



March 5, 2014

Whiting Oil and Gas Corporation

1700 Broadway, Suite 2300
Denver, CO 80290

Attention:

Mr. Cole Orley
Phone: 303.390.4259
Email: cole.orley@whiting.com

Rig Phone: 832.325.9120 (*Kenny*)

RAZOR 26K-2305A

(Frontier 26)

Weld County, Colorado

Sec. 26 – T10N – R58W

Plugback-KOP Cementing Proposal

Prepared by:

Brea Carlock
Sanjel USA, Denver
Direct: 303.893.4444
Cell: 303.345.5363
bcarlock@sanjel.com

Service Location:

Ft. Lupton, CO
303.857.7948

Well Data

Total Depth:	6,017 ft
Previous Casing:	9 5/8 inch, 36 lb/ft at 1,564 ft
Open Hole:	8 3/4 inch
Drill Pipe:	4 inch, 14.4 lb/ft XT
Plugback Depths:	6,000 ft – 5,300 ft
KOP Depths:	5,300 ft – 4,700 ft
Excess:	10%
Drilling Fluid:	9.2 ppg water-based
BHST:	190°F – 200°F (at total depth)

Cement Blend

Plugback:	0:1:0 'G' + 0.5% CFR + 0.2% AS-3 + 0.15% LTR 6000 ft – 5300 ft = 700 ft PLUGBACK
KOP:	0:1:0 'G' + 1% CFR + 0.2% AS-3 + 0.1% LTR 5300 ft – 4700 ft = 600 ft KOP

Cement Data

<i>BHST / BHCT</i>	:°F	<u>Plugback</u> 200 / 180	<u>KOP</u> 180 / 160
Water Requirement	:gal/sk	5.03	3.23
Yield	:ft ³ /sk	1.15	0.93
Density	:lbs/gal	15.8	17.5
Thickening Time	:hrs:min	4:00*	3:00-3:30*
Compressive Strength	:psi/hrs	2177/8 2463/24	*Tests pending

Plug Calculations

Plugback	700 ft × 0.4176 ft ³ /ft	= 292.3 ft ³
	292.3 ft ³ × 10% excess	= 321.5 ft ³
	321.5 ft ³ / 1.15 ft ³ /sk	= <u>280 sks</u>
KOP	600 ft × 0.4176 ft ³ /ft	= 250.6 ft ³
	250.6 ft ³ × 10% excess	= 275.7 ft ³
	275.7 ft ³ / 0.93 ft ³ /sk	= <u>300 sks</u>

Cement Plug Job Procedure

1. Run in hole 4" drill pipe.
2. Rig in Sanjel cementing unit and surface treating lines. Conduct safety meeting with Sanjel crew, rig crew, and client representative(s).
3. Fill surface treating lines with water and pressure test lines to 3000 psi or limit set per customer representative.
4. Mix and pump the following:
 - 1) **15 bbls** Visweep ahead mixed at 10.0 ppg
 - 2) **280 sks** Plugback Cement mixed at 15.8 ppg (*0:1:0 'G' + additives*)
 - 3) **5 bbls*** Visweep behind mixed at 10.0 ppg (**or volume to balance*)
 - 4) *Displace with drilling fluid to balance*
5. Pull slowly out of hole with drill pipe, above top of cement. Circulate drill pipe clean. Prepare to set KOP.
 - 1) **15 bbls** Visweep ahead mixed at 10.0 ppg
 - 2) **300 sks** KOP Cement mixed at 17.5 ppg (*0:1:0 'G' + additives*)
 - 3) **5 bbls*** Visweep behind mixed at 10.0 ppg (**or volume to balance*)
 - 4) *Displace with drilling fluid to balance*
6. Pull slowly out of hole with drill pipe, above top of cement. Circulate drill pipe clean.
7. Rig down Sanjel.
8. Allow a minimum of **12-18 hours** for cement to set before kicking off or resuming normal rig operations.

Note:

This recommendation is to be used as a guide. Job conditions and field experience must dictate job procedures. Please check all calculations on location.

A minimum of two additional hours of pumping time per pumping operation will be charged after initial 6 hours location time. Hours will be charged as follows:

Additional hours on location will be charged (non-discounted) as follows:

Twin Cement Pumping Unit – per unit, per hour

Pumping Time.....	\$525/hr
Standby Time.....	\$340/hr

Bulk Cement Unit – per unit, per hour

Standby Time.....	\$285/hr
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Additional location time will be charged (undiscounted) for periods exceeding four hours on location. The additional time includes both pumping and standby time.

NOTE:

Travel charges are an estimate only. Invoice price will be based upon actual distance traveled. Equipment charges are for specified operating times. Hourly rates will be charged for operating times greater than specified. Federal and State taxes where applicable are additional. Quote is valid for 30 days from the date it is submitted.

- Agreement for Services.** Sanjel (USA) Inc. ("Sanjel") and the customer for whom Sanjel is providing the Services ("Customer"), (collectively, the "Parties"), expressly understand and agree that the terms and conditions in this agreement (the "Agreement") shall govern and control the provision of all services provided by Sanjel to Customer, including any services, materials or consumables provided or performed by Sanjel under written or oral requests for services or job orders ("Services").
- Entire Agreement and Conflict.** Subject to any Master Service Agreement ("MSA") in effect between the Parties, this Agreement constitutes the entire agreement of the Parties with respect to the subject matter herein. This Agreement shall not be superseded or replaced by any other agreement (including any terms and conditions which may be found in any purchase order, service order, or invoice produced by Customer or found in Sanjel's Price Book) unless specifically agreed to by the Parties in writing. If there is any conflict between the terms of this Agreement and the MSA, the provisions of the MSA shall prevail.
- Results of Services.** The Customer acknowledges and agrees that the Services are of such a nature that no results of the work performed can be guaranteed and Sanjel specifically does not make any representations, warranties or guarantees with respect to the results of the Services.
- Price and Price Changes.** Customer shall pay for the Services at the rates set out in Sanjel's current Price Book ("Price Book"). All rates and prices quoted in the Price Book are subject to change without prior notice to the Customer, including the imposition of fuel or other surcharges related to increases in commodity prices. Special jobs undertaken by Sanjel outside of the scope of the Services shall not be subject to Price Book or any previously agreed upon discounts.
- Taxes.** All prices are exclusive of any municipal, state, federal, and/or special taxes or levies imposed on the sale of the Services. Customer shall be responsible for all taxes applicable to the provision of the Services.
- Additional Services Requests.** Services, equipment or materials not listed in the Price Book or a Sanjel proposal but purchased or rented by Sanjel at Customer's request shall be charged to Customer at actual cost plus twenty five percent (25%). Sanjel shall have no liability to Customer in respect of such services, equipment or materials.
- Payment Terms.** Payment terms are cash, net thirty (30) days. Interest shall be charged at eighteen percent (18%) per annum on all overdue accounts, and where necessary, all costs of collection of overdue accounts, including any legal fees and disbursements.
- Standby Charge.** In the event that Sanjel is unable to perform a job or provide requested Services to Customer due to circumstances beyond its control, including instances of force majeure, Sanjel retains the right to charge Customer seventy five percent (75%) of the applicable base charge, plus 100% of costs including, but not limited to, mileage, blending, material handling/hauling, materials and/or return delivery and restocking charges, and all location time in excess of the location time allowance.
- Warranties.** Sanjel warrants only that title to the product, supplies and materials, shall pass and vest in Customer, free and clear of all liens, claims and encumbrances of any nature, and that the same are free from defects in workmanship. There are no warranties, express or implied, of merchantability, use, and fitness or otherwise which extend beyond those expressly stated herein.
- Proprietary Rights.** Customer acknowledges that any intellectual property which is used by Sanjel for the provision of Services, or is created or developed by Sanjel in the course of performing the Services, is and shall remain the property of and is owned by Sanjel at all times.
- Confidentiality.** The Parties agree to take all reasonable precautions to protect the confidential information of the other from unauthorized use and disclosure and each Party shall use the confidential information of the other only for the purpose of conducting the Services.
- LIABILITY AND INDEMNITY.** (A) SUBJECT TO SECTIONS 12(b),13,14 & 15 BELOW, CUSTOMER SHALL BE LIABLE TO SANJEL FOR ALL CLAIMS, DEMANDS, ACTIONS, CAUSES OF ACTION, DAMAGES, LOSSES, DEFICIENCIES, COSTS, LIABILITIES, EXPENSES (INCLUDING LEGAL FEES, ON A SOLICITOR-CLIENT BASIS ("CLAIMS")), THAT MAY BE MADE OR BROUGHT AGAINST SANJEL (EITHER DIRECTLY BY CUSTOMER, ITS AFFILIATES OR SUBSIDIARIES OR BY ANY THIRD PARTY) OR WHICH SANJEL MAY SUFFER OR INCUR AS A RESULT OF, ARISING OUT OF OR INCIDENT TO THIS AGREEMENT OR ANY SERVICES PROVIDED HEREUNDER, WHETHER SUCH CLAIM IS FOUNDED IN CONTRACT, TORT OR ANY OTHER CAUSE OF ACTION WHATSOEVER, UNLESS CAUSED BY THE NEGLIGENCE OR WILLFUL MISCONDUCT OF SANJEL. (B) NOTWITHSTANDING SECTION 12(A), CUSTOMER SHALL AT ALL TIMES BE SOLELY LIABLE FOR ANY CLAIMS MADE OR BROUGHT AGAINST SANJEL (EITHER BY CUSTOMER, ITS AFFILIATES OR SUBSIDIARIES OR BY ANY THIRD PARTY) OR WHICH SANJEL MAY SUFFER OR INCUR AS A RESULT OF, ARISING OUT OF OR INCIDENT TO: WELL BLOWOUT OR ANY UNCONTROLLED WELL CONDITION, FIRE, CRATERING, REDRILL OR SIDETRACKING, SEEPAGE OR RESERVOIR DAMAGE, LOSS OR DAMAGE TO THE HOLE, POLLUTION AND CONTAMINATION (EXCEPT SUDDEN AND ACCIDENTAL POLLUTION ORIGINATING ABOVE THE SERVICE OF THE EARTH AND EMANATING FROM SANJEL'S EQUIPMENT WHILE SUCH EQUIPMENT IS IN SANJEL'S CARE, CUSTODY AND CONTROL); EVEN IF CAUSED IN WHOLE OR IN PART BY THE SOLE, JOINT OR CONCURRENT NEGLIGENCE, GROSS NEGLIGENCE, WILLFUL MISCONDUCT OR OTHER FAULT (ACTIVE OR PASSIVE) OF SANJEL OR ANY OTHER PERSON. (C) CUSTOMER SHALL PROTECT, DEFEND, INDEMNIFY AND SAVE HARMLESS SANJEL, ITS AFFILIATES AND SUBSIDIARIES, FROM AND AGAINST ALL OF THE CLAIMS DESCRIBED IN SECTIONS 12(A) AND 12(B) ABOVE.
- LIABILITY CAP.** NOTWITHSTANDING SECTION 12 OR ANY OTHER TERM HEREIN TO THE CONTRARY, SANJEL'S MAXIMUM LIABILITY TO CUSTOMER ARISING OUT OF OR IN CONNECTION WITH THIS AGREEMENT AND ANY SERVICES PROVIDED HEREUNDER IS LIMITED TO THE COST OF THE PRODUCTS OR SERVICES SUPPLIED FOR THE PARTICULAR JOB IN WHICH SUCH DAMAGES AROSE.
- Consequential damages.** Notwithstanding section 12 or any other term herein to the contrary, neither Party shall be liable to the other for business interruptions, punitive, indirect or consequential damages relating thereto (including but not limited to any loss of profit, loss of expected revenue, loss of hydrocarbons or loss of rig time).
- Equipment and Materials.** Customer shall be liable to Sanjel for any and all loss or damage to Sanjel equipment, tools or materials: (i) while located down hole; and (ii) while being transported to or from the work-site by Customer at any time or while such equipment, tools or materials are being loaded onto or attached to any transportation unit or vehicle furnished by or arranged for by Customer. In the event any Sanjel equipment is lost, damaged or destroyed during the provision of Service, Customer shall use reasonable efforts to diligently recover or repair said equipment, and in the event recovery or repair are not possible, Customer agrees to reimburse Sanjel for the lost, damaged or destroyed equipment at actual replacement cost value plus twenty-five percent (25%).
- Disposal of Chemicals.** Customer shall arrange for and be responsible for the disposal of any used chemicals, hazardous material(s), including but not limited to, any waste produced or accumulated during the provision of Services.
- Waiver.** Failure to enforce any or all of the above terms and conditions shall not relieve the Parties of their rights and obligations hereunder or constitute a waiver thereof or preclude subsequent enforcement of same.
- Amendments.** This Agreement may only be amended by a written agreement between the Parties signed by a duly authorized representative of each Party.
- Governing Law.** The Parties agree that the laws of the State of Colorado shall govern this Agreement, without the application of choice of law rules. The parties voluntarily submit to the jurisdiction and venue of the federal or state courts (as applicable) of the State of Colorado for the adjudication of all disputes under this Agreement.