Form 3160-5
(June 1990)

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT---" for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.
SF-080247-A

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

1. Type of Well
☐ Oil X Gas ☐ Other

8. Well Name and No.
Simmons 8-1

2. Name of Operator
D.J. Simmons Company, Ltd.

9. API Well No.
300450789100

3. Address and Telephone No. 3005 Northridge Drive, Suite L, Farmington, NM 87401
505-326-3753

10. Field and Pool, or Exploratory Area
Blanco Mesa Verde

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
Section 25, T-29-N, R-9-W
Surface Location: 1090' FNL & 790' FEL
Proposed Production Zone: 1584' FNL & 1262' FEL

11. County or Parish, State
San Juan County, New Mexico

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

TYPE OF SUBMISSION	TYPE OF ACTION	
X Notice of Intent	☐ Abandonment	☐ Change of Plans
	☐ Recompletion	☐ New Construction
☐ Subsequent Report	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
☐ Final Abandonment Notice	☐ Altering Casing	☐ Conversion to Injection
	☐ Other Sidetrack	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depth for all markers and zones pertinent to this work.)*

SEE ENGINEERING NOTES ATTACHED

RECEIVED
AUG 28 1995
OIL CON. DIV.
DIST. 3

14. I hereby certify that the foregoing is true and correct
ROBERT L. CRABB
Signed [signature] Title Agent for D.J. Simmons Company, Ltd. Date August 9, 1995

(This space for Federal or State office use)

APPROVED

Approved by ______ Title ______ Date ______
Conditions of approval, if any:

AUG 25 1995
DISTRICT MANAGER

Title 18 U.S.C. Section 1001, makes 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.

*See Instruction on Reverse Side

Hold C-104 in Suspension
for OH ... (3)

NMOCD

ENGINEERING NOTES

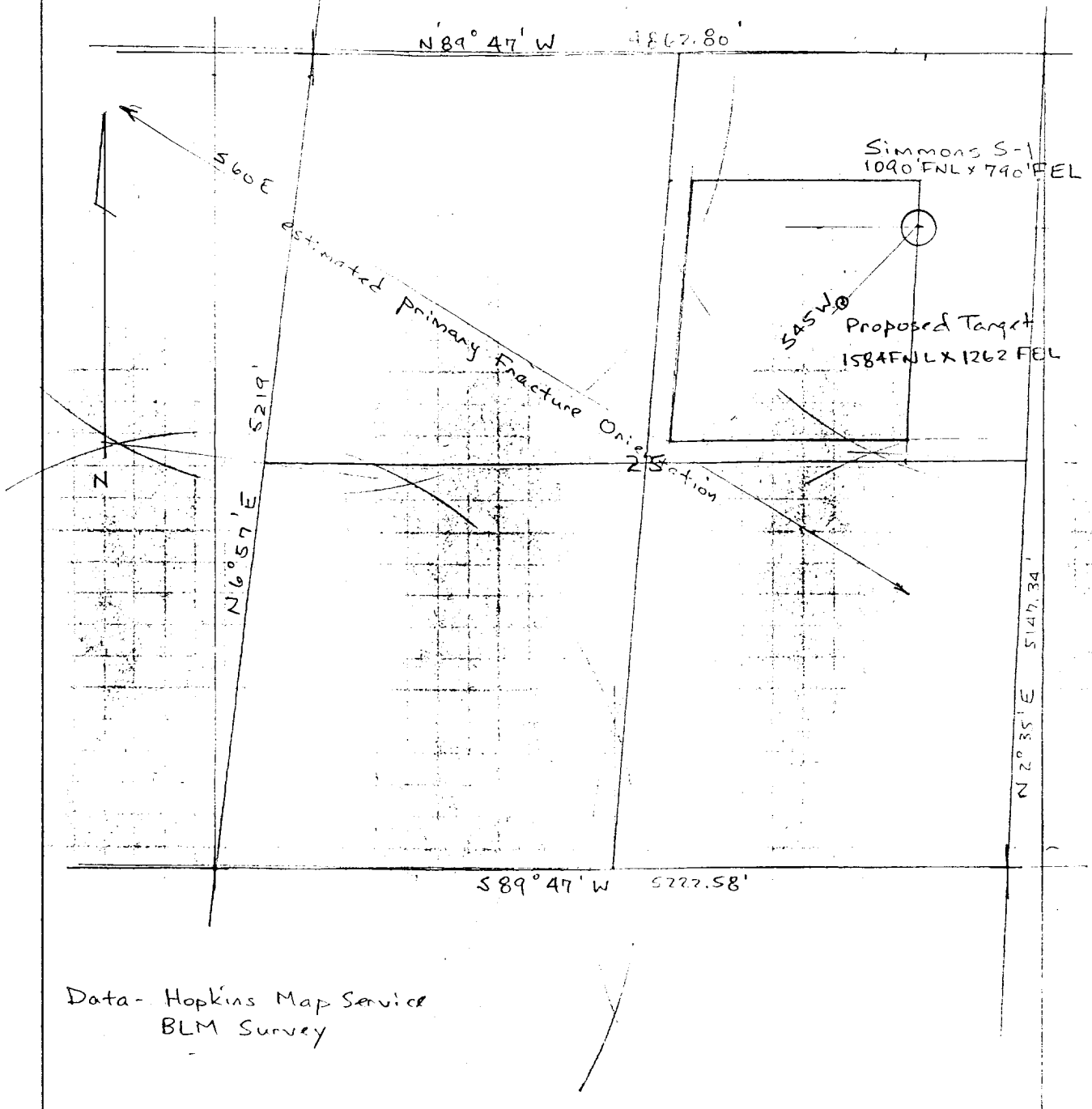
Simmons S-1

Blanco Mesa Verde Sidetrack
Directional Drilling Plan

Engineering Calculations

On Site Technologies Ltd
R. Griffee
9/24/95

section 25 T29N R9W
San Juan County N.M.



Data - Hopkins Map Service
BLM Survey

R. Griffee
OnSite Technologies Ltd.

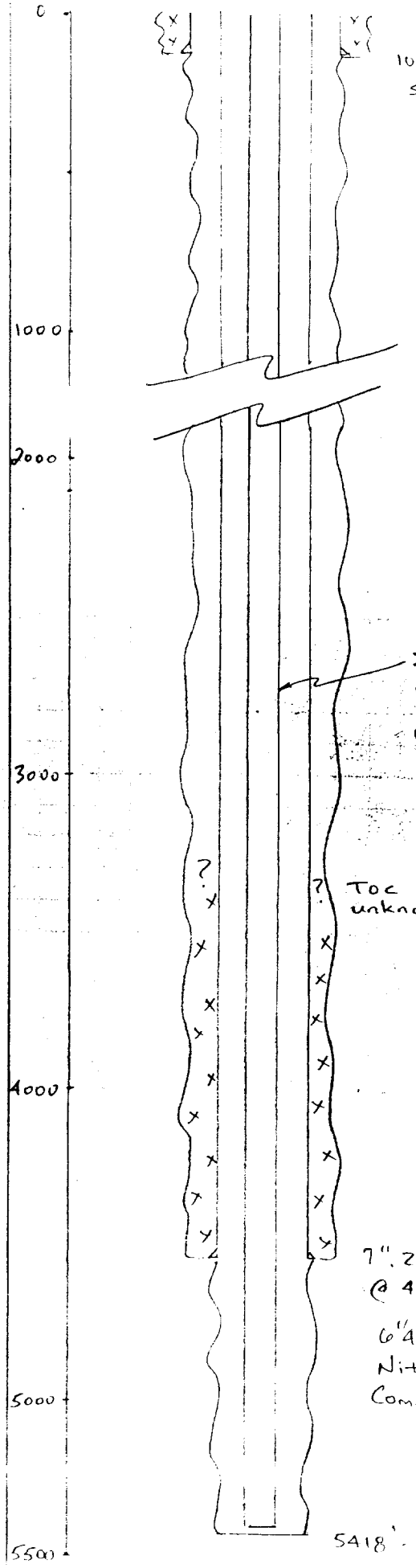
Simmons S-1
Blanco MV Sidetrack

Operations Outline

1. Plugback open hole to 4350'. 185' inside 7" csg set @ 4535'
2. Repair 7" x 8 3/4" annulus by squeeze cementing. Cement to Surface
3. Cut Window in 7" csg 4300 - 4450'
4. Directionally drill 6 1/4" hole to target.
   a. KOP = 4400'
   b. build @ 10°/100' to 45° @ 4850' MD, 4805.62' TVD.
   c. Target Location - bottom of Point Lookout
      493.79' South and 493.79' West of Surface Locn.
      Legal Coordinates BHL:
      1583.79' FNL x 1261.51' FEL
5. Log. Run 4 1/2" csg to surface. Cement TD to 4350' inside 7" csg
6. Perf & Frac MesaVerde Sands.

Simmons S-1
Current Well bore Schematic

R. Griffee
On Site Technologies Ltd.



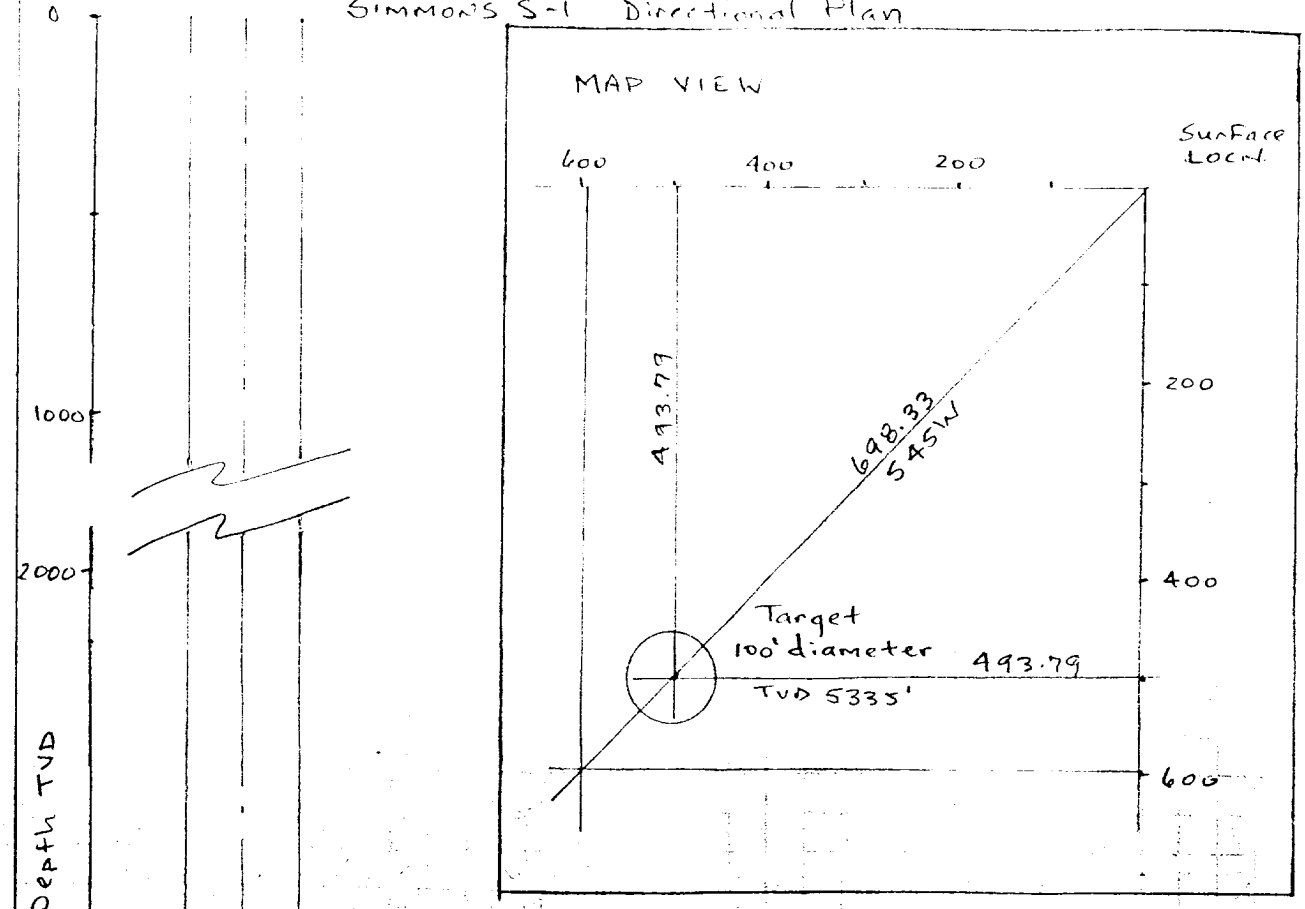
Ojo Alamo 1946
Kirtland 2046

P.C. 2937
Lewis 3032

CLIFFHouse 4600
MenceFee 4726

Point Lookout 5166
Mancos 5335

Simmons S-1 Directional Plan



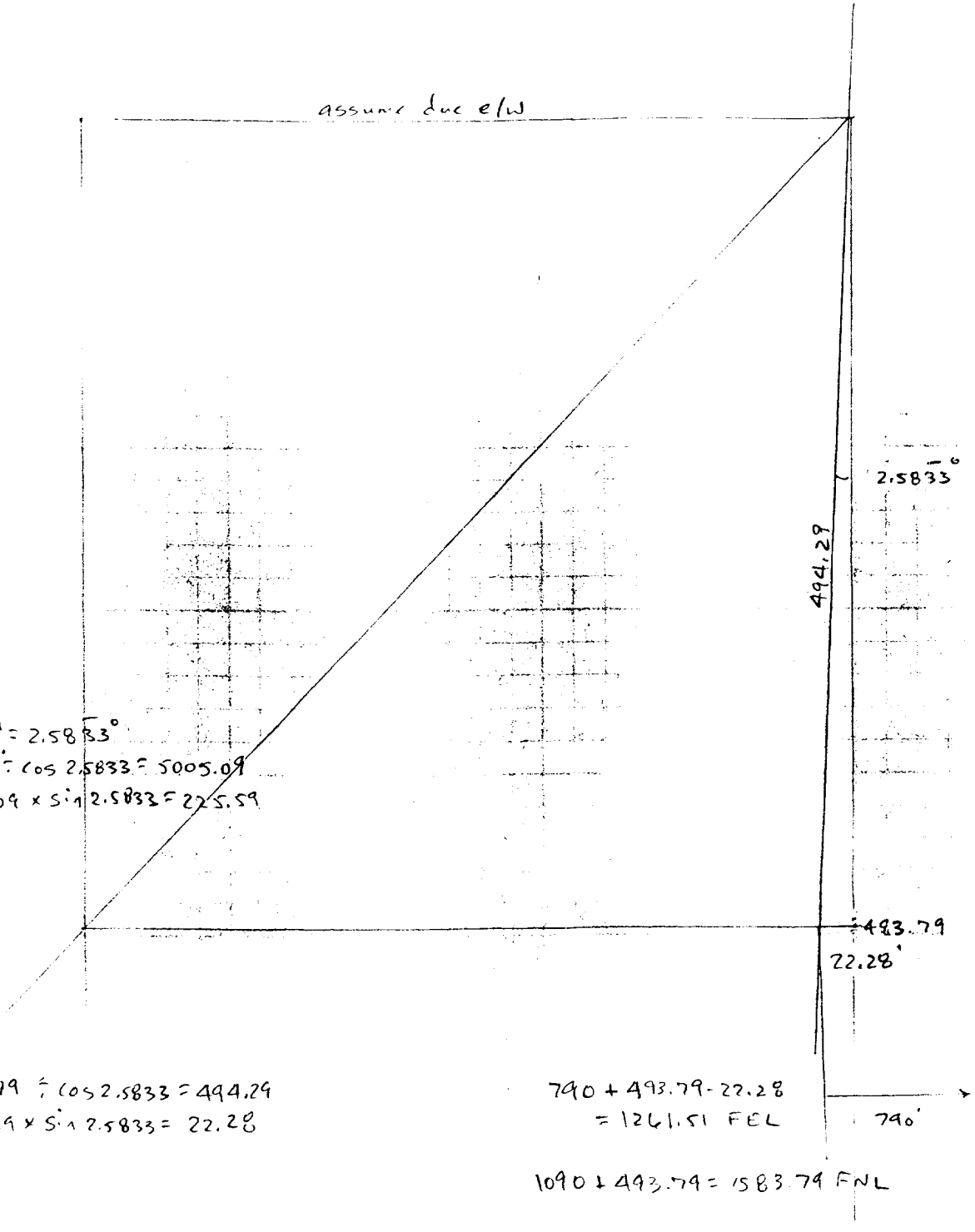
R. Griffee
On Site Technologies Ltd.

Simmons S-1

Build rate 10 deg/100 ft

Measured Depth	Delta Course	Inclination (degrees)	avg Inclination	Direction	Delta TVD	Delta Departure	Total TVD	Total Departure	South Delta	West Delta	South Coor	West Coor
Original Vertical Section												
0	0											
4400	4400	0	0	N45E	0.00	0.00	4400.00	0.00	0.00	0.00	0.00	0.00
Kick Off Point:		4400										
Build Section												
4400		0	0	S45W	0.00	0.00	4400.00	0.00	0.00	0.00		
4500	100	10	5	S45W	99.62	8.72	4499.62	8.72	6.16	6.16	6.16	6.16
4600	100	20	15	S45W	96.59	25.88	4596.21	34.60	18.30	18.30	24.46	24.46
4700	100	30	25	S45W	90.63	42.26	4686.84	76.86	29.88	29.88	54.35	54.35
4800	100	40	35	S45W	81.92	57.36	4768.76	134.22	40.56	40.56	94.91	94.91
4850	50	45	42.5	S45W	36.86	33.78	4805.62	168.00	23.89	23.89	118.79	118.79
Hold Point:		4850										
Hold Section												
4900	50	45	45	S45W	35.36	35.36	4840.98	203.35	25.00	25.00	143.79	143.79
5000	100	45	45	S45W	70.71	70.71	4911.69	274.06	50.00	50.00	193.79	193.79
5100	100	45	45	S45W	70.71	70.71	4982.40	344.77	50.00	50.00	243.79	243.79
5200	100	45	45	S45W	70.71	70.71	5053.11	415.48	50.00	50.00	293.79	293.79
5300	100	45	45	S45W	70.71	70.71	5123.82	486.19	50.00	50.00	343.79	343.79
5400	100	45	45	S45W	70.71	70.71	5194.53	556.91	50.00	50.00	393.79	393.79
5500	100	45	45	S45W	70.71	70.71	5265.24	627.62	50.00	50.00	443.79	443.79
5600	100	45	45	S45W	70.71	70.71	5335.95	698.33	50.00	50.00	493.79	493.79
5700	100	45	45	S45W	70.71	70.71	5406.66	769.04	50.00	50.00	543.79	543.79
5800	100	45	45	S45W	70.71	70.71	5477.37	839.75	50.00	50.00	593.79	593.79

Calculations



$2° 35' = 2.5833°$

$5006 \div \cos 2.5833 = 5005.09$

$5005.09 \times \sin 2.5833 = 225.59$

$493.79 \div \cos 2.5833 = 494.29$

$494.29 \times \sin 2.5833 = 22.28$

$790 + 493.79 - 22.28 = 1261.51$ FEL

$1090 + 493.79 = 1583.79$ FNL

Simmons S-1
1090' FNL x 790' FEL, Section 25 T29N, R9W, San Juan County, NM

MesaVerde Sidetrack
Plug Back and Casing Repair Operations

For: Mr. John Byrum, D. J. Simmons Co.
Prepared By: R. Griffee, 8/21/95

Step 1, Initial Preparation, Prior to moving in rig.

1(a). Construct Blowdown Pit, Blade Location.

1(b). Install and/or test rig anchors.

1(c). Attempt to blow well down.
On Site consultant will attempt to blow well down appx one day prior to moving rig in.
assume 4 hours + mileage.

Step 2, MIRU Completion Rig

Operational Day 1 (12.5 hours calculated) Step 2(a) through 4(a).

2(a). Road rig to location.
assume 1 hour travel from previous location (Could occur the night before rig operations commence). Have water truck on location in timely fashion based on previous blow down results.

2(b). Rig up. Set pump and pit. Kill well with water if required. Nipple down well head. Nipple up 3000 psi BOPE. NU Stripping head. Lay blow down lines to pit.

Step 3. Pull 2 3/8" tubing.

3(a). Pull on 2 3/8" tubing. If tubing is free, procede to step 3(d).

3(b). Take stretch measurements. Determine if tubing is stuck in casing or in open hole.

3(c). RU Wireline. Jet cut tubing below 7" casing shoe at appx 3942'. - ?

3(d). POOH with 2 3/8" tubing. SLM. Visually inspect, lay down.

Step 4. 7" Casing Scraper Run.

4(a). PU 7" casing scraper and SN. Install wireline retreivable standing valve in SN. Pick up 2 3/8" work string and RIH with scraper to casing shoe at +/- 4535'. Pressure test tbg to 1000 psi with rig pump. Retrieve plug on rig wireline. Insure that scraper is calipered to 7" casing ID. This step is critical to the success of Step 5, and the reduction of risk in sticking the cement retainer.

Operational Day 2 (9 hours calculated) Step 4(b) through 5(h).

4(b). POOH with tubing and scraper. Stand back work string and lay down scraper and SN.

Step 5. Plug Number 1, Open Hole Mesa Verde.

5(a). RU Wireline and Run CBL from the 7" casing shoe at 4535' to 250 ft above the discovered actual cement top. Check for stringers above cement top. Record Top of Cement depth.

5(b). Pick up 7" tbg set cement retainer. RIH on 2 3/8" work string to 4485'. Set retainer.

5(c). Pressure Test work string to 1000 psi.

5(d). Sting out of retainer. Load casing with water. Attempt to pressure test casing, above retainer to 500 psi.

5(e). Sting into retainer. Rig up Western Co. Establish injection rate into Mesa Verde open hole.

Cement Volume Calculation

TD = 5700', Retainer Depth = 4485', Shoe Depth = 4535', 6 1/4" hole capacity = .2131 cf/lf,
7" casing capacity = 0.2210 cf/lf
0.2131 cf/lf x (5700 - 4535) = 248.26 cf
Use 20% excess
248.26 cf x 1.2 = 297.91 cf
0.2141 cf/lf x (4535 - 4485) = 10.71 cf
(297.91 + 10.71) cf / 1.15 cf/sk = 309 sks, round up to 310 sks.

5(f). Mix 310 sks Class 'b' slurry (reduce volume correspondingly if tubing was jet cut above). Squeeze Mesa Verde open hole with 300 sks.

5(g). Sting out of retainer. Spot 10 sks slurry on top of retainer.

5(h). TOH with 2 3/8" work string. Stand back tbg, lay down stinger.

Step 6. Casing Repair (7") from Retainer to Cement Top

If the 7" casing successfully pressure tests to 500 psi in Step 5(d) above, Skip all of Step 6, go to Step 7.

Operational Day 3 (14 hours calculated) Step 6(a) through 6(c)

6(a). PU 7" test packer. RIH with 2 3/8" work string. Isolate casing leak(s) below the cement top. Continue isolating leak(s) above cement top. A retrievable bridge plug may be required.

6(b). Squeeze casing leak(s) below the discovered top of cement as required using a test packer and retireivable bridge plug if required.

6(c). WOC overnight

Operational Day 4 (10 hours calculated) Step 6(d)

6(d). PU 6 1/4" bit. RIH on workstring. Drill out cement remaining in 7" casing. POOH. PU 7" test packer and RIH on workstring. Pressure test repaired casing interval to 500 psi with rig pump. POOH, lay down packer.

Step 7. Squeeze Cementing above primary Top of Cement to Surface

Operational Day 5 (6 1/2 hours calculated) Step 7(a) through 7(g).

Alter procedure as required depending on leaks discovered in step 6(a).

7(a). If required, perforate two squeeze holes at the top of cement found by analyzing bond log from step 5(a) (+/-). Rig down wireline.

7(b). Establish injection rate down casing, through squeeze holes, up 7" annulus, through Braden head. Use rig pump and tank.

7(c). PU 7" cement retainer. RIH with work string to 30' above the squeeze holes determined in step 7(a), or to a depth determined by leak isolation in step 6(a). Set retainer.

7(d). RU Western Co. Establish injection rate under retainer, through squeeze holes, up 7" annulus, through Braden head.

Cement Volume Calculation, Cement from Primary Top of Cement to Surface

8 3/4" hole x 7" casing annulus capacity; 0.1503 cf/lf
10 3/4 casing x 7" casing annulus capacity; 0.2993 cf/lf

0.1503 cf/lf x (Squeeze hole depth - 114) lf = _____ cf
use 15% excess, _____ cf x 1.2 = _____ cf
0.2993 cf/lf x 114 lf = 34.12 cf
(_____ + 34.12) cf / 1.15 cf/lf = _____ sks

7(e). Mix ___ sks Class 'b' slurry. Squeeze under retainer through squeeze holes, up annulus and through Braden head. Bring cement top to Surface

7(f). Sting out of retainer. Spot 5 sks slurry on top of retainer.

7(g) POOH with tubing. Lay down tbg and stinger. WOC over night.

Operational Day 6 (11 hours calculated) Step 7(h) through 9(b).

7(h). Pick up 6 1/4" bit and run in hole with workstring. Drill out cement and retainer remaining in 7" casing. Pressure test repaired casing interval to 500 psi with rig pump.

7(i). TOOH with work string.

Step 8. Casing Scraper Run

8(a) Pick up casing 7" casing scraper and run to retainer at 4485'. POOH and lay down work string and scraper.

Step 9. Rig down. MOL.

9(a). ND BOPE. NU wellhead.

9(b). Rig down and move to next location.

Simmons S-1
1090' FNL x 790' FEL, Section 25 T29N, R9W, San Juan County, NM

MesaVerde Sidetrack
4 1/2" Casing and Cementing Operation

Discussion

The following casing and cementing program is designed to install a 4 1/2" production casing string in the designed 45 degree (+/-) sidetracked hole. Casing strengths and specifications have been selected to provide adequate joint strength for running through the curve section of the directional well bore and to provide satisfactory burst strength to facilitate a nitrified hydraulic fracture treatment. The cementing program is designed to place cement in the casing / open hole annulus, with the top of the cement to be located inside the 7" casing just below the bottom of the Chacra formation. This is to allow a completion in the Chacra formation at some later date, as the operator chooses. If the option to complete the Chacra is selected at a later date, the 4 1/2" casing would be backed off, just above the cement top, so that the 7" casing could be perforated, and the Chacra zone could be hydraulically fractured after re-running the 4 1/2" casing string.

Casing Program

Run 4 1/2", 11.6 ppf, J55, LTC from new sidetracked TD to surface. LTC threads will be required due to the 45 degree hole. Install stage collar at 4200 ft (measured depth), just below the bottom of the Chacra formation . Note; 7" 23 ppf, J55, STC is set at 4535'. A window will have been cut in the 7" casing string to facilitate sidetracking operations from 4300' to 4450'. Centralize casing with 1 centralizer per joint. Install guide shoe on bottom and float collar one joint from bottom.

4 1/2", 11.6 ppf, J55, LTC data:
ID = 4.000", Drift ID = 3.875", Coupling OD = 5"
Collapse resistance = 4,960 psi, Internal Yield Pressure = 5350 psi
Body Tensile Yield = 184,000 lbs, Joint Strength = 162,000 lbs

7", 23 ppf, J55 STC data;
ID = 6.366", Drift ID = 6.241"

Clearance Calculations
4 1/2" csg inside 7", 20 ppf csg
(6.366- 5.000) / 2 = 0.683", assuming centered pipe

Cementing Program

Cement with 165 sks of Class 'b' neat with pumping additives as required by pilot testing. This slurry volume is calculated to bring the cement top to 3520 ft, using 20% excess over the open hole volume. Drop stage tool bomb and open stage collar ports. Circulate excess cement to the surface. Mix 83 bbls of packer fluid with oxeygen scavanger and clay stabilizer and circulate in place from the stage collar to the surface. Drop closing plug and displace with water. WOC 72 hours prior to commencing further completion operations.

Cement Volume Calculations

annular capacity 6 1/4" hole x 4 1/2" casing = 0.1026 cf/lf
annular capacity 7", 23 ppf csg x 4 1/2" casing = 0.1106 cf/lf
capacity of 4 1/2", 11.6 ppf casing = 0.0872 cf/lf

New TD = 5700 ft, measured Depth and 5407 ft, true vertical depth
Top of Window = 4300 ft
Stage Collar depth = 4200 ft

Open hole volume
(5700 - 4300)lf x 0.1026 cf/lf = 143.64 cf
use 20% excess
143.64 x 1.2 = 172.37 cf

Volume in 7" x 4 1/2" annulus
(4300 - 4200) x 0.1106 cf/lf = 11.06 cf

Shoe volume
40 ft x 0.0872 cf/lf = 3.49 cf

Slurry: Class 'b' neat. Yield 1.15 cf/sk

172.37 cf + 11.06 cf + 3.49 cf = 186.92 cf
186.92 cf / 1.15 cf/sk = 163 sks.

Packer Fluid Volume Calculation

4200 lf x 0.1106 cf /lf / 5.615 cf/bbl = 82.7 bbls