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FY09 Assessment of Mercury Reduction at SNL/NM

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FY09 Assessment of Mercury Reduction at SNL/NM

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Abstract

This assessment takes the result of the FY08 performance target baseline of mercury at Sandia National Laboratories/New Mexico, and records the steps taken in FY09 to collect additional data, encourage the voluntary reduction of mercury, and measure success.

INTRODUCTION

Elemental (metallic) mercury and all of its compounds are toxic, and exposure to excessive levels can permanently damage or fatally injure the brain and kidneys. Elemental mercury can also be absorbed through the skin and cause allergic reactions. Ingestion of inorganic mercury compounds can cause severe renal and gastrointestinal damage. Organic compounds of mercury such as methyl mercury, created when elemental mercury enters the environment, are considered the most toxic forms of the element. Exposures to very small amounts of these compounds can result in devastating neurological damage and death.[1] SNL/NM is required to report annually on the site wide inventory of mercury for the Environmental Protection Agency's (EPA) Toxics Release Inventory (TRI) Program, as the site's inventory is excess of the ten pound reportable threshold quantity.

In the fiscal year 2008 (FY08) Pollution Prevention Program Plan, Section 5.3 Reduction of Environmental Releases, a performance target stated was to establish a baseline of mercury, its principle uses, and annual quantity or inventory. This was accomplished on July 29, 2008 by recording the current status of mercury in the Chemical Information System (CIS). See Table 1 below.

Table 1: FY08 Elemental Mercury and Mercury Compounds Total in CIS (as of 7/29/08)
Supporting data is contained in Attachment 1.

Original		Conversion	
Units	Total	KG	Liter
GR	3900.8	3.90	
KG	9.45	9.45	
L	5		5.00
LBS	36.09	16.40	
ML	1550		1.55
OZ	4	0.11	
Grand Total		**29.86**	**6.55**

This was followed up by activities outlined in the Pollution Prevention FY09 Program Plan, Section 4.2.1 Toxic and Hazardous Chemical Reduction:

- Contact lab owners who use or store mercury and mercury-containing chemicals to encourage disposal and identify potential substitutes. Provide lists of mercury chemicals from Chemical Information System (CIS) for their review,
- Measure reduction against July 2008 baseline, and
- Create a mercury awareness program to encourage disposal of mercury thermometers and other equipment containing mercury.

[1] National Institutes of Health Office of Research Facilities: Mercury Health hazards – Toxicology http://orf.od.nih.gov/Environmental+Protection/Mercury+Free/MercuryHealthHazards.htm

Additionally, in the Division 2000 FY09 EMS Action Plan, is the target of a chemical inventory reduction of 10%, with a particular focus on three areas, one of which being mercury-containing chemicals.

FY09 ACTIVITIES

New Status Totals through FY09

The mercury baseline from July 29, 2008 was compared to a new CIS data pull performed on March 20, 2009. The number of containers and weight/volume of mercury was nearly identical to the baseline from eight months before. Two containers weighing a total of 0.43kg had been consumed and/or disposed during that time. See Table 2 below.

Table 2: FY09 Elemental Mercury and Mercury Compounds
Total in CIS (as of 3/20/09)
Supporting data is contained in Attachment 2.

Original		Conversion	
Units	Total	KG	Liter
GR	3890.8	3.89	
KG	9.45	9.45	
L	5		5.00
LBS	35.09	15.95	
ML	1550		1.55
OZ	4	0.11	
Grand Total		**29.40**	**6.55**

To accomplish the first of the three P2 Plan activities, an e-mail was sent in March to each of the CIS inventory owners of elemental mercury containers older than two years. This means that 14 of the 16 containers onsite had an e-mail sent to the owner. The e-mail contained:

- A request to verify that the mercury container still existed,
- A request to submit unneeded mercury to the Chemical Exchange Program or to recycle the container through the hazardous waste management facility, and
- A cost estimate for recycling of the material.

Some of the oldest container owners responded that the material was still being actively used as a standard or in equipment. Two others responded that the containers were almost empty and should be submitted for hazardous waste disposal and recycling during this fiscal year. Eight owners of more recent containers (2000-2006), did not respond. No mercury-related chemicals were submitted to the Chemical Exchange during the following six months. See the table on the following page.

Table 3: Owners of Elemental Mercury Contacted and Results

		Original		Currently			
Location	Org.	Quantity	Unit	Quantity	Unit	Purchased	P2 Correspondence
NM/870/1104	2736	0.01	LBS	0.01	LBS	8/20/1996	*Needed: Calibration Standard*
NM/701/2307	1822	5.50	LBS	5.50	LBS	8/13/1997	E-mailed 3/20/09 - No answer
NM/701/2343	1825	6.00	LBS	0.12	LBS	8/20/1997	*Needed: Reduced amount remaining*
NM/827/118	2542	1.00	LBS	1.00	LBS	6/22/1998	*Needed: Equipment Component*
NM/AML/229/23	1815	1.10	LBS	0.00	LBS	1/11/1999	*Empty - Just Disposed*
NM/AML/229/23	1815	6.60	LBS	6.60	LBS	7/8/1999	*Needed: To fill bubblers*
NM/AML/230	1815	5.00	LBS	5.00	LBS	6/8/2000	*Needed:*
NM/518/1305	1816	0.11	LBS	0.11	LBS	5/24/2001	E-mailed 3/20/09 - No answer
NM/897/3484	1132	0.99	LBS	0.99	LBS	5/29/2001	E-mailed 3/20/09 - No answer
NM/6591/SHOP	1381	1.00	LBS	1.00	LBS	6/28/2001	E-mailed 3/20/09 - No answer
NM/897/2220	1123	1.00	LBS	1.00	LBS	5/24/2005	E-mailed 3/20/09 - No answer
NM/AML/230	1815	6.24	LBS	6.24	LBS	5/24/2005	*Needed:*
NM/AML/230	1815	1.00	LBS	1.00	LBS	5/24/2005	*Needed:*
NM/827/141	2541	1.10	LBS	1.10	LBS	8/18/2006	E-mailed 3/20/09 - No answer
NM/AML/271	1815	6.60	LBS	6.60	LBS	11/9/2007	Recent - not contacting
NM/827/135	2541	0.79	LBS	0.79	LBS	3/12/2008	Recent - not contacting
		44.04	**LBS**	**37.06**	**LBS**		

Mercury Walk-Through of Clinical Services, Organization 3331 (Building 831)

A mercury walk-through of building 831 was performed on April 28, 2009. The manager of Clinical Services (Org 3331) and their assigned Environmental Compliance Coordinator accompanied Pollution Prevention. See Attachment 3 for the complete checklist used and narrative of the results.

A button cell battery, their mobile and wall-mounted sphygmomanometers, and potentially the thermostats were found to contain mercury. The battery's appropriate disposal path was known and reinforced, and the sphygmomanometers, or blood pressure units, were in the process of being replaced with modern aneroid technology. According to CIS, building 831 has no containers of mercury, and none were found.

Hazardous Waste Containing Mercury Generated by SNL/NM

Much more mercury-related activity is occurring onsite than the simple container tracking in CIS would indicate. To better document historic mercury recycling and disposal, hazardous waste generation data for fiscal years 2000 through the second quarter of 2009 was reviewed and pertinent mercury data tabulated. The data was divided between being recycled and being disposed, and under those into ten subcategories. This table can be found in Attachment 4. Over 11,659 kilograms of mercury waste has been submitted over the past decade, with 72% of it being recycled. Mercury batteries and non-fluorescent light bulbs make up more than half of the recycled mercury waste, and both of these are on the decline. The large clean-up of 2006

contributing 79% of the non-recyclable mercury was the result of the decontamination work preceding the demolition of an old building.

An area that is not yet well understood is that of mercury-containing equipment (or articles), which is not tracked in CIS or in any other known fashion.

Division 2000 Efforts to Reduce Mercury-Containing Chemicals

On July 6, 2008, an article about a Division 2000 success was published in the Sandia Lab News (http://www.sandia.gov/LabNews/080606.html). An unused five hundred pound ultrasonic interferometer manometer was reapplied to the National Institute of Standards and Technology (NIST). This manometer contained 200 pounds of mercury, and giving it to NIST for reuse avoided $115,000 in disposal and clean-up fees.

Division 2000 has an FY09 EMS Objective to reduce chemical inventories by 10%, with a special focus, among other items, on mercury-containing chemicals. According to the Division 2000 principal technologist of the Primary Standards Lab Temperature Group in building 827, they have gone to great lengths over the past year to remove unneeded equipment and excess mercury. They also have calibration customers that use mercury thermometers, and they encourage their customers to move away from mercury equipment. Because of this, the group has seen a sizable reduction in calibration work on mercury equipment. However, some mercury is still required to do their work.

For the rest of Division 2000, the chemical reduction effort has exceeded the goal in three of four centers, with the fourth well on their way, and at least seven containers of mercury have been disposed or recycled. One particular container with 2.5 grams of mercury had been purchased in 1996, moved locations 3 times, and was finally disposed of as no longer needed.

CONCLUSION

There is now a better grasp of mercury quantities and usage at SNL/NM, but an existing gap in knowledge continues to be the usage of mercury in laboratory equipment such as pH probes and calibration masses. Learning from Division 2000, internal efforts by other divisions to reapply or remove mercury-containing equipment and chemicals is critical to achieving the elimination of unnecessary quantities of mercury onsite.

Contacting and encouraging elemental mercury owners met with mixed success, but the status of mercury inventories through the year were successfully captured. The awareness program called for in the FY09 Pollution Prevention Plan was not implemented, and has been moved into the new FY10 Pollution Prevention Plan. Laboratory usage and mercury-containing equipment will be a particular objective.

Attachment 1
Mercury Baseline, July 29, 2008

Tradename:	**INSTRUMENT CHECK STANDARD 2 - CL-ICS-2**				
Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00667175	NM/1090/LAB	4121	100	ML	1/23/2008
AQ00667176	NM/1090/LAB	4121	125	ML	1/23/2008
Number of containers: 2					
Tradename:	**MERCURIC ACETATE**				
Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00047995	NM/701/2307	1822	100	GR	6/10/1996
AQ00291704	NM/823/2039	6338	50	GR	12/15/1999
AQ00552874	NM/AML/229/22	1815	5	GR	10/21/2005
Number of containers: 3					
Tradename:	**MERCURIC BROMIDE**				
Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00447435	NM/AML/271	1815	500	GR	3/19/2004
AQ00433333	NM/AML/271	1815	25	GR	7/7/2003
Number of containers: 2					
Tradename:	**MERCURIC CHLORIDE**				
Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00149828	NM/701/1327	1822	1	LBS	8/22/1997
AQ00146684	NM/701/2307	1822	0.25	LBS	8/13/1997
AQ00089091	NM/897/1094/2D5	1100	1.1	LBS	5/6/1997
AQ00089092	NM/897/1094/2D5	1100	500	GR	5/6/1997
AQ00292961	NM/AML/228/1	1815	5	GR	8/2/2000
AQ00406348	NM/AML/230	1815	100	GR	8/21/2002
Number of containers: 6					
Tradename:	**MERCURIC IODIDE**				
Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00156543	NM/701/2307	1822	100	GR	8/14/1997
AQ00088913	NM/897/1094/2C3	1100	4	OZ	5/19/1997
AQ00527188	NM/AML/271	1815	0.25	LBS	10/2/2006
Number of containers: 3					
Tradename:	**MERCURIC NITRATE**				
Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00123524	NM/897/3081	1114	50	GR	6/26/1997
Number of containers: 1					
Tradename:	**MERCURIC NITRATE, MONOHYDRATE**				
Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00655133	NM/AML/230	1815	50	GR	6/27/2007
AQ00499070	NM/AML/256	1815	50	GR	7/30/2004
Number of containers: 2					
Tradename:	**MERCURIC OXIDE, SOLID**				
Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00418651	NM/701/1343B	6338	5	GR	12/9/2002

AQ00418650	NM/701/1343B	6338	5	GR	12/9/2002
AQ00064222	NM/701/2317	1822	10	GR	9/17/1997
AQ00140623	NM/823/2296B	6316	50	GR	7/17/1997
AQ00029797	NM/897/3025	1112	500	GR	11/30/1995
AQ00450689	NM/AML/229/22	1815	100	GR	4/21/2006
Number of containers: 6					

Tradename:	**MERCURIC SULFATE**				
Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00654707	NM/823/2296	6316	28.3	GR	6/21/2007
Number of containers: 1					

Tradename:	**MERCURIC SULFIDE**				
Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00017536	NM/823/B59	6772	50	GR	7/17/1997
AQ00089346	NM/897/1094/2G2	1100	1	LBS	5/12/1997
Number of containers: 2					

Tradename:	**MERCUROUS NITRATE DIHYDRATE**				
Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00365020	NM/AML/256	1815	50	GR	7/2/2001
Number of containers: 1					

Tradename:	**MERCUROUS NITRATE MONOHYDRATE**				
Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00090674	NM/897/1094/4F3	1100	500	GR	5/15/1997
Number of containers: 1					

Tradename:	**MERCURY**				
Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00344654	NM/518/1305	1816	50	GR	5/24/2001
AQ00358592	NM/6591/SHOP	1381	1	LBS	6/28/2001
AQ00556733	NM/701/1319	1744	5	GR	1/9/2006
AQ00146688	NM/701/2307	1822	2.5	KG	8/13/1997
AQ00152258	NM/701/2343	1825	6	LBS	8/20/1997
AQ00212179	NM/827/118	2542	1	LBS	6/22/1998
AQ00431009	NM/827/135	2541	360	GR	3/12/2008
AQ00596138	NM/827/141	2541	0.5	KG	8/18/2006
AQ00069423	NM/870/1104	2736	2.5	GR	8/20/1996
AQ00500603	NM/897/2220	1123	1	LBS	5/24/2005
AQ00318831	NM/897/2484	1816	1	LBS	5/19/2005
AQ00344653	NM/897/3484	1132	0.45	KG	5/29/2001
AQ00241843	NM/AML/229/23	1815	500	GR	1/11/1999
AQ00254477	NM/AML/229/23	1815	3	KG	7/8/1999
AQ00500602	NM/AML/230	1815	1	LBS	5/24/2005
AQ00293869	NM/AML/230	1815	5	LBS	6/8/2000
AQ00500601	NM/AML/230	1815	6.24	LBS	5/24/2005
AQ00571115	NM/AML/271	1815	3	KG	11/9/2007
Number of containers: 18					

Tradename:	**MERCURY CHLORIDE**				
Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00146686	NM/701/2307	1822	0.25	LBS	8/13/1997

Attachment 1
Mercury Baseline, July 29, 2008

Number of containers: 1

Tradename:	**MERCURY STANDARD FOR CALIBRATION AND/OR SPIKING**				
Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00669690	NM/870/1104	2736	125	ML	7/9/2008

Number of containers: 1

Tradename:	**MERCURY STANDARDS**				
Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00530570	NM/823/2296B	6316	100	ML	7/29/2005
AQ00530563	NM/823/2296B	6316	100	ML	7/29/2005

Number of containers: 2

Tradename:	**MERCURY TRIPLE DISTILLED**				
Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00698181	NM/AML/105	1815	5	LBS	5/30/2008
AQ00698180	NM/AML/105	1815	5	LBS	5/30/2008

Number of containers: 2

Tradename:	**MERCURY(II) PERCHLORATE, TRIHYDRATE**				
Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00011729	NM/AML/228/11	1815	100	GR	7/1/1997

Number of containers: 1

Tradename:	**OIL STANDARD--SINGLE-ELEMENT SOLUTION**				
Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00681523	NM/823/2027	6338	50	GR	10/4/2007

Number of containers: 1

Tradename:	**SODIUM HYDROXIDE 50% SOLUTION, LS GRADE (LOW SALT)**				
Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00534613	NM/897/1085	8332	5	L	6/15/2005
AQ00117001	NM/897/3063	1114	500	ML	6/10/1997
AQ00390105	NM/AML/256	1815	500	ML	6/24/2002

Number of containers: 3

Attachment 2
Mercury Status, March 20, 2009

Tradename: **INSTRUMENT CHECK STANDARD 2 - CL-ICS-2**

Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00667175	NM/1090/LAB	4121	100	ML	1/23/2008
AQ00667176	NM/1090/LAB	4121	125	ML	1/23/2008

Number of containers: 2

Tradename: **MERCURIC ACETATE**

Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00047995	NM/701/2307	1822	100	GR	6/10/1996
AQ00291704	NM/823/2039	6338	50	GR	12/15/1999
AQ00552874	NM/AML/229/22	1815	5	GR	10/21/2005

Number of containers: 3

Tradename: **MERCURIC BROMIDE**

Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00447435	NM/AML/271	1815	500	GR	3/19/2004
AQ00433333	NM/AML/271	1815	25	GR	7/7/2003

Number of containers: 2

Tradename: **MERCURIC CHLORIDE**

Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00149828	NM/701/1327	1822	1	LBS	8/22/1997
AQ00146684	NM/701/2307	1822	0.25	LBS	8/13/1997
AQ00089091	NM/897/1094/2D5	1100	1.1	LBS	5/6/1997
AQ00089092	NM/897/1094/2D5	1100	500	GR	5/6/1997
AQ00292961	NM/AML/228/1	1815	5	GR	8/2/2000
AQ00406348	NM/AML/230	1815	100	GR	8/21/2002

Number of containers: 6

Tradename: **MERCURIC IODIDE**

Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00156543	NM/701/2307	1822	100	GR	8/14/1997
AQ00088913	NM/897/1094/2C3	1100	4	OZ	5/19/1997
AQ00527188	NM/AML/271	1815	0.25	LBS	10/2/2006

Number of containers: 3

Tradename: **MERCURIC NITRATE**

Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00123524	NM/897/3081	1114	50	GR	6/26/1997

Number of containers: 1

Tradename: **MERCURIC NITRATE, MONOHYDRATE**

Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00655133	NM/AML/230	1815	50	GR	6/27/2007
AQ00499070	NM/AML/256	1815	50	GR	7/30/2004

Number of containers: 2

Tradename: **MERCURIC OXIDE, SOLID**

Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00064222	NM/701/2317	1822	10	GR	9/17/1997
AQ00140623	NM/823/2296B	6316	50	GR	7/17/1997
AQ00029797	NM/897/3025	1112	500	GR	11/30/1995

AQ00450689	NM/AML/229/22	1815	100	GR	4/21/2006

Number of containers: 4

Tradename: **MERCURIC SULFATE**

Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00654707	NM/823/2296	6316	28.3	GR	6/21/2007

Number of containers: 1

Tradename: **MERCURIC SULFIDE**

Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00017536	NM/823/B59	6772	50	GR	7/17/1997
AQ00089346	NM/897/1094/2G2	1100	1	LBS	5/12/1997

Number of containers: 2

Tradename: **MERCUROUS NITRATE DIHYDRATE**

Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00365020	NM/AML/256	1815	50	GR	7/2/2001

Number of containers: 1

Tradename: **MERCUROUS NITRATE MONOHYDRATE**

Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00090674	NM/897/1094/4F3	1100	500	GR	5/15/1997

Number of containers: 1

Tradename: **MERCURY**

Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00344654	NM/518/1305	1816	50	GR	5/24/2001
AQ00358592	NM/6591/SHOP	1381	1	LBS	6/28/2001
AQ00146688	NM/701/2307	1822	2.5	KG	8/13/1997
AQ00152258	NM/701/2343	1825	6	LBS	8/20/1997
AQ00212179	NM/827/118	2542	1	LBS	6/22/1998
AQ00431009	NM/827/135	2541	360	GR	3/12/2008
AQ00596138	NM/827/141	2541	0.5	KG	8/18/2006
AQ00069423	NM/870/1104	2736	2.5	GR	8/20/1996
AQ00500603	NM/897/2220	1123	1	LBS	5/24/2005
AQ00344653	NM/897/3484	1132	0.45	KG	5/29/2001
AQ00241843	NM/AML/229/23	1815	500	GR	1/11/1999
AQ00254477	NM/AML/229/23	1815	3	KG	7/8/1999
AQ00500601	NM/AML/230	1815	6.24	LBS	5/24/2005
AQ00293869	NM/AML/230	1815	5	LBS	6/8/2000
AQ00500602	NM/AML/230	1815	1	LBS	5/24/2005
AQ00571115	NM/AML/271	1815	3	KG	11/9/2007

Number of containers: 16

Tradename: **MERCURY CHLORIDE**

Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00146686	NM/701/2307	1822	0.25	LBS	8/13/1997

Number of containers: 1

Tradename: **MERCURY STANDARD FOR CALIBRATION AND/OR SPIKING**

Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00669690	NM/870/1104	2736	125	ML	7/9/2008

Number of containers: 1

Attachment 2

Mercury Status, March 20, 2009

Tradename:	**MERCURY STANDARDS**				
Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00530570	NM/823/2296B	6316	100	ML	7/29/2005
AQ00530563	NM/823/2296B	6316	100	ML	7/29/2005
Number of containers: 2					
Tradename:	**MERCURY TETRATHIOCYANATOCOBALTATE(II)**				
Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00721528	NM/894/153	2546	5	GR	1/22/2009
Number of containers: 1					
Tradename:	**MERCURY TRIPLE DISTILLED**				
Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00698181	NM/AML/105	1815	5	LBS	5/30/2008
AQ00698180	NM/AML/105	1815	5	LBS	5/30/2008
Number of containers: 2					
Tradename:	**MERCURY(II) PERCHLORATE, TRIHYDRATE**				
Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00011729	NM/AML/228/11	1815	100	GR	7/1/1997
Number of containers: 1					
Tradename:	**OIL STANDARD--SINGLE-ELEMENT SOLUTION**				
Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00681523	NM/823/2027	6338	50	GR	10/4/2007
Number of containers: 1					
Tradename:	**SODIUM HYDROXIDE 50% SOLUTION, LS GRADE (LOW SALT)**				
Barcode	Location	Org.	Quantity	QUnit	Purchase Date
AQ00534613	NM/897/1085	8622	5	L	6/15/2005
AQ00117001	NM/897/3063	1114	500	ML	6/10/1997
AQ00390105	NM/AML/256	1815	500	ML	6/24/2002
Number of containers: 3					

Attachment 3
Mercury Checklist for Medical Facilities

Location: SNL/NM, Bldg 831 **Date:** 4/28/09:1330

Chemical Storage:

Chemical Information System (CIS) searched on 4/28/09:0730.
No mercury or mercuric compounds identified.

Materials or Equipment Containing Mercury:

Y | N **Button cell batteries** (zinc air, **silver oxide**, or alkaline manganese)

Comments: Only one found on hand. Staff knows to not throw away and to notify trained (ENV112) hazardous waste "generator" to submit batteries to hazardous waste management facility. Manager (Miller) volunteered to issue an e-mail to staff as reminder of battery policy.

Y | **N** Consumer-style fever thermometers

Y | **N** Hospital laboratory thermometers

Y | N **Wall blood pressure units (sphygmomanometer)**

Comments: Most patient rooms have a wall hung sphygmomanometer with a mercury gauge. These are being phased out and replaced by digital multi-purpose sphygmomanometers. Both the manufacturer's website and equipment manual were reviewed. The new sphygmomanometers are aneroid ("without liquid"), and therefore mercury-free. Disposition of the mercury-containing sphygmomanometers was discussed. As they are operable equipment, Reapplication Services may accept the sphygmomanometers. If they are rejected by Reapplication Services, the mercury-containing gauge (not the cuffs) must be submitted to the hazardous waste management facility.

Y | N **Portable blood pressure units (sphygmomanometer)**

See comments above for "Wall blood pressure units (sphygmomanometer)."

Y | **N** Foley catheter

Y | **N** Barometers (atmospheric pressure)

Y | **N** Scoliometer/Inclinometer (torso distortion)

Y | **N** Are obtained samples stored with fixatives?
If yes, what fixatives are used? _____

Y | **N** Maloney or Hurst bougies (esophageal dilators)

Y | **N** Cantor tubes (intestinal blockage tool)

Y | **N** Miller-Abbott tubes (intestinal blockage tool)

Y | **N** Dennis tube (intestinal blockage tool)

Y | **N** Coulter Counter (If equipment present, Beckman Coulter should be contacted to find out if the equipment contains mercury or not.)
If yes, what is the equipment make and model? _____

Y | **N** Warmers, ovens, boilers – see gauges and switches

Y | N Look for "Hg" in any other gauges on equipment and hand tools: **Thermostats**

Comments: Thermostats in patient rooms and perhaps throughout the facility appear quite old, and are potentially mercury-containing. Any renovation to the facility should take the opportunity to list these as hazards to be mitigated.

Attendees:
3331 – Anna Miller (Manager)
4131 – Samuel McCord (Pollution Prevention)
4133 – Matthew Shain (Environmental Compliance)

Attachment 4
Mercury Waste: FY2000 thru 2Q FY2009

FY	Mercury Recycled in kilograms						Mercury Disposed in kilograms				Total (kg)
	Mercury & Compounds	Mercury Batteries	Mercury Lamps (Non-Fluorescent)	Mercury Containing Articles	Mercury Contaminated Material	Mercury Standards	Spill Cleanup	Contaminated Lab Trash	Chemical Mixtures	Electrical Components	
2000	558.3	1,463.7	175.4	137.1	76.9	0.8	0.0	0.0	0.0	0.0	**2,412.2**
2001	91.5	1,554.1	93.6	89.7	104.5	0.1	69.7	0.0	35.6	26.9	**2,065.7**
2002	19.8	7.2	252.9	124.1	73.4	0.0	0.0	0.5	102.8	0.0	**580.6**
2003	49.8	617.6	93.4	131.4	64.2	0.3	14.0	0.0	97.6	0.0	**1,068.3**
2004	59.4	7.5	216.9	111.3	64.7	0.0	71.4	0.0	52.6	0.0	**583.8**
2005	89.7	323.6	137.7	94.5	8.2	0.0	12.1	0.8	81.5	3.9	**752.0**
2006	4.5	2.9	303.7	78.4	9.4	0.0	2,581.6	3.3	44.8	0.7	**3,029.3**
2007	19.2	9.1	49.8	296.3	10.6	0.0	0.1	0.1	5.9	0.0	**391.1**
2008	6.7	0.7	15.7	439.7	133.5	0.0	0.0	6.3	17.1	8.6	**628.3**
2009 YTD	0.8	0.1	27.7	42.4	33.6	0.1	20.8	14.1	5.9	2.4	**147.9**
	899.7	**3,986.5**	**1,366.8**	**1,544.9**	**579.0**	**1.3**	**2,769.7**	**25.1**	**443.8**	**42.5**	**11,659.2**

	kg	
Mercury Recycled	8,378.3	71.9%
Mercury Disposed	3,281.0	28.1%
	11,659.2	

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