



Well History

Well Name: Lesser 7-21

API 05123136810000		Surface Legal Location SWNE 21 5N 66W		Field Name Wattenberg		State CO		Well Configuration Type Horizontal	
Ground Elevation (ft) 4,847.00	Original KB Elevation (ft) 4,857.00	KB-Ground Distance (ft) 10.00	Spud Date 11/9/1987 00:00	Rig Release Date	On Production Date	Abandon Date 8/28/2020			

Job

Drilling - original, 11/9/1987 00:00

Job Category Drilling	Primary Job Type Drilling - original	Start Date 11/9/1987	End Date 11/14/1987	Objective
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Daily Operations

Start Date	Summary	End Date

Abandon Well LOE, 11/15/1987 00:00

Job Category Abandon	Primary Job Type Abandon Well LOE	Start Date 11/15/1987	End Date 11/15/1987	Objective
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Daily Operations

Start Date	Summary	End Date

WBI - Abandon Well PDC, 8/20/2020 06:00

Job Category Abandon	Primary Job Type WBI - Abandon Well PDC	Start Date 8/20/2020	End Date 8/28/2020	Objective RE ENTRY
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Daily Operations

Start Date	Summary	End Date
8/20/2020	MIRU ENSIGN RIG 352 IWP SURFACE CSG- 0 PSI. HELD SAFETY MEETING. MOVED RIG, TANKS, RIG PUMP, FLOWBACK AND ALL OTHER SUPPORT EQUIPMENT INTO LOCATION. SMALL LOCATION, HAD TO MOVE EQUIPMENT ONE PIECE AT A TIME. R/U TANKS AND IRON (DOUBLE 3" LINE TO AND FROM WELL HEAD). FILLED FRAC TANK FROM HYDRANT. W/ 500 BBLS FRESH WATER. N/D WELL HEAD TREE AND N/U BOPS. R/U RMOR TEST UNIT. TESTED BLIND RAMS, PIPE RAMS, AND ANNULAR BAG TO 250 PSI ON THE LOW AND 2500 PSI ON THE HIGH SIDE. HAD SOME EQUIPMENT ISSUES THAT HELD US UP FOR A FEW HOURS. ALL STACK TESTED GOOD. TESTS CHARTED. ELECTRICIAN PERFORMED OHMS TEST ON ALL EQUIPMENT ON LOCATION. ALL EQUIPMENT TESTED GOOD UNDER 25 OHMS. SPOTTED IN PIPE WRANGLER. LOCATION IS READY TO START REENTRY PROCEDURES IN THE AM. SWI, SDFD, CREW TO THE YARD.	8/20/2020
8/21/2020	CREW TO LOCATION. HELD SAFETY MEETING. OPENED WELL TO FLAT TANK. LOADED COLLARS ON THE RACK. P/U 7 7/8" STS CONE BIT, BIT SUB AND 1- 4 3/4" DRILL COLLAR. TAGGED CEMENT AT 6' BELOW GROUND LEVEL. STARTED PUMPING AT 3.5 BBLS/ MIN RATE AT 250 PSI. DRILLED ON SURFACE PLUG FOR 20 MIN AND FELL THROUGH. CONTINUED WASHING IN TO DC # 8 @ 268' (42' ABOVE SURFACE CSG) WITH NO TAG. TRIED TO ESTABLISH A PRESSURE TEST ON THE SURFACE CSG TO 1000 PSI AGAINST THE SHOE PLUG WITH NO LUCK. ROLLED HOLE CLEAN. POOH L/D ON RACKS W/ 8 DRILL COLLARS. CHANGED OVER TO 2 7/8" EQUIPMENT. P/U RIH W/ STS 8 5/8" TENSION PACKER DOWN TO 258'. SET PACKER INSIDE SURFACE CSG. PRESSURE TESTED SURFACE CSG TO 1000 PSI AND HELD FOR 15 MIN. GOOD TEST. RELEASED PRESSURE. POOH L/D WORKSTRING AND PACKER ON RACKS. P/U 7 7/8" PDC BIT, BIT SUB, TBG FLOAT, 2- 4 3/4" DRILL COLLARS AND RIH W/ 5 JTS 2 7/8" WORKSTRING. R/U POWER SWIVEL AND STARTED DRILLING OUT. PUMPING 3.6 BBL/MIN RATE AT 450 PSI. TAGGED SURFACE CEMENT AT 290'. DRILLED THROUGH. ROLLED HOLE CLEAN. FELL THROUGH SURFACE PLUG @ 312'. CONTINUED DRILLING OUT DOWN TO A TOTAL DEPTH OF 609'. RETURNING LIGHT MUD A SMALL AMOUNT OF GAS TO TANKS/BURNER. ROLLED HOLE CLEAN. R/D POWER SWIVEL AND TRIPPED OUT WITH 10 JTS WORKSTRING. LEFT HANG @ 300' FOR THE NIGHT INSIDE THE SURFACE SHOE.	8/21/2020
8/22/2020	CREW TO LOCATION. HELD SAFETY MEETING. 0 PRESSURE ON WELL. RIH FROM DERRICK WITH 4 JNTS OF 2-7/8" PH6 TBNG AND STACKED OUT AT 425'. RU SWIVEL ON JNT 12. BROKE CIRCULATION PUMPING 3.7 BPM AT 450 PSI. WASHED AND REAMED DOWN TO 641'. PUMP LOST PRIME. HAD TO SWITCH OUT TRASH PUMPS. REESTABLISHED CIRCULATION AND CONTINUED WASHING AND REAMING DOWN. HAD MULTIPLE HARD TAGS. ADDED 1 CUP OF DESCO AND 1 CUP OF SAPP TO EACH CONNECTION. ROLLED BOTTOMS UP EVERY 15-20 JNTS. VERY HEAVY MUD RETURNS. TRANSFERRED 80 BBLS OF HEAVY MUD TO SECONDARY MUD TANK. MIXED 2 BAGS OF DESCO AND 2 BAGS OF SAPP TO MUD TANK AND THINNED MUD WITH FRESH WATER. CONTINUED WASHING AND REAMING DOWN TO 3519' WITH 112 JNTS. VERY SMOOTH LAST 20 JNTS. STARTED ROLLING THE HOLE. LOST CIRCULATION. PLUGGED OFF DOWN HOLE. WORKED TBNG. LD 6 JNTS ON PIPE RACKS. UNABLE TO BREAK CIRCULATION AGAIN. POOH TO DERRICK WITH 42 JNTS. TBNG STUCK. PUMPED 9 BBLS DOWN TBNG WITHOUT CIRCULATING. PUMPED 6 BBLS DOWN SURFACE CASING. PIPE FREE. SB TOTAL OF 106 JNTS IN DERRICK LEAVING 6 JNTS, 2 DRILL COLLARS AND MOTOR AND BIT IN HOLE. SECURED WELL. SDFD. CREW TO YARD.	8/22/2020
8/23/2020	CREW TO LOCATION WELL WAS DEAD THIS AM. HELD SAFETY MEETING AND OPENED WELL TO FLAT TANK. FILLED FRAC TANK W/ 423 BBLS FRESH WATER. FUNCTION TESTED MOTOR. STARTED TRIPPING IN OUT OF THE DERRICK. TAGGED @ 641'. R/U RIG PUMP AND CIRCULATED HOLE CLEAN. FELL THROUGH TAG AT 641' AND CONTINUED DOWN TO 3519' STOPPING TO CIRCULATE HOLE CLEAN EVERY 1000' ALONG THE WAY. RETURNED HEAVY MUD AT EACH 1000' INTERVAL. R/U POWER SWIVEL AND STARTED DRILLING OUT FROM 3519' PUMPING 4 BBL/MIN RATE AT 1200 PSI AND ADDING ONE CUP OF DESCO AND ONE CUP OF SAPP AT EACH CONNECTION. CONTINUED DRILLING DOWN TO A TOTAL DEPTH OF 5759' W/ 185 JTS WORK STRING AND 2 DRILL COLLARS ROLLING BOTTOMS UP EVERY 25 JTS. ONLY FEELING A FEW HARD SPOTS BETWEEN 3519' AND 5759'. ROLLED HOLE FOR 1.5 HOURS AT 5759' RETURNING HEAVY MUD TO TANK. ROLLED UNTIL CLEAN. SWIVELED OUT 3 JTS WORKSTRING. R/D POWER SWIVEL AND TRIPPED OUT TO THE DERRICK W/ 176 JTS WORKSTRING. LEFT 6 JTS AND DRILL COLLARS IN THE HOLE INSIDE THE SURFACE CSG FOR THE NIGHT.	8/23/2020



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Daily Operations

Start Date	Summary	End Date
8/24/2020	<p>WELL WAS DEAD THIS AM. HELD SAFETY MEETING AND OPENED WELL TO THE TANK. TRIPPED IN OUT OF THE DERRICK W/ 50 JTS WORKSTRING. TAGGED @ 1600'. WORKED THROUGH HARD SPOT. TRIPPED IN DOWN TO JT 182 @ 5665' STOPPING TO CIRCULATE EVERY 90 JTS. R/U POWER SWIVEL AND ESTABLISHED CIRCULATION AND STARTED DRILLING OUT FROM 5665'. PUMPING 4 BBL/MIN RATE AT 1300 PSI. ADDING 1 CUP OF DESCO AND 1 CUP OF SAPP AT EACH CONNECTION. CLEANED SMOOTHLY DOWN TO JT # 210. ROLLED A FULL BOTTOMS UP. CIRCULATING BACK MUD AND A FEW GAS KICKS. HAD TO BURN GAS THROUGH SEPARATOR FOR 20 MIN UNTIL WELL WAS CALM. CONTINUED DRILLING OUT DOWN TO A TOTAL DEPTH OF 7024' W/ 226 JTS WORKSTRING. TD DEPTH. ROLLED HOLE CLEAN FOR 2 HOURS RETURNING MUD AND SMALL AMOUNTS OF GAS. ROLLED CLEAN. OPENED WELL ON BOTH ENDS AND WELL WAS BALANCED. PUMPED 25 BBLS FRESH WATER DOWN TBG TO CLEAN. SWIVELED OUT W/ 4 JTS WORKSTRING. R/D SWIVEL. TRIPPED OUT TO THE DERRICK W/ 222 JTS WORKSTRING AND L/D 2- DRILL COLLARS AND MOTOR/BIT. SWI, SDFD, CREW TO THE YARD.</p>	8/24/2020
8/25/2020	<p>WELL WAS DEAD THIS AM. HELD SAFETY MEETING AND OPENED WELL TO THE TANK. P/U 2 7/8" MULE SHOE AND TRIPPED IN OUT OF THE DERRICK W/ 222 JTS PH6 WORKSTRING. P/U RIH W/ 6 JTS WORKSTRING TO LEAVE 228 JTS IN THE HOLE @ 7000'. R/U MAGNUM CEMENT SERVICES. HELD SAFETY MEETING AND PRESSURE TESTED IRON TO 2500 PSI. PUMPED 7 BBLS FRESH WATER TO ESTABLISH CIRCULATION AND ANOTHER 20 BBLS FRESH WATER WHILE BATCHING UP. MIXED UP AND PUMPED 213 SACKS (48.5 BBLS) 14.1 PPG NIO BLEND CEMENT COVERING FROM 7000' TO APPROX. 6497'. GOOD CIRCULATION THROUGHOUT THE ENTIRE JOB AT 2.5 BBL/MIN RATE. DISPLACED W/ 30 BBLS FRESH WATER TO BALANCE PLUG. R/D CEMENTERS. POOH L/D ON RACK W/ 48 JTS WORKSTRING. R/U RIG PUMP, ESTABLISHED CIRCULATION AND ROLLED HOLE FOR 4 HOURS WHILE WAITING ON CEMENT TO CURE. KILLED PUMP. WELL WAS STATIC. TRIPPED BACK IN W/ 23 JTS TBG TO TAG CEMENT TOP @ 6228'. GOOD TAG. POOH L/D ON RACK W/ 1 JT TBG AND TOOH S/B IN THE DERRICK W/ 72 JTS WORK STRING LEAVING 131 JTS IN THE HOLE @ 4020'. R/U CEMENTERS. PUMPED 20 BBLS FRESH WATER AHEAD TO ESTABLISH RATE. MIXED UP AND PUMPED 213 SACKS (48.5 BBLS) 14.1 PPG NIO BLEND CEMENT COVERING FROM 4020' TO APPROX. 3515'. GOOD CIRCULATION THROUGHOUT THE ENTIRE JOB AT 3 BBL/MIN RATE. DISPLACED W/ 14 BBLS FRESH WATER TO BALANCE PLUG. R/D CEMENTERS TO WASH UP. POOH L/D ON RACK 103 JTS WORKSTRING. TOOH S/B IN THE DERRICK W/ 18 JTS AND LEAVE 10 JTS WORK STRING IN THE HOLE FOR THE NIGHT ABOVE THE SURFACE SHOE.</p>	8/25/2020
8/26/2020	<p>WELL WAS DEAD THIS AM. HELD SAFETY MEETING AND OPENED WELL TO THE TANK. TIH OUT OF DERRICK W/ 90 JTS WORKSTRING. CONTINUED TO P/U RIH W/ 21 JTS WORKSTRING TO TAG SUSSEX PLUG @ 3687'. CEMENT TOP NEEDED TO BE AT 3515'. GOT PERMISSION FROM THE STATE TO TOP OFF WITHOUT A TAG REQUIRED. R/U MAGNUM CEMENT SERVICES. HELD SAFETY MEETING AND PRESSURE TESTED IRON TO 2500 PSI. PUMPED 10 BBLS FRESH WATER TO ESTABLISH CIRCULATION. MIXED UP AND PUMPED 47 SACKS (10.7 BBLS) 14.1 PPG SUSSEX BLEND CEMENT FROM 3687' TO 3515'. GOOD CIRCULATION THROUGHOUT THE ENTIRE JOB AT 2.5 BBL/MIN RATE. DISPLACED W/ 15 BBLS FRESH WATER TO BALANCE PLUG. R/D CEMENTERS. POOH L/D ON THE RACK W/ 64 JTS TBG TO LEAVE 56 IN THE HOLE @ 1699'. R/U CEMENTERS. PUMPED 20 BBLS FRESH WATER AHEAD TO ESTABLISH CIRCULATION. MIXED UP AND PUMPED 213 SACKS (48.5 BBLS) 14.1 PPG TYPE 3 CEMENT W/ 1% CACL FROM 1699' TO 1190'. GOOD CIRCULATION THROUGHOUT THE ENTIRE JOB AT 3 BBL/MIN RATE. DISPLACED W/ 5 BBLS FRESH WATER TO BALANCE PLUG. R/D CEMENTERS TO WASH UP. TOOH S/B IN THE DERRICK W/ 20 JTS TBG LEAVING 36 IN THE HOLE @ 1108'. R/U RIG PUMP. ESTABLISHED CIRCULATION AND ROLLED HOLE FOR 3 HOURS WHILE WAITING ON CEMENT TO CURE. KILLED PUMP. WELL WAS STATIC. P/U RIH W/ 3 JTS AND TAGGED W/ 37 JTS WORKSTRING 15' IN AT 1190'. POOH L/D ON RACKS W/ 37 JTS WORKSTRING. STARTED TO TRIP IN HOLE OUT OF THE DERRICK TO PUMP THE SURFACE PLUG WHEN WE HAD MECHANICAL PROBLEMS W/ THE RIG. SHUT DOWN FOR THE DAY. WILL BE UP AND RUNNING BY NOON TOMORROW.</p>	8/26/2020
8/27/2020	<p>WELL WAS DEAD THIS AM. HELD SAFETY MEETING AND OPENED WELL TO THE TANK. FINISHED WORKING ON THE RIG UNTIL NOON. TRIPPED IN W/ 18 JTS WORKSTRING AND MULE SHOE TO A DEPTH OF 558'. R/U MAGNUM CEMENT SERVICES. HELD SAFETY MEETING AND PRESSURE TESTED IRON TO 2500 PSI. PUMPED 13 BBLS FRESH WATER AHEAD TO ESTABLISH RATE. MIXED UP AND PUMPED 400 SACKS (84 BBLS) 14.1 PPG TYPE 3 CEMENT W/ 1% CACL FROM 558'. GOOD CIRCULATION THROUGHOUT THE ENTIRE JOB AT 2.5 BBL/MIN RATE. NO CEMENT TO SURFACE. CALCULATED CEMENT AT A 14" OPEN HOLE AND PUMPED AN EXTRA 100 SACKS. R/D CEMENTERS TO WASH UP. POOH L/D ALL WORKSTRING ON THE RACK. WAITED 2.5 HOURS FOR CEMENT TO CURE. P/U RIH OFF THE RACK W/ 12 JTS WORKSTRING AND DID NOT TAG @ 70' BELOW THE SHOE. L/D ALL TUBING. RIGGED OUT ALL EQUIPMENT THAT WAS NO LONGER NEEDED ON LOCATION. PULLED ALL MUD FROM TANKS. SHUT WELL IN FOR THE NIGHT.</p>	8/27/2020



Well History

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Daily Operations

Start Date	Summary	End Date
8/28/2020	<p>CREW TO LOCATION</p> <p>WELL WAS DEAD THIS AM. HELD SAFETY MEETING. OPENED WELL TO THE TANK. P/U MULE SHOE AND RIH OFF RACK W/ 6 JTS WORKSTRING. TAGGED W/ 10' IN ON JOINT #6 @ 176'. L/D ONE JOINT ON RACK. CHAINED DOWN TBG. R/U MAGNUM CEMENT SERVICES. HELD SAFETY MEETING AND PRESSURE TESTED IRON TO 1500 PSI. PUMPED 5 BBLs FRESH WATER AHEAD TO ESTABLISH RATE. MIXED UP AND PUMPED 70 SACKS (15 BBLs) 14.1 PPG TYPE 3 CEMENT W/ 1% CACL FROM 176' TO SURFACE. GOOD CIRCULATION THROUGHOUT THE ENTIRE JOB AT 2 BBL/MIN RATE. RETURNED 1 BBL CEMENT TO TANK. R/D CEMENTERS. POOH L/D ON RACKS W/ 5 JTS WORKSTRING AND MULE SHOE. NO TOP OFF NECESSARY. R/D CEMENTERS TO WASH UP. CLEANED TANKS AND EQUIPMENT. N/D BOPS AND RIGGED DOWN. MOVED ALL EQUIPMENT OFF LOCATION. DUG UP WELL. CUT AND CAPPED WELL 10' BELOW GROUND LEVEL. WELDED ON MARKER PLATE AND BURIED WELL. TURNED OVER TO CONSTRUCTION TO RECLAIM LOCATION.</p> <p>THIS IS THE FINAL REPORT.</p>	8/28/2020