

Appendix 99-1-8

Laboratory	Category	Item/subcategory	Replacement cost	Age	Priority Order 1 to 3 = high to low
Chemistry	Safety	Gas chromatography:			1-Replacement is highest priority. Safety requires these systems. Since these also depend on each other as spares, we recommend replacing all three units at the same time to avoid multiple spares requirements, to ensure compatibility, and to simplify maintenance and training requirements
		Hydrocarbon monitoring:			
		GC #1 -NGA	\$22,000	1984	
		GC #2	\$38,000	1987	
		GC #3	\$25,000	1984	
Chemistry	Safety	S1 and S2 determination:			3-Repair as required. Note that new model is now available. If proven reliable, this may move up in priority due to # of hours spent in maintenance
		Hydrocarbon monitoring:			
		Rock Eval	\$100,000	1984	
		CNS	\$40,000	1988	2-Failure requires replacement
	Safety	Downhole temperature measurement:			3- Repair as required. 2- Requires upgrade and development 2- Requires change in status and development funds
		ADARA (APC shoes)		1998	
		WSTP (temperature)			
		DVTP			
	Safety	H ₂ S monitoring:			3- Repair as required.
		Central alarm station, mobile monitors	\$20,000	1991	
Underway	Safety	Site location:			3-New system, upgrade and maintain 2-Failure requires replacement 2-Failure requires replacement 2-Failure requires replacement 3- New systems 3-Dry dock replacement/refurbishment
		GPS and navigation computer and software	\$40,000	1997	
		80" Water guns (2) and deployment equipment	\$95,000		
		Single channel streamers and deployment equipment	\$15,000		
		Seismic acquisition equipment	\$75,000		
		Analog records and supporting electronics	\$75,000	1996	
Safety	Lab safety:	Hazardous materials:			3- Failure requires component replacement.
		Hoods, extraction systems, storage, HAZMAT equip.	\$25,000		
	Safety	Computer infrastructure			2- Continually require upgrade and replacement
		Network			
		Database			
		Workstations			
	Safety	Weather monitoring equipment			3- Do not replace. Service can be provided by other means.

Ephemeral properties measurements

Physical properties	Density	MST - GRAPE	\$54,500	1985	2-Source will require replacement
		Pycnometer	\$13,000	1995	3-New system
Physical properties	Velocity	MST - Pwave	\$14,000	1985	3-Replacement purchased, to be installed
		VS - Digital sonic velocity stations 1,2, and 3.	\$6,500	1994	3-New system
Magnetics	Magnetics	MST - Magnetic susceptibility	\$3,800	1995	3-New system
		Cryogenic magnetometer	\$260,000	1995	3-New system
		Tensor orientation tool	\$26,000		2-Failure requires replacement (cost per unit)
		AF demagnetizer	\$24,500	1997	3- New system
Core	Color	Minolta	\$12,000	1997	2-Failure requires replacement
Curation	Sampling	Stereoscopes	\$16,000	1985-92	3- Maintain and repair as required
		Microscopes	\$16,000-72,000	1984-95	3- Maintain and repair as required
		Core splitter	\$15,000	1984	3- Partial dry dock replacement/repair as required
Photography	Photography	Core, close-up, and microscope cameras and lights	\$20,000		3- Maintain and repair as required
		Kreonite B&W processor	\$15,000	1984	2-Failure requires replacement
		Wing-lynch color processor	\$12,000		2-Failure requires replacement
Chemistry	Alkalinity measurements:	Titration systems	\$10,000	1992	3- Maintain and repair as required
		Ion chromatograph			
Chemistry	Ion chromatograph	Dionex	\$25,000	1992	3- Maintain and repair as required
		Dionex II	\$25,000	1997	3-New system
Downhole	In-situ gas collection:	WSTP hardware and water sampling electronics	\$15,000		2-Failure requires replacement
Physical properties	Thermoconductivity measurements:	Teka	\$22,000	1995	3- Maintain and repair as required
Physical properties	Strength measurements:	VS - Shear Vane	\$3,000	1984	3- Maintain and repair as required
Physical properties	Whole core MST track hardware		\$10,000		2-Failure requires replacement

Drilling decisions

	Paleontology:	Microscopes			3- Maintain and repair as required
		Core-core and core-log integration:			
Physical properties		MST - Magnetic Susceptibility	\$4,000	1995	3- Maintain and repair as required
		MST - Natural Gamma Ray	\$32,100	1992	3- Maintain and repair as required
		Sun workstation	\$8,000	1998	3-New system
					Within the SCIMP prioritization, none of these can have a highest priority rating. However, we still argue that, if funds become available, the capital replacement of these items should be in the following order.
Chemistry	Additional services				
	Carbonate analysis:				
		Coulometer	\$12,000	1987	2-Failure requires replacement
		Magnetic measurements:			
Magnetics		Kappa Bridge	\$25,000	1993	3-Maintain as required, do not replace unless recommended
		Thermal Demag	\$30,000	1987	2-Failure requires replacement
		Molspin	\$12,000	1996	3-New system. Should not require replacement
		Thin sections:			
Thin section					
		Logitech PMA polisher	\$16,000	1984	2-Failure requires replacement
		Logitech LP30 auto thin section grinder	\$52,000	1984	2-Failure requires replacement
		Petrothin manual thin section grinder	\$6,500	1984	2-Failure requires replacement
		XRF analysis:			
X-ray		ARL XRF	\$270,000	1985	3- Maintain and repair as required. Complete failure requires panel recommendation for replacement. Likely higher priority if more hard rock legs scheduled, but only as enhancement service, not envisioned to become required.
		Beadmaker	\$50,000	1995	3-Robust equipment, spares easy to acquire
		XRD analysis:			
X-ray		Phillips XRD	\$225,000	1984	3- Maintain and repair as required. For the last several years identified as top priority nonsafety or ephemeral replacement. Possible replacement with tabletop, quantitative unit (\$60K). Still highest priority, big ticket nonrequired, enhancement item.
		Water chemistry			
Chemistry		Varian AA	\$30,000	1987	1-Continual use, cannot be linked to database, cannot be networked, requires pencil and paper for data transfer
		Milton-Roy UV-Vis spectrophotometer	\$4,000	1990	2-Failure requires replacement
		Industrial photography			
Photography		Nikon and Hasseblad cameras and lenses	\$120,000		3-Loss may require replacement of individual components
		Microphotographs			
		digital cameras	\$10,000		3- New systems, still have film back-ups
		Underway			
Underway		Multichannel streamers	\$40,000		3-Requires testing at sea before prioritization
		Magnetometer and deployment equipment	\$35,000		3-Rplacement upon failure requires panel recommendation

	200" water guns	\$20,000	2-Failure requires replacement
	Sun work stations (2)	\$18,000	2-Will require upgrade/replacement ± 2 yrs.
	Tape drives and MO drives	\$25,000	2-Failure requires replacement
	HP plotter	\$8,000	2-Will require upgrade/replacement ± 2 yrs.
<hr/>			
	VSP		
Downhole	400" water gun	\$20,000	3-If complete failure consider GI gun replacement
	1500" air gun	\$15,000	2-Failure requires replacement
<hr/>			
DEVELOPMENT			
	Digital core imaging	\$25,000	Includes only primary system, if placed in service back-up is required
	Split core MST	\$15,000	
LATE UPDATES	1/7/99		
We have included the following items is our FY 2000 Special Operating Expense Budget			
	Microbiology lab equipment	\$150,000	Laminar flow hood, electron capture detector for GC, a GC dedicated to bacterial activity measurements, freezer, incubators, refrigerator, autoclave, anerobic cabinet, supplies Discussion at Spring 1999 SciMP
	Tabletop XRD	\$75,000	
	AA	\$50,000	
Wish list items	Computer upgrades or labs	\$30,000	
	Autoengraver for core liners	\$30,000	
	Coulometer autosampler	\$17,000	
	Digestor (paleontology)	\$15,000	
	Accelerated Solvent Extraction equipment	\$40,000	

New GCs have been purchased, will be delivered by Leg 185.