Operator Guidance Summary and Structure

C-103P SR to Plug and Abandon

The Oil Conservation Division ("OCD") Operator guidance is designed to outline the base line of which documents, file types, and parameters are needed for the submission type listed in the header of this document. This guidance is written to be a high-level guide and is not intended to be all inclusive as there are times when variables occur outside the scope covered herein and may require additional information or steps. The structure of these documents utilizes a bulleted system and is formatted as follows:

Introduction summary of the form and applicable rules.

- Prerequisite submissions
    - ☐ Submission A
    - ☐ Submission B
- Main application/sundry name (links will be included if applicable)
    - List of required attachments
        - ☐ File A
        - ☐ File B
        - ☐ File C
    - List of additional attachments (information helpful but not required in most cases)
        - ☐ File D
        - ☐ File E
- Information needed on each file listed above (required and additional files)
    - File A
        - ☐ [Information here] I.E. API #
            - ❖ ☐ [Parameter here] I.E. Must not be duplicate API #
    - Continued as needed.
        - ☐ [Information here] I.E. API #
            - ❖ ☐ [Parameter here] I.E. Must not be duplicate API #

********** End of Structure **********

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A C-103P Subsequent report of the plugging and abandonment of a well consists of multiple attachments. These attachments are reviewed together by OCD for State, Fee, and Federal wells in order to ensure that the well was plugged in a sufficient manner that will permanently confine all oil, gas and water in the separate strata in which they are originally found.

Per 19.15.25.9 NMAC

A. The operator shall file notice of intention to plug with the division on form C-103 prior to commencing plugging operations. The notice shall provide all the information 19.15.7.14 NMAC requires including operator and well identification and proposed procedures for plugging the well.
B. In addition, the operator shall provide a well bore diagram showing the proposed plugging procedure.
C. The operator shall notify the division 24 hours prior to commencing plugging operations. In the case of a newly drilled dry hole, the operator may obtain verbal approval from the appropriate OCD representative of the plugging method and time operations are to begin. The operator shall file written notice in accordance with 19.15.25.11 NMAC with the division within 10 days after the appropriate OCD representative has given verbal approval.

Per 19.15.25.10 NMAC

A. Before an operator abandons a well, the operator shall plug the well in a manner that permanently confines all oil, gas and water in the separate strata in which they are originally found. The operator may accomplish this by using mud-laden fluid, cement and plugs singly or in combination as approved by the division on the notice of intention to plug.
B. The operator shall mark the exact location of plugged and abandoned wells with a steel marker not less than four inches in diameter set in cement and extending at least four feet above mean ground level. The operator's name, lease name and well number and location, including unit letter, section, township and range, shall be welded, stamped or otherwise permanently engraved into the marker's metal. A person shall not build permanent structures preventing access to the wellhead over a plugged and abandoned well without the division's written approval. A person shall not remove a plugged and abandonment marker without the division's written approval.
C. The operator may use below-ground plugged and abandonment markers only with the division's written approval when an above-ground marker would interfere with agricultural endeavors. The below-ground marker shall have a steel plate welded onto the abandoned well's surface or conductor pipe and shall be at least three feet below the ground surface and of sufficient size so that all the information 19.15.16.8 NMAC requires can be stenciled into the steel or welded onto the steel plate's surface. The division may require a re-survey of the well location.

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Information Helpful to submit a C-103P:

1. Approved C-103F
2. Daily plugging reports
3. WBD (Wellbore Diagrams)
    a. C-103F
        i. Pre plugged from C-103F.
        ii. Proposed plugging from C-103F.
    b. As plugged.

- **Build the "As Plugged" Wellbore Diagram:**
  Note two examples can be seen in Example A and Example A1.
    - List the Company Name, well name and number, API number, and ULSTR information.
    - List the following information for each casing/liner present in the wellbore:
        - Hole Size
        - Casing Size OD
        - Casing Size ID
        - Grade
        - Weight
        - Depth
        - Annular capacity in cubic feet per linear foot
            - Must be listed as separate volumes if you have casing/casing annulus and open hole/casing annulus
        - TOC (Top of cement) for each string/stage and source of determination
        - DV (Diverting Valve) Tools
    - List the depths of all perforated intervals.
    - Depth of well:
        - For Vertical: List the TD (total depth) and PBTD (plugback measured depth) of the well.
        - For Deviated/Horizontal: List TVD (True Vertical Depth), MD (Measured Depth), TD, and PBTD for the well.
    - Formation Top Information:
        - For all penetrated formations by the well you must list the formation top and formation name.
            - Note: For highly deviated or directional wells list both MD and TVD
    - Details for each placed plug from the rig report:
        - List and show if the plug was either:
            - Inside balance plug
            - Perforations and squeezes such as Inside/outside
            - Isolation device that was used
                - List type i.e. CIBP (Cast Iron Bridge Plug), CR (Cement Retainer)
                - List depth set in MD and TVD
        - Top and Bottom of plug height that was set.
        - Fluid spacer details.

- Sacks pumped.
- Specify Cement Class/Type used.
  Note: if all plugs are the same specifications, a blanket statement can be used instead of listing per plug for the following information.
    - Specify ppg used.
    - Specify yield used.
    - Specify mix water volume used.

- **Build the Sundry and description of work that took place:**
  - Utilizing all the daily reports you received.
    - The Sundry header should show:
      - Operator of Record Name and OGRID
      - Well name and API number
      - SHL (Surface hole location) (should match most current C-102as drilled) which includes the unit, section, township, and range
      - BHL (bottom hole location) for highly deviated and directional wells
      - GL (Ground Elevation), KB (Kelly Bushing) if available, DF (Drill Floor) if available.
    - List the Name and agency of the regulatory representative that was on site (If applicable).
    - Detailed description of all plugs set including perf intervals and isolation device set.
    - The work procedure should include details on:
      - CBL top and bottom recorded interval
      - CBL TOC(s)
      - Details of any casing pressure tests performed.
      - Details of any drilling, milling, or cleanouts that were performed.
      - MIRU (Move in rig up) dates
      - Marker cutoff date
    - Attachments to the Sundry shall include:
      - Photos of the Dry hole marker
      - GPS coordinates of the marker using NAD 83
      - As plugged WBD

      Note: The CBL must be submitted via the OCD electronic permitting submissions system

      Note: The plugging report may be submitted as a separate page as long as attached with the sundry as the cover page.

Example A, As plugged wellbore diagram

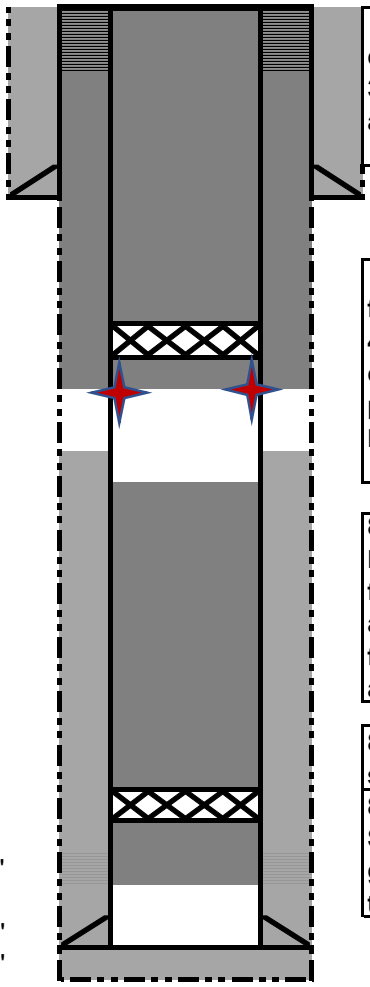
End of Well Report
ABC Production, LLC
Upper Crust # 1
API # 30-000-01111
NW/NW, Unit D, Sec 1, T20N, R10W
Some County, NM

GL 5500'
KB 5513'
Spud Date 1/1/1963
Plugged Date 8/2/2022

SURF CSG	
Hole size	11"
Csg Size:	8.625"
Wt:	24#
Grade:	N/A
ID:	8.097"
Depth	297'
cap cf/ft:	0.3575
TOC:	Surf

PROD CSG	
Hole size	6.75"
Csg Size:	4.5"
Wt:	9.5#
Grade:	J-55
ID:	4.090"
Depth	2175'
cap cf/ft:	0.0912
Csg/Csg Ann	0.2318
Csg/OH Ann, cf/ft:	0.1381
TOC:	1325' (Calc.)

FORMATION TOPS	
San Jose	Surf
Nacimiento	430'
Ojo Alamo	1512'
Kirtland	1680'
Fruitland	1924'
Pictured Cliffs	2063'



Perfs 2067-2113'

PBTD 2132'
TD 2175'

8-2-2022: Cut off WH, TOC in 4.5" casing at surface, in surface casing at 35'. Installed P&A marker, topped off annulus and cellar with 32 sx.

8-1-2022: Plug 3: Nacimiento formation top to surface: Perforated at 480'. Established circulation down casing and out BH. Mixed and pumped 125 sx down casing and out BH. Good cement returns. WOC.

8-1-2022: Plug 2: Pictured Cliffs, Fruitland, Kirtland and Ojo Alamo formation tops: Set CR at 2019'. Mixed and pumped balanced plug of 49 sx from 2019'. WOC, TIH, tagged Plug 2 at 1396'.

8-1-2022: Ran CBL from 2019' to surface. TOC at 1085'.

8-1-2022: Plug 1: Pictured Cliffs perfs: Set CR at 2019'. PT casing to 650 psi, good test. Mixed and pumped 10 sx through CR.

All cement used was Class G mixed at 15.8 ppg, yield 1.15 cuft/sx
Regulatory representative: Mr. Inspector, BLM, FFO
Marker GPS Coordinates: Lat; 34.244237 N, Long; 109.372235 W

Example A1, As plugged wellbore diagram

End of Well Report
ABC Production, LLC
Old Salt # 44
API # 30-044-20735
NW/NW, Unit D, Sec 33 T23N, R2W
Some County, NM

GL 7029'
KB 7042'
Spud Date 9/30/1984
P&A Date

SURF CSG

Hole size	12.25"
Csg Size:	9.625"
Wt:	32#
Grade:	J-55
ID:	9.001
Depth	260'
Csg cap ft^3:	0.4418
TOC:	Surf

INT CSG

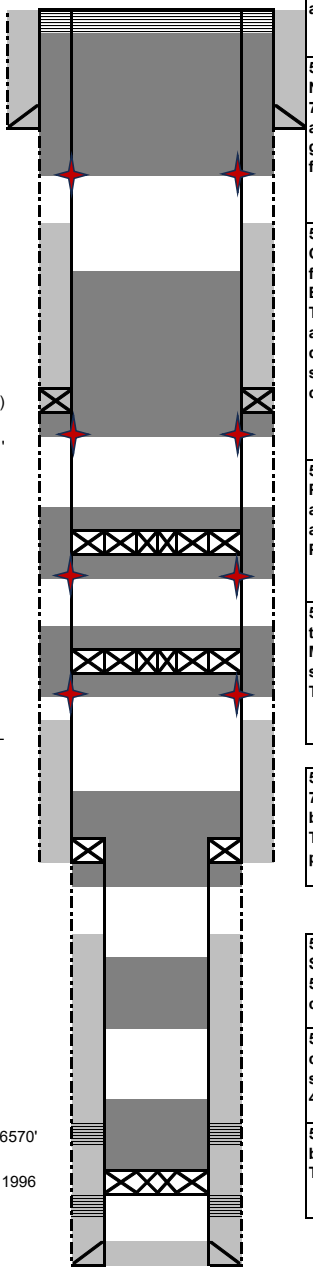
Hole size	8.75"
Csg Size:	7"
Wt:	23#
Grade:	J-55
ID:	6.366"
Depth	4901'
Csg cap ft^3:	0.2210
Csg/Csg Ann ft^3:	0.1668
Csg/OH cap ft^3:	0.1503
DV Tool:	2391'
TOC: Stg 1: (CBL)	4150'
TOC: Stg 2: (TS)	1000'

LINER

Hole size	6.25"
Csg Size:	4.5"
Wt:	11.6#
Grade:	K-55
ID:	4.000
Depth	4720-6845'
Csg cap ft^3:	0.0872
Csg/OH cap ft^3:	0.1026
TOC (CBL)	5150'

FORMATION TOPS

San Jose	Surface
Nacimiento	650'
Ojo Alamo	1956'
Kirtland	2101'
Fruitland	2230'
Pictured Cliffs	2395'
Chacra	2808'
Mesa Verde	3868'
Mancos	4722'
Gallup	5341'
Dakota	6598'



5-9-2024: Plug 8: Topped off plug: Cut off WH, TOC at 10' in 7" casing and at 68' in 7" x 9 5/8" annulus. Topped off casings and cellar with poly pipe and 43 sx.

5-8-2024: Plug 7: Surface casing shoe and Nacimiento formation top: Perforated at 700'. Established circulation down casing and out BH. Mixed and pumped 225 sx, good cement returns out BH, then slowed for last 50 sx. WOC.

5-7-2024: Plug 6: DV tool and Pictured Cliffs, Fruitland, Kirtland and Ojo Alamo formation tops: Perforated at 2445'. Established injection1 bpm at 850 psi. TOOH, TIH, set CR at 2390'. Mixed cement and displaced to CR, stiug into CR, displaced 5 sx through CR, pressured up, stung out and placed 75 sx cement inside casing. WOC, tagged Plug 6 at 1812'.

5-7-2024: Plug 5: Chacra formation top: Perforated at 2858', set CR at 2811'. Mixed and pumped 52 sx through CR, stung out and placed 14 sx above CR. WOC. Tagged Plug 5 at 2699'.

5-6-2024: Plug 4: Mesa Verde formation top: Perforate at 3918', set CR at 3868'. Mixed and pumped 52 sx through CR, sting out and place 14 sx above CR. WOC. Tagged Plug 4 at 3751'.

5-6-2024: Plug 3: Mancos formation top, 7" csg shoe and liner top: Spotted a balanced plug of 25 sx from 4954'. WOC, Tagged Plug 3 at 4598'. PT casing, passed.

5-5-2024: Plug 2: Gallup formation top: Spotted a balanced plug of 12 sx from 5391'. WOC, Tagged Plug 2 at 5235'. PT casing, failed.

5-5-2024: Loaded and rolled hole. PT casing, failed. Run CBL from 6481' to surface, liner TOC at 5158', 7" TOC at 4150'.

5-5-2024: Plug 1: Dakota perfs: Spotted balanced plug of 18 sx from 6690'. WOC. Tagged at 6481'.

All cement used was Class G mixed at 15.8 ppg, yield 1.15 cu ft/sx and mix water 5 gal/sx
Spacer fluid used was fresh water
Regulatory representative: John Henry, BLM FFO
GPS Coordinates: Lat; 36.33336 N, Long; 108.666643 W