Appendix 2

Target Loading Table						
Title: GaAs Cross Section Array #1: 20160606AJD						
Target Array: TA15_07(f)						
Preparer: Anthony J. DeGraffenreid						
Proposed Run Time (e.g. days, hrs.): 2 hours						
Desired Completion Date: Monday, June 6th, 2016						
Requested Beam Energy (MeV): 116.5 gaussian			Requested Beam Current (μA/h): 40			
	Item	Type and stamped ID *(if available)*	Thickness *inch*	Thickness *mm*	BLIP Operator *(Initial)*	Witness *(Initial)*
Box 1	Water gap	n/a	0.200	5.08		
	Aluminum Shaped Degrader	0.354" w/ 0.200" water gap	0.354	8.99		
	Water gap	n/a	0.100	2.54		
	Aluminum Degrader	0.354" w/ 0.100" water gap	0.354	8.99		
	Water gap	n/a	0.100	2.54		
	Aluminum Degrader	0.056" w/ 0.100" water gap	0.056	1.42		
	Water gap	n/a	0.200	5.08		
	GaAs Tgt #1	**CBQ**	0.500	12.7		
	Water gap	n/a	0.100	3.43		
	Aluminum Degrader	0.158" w/ 0.100" water gap	0.116	2.95		
	Water	n/a	.200	5.08		
	Copper Degrader	0.543" w/ 0.200" water gap	0.521	13.23		
RSC Approval: Dana Beavis				**Date Approved:** 6/7/16		

Appendix 1

Target Array and Energy Propagation Calculations

Title: GaAs Cross Section Array #1: 20160606AJD
Target Submission: TS15_07(f)
Target Array: TA15_07(f)
Preparer: Anthony J. DeGraffenreid

The BLIP Target Stack - GaAs - 2016

vary water gap(mm) 2.692

Layer No.	Material in Beam	density(g/cm^3)	thickness (inches)	thickness (mm)	KE (MeV in)	Range(mm)	KE (MeV out) 116.5	Delta E (MeV)	Watts
1	Beryllium	1.85	0.012	0.305	116.500	66.780	116.190	0.31	12.4
2	AlBeMet	2.10	0.012	0.305	116.190	59.670	115.850	0.34	13.6
3	Stainless Steel window	7.99	0.031	0.787	115.850	18.180	112.930	2.92	116.8
4	Water	1.00	0.106	2.692	112.930	94.800	111.100	1.83	73.2
5	Stainless Steel window	7.99	0.020	0.508	111.100	16.910	109.190	1.91	76.4
7	Water	1.00	0.200	5.080	109.190	89.310	105.650	3.54	141.6
8	Aluminum Degrader	2.70	0.354	8.992	105.650	40.664	91.670	13.98	559.2
9	Water	1.00	0.100	2.540	91.670	65.420	89.650	2.02	80.8
10	Aluminum Degrader	2.70	0.354	8.992	89.650	30.450	73.560	16.09	643.6
11	Water	1.00	0.100	2.540	73.560	44.120	71.170	2.39	95.6
12	Aluminum Degrader	2.70	0.056	1.422	71.170	20.236	68.300	2.87	114.8
13	Water	1.00	0.200	5.080	68.300	38.620	63.150	5.15	206
14	Al Target Front	2.70	0.020	0.508	63.150	16.365	62.030	1.12	44.8
17	Al Monitor Foil	2.70	0.001	0.025	62.030	15.852	61.970	0.06	2.4
18	[redacted]							0.47	18.8
19	Al Target Back	2.70	0.181	4.597	61.500	15.613	50.550	10.95	438
20	Water Back of Aluminum	1.00	0.298	7.569	50.550	22.460	40.260	10.29	411.6
21	Water	1.00	0.100	2.540	40.260	14.890	36.310	3.95	158
22	Aluminum Degrader	2.70	0.158	4.013	36.310	6.111	19.870	16.44	657.6
23	Water	1.00	0.200	5.080	19.870	4.160	#N/A	19.87	794.8
24	Copper Degrader	7.99	0.543	13.792	#N/A	#N/A	#N/A	#N/A	#N/A
25	Water	1.00	0.2	5.080	#N/A	#N/A	#N/A	#N/A	#N/A

Raster (On/Off)	[redacted]
Beam Energy (MeV)	[redacted]
Current (uA)	[redacted]
Target Holder	[redacted]
Irradiation Time (min)	[redacted]
Beam Energy on Target (MeV)	[redacted]

	Inches	Millimeters
Thickness in Box 1	2.870	72.886
MaxTotalThickness in Box 1	2.868	72.837
Space Left in Box 1	-0.002	-0.049

RSC Approval: [signature]

Date Approved: 6/7/16