

Submit 3 Copies To Appropriate District  
Office  
District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Ave., Artesia, NM 88210  
District III  
1000 Rio Brazos Rd., Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM  
87505

State of New Mexico  
Energy, Minerals and Natural Resources

Form C-103  
May 27, 2004

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

WELL API NO. 30 - 015 - 26575
5. Indicate Type of Lease STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/>
6. State Oil & Gas Lease No. NM-0557371
7. Lease Name or Unit Agreement Name WDW - 3
8. Well Number 3
9. OGRID Number
10. Pool name or Wildcat

SUNDRY NOTICES AND REPORTS ON WELLS,  
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEEN OR PLUG BACK TO A  
DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH  
PROPOSALS.)

1. Type of Well: Oil Well ☐ Gas Well ☒ Other

2. Name of Operator  
NAVAJO REFINING COMPANY

3. Address of Operator  
P.O. BOX 159, ARTESIA, NM 88211

4. Well Location

Unit Letter \_\_\_\_\_ : 790 feet from the SOUTH line and 2250 feet from the WEST line  
Section 1 Township 18 south Range 27 East NMPM County Eddy

11. Elevation (Show whether DR, RKB, RT, GR, etc.)  
GR 3609', RKB 3625'

Pit or Below-grade Tank Application ☐ or Closure ☐

Pit type N/A Depth to Groundwater 100 FT Distance from nearest fresh water well 1 MILE Distance from nearest surface water 6 MILES

Pit Liner Thickness: N/A mil Below-Grade Tank: Volume N/A bbls; Construction Material N/A

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

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐  
TEMPORARILY ABANDON ☐ CHANGE PLANS ☐  
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐  
COMMENCE DRILLING OPNS. ☐ P AND A ☐  
CASING/CEMENT JOB ☐

OTHER: To complete a Class 1 non-hazardous waste well ☒

OTHER: Well completion report to follow ☒

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 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

See attached well summary document and well schematic.

MIT Witnessed by Carl Chavez  
No Chart Submitted  
/s/

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☐, a general permit ☐ or an (attached) alternative OCD-approved plan ☐.

SIGNATURE Daniel Moore TITLE Env. Mgr. for Waters & Waste DATE 1/8/07

Type or print name  
For State Use Only

E-mail address:

Telephone No.

APPROVED BY: \_\_\_\_\_ TITLE \_\_\_\_\_ DATE \_\_\_\_\_

Conditions of Approval (if any):

Accepted for record  
NMOCD /s/

Submit To Appropriate District Office  
State Lease - 6 copies  
Fee Lease - 5 copies  
District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Rd., Aztec, NM 87410  
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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-105  
Revised June 10, 2003

WELL API NO.  
30 - 015 - 26575

5. Indicate Type of Lease  
STATE ☒ FEE ☐

State Oil & Gas Lease No.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. Type of Well:  
OIL WELL ☐ GAS WELL ☐ DRY ☐ OTHER ☒ Non-hazardous Waste Disposal Well

b. Type of Completion:  
NEW ☐ WORK ☒ DEEPEN ☐ PLUG ☐ DIE ☐  
WELL OVER BACK

2. Name of Operator

NAVAJO REFINING COMPANY

3. Address of Operator

P.O. BOX 159, ARTESIA, NM 88211

4. Well Location

Unit Letter : 790 Feet From The SOUTH Line and 2250 Feet From The WEST Line

Section 1 Township 18 South Range 27 East NMPM

County Eddy, NM

10. Date Spudded 12/22/90	11. Date T.D. Reached 1/29/91	12. Date Compl. (Ready to Prod.) Injection 1/15/07	13. Elevations (DF& RKB, RT, GR, etc.) DF 3616 ft / GR 3609 ft	14. Elev. Casinghead 3609 ft
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15. Total Depth 10,119 ft	16. Plug Back T.D. 9020 ft	17. If Multiple Compl. How Many Zones? 2	18. Intervals Drilled By	Rotary Tools (Recentry Drill out CIBP Plugs with Swivel)	Cable Tools
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19. Producing Interval(s), of this completion - Top, Bottom, Name  
Injection Interval 7660 ft to 8450 ft Cisco & 8540 ft to 8620 ft Canyon

20. Was Directional Survey Made  
No

21. Type Electric and Other Logs Run  
CBL/VDL, Temperature, Caliper, Radioactive Tracer, Pressure

22. Was Well Cored  
No

23. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13 3/8"	54.50	400'	17 1/2"	425-CIRC	NONE
9 5/8"	36	2604'	12 1/4"	1025-CIRC	NONE
7"	29 & 26	9450'	8 3/4"	1350-CIRC	NONE

24. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN	SIZE	DEPTH SET	PACKER SET
4 1/2"	9051'	10,119'	175	NONE	4 1/2"	7567'	7575'

25. TUBING RECORD

26. Perforation record (interval, size, and number)

7660' TO 8450' / 0.5" / 2 JSFP / 60°  
8540' TO 8620' / 0.5" / 2 JSFP / 60°

27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
7050' TO 7102'	80 SKS PREM 14.8 PPG CMT SQZ PERF
7262' TO 7278'	100 SKS PREM 14.8 PPG CMT SQZ PERF
7304' TO 7314'	80 SKS PREM 14.8 PPG CMT SQZ PERF

28. PRODUCTION

Date First Production (INJECTION WELL)		Production Method (Flowing, gas lift, pumping - Size and type pump) (INJECTION PUMP)			Well Status (Prod. or Shut-in) (SHUT-IN)		
Date of Test 10/19/06	Hours Tested 4 HOURS	Choke Size NO CHOKE INJECT TEST	Prod'n For Test Period N/A	Oil - Bbl N/A	Gas - MCF N/A	Water - Bbl. N/A	Gas - Oil Ratio N/A
Flow Tubing Press. MAX INJECT 1450 PSI	Casing Pressure 750 PSI	Calculated 24- Hour Rate 8 BPM	Oil - Bbl. N/A	Gas - MCF N/A	Water - Bbl. N/A	Oil Gravity - API - (Corr.) N/A	

29. Disposition of Gas (Sold, used for fuel, vented, etc.)  
NO GAS

Test Witnessed By

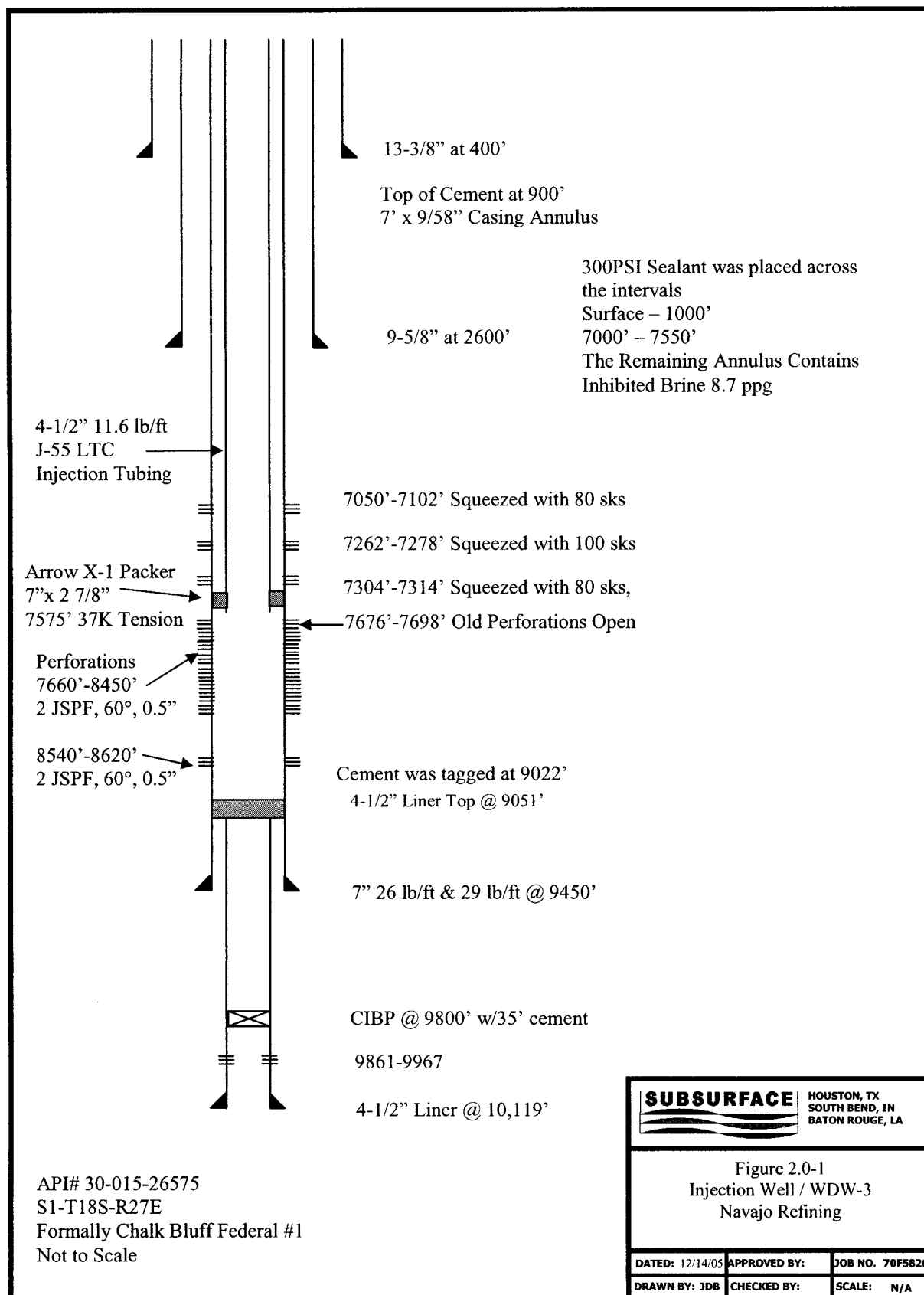
30. List Attachments  
WELL SUMMARY OF EVENTS, WELL WAS CONVERTED TO A CLASS 1 NON-HAZARDOUS WATER WASTE DISPOSAL WELL. A FULL REPORT WILL FOLLOW AT A LATER DATE.

31. I hereby certify that the information shown on both sides of this form as true and complete to the best of my knowledge and belief

Signature Darrell Moore Printed Name Darrell Moore Title Env. Mgr.

Date 1/8/07

E-mail Address darrell.moore@navajo-refining.com



## Well Summary

Navajo Refining Company (Navajo) contracted Subsurface Technology, Inc. (Subsurface), to prepare an application for permit and to reenter a plugged and abandoned (P&A) oil and gas well. The Application for Permit to Drill or Reenter and the Sundry Notices and Reports on Wells was submitted to the Department of the Interior, Bureau of Land Management (BLM), on June 29, 2006 and approved. The Application for Permit to Drill, Re-enter, Deepen, Plug Back, or add a Zone was submitted to the State of New Mexico Oil Conservation Commission (OCD) on June 29, 2006 and approved.

Subsurface prepared an engineering plan to reenter the P&A'd oil and gas well formally owned by Mewbourne Oil Company. The original well name was Caulk Bluff Federal #1 (API number 30-015-26575), and a Change of Operator application was submitted to the OCD on December 5, 2000 and approved under the well name of WDW-3. Under contract to Navajo, Subsurface commenced field operations on September 25, 2006. The existing location was cleared and prepared for reentry operations. An earthen lined reserve pit was dug to catch returns. All depths unless stated are referenced to rig floor at six feet to seven feet above ground level. The rig floor was moved from six feet to seven feet after drilling out the cast iron bridge plugs.

A workover rig and reverse unit was placed on location and the existing wellhead was removed. The first cast iron bridge plug (CIBP) at 7010 feet was drilled and the perforated interval from 7050 feet to 7102 feet was squeezed off with neat cement and successfully pressured tested to six hundred eighty pounds per square inch gauge pressure (680 psig). The second and third CIBP at 7190 feet and 7279 feet was drilled. There appeared to be ten feet of cement on top of the third CIBP. The perforated interval from 7262 feet to 7278 feet and from 7304 feet to 7314 feet was squeezed with neat cement. The squeezed interval was pressure tested to 920 psig and would not hold. A second cement squeeze was performed across the perforated interval from 7262 feet to 7278 feet and from 7304 feet to 7314. The interval was pressured tested to 630 psig and continued to lose pressure at a rate of two pounds per square inch every thirty minutes (2 psi/30 min). The fourth CIBP at 7595 feet was drilled and at 7838 feet a cement plug was encountered and drilled through. Cement was tagged twenty nine (29) feet above the top of the liner at 9022 feet. The hole was circulated clean and prepared for logging.

A Cement Bond Log (CBL), Variable Density Log (VDL), caliper log, and temperature survey were performed. The CBL/VDL showed that the top of the cement (TOC) behind the 7-inch casing was located 900 feet from the surface. The OCD was notified and approved the existing well condition. The casing was perforated from 7660 feet to 8450 feet and from 8540 feet to 8620 feet at 2-JSPF on sixty degree (60°) phasing.

A packer was set at 7546 feet with 2 7/8-inch PH-6 tubing, the well was swabbed back and samples of the formation fluid were recovered. It was estimated that two hundred twenty six barrels (226 bbls) of formation fluid was returned to the surface. A pressure test on the annulus between the 7-inch and 2 7/8-inch was performed at 660 psig with the annulus losing pressure at a rate of 8 psi/hr.

An injection test was performed on the well down the 2 7/8-inch tubing with the annulus open to the bottom of the well. The open annulus will allow for the calculation of the bottom hole pressure while pumping down the 2 7/8-inch tubing with out the influence of tubing friction pressure on the bottom hole calculations. The injection rates were from two barrels per minute (2 bpm) to ten barrels per minute (10 bpm). From the data collected during the injection test it appears that the well will be able to accept an injection rate up to 10 bpm at the permitted pressure of 1550 psig with 4 1/2-inch, 11.6 pound per foot (11.6 lb/ft) tubing in the wellbore.

At the request of the OCD, Subsurface went back into the wellbore with a retrievable bridge plug (RBP) to test the casing and isolate any leaks to within 1000 feet. The RBP was set at 7550 feet and the packer was set at 6985 feet to isolate the squeezed interval from 7050 feet to 7314 feet. The squeezed interval was pressure tested to 490 psig and the annulus to 632 psig. The squeezed interval was losing pressure at a rate of 6 psi/hr and the annulus was gaining pressure due to thermal affects. The RBP was moved up the wellbore to 1255 feet and casing pressure tested to 569 psig. The casing above 1255 feet was losing pressure at a rate of 2 psi/hr. The casing leaks were isolated to the squeezed interval from 7050 feet to 7314 feet and in the interval from surface to 1255 feet. The OCD was called and approved the 300PSI sealing application to stop the casing leaks across the two intervals.

The 4 1/2-inch tubing was run into the wellbore and the Arrow X-1 packer was set at 7575.73 feet with 37,000 lbs of tension. Prior to running the 4 1/2-inch tubing a new Superior hanging spool was installed. Prior to setting the tubing packer, the annulus between the 4 1/2-inch tubing and the 7-inch casing was filled with inhibited brine, with the 300psi sealant across the squeezed perforations and across the upper section of the 7-inch casing. Once the packer was set and casing hung off in the spool a new Superior wellhead was installed and the P-seals were pressure tested to 3000 psig. After the wellhead was assembled the annulus was squeezed at 545 psig for four hours (4 hrs) as specified by the sealant manufacture representative on site. The annulus was then pressure tested to 480 psig overnight with no pressure loss. Workover rig was disassembled and moved off location with all associated equipment.

A 12 hr pump in and falloff test was performed down the 4 1/2-inch tubing. To maintain a surface injection pressure that was below the permitted pressure of 1550 psi the injection rate was lowered to 9 bpm at the end of the pump in procedure. The BHP gauge was placed at 8630 feet for 14 hrs to monitor BHP, when the gauge was pulled five minute (5 min) gradient stops were made every 1000 feet with the first stop at 7000 feet. The analysis of the data showed interference from the adjacent injection wells, which skewed the results for determination of the skin and possibly the permeability. The equipment used to perform the falloff testing was moved off location to prepare for mechanical integrity testing (MIT).

The MIT was performed and witnessed by the OCD. The MIT consisted of an annulus pressure test, and a radioactive tracer survey. The temperature survey was performed during the CBL/VDL logging event and will be used as a baseline for any future temperature surveys. The annulus pressure test was performed at 530 psia and lost 2.5 psi over a one hour period, which was within the OCD requirements of five percent (5%)

over a 30 min time interval. The radioactive tracer survey showed no signs of fluid flow out of the permitted interval above 7650 feet. The OCD witnessed the annular pressure test and the first half of the radioactive tracer survey.

The annulus monitoring system was installed and tested. The well was turned over to Navajo for injection.