

Form 3160-5
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

5. Lease Serial No.	NMNM0155254D
6. If Indian, Allottee or Tribe Name	

SUBMIT IN TRIPLICATE - Other instructions on page 2		7. If Unit of CA/Agreement, Name and/or No. Cato San Andres Unit
1. Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		8. Well Name and No. Cato San Andres Unit #185
2. Name of Operator Shell Oil Company (Western Division)		9. API Well No. 30-005-20186
3a. Address P.O. Box 576, Houston, TX 77210	3b. Phone No. (include area code) (832) 337-2434	10. Field and Pool or Exploratory Area Cato; San Andres
4. Location of Well (Footage, Sec., T.,R.,M., or Survey Description) G-04-09S-30E 1980 FNL 1980 FEL		11. Country or Parish, State Chaves County, New Mexico, USA

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION				
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off	
<input checked="" type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity	
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other	
	<input type="checkbox"/> Change Plans	<input checked="" type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon		
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal		

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleate horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be perfonned or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has detennined that the site is ready for final inspection.)

Please refer to the attached Plug and Abandonment End of Well Report.

Accepted for Record

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed) Samantha Baker	Title SGWS Legacy Program Manager
Signature Samantha Baker	Date 11/04/2024

THE SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by	Petroleum Engineer	Date 11/07/2024
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	Office RFO	

Title 18 U.S.C Section 1001 and Title 43 U.S.C Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local area or regional procedures and practices, are either shown below, will be issued by or may be obtained from the local Federal office.

SPECIFIC INSTRUCTIONS

Item 4 - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

Item 13: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. If the proposal will involve **hydraulic fracturing operations**, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.

PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c) and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.

ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.

EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.

Response to this request is mandatory.

The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C St., N.W., Mail Stop 401 LS, Washington, D.C. 20240

LANGAN**Technical
Memorandum**

300 Union Boulevard, Suite 405 Lakewood, CO 80228 T: 303.262.2000 F: 303.262.2001

To: BLM

From: Langan

Info: Shell

Date: November 04, 2024

Re: Plug and Abandonment – End of Well Report
Cato San Andres Unit #185 / API 30-005-20186
Section 4, Township 9S, Range 30E
Langan Project No.: 781014301

Work Summary:

8/07/24 – The crew moved in and spotted equipment, followed by a PJSM. They opened the well and conducted gas testing in the cellar area with good results. The wellhead was then prepped for bell nipple installation. The 4.5" production casing stump was cut off and identified with an ID of 4.052". The crew completed the day by welding the bell nipple.

8/08/24 – A PJSM was conducted discussing SSE OOP, PPE, and JSA review. Equipment and work areas were inspected. The crew rigged up wireline unit and picked up wireline lubricator and tools. The lubricator was pressure tested at 250 psi and 500 psi for 5 minutes each with good results. The well was opened, and they ran in hole with 3.625" GRJB, tagging a restriction at 905'KB. After pulling out of hole, they ran in with 3.5" GRJB, again tagging at 905'KB. They then ran an impression block measuring 3.6785", which tagged a restriction at 480'KB. After pulling out of hole, they were unable to determine the obstruction. The tools were bumped up, the 5 1/8" 5K gate valve was closed, and the lubricator was laid down. Finally, the wireline unit was rigged down.

10/05/24 – Operations began with a move to well #188, followed by a PJSM and JSA review. The crew then relocated from well #188 to well #185. They moved in and rigged up workover rig, spotted equipment including catwalk and pipe racks, and offloaded tubing onto storage racks.

10/06/24 – The crew started by replacing a 2" bullplug on the 8 5/8" wellhead and loaded pipe onto working racks. They tallied 106 joints of 2 3/8" 8RD EUE tubing (3428') and secured the well,

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followed by SDFN. A PJSM with JSA review was conducted, and equipment and work areas were inspected. The mud pit and pump were spotted. The day included multiple periods of NPT Drake, with a break to rig up temporary iron to pump and open top tank.

10/07/24 - The day began with ending NPT Drake and securing the location. After a PJSM and JSA review, equipment and work areas were inspected, and wellhead pressure was checked at 0 psi. The crew nipped up BOP, followed by another period of NPT Drake. The BOP pipe rams were pressure tested with good results. The day ended with more NPT Drake, securing the well, and SDFN.

10/08/24 – Operations started with a PJSM discussing pinch points and JSA review. Equipment and work areas were inspected, and wellhead pressure was verified at 0 psi. The well was opened, and BOP blind rams were pressure tested at 250 psi and 800 psi for 5 minutes each with good results. The workfloor was rigged up. The crew ran in hole with 2.375" 8 RD EUE workstring and 3.75" Tri cone bit BHA, encountering tags at 905'KB and 970'KB before finding a solid restriction at 1508'KB. The power swivel was rigged up. They lined up the rig pump for forward circulation, pumping 25 bbls of freshwater at 1.5 bpm with 250 psi. Returns showed black water at 10 ppg. Cleanout continued with light tags to 2362'KB, with ROP slowing to 0.5 fpm with 2-3K WOB. Returns increased to 10.2 ppg PH7 CHL 3000 Sulphates 1600, and samples revealed pipe scale and Red Bed. Cleanout stopped at 2398'KB, and 40 bbls of freshwater were circulated with no change in returns. The crew swiveled out 4 joints and pulled out of hole to derrick with 35 stands (70 joints). They laid down the BHA, noting the 3.75" bit looked good. The well was secured and SDFN.

10/09/24 – PJSM focused on communication, buffer zones, and JSA review. Equipment and work areas were inspected, wellhead pressure checked at 0 psi, and the well was opened. The crew made up a 3.875" tri-cone bit BHA and ran in hole with workstring from derrick, tagging at 942'. They noted they did not run in hole with the same 3.75" bit as the previous day after discovering it was not bored out for reverse circulation. The power swivel was rigged up, and dirty fluid in the mudpit was changed to clean freshwater. They broke circulation, rotated and circulated at 942'KB, worked through the restriction, swiveled down 6 joints, and racked back

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the power swivel. Running in hole with tubing from derrick, they tagged a restriction at 2321'KB (77' high), laid down 1 joint, and rigged up the power swivel. Attempts to work the plug loose with the rig were unsuccessful. Forward circulation attempts showed pump pressure at 500 psi. After working up and down with the rig, they lined up the pump for reverse circulation but were unsuccessful with pump pressure at 300 psi, despite observing returns from 8 5/8" and working pipe up and down. They pulled out of hole with workstring wet, finding the 3.875" bit plugged with red bed and other gritty claylike formation. The well was secured and SDFN.

10/10/24 – The day began with a PJSM covering 7 Step with rig crew, LSRs, Equipment inspections, JSA Review, overhead lifts, PPE, and discussion of operational and safety goals. Equipment and work areas were inspected, with wellhead pressure checked at 0 psi and 8-5/8" at 0 psi (slight vacuum). The crew swapped out water in the pit and cleaned out tubing with a pressure washer, rabbiting all joints. They made up a 3.875" tri-cone bit and ran in hole, encountering a slight tag at 883'. After rigging up the power swivel, they began washing down while rotating and circulating, reaching EOT at 1360' and circulating the wellbore to lift solids. Continuing to run in hole with swivel, they reached EOT at 1880' with pump pressure varying from 250 psi to 400 psi. Fluid returns were 10.1 ppg. They continued running in hole with swivel to EOT at 2006', experiencing heavy u-tube up the tubing during connections, suggesting material falling in on the 4.5" x 2.375" backside from compromised 4.5" casing. After discussion with Shell engineer, they pulled out of hole with tubing and 3-7/8" bit. The tubing was clear, but the bit was plugged with sand and red bed formation. The well was shut in and monitored, with final readings showing 4.5" at 0 psi and 4.5" x 8-5/8" at 0 psi before SDFN.

10/11/2024 – A PJSM was conducted covering 7 Step with rig crew, LSRs, Equipment inspections, JSA Review, overhead lifts, PPE, and daily operational and safety goals. Equipment and work areas were inspected, with wellhead pressure checked at 0 psi and 8-5/8" at 0 psi (slight vacuum). After NPT waiting on brine tank and 10ppg brine, the tank was spotted and filled with 10+ppg brine (verified by sample). The crew made up a 3-7/8" tri-cone bit and ran in hole, tagging at 930'. The power swivel was rigged up to begin rotating and circulating down with 10ppg brine, requiring 10 bbls to catch circulation. A solid tag was encountered at 945', feeling like metal when drilling. After discussion with the engineer, they pulled out of hole, finding pieces of metal stuck

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in the bit and bit sub. A 3.06" tagging tool was made up and run in hole to attempt passing through the obstruction, but it tagged at exactly 945'. After attempting to turn pipe to fall through, they pulled out of hole, shut in the well, and SDFN, with wireline camera set up for the morning.

10/12/24 – Held a PJSM covering 7 Step with rig crew, LSRs, Equipment inspections, JSA Review, overhead lifts, PPE, and daily operational and safety goals. Equipment and work areas were inspected, showing 0 psi on both wellhead and 8-5/8" (slight vacuum). A 3.06" tag tool was made up and run in hole to tag at 945', then pulled out of hole to check fluid level (350'). A mule shoe was made up and run in hole just above the tag. Wireline and camera BHA were rigged up, but encountered NPT-Drake wireline when the camera shorted out at 850'. After troubleshooting, wireline ran in hole with camera, revealing total failure of casing from 900' - 945' +/- with complete washout of formation. After rigging down wireline and pulling out of hole with tubing, they waited on orders. A mule shoe was made up and run in hole just above the tag. At 945', with both annuli open, they pumped freshwater down tubing, catching circulation up 2-3/8" x 4.5" annuli with 10 bbls away. Green dye was pumped and returned after 20 bbls (5 bbls over wellbore volume), but no returns were seen on the 4.5" x 8-5/8" annuli. They pulled out of hole with tubing, shut in the well, and SDFN.

10/13/24 – Held a PJSM covering 7 Step with rig crew, LSRs, Equipment inspections, JSA Review, overhead lifts, PPE, and daily operational and safety goals. Equipment and work areas were inspected, showing 0 psi on both wellhead and 8-5/8" (slight vacuum). A 3.06" mule shoe was made up and run in hole with tubing to 945'. Cementers were rigged up and circulation was broken with 11 bbls away. The first cement plug was pumped: 5 bbls freshwater spacer + 48 sacks (10 bbls) type 1/2 cement with 1.18 yield at 15.6 ppg + 0.7 bbls displacement. After pulling out of hole with tubing, they reversed out with 4 bbls at 300' (estimated plug: 321' - 945', 624' plug). After waiting on cement and pulling out with 29 joints, they tagged TOC at 890' (+55'). The second cement plug was pumped: 5 bbls freshwater spacer + 48 sacks (10 bbls) type 1/2 cement with 1.18 yield at 15.6 ppg + 0.6 bbls displacement. They pulled out of hole with tubing, reversing out with 3 bbls at 250' (estimated plug: 266' - 890', 624' plug). Circulation was caught up both annuli with 8.9 bbls pumped, indicating continued communication between 4.5" and 8-5/8". After

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pulling out of hole with 27 joints, they planned to wait on cement overnight and tag TOC in the morning before awaiting orders. The well was shut in and SDFN.

10/14/24 – The day began with crew travel to Roswell and a PJSM covering 7 Step with rig crew, LSRs, Equipment inspections, JSA Review, overhead lifts, PPE, and daily operational and safety goals. Equipment and work areas were inspected, showing 0 psi on both wellhead and 8-5/8" (slight vacuum). A mule shoe was made up and run in hole to tag TOC at 367'. After circulating up both annuli with good circulation, they pulled out of hole with tubing. Wireline was rigged up to perforate 4.5" casing below shoe at 319'-321' using a 3' gun with 6 spf (18 shots total). After wireline pulled out and rigged down, they ran in hole with tubing to 367' and prepared to pump surface plug. The third cement plug (surface plug) consisted of 5 bbls freshwater spacer + 121 sacks (24.6 bbls) between 4.5" x 8-5/8" and 24 sacks (5.8 bbls) in 4.5" casing with type 1/2 cement with 1.18 yield at 15.6 ppg. Cement was verified to surface on both, with total pumped volume of 145 sacks (30.4 bbls). After pulling out of hole with 11 joints of tubing, the well was topped off with 0.25 bbls of cement. Surface equipment was washed up and cementers rigged down. The workover rig and all support equipment were rigged down, with equipment set up for the morning before moving to well 179, which needed enlarging and leveling. The crew traveled to Roswell.

10/23/24 – Langan met with Drake at well 185 for cut and cap. Safety was discussed, and permits were issued. Drake cut and cap at well 185 with only ~3 feet of cement added to fill to the surface before placing the plate. Confirmation email sent to Donald Christie with photographs of the completed well, cut and capped.

Plug & Abandonment Program

Cato San Andres Unit 185

Revision: 0

G-4-9S-30E

Chaves County, NM

NEW MEXICO - CSAU 185 - P&A SCHEMATIC

Location (Unit-Sec-Twp-Range): G-4-9S-30E

API: 30-005-20186

Surface Hole Latitude: 33.6035156

Surface Hole Longitude: -103.8838043

GL (ft): 4088

Bottom Hole Location: Vertical Well

KB (ft): 10

Surface Casing Information

Size (in):	8.625
Weight (lb/ft):	24
Grade:	J55
Hole Size (in):	12.25
Setting Depth:	271

Production Casing Information

Size (in):	4.5
Weight (lb/ft):	10.5
Grade:	N/A
Hole Size (in):	7.875
Setting Depth:	3550

Formation Depth Information

Formation	MD (ft)
USDW	104
Red Beds - Top	N/A
Red Beds - Base	952
Rustler - Top	952
Rustler - Base	N/A
Yates - Top	1513
Queen - Top	2151
Grayburg - Top	2318
Four Mile Draw - Top	2678
San Andres Marker - Top	3230
Slaughter "A" Zone	3385

UDSW: 104 ft

Red Beds - Top: N/A ft

Red Beds - Base
& Rustler - Top 952 ft

Rustler - Base: N/A ft

Yates - Top: 1513 ft

Queen - Top: 2151 ft

Grayburg - Top: 2318 ft

Four Mile Draw - Top: 2678 ft

San Andres Marker - Top: 3230 ft

Slaughter "A" Zone: 3385 ft

Est Surface Csg TOC: Surface

Plug #3 - Perf & Squeeze: 367 ft
From: 367 ft - 0 ft
145 sks

Surface Csg Shoe: 271 ft

Perf Depth: From: 321 ft - 318 ft

Plug #2: 523 ft
From: 890 - 367 ft
48 sksPlug #1: 55 ft
From: 945 - 890 ft
48 sks

Casing Failure: 945 ft

Formation Fill Depth: 2006 ft

Est Production Csg TOC: 2600 ft

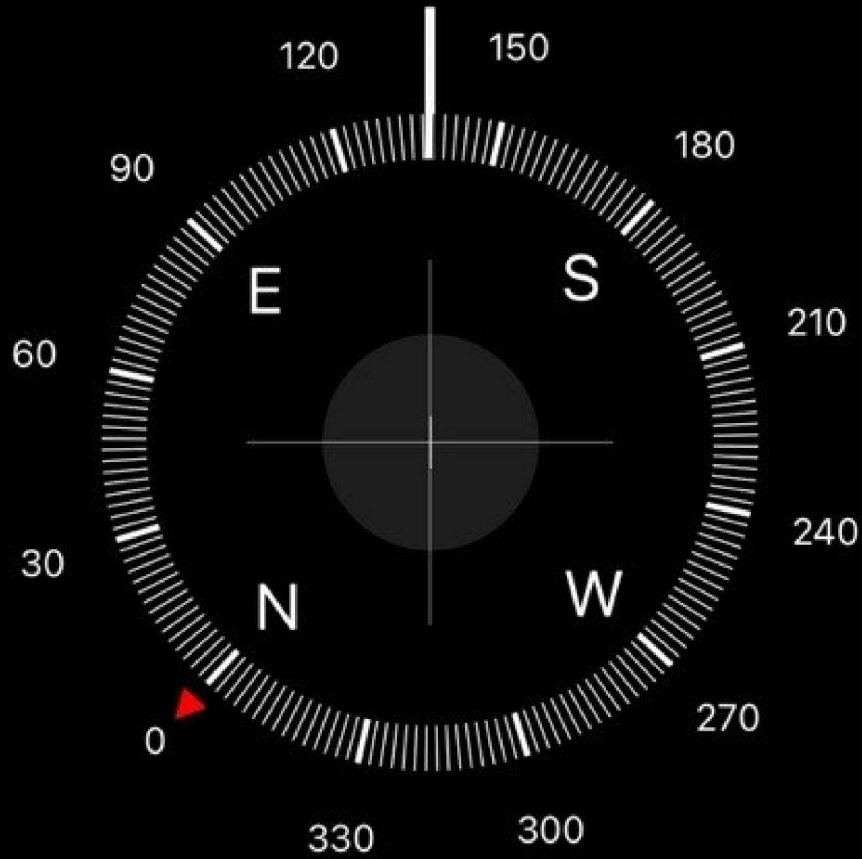
Bottom Perf: 3451 ft

PBTD: 3517 ft
Prod Csg Shoe: 3550 ft

SHELL
CSAU #185
API # 30-005-20186
G-04-095-30E
1980 FNL 1980 FEL
Chaves County, NM
Lat/Long
33.5636787, -103.8838043

4:30

SOS 49



137° SE

33°33'49" N 103°53'1" W

4080 ft Elevation

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/oed/contact-us>

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 413740

CONDITIONS

Operator: CANO PETRO OF NEW MEXICO, INC. 801 Cherry Street Fort Worth, TX 76102	OGRID: 248802
	Action Number: 413740
	Action Type: [C-103] Sub. Plugging (C-103P)

CONDITIONS

Created By	Condition	Condition Date
loren.diede	None	3/14/2025