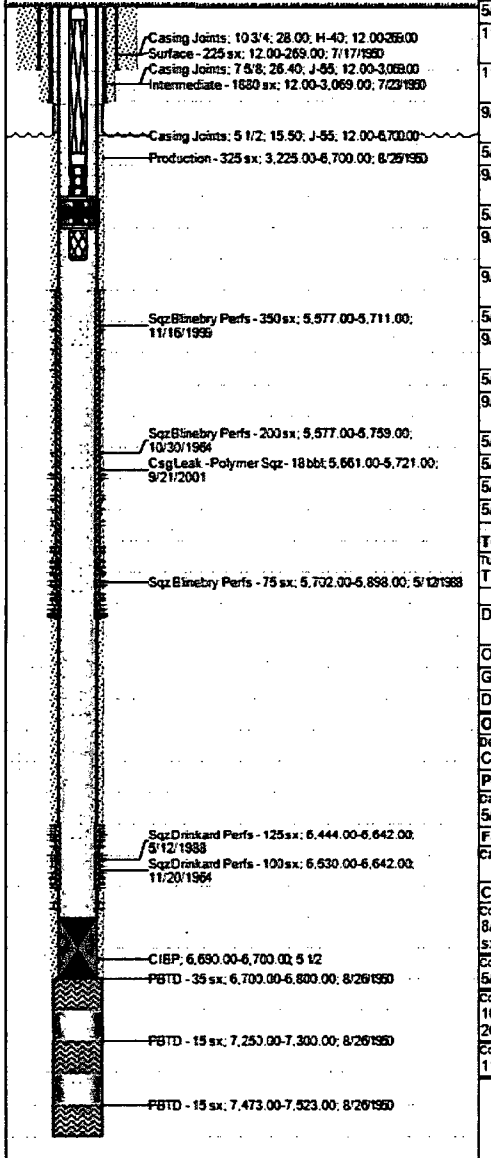
Apache

Downhole Well Profile w Cement

Well Name: NEDU 511W

Injection, NORTHEAST DRINKARD UNIT 511 - Original Hole, 10/25/2018 1:01:16 PM

Vertical schematic (proposed)



Perforations

Date	Type	Prop?	Top (ftKB)	Btm (ftKB)	Shot Dens (shots/ft)	Entered Shot Total
11/3/1964	Drinkard Sqz'd	No	6,480	6,480	1.0	1
5/18/1988	Drinkard	No	6,486	6,492	1.0	7
11/3/1964	Drinkard Sqz'd	No	6,491	6,491	1.0	1
11/3/1964	Drinkard Sqz'd	No	6,505	6,505	1.0	1
9/12/1950	Drinkard Sqz'd	No	6,530	6,535	4.0	20
5/18/1988	Drinkard	No	6,531	6,535	1.0	5
9/12/1950	Drinkard Sqz'd	No	6,542	6,546	4.0	16
5/18/1988	Drinkard	No	6,551	6,563	1.0	13
9/8/1950	Drinkard Sqz'd	No	6,572	6,587	4.0	60
9/6/1950	Drinkard Sqz'd	No	6,596	6,605	4.0	36
5/18/1988	Drinkard	No	6,597	6,601	1.0	5
9/3/1950	Drinkard Sqz'd	No	6,612	6,623	4.0	36
5/18/1988	Drinkard	No	6,615	6,623	1.0	9
9/1/1950	Drinkard Sqz'd	No	6,630	6,642	4.0	48
5/18/1988	Drinkard	No	6,635	6,641	1.0	7
5/18/1988	Drinkard	No	6,644	6,648	1.0	5
5/18/1988	Drinkard	No	6,669	6,672	1.0	4
5/18/1988	Drinkard	No	6,676	6,679	1.0	4

Tubing Strings

Tubing Description	Run Date	String Length (ft)	Set Depth (ftKB)
Tubing - Injection	9/19/2001	5,495.03	5,507.0

Item Des	Jts	Make	Model	OD (in)	Wt (lb/ft)	Grade	Len (ft)
Duoline 20 Tubing	170			2 3/8			5,465.97
On/Off Tool	1			2 3/8			1.78
Guiberson Uni-VI Packer	1			5 1/2			7.25
Duoline 20 Tubing	1			2 3/8			20.03

Other In Hole

Description	OD (in)	Top (ftKB)	Run Date
CIBP	5 1/2	6,690	11/11/1999

Plug Back Total Depths

Date	Type	Depth (ftKB)	Depth (TVD) (ftKB)
5/18/1988	Bridge Plug/Packer	6,692	

Failed Component Links & Details

Category	Description	Failure Depth (ftKB)	Comp Date	Failure Date

Comments

Comment: 8/24/1950: drill to 7523' - PBTD @ 6700' w/ cmt plugs 7473-7523' w/ 15 sx, 7250-7300' w/ 15 sx, 6700-6800' w/ 35 sx - perf 6530-6642' - az w/ 9500 gal 20% acid

Comment: 5/1/1954: FT w/ 3000 gal GLC + 3000# sand

Comment: 10/5/1956: perf 5577-5759' w/ 2 JSPF - az perfs 5577-5759' w/ 2500 gal 15% LSTNE acid, 200 gal kerosene base gel, 2500 gal 15% LSTNE - dual complete Blinebry Drinkard

Comment: 11/22/1964: az w/ 20,350 gal 15% HCL

Current WBD

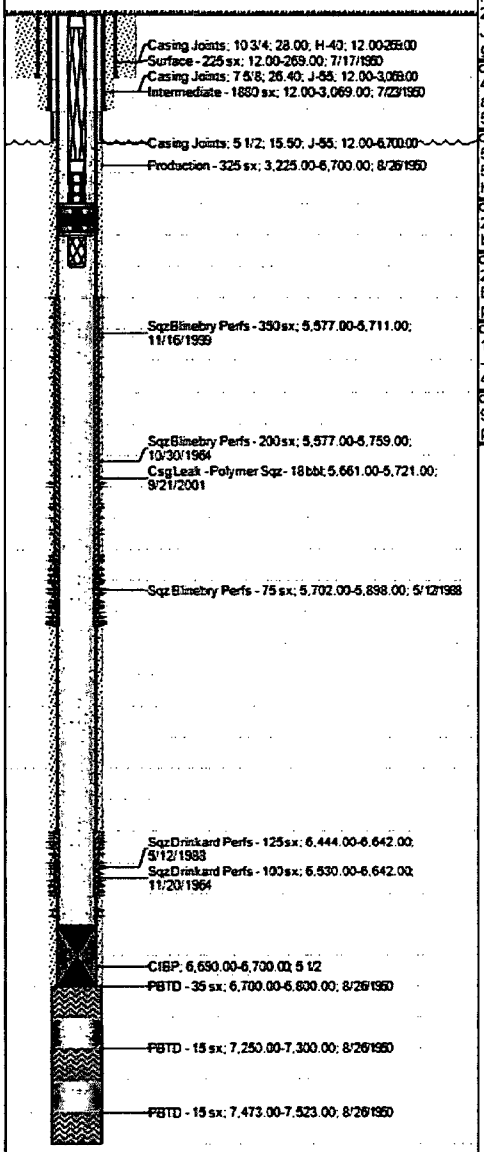
Apache

Downhole Well Profile w Cement

Well Name: NEDU 511W

Injection, NORTHEAST DRINKARD UNIT 511 - Original Hole, 10/25/2018 1:01:24 PM

Vertical schematic (proposed)



Comments

Comment
12/8/1964: sqz Drinkard 6530-6642' w/ 100 sx cmt - sqz Blinebry 5577-5779' w/ 200 sx cmt - perf Drinkard 6444-6505' w/ 1 JSPF - treat 6444-6505' w/ 2000 gal 7.5% DDA acid, 20,000 gal lease crude, 20,000# sand, 1000# adomite - retreat w/ 3000 gal emulsion breaker, 30 gal W-20 - frac w/ 100,000 gal water, 100,000# sand, 2500# adomite - perf Blinebry 5702-5898' w/ 1 JSPF - az 5702-5898' w/ 5000 gal 15% HCL & 5/10% HC-2 acid - frac 5702-5898' w/ 40,000 gal crude, 32,000# sand, 2000# adomite

Comment
4/13/1983: C/O from 6485-6510' recovering frac sand & trash - spot 150 gal 15% HCL NEFE acid @ 6505' - az Drinkard w/ 672 gal 15% HCL NEFE acid - spot 150 gal 15% NEFE HCL @ 5900' - az Blinebry w/ 20 bbl 15% NEFE HCL acid

Comment
5/10/1988: sqz Drinkard 6444-6642' w/ 125 sx cmt - sqz Blinebry 5702-5898' w/ 75 sx - perf 5795-6679' w/ 1 JSPF & 5733-5899' w/ 1 JSP2F (143 holes) - az Drinkard w/ 6048 gal 15% HCL acid + 950# RS - az Blinebry w/ 5754 gal 15% HCL acid + 1500# RS

Comment
2/22/1989: perf 5696-6058' w/ 1 JSPF (28 holes) - pump 2100 gal 15% HCL NEFE acid + 32 balls - convert to WIW

Comment
2/5/1996: az Drinakrd 6470-6679' w/ 2800 gal 20% NEFE HCL acid + 3200# GRS - az Blinebry 5730-5899' w/ 3700 gal 20% NEFE HCL acid + 5300# GRS - communication w/ old perfs 5577-5711'

Comment
11/11/1999: tag fill @ 6620' - C/O to 6690' - sqz Blinebry perfs 5577-5711' w/ 350 sx CL C cmt - cmt communicated between plugs - perf 5696-6102' w/ 2 JSPF - az w/ 5.8 bbl 15% BxDx & 41 bbl 1% KCL flush

Comment
9/20/2001: tag fill @ 6551' - C/O to 6688' w/ FeS in returns - spot 5 bbl polymer - pump 2 bbl polymer into csg leak - spot 10.5 bbl polymer gel (2.3 bbl sqz'd into leak)

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

Proposed

Apache

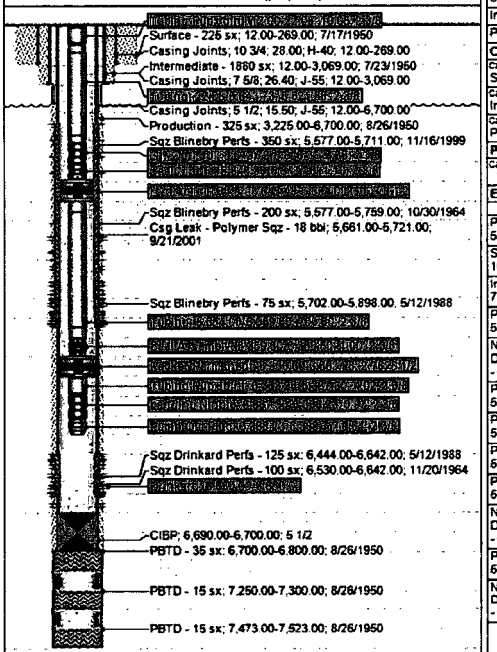
Well Name: NEDU 511W

Legal Well Name	Common Well Name	API/UWI
NORTHEAST DRINKARD UNIT 511W	NEDU 511W	3002506532

Ground Elevation (ft)	Original KB Elevation (ft)	Surface Legal Location	PBTD (All) (ftKB)	Total Depth (ftKB)
3,412.0	3,424.0	660' FSL, 660' FWL, Unit M, Sec 11, T-21S, R-37E	Original Hole - 6,692	7,523.0

Injection, NORTHEAST DRINKARD UNIT 511 - Original Hole, 10/26/2018 1:05:16 PM

Vertical schematic (proposed)



Current Wellbore Sections

Section Des	Size (in)	Act Top (ftKB)	Act Btm (ftKB)	Start Date
Surface	16	12.0	269.0	7/15/1950
Inter 1	9 7/8	269.0	3,069.0	7/18/1950
Prod 1	6 3/4	3,069.0	7,523.0	7/24/1950

Casing Strings

Casing Description	String Nominal OD (in)	Weight/Length (lb/ft)	String Grade	Set Depth (ftKB)
Surface	10 3/4	28.00	H-40	269.00
Inter 1	7 5/8	26.40	J-55	3,069.00
Prod 1	5 1/2	15.50	J-55	6,700.00

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
Prod 1, 6,700.00ftKB, 5 1/2	Cement Squeeze	6,530.00	6,642.00	
Surface, 269.00ftKB, 10 3/4	Primary Cement	12.00	269.00	Returns at Surface
Inter 1, 3,069.00ftKB, 7 5/8	Primary Cement	12.00	3,069.00	Returns at Surface
Prod 1, 6,700.00ftKB, 5 1/2	Primary Cement	3,225.00	6,700.00	Temperture Survey
NORTHEAST DRINKARD UNIT 511 - Original Hole	Cement Plug	7,473.00	7,523.00	
Prod 1, 6,700.00ftKB, 5 1/2	Cement Squeeze	5,577.00	5,759.00	
Prod 1, 6,700.00ftKB, 5 1/2	Cement Squeeze	6,444.00	6,642.00	
Prod 1, 6,700.00ftKB, 5 1/2	Cement Squeeze	5,577.00	5,711.00	
Prod 1, 6,700.00ftKB, 5 1/2	Cement Squeeze	6,661.00	5,721.00	
NORTHEAST DRINKARD UNIT 511 - Original Hole	Cement Plug	7,250.00	7,300.00	
Prod 1, 6,700.00ftKB, 5 1/2	Cement Squeeze	5,702.00	5,898.00	
NORTHEAST DRINKARD UNIT 511 - Original Hole	Cement Plug	6,700.00	6,800.00	

Scenario 1: Dual Packer Proposed WBD (Proposed Changes in Yellow)

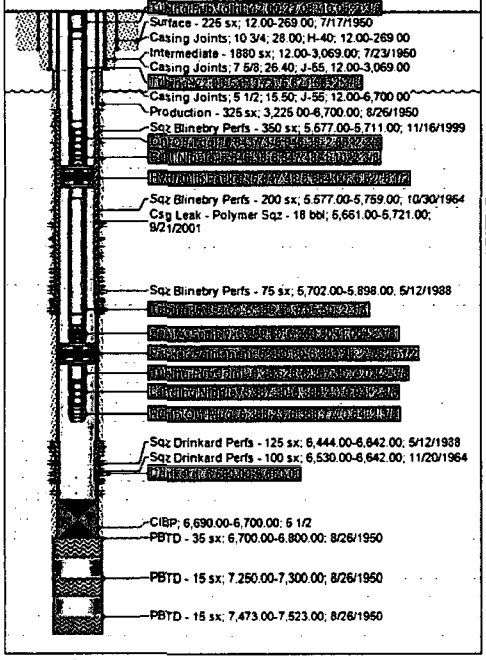
Proposed

Apache

Well Name: NEDU 511W

Injection, NORTHEAST DRINKARD UNIT 611 - Original Hole, 10/25/2018 1:05:24 PM

Vertical schematic (proposed)



Proposed Tubing String

Tubing Description		Set Depth (ftKB)	
Tubing - Injection		6,368.8	
Item Description	Length (ft)	OD Nominal (in)	Joints
Tubing Pup Joint	10.05	2 3/8	1
Item Description	Length (ft)	OD Nominal (in)	Joints
Tubing	5,621.68	2 3/8	174
Item Description	Length (ft)	OD Nominal (in)	Joints
On-Off Tool	2.65	2 3/8	1
Item Description	Length (ft)	OD Nominal (in)	Joints
Seal Nipple	1.10	2 3/8	1
Item Description	Length (ft)	OD Nominal (in)	Joints
Hydraulic Packer	6.52	5 1/2	1
Item Description	Length (ft)	OD Nominal (in)	Joints
Tubing	705.50	2 3/8	22
Item Description	Length (ft)	OD Nominal (in)	Joints
Seal Assembly	1.00	2 3/8	1
Item Description	Length (ft)	OD Nominal (in)	Joints
Packer-Permanent	2.78	5 1/2	1
Item Description	Length (ft)	OD Nominal (in)	Joints
Tubing Pup Joint	4.02	2 3/8	1
Item Description	Length (ft)	OD Nominal (in)	Joints
Landing Nipple	0.93	2 3/8	1
Item Description	Length (ft)	OD Nominal (in)	Joints
Pump Out Plug	0.54	2 3/8	1

Existing Perforations

Type	Top Depth (ftKB)	Bottom Depth (ftKB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry Sqz'd	5,577	5,647	2.0	140
Blinebry Sqz'd	5,668	5,715	2.0	94
Blinebry Sqz'd	5,696	5,697	1.0	1
Blinebry	5,696	5,716	2.0	42
Blinebry Sqz'd	5,702	5,702	1.0	1
Blinebry Sqz'd	5,702	5,703	1.0	2
Blinebry Sqz'd	5,707	5,708	1.0	2
Blinebry Sqz'd	5,711	5,711	1.0	1
Blinebry	5,728	5,764	2.0	74
Blinebry Sqz'd	5,730	5,759	2.0	58
Blinebry	5,733	5,747	0.5	7
Blinebry Sqz'd	5,735	5,735	1.0	1

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

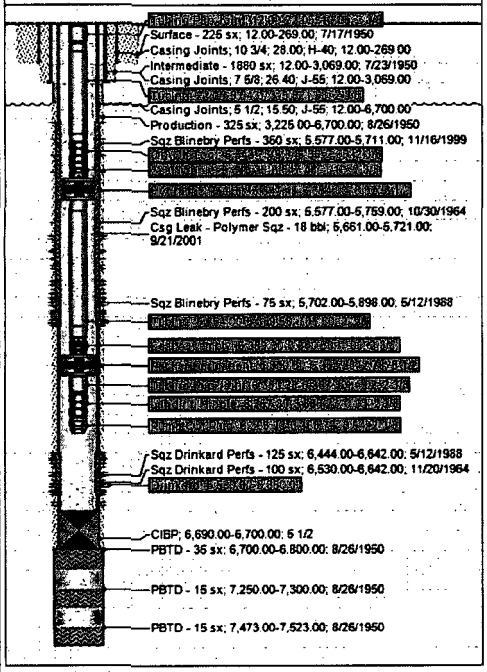
Proposed

Apache

Well Name: NEDU 511W

Injection, NORTHEAST DRINKARD UNIT 511 - Original Hole, 10/25/2018 1:05:31 PM

Vertical schematic (proposed)



Existing Perforations

Type	Top Depth (ftKB)	Bottom Depth (ftKB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry Sqz'd	5,745	5,745	1.0	1
Blinebry	5,751	5,769	0.5	9
Blinebry Sqz'd	5,754	5,754	1.0	1
Blinebry Sqz'd	5,773	5,773	1.0	1
Blinebry	5,794	5,800	2.0	14
Blinebry	5,795	5,803	1.0	9
Blinebry Sqz'd	5,800	5,800	1.0	1
Blinebry	5,814	5,822	1.0	9
Blinebry	5,816	5,820	2.0	10
Blinebry Sqz'd	5,822	5,822	1.0	1
Blinebry	5,855	5,899	0.5	22
Blinebry	5,858	5,862	2.0	10
Blinebry	5,870	5,874	2.0	10
Blinebry Sqz'd	5,876	5,876	1.0	1
Blinebry	5,886	5,900	2.0	30
Blinebry Sqz'd	5,898	5,898	1.0	1
Blinebry	5,954	5,960	1.0	7
Blinebry	5,968	5,974	1.0	7
Blinebry	5,978	5,981	1.0	4
Blinebry	6,025	6,033	1.0	9
Blinebry	6,026	6,032	2.0	14
Blinebry	6,040	6,048	1.0	9
Blinebry	6,044	6,048	2.0	10
Blinebry	6,056	6,058	1.0	3
Blinebry	6,063	6,079	1.0	17

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

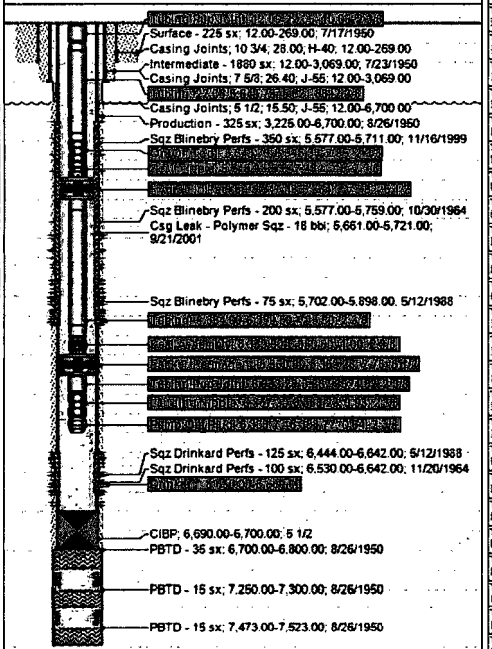
Proposed

Apache

Well Name: NEDU 511W

Injection, NORTHEAST DRINKARD UNIT 511 - Original Hole, 10/25/2018 1:05:38 PM

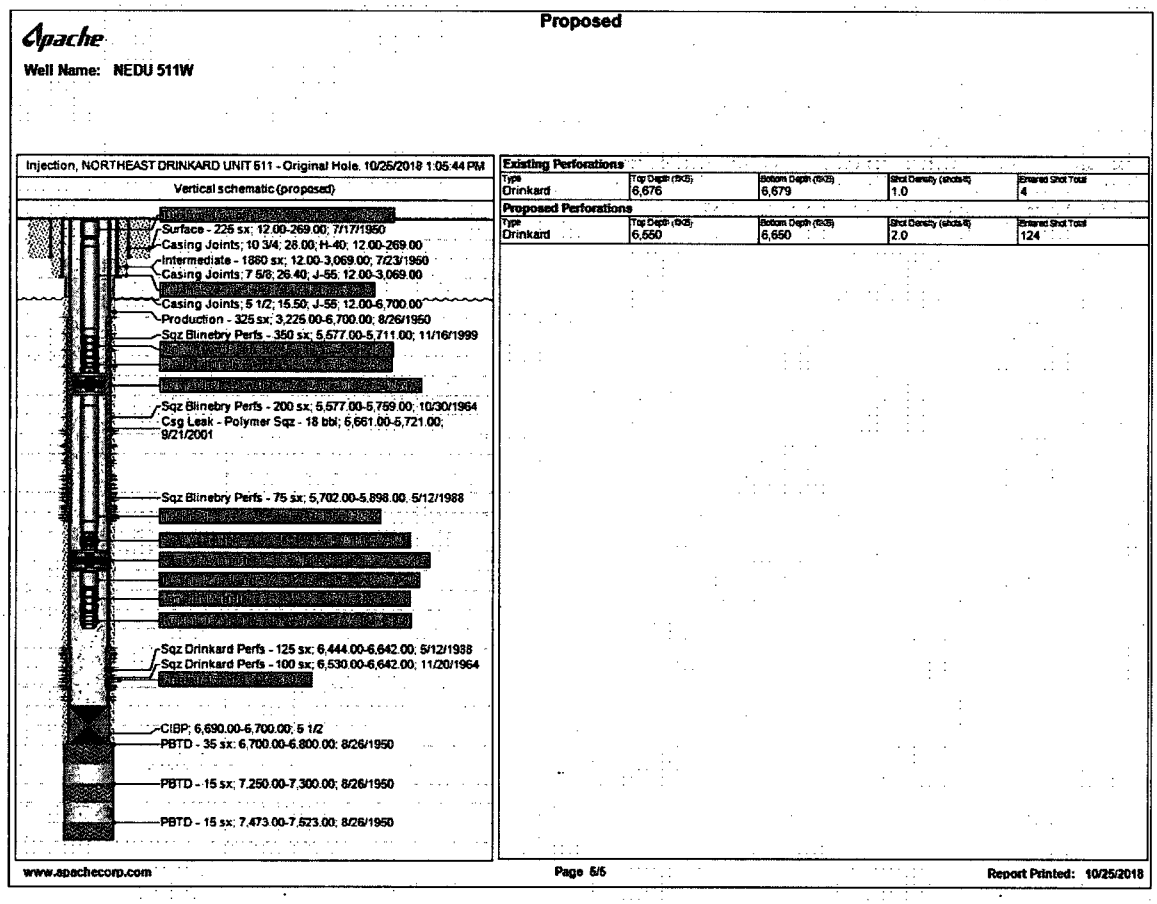
Vertical schematic (proposed)



Existing Perforations

Type	Top Depth (TVD)	Bottom Depth (TVD)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	6,066	6,076	2.0	22
Blinebry	6,096	6,102	2.0	14
Drinkard Sqz'd	6,444	6,444	1.0	1
Drinkard Sqz'd	6,452	6,452	1.0	1
Drinkard Sqz'd	6,461	6,461	1.0	1
Drinkard Sqz'd	6,466	6,466	1.0	1
Drinkard	6,470	6,478	1.0	9
Drinkard Sqz'd	6,473	6,473	1.0	1
Drinkard Sqz'd	6,480	6,480	1.0	1
Drinkard	6,486	6,492	1.0	7
Drinkard Sqz'd	6,491	6,491	1.0	1
Drinkard Sqz'd	6,505	6,505	1.0	1
Drinkard Sqz'd	6,530	6,535	4.0	20
Drinkard	6,531	6,535	1.0	5
Drinkard Sqz'd	6,542	6,546	4.0	16
Drinkard	6,551	6,563	1.0	13
Drinkard Sqz'd	6,572	6,587	4.0	60
Drinkard Sqz'd	6,596	6,605	4.0	36
Drinkard	6,597	6,601	1.0	5
Drinkard Sqz'd	6,612	6,623	4.0	36
Drinkard	6,615	6,623	1.0	9
Drinkard Sqz'd	6,630	6,642	4.0	48
Drinkard	6,635	6,641	1.0	7
Drinkard	6,644	6,648	1.0	5
Drinkard	6,669	6,672	1.0	4

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



Proposed

Apache

Well Name: NEDU 511W

Injection, NORTHEAST DRINKARD UNIT 511 - Original Hole, 10/25/2018 1:05:44 PM

Vertical schematic (proposed)

Surface - 225 sx; 12.00-269.00; 7/17/1950
Casing Joints; 10 3/4; 28.00; H-40; 12.00-269.00
Intermediate - 1880 sx; 12.00-3,069.00; 7/23/1950
Casing Joints; 7 5/8; 26.40; J-55; 12.00-3,069.00
Casing Joints; 5 1/2; 15.50; J-55; 12.00-6,700.00
Production - 325 sx; 3,225.00-6,700.00; 8/26/1950
Sqz Blinebry Perfs - 350 sx; 5,577.00-5,711.00; 11/16/1999
Sqz Blinebry Perfs - 200 sx; 5,577.00-5,759.00; 10/30/1964
Csg Leak - Polymer Sqz - 18 bbl; 6,661.00-6,721.00; 9/21/2001
Sqz Blinebry Perfs - 75 sx; 5,702.00-5,898.00; 5/12/1988
Sqz Drinkard Perfs - 125 sx; 6,444.00-6,642.00; 5/12/1988
Sqz Drinkard Perfs - 100 sx; 6,530.00-6,642.00; 11/20/1964
CIBP; 6,690.00-6,700.00; 5 1/2
PBTD - 35 sx; 6,700.00-6,800.00; 8/26/1950
PBTD - 15 sx; 7,250.00-7,300.00; 8/26/1950
PBTD - 15 sx; 7,473.00-7,523.00; 8/26/1950

Existing Perforations

Type	Top Depth (ftKB)	Bottom Depth (ftKB)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,676	6,679	1.0	4

Proposed Perforations

Type	Top Depth (ftKB)	Bottom Depth (ftKB)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,550	6,650	2.0	124

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

Proposed

Apache

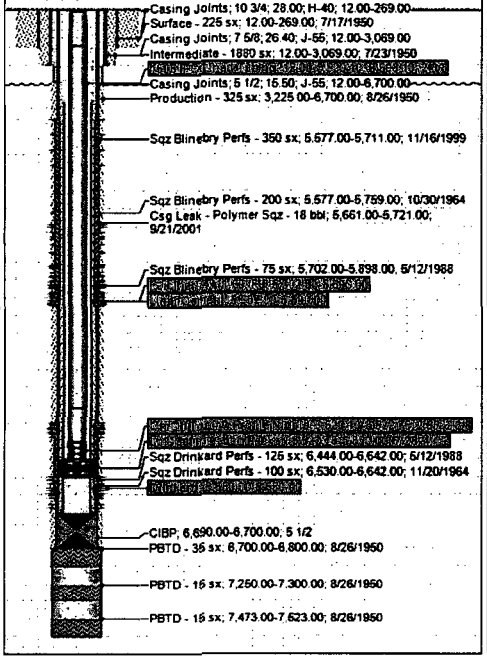
Well Name: NEDU 511W

Legal Well Name	Common Well Name	API/Surface Loc
NORTHEAST DRINKARD UNIT 511W	NEDU 511W	3002506532

Ground Elevation (ft)	Original KB Elevation (ft)	Surface Legal Location	PBTD (All) (mKB)	Total Depth (mKB)
3,412.0	3,424.0	660' FSL, 660' FWL, Unit M, Sec 11, T-21S, R-37E	Original Hole - 6,692	7,523.0

Injection, NORTHEAST DRINKARD UNIT 511 - Original Hole, 10/25/2018 1:12:08 PM

Vertical schematic (proposed)



Current Wellbore Sections

Section Des	Size (in)	Act Top (mKB)	Act Btm (mKB)	Start Date
Surface	16	12.0	269.0	7/15/1950
Inter 1	9 7/8	269.0	3,069.0	7/18/1950
Prod 1	6 3/4	3,069.0	7,523.0	7/24/1950

Casing Strings

Casing Description	String Nominal OD (in)	Weight/Length (lb/ft)	String Grade	Set Depth (mKB)
Surface	10 3/4	28.00	H-40	269.00
Inter 1	7 5/8	26.40	J-55	3,069.00
Prod 1	5 1/2	15.50	J-55	6,700.00

Proposed Casing Strings

Casing Description	String Nominal OD (in)	Weight/Length (lb/ft)	String Grade	Set Depth (mKB)
Prod Lnr 1	4	11.60	FJ	6,690.00

Existing Cement

String	Des	Top (mKB)	Btm (mKB)	Top Meas Meth
Prod 1, 6,700.00ftKB, 5 1/2	Cement Squeeze	6,530.00	6,642.00	
Surface, 269.00ftKB, 10 3/4	Primary Cement	12.00	269.00	Returns at Surface
Inter 1, 3,069.00ftKB, 7 5/8	Primary Cement	12.00	3,069.00	Returns at Surface
Prod 1, 6,700.00ftKB, 5 1/2	Primary Cement	3,225.00	6,700.00	Temperture Survey
NORTHEAST DRINKARD UNIT 511 - Original Hole	Cement Plug	7,473.00	7,523.00	
Prod 1, 6,700.00ftKB, 5 1/2	Cement Squeeze	5,577.00	5,759.00	
Prod 1, 6,700.00ftKB, 5 1/2	Cement Squeeze	6,444.00	6,642.00	
Prod 1, 6,700.00ftKB, 5 1/2	Cement Squeeze	5,577.00	5,711.00	
Prod 1, 6,700.00ftKB, 5 1/2	Cement Squeeze	5,661.00	5,721.00	
NORTHEAST DRINKARD UNIT 511 - Original Hole	Cement Plug	7,250.00	7,300.00	
Prod 1, 6,700.00ftKB, 5 1/2	Cement Squeeze	6,702.00	6,898.00	
NORTHEAST DRINKARD UNIT 511 - Original Hole	Cement Plug	6,700.00	6,800.00	

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

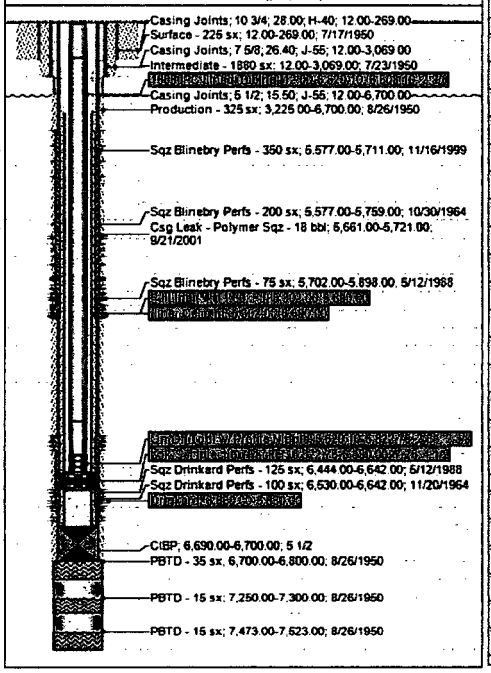
Proposed

Apache

Well Name: NEDU 511W

Injection, NORTHEAST DRINKARD UNIT 511 - Original Hole, 10/25/2018 1:12:22 PM

Vertical schematic (proposed)



Proposed Cement

String	Description	Top Depth (ftKB)	Bottom Depth (ftKB)	Top Measurement Method
Prod Lnr 1, 6,690.00ftKB, 4	Primary Liner Cement	5,302.00	6,690.00	Returns at Surface

Proposed Tubing String

Tubing Description		Set Depth (ftKB)	
Tubing - Injection		6,368.8	
Item Description	Length (ft)	OD Nominal (in)	Joints
Tubing Pup Joint	10.05	2 3/8	1
Tubing	6,621.68	2 3/8	174
On-Off Tool	2.65	2 3/8	1
Seal Nipple	1.10	2 3/8	1
Hydraulic Packer	6.52	5 1/2	1
Tubing	705.50	2 3/8	22
Seal Assembly	1.00	2 3/8	1
Packer-Permanent	2.78	5 1/2	1
Tubing Pup Joint	4.02	2 3/8	1
Landing Nipple	0.93	2 3/8	1
Pump Out Plug	0.64	2 3/8	1
Tubing - Injection		6,630.0	
1505 IPC Lined Tubing	6,508.10	2 3/8	201
On/Off Tool w/ Profile Nipple	2.65	2 3/8	1
Lok-Set Injection Packer	7.25	4 1/2	1

Existing Perforations

Type	Top Depth (ftKB)	Bottom Depth (ftKB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry Sqz'd	5,577	5,647	2.0	140
Blinebry Sqz'd	5,668	5,715	2.0	94
Blinebry Sqz'd	5,696	5,697	1.0	1
Blinebry	5,696	5,716	2.0	42
Blinebry Sqz'd	5,702	5,702	1.0	1
Blinebry Sqz'd	5,702	5,703	1.0	2

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

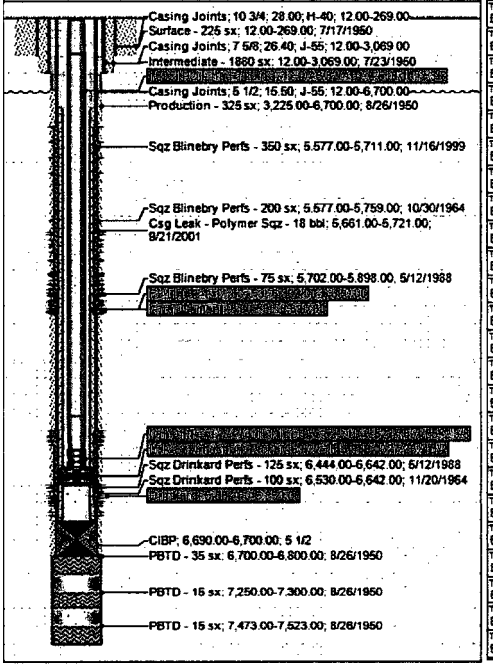
Proposed

Apache

Well Name: NEDU 511W

Injection, NORTHEAST DRINKARD UNIT 511 - Original Hole, 10/26/2018 1:12:30 PM

Vertical schematic (proposed)



Existing Perforations

Type	Top Depth (TVD)	Bottom Depth (TVD)	Shot Density (shots/ft)	Entered Shot Total
Blinebry Sqz'd	5,707	5,708	1.0	2
Blinebry Sqz'd	5,711	5,711	1.0	1
Blinebry	5,728	5,764	2.0	74
Blinebry Sqz'd	5,730	5,759	2.0	58
Blinebry	5,733	5,747	0.5	7
Blinebry Sqz'd	5,735	5,735	1.0	1
Blinebry Sqz'd	5,745	5,745	1.0	1
Blinebry	5,751	5,769	0.5	9
Blinebry Sqz'd	5,754	5,754	1.0	1
Blinebry Sqz'd	5,773	5,773	1.0	1
Blinebry	5,794	5,800	2.0	14
Blinebry	5,796	5,803	1.0	9
Blinebry Sqz'd	5,800	5,800	1.0	1
Blinebry	5,814	5,822	1.0	9
Blinebry	5,816	5,820	2.0	10
Blinebry Sqz'd	5,822	5,822	1.0	1
Blinebry	5,855	5,899	0.5	22
Blinebry	5,858	5,862	2.0	10
Blinebry	5,870	5,874	2.0	10
Blinebry Sqz'd	5,876	5,876	1.0	1
Blinebry	5,886	5,900	2.0	30
Blinebry Sqz'd	5,898	5,898	1.0	1
Blinebry	5,954	5,960	1.0	7
Blinebry	5,968	5,974	1.0	7
Blinebry	5,978	5,981	1.0	4

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

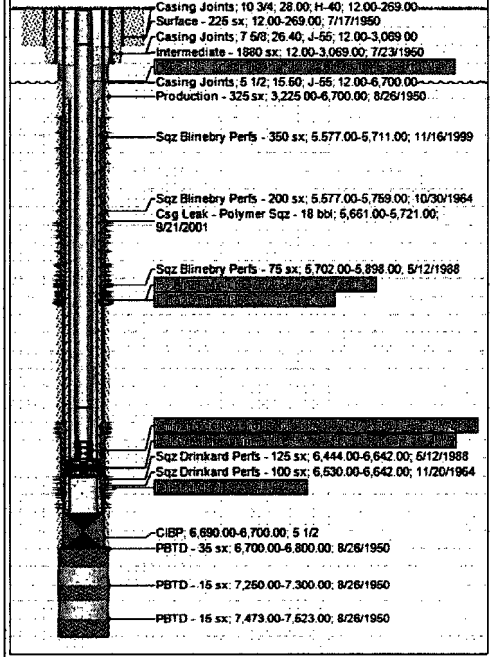
Proposed

Apache

Well Name: NEDU 511W

Injection, NORTHEAST DRINKARD UNIT 511 - Original Hole, 10/25/2018 1:12:38 PM

Vertical schematic (proposed)



Existing Perforations

Type	Top Depth (ftKB)	Bottom Depth (ftKB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	6,025	6,033	1.0	9
Blinebry	6,026	6,032	2.0	14
Blinebry	6,040	6,048	1.0	9
Blinebry	6,044	6,048	2.0	10
Blinebry	6,056	6,058	1.0	3
Blinebry	6,063	6,079	1.0	17
Blinebry	6,066	6,076	2.0	22
Blinebry	6,096	6,102	2.0	14
Drinkard Sqz'd	6,444	6,444	1.0	1
Drinkard Sqz'd	6,452	6,452	1.0	1
Drinkard Sqz'd	6,461	6,461	1.0	1
Drinkard Sqz'd	6,466	6,466	1.0	1
Drinkard	6,470	6,478	1.0	9
Drinkard Sqz'd	6,473	6,473	1.0	1
Drinkard Sqz'd	6,480	6,480	1.0	1
Drinkard	6,486	6,492	1.0	7
Drinkard Sqz'd	6,491	6,491	1.0	1
Drinkard Sqz'd	6,505	6,505	1.0	1
Drinkard Sqz'd	6,530	6,535	4.0	20
Drinkard	6,531	6,535	1.0	5
Drinkard Sqz'd	6,542	6,546	4.0	16
Drinkard	6,551	6,563	1.0	13
Drinkard Sqz'd	6,572	6,587	4.0	60
Drinkard Sqz'd	6,596	6,605	4.0	36
Drinkard	6,597	6,601	1.0	5

Scenario 2: FJ Liner Proposed WBD (Proposed Changes in Yellow)

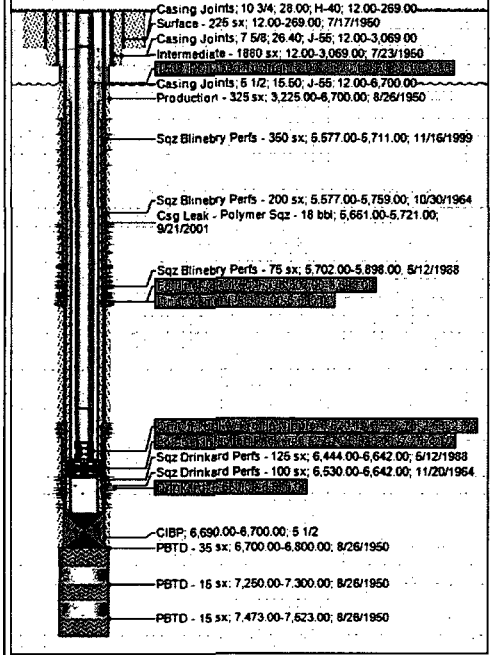
Proposed

Apache

Well Name: NEDU 511W

Injection, NORTHEAST DRINKARD UNIT 511 - Original Hole, 10/25/2018 1:12:44 PM

Vertical schematic (proposed)



Existing Perforations

Type	Top Depth (ftKB)	Bottom Depth (ftKB)	Shot Density (shots/ft)	Entered Shot Total
Drinkard Sqz'd	6,612	6,623	4.0	36
Drinkard	6,615	6,623	1.0	9
Drinkard Sqz'd	6,630	6,642	4.0	48
Drinkard	6,635	6,641	1.0	7
Drinkard	6,644	6,648	1.0	5
Drinkard	6,669	6,672	1.0	4
Drinkard	6,676	6,679	1.0	4

Proposed Perforations

Type	Top Depth (ftKB)	Bottom Depth (ftKB)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,550	6,650	2.0	124

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