ATP Oil & Gas Corporation
Mississippi Canyon Block 942
OCS-G-24130 Well No 2 ST01 BP00
Proposed Tie-Back Procedure

WELL DATA

Water Depth:	4000’
RKB to Mudline:	4145’
Status:	The 7 ⅝” production liner has been run and cemented with the liner and liner top tested to 5100 psi w/ 13.5 ppg SOBM
Type well:	Oil
TD:	21,400’ MD / 17,220’ TVD
Drive Pipe:	36” @ 4328’ MD
Cond:	28” 218# X-56 @ 4,784’ MD
Surface:	22” 224.2# X-80 @ 5,868’ MD / 5,865’ TVD
Surface liner:	18” 94# X-80 @ 6,572’ MD / 6,560’ TVD, TOL @ 4,840’ MD
Surface liner:	16” 84# L-80 @ 8,650’ MD / 8,338’ TVD, TOL @ 4,749’ MD
Intermediate:	13 ⅝” 88.2# HC Q125 @ 12,801’ MD / 11,610’ TVD
Drilling liner:	11¾” 65# HCQ125 Hydril 513 @ 16,019’ MD / 14,111’ TVD, TOL @ 12,525’ MD / 11,402’ TVD
Production liner:	7 ⅝” 39# C-95 & C-110 @ 21,000’ MD / 17,011’ TVD, TOL @ 11,770’ MD / 10,806’ TVD 5 ½” 23# P-110 Hydril 521 liner top @ 20,700’/ 16,854’tvd – PBTD @ ±21,220’ MD / 17,133’ TVD (Top of cement landing collar in 5-½” liner)
Tree:	13 ⅝” 10K, Dril-Quip Surface Tree
“S” Sand:	21,010’ – 21,090’ MD / 17,022’ – 17,066’ TVD
Yellow Sands:	17,100’ – 17,560’ MD / 14,834’ – 15,120’ TVD
Completion Fluid:	13.3 ppg $CaBr_2$ brine, 12.5ppg $NaBr_2$

Drill Pipe Data:

Size OD	Nominal Weight	Grade	Torsional Yield Strength	Tensile Yield Strength	Nominal ID	Burst Strength	Collapse Strength	Connection Type	Tool Joint OD	Tool Joint ID
inches	lbs/ft		ft-lbs	lbs	inches	psi	psi			
5.875**	26.3	S-135	117,900	961,000	5.045	16,688	14,892	5⅞ XT57	7.00	4.25
5.00**	19.5	Z-140	60,300	581,500	4.276	16,218	10,192	XT-50	6.625	2.75
4.50 **	20.0	S-135	51,630	581,248	3.64	20,640	18,806	XT-43	5.250	3.00

** Values based on Premium pipe = 80% new

Drilling Riser/ Intermediate Casing/ Production Liner/ Tieback Casing/ Risers:

	BURST	COLLAPSE
14” 106# VM95SS Vam Top FE-NA	8,910 psi	5,300 psi
13 ⅝” 88.2# HCQ125 Hydril 523	10,030 psi	6,360 psi
11 ¾” 65# HCQ-125 Hydril 513	9,940 psi	6,180 psi
10 ¾” 65.7# TN80SS Tenaris Blue	7,750 psi	6,300 psi
10 ¾” 70.5# VM95SS VAM TTR-NA	10,050 psi	8,480 psi
7 ⅝", 39.0#, C-95 Hydril 523 & Vam Top	10,900 psi	10,000 psi
7 ⅝", 39.0#, VM95SS Vam Top FE	10,900 psi	10,000 psi
5 ½” 23# P-110 Hydril 521	14,530 psi	14,540 psi

WELL STATUS

Platform A (*ATP Titan*) and Nabors Rig 202 were installed 12/31/2009. MC942 #2 ST01 BP00 was drilled to TD of 21,400' MD / 17,220' TVD with a PBTD @ ±21,220' MD / 17,133' TVD , top of shoe track **(with float shoe and float / landing collar – for two inside mechanical barriers)**. The 7 ⅝" production liner has been run and cemented with 2 annular swell packers for additional annular isolation and was stuck off bottom at ±21,000', the casing, liner and liner top were positively tested to 5,100 psi with 13.5 ppg SOBM. The 7 ⅝" shoe track was drilled out and the well was cleaned out to TD at 21,400' after which a CBL log was run confirming good cement bond behind the 7 ⅝" liner to 16,600'. A 5 ½" 23# P-110 liner will have been run to TD at 21,400' with the liner top tested to 1000 psi. ATP proposes to:

- Clean the well out to PBTD at ±21,220' with 13.5 ppg mud in hole, perform a 1 hour negative test on the 7 ⅝" liner top to the 5 ½" PBTD to a seawater gradient.
- Displace the wellbore from 13.5 ppg SOBM to a 12.5 ppg $NaBr_2$ completion fluid by indirect displacement – Mud to SW to $NaBr_2$.
- Run a 7 ⅝" x 10 ¾" casing string to tie back from the 7 ⅝" production liner top to the 10 ¾" x 12.37" nested hanger in the subsea wellhead. Run the hanger seal assembly, lockdown and test same to 5100 psi.
- Displace the wellbore from 12.5ppg $NaBr_2$ completion fluid to 13.3 ppg $CaBr_2$ to place kill weight fluid in the wellbore for the TA procedure.
- TA the well with a 10 ¾" storm packer set 200 - 400' below the mud line, displace riser to SW negatively testing packer 1 hour for well stability. Remove surface BOPs, release the 14" drilling riser from the top of the SID – pull and lay down the 14" drilling riser, release the SID from the subsea wellhead and pull the SID to surface sending in for storage.
- Run and tie back the 10 ¾" outer production riser from the subsea wellhead to the riser tensioners on the ATP Titan Spar. Install & test surface 13 ⅝" 10K BOP stack.
- Displace riser from SW to 13.3 ppg $CaBr_2$ and retrieve storm packer from hole.
- Displace the wellbore from 13.3 ppg $CaBr_2$ completion fluid to 12.5ppg $NaBr_2$.
- Run a 7 ⅝" inner string and inner production riser from tie back receptacle at ±8500' (placing MI thermal fluid in B annulus) to 13 ⅝" surface wellhead; land and lock hanger; Run and test 13 ⅝" x 7 ⅝" seal assembly.

TIE BACK PROCEDURE

1. Perform SID and BOP system test w/ 4 ½" and 5" to 250 / 3500 psi for the annular and 250 / 5500 psi for the rams, choke manifold valves and lines for 5 minutes on chart as necessary as per ATP & BOEMRE specifications.
2. Ensure the DQ 12 ⅜" Wear Sleeve is installed in the nested hanger seal bore at the seafloor. P/U 2-7/8" stinger & 4 ½" drill pipe and RIH with 4 ½" bit w/ casing scraper/brush/magnet assemblies and 13 ⅝" negative test packer to clean out the casing and liners to PBTD @ ±21,220' MD / 17,133' TVD - Top of cement landing collar in the 5 ½" liner. Clean out as necessary and circulate SOBM and hole clean.
3. Position 13 ⅝" packer at TOL at 11,770' to perform negative test.
4. Pump 6.5 ppg base oil down drill pipe with the SLB cementing unit to ±13,275' md to achieve a -4365 psi differential inside the drill pipe.
   [[(13.5 ppg mud - 8.6 ppg sw) * 17133' tvd TD * .052 = 4365 psi underbalance]
   [4365 psi / .052 / (13.5 ppg mud - 6.5 ppg base oil) = 11,993' tvd or 13,275' md]
   Set the packer and pressure up to 1,000 psi on the annulus to verify the tool is properly set, monitor annular pressure throughout the test. Bleed the 4365 psi drill pipe pressure (Pdp) back to the cement unit for 0 psi Pdp and negative test the 7 ⅝" liner shoe to a seawater gradient – **monitor for a stable test with no flow for a minimum of 60 minutes (Monitor and record PVT data to ensure wellbore stability and integrity)**. Communicate results with ATP Houston Office before proceeding. If at any time flow is observed, discontinue the test and pressure back up on the system to equalize to kill weight fluid weight and communicate with the ATP Houston Office before proceeding. If the test is good, pressure back up to 4365 psi Pdp and bleed off annular pressure to 0 psi. Release packer, Reverse out base oil and circulate hole clean. Monitor well for stability – POOH & L/D 13 ⅝" packer. (Note: the 13 ⅝" VersaFlex Expandable Liner Hanger Assembly is good to a minimum of 7600 psi differential pressure above and below after expansion.)
5. P/U 13 ⅝" casing and 14" riser MI brush, magnet assemblies & RIH w/ 4 ½" bit with 5 ½", 7 ⅝" liner MI brush, magnet and scraper assemblies to PBTD, Short trip and circulate as necessary.
6. Perform an Indirect Displacement from PBTD with MI recommended spacers and seawater displacing the 13.5# SOBM from hole, circulate the hole clean with polymer sweeps and seawater. Monitor and record PVT data to ensure wellbore stability and integrity.
7. Short trip as necessary. Circulate and sweep hole clean with SW. Clean pits to take on 12.5 ppg sodium bromide ($NaBr_2$).
8. Pump MI recommended spacer and displace the seawater from the hole to 12.5 ppg $NaBr_2$ – short trip if necessary, circulate and filter $NaBr_2$ clean. POOH.

9. RIH with 7 ⅝" polish bore 12 ¼" tapered mill assembly and DQ 12 ⅜" Wear Sleeve on BHA RT. Dress off and polish the top of the hanger at ±11,770' MD - POOH w/ mill assembly & wear sleeve (wash area through the nested hanger).
10. RIH w/ HES Seal Assembly on 7 ⅝" 39# C-95 Vam Top (±3270') x 10 ¾" 65.7# TN 80 SS Tenaris Blue (±4350') tieback casing w/ 12 ⅜" nested casing hanger on 5 ⅞" landing string. A Halliburton dual 7 ⅝" x 13 ⅝" Swell Packer Assembly will be run 2 - 4 joints above the seal assembly for an additional annular pressure barrier and also serve as an anchoring device for the 7 ⅝" tie-back. Verify 7 ⅝" seal entry into polish bore.
11. P/U and Reverse circ – 50 bbls 12.5# Swell Packer SOBM activation fluid, ~ 485 bbls of inhibited 12.5 ppg $NaBr_2$ packer fluid followed by ~ 490 bbls of untreated 12.5 ppg NaBr2 fluid in annulus to spot annular activation fluid at the top of liner hanger packer and across the swell packer.
12. Sting in PBR and land tieback string in the nested hanger profile in the subsea wellhead lock-down sleeve. Tieback will extend from mud line to 7 ⅝" TOL at 11,770' MD (+/- 3,270' of 7 ⅝" 39# C-95 Vam Top casing & +/- 4,350' of 10 ¾" 65.7# TN80SS/C-90 Tenaris Blue casing w/ DQ XO Tie-back tool @ ± 8500'). Test PBR seals to 500 psi for 15 minutes - POOH w/ 5 ⅞" dp & DQ RT.
13. RIH w/ DQ MPT w/ Mill and Flush Assembly to wash 12 ⅜" sealbore area prior to RIH w/ 10 ¾" seal assembly - POOH.
14. TIH, Set & test (5100psi) the 12 ⅜" nested casing hanger seal assembly at 4145' as per Dril-Quip test procedures. Release DQ Running Tool & POOH. Shell Test casing & riser to 5100 psi for 30 minutes on chart.
15. TIH with 4 ½" bit w/ 5 ½" & 7 ⅝" casing scraper/brush/magnet assembly to PBTD.
16. Displace the wellbore from 12.5ppg $NaBr_2$ completion fluid to 13.3 ppg $CaBr_2$ to place kill weight fluid in the wellbore for the TA procedure - POOH.
17. M/U 10 ¾" storm packer with necessary 4 ½" dp on bottom and RIH on 5" landing string. Set and Hang off on packer at +/-200' BML trapping hydrostatic pressure from 13.3 ppg $CaBr_2$ fluid above, below the packer. Test on top of storm packer to 1,000 psi.
18. Displace well above TA packer and riser from 13.3 ppg $CaBr_2$ to seawater from the top of the storm packer. **Monitor well for no flow and negative test for a minimum of 60 minutes for well stability – Record Test on IADC.** POOH w/ 5" drill pipe. **The well is Temporarily Abandoned for removal of the 14" drilling riser and SID.**
19. Nipple down slip joint and 13 ⅝" surface BOP's.
20. P/U, latch and lock the drilling riser tension joint running tool and adjust riser tensioners as per recommended procedures to transfer load to the top drive hook.
21. Disconnect the 14" riser from top of the SID. Pull and lay down the 14" drilling riser sending in to the dock for storage. Move spar far enough to gain access to disconnect and pull the SID to surface while L/D the riser.

22. Install Production Jumper line while BOPs are R/D and out of the way if possible.
23. Run and latch 10 ¾" 70.5# VM 95SS Vam TTR-NA outer production riser. Confirm riser connector latch and pressure test the 10 ¾" 70.5# riser to 1,000 psi against the top of the 10 ¾" storm packer to confirm riser integrity. Transfer weight from rig to platform riser tensioners. R/D DQ riser RT and handling equipment.
24. Nipple up 13 ⅝" B-Section Spool and 13 ⅝" BOPs.
25. Perform surface BOP system test w/ smallest and largest drill pipe to 250 / 3500 psi for the annular and 250 / 6300 psi for the rams, choke manifold valves and lines for 5 minutes on chart as necessary as per ATP & BOEMRE specifications.
26. RIH w/ 4 ½" drill pipe & storm packer retrieving tool to top of packer - Displace well from seawater to 13.3 ppg $CaBr_2$ above packer.
27. Latch & open packer storm valve and confirm zero pressure below packer prior to unseating it. Release Storm packer and test the 7 ⅝" x 10 ¾" casing and 10 ¾" outer riser to 250 psi / 5 minutes and 5900 psi / 30 minutes on chart.
28. POOH & L/D 10 ¾" Storm packer, continue POOH racking 4 ½" dp.
29. TIH with 4 ½" bit w/ 5 ½" & 7 ⅝" casing scraper/brush/magnet assembly to PBTD.
30. Displace the wellbore from 13.3 ppg $CaBr_2$ completion fluid to 12.5ppg $NaBr_2$ - POOH.
31. TIH slow w/ 7 ⅝" x 10 ¾" XO wear sleeve retrieving tool to +/- 8500'.
32. Latch and pull wear sleeve exposing 10 ¾" x 7 ⅝" monitoring ports, equalize & monitor pressure thru ports – Stabilize well. POOH slow & L/D same.
33. R/U and Run DrilQuip's tie-back tool (secondary tie-back tool w/o the torque and test tool installed), 7 ⅝" 39# C95 Vam Top casing (~1400') and 7 ⅝" 39# VM 95 SS VAM TOP FE (~7100') inner production riser as per DQ running procedures & locate into profile at 8,500' MD (+/-4,355' BML) - space out as necessary
34. P/U & reverse circ. ~275 bbls of 12.5 ppg Safe-therm insulating fluid into 10 ¾" x 7 ⅝" tieback casing annulus.
35. Latch and Bleed off pressure on backside to 0 psi. Torque landing string w/ DQ surface clutch torque tool as per DQ running procedures into profile at 8,500' MD – land hanger in surface wellhead and lockdown same.
36. Test 7 ⅝" casing and tie-back to 250 psi / 5 minutes and 5900 psi / 30 minutes on chart. R/D DQ running tools.
37. Run and test 13 ⅝" x 7 ⅝" seal assembly in surface wellhead as per DQ run procedure.
38. R/D Casing running and Tie-back tools and prepare rig up for completion.
39. File APM for MC942 #A-3 Completion.