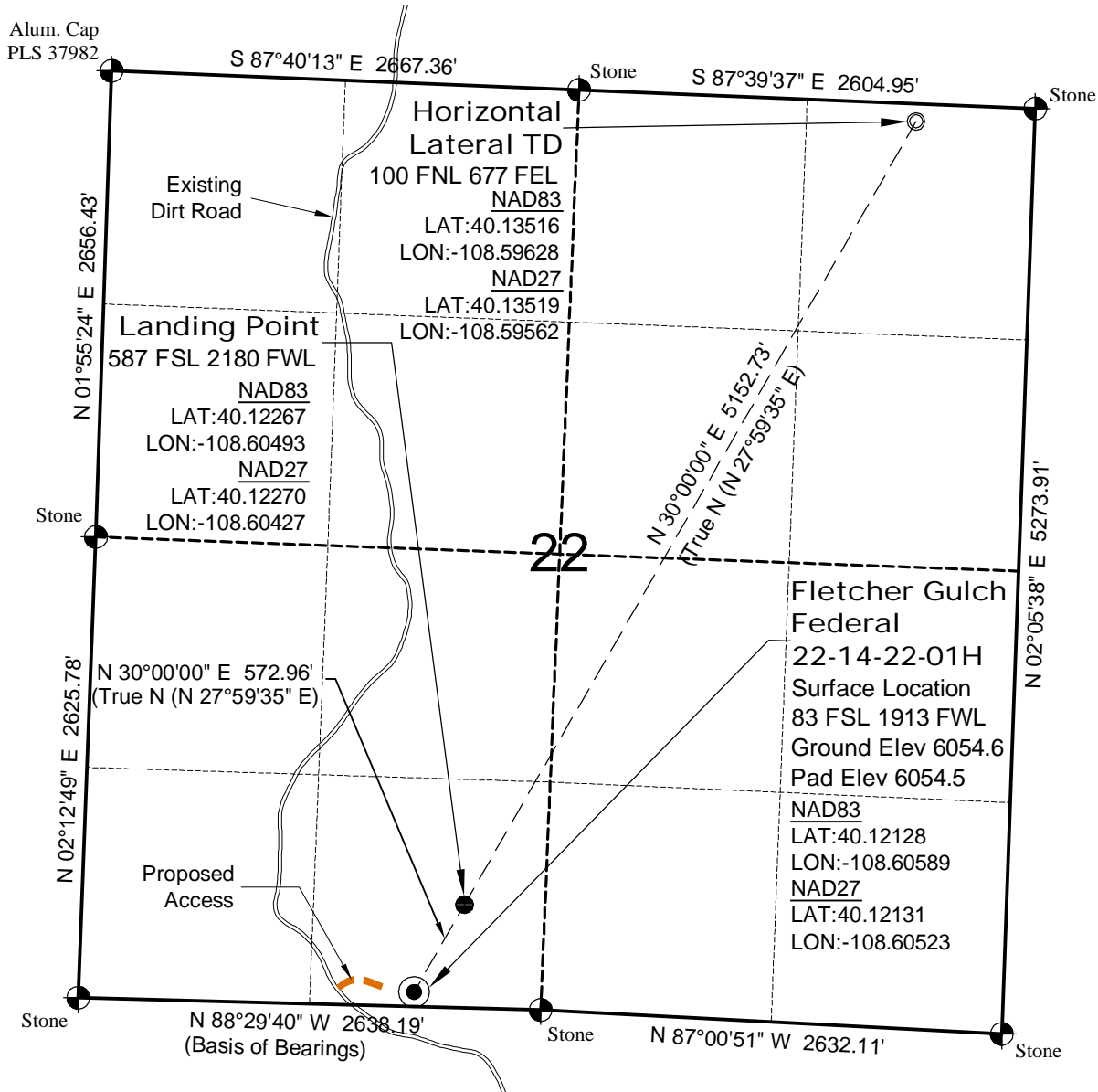


# WELL LOCATION MAP

FLETCHER GULCH FEDERAL  
22-14 PAD

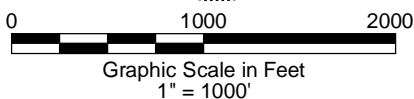


## NOTES

- 1.) Horizontal and vertical datum, based on NGS E 151-Reset.
  - 2.) All directions, distances, and dimensions shown hereon are based on coordinates from the "Colorado coordinate system of 1983 north zone" (article 52 of title 38, C.R.S.).
  - 3.) All section line dimensions shown hereon are based on field measurements of existing monuments and/or physical evidence found in the field unless otherwise indicated. Refer to BLM Survey.
  - 4.) Physical features shown hereon are for graphical representation only.
  - 5.) See Form 2A for visible improvements within 400' of wellhead.
  - 6.) Distances to nearest section lines are measured perpendicularly.
  - 7.) This is not a land survey nor land survey plat.
  - 8.) Date of Survey 11/3/11; Date of Drawing 3/7/12. REV 0
- PDOP Reading: 2.1 Instrument Operator: Dave Murrey

## SURVEYOR'S STATEMENT

The undersigned hereby states that the well location shown hereon was staked on the ground based on existing monumentation and/or physical evidence found in the field and is correct to the best of my knowledge, information and belief.

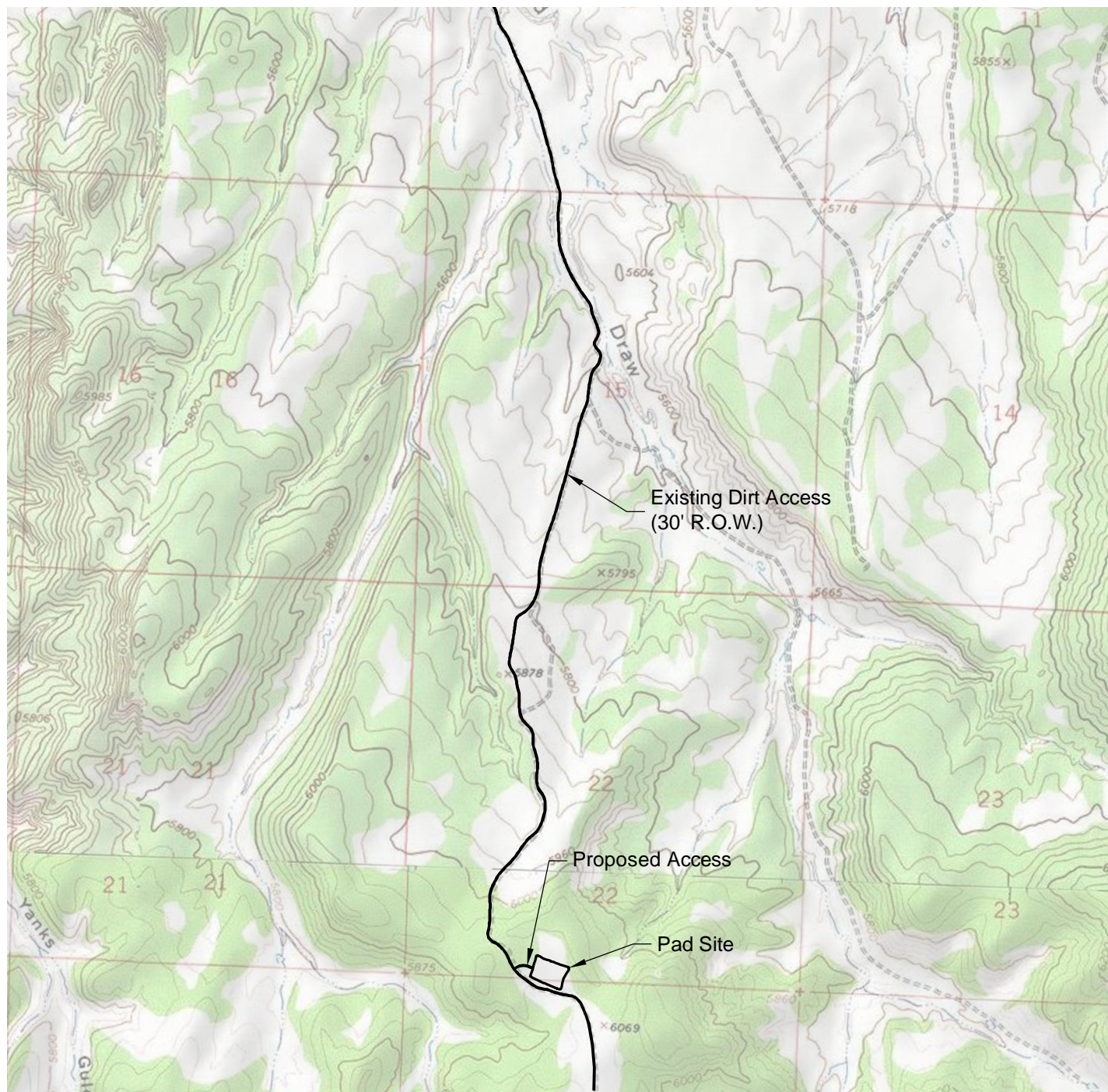


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Ph 303 666 0379 Fx 303 665 6320

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FLETCHER GULCH FEDERAL 22-14-22-01H  
SL SE1/4 SW1/4 SECTION 22 T2N R100W  
HL NE1/4 NE1/4 SECTION 22 T2N R100W  
6th PM RIO BLANCO COUNTY COLORADO

# ACCESS ROAD MAP

**FLETCHER GULCH FEDERAL  
22-14 PAD**



North



Graphic Scale in Feet  
1" = 2000'



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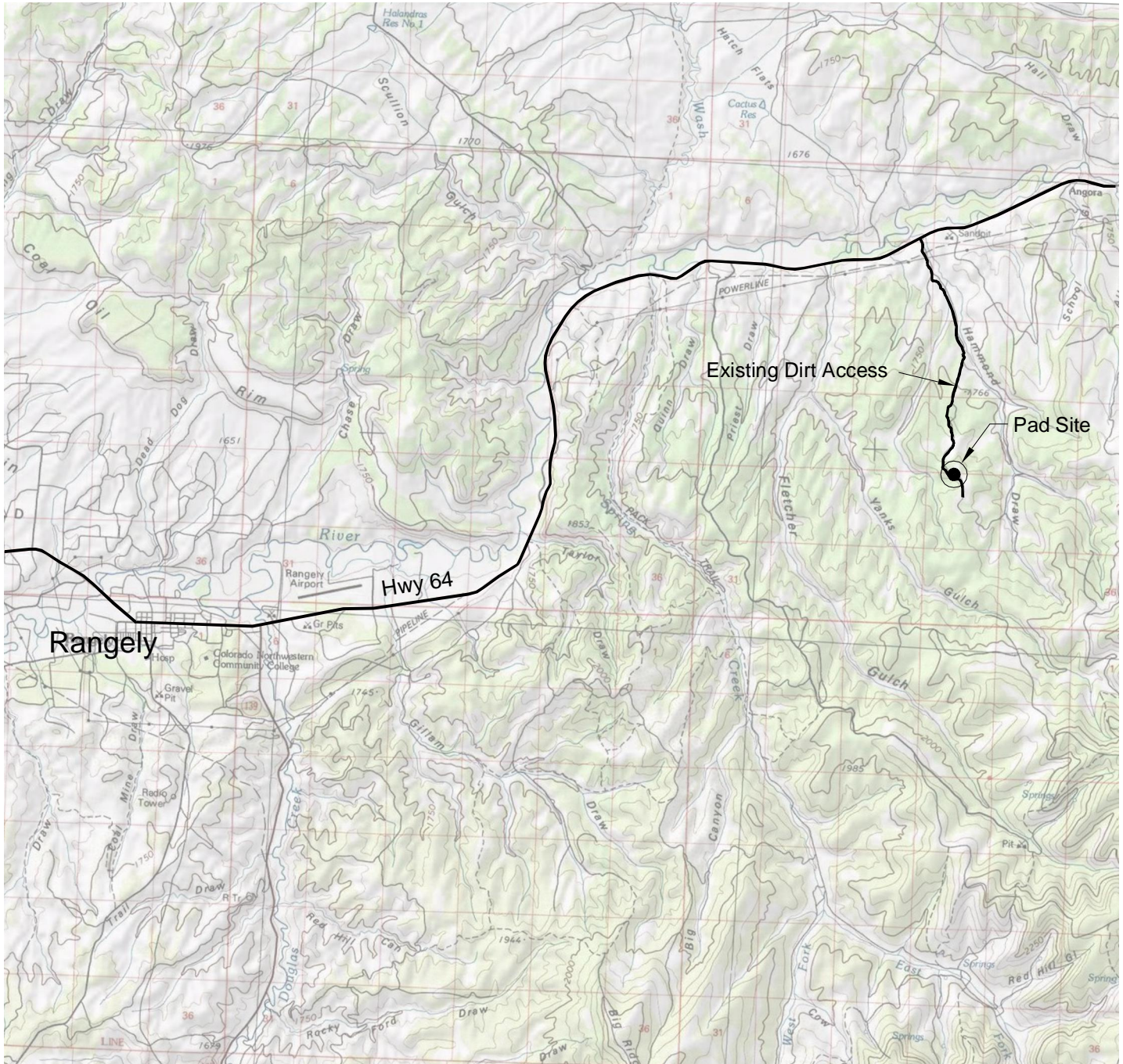
**LARAMIE ENERGY II LLC**  
**FLETCHER GULCH FEDERAL 22-14-22-01H**

SL SE1/4 SW1/4 SECTION 22 T2N R100W  
HL NE1/4 NE1/4 SECTION 22 T2N R100W  
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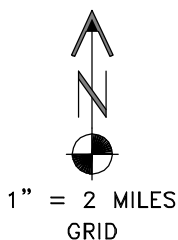
# VICINITY MAP

**FLETCHER GULCH FEDERAL  
22-14 PAD**



## DRIVING DIRECTIONS:

MP 0.0 - Rangely; Intersection of Highway 64 & Highway 139; East on Highway 64  
 MP 12.0 - Right on existing road; south along existing road  
 MP 15.4 - Left on access to Fletcher Gulch Federal 22-14 Pad  
 MP 15.5 - Fletcher Gulch Federal 22-14 Pad



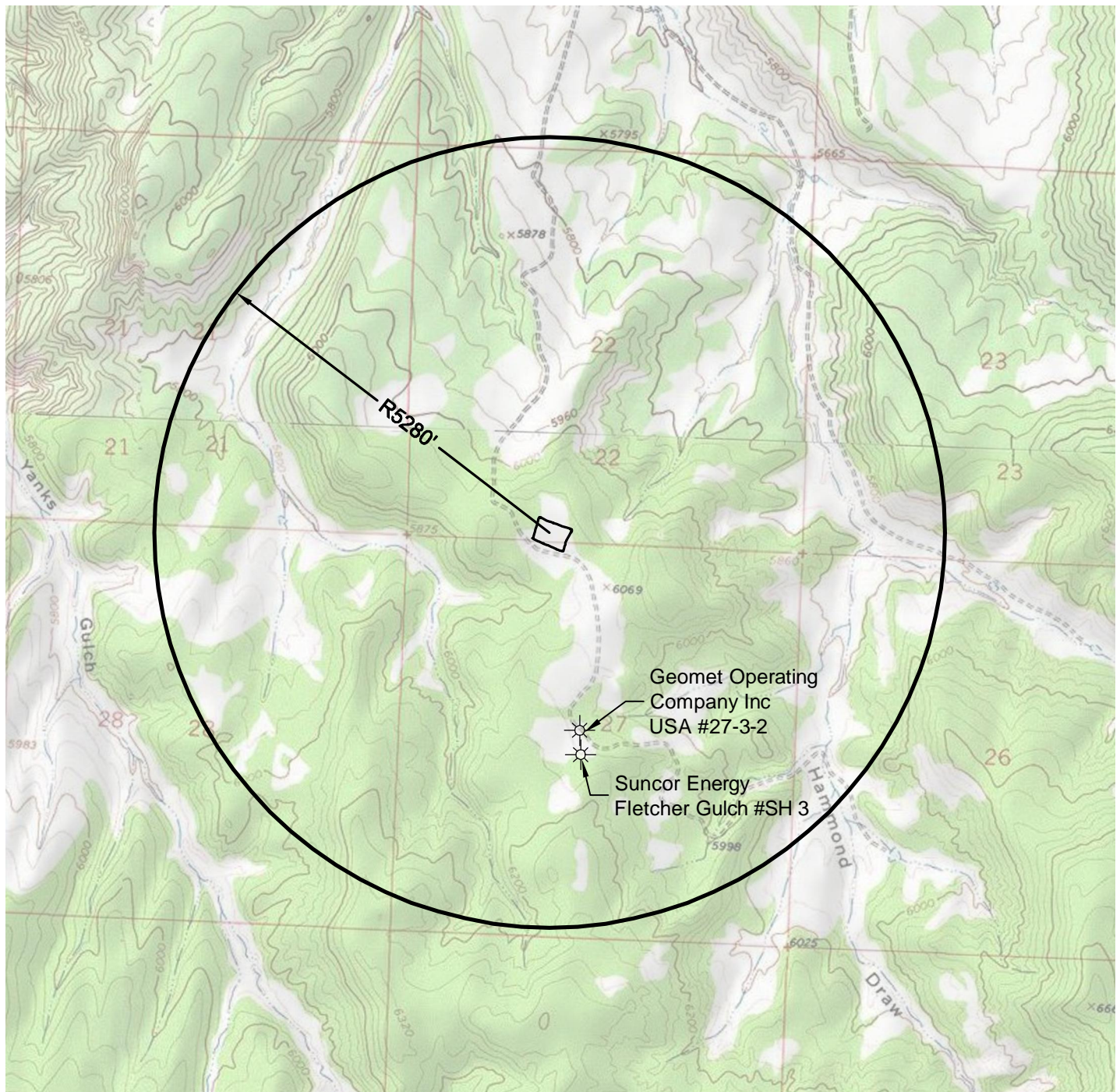
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**LARAMIE ENERGY II LLC**  
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 SL SE1/4 SW1/4 SECTION 22 T2N R100W  
 HL NE1/4 NE1/4 SECTION 22 T2N R100W  
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## WELL VICINITY MAP

**FLETCHER GULCH FEDERAL  
22-14 PAD**



North

0                      2000                      4000

Graphic Scale in Feet  
1" = 2000'



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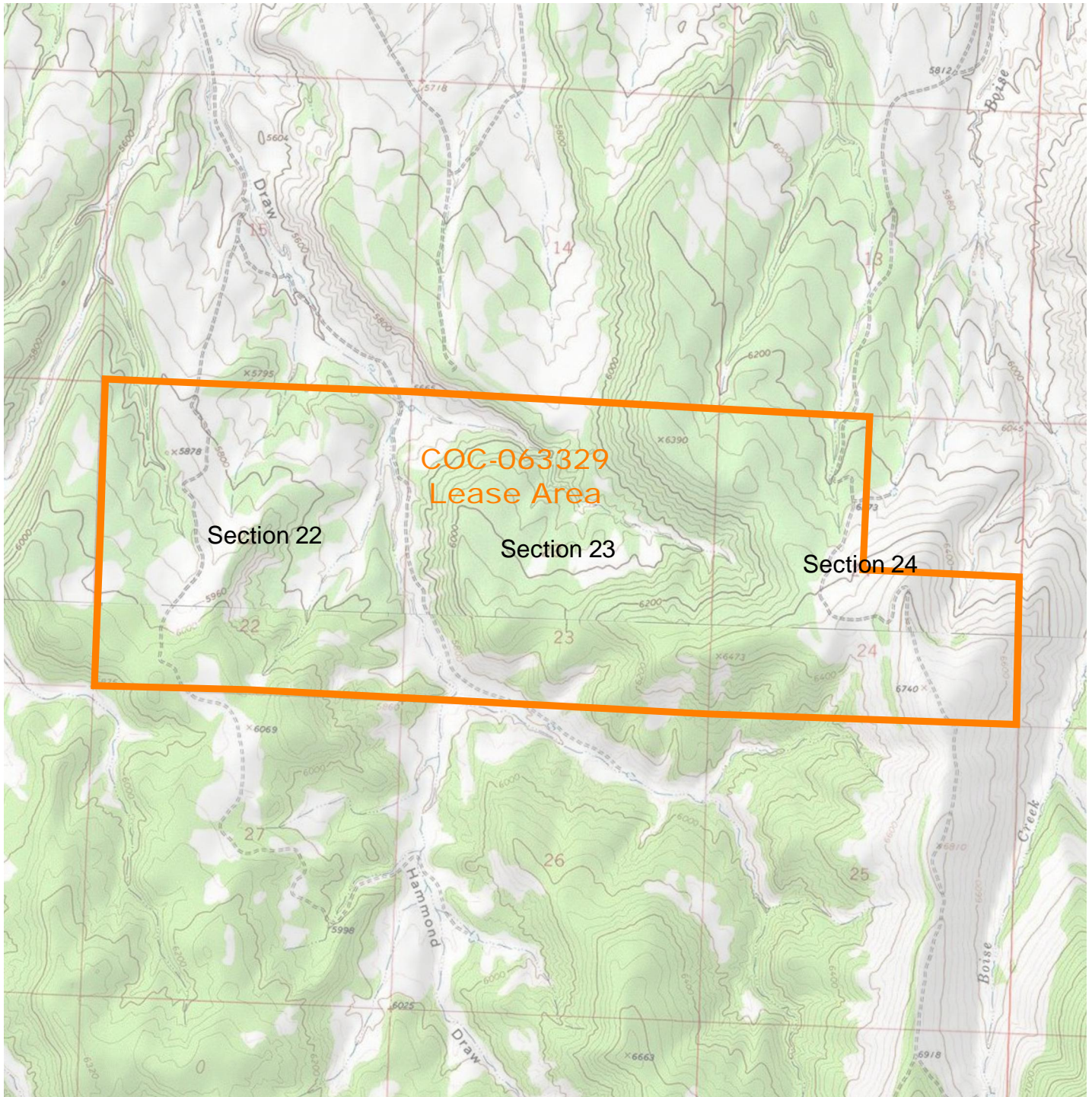
**LARAMIE ENERGY II LLC**  
**FLETCHER GULCH FEDERAL 22-14-22-01H**

SL SE1/4 SW1/4 SECTION 22 T2N R100W  
HL NE1/4 NE1/4 SECTION 22 T2N R100W  
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# LEASE AREA

FLETCHER GULCH FEDERAL  
22-14 PAD

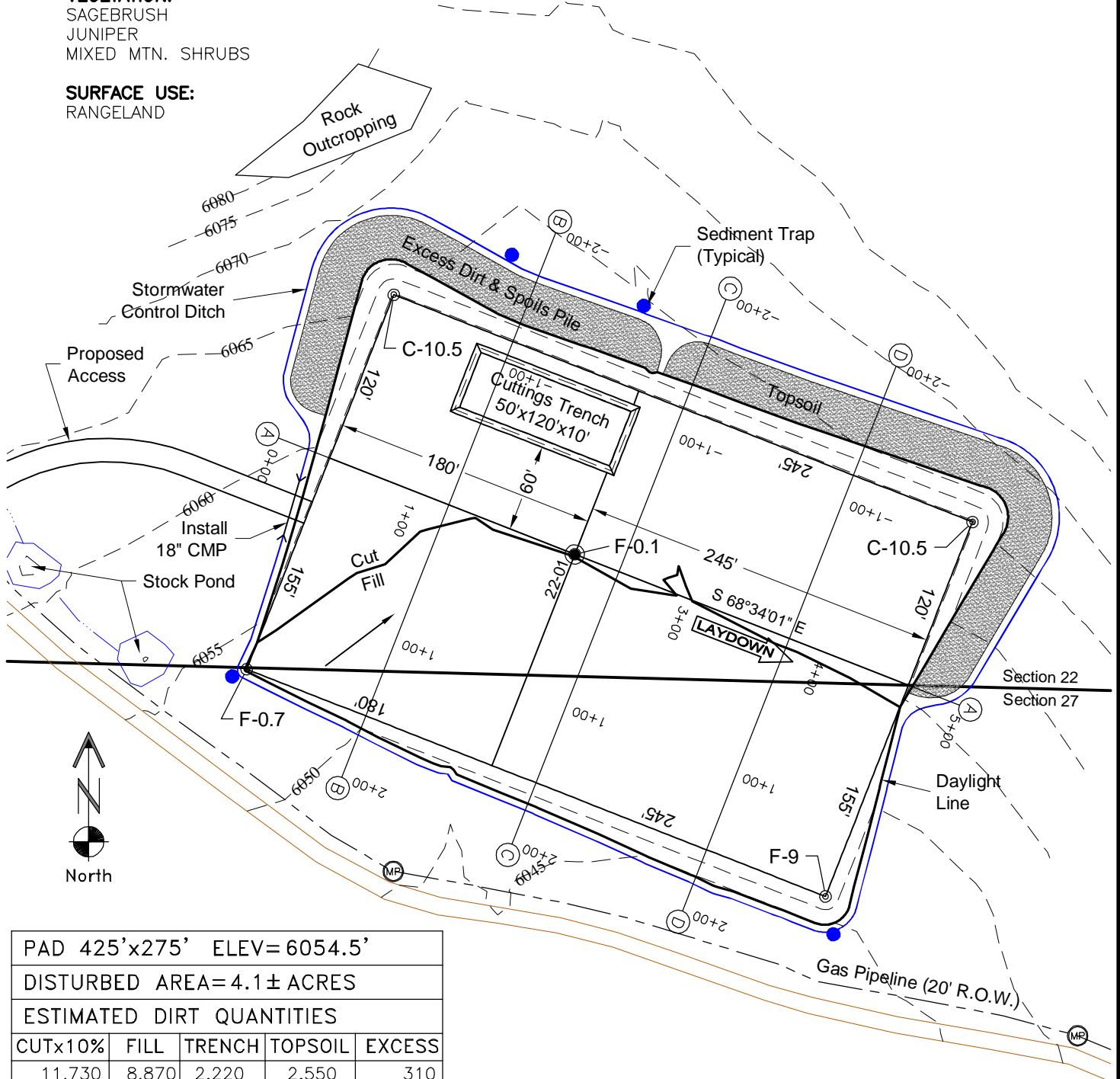


# PAD LAYOUT

FLETCHER GULCH FEDERAL  
22-14 PAD

**VEGETATION:**  
SAGEBRUSH  
JUNIPER  
MIXED MTN. SHRUBS

**SURFACE USE:**  
RANGELAND



PAD 425'x275' ELEV=6054.5'

DISTURBED AREA=4.1± ACRES

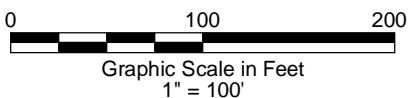
ESTIMATED DIRT QUANTITIES

CUTx10%	FILL	TRENCH	TOPSOIL	EXCESS
11,730	8,870	2,220	2,550	310

NOTE: VOLUMES IN CUBIC YARDS. TOPSOIL INCLUDED IN VOLUMES AT A DEPTH OF 6\".

## NOTES:

- 1) 10% ALLOWANCE IS MADE FOR SOIL EXPANSION.
- 2) MINIMIZE TOPSOIL REMOVAL TO ORGANIC LAYER.



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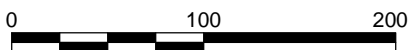


# EXISTING CONTOURS

FLETCHER GULCH FEDERAL  
22-14 PAD



North



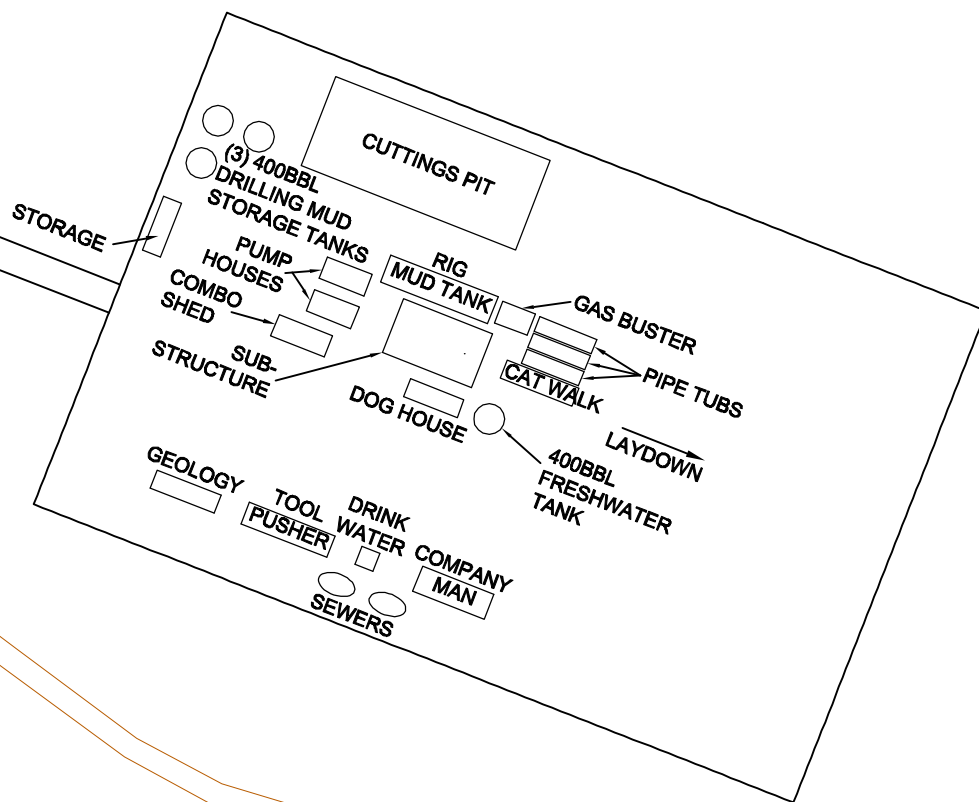
Graphic Scale in Feet  
1" = 100'

  
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**HL NE1/4 NE1/4 SECTION 22 T2N R100W**  
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# TYPICAL RIG LAYOUT

FLETCHER GULCH FEDERAL  
22-14 PAD



North

0 100 200

Graphic Scale in Feet  
1" = 100'



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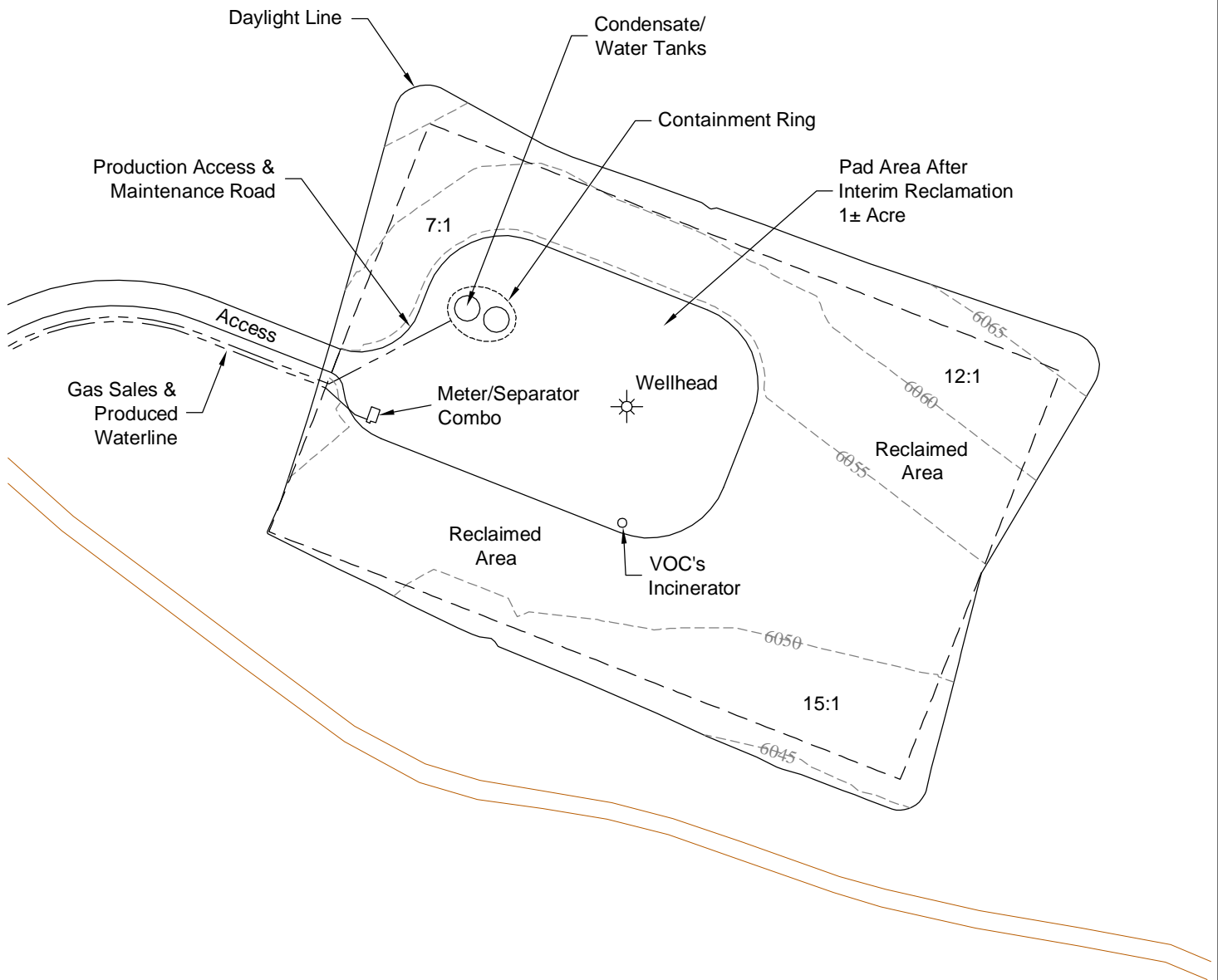
**LARAMIE ENERGY II LLC**  
FLETCHER GULCH FEDERAL 22-14-22-01H

SL SE1/4 SW1/4 SECTION 22 T2N R100W  
HL NE1/4 NE1/4 SECTION 22 T2N R100W  
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# PRODUCTION SCHEMATIC

FLETCHER GULCH FEDERAL  
22-14 PAD



0 100 200  
Graphic Scale in Feet  
1" = 100'

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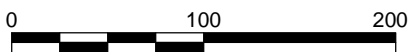
**LARAMIE ENERGY II LLC**  
FLETCHER GULCH FEDERAL 22-14-22-01H  
SL SE1/4 SW1/4 SECTION 22 T2N R100W  
HL NE1/4 NE1/4 SECTION 22 T2N R100W  
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# FINAL ABANDONMENT

FLETCHER GULCH FEDERAL  
22-14 PAD



North



Graphic Scale in Feet  
1" = 100'

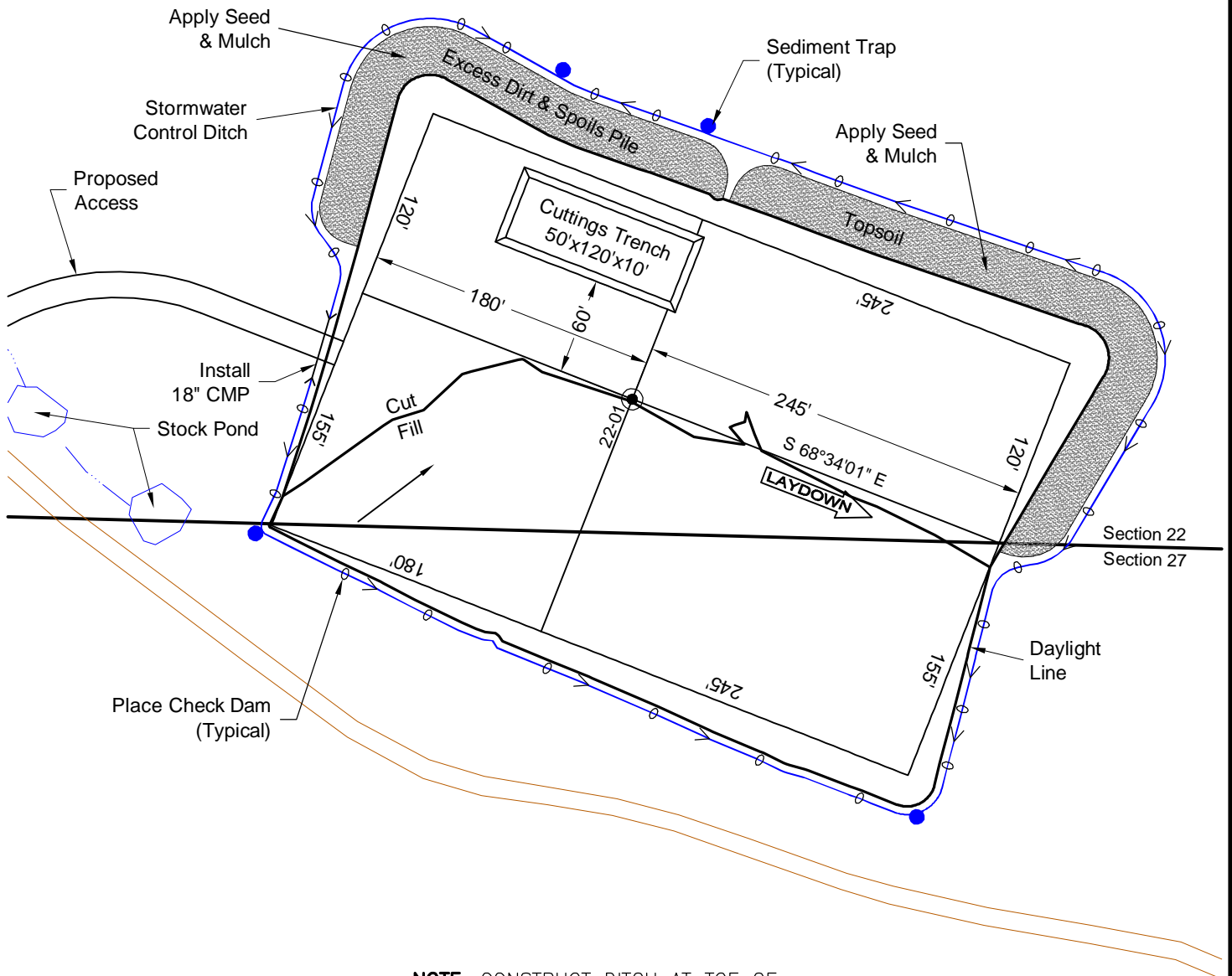
  
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**SL SE1/4 SW1/4 SECTION 22 T2N R100W**  
**HL NE1/4 NE1/4 SECTION 22 T2N R100W**  
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# STORMWATER BMP

FLETCHER GULCH FEDERAL  
22-14 PAD



**NOTE:** CONSTRUCT DITCH AT TOE OF  
SLOPE. NO DITCH WILL BE NECESSARY  
IF ROCK IS ENCOUNTERED.



North

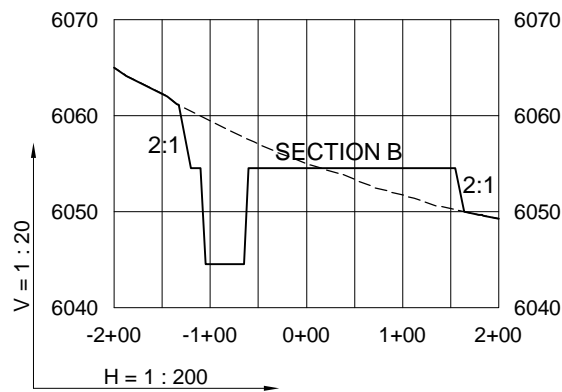
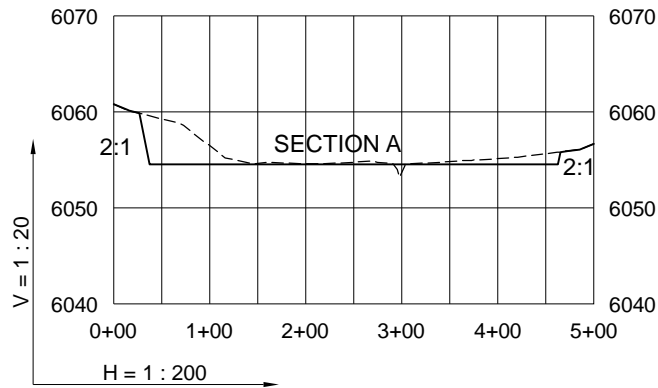
0 100 200  
Graphic Scale in Feet  
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SL SE1/4 SW1/4 SECTION 22 T2N R100W  
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# CROSS SECTIONS A & B

FLETCHER GULCH FEDERAL  
22-14 PAD



----- Existing Ground  
———— Proposed Grade

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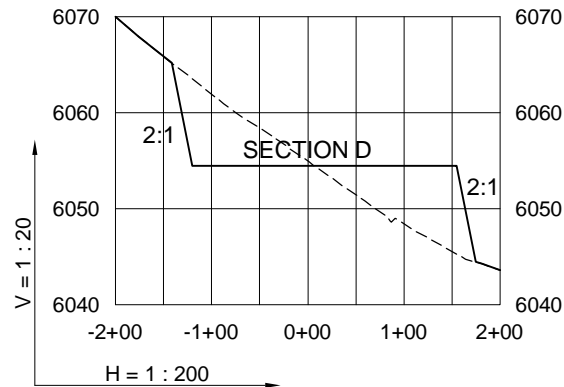
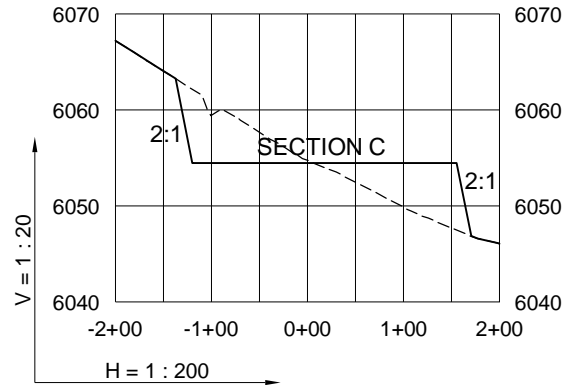
**LARAMIE ENERGY II LLC**  
FLETCHER GULCH FEDERAL 22-14-22-01H

SL SE1/4 SW1/4 SECTION 22 T2N R100W  
HL NE1/4 NE1/4 SECTION 22 T2N R100W  
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# CROSS SECTIONS C & D

FLETCHER GULCH FEDERAL  
22-14 PAD



----- Existing Ground  
————— Proposed Grade

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**FLETCHER GULCH FEDERAL 22-14-22-01H**

SL SE1/4 SW1/4 SECTION 22 T2N R100W  
HL NE1/4 NE1/4 SECTION 22 T2N R100W  
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**Laramie Energy II, LLC**  
10-point Drilling Plan

Well No:	<b>FG Fed. 22-14-22-01H</b>	Measured Depth:	<b>11,948'</b>
Surface Location:	<b>SESW Sec. 22 T2N R100W</b>	True Vertical Depth:	<b>6468'</b>
BH Location	<b>NENE Sec. 22 T2N R100W</b>		<b>5153' Hor. Disp.</b>
Lease No:	<b>COC 063329</b>	Reference:	<b>CO-110-2009-0180-EA</b>
Unit	<b>COC-075153X (FG Deep)</b>		<b>CO-110-2010-0043-EA</b>
County	<b>Rio Blanco, CO</b>		

**Producing Zone Footages**

<b>Beginning:</b> 83' FSL 1913' FWL S22 T2N R100W	<b>End:</b> 100 FNL 677 FEL S22 T2N R100W
<b>Lat:</b> 40.12128 <b>Long:</b> -108.660589	<b>Lat:</b> 40.13516 <b>Long:</b> -108.59628



## Summary of Drilling Operations

Laramie intends to horizontally drill the Fletcher Gulch Federal 22-14-22-01H into the Niobrara formation to determine the presence or lack of hydrocarbons. The following is a brief synopsis of the drilling procedure.

### Surface Hole

To isolate any possible shallow ground water and to enable LEII to install BOPE for well control while drilling through the Mesa Verde coal zones, the surface hole will be drilled with a 12 1/4" bit and freshwater LSND mud system to 1000' TD. The hole will be cased with 9 5/8" 32.3# H-40 STC pipe and cemented back to surface.

### Intermediate Hole

To Isolate the entire Mesaverde Group including the CBM reservoir, the intermediate hole will be drilled with an 8 3/4" bit out from under the surface casing to a depth of 3809' with a freshwater LSND Mud.

The hole will then be cased with 7" 23.0 # J-55 STC pipe and **cemented back into the surface casing a minimum of 200' (800')**.

### Pilot Hole

Drilling out from the intermediate casing, an 6 1/4" pilot hole will be drilled vertically to MD/TD of +/-8613' with a LSND mud system. The pilot hole will be mud-logged from intermediate casing to TD. Once TD is reached the hole will be logged with a Triple Combo, Image, and Dipole Sonic Log suite to allow for correlation of the formations during the horizontal leg of the well.

After logging, the pilot hole will be completely plugged back with cement from 8613'to +/- 5895' by setting 3 or more balanced plugs from TD to plugback. The cement will be allowed to cure sufficiently to allow LE II "dress" the cement in preparation to kick off the horizontal leg of the well at +/- 5900'.

### Horizontal Leg

Once the pilot hole is logged and plugged back, the horizontal leg of the well will be kicked off at +/- 5900' building angle to 90 degrees with the end of build at 6795' MD/6468' TVD. Drilling will continue horizontally to a final TD of 11948' MD/ 6468' TVD.

Once TD is reached, a 4 1/2" 13.5# P-110 LTC casing will run to Total Depth and cemented back into the intermediate casing minimum of 200' (+/- 3609').

## Drilling Program

### **1 & 2 Estimated Tops of Geological Markers and Formations Expected to Contain Water, Oil and Gas and Other Minerals:**

Estimated Formation Tops (based on KB@6076' with 21' KB)

<u>Formation</u>	<u>TVD(ft.)</u>	<u>MD(ft.)</u>	<u>Comments</u>
Green River	Surface	Surface	
Williams Fork	302	302	CBM Gas in Coals
Cameo	1753	1753	
Iles	2183	2183	
Sego	2633	2633	Possible Gas
Castlegate	3359	3359	
Mancos	3817	3817	Possible Gas
Niobrara	6068	6068	Possible Gas
Tow Creek	6399	6399	Horizontal Section Possible Gas
Frontier	7931	7931	Possible Gas
Mowry	8028	8028	Possible Oil and Gas
Dakota	8113	8113	Possible Oil and Gas
TD:	Pilot Hole 8613' TVD//MD (PB to 5895)		Horizontal (6468' TVD/ 11,948' MD)

Oil Shale- None anticipated

Water Wells- There are no permitted water wells within 1-mile of the proposed well as indicated by the COGCC as of May 7, 2012.

Oil or Gas Wells: The "Well Vicinity Map" illustrates the location of individual well sites in various states of activity within a one-mile radius relative to each location as identified by the Colorado Oil and Gas Conservation (COGCC) website database. As of May 07, 2012, there are 2 abandoned gas wells within one-mile of the proposed FG Fed. 22-14-22-01H.

Any sources water and prospectively valuable minerals encountered during drilling will be recorded by depth and adequately protected by isolating the zones with casing and cement (see casing and cementing program). A sample will be taken of any water flows that are significant enough to be sampled, and furnished to the White River Field Office for analysis, if requested.

### **3. Pressure Control and Auxiliary Equipment: 5M System.**

After setting surface casing to the specified depth (section 5), 5,000-psi equipment will be used. Equipment will be installed per **Attachment A**. Test pressures will be as follows:

11" – 5,000-psi ram type BOP's	5,000 psi
11" – 5,000-psi annual BOP's	2,500 psi
Ancillary equipment and choke manifold	5,000 psi
Surface casing	1,500 psi

Pressure tests will be conducted after installation of equipment and prior to drilling out casing float equipment and every 30 days thereafter. A certified tester will perform pressure testing and charts will be made available from Laramie upon request.

BOP, choke manifold, and accumulator equipment installation will be consistent with 43 CFR Part 3164.1 Onshore Oil and Gas Order No. 2.

**Auxiliary equipment:**

- a) Manually operated kelly cocks.
- b) Full opening floor valves capable of fitting all drill-string connections will be kept on the floor in the open position.

**4. Casing Program:**

Hole Info		Setting Depth		Casing Information							
Hole	Size	MD	TVD	Size	Grade	Weight	Type		Collapse psi	Burst psi	Yield Klbs
Cond.	26	40'	40	16	0.25	42.0 lb					
Surf.	12 ¼	1000	1000	9 5/8	H-40	32.3	STC	New	1400	2270	254
Int.	8 ¾	3809	3809	7	J-55	23.0	LTC	New	3270	4360	366
Prod.	6 ¼	11948	6468	4.5	P-110	13.5 lb	LTC	New	10670	12410	422

**5. Cementing Program**

Plug Back of Pilot Hole from 8613' -5895' MD.

The pilot hole will entirely plugged back with 3 or more balanced cement plugs. Volumes to be determined by caliper log.

Plugs 1 & 2(others): PlugCem: 15.8 ppg 1.15 ft³/sx  
Class G, 0.3% Halad 3-22, HR-5

Kick Off Plug: PlugCem B1: 17.5 ppg 0.94 ft³/sx  
Class G, 0.75% CFR-3, Hr-5

Cementing Program						
Casing	Stage	Sx.	Yield	Weight	Type	~TOC
Conductor		78			Redi-Mix concrete	Surface
Surface	Lead	200	1.15	12.3	Class "C" Cement with 2% CaCl and 1/4pps celloflake.	Surface
	Tail	120		13.5		
Intermediate	Lead	52	2.12	12.2 ppg	Econocem System w/0.4% Halad R-344, 0.4% HR-5, 0.125 lb/sk Poly-E-Flake, 3lb/sk Gilsointe.	
	Tail	78	1.28	14.2 ppg	Extendacem System w/ 0.2% Halad R-344, 0.4% HR-5, 0.125 lb/sk Poly-E-flake, 3 lb/sk Gilsonite	
DV Tool						
	Lead	271	2.12	12.2 ppg	Econocem System w/0.4% Halad R-344, 0.4% HR-5, 0.125 lb/sk Poly-E-Flake, 3lb/sk Gilsointe.	
	Tail	50	1.28	14.2 ppg	Extendacem System w/ 0.2% Halad R-344,	800'



					0.4% HR-5, 0.125 lb/sk Poly-E-flake, No Gilsonite	
Production	Single	330	1.55	13.5 ppg	Halcem w/0.3% HR-601, 0.125 lb/sk Poly-E- Flake	3600

Area Fracture Gradient: 0.65 psi 1 foot

#### **Surface Casing**

Full cement returns back to surface will be attempted, calculation for hole size and pipe size are used with a 100% excess volume.

If full returns are not seen or fallback occurs, 1" injection of remedial cement down the backside will be performed and topped to surface.

#### **Intermediate**

Cement volumes to be calculated from caliper log + 20%. DV tool setting depth will be determined once intermediate hole is drilled and loss circulation zones are identified. Volumes of cement will be adjusted to attempt TOC 200' inside of surface casing or +/- 800'. Cement volumes in this drilling plan is for a DV tool setting depth of 3000'.

#### **Production**

Cement volumes to be calculated 20% over gauge of the hole..

Placement of cement on the well will be **attempted** to isolate the casing from all formations. Conductor pipe and surface casing is cemented back to surface.

### **Drilling Equipment:**

#### **Surface Hole (0-1000')**

Drilling of surface hole will be with a surface hole drilling rig if available. Hole size will be 12 1/4". The hole will be drilled LSND mud.

If the surface Hole drilling rig is not available to preset the surface casing a conventional rotary drilling rig will be used to drill the surface hole. A 12 1/4" hole will be drilled utilizing LSND mud.

#### **Intermediate Hole (1000' – 3089')**

Drilling below surface casing will be with conventional rotary equipment utilizing fresh LSND mud. Hole size will be 8 3/4".

#### **Pilot Hole(3089' – 8613') and Horizontal Section (6795'-11948')**

The conventional rig will be used to drill out the intermediate and to TD. A freshwater LSND mud will be used. Hole size will be 6 1/4".

### **6. Mud Program:**

<b>Interval (feet)</b>	<b>Mud Weight (lbs/gal)</b>	<b>Viscosity Sec/qt</b>	<b>Fluid/Loss (ml/30min)</b>	<b>Mud Type</b>
0-1000	8.4-9.0	35-50	10-14	LSND

1000-3809	8.0-9.0	40-50	6-8	LSND
3809-8613	8.0-9.0	45-55	6-8	LSND

### **Drilling Mud**

Mud volumes will be maintained equivalent to two hole volumes for the well. In addition to the regular inventory of mud for normal weight up and management, 400-600 sx of Barite will be available for additional weight up if needed. Normal inventory of LCM is 600-1200 bags of sawdust as well as other materials (walnut shells, celloflake, etc) will be available.

The drilling fluids will be monitored by the rig crew on a constant basis with oversight from a mud engineer.

### **Surface Hole (0-1000')**

Water based drilling fluids consisting primarily of fresh water, bentonite, lignite, caustic, lime, soda ash and polymers. Maximum anticipated mud weight is  $\pm 9.0$  ppg. Mud will be saved when cementing surface casing.

The same mud system will be use if a surface rig is available or with the conventional rig.

### **Intermediate Hole (1000'-3809')**

Hole size will be 8  $\frac{3}{4}$ ".

Drilling below surface casing will be with conventional rotary equipment utilizing freshwater mud. Caustic Soda will be added to the mud to maintain a PH 9.4-10.0 for optimum performance of all products and to promoted good wellbore integrity. Inventories of sawdust, cotton seed hulls, and fiber seal will be maintained on location for potential loss circulation zone. Inventory of barite will be on location to increase mud weight if needed.

### **Pilot Hole(3809' – 8613') and Horizontal Section (6468'-11,948')**

Hole size will be 6  $\frac{1}{4}$ ".

Drilling out below intermediate casing will be with conventional rotary equipment utilizing LSND mud. As needed , additions of lignite to the mud will help disburse the system better and hold the barite in suspension, and control the rheology. Anticipated mud weight is 8.0-9.0 ppg.

Sufficient mud materials to maintain mud properties, control lost circulation and to contain blowout will be available at the wellsite. Material Safety Data sheets will be available.

Mud reports will be kept on location at all times. No chrome constituent additives will be used in the mud system on Federal and Indian lands without prior BLM approval to ensure adequate protection of fresh water aquifers.

## **7. Testing, Logging and Core Programs:**

Cores: None anticipated  
DST's: None anticipated  
Sampling: Mud Logger will capture cutting samples every 30' or as requested by Geologist  
Surveys: Run every connection on build to Landing point.  
Mud logger: Mud logging unit on site and in operation from intermediate casing setting point to TD.  
Logging: Triple Combo, Image and Sonic Log through pilot hole.

#### 8. Anticipated Pressures and Temperatures:

No over pressured formation is anticipated.  
Anticipate BHT of 160 degrees F is expected.  
Anticipated BHP less than normal gradient is expected(3731 psi).  
Proper mud weight will be maintained to drill at a balanced or slightly under-balanced condition.  
Notification will be made if planned drilling practices deviate from this proposal.

#### Conventional Rotary Drilling Rig Auxiliary Equipment

Geolograph  
PVT-Flowmeter  
Desilter  
Desander  
Full Opening Safety Valve  
Upper Kelly Valve  
Lower Kelly Valve  
Separation Equipment

**9 & 10. Drilling Schedule:** Anticipated starting date: October 15, 2012  
Duration of operation: 30 days.

#### **Laramie Energy II Contacts:**

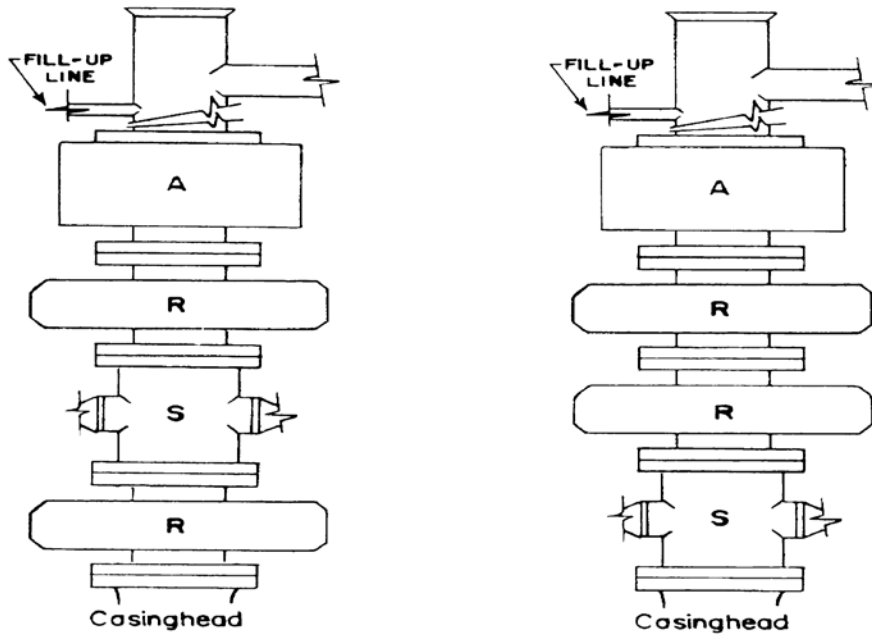
<b>Title</b>	<b>Name</b>	<b>Office No.</b>	<b>Cell No.</b>	<b>Fax No.</b>	<b>E-mail</b>
VP Operations	Bob Hea	303-339-4925	303-842-4982	303-339-4399	rhea@laramie-energy.com
Geologist	Andy McCarthy	303-339-4396	303-929-9890	303-339-4399	amccarthy@laramie-energy.com
Drilling Engineer	Randy Natvig	303-339-4337	303-478-5191	303-339-4399	rnatvig@laramie-energy.com
Reg & Env. Coord.	Wayne Bankert	970-683-5419	970-985-5383	970-683-5594	wbankert@laramie-energy.com



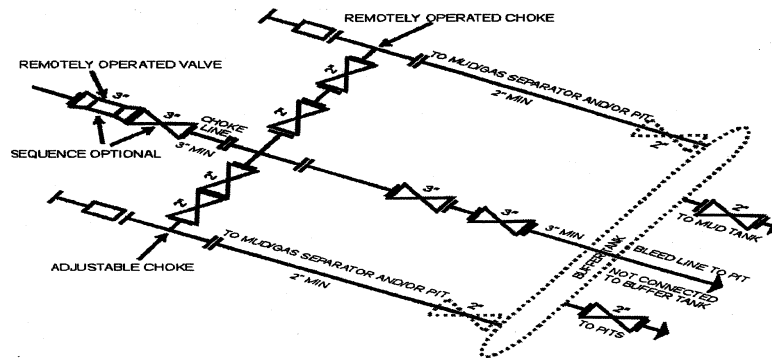


# Laramie Energy II, LLC

## Attachment A to Form 3160-3



**FIGURE K1-2. Recommended IADC Class 3(3000 psi WP) and 5(5000 psi WP) stacks. Either RSRA (left) or SRRA (right) is acceptable and drilling spool is optional is side outlets on rams are utilized.**



### 5M CHOKE MANIFOLD EQUIPMENT - CONFIGURATION OF CHOKES MAY VARY

Although not required for any of the choke manifold systems, buffer tanks are sometimes installed downstream of the choke assemblies for the purpose of manifold the bleed lines together. When buffer tanks are employed, valves shall be installed upstream to isolate a failure or malfunction without interrupting flow control. Though not shown on 2M, 3M, 10M, OR 15M drawings, it would also be applicable to those situations.

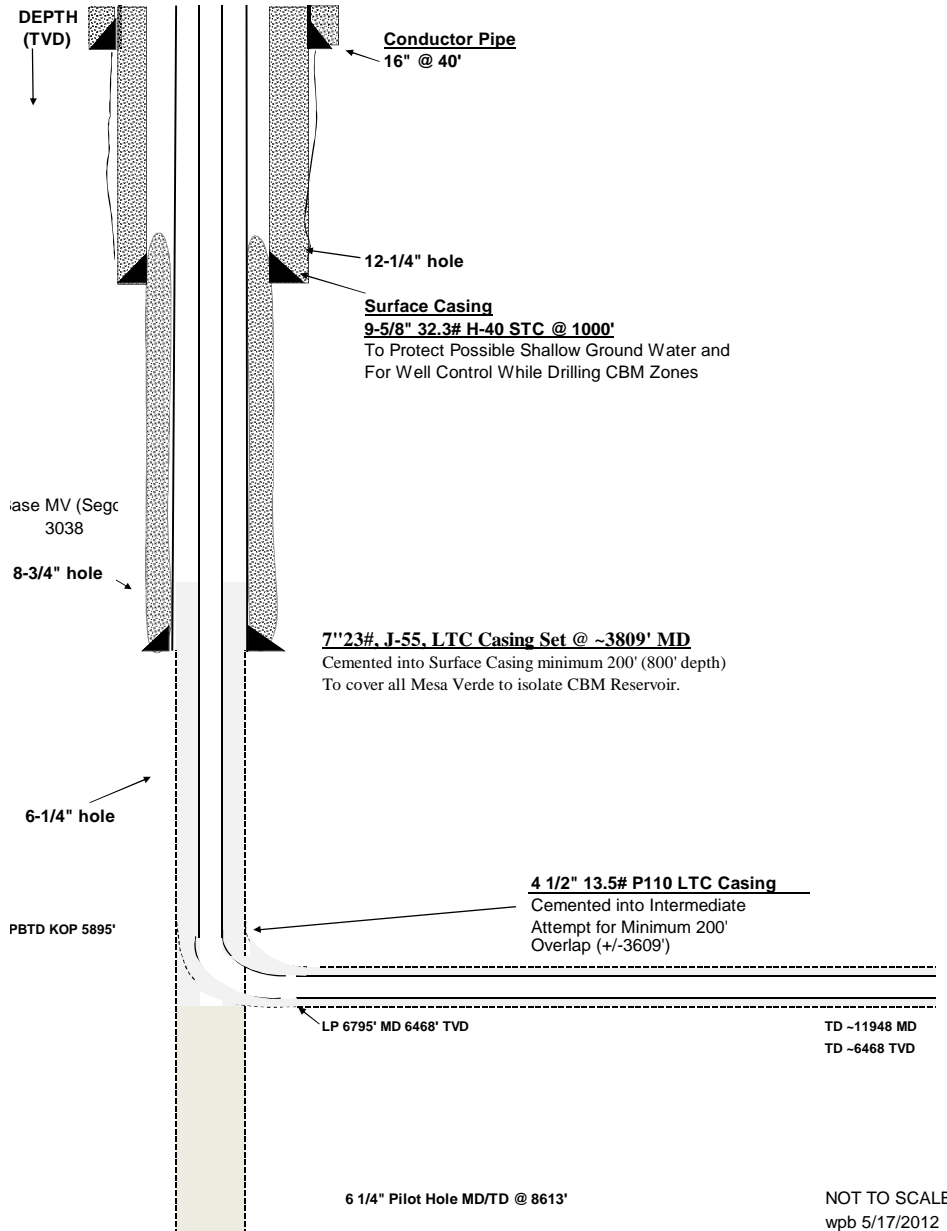
[54 FR 39528, Sept. 27, 1989]

MD/TD 11948'  
TVD: 6468'  
  
Lease No.: COC-063329  
Unit: COC-075753X (Deep)

**Laramie Energy II, LLC**  
**Fletcher Gulch Fed. 22-14-22-01H**

Section 22, T02N, R100W  
Surface Location: 83' FSL & 2180' FEL  
Bottom Hole: 100' FNL & 677' FEL

Rio Blanco County, CO





**Departure**  
Energy Services (US) LP

## **Laramie Energy II, LLC**

Rio Blanco County, CO

Sec 22, T2N-R100W

Fletcher Gulch Federal 22-14-01-01H

Original Pilot Hole and Horizontal Hole

## **Standard Planning Report**

09 May, 2012







# REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Fletcher Gulch Federal 22-14-01-01H, True North  
 Vertical (TVD) Reference: WELL @ 6075.50ft (RKB @ 21')  
 Section (VS) Reference: Slot - (0.00N, 0.00E)  
 Measured Depth Reference: WELL @ 6075.50ft (RKB @ 21')  
 Calculation Method: Minimum Curvature

Project: Rio Blanco County, CO  
 Site: Sec 22, T2N-R100W  
 Well: Fletcher Gulch Federal 22-14-01-01H  
 Wellbore: Original Horizontal Hole  
 Design: Plan #2

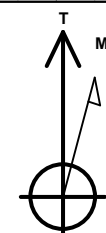
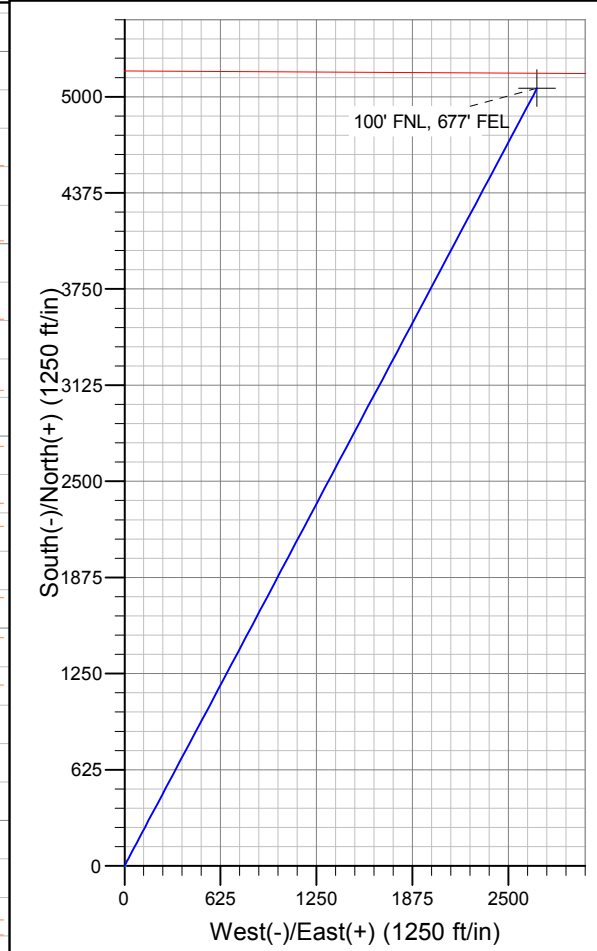
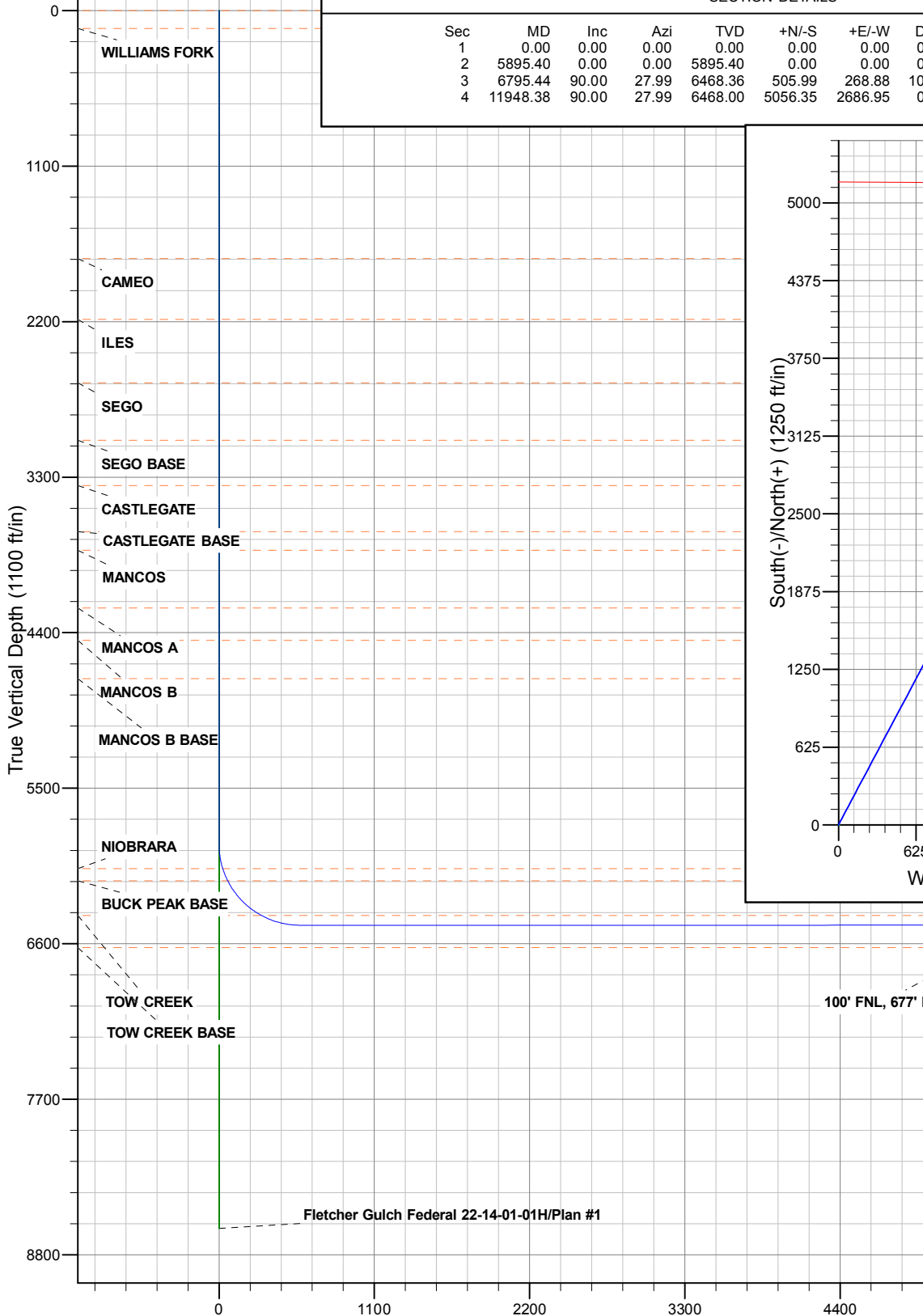


**Departure**  
 Energy Services (US) LP

Phone: 307.265.2231  
 Fax: 307.472.5064  
 www.depatureus.com

# SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	5895.40	0.00	0.00	5895.40	0.00	0.00	0.00	0.00	0.00
3	6795.44	90.00	27.99	6468.36	505.99	268.88	10.00	27.99	573.00
4	11948.38	90.00	27.99	6468.00	5056.35	2686.95	0.00	0.00	5725.94



Azimuths to True North  
 Magnetic North: 10.59°  
 Magnetic Field  
 Strength: 52417.1nT  
 Dip Angle: 66.11°  
 Date: 5/9/2012  
 Model: IGRF2010



**Departure**  
Energy Services (US) LP

## **Laramie Energy II, LLC**

Rio Blanco County, CO

Sec 22, T2N-R100W

Fletcher Gulch Federal 22-14-01-01H

Original Pilot Hole

Plan: Plan #1

## **Standard Planning Report**

09 May, 2012



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Fletcher Gulch Federal 22-14-01-01H
<b>Company:</b>	Laramie Energy II, LLC	<b>TVD Reference:</b>	WELL @ 6075.50ft (RKB @ 21')
<b>Project:</b>	Rio Blanco County, CO	<b>MD Reference:</b>	WELL @ 6075.50ft (RKB @ 21')
<b>Site:</b>	Sec 22, T2N-R100W	<b>North Reference:</b>	True
<b>Well:</b>	Fletcher Gulch Federal 22-14-01-01H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Pilot Hole		
<b>Design:</b>	Plan #1		

<b>Project</b>	Rio Blanco County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site						Sec 22, T2N-R100W											
Site Position:			Northing:			1,302,238.56 ft			Latitude:			40.121280°N					
From:			Lat/Long			Easting:			2,131,603.02 ft			Longitude:			108.605890°W		
Position Uncertainty:			0.00 ft			Slot Radius:			13.200 in			Grid Convergence:			-2.01		

Well	Fletcher Gulch Federal 22-14-01-01H					
Well Position	+N/-S	0.00 ft	Northing:	1,302,238.56 ft	Latitude:	40.121280°N
	+E/-W	0.00 ft	Easting:	2,131,603.02 ft	Longitude:	108.605890°W
Position Uncertainty		0.00 ft	Wellhead Elevation:	6,075.50 ft	Ground Level:	6,054.50 ft

<b>Wellbore</b>	Original Pilot Hole				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	5/9/2012	10.59	66.11	52,417

<b>Design</b>	Plan #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	0.00

<b>Plan Sections</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8,613.00	0.00	0.00	8,613.00	0.00	0.00	0.00	0.00	0.00	0.00	





<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Fletcher Gulch Federal 22-14-01-01H
<b>Company:</b>	Laramie Energy II, LLC	<b>TVD Reference:</b>	WELL @ 6075.50ft (RKB @ 21')
<b>Project:</b>	Rio Blanco County, CO	<b>MD Reference:</b>	WELL @ 6075.50ft (RKB @ 21')
<b>Site:</b>	Sec 22, T2N-R100W	<b>North Reference:</b>	True
<b>Well:</b>	Fletcher Gulch Federal 22-14-01-01H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Pilot Hole		
<b>Design:</b>	Plan #1		

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
<b>GREEN RIVER</b>									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
126.00	0.00	0.00	126.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>WILLIAMS FORK</b>									
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
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Surface Casing</b>									
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,753.00	0.00	0.00	1,753.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>CAMEO</b>									
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,183.00	0.00	0.00	2,183.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>ILES</b>									
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,633.00	0.00	0.00	2,633.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>SEGO</b>									
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,038.00	0.00	0.00	3,038.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>SEGO BASE</b>									
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,359.00	0.00	0.00	3,359.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>CASTLEGATE</b>									
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,685.00	0.00	0.00	3,685.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>CASTLEGATE BASE</b>									

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Fletcher Gulch Federal 22-14-01-01H
<b>Company:</b>	Laramie Energy II, LLC	<b>TVD Reference:</b>	WELL @ 6075.50ft (RKB @ 21')
<b>Project:</b>	Rio Blanco County, CO	<b>MD Reference:</b>	WELL @ 6075.50ft (RKB @ 21')
<b>Site:</b>	Sec 22, T2N-R100W	<b>North Reference:</b>	True
<b>Well:</b>	Fletcher Gulch Federal 22-14-01-01H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Pilot Hole		
<b>Design:</b>	Plan #1		

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)
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,817.00	0.00	0.00	3,817.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>MANCOS</b>									
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,225.00	0.00	0.00	4,225.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>MANCOS A</b>									
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,455.00	0.00	0.00	4,455.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>MANCOS B</b>									
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,724.00	0.00	0.00	4,724.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>MANCOS B BASE</b>									
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,068.00	0.00	0.00	6,068.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>NIORARA</b>									
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,155.00	0.00	0.00	6,155.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>BUCK PEAK</b>									
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,399.00	0.00	0.00	6,399.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>TOW CREEK</b>									
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,627.00	0.00	0.00	6,627.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>TOW CREEK BASE</b>									
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	0.00	0.00
7,236.00	0.00	0.00	7,236.00	0.00	0.00	0.00	0.00	0.00	0.00

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Fletcher Gulch Federal 22-14-01-01H
<b>Company:</b>	Laramie Energy II, LLC	<b>TVD Reference:</b>	WELL @ 6075.50ft (RKB @ 21')
<b>Project:</b>	Rio Blanco County, CO	<b>MD Reference:</b>	WELL @ 6075.50ft (RKB @ 21')
<b>Site:</b>	Sec 22, T2N-R100W	<b>North Reference:</b>	True
<b>Well:</b>	Fletcher Gulch Federal 22-14-01-01H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Pilot Hole		
<b>Design:</b>	Plan #1		

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)
<b>RANGELY BENCH</b>									
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	0.00	0.00
7,352.00	0.00	0.00	7,352.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>RANGELY BENCH BASE</b>									
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	0.00	0.00
7,500.00	0.00	0.00	7,500.00	0.00	0.00	0.00	0.00	0.00	0.00
7,600.00	0.00	0.00	7,600.00	0.00	0.00	0.00	0.00	0.00	0.00
7,612.00	0.00	0.00	7,612.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>CARLILE</b>									
7,700.00	0.00	0.00	7,700.00	0.00	0.00	0.00	0.00	0.00	0.00
7,800.00	0.00	0.00	7,800.00	0.00	0.00	0.00	0.00	0.00	0.00
7,900.00	0.00	0.00	7,900.00	0.00	0.00	0.00	0.00	0.00	0.00
7,931.00	0.00	0.00	7,931.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>FRONTIER</b>									
8,000.00	0.00	0.00	8,000.00	0.00	0.00	0.00	0.00	0.00	0.00
8,028.00	0.00	0.00	8,028.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>MOWRY</b>									
8,100.00	0.00	0.00	8,100.00	0.00	0.00	0.00	0.00	0.00	0.00
8,113.00	0.00	0.00	8,113.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>DAKOTA</b>									
8,200.00	0.00	0.00	8,200.00	0.00	0.00	0.00	0.00	0.00	0.00
8,300.00	0.00	0.00	8,300.00	0.00	0.00	0.00	0.00	0.00	0.00
8,400.00	0.00	0.00	8,400.00	0.00	0.00	0.00	0.00	0.00	0.00
8,500.00	0.00	0.00	8,500.00	0.00	0.00	0.00	0.00	0.00	0.00
8,600.00	0.00	0.00	8,600.00	0.00	0.00	0.00	0.00	0.00	0.00
8,613.00	0.00	0.00	8,613.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>TD at 8613.00</b>									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,000.00	1,000.00	Surface Casing	9.625	12.250	

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Fletcher Gulch Federal 22-14-01-01H
<b>Company:</b>	Laramie Energy II, LLC	<b>TVD Reference:</b>	WELL @ 6075.50ft (RKB @ 21')
<b>Project:</b>	Rio Blanco County, CO	<b>MD Reference:</b>	WELL @ 6075.50ft (RKB @ 21')
<b>Site:</b>	Sec 22, T2N-R100W	<b>North Reference:</b>	True
<b>Well:</b>	Fletcher Gulch Federal 22-14-01-01H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Pilot Hole		
<b>Design:</b>	Plan #1		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
0.00	0.00	GREEN RIVER		0.00		
126.00	126.00	WILLIAMS FORK		0.00		
1,753.00	1,753.00	CAMEO		0.00		
2,183.00	2,183.00	ILES		0.00		
2,633.00	2,633.00	SEGO		0.00		
3,038.00	3,038.00	SEGO BASE		0.00		
3,359.00	3,359.00	CASTLEGATE		0.00		
3,685.00	3,685.00	CASTLEGATE BASE		0.00		
3,817.00	3,817.00	MANCOS		0.00		
4,225.00	4,225.00	MANCOS A		0.00		
4,455.00	4,455.00	MANCOS B		0.00		
4,724.00	4,724.00	MANCOS B BASE		0.00		
6,068.00	6,068.00	NIOBRARA		0.00		
6,155.00	6,155.00	BUCK PEAK		0.00		
6,399.00	6,399.00	TOW CREEK		0.00		
6,627.00	6,627.00	TOW CREEK BASE		0.00		
7,236.00	7,236.00	RANGELY BENCH		0.00		
7,352.00	7,352.00	RANGELY BENCH BASE		0.00		
7,612.00	7,612.00	CARLILE		0.00		
7,931.00	7,931.00	FRONTIER		0.00		
8,028.00	8,028.00	MOWRY		0.00		
8,113.00	8,113.00	DAKOTA		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
8,613.00	8,613.00	0.00	0.00	TD at 8613.00	





**Departure**  
Energy Services (US) LP

## **Laramie Energy II, LLC**

Rio Blanco County, CO

Sec 22, T2N-R100W

Fletcher Gulch Federal 22-14-01-01H

Original Horizontal Hole

Plan: Plan #2

## **Standard Planning Report**

09 May, 2012



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Fletcher Gulch Federal 22-14-01-01H
<b>Company:</b>	Laramie Energy II, LLC	<b>TVD Reference:</b>	WELL @ 6075.50ft (RKB @ 21')
<b>Project:</b>	Rio Blanco County, CO	<b>MD Reference:</b>	WELL @ 6075.50ft (RKB @ 21')
<b>Site:</b>	Sec 22, T2N-R100W	<b>North Reference:</b>	True
<b>Well:</b>	Fletcher Gulch Federal 22-14-01-01H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Horizontal Hole		
<b>Design:</b>	Plan #2		

<b>Project</b>	Rio Blanco County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		Sec 22, T2N-R100W			
Site Position:		Northing:	1,302,238.56 ft	Latitude:	40.121280°N
From:	Lat/Long	Easting:	2,131,603.02 ft	Longitude:	108.605890°W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-2.01

Well	Fletcher Gulch Federal 22-14-01-01H					
Well Position	+N/-S	0.00 ft	Northing:	1,302,238.56 ft	Latitude:	40.121280°N
	+E/-W	0.00 ft	Easting:	2,131,603.02 ft	Longitude:	108.605890°W
Position Uncertainty		0.00 ft	Wellhead Elevation:	6,075.50 ft	Ground Level:	6,054.50 ft

<b>Wellbore</b>	Original Horizontal Hole				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	5/9/2012	10.59	66.11	52,417

<b>Design</b>	Plan #2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	27.99

<b>Plan Sections</b>										
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	
5,895.40	0.00	0.00	5,895.40	0.00	0.00	0.00	0.00	0.00	0.00	
6,795.44	90.00	27.99	6,468.36	505.99	268.88	10.00	10.00	3.11	27.99	
11,948.38	90.00	27.99	6,468.00	5,056.35	2,686.95	0.00	0.00	0.00	0.00	100' FNL, 677' FEL



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Fletcher Gulch Federal 22-14-01-01H
<b>Company:</b>	Laramie Energy II, LLC	<b>TVD Reference:</b>	WELL @ 6075.50ft (RKB @ 21')
<b>Project:</b>	Rio Blanco County, CO	<b>MD Reference:</b>	WELL @ 6075.50ft (RKB @ 21')
<b>Site:</b>	Sec 22, T2N-R100W	<b>North Reference:</b>	True
<b>Well:</b>	Fletcher Gulch Federal 22-14-01-01H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Horizontal Hole		
<b>Design:</b>	Plan #2		

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
<b>GREEN RIVER</b>									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
126.00	0.00	0.00	126.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>WILLIAMS FORK</b>									
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
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Surface Casing</b>									
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,753.00	0.00	0.00	1,753.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>CAMEO</b>									
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,183.00	0.00	0.00	2,183.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>ILES</b>									
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,633.00	0.00	0.00	2,633.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>SEGO</b>									
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,038.00	0.00	0.00	3,038.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>SEGO BASE</b>									
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,359.00	0.00	0.00	3,359.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>CASTLEGATE</b>									
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,685.00	0.00	0.00	3,685.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>CASTLEGATE BASE</b>									



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<b>Project:</b>	Rio Blanco County, CO	<b>MD Reference:</b>	WELL @ 6075.50ft (RKB @ 21')
<b>Site:</b>	Sec 22, T2N-R100W	<b>North Reference:</b>	True
<b>Well:</b>	Fletcher Gulch Federal 22-14-01-01H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Horizontal Hole		
<b>Design:</b>	Plan #2		

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)
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,809.00	0.00	0.00	3,809.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Intermediate Casing</b>									
3,817.00	0.00	0.00	3,817.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>MANCOS</b>									
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,225.00	0.00	0.00	4,225.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>MANCOS A</b>									
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,455.00	0.00	0.00	4,455.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>MANCOS B</b>									
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,724.00	0.00	0.00	4,724.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>MANCOS B BASE</b>									
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,895.40	0.00	0.00	5,895.40	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start DLS 10.00 TFO 27.99</b>									
5,900.00	0.46	27.99	5,900.00	0.02	0.01	0.02	10.00	10.00	0.00
6,000.00	10.46	27.99	5,999.42	8.41	4.47	9.52	10.00	10.00	0.00
6,070.72	17.53	27.99	6,068.00	23.50	12.49	26.62	10.00	10.00	0.00
<b>NIOBRARA</b>									
6,100.00	20.46	27.99	6,095.68	31.92	16.96	36.14	10.00	10.00	0.00
6,164.82	26.94	27.99	6,155.00	54.91	29.18	62.19	10.00	10.00	0.00
<b>BUCK PEAK BASE</b>									
6,200.00	30.46	27.99	6,185.85	69.83	37.11	79.08	10.00	10.00	0.00
6,300.00	40.46	27.99	6,267.20	120.99	64.30	137.02	10.00	10.00	0.00
6,400.00	50.46	27.99	6,337.25	183.86	97.70	208.20	10.00	10.00	0.00
6,500.00	60.46	27.99	6,393.88	256.50	136.31	290.47	10.00	10.00	0.00
6,510.56	61.52	27.99	6,399.00	264.66	140.64	299.70	10.00	10.00	0.00
<b>TOW CREEK</b>									
6,600.00	70.46	27.99	6,435.36	336.73	178.94	381.32	10.00	10.00	0.00
6,700.00	80.46	27.99	6,460.43	422.10	224.30	478.00	10.00	10.00	0.00
6,795.44	90.00	27.99	6,468.36	505.99	268.88	573.00	10.00	10.00	0.00
<b>Start 5152.94 hold at 6795.44 MD</b>									
6,800.00	90.00	27.99	6,468.36	510.02	271.02	577.56	0.00	0.00	0.00



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<b>Company:</b>	Laramie Energy II, LLC	<b>TVD Reference:</b>	WELL @ 6075.50ft (RKB @ 21')
<b>Project:</b>	Rio Blanco County, CO	<b>MD Reference:</b>	WELL @ 6075.50ft (RKB @ 21')
<b>Site:</b>	Sec 22, T2N-R100W	<b>North Reference:</b>	True
<b>Well:</b>	Fletcher Gulch Federal 22-14-01-01H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Horizontal Hole		
<b>Design:</b>	Plan #2		

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)
6,900.00	90.00	27.99	6,468.35	598.32	317.95	677.56	0.00	0.00	0.00
7,000.00	90.00	27.99	6,468.34	686.63	364.88	777.56	0.00	0.00	0.00
7,100.00	90.00	27.99	6,468.34	774.94	411.80	877.56	0.00	0.00	0.00
7,200.00	90.00	27.99	6,468.33	863.24	458.73	977.56	0.00	0.00	0.00
7,300.00	90.00	27.99	6,468.32	951.55	505.65	1,077.56	0.00	0.00	0.00
7,400.00	90.00	27.99	6,468.32	1,039.86	552.58	1,177.56	0.00	0.00	0.00
7,500.00	90.00	27.99	6,468.31	1,128.16	599.51	1,277.56	0.00	0.00	0.00
7,600.00	90.00	27.99	6,468.30	1,216.47	646.43	1,377.56	0.00	0.00	0.00
7,700.00	90.00	27.99	6,468.30	1,304.77	693.36	1,477.56	0.00	0.00	0.00
7,800.00	90.00	27.99	6,468.29	1,393.08	740.28	1,577.56	0.00	0.00	0.00
7,900.00	90.00	27.99	6,468.28	1,481.39	787.21	1,677.56	0.00	0.00	0.00
8,000.00	90.00	27.99	6,468.27	1,569.69	834.13	1,777.56	0.00	0.00	0.00
8,100.00	90.00	27.99	6,468.27	1,658.00	881.06	1,877.56	0.00	0.00	0.00
8,200.00	90.00	27.99	6,468.26	1,746.30	927.99	1,977.56	0.00	0.00	0.00
8,300.00	90.00	27.99	6,468.25	1,834.61	974.91	2,077.56	0.00	0.00	0.00
8,400.00	90.00	27.99	6,468.25	1,922.92	1,021.84	2,177.56	0.00	0.00	0.00
8,500.00	90.00	27.99	6,468.24	2,011.22	1,068.76	2,277.56	0.00	0.00	0.00
8,600.00	90.00	27.99	6,468.23	2,099.53	1,115.69	2,377.56	0.00	0.00	0.00
8,700.00	90.00	27.99	6,468.23	2,187.83	1,162.62	2,477.56	0.00	0.00	0.00
8,800.00	90.00	27.99	6,468.22	2,276.14	1,209.54	2,577.56	0.00	0.00	0.00
8,900.00	90.00	27.99	6,468.21	2,364.45	1,256.47	2,677.56	0.00	0.00	0.00
9,000.00	90.00	27.99	6,468.20	2,452.75	1,303.39	2,777.56	0.00	0.00	0.00
9,100.00	90.00	27.99	6,468.20	2,541.06	1,350.32	2,877.56	0.00	0.00	0.00
9,200.00	90.00	27.99	6,468.19	2,629.36	1,397.25	2,977.56	0.00	0.00	0.00
9,300.00	90.00	27.99	6,468.18	2,717.67	1,444.17	3,077.56	0.00	0.00	0.00
9,400.00	90.00	27.99	6,468.18	2,805.98	1,491.10	3,177.56	0.00	0.00	0.00
9,500.00	90.00	27.99	6,468.17	2,894.28	1,538.02	3,277.56	0.00	0.00	0.00
9,600.00	90.00	27.99	6,468.16	2,982.59	1,584.95	3,377.56	0.00	0.00	0.00
9,700.00	90.00	27.99	6,468.16	3,070.89	1,631.87	3,477.56	0.00	0.00	0.00
9,800.00	90.00	27.99	6,468.15	3,159.20	1,678.80	3,577.56	0.00	0.00	0.00
9,900.00	90.00	27.99	6,468.14	3,247.51	1,725.73	3,677.56	0.00	0.00	0.00
10,000.00	90.00	27.99	6,468.14	3,335.81	1,772.65	3,777.56	0.00	0.00	0.00
10,100.00	90.00	27.99	6,468.13	3,424.12	1,819.58	3,877.56	0.00	0.00	0.00
10,200.00	90.00	27.99	6,468.12	3,512.43	1,866.50	3,977.56	0.00	0.00	0.00
10,300.00	90.00	27.99	6,468.11	3,600.73	1,913.43	4,077.56	0.00	0.00	0.00
10,400.00	90.00	27.99	6,468.11	3,689.04	1,960.36	4,177.56	0.00	0.00	0.00
10,500.00	90.00	27.99	6,468.10	3,777.34	2,007.28	4,277.56	0.00	0.00	0.00
10,600.00	90.00	27.99	6,468.09	3,865.65	2,054.21	4,377.56	0.00	0.00	0.00
10,700.00	90.00	27.99	6,468.09	3,953.96	2,101.13	4,477.56	0.00	0.00	0.00
10,800.00	90.00	27.99	6,468.08	4,042.26	2,148.06	4,577.56	0.00	0.00	0.00
10,900.00	90.00	27.99	6,468.07	4,130.57	2,194.99	4,677.56	0.00	0.00	0.00
11,000.00	90.00	27.99	6,468.07	4,218.87	2,241.91	4,777.56	0.00	0.00	0.00
11,100.00	90.00	27.99	6,468.06	4,307.18	2,288.84	4,877.56	0.00	0.00	0.00
11,200.00	90.00	27.99	6,468.05	4,395.49	2,335.76	4,977.56	0.00	0.00	0.00
11,300.00	90.00	27.99	6,468.05	4,483.79	2,382.69	5,077.56	0.00	0.00	0.00
11,400.00	90.00	27.99	6,468.04	4,572.10	2,429.61	5,177.56	0.00	0.00	0.00
11,500.00	90.00	27.99	6,468.03	4,660.40	2,476.54	5,277.56	0.00	0.00	0.00
11,600.00	90.00	27.99	6,468.02	4,748.71	2,523.47	5,377.56	0.00	0.00	0.00
11,700.00	90.00	27.99	6,468.02	4,837.02	2,570.39	5,477.56	0.00	0.00	0.00
11,800.00	90.00	27.99	6,468.01	4,925.32	2,617.32	5,577.56	0.00	0.00	0.00
11,900.00	90.00	27.99	6,468.00	5,013.63	2,664.24	5,677.56	0.00	0.00	0.00
11,948.38	90.00	27.99	6,468.00	5,056.35	2,686.95	5,725.94	0.00	0.00	0.00
TD at 11948.38									

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Fletcher Gulch Federal 22-14-01-01H
<b>Company:</b>	Laramie Energy II, LLC	<b>TVD Reference:</b>	WELL @ 6075.50ft (RKB @ 21')
<b>Project:</b>	Rio Blanco County, CO	<b>MD Reference:</b>	WELL @ 6075.50ft (RKB @ 21')
<b>Site:</b>	Sec 22, T2N-R100W	<b>North Reference:</b>	True
<b>Well:</b>	Fletcher Gulch Federal 22-14-01-01H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Horizontal Hole		
<b>Design:</b>	Plan #2		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
100' FNL, 677' FEL	0.00	358.00	6,468.00	5,056.35	2,686.95	1,307,197.71	2,134,465.38	40.135160°N	108.596280°W
- plan hits target center									
- Point									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(ft)	(ft)			(in)	(in)
1,000.00	1,000.00	Surface Casing		9.625	12.250
3,809.00	3,809.00	Intermediate Casing		7.000	8.750

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
0.00	0.00	GREEN RIVER		0.00		
126.00	126.00	WILLIAMS FORK		0.00		
1,753.00	1,753.00	CAMEO		0.00		
2,183.00	2,183.00	ILES		0.00		
2,633.00	2,633.00	SEGO		0.00		
3,038.00	3,038.00	SEGO BASE		0.00		
3,359.00	3,359.00	CASTLEGATE		0.00		
3,685.00	3,685.00	CASTLEGATE BASE		0.00		
3,817.00	3,817.00	MANCOS		0.00		
4,225.00	4,225.00	MANCOS A		0.00		
4,455.00	4,455.00	MANCOS B		0.00		
4,724.00	4,724.00	MANCOS B BASE		0.00		
6,070.72	6,068.00	NIOBRARA		0.00		
6,164.82	6,155.00	BUCK PEAK BASE		0.00		
6,510.56	6,399.00	TOW CREEK		0.00		

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
5,895.40	5,895.40	0.00	0.00	Start DLS 10.00 TFO 27.99
6,795.44	6,468.36	505.99	268.88	Start 5152.94 hold at 6795.44 MD
11,948.38	6,468.00	5,056.35	2,686.95	TD at 11948.38

## **LARAMIE ENERGY II, LLc**

### **13- Point Surface Use Plan**

<u>Well</u>	<u>Qtrqtr</u>	<u>Sec.</u>	<u>Twn.</u>	<u>Rng.</u>	<u>PM</u>	<u>Lease</u>	<u>Unit</u>
FG Fed 22-14-22-01H	Lot 12	4	1 N	100 W	6 <sup>th</sup>	COC-63322	COC-75153X

Rio Blanco County, CO

### **References**

On-site with BLM 3/28/2012

CO-110-2010-0043EA

ROD 6-1-2011

And

CO-110-2009-0180-EA

ROD 12-8-2009

## **13 Point Surface Use Plan**

### **LARAMIE ENERGY II, LLC**

#### **Fletcher Gulch Fed. 22-14-22-01H**

Lease No. COC-63329  
Unit: FG (Deep) COC-75153X  
Rio Blanco County, Colorado

#### **Proposal;**

Laramie Energy II, LLC (LEII), is proposing to drill and complete the above referenced exploratory natural gas well to comply with Section 9 (Drilling to Discovery) of the Fletcher Gulch (Deep) Exploratory Unit Agreement which states in part...“Until the discovery of unitized substances capable of being produced in paying quantities, the Unit Operator shall continue drilling one well at a time, allowing not more than 6 months between the completion of one well and the commencement of drilling operations for the next well, until a well capable of producing unitized substances in paying quantities is completed to the satisfaction of the AO...”

#### **1. Existing Roads:**

For Access Roads and proposed Access Road refer to the Vicinity Map.

- A. To access the well location , travel east from Rangely, CO, along State Highway 64 approximately 12.0 miles (west from Meeker approximately 46 miles) to the intersection of the Hammond Draw Road). Travel south on Hammond Draw road approximately 1.8 miles to a fork in the road. Take the right fork and continue on for approximately 1.60 miles to the proposed location entry.

#### **2. Planned Access Roads Common:**

No new access road is planned at this time other than the entry to the location. The existing road will need to be upgraded by Laramie II. Upgrading will be possible curve widening, graveling and drainage work for stormwater management. If any additional work is required on the access, the following (sections B-H) will be implemented.

In addition to the following construction parameters, E-mail correspondence from the WRFO on May 15, 2012 included the following observations. Most of these recommendations are already addressed in the road portion of this surface use plan.

- Keep all current waterbars, they have a good design and should be maintained during the rig move and other operations that result in heavy truck traffic.
- All installed culverts should be at least 18-inches in diameter. No size is given for the culverts on the large drainages on sheet 1. Use large culverts (at least 24-inch) at these tight crossings to reduce fill and to keep these culverts from plugging.
- The BLM preferred travelway for resource and local roads is 14 feet with turnouts. The operator needs to include turn-outs that are intervisible in the design. These turnouts should

be identified in the surface use plan. (Gold Book, pages 25 and 26, Onshore order 1).  
Turnouts must be at most 1,000 feet apart according to the Gold Book.

- If the operator cannot avoid using the road when the road base is saturated, they should plan for gravel or other surfacing for the road section before the rocky section identified on sheet 2 (Gold Book, page 25). I think given the amount of rock and a change in soils, the rest of the road should be ok with spot graveling.
- Plan to add water bars or culverts in road sections as a maintenance action in locations where the borrow ditches are down-cutting to provide cross drainage. There are a few short steep sections that could use additional drainage, although most of the segments are adequate. Therefore, this should be identified but left for a future management action to see how the improvements will perform.

- A. **Summary of New Access Road (Entry)** FG Fed. 22-14-22-01H
- |   |  |
|---|--|
| 1. Approximate length                   | 300 ft   |
| 2. Requested construction width         | 50 ft  |
| 3. Road width                           | 16 ft  |
| 4. Maximum grade                        | 8 %  |
| 5. Crown design                         | Yes  |
| 6. Turnouts                             | None   |
| 7. Drainage and Ditch                   | Yes  |
| 8. On-site and Off-site erosion control | Refer to Attachment No. 1- <b>Site Specific Stormwater Management Plan.</b>  |
| 9. Revegetation of disturbed areas      | Refer to Attachment No. 2- <b>Site Specific Reclamation Plan</b>             |
| 10. Location and size of culverts       | 1-18" CMP Refer to "Pad Layout" and "Stormwater BMP's" Exhibits for location |
| 11. Fence cuts and gates                | None   |
| 12. Major cuts and fills                | None   |
- B. Any new road construction will conform to recommended standards outlined in The Oil and Gas Gold Book-**Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development** (BLM and USFS, 2006).
- C. All new access roads will be designed and constructed by the crown and ditch method with a maximum of 8-10 percent grade. The roads will have a 16 foot travel surface with 4 feet on each side for borrow ditch. The road disturbed width will be determined by the topography but not greater than 50'. Construction will be accomplished to minimize any disturbance yet construct a travel way that is both safe and structurally sound. Entries to the well pad will be 100 feet wide to allow for 40 foot turning radius both left and right entering and exiting the location. Once the entry and road is completed, the disturbed area will be reclaimed back to the 16 feet travel width and 4feet shoulders for borrow and stormwater ditch management. Total long term disturbance will be 24 feet.
- D. LEII's policy is to implement the use of the existing vegetation and topography to minimize the visual and surface disturbance impacts to the environment. Any vegetation that will require removal will be stored and be redistributed over the cut and fill slopes after re-seeding. Some of the vegetation debris will be placed at the toe of the fill slopes to be used for stormwater



management. Any pinyon trees removed during construction will be chipped and used for mulch, or will be cut and removed from the area.

- E. The topsoil will be stripped to minimum depth of 6 inches. Or lacking top soil, the top 6 inches of soil will be stripped and stockpiled separate from other spoils to ensure soil horizons are not blended and the fertility of the topsoil layer is not compromised. Under no circumstances, will the topsoil be used for construction purposes.
- F. Culverts will be installed at drainage crossings and will pass a 25-year or greater storm event. LEII will submit an ACOE 404 permit for any crossings that are determined to be navigable waters. Best Management Practices will be implemented at each drainage crossing and for the entire length of the road where deemed necessary to comply with State of Colorado Stormwater requirements.
- G. LEII a will be responsible for continuous inspection and maintenance of the access road. LEII will conform to a schedule of preventive maintenance, which at a minimum, provides for the following corrective measures on as needed basis. (Problem areas will be corrected as needed.)
  - 1. Road surface grading.
  - 2. Relief ditch, culvert cleaning and cattle guard cleaning and sign maintenance.
  - 3. Erosion control measures for cut and fill slopes and all other disturbed areas.
  - 4. Road and slope stabilization measures as required. The road will be maintained to the standards required for the construction of the road until final abandonment and rehabilitation takes place.
  - 5. Stormwater BMP maintenance.
  - 6. Dust abatement will be applied as needed or if requested by the BLM. Level and type of abatement (watering, application of various dust suppression agents, surfacing) will depend on the conditions. LEII will incorporate sufficient dust abatement to prevent any heavy plumes of dust from construction or road use.
  - 7. Weed Control. Weed monitoring and reclamation measures will be continued on an annual basis, or more frequently, if necessary, throughout the life of the project.
- H. All equipment and vehicles will be confined to the access roads, pads and areas specified in the site specific APD's. The proposed new access and footages are included in Table 1.

### 3. Location of Existing Wells:

The "Well Vicinity Map" illustrates the location of individual well sites in various states of activity within a one-mile radius relative to each location as identified by the Colorado Oil and Gas Conservation (COGCC) website database. As of May 07, 2012, there are 2 abandoned gas wells within one-mile of the proposed FG Fed. 22-14-22-01H.

As of May 07, 2012, the State of Colorado water well database identifies no permitted water wells within a one-mile radius of the proposed well location.

Table 1. Proposed Well Pads, Roads						
Well Pad	Lease	Legal Description T2N, R100W	Surface	Short Term Acres	Long Term Acres	Remarks
FG Fed. 22-14-22-01H	COC-63329	SESW Sec.22	BLM	4.1	1.0	Includes New

							Access
<b>Subtotal</b>				<b>BLM</b>	<b>4.1</b>	<b>1.0</b>	
<b>Well Pad</b>	<b>Gas Line miles ft.</b>		<b>Legal Description T2N, R100W</b>				
FG Fed. 22-14-22-01H	0.06	300	SESW Sec. 22	BLM	0	0	Buried in Access Road Disturbance
<b>Sub-Total</b>	<b>0.06</b>	<b>300</b>			<b>0</b>	<b>0</b>	Part of Road Disturbance
<b>TOTAL</b>				<b>BLM</b>	<b>8.8</b>	<b>2.1</b>	<b>76 % Interim</b>

**4. Location of Existing and/or Proposed Production Facilities and Production Gathering and Service Lines:**

A. Existing Production Facilities and Gathering Lines

As part of its Fletcher Gulch “Shallow” Unit, Genesis has installed production facilities, buried “poly” water and gas gathering lines, and a Compressor Facility in Lot 10, Sec. 3, Twn. 1N Rng. 100 W, 6<sup>th</sup> PM in the area of the proposed well locations. The facility is Operated by Ceritas

B. Production Facilities

1. See “Production Schematic” for the proposed facility layout. All permanent (onsite for six (6) months or longer) structures constructed or installed will be painted a flat, non-reflective, earth tone color to match the standard environmental colors or colors requested by the WRFO. Facilities required to comply with the Occupational Safety and Health Act (OSHA) may be excluded. Production facilities will be placed to allow maximum reshaping of cuts and fills.
2. If a tank battery is constructed, a metal containment ring of sufficient capacity to contain 1 ½ times the storage capacity of the largest tank will surround it. All load lines and valves will be placed inside the metal containment ring surrounding the tank battery. Guards will be installed around the well head(s) for protection of wild life and livestock.
3. All site security guidelines identified in 43 CFR 3162.7 regulations will be adhered to.
4. All off-lease storage, off-lease measurement or commingling on-lease or off-lease will have prior written approval from the Authorized Officer.
5. All product lines entering and leaving hydrocarbon storage tanks will be effectively sealed in accordance with 43 CFR 3164.1 Onshore Oil and Gas Orders No. 3 (Site Security).
6. The oil and gas measurement facilities will be installed on the well locations. The oil and gas meters will be calibrated in place prior to any deliveries. Tests for meter accuracy will be conducted monthly for the first three (3) months on new meter installations and at least quarterly thereafter. The Authorized Officer will be provided with a date and times for the initial meter calibration and all future meter proving schedules. A copy of the meter

calibration report will be submitted to the Field Office. All meter measurement facilities will conform to the API standards for liquid hydrocarbons and the AGA standard for natural gas measurement.

7. To minimize the amount of vehicular traffic to and from the project site, remote telemetry equipment will be installed at each well location.

C. Gathering Lines

As this well is strictly an exploratory well, Laramie II prefers to limit as much new disturbance as possible until the project becomes viable. This includes using existing roads and any existing pipelines already in place but not in service.

Immediately paralleling the access road are two buried gas lines. The lines were installed as part of Genesis Gas and Oil Fletcher Gulch shallow Unit. One line is currently in service and is the sales(or discharge) line from the existing compressor facility in Lot 10 Section 3, Twn 1N, Rng. 100W. The second line is a future “gathering” line that is currently not in service. Laramie II intends to temporarily use this line to move the gas from the well to the compressor facility for treatment and compression.

By tying in to this line, approximately 17,300 feet of pipeline ROW will not be required to test the well. At a 50’ disturbance width this saves approximately 19.8 acres of disturbance.

Once the well proves capable of production LEII will present a proposal for a buried gathering system for the well and future development.

- D. LEII will protect all survey monuments, witness corners, reference monuments and bearing trees in the affected areas against disturbance during construction, operations, maintenance and termination of the facilities authorized herein.

LEII will immediately notify the Authorized Officer (White River Field Office) in the event that any corners, monuments or markers are disturbed or are anticipated to be disturbed. If any monuments, corner or accessories are destroyed, obliterated or damaged during construction, operation or maintenance, LEII will secure the services of a Registered Land Surveyor to restore the disturbed monuments, corner or accessories, at the same location, using surveying procedures found in the Manual of Surveying Instructions for the Survey of public Lands of the United States, latest edition. LEII will ensure the Registered Land Surveyor properly records the survey in compliance with Colorado Revised Statutes 38-53-101 through 38-53-112 (1973) and LEII will send a copy to the Authorized Officer.

- E. During drilling and subsequent operations, all equipment and vehicles will be confined to the access road right- of-way and any additional areas as specified in the approved Application for Permit to Drill.
- F. Topsoil will be stripped to a minimum depth of 6”. Topsoil storage will be no deeper (higher) than the minimum height needed for storage without creating a large feature. If topsoil is less than 6”, then the top 6” of surface material will be stripped and piled as described. The topsoil piles will be seeded within 48 hours of completed pad construction.
- G. The cut and fill slopes will be protected against riling and erosion with measures such as water bars, lateral furrows, or other measures approved by the Authorized Officer. Weed free straw

bales or a fabric silt fence will be used at the toe of the fill slopes with brush/slash incorporated below the fence.

H. LEII or its successors will be responsible for road maintenance for the life of the project.

## **5. Location and Type of Water Supply:**

Water for the well will be trucked or pumped from approved sources. In addition, LE II is working with Genesis to use the water produced from the Fletcher Gulch CBM wells for drilling and completion operations. The remainder of the water needed will be purchased from a private entity from their water well or private individuals with water rights on the Colorado River. The Colorado Division of Water Resources requires the owner to meter the volume pumped and augment all diversions with industrial contracts with the Bureau of Reclamation.

LEII has a Recovery Agreement with the U.S. Fish and Wildlife and is covered by the BLM's Programmatic Biological Opinion for water depletion. A copy of this agreement is part of this submittal.

Estimated water usage for the drilling and completion of one horizontal well is 10.0 acre-ft. Approximately 65% -70 % (6.5 – 7.0 acre-ft.) of the water is recovered during completion operations and is recycled and used in other drilling and completions of other wells operated by LEII.

## **6. Source of Construction Materials:**

No construction materials are needed for drilling operations. Surface and subsoil(native) materials within the proposed construction areas will be used. Gravel for the access roads, facilities site and well pad will be obtained from private sources at the time of construction. The surface disturbance for the new access roads, facilities, and well pads are on Bureau of Land Management Lands (BLM).

## **7. Methods of Handling Waste Disposal:**

- A. All unattended pits, will be fenced (stock tight) while drilling with three (3) sides fenced. Once drilling is completed the fourth side of the pit will be fenced. When it has been determined to backfill the cuttings pit, the pit will be reclaimed.
- B. LEII proposes to use a de-watering system in its drilling operations. The system uses a series of centrifuges to remove the cuttings from the drilling fluid and returns the fluid to tanks while the cuttings (~250 cubic yards per well) are disposed of in a cuttings pit on location. By using this method eliminates the need for a separate reserve pit. The system has proved successful in drilling operations within the Piceance Basin. The cuttings pits will be constructed to the size anticipated for the depth of the well to be drilled each. If time allows, the pit will be reclaimed prior to the end of the drilling season to eliminate any wildlife concerns.
- C. Produced waste water and drilling fluids including salts and chemicals will be contained in tanks and will be trucked to a State Approve disposal facility (RNI disposal in Rangely) after completion of the well. After completion of all drilling and completion operations, the cuttings pit will be reclaimed.
- D. Produced Water Management  
General:

Completion Phase: All “frac” flowback water will be contained in temporary tanks during completion operations and re-cycled and re-used or trucked offsite to approved commercial disposal facilities.

Production Phase: Permanent 400 bbl steel tanks, will be installed on the well pad to store produced water and condensate. These tanks will be onsite for the life of the wells. Produced water contained in the storage tanks will be trucked to offsite disposal facilities.

The Anticipated Disposal Site for the project is:

RNI (Dalbo) Evaporation Facility – Rangely, CO

Condensate will be measured and sold in compliance with Onshore Oil and Gas Order No. 4 (Measurement of Oil) and Oil and Gas Order No.3(Site Security).

- E. All drilling fluids and chemicals will be contained in tanks through the de-watering system.
- F. Sewage: Chemical toilets or an enclosed sewer system will be used. Contents will be disposed of at an approved disposal facility. No bore holes will be used for disposal of waste materials. Human waste will be contained and will be disposed of at an approved sanitary landfill.
- G. Garbage and other waste materials: Garbage will be managed to avoid conflict with wildlife, including black bears. All garbage and trash will be stored in a totally enclosed trash container and removed and deposited in an approved sanitary landfill within one week following termination of drilling operations. No garbage or trash will be disposed of in the cuttings pit. The wellsite and access road will be kept free of trash and debris at all times.
- H. LEII will comply with those standards set forth by CERCLA and RICRA for the disposal of hazardous waste materials from oil and gas development. Also, hazardous substances specifically listed by the EPA as a hazardous waste or demonstrating a characteristic of a hazardous waste will not be used in drilling, testing, or completion operations.

## **8. Ancillary Facilities:**

There are no ancillary facilities planned beyond the standard drilling operations equipment at this time.

Standard Drilling Operation Equipment on location includes: Drilling rig with associated equipment; living facilities for company representative, tool pusher, mud logger, toilet facilities; and trash container(s).

## **9. Wellsite Layout:**

The surface location was surveyed and oriented to accommodate the topography of the project area as well as to minimize the surface disturbance.

The following applies:

- A. The working surface of the well pad will be about 275 feet by 425 feet (2.79 acres including the access). The total disturbed area for the pad and new access is estimated to be 4.1 acres and includes cut and fill slopes, soil stockpile, and surface water diversions/BMPs.



- B. The topsoil will be stripped to minimum depth of 6 inches. Or lacking top soil, the top 6" of soil will be stripped and stockpiled separate from other spoils to ensure soil horizons are not blended and the fertility of the topsoil layer is not compromised. Under no circumstances, will the topsoil be used for construction purposes.
- C. Fill slopes will be armored with excavated rock and/or slash vegetation as well as having silt containment installed to reduce the velocity of rain drops and subsequent erosion along the toe of the well pad fill slope. Also, if needed, aspen matting will be lain down to allow for erosion mitigation as well as enhancing reestablishment of vegetation.
- E. Prior to commencement of drilling operations, the cuttings pit will be fenced on three (3) sides using three strands of barbed wire according to the following minimum standards:
  - 1. Corner posts shall be cemented and/or braced in such a manner to keep the fence tight at all times.
  - 2. Standard steel, wood, or pipe posts shall be used between the corner braces. The maximum distance between any two (2) posts shall be no greater than sixteen (16) feet.
  - 3. All wire shall be stretched using a stretching device before it is attached to the corner posts.
  - 4. The fourth side of the cuttings pit will be fenced immediately upon removal of the drilling rig and the fencing will be maintained until the pit is backfilled.
- F. Cut slopes, associated with pad construction, will be left rough to provide a seed catchment surface, and may require 'step cutting' if heights exceed 15 feet.

## **Well Site Specifics**

### **1. FG Federal 22-14 Pad**

Surface vegetation on the FG Fed. 22-14 pad is predominantly sagebrush intermingled with juniper trees and mixed mountain shrubs. The Natural Resource Conservation Service identifies the soil properties at the pad location and surrounding area as "Yamac Loam" (NRCS Map Unit 104).

Access to the location will require 300' of new construction. The road will have a graveled 16' travel width stormwater ditches on each side to manage run-off.

Initial disturbance area of the pad will be 4.1 acres with an interim reclamation area of 1.0 acres once the well is drilled and completed. See attached "Production Schematic"

Stormwater BMP's will include but is not limited to stormwater control ditch around the pad as well as along the new access to manage sediment and stormwater run-off.

- 1. Pad length.....425 ft.
- 2. Pad width..... 275 ft.
- 3. Cuttings pit depth.....10 ft.
- 4. Maximum cut.....10.8 ft. (NW corner)
- 5. Maximum fill.....8.8 ft. (SE corner)
- 6. Location of excess material\*..... 2530 yd<sup>3</sup> Windrow NW Edge of Pad)
- 7. Location of topsoil material\*\*.....Windrow NE and SE Edge of Pad
- 8. Access Road location.....NE edge of pad (East of CL)
- 9. Pad and stockpile disturbance.....3.80 acres
- 10. Total disturbance (pad, access road, and material stockpile).....4.1 acres

11. Total material stockpiles.....	0.60 acres
12. Access road disturbance.....	0.30 acre
13. Estimated dirtwork quantities	
Total cut material.....	11,730 yd <sup>3</sup>
Total fill material.....	8,870 yd <sup>3</sup>
Topsoil.....	2,550 yd <sup>3</sup>
Cuttings Trench.....	2,220 yd <sup>3</sup>
Total Excess Material = Cut-TS-Fill+Trench=	2530 yd <sup>3</sup>

- \* Excess material may change based on amount of topsoil removed. Spoils will be separated and stockpiled independent of topsoil.
- \*\* Volume of topsoil may change do to depth of removal.

## 10. Plans for Restoration of the Surface:

See Attachment II for Interim and Final Reclamation of the site.

## 11. Surface and Mineral Ownership:

The new location entry and surface location is entirely on Bureau of Land Management lands managed by the White River Field Office of the BLM. The mineral estate is also entirely Federal including lease COC-63329.

The existing access road from Highway 64 is entirely on BLM lands managed by the WRFO.

## 12. Other Information:

- A. Once the well is drilled and completed LEII's will prepare a Spill Prevention Control and Countermeasures (SPCC) plan for the site. Normally, these plans are not completed until the production facilities are in place and producing.
- B. Attached to this proposal is LEII's standard wildlife BMP's for Sensitive Wildlife Areas (SWA's).
- C. LEII has incorporated the Glenwood Springs Energy Office (CRVFO) March 2007 "Noxious and Invasive Weed Management Plan for Oil and Gas Operators" (attached) into all LEII operations on Federal and Fee lands.
- D. LEII is responsible for informing all persons in the area who are associated with this project that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts or fossils. LEII will immediately bring to the attention of the Authorized Officer (BLM White River Field Office) any and all antiquities or other objects of historic or scientific interest including, but not limited to, historic or prehistoric ruins, artifacts, or fossils discovered as a result of operations under this permit. LEII will immediately suspend all activities in the area of the object and will leave such discoveries intact until told to proceed by the Authorized Officer. Notice to proceed will be based upon evaluation of the cultural significance of the object.
- E. LEII implements Best Management Practices (BMP's) to minimize or eliminate the nature and degree of specific impacts which may occur from oil and gas exploration and development. These could include but are not limited to:

1. Erosion Control- seeding, mulching, fertilizing, and netting.
  2. Slope Stabilization - buttresses, retaining structures, rip-rap, etc.
  3. Velocity Control - slope drains, spreaders, energy dissipaters, check dams, drop structures, and diversion berms.
  4. Sediment Control - straw bales, filter fence, inlet protection, siltation berms, traps, and basins.
  5. Sediment Basins - will be maintained on a regular basis.
- F. Sediment will be trapped before it reaches lakes, wetlands/riparian areas, intermittent drainage channels, and streams.
- G. Army Corp. of Engineer 404 permits will be submitted for any drainages determined to be navigable waters.
- H. Miscellaneous Information.
1. There will be no deviation from the proposed drilling and/or workover program without prior approval from the Authorized Officer. Safe drilling and operating practices will be observed.
  2. Sundry Notice and Report on Wells (Form 3160-5) will be filed for approval for all changes or plans and other operations in accordance with 43 CFR 3164.
  3. The dirt contractor will be provided with an approved copy of the surface use plan.

### 13. Lessee's or Operator's Representative and Certification:

Operator Representative: Wayne P. Bankert (Senior Reg. and Env. Coordinator)  
Laramie Energy II, LLc  
601 28 ¼ Rd Suite D  
Grand Junction, CO 81506  
O: 970-812-5310  
M: 970-985-5383  
[wbankert@laramie-energy.com](mailto:wbankert@laramie-energy.com)

Operator: Laramie Energy II, LLc  
1512 Larimer Street, Suite 1000  
Denver, CO 80202  
O: 303-339-4400

All lease and/or unit operations will be conducted in such a manner that full compliance is made with all applicable laws, regulations and Onshore Oil and Gas Orders. The operator is fully responsible for the actions of its subcontractors. A copy of these conditions will be furnished to the field representative to ensure compliance.







#### Representative Certification:

I hereby certify that I, or persons under my direct supervision, inspected the proposed drill sites and access routes that fall within the constraints of this document; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge and belief, true and correct; and that the work associated with the operations proposed herein will be performed by LEII, LLC and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

By: \_\_\_\_\_  
Wayne P. Bankert  
Senior Regulatory and Environmental Coordinator

Date: \_\_\_\_\_

## LOCATION PHOTOS

<b>Fletcher Gulch Federal 22-14 Pad</b> <b>SE1/4 SW1/4 Sec 22 T2N R100W</b> <b>Lat: 40.12128 Long: -108.60589</b>	<b>LARAMIE ENERGY II LLC</b> <b>Rio Blanco County, CO</b> <b>Date of Pictures: 11/3/2011</b>
	
<b>PAD NORTH</b>	<b>PAD EAST</b>
	
<b>PAD SOUTH</b>	<b>PAD WEST</b>
	
<b>ACCESS</b>	<b>ACCESS</b>



**GEOSURV Inc.** 520 Stacy CT Suite B Lafayette CO 80026 ph 303 666 0379 fx 303 665 6320

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