IDAHO DEPARTMENT OF LANDS DIRECTOR'S OFFICE 300 N. 6th Street Suite 103 PO Box 83720 Boise, ID 83720-0050 Phone (208) 334-0200 Fax (208) 334-5342



MICK THOMAS, DIVISION ADMINISTRATOR SECRETARY TO THE COMMISSION IDAHO OIL AND GAS CONSERVATION COMMISSION Betty Coppersmith, Chairman Marc Shigeta, Vice Chairman Jim Classen Ray Hinchcliff Dustin Miller

September 13, 2021

Nathan Caldwell Snake River Oil and Gas, LLC 117 East Calhoun Street Magnolia, Arkansas 83661

SENT VIA EMAIL caldwell.nathan@weiser-brown.com

Subject: Barlow 2-14 Application for Permit to Drill Amendments, USWN 11-075-20036

Dear Mr. Caldwell,

Per the requirements of IDAPA 20.07.02.030.01 an operator is required to notify the department of any changes to operation plans previously approved by Idaho Department of Lands. On September 2, 2021 the department received your written request to amend the Application for Permit to Drill for the Barlow #2-14, permitted as USWN 11-075-20036 on June 16, 2021.

The department has reviewed and approved the requested amendments to the application and permit.

If you have any questions, please don't hesitate to contact me at 208-334-0298 or <u>mthomas@idl.idaho.gov</u>.

Sincerely,

Mick Thomas Division Administrator Minerals, Public Trust, Oil & Gas <u>mthomas@idl.idaho.gov</u>

ecc: Michael Christian, James Thum, Clint Harman



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Types of Tools to be Used

BHA #1 Directional Drilling Assembly
12-1/4" Smith FDS bit or equivalent, with 6 ³ / ₄ "directional motor assembly
1-8" float sub
8" Spiral integral blade stabilizer
8" mule shoe sub
8" non-mag drill collar (MWD)
8" non-mag drill collar
X/O (if needed)
15 – 4 1/2" Heavy weight drill pipe
Drilling jar assembly
5 - 4 1/2" Heavy weight drill pipe
4 1/2" 15.5 #/ft XH Drill pipe

Page 7 | 26

Well Construction

Casing Program

Well	Bit Size /	Casing Size, Grade and	Casing Setting	Top of	Cement Type and Volume
Interval	Holes Size	Weight	Depth (MD)	Cement	
Conductor	20"	16" / H-40 / 62.58#/ft	120'	Surface	200 sks Class A or C
Surface	12 1/4"	9 5/8" / J-55 / 36#/ft	1,125	Surface	Lead: 247 sks Type III - RC
					Econolite Plus
					Tail: 80 sks Type III - RC
					Surface
Production	8 ¹ / ₂ "	5 ½" / J-55 / 15.5#/ft	4,463	Surface	Lead: 394 sks Class G - RC
					Gas Bond
					Tail: 400 sks Class G - RC
					Gas Bond

Surface Casing Detail

Surface Cushig Detail
9 5/8" float shoe
1 full length joint 9 5/8" 36# J-55 LTC for shoe track - centralized
9 5/8" float collar
9 5/8" 36# J-55 LTC Casing jts to surface
Cement basket for 9 5/8" casing approx. 80' below surface.
Centralization – Install 1 cent /jt

Production Casing Detail

 $5\frac{1}{2}$ " float shoe

2 full length jts 5 ¹/₂" 15.5# J-55 LTC for shoe track – centralized

5 $\frac{1}{2}$ " float collar

5 ½ 15.5# J-55 LTC csg with 1 centralizer / joint to surface (turbolizers and scratchers placement TBD).

IDL Permit Supplement Revision 1 Barlow 2-14

Snake River Oil and Gas Well Name: Barlow 2-14 Location: Section 14 T8N R5W County: Payette Field: Wildcat Rig: Paul Graham Drilling Co. 4 PROPOSED WELLBORE DIAGRAM



Wall Name: Barlow 2.14	Field: Wildoot
Weil Name. Ballow 2-14	Field: Wildcat
County: Payette	State: Idaho
Total Depth (MD)4463'	TVD 3776'

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MICK THOMAS, DIVISION ADMINISTRATOR SECRETARY TO THE COMMISSION IDAHO OIL AND GAS CONSERVATION COMMISSION Betty Coppersmith, Chairman Marc Shigeta, Vice Chairman Jim Classen Ray Hinchcliff Dustin Miller

June 16, 2021

via e-mail: caldwell.nathan@weiser-brown.com

Nathan Caldwell Snake River Oil and Gas/NWGP Weiser Brown Operating 117 E. Calhoun St. (Box 500) Magnolia, Arkansas 71753

SUBJECT: Permit to Drill #11-075-20036, Barlow #2-14, Payette Co., ID

The Idaho Department of Lands (IDL) has completed our review of this permit to drill for oil and gas. Enclosed is a copy of the approved permit. This permit was approved with the following stipulations:

- The conductor pipe shall be cemented to the surface as required by IDAPA 20.07.02.310.04. Permittee shall use ready mix cement unless water is encountered, in which case an appropriate slurry mix will be used.
- 2. During drilling and logging of the hole for the production casing, the permittee shall identify any water bearing zones and isolate those zones in the annular space during cementing or completion activities.
- 3. The permittee shall be required to submit an affidavit covering the initial BOP pressure test after installation signed by the operator or contractor attesting to the satisfactory pressure test.
- 4. The permittee shall ensure tanks are adequately sized, designed and constructed for the reception and confinement of mud and cuttings and to prevent contamination of streams and potable water.
- 5. Drilled holes cannot be used for any other purposes unless they are constructed according to the applicable well construction standards administered by the Idaho Department of Water Resources.
- 6. Applicant will obtain any needed water rights from Idaho Department of Water Resources if nearby wells will be used to supply water for the drilling operations.
- 7. This permit allows for an additional one hundred fifty (150) feet of drill hole below the permitted depth of the well for purposes of logging and casing, but no well completion nor production will be allowed to occur below the permitted depth without authorization from the Department.

Nathan Caldwell June 16, 2021 Page 2

- 8. All well information required by Idaho Code § 47-324(4), IDAPA 20.07.02.340 and 341 will be submitted to IDL within 30 days of the logs being run.
- 9. Well Log information shall be submitted in paper and electronic formats as required by IDAPA 20.07.07.340.05. Paper copies shall be submitted on a minimum of 24 lb. Premium Pre Fold Bond Paper. All log copies shall be the final processed logs as provided by the service company. No field / preliminary copies shall be accepted.
- 10. Idaho Department of Lands inspectors shall have 24 hour, unencumbered access for compliance and regulatory purposes.
- 11. All cementing operations shall be in accordance with IDAPA 20.07.02.310. Cement will be returned to surface on the surface casing via the pump and plug method or other method as approved by the Department.
- 12. This permit does not grant the right for surface ingress or egress nor does this application grant the right to production from unleased lands.
- 13. If the proposed target Sand "B" described in the Geologic Prognosis of the submitted APD are hydrocarbon-bearing, no production may occur without a final processed angular deviation and directional survey being submitted to the Department.
- 14. If potential hydrocarbon-bearing zones are encountered other than the proposed target Sand "B" described in the Geologic Prognosis of the submitted APD, no production may occur from those zones without authorization from the Department. Any production that occurs in the target sand is subject to the limitations set forth in the Integration and Spacing Order for Docket CC-2016-OGR-01-001, dated August 5, 2016.

Please ensure that all operations are conducted in accordance with the requirements of IDAPA 20.07.02 (Rules Governing Conservation of Oil and Natural Gas in the State of Idaho).

This permit will be administered by IDL staff and possibly a contractor hired by IDL. We will be inspecting the drilling operation. Please contact me at 208-334-0298 if you have any questions.

Sincerely.

how

Mick Thomas Division Administrator, Oil & Gas

Nathan Caldwell June 16, 2021 Page 3

ecc: Patti Nitz, Payette County, 1130 3rd Ave. N., Payette, ID 83661 Chad Hersley, IDWR, PO Box 83720, Boise, Idaho 83720-0098



IDAHO OIL AND GAS CONSERVATION COMMISSION

Application For Permit to Drill, Deepen, or Plug Back

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APPLICATION TO: 🔲 Drill (\$2,000)	Deepen (\$	500) 🔲 Plug Back (\$5	00)
NAME OF OPERATOR: Snake Rive	er Oil and Gas	, LLC	Date: April 10, 2020
Address: P.O. Box 500			
_{City:} Magnolia	State: AR	Zip Code: 71754	Telephone: 870-234-3080
Contact Name: Dave Smith		Email Address Dav	esmith1776@Outlook.com
Emergency Contact Name/Phone: Na	than Caldwell	/ 870-904-7305	
	DESCRIPTIO	N OF WELL AND LEAS)E
Name of Lease: Barlow		Well Number: 2-14	Elevation (ground): 2164.4
Well Location: Section: 14 Townsh	nip: 8N Ran	ge: 5W (or block an	d survey)
(Give footage from Section line	es): 1612' from	S line / 2453' from \	W line
Latitude/Longitude (Dec Degre	es NAD83 minim	num requirement):	1
Datum: WGS84 NAD83		Other: N44° 01'47.59	87" / W116° 54'14.9551"
Field and Reservoir (if wildcat, so state): Wildcat	-	County: Pavette
Distance, in miles, and direction from n	earest town or po	ost office: 1.61 miles f	from Fruitland Post Office
Nearest distance from proposed location	on to property or I	ease line: 1612 fee	t Nearest producing well: 20 feet
Type of Test/Unit: Gas / 640 acre un	it Gas / 160 a	acre unit Oil / 40 acre	e unit Other/Docket No
Is Operator requesting a well location e	xception?	⊡No Confidentia	Well Status Request?
Distance from proposed location to nea	rest drilling, com	pleted or applied for on	the same lease: 20
Proposed depth: <u>4463'</u> Approx.	date work will sta	rt: 9-1-2020 Number	of acres in lease(s): 640
Number of wells on lease, including this	well, completed	in or drilling to this rese	rvoir: 1
If lease purchased with one or more we	lls drilled, comple	ete the following informa	ition:
Purchased from (Name): <u>AM I</u>	daho		
Address of above: 15021 Kat	ty Freeway, Sι	uite 400, Houston T)	K 77094
Bond Type <u>and</u> Number: Idah	OGCC Bond	# ROG 000 1695	
Surface Rights Owner (At proposed surfa	ce location): Name	e Brad, Angela Barlow	Phone: 208-452-3630
Does the drilling unit contain state lease	es? ¹ If yes, check	c all that apply:	
	IDT Dut	olic Trust 🔳 Other	State Water Bottoms
Does this application include the foll	owing actions?	If yes, check all that a	pply:
Well Treatment	Pit constru	uction Direction	nal or Horizontal Drilling
Applications that include well treatments, pit	construction, and o	directional drilling must pro	vide attachments with the information required
from the respective sections of IDAPA 20.07	.02 and Idaho Cod	le § 47-3. If these activities	s are not included in this application, then a
separate application and approval will be rec	quired prior to com	mencement of any of these	e activities.
Remarks: (If this is an application to dee	epen or plug back	, briefly describe work to	o be done, giving present producing zone



IDAHO OIL AND GAS CONSERVATION COMMISSION

Application For Permit to Drill, Deepen, or Plug Back



Applicant(s) should be familiar with and adhere to IDAPA 20.07.02, Rules Governing Conservation of Oil and Natural Gas in the State of Idaho, and Idaho Code § 47-3, Oil and Gas Wells--Geologic Information and Prevention of Waste.

Please check the boxes below to indicate that you have supplied the required information.

Maps Required

- Attach a survey plat or map, preferably on a scale of one (1) inch equals one thousand (1,000) feet, prepared by a licensed surveyor or engineer.
- The plat must show:
 - Distance of the proposed surface location to the nearest occupied structure and the nearest highway.
 - The proposed well location. For directional wells, both surface and bottom hole locations should be marked.
 The location of the well with reference to the nearest lines of an established public survey.
 - All leased tracts held by the applicant within the drilling unit. Distances of the proposed well from the two nearest unit boundary lines, if applicable, and from the nearest oil or gas wells on the same unit. completed in or being drilled to the same reservoir. If the well location requested is not in conformance with the applicable well-spacing rules, show all off-setting wells to the proposed well, and the names and addresses of all adjoining lease or property owners.
 - The location of the nearest structure with a water supply, or the nearest water well as shown on the IDWR registry of water rights or well log database. The location of the nearest canal, ditch, or ordinary high-water mark of surface waters (§47-319(1)).

Other Required Information

- Estimated depth to the top of the important geologic markers.
- Estimated depth to the top of the target formations.
- Information on the type of tools to be used.
- Proposed logging program.
- Proposed casing program, including size and weight of casing and the depth at which each casing type is to be set.
- Type and amount of cement to be used, and the intervals cemented.
- Information on the drilling plan (drill pad and rig set up, etc).
- Schematic diagram of the BOP and well head assemblies, including the minimum size and pressure rating of all components of the BOP and well head assemblies.
- Best management practices to be used for erosion and sediment control.
- Plan for interim reclamation of the drill site after the well is completed, and a plan for final reclamation of the drill site following plugging and abandonment of the well. These plans must contain the information needed to implement reclamation as described in IDAPA 20.07.02 subsection 310.16 and section 510.

CERTIFICATION: I, <u>Chris Weiser</u>, the undersigned, state that I am the <u>Managing Member of</u> <u>Snake River Oil and Gas, LLC (company)</u> and that I am authorized by said company to make this application, and that this application was prepared under my supervision and direction, and that the facts stated herein are true, and complete to the bbest of my knowledge. Date June 26, 2020 Signature:

NOTICE: Before submitting this form, be sure that you have given all information requested.

IDL Office Use Only:	Mr. h. At	4/1/1
Approval Date: <u>6/17/2(</u>	_ Approved by:	Ma ministrator
US Well Number: 11-075-200	036 Operator Number (if known):	

IDLOGD001.01 (06/17)



IDAHO OIL AND GAS CONSERVATION COMMISSION Application For Permit to Drill, Deepen, or Plug Back



ADDITIONAL INFORMATION

State Land Ownership Explanation¹

IDL	Idaho Department of Lands
IDFG	Idaho Department of Fish and Game
IDT	Idaho Department of Transportation
Public Trust	State owned beds and banks of navigable rivers and lakes
Other	Other state agencies not named above. Includes, but is not limited to; Idaho Department of Parks and Recreation, Idaho Military Division, etc.

Fees: IDAPA 20.07.02.200.02

An application fee must accompany each application for permit to drill, deepen, or plug back. No service fee is required for a permit to deepen or plug back in a well for which the fee has been paid for permit to drill unless the drilling permit has expired.

Permit Denial: IDAPA 20.07.02.200.05

Applications may be denied for the following reasons:

- a. Application fee was not submitted.
- b. Application is incomplete.
- c. Failure to post required bonds.
- d. Proposed well will result in a waste of oil or gas, a violation of correlative rights, or the pollution of fresh water supplies.

Well Completion/Recompletion Report: IDAPA 20.07.02.340

Within thirty (30) days after the completion of a well drilled for oil or gas, or the recompletion of a well into a different source of supply, or where the producing interval is changed, a completion report shall be filed with the Department, on a form prescribed by the department.

Log Submittals: IDAPA 20.07.02.341

All wells shall have:

- 1. A lithologic log from the bottom of the hole to the top, to the extent practicable.
- 2. A bottomhole location survey log.
- 3. A cement bond log.
- 4. If other logs were run, including, but not limited to, resistivity, gamma-neutron log, sonic log, etc., then the owner or operator shall retain a copy regardless of results.
- 5. All logs shall be submitted to the Department in paper and digital formats within thirty (30) days of the log being run. If logs were run in color, then the submitted copies shall also be in color. Digital formats must be Tiff and LAS 2.0 or higher. Logs submitted to the department must have a scale of one (1) inch for correlation logs and five (5) inches for detail logs.

Please submit Application to Drill, Deepen, or Plug Back to:

Idaho Department of Lands Oil and Gas Division 300 N. 6th Street, Suite 103 PO Box 83720 Boise, Idaho 83702-0050

Snake River Oil & Gas, LLC

IDL Permit Supplement Barlow 2-14 Payette County, ID April 10, 2020

Table of Contents

Surveyors Well Plat and Aerial Photo Well Plat	3
Geologic Prognosis	6
Site Preparation	8
Well Construction	9
Cementing Program	10
Rig Location Plat	11
Blowout Preventer (BOP) Schematic	13
Drilling Plan	14
Logging Plan	19
Wellhead	
Wellbore Schematic	
Reclamation	

Surveyors Well Plat and Aerial Photo Well Plat

All tracts (100 %) within the unit are leased. The Barlow 2-14 well is proposed to be drilled from the existing Barlow 1-14 drilling pad to minimize surface disturbance in the community. The Barlow 2-14 surface location is 20' northwest of the Barlow 1-14. The Barlow 2-14 is a Sand "B" test, the Barlow 1-14 is completed in Sand "D", a separate source of supply.

See Surveyors Well Plat on Page 4 and Aerial Photo on Page 5.



Payette County, ID April 10, 2020



Geologic Prognosis

Prospect:

The Barlow 2-14 well is designed to test Sand "B". It is estimated that the target Sand "B" will be encountered at +/- 3894' Measured Depth in the Proposed Well. The nearby Barlow #1-14 well is an existing well which produces from a separate source of supply in Sand "D".

Proposed Well

The well is to be drilled as a directional well to a depth of 4,463' MD/ 3,777' TVD. The surface and bottom hole location will be in Section 14-Township 8N-Range 5W (Payette County, Idaho).

Estimated Geological Formation Tops

Zone	Expected Depth
Shallow Sand	1,320"
Sand "B"	3,894'
Sand "D"	4,228'

Types of Tools to be Used

BHA #1 Pendulum Drilling Assembly
12 ¹ / ₄ " Mill tooth bit
Bit sub w/ float
1 (8") Drill Collar (DC)
12 ¹ / ₄ " Weld Blade Stabilizer (1/8" UG)
1 – 8" Drill Collar
12 ¹ / ₄ " Weld Blade Stabilizer (1/8" UG)
X/O (if needed)
15 – 4" HWDP
Drilling Jars
5 – 4" HWDP
X/O to 4" Drill Pipe (if needed)
BHA #2 Directional Drilling Assembly
8 ¹ / ₂ " Smith FDS bit or equivalent, with 6 ³ / ₄ " directional motor assembly

 $1-6\frac{3}{4}$ " float sub

8" Spiral integral blade stabilizer

6³/₄" mule shoe sub

6³/₄" non-mag drill collar (MWD)

6³/₄" non-mag drill collar

X/O (if needed)

15 – 4" Heavy weight drill pipe

Drilling jar assembly

5 – 4" Heavy weight drill pipe

4" 14.00 #/ft XH Drill pipe

Payette County, ID April 10, 2020

Site Preparation

Erosion Control

The well will be drilled from an existing drilling pad (Barlow 1-14), therefore minimal new surface disturbance will occur.

Appropriate grading, mechanical stabilization (rip-rap or hay bales), chemical stabilization (soil cement), and silt fencing will be used to prevent soil erosion. All the cut and fill slopes are designed with a minimum 2:1 grade to minimize runoff erosion and ensure mechanical stability.

<u>Sump</u>

The location will have a 2' deep trench on downhill sides where the spoil from that trench will be used to construct an earthen berm around the location. The trench will act as a sump to collect rain and wash water for controlled release or appropriate disposal as required.

Well Construction

Casing Program

Well Interval	Bit Size / Holes Size	Casing Size, Grade and Weight	Casing Setting Depth (MD)	Top of Cement	Cement Type and Volume
Conductor	20"	16" / H-40 / 65#/ft	120'	Surface	200 sks Class A or C
Surface	12 1/4"	9 5/8" / K-55 / 40#/ft	1,125	Surface	Lead: 247 sks Type III - RC Econolite Plus Tail: 80 sks Type III - RC Surface
Production	8 1/2"	5 ½" / J/K-55 / 17#/ft	4,463	Surface	Lead: 394 sks Class G - RC Gas Bond Tail: 400 sks Class G - RC Gas Bond

Surface Casing Detail

builder Cushing B than
9 5/8" float shoe
1 full length joint 9 5/8" 40# K-55 STC for shoe track - centralized
9 5/8" float collar
9 5/8" 40# K-55 STC Casing jts to surface
Cement basket for 9 5/8" casing approx. 80' below surface.
Centralization – Install 1 cent /jt

Production Casing Detail

 $5\frac{1}{2}$ " float shoe

2 full length jts 5 ¹/₂" 17# K-55 LTC for shoe track – centralized

5 ¹/₂" float collar

5 1/2 17# K-55 LTC csg with 1 centralizer / joint to surface (turbolizers and scratchers placement TBD).

Cementing Program

Conductor: 200 sks Class A or C – surface to 120'

Surface Casing: 9 5/8" (Excess 150%)

Stage	Volume	Yield	Density	Description
Spacer	20 bbls		8.54 ppg	20 bbls 4% KCL
Lead Cement	768 ft3	3.11 ft3 / sk	11.0 ppg	247 sks Type III - RC Econolite Plus
Tail Cement	100 ft3	1.36 ft3 / sk	14.8 ppg	80 sks Type III - RC Surface Tail
Displacement	80 bbls		9-10 ppg	Drilling fluids/Water
Top out	102 ft3	1.36 ft3 / sk	14.8 pg	75 sks Type III - RC Surface Tail
Cement				

Depth: 1,125' MD Hole Size: 12 ¹/₄" Mud weight: 8.7 ppg

Production Casing (Excess 20%)

Stage	Volume	Yield	Density	Description
Spacer	20 bbls		8.34 pg	10 bbls mud flush
Spacer	40 bbls		12 ppg	40 bbls 4% KCL weighted spacer
Lead Cement	677 ft3	1.72 ft3 / sk	13.0 ppg	394 sks Class G - RC Gas Bond Lead
Tail Cement	528 ft3	1.32 ft3 / sk	14.2 ppg	400 sks Class G - RC Gas Bond Tail
Displacement	102 bbls		8.54 ppg	102 bbls 4% KCL

Depth: 4,463' MD Hole Size: 8 ¹/₂" Mud weight: 11.5 ppg

IDL Permit Supplement Barlow 2-14 Payette County, ID April 10, 2020

Rig Location Plat

See Paul Graham Drilling Rig 4 Location Diagram Page 12



Blowout Preventer (BOP) Schematic

Stack from bottom up; pipe rams, mud cross, blind rams and annular. Pressure control equipment to include upper Kelly cock, Kelly, lower Kelly valve, stand-by full opening drill string valve (TIW), stand-by drill string inside BOP (Gray).

BOP Diagram



Drilling Plan

Drilling Plan expected to include but not limited to:

- 1. Drill 20" hole to 102' with water well rig and run 16" casing and set same with cement back to surface.
- 2. Move in drilling rig.
- 3. Drill 12 ¹/₄" directional hole with drilling rig to 1,100' and run 9 5/8" casing set same with cement back to surface.
- 4. Drill 8 ¹/₂" directional hole to 4,463' and run open hole logs. If logs look good, run 5 ¹/₂" casing to TD and cement back to surface.
- 5. Move out drilling rig.

See Titan Directional Drilling Plan Pages 15-18.



IDL Permit Supplement Barlow 2-14

Payette County, ID April 10, 2020

Titan Directional Drilling

Survey Report

Project: Site: Well: Wellbore: Design:	Sna Pay Bar Bar #2- Pla	ake River Oil and yette County, ID rlow 2-14 Pad rlow #2-14 -14 OH in #3	I Gas W'27		Local Co-o TVD Refere MD Refere North Refe Survey Cal Database:	rdinate Refer ence: nce: rence: lculation Meth	ence: hod:	Well Barlow #2- est.GL+KB @ 2 est.GL+KB @ 2 Grid Minimum Curva EDM 5k-14	-14 178.00usft (plar 178.00usft (plar tture	ning) ning)	
Project		Payette County	y, ID W'27								
Map System: Geo Datum: Map Zone:		US State Plane NAD 1927 (NAD Idaho West 1103	1927 (Exact so CON CONUS) 3	olution)	System I	Datum:		Mean Sea Leve Using geodetic	el scale factor		
Site		Barlow 2-14 Pa	ad								
Site Position: From: Position Uncert	ainty:	Мар	0.00 usft	Northing: Easting: Slot Radius:	86 19	33,411.00 usft 6,717.00 usft 13-3/16 *	Latitude: Longitude Grid Conv	: ergence:		44° 1' 48 116° 54' 11 -0.8	8.003 N .383 W 80 °
Well		Barlow #2-14									
Well Position Position Uncert	tainty	+N/-S +E/-W	0.00 usft 0.00 usft 0.00 usft	Northing: Easting: Wellhead Ele	vation:	863,411 196,717	.00 usft I .00 usft I usft (Latitude: Longitude: Ground Level:		44° 1' 48 116° 54' 11 2,164	3.003 N .383 W 00 usft
	_										
Wellbore		#2-14 OH									-
Magnetics		Model Nar	ne	Sample Date	Decl	ination (*)	Di	p Angle (*)	Field	I Strength (nT)	
		IGR	F2020	06/01/20		13.48		67.37	7 52	2,343.39569401	
Design		Plan #3									
		Fidil #3									
Audit Notes:		p3 for 150' rathe	ole added to p2	; Surface assume	1 20'NW of #1-1	4					
Audit Notes: Version:		p3 for 150' rath	ole added to p2	; Surface assumed Phase:	120'NW of #1-1 PROTOTYPE	4	Tie On Depth:				0.00
Audit Notes: Version: Vertical Section	1 :	p3 for 150' rath	ole added to p2 Depth Fr (u	; Surface assumed Phase: rom (TVD) isft)	20'NW of #1-1 PROTOTYPE +N/-S (usft)	4	Tie On Depth: +E/-W (usft)		Direction (°)		0.00
Audit Notes: Version: Vertical Section	N:	p3 for 150' ratho	ole added to p2 Depth Fr (u	; Surface assumed Phase: rom (TVD) (sft) 0.00	1 20'NW of #1-1 PROTOTYPE +N/-S (usft) 0.	00	Tie On Depth: +E/-W (usft) 0.00		Direction (°) 24	11.23	0.00
Audit Notes: Version: Vertical Section	n: /	p3 for 150' rathe	ble added to p2 Depth Fr (u	; Surface assumed Phase: rom (TVD) isft) 0.00	1 20'NW of #1-1 PROTOTYPE +N/-S (usft) 0.	4 E 00	Tie On Depth: +E/-W (usft) 0.00		Direction (°) 24	11.23	0.00
Audit Notes: Version: Vertical Section Planned Survey Measur Depti (usft	n: / red h	p3 for 150' ratho	Depth Fr (u Azimuth (")	; Surface assumed Phase: rom (TVD) sft) 0.00 Vertical Depth (usft)	1 20'NW of #1-1 PROTOTYPE +N/-S (usft) 0. +N/-S (usft)	4 5 00 +E/-W (usft)	Tie On Depth: +E/-W (usft) 0.00 Vertical Section (usft)	Dogleg Rate (*/100usft)	Direction (*) 24 Build Rate (*/100usft)	11.23 Turn Rate (*/100usft)	0.00
Audit Notes: Version: Vertical Section Planned Survey Measur Depti (usft	n: red h)	p3 for 150' raths	Depth Fr (u Azimuth (*) 0.00	; Surface assumed Phase: rom (TVD) (sft) 0.00 Vertical Depth (usft) 0.00	1 20'NW of #1-1 PROTOTYPE +N/-S (usft) 0.00 0.00	4 5 00 +E/-W (usft) 0.00	Tie On Depth: +E/-W (usft) 0.00 Vertical Section (usft) 0.00	Dogleg Rate (*/100usft) 0.00	Direction (") 24 Build Rate ("/100usft) 0.00	11.23 Turn Rate (*/100usft) 0.00	0.00
Audit Notes: Version: Vertical Section Planned Survey Measur Depti (usft 12	n: red h 0.00 20.00	p3 for 150' ratho Inclination (*) 0.00 0.00	Azimuth (*) 0.00 0.00	(surface assumed Phase: rom (TVD) (sft) 0.00 Vertical Depth (usft) 0.00 120.00	+N/-S (usft) 0.00 0.00	+E/-W (usft) 0.00	Tie On Depth: +E/-W (usft) 0.00 Vertical Section (usft) 0.00 0.00	Dogleg Rate (*/100usft) 0.00 0.00	Direction (*) 24 Build Rate (*/100usft) 0.00 0.00	11.23 Turn Rate (*/100usft) 0.00 0.00	0.00
Audit Notes: Version: Vertical Section Planned Survey Measur Depti (usft 12 16" 30	red h 0.00 20.00	Pian w3 p3 for 150' rathe Inclination (*) 0.00 0.00 0.00	Azimuth (*) 0.00 0.00	; Surface assumed Phase: rom (TVD) sft) 0.00 Vertical Depth (usft) 0.00 120.00 300.00	1 20'NW of #1-1 PROTOTYPE +N/-S (usft) 0.00 0.00 0.00	4 5 •E/-W (usft) 0.00 0.00 0.00	Tie On Depth: +E/-W (usft) 0.00 Vertical Section (usft) 0.00 0.00 0.00	Dogleg Rate (*/100usft) 0.00 0.00	Direction (*) 24 Build Rate (*/100usft) 0.00 0.00	11.23 Turn Rate (*/100usft) 0.00 0.00 0.00	0.00
Audit Notes: Version: Vertical Section Planned Survey Measur Depti (usft 12 16" 30 400	n: red h 0.00 0.00 0.00 0.00 0.00	Pian w3 p3 for 150' rathe Inclination (*) 0.00 0.00 0.00 3.00 3.00	Azimuth (*) 0.00 0.00 0.00 0.00	; Surface assumed Phase: rom (TVD) isft) 0.00 Vertical Depth (usft) 0.00 120.00 300.00 399.95 100.02	*N/-S (usft) 0.00 0.00 0.00 0.00 0.00 0.00 0.00	4 5 600 +E/-W (usft) 0.00 0.00 0.00 0.00 0.00 0.00	Tie On Depth: +E/-W (usft) 0.00 Vertical Section (usft) 0.00 0.00 0.00 2.62	Dogleg Rate (*/100usft) 0.00 0.00 0.00 3.00 3.00	Direction (*) 24 Build Rate (*/100usft) 0.00 0.00 0.00 3.00 3.00	11.23 Turn Rate (*/100usft) 0.00 0.00 0.00 0.00	0.00
Audit Notes: Version: Vertical Section Planned Survey Measur Depti (usft 12 16" 30 40 50	red h) 0.00 20.00 10.00 10.00 10.00	p3 for 150' rathe	Azimuth (*) 0.00 0.00 241.23 241.23	:; Surface assumed Phase: rom (TVD) isft) 0.00 Vertical Depth (usft) 0.00 120.00 300.00 399.95 499.63	+N/-S (usft) 0.00 0.00 0.00 -1.26 -5.03	14 000 +E/-W (usft) 0.00 0.00 0.00 -2.29 -9.17	Tie On Depth: +E/-W (usft) 0.00 Vertical Section (usft) 0.00 0.00 0.00 2.62 10.46	Dogleg Rate (*/100usft) 0.00 0.00 3.00 3.00	Direction (*) 24 Build Rate (*/100usft) 0.00 0.00 3.00 3.00	11.23 Turn Rate (*/100usft) 0.00 0.00 0.00 0.00 0.00	0.00
Audit Notes: Version: Vertical Section Planned Survey Measur Depti (usft) 12 16" 30 40 50 60 70	red h) 0.00 20.00 00.00 00.00 00.00 00.00	Pian w3 p3 for 150' rathe Inclination (*) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	Azimuth (*) 0.00 0.00 241.23 241.23 241.23	:; Surface assumed Phase: rom (TVD) (sft) 0.00 Vertical Depth (usft) 0.00 120.00 300.00 399.95 499.63 598.77 697.09	+N/-S (usft) 0.00 0.00 0.00 -1.26 -5.03 -11.32 -20.08	4 5 00 +E/-W (usft) 0.00 0.00 0.00 -2.29 -9.17 -20.61 -26.59	Tie On Depth: +E/-W (usft) 0.00 Vertical Section (usft) 0.00 0.00 2.62 10.46 23.51 41.74	Dogleg Rate (*/100usft) 0.00 0.00 0.00 3.00 3.00 3.00 3.00	Direction (*) 24 Build Rate (*/100usft) 0.00 0.00 0.00 3.00 3.00 3.00 3.00	11.23 Turn Rate (*/100usft) 0.00 0.00 0.00 0.00 0.00 0.00	0.00
Audit Notes: Version: Vertical Section Planned Survey Measur Depti (usft 12 16" 30 40 50 60 70 80	red h) 0.00 20.00 00.00 00.00 00.00 00.00 00.00 00.00 00.00	Pian w3 p3 for 150' rathe Inclination (*) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	Azimuth (*) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	:; Surface assumed Phase: rom (TVD) sft) 0.00 Vertical Depth (usft) 0.00 120.00 300.00 399.95 499.63 598.77 697.08 794.31	*N/-S (usft) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 -1.26 -5.03 -11.32 -20.08 -31.32	4 5 00 +E/-W (usft) 0.00	Tie On Depth: +E/-W (usft) 0.00 Vertical Section (usft) 0.00 0.00 0.00 0.00 2.62 10.46 23.51 41.74 65.08	Dogleg Rate (*/100usft) 0.00 0.00 0.00 3.00 3.00 3.00 3.00 3.0	Direction (*) 24 Build Rate (*/100usft) 0.00 0.00 0.00 3.00 3.00 3.00 3.00 3.0	11.23 Turn Rate (*/100usft) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00
Audit Notes: Version: Vertical Section Planned Survey Measur Depti (usft 12 16" 30 40 50 60 70 80 90	n: red h) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	Pian w3 p3 for 150' ratho Inclination (") 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	Azimuth (*) 0.00 0.00 241.23 241.23 241.23 241.23 241.23 241.23 241.23 241.23	:; Surface assumed Phase: rom (TVD) isft) 0.00 Vertical Depth (usft) 0.00 120.00 399.95 499.63 598.77 697.08 794.31 890.18	+N/-S (usft) 0.00 +N/-S (usft) 0.00 0.00 -1.26 -5.03 -11.32 -20.08 -31.32 -44.98	14 5 00 +E/-W (usft) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.229 -9.17 -20.61 -36.58 -57.05 -81.94	Tie On Depth: +E/-W (usft) 0.00 Vertical Section (usft) 0.00 0.00 0.00 2.62 10.46 23.51 41.74 65.08 93.48	Dogleg Rate (*/100usft) 0.00 0.00 0.00 3.00 3.00 3.00 3.00 3.0	Direction (*) 24 Build Rate (*/100usft) 0.00 0.00 3.00 3.00 3.00 3.00 3.00 3.0	11.23 Turn Rate (*/100usft) 0.00	0.00
Audit Notes: Version: Vertical Section Planned Survey Measur Depti (usft) 12 16" 30 40 50 60 70 80 90 1,00	red h) 0.00 20.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00	Pian w3 p3 for 150' ratho inclination (*) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	Azimuth (*) 0.00 0.00 241.23 241.23 241.23 241.23 241.23 241.23 241.23 241.23 241.23	:; Surface assumed Phase: rom (TVD) isft) 0.00 Vertical Depth (usft) 0.00 120.00 399.95 499.63 598.77 697.08 794.31 890.18 984.43	*N/-S (usft) 0.00 +N/-S (usft) 0.00 0.00 -1.26 -5.03 -11.32 -20.08 -31.32 -44.98 -61.05	4 5 000 +E/-₩ (usft) 0.00 0.00 0.00 0.00 -2.29 -9.17 -20.61 -36.58 -57.05 -81.94 -111.20	Tie On Depth: +E/-W (usft) 0.00 Vertical Section (usft) 0.00 0.00 0.00 0.00 2.62 10.46 23.51 41.74 65.08 93.48 126.85	Dogleg Rate (*/100usft) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	Direction (*) 24 Build Rate (*/100usft) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	11.23 Turn Rate (*/100usft) 0.000 0.00	0.00
Audit Notes: Version: Vertical Section Planned Survey Measur Depti (usft 12 16" 30 40 50 60 70 80 90 1,00 1,10	red h) 0.00 20.00 00.00 00.00 00.00 00.00 00.00 00.00 00.00 00.00 00.00	Pian w3 p3 for 150' rathe Inclination (*) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	Azimuth (*) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	:; Surface assumed Phase: rom (TVD) sft) 0.00 Vertical Depth (usft) 0.00 120.00 399.95 499.63 598.77 697.08 794.31 890.18 984.43 1,076.81	*N/-S (usft) 0.00 +N/-S (usft) 0.00 0.00 -1.26 -5.03 -11.32 -20.08 -31.32 -44.98 -61.05 -79.46	4 5 00 +E/-W (usft) 0.00 0.01 0.01 0.00	Tie On Depth: +E/-W (usft) 0.00 Vertical Section (usft) 0.00 0.00 0.00 2.62 10.46 23.51 41.74 65.08 93.48 126.85 165.12	Dogleg Rate (*/100usft) 0.00 0.00 0.00 3.00 3.00 3.00 3.00 3.0	Direction (*) 24 Build Rate (*/100usft) 0.00 0.00 0.00 3.00 3.00 3.00 3.00 3.0	11.23 Turn Rate (*/100usft) 0.00	0.00
Audit Notes: Version: Vertical Section Planned Survey Measur Depti (usft 12 16" 30 40 50 60 70 80 90 1,00 1,10 1,12 1,10	red h) 0.00 20.00 00.00 00.00 00.00 00.00 00.00 00.00 00.00 00.00 00.00 00.00 00.00	Pian w3 p3 for 150' ratho Inclination (") 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	Azimuth (*) 0.00 0.00 241.23 241.23 241.23 241.23 241.23 241.23 241.23 241.23 241.23 241.23 241.23	:; Surface assumed Phase: rom (TVD) isft) 0.00 Vertical Depth (usft) 0.00 120.00 120.00 399.95 499.63 598.77 697.08 794.31 890.18 984.43 1,076.81 1,100.00	4 20'NW of #1-1 PROTOTYPE +N/-S (usft) 0.0 +N/-S (usft) 0.00 0.1.26 -5.03 -11.32 -20.08 -31.32 -44.98 -61.05 -79.46 -84.52	4 5 600 •E/-W (usft) 0.00 0.01 0.01 0.01 0.05 0.01 0.05	Tie On Depth: *E/-W (usft) 0.00 Vertical Section (usft) 0.00 0.00 0.00 2.62 10.46 23.51 41.74 65.08 93.48 126.85 165.12 175.63	Dogleg Rate (*/100usft) 0.00 0.00 0.00 3.00 3.00 3.00 3.00 3.0	Direction (*) 24 Build Rate (*/100usft) 0.00 0.00 0.00 3.00 3.00 3.00 3.00 3.0	11.23 Turn Rate (*/100usft) 0.00	0.00
Audit Notes: Version: Vertical Section Planned Survey Measur Depti (usft) 12 16" 30 40 50 60 70 80 90 1,00 1,10 1,12 9 5/8" 1,20	red h 0.00 20.00 10	Pian w3 p3 for 150' ratho inclination (*) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	Depth Fr (u Azimuth (*) 0.00 0.00 241.23 241.23 241.23 241.23 241.23 241.23 241.23 241.23 241.23 241.23 241.23 241.23 241.23	:; Surface assumed Phase: rom (TVD) isft) 0.00 Vertical Depth (usft) 0.00 120.00 309.95 499.63 598.77 697.08 794.31 890.18 984.43 1,076.81 1,100.00 1,167.06	4 20'NW of #1-1 PROTOTYPE (usft) 0.0 +N/-S (usft) 0.00 0.00 0.00 0.00 0.00 -1.26 -5.03 -11.32 -20.08 -31.32 -44.98 -61.05 -79.46 -84.52 -100.17	4 5 00 •E/-W (usft) 0.00 0.00 0.00 -2.29 -9.17 -20.61 -36.58 -57.05 -81.94 -111.20 -144.74 -153.95 -182.47	Tie On Depth: *E/-W (usft) 0.00 Vertical Section (usft) 0.00 0.00 0.00 0.00 0.00 0.00 2.62 10.46 23.51 41.74 65.08 93.48 126.85 165.12 175.63 208.16	Dogleg Rate (*/100usft) 0.00 0.00 0.00 0.00 3.00 3.00 3.00 3.0	Direction (*) 24 Build Rate (*/100usft) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	11.23 Turn Rate (*/100usft) 0.00	0.00

03/23/20 4:39:09PM

COMPASS 5000.14 Build 85F

Titan Directional Drilling

Survey Report

Company:	Snake River Oil and Gas	Local Co-ordinate Reference:	Well Barlow #2-14
Project:	Payette County, ID W'27	TVD Reference:	est.GL+KB @ 2178.00usft (planning)
Site:	Barlow 2-14 Pad	MD Reference:	est.GL+KB @ 2178.00usft (planning)
Well:	Barlow #2-14	North Reference:	Grid
Wellbore:	#2-14 OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #3	Database:	EDM 5k-14

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (*/100usft)	Build Rate (*/100usft)	Turn Rate (°/100usft)
1,400.00	33.00	241.23	1,340.18	-148.28	-270.09	308.12	3.00	3.00	0.00
1,500.00	36.00	241.23	1,422.59	-175.53	-319.74	364.75	3.00	3.00	0.00
1,600.00	39.00	241.23	1,501.91	-204.82	-373.09	425.62	3.00	3.00	0.00
1,700.00	42.00	241.23	1,577.95	-236.07	-430.02	490.56	3.00	3.00	0.00
1,800.00	45.00	241.23	1,650.47	-269.20	-490.35	559.38	3.00	3.00	0.00
1,837.33	46.12	241.23	1,676.61	-282.02	-513.72	586.04	3.00	3.00	0.00
1,900.00	46.12	241.23	1,720.05	-303.76	-553.31	631.21	0.00	0.00	0.00
2,000.00	46.12	241.23	1,789.37	-338.45	-616.50	703.29	0.00	0.00	0.00
2,100.00	46.12	241.23	1,858.68	-373.13	-679.68	775.37	0.00	0.00	0.00
2,200.00	46.12	241.23	1,928.00	-407.82	-742.87	847.45	0.00	0.00	0.00
2,300.00	46.12	241.23	1,997.31	-442.51	-806.05	919.53	0.00	0.00	0.00
2,400.00	46.12	241.23	2,066.63	-477.20	-869.23	991.61	0.00	0.00	0.00
2,500.00	46.12	241.23	2,135.94	-511.88	-932.42	1,063.69	0.00	0.00	0.00
2,600.00	46.12	241.23	2,205.26	-546.57	-995.60	1,135.76	0.00	0.00	0.00
2,700.00	46.12	241.23	2,274.57	-581.26	-1,058.79	1,207.84	0.00	0.00	0.00
2,800.00	46.12	241.23	2,343.89	-615.94	-1,121.97	1,279.92	0.00	0.00	0.00
2,900.00	46.12	241.23	2,413.20	-650.63	-1,185.15	1,352.00	0.00	0.00	0.00
2,980.98	46.12	241.23	2,469.33	-678.72	-1,236.32	1,410.37	0.00	0.00	0.00
3,000.00	45.60	241.23	2,482.58	-685.29	-1,248.29	1,424.02	2.75	-2.75	0.00
3,100.00	42.85	241.23	2,554.24	-718.85	-1,309.42	1,493.76	2.75	-2.75	0.00
3,200.00	40.10	241.23	2,629.16	-750.72	-1,367.46	1,559.98	2.75	-2.75	0.00
3,300.00	37.35	241.23	2,707.17	-780.82	-1,422.29	1,622.53	2.75	-2.75	0.00
3,400.00	34.60	241.23	2,788.09	-809.08	-1,473.78	1,681.26	2.75	-2.75	0.00
3,500.00	31.85	241.23	2,871.74	-835.44	-1,521.80	1,736.04	2.75	-2.75	0.00
3,600.00	29.10	241.23	2,957.92	-859.85	-1,566.25	1,786.75	2.75	-2.75	0.00
3,700.00	26.35	241.23	3,046.43	-882.23	-1,607.02	1,833.26	2.75	-2.75	0.00
3,800.00	23.60	241.23	3,137.07	-902.55	-1,644.03	1,875.48	2.75	-2.75	0.00
3,889.68	21.13	241.23	3,220.00	-918.96	-1,673.94	1,909.60	2.75	-2.75	0.00
3,900.00	20.85	241.23	3,229.64	-920.74	-1,677.18	1,913.29	2.75	-2.75	0.00
4,000.00	18.10	241.23	3,323.91	-936.78	-1,706.39	1,946.62	2.75	-2.75	0.00
4,100.00	15.35	241.23	3,419.67	-950.63	-1,731.61	1,975.39	2.75	-2.75	0.00
4,200.00	12.60	241.23	3,516.70	-962.25	-1,752.78	1,999.54	2.75	-2.75	0.00
4,300.00	9.85	241.23	3,614.78	-971.61	-1,769.84	2,019.00	2.75	-2.75	0.00
4,400.00	7.10	241.23	3,713.68	-978.70	-1,782.75	2,033.73	2.75	-2.75	0.00
4,463.41	5.35	241.23	3,776.71	-982.01	-1,788.78	2,040.60	2.75	-2.75	0.00

Titan Directional Drilling

Survey Report

Company: Project: Site: Well: Wellbore: Design:	Snake Rive Payette Co Barlow 2-14 Barlow #2- #2-14 OH Plan #3	er Oil and unty, ID V 4 Pad 14	Gas N°27		L T M S S	Local Co-ordin IVD Reference MD Reference: North Reference Survey Calcula Database:	ate Reference: : e: tion Method:	Well Barlow # est.GL+KB @ Grid Minimum Cur EDM 5k-14	2-14 2 2178.00usft (plannin 2 2178.00usft (plannin vature	g) g)
Design Targets Target Name - hit/miss targe - Shape	et Dip	Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Barlow 2-14 SL - plan hits tar - Point	get center	0.00	360.00	0.00	0.00	0.00	863,411.00	196,717.00	44* 1' 48.003 N	116° 54' 11.383 W
Barlow 2-14 Tgt - plan hits tar - Point	get center	0.00	360.00	3,220.00	-918.96	-1,673.94	862,492.00	195,043.00	44* 1' 38.697 N	116" 54' 34.116 W
Barlow 2-14 PBH - plan hits targ - Point	L get center	0.00	0.00	3,776.71	-982.01	-1,788.78	862,428.95	194,928.16	44" 1' 38.058 N	116° 54' 35.675 W

Measured Depth (usft)	Vertical Depth (usft)	Nan	Casing Diameter te (")	Hole Diameter (")
120.0	0 120.00	16"	16	19
1,125.4	6 1,100.00	9 5/8"	9-5/8	12-1/4

COMPASS 5000.14 Build 85F

Payette County, ID April 10, 2020

Logging Plan

- 1. Mud loggers will collect and analyze the lithology of drill cuttings and mud gas values from conductor casing shoe to total depth (120' to 4,463' MD)
- 2. Open Hole Logging Program 1,100' 4,463':

Run 1: TD to Surface Casing shoe (1,100' – 4,463') Triple Combo on drill pipe. Triple Combo is induction, Gamma Ray, and Neutron/Density Porosity Logs. IDL Permit Supplement Barlow 2-14 Payette County, ID April 10, 2020

<u>Wellhead</u>

See Surface Wellhead System Diagram Page 21.

See Surface Wellhead System with Wellhead Assembly Diagram Page 22







IDL Permit Supplement Barlow 2-14

Payette County, ID April 10, 2020

Wellbore Schematic

See Barlow 2-14 Proposed Wellbore Schematic Page 24.

Snake River Oil and Gas Well Name: Barlow 2-14 Location: Section 14-8N-5W Payette County, Idaho Field: Harmon PROPOSED WELLBORE DIAGRAM DATE: 4/9/20 Wellhead: GL: 2,178' (GL elev + RKB est) A Sec: 9-5/8" SOW x 11"-5M B Sec: 11* 5M x 7-1/16* 5M Tubing Head w/ dry hole flange 120' Conductor: 16" 65# H-40 @ 120' Cemented to surface w/ 200 sks Class A or C Hole Size 20" Surface Casing: 9 5/8" 40# K-55 STC @ 1,125' 1125' FIT: EMW 12 ppg Cemented with 402 sks Type III Cmt Lead: 247 sks RC Econolite Plus Tail: 80 sks RC Surface Tail TOC: Cemented to Surface Top out cement - 75 sks RC Surface Tail Est Mud weight 8.7 pg Surface TD Hole Size 12.25" 4% KCI Displace cement with 4% KCL Hole Deviation: Max Angle ~ 45 deg *See Directional Plan Logging Run #1 - Triple Combo on WL Production Casing 5 1/2" 17# J/K-55 LTC @ 4,463' Float collar @ 4,381' Cemented with 794 sks Class G Cmt Lead: 394 sks RC Gas Bond Lead Tail: 400 sks RC Gas Bond TOC: Cemented to Surface 4463' Est Mud weight: 11.5 ppg at TD Hole Size: 8.5" Proposed TD 4,463' MD 3,776' TVD PBTD 4,381'

Well Name: Barlow 2-14	Field: Harmon
County: Payette	State: ID
Total Depth (MD) 4,463'	TVD: 3,776

Reclamation

Reclamation will be conducted in accordance with IDAPA 20.07.02.310.16;.510. To achieve those requirements, Snake River Oil and Gas, LLC proposes to address reclamation through a multistep process which is outlined below. As provided for in IDAPA 20.07.02.510.08, Snake River Oil and Gas, LLC may enter into a Surface Use Agreement with the landowner the terms of which will ensure that the site is left in stable, non-eroding condition as required.

- 1. Interim drill site clean-up: Debris and waste materials including, but not limited to, concrete, sack bentonite and other drilling mud additives, sand, plastic, pipe, and cable associated with the drilling, reentry, or completion operations shall be removed and disposed of properly.
- 2. Re-establish slope stability, surface stability, and desired topographic diversity.
 - a. Reconstruct the landscape to the approximate original contour unless otherwise provided for in the Surface Use Agreement.
 - b. Maximize geomorphic stability and topographic diversity of the reclaimed topography.
 - c. Eliminate high walls, cut slopes, and/or topographic depressions on site, unless otherwise approved.
 - d. Minimize sheet and rill erosion on the reclaimed area. Eliminate mass wasting, head cutting, large rills or gullies, down cutting in drainages, or overall slope instability on the reclaimed area.
- 3. Maintain the integrity of the topsoil and subsoil (where appropriate and not otherwise dictated by the Surface Use Agreement).
 - a. Identify salvaged topsoil and subsoil.
 - b. Segregation of salvaged soils to protect those materials from erosion, degradation, and contamination.
 - c. Incorporate stored soil material into the disturbed landscape to the extent practicable.
 - d. Stockpiled soils to be stored beyond one growing season shall be stabilized with appropriate vegetation.
 - e. Record location and approximate volumes of stockpiles.
- 4. Prepare site for revegetation upon completion of well activities plugging/abandonment.
 - a. Redistribute soil materials in a manner similar to the original vertical profile.
 - b. Reduce compaction to an appropriate depth (generally below the root zone) prior to redistribution of topsoil, to accommodate appropriate site-specific plant species.
 - c. Provide suitable conditions to support the long-term establishment and viability of the desired plant community.
 - d. Protect seed and seedling establishment (e.g. erosion control matting, mulching, hydro-seeding, surface roughening, fencing, etc.) to be determined based upon site specific conditions.
- 5. Establish a desired self-perpetuating native plant community based upon region specific guidance available from NRCS.
 - a. Establish species composition, diversity, structure, and total ground cover appropriate for the desired plant community.
 - b. Select genetically appropriate and locally adapted native plant materials based on the site characteristic and setting
 - i. Seed mixtures shall be selected based on soil type, site conditions and intended final use.
 - ii. Seed shall not be used later than one year after the test date that appears on the label.

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- iii. The bags of seed shall be clearly labeled indicating test date, weed percentage or % Pure Live Seed (PLS), viability or germination percentage, and inert material.
- c. Select non-native plants only as a short term and non-persistent alternative to native plant materials. Ensure the non-natives are designed to aid in the re-establishment of native plant communities. Revegetate in accordance with best practices described below:
 - i. Re-spread topsoil to a minimum depth of 4 inches.
 - ii. Prepare a friable but firm and weed free seedbed that is not compacted by prior construction work.
 - iii. Appropriate firmness can be estimated when a person leaves about a ¹/₄ inch deep footprint.
 - iv. Remove rocks, twigs, concrete, foreign material and clods over 2 inches that can't be broken down.
 - v. Soil moisture content shall be at least 30% soil capacity (estimated). Do not seed into undesirable moisture conditions (e.g. "dust" or "mud").
- d. Plant communities shall be evaluated annually for two years to ensure revegetation success as determined by IDAPA 20.07.02.510.07.
 - i. Repair and reseed areas that have erosion damage as necessary.
 - ii. If a stand has less than 70% ground cover after two years, re-evaluate the choice of plant materials, methods and available light and moisture. Re-establish the stand with modifications based on the evaluation
- 6. Reestablish initial visual composition
 - a. Ensure the reclaimed landscape features conform to the prior conditions of the site.

Proposed SROG Barlow #2-14 Estimated Pre-drilling Geological Formation Tops

	Expected Depths (RKB)			
Zone	<u>MD (ft)</u>	<u>TVD (ft)</u>		
Glenns Ferry	0' (Surface)	0' (Surface)		
Shallow Sand	1320'	1265'		
Chalk Hills	2540'	2150'		
Sand "B"	3894'	3220'		
Sand "D"	4228'	3543'		
Payette Formation	NDE	NDE		

NDE=Not Deep Enough