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Idaho Department Of Lands
Idaho Oil And Gas Conservation Commission

Well Treatment Permit Application

IDAPA 20.07.02.210, 20.07.02.211 Idaho Code § 47-316 (3)(d)

Operator and Well Information

NAME OF OPERATOR: Snake River Oil and Gas Date: 04/22/2025

Well Permit Number: LU600117 Well Name: ML Investments

Operator Number: 2-10 API Number: 11-075-20022

Local Contact: Nathan Caldwell Telephone: 870.904.7305

Well Location: Section: 10 Township: 8N Range: 4W (or block and survey)

(Give footage from Section lines): 1503.5' FNL and 1201.6' FEL

Latitude: 44.049321 /Longitude: 116.796703 (Dec Degrees NAD83 minimum requirement)

Datum: ☐WGS84 ■NAD83 ☐NAD27 ☐Other:

Field and Reservoir (if wildcat, so state): Willow (Sand 1) County: Payette

If this is a master drilling and treatment plan, then please list all well names and permit numbers (if known) included in this application (IDAPA 20.07.02.210.02): n/a

Part 1: Proposed Treatment Summary – IDAPA 20.07.02.210 (attach detailed information to this application form)

a. Depth to perforations or open hole interval being treated (IDAPA 20.07.02.210.01.a):
4000 - 4015, 4023-4030, 4043-4049; see attached Appendix 1.a for summary of procedure.

b. Local source of water, or type of base fluid if water is not used (IDAPA 20.07.02.210.01.b):
Natural Gas from Harmon Field

c. Attach list of proposed additives to be used, including: supplier, purpose, trade name, SDS information, anticipated percentage by volume, and total volume (IDAPA 20.07.02.210.01.c): No additives

d. Type of proppant(s) proposed (IDAPA 20.07.02.210.01.d):
No Proppant

e. Anticipated percentage by volume and total volumes of water or other base treatment fluid, individual additives, and proppant(s) (IDAPA 20.07.02.210.01.e):
Injection Gas will be utilized after dehydration.

f. Estimated pump pressures required for treatment (IDAPA 20.07.02.210.01.f): Estimate pressure will be 1400 to 1600 psi with a maximum of 2000 psi

g. Pressure gradient in well bore and native pressure in interval being treated (IDAPA 20.07.02.210.01.o): The current well bore pressure gradient is 0.160 psi/ft with the original Sand 1 reservoir pressure of 1750 psi.

h. Method and timeline for management, storage, and disposal of well treatment fluids (IDAPA 20.07.02.210.01.g): All produced hydrocarbons will be sold. Water production will be held at the Little Willow facility until hauled to permitted third-party disposal (L&R).

i. Size and design of storage pits, if proposed, in conformance with IDAPA 20.07.02.230 (IDAPA 20.07.02.210.01.h): No Pits.

j. Summary of known water bearing zones from surface to bottom of well (IDAPA 20.07.02.210.01.j): See attached Appendix 1.j.

k. Attach signed affidavit by the owner or operator stating that all homeowners and water well owners within one-quarter (1/4) mile of the proposed treatment well, and all owners of a public drinking water system that have an IDEQ recognized source water assessment or protection area within one-quarter (1/4) mile of the proposed treatment well have been notified of the proposed treatment (IDAPA 20.07.02.210.01.m). See attached Appendix 1.k.

l. Attach proof of publication of a legal notice in a local newspaper in the county where the well is located briefly describing the well treatment (IDAPA 20.07.02.210.01.n). To be provided upon completion of publication (publication in Argus-Observer scheduled for Wednesday 4/30/2025).

m. Attach current Well Bore Diagram (casing size and depths, cemented intervals, perforations, total depth, basic geology, and whether well bottom is open, cemented, etc.) (IDAPA 20.07.02.210.01.o). See attached Appendix 1.m.

Part 2: Fresh Water Protection Plan - IDAPA 20.07.02.210.01.k; IDAPA 20.07.02.210.06 (attach detailed information to this application form)

a. Attach site-specific ground water protection and storm water Best Management Practices (BMPs) (i.e. fluid containment structures, fluid handling guidelines, automatic pressure shut offs, berms, etc.) (IDAPA 20.07.02.210.k.i). Flowed back condensate and water will be handled with existing on site production equipment and BMPs.

b. Attach a preconstruction topographic map and / or aerial photos identifying all habitable structures, wells, perennial or intermittent springs, surface waters, and irrigation ditches within one-quarter (1/4) mile of the oil or gas well to be treated (IDAPA 20.07.02.210.k.iii). See attached Appendix 2.b.

c. Brief description of structural geology that may influence ground water flow and direction (IDAPA 20.07.02.210.01.k.iv): See atached Appendix 2.c.

d. Brief description of the hydrogeological characteristics of the treatment area and surrounding land (IDAPA 20.07.02.210.01.k.v.): See attached Appendix 2.d.

e. Attach a copy of the proposed freshwater monitoring program in conformance with IDAPA 20.07.02.210.06. See attached Appendix 2.e.

Part 3: Hydraulic Fracturing - IDAPA 20.07.02.211 (attach detailed information to this application form)

a. Is the request for a permit for well treatment include hydraulic fracturing? No (Yes or No)

If No, skip Part 3 of the Application. If Yes, in addition to the information provided in Part 1 of this application, please include the following:

b. The geological names and descriptions of the formation into which well stimulation fluids are to be injected (IDAPA 20.07.02.211.01.a):

c. For each stage of the well stimulation program, attach a list of the chemical additives and proppants, the concentrations proposed to be mixed, and the rates of injection proposed, including:

   i. Stimulation fluid identified by additive type (IDAPA 20.07.02.211.01.b.i).

   ii. The chemical compound name and CAS number as found on the previously submitted SDS (IDAPA 20.07.02.211.01.b.ii).

   iii. The proposed rate or concentration for each additive and the total volume of each (IDAPA 20.07.02.211.01.b.iii).

   iv. The formulary disclosure of the chemical compounds used in the well stimulation (IDAPA 20.07.02.211.01.b.iv).

d. Attach a detailed description of the proposed well stimulation design, including:

   i. The anticipated surface treating pressure range (IDAPA 20.07.02.211.01.c.i).

   ii. The maximum injection treating pressure. Accepted safety limits are generally eighty percent (80%) of the maximum pressure rating of the pressurized system (IDAPA 20.07.02.211.01.c.ii).

   iii. The estimated or calculated fracture height in both the horizontal and vertical directions (IDAPA 20.07.02.211.01.c.iii).

e. Attach a copy of a successful Mechanical Integrity Test (MIT) completed per the requirements as described in IDAPA 20.07.02.320. A successful MIT is defined as a pressure drop no greater than ten percent (10%) over thirty (30) minutes (IDAPA 20.07.02.211.03).

f. Pressure monitoring of the annulus pressure at the casing head during well stimulation operations. Attach a copy of mechanical pressure monitoring records to this application (IDAPA 20.07.02.211.04).

CERTIFICATE: I, the undersigned, state that I am the Manager of Snake River Oil and Gas, LLC (company) 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, correct and complete to the best of my knowledge. I certify that all aspects of the well construction, including the suitability and integrity of the cement used to seal the well, are designed to meet the requirements of the proposed well treatment (IDAPA 20.07.02.210.l). I certify that these treatment operations will comply with Spill Prevention, Control, and Countermeasures (SPCC) requirements administered by the EPA (IDAPA 20.07.02.210.01.k.ii).

Signature: Richard Brown Digitally signed by Richard Brown Date: 2025.04.24 11:32:37 -05'00' Date: April 22, 2025

FOR IDL USE ONLY:

Approved by:_____ Approval Date: _____

Well Permit Number:_____ Well Name: _____

Additional Information

Fees: Idaho Code § 47-316(3)(d)

An application fee must accompany each application for permit to treat a well. No service fee is required for a well treatment permit if submitted with an Application for Permit to Drill a well.

Time Limit for Permit: IDAPA 20.07.02.210.03

If a treatment approved in a drilling permit is not commenced within one (1) year of approval, the well treatment permit will expire, and reapplication will be required. Prior to the expiration date, the operator may apply to the Department for a six-month (6) extension of the permit.

Permit Denial:

The Department may deny well treatment applications for one (1) or more of the following reasons:

1. Application is incomplete or does not contain the information in Subsection 210.01 of these rules.
2. Application fee was not submitted (Idaho Code § 47-316(1)).
3. Proposed treatment will result in a waste of oil or gas, a violation of correlative rights or the pollution of freshwater supplies (Idaho Code § 47-315).

Well Treatment Report: IDAPA 20.07.02.210.05

Within thirty (30) days after completion of the well treatment an operator shall file a Well Treatment Report detailing the work performed. The report shall include:

1. The daily production of gas, condensate, oil, and water both prior to and after the operation.
2. The size and depth of the perforations.
3. Percentages by volume of base treatment fluid, individual additives, and proppant(s).
4. Documentation demonstrating the chemicals used in the well treatment have been reported to the website https://fracfocus.org/ .
5. Static pressure testing results before and after the well treatment.
6. The amounts, handling, and if necessary, disposal at an identified appropriate disposal facility, or reuse of the well stimulation fluid load recovered during flowback, swabbing, recovery, or all from production facility vessels.

In addition to the above Well Treatment Report information, if hydraulic fracturing was applied for and was conducted during well treatment operations, include the following additional information in the well treatment report:

1. The actual total well stimulation treatment volume pumped (IDAPA 20.07.02.211.05.a).
2. The actual surface pressure and rate at the end of each fluid stage, and the actual flush volume, rate and final pump pressure (IDAPA 20.07.02.211.05.b).
3. The instantaneous shut-in pressure, and the actual fifteen (15) minute and thirty (30) minute shut-in pressures when these pressure measurements are available (IDAPA 20.07.02.211.05.c).
4. A continuous record of the annulus pressure(s) during the well stimulation (IDAPA 20.07.02.211.05.d).
5. In lieu of items 1 through 4, attach a copy of the well stimulation service contractor's job log with cost / pricing information redacted (IDAPA 20.07.02.211.05.e).
6. A report containing all details pertaining to any annulus pressure increases of more than five hundred (500) psi gauge as described in IDAPA 20.07.02.211.04, including corrective actions taken (IDAPA 20.07.02.211.05.f).
7. Results of post-treatment fluid analysis used to help determine the method of fluid disposal (IDAPA 20.07.02.211.05.g).

Compliance with IDAPA 20.07.02 is required. Please read these rules for specific details and reporting requirements.

Appendix 1.a

PROPOSED WELL TREATMENT
ML INVESTMENTS 2-10
WILLOW FIELD
PAYETTE COUNTY, IDAHO

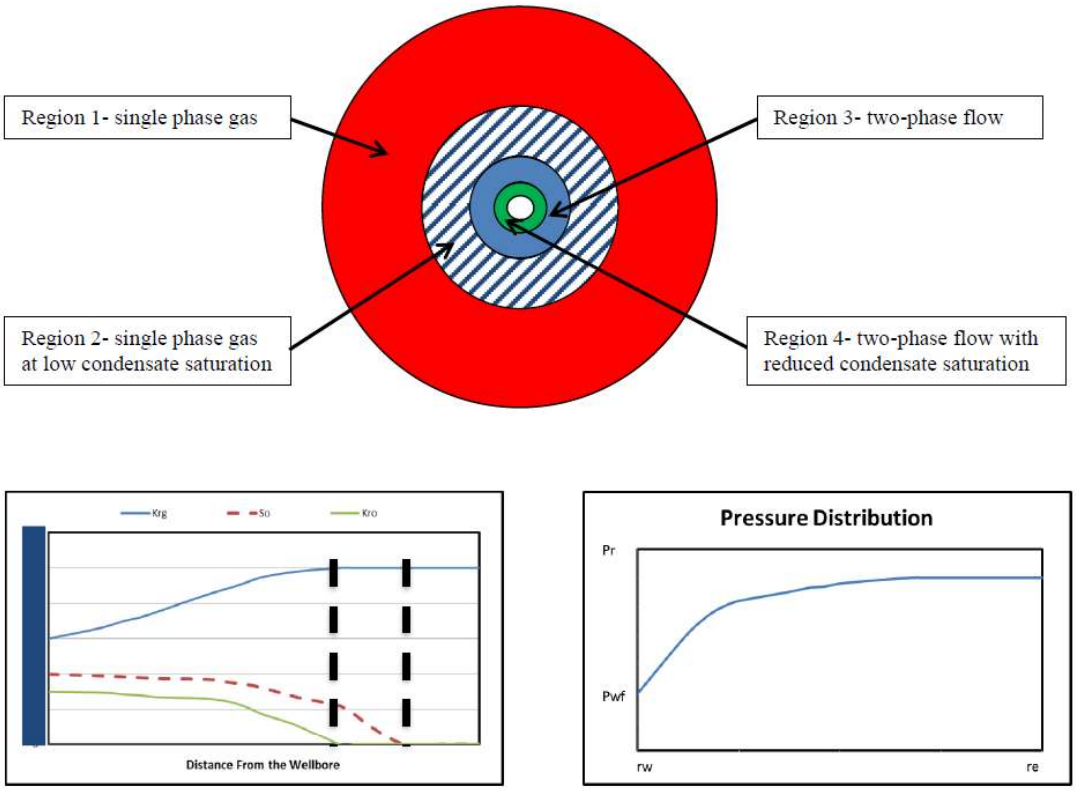
INTRODUCTION

The ML Investments 2-10 well was drilled and completed in 2013. The initial completion in Sand 2 resulted in accumulative production of approximately 2.56 BCF of gas with over 64 MB of condensate. The well was recompleted to Sand 1 in April, 2018. Sand 1 appears to be a volumetric pressure depletion or very weak water drive reservoir. The well produced approximately 841 MMCF with 22 MB of condensate from Sand 1. The well is shut in at this time.

Initial Sand 1 reservoir conditions of 1750 psi and 227^{o}F coupled with the decrease in condensate yield occurring at the start of production suggest the reservoir was either at or very near the dew point. Production of the wells from the volumetric or pressure depletion reservoir is facilitated by causing a drawdown at the perforations and near-wellbore. This drawdown reduces the pressure below the dew point resulting in condensate formation in the pore space.

CONDENSATE ACCUMULATION AND REMOVAL

Condensate accumulation in the near wellbore region and the resulting reduction of gas production is a globally known phenomenon. Condensate accumulation reduces the pore space available for gas flow. The region can be visualized as a donut shape around the completion with the lateral extent dictated by fluid composition, formation characteristics, and pressure profile. Experimentally, condensate accumulation has approached 20% of pore volume[1] which can significantly affect relative permeability to gas. Sayed and Al-Muntasheri noted four regions in a typical gas condensate reservoir. The red region[2] is considered the portion of the reservoir above the dew point and therefore single phase (gas). As the distance approaches the wellbore and pressure continues to drop further below the dew point, one passes through Region 2 with low condensate saturation and moves into the two-phase regions of concern. It should be noted that we believe that Region 1 is of limited extent in the Sand 1 reservoir.



In order to restore the relative permeability to gas in Regions 3 and 4, we plan to inject rich gas and mobilize the condensate.

Lake[3] and others utilize ternary diagrams to illustrate miscibility of compounds within the reservoir. The diagram below from Lake represents 100% light hydrocarbon (methane) at the top of the diagram with intermediate hydrocarbons at 100% in the lower right corner and 100% heavy hydrocarbons in the lower left corner. For example, a 50/50 mixture of heavy and intermediate hydrocarbons would be on the bottom edge of the diagram at a point half-way between the two. The placement of the bold curve enclosing the Two-Phase region is for a discreet pressure. If temperature is constant and pressure is decreased, the bold curve moves to the right and the two-phase region increases. Conversely at constant temperature, if pressure increases, the bold curve moves to the left and the two-phase region gets smaller. We plan to inject rich gas. This will place our injectant somewhere along the side of the triangle between the top (Light) and the bottom right (Intermediate). We hope to conduct the injection while operating in the region to the right of the Critical tie line. However, as previously noted, the bold curve may be further to the right than illustrated and indeed may cover most of the ternary diagram. This could inhibit the movement of condensate. The movement would then be facilitated by banking the condensate and then moving it away from the wellbore.

Dilution path	Type
I_1-J_1	Immiscible
I_1-J_2	Multiple contact (developed) Miscibility (rich gas)
I_2-J_1	Multiple contact (developed) Miscibility (vaporizing gas)
I_2-J_3	First-contact miscible

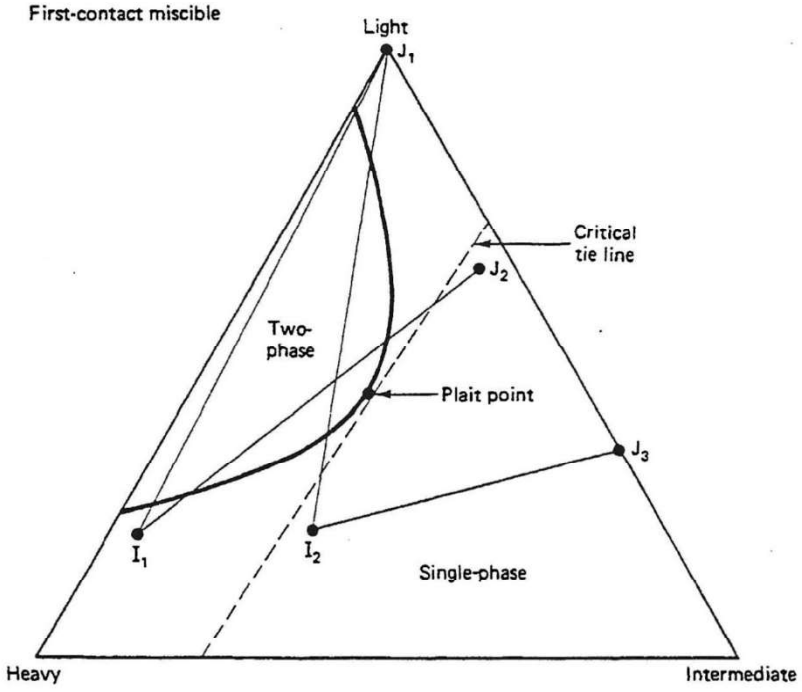


Figure 7-17 Summary of miscibility and developed miscibility

Snake River Oil and Gas contracted Gemini Solutions to model the Sand 1 reservoir and make predictions of various injection scenarios. The current wellbore configuration may limit the injection rate so scenarios of 5 MMFC/D were high graded for further scrutiny. The table below summarizes the injection totals at a maximum injection rate of 5 MMCF/D along with the recovery of condensate and gas in the first 21 days after injection. The two cases are for a clean no skin completion and a completion with skin damage. The model predicts similar condensate recovery whether injection is for 7 or 10 days with no skin and the condensate recovery actually is reduced if skin damage is present.

21-Day Recovery		No Skin			Skin	
	Injection Total	Cond Cumulative	Gas Cumulative	Injection Total	Cond Cumulative	Gas Cumulative
5 MM for 7 Days	34993	1610.39	105000	20862	651.13	41626
5 MM for 10 Days	49990	1624.33	105000	28797	605.59	42352

INJECTION PROCEDURE

Snake River Oil and Gas plans to install a boost compressor capable of injecting a maximum of 5 MMCF/D with a maximum pressure of 2000 psi. We will meter the gas from Little Willow Gas Plant and analyze the composition and heat content on a daily basis while injecting and for the first 21 days while withdrawal gas on flowback.

1. Install isolation valve and hydrotest gas lift line from Little Willow Gas Plant to the ML Investments 2-10 well.
2. Install wellhead manifold for injection.
3. Set compressor and tie in for injection, fuel, and bypass.
4. Start injection and monitoring. Test injection gas for composition, heat content, and injection temperature.
5. Inject at rate based on a maximum of 5 MMCF/D or 2000 psi injection pressure. NOTE: injection MAIP will be derated based on rate-friction calculation to not exceed 1750 psi bottomhole pressure.
6. Maintain injection for 7 days with the option to inject for a maximum of 20 days.
7. Flow well back while monitoring gas for composition, heat content, and condensate yield. Monitor for 21 days.
8. Repeat cycle as appropriate based on observed results or resume production operations.
9. Rig down and move off compression.

References

1. Kai Luo, Shi Li, Xitan Zheng, Gang Chen, Zhijian Dai, Ning Liu Experimental Investigation into Revaporization of Retrograde Condensate by Lean Gas Injection. SPE 68683.
2. Mohammed A. Sayed, Ghaithan A. Al-Muntasheri Liquid Bank Removal in Production Wells Drilled in Gas-condensate Reservoirs: A Critical Review. SPE 168153.
3. Lary W. Lake Enhanced Oil Recovery. **Figure 7-17.**

Appendix 1.j

Summary of known water bearing zones from surface to bottom of well (IDAPA 20.07.02.210.01.j):

There are no known water bearing zones present from the surface of the well to 140' Measured Depth (MD). Analysis of the Mud Log and Quad Combo logs shows that there are no water bearing zones present from 140’ MD to the top of Sand 1 at 3998’ MD. This approximately 4000’ thick overlying interval is composed of impermeable grey claystone with some silty grey claystone.

Sand 1 is found from 3998’ to 4050’ MD and is gas and condensate bearing.

Sand 2 is found from 4080’ to 4240’ MD and is also gas and condensate bearing.

There are water bearing sands present from 4290’ to 4400’ MD, 4435’ to 4510’ MD, and 4660’ to 4930’ MD. These sands have been tested and shown to be water bearing with minor shows of gas and condensate present in each.

Appendix 1.k

Declaration regarding notice of proposed well treatment

Declaration of Wade Moore III

I, Wade Moore III, declare as follows:

1. I am a contractor to Applicant Snake River Oil and Gas, LLC ("SROG") for land functions.
2. Based on a review of Idaho Department of Water Resources records and my personal knowledge of the area, I determined that there is one residence and water well located within ¼ mile of the ML Investments #2-10 well, both owned by Richard Peterson. These are noted on Appendix 2.b to the Application, showing a ¼ mile radius around the well and noting Peterson's residence and well as other surface waters in the radius area.
3. I have discussed the proposed well treatment described in the Application with Mr. Peterson. I have notified him that we intend to test his water well before and after the proposed well treatment.
4. There is no public drinking water system with an IDEQ recognized source water assessment or protection are within ¼ mile of the well.
5. I make this Declaration under penalty of perjury under the laws of the State of Idaho

Date: April 22, 2025

Wade Moore III

Appendix 1.m
Wellbore Diagram

ML Investments 2-10

Willow Field

Payette County, Idaho

Surface & BH Location: Section 10 Township 8N Range 4W
Surface Location: 1,504' FNL, 1,202' FEL
GL: 2298.60' **KB:** 2314.60' **DF to GL:** 16.00'

Spud Date: 08-01-2013
API Number: 11-075-20022

Last updated on: 20180419
Last updated by: KS

Schlumberger Logs: GR, SP, Ind/Res, Dens/Por, BHL Sonic & FMI (2013-08-09&10)
Weatherford Wireline: CBL, GR, CCL (2013-08-13)
Slumberger Logs:
Sigma log: TD 3950' (1040') 1 pass
C/O Log: TD 4650' Interval 1 (340') 2 Passes; 4520'-3990' interval 2 (530') additional pass

3/23/14 - 2 3/8" x 4 1/2" VS1X pkr (3.68" Running OD)

Sat down at 40' +/- (csg collar). Could not get down.
Deceided to run Cmt retainer as prod pkr (3.61" Running OD).

NOTE: 3/2/18 - Ran TCP/Pkr assy on WL using 3.59" OD (turned down) w/o drag blocks. Did not tag up on any collar when RIH.
Ran 3.60" GR/JB to 4179'.

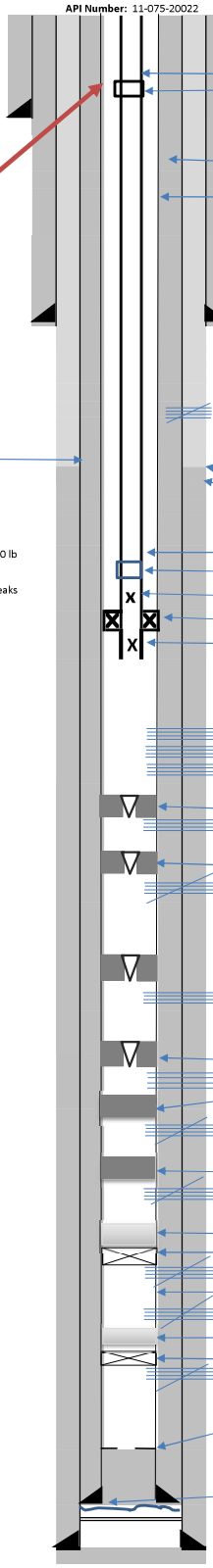
Deviation Information: Straight Hole

[**NOTE:** 22.04' jt of K-55 STC from 3,618.02'-3,640.06']

Casing leak/patch history
(20140221) Set csg patch @ 1570-90', did not hold.
(20140225) milled out csg patch
(20140226) Set Weatherford retrievable BP @ 1672', top of BP 1667', 3 50 lb sks of sand on plug. Break off BP retrieving head.
(20140227) found csg. Leaks using squeeze pkr @ 1578-1591' squeezed leaks w/ 58 cu ft class G cmt w/ 3% CaCl x water loss. Displace cmt to 1387' no flowback, release packer, no cmt to surface Cal. TOC @ 1513'
(20140301) milled out csg patch x retrieve bridge plug
(20140303) set 30' csg patch @ 1570-1600' (csg leaks from 1578-1592')
(20140308) -patch did not hold- mill out casing patch at 1570'.
(20140310) decided to run 4 1/2" casing

3/28/2018 Cmt retainer at 4147'

* FC & FS segments are K-55 STC, along w/ jt @ 3,640.06'



0.50 hHNGR
15.510K Comprssion correction
Cmt'd to surf. w/ neat cement. (2013-08-21)
47.53' 1-jt. 2 3/8 Tbg.
70.91' Tubing Pups 1-10' 1-2' 1-1'
13-3/8" J-55 conductor, set @ 120' & cmt'd to surf. (2013-07-18)

100 sx Cal Prem cmt w/ 4% CFL x .3% TCR-10

4 1/2" OD, 3.826" ID; 15.1# P-110 Buttress
CSG; Col'pse 14,320 psi; Int prs 13,460 psi

8-5/8" 32.0ppf K-55 STC csg @ 960' (2013-08-01)
Cmt'd to surface w/ 150 sks lead cmt (65% Type III, 35% POZ, 6% Gel, 4#/sk Gyp, 5% Salt BWOW) & 100 sks tail cmt (Type III, 5% Salt BWOW), with 23 bbls cmt returns @ surf.

1585 - 1586 Perf'd & squeezed w/ 243bbls of 13.3ppg cmt; no returns to surface (2013-08-13) (cement retainer (1575')and bridge plug (1595') drilled out 20131215)

CBL showed top of cement @ +/- 1,850' (2013-08-13)
Calc. TOC @ 1,900' - Mixed and pumped Lead: 1067cuft./639 sks/190 bbl of TCI Lite @ 13.1 ppg. Mixed & pumped tail: 252 cuft/220 sks/51 bbl + gas seal @ 16 ppg. (2013-08-11)

3930.08' 119 jts 2 3/8" 4.7# J-55 EUE 8rd tbg .
3931.43' 4 1/2 x 2 3/8 on/off tool skirt
3932.62' 2 3/8 x 1.875 "X" Profle Stinger
3939.10' (top 3927' WLM)4 1/2 x 2 3/8 VSI-X pkr w/ Carbide turned down to 3.59 OD. 1.72" XN at 4146'
3952.71' 2 3/8 tbg pup out plug (Pin @1400 and convert to w/l entry guide)

4000 - 4015'
4023 - 4030'
4043 - 4049'
perf w/ 3 1/8" HSE, 6/60 (4-13-18)
Sand 1

4059' 3.61 OD Weatherfor retainer (4-12-18)
4080 - 4092' perf 3 1/8" HSE, 6/60 (4-9-18)
Sand 2

4098' WLM Top of 3.61 OD Weatherfor retainer
4/6/2018
Perfs: 4102-12' 3 1/8" HSE 6 / 60 (3-29-18)
41
squeezed w/ 50 sks Class G dmt (4-6-18)

3/3/2018
Perfs: 4158-70' 6/60 3 1/8" HSE
Sand 2

4180' Weatherford cmt retainer, 3.6" OD (20140323)
4194-4204' Perf'd (20140322)
Sand 2
4260' set Weatherford cmt retainer (tool hung up on every collar) (20140322)
4288-4300' Perf'd (20140321)

4403' set Weatherford cmt retainer (20140320)
4436 - 4442' Perf'd (20140319)

4585' 15' of cmt on top of plug.
4600' set CIBP (20140318)
4660-4665' Perf'd (20140317)
4685' CIBP (20140317)
4690-4700' Perf'd (20140316)
4735' 15' of cmt on top of plug.
4750' CIBP (20140316)
4790 -4800' Perf'd (20140315)

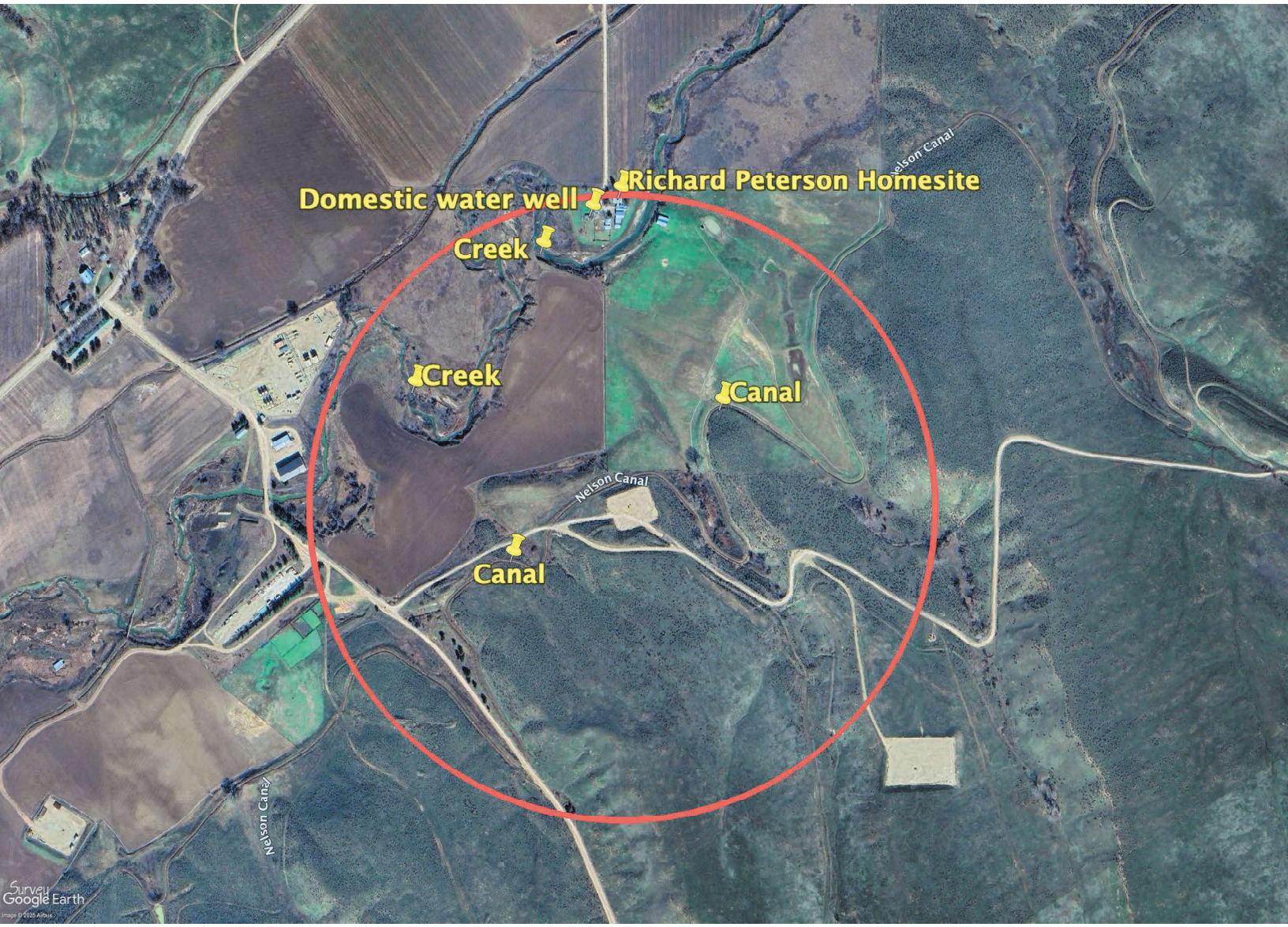
4839' tag btm on jt 149 (20140314)
Float collar @ 4839'
1 20' pup jt
(20140311)
Casing shoe @ 4862'
PBTD = 4877' 20131216 - tubing measurements - tagged bottom on bit and scraper run
FC @ 4,899.95' MD
5-1/2" 15.5 ppf K-55 LTC* csg @ 4,991' MD/4,989.56' TVD (2013-08-10)

TD:4,991' MD / 4,989.56'TVD
7.875" bit size

Well Name & No.: ML Investments 2-20	Field: Willow Hamilton
County / Parish: Payette	State: Idaho
Total Depth (MD): 4991' BPTD' 4059'	(TVD): 4,989.56"
Last Revesied: 04/19/18	Updated by: KRES
Initial WBD: A Thomas	

Appendix 2.b

Water wells, residence,
surface waters within 1/4 mile



Appendix 2.c

Brief description of structural geology that may influence ground water flow and direction (IDAPA 20.07.02.210.01.K.IV):

The ML Investments #2-10 well is located on the southern margin of the valley of Little Willow Creek, a seasonal creek that is oriented northeast to southwest and drains to the southwest. The valley is typically ½ to 1 mile wide and is surrounded by broad rolling hills and steep bluffs, with surface elevations ranging from 2230' to 2600' above sea level.

The valley floor is filled with Quaternary Alluvium of varying thickness to approximately 150'. Generally exposed (and heavily weathered) at the surface in the surrounding higher ground is the Upper Glenns Ferry Formation, composed of pro-delta mudstones and claystones (Wood, 1994 & 2004). Pristine bedding exposures are rare, but when found they typically gently dip to the southwest at 5-10 degrees. Good quality 3-D seismic data become useful and of sufficient fold to measure dip at depths greater than several hundred feet, and in this area confirm gentle dip to the southwest from 600' MD to approximately 3000' MD. The ML #2-10 wellbore crosses a down to the southwest fault at 3678' MD and goes "upthrown" into a fault block with bed dips of 0 to 15 degrees to the northeast, with bed dip increasing with depth. This fault block is a classic "upthrown 3-way structural closure" and is the defining feature responsible for the Willow Field gas/condensate field.

Appendix 2.d

Brief description of the hydrogeological characteristics of the treatment area and surrounding land (IDAPA 20.07.02.210.01.k.v.)

From a recent US Geological Survey/Idaho Department of Water Resources publication (US Dept. of the Interior-USGS Fact Sheet 2017-3027): (In regard to this part of southwest Idaho..) "The aquifer system can be broadly conceptualized as having three parts – a shallow water-table aquifer; a complex, deep underlying aquifer under confined conditions; and a lowermost confined geothermal aquifer. Groundwater flow in the shallow aquifer is generally from topographic highs to rivers and drains." Our ML #2-10 well only reaches the first 2 types and so we will limit our address to them.

As noted in ***Appendix 1. j.***, there are no known sands in the well from the surface to 140' MD. Our first samples are mudstones and claystones of the Upper Glenns Ferry. The surface location of the well is at an elevation of 2300' above sea level, approximately 70' above the elevation of the valley floor. Thus, it is unlikely that this location has any alluvium present. Any sands that might be present in this interval in the surrounding area would likely be in the shallow water table aquifer. This aquifer would likely be charged in the higher elevation areas of the Little Willow Creek watershed to the northeast and flow to the southwest under the valley of Little Willow Creek, ultimately discharging to the Payette River. As this interval of the well is protected by 3 concentric cemented strings of casing and there are no known sands in the well there should not be any concerns of affecting the possible shallow water aquifer zone during the well treatment.

The proposed interval to be treated is Willow Sand 1 (3998'- 4050' MD). This zone is a confined reservoir in a well-defined structural trap bounded by sealing faults. The Sand 1 reservoir exhibits the characteristics of a confined depletion drive or volumetric reservoir based on its well documented pressure and production history. An apt analogy would be that the Sand 1 reservoir behaves as a confined "tank" or bottle, and the reservoir pressure declines predictably as the fluids are produced from the reservoir. This confined characteristic matches the second type of aquifer described in the USGS/IDWR fact sheet. Because of the confined nature of the Sand 1 reservoir, there should be no concerns about any effects of the proposed treatment procedure on any other surrounding aquifers.

Wood, S.H. 1994. Seismic expression and geological significance of a lacustrine delta in Neogene deposits of the western Snake River Plain, Idaho: AAPG Bulletin, v. 78, p. 102-121

Wood, S. H. 2004, Geology across and under the Western Snake River Plain, Idaho: Owyhee Mountains to the Boise Foothills (Chapter &) USGS Open File Report 2004-1222. P. 84-107

USGS-IDWR, 2017, A Groundwater Flow Model for the Treasure Valley and Surrounding Area, Southwestern Idaho, US Dept. of the Interior/US Geological Survey Fact Sheet 2017-3027

Appendix 2.e

Freshwater Monitoring Program

Applicant's proposed treatment involves injecting natural gas into a depleted natural gas reservoir, in the same zones from which natural gas and condensate were previously produced, and applicant respectfully submits this procedure does not pose a threat of pollution to fresh waters. No liquids handling at the surface will be involved other than flowback of recovered condensates into existing production equipment. However, Applicant proposes to test the water well adjacent to the Richard Peterson residence, identified on Appendix 2.b, the only water well within ¼ mile of the ML Investments #2-10 well, before and within 30 days after completion of the proposed well treatment. The testing and analysis will be performed by Analytical Laboratories, Inc. of Boise, an EPA certified lab that Applicant has used for pre- and post-drilling water well testing for producing wells to comply with Payette County's oil and gas ordinance. Applicant has obtained Mr. Peterson's permission to conduct the testing. The analytes to be evaluated and the EPA methods to be used for analysis are listed on the quote from Analytical Laboratories, Inc. on the following page. Detection limits are set forth in the applicable EPA method.

Analytical Laboratories Inc

1804 N. 33rd Street
Boise, Idaho 83703
Phone (208) 342-5515

Analytical Services Quotation

Printed: 04/23/2025

For: **CHRIS PATE**
1804 N 33RD ST
BOISE, ID 83703

Effective: 04/23/2025
Expires: 05/23/2025

Project: Snake River Oil & Gas - 9090 Hansen Ln Payette ID
Manager: ANALYTICAL LABORATORIES
Phone: (208) 342-5515 Email: chrispateali@gmail.com

Price

Pricing Summary

Analysis	Method	Qty	TAT (days)	Unit Price	Extended Price
Drinking Water					
Inorganics					
Fluoride	EPA 300.0	1	10	$21.00	$21.00
Alkalinity	EPA 310.1	1	10	$20.00	$20.00
Sulfate	EPA 300.0	1	10	$21.00	$21.00
Nitrate	EPA 300.0	1	10	$21.00	$21.00
Chloride	EPA 300.0	1	10	$21.00	$21.00
Conductivity	EPA 120.1	1	10	$15.00	$15.00
Metals by ICP					
Boron by EPA 200.7	EPA 200.7	1	10	$17.00	$17.00
Calcium by EPA 200.7	EPA 200.7	1	10	$16.00	$16.00
Aluminum by EPA 200.7	EPA 200.7	1	10	$16.00	$16.00
Iron by EPA 200.7	EPA 200.7	1	10	$16.00	$16.00
Potassium by EPA 200.7	EPA 200.7	1	10	$16.00	$16.00
Magnesium by EPA 200.7	EPA 200.7	1	10	$16.00	$16.00
Manganese by EPA 200.7	EPA 200.7	1	10	$16.00	$16.00
Sodium by EPA 200.7	EPA 200.7	1	10	$16.00	$16.00
Silica	EPA 200.7	1	10	$17.00	$17.00
Metals by ICP-MS					
Uranium by EPA 200.8	EPA 200.8	1	10	$40.00	$40.00
Selenium by EPA 200.8	EPA 200.8	1	10	$23.00	$23.00
Barium by EPA 200.8	EPA 200.8	1	10	$23.00	$23.00
Arsenic by EPA 200.8	EPA 200.8	1	10	$23.00	$23.00
Organics					
RSK175MOD Methane, Ethane, Ethene	RSK175 MOD	1	10	$340.00	$340.00
Radiochemistry					
Gross Beta	EPA 900.0	1	40	$120.00	$120.00
Gross Alpha	EPA 900.0	1	40	$120.00	$120.00
Services					
MISC	varies	1	10	$5.00	$5.00
Sample pickup/collection	SERVICES	1	10	$275.00	$275.00
Field pH	EPA 150.1	1	10	$10.00	$10.00

Analytical Laboratories Inc

1804 N. 33rd Street
Boise, Idaho 83703
Phone (208) 342-5515

Analytical Services Quotation

Printed: 04/23/2025

(Continued)

For: **CHRIS PATE**
Project: Snake River Oil & Gas - 9090 Hansen Ln Payette ID
Manager: ANALYTICAL LABORATORIES
Phone: (208) 342-5515 Email: chrispateali@gmail.com

Price

Pricing Summary

Analysis	Method	Qty	TAT (days)	Unit Price	Extended Price
Non-Drinking Water					
Volatiles					
Benzene, Toluene, Ethylbenzene, Xylenes	EPA 8260B	1	14	$235.00	$235.00
				Bid Total:	**$1,479.00**

Comments: Client Info - Snake River Oil & Gas: Wade Moore
wade7m3@gmail.com Testing Location - 9090 Hansen Ln. Payette, ID 83661
*Permit #734337 Well ID #293534

CHRIS PATE
Environmental Analyst

Rush charges may be applied if sample submission is delayed until the end of analysis hold times.