

MOLLER Schedule Dev-1				MOLLER Baseline Layout							26-Feb-19 15:47									
WBS Path	MOLLER BOE	Activity ID	Activity Name	Start	Finish	Planned	Planned Labor Units	Planned Labor Cost	Planned Material Cost	Planned Total Cost	Y2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	26		
				Duration																
MOLLER-1 MOLLER Schedule Dev-1				01-Mar-19	30-Sep-25	1637.00	15396.55	\$1,418,950	\$2,314,229	\$3,738,022									3	
MOLLER-1.1.04 Integrating Detectors (HW Only)				01-Mar-19	30-Sep-25	1637.00	7620.55	\$804,289	\$1,252,405	\$2,061,537									3	
MOLLER-1.1.04.01 Detector Management				01-Mar-19	30-Sep-25	1637.00	2900.00	\$377,294	\$0	\$377,294									3	
1.04.01		10401000	Detector Management (FY19)	01-Mar-19	30-Sep-19	149.00	260.00	\$31,177	\$0	\$31,177										
1.04.01		10401005	Detector Management (FY20)	01-Oct-19	30-Sep-20	248.00	440.00	\$54,344	\$0	\$54,344										
1.04.01		10401010	Detector Management (FY21)	01-Oct-20	30-Sep-21	248.00	440.00	\$55,972	\$0	\$55,972										
1.04.01		10401015	Detector Management (FY22)	01-Oct-21	30-Sep-22	249.00	440.00	\$57,653	\$0	\$57,653										
1.04.01		10401020	Detector Management (FY23)	03-Oct-22	29-Sep-23	247.00	440.00	\$59,382	\$0	\$59,382										
1.04.01		10401025	Detector Management (FY24)	02-Oct-23	30-Sep-24	249.00	440.00	\$59,382	\$0	\$59,382										
1.04.01		10401030	Detector Management (FY25)	01-Oct-24	30-Sep-25	247.00	440.00	\$59,382	\$0	\$59,382										
MOLLER-1.1.04.02 Thin Quartz Detector				02-Oct-20	09-Feb-22	332.00	2769.09	\$247,738	\$903,150	\$1,152,511	09-Feb-22; MOLLER-1.1.04.02 Thin Qu									
1.04.02		10402000	Design Thin Quartz Detector	02-Oct-20	22-Dec-20	56.00	501.82	\$50,414	\$0	\$50,414										
1.04.02		10402005	Design the Mounting Structure for Thin Quartz and Shower Max Detectors	23-Dec-20	22-Mar-21	56.00	647.27	\$55,998	\$0	\$55,998										
1.04.02		10402010	Write Specification for Quartz	23-Dec-20	07-Jan-21	5.00	20.00	\$2,544	\$0	\$2,544										
1.04.02		10402015	Procure Quartz	08-Jan-21	31-Mar-21	58.00	0.00	\$0	\$309,120	\$309,120										
1.04.02		10402020	Inspect Quartz	01-Apr-21	28-Apr-21	20.00	180.00	\$14,066	\$0	\$14,066										
1.04.02		10402025	Write Specification for Air Light Guides	08-Jan-21	14-Jan-21	5.00	80.00	\$7,003	\$0	\$7,003										
1.04.02		10402030	Procure Air Light Guides	15-Jan-21	12-Mar-21	40.00	0.00	\$0	\$38,640	\$38,640										
1.04.02		10402035	Assemble and Inspect Air Light Guides	15-Mar-21	06-Apr-21	17.00	600.00	\$49,830	\$0	\$49,830										
1.04.02		10402040	Write Specification for Phototubes	15-Jan-21	22-Jan-21	5.00	40.00	\$5,088	\$0	\$5,088										
1.04.02		10402045	Procure Phototubes	25-Jan-21	14-Jan-22	244.00	0.00	\$0	\$385,969	\$385,969										
1.04.02		10402050	Inspect Phototubes	18-Jan-22	09-Feb-22	17.00	360.00	\$28,976	\$0	\$28,976										
1.04.02		10402055	Write Specification for Phototube Bases	25-Jan-21	29-Jan-21	5.00	40.00	\$5,088	\$0	\$5,088										
1.04.02		10402060	Procure Phototube Bases	01-Feb-21	30-Apr-21	65.00	0.00	\$0	\$77,280	\$77,280										
1.04.02		10402065	Inspect Phototube Bases	03-May-21	25-May-21	17.00	160.00	\$13,730	\$0	\$13,730										
1.04.02		10402070	Design the Phototube Test Stand	23-Dec-20	07-Jan-21	5.00	20.00	\$2,544	\$0	\$2,544										
1.04.02		10402075	Procure Phototube Test Stand Hardware	08-Jan-21	19-Feb-21	30.00	0.00	\$0	\$5,750	\$5,750										
1.04.02		10402080	Place Order for the Mounting Structure (Thin Quartz and Shower Max)	23-Mar-21	15-Jun-21	60.00	80.00	\$7,454	\$0	\$7,454										
1.04.02		10402085	Fabricate Mounting Structure (Thin Quartz and Shower Max)	16-Jun-21	07-Oct-21	80.00	0.00	\$0	\$86,391	\$86,391										
1.04.02		10402090	Inspect Mounting Structure (Thin Quartz and Shower Max)	08-Oct-21	01-Nov-21	17.00	40.00	\$5,003	\$0	\$5,003										
1.04.02		10402095	Misc. Consumables	08-Jan-21	09-Feb-22	271.00	0.00	\$0	\$0	\$1,623										
MOLLER-1.1.04.03 Shower Max Detector				02-Oct-20	10-Aug-21	211.00	1395.45	\$125,346	\$325,795	\$452,751	10-Aug-21; MOLLER-1.1.04.03 Shower Max I									
1.04.03		10403000	Design Shower Max Detector	02-Oct-20	22-Dec-20	56.00	465.45	\$45,914	\$0	\$45,914										
1.04.03		10403005	Write Specification for Quartz	23-Dec-20	07-Jan-21	5.00	20.00	\$2,544	\$0	\$2,544										
1.04.03		10403010	Procure Quartz	08-Jan-21	02-Apr-21	60.00	0.00	\$0	\$170,200	\$170,200										
1.04.03		10403015	Inspect Quartz	05-Apr-21	30-Apr-21	20.00	180.00	\$14,066	\$0	\$14,066										
1.04.03		10403020	Write Specification for the Air Light Guides	08-Jan-21	14-Jan-21	5.00	80.00	\$7,003	\$0	\$7,003										
1.04.03		10403025	Procure Air Light Guides	15-Jan-21	12-Mar-21	40.00	0.00	\$0	\$3,220	\$3,220										
1.04.03		10403030	Assemble and Inspect Air Light Guides	15-Mar-21	06-Apr-21	17.00	120.00	\$9,377	\$0	\$9,377										
1.04.03		10403035	Write Specification for Tungsten Sheets	15-Jan-21	22-Jan-21	5.00	60.00	\$5,422	\$0	\$5,422										
1.04.03		10403040	Procure Tungsten Sheets	25-Jan-21	16-Apr-21	60.00	0.00	\$0	\$92,690	\$92,690										
1.04.03		10403045	Inspect Tungsten Sheets	19-Apr-21	30-Apr-21	10.00	30.00	\$2,712	\$0	\$2,712										
1.04.03		10403050	Write Specification for Phototubes	25-Jan-21	29-Jan-21	5.00	40.00	\$5,088	\$0	\$5,088										
1.04.03		10403055	Procure Phototubes	01-Feb-21	20-Jul-21	120.00	0.00	\$0	\$48,300	\$48,300										
1.04.03		10403060	Inspect Phototubes	21-Jul-21	10-Aug-21	15.00	180.00	\$14,066	\$0	\$14,066										
1.04.03		10403065	Write Specification for Phototube Bases	01-Feb-21	05-Feb-21	5.00	40.00	\$5,088	\$0	\$5,088										
1.04.03		10403070	Procure Phototube Bases	08-Feb-21	07-May-21	65.00	0.00	\$0	\$11,385	\$11,385										
1.04.03		10403075	Inspect Phototube Bases	10-May-21	02-Jun-21	17.00	180.00	\$14,066	\$0	\$14,066										
1.04.03		10403080	Misc. Consumables	08-Jan-21	02-Aug-21	144.00	0.00	\$0	\$0	\$1,610										
MOLLER-1.1.04.04 Scanner Detector				23-Dec-20	31-Aug-21	170.00	556.00	\$53,912	\$23,460	\$78,982	31-Aug-21; MOLLER-1.1.04.04 Scanner Det									
1.04.04		10404000	Design Scanner Detector (Including Mounting Structure)	23-Dec-20	05-Feb-21	25.00	280.00	\$26,775	\$0	\$26,775										
TASK filters: MOLLER WBS, Switch to turn off																				
Actual Work Remaining Critical Remaining Work Milestone																				
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MOLLER Schedule Dev-1

MOLLER Baseline Layout

26-Feb-19 15:47

WBS Path	MOLLER BOE	Activity ID	Activity Name	Start	Finish	Planned	Planned	Planned	Planned	Planned	Planned Total	Y2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	26
						Duration	Labor Units	Labor Cost	Material Cost	Cost	Cost								
1.04.04		10404005	Write Specification for Quartz	08-Feb-21	12-Feb-21	5.00	20.00	\$2,544	\$0	\$2,544									
		10404010	Procure Quartz	15-Feb-21	07-May-21	60.00	0.00	\$0	\$4,600	\$4,600									
		10404015	Inspect Quartz	10-May-21	10-May-21	1.00	8.00	\$625	\$0	\$625									
		10404020	Write Specification for Air Light Guides	15-Feb-21	15-Feb-21	1.00	8.00	\$700	\$0	\$700									
		10404025	Procure Air Light Guides	16-Feb-21	10-Mar-21	17.00	0.00	\$0	\$460	\$460									
		10404030	Assemble and Inspect Air Light Guides	11-Mar-21	17-Mar-21	5.00	40.00	\$3,126	\$0	\$3,126									
		10404035	Write Specification for Phototubes	16-Feb-21	22-Feb-21	5.00	40.00	\$5,088	\$0	\$5,088									
		10404040	Procure Phototubes	23-Feb-21	11-Aug-21	120.00	0.00	\$0	\$4,600	\$4,600									
		10404045	Inspect Phototubes	12-Aug-21	18-Aug-21	5.00	40.00	\$3,126	\$0	\$3,126									
		10404050	Write Specification for Phototube Bases	23-Feb-21	01-Mar-21	5.00	40.00	\$5,088	\$0	\$5,088									
		10404055	Procure Phototube Bases	02-Mar-21	01-Jun-21	65.00	0.00	\$0	\$2,300	\$2,300									
		10404060	Inspect Phototube Bases	02-Jun-21	08-Jun-21	5.00	40.00	\$3,126	\$0	\$3,126									
		10404065	Place order for the Mounting Structure	08-Feb-21	08-Feb-21	1.00	8.00	\$696	\$0	\$696									
		10404070	Fabricate Mounting Structure	09-Feb-21	26-Apr-21	55.00	0.00	\$0	\$2,300	\$2,300									
		10404075	Inspect Mounting Structure	27-Apr-21	27-Apr-21	1.00	8.00	\$972	\$0	\$972									
		10404080	Place order for the Motion System	09-Feb-21	09-Feb-21	1.00	8.00	\$667	\$0	\$667									
		10404085	Fabricate Motion System	10-Feb-21	27-Apr-21	55.00	0.00	\$0	\$9,200	\$9,200									
		10404090	Inspect Motion System	28-Apr-21	29-Apr-21	2.00	16.00	\$1,378	\$0	\$1,378									
		10404095	Misc. Consumables	08-Feb-21	31-Aug-21	145.00	0.00	\$0	\$0	\$1,610									
MOLLER-1.1.05 Tracking Detectors				02-Oct-20	07-Dec-23	790.00	7776.00	\$614,660	\$1,061,825	\$1,676,485	07-Dec-23, MOLLER-1.1.05.01 GEM Detectors								
MOLLER-1.1.05.01 GEM Detectors				02-Oct-20	07-Dec-23	790.00	5432.00	\$406,046	\$438,785	\$844,831	07-Dec-23, MOLLER-1.1.05.02 Pion Detectors and Trigger Scintillators								
1.05.01		10501000	Prototype and Design GEM Modules	02-Oct-20	28-Sep-21	245.00	200.00	\$16,829	\$0	\$16,829									
1.05.01		10501005	Time for Vendor to deliver first batch of Gem Modules	29-Sep-21	28-Mar-22	120.00	0.00	\$0	\$0	\$0									
1.05.01		10501010	Procure Module Parts and Tooling required for assembly	29-Sep-21	23-Mar-23	365.00	0.00	\$0	\$321,929	\$321,929									
1.05.01		10501015	Assemble and Test GEM Modules	29-Mar-22	12-Sep-23	365.00	3840.00	\$290,303	\$0	\$290,303									
1.05.01		10501020	Install GEM Modules on Frame	13-Sep-23	07-Dec-23	60.00	480.00	\$36,672	\$0	\$36,672									
1.05.01		10501025	Specify the PreAmps/Discriminators	02-Oct-20	26-Oct-20	17.00	16.00	\$1,912	\$0	\$1,912									
1.05.01		10501030	Procure GEM Front End Electronics	04-Jan-22	20-Dec-22	245.00	0.00	\$0	\$89,173	\$89,173									
1.05.01		10501040	Receive the PreAmps/Discriminators	13-Nov-20	09-Dec-20	17.00	16.00	\$1,190	\$0	\$1,190									
1.05.01		10501045	Design GEM Gas System	02-Oct-20	12-Nov-20	30.00	400.00	\$22,469	\$0	\$22,469									
1.05.01		10501050	Procure GEM Gas System	13-Nov-20	09-Nov-21	245.00	0.00	\$0	\$27,682	\$27,682									
1.05.01		10501055	Install GEM Modules on Frame	13-Sep-23	07-Dec-23	60.00	480.00	\$36,672	\$0	\$36,672									
MOLLER-1.1.05.02 Pion Detectors and Trigger Scintillators				02-Oct-20	12-Apr-22	376.00	824.00	\$72,955	\$241,900	\$314,855	12-Apr-22, MOLLER-1.1.05.02: Pion Detectors and Trigger Scintillators								
1.05.02		10502000	Design the Trigger Scintillators	02-Oct-20	08-Oct-20	5.00	80.00	\$8,024	\$0	\$8,024									
1.05.02		10502005	Procure Trigger Scintillators Parts	04-Jan-22	01-Mar-22	40.00	0.00	\$0	\$53,100	\$53,100									
1.05.02		10502010	Assemble and Test Trigger Scintillators	02-Mar-22	15-Mar-22	10.00	40.00	\$4,104	\$0	\$4,104									
1.05.02		10502015	Mount Trigger Scintillators to Frame	16-Mar-22	29-Mar-22	10.00	40.00	\$4,104	\$0	\$4,104									
1.05.02		10502020	Design the Pion Detectors	02-Oct-20	29-Oct-20	20.00	160.00	\$16,047	\$0	\$16,047									
1.05.02		10502025	Procure Pion Detectors Parts	04-Jan-22	01-Mar-22	40.00	0.00	\$0	\$129,800	\$129,800									
1.05.02		10502030	Assemble and Test Pion Detectors	02-Mar-22	12-Apr-22	30.00	160.00	\$16,416	\$0	\$16,416									
1.05.02		10502035	Design the Pion Detector Frame	30-Oct-20	23-Nov-20	17.00	320.00	\$22,469	\$0	\$22,469									
1.05.02		10502040	Procure Pion Detector Frame	04-Jan-22	01-Mar-22	40.00	0.00	\$0	\$59,000	\$59,000									
1.05.02		10502045	Install Frame in Hall	02-Mar-22	03-Mar-22	2.00	24.00	\$1,791	\$0	\$1,791									
MOLLER-1.1.05.03 Ferris Wheel				02-Oct-20	11-Aug-22	461.00	1520.00	\$135,659	\$381,140	\$516,799	11-Aug-22, MOLLER-1.1.05.03: Ferris Wheel								
1.05.03		10503000	Design the Ferris Wheel	02-Oct-20	04-Feb-21	80.00	940.00	\$90,604	\$0	\$90,604									
1.05.03		10503005	Procure Ferris Wheel Hardware	04-Jan-22	26-Apr-22	80.00	0.00	\$0	\$208,860	\$208,860									
1.05.03		10503010	Fabricate and Assemble Ferris Wheel	27-Apr-22	21-Jul-22	60.00	0.00	\$0	\$172,280	\$172,280									
1.05.03		10503015	Install and Align the Ferris Wheel	22-Jul-22	11-Aug-22	15.00	580.00	\$45,055	\$0	\$45,055									

TASK filters: MOLLER WBS, Switch to turn off

Actual Work

Remaining Work

Critical Remaining Work

Milestone

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