EXPRESSION OF INTEREST (EOI)

FOR

"TURNKEY SERVICES FOR PRODUCTION FROM SHUT-IN OIL WELLS HAVING CRUDE OIL WITH HIGH POUR POINT IN ASSAM FIELD".

EOI No.: EOI/OGPS/ASSETS/001/2023

1.0 EXPRESSION OF INTEREST:

Oil India Limited (OIL) invites Expression of Interest from prospective in-country vendors for providing a turnkey solution with services for the production from shut-in oil wells with high pour point and asphaltene content located in the state of Assam.

2.0 PREAMBLE:

OIL is a Government of India Enterprise under the Ministry of Petroleum and Natural Gas, and it is a premier upstream Oil Company engaged in the business of Exploration, Production & Transportation of Crude Oil & Natural Gas, as well as production of LPG. The company's headquarters is in Duliajan, Assam, India.

OIL has encountered high pour point crude oil during initial production testing in few wells in Kharjan, Nadua, Khagorijan, Singhibil, and Central Small fields under Central & Western Assets (Crude oil sample analysis report of these wells is enclosed herewith in Annexure-I). Due to the complex rheology of this high pour point crude oil, with features like high wax content, high asphaltene, and resin content, these wells had to be kept shut-in as OIL does not have suitable technology to produce such crude. These wells also do not have gas-lift network for artificial lift assistance.

To revitalize the production from these shut-in wells and maximize their potential, OIL intends to invite prospective bidders to submit an Expression of Interest (EOI) for providing a turnkey solution with services for the production from shut-in oil wells with high pour point and asphaltene content. This project aims to contribute to the overall growth of our operations by unlocking the potential of these wells.

2.0 PROJECT OBJECTIVES:

The primary objectives of this project are as follows:

a. Revive production from the shut-in oil wells to their optimal capacity.

b. Mitigate the challenges posed by the high pour point and asphaltene content through effective treatment and management solutions.

c. Ensure the safety and compliance standards are adhered to throughout the project execution.

d. Optimize operational efficiency and minimize downtime during the transition from shut-in to production.

3.0 SCOPE OF WORK:

The scope of work for this project includes, but is not limited to, the following activities:

a. Engineering and Design:

i. Conduct a comprehensive assessment of the shut-in oil wells, including their current condition, equipment, and infrastructure.

ii. Develop an engineering plan and design specifications to address the challenges posed by the high pour point and asphaltene content.

iii. Recommend appropriate equipment, materials, and processes required for effective production.

b. Procurement:

i. Prepare a detailed procurement plan, including the identification and sourcing of equipment, chemicals, and materials necessary for the project.

ii. Coordinate with vendors, negotiate pricing, and ensure timely delivery of all required items.

c. Mobilization and Installation:

i. Mobilize a skilled workforce and required equipment to the project site.

ii. Oversee the installation, commissioning, and testing of the recommended equipment and systems.

iii. Ensure compliance with all safety regulations and standards during the mobilization and installation phases.

d. Operational Support:

i. Provide training and technical support to the operating personnel to ensure a smooth transition from shut-in to production.

ii. Implement effective monitoring systems and protocols to continuously evaluate and optimize production performance.

iii. Develop maintenance procedures and schedules to ensure long-term operational reliability.

e. Reporting and Documentation:

i. Prepare regular progress reports, including project milestones, key findings, and any challenges encountered.

ii. Provide detailed documentation of the project, including engineering designs, installation records, and operational guidelines.

3.0 TIMELINE AND DELIVERABLES:

The study phase and mobilization of the contractor's equipment along with the chemicals/consumables under the hired services shall be completed within 90 (days) from the date of Letter of Award for contract through open tender.

The duration of the proposed contract will be for 03 (three) years extendable by another 06(six) months).

The contractor should maintain their base office for operation & maintenance from in and around Duliajan, Assam.

4.0 SUBMISSION OF EXPRESSION OF INTEREST:

Interested parties are requested to submit their EOIs in electronic format to **dilipgoswami@oilindia.in** & **sanjeev_thakur@oilindia.in** or hard copy may be submitted to the following address no later than **21.08.2023 (14:00 hrs)**:

CGM-OGPS (HoD)
OILINDIA LIMITED
P.O. DULIAJAN-786602
DIST. DIBRUGARH, ASSAM, INDIA

The EOI should include the following information:

i. Company profile, including relevant experience in similar projects.

ii. Description of technical capabilities and qualifications.

iii. Outline of proposed methodology and approach.

iv. Tentative Scope of Work

v. Budgetary estimate.

vi. List of key personnel and their roles.

5.0 EVALUATION AND SELECTION:

All submitted EOIs will be evaluated based on predetermined selection criteria, including technical expertise, experience, proposed approach, and cost considerations. Shortlisted bidders may be invited for further discussions or presentations to clarify their proposals.

6.0 CONFIDENTIALITY:

All information provided during the EOI process will be treated as confidential and used solely for the purpose of evaluating submissions.

Please note that this invitation does not constitute a commitment to award the project or provide any form of reimbursement for costs incurred during the preparation of the EOI.

Should you have any questions or require further clarification, please do not hesitate to contact us at [contact email address]. We look forward to receiving your Expression of Interest and exploring the potential of working together on this important project.

****

Annexure-I

Crude oil sample Results

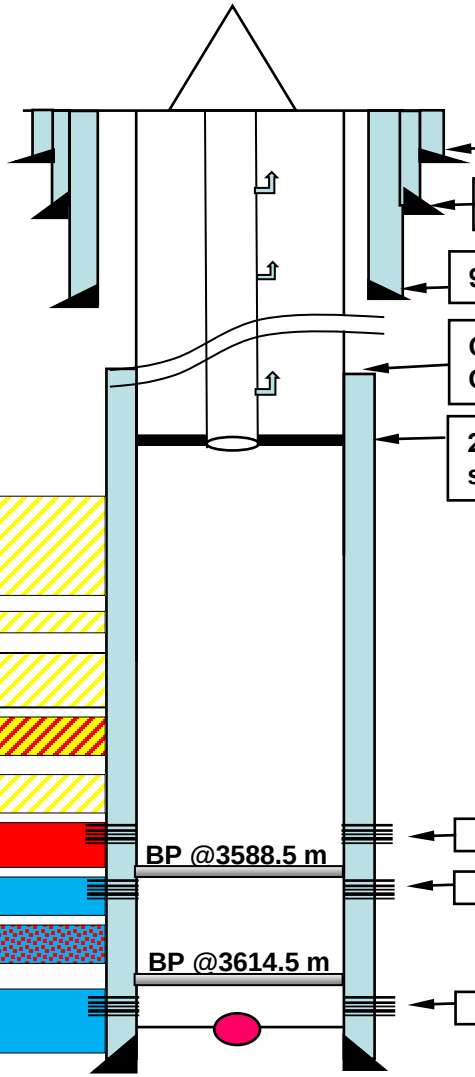
Well No	Density (gm/cm^3)	Pour Point ° C	API Gravity	Wax Content % w/w	Asphaltene content, % w/w	Resin Content % w/w
A	0.9102	36.0	29.3	14.87	2.89	14.95
B	0.9056	30	24.7	12.2	4.17	14.96
C	0.9181	33	22.5	11.65	4.47	12.80
D	NA	42	17.9	NA	23.1	11.2
E	NA	51	14.5	NA	6.7	10.2
F	NA	24	14.0	9.27	38.0	15.4
G	0.9914	45	12.5	NA	25.8	12.2

Note: The above wells are below 'sub hydrostatic' or 'hydrostatic equilibrium,' and they require artificial lift assistance for production. These wells also do not have gas-lift network for artificial lift assistance.

Well No. A
Deviated (S-Bend)

(Not to scale)

DF Elev: 132.02 m asl
GF Elev: 124.40 m asl
DC: 39.60 m



20.0" Casing shoe: 156.6 m

13.3/8" Casing shoe: 1736.7 m

9.5/8" Casing shoe at 3018.0 m

Cement top behind 5.1/2'' casing @3103.0 m(As per CBL-VDL-GR-CCL log)

2.7/8" OD tubing with Hookwall packer and GLV's set at 3484.7 m

3502 m Lk+Th sand: 3502.0- 3517.0 m
(SB: 3508.0-3509.4 m,3512.0-3513.5 m)

3521-m Lk+Th sand: 3521.2- 3522.0 m

3527 m Lk+Th sand: 3527.0-3535.5 m
(SB: 3531.0- 3531.5 m & 3532.5- 3533.5 m)

3542 m Lk+Th sand: 3542.0- 3547.0 m
(SB:3546.0- 3546.5 m)

3560 m Lk+Th sand: 3560.0- 3566.0 m

3582 m Lk+Th sand: 3581.6- 3586.1 m

3589 m Lk+Th sand: 3589.3- 3592.2 m

3596 m Langpar sand: 3596.2- 3608.3 m
(SB: 3601.5-3602.5 m & 3603.7- 3604.2 m)

3622 m Langpar sand: 3621.5- 3650.0 m
(SB: 3628.2-3629.6 m & 3641.0- 3643.0)

BP @3588.5 m

BP @3614.5 m

Perforations: 3582.5 - 3585.5 m (open)

Perforations: 3589.7- 3592.2 m (PB)

Perforations: 3622.0 – 3625.0 m (PB)

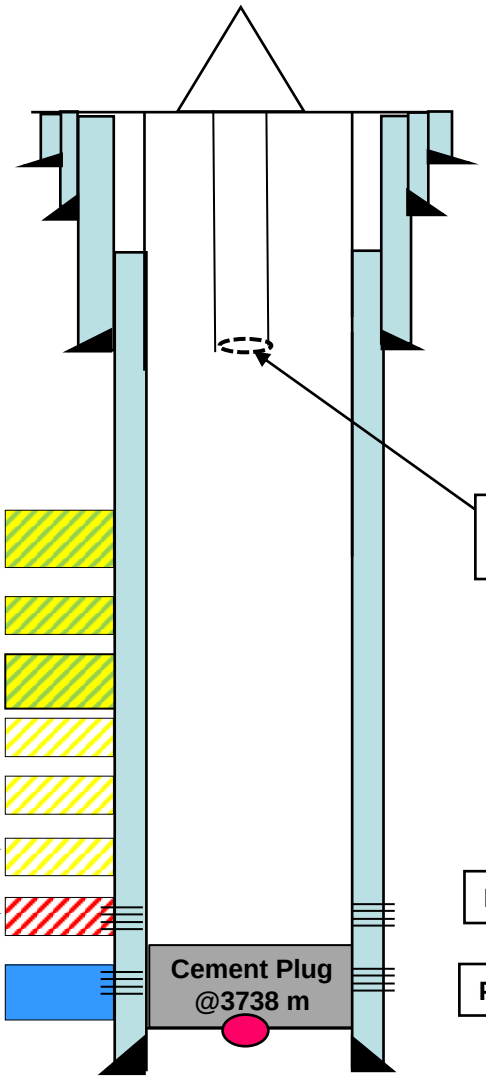
5.1/2" Float Collar/ Casing Shoe = 3641.2 / 3653.6 m
(20 lbs/ft, P-110XBTC, N-80XBTC)

Well No. B
Deviated (J-Bend)

(Not to scale)

DF Elev: 132.02 m asl
GF Elev: 124.40 m asl
DC: Variable

KOP: 1736.9 m
Maximum Drift angle: 30.87^0 at 3572.36 m



20.0" Casing shoe: 146 m

13.3/8" Casing shoe: 1700 m

Cement top behind 5.1/2'' casing @ 2494 m (as per CBL-VDL on 04.04.2022); 118 pcf

9.5/8" Casing shoe: 3147 m

2.7/8" EUE Tubing with tail pipe+ seating nipple+ perforated tube at 2601.44 m (seating nipple at 2200 m)

3646 m Lk+Th sand: 3645.8- 3651.2 m

3659-m Lk+Th sand: 3659- 3664 m

3670 m Lk+Th sand: 3670.4-3682 m
(SB: 3677.8- 3679.8 m

3687 m Lk+Th sand: 3687- 3690.6 m

3696 m Lk+Th sand: 3695.5- 3698.0 m

3702 m Lk+Th sand: 3702- 3709.2 m
(SB: 3705-3706.8 m)

3724 m Lk+Th sand: 3724- 3731.2 m
(SB: 3727.8-3728.5 m)

3743 m Langpar sand: 3742.5- 3754 m
(SB: 3747-3748.5 m)

Perforations: 3726.0 – 3731.0 (Open)

Perforations: 3743.0 – 3746.0 (Cement Squeezed)

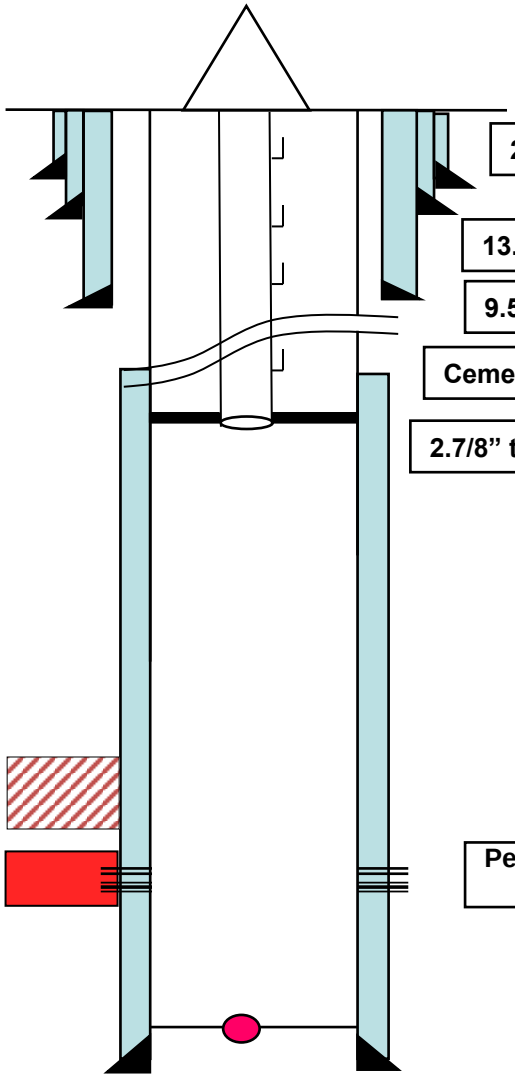
5.1/2" Float Collar/ Casing Shoe = 3795 / 3800 m
(20 lbs/ft, P-110XBTC, N-80XBTC)

Well No. C
DEVIATED WELL (J-BEND)

(Not to scale)

DF Elev: 132.02 m asl
GF Elev: 124.40 m asl
DC: Variable (J-Bend)

Deviation data: This is a deviated (J-bend) well with a maximum drift angle of 26.78 deg. at 2182.66 m MD (2073.04 m TVD).
K.O.P: 800 m



20" Casing shoe: 154 m

13.3/8" Casing shoe: 2100 m

9.5/8" Casing shoe at 3246 m

Cement top behind 5.1/2'' casing 2854 m

2.7/8" tubing with HW Packer and GLVs landed at 3790.30 m

3821m Lk+Th sand: 3821.6-3830.0 m

3837m Lk+Th sand: 3837.2-3841.4 m

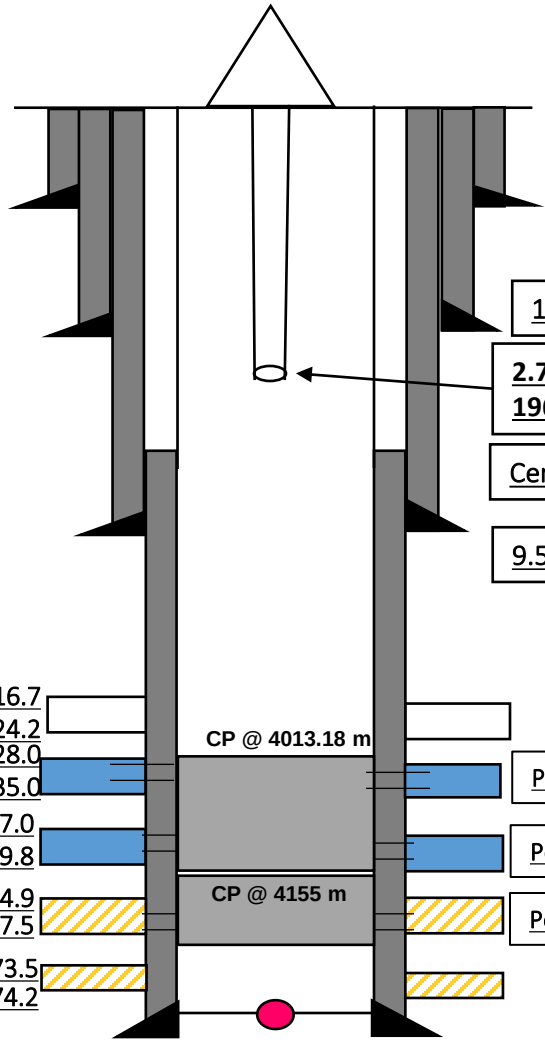
Perforations: 3837.5-3841.5 (Open)
: 3838.5-3841.5 (Open)

5.1/2" Casing Shoe /Float collar: 3913 m /3889 m
20 ppf, P-110XBTC (3882 M); N-80XBTC (3807.5-3809.5 m)

Not to scale

Well No. D
(J-Bend C Hole)

D.F. Elev: 132.66 m asl
G.L. Elev: 122.16 m asl



20" Casing shoe: 145.9 m

13.3/8 " Casing shoe: 1709.9 m

2.7/8" OD perforated safety tubing with bull nose landed at 1969 m

Cement Top behind 5.1/2" casing at 3290 m (**118 pcf**)

9.5/8 " Casing shoe: 3487.7 m

4117 m Lk+Th Sand (SB: 4118 -4118.7, 4121.8 – 4123.7)

4116.7
4124.2

4128 m Lk+Th Sand

4128.0
4135.0

Perforation : 4130 - 4133 m (Open)

4137 m Lk+Th Sand

4137.0
4139.8

Perforation : 4137 - 4139.5 m (PB by CP in the range of 4135–4150 m)

4165 m Lk+Th Sand

4164.9
4167.5

Perforation : 4165 - 4167.5 m (PB by CP in the range of 4168 – 4155 m)

4173 m Lk+Th Sand

4173.5
4174.2

CP @ 4013.18 m

CP @ 4155 m

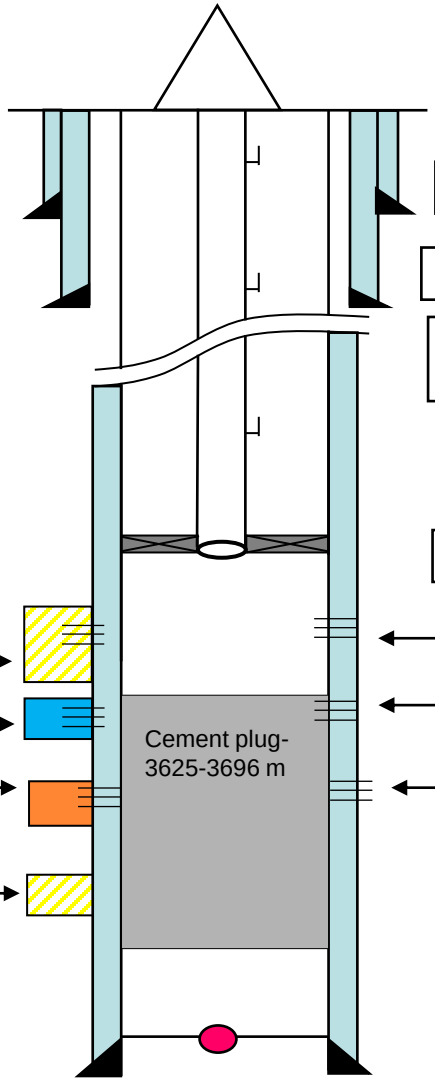
5.1/2" Float collar/ Csg Shoe = 4182.6 m / 4194.6 m, PPF : 20
P-110 BTC : 0-752 m ; N-80 BTC : 752-4194.6 m

Well No. E
DEVIATED, S-Bend

(Not to scale)

DFE: 118.53 m asl
GLE: 110.91 m asl
DC: 26.35 m

KOP:1790.0 m
Max. drift angle 17.8 ° achieved at 2065.0 m MD.The hole is nearly vertical below 2865.0 m MD



13.3/8" Casing shoe: 1752.91 m

9.5/8" Casing shoe: 3082.68 m

Cement Top: inside 9.5/8" casing, CBL-VDL could not be recorded due to several held up at 2021 m

2.7/8" tubing with Hook-wall Packer and GLVs set at 3560 m

3611-m LK+TH Sand: 3611.0 – 3624.0 m
Shale break : 3615.5 – 3617.0 m

3626-m Lk+ Th Sand: 3625.5 – 3631.0 m

3657-m Lk+Th Sand: 3656.5 – 3660.2 m
Shale Break : 3658.8 – 3659.3 m

3669-m Lk+Th Sand: 3668.5 – 3672.0 m

Perforations: 3611.0 - 3615.5 m (Open)

Perforations: 3626.0 - 3631.0 m (PB)

Perforations: 3656.0 - 3658.0 m (PB)
3656.5 - 3658.5 m (PB)

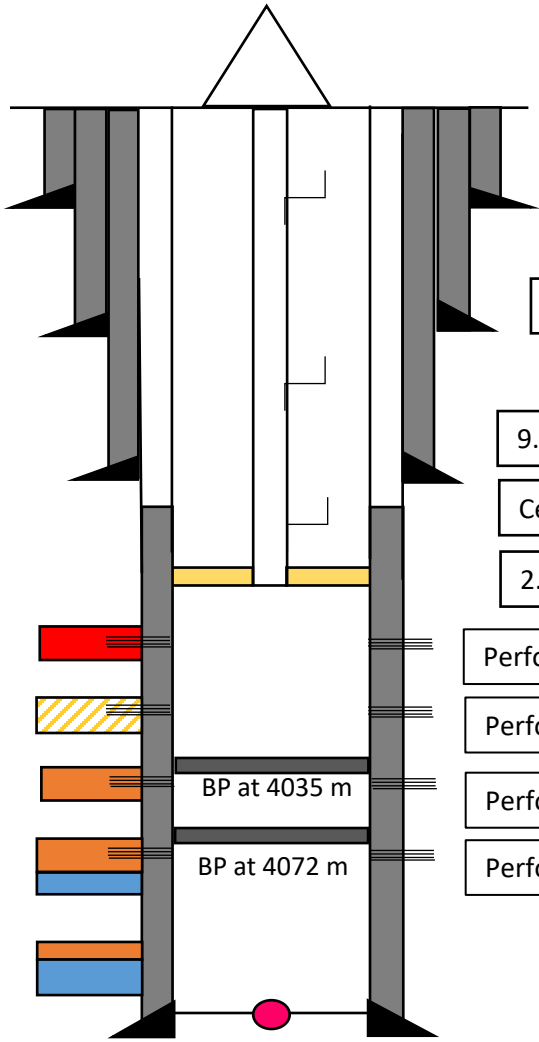
5.1/2" Float Collar/ Casing Shoe = 3740.61 m / 3752.18 m

Well No. F
(J-Bend Well)

Not to scale

D.F. Elev: 131.30 m asl
G.L. Elev: 122.30 m asl
D.C : Variable

Maximum Drift Angle: 30.42° at 867.75 m (MWD). KOP: 200 m



20" Casing shoe: 152.2 m

13.3/8 " Casing shoe: 1651.0 m

9.5/8 " Casing shoe: 3383.0 m

Cement Top: 3400 m (118 pcf); CBL-VDL recorded on 08.11.16

2.7/8" L-80 VAM tbg with HW packer and GLVs set at 3937.48 m

Perforation : 4006.0 - 4008.5 m (Open)

Perforation : 4014.0 - 4020.0 m (Open)

Perforation : 4038.5 - 4040.0 m (PB)

Perforation : 4074 - 4075 m (PB)

4006 m Lk+Th Sand: 4006.0-4008.5 m

4014 m Lk+Th Sand: 4014.0-4020.4 m, 4015.0-4015.5, 4016.5-4017.3, 4018.0-4019.2)

4038 m Lk+Th Sand: 4038.5-4040.0 m

4073 m Lk+Th: 4073.2-4078.5 m, (SB: 4083.5-4084.5 m), OWC: 4075.2 m,

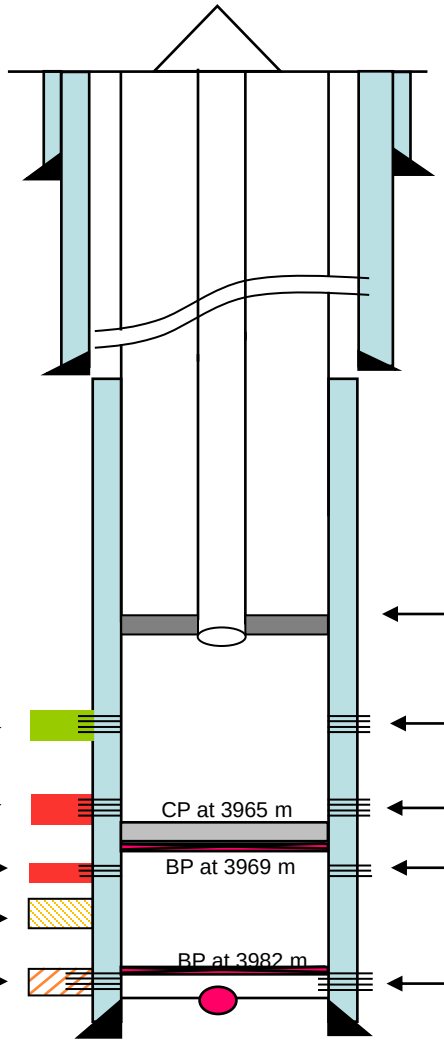
4083 m Lk+Th Sand: 4082.5-4085.3 (SB: 4083.5-4084.5 m, OWC: 4084 m

5.1/2" Float collar/ Csg Shoe = 4140.11 m / 4153.0 m
PPF : 20, P-110 BTC , N-80 BTC

(Not to scale)

Well No. G
Vertical well

D.F. Elev: 120.59 m asl
G.L. Elev: 111.45 m asl



13.3/8" Casing shoe: 1696.4 m

9.5/8'' Casing shoe: 3244.45 m

Cement behind 5.1/2" Casing is at 3255 m

L-80 tubing with Hydraulic packer at 3867 m

3936-m LK+TH Sand: 3936 – 3939 m

Perforations: 3936-3939 m Open

3958-m LK+TH Sand: 3958 – 3965.5 m

Perforations: 3959-3965 m C sq.

3970-m LK+TH Sand: 3970 – 3972 m

Perforations: 3970.1 – 3972.1 m cement sq.

3976-m LK+TH Sand: 3976.5 – 3978.5 m

3983-m LK+TH Sand
3983 – 3988.0 m (Heavy Oil)

Perforations: 3983 – 3987 m Plugged back. On Testing immediate tubing pressure build up of 42ksc.Well displaced 55 bbls of well fluid. Sample analysis on 06.01.13 at 3:15pm show oil:74%(API:12.5, PP:51C), Water:26% (Sal:400ppm, B/C:549 ppm)

5.1/2" Baffle Collar/ Csg Shoe = 4081.45 m/4094.2 m