



*HS Resources  
Evans Office  
3939 Carson Ave  
Evan, CO 80620  
(970) 330-0614  
Date: 04/25/2000*

***Codell Re-Frac Authorization***

**HSR-TOOMEY 7-13**

**SWNE Section 13 3N 67W  
WELD COUNTY, CO**

**AREA: 1      ROUTE 19      SSI: 960130      API #: 05-123-18922**  
**Spud Date: 03/06/1996      KB: 4901      GL: 4791      TD: 7452      PBTD: 7372**

Approved: [Signature] Date: 4/25/00 Area Engineer

Approved: Cindy L. Haeferle Date: 4/26/00 Area Manager

Approved: [Signature] Date: 5/4/00 District Manager

**HS RESOURCES, INC.**  
**HSR-TOOMEY 7-13**  
**SWNE Section 13 3N 67W**  
**WELD COUNTY, CO**  
**04/25/2000**

**AREA: 1 ROUTE 19 Spud: 03/06/199 Orig Operator: HSR SSI: 960130 API #: 05-123-18922**  
**GL: 4791 KB: 4901 MTD: 7452 TVD: 7452 PBMD: 7372 PBTVD: 7372**

**Directions: FROM 32 1/2 & 23 1/2, W 3/8, N INTO**

| TUBULARS          | Tool Type      | Joints | Size          | Weight | Grade      | Thread   | Condition | Top D | Btm D     |
|-------------------|----------------|--------|---------------|--------|------------|----------|-----------|-------|-----------|
| SURFACE CASING    |                |        |               |        |            |          |           |       |           |
| PRODUCTION CASING | CASING         | 16     | 8-5/8         | 23     |            | 8RD EUE  |           | 10    | 703       |
|                   | CASING         | 170    | 3-1/2         | 7.7    | I-70       |          |           | 10    | 7377      |
|                   | FLOAT COLLAR   | 1      | 3-1/2         |        |            |          |           | 7377  | 7379      |
|                   | CASING         | 1      | 3-1/2         | 7.7    | I-70       |          |           | 7379  | 7419      |
|                   | GUIDE SHOE     | 1      | 3-1/2         |        |            |          |           | 7419  | 7420      |
| PRODUCTION TUBING |                |        |               |        |            |          |           |       |           |
|                   | TUBING         | 214    | 2-1/16        | 3.25   | J-55       | 10 RD II |           | 7     | 7250      |
|                   | SEATING NIPPLE | 1      | 2-1/16        |        |            |          |           | 7250  | 7252      |
| CEMENT            | Stage          | Sack   | Cement Type   |        | Top D      | Btm D    | cbl       | est   | Comments  |
| SURFACE CEMENT    |                |        |               |        |            |          |           |       |           |
| PRODUCTION CEMENT | STAGE 1        | 490    | NEAT          |        | 10         | 713      | No        | Yes   | RETURNS   |
|                   | STAGE 1        | 265    | 50/50 POZ-MIX |        | 3912       | 4782     | Yes       | No    |           |
|                   | STAGE 1 TAIL   | 150    | PREMIUM       |        | 6416       | 7452     | Yes       | No    |           |
| PERFORATIONS      |                |        |               |        |            |          |           |       |           |
| Formation         | Top            | Btm    | spf           | Shot   | Date       | Comments |           |       | Producing |
| NIOBRARA B        | 7072           | 7074   | 2             | 6      | 03/15/1996 |          |           |       | Yes       |
| CODELL            | 7292           | 7297   | 2             | 11     | 03/15/1996 |          |           |       | Yes       |

**Codell re-frac Prognosis (3-1/2" Casing Frac)**

- MIRU Service Unit. Control well with 2% KCL and biocide as required. NDWH, NUBOP's Pull plunger and BS.
- Drop SV and pressure test tbg to 1,000 psi. PU 2-1/16" tubing and tag bottom for fill. TOOHL w/ 2-1/16" tubing.
- If fill is tagged less than 30' below bottom Codell perf, circulate sand out of hole to 30' below bottom Codell perf.  
 Note: If tbg did not test in step 2, pull tubing and hydrotest before circulating fill out of hole.
- PU 3-1/2" plug and packer and TIH w/ 2-1/16" tbg. Set Plug @ 7900' Pressure test casing to 5,500 psi.
- Release plug and TOOHL LD packer and plug.
- RU **Bran-De-X** and Perforate Codell as follows:  
 Zone Interval SPF Phasing Charge Size Holes  
**Codell 7290 - 7300 4 90 .32 40**
- RU Service Co. and Re-Frac Codell down 3-1/2 as per prognosis (122,000 gal, 261,000# 20/40, 7 frac tanks)  
 Set Max PSI @ 5,300 psi, Casing Pop-Off @ 5,500 psi.  
 RU forced closure line in case immediate flowback is required.
- Do not force close. RD Service Co. immediately after frac. Begin flowback on 18/64" choke as soon as possible.
- When well dies, TIH w/ NC, SN and 2-1/16" production tubing. Hydrotest to 6,000 psi if not already hydrotested.
- Tag sand and circulate to PBTD.
- Land Tubing @ +/- **7270" KB NDBOP's, NUWH.**
- Broach tubing to SN. RD Service Unit and RU Swab rig. Swab well to production.

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WELD COUNTY, CO

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04/25/2000

Orig Operator: HSR

SSI: 960130

GL: 4791 KB: 4901 MTD: 7452 TVD: 7452 PBMD: 7372 PBTVD: 7372 API #: 05-123-18922

**Comments****Hole Data**

| Hole | Size   | Top | Btm  | Date       |
|------|--------|-----|------|------------|
| SURF | 12-1/4 | 10  | 713  | 03/07/1996 |
| PROD | 7-7/8  | 713 | 7452 | 03/10/1996 |

**SURFACE CASING**

| Tool Type | Size  | Weight | Grade | Top D | Btm D |
|-----------|-------|--------|-------|-------|-------|
| CASING    | 8-5/8 | 23     |       | 10    | 703   |

**SURFACE CEMENT**

| Stage   | Sacks | Cement Type | cbl | Comments | Top D | Btm D |
|---------|-------|-------------|-----|----------|-------|-------|
| STAGE 1 | 490   | NEAT        | No  | RETURNS  | 10    | 713   |

**PRODUCTION CASING**

| Tool Type    | Size  | Weight | Grade | Top D | Btm D |
|--------------|-------|--------|-------|-------|-------|
| CASING       | 3-1/2 | 7.7    | 1-70  | 10    | 7377  |
| FLOAT COLLAR | 3-1/2 |        |       | 7377  | 7379  |
| CASING       | 3-1/2 | 7.7    | 1-70  | 7379  | 7419  |
| GUIDE SHOE   | 3-1/2 |        |       | 7419  | 7420  |

**PRODUCTION CEMENT**

| Stage        | Sacks | Cement Type   | cbl | Comments | Top D | Btm D |
|--------------|-------|---------------|-----|----------|-------|-------|
| STAGE 1      | 265   | 50/50 POZ-MIX | Yes |          | 3912  | 4782  |
| STAGE 1 TAIL | 150   | PREMIUM       | Yes |          | 6416  | 7452  |

**PRODUCTION TUBING**

| Tool Type      | Size   | Weight | Grade | Top D | Btm D |
|----------------|--------|--------|-------|-------|-------|
| TUBING         | 2-1/16 | 3 25   | J-55  | 7     | 7250  |
| SEATING NIPPLE | 2-1/16 |        |       | 7250  | 7252  |

**PERFORATIONS**

| Formation (Bench) | Top  | Btm  |
|-------------------|------|------|
| NIOBRARA B        | 7072 | 7074 |
| CODELL            | 7292 | 7297 |

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HSR-TOOMEY 7-13

SWNE Section 13 3N 67W

WELD COUNTY, CO

AREA: 1

ROUTE 19

GL: 4791

04/25/00116

SSI: 960130

API #: 05-123-18922

Spud: 03/06/1996

KB: 4901

MTD: 7452

TVD: 7452

PBMD: 7372

PBTVD: 7372

| Date       | History note                           |
|------------|--|
| 03/06/1996 | SPUD WELL                              |
| 03/10/1996 | TD 7452                                |
| 03/19/1996 | FRAC CODELL / NIOBRARA (LIMITED ENTRY) |
| 03/22/1996 | CLEAN OUT TO 7372                      |

| Stimulation Data: |      | HSR-TOOMEY 7-13 |             |          |           |               |          |
|-------------------|------|-----------------|-------------|----------|-----------|---------------|----------|
| Date              | Type | Method          | Vendor      | Avg Rate | Avg Press | ISIP          | Max Sand |
| 03/19/1996        | FRAC | CASING          | HALLIBURTON | 25       | 4737      | 3359          | 8        |
| Comments          |      |                 |             |          |           |               |          |
| Formations        |      | Materials       |             |          |           |               |          |
| CODELL            |      | Type            | Volume      | Units    | Size      | Material Name |          |
| NIOBRARA          |      | FLUID           | 123,312     | GALS     |           | PURGEL III    |          |
|                   |      | FLUID           | 1,000       | GALS     | 7 1/2%    | ACID          |          |
|                   |      | SAND            | 423,840     | LBS      | 20/40     | SAND          |          |
|                   |      | SAND            | 7,500       | LBS      | 100 MESH  | SAND          |          |

3939 Carson Avenue

**Inc.**

Evans, CO 80620

Office: 970-330-0614

Fax: 970-330-0431

**HS Resources,**

# FAXtransmittal

To: **BRANDEX: 970-522-0292**

CC:

Fax: **970-522-0291**

From:

Date: **4/25/00**

RE: **Perforating design: HSR-TOOMEY 7-13**

Pages: **1, including this cover page**

## Comments

**HS RESOURCES, INC.  
HSR-TOOMEY 7-13  
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**KB: 4901      GL: 4791      TD: 7452      PBTD: 7372**

**Directions: FROM 32 1/2 & 23 1/2, W 3/8, N INTO**

## Csg Data:

| PRODUCTION CASING |       |        |       |       |       |  |
|-------------------|-------|--------|-------|-------|-------|--|
| Tool Type         | Size  | Weight | Grade | Top D | Btm D |  |
| CASING            | 3-1/2 | 77     | I-70  | 10    | 7377  |  |
| FLOAT COLLAR      | 3-1/2 |        |       | 7377  | 7379  |  |
| CASING            | 3-1/2 | 77     | I-70  | 7379  | 7419  |  |
| GUIDE SHOE        | 3-1/2 |        |       | 7419  | 7420  |  |

## Gun Size:

| Formation | Interval    | SPF | Phasing | Charge | Dia | Holes |
|-----------|-------------|-----|---------|--------|-----|-------|
| Codell    | 7290 – 7300 | 4   | 90      |        | .32 | 40    |