

FINNEY LAND CO.

OIL & GAS CONSULTING

P.O. BOX 2471

DURANGO, CO 81302

PHONE: (970) 259-5691 • FAX (970) 259-4279

April 20, 2015

Bureau of Land Management
Attn: Barbara Telecky
San Juan Public Lands Center
15 Burnett Court
Durango, CO 81301

RE: Four Star Oil & Gas Company
Southern Ute #11-D1 and
Southern Ute #19-D1 Permits

Dear Ms. Telecky:

Attached please find 4 copies of the APD for Four Star Oil & Gas's proposed Southern Ute #11-D1 and Southern Ute #19-D1 Wells. Both of these wells are proposed Fruitland Coal wells to be located in T33N-R9W, Se. 34: SE/4SE/4.

Please charge the application fee to the following Visa Account:

Anne C. Finney

Please replace the current Visa card that I have on file with the BLM with this new one.

Should you have any questions or need any additional information please don't hesitate to contact me.
Thank you for your help on this permit.

Best regards,



Michael J. Finney
President, Finney Land Co.

xc: John Turner – Four Star Oil & Gas Company

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0137
Expires July 31, 2010

| | | |
|--|---|--|
| 1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER | | 5. Lease Serial No. 14-20-151-32 |
| 1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone | | 6. If Indian, Allottee or Tribe Name Southern Ute Indian Tribe |
| 2. Name of Operator Four Star Oil & Gas Company | | 7. If Unit or CA Agreement, Name and No. N/A |
| 3a. Address 332 RD. 3100 Aztec, NM 87410 | | 8. Lease Name and Well No. Southern Ute #11-D1 |
| 3b. Phone No. (include area code) 505-333-1901 | | 9. API Well No. |
| 4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 1049' FSL & 1221' FEL At proposed prod. zone 2102' FSL & 2090' FEL | | 10. Field and Pool, or Exploratory Ignacio-Blanco |
| 14. Distance in miles and direction from nearest town or post office* 10.25 miles to Ignacio, CO. | | 11. Sec., T. R. M. or Blk. and Survey or Area Sec. 34, T33N, R9W N.M.P.M. |
| 15. Distance from proposed* 2090' to nearest lease line location to nearest 604.33' from unit line property or lease line, ft. (Also to nearest drig. unit line, if any) | 16. No. of acres in lease Total 2560 | 12. County or Parish La Plata |
| 17. Spacing Unit dedicated to this well E/2 | 13. State CO | |
| 18. Distance from proposed location* 14' to nearest well, drilling, completed, to proposed SU #19-D1 applied for, on this lease, ft. | 19. Proposed Depth 3982' | 20. BLM/BIA Bond No. on file BIA-K02907914-F4072 BLM-K0357927A |
| 21. Elevations (Show whether DF, KDB, RT, GL, etc.) GL Elevation 7214' | 22. Approximate date work will start* 08/23/2015 | 23. Estimated duration 16 days |

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

- | | |
|--|---|
| 1. Well plat certified by a registered surveyor. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the BLM. |

| | | |
|--------------------------------|---------------------------------------|--------------------|
| 25. Signature | Name (Printed/Typed) April E. Pohl | Date 04/20/2015 |
| Title Permitting Specialist | | |
| Approved by (Signature) | Name (Printed/Typed) | Date |
| Title | Office | |

Application approval 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.
Conditions of approval, if any, are attached.

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.

(Continued on page 2)

*(Instructions on page 2)

Surface Use Plan

Four Star Oil & Gas Company

Southern Ute #11-D1 Well
Lease #14-20-151-32

Twp 33 N, Rge 9 W N.M.P.M.

Section 34: SE/4SE/4

1049' FSL x 1221' FEL

La Plata County, CO

Prepared by: Finney Land Co.
For: Four Star Oil & Gas Company
April 15, 2015

Surface Use Plan, Southern Ute #11-D1 Well

1.0 EXISTING ROADS:

See attached plat, Survey Plat A.

The existing "Texaco Hill" road is the main access road for this well. The last approximately 0.1 mile of road turns off of the Texaco Hill road and is the existing Southern Ute #11 Well access road. This road will be used for The Southern Ute #11-D1 Well also.

The "Texaco Hill" road is maintained by oil and gas operators that use it under a "Road Maintenance Agreement" that is overseen by the La Plata County Energy Council. Four Star Oil & Gas Company contributes to this road maintenance.

The existing 0.1 mile of access road described below is approximately 20 feet in width. The road shall be properly maintained in the same or better condition than presently found. The road conditions will be evaluated during the spring of each year. If necessary, additional base material and/or pulling of material from slopes back onto existing running surface to maintain crowning for off road drainage of precipitation run off will be done.

Access:

From the junction of State Highway 172 and La Plata County Road 318 in Ignacio, Colorado, travel West on County Road 318 for 12.4 miles;

Go left (South) onto existing "Texaco Hill" road for .3 miles;

Go left (East) on "Texaco Hill" road for 1.6 miles;

Go straight (East) on "Texaco Hill road for 1.4 miles;

Go right (South) on well access road 0.1 miles to staked location on existing So. Ute #11 well pad.

2. NEW ACCESS ROADS: NOT APPLICABLE

No new access roads will need to be constructed. The road is currently in good shape and no additional work is necessary to facilitate the drilling and completion of the proposed well.

3. LOCATION OF EXISTING GAS & WATER WELL(S):

See attached plat for details, Plat B, There are no domestic water wells within 1 mile of the proposed well.

4. LOCATION OF EXISTING AND PROPOSED FACILITIES:

See attached survey plats, Survey Plat C-1 – Pad Drawing and Survey Plat C-2 Pipeline Survey Plat

A: The proposed wells are to be located within the current surface disturbance of the existing Southern Ute #11 wellpad. The new proposed facilities consist of a two (2) wellheads with wellhead piping, two (2) pumping units with electric motors, casing and tubing flowlines from each proposed well to the existing separator already on location, v-cone meters on each casing flowline, water meters on each tubing flowline, one (1) new TotalFlow EFM (including batteries and solar array) to replace the existing

AutoPilot EFM (including batteries and solar array), and an electrical rack with primary disconnect and load center. All permanent equipment will be painted green as required.

5. LOCATION AND TYPE OF WATER SUPPLY:

Water for drilling and completion operations for the proposed wells will be sourced from Basin Disposal, Inc. and from Hydropure Technology, Inc. Water will be trucked to the site using the same roads described above. It is estimated that 1900 barrels of water may be used during the drilling phase of the project and another 3280 barrels of water used during the completion phase. The total anticipated number of truck trips is approximately 50.

Water for drilling and completion operations involves potable water, fresh water, and 2% KCl water.

The potable water will be sourced from Hydropure Technology, Inc. located at 711 North Light Plant Road, Aztec, NM 87410. The potable water will be trucked to the site using the same roads described above. It is estimated that 150 barrels of water may be used during the drilling phase of the project and another 150 barrels of water used during the completion phase. The total anticipated number of truck trips for the potable water is approximately 13. The trucks used to transport the potable water will be 24 bbl capacity, bobtail trucks.

The fresh water will be sourced from Basin Disposal Inc. located at 200 Montana, Bloomfield, NM 87413. Basin Disposal gets their fresh water from the City of Bloomfield, New Mexico. The fresh water will be trucked to the site using the same roads as described above. It is estimated that 1750 barrels of water may be used during the drilling phase of the project and another 3000 barrels of water used during completion. The total anticipated number of truck trips for the fresh water is approximately 35. The trucks used to transport the fresh water will have a capacity of 130 bbl.

The 2% KCl water will be sourced from Basin Disposal Inc. located at 200 Montana, Bloomfield, NM 87413. The 2% KCl water will be trucked to the site using the same roads as described above. No 2% KCl water will be used during the drilling phase of the project and 130 barrels of water used during completion. The total anticipated number of truck trips for the 2% KCl water is approximately 2. The trucks used to transport the KCl water will be 130 bbl capacity.

6. CONSTRUCTION MATERIALS:

Minimal new construction materials will be necessary for this site because it is on an existing wellpad. If necessary, all of the construction materials for the proposed work will be obtained onsite or trucked from a third-party commercial facility. Road Base will be used to build the pad for the pumping unit and to back fill any low spots on the pad. Washed gravel will be spread around the equipment. Fill dirt may also be needed to back fill the on-pad pipeline. The construction materials obtained from an offsite facility will be coming from Durango Gravel's pit located at 995 Highway 3, Durango, CO (Twp 34 N, Rge 9 W NUL, Sec. 2: SE/4)

The earthen berm around the existing water tank may need to be temporarily removed to accommodate drilling equipment. If removed, it will be re-built using the original materials after drilling is completed.

The new on-pad gas piping from each wellhead to the separator is made of 4" x .237" or 6" x .280" pipe (ASTM A106 Grade B, SMLS, FBE – rated to more than 1000psi. Water piping will be made of 2" x .218" pipe (ASTM A106 Grade B, SMLS, FBE – rated to more than 1500psi).

7. METHODS FOR HANDLING WASTE:

A. DRILL CUTTINGS: The drilling operation will utilize a closed loop mud system with all make-up fluids and mud return cuttings and fluids contained in above ground steel pits. 30 mm reinforced liners will be placed under the tanks and a 6" coil drain pipe will be placed under the liner around the border of the tanks. All drill cuttings and non-recycled drill fluids will be transported off site to approved commercial disposal facilities. Where possible, fluids will be recycled during the drilling operation

Drill cuttings disposal:

Facility Name: Industrial Ecosystems, Inc.
Permit #: NM01-0010B
Address of Facility: 49 County Rd. 215, Aztec, NM 87410

B. RETURN FLUIDS: The completion and work-over operation(s) will also utilize steel tanks to capture, contain and control all return fluids until these fluids are transported off site to approved commercial disposal facilities. Where possible, fluids will be recycled during completion or work-over operations. 30 mm reinforced liners will be placed under the tanks and a 6" coil drain pipe will be placed under the liner around the border of the tanks.

Return Fluids disposal:

Facility name: Sunco
Permit #: UIC-CL1-005
Address of Facility: 345 County Rd. 350, Farmington, NM 87401

Unused Drilling mud left after drilling the well:

Facility Name: Sunco
Permit #: UIC-CL1-005
Address of Facility: 345 County Rd. 350, Farmington, NM 87401

C. GARBAGE AND TRASH: All garbage and trash will be contained in a cage and hauled away to an approved landfill.

Garbage and Trash Disposal:

Name of Facility: San Juan County Landfill
Permit #: 052426
Address of Facility: 78 County Road 3140, Aztec, NM 87410

D. CHEMICAL TOILETS: Chemical toilets will be provided and maintained during construction, drilling and completion operations.

E. NON-FRESH WATER STORAGE: Any tanks used to handle or store any material other than fresh water will have 30 mm reinforced liners will be placed under the tanks and a 6" coil drain pipe will be placed under the liner around the border of the tanks.

F. DRILLING MUD: Drilling Mud will be mixed on site in the steel mud tank. Fresh water will be mixed with dry additives to make up the drilling mud. The dry additives will be stored in pallets until used. The dry additives will be stored in the shrink wrap plastic until used. A plastic tarp will be placed

over them and be securely fastened. Any drilling mud left after drilling the well will be disposed of at a properly licensed facility.

G. COMPLETION FLUID: The completion fluid will utilize fresh water as a base material. The water will be stored in 400 bbl. frac tanks. Any fracturing additives will be pumped "on-the-fly" by the hydraulic fracturing company. The fracturing chemicals will be brought to the location by truck in either drums, "totes", or in the case of any dry materials in bags stored on pallets. Any fracturing fluid chemical left after the treatment(s) will be removed by the hydraulic fracturing company and returned to their warehouse.

8. ANCILLARY FACILITIES

Camper trailers will be on location for the company man, tool pusher, mud logger and drilling engineers during drilling and completion operations.

9. WELLSITE LAYOUT:

See Drawing D-1 - Drilling Site Layout and Drawing D-2 - Pad Cross Section.

The referenced drawing depicts the layout of the proposed well pad utilizing a closed loop mud/returns system during the drilling and completion operation phases. If the well is completed as a producer, production equipment will be constructed on the location and the equipment will be painted as required.

10. SURFACE RESTORATION/RECLAMATION:

See Drawing E for the proposed interim reclamation area. Interim and final reclamation will be done pursuant to the requirements of the Southern Ute Indian Tribe and the BLM. Interim reclamation will be minimal. It will consist of weed control, erosion control, and re-seeding disturbed areas that are not part of the proposed pad or an existing pad. Final reclamation shall include, but not be limited to: re-contouring the land back to its original condition as much as practical, redistribution of topsoil, reseeding to reestablish vegetation, insuring proper drainage to prevent erosion, and weed control.

No new surface disturbance is anticipated. The well is proposed to be drilled on the existing So. Ute #11 wellpad. Appropriate storm-water measures will be installed as necessary to prevent erosion and runoff.

11. SURFACE OWNERSHIP:

Southern Ute Indian Tribe, P.O. Box 1500, Ignacio, CO 81137

12. OTHER INFORMATION:

Contact the following persons for operations, engineering, and/or regulatory issues:

Permitting Specialist:

April E. Pohl

(505) 333-1941

april.pohl@chevron.com

San Juan Basin Operations Supervisor:
George Badovinat (505) 333-1912

gbado@chevron.com

Lead Facility Engineer:
Andy Olson (505) 333-1954

andrewolson@chevron.com

HES Specialist:
Don Lindsey (505) 333-1920

LLIN@Chevron.com

Chevron San Juan Field Management Team Office
332 Road 3100
Aztec, New Mexico 87410
Office: (505) 333-1901

13. OPERATOR CERTIFICATION:

I certify that I, or someone under my supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of State and Federal laws applicable to this operation, that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Executed this 20 day of April, 2015

Name: April E. Pohl signature

April E. Pohl - printed name

Permitting Specialist

Four Star Oil & Gas Company

332 Road 3100

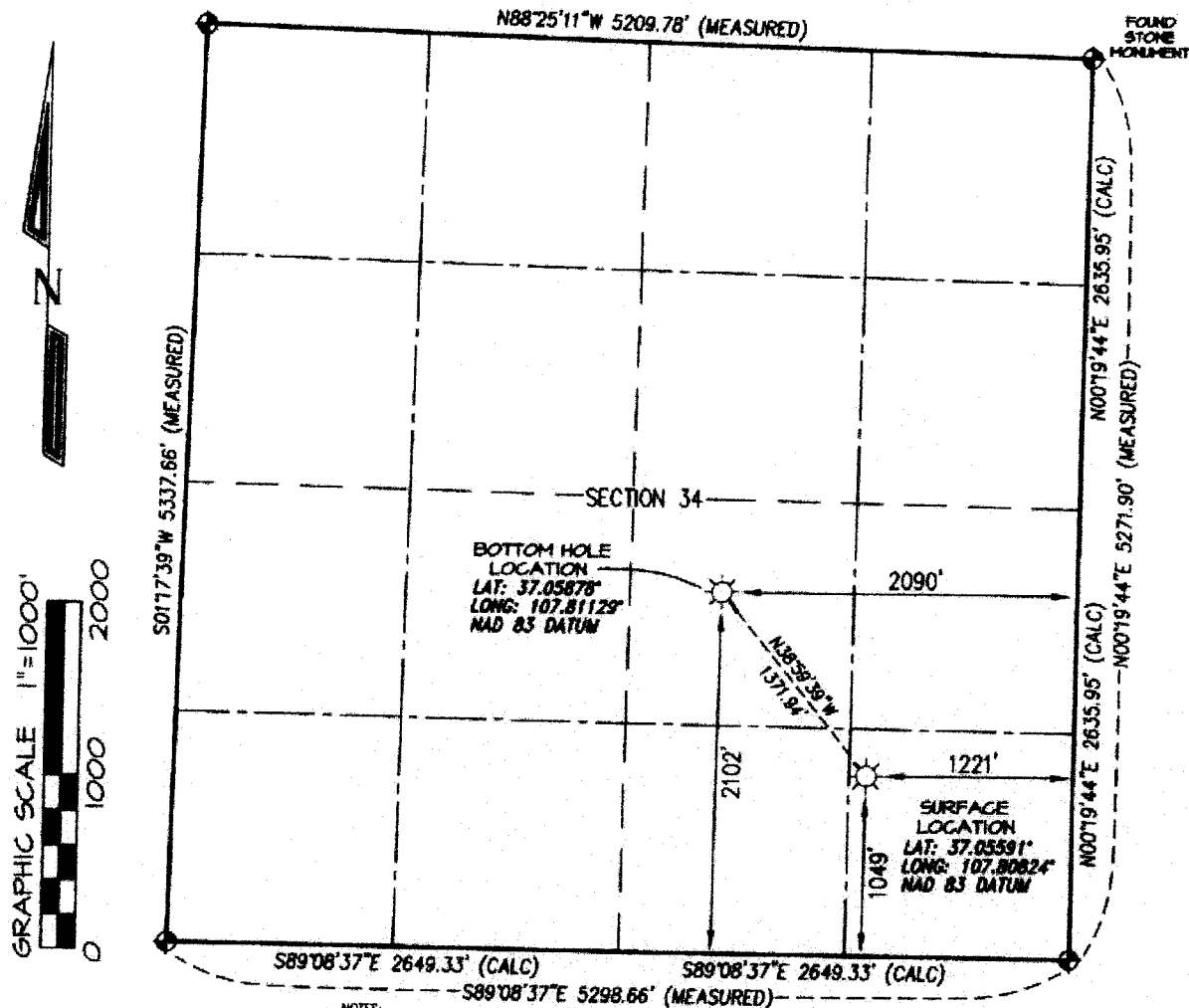
Aztec, NM 87410

Well Location Survey Plat A

FOUR STAR OIL & GAS COMPANY SOUTHERN UTE 11-D1

SURFACE LOCATION: 1049' FSL, 1221' FEL
SBC. 34, T-33-N, R-9-W, N.M.P.M., LA PLATA COUNTY, COLORADO.
GROUND LEVEL ELEVATION: 7214'

BOTTOM HOLE LOCATION: 2102' FSL, 2090' FEL
SBC. 34, T-33-N, R-9-W, N.M.P.M., LA PLATA COUNTY, COLORADO.



BASIS OF BEARING:

REAL-TIME KINEMATIC GPS SURVEY
 SOLUTION OF CO SOUTH STATE
 PLANE (NAD 83) COORDINATE GRID
 - NO ROTATION OR SCALE FACTOR APPLIED -

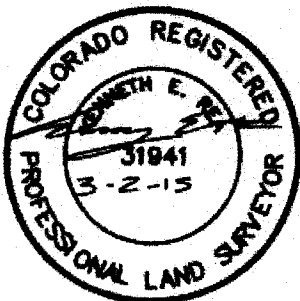
BASIS OF ELEVATION:

N.G.S. SURVEY MARK "IGNATIO" LOCATED IN THE
 SE/4 NE/4 OF SECTION 34, T33N, R9W, N.M.P.M., LA PLATA
 COUNTY, COLORADO. REFERENCE ELEVATION = 6590'

NOTES:

1. WELL LOCATION FOOTAGE CALLS MEASURED PERPENDICULAR TO SECTION LINES.
2. SURFACE USE FOR THE LAND SURROUNDING THIS LOCATION IS SOUTHERN UTE TRIBAL LAND.
3. VISIBLE IMPROVEMENTS WITHIN 500' OF WELL BORE LOCATION ARE NOTED ON ATTACHED PHOTO DIAGRAM.
4. THERE ARE NO BUILDING UNITS, SURFACE UNITS, OR RIPARIAN AREAS WITHIN 1000' OF THE WELL BORE LOCATION.
5. THERE ARE NO PUBLIC ROADS, MAJOR ABOVE GROUND UTILITIES, OR RAILROADS WITHIN 200' OF THE WELL BORE LOCATION.
6. THERE ARE NO PROPERTY BOUNDARY LINES WITHIN 150' OF THE WELL BORE LOCATION.
7. WELL GPS OBSERVATION PERFORMED BY NELSON ROSS ON DATE OF SURVEY - POOP VALUE = 1.92
8. THIS EXHIBIT IS INTENDED TO DEPICT THE PROPOSED WELL LOCATION AND DOES NOT REPRESENT A MONUMENTED BOUNDARY SURVEY.

and denote found 3-1/4" B.L.M. aluminum cap unless otherwise noted.



I, KENNETH E. REA, A REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY CERTIFY THAT THE WELL LOCATION SHOWN ON THIS PLAT IS ACCURATELY PLOTTED FROM FIELD NOTES OF ACTUAL SURVEYS MADE UNDER MY DIRECT SUPERVISION, AND THAT THIS PLAT IS NOT A LAND SURVEY PLAT OR IMPROVEMENT SURVEY PLAT, AND THAT IT IS NOT TO BE RELIED UPON FOR THE ESTABLISHMENT OF FENCE, BUILDING, OR OTHER FUTURE IMPROVEMENT LINES.

DRAWN BY: K.R.
 CHECKED BY: K.R.
 DATE: 1/28/15
 FILE NO: 010707MP
 JOB NO: 0107

PREPARED FOR:

FOUR STAR OIL & GAS COMPANY

**NORTHSTAR
SURVEYING & MAPPING, INC.**

768 County Rd. 308
 DURANGO, CO. 81303
 (970) 385-0851

Four Star Oil & Gas Company
Southern Ute 11-D1
1049' FSL & 1221' FEL
Section 34, T33N, R9W, N.M.P.M.
La Plata County, Co.
Ground Level Elevation: 7214'

Survey Plat A

Access Road Map

C.R. 318

C.R. 310

Existing Road

No New Access

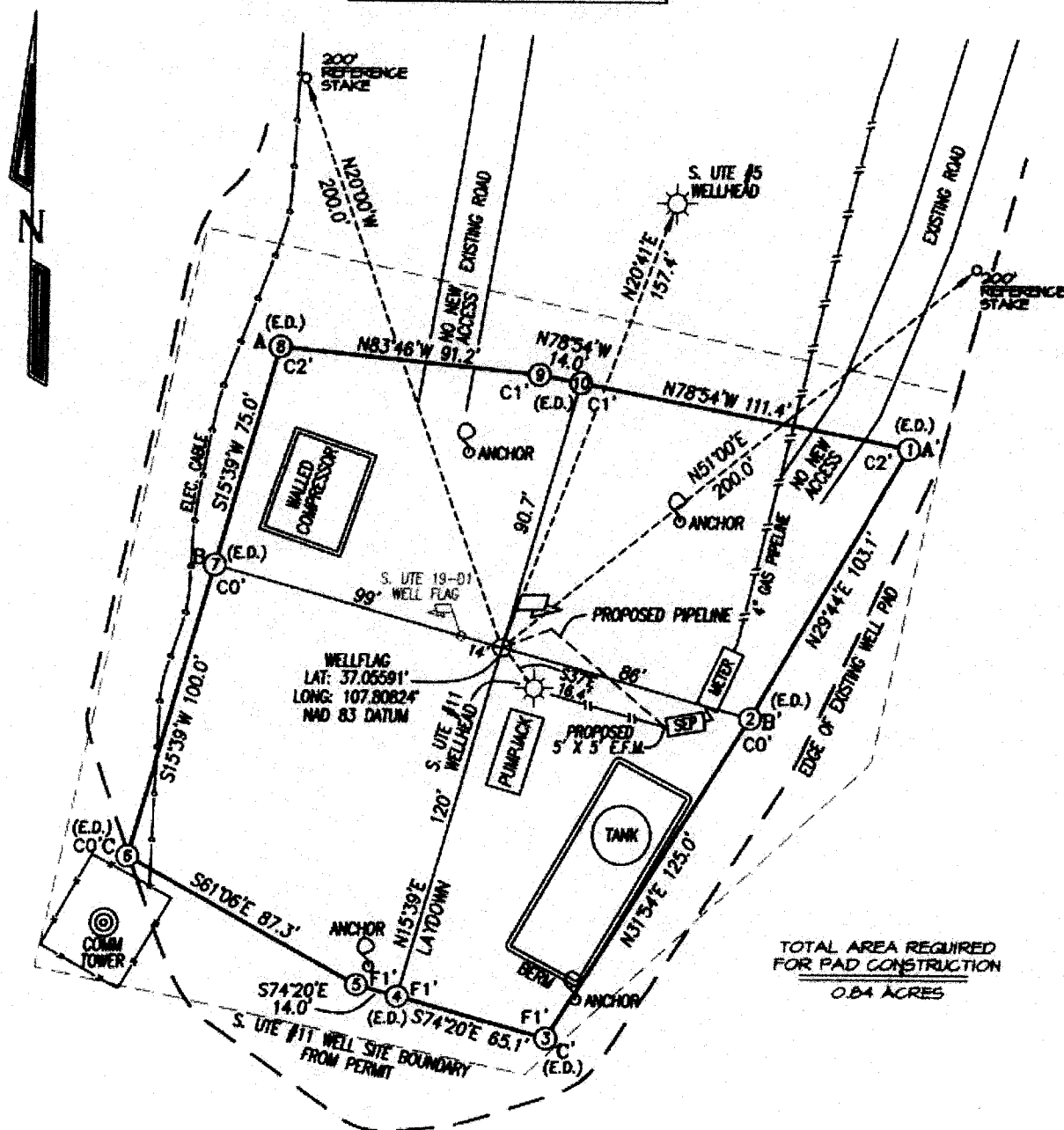
Canyon

SU 11- D1 Well Bottomhole Location

1 Mile Radius

**FOUR STAR OIL & GAS CO. SOUTHERN UTE 11-D1
1049' FSL, 1221' FEL, SECTION 34, T-33-N, R-9-W, N.M.P.M.,
LA PLATA COUNTY, CO. GROUND LEVEL ELEVATION: 7214'**

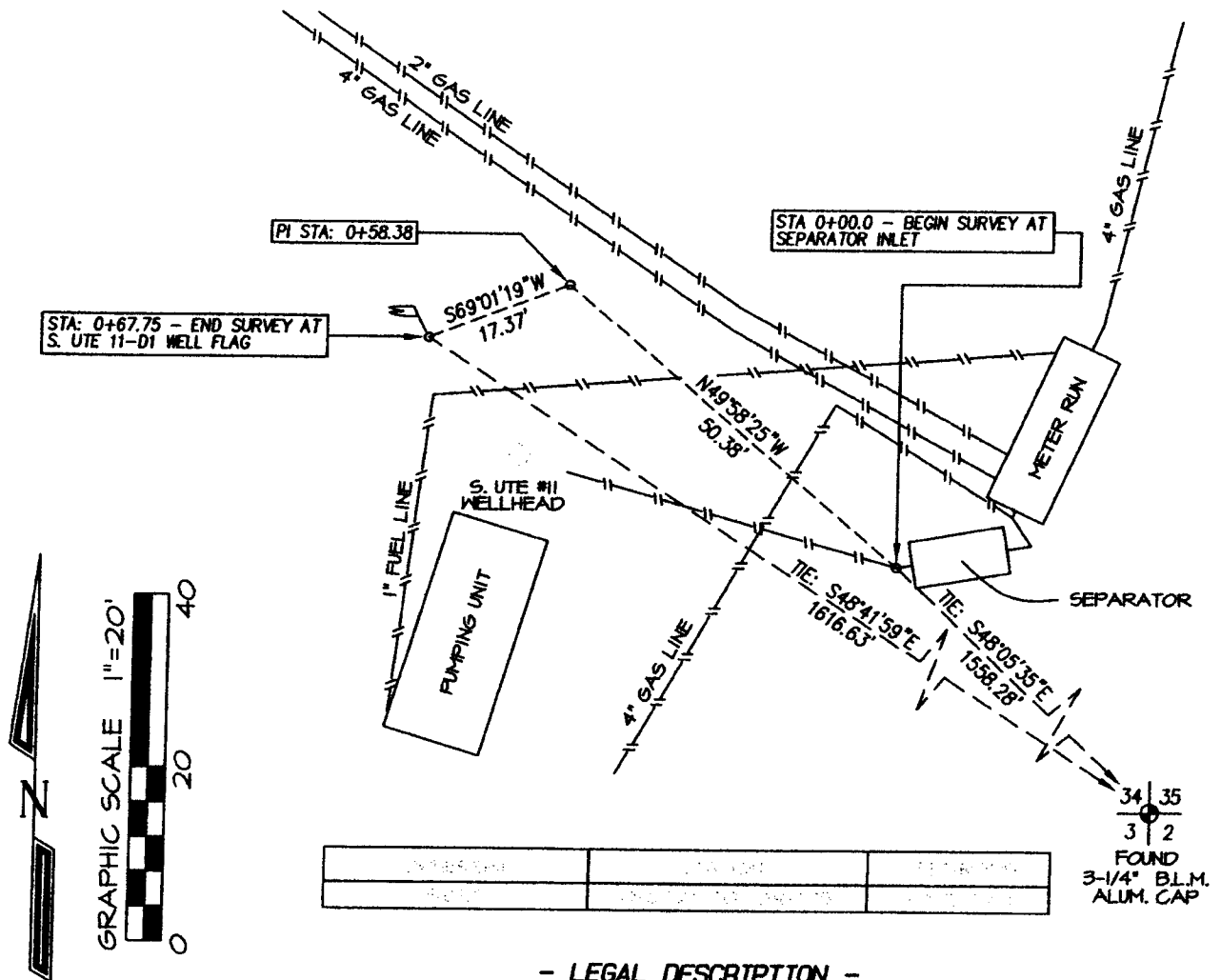
(E.D.) DENOTES EDGE OF DISTURBANCE



TOTAL AREA REQUIRED
FOR PAD CONSTRUCTION
0.84 ACRES

Survey Plat C-2

FOUR STAR OIL & GAS COMPANY: SOUTHERN UTE 11-D1 PROPOSED PIPELINE LOCATED IN THE SE/4 SE/4 OF SECTION 34, T33N, R9W, N.M.P.M., LA PLATA COUNTY, COLORADO



- LEGAL DESCRIPTION -

A pipeline easement being forty feet (40') wide located in the SE/4 SE/4 of Section 34, Township 33 North, Range 9 West, N.M.P.M., La Plata County, Colorado. Said easement lying twenty feet (20') on each side of the following described centerline:

Beginning at existing S. Ute #11 separator inlet, whence the Southeast corner of said Section 34, being a 3-1/4\" B.L.M. Aluminum Cap bears: S48°05'35\"E a distance of 1558.28 feet.

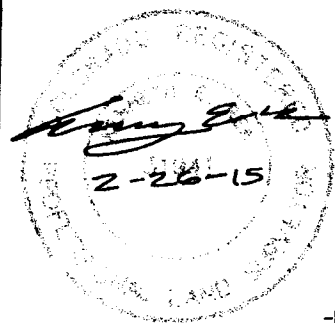
Thence N49°58'25\"W a distance of 50.38 feet,

Thence S69°01'19\"W a distance of 17.37 feet, ending at Four Star Oil & Gas Company: Southern Ute 11-D1 wellflag, whence said Southeast corner of Section 34 bears: S48°41'59\"E a distance of 1616.63 feet.

Described easement being 67.75 feet in length & containing 0.062 acres, more or less.

BASIS OF BEARING:

REAL-TIME KINEMATIC GPS SURVEY
SOLUTION OF CO SOUTH STATE
PLANE (NAD 83) COORDINATE GRID
-NO ROTATION OR SCALE FACTOR APPLIED-



I, KENNETH E. REA, A REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY CERTIFY THAT THE SURVEY REPRESENTED BY THIS PLAT WAS MADE UNDER MY DIRECT SUPERVISION AND THAT THIS PLAT ACCURATELY REPRESENTS THIS SURVEY TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REVISED: 2/26/15

DRAWN BY: K.R. SURVEYED: 2/5/15
CHECKED BY: K.R. DRAWN: 2/10/15
FILE NO: CNY07PL JOB NO. CH107

PREPARED FOR:

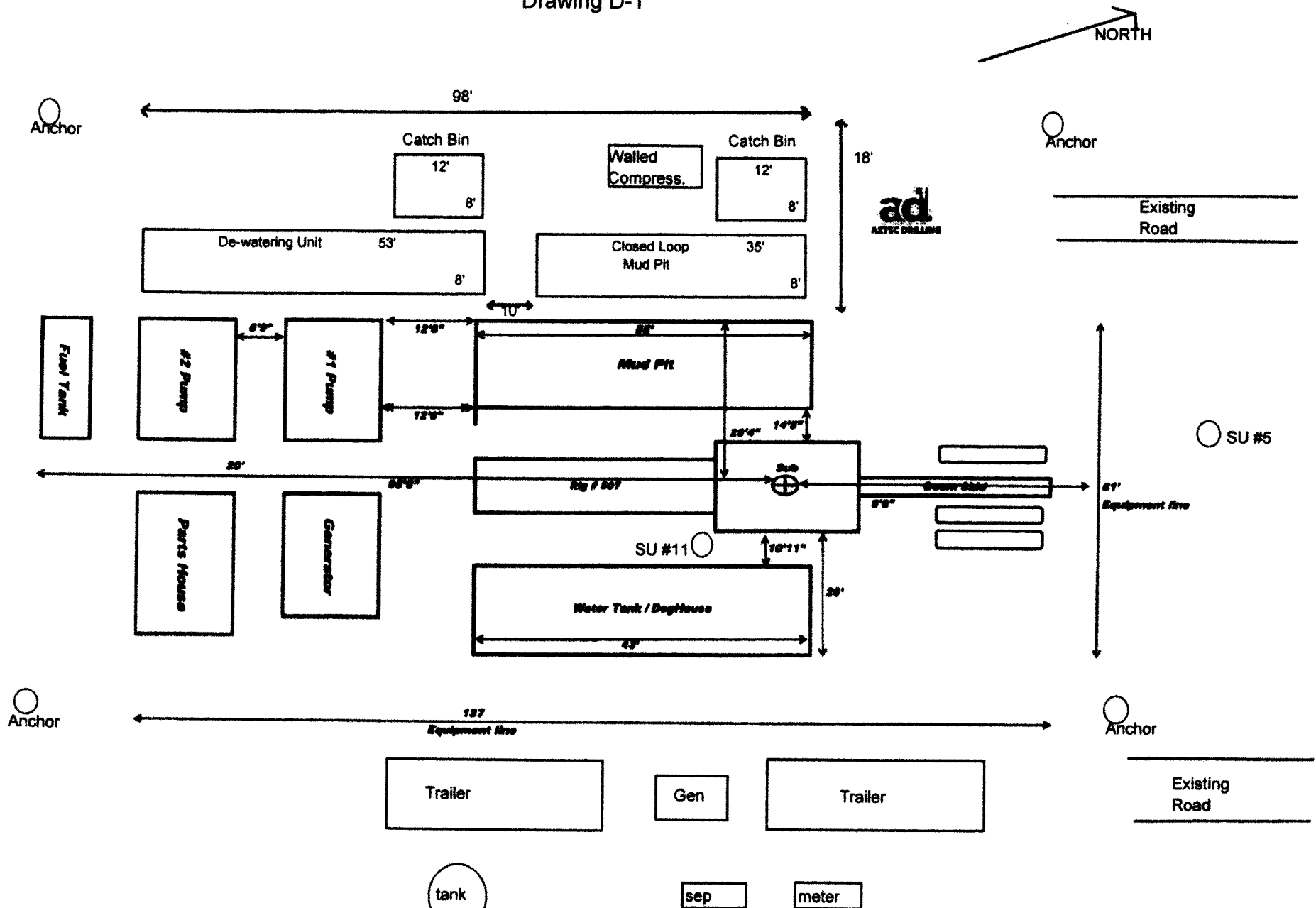
FOUR STAR OIL & GAS CO.

**NORTHSTAR
SURVEYING & MAPPING, INC.**

768 County Road 308
DURANGO, CO. 81303
(970) 385-0851

DRILLING SITE LAYOUT

Drawing D-1



Rig 507 Foot Print

Well SU #11-D1

Updated March, 2012

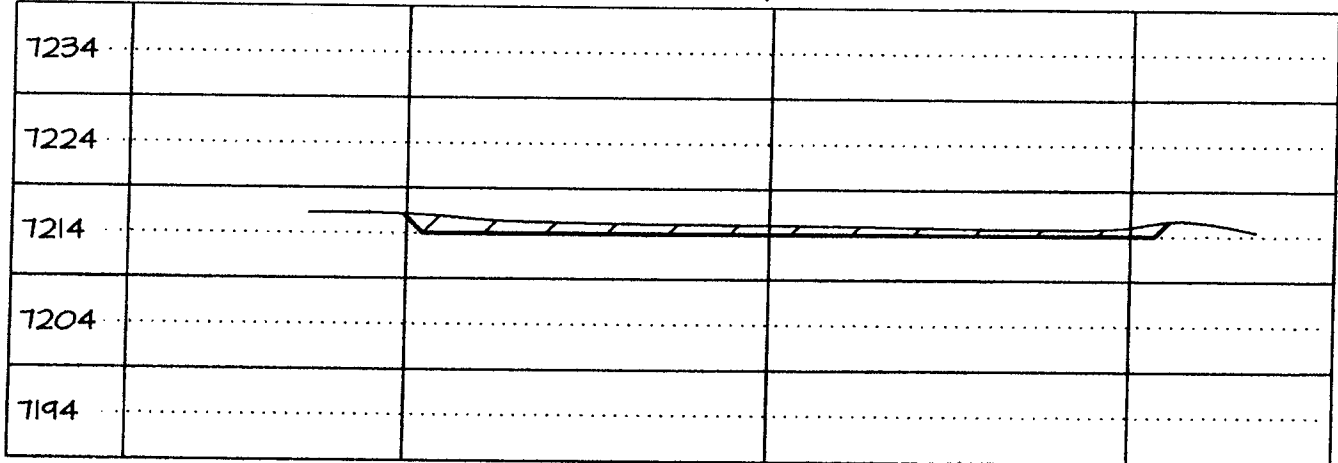
Plat D-2

FOUR STAR OIL & GAS CO. SOUTHERN UTE 11-D1
1049' FSL, 1221' FEL, SECTION 34, T-33-N, R-9-W, N.M.P.M.,
LA PLATA COUNTY, CO. GROUND LEVEL ELEVATION: 7214'

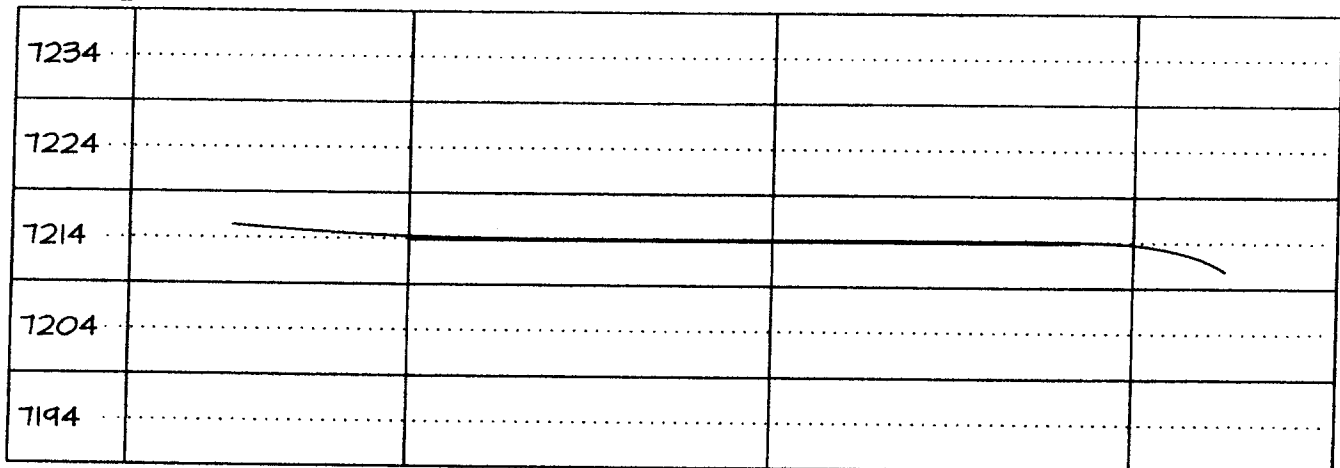
PAD CROSS SECTION DETAIL

ELEV. A-A'

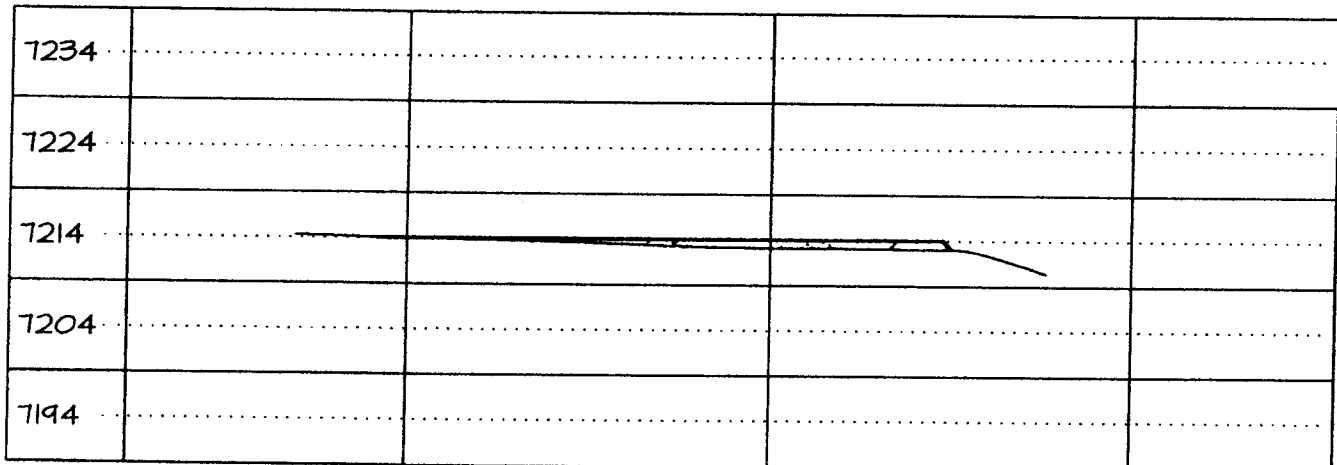
C/L



B-B'



C-C'



VERTICAL SCALE: 1" = 20' / HORIZONTAL SCALE: 1" = 50'

DATE DRAWN: 1/07/15

NORTHSTAR SURVEYING & MAPPING, INC.

FILE NO: CHV07CFB

DRAWN BY: K.R.

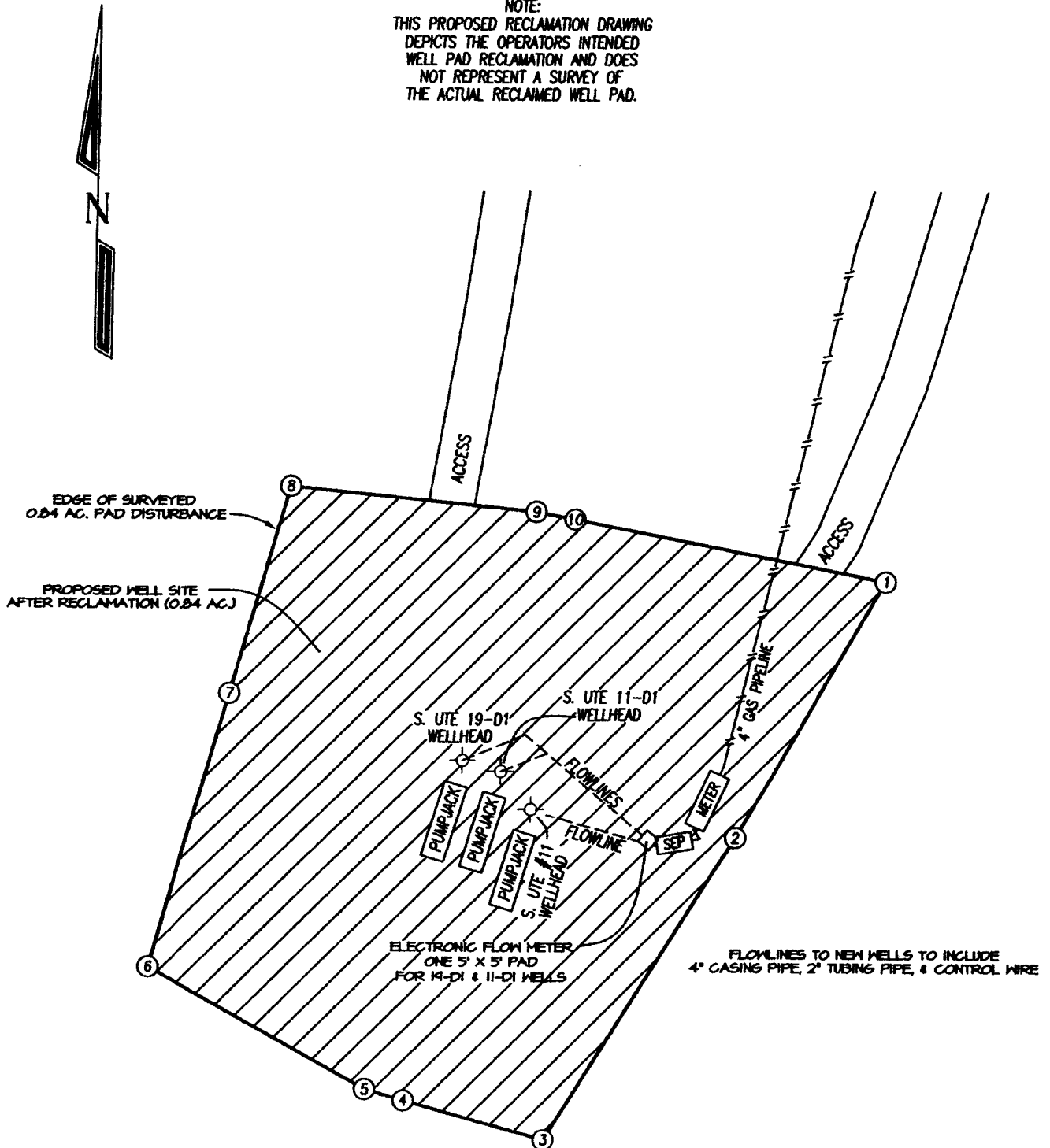
CHECKED BY: K.R.

Drawing E

**FOUR STAR OIL & GAS CO. SOUTHERN UTE 11-D1
1049' FSL, 1221' FEL, SECTION 34, T-33-N, R-9-W, N.M.P.M.,
LA PLATA COUNTY, CO. GROUND LEVEL ELEVATION: 7214'**

PROPOSED RECLAMATION DRAWING

NOTE:
THIS PROPOSED RECLAMATION DRAWING
DEPICTS THE OPERATORS INTENDED
WELL PAD RECLAMATION AND DOES
NOT REPRESENT A SURVEY OF
THE ACTUAL RECLAIMED WELL PAD.



DRAWING SCALE: 1" = 50'

DATE DRAWN: 2/26/15

NORTHSTAR SURVEYING & MAPPING, INC.

FILE NO. CHV07RP

DRAWN BY: K.R.

CHECKED BY: K.R.

Four Star Oil & Gas Company

Southern Ute #11-D1

SHL: 1049' FSL & 1221' FEL of Section 34, T33N, R9W

BHL: 2102' FSL & 2090' FEL of Section 34, T33N, R9W

La Plata County, Colorado

GL Elevation: 7214'

Drilling Plan

All Lease and/or unit operations will be conducted in such a manner that full compliance is made with: 43 CFR part 3160, applicable BLM On-Shore Orders, COGCC rules and regulations, as well as the Southern Ute Tribal Conditions of Approval. The operator is fully responsible for the actions of its subcontractors. A copy of the APD and Conditions of Approval will be available to the field representatives to ensure compliance.

ESTIMATED FORMATION TOPS (KB) and NOTABLE ZONES:

| Formation Name | Depth (TVD) | Rock Type | Comments |
|----------------------|-------------|-------------------------|--------------------------------|
| San Jose | 0' | Sandstone / Siltstone | Brackish / Fresh Water |
| Naicomento | 1418' | Shale / Minor Sandstone | |
| Ojo Alamo | 2218' | Sandstone / Siltstone | Brackish / Brine Water |
| Kirtland | 2518' | Shale / Minor Sandstone | |
| Fruitland | 3268' | Coal, Shale, Sandstone | Nat Gas, Brine water |
| Pictured Cliffs | 3832' | Sandstone | Possible Lost Circ, Gas, Water |
| Proposed Total Depth | 3982' | | |

Possible Aquifers: Surface to +/- 500'. Fresh water zones will be adequately protected by setting and cementing the surface casing.

Oil Shale: None expected.

Oil: None expected.

Gas: Gas is expected in the Fruitland Coal. All zones containing commercial quantities of oil or gas will be cased and cemented.

PRESSURE CONTROL

Maximum expected pressure is 2000 (0.433 pressure gradient) psi. The drilling contract has not yet been awarded, thus the exact BOP and Choke Manifold model to be used is not yet known. A typical 11" 3000 psi model is pictured in Exhibits A & B.

Four Star Oil & Gas Company

Southern Ute #11-D1

SHL: 1049' FSL & 1221' FEL of Section 34, T33N, R9W

BHL: 2102' FSL & 2090' FEL of Section 34, T33N, R9W

La Plata County, Colorado

GL Elevation: 7214'

A remote accumulator will be used, and the pressures, the capacities, and the remote & manual controls will be identified at the time of the BLM supervised BOP test.

BOP equipment, accumulator, choke manifold, and all accessories will meet or exceed BLM requirements as listed in Onshore Order #2 for the 3M systems. The pressure control equipment considerations include but will not be limited to:

1. Annular preventer.
2. Double ram with blind rams and pipe rams.
3. Drilling spool, or blowout prevent with 2 side outlets. The choke side shall be a 3" minimum diameter and the kill side shall be at least 2" diameter.
4. 2" minimum kill line.
5. 3" diameter choke line.
6. 2 kill line valves, one of which shall be a 2" minimum check valve.
7. 2 chokes.
8. Pressure gauge on choke manifold.
9. Upper Kelly cock valve with handle available.
10. Safety valve and subs to fit all drill string connections in use.
11. All BOPE connections subjected to well pressure shall be flanged, welded, or clamped.
12. Fill-up line above uppermost preventer.
13. Accumulator will have sufficient capacity to open the hydraulically-controlled choke line valve, close all rams plus the annular preventer, and retain a minimum of 200 psi above per charge on the closing manifold without the use of the closing pumps.
14. Accumulator fluid volume is to be maintained at manufacturer's recommendations and shall be double the usable fluid volume of the accumulator system capacity.
15. Accumulator system shall have 2 independent power sources to close the preventers. Nitrogen bottles (3 minimum) may be 1 of the independent power sources and, if so, shall maintain a charge equal to the manufacturer's specifications.

BOPs will be pressed tested after initial installation, any time a seal is broken, and following any related repairs. Additionally, the BOPs will be operationally checked every 24 hours and a BOPE pit level drill shall be conducted weekly for each drilling crew. All tests and pressure tests will be recorded on an IADC log.

Ram type preventers, annular preventer, choke manifold, and related pressure control equipment will be pressure tested to 2000 psi high and 250 psi low.

The casing strings will be pressure tested per BLM Onshore Order #2 for 30 minutes as follows:

- a. Surface casing tested to 1000 psi prior to drilling out the shoe.
- b. Production casing tested to 3850 psi (80% of the internal yield) prior to commencement of completion operations.

Four Star Oil & Gas Company

Southern Ute #11-D1

SHL: 1049' FSL & 1221' FEL of Section 34, T33N, R9W

BHL: 2102' FSL & 2090' FEL of Section 34, T33N, R9W

La Plata County, Colorado

GL Elevation: 7214'

| Casing Description | Hole Size | Casing OD | Weight lb/ft | Grade | Age | Connection | Top MD | Bottom MD |
|--------------------|-----------|-----------|--------------|-------|-----|------------|--------|-----------|
| Surface | 12 1/4" | 9 5/8" | 36 | J-55 | New | ST&C | 0 | 500' |
| Production | 8 3/4" | 5 1/2" | 15.5 | J-55 | New | LT&C | 0 | 4275' |

| Casing Description | Casing OD | Footage | Collapse psi | Collapse Safety Factor | Burst psi | Burst Safety Factor | Tensile 1000 lb | Tensile Safety Factor |
|--------------------|-----------|---------|--------------|------------------------|-----------|---------------------|-----------------|-----------------------|
| Surface | 9 5/8" | 500' | 2020 | 8.2 | 3520 | 14.3 | 394 | 21.9 |
| Production | 5 1/2" | 4275' | 4040 | 2.1 | 4810 | 2.4 | 217 | 3.3 |

PROPOSED CASING PROGRAM

See attached Drilling Plan Exhibit C for the Wellbore Schematic.

Collapse Safety Factor: Based on evacuated casing and 9.5 ppg annular hydrostatic at TVD.

Burst Safety Factor: Based on evacuated annulus and 9.5 ppg internal hydrostatic at TVD.

Tensile Safety Factor: Based on hanging air weight of casing in vertical hole at measured depth.

Surface and production casings are to be cemented to surface.

CASING CEMENT

The cement programs are designed to meet the BLM Onshore Order #2 and COGCC requirements. The WOC periods will be sufficient to allow the cement compressive strength at the casing shoe to have reached 500 psi prior to drill out of the shoe.

Surface Casing: will be cemented to surface.

Cement and properties: Mix and pump 237 sacks (326 cu ft) Type III cement with CaCl₂, cellophane, and a fluid loss additive. Slurry density is to be 14.6 ppg, 1.38 cu ft/sk yield. Volume will include 100% excess. Cement is to be displaced using a top plug.

Two centralizers will be run on the shoe joint, one centralizer each on the next two joints, and then one centralizer on every third joint thereafter.

Four Star Oil & Gas Company

Southern Ute #11-D1

SHL: 1049' FSL & 1221' FEL of Section 34, T33N, R9W

BHL: 2102' FSL & 2090' FEL of Section 34, T33N, R9W

La Plata County, Colorado

GL Elevation: 7214'

If cement is not circulated to surface, a CBL or temperature survey will be run to determine the TOC and remedial cementing will be conducted to circulate cement to surface.

The surface casing will be pressure tested to 1000 psi prior to drilling out of the shoe.

Production Casing: will be cemented to surface.

Lead cement and properties: Mix and pump 580 sacks (1175 cu ft) Premium Lite FM cement with CaCl₂, cellophane, asphaltite, gel, and sodium metasilicate. Slurry density is to be 12.3 ppg, 2.03 cu ft/sk yield. Volume will include 65% excess.

Tail cement and properties: Mix and pump 322 sacks (443 cu ft) Type III cement with CaCl₂, cellophane, and a fluid loss additive. Slurry density is to be 14.6 ppg, 1.38 cu ft/sk yield. Volume will include 35% excess. TOC calculated to be at 3000'.

Two centralizers will be run on the shoe joint, one centralizer each on the next three joints, and then one centralizer on every third joint into the surface casing.

A CBL log will be run in the production casing prior to commencement of completion operations to determine TOC.

Cement specifications may vary slightly due to cement and cement contractor availability.

MUD PROGRAM

| Depth | Type | Mud Weight (ppg) | Funnel Viscosity (sec/q) | API Filtrate (cc/30 min) | pH |
|--------------|----------------|---------------------|-----------------------------|-----------------------------|-----------|
| 0' - 500' | Water/Spud Mud | 8.4 - 9.0 | 27 - 35 | NC | 8.0 - 9.0 |
| 500' - 4275' | MILGEL/LSND | 8.5 - 9.5 | 50 - 65 | 4.0 - 6.0 | 8.0 - 9.0 |

The viscosity, mud weight, and other physical and chemical characteristics of the drilling mud will be varied as required to keep the hole clean, circulate drill cuttings, prevent caving, prevent lost circulation, and maximize penetration rate.

Sufficient mud and materials will be kept on site to maintain mud properties and meet loss circulation or mud weight requirements at all times.

Mud design may change depending on well conditions, and mud properties will be determined by the Chevron representative and the mud engineer.

Four Star Oil & Gas Company

Southern Ute #11-D1

SHL: 1049' FSL & 1221' FEL of Section 34, T33N, R9W

BHL: 2102' FSL & 2090' FEL of Section 34, T33N, R9W

La Plata County, Colorado

GL Elevation: 7214'

CORING, TESTING, & LOGGING

No cores, drill stem tests, or open hole logs will be run. If cement is not circulated to surface, a CBL or temperature survey will be run to determine the TOC.

No mud logging will be conducted.

Inclination surveys will be run in 250' intervals and at the base of the surface hole prior to setting surface casing. A Gyro Multishot will be run at KOP below the surface casing and directional surveys will be taken every 100' to surface. Directional MWD surveys will be taken every 200' from the KOP to TD.

ANTICIPATED PRESSURES AND TEMPERATURES

| | |
|------------------------------------|----------|
| Expected bottom hole pressure: | 1725 psi |
| Anticipated abnormal pressure: | None |
| Anticipated abnormal temperatures: | None |
| Anticipated hazardous gas (H2S): | None |

If any foregoing conditions are unexpectedly encountered, suitable steps will be taken to mitigate according to accepted industry best practices.

OTHER INFORMATION

The anticipated spud date is August 23, 2015, pending permit approval. The spud date will be dependent on the weather conditions, road conditions, and the regulatory agency-supplied Conditions of Approval.

No new dirt work is anticipated for the access road. Minimal dirt work is anticipated for the well pad. The dirt work for the well pad construction will commence upon approval of the APD and will be dependent on weather conditions. This well is to be drilled on an existing pad used by Four Star Oil & Gas Company's Southern Ute #11 well head and surface equipment. Four Star Oil & Gas Company will shut-in the producing well while drilling operations are conducted. Temporary barriers will be placed around the wellheads and equipment to protect them from contact or damage.

The drilling operation is expected to take 7 days. The drilling rig and associated equipment will be removed and preparations will be made for the completion of the well.

The well will be drilled utilizing closed loop and solids control handling equipment. The closed loop and solids control equipment will be set and utilized as per BLM and Southern Ute specifications and Conditions of Approval. The closed loop and solids control equipment set-up and operation are outlined in the 13 point surface use plan.

Four Star Oil & Gas Company

Southern Ute #11-D1

SHL: 1049' FSL & 1221' FEL of Section 34, T33N, R9W

BHL: 2102' FSL & 2090' FEL of Section 34, T33N, R9W

La Plata County, Colorado

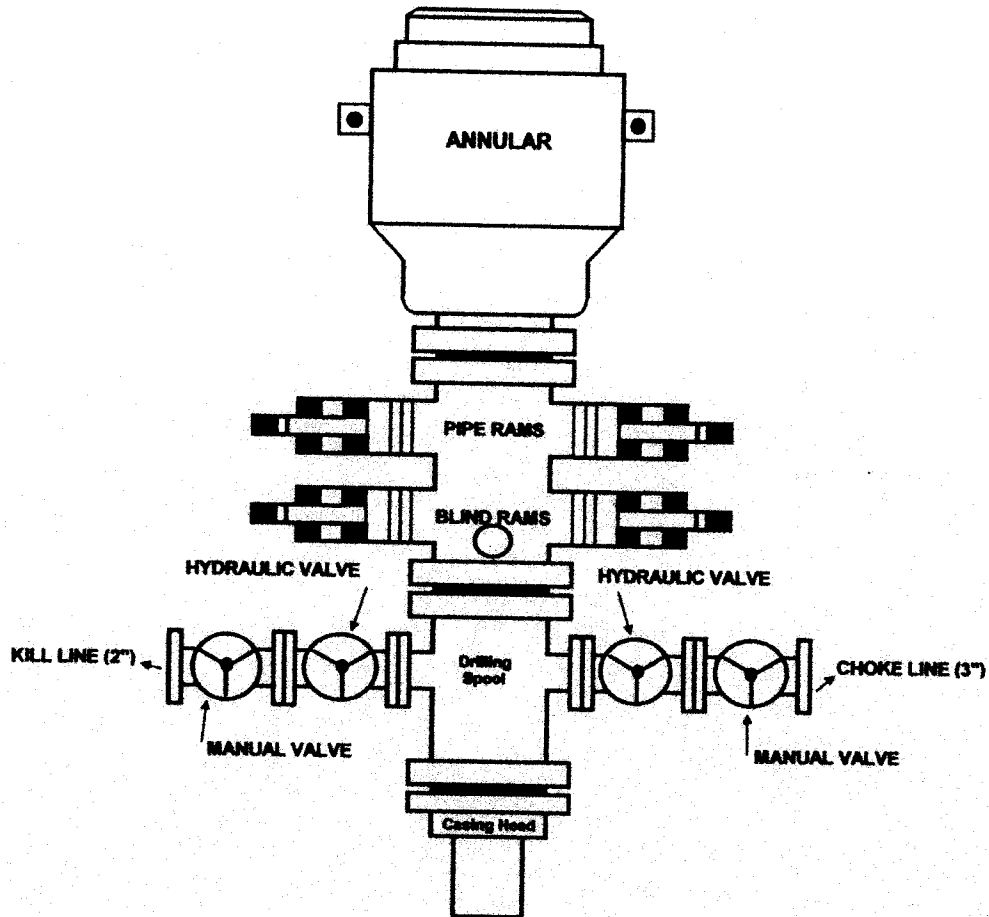
GL Elevation: 7214'

Completion operations will start about two weeks after the finish of drilling operations. A completion rig will be moved in for the completion phase. The completion phase is expected to take approximately 9 days. The completion phase will include perforating, fracture stimulation, and well testing.

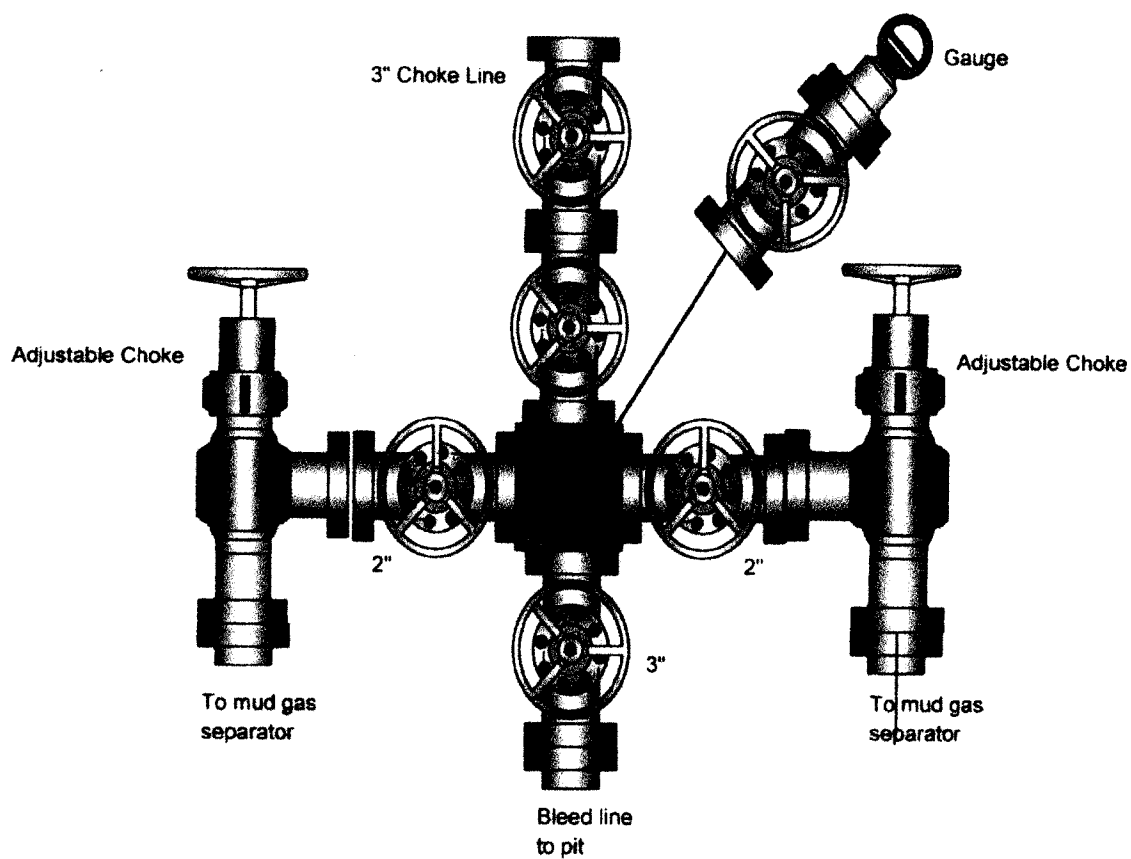
Some event/situations may arise that could potentially change the starting date or project duration that are out of Four Star Oil & Gas Company's control. If such events/situations arise, the proper officials will be promptly notified.

Drilling Plan Exhibit A

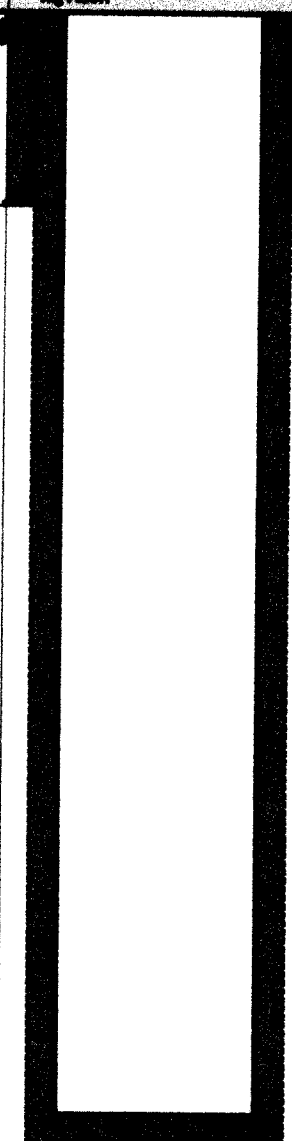
Blowout Preventer Diagram - 3M System



Ad 507 Choke



Drilling Plan Exhibit C

| Depth MD/TVD | Directional Program | Hole Size | Casing Program | MWD Elev. Big Floor: | PP | NW | PE | Mud & Cost Program | Directional | Logging Program |
|----------------------|------------------------|--------------|---------------------------------|--|----|-----|----|--|--|--------------------|
| 50' | | | 16" Conductor |  | | | | Water/Spud Mud | | |
| | | | 9 5/8" | | | 8.4 | | 14.6 ppg LEAD: to Surface 100% XS | Vertical Inclination Surveys | |
| 500' | | 12-1/4" | 36 ppf, J-55, ST&C | | | 9.0 | | | | |
| | | | | | | 8.5 | | MILGEL/LSND to TD | GYRO Multishot at KOP at 500' to Surface | |
| | | | | | | | | 12.3 ppg LEAD: to Surface 65% XS 14.8 ppg TAIL: to 3000' 35% XS | | |
| 4275' MD / 3982' TVD | | 8-3/4" | 5-1/2" 15.50 ppf, J-55, LT&C | | | 9.5 | | | Directional MWD Surveys as per Directional Plan | No OH Logs |

Note: Schematic is NOT to scale.

Brammer Engineering

La Plata County, Colorado NAD27

SU 11 Pad

SU 11D1

OH

Plan: Plan #3

Standard Planning Report

08 April, 2015



Scientific Drilling

www.scientificdrilling.com



Scientific Drilling

Company: Brammer Engineering
Project: La Plata County, Colorado NAD27
Site: SU 11 Pad
Well: SU 11D1

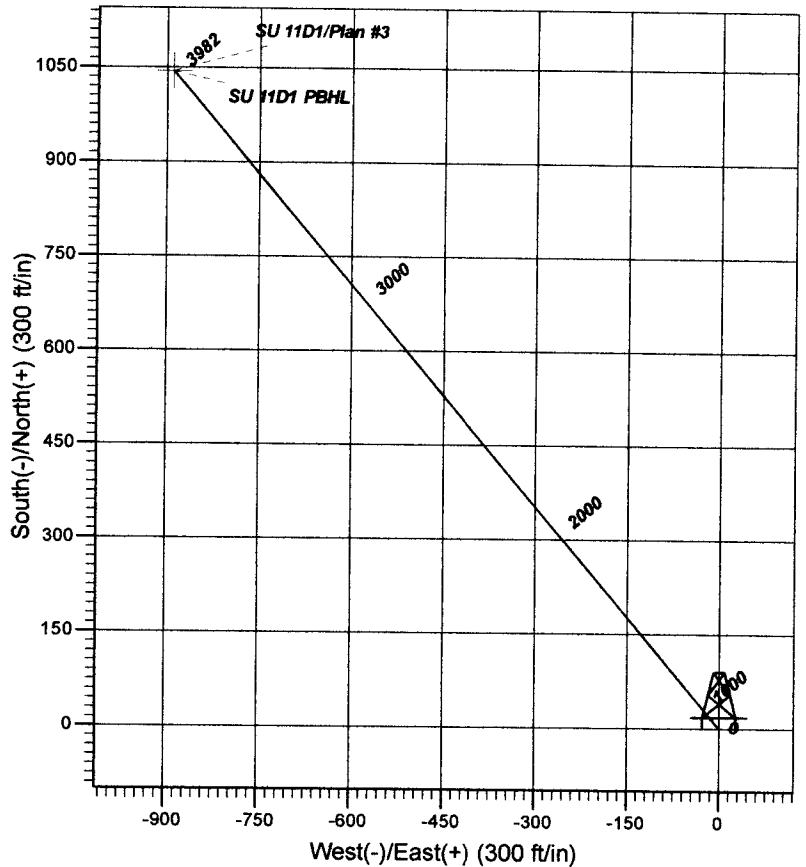
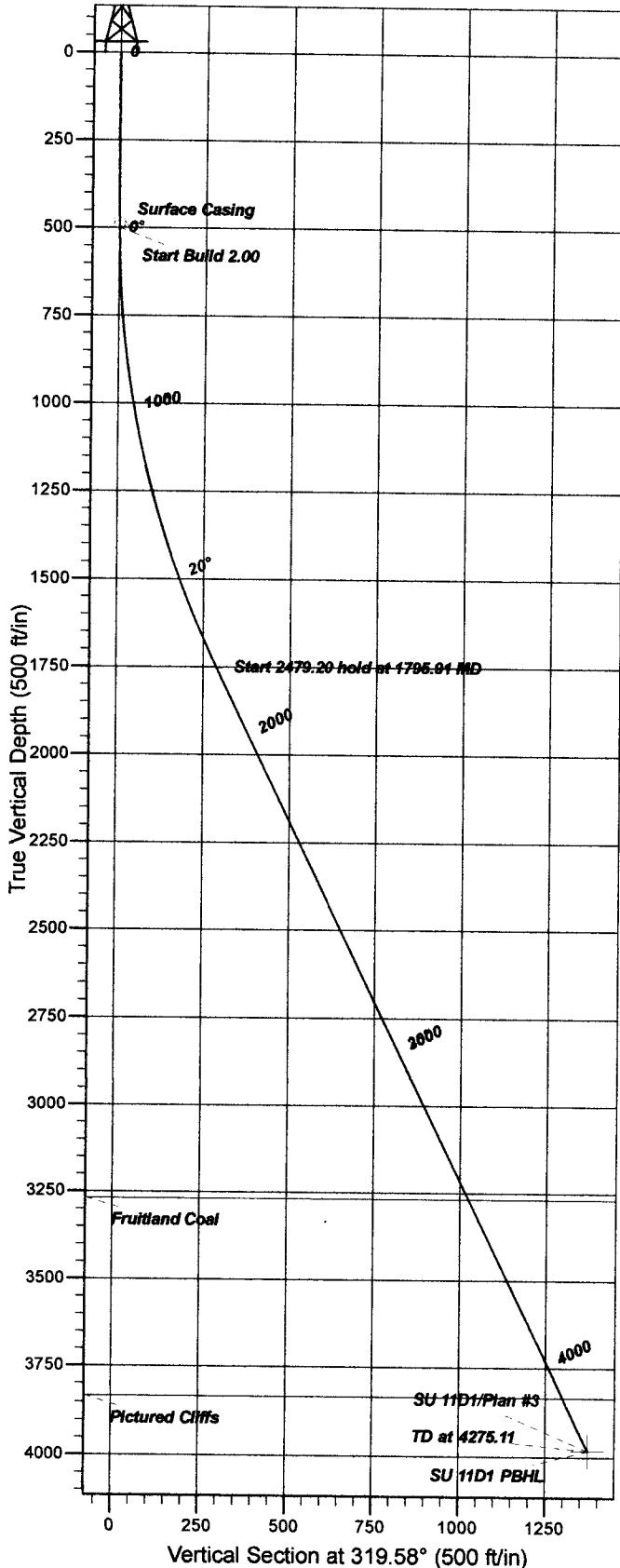
Well Details: SU 11D1

GL 7214' @ 7214.00ft
+N/-S 0.00 +E/-W 0.00 Northing 1150055.68 Easting 2326455.97 Latitude 37.0559119 Longitude -107.8082420 Slot



Azimuths to True North
Magnetic North: 9.56°

Magnetic Field
Strength: 50454.9snT
Dip Angle: 63.63°
Date: 2/5/2015
Model: IGRF2015



FORMATION TOP DETAILS

| TVDPATH | MDPATH | FORMATION |
|---------|---------|-----------------|
| 3268.00 | 3481.26 | Fruitland Coal |
| 3832.00 | 4108.33 | Pictured Cliffs |

Plan: Plan #3

11:52, April 08 2015
Created By: Janie Collins

PROJECT DETAILS: La Plata County, Colorado NAD27

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Southern Zone

System Datum: Mean Sea Level

CASING DETAILS

| TVD | MD | Name | Size |
|--------|--------|----------------|-------|
| 500.00 | 500.00 | Surface Casing | 9.625 |

SECTION DETAILS

| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | VSec | Target |
|-----|---------|-------|--------|---------|---------|---------|------|-------------|--------|--------------|
| 1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2 | 500.00 | 0.00 | 0.00 | 500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3 | 1795.91 | 25.92 | 319.58 | 1752.16 | 219.36 | -186.83 | 2.00 | 319.58 | 288.14 | |
| 4 | 4275.11 | 25.92 | 319.58 | 3982.00 | 1044.32 | -889.46 | 0.00 | 0.001371.77 | | SU 11D1 PBHL |

DESIGN TARGET DETAILS

| Name | TVD | +N/-S | +E/-W | Northing | Easting | Latitude | Longitude | Shape |
|--------------|---------|---------|---------|------------|------------|------------|--------------|-------|
| SU 11D1 PBHL | 3982.00 | 1044.32 | -889.46 | 1151121.65 | 2325592.59 | 37.0587800 | -107.8112900 | Point |

- plan hits target center

Planning Report



Database: Grand Junction District
Company: Brammer Engineering
Project: La Plata County, Colorado NAD27
Site: SU 11 Pad
Well: SU 11D1
Wellbore: OH
Design: Plan #3

Local Co-ordinate Reference: Well SU 11D1
TVD Reference: GL 7214' @ 7214.00ft
MD Reference: GL 7214' @ 7214.00ft
North Reference: True
Survey Calculation Method: Minimum Curvature

| | | | |
|--------------------|---------------------------------|----------------------|----------------|
| Project | La Plata County, Colorado NAD27 | | |
| Map System: | US State Plane 1983 | System Datum: | Mean Sea Level |
| Geo Datum: | North American Datum 1983 | | |
| Map Zone: | Colorado Southern Zone | | |

| | | | |
|------------------------------|-----------|--------------------------|-------------------|
| Site | SU 11 Pad | | |
| Site Position: | | Northing: | 1,150,090.59 usft |
| From: | Lat/Long | Easting: | 2,326,635.49 usft |
| Position Uncertainty: | 0.00 ft | Slot Radius: | 13.200 in |
| | | Latitude: | 37.0560200 |
| | | Longitude: | -107.8076300 |
| | | Grid Convergence: | -1.42 ° |

| | | | |
|-----------------------------|---------|----------------------------|------------------|
| Well | SU 11D1 | | |
| Well Position | +N-S | -39.34 ft | Northing: |
| | +E-W | -178.60 ft | Easting: |
| Position Uncertainty | 0.00 ft | Wellhead Elevation: | 0.00 ft |
| | | Latitude: | 37.0559119 |
| | | Longitude: | -107.8082420 |
| | | Ground Level: | 7,214.00 ft |

| | | | |
|------------------|-------------------|--------------------|-----------------------|
| Wellbore | OH | | |
| Magnetics | Model Name | Sample Date | Declination |
| | IGRF2015 | 2/5/2015 | (°) |
| | | | 9.56 |
| | | | Dip Angle |
| | | | (°) |
| | | | 63.63 |
| | | | Field Strength |
| | | | (nT) |
| | | | 50,455 |

| | | | |
|--------------------------|-------------------------|-------------|----------------------|
| Design | Plan #3 | | |
| Audit Notes: | | | |
| Version: | Phase: | PLAN | Tie On Depth: |
| | | | 0.00 |
| Vertical Section: | Depth From (TVD) | +N-S | +E-W |
| | (ft) | (ft) | (ft) |
| | 0.00 | 0.00 | 0.00 |
| | | | Direction |
| | | | (°) |
| | | | 319.58 |

| Plan Sections | | | | | | | | | | |
|---------------------|-----------------|-------------|---------------------|-----------|-----------|-----------------------|----------------------|---------------------|---------|--------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N-S (ft) | +E-W (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | TFO (°) | Target |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 500.00 | 0.00 | 0.00 | 500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1,795.91 | 25.92 | 319.58 | 1,752.16 | 219.36 | -186.83 | 2.00 | 2.00 | 0.00 | 319.58 | |
| 4,275.11 | 25.92 | 319.58 | 3,982.00 | 1,044.32 | -889.46 | 0.00 | 0.00 | 0.00 | 0.00 | SU 11D1 PBHL |

Database: Grand Junction District
Company: Brammer Engineering
Project: La Plata County, Colorado NAD27
Site: SU 11 Pad
Well: SU 11D1
Wellbore: OH
Design: Plan #3

Local Co-ordinate Reference: Well SU 11D1
TVD Reference: GL 7214' @ 7214.00ft
MD Reference: GL 7214' @ 7214.00ft
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned Survey

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|------------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 100.00 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 200.00 | 0.00 | 0.00 | 200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 300.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 400.00 | 0.00 | 0.00 | 400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 500.00 | 0.00 | 0.00 | 500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Surface Casing | | | | | | | | | |
| 600.00 | 2.00 | 319.58 | 599.98 | 1.33 | -1.13 | 1.75 | 2.00 | 2.00 | 0.00 |
| 700.00 | 4.00 | 319.58 | 699.84 | 5.31 | -4.52 | 6.98 | 2.00 | 2.00 | 0.00 |
| 800.00 | 6.00 | 319.58 | 799.45 | 11.95 | -10.18 | 15.69 | 2.00 | 2.00 | 0.00 |
| 900.00 | 8.00 | 319.58 | 898.70 | 21.22 | -18.08 | 27.88 | 2.00 | 2.00 | 0.00 |
| 1,000.00 | 10.00 | 319.58 | 997.47 | 33.13 | -28.22 | 43.52 | 2.00 | 2.00 | 0.00 |
| 1,100.00 | 12.00 | 319.58 | 1,095.62 | 47.66 | -40.59 | 62.60 | 2.00 | 2.00 | 0.00 |
| 1,200.00 | 14.00 | 319.58 | 1,193.06 | 64.78 | -55.18 | 85.10 | 2.00 | 2.00 | 0.00 |
| 1,300.00 | 16.00 | 319.58 | 1,289.64 | 84.49 | -71.96 | 110.98 | 2.00 | 2.00 | 0.00 |
| 1,400.00 | 18.00 | 319.58 | 1,385.27 | 106.74 | -90.91 | 140.21 | 2.00 | 2.00 | 0.00 |
| 1,500.00 | 20.00 | 319.58 | 1,479.82 | 131.53 | -112.02 | 172.77 | 2.00 | 2.00 | 0.00 |
| 1,600.00 | 22.00 | 319.58 | 1,573.17 | 158.81 | -135.26 | 208.60 | 2.00 | 2.00 | 0.00 |
| 1,700.00 | 24.00 | 319.58 | 1,665.21 | 188.55 | -160.59 | 247.67 | 2.00 | 2.00 | 0.00 |
| 1,795.91 | 25.92 | 319.58 | 1,752.16 | 219.36 | -186.83 | 288.14 | 2.00 | 2.00 | 0.00 |
| 1,800.00 | 25.92 | 319.58 | 1,755.84 | 220.72 | -187.99 | 289.93 | 0.00 | 0.00 | 0.00 |
| 1,900.00 | 25.92 | 319.58 | 1,845.78 | 254.00 | -216.33 | 333.64 | 0.00 | 0.00 | 0.00 |
| 2,000.00 | 25.92 | 319.58 | 1,935.73 | 287.27 | -244.68 | 377.35 | 0.00 | 0.00 | 0.00 |
| 2,100.00 | 25.92 | 319.58 | 2,025.67 | 320.55 | -273.02 | 421.06 | 0.00 | 0.00 | 0.00 |
| 2,200.00 | 25.92 | 319.58 | 2,115.61 | 353.82 | -301.36 | 464.77 | 0.00 | 0.00 | 0.00 |
| 2,300.00 | 25.92 | 319.58 | 2,205.55 | 387.10 | -329.70 | 508.47 | 0.00 | 0.00 | 0.00 |
| 2,400.00 | 25.92 | 319.58 | 2,295.49 | 420.37 | -358.04 | 552.18 | 0.00 | 0.00 | 0.00 |
| 2,500.00 | 25.92 | 319.58 | 2,385.44 | 453.65 | -386.38 | 595.89 | 0.00 | 0.00 | 0.00 |
| 2,600.00 | 25.92 | 319.58 | 2,475.38 | 486.92 | -414.72 | 639.60 | 0.00 | 0.00 | 0.00 |
| 2,700.00 | 25.92 | 319.58 | 2,565.32 | 520.20 | -443.06 | 683.31 | 0.00 | 0.00 | 0.00 |
| 2,800.00 | 25.92 | 319.58 | 2,655.26 | 553.47 | -471.40 | 727.02 | 0.00 | 0.00 | 0.00 |
| 2,900.00 | 25.92 | 319.58 | 2,745.20 | 586.75 | -499.74 | 770.73 | 0.00 | 0.00 | 0.00 |
| 3,000.00 | 25.92 | 319.58 | 2,835.15 | 620.02 | -528.09 | 814.43 | 0.00 | 0.00 | 0.00 |
| 3,100.00 | 25.92 | 319.58 | 2,925.09 | 653.30 | -556.43 | 858.14 | 0.00 | 0.00 | 0.00 |
| 3,200.00 | 25.92 | 319.58 | 3,015.03 | 686.57 | -584.77 | 901.85 | 0.00 | 0.00 | 0.00 |
| 3,300.00 | 25.92 | 319.58 | 3,104.97 | 719.85 | -613.11 | 945.56 | 0.00 | 0.00 | 0.00 |
| 3,400.00 | 25.92 | 319.58 | 3,194.91 | 753.12 | -641.45 | 989.27 | 0.00 | 0.00 | 0.00 |
| 3,481.26 | 25.92 | 319.58 | 3,268.00 | 780.16 | -664.48 | 1,024.79 | 0.00 | 0.00 | 0.00 |
| Fruitland Coal | | | | | | | | | |
| 3,500.00 | 25.92 | 319.58 | 3,284.86 | 786.40 | -669.79 | 1,032.98 | 0.00 | 0.00 | 0.00 |
| 3,600.00 | 25.92 | 319.58 | 3,374.80 | 819.67 | -698.13 | 1,076.69 | 0.00 | 0.00 | 0.00 |
| 3,700.00 | 25.92 | 319.58 | 3,464.74 | 852.95 | -726.47 | 1,120.40 | 0.00 | 0.00 | 0.00 |
| 3,800.00 | 25.92 | 319.58 | 3,554.68 | 886.23 | -754.81 | 1,164.10 | 0.00 | 0.00 | 0.00 |
| 3,900.00 | 25.92 | 319.58 | 3,644.62 | 919.50 | -783.15 | 1,207.81 | 0.00 | 0.00 | 0.00 |
| 4,000.00 | 25.92 | 319.58 | 3,734.56 | 952.78 | -811.50 | 1,251.52 | 0.00 | 0.00 | 0.00 |
| 4,100.00 | 25.92 | 319.58 | 3,824.51 | 986.05 | -839.84 | 1,295.23 | 0.00 | 0.00 | 0.00 |
| 4,108.33 | 25.92 | 319.58 | 3,832.00 | 988.82 | -842.20 | 1,298.87 | 0.00 | 0.00 | 0.00 |
| Pictured Cliffs | | | | | | | | | |
| 4,200.00 | 25.92 | 319.58 | 3,914.45 | 1,019.33 | -868.18 | 1,338.94 | 0.00 | 0.00 | 0.00 |
| 4,275.11 | 25.92 | 319.58 | 3,982.00 | 1,044.32 | -889.46 | 1,371.77 | 0.00 | 0.00 | 0.00 |
| SU 11D1 PBHL | | | | | | | | | |

Planning Report



Database: Grand Junction District
Company: Brammer Engineering
Project: La Plata County, Colorado NAD27
Site: SU 11 Pad
Well: SU 11D1
Wellbore: OH
Design: Plan #3

Local Co-ordinate Reference: Well SU 11D1
TVD Reference: GL 7214' @ 7214.00ft
MD Reference: GL 7214' @ 7214.00ft
North Reference: True
Survey Calculation Method: Minimum Curvature

Design Targets

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
|--|------------------|-----------------|-------------|---------------|---------------|--------------------|-------------------|------------|--------------|
| SU 11D1 PBHL - plan hits target center - Point | 0.00 | 0.00 | 3,982.00 | 1,044.32 | -889.46 | 1,151,121.65 | 2,325,592.59 | 37.0587800 | -107.8112900 |

Casing Points

| Measured Depth (ft) | Vertical Depth (ft) | Name | Casing Diameter (in) | Hole Diameter (in) |
|---------------------------|---------------------------|----------------|----------------------------|--------------------------|
| 500.00 | 500.00 | Surface Casing | 9.625 | 12.250 |

Formations

| Measured Depth (ft) | Vertical Depth (ft) | Name | Lithology | Dip (°) | Dip Direction (°) |
|---------------------------|---------------------------|-----------------|-----------|------------|-------------------------|
| 3,481.26 | 3,268.00 | Fruitland Coal | | 0.00 | |
| 4,108.33 | 3,832.00 | Pictured Cliffs | | 0.00 | |

Brammer Engineering

La Plata County, Colorado NAD27

SU 11 Pad

SU 11D1

OH

Plan #3

Anticollision Report

08 April, 2015



www.scientificdrilling.com

Anticollision Report



Company: Brammer Engineering
Project: La Plata County, Colorado NAD27
Reference Site: SU 11 Pad
Site Error: 0.00 ft
Reference Well: SU 11D1
Well Error: 0.00 ft
Reference Wellbore: OH
Reference Design: Plan #3

Local Co-ordinate Reference: Well SU 11D1
TVD Reference: GL 7214' @ 7214.00ft
MD Reference: GL 7214' @ 7214.00ft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Reference Datum

Reference Plan #3

Filter type: NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method: MD Interval 100.00ft
Depth Range: 0.00 to 300,000.00ft
Results Limited by: Maximum center-center distance of 10,000.00 ft
Warning Levels Evaluated at: 2.00 Sigma

Error Model: ISCWSA
Scan Method: Closest Approach 3D
Error Surface: Elliptical Conic
Casing Method: Not applied

Survey Tool Program Date 4/8/2015

From (ft) 0.00
To (ft) 4,275.11
Survey (Wellbore) Plan #3 (OH)

Tool Name SDI MWD
Description SDI MWD - Standard ver 1.0.1

Summary

| Site Name | Reference Measured Depth (ft) | Offset Measured Depth (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Separation Factor | Warning |
|--|-------------------------------|----------------------------|-------------------------------|--------------------------------|-------------------|---------|
| Offset Well - Wellbore - Design | | | | | | |
| SU 11 Pad | | | | | | |
| SU #5 - OH - OH | 1,062.30 | 1,051.20 | 306.35 | 302.64 | 82.600 CC | |
| SU #5 - OH - OH | 1,100.00 | 1,087.70 | 306.47 | 302.59 | 78.948 ES | |
| SU #5 - OH - OH | 1,800.00 | 1,748.44 | 388.17 | 380.33 | 49.508 SF | |
| SU 11 - OH - OH | 500.00 | 491.00 | 182.88 | 168.40 | 12.630 CC | |
| SU 11 - OH - OH | 700.00 | 690.85 | 186.26 | 165.27 | 8.875 ES | |
| SU 11 - OH - OH | 1,200.00 | 1,184.08 | 235.16 | 198.32 | 6.384 SF | |
| SU 19D1 - OH - Plan #2 | 500.00 | 500.00 | 14.19 | 12.17 | 7.015 CC, ES | |
| SU 19D1 - OH - Plan #2 | 600.00 | 599.43 | 14.72 | 12.27 | 5.996 SF | |

Offset Design SU 11 Pad - SU #5 - OH - OH

Survey Program: 101-SDI Standard Keeper 103

Offset Site Error: 0.00 ft

Offset Well Error: 0.00 ft

| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N-S (ft) | Offset Wellbore Centre +E-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
|---------------------|---------------------|---------------------|---------------------|----------------|-------------|-----------------------|----------------------------------|----------------------------------|-------------------------------|--------------------------------|-------------------------|-------------------|---------|
| 0.00 | 0.00 | 0.00 | 9.00 | 0.00 | 0.00 | 40.87 | 238.14 | 206.03 | 315.02 | | | | |
| 100.00 | 100.00 | 91.60 | 100.60 | 0.11 | 0.07 | 40.85 | 238.14 | 205.89 | 314.81 | 314.61 | 0.19 | 1,623.745 | |
| 200.00 | 200.00 | 192.02 | 201.02 | 0.34 | 0.19 | 40.83 | 238.02 | 205.64 | 314.55 | 314.02 | 0.53 | 598.209 | |
| 300.00 | 300.00 | 292.67 | 301.66 | 0.56 | 0.31 | 40.85 | 237.62 | 205.44 | 314.12 | 313.28 | 0.85 | 370.801 | |
| 400.00 | 400.00 | 392.66 | 401.66 | 0.79 | 0.43 | 40.87 | 237.13 | 205.19 | 313.59 | 312.42 | 1.16 | 269.204 | |
| 500.00 | 500.00 | 492.60 | 501.60 | 1.01 | 0.56 | 40.90 | 236.63 | 204.98 | 313.07 | 311.58 | 1.48 | 211.165 | |
| 600.00 | 599.98 | 593.18 | 602.18 | 1.23 | 0.68 | 81.66 | 236.15 | 204.61 | 312.21 | 310.29 | 1.92 | 162.802 | |
| 700.00 | 699.84 | 692.76 | 701.75 | 1.46 | 0.81 | 82.61 | 235.75 | 204.06 | 310.82 | 308.55 | 2.27 | 136.899 | |
| 800.00 | 799.45 | 792.04 | 801.03 | 1.70 | 0.94 | 84.23 | 235.35 | 203.66 | 309.25 | 306.62 | 2.64 | 117.327 | |
| 900.00 | 898.70 | 891.11 | 900.10 | 1.96 | 1.05 | 86.48 | 235.08 | 203.26 | 307.78 | 304.77 | 3.01 | 102.147 | |
| 1,000.00 | 997.47 | 990.50 | 999.48 | 2.26 | 1.17 | 89.34 | 234.94 | 202.66 | 306.65 | 303.22 | 3.42 | 89.532 | |
| 1,062.30 | 1,058.70 | 1,051.20 | 1,060.18 | 2.47 | 1.24 | 91.42 | 234.78 | 202.32 | 306.35 | 302.64 | 3.71 | 82.600 CC | |
| 1,100.00 | 1,095.62 | 1,087.70 | 1,096.68 | 2.60 | 1.29 | 92.78 | 234.73 | 202.16 | 306.47 | 302.59 | 3.88 | 78.948 ES | |
| 1,200.00 | 1,193.06 | 1,185.25 | 1,194.24 | 2.99 | 1.41 | 96.83 | 234.56 | 201.88 | 308.06 | 303.68 | 4.38 | 70.255 | |
| 1,300.00 | 1,289.64 | 1,282.48 | 1,291.46 | 3.44 | 1.53 | 101.37 | 234.21 | 201.55 | 311.81 | 306.88 | 4.93 | 63.221 | |
| 1,400.00 | 1,385.27 | 1,377.69 | 1,386.67 | 3.95 | 1.66 | 106.19 | 233.86 | 201.14 | 318.52 | 313.01 | 5.51 | 57.805 | |
| 1,500.00 | 1,479.82 | 1,472.03 | 1,481.01 | 4.53 | 1.77 | 111.22 | 233.45 | 200.91 | 329.11 | 323.02 | 6.10 | 53.971 | |
| 1,600.00 | 1,573.17 | 1,565.64 | 1,574.81 | 5.17 | 1.89 | 116.30 | 232.94 | 200.68 | 344.03 | 337.34 | 6.69 | 51.442 | |
| 1,700.00 | 1,665.21 | 1,657.85 | 1,666.82 | 5.88 | 2.01 | 121.25 | 232.40 | 200.35 | 363.60 | 356.33 | 7.27 | 49.995 | |
| 1,800.00 | 1,755.84 | 1,748.44 | 1,757.42 | 6.65 | 2.10 | 125.93 | 231.88 | 200.02 | 388.17 | 380.33 | 7.84 | 49.508 SF | |

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report



Company: Brammer Engineering
Project: La Plata County, Colorado NAD27
Reference Site: SU 11 Pad
Site Error: 0.00 ft
Reference Well: SU 11D1
Well Error: 0.00 ft
Reference Wellbore: OH
Reference Design: Plan #3

Local Co-ordinate Reference: Well SU 11D1
TVD Reference: GL 7214' @ 7214.00ft
MD Reference: GL 7214' @ 7214.00ft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Reference Datum

| Offset Design SU 11 Pad - SU #5 - OH - OH | | | | | | | | | | | | | Offset Site Error: | 0.00 ft |
|---|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|----------------------------------|-----------|----------------------|-----------------------|-------------------------|-------------------|--------------------|---------|
| Survey Program: 101-SDI Standard Keeper 103 | | | | | | | | | | | | | Offset Well Error: | 0.00 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | | Warning |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N-S (ft) | +E-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | | |
| 1,900.00 | 1,845.78 | 1,838.63 | 1,847.60 | 7.47 | 2.16 | 130.49 | 232.22 | 199.63 | 418.53 | 408.19 | 8.35 | 49.903 | | |
| 2,000.00 | 1,935.73 | 1,927.97 | 1,936.94 | 8.30 | 2.24 | 134.57 | 231.74 | 199.26 | 447.40 | 438.59 | 8.81 | 50.791 | | |
| 2,100.00 | 2,025.67 | 2,017.63 | 2,026.60 | 9.14 | 2.36 | 138.19 | 231.11 | 198.96 | 480.38 | 471.15 | 9.23 | 52.042 | | |
| 2,200.00 | 2,115.61 | 2,107.46 | 2,116.42 | 9.98 | 2.47 | 141.39 | 230.44 | 198.65 | 515.01 | 505.39 | 9.62 | 53.517 | | |
| 2,300.00 | 2,205.55 | 2,197.99 | 2,206.96 | 10.83 | 2.58 | 144.23 | 229.74 | 198.27 | 550.92 | 540.92 | 10.00 | 55.092 | | |
| 2,400.00 | 2,295.49 | 2,288.67 | 2,297.62 | 11.69 | 2.70 | 146.74 | 229.14 | 197.78 | 587.80 | 577.44 | 10.36 | 56.723 | | |
| 2,500.00 | 2,385.44 | 2,379.80 | 2,388.76 | 12.54 | 2.82 | 148.97 | 228.63 | 197.17 | 625.44 | 614.71 | 10.73 | 58.307 | | |
| 2,600.00 | 2,475.38 | 2,472.23 | 2,481.17 | 13.40 | 2.93 | 150.97 | 228.23 | 196.32 | 663.57 | 652.48 | 11.09 | 59.831 | | |
| 2,700.00 | 2,565.32 | 2,561.93 | 2,570.87 | 14.26 | 3.04 | 152.71 | 227.96 | 195.32 | 702.11 | 690.66 | 11.46 | 61.270 | | |
| 2,800.00 | 2,655.26 | 2,650.94 | 2,659.88 | 15.12 | 3.15 | 154.27 | 227.62 | 194.49 | 741.36 | 729.53 | 11.83 | 62.687 | | |
| 2,900.00 | 2,745.20 | 2,741.42 | 2,750.36 | 15.99 | 3.26 | 155.69 | 227.32 | 193.72 | 781.09 | 768.90 | 12.19 | 64.071 | | |
| 3,000.00 | 2,835.15 | 2,832.58 | 2,841.51 | 16.85 | 3.38 | 157.00 | 226.98 | 192.78 | 821.08 | 808.52 | 12.56 | 65.393 | | |
| 3,100.00 | 2,925.09 | 2,922.74 | 2,931.67 | 17.72 | 3.48 | 158.15 | 226.66 | 191.90 | 861.33 | 848.40 | 12.93 | 66.621 | | |
| 3,200.00 | 3,015.03 | 3,012.11 | 3,021.03 | 18.59 | 3.59 | 159.21 | 226.63 | 191.05 | 901.93 | 888.63 | 13.30 | 67.801 | | |
| 3,300.00 | 3,104.97 | 3,104.39 | 3,113.30 | 19.46 | 3.70 | 160.21 | 226.34 | 190.05 | 942.70 | 929.03 | 13.67 | 68.945 | | |
| 3,400.00 | 3,194.91 | 3,200.82 | 3,209.73 | 20.32 | 3.81 | 161.16 | 226.44 | 188.75 | 983.28 | 969.23 | 14.05 | 69.971 | | |
| 3,500.00 | 3,284.86 | 3,292.42 | 3,301.31 | 21.19 | 3.89 | 161.98 | 226.81 | 187.29 | 1,023.72 | 1,009.28 | 14.44 | 70.874 | | |
| 3,600.00 | 3,374.80 | 3,385.78 | 3,394.66 | 22.06 | 3.99 | 162.75 | 227.26 | 185.65 | 1,064.15 | 1,049.32 | 14.84 | 71.717 | | |
| 3,700.00 | 3,464.74 | 3,478.91 | 3,487.77 | 22.93 | 4.07 | 163.46 | 227.98 | 183.91 | 1,104.50 | 1,089.26 | 15.24 | 72.481 | | |
| 3,800.00 | 3,554.68 | 3,568.27 | 3,577.11 | 23.80 | 4.15 | 164.07 | 228.86 | 182.28 | 1,144.89 | 1,129.25 | 15.65 | 73.179 | | |
| 3,900.00 | 3,644.62 | 3,658.94 | 3,667.76 | 24.67 | 4.22 | 164.66 | 229.72 | 180.77 | 1,185.53 | 1,169.47 | 16.06 | 73.841 | | |
| 4,000.00 | 3,734.56 | 3,749.27 | 3,758.07 | 25.55 | 4.30 | 165.20 | 230.58 | 179.19 | 1,226.21 | 1,209.74 | 16.47 | 74.462 | | |
| 4,100.00 | 3,824.51 | 3,838.91 | 3,847.70 | 26.42 | 4.38 | 165.71 | 231.48 | 177.79 | 1,267.08 | 1,250.19 | 16.88 | 75.045 | | |
| 4,200.00 | 3,914.45 | 3,930.52 | 3,939.29 | 27.29 | 4.46 | 166.18 | 232.42 | 176.39 | 1,308.03 | 1,290.73 | 17.30 | 75.592 | | |

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report



Company: Brammer Engineering
Project: La Plata County, Colorado NAD27
Reference Site: SU 11 Pad
Site Error: 0.00 ft
Reference Well: SU 11D1
Well Error: 0.00 ft
Reference Wellbore: OH
Reference Design: Plan #3

Local Co-ordinate Reference: Well SU 11D1
TVD Reference: GL 7214' @ 7214.00ft
MD Reference: GL 7214' @ 7214.00ft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Reference Datum

| Offset Design SU 11 Pad - SU 11 - OH - OH | | | | | | | | | | | | | Offset Site Error: |
|---|---------------------------|---------------------------|---------------------------|-------------------|----------------|-----------------------------|---|---------------|--|-----------------------------|-------------------------------|----------------------|--------------------|
| Survey Program: 95-INCLINOMETER | | | | | | | | | | | | | 0.00 ft |
| Reference Offset Semi Major Axis | | | | | | | | | | | | | Offset Well Error: |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Distance Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
| 0.00 | 0.00 | 0.00 | 9.00 | 0.00 | 0.00 | 77.58 | 39.34 | 178.60 | 183.10 | | | | |
| 100.00 | 100.00 | 91.00 | 100.00 | 0.11 | 1.38 | 77.58 | 39.34 | 178.60 | 182.88 | 181.39 | 1.49 | 122.388 | |
| 200.00 | 200.00 | 191.00 | 200.00 | 0.34 | 4.36 | 77.58 | 39.34 | 178.60 | 182.88 | 178.18 | 4.70 | 38.951 | |
| 300.00 | 300.00 | 291.00 | 300.00 | 0.56 | 7.39 | 77.58 | 39.34 | 178.60 | 182.88 | 174.92 | 7.96 | 22.984 | |
| 400.00 | 400.00 | 391.00 | 400.00 | 0.79 | 10.43 | 77.58 | 39.34 | 178.60 | 182.88 | 171.66 | 11.22 | 16.302 | |
| 500.00 | 500.00 | 491.00 | 500.00 | 1.01 | 13.47 | 77.58 | 39.34 | 178.60 | 182.88 | 168.40 | 14.48 | 12.630 CC | |
| 600.00 | 599.98 | 590.98 | 599.98 | 1.23 | 16.50 | 118.47 | 39.34 | 178.60 | 183.71 | 165.97 | 17.74 | 10.357 | |
| 700.00 | 699.84 | 690.85 | 699.84 | 1.46 | 19.54 | 119.84 | 39.34 | 178.60 | 186.26 | 165.27 | 20.99 | 8.875 ES | |
| 800.00 | 799.45 | 790.46 | 799.45 | 1.70 | 22.56 | 122.02 | 39.34 | 178.60 | 190.75 | 166.53 | 24.23 | 7.874 | |
| 900.00 | 898.70 | 889.72 | 898.70 | 1.96 | 25.58 | 124.90 | 39.34 | 178.60 | 197.51 | 170.06 | 27.45 | 7.195 | |
| 1,000.00 | 997.47 | 988.49 | 997.47 | 2.26 | 28.58 | 128.28 | 39.34 | 178.60 | 206.91 | 176.27 | 30.64 | 6.753 | |
| 1,100.00 | 1,095.62 | 1,086.65 | 1,095.62 | 2.60 | 31.56 | 131.97 | 39.34 | 178.60 | 219.35 | 185.57 | 33.78 | 6.494 | |
| 1,200.00 | 1,193.06 | 1,184.08 | 1,193.06 | 2.99 | 34.52 | 135.77 | 39.34 | 178.60 | 235.16 | 198.32 | 36.84 | 6.384 SF | |
| 1,300.00 | 1,289.64 | 1,280.67 | 1,289.64 | 3.44 | 37.45 | 139.52 | 39.34 | 178.60 | 254.59 | 214.80 | 39.79 | 6.399 | |
| 1,400.00 | 1,385.27 | 1,376.30 | 1,385.27 | 3.95 | 40.35 | 143.09 | 39.34 | 178.60 | 277.82 | 235.20 | 42.61 | 6.519 | |
| 1,500.00 | 1,479.82 | 1,470.85 | 1,479.82 | 4.53 | 43.22 | 146.40 | 39.34 | 178.60 | 304.90 | 259.61 | 45.29 | 6.732 | |
| 1,600.00 | 1,573.17 | 1,564.20 | 1,573.17 | 5.17 | 46.06 | 149.40 | 39.34 | 178.60 | 335.83 | 288.02 | 47.81 | 7.025 | |
| 1,700.00 | 1,665.21 | 1,656.25 | 1,665.21 | 5.88 | 48.86 | 152.08 | 39.34 | 178.60 | 370.56 | 320.41 | 50.15 | 7.389 | |
| 1,800.00 | 1,755.84 | 1,746.88 | 1,755.84 | 6.65 | 51.61 | 154.46 | 39.34 | 178.60 | 409.01 | 356.67 | 52.35 | 7.814 | |
| 1,900.00 | 1,845.78 | 1,836.86 | 1,845.78 | 7.47 | 54.34 | 156.83 | 39.34 | 178.60 | 449.50 | 394.48 | 55.02 | 8.169 | |
| 2,000.00 | 1,935.73 | 1,926.80 | 1,935.73 | 8.30 | 57.07 | 158.81 | 39.34 | 178.60 | 490.55 | 432.82 | 57.72 | 8.499 | |
| 2,100.00 | 2,025.67 | 2,016.74 | 2,025.67 | 9.14 | 59.80 | 160.50 | 39.34 | 178.60 | 532.01 | 471.58 | 60.43 | 8.803 | |
| 2,200.00 | 2,115.61 | 2,106.68 | 2,115.61 | 9.98 | 62.53 | 161.94 | 39.34 | 178.60 | 573.81 | 510.65 | 63.16 | 9.085 | |
| 2,300.00 | 2,205.55 | 2,196.63 | 2,205.55 | 10.83 | 65.27 | 163.19 | 39.34 | 178.60 | 615.88 | 549.98 | 65.90 | 9.345 | |
| 2,400.00 | 2,295.49 | 2,286.58 | 2,295.49 | 11.69 | 68.00 | 164.28 | 39.34 | 178.60 | 658.16 | 589.51 | 68.65 | 9.587 | |
| 2,500.00 | 2,385.44 | 2,376.52 | 2,385.44 | 12.54 | 70.73 | 165.25 | 39.34 | 178.60 | 700.61 | 629.20 | 71.41 | 9.811 | |
| 2,600.00 | 2,475.38 | 2,466.46 | 2,475.38 | 13.40 | 73.46 | 166.10 | 39.34 | 178.60 | 743.21 | 669.04 | 74.18 | 10.020 | |
| 2,700.00 | 2,565.32 | 2,556.41 | 2,565.32 | 14.28 | 76.19 | 166.86 | 39.34 | 178.60 | 785.93 | 708.99 | 76.95 | 10.214 | |
| 2,800.00 | 2,655.26 | 2,646.35 | 2,655.26 | 15.12 | 78.92 | 167.55 | 39.34 | 178.60 | 828.76 | 749.03 | 79.73 | 10.385 | |
| 2,900.00 | 2,745.20 | 2,736.29 | 2,745.20 | 15.99 | 81.65 | 168.16 | 39.34 | 178.60 | 871.67 | 789.16 | 82.51 | 10.564 | |
| 3,000.00 | 2,835.15 | 2,826.26 | 2,835.15 | 16.85 | 84.39 | 168.72 | 39.34 | 178.60 | 914.66 | 829.36 | 85.30 | 10.723 | |
| 3,100.00 | 2,925.09 | 2,916.20 | 2,925.09 | 17.72 | 87.12 | 169.23 | 39.34 | 178.60 | 957.71 | 869.62 | 88.09 | 10.872 | |
| 3,200.00 | 3,015.03 | 3,006.14 | 3,015.03 | 18.59 | 89.85 | 169.70 | 39.34 | 178.60 | 1,000.82 | 909.94 | 90.89 | 11.012 | |
| 3,300.00 | 3,104.97 | 3,096.08 | 3,104.97 | 19.46 | 92.58 | 170.13 | 39.34 | 178.60 | 1,043.98 | 950.30 | 93.69 | 11.143 | |
| 3,400.00 | 3,194.91 | 3,186.03 | 3,194.91 | 20.32 | 95.31 | 170.52 | 39.34 | 178.60 | 1,087.19 | 990.70 | 96.49 | 11.268 | |
| 3,500.00 | 3,284.86 | 3,275.97 | 3,284.86 | 21.19 | 98.04 | 170.88 | 39.34 | 178.60 | 1,130.43 | 1,031.14 | 99.29 | 11.385 | |
| 3,600.00 | 3,374.80 | 3,365.92 | 3,374.80 | 22.06 | 100.78 | 171.22 | 39.34 | 178.60 | 1,173.71 | 1,071.61 | 102.10 | 11.496 | |
| 3,700.00 | 3,464.74 | 3,455.86 | 3,464.74 | 22.93 | 103.51 | 171.53 | 39.34 | 178.60 | 1,217.01 | 1,112.11 | 104.91 | 11.601 | |
| 3,800.00 | 3,554.68 | 3,521.00 | 3,529.88 | 23.80 | 105.48 | 171.75 | 39.34 | 178.60 | 1,260.59 | 1,153.54 | 107.05 | 11.776 | |
| 3,900.00 | 3,644.62 | 3,521.00 | 3,529.88 | 24.67 | 105.48 | 171.75 | 39.34 | 178.60 | 1,308.75 | 1,201.31 | 107.44 | 12.181 | |
| 4,000.00 | 3,734.56 | 3,521.00 | 3,529.88 | 25.55 | 105.48 | 171.75 | 39.34 | 178.60 | 1,362.56 | 1,254.73 | 107.83 | 12.636 | |
| 4,100.00 | 3,824.51 | 3,521.00 | 3,529.88 | 26.42 | 105.48 | 171.75 | 39.34 | 178.60 | 1,421.37 | 1,313.15 | 108.22 | 13.134 | |
| 4,200.00 | 3,914.45 | 3,521.00 | 3,529.88 | 27.29 | 105.48 | 171.75 | 39.34 | 178.60 | 1,484.59 | 1,375.99 | 108.61 | 13.669 | |

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report



Company: Brammer Engineering
Project: La Plata County, Colorado NAD27
Reference Site: SU 11 Pad
Site Error: 0.00 ft
Reference Well: SU 11D1
Well Error: 0.00 ft
Reference Wellbore: OH
Reference Design: Plan #3

Local Co-ordinate Reference: Well SU 11D1
TVD Reference: GL 7214' @ 7214.00ft
GL Reference: GL 7214' @ 7214.00ft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Reference Datum

Offset Design SU 11 Pad - SU 19D1 - OH - Plan #2

| Survey Program: 0-SDI MWD | | | | | | | | | | | | | Offset Site Error: | 0.00 ft |
|---------------------------|---------------------|---------------------|---------------------|----------------|-------------|-----------------------|----------------------------------|-----------|----------------------|-----------------------|-------------------------|-------------------|--------------------|---------|
| Reference | | | | | | | | | | | | | Offset Well Error: | 0.00 ft |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N-S (ft) | +E-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning | |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -75.13 | 3.64 | -13.72 | 14.19 | 14.19 | 0.00 | N/A | | |
| 100.00 | 100.00 | 100.00 | 100.00 | 0.11 | 0.11 | -75.13 | 3.64 | -13.72 | 14.19 | 13.97 | 0.22 | 63.137 | | |
| 200.00 | 200.00 | 200.00 | 200.00 | 0.34 | 0.34 | -75.13 | 3.64 | -13.72 | 14.19 | 13.52 | 0.67 | 21.046 | | |
| 300.00 | 300.00 | 300.00 | 300.00 | 0.56 | 0.56 | -75.13 | 3.64 | -13.72 | 14.19 | 13.07 | 1.12 | 12.627 | | |
| 400.00 | 400.00 | 400.00 | 400.00 | 0.79 | 0.79 | -75.13 | 3.64 | -13.72 | 14.19 | 12.62 | 1.57 | 9.020 | | |
| 500.00 | 500.00 | 500.00 | 500.00 | 1.01 | 1.01 | -75.13 | 3.64 | -13.72 | 14.19 | 12.17 | 2.02 | 7.015 CC, ES | | |
| 600.00 | 599.98 | 599.43 | 599.40 | 1.23 | 1.22 | -43.28 | 2.93 | -15.75 | 14.72 | 12.27 | 2.46 | 5.996 SF | | |
| 700.00 | 699.84 | 698.54 | 698.29 | 1.46 | 1.42 | -63.89 | 0.82 | -21.83 | 17.95 | 15.07 | 2.88 | 6.239 | | |
| 800.00 | 799.45 | 796.99 | 796.16 | 1.70 | 1.66 | -82.86 | -2.68 | -31.86 | 26.36 | 23.04 | 3.32 | 7.937 | | |
| 900.00 | 898.70 | 894.47 | 892.53 | 1.96 | 1.93 | -94.41 | -7.49 | -45.70 | 40.32 | 36.50 | 3.82 | 10.567 | | |
| 1,000.00 | 997.47 | 990.70 | 986.96 | 2.26 | 2.26 | -100.84 | -13.56 | -63.14 | 59.25 | 54.88 | 4.37 | 13.552 | | |
| 1,100.00 | 1,095.62 | 1,085.40 | 1,079.05 | 2.60 | 2.64 | -104.52 | -20.81 | -83.94 | 82.71 | 77.71 | 5.00 | 16.546 | | |
| 1,200.00 | 1,193.06 | 1,178.34 | 1,168.48 | 2.99 | 3.09 | -106.70 | -29.12 | -107.83 | 110.43 | 104.73 | 5.71 | 19.356 | | |
| 1,300.00 | 1,289.64 | 1,269.30 | 1,254.94 | 3.44 | 3.59 | -108.01 | -38.41 | -134.51 | 142.20 | 135.71 | 6.49 | 21.900 | | |
| 1,400.00 | 1,385.27 | 1,358.11 | 1,338.20 | 3.95 | 4.16 | -108.77 | -48.56 | -163.67 | 177.84 | 170.48 | 7.36 | 24.150 | | |
| 1,500.00 | 1,479.82 | 1,444.63 | 1,418.11 | 4.53 | 4.77 | -109.16 | -59.46 | -194.98 | 217.18 | 208.86 | 8.32 | 26.116 | | |
| 1,600.00 | 1,573.17 | 1,528.73 | 1,494.53 | 5.17 | 5.43 | -109.30 | -71.00 | -228.13 | 260.04 | 250.68 | 9.35 | 27.803 | | |
| 1,700.00 | 1,665.21 | 1,610.34 | 1,567.41 | 5.88 | 6.13 | -109.23 | -83.07 | -262.80 | 306.25 | 295.78 | 10.47 | 29.248 | | |
| 1,800.00 | 1,755.84 | 1,689.40 | 1,636.72 | 6.65 | 6.86 | -109.05 | -95.57 | -298.71 | 355.65 | 343.98 | 11.67 | 30.469 | | |
| 1,900.00 | 1,845.78 | 1,766.23 | 1,702.78 | 7.47 | 7.64 | -109.60 | -108.46 | -335.75 | 407.54 | 394.58 | 12.96 | 31.444 | | |
| 2,000.00 | 1,935.73 | 1,841.06 | 1,765.83 | 8.30 | 8.44 | -109.74 | -121.71 | -373.81 | 461.31 | 447.05 | 14.27 | 32.334 | | |
| 2,100.00 | 2,025.67 | 1,913.83 | 1,825.85 | 9.14 | 9.26 | -109.63 | -135.24 | -412.67 | 516.89 | 501.31 | 15.59 | 33.165 | | |
| 2,200.00 | 2,115.61 | 1,984.47 | 1,882.83 | 9.98 | 10.11 | -109.33 | -148.97 | -452.10 | 574.20 | 557.29 | 16.92 | 33.945 | | |
| 2,300.00 | 2,205.55 | 2,052.95 | 1,936.81 | 10.83 | 10.98 | -108.91 | -162.82 | -491.89 | 633.19 | 614.94 | 18.25 | 34.688 | | |
| 2,400.00 | 2,295.49 | 2,119.25 | 1,987.85 | 11.69 | 11.85 | -108.42 | -176.73 | -531.84 | 693.81 | 674.23 | 19.59 | 35.421 | | |
| 2,500.00 | 2,385.44 | 2,188.37 | 2,039.85 | 12.54 | 12.80 | -107.85 | -191.70 | -574.85 | 755.92 | 734.97 | 20.95 | 36.074 | | |
| 2,600.00 | 2,475.38 | 2,266.19 | 2,098.11 | 13.40 | 13.88 | -107.26 | -208.66 | -623.58 | 818.41 | 796.02 | 22.39 | 36.554 | | |
| 2,700.00 | 2,565.32 | 2,344.01 | 2,156.36 | 14.26 | 14.97 | -106.76 | -225.63 | -672.31 | 880.94 | 857.11 | 23.83 | 36.972 | | |
| 2,800.00 | 2,655.26 | 2,421.84 | 2,214.62 | 15.12 | 16.06 | -106.33 | -242.59 | -721.04 | 943.51 | 918.24 | 25.27 | 37.339 | | |
| 2,900.00 | 2,745.20 | 2,499.66 | 2,272.87 | 15.99 | 17.16 | -105.95 | -259.55 | -769.78 | 1,006.10 | 979.39 | 26.71 | 37.663 | | |
| 3,000.00 | 2,835.15 | 2,577.48 | 2,331.13 | 16.85 | 18.26 | -105.61 | -276.52 | -818.51 | 1,068.72 | 1,040.56 | 28.16 | 37.949 | | |
| 3,100.00 | 2,925.09 | 2,655.30 | 2,389.38 | 17.72 | 19.37 | -105.31 | -293.48 | -867.24 | 1,131.36 | 1,101.75 | 29.61 | 38.205 | | |
| 3,200.00 | 3,015.03 | 2,733.12 | 2,447.64 | 18.59 | 20.47 | -105.04 | -310.45 | -915.97 | 1,194.02 | 1,162.95 | 31.07 | 38.435 | | |
| 3,300.00 | 3,104.97 | 2,810.94 | 2,505.89 | 19.46 | 21.58 | -104.80 | -327.41 | -964.70 | 1,256.69 | 1,224.17 | 32.52 | 38.643 | | |
| 3,400.00 | 3,194.91 | 2,888.77 | 2,564.15 | 20.32 | 22.68 | -104.58 | -344.38 | -1,013.43 | 1,319.37 | 1,285.39 | 33.98 | 38.832 | | |
| 3,500.00 | 3,284.86 | 2,966.59 | 2,622.40 | 21.19 | 23.79 | -104.39 | -361.34 | -1,062.16 | 1,382.06 | 1,346.63 | 35.43 | 39.003 | | |
| 3,600.00 | 3,374.80 | 3,044.41 | 2,680.66 | 22.06 | 24.90 | -104.20 | -378.30 | -1,110.89 | 1,444.77 | 1,407.87 | 36.89 | 39.161 | | |
| 3,700.00 | 3,464.74 | 3,122.23 | 2,738.91 | 22.93 | 26.02 | -104.04 | -395.27 | -1,159.63 | 1,507.48 | 1,469.12 | 38.35 | 39.305 | | |
| 3,800.00 | 3,554.68 | 3,200.05 | 2,797.17 | 23.80 | 27.13 | -103.89 | -412.23 | -1,208.36 | 1,570.20 | 1,530.38 | 39.82 | 39.436 | | |
| 3,900.00 | 3,644.62 | 3,277.87 | 2,855.43 | 24.67 | 28.24 | -103.74 | -429.20 | -1,257.09 | 1,632.92 | 1,591.64 | 41.28 | 39.553 | | |
| 4,000.00 | 3,734.56 | 3,355.70 | 2,913.68 | 25.55 | 29.36 | -103.61 | -446.16 | -1,305.82 | 1,695.65 | 1,652.90 | 42.75 | 39.662 | | |
| 4,100.00 | 3,824.51 | 3,433.52 | 2,971.94 | 26.42 | 30.47 | -103.49 | -463.12 | -1,354.55 | 1,758.38 | 1,714.16 | 44.22 | 39.764 | | |
| 4,200.00 | 3,914.45 | 3,511.34 | 3,030.19 | 27.29 | 31.58 | -103.38 | -480.09 | -1,403.28 | 1,821.12 | 1,775.43 | 45.69 | 39.858 | | |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report



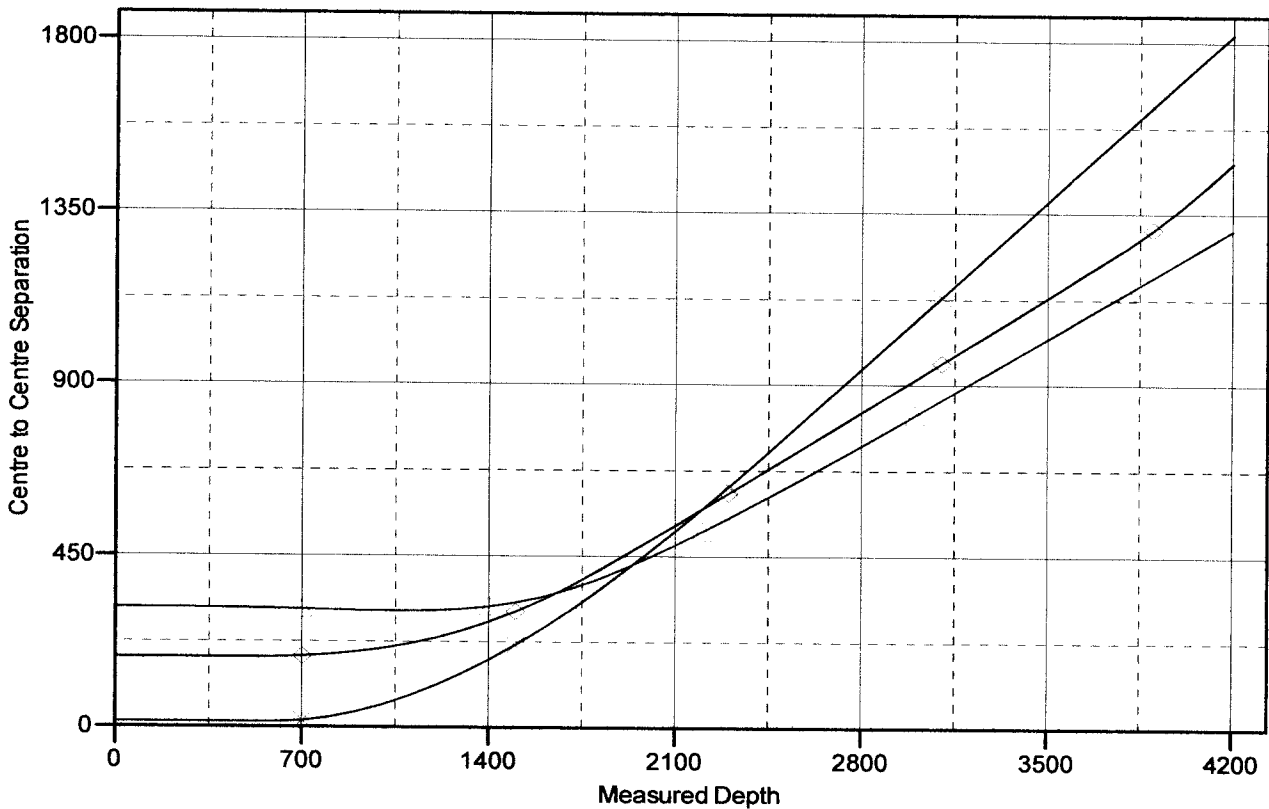
Company: Brammer Engineering
Project: La Plata County, Colorado NAD27
Reference Site: SU 11 Pad
Site Error: 0.00 ft
Reference Well: SU 11D1
Well Error: 0.00 ft
Reference Wellbore: OH
Reference Design: Plan #3

Local Co-ordinate Reference: Well SU 11D1
TVD Reference: GL 7214' @ 7214.00ft
MD Reference: GL 7214' @ 7214.00ft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Reference Datum

Reference Depths are relative to GL 7214' @ 7214.00ft
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.5000000

Coordinates are relative to: SU 11D1
 Coordinate System is US State Plane 1983, Colorado Southern Zone
 Grid Convergence at Surface is: -1.42°

Ladder Plot



LEGEND

▲ SU #5, OH, OH V0

◆ SU 11, OH, OH V0

✱ SU 19D1, OH, Plan #2 V0

Company: Brammer Engineering
Project: La Plata County, Colorado NAD27
Reference Site: SU 11 Pad
Site Error: 0.00 ft
Reference Well: SU 11D1
Well Error: 0.00 ft
Reference Wellbore: OH
Reference Design: Plan #3

Local Co-ordinate Reference: Well SU 11D1
TVD Reference: GL 7214' @ 7214.00ft
MD Reference: GL 7214' @ 7214.00ft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Grand Junction District
Offset TVD Reference: Reference Datum

Reference Depths are relative to GL 7214' @ 7214.00ft

Offset Depths are relative to Offset Datum

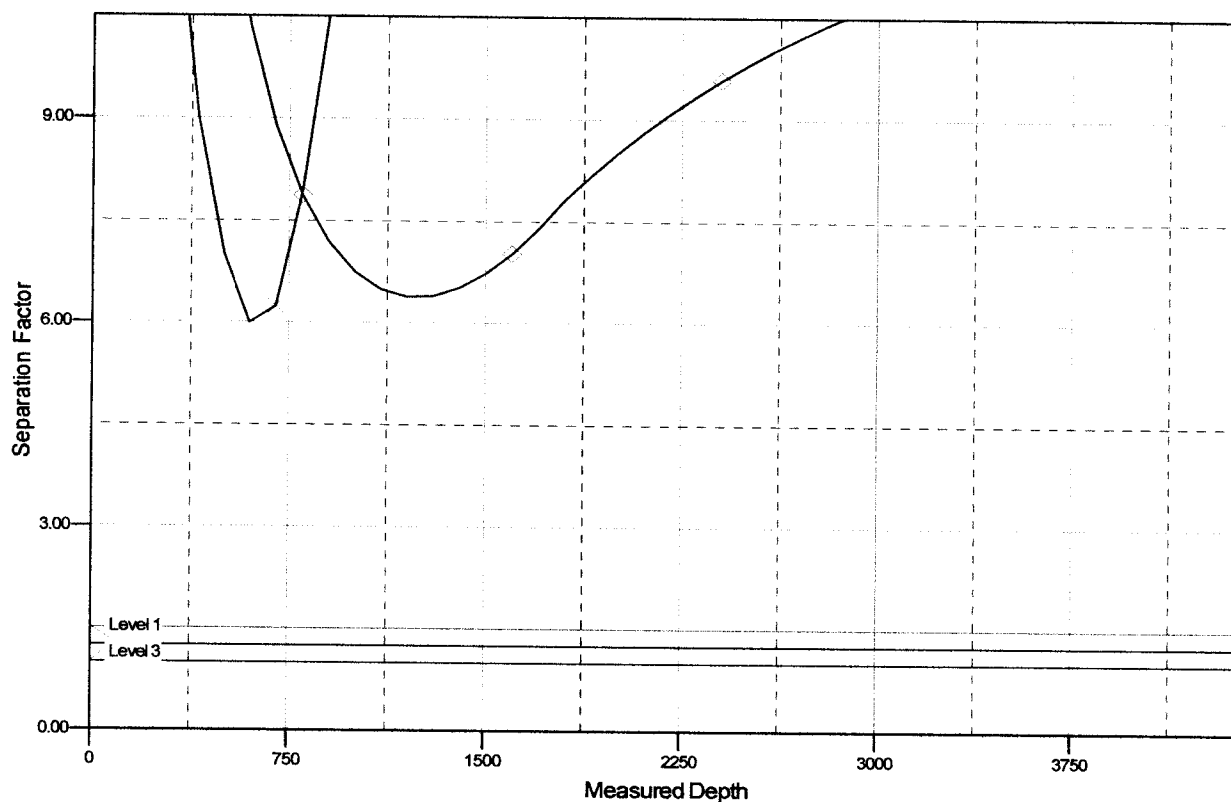
Central Meridian is -105.5000000

Coordinates are relative to: SU 11D1

Coordinate System is US State Plane 1983, Colorado Southern Zone

Grid Convergence at Surface is: -1.42°

Separation Factor Plot



LEGEND

▲ SU #5, OH, OH V0

◆ SU 11, OH, OH V0

✱ SU 19D1, OH, Plan#2 V0