



Charge Performance Summary												
	O.D. (in.)	Charge Type	Shot Density (spf)	Phasing	Charge P/N	Explosive Weight (g)	Casing O.D. (in.)	Entry Hole (in.)	Penetration (in.)	Penetration Normalized @ 5000 psi (in.)	Temp 1hr	Data Source
Expendable Perforating Guns												
HERO	2 3/4	SDP	6D	60°	SDP-2750-402NT3	14.5	4.5	0.29	32.83	35.04	400°F	API RP-19B
HERO	2 7/8	SDP	6F	60°	SDP-2875-402NT3	15.6	4.5	0.32	27.86	29.72	400°F	API RP-19B
	2 7/8	DP	6F	60°	TAG-3125-302LD	15.0	4.5	0.30	19.46	22.73	330°F	API RP-43
	2 7/8	BH	6F	60°	TAG-3125-301	15.0	4.5	0.60	6.69	6.81	330°F	API RP-43
PHANTOM	2 7/8	BH	6F	60°	TAG-3125-301LD	15.0	4.5	0.58	6.37	6.58	330°F	API RP-43
	2 7/8	SDP	6F	60°	TAG-3125-302	15.0	4.5	0.33	21.88	24.34	330°F	API RP-43
HERO	3 1/8	SDP	4D/6F	40°/60°	SDP-3125-411NT3	21.0	4.5	0.35	34.46	36.27	400°F	API RP-19B
RAPTOR	3 1/8	SDP	4D/6F	40°/60°	HSC-4000-311NT	21.5	5.0	0.36	26.36	28.85	330°F	API RP-43
	3 1/8	DP	4D/6F	40°/60°	HSC-4000-311T	23.0	4.5	0.42	26.16	26.16	330°F	EPA
	3 1/8	DP	9F	160°/40°	HSC-3125-301A	10.5	4.5	0.30	10.24	11.54	330°F	API RP-43
	3 1/8	BH	9F	160°/40°	HSC-3125-310A	11.0	5.0	0.57	5.81	6.47	330°F	API RP-43
	3 1/8	BH	12F	135°/45°	HSC-3125-310A	11.0	5.0	0.58	5.18	5.29	330°F	API RP-43
	3 3/8	DP	4D/6D	90°/60°	HSC-4000-311T	23.0	4.5	0.41	27.15	29.20	330°F	API RP-19B
	3 3/8	DP	4D/6D	90°/60°	HSC-4000-311	23.0	5.5	0.44	20.14	20.23	330°F	API RP-19B
	3 3/8	DP	4D/6D	90°/60°	HSC-4000-311ZT	19.0	4.5	0.37	20.53	23.23	330°F	API RP-43
	3 3/8	GH	4D/6D	90°/60°	HSC-4000-311GH	23.0	5.5	0.51	14.40	15.09	330°F	API RP-43
	3 3/8	BH	12F	135°/45°	HSC-3125-310A	11.0	5.5	0.63	4.87	5.19	330°F	API RP-43
PHANTOM	3 3/8	BH	12F	135°/45°	HSC-3125-310ZF	11.0	5.5	0.63	5.46	5.76	330°F	API RP-43
	3 3/8	BH	4D/5D/6D	90°/60°/60°	HSC-3375-301	20.0	5.0	0.73	6.05	6.73	330°F	API RP-43
	3 3/8	DP	4D/5D/6D	90°/60°/60°	HSC-4000-311Z	19.0	4.5	0.39	21.03	21.03	330°F	QC
RAPTOR	3 3/8	SDP	4D/5D/6D	90°/60°/60°	HSC-4000-311NT	21.5	5.0	0.37	30.23	31.66	330°F	API RP-43
	3 3/8	GH	4D/5D/6F	90°/60°/60°	TAG-3375-302	25.0	4.5	0.68	18.16	20.82	330°F	API RP-19B
HERO	3 3/8	SDP	4D/5D/6F	90°/60°/60°	SDP-3375-411NT3	25.0	4.5	0.48	41.39	43.62	400°F	API RP-19B
	3 3/8	DP	4D/5D/6F	90°/60°/60°	HSC-4000-318	26.0	4.5	0.48	27.07	27.07	330°F	EPA
	3 3/8	DP	4D/5F	90°/60°	TAG-5000-360	32.0	4.5	0.44	22.20	23.91	330°F	API RP-43
	4	DP	4F/5F	90°/60°	TAG-5000-313	36.0	7.0	0.42	28.01	31.99	330°F	API RP-43
	4	DP	4D/6D	90°/60°	HSC-4000-311T	23.0	5.5	0.39	26.89	26.89	330°F	EPA
	4	DP	4D/6D	90°/60°	HSC-4000-311	23.0	5.5	0.41	20.88	22.11	330°F	API RP-43
PHANTOM	4	BH	4F/5F	60°	HSC-5000-325F	32.0	5.5	0.91	7.16	7.16	330°F	EPA
	4	DP	4F/5F	60°	HSC-5000-321	32.0	5.5	0.52	30.63	30.63	330°F	EPA
	4	DP	6D	60°	HSC-4000-318	26.0	5.5	0.42	27.09	27.09	330°F	EPA
	4	DP	6F	90°/60°	TAG-5000-360	32.0	7.0	0.41	26.77	28.82	330°F	API RP-43
	4	SDP	4F/5F	90°/60°	TAG-5000-482	39.0	5.5	0.46	36.10	40.38	400°F	API RP-43
	4 1/2	DP	4D/5F	90°/60°	TAG-5000-313	36.0	7.0	0.50	33.40	34.76	330°F	API RP-43
	4 1/2	DP	4D/6D	60°	TAG-5000-360	32.0	7.0	0.44	31.55	33.85	330°F	API RP-43
	4 1/2	DP	4D/5D	90°/60°	HSC-5000-321	32.0	7.0	0.47	34.58	34.58	330°F	EPA
	4 1/2	DP	12F	135°/45°	HSC-4000-311T	23.0	7.0	0.42	18.14	20.45	330°F	API RP-19B
	4 1/2	DP	12F	135°/45°	HSC-4000-311	23.0	7.0	0.43	20.23	20.23	330°F	EPA
PHANTOM	4 1/2	BH	4D/5D	90°/60°	HSC-5000-325F	32.0	7.0	0.83	9.66	9.66	330°F	EPA
	4 1/2	BH	12F	135°/45°	HSC-3375-301	20.0	7.0	0.71	7.04	7.72	330°F	API RP-43
	4 1/2	BH	12F/16F	135°/45°	TAG-5000-306	20.0	7.0	0.72	6.32	6.85	330°F	API RP-43
PHANTOM	4 1/2	BH	12F/16F	135°/45°	TAG-5000-306ZF	19.0	7.0	0.72	6.96	7.63	330°F	API RP-43
PHANTOM	4 1/2	BH	18F	140°/20°	TAG-4625-301ZF	17.0	7.0	0.78	6.57	7.14	330°F	API RP-43
	4 1/2	SDP	5F	60°	TAG-5000-482	39.0	7.0	0.46	37.61	38.21	400°F	API RP-43
RAPTOR	4 1/2	SDP	5F	60°	SDP-5000-400	39.0	7.0	0.37	48.13	49.13	400°F	API RP-43
	5 1/8	DP	4D/5F	90°/60°	TAG-5000-313	36.0	7.0	0.50	31.86	31.86	330°F	EPA
RAPTOR	5 1/8	DP	4D/6D	90°/60°	SDP-5000-400	39.0	7.0	0.42	44.12	44.12	400°F	QC
	5 1/8	DP	4D/6D	90°/60°	TAG-5000-360	32.0	7.0	0.45	29.67	29.67	330°F	EPA
	5 1/8	DP	4D/5D	90°/60°	HSC-5000-321	32.0	7.0	0.52	28.80	28.80	330°F	EPA
	5 1/8	DP	12F	135°/45°	HSC-4000-311T	23.0	7.0	0.40	22.15	22.15	330°F	EPA
	5 1/8	DP	12F	135°/45°	HSC-4000-311	23.0	7.0	0.45	21.22	21.22	330°F	EPA
	5 1/8	BH	12F/16F	135°/45°	TAG-5000-306	20.0	7.0	0.72	6.87	7.54	330°F	API RP-43
PHANTOM	5 1/8	BH	12F/16F	135°/45°	TAG-5000-306ZF	19.0	7.0	0.71	7.05	7.66	330°F	API RP-43
	7	SDP	12F	135°/45°	TAG-5000-482	39.0	9.63	0.45	33.41	35.59	400°F	API RP-43
	7	DP	12F	135°/45°	TAG-5000-313	36.0	9.63	0.46	28.49	30.35	330°F	API RP-43
RAPTOR	7	SDP	12F	135°/45°	SDP-5000-400	39.0	9.63	0.40	45.69	48.42	400°F	API RP-43
	7	BH	18F	140°/20°	TAG-7000-361F	39.0	9.63	1.08	8.82	8.82	330°F	EPA
	7	BH	18F	140°/20°	TAG-7000-362F	39.0	9.63	1.06	7.43	8.24	330°F	API RP-43

D = Dry; F = Fluid

Penetration normalized @ 5% per 1000 psi change