

Form 3160-3
(February 2005)

SECRETARY'S POTASH

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007 **EA 210**5. Lease Serial No.
USA NMNM LC 069464-A

6. If Indian, Allottee or Tribe Name

7. If Unit or CA Agreement, Name and No.

8. Lease Name and Well No.

Arcturus 18-Federal 3H **(38355)**

9. API Well No.

30-015-38953

10. Field and Pool, or Exploratory

Hackberry; Bone Spring, NW **(97020)**

11. Sec., T. R. M. or Blk. and Survey or Area

Sec 18 T19S-R31E

1a. Type of work: ☒ DRILL ☐ REENTER1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

2. Name of Operator

Devon Energy Production Co., LP **(6137)**3a. Address **20 North Broadway
OKC, OK 73102**3b. Phone No. (include area code)
(405)-552-78024. Location of Well (Report location clearly and in accordance with any State requirements.) **per attached SN dated 2/18/11**At surface **SWSW 1000' FSL & 340' FWL (Lot M)**At proposed prod. zone **NESE 2300' FSL & 340' FEL Lot 1**14. Distance in miles and direction from nearest town or post office*
Approximately 12 miles southwest of Loco Hills, NM.

12. County or Parish

Eddy

13. State

NM

15. Distance from proposed*
location to nearest
property or lease line, ft.
(Also to nearest drig. unit line, if any) **340'**

16. No. of acres in lease

760

17. Spacing Unit dedicated to this well

16018. Distance from proposed location*
to nearest well, drilling, completed,
applied for, on this lease, ft. **SL: 50' BHL: 600'**19. Proposed Depth
TVD 8854' MD 13657'

20. BLM/BIA Bond No. on file

CO-110421. Elevations (Show whether DF, KDB, RT, GL, etc.)
3410.6' GL22. Approximate date work will start*
12/15/201023. Estimated duration
45 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.

2. A Drilling Plan.

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).

4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).

5. Operator certification

6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature

Name (Printed/Typed)

Stephanie A. Ysasaga

Date

11/01/2010

Title

Sr. Staff Engineering Technician

Approved by (Signature)

/s/ Linda S.C. Rundell

Name (Printed/Typed)

Date

MAR 24 2011

Title

STATE DIRECTOR

Office

NM STATE 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.

APPROVAL FOR TWO YEARS

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.

*(Instructions on page 2)

CAPTAN CONTROLLED WATER BASIN

RECEIVED

MAR 31 2011

NMOCD ARTESIA

OCD CONDITION OF APPROVAL of Drilling:

Intent to drill ONLY -- CANNOT produce until the Non-Standard Location has been approved by OCD Santa Fe office.

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

KZ 04/13/11

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

DRILLING PROGRAM

~~Devon~~ Devon Energy Production Company, LP

¹²⁰⁰ **Arcturus 18 Federal 3H**

Surface Location: 1000' FSL & 340' FWL, Unit M, Sec 18 T19S R31E, Eddy, NM

Bottom hole Location: 2300' FSL & 340' FEL, Unit I, Sec 18 T19S R31E, Eddy, NM

1. **Geologic Name of Surface Formation**

a. Permian

2. **Estimated Tops of Geological Markers & Depths of Anticipated Fresh Water, Oil or Gas:**

a. Rustler	425'	Barren
b. Salado	508'	Barren
c. Tansil Dolomite	1965'	Barren
d. Yates	2039'	Oil
e. Seven Rivers	2254'	Oil
f. Queen	3151'	Oil
g. San Andres	3974'	Oil
h. Delaware	4699'	Oil
i. Bone Springs	6394'	Oil
j. 1 st Bone Spring Ss	7786'	Oil
k. 2 nd Bone Spring Lime	8044'	Oil
l. 2 nd Bone Spring Ss	8554'	Oil
m. 2 nd Bone Spring Middle Ss	8714'	Oil
n. 2 nd Bone Spring Middle Ss Base	8789'	Oil
o. 3 rd Bone Spring Lime	9004'	Oil
p. PTD (Pilot Hole)	9080'	
q. Total Depth	TVD 8854' MD 13657'	

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 13 3/8" casing at ~~475'~~^{400'} and circulating cement back to surface. The fresh water sands will be protected by setting 9 5/8" casing at 3100' and circulating cement to surface. The Delaware intervals will be isolated by setting 5 1/2" casing to total depth and circulating cement above the base of the 9 5/8" casing. All casing is new and API approved.

3. **Casing Program:** See COA

<u>Hole Size</u>	<u>Hole Interval</u>	<u>OD Csg</u>	<u>Casing Interval</u>	<u>Weight</u>	<u>Collar</u>	<u>Grade</u>
17 1/2"	0' - 475' ^{400'}	13 3/8"	0' - 475' ^{400'}	48#	STC	H-40
12 1/4"	475' ^{400'} - 3100'	9 5/8"	0' - 3100'	40#	LTC	J-55
8 3/4"	3100' - 8100	5 1/2"	0' - 8100'	17#	LTC	P-110HC
8 3/4"	8100' - 13657'	5 1/2"	8100' - 13657'	17#	BTC	P-110HC

Design Parameter Factors:

<u>Casing Size</u>	<u>Collapse Design</u>	<u>Burst Design</u>	<u>Tension Design</u>
	<u>Factor</u>	<u>Factor</u>	<u>Factor</u>
13 3/8"	2.99	6.72	12.20
9 5/8"	1.23	2.15	2.74
5 1/2" LTC	1.64	2.02	1.55
5 1/2" BTC	1.84	2.27	5.22

4. Cement Program:

a. 13 3/8" Surface

Lead: 250 sacks Class C Cement + 2% bwoc Calcium Chloride + 0.125 lbs/sack Cello Flake + 4% bwoc Bentonite + 81.4% Fresh Water, 13.5 ppg. **Yield:** 1.75 cf/sk

Tail: 250 sacks Class C Cement + 2% bwoc Calcium Chloride + 0.125 lbs/sack Cello Flake + 56.3% Fresh Water, 14.8 ppg. **Yield:** 1.35 cf/sk.. **TOC @ surface.**

b. 9 5/8" Intermediate

See
COA

Lead: 750 sacks (35:65) Poz (Fly Ash):Class C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 6% bwoc Bentonite + 107.8% Fresh Water, 12.5 ppg. **Yield:** 1.96 cf/sk

Tail: 300 sacks Class C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 0.4% bwoc Sodium Metasilicate + 4% bwoc MPA-5 + 52.7% Water, 14.8 ppg. **Yield:** 1.34 cf/sk. **TOC @ surface.**

c. 5 1/2" Production

1st Stage

Lead: 900 sacks (35:65) Poz (Fly Ash):Class H Cement + 5% bwow Sodium Chloride + 0.3% bwoc CD-32 + 0.5% bwoc FL-25 + 2% bwoc Bentonite + 0.6% bwoc Sodium Metasilicate + 0.5% bwoc FL-52A + 102.5% Fresh Water, 12.5 ppg. **Yield:** 2.00 cf/sk

Tail: 1,400 sacks (50:50) Poz (Fly Ash):Class H Cement + 1% bwow Sodium Chloride + 0.2% bwoc R-3 + 0.125 lbs/sack Cello Flake + 0.5% bwoc BA-10A + 4% bwoc MPA-5 + 58.3% Fresh Water, 14.2 ppg. **Yield:** 1.28 cf/sk

DV TOOL at ~4,500 ft**2nd Stage**

Lead: 250 sacks Class C Cement + 1% bwow Calcium Chloride + 0.125 lbs/sack Cello Flake + 157.8% Fresh Water, 11.4 ppg. **Yield:** 2.89 cf/sk

Tail: 150 sacks (60:40) Poz (Fly Ash):Class C Cement + 1% bwow Sodium Chloride + 0.2% bwoc R-3 + 0.125 lbs/sack Cello Flake + 0.5% bwoc BA-10A + 4% bwoc MPA-5 + 63.2% Fresh Water, 13.8 ppg. **Yield:** 1.37cf/sk. **TOC @ 2,600 ft**

8-3/4" Pilot Hole Plug 650 sxs Class H, 18.0 ppg, 0.89 cf/sk
 Top of Plug 8,297' (KOP)
 Bottom of Plug 9,080' (Pilot Hole TD)

TOC for All Strings:

Surface: 0'
 Intermediate: 0'
 Production: 2,600'

The above cement volumes could be revised pending the caliper measurement from the open hole logs. Actual cement volumes will be adjusted bases on fluid caliper and caliper log data.

5. Pressure Control Equipment:

BOP DESIGN: The BOP system used to drill the intermediate hole will consist of a 13-5/8" 3M Double Ram and Annular preventer. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2 as a 3M system prior to drilling out the surface casing shoe.

The BOP system used to drill the production hole will consist of a 13-5/8" 3M Double Ram and Annular preventer. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2 as a 3M system prior to drilling out the intermediate casing shoe.

The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi WP.

A flexible line with flanged ends may be used between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns.

6. Proposed Mud Circulation System *See CO4*

<u>Depth</u>	<u>Mud Wt.</u>	<u>Visc</u>	<u>Fluid Loss</u>	<u>Type System</u>
0' - 475 400'	8.4-9.0	30-34	NC	Fresh Water
400 475' - 3100'	9.8-10.0	28-32	NC	Brine
3100' - 13657'	8.6-9.0	28-32	NC-12	Fresh Water

The necessary mud products for weight addition and fluid loss control will be on location at all times.

7. Auxiliary Well Control and Monitoring Equipment:

- A Kelly cock will be in the drill string at all times.
- A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.

- c. Hydrogen Sulfide detection equipment will be in operation after drilling out the 13 3/8" casing shoe until the 5 1/2" casing is cemented. Breathing equipment will be on location upon drilling the 13 3/8" shoe until total depth is reached.

8. Logging, Coring, and Testing Program: *See COA*

- a. Drill stem tests will be based on geological sample shows.
- b. If a drill stem test is anticipated; a procedure, equipment to be used and safety measures will be provided via sundry notice to the BLM.
- c. The open hole electrical logging program will be:
 - i. Total Depth to Intermediate Casing Dual Laterolog-Micro Laterolog with SP and Gamma Ray. Compensated Neutron – Z Density log with Gamma Ray and Caliper.
 - ii. Total Depth to Surface Compensated Neutron with Gamma Ray
 - iii. No coring program is planned
 - iv. Additional testing will be initiated subsequent to setting the 5 1/2" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows and drill stem tests.

9. Potential Hazards:

- a. No abnormal pressures or temperatures are expected. There is no known presence of H₂S in this area. If H₂S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6 No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 3600 psi and Estimated BHT 145°. No H₂S is anticipated to be encountered.

10. Anticipated Starting Date and Duration of Operations:

- a. Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 32 days. If production casing is run then an additional 30 days will be needed to complete well and construct surface facilities and/or lay flow lines in order to place well on production.



Weatherford^(®)

Drilling Services

Proposal



devon

ARCTURUS 18 FEDERAL 3H

EDDY COUNTY, NM

WELL FILE: PLAN 1

NOVEMBER 12, 2010

Weatherford International, Ltd.

P.O. Box 61028

Midland, TX 79711 USA

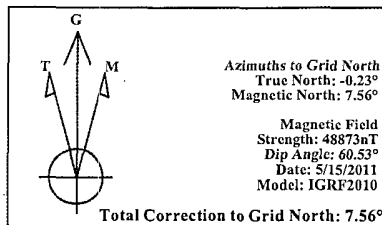
+1.432.561.8892 Main

+1.432.561.8895 Fax

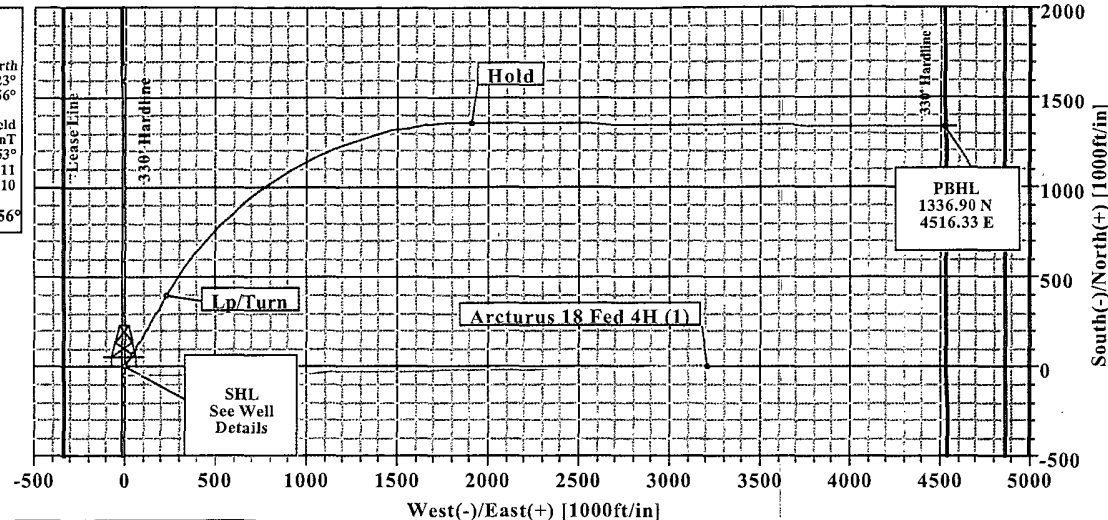
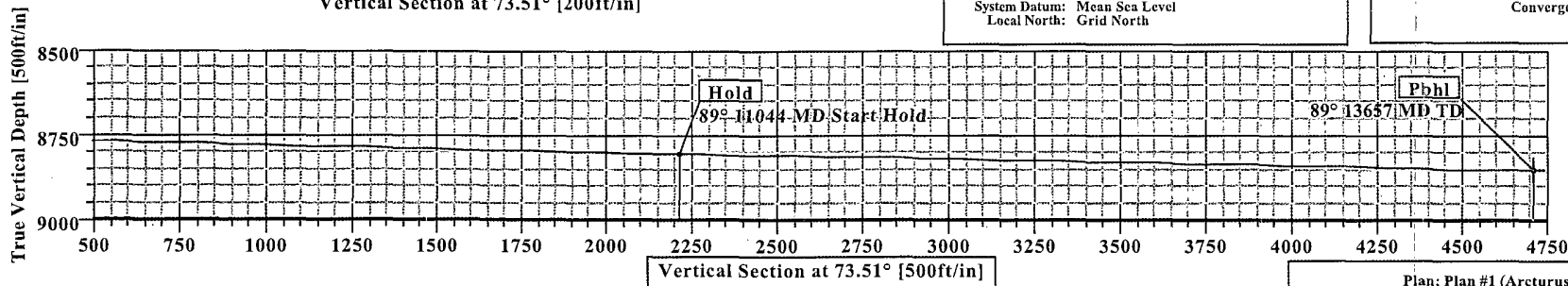
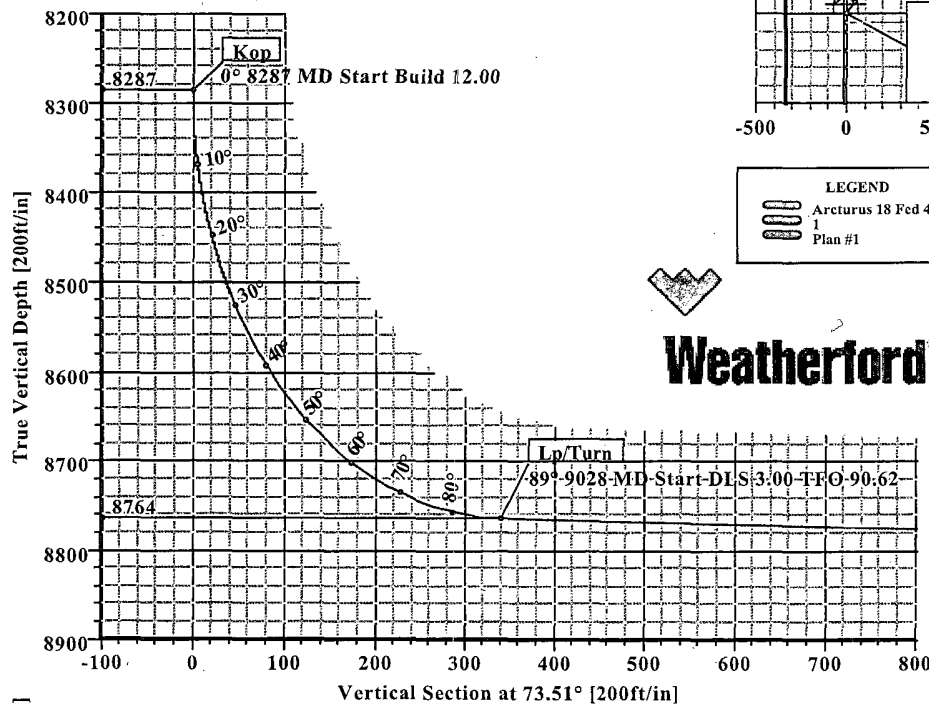
www.weatherford.com



ARCTURUS 18 FED 3H EDDY CO., NEW MEXICO



KB ELEV: 3436
GL ELEV: 3411



LEGEND	
	Arcturus 18 Fed 4H (1)
	Plan #1

SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	30.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	8286.62	0.00	30.00	8286.62	0.00	0.00	0.00	30.00	0.00	
3	9027.74	88.93	30.00	8764.00	405.81	234.29	12.00	30.00	339.84	
4	11044.45	88.93	90.51	8805.43	1360.27	1904.70	3.00	90.62	2212.46	
5	13656.64	88.93	90.51	8854.00	1336.90	4516.33	0.00	0.00	4710.05	Pbhl

WELL DETAILS							
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
Arcturus 18 Fed 3H	0.00	0.00	602567.58	669821.68	32°39'20.907N	103°54'57.094W	N/A

TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Pbhl	8854.00	1336.90	4516.33	603904.48	674338.01	Point

FIELD DETAILS	
Eddy Co., NM (NAD 83)	
Geodetic System:	US State Plane Coordinate System 1983
Ellipsoid:	GRS 1980
Zone:	New Mexico, Eastern Zone
Magnetic Model:	IGRF2010
System Datum:	Mean Sea Level
Local North:	Grid North

SITE DETAILS	
Arcturus 18 Fed 3H	
Site Centre Northing:	602567.58
Easting:	669821.68
Ground Level:	3411.00
Positional Uncertainty:	0.00
Convergence:	0.23



Weatherford International Ltd.

WFT Plan Report - X & Y's

**Weatherford®**

Company: Devon Energy		Date: 11/12/2010	Time: 11:36:01	Page: 1						
Field: Eddy Co., NM (NAD 83)		Co-ordinate(NE) Reference:	Well: Arcturus 18 Fed 3H, Grid North							
Site: Arcturus 18 Fed 3H		Vertical (TVD) Reference:	SITE 3436.0							
Well: Arcturus 18 Fed 3H		Section (VS) Reference:	Well (0.00N,0.00E,73.51Azi)							
Wellpath: 1		Survey Calculation Method:	Minimum Curvature Db: Sybase							
Plan: Plan #1		Date Composed:	11/12/2010							
Principal: Yes		Version:	1							
		Tied-to:	From Surface							
Field: Eddy Co., NM (NAD 83)										
Map System: US State Plane Coordinate System 1983		Map Zone:	New Mexico, Eastern Zone							
Geo Datum: GRS 1980		Coordinate System:	Well Centre							
Sys Datum: Mean Sea Level		Geomagnetic Model:	IGRF2010							
Site: Arcturus 18 Fed 3H										
Site Position:	Northing: 602567.58 ft	Latitude:	32 39 20.907 N							
From: Map	Easting: 669821.68 ft	Longitude:	103 54 57.094 W							
Position Uncertainty: 0.00 ft		North Reference:	Grid							
Ground Level: 3411.00 ft		Grid Convergence:	0.23 deg							
Well: Arcturus 18 Fed 3H Slot Name:										
Well Position:	+N/-S 0.00 ft Northing: 602567.58 ft	Latitude:	32 39 20.907 N							
+E/-W 0.00 ft Easting: 669821.68 ft		Longitude:	103 54 57.094 W							
Position Uncertainty: 0.00 ft										
Wellpath: 1										
Current Datum: SITE	Height 3436.00 ft	Drilled From:	Surface							
Magnetic Data: 5/15/2011		Tie-on Depth:	0.00 ft							
Field Strength: 48873 nT		Above System Datum:	Mean Sea Level							
Vertical Section: Depth From (TVD)	+N/-S ft	Declination:	7.79 deg							
		Mag Dip Angle:	60.53 deg							
		+E/-W ft	Direction deg							
0.00	0.00	0.00	73.51							
Plan Section Information										
MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	30.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8286.62	0.00	30.00	8286.62	0.00	0.00	0.00	0.00	0.00	30.00	
9027.74	88.93	30.00	8764.00	405.81	234.29	12.00	12.00	0.00	30.00	
11044.45	88.93	90.51	8805.43	1360.27	1904.70	3.00	0.00	3.00	90.62	
13656.64	88.93	90.51	8854.00	1336.90	4516.33	0.00	0.00	0.00	0.00	Pbhl
Survey										
MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
8200.00	0.00	30.00	8200.00	0.00	0.00	0.00	0.00	602567.58	669821.68	
8286.62	0.00	30.00	8286.62	0.00	0.00	0.00	0.00	602567.58	669821.68	Kop
8300.00	1.61	30.00	8300.00	0.16	0.09	0.14	12.00	602567.74	669821.77	
8400.00	13.61	30.00	8398.94	11.60	6.70	9.72	12.00	602579.18	669828.38	
8500.00	25.61	30.00	8492.97	40.61	23.45	34.01	12.00	602608.19	669845.13	
8600.00	37.61	30.00	8577.98	85.91	49.60	71.95	12.00	602653.49	669871.28	
8700.00	49.61	30.00	8650.26	145.53	84.02	121.88	12.00	602713.11	669905.70	
8800.00	61.61	30.00	8706.64	216.86	125.21	181.61	12.00	602784.44	669946.89	
8900.00	73.61	30.00	8744.67	296.79	171.35	248.54	12.00	602864.37	669993.03	
9000.00	85.61	30.00	8762.68	381.81	220.44	319.75	12.00	602949.39	670042.12	
9027.74	88.93	30.00	8764.00	405.81	234.29	339.84	12.00	602973.39	670055.97	Lp/Turn
9100.00	88.91	32.17	8765.36	467.68	271.59	393.17	3.00	603035.26	670093.27	
9200.00	88.88	35.17	8767.29	550.88	327.01	469.92	3.00	603118.46	670148.69	
9300.00	88.86	38.17	8769.26	631.06	386.71	549.93	3.00	603198.64	670208.39	
9400.00	88.83	41.17	8771.27	708.01	450.53	632.96	3.00	603275.59	670272.21	
9500.00	88.81	44.17	8773.32	781.52	518.28	718.79	3.00	603349.10	670339.96	



Weatherford International Ltd.

WFT Plan Report - X & Y's

**Weatherford®**

Company: Devon Energy
Field: Eddy Co., NM (NAD 83)
Site: Arcturus 18 Fed 3H
Well: Arcturus 18 Fed 3H
Wellpath: 1

Date: 11/12/2010 Time: 11:36:01 Page: 2
Co-ordinate(NE) Reference: Well: Arcturus 18 Fed 3H, Grid North
Vertical (TVD) Reference: SITE 3436.0
Section (VS) Reference: Well (0.00N,0.00E,73.51Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
9600.00	88.80	47.17	8775.41	851.37	589.79	807.19	3.00	603418.95	670411.47	
9700.00	88.79	50.17	8777.52	917.39	664.86	897.91	3.00	603484.97	670486.54	
9800.00	88.78	53.17	8779.64	979.38	743.28	990.70	3.00	603546.96	670564.96	
9900.00	88.77	56.17	8781.79	1037.19	824.84	1085.31	3.00	603604.77	670646.52	
10000.00	88.77	59.17	8783.94	1090.65	909.31	1181.48	3.00	603658.23	670730.99	
10100.00	88.77	62.17	8786.09	1139.61	996.46	1278.95	3.00	603707.19	670818.14	
10200.00	88.77	65.17	8788.24	1183.94	1086.06	1377.44	3.00	603751.52	670907.74	
10300.00	88.78	68.18	8790.38	1223.52	1177.86	1476.70	3.00	603791.10	670999.54	
10400.00	88.79	71.18	8792.50	1258.24	1271.60	1576.44	3.00	603825.82	671093.28	
10500.00	88.80	74.18	8794.60	1288.01	1367.03	1676.40	3.00	603855.59	671188.71	
10600.00	88.82	77.18	8796.68	1312.74	1463.89	1776.29	3.00	603880.32	671285.57	
10700.00	88.84	80.18	8798.72	1332.37	1561.91	1875.85	3.00	603899.95	671383.59	
10800.00	88.86	83.18	8800.72	1346.83	1660.83	1974.81	3.00	603914.41	671482.51	
10900.00	88.89	86.18	8802.68	1356.11	1760.37	2072.88	3.00	603923.69	671582.05	
11000.00	88.92	89.18	8804.59	1360.15	1860.26	2169.81	3.00	603927.73	671681.94	
11044.45	88.93	90.51	8805.43	1360.27	1904.70	2212.46	3.00	603927.85	671726.38	Hold
11100.00	88.93	90.51	8806.46	1359.78	1960.24	2265.57	0.00	603927.36	671781.92	
11200.00	88.93	90.51	8808.32	1358.88	2060.21	2361.19	0.00	603926.46	671881.89	
11300.00	88.93	90.51	8810.18	1357.99	2160.19	2456.80	0.00	603925.57	671981.87	
11400.00	88.93	90.51	8812.04	1357.09	2260.17	2552.41	0.00	603924.67	672081.85	
11500.00	88.93	90.51	8813.90	1356.20	2360.15	2648.03	0.00	603923.78	672181.83	
11600.00	88.93	90.51	8815.76	1355.30	2460.13	2743.64	0.00	603922.88	672281.81	
11700.00	88.93	90.51	8817.62	1354.41	2560.11	2839.25	0.00	603921.99	672381.79	
11800.00	88.93	90.51	8819.48	1353.51	2660.09	2934.86	0.00	603921.09	672481.77	
11900.00	88.93	90.51	8821.34	1352.62	2760.07	3030.48	0.00	603920.20	672581.75	
12000.00	88.93	90.51	8823.19	1351.72	2860.04	3126.09	0.00	603919.30	672681.72	
12100.00	88.93	90.51	8825.05	1350.83	2960.02	3221.70	0.00	603918.41	672781.70	
12200.00	88.93	90.51	8826.91	1349.93	3060.00	3317.31	0.00	603917.51	672881.68	
12300.00	88.93	90.51	8828.77	1349.04	3159.98	3412.93	0.00	603916.62	672981.66	
12400.00	88.93	90.51	8830.63	1348.14	3259.96	3508.54	0.00	603915.72	673081.64	
12500.00	88.93	90.51	8832.49	1347.25	3359.94	3604.15	0.00	603914.83	673181.62	
12600.00	88.93	90.51	8834.35	1346.36	3459.92	3699.77	0.00	603913.94	673281.60	
12700.00	88.93	90.51	8836.21	1345.46	3559.90	3795.38	0.00	603913.04	673381.58	
12800.00	88.93	90.51	8838.07	1344.57	3659.87	3890.99	0.00	603912.15	673481.55	
12900.00	88.93	90.51	8839.93	1343.67	3759.85	3986.60	0.00	603911.25	673581.53	
13000.00	88.93	90.51	8841.79	1342.78	3859.83	4082.22	0.00	603910.36	673681.51	
13100.00	88.93	90.51	8843.65	1341.88	3959.81	4177.83	0.00	603909.46	673781.49	
13200.00	88.93	90.51	8845.51	1340.99	4059.79	4273.44	0.00	603908.57	673881.47	
13300.00	88.93	90.51	8847.37	1340.09	4159.77	4369.05	0.00	603907.67	673981.45	
13400.00	88.93	90.51	8849.23	1339.20	4259.75	4464.67	0.00	603906.78	674081.43	
13500.00	88.93	90.51	8851.09	1338.30	4359.72	4560.28	0.00	603905.88	674181.40	
13600.00	88.93	90.51	8852.95	1337.41	4459.70	4655.89	0.00	603904.99	674281.38	
13656.64	88.93	90.51	8854.00	1336.90	4516.33	4710.05	0.00	603904.48	674338.01	Pbhl

Targets

Name	Description Dip.	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<--- Latitude ---> Deg Min Sec	<--- Longitude ---> Deg Min Sec
Pbhl			8854.00	1336.90	4516.33	603904.48	674338.01	32 39 33.957 N	103 54 4.202 W



Weatherford International Ltd.

WFT Plan Report - X & Y's

**Weatherford**

Company: Devon Energy	Date: 11/12/2010	Time: 11:36:01	Page: 3
Field: Eddy Co., NM (NAD 83)	Co-ordinate(NE) Reference:	Well: Arcturus 18 Fed 3H, Grid North	
Site: Arcturus 18 Fed 3H	Vertical (TVD) Reference:	SITE 3436.0	
Well: Arcturus 18 Fed 3H	Section (VS) Reference:	Well (0.00N,0.00E,73.51Azi)	
Wellpath: 1	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Casing Points

MD	TVD	Diameter	Hole Size	Name

Annotation

MD ft	TVD ft	
8286.62	8286.62	Kop
9027.74	8764.00	Lp/Turn
11044.45	8805.43	Hold
13656.64	8854.00	Pbhl

Formations

MD	TVD	Formations	Lithology	Dip Angle	Dip Direction



Weatherford International Ltd.

Anticollision Report

**Weatherford**

Company: Devon Energy Date: 11/12/2010 Time: 12:36:42 Page: 1
Field: Eddy Co., NM (NAD 83)
Reference Site: Arcturus 18 Fed 3H Co-ordinate(NE) Reference: Well: Arcturus 18 Fed 3H, Grid North
Reference Well: Arcturus 18 Fed 3H Vertical (TVD) Reference: SITE 3436.0
Reference Wellpath: 1 Db: Sybase

NO GLOBAL SCAN: Using user defined selection & scan criteria
Interpolation Method: MD Interval: 100.00 ft
Depth Range: 0.00 to 13656.64 ft
Maximum Radius: 10000.00 ft

Reference: Plan: Plan #1
Error Model: ISCWSA Ellipse
Scan Method: Closest Approach 3D
Error Surface: Ellipse

Plan: Plan #1 Date Composed: 11/12/2010
Version: 1
Principal: Yes Tied-to: From Surface

Summary

Site	Offset Wellpath	Well	Wellpath	Reference MD ft	Offset MD ft	Ctr-Ctr Distance ft	Edge Distance ft	Separation Factor	Warning
Arcturus 18 Fed 4H	Arcturus 18 Fed 4H	1 V0 Plan: Plan #1 V1		8300.00	8300.02	50.14	13.11	1.35	Level 3

Site: Arcturus 18 Fed 4H
Well: Arcturus 18 Fed 4H
Wellpath: 1 V0 Plan: Plan #1 V1 Inter-Site Error: 0.00 ft

Reference MD ft	TVD ft	Offset MD ft	TVD ft	Semi-Major Axis Ref ft	Offset ft	TFO-HS deg	Offset Location North ft	East ft	Ctr-Ctr Distance ft	Edge Distance ft	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	179.85	-49.98	0.13	49.98			No Data
100.00	100.00	100.00	100.00	0.08	0.08	179.85	-49.98	0.13	49.98	49.81	296.49	
200.00	200.00	200.00	200.00	0.31	0.31	179.85	-49.98	0.13	49.98	49.36	80.86	
300.00	300.00	300.00	300.00	0.53	0.53	179.85	-49.98	0.13	49.98	48.91	46.81	
400.00	400.00	400.00	400.00	0.76	0.76	179.85	-49.98	0.13	49.98	48.46	32.94	
500.00	500.00	500.00	500.00	0.98	0.98	179.85	-49.98	0.13	49.98	48.01	25.41	
600.00	600.00	600.00	600.00	1.21	1.21	179.85	-49.98	0.13	49.98	47.56	20.69	
700.00	700.00	700.00	700.00	1.43	1.43	179.85	-49.98	0.13	49.98	47.11	17.44	
800.00	800.00	800.00	800.00	1.66	1.66	179.85	-49.98	0.13	49.98	46.66	15.08	
900.00	900.00	900.00	900.00	1.88	1.88	179.85	-49.98	0.13	49.98	46.22	13.28	
1000.00	1000.00	1000.00	1000.00	2.11	2.11	179.85	-49.98	0.13	49.98	45.77	11.86	
1100.00	1100.00	1100.00	1100.00	2.33	2.33	179.85	-49.98	0.13	49.98	45.32	10.72	
1200.00	1200.00	1200.00	1200.00	2.56	2.56	179.85	-49.98	0.13	49.98	44.87	9.77	
1300.00	1300.00	1300.00	1300.00	2.78	2.78	179.85	-49.98	0.13	49.98	44.42	8.98	
1400.00	1400.00	1400.00	1400.00	3.01	3.01	179.85	-49.98	0.13	49.98	43.97	8.31	
1500.00	1500.00	1500.00	1500.00	3.23	3.23	179.85	-49.98	0.13	49.98	43.52	7.73	
1600.00	1600.00	1600.00	1600.00	3.46	3.46	179.85	-49.98	0.13	49.98	43.07	7.23	
1700.00	1700.00	1700.00	1700.00	3.68	3.68	179.85	-49.98	0.13	49.98	42.62	6.79	
1800.00	1800.00	1800.00	1800.00	3.91	3.91	179.85	-49.98	0.13	49.98	42.17	6.40	
1900.00	1900.00	1900.00	1900.00	4.13	4.13	179.85	-49.98	0.13	49.98	41.72	6.05	
2000.00	2000.00	2000.00	2000.00	4.35	4.35	179.85	-49.98	0.13	49.98	41.27	5.74	
2100.00	2100.00	2100.00	2100.00	4.58	4.58	179.85	-49.98	0.13	49.98	40.82	5.46	
2200.00	2200.00	2200.00	2200.00	4.80	4.80	179.85	-49.98	0.13	49.98	40.37	5.20	
2300.00	2300.00	2300.00	2300.00	5.03	5.03	179.85	-49.98	0.13	49.98	39.92	4.97	
2400.00	2400.00	2400.00	2400.00	5.25	5.25	179.85	-49.98	0.13	49.98	39.47	4.76	
2500.00	2500.00	2500.00	2500.00	5.48	5.48	179.85	-49.98	0.13	49.98	39.02	4.56	
2600.00	2600.00	2600.00	2600.00	5.70	5.70	179.85	-49.98	0.13	49.98	38.57	4.38	
2700.00	2700.00	2700.00	2700.00	5.93	5.93	179.85	-49.98	0.13	49.98	38.12	4.22	
2800.00	2800.00	2800.00	2800.00	6.15	6.15	179.85	-49.98	0.13	49.98	37.67	4.06	
2900.00	2900.00	2900.00	2900.00	6.38	6.38	179.85	-49.98	0.13	49.98	37.22	3.92	
3000.00	3000.00	3000.00	3000.00	6.60	6.60	179.85	-49.98	0.13	49.98	36.78	3.78	
3100.00	3100.00	3100.00	3100.00	6.83	6.83	179.85	-49.98	0.13	49.98	36.33	3.66	
3200.00	3200.00	3200.00	3200.00	7.05	7.05	179.85	-49.98	0.13	49.98	35.88	3.54	
3300.00	3300.00	3300.00	3300.00	7.28	7.28	179.85	-49.98	0.13	49.98	35.43	3.43	
3400.00	3400.00	3400.00	3400.00	7.50	7.50	179.85	-49.98	0.13	49.98	34.98	3.33	
3500.00	3500.00	3500.00	3500.00	7.73	7.73	179.85	-49.98	0.13	49.98	34.53	3.23	



Weatherford International Ltd.

Anticollision Report

**Weatherford**

Company: Devon Energy
Field: Eddy Co., NM (NAD 83)
Reference Site: Arcturus 18 Fed 3H
Reference Well: Arcturus 18 Fed 3H
Reference Wellpath: 1

Date: 11/12/2010
Time: 12:36:42
Page: 2

Co-ordinate(NE) Reference: Well: Arcturus 18 Fed 3H, Grid North
Vertical (TVD) Reference: SITE 3436.0
Db: Sybase

Site: Arcturus 18 Fed 4H
Well: Arcturus 18 Fed 4H
Wellpath: 1 VO Plan: Plan #1 V1

Inter-Site Error: 0.00 ft

Reference		Offset		Semi-Major Axis			Offset Location		Ctr-Ctr Distance ft	Edge Distance ft	Separation Factor	Warning
MD ft	TVD ft	MD ft	TVD ft	Ref ft	Offset ft	TFO-HS deg	North ft	East ft				
3600.00	3600.00	3600.00	3600.00	7.95	7.95	179.85	-49.98	0.13	49.98	34.08	3.14	
3700.00	3700.00	3700.00	3700.00	8.18	8.18	179.85	-49.98	0.13	49.98	33.63	3.06	
3800.00	3800.00	3800.00	3800.00	8.40	8.40	179.85	-49.98	0.13	49.98	33.18	2.97	
3900.00	3900.00	3900.00	3900.00	8.63	8.63	179.85	-49.98	0.13	49.98	32.73	2.90	
4000.00	4000.00	4000.00	4000.00	8.85	8.85	179.85	-49.98	0.13	49.98	32.28	2.82	
4100.00	4100.00	4100.00	4100.00	9.07	9.07	179.85	-49.98	0.13	49.98	31.83	2.75	
4200.00	4200.00	4200.00	4200.00	9.30	9.30	179.85	-49.98	0.13	49.98	31.38	2.69	
4300.00	4300.00	4300.00	4300.00	9.52	9.52	179.85	-49.98	0.13	49.98	30.93	2.62	
4400.00	4400.00	4400.00	4400.00	9.75	9.75	179.85	-49.98	0.13	49.98	30.48	2.56	
4500.00	4500.00	4500.00	4500.00	9.97	9.97	179.85	-49.98	0.13	49.98	30.03	2.51	
4600.00	4600.00	4600.00	4600.00	10.20	10.20	179.85	-49.98	0.13	49.98	29.58	2.45	
4700.00	4700.00	4700.00	4700.00	10.42	10.42	179.85	-49.98	0.13	49.98	29.13	2.40	
4800.00	4800.00	4800.00	4800.00	10.65	10.65	179.85	-49.98	0.13	49.98	28.68	2.35	
4900.00	4900.00	4900.00	4900.00	10.87	10.87	179.85	-49.98	0.13	49.98	28.23	2.30	
5000.00	5000.00	5000.00	5000.00	11.10	11.10	179.85	-49.98	0.13	49.98	27.78	2.25	
5100.00	5100.00	5100.00	5100.00	11.32	11.32	179.85	-49.98	0.13	49.98	27.33	2.21	
5200.00	5200.00	5200.00	5200.00	11.55	11.55	179.85	-49.98	0.13	49.98	26.89	2.16	
5300.00	5300.00	5300.00	5300.00	11.77	11.77	179.85	-49.98	0.13	49.98	26.44	2.12	
5400.00	5400.00	5400.00	5400.00	12.00	12.00	179.85	-49.98	0.13	49.98	25.99	2.08	
5500.00	5500.00	5500.00	5500.00	12.22	12.22	179.85	-49.98	0.13	49.98	25.54	2.04	
5600.00	5600.00	5600.00	5600.00	12.45	12.45	179.85	-49.98	0.13	49.98	25.09	2.01	
5700.00	5700.00	5700.00	5700.00	12.67	12.67	179.85	-49.98	0.13	49.98	24.64	1.97	
5800.00	5800.00	5800.00	5800.00	12.90	12.90	179.85	-49.98	0.13	49.98	24.19	1.94	
5900.00	5900.00	5900.00	5900.00	13.12	13.12	179.85	-49.98	0.13	49.98	23.74	1.90	
6000.00	6000.00	6000.00	6000.00	13.35	13.35	179.85	-49.98	0.13	49.98	23.29	1.87	
6100.00	6100.00	6100.00	6100.00	13.57	13.57	179.85	-49.98	0.13	49.98	22.84	1.84	
6200.00	6200.00	6200.00	6200.00	13.80	13.80	179.85	-49.98	0.13	49.98	22.39	1.81	
6300.00	6300.00	6300.00	6300.00	14.02	14.02	179.85	-49.98	0.13	49.98	21.94	1.78	
6400.00	6400.00	6400.00	6400.00	14.24	14.24	179.85	-49.98	0.13	49.98	21.49	1.75	
6500.00	6500.00	6500.00	6500.00	14.47	14.47	179.85	-49.98	0.13	49.98	21.04	1.73	
6600.00	6600.00	6600.00	6600.00	14.69	14.69	179.85	-49.98	0.13	49.98	20.59	1.70	
6700.00	6700.00	6700.00	6700.00	14.92	14.92	179.85	-49.98	0.13	49.98	20.14	1.68	
6800.00	6800.00	6800.00	6800.00	15.14	15.14	179.85	-49.98	0.13	49.98	19.69	1.65	
6900.00	6900.00	6900.00	6900.00	15.37	15.37	179.85	-49.98	0.13	49.98	19.24	1.63	
7000.00	7000.00	7000.00	7000.00	15.59	15.59	179.85	-49.98	0.13	49.98	18.79	1.60	
7100.00	7100.00	7100.00	7100.00	15.82	15.82	179.85	-49.98	0.13	49.98	18.34	1.58	
7200.00	7200.00	7200.00	7200.00	16.04	16.04	179.85	-49.98	0.13	49.98	17.89	1.56	
7300.00	7300.00	7300.00	7300.00	16.27	16.27	179.85	-49.98	0.13	49.98	17.45	1.54	
7400.00	7400.00	7400.00	7400.00	16.49	16.49	179.85	-49.98	0.13	49.98	17.00	1.52	
7500.00	7500.00	7500.00	7500.00	16.72	16.72	179.85	-49.98	0.13	49.98	16.55	1.49	Level 3
7600.00	7600.00	7600.00	7600.00	16.94	16.94	179.85	-49.98	0.13	49.98	16.10	1.48	Level 3
7700.00	7700.00	7700.00	7700.00	17.17	17.17	179.85	-49.98	0.13	49.98	15.65	1.46	Level 3
7800.00	7800.00	7800.00	7800.00	17.39	17.39	179.85	-49.98	0.13	49.98	15.20	1.44	Level 3
7900.00	7900.00	7900.00	7900.00	17.62	17.62	179.85	-49.98	0.13	49.98	14.75	1.42	Level 3
8000.00	8000.00	8000.00	8000.00	17.84	17.84	179.85	-49.98	0.13	49.98	14.30	1.40	Level 3
8100.00	8100.00	8100.00	8100.00	18.07	18.07	179.85	-49.98	0.13	49.98	13.85	1.38	Level 3
8200.00	8200.00	8200.00	8200.00	18.29	18.29	179.85	-49.98	0.13	49.98	13.40	1.37	Level 3
8300.00	8300.00	8300.02	8300.02	18.52	18.52	149.75	-49.98	0.30	50.14	13.11	1.35	Level 3
8400.00	8398.94	8398.68	8397.67	18.73	18.74	143.11	-49.75	13.08	61.70	24.47	1.66	
8500.00	8492.97	8490.95	8484.82	18.95	18.95	133.11	-49.23	42.94	92.29	55.03	2.48	
8600.00	8577.98	8573.37	8556.54	19.18	19.16	124.30	-48.53	83.33	140.26	102.88	3.75	



Weatherford International Ltd.

Anticollision Report

**Weatherford**

Company: Devon Energy
Field: Eddy Co., NM (NAD 83)
Reference Site: Arcturus 18 Fed 3H
Reference Well: Arcturus 18 Fed 3H
Reference Wellpath: 1

Date: 11/12/2010 Time: 12:36:42
Co-ordinate(NE) Reference: Well: Arcturus 18 Fed 3H, Grid North
Vertical (TVD) Reference: SITE 3436.0

Page: 3

Db: Sybase

Site: Arcturus 18 Fed 4H
Well: Arcturus 18 Fed 4H
Wellpath: 1 VO Plan: Plan #1 V1

Inter-Site Error: 0.00 ft

Reference		Offset		Semi-Major Axis			Offset Location		Ctr-Ctr Distance ft	Edge Distance ft	Separation Factor	Warning
MD ft	TVD ft	MD ft	TVD ft	Ref ft	Offset ft	TFO-HS deg	North ft	East ft				
8700.00	8650.26	8645.02	8612.46	19.47	19.39	115.90	-47.75	128.03	201.80	163.95	5.33	
8800.00	8706.64	8706.69	8654.77	19.88	19.65	106.62	-46.97	172.82	273.06	234.24	7.03	
8900.00	8744.67	8759.91	8686.39	20.42	19.94	95.90	-46.22	215.59	350.73	310.64	8.75	
9000.00	8762.68	8806.35	8709.94	21.11	20.26	84.02	-45.52	255.59	432.01	390.85	10.49	
9100.00	8765.36	8850.60	8728.67	21.93	20.61	84.41	-44.82	295.66	514.37	471.95	12.13	
9200.00	8767.29	8901.59	8745.54	22.90	21.09	88.00	-43.98	343.74	595.49	551.53	13.54	
9300.00	8769.26	8959.59	8758.38	24.00	21.74	89.94	-43.00	400.26	674.29	628.55	14.74	
9400.00	8771.27	9023.65	8764.62	25.22	22.56	90.53	-41.89	463.97	750.05	702.27	15.70	
9500.00	8773.32	9092.69	8768.28	26.54	23.55	90.68	-40.68	532.90	822.35	772.25	16.42	
9600.00	8775.41	9165.42	8772.13	27.95	24.72	90.79	-39.42	605.51	890.93	838.26	16.92	
9700.00	8777.52	9241.63	8776.16	29.42	26.04	90.87	-38.09	681.60	955.62	900.17	17.23	
9800.00	8779.64	9321.12	8780.37	30.93	27.52	90.93	-36.70	760.97	1016.24	957.79	17.39	
9900.00	8781.79	9403.67	8784.74	32.49	29.14	90.98	-35.27	843.40	1072.62	1010.99	17.41	
10000.00	8783.94	9489.06	8789.26	34.06	30.92	91.02	-33.78	928.65	1124.60	1059.63	17.31	
10100.00	8786.09	9577.04	8793.92	35.65	32.82	91.05	-32.25	1016.50	1172.05	1103.58	17.12	
10200.00	8788.24	9667.39	8798.70	37.23	34.84	91.08	-30.67	1106.70	1214.83	1142.77	16.86	
10300.00	8790.38	9759.85	8803.59	38.79	36.97	91.11	-29.06	1199.01	1252.83	1177.08	16.54	
10400.00	8792.50	9854.16	8808.59	40.33	39.18	91.14	-27.42	1293.18	1285.94	1206.43	16.17	
10500.00	8794.60	9950.07	8813.66	41.83	41.48	91.18	-25.75	1388.95	1314.08	1230.77	15.77	
10600.00	8796.68	10047.32	8818.81	43.29	43.85	91.22	-24.05	1486.04	1337.16	1250.03	15.35	
10700.00	8798.72	10145.64	8824.02	44.69	46.28	91.26	-22.34	1584.21	1355.12	1264.17	14.90	
10800.00	8800.72	10244.76	8829.26	46.02	48.76	91.32	-20.61	1683.18	1367.93	1273.16	14.44	
10900.00	8802.68	10344.41	8834.54	47.28	51.27	91.38	-18.88	1782.67	1375.53	1277.00	13.96	
11000.00	8804.59	10444.32	8839.83	48.46	53.82	91.46	-17.14	1882.42	1377.92	1275.67	13.48	
11100.00	8806.46	10544.23	8845.12	50.33	56.38	91.58	-15.39	1982.18	1375.89	1269.21	12.90	
11200.00	8808.32	10644.14	8850.40	52.83	58.96	91.73	-13.65	2081.93	1373.35	1261.61	12.29	
11300.00	8810.18	10744.05	8855.69	55.35	61.55	91.88	-11.91	2181.68	1370.83	1253.98	11.73	
11400.00	8812.04	10843.95	8860.98	57.89	64.16	92.02	-10.17	2281.44	1368.31	1246.33	11.22	
11500.00	8813.90	10943.86	8866.27	60.45	66.77	92.17	-8.43	2381.19	1365.80	1238.65	10.74	
11600.00	8815.76	11043.76	8871.56	63.03	69.40	92.32	-6.69	2480.94	1363.30	1230.96	10.30	
11700.00	8817.62	11143.67	8876.85	65.62	72.04	92.47	-4.95	2580.69	1360.80	1223.26	9.89	
11800.00	8819.48	11243.58	8882.14	68.22	74.68	92.62	-3.21	2680.44	1358.32	1215.55	9.51	
11900.00	8821.34	11343.48	8887.42	70.84	77.33	92.77	-1.47	2780.19	1355.85	1207.84	9.16	
12000.00	8823.19	11443.39	8892.71	73.46	79.98	92.92	0.27	2879.94	1353.39	1200.11	8.83	
12100.00	8825.05	11543.29	8898.00	76.10	82.64	93.07	2.01	2979.69	1350.93	1192.39	8.52	
12200.00	8826.91	11643.20	8903.29	78.74	85.31	93.22	3.75	3079.44	1348.49	1184.66	8.23	
12300.00	8828.77	11743.11	8908.58	81.39	87.98	93.37	5.49	3179.19	1346.05	1176.93	7.96	
12400.00	8830.63	11769.95	8910.00	84.05	88.70	93.42	5.96	3205.99	1345.61	1173.14	7.80	
12500.00	8832.49	11769.95	8910.00	86.71	88.70	93.42	5.96	3205.99	1352.32	1177.20	7.72	
12600.00	8834.35	11769.95	8910.00	89.38	88.70	93.42	5.96	3205.99	1366.33	1188.56	7.69	
12700.00	8836.21	11769.95	8910.00	92.06	88.70	93.42	5.96	3205.99	1387.43	1207.00	7.69	
12800.00	8838.07	11769.95	8910.00	94.73	88.70	93.42	5.96	3205.99	1415.29	1232.21	7.73	
12900.00	8839.93	11769.95	8910.00	97.42	88.70	93.42	5.96	3205.99	1449.53	1263.79	7.80	
13000.00	8841.79	11769.95	8910.00	100.10	88.70	93.42	5.96	3205.99	1489.71	1301.30	7.91	
13100.00	8843.65	11769.95	8910.00	102.79	88.70	93.42	5.96	3205.99	1535.36	1344.28	8.04	
13200.00	8845.51	11769.95	8910.00	105.49	88.70	93.42	5.96	3205.99	1586.01	1392.26	8.19	
13300.00	8847.37	11769.95	8910.00	108.19	88.70	93.42	5.96	3205.99	1641.19	1444.77	8.36	
13400.00	8849.23	11769.95	8910.00	110.89	88.70	93.42	5.96	3205.99	1700.47	1501.37	8.54	
13500.00	8851.09	11769.95	8910.00	113.59	88.70	93.42	5.96	3205.99	1763.44	1561.65	8.74	
13600.00	8852.95	11769.95	8910.00	116.29	88.70	93.42	5.96	3205.99	1829.70	1625.24	8.95	
13656.64	8854.00	11769.95	8910.00	117.83	88.70	93.42	5.96	3205.99	1868.56	1662.58	9.07	

**Weatherford®****Weatherford Drilling Services**

GeoDec v5.03

Report Date: November 12, 2010
Job Number: _____
Customer: Devon Energy
Well Name: Arcturus 18 Fed 3H
API Number: _____
Rig Name: _____
Location: Eddy Co., NM (NAD 83)
Block: _____
Engineer: RWJ

US State Plane 1983	Geodetic Latitude / Longitude
System: New Mexico Eastern Zone	System: Latitude / Longitude
Projection: Transverse Mercator/Gauss Kruger	Projection: Geodetic Latitude and Longitude
Datum: North American Datum 1983	Datum: North American Datum 1983
Ellipsoid: GRS 1980	Ellipsoid: GRS 1980
North/South 602567.580 USFT	Latitude 32.6558109 DEG
East/West 669821.680 USFT	Longitude -103.9158550 DEG
Grid Convergence: .23°	
Total Correction: +7.56°	

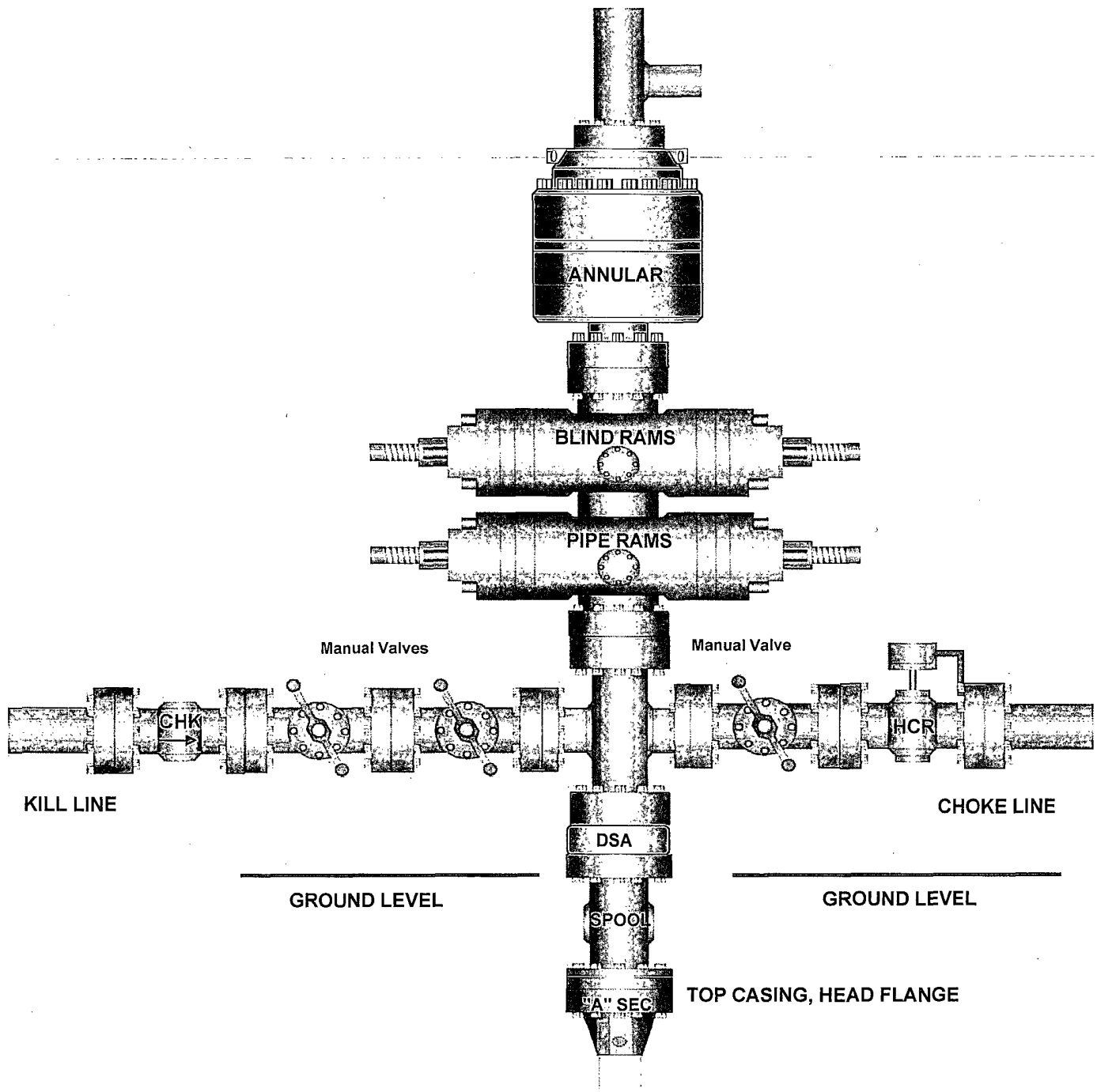
Geodetic Location WGS84	Elevation =	0.0 Meters
Latitude =	32.65581° N	32° 39 min 20.919 sec
Longitude =	103.91585° W	103° 54 min 57.078 sec

Magnetic Declination =	7.79°	[True North Offset]
Local Gravity =	.9988 g	Checksum = 6674
Local Field Strength =	48869 nT	Magnetic Vector X = 23820 nT
Magnetic Dip =	60.53°	Magnetic Vector Y = 3259 nT
Magnetic Model =	IGRF-2010g11	Magnetic Vector Z = 42546 nT
Spud Date =	May 15, 2011	Magnetic Vector H = 24042 nT

Signed: _____

Date: _____

13-5/8" x 3,000 psi BOP Stack



Attachment to Exhibit #1
NOTES REGARDING BLOWOUT PREVENTERS

Devon Energy Production Company, LP

~~1000'~~
1200'

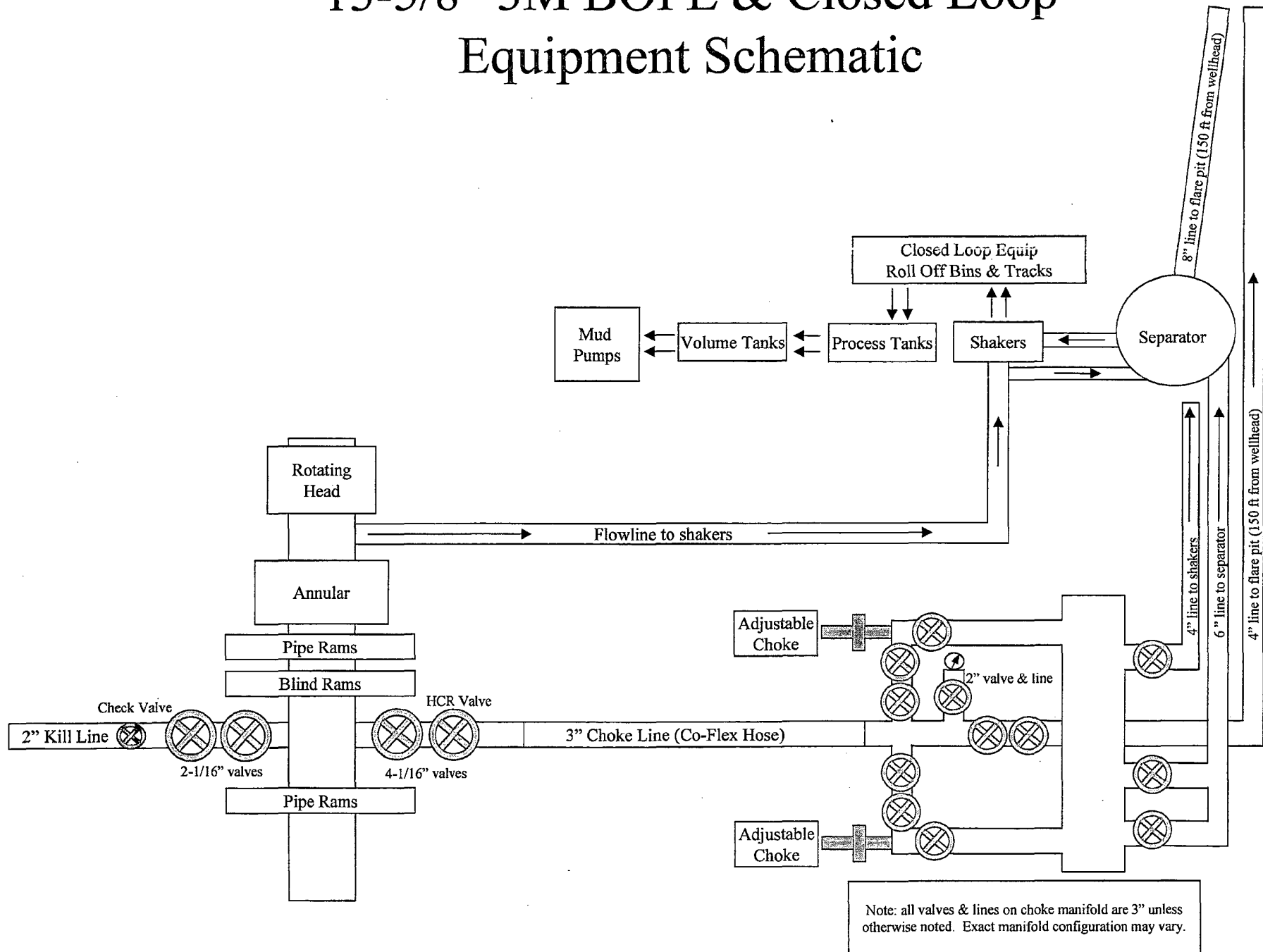
Arcturus 18 Federal 3H

Surface Location: ~~1000'~~ FSL & 340' FWL, Unit M, Sec 18 T19S R31E, Eddy, NM

Bottom hole Location: 2300' FSL & 340' FEL, Unit I, Sec 18 T19S R31E, Eddy, NM

-
1. Drilling nipple will be constructed so it can be removed mechanically without the aid of a welder. The minimum internal diameter will equal BOP bore.
 2. Wear ring will be properly installed in head.
 3. Blowout preventer and all associated fittings will be in operable condition to withstand a minimum 3000 psi working pressure.
 4. All fittings will be flanged.
 5. A full bore safety valve tested to a minimum 3000 psi WP with proper thread connections will be available on the rotary rig floor at all times.
 6. All choke lines will be anchored to prevent movement.
 7. All BOP equipment will be equal to or larger in bore than the internal diameter of the last casing string.
 8. Will maintain a kelly cock attached to the kelly.
 9. Hand wheels and wrenches will be properly installed and tested for safe operation.
 10. Hydraulic floor control for blowout preventer will be located as near in proximity to driller's controls as possible.
 11. All BOP equipment will meet API standards and include a minimum 40 gallon accumulator having two independent means of power to initiate closing operation.

13-5/8" 3M BOPE & Closed Loop Equipment Schematic



DISTRICT I --- CHECKLIST FOR INTENTS TO DRILL

Operator DEVON ENERGY PRODUCTION CO LP OGRID # 6137
 38355 Well Name & # ARCTURUS 18 FED #3H Surface Type (F) (S) (P)
 Location: UL M, Sect 18, Township 19 s, RNG 31 e, Sub-surface Type (F) (S) (P)
I 18 19 31

A. Date C101 rec'd / / C101 reviewed / /

B. 1. Check mark, Information is OK on Forms:

OGRID X, BONDING FED, PROP CODE X, WELL # X, SIGNATURE X

2. Inactive Well list as of: 4/13/11 # wells 1528, # inactive wells 4

a. District Grant APD but see number of inactive wells:

No letter required X; Sent Letter to Operator , to Santa Fe

3. Additional Bonding as of: 4/13/11

a. District Denial because operator needs addition bonding:

No Letter required ; Sent Letter to Operator , To Santa Fe

b. District Denial because of Inactive well list and Financial Assurance:

No Letter required ; Sent Letter to Operator , To Santa Fe

C. C102 YES , NO , Signature

1. Pool HACKBERRY; BONE SPRING (97020) Code

a. Dedicated acreage 160, What Units ITKL

b. SUR. Location Standard : Non-Standard Location X

c. Well shares acres: Yes , No X # of wells plus this well #

2. 2nd. Operator in same acreage, Yes , No X

Agreement Letter , Disagreement letter

3. Intent to Directional Drill Yes X, No

a. Dedicated acreage 160, What Units ITKL

b. Bottomhole Location Standard X, Non-Standard Bottomhole

4. Downhole Commingle: Yes , No X

a. Pool #2 , Code , Acres

Pool #3 , Code , Acres

Pool #4 , Code , Acres

5. POTASH Area Yes , No FED

D. Blowout Preventer Yes X, No

E. H2S Yes , No , PART FED APD

F. C144 Pit Registration Yes , No X, need

G. Does APD require Santa Fe Approval:

1. Non-Standard Location: Yes X, No , NSL #

2. Non-Standard Proration: Yes , No X, NSP #

3. Simultaneous Dedication: Yes , No X, SD #

Number of wells Plus #

4. Injection order Yes , No X; PMX # or WFX #

5. SWD order Yes , NO X; SWD #

6. DHC from SF ; DHC-HOB ; Holding

7. OCD Approval Date 04/13/11

API #30-0 15--38953

8. Reviewers KZ