HALLIBURTON

Bayswater Exploration

G&D Hanks T-27-28HC

Intervals 1-47

Codell Formation

Weld County, CO

API: 05-123-46279

Prepared for: Robert Carney

October 30, 2018

Stimulation Treatment

Post Job Report

Prepared By:

Breanna Stranges

Daniel Stuck

Silver Crew

HALLIBURTON

Engineering Executive Summary

On September 27, 2018 a stimulation treatment was performed in the Codell formation on the G&D Hanks T-27-28HC well in Weld County, CO. The G&D Hanks T-27-28HC was a 47 stage Horizontal Plug and Perf Design. The proposed treatment consisted of:

2,733,180	gallons of FR Water
25,000	gallons of 15% HCl Acid
1,605,680	gallons of Proppant Laden Fluid
11,398,000	pounds of 30/50 White

The actual treatment fully completed 47 of 47 stages. During the treatment 0 stages were skipped, and 0 stages screened out or were otherwise cut short of design. The actual treatment consisted of:

24,834,499	gallons of FR Water
576,366	gallons of Fresh Water
12,014	gallons of 15% HCl Acid
22,145,058	gallons of Proppant Laden Fluid
11,398,000	pounds of 30/50 White

A more detailed description of the actual treatment can be found in the attached reports. The following comments were provided to summarize events and changes to the proposed treatment:

There were no intervals screened out, skipped, or cut short.

Per customer request, acid was only pumped on intervals 1-10. After that it was pumped on an as-needed basis. See stage comments for more details.

Had to come offline during Interval 7 to swap out the blender which resulted in downtime. Had to come offline during Interval 39 because of a leak on the missile. See stage comments for more details.

Halliburton is strongly committed to quality control on location. Before and after each job all chemicals, proppants, and fluid volumes are measured to assure the highest level of quality control. Tank fluid analysis, crosslink time, and break tests are performed before each job in order to optimize the performance of the treatment fluids.

FightR and Opti concentrations were adjusted as needed due to pressure.

Halliburton maintains a continuous quality improvement process and appreciates any comments or suggestions that you may have. Halliburton again thanks you for the opportunity to perform service work on this well. We hope to be your solutions provider for future projects.

Thank you,

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Customer Bayswater Exploration
Lease G&D Hanks T-27-28HC
Formation Codell
API 05-123-46279
Date September 27, 2018

HALLIBURTON | Production Enhancement

Wellbore Summary		
Tubular	Top MD	Bot MD
5.5" 20# Casing	0	18,315

Directional Data	
KOP	6,943 *ft*
Avg. TVD	7,368 *ft*
Total MD	18,315 *ft*

			Sleeve / Perf Depth (ft)		*Perforation Data*						
Zone #	**Displacement to Sleeve/Top Perf** *(gal)*	**Displacement to Sleeve/Top Perf** *(bbl)*	**Top MD (ft)**	**Btm MD (ft)**	**Number of Perf Clusters** *(count)*	**Cluster Spacing** *(ft)*	**Perf Gun Length** *(ft)*	**Perf Density** *(spf)*	**Total Perfs** *(count)*	**Phasing** *(deg)*	**Perf Diameter** *(in)*
1	16,787	400	18,023	18,207	Multistage Sleeve						
2	16,555	394	17,774	17,957	9	23	1	3	40	360	0.33
3	16,354	389	17,559	17,742	9	23	1	3	40	360	0.33
4	16,154	385	17,344	17,527	9	23	1	3	40	360	0.33
5	15,954	380	17,129	17,312	9	23	1	3	40	360	0.33
6	15,754	375	16,914	17,065	9	23	1	3	40	360	0.33
7	15,553	370	16,699	16,879	9	23	1	3	40	360	0.33
8	15,353	366	16,484	16,667	9	23	1	3	40	360	0.33
9	15,153	361	16,269	16,452	9	23	1	3	40	360	0.33
10	14,953	356	16,054	16,237	9	23	1	3	40	360	0.33
11	14,752	351	15,839	16,022	9	23	1	3	40	360	0.33
12	14,552	346	15,624	15,807	9	23	1	3	40	360	0.33
13	14,352	342	15,409	15,592	9	23	1	3	40	360	0.33
14	14,152	337	15,194	15,377	9	23	1	3	40	360	0.33
15	13,951	332	14,979	15,162	9	23	1	3	40	360	0.33
16	13,751	327	14,764	14,947	9	23	1	3	40	360	0.33
17	13,551	323	14,549	14,732	9	23	1	3	40	360	0.33
18	13,351	318	14,334	14,517	9	23	1	3	40	360	0.33
19	13,150	313	14,119	14,302	9	23	1	3	40	360	0.33
20	12,950	308	13,904	14,087	9	23	1	3	40	360	0.33
21	12,750	304	13,689	13,872	9	23	1	3	40	360	0.33
22	12,554	299	13,479	13,657	9	23	1	3	40	360	0.33
23	12,349	294	13,259	13,442	9	23	1	3	40	360	0.33
24	12,149	289	13,044	13,227	9	23	1	3	40	360	0.33
25	11,949	284	12,829	13,012	9	23	1	3	40	360	0.33
26	11,749	280	12,614	12,797	9	23	1	3	40	360	0.33
27	11,548	275	12,399	12,582	9	23	1	3	40	360	0.33
28	11,348	270	12,184	12,367	9	23	1	3	40	360	0.33
29	11,148	265	11,969	12,152	9	23	1	3	40	360	0.33
30	10,948	261	11,754	11,937	9	23	1	3	40	360	0.33
31	10,747	256	11,539	11,722	9	23	1	3	40	360	0.33
32	10,547	251	11,324	11,507	9	23	1	3	40	360	0.33
33	10,347	246	11,109	11,292	9	23	1	3	40	360	0.33
34	10,147	242	10,894	11,077	9	23	1	3	40	360	0.33
35	9,946	237	10,679	10,862	9	23	1	3	40	360	0.33
36	9,746	232	10,464	10,647	9	23	1	3	40	360	0.33
37	9,546	227	10,249	10,432	9	23	1	3	40	360	0.33
38	9,346	223	10,034	10,217	9	23	1	3	40	360	0.33
39	9,145	218	9,819	10,002	9	23	1	3	40	360	0.33
40	8,945	213	9,604	9,787	9	23	1	3	40	360	0.33
41	8,745	208	9,389	9,572	9	23	1	3	40	360	0.33
42	8,545	203	9,174	9,357	9	23	1	3	40	360	0.33
43	8,344	199	8,959	9,142	9	23	1	3	40	360	0.33
44	8,144	194	8,744	8,927	9	23	1	3	40	360	0.33
45	7,944	189	8,529	8,712	9	23	1	3	40	360	0.33
46	7,744	184	8,314	8,497	9	23	1	3	40	360	0.33
47	7,543	180	8099	8282	9	23	1	3	40	360	0.33

Customer Bayswater Exploration
Formation Codell
Lease G&D Hanks T-27-28HC
API 05-123-46279
Date September 27, 2018

Stage Summaries

									Fluids										Proppants	
	Average				Max		ISIP		FR Water		Fresh Water		15% HCl Acid		Proppant Laden Fluid		Total Fluid		30/50 Ticket Weight	Total Proppant Ticket Weight
Interval	Pressure	Rate	Temp	pH	Pressure	Rate	psi	psi/ft	gal	bbl	gal	bbl	gal	bbl	gal	bbl	gal	bbl	lbs	lbs
1	7749	60.2	58	7.30	7997	76.2	4143	0.995	352,625	8,396	26,082	621	2,000	48	258,101	6,145	380,707	9,064	84,400	84,400
2	7460	75.8	50	8.08	7975	80.0	4591	1.056	599,728	14,279	20,454	487	500	12	469,664	11,182	620,682	14,778	246,000	246,000
3	7350	75.6	51	8.45	7846	80.0	4447	1.037	526,979	12,547	21,126	503	500	12	451,351	10,746	548,605	13,062	246,000	246,000
4	7055	79.8	51	8.64	7811	80.3	4357	1.024	536,530	12,775	19,236	458	500	12	460,090	10,955	556,266	13,244	245,900	245,900
5	7045	80.0	51	8.87	7806	80.1	4566	1.053	532,081	12,669	22,260	530	500	12	474,626	11,301	554,841	13,211	246,100	246,100
6	7590	79.2	51	8.80	7945	80.1	4982	1.109	561,864	13,378	20,076	478	500	12	473,119	11,265	582,440	13,868	245,700	245,700
7	7195	73.7	51	8.80	7897	78.4	4917	1.100	570,849	13,592	22,050	525	500	12	502,889	11,974	593,399	14,129	245,800	245,800
8	7321	79.5	49	8.87	7572	80.3	5048	1.118	550,112	13,098	19,404	462	500	12	494,001	11,762	570,016	13,572	246,900	246,900
9	7326	78.8	50	8.91	7670	79.9	4740	1.076	580,536	13,822	17,556	418	500	12	520,861	12,401	598,592	14,252	247,000	247,000
10	7303	78.1	50	8.90	7684	80.3	4764	1.080	547,868	13,044	17,598	419	500	12	475,949	11,332	565,966	13,475	246,600	246,600
11	7377	79.9	50	9.07	7639	80.2	4602	1.058	531,643	12,658	16,884	402	0		474,824	11,305	548,527	13,060	244,800	244,800
12	7427	80.0	47	9.10	7667	80.3	4799	1.084	529,872	12,616	31,710	755	0		472,520	11,250	561,582	13,371	247,500	247,500
13	7185	78.1	50	8.93	7574	79.6	4795	1.084	521,410	12,415	17,052	406	0		472,736	11,256	538,462	12,821	246,000	246,000
14	7459	75.2	47	9.00	7754	75.6	4902	1.098	564,162	13,432	17,010	405	0		471,538	11,227	581,172	13,837	245,800	245,800
15	7415	77.8	49	9.20	7985	78.7	4945	1.104	523,350	12,461	16,674	397	0		471,508	11,226	540,024	12,858	246,000	246,000
16	7238	79.9	49	9.05	7620	80.2	5030	1.116	526,614	12,538	14,406	343	250	6	473,269	11,268	541,270	12,887	246,000	246,000
17	7261	79.6	52	9.12	7617	80.2	4975	1.108	526,562	12,537	14,952	356	0		474,593	11,300	541,514	12,893	245,600	245,600
18	7373	79.2	51	8.98	7820	80.7	4859	1.092	560,409	13,343	14,532	346	0		472,326	11,246	574,941	13,689	245,800	245,800
19	7308	79.6	50	8.99	7647	80.8	5037	1.117	522,615	12,443	13,272	316	0		472,932	11,260	535,887	12,759	245,800	245,800
20	7012	79.7	49	8.89	7402	79.9	4629	1.061	524,333	12,484	13,482	321	0		470,654	11,206	537,815	12,805	246,000	246,000
21	7055	79.6	51	9.03	7843	80.3	4627	1.061	527,111	12,550	13,188	314	0		474,628	11,301	540,299	12,864	246,000	246,000
22	7014	80.0	50	8.89	7661	80.3	4749	1.078	523,692	12,469	11,802	281	0		474,249	11,292	535,494	12,750	246,000	246,000
23	7205	79.8	50	8.88	7609	80.3	4941	1.104	520,727	12,398	11,382	271	0		473,078	11,264	532,109	12,669	246,000	246,000
24	7327	79.8	55	9.14	7668	80.9	4913	1.100	520,655	12,397	11,802	281	0		473,468	11,273	532,457	12,678	246,000	246,000
25	7276	78.6	55	8.88	7830	80.0	4629	1.061	522,884	12,450	10,710	255	500	12	473,646	11,277	534,094	12,717	246,000	246,000
26	7104	75.8	52	8.80	7454	79.9	4717	1.073	516,143	12,289	10,920	260	500	12	475,838	11,329	527,563	12,561	246,000	246,000
27	6352	66.3	50	8.88	7779	74.9	4663	1.066	519,529	12,370	10,122	241	500	12	476,126	11,336	530,151	12,623	246,000	246,000
28	7039	74.9	50	9.00	7631	75.4	4834	1.089	521,018	12,405	11,256	268	500	12	473,284	11,269	532,774	12,685	246,000	246,000
29	7296	78.3	50	8.80	7576	79.4	4968	1.107	540,377	12,866	12,600	300	252	6	478,069	11,383	553,229	13,172	246,000	246,000
30	7120	74.7	50	8.80	7786	75.7	4840	1.090	519,989	12,381	9,156	218	500	12	472,960	11,261	529,645	12,611	246,000	246,000
31	7057	76.8	50	8.80	7619	77.2	4796	1.084	523,417	12,462	8,064	192	252	6	472,557	11,251	531,733	12,660	246,000	246,000
32	7155	79.4	49	8.80	7636	80.3	4767	1.080	518,450	12,344	9,786	233	252	6	474,153	11,289	528,488	12,583	246,000	246,000
33	6557	77.2	49	8.80	7583	80.3	4647	1.064	519,931	12,379	7,308	174	252	6	475,306	11,317	527,491	12,559	246,000	246,000
34	6986	79.7	50	8.90	7483	79.9	4749	1.078	521,023	12,405	5,292	126	250	6	472,764	11,256	526,565	12,537	246,000	246,000
35	7119	78.7	50	8.90	7598	80.1	4945	1.104	521,253	12,411	7,896	188	500	12	476,769	11,352	529,649	12,611	246,000	246,000
36	7113	79.4	51	8.80	7594	80.2	4965	1.107	516,774	12,304	7,728	184	252	6	472,917	11,260	524,754	12,494	246,000	246,000
37	6641	79.6	56	8.90	7191	80.2	4823	1.088	525,042	12,501	5,460	130	250	6	475,773	11,328	530,752	12,637	242,300	242,300
38	6640	79.8	51	8.88	7158	80.1	4855	1.092	522,407	12,438	5,040	120	0		474,328	11,294	527,447	12,558	246,000	246,000
39	6864	77.3	51	8.80	7444	80.4	4815	1.087	567,192	13,505	5,208	124	252	6	475,732	11,327	572,652	13,635	246,000	246,000
40	6789	79.9	50	8.80	7539	81.0	4942	1.104	518,078	12,335	5,082	121	252	6	475,621	11,324	523,412	12,462	246,000	246,000
41	6617	79.7	50	8.80	7126	80.4	4688	1.069	518,045	12,334	4,704	112	0		474,468	11,297	522,749	12,446	246,000	246,000
42	6728	80.0	50	8.80	7146	80.2	4776	1.081	515,762	12,280	4,494	107	0		472,862	11,259	520,256	12,387	246,000	246,000
43	6808	79.8	49	9.03	7283	80.0	4856	1.092	519,582	12,371	3,528	84	0		474,619	11,300	523,110	12,455	246,000	246,000
44	6784	79.7	49	9.02	7276	80.0	4669	1.067	519,467	12,368	2,982	71	0		476,552	11,346	522,449	12,439	246,000	246,000
45	6640	79.8	48	9.04	7263	80.2	4687	1.069	526,400	12,533	2,520	60	0		480,185	11,433	528,920	12,593	246,000	246,000
46	6597	80.2	48	9.06	7071	80.4	4607	1.058	527,503	12,560	2,520	60	0		478,785	11,400	530,023	12,620	246,000	246,000
47	6682	79.9	55	9.05	7279	80.2	4749	1.078	531,907	12,664	0		0		488,770	11,637	531,907	12,664	246,000	246,000

									Fluids										Proppants	
	Average				Max		ISIP		FR Water		Fresh Water		15% HCl Acid		Proppant Laden Fluid		Total Fluid		30/50 Ticket Weight	Total Proppant Ticket Weight
	Pressure	Rate	Temp	pH	Pressure	Rate	psi	psi/ft	gal	bbl	gal	bbl	gal	bbl	gal	bbl	gal	bbl	lbs	Total
Planned									2,733,180	65,076	0	0	25,000	595	1,605,680	38,230	2,758,180	65,671	11,398,000	11,398,000
Recorded	7085	78.0	51	8.86	7997	81.0	4773	1.081	24,834,499	591,298	576,366	13,723	12,014	286	22,145,058	527,263	25,422,879	605,307	11,398,000	11,398,000
																		Weight Tickets	11,398,000	11,398,000

**** IFS numbers for proppant are taken from software calculations based on multiple variables**

**** Proppant is billed from Weight Ticket volumes**

3.1 Procedure

3.1.1 Job Fluids

Slick Water
Job Volume: 24255000.0 (Gal)

Base Fluid	FRESH WATER 1000.00 (gal/Mgal)	24255000 (Gal)	**Friction Reducer**	FIGHTR EC-1, BULK 0.50 (gal/Mgal)	12128.00 (Gal)
Breaker	Optikleen-WF 0.50 (lbm/Mgal)	12128.00 (lbm)			

15% HCL Acid
Job Volume: 25000.0 (Gal)

Base Fluid	HCL ACID 1000.00 (gal/Mgal)	25000 (Gal)	**Surfactant**	Losurf-300D 2.00 (gal/Mgal)	50.00 (Gal)
Corrosion Inhibitor	HAI-404M 6.00 (gal/Mgal)	150.00 (Gal)	**Mixing Fluid**	FRESH WATER 603.38 (gal/Mgal)	15085.00 (Gal)
Additive Material	HYDROCHLORIC ACID 535.00 (gal/Mgal)	13375.00 (Gal)			

3.1.2 Job Totals

Fluids

Friction Reducer	FIGHTR EC-1, BULK	12128(Gal)	**Breaker**	Optikleen-WF	12128.00(lbm)
Surfactant	Losurf-300D	50(Gal)	**Corrosion Inhibitor**	HAI-404M	150(Gal)

Proppants

	Designed Qty	Requested
Premium White-30/50	11550000 (lbm)	11550000(lbm)

Customer Supplied Items

	Designed Qty	Tank Bottom	Requested with Tank Bottom
FRESH WATER	24255000 (Gal)	0 (Gal)	24255000(Gal)