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

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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

WELL API NO.
30-025-06473

5. Indicate Type of Lease
STATE ☑ FEE ☐

6. State Oil & Gas Lease No.
B-935

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 503

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 K : 2080 feet from the South line and 2080 feet from the West line
Section 10 Township 21S Range 37E NMPM County Lea

11. Elevation *(Show whether DR, RKB, RT, GR, etc.)*
3470' 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: 9/24/1952 Rig Release Date: 12/3/1952

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 11/16/2018

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 503W: (API: 30-025-06473)

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 7100'.
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 7100'. 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

Apache

Downhole Well Profile w Cement

Well Name: NEDU 503W

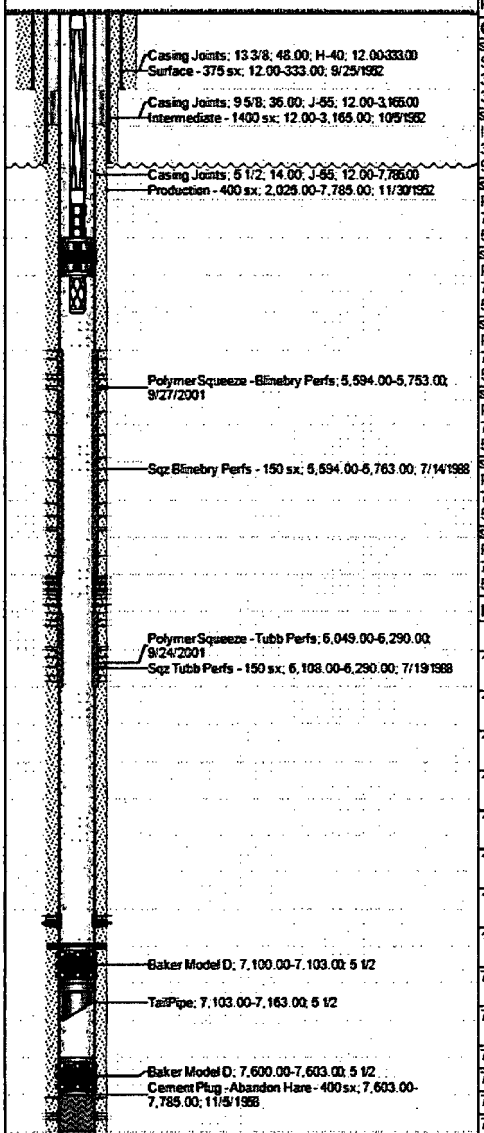
API/Surface Loc	Surface Legal Location	Field Name	State/Province
3002506473	2080' FSL, 2080' FWL, Unit K, Sec 10, T-21S, R-37E	Eunice (North) Btd	New Mexico

Spud Date	Original KB Elevation (ft)	Ground Elevation (ft)	KB-Ground Distance (ft)
9/24/1952	3,464.0	3,452.0	12.0

PBTD (All) (ftKB)	Total Depth (ftKB)	Comment
Original Hole - 7,100	7,785.0	

Injection, NORTHEAST DRINKARD UNIT 503 - Original Hole, 10/25/2018 11:10:49 AM

Vertical schematic (proposed)



Casing Strings

Csg Des	OD (in)	ID (in)	Wt/Len (lb/ft)	Grade	Set Depth (ftKB)
Surface	13 3/8	12.715	48.00	H-40	333.00
Inter 1	9 5/8	8.921	36.00	J-55	3,165.00
Prod 1	5 1/2	5.012	14.00	J-55	7,785.00

Cement

String	Description	Top Depth (ftKB)	Bottom Depth (ftKB)	Top Meas Meth	Start Date
Surface, 333.00ftKB, 13 3/8	Surface - 375 sx	12.00	333.00	Returns at Surface	9/25/1952
Inter 1, 3,165.00ftKB, 9 5/8	Intermediate - 1400 sx	12.00	3,165.00	Returns at Surface	10/5/1952
Prod 1, 7,785.00ftKB, 5 1/2	Production - 400 sx	2,025.00	7,785.00	Temperture Survey	11/30/1952
Prod 1, 7,785.00ftKB, 5 1/2	Cement Plug - Abandon Hare - 400 sx	7,603.00	7,785.00		11/5/1958
Prod 1, 7,785.00ftKB, 5 1/2	Sqz Blinebry Perfs - 150 sx	5,594.00	5,763.00		7/14/1988
Prod 1, 7,785.00ftKB, 5 1/2	Sqz Tubb Perfs - 150 sx	6,108.00	6,290.00		7/19/1988
Prod 1, 7,785.00ftKB, 5 1/2	Polymer Squeeze - Tubb Perfs	6,049.00	6,290.00		9/24/2001
Prod 1, 7,785.00ftKB, 5 1/2	Polymer Squeeze - Blinebry Perfs	5,594.00	5,753.00		9/27/2001

Perforations

Date	Type	Prop?	Top (ftKB)	Btm (ftKB)	Shot Dens (shots/ft)	Entered Shot Total
11/9/1958	Blinebry Sqz'd	No	5,594	5,599	2.0	12
11/9/1958	Blinebry Sqz'd	No	5,613	5,632	2.0	40
11/9/1958	Blinebry Sqz'd	No	5,645	5,649	2.0	10
11/9/1958	Blinebry Sqz'd	No	5,656	5,665	2.0	20
11/9/1958	Blinebry Sqz'd	No	5,669	5,671	2.0	6
11/9/1958	Blinebry Sqz'd	No	5,674	5,684	2.0	22
11/9/1958	Blinebry Sqz'd	No	5,712	5,732	2.0	42
11/9/1958	Blinebry Sqz'd	No	5,733	5,753	2.0	42
7/23/1988	Blinebry Sqz'd	No	5,738	5,743	1.0	6
7/23/1988	Blinebry Sqz'd	No	5,758	5,760	1.0	3
7/23/1988	Blinebry	No	5,776	5,779	1.0	4
7/23/1988	Blinebry	No	5,783	5,789	1.0	7
7/23/1988	Blinebry	No	5,795	5,809	1.0	15
7/23/1988	Blinebry	No	5,817	5,822	1.0	6
7/23/1988	Blinebry	No	5,827	5,834	1.0	8

Current WBD

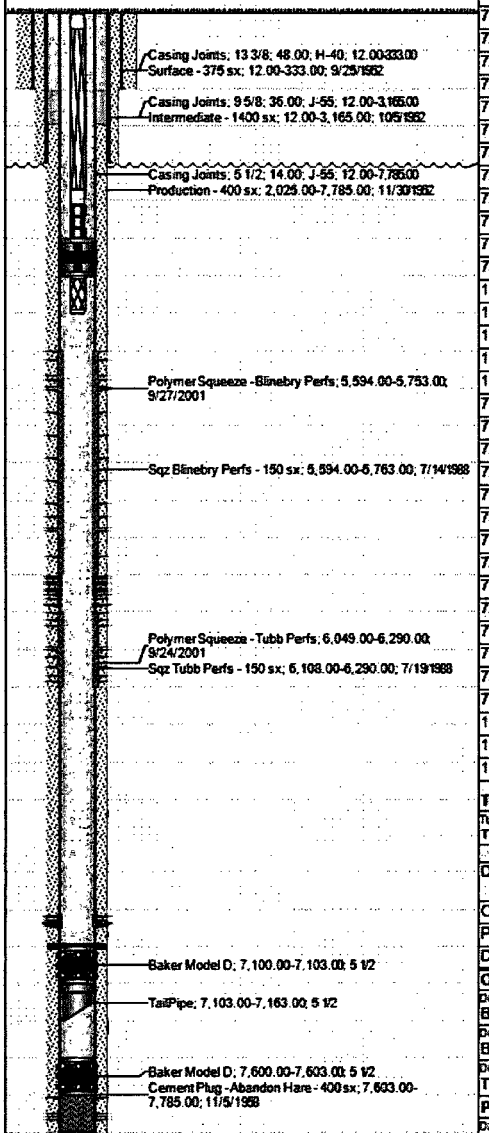
Apache

Downhole Well Profile w Cement

Well Name: NEDU 503W

Injection, NORTHEAST DRINKARD UNIT 503 - Original Hole, 10/25/2018 11:11:01 AM

Vertical schematic (proposed)



Perforations

Date	Type	Prop?	Top (ftKB)	Btm (ftKB)	Shot Dens (shots/ft)	Entered Shot Total
7/23/1988	Blinebry	No	5,841	5,844	1.0	4
7/23/1988	Blinebry	No	5,868	5,871	1.0	4
7/23/1988	Blinebry	No	5,883	5,893	1.0	11
7/23/1988	Blinebry	No	5,897	5,899	1.0	3
7/23/1988	Blinebry	No	5,911	5,915	1.0	5
7/23/1988	Blinebry	No	5,919	5,925	1.0	7
7/23/1988	Blinebry	No	5,943	5,945	1.0	3
7/23/1988	Blinebry	No	5,988	5,989	1.0	2
7/23/1988	Blinebry	No	5,991	5,992	1.0	2
7/23/1988	Blinebry	No	5,998	6,000	1.0	3
7/23/1988	Tubb - Sqz'd	No	6,049	6,052	1.0	4
7/23/1988	Tubb - Sqz'd	No	6,060	6,063	1.0	4
7/23/1988	Tubb - Sqz'd	No	6,069	6,071	1.0	3
7/23/1988	Tubb - Sqz'd	No	6,102	6,116	1.0	15
11/9/1958	Tubb - Sqz'd	No	6,108	6,118	2.0	22
11/9/1958	Tubb - Sqz'd	No	6,140	6,150	2.0	22
11/9/1958	Tubb - Sqz'd	No	6,194	6,222	2.0	58
11/9/1958	Tubb - Sqz'd	No	6,232	6,248	2.0	34
11/9/1958	Tubb - Sqz'd	No	6,262	6,290	2.0	58
7/23/1988	Drinkard	No	6,497	6,498	1.0	2
7/23/1988	Drinkard	No	6,500	6,508	1.0	9
7/23/1988	Drinkard	No	6,516	6,518	1.0	3
7/23/1988	Drinkard	No	6,539	6,541	1.0	3
7/23/1988	Drinkard	No	6,582	6,586	1.0	5
7/23/1988	Drinkard	No	6,602	6,607	1.0	6
7/23/1988	Drinkard	No	6,631	6,635	1.0	5
7/23/1988	Drinkard	No	6,644	6,645	1.0	2
7/23/1988	Drinkard	No	6,648	6,650	1.0	3
7/23/1988	Drinkard	No	6,658	6,658	1.0	1
7/23/1988	Drinkard	No	6,667	6,671	1.0	5
7/23/1988	Drinkard	No	6,676	6,694	0.5	9
7/23/1988	Drinkard	No	6,700	6,716	0.5	8
7/23/1988	Drinkard	No	6,723	6,729	1.0	7
12/2/1952	Hare - Susp	No	7,620	7,694	4.0	300
12/2/1952	Hare - Susp	No	7,706	7,710	4.0	20
12/2/1952	Hare - Susp	No	7,720	7,752	4.0	132

Tubing Strings

Tubing Description	Run Date	String Length (ft)	Set Depth (ftKB)
Tubing - Injection	9/6/2001	6,543.00	6,555.0

Item Des	Jts	Make	Model	OD (in)	Wt (lb/ft)	Grade	Len (ft)
Duoline Tubing	171			2 3/8			5,519.97
On/Off Tool	1			2 3/8			1.78
Packer	1			5 1/2			7.25
Duoline Tubing	1			2 3/8			14.00

Other In Hole

Description	OD (in)	Top (ftKB)	Run Date
Baker Model D	5 1/2	7,600	12/4/1952
Baker Model D	5 1/2	7,100	7/15/1988
TailPipe	5 1/2	7,103	7/15/1988

Plug Back Total Depths

Date	Type	Depth (ftKB)	Depth (TVD) (ftKB)
		7,100	

Current WBD

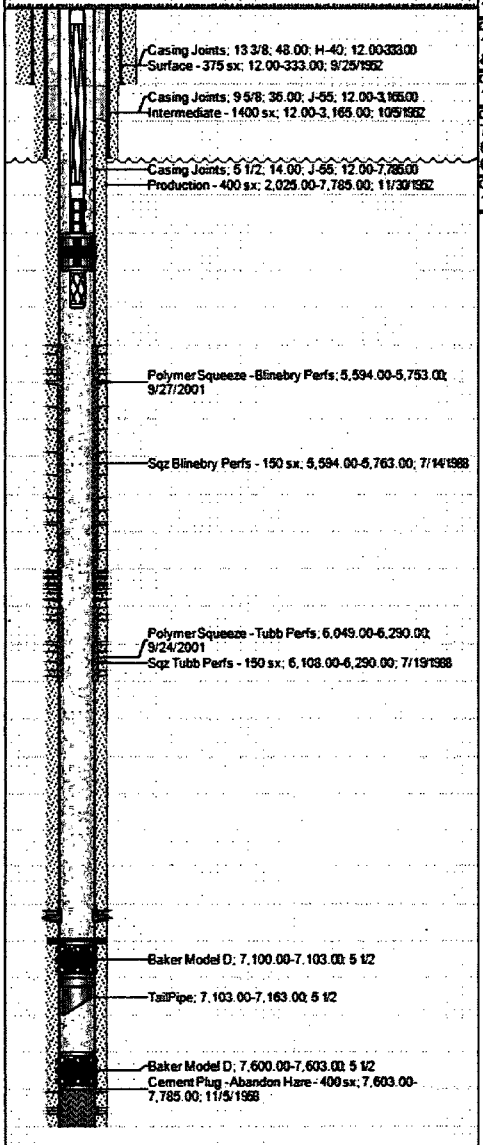
Apache

Downhole Well Profile w Cement

Well Name: NEDU 503W

Injection, NORTHEAST DRINKARD UNIT 503 - Original Hole, 10/25/2013 11:11:09 AM

Vertical schematic (proposed)



Failed Component Links & Details

Category	Description	Failure Depth (ftKB)	Comp Dur	Failure Date

Comments

Comment
12/3/1953: perf 7620-7752' w/ 4 JSPF - frac McKee w/ 4000 gal oil, 2500# sand, C/O to 7770'

Comment
11/1/1958: abandon Hare w/ 400 sx cmt plug - recomplete as Blinebry-Tubb - perf 5594-5753' & 6108-6290' - az Tubb w/ 3000 gal 15% NE acid

Comment
1/1/1959: az Blinebry w/ 1000 gal

Comment
7/31/1988: convert to WIW - sqz Blinebry perfs 5594-5763' w/ 100 sx - sqz Tubb perfs 6108-6290' w/ 150 sx - az Drinkard 6497-6716' w/ 4200 gal 15% NEFE acid - az Tubb perfs 6049-6116' w/ 2100 gal 15% NEFE acid - az Blinebry perfs 5739-5945' w/ 3150 gal 15% NE acid

Comment
10/3/2001: sqz Tubb 6049-6290' & Blinebry 5594-5753' w/ polymer

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

Proposed

Apache

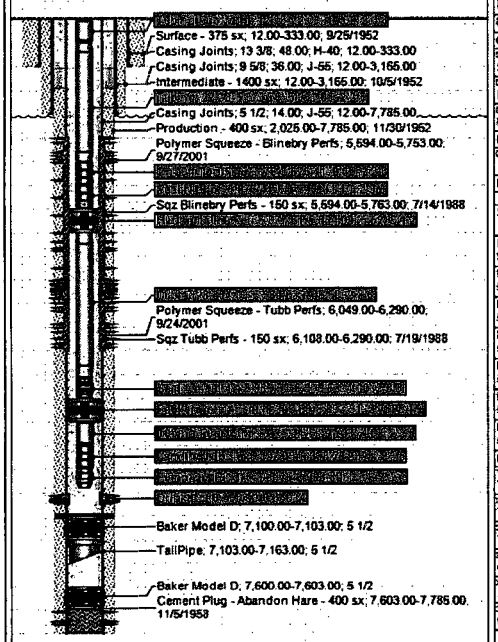
Well Name: NEDU 503W

Legal Well Name	Common Well Name	API/Surface Loc
NORTHEAST DRINKARD UNIT 503W	NEDU 503W	3002506473

Ground Elevation (ft)	Original KB Elevation (ft)	Surface Legal Location	Depth (ftKB)	Total Depth (ftKB)
3,452.0	3,464.0	2080' FSL, 2080' FWL, Unit K, Sec 10, T-21S, R-37E	Original Hole - 7,100	7,785.0

Injection, NORTHEAST DRINKARD UNIT 503 - Original Hole, 10/25/2018 11:13:16 AM

Vertical schematic (proposed)



Current Wellbore Sections

Section Des	Size (in)	Act Top (ftKB)	Act Btm (ftKB)	Start Date
Surface	17 1/2	12.0	333.0	9/24/1952
Inter 1	12 1/4	333.0	3,165.0	9/26/1952
Prod 1	8 3/4	3,165.0	7,785.0	10/6/1952

Casing Strings

Casing Description	String Nominal OD (in)	Nominal Weight (lb/ft)	String Grade	Set Depth (ftKB)
Surface	13 3/8	48.00	H-40	333.00
Casing Description	String Nominal OD (in)	Nominal Weight (lb/ft)	String Grade	Set Depth (ftKB)
Inter 1	9 5/8	36.00	J-55	3,165.00
Casing Description	String Nominal OD (in)	Nominal Weight (lb/ft)	String Grade	Set Depth (ftKB)
Prod 1	5 1/2	14.00	J-55	7,785.00

Proposed Casing Strings

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

Existing Cement

String	Des	Top (ftKB)	Btm (ftKB)	Top Meas Meth
Surface, 333.00ftKB, 13 3/8	Primary Cement	12.00	333.00	Returns at Surface
Inter 1, 3,165.00ftKB, 9 5/8	Primary Cement	12.00	3,165.00	Returns at Surface
Prod 1, 7,785.00ftKB, 5 1/2	Primary Cement	2,025.00	7,785.00	Temperture Survey
Prod 1, 7,785.00ftKB, 5 1/2	Abandonment Plug	7,603.00	7,785.00	
Prod 1, 7,785.00ftKB, 5 1/2	Cement Squeeze	5,594.00	5,763.00	
Prod 1, 7,785.00ftKB, 5 1/2	Cement Squeeze	6,108.00	6,290.00	
Prod 1, 7,785.00ftKB, 5 1/2	Cement Squeeze	6,049.00	6,290.00	
Prod 1, 7,785.00ftKB, 5 1/2	Cement Squeeze	5,594.00	5,753.00	

Proposed Tubing String

Tubing Description		Set Depth (ftKB)	
Tubing - Injection		6,398.8	
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	5,651.68	2 3/8	175
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	6.62	5 1/2	1

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

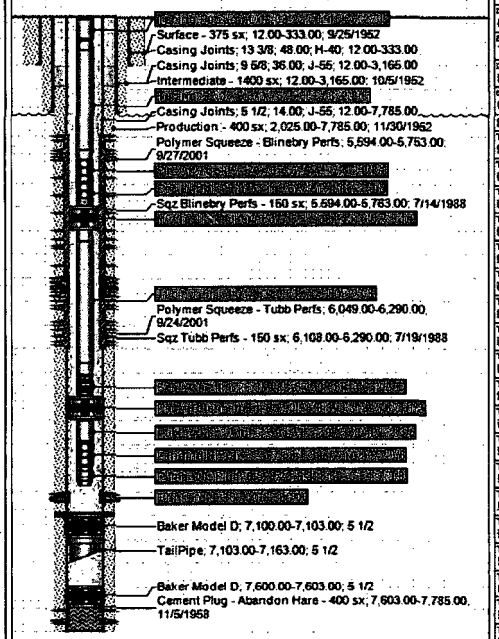
Proposed

Apache

Well Name: NEDU 503W

Injection, NORTHEAST DRINKARD UNIT 603 - Original Hole, 10/25/2018 11:13:26 AM

Vertical schematic (proposed)



Item Description	Length (ft)	OD Nominal (in)	Joints
Tubing	706.50	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

Existing Perforations

Type	Top Depth (ftKB)	Bottom Depth (ftKB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry Sqz'd	5,594	5,599	2.0	12
Blinebry Sqz'd	5,613	5,632	2.0	40
Blinebry Sqz'd	5,645	5,649	2.0	10
Blinebry Sqz'd	5,656	5,665	2.0	20
Blinebry Sqz'd	5,669	5,671	2.0	6
Blinebry Sqz'd	5,674	5,684	2.0	22
Blinebry Sqz'd	5,712	5,732	2.0	42
Blinebry Sqz'd	5,733	5,753	2.0	42
Blinebry Sqz'd	5,738	5,743	1.0	6
Blinebry Sqz'd	5,758	5,760	1.0	3
Blinebry	5,776	5,779	1.0	4
Blinebry	5,783	5,789	1.0	7
Blinebry	5,795	5,809	1.0	15
Blinebry	5,817	5,822	1.0	6
Blinebry	5,827	5,834	1.0	8
Blinebry	5,841	5,844	1.0	4
Blinebry	5,868	5,871	1.0	4
Blinebry	5,883	5,893	1.0	11
Blinebry	5,897	5,899	1.0	3

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

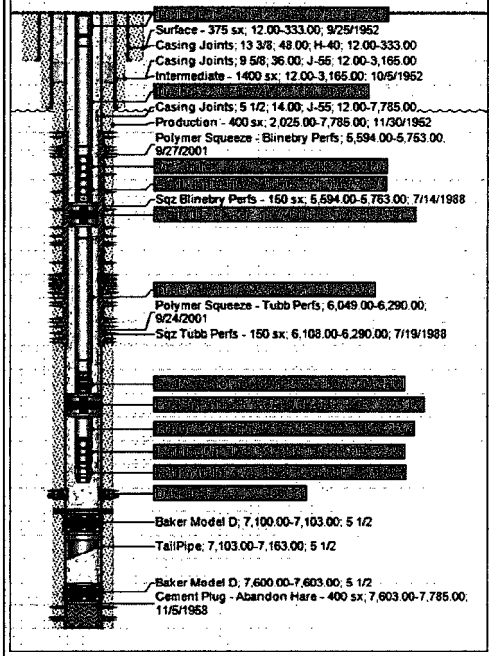
Proposed

Apache

Well Name: NEDU 503W

Injection, NORTHEAST DRINKARD UNIT 503 - Original Hole, 10/25/2018 11:13:33 AM

Vertical schematic (proposed)



Existing Perforations

Type	Top Depth (ftKB)	Bottom Depth (ftKB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,911	5,915	1.0	5
Blinebry	5,919	5,925	1.0	7
Blinebry	5,943	5,945	1.0	3
Blinebry	5,988	5,989	1.0	2
Blinebry	5,991	5,992	1.0	2
Blinebry	5,998	6,000	1.0	3
Tubb - Sqz'd	6,049	6,052	1.0	4
Tubb - Sqz'd	6,060	6,063	1.0	4
Tubb - Sqz'd	6,069	6,071	1.0	3
Tubb - Sqz'd	6,102	6,116	1.0	15
Tubb - Sqz'd	6,108	6,118	2.0	22
Tubb - Sqz'd	6,140	6,150	2.0	22
Tubb - Sqz'd	6,194	6,222	2.0	58
Tubb - Sqz'd	6,232	6,248	2.0	34
Tubb - Sqz'd	6,262	6,290	2.0	58
Drinkard	6,497	6,498	1.0	2
Drinkard	6,500	6,508	1.0	9
Drinkard	6,516	6,518	1.0	3
Drinkard	6,539	6,541	1.0	3
Drinkard	6,582	6,586	1.0	5
Drinkard	6,602	6,607	1.0	6
Drinkard	6,631	6,636	1.0	5
Drinkard	6,644	6,645	1.0	2
Drinkard	6,648	6,650	1.0	3
Drinkard	6,658	6,658	1.0	1

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

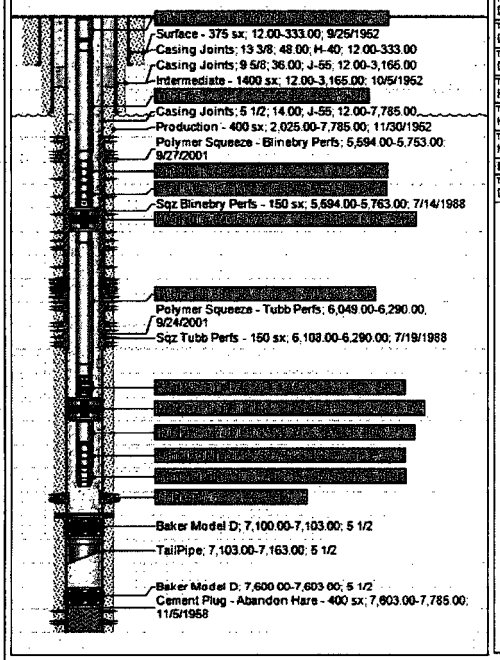
Proposed

Apache

Well Name: NEDU 503W

Injection, NORTHEAST DRINKARD UNIT 503 - Original Hole, 10/25/2018 11:13:40 AM

Vertical schematic (proposed)



Existing Perforations

Type	Top Depth (ftKB)	Bottom Depth (ftKB)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,667	6,671	1.0	5
Drinkard	6,676	6,694	0.5	9
Drinkard	6,700	6,716	0.5	8
Drinkard	6,723	6,729	1.0	7
Hare - Susp	7,620	7,694	4.0	300
Hare - Susp	7,706	7,710	4.0	20
Hare - Susp	7,720	7,752	4.0	132

Proposed Perforations

Type	Top Depth (ftKB)	Bottom Depth (ftKB)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,550	6,650	2.0	156

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

Proposed

Apache

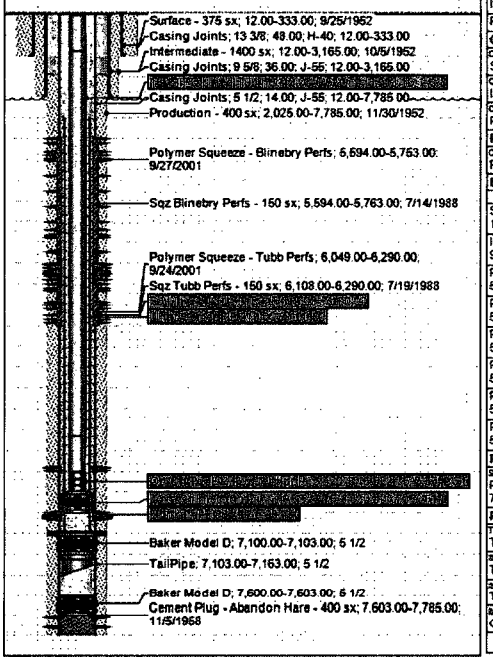
Well Name: NEDU 503W

Legal Well Name	Common Well Name	API/Surface Loc
NORTHEAST DRINKARD UNIT 503W	NEDU 503W	3002506473

Ground Elevation (ft)	Original KB Elevation (ft)	Surface Legal Location	Total Depth (ftKB)	Total Depth (TVD)
3,452.0	3,464.0	2080' FSL, 2080' FWL, Unit K, Sec 10, T-21S, R-37E	Original Hole - 7,100	7,785.0

Injection, NORTHEAST DRINKARD UNIT 503 - Original Hole, 10/25/2018 11:17:44 AM

Vertical schematic (proposed)



Current Wellbore Sections

Section Des	Size (in)	Act Top (ftKB)	Act Btm (ftKB)	Start Date
Surface	17 1/2	12.0	333.0	9/24/1952
Inter 1	12 1/4	333.0	3,165.0	9/26/1952
Prod 1	8 3/4	3,165.0	7,785.0	10/6/1952

Casing Strings

Casing Description	Csg Nominal OD (in)	Nominal Wt (lb/ft)	Csg Grade	Set Depth (ftKB)
Surface	13 3/8	48.00	H-40	333.00
Casing Description	Csg Nominal OD (in)	Nominal Wt (lb/ft)	Csg Grade	Set Depth (ftKB)
Inter 1	9 5/8	36.00	J-55	3,165.00
Casing Description	Csg Nominal OD (in)	Nominal Wt (lb/ft)	Csg Grade	Set Depth (ftKB)
Prod 1	5 1/2	14.00	J-55	7,785.00

Proposed Casing Strings

Casing Description	Csg Nominal OD (in)	Nominal Wt (lb/ft)	Csg Grade	Set Depth (ftKB)
Prod Lnr 1	4	11.60	FJ	7,100.00

Existing Cement

String	Des	Top (ftKB)	Btm (ftKB)	Top Meas Meth
Surface, 333.00ftKB, 13 3/8	Primary Cement	12.00	333.00	Returns at Surface
Inter 1, 3,165.00ftKB, 9 5/8	Primary Cement	12.00	3,165.00	Returns at Surface
Prod 1, 7,785.00ftKB, 5 1/2	Primary Cement	2,025.00	7,785.00	Temperture Survey
Prod 1, 7,785.00ftKB, 5 1/2	Abandonment Plug	7,603.00	7,785.00	
Prod 1, 7,785.00ftKB, 5 1/2	Cement Squeeze	5,594.00	5,763.00	
Prod 1, 7,785.00ftKB, 5 1/2	Cement Squeeze	6,108.00	6,290.00	
Prod 1, 7,785.00ftKB, 5 1/2	Cement Squeeze	6,049.00	6,290.00	
Prod 1, 7,785.00ftKB, 5 1/2	Cement Squeeze	5,594.00	5,753.00	

Proposed Cement

String	Description	Top Depth (ftKB)	Bottom Depth (ftKB)	Top Measurement Method
Prod Lnr 1, 7,100.00ftKB, 4	Primary Liner Cement	5,319.00	7,100.00	Returns at Surface

Proposed Tubing String

Tubing Description			Set Depth (ftKB)	
Tubing - Injection			6,398.8	
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	5,651.68		2 3/8	175
Item Description	Length (ft)		OD Nominal (in)	Joints
On-Off Tool	2.65		2 3/8	1

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

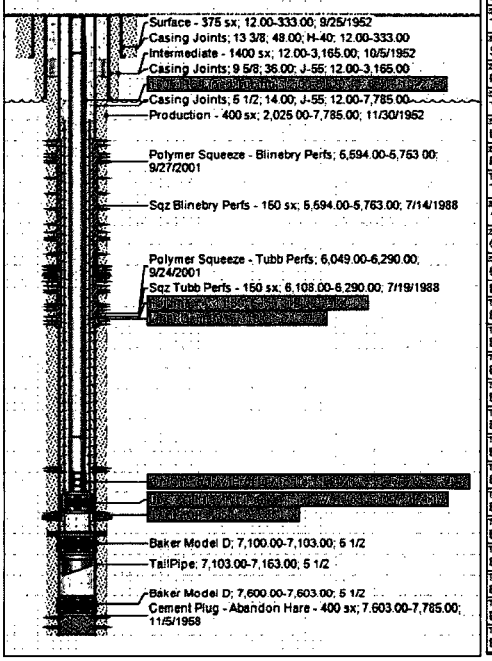
Proposed

Apache

Well Name: NEDU 503W

Injection, NORTHEAST DRINKARD UNIT 603 - Original Hole, 10/25/2018 11:18:11 AM

Vertical schematic (proposed)



Item Description	Length (ft)	OD Nominal (in)	Joints
Seal Nipple	1.10	2 3/8	1
Hydraulic Packer	6.52	5 1/2	1
Tubing	706.50	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	0.54	2 3/8	1

Tubing Description	Set Depth (ftKB)
Tubing - Injection	6,530.0

Item Description	Length (ft)	OD Nominal (in)	Joints
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	5,594	5,599	2.0	12
Blinebry Sqz'd	5,613	5,632	2.0	40
Blinebry Sqz'd	5,645	5,649	2.0	10
Blinebry Sqz'd	5,656	5,665	2.0	20
Blinebry Sqz'd	5,669	5,671	2.0	6
Blinebry Sqz'd	5,674	5,684	2.0	22
Blinebry Sqz'd	5,712	5,732	2.0	42
Blinebry Sqz'd	5,733	5,753	2.0	42
Blinebry Sqz'd	5,738	5,743	1.0	6
Blinebry Sqz'd	5,758	5,760	1.0	3
Blinebry	5,776	5,779	1.0	4
Blinebry	5,783	5,789	1.0	7
Blinebry	5,795	5,809	1.0	15

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

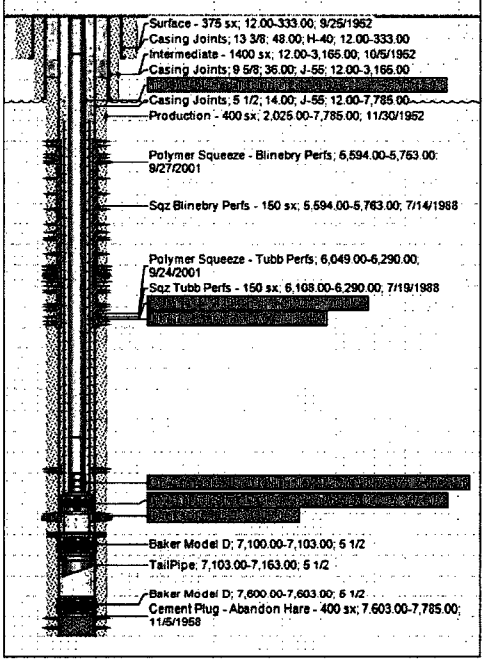
Proposed

Apache

Well Name: NEDU 503W

Injection, NORTHEAST DRINKARD UNIT 503 - Original Hole, 10/26/2018 11:18:19 AM

Vertical schematic (proposed)



Existing Perforations

Type	Top Depth (ftKB)	Bottom Depth (ftKB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,817	5,822	1.0	6
Blinebry	5,827	5,834	1.0	8
Blinebry	5,841	5,844	1.0	4
Blinebry	5,868	5,871	1.0	4
Blinebry	5,883	5,893	1.0	11
Blinebry	5,897	5,899	1.0	3
Blinebry	5,911	5,915	1.0	5
Blinebry	5,919	5,926	1.0	7
Blinebry	5,943	5,945	1.0	3
Blinebry	5,988	5,989	1.0	2
Blinebry	5,991	5,992	1.0	2
Blinebry	5,998	6,000	1.0	3
Tubb - Sqz'd	6,049	6,052	1.0	4
Tubb - Sqz'd	6,060	6,063	1.0	4
Tubb - Sqz'd	6,069	6,071	1.0	3
Tubb - Sqz'd	6,102	6,116	1.0	15
Tubb - Sqz'd	6,108	6,118	2.0	22
Tubb - Sqz'd	6,140	6,150	2.0	22
Tubb - Sqz'd	6,194	6,222	2.0	58
Tubb - Sqz'd	6,232	6,248	2.0	34
Tubb - Sqz'd	6,262	6,290	2.0	58
Drinkard	6,497	6,498	1.0	2
Drinkard	6,500	6,508	1.0	9
Drinkard	6,516	6,518	1.0	3
Drinkard	6,539	6,541	1.0	3

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

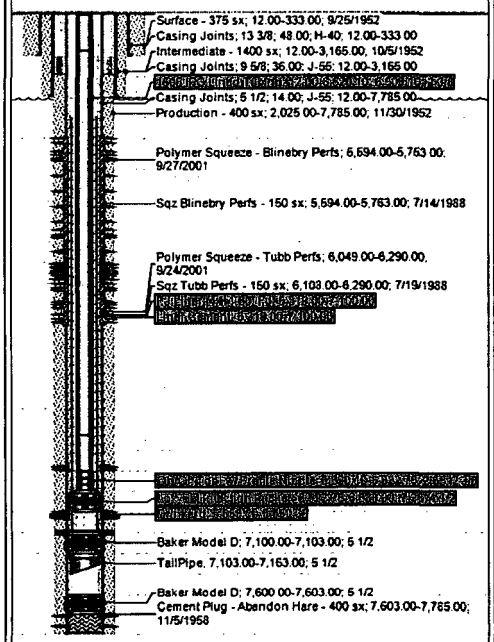
Proposed

Apache

Well Name: NEDU 503W

Injection, NORTHEAST DRINKARD UNIT 603 - Original Hole, 10/25/2018 11:18:26 AM

Vertical schematic (proposed)



Existing Perforations

Type	Top Depth (ftKB)	Bottom Depth (ftKB)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,582	6,586	1.0	5
Drinkard	6,602	6,607	1.0	6
Drinkard	6,631	6,635	1.0	5
Drinkard	6,644	6,645	1.0	2
Drinkard	6,648	6,650	1.0	3
Drinkard	6,658	6,658	1.0	1
Drinkard	6,667	6,671	1.0	5
Drinkard	6,676	6,694	0.5	9
Drinkard	6,700	6,716	0.5	8
Drinkard	6,723	6,729	1.0	7
Hare - Susp	7,620	7,694	4.0	300
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Proposed Perforations

Type	Top Depth (ftKB)	Bottom Depth (ftKB)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,550	6,650	2.0	156