



Beryllium-Associated Worker Registry BHSC Meeting November 5, 2009

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Number of Beryllium-Associated Workers Reported to the Registry



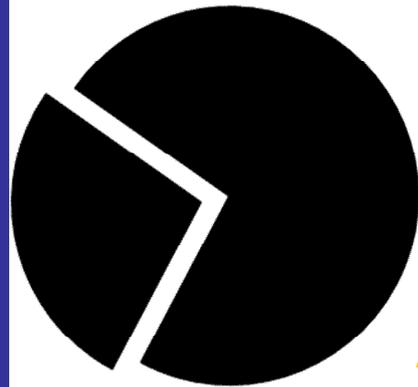
- ◆ A total of 19,875 individuals who have been included in rosters reported to the Registry
 - Received a medical screening examination for CBD or were monitored for beryllium exposure
 - Includes individuals who have separated from employment since 2002
- ◆ The Registry has data on another 3,998 Rocky Flats workers collected prior to site closure in 2005
 - Not included in these summaries
 - Now offered screening for CBD through former worker programs



DOE-Wide Prevalence of BeS and CBD



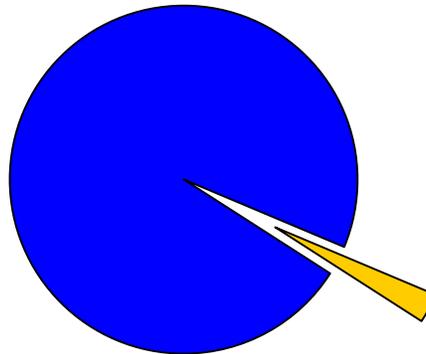
19,875 Employees Reported to the Registry



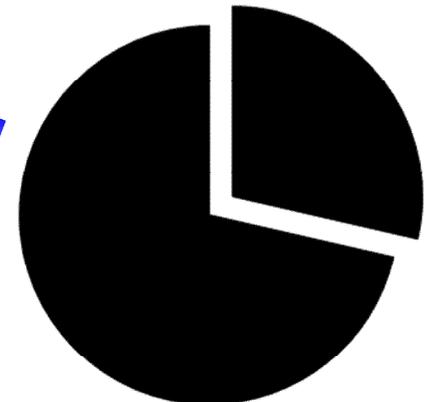
Not Screened 5,352 (27%)

Screened 14,523 (73%)

413 BeS or CBD Employees
(3% of screened)



118 Reported CBD
(29% of abnormal)





BeS and CBD by DOE Site



Site	Employees with BeLPT Results	"Sensitized" Employees	CBD Employees
HAN	3,986	66 (1.7%)	26 (0.7%)
Y-12	1,965	89 (4.5%)	47 (2.4%)
LANL	1,903	2 (0.1%)	3 (0.2%)
PTX	1,610	27 (1.7%)	15 (0.9%)
KCP	1,071	38 (3.5%)	13 (1.2%)
NTS	825	16 (1.9%)	3 (0.4%)
LLNL	595	24 (4.0%)	2 (0.3%)
SRS	590	10 (1.7%)	5 (0.8%)
SNL	576	1 (0.2%)	0
ETTP	381	6 (1.6%)	4 (1.0%)
ORNL	370	6 (1.6%)	0
INL	284	3 (1.1%)	0
ANL	105	3 (2.9%)	0



BeS and CBD by Year of First Hire



Year of First Hire	Employees with BeLPT Results	"Sensitized" Employees	CBD Employees
<1961	62	0	1 (1.6%)
1961-1965	105	3 (2.9%)	0
1966-1970	606	21 (3.5%)	22 (3.6%)
1971-1975	696	12 (1.7%)	11 (1.6%)
1976-1980	1,957	68 (3.5%)	26 (1.3%)
1981-1985	1,493	34 (2.3%)	19 (1.3%)
1986-1990	1,261	17 (1.3%)	3 (0.2%)
1991-1995	1,160	29 (2.5%)	4 (0.3%)
1996-2000	1,048	14 (1.3%)	4 (0.4%)
2001-2005	1,698	26 (1.5%)	1 (0.1%)
2006-2007	363	5 (1.4%)	1 (0.3%)
Not Reported	4,074	66 (1.6%)	26 (0.6%)
Totals	14,523	295 (2.0%)	118 (0.8%)



Analyses of Exposure Data



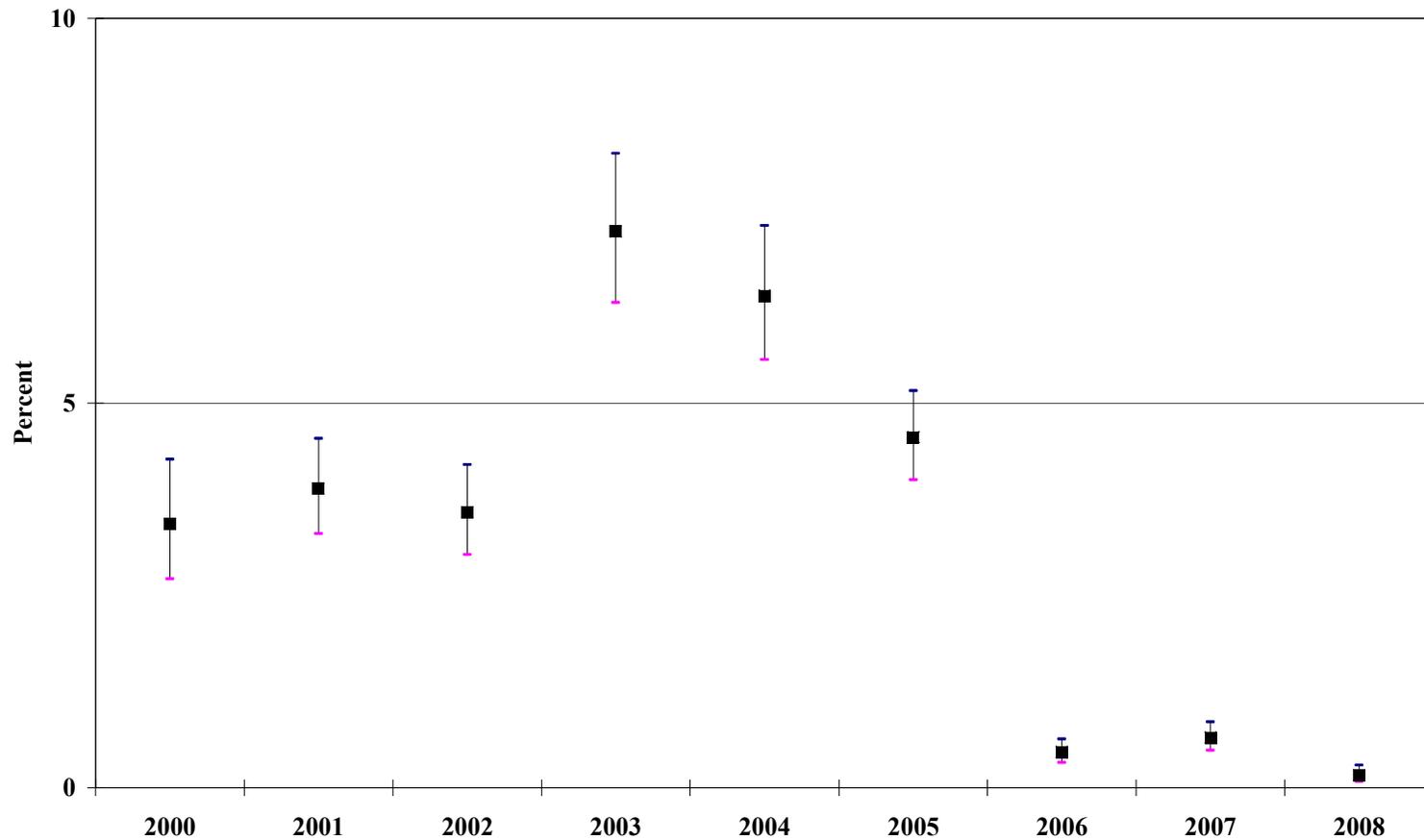
- ◆ 39,975 exposure monitoring records were submitted to the Registry through the end of 2008
- ◆ 84% were below laboratory reporting limits
- ◆ Another 139,571 exposure monitoring records from Rocky Flats are not included in these analyses



DOE –Wide Exposure Trend

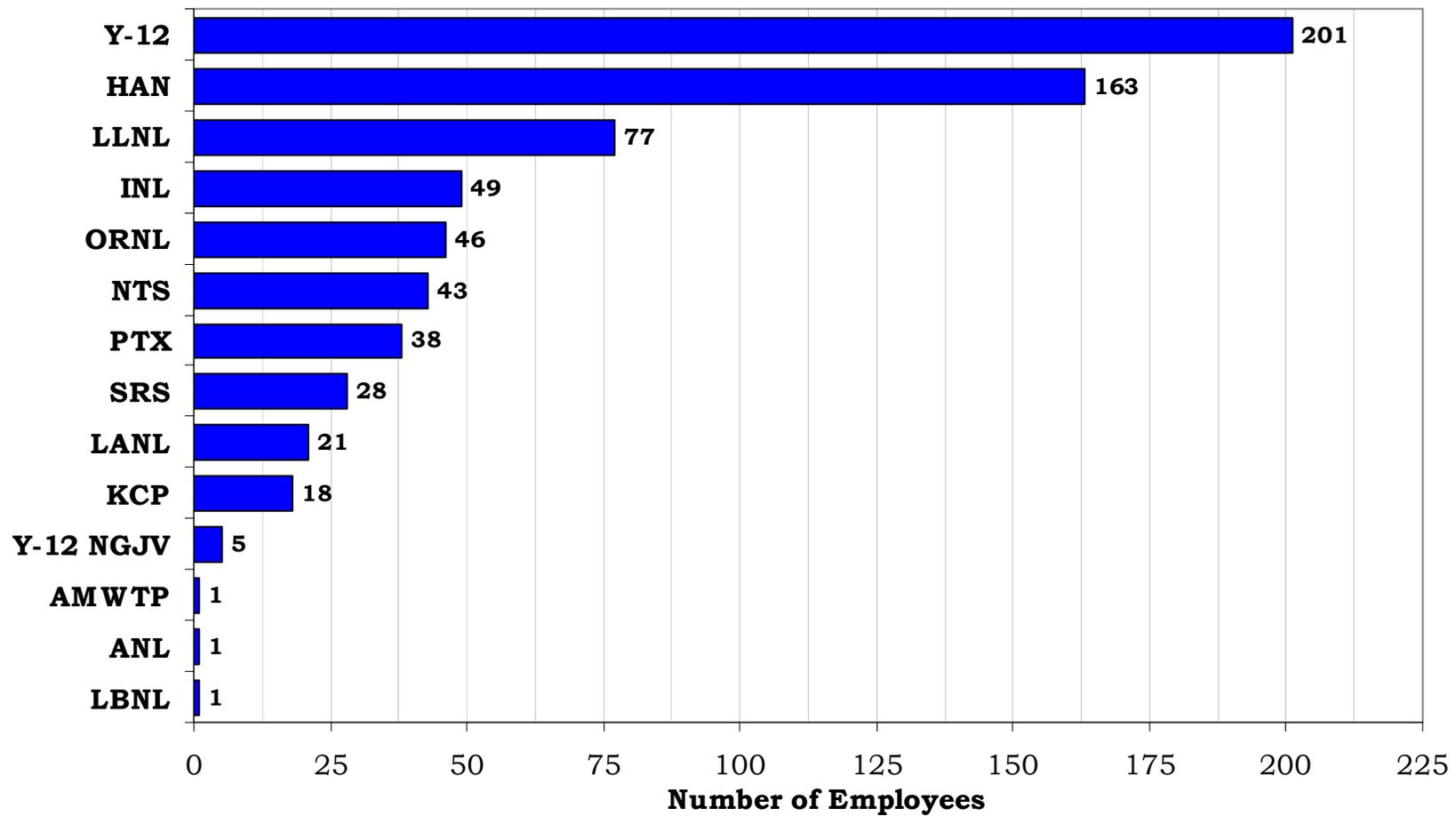


Percent of Measurements Exceeding $0.2 \mu\text{g}/\text{m}^3$
with 95% upper and lower confidence limits





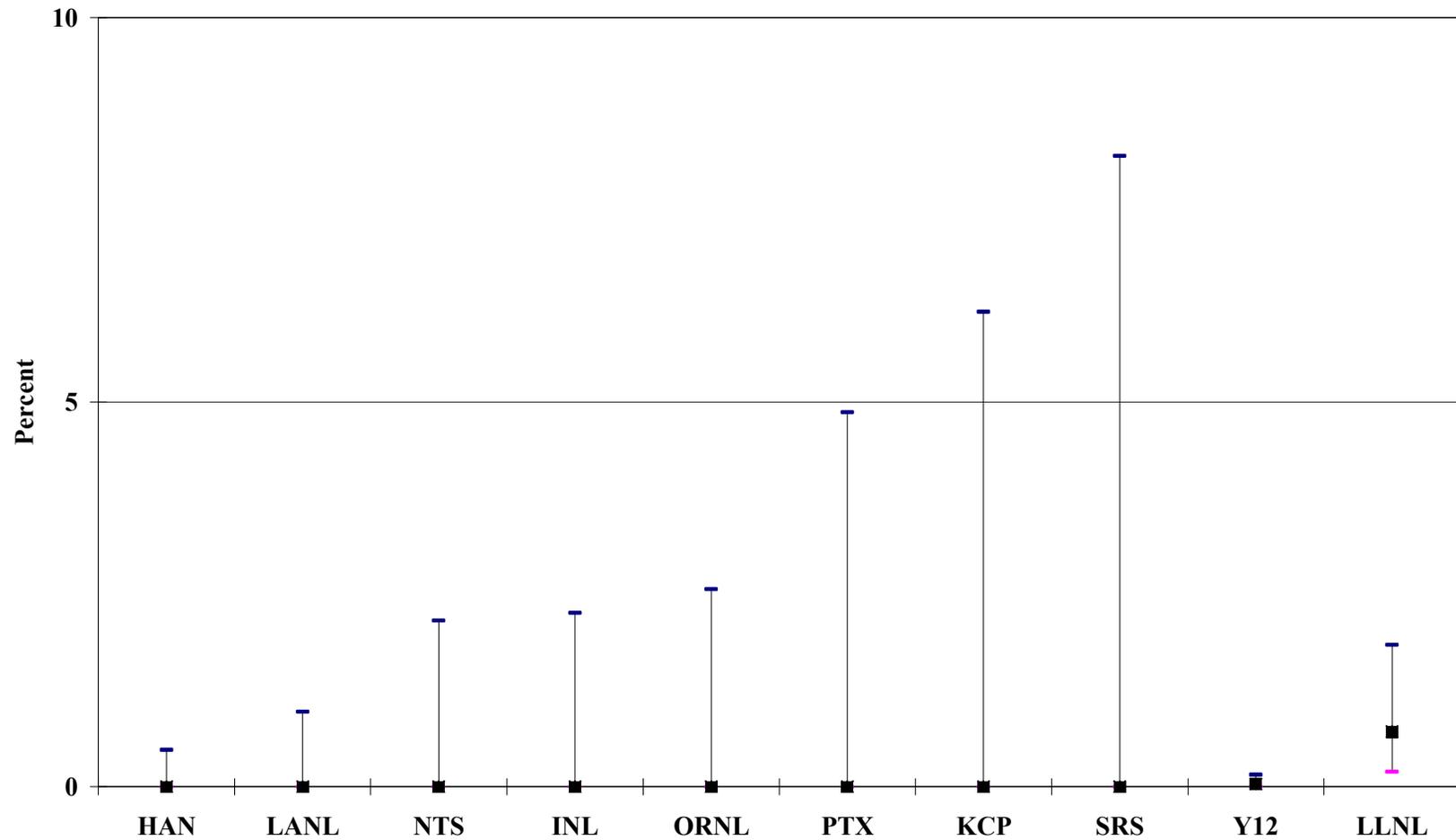
692 Individuals Monitored in 2008





Analysis by Site - 2008

Percent Exceeding $0.2 \mu\text{g}/\text{m}^3$ and
90% Confidence Interval





List of 2008 Exposure Monitoring Results Above the 0.2 $\mu\text{g}/\text{m}^3$ Action Level



Site ID	Activity Description	8- Hr Time Weighted Average $\mu\text{g}/\text{m}^3$	Respirator Assigned Protection Factor
LLNL	Recycling preparation, repackaging of beryllium materials into shipping containers	0.20	10
Y12	Production	0.24	100
LLNL	Decontamination equipment during 321c facility cleaning.	0.25	100
LLNL	Decontamination - prepare to remove equipment	0.25	1

- ◆ Only 4 results exceeding the action level in 2008 compared to 33 in 2007.
- ◆ With one exception, work planning processes identified the hazard and provided appropriate level of respiratory protection.



Goals for Future Reports



- ◆ Reduce the lag time in providing summary data to those who need it to operate and manage CBDPP.
 - Automate the updating of a standard set of summary statistics
 - Charts and tables with DOE-wide statistics updated on a web site semi-annually.
 - Are there site specific or other breakouts of the summary data that should be automated for dissemination to sites?
- ◆ Analyses that identify opportunities for improvement.
 - Pursue questions raised by the summary statistics.
 - Support collaborative investigations and studies that answer questions, reach conclusions and recommend improvements.



“Sneak Peak” at BAWR Web Application



- ◆ Web-based application designed to give more direct access to Registry data
- ◆ Application is in the early development stages
- ◆ Application currently designed to serve 2 groups:
 - **DOE HQ** can view and download summary data and individual data records for ALL sites that participate in the BAWR
 - **Sites** can view and download data for their specific site
- ◆ Demonstration uses a fictitious site named “Test Site” (Site Abbreviation “TEST”)



BAWR Web Application DOE Banner Page – Links, Contacts, Instructions, Login



The screenshot shows a Windows Internet Explorer browser window titled "HSRD Home - Windows Internet Explorer provided by ORAU". The address bar displays "http://localhost:4444/BeReg_Application/". The main content area features a blue header with the DOE logo and the text "DOE Beryllium-Associated Worker Registry (BAWR)". Below the header, there are navigation links: "BAWR Home Page", "Contacts.... | Instructions.... | Login_Privacy_Security_Statement....", and "DOE Beryllium-Associated Worker Registry (BAWR)". The left sidebar contains links to "DOE Office of Health, Safety and Security", "Current Beryllium-Associated Worker Registry Summary", "Beryllium-Associated Worker Registry Data Collection and Management Guide DOE-STD-1187-2007", and "Oak Ridge Institute for Science and Education, Occupational Exposure and Worker Studies". A "BAWR Login" button is located at the bottom of the sidebar. The main content area contains a paragraph describing the registry and a section titled "Title 10, Code of Federal Regulations, part 850 (10 C.F.R. 850), 'Chronic Beryllium Disease Prevention Program,'". The footer of the browser window shows "Local intranet".



BAWR Web Application Home Page – Site TEST



Untitled Page - Windows Internet Explorer provided by ORAU

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites History Mail Print Edit Discuss

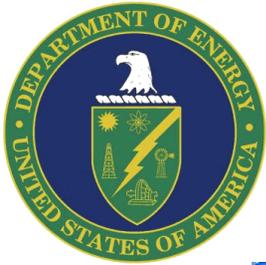
Address http://localhost:4536/BeReg_Application/frn_HomePage_Site.aspx Go Links >>

 **DOE Beryllium-Associated Worker Registry (BAWR)**

Site Home Page: TEST
[Record Count by Type and Last Date Submitted](#) [Log Off](#) [Export Selection to CSV](#)

View Records	Record Type	Type Description	Total Record Count
<input type="button" value="Select"/>	ActivitiesAndExposures	Beryllium Activities And Exposure Data	2162
<input type="button" value="Select"/>	BAL	Bronchoalveolar Lavage LPT Results	13
<input type="button" value="Select"/>	BX	Transbronchial Biopsy and BAL Pathology Results	14
<input type="button" value="Select"/>	CBD	Chronic Beryllium Disease Evaluation Results	23
<input type="button" value="Select"/>	CPET	Cardiopulmonary Exercise Test Results	0
<input type="button" value="Select"/>	CT	High-Resolution Computed Tomography Results	23
<input type="button" value="Select"/>	CXR	Chest X-Ray Results	399
<input type="button" value="Select"/>	Dermatitis	Beryllium-Induced Dermatitis Results	0
<input type="button" value="Select"/>	DLCO	Carbon Monoxide Diffusion Test Results	0
<input type="button" value="Select"/>	LPT	Beryllium Lymphocyte Proliferation Test Results	1253
<input type="button" value="Select"/>	Referral	Referral/Follow-Up	28
<input type="button" value="Select"/>	Roster	Roster	983
<input type="button" value="Select"/>	Smoking	Smoking Data	836
<input type="button" value="Select"/>	Spirometry	Spirometry Results	720
<input type="button" value="Select"/>	WorkHistory	Beryllium Work History Data	853

Local intranet



BAWR Web Application

Record Count by Type and Last Date Submitted

(click [HOME](#) to return)



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Address http://localhost:4536/BeReg_Application/frn_Most_Recent_Submission.aspx Go Links

 **DOE Beryllium-Associated Worker Registry (BAWR)**

[HOME](#) [Log Off](#)

Last Date Submitted - SiteID: TEST

Record Type	Date Submitted By Site	Record Count Submitted This Date
ActivitiesAndExposures	02/03/2009	115
BAL	02/03/2009	7
BX	02/03/2009	4
CBD_Evaluation	02/03/2009	8
CPET		0
CT	02/03/2009	9
CXR	02/03/2009	65
Dermatitis		0
DLCO		0
LPT	02/03/2009	148
Referral	02/03/2009	5
Roster	03/19/2009	10
Smoking	02/03/2009	103
Spirometry	08/03/2007	79
WorkHistory	02/03/2009	44

Done Local intranet



BAWR Web Application

Home Page – Site TEST – Select Roster



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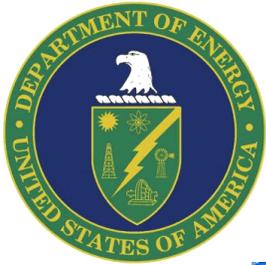
Address http://localhost:4536/BeReg_Application/frn_HomePage_Site.aspx Go Links >>

 **DOE Beryllium-Associated Worker Registry (BAWR)**

Site Home Page: TEST
[Record Count by Type and Last Date Submitted](#) [Log Off](#) [Export Selection to CSV](#)

View Records	Record Type	Type Description	Total Record Count
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<input type="button" value="Select"/>	Spirometry	Spirometry Results	720
<input type="button" value="Select"/>	WorkHistory	Beryllium Work History Data	853

Local intranet



BAWR Web Application

Roster – View All Records



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Address http://localhost:4536/BeReg_Application/frm_Roster_All.aspx

DOE Beryllium-Associated Worker Registry (BAWR)

TEST - Roster (Roster) - Total Number Of Records = 983

[Home](#) [View Records With Syntax Errors](#) [View Records With Inconsistencies](#) [View All Records](#) [Export Selection to CSV](#)

View Records For A unique ID: Selection contains 983 record(s).

View Record Fields	BeReg RecordID	unique ID	year born	gender	race	employer type	first hire on site date	year employment ended	date of death	immediate cause of death	first cause of death	second cause of death	other causes of death	old unique ID	previous site	re si
Select	90032	5000095	1947	M		C	07/14/1969									
Select	90033	5000160	1953	M		C	03/19/1984									
Select	90034	5000170	1954	M		C	09/28/1978									
Select	90035	5000250	1957	M		C	09/28/1987									
Select	90036	5000255	1956	M		C	07/24/1978									
Select	90037	5000285	1962	M		C	01/30/1989									
Select	90038	5000295	1964	M		C	03/13/1989									
Select	90039	5000315	1950	M		C	10/02/1989									

1 2 3 4 5 6 7 8 9 10 ... Last

Local intranet



BAWR Web Application

Roster – View Records With Syntax Errors



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Address http://localhost:4536/BeReg_Application/frm_Roster_All.aspx

DOE Beryllium-Associated Worker Registry (BAWR)

TEST - Roster (Roster) - Total Number Of Records = 983

[Home](#)
 [View Records With Syntax Errors](#)
 [View Records With Inconsistencies](#)
 [View All Records](#)
 [Export Selection to CSV](#)

View Records For A unique ID: Selection contains 6 record(s).

View Record Fields	BeReg RecordID	unique ID	year born	gender	race	employer type	first hire on site date	year employment ended	date of death	immediate cause of death	first cause of death	second cause of death	other causes of death	old unique ID	previous site	registry pr site
Select	90294	5840470	1960	M		F										
Select	90346	5990020	1949	M		F										
Select	90324	6201830	1952	M		F										
Select	90418	6260725	1959	M		F										
Select	90421	6305100	1967	M		F										
Select	90636	6355765	1959	M		F										

Local intranet



BAWR Web Application

Roster – [View Record Detail](#)
(then click [Return to Prior List](#))



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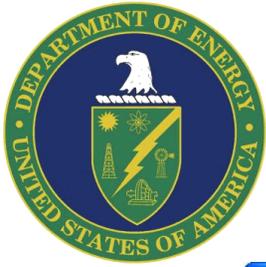
Address http://localhost:4536/BeReg_Application/frm_Roster_RecordID.aspx

 **DOE Beryllium-Associated Worker Registry (BAWR)**

[Home](#) [Return To Prior List](#) [Export Record to CSV](#)

- BeReg_RecordID: 90294
SiteID: TEST
site code: 99
unique ID: 5840470
year born: 1960
gender: M
race:
employer type: F
first hire on site date:
year employment ended:
date of death:
immediate cause of death:
first cause of death:
second cause of death:
other causes of death:
old unique ID:
previous site:
registry_previous site:
Filename: TEST_error_corrections_Sept08_9-22-2008.xls
DateSubmittedBySite: 09/22/2008
Changed: X
Change Date: 03/27/2009
ImportErrorComments: 1
Err_StatusCode: 0
Err_YearBorn: 0
Err_Gender: 0
Err_EmpType: 0
Err_FirstHire: 1
Err_YearEmpEnded: 0
Err_DateOfDeath: 0
Err_OldID: 0
Err_UniqueID: 0
Err_DOD_YearEmpEnded: 0
Err_DOD_LessThan_YearEmpEnded: 0
IsMarkedForDeletion: 0
Flag-year employment ended < WH job begin or < job end date:
Flag-death date < WH job begin date or < job end date:
Flag-year employment ended with null Work History job end date:
Flag-death date with null Work History job end date:
Flag-no Work History records: X
Flag-marked for deletion but will create orphan:
IsFlaggedRecord: 1
DateGenerated: 06/26/2009

Done Local intranet



BAWR Web Application

Roster – View Records With Inconsistencies



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File Edit View Favorites Tools Help

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Address http://localhost:4444/BeReg_Application/frm_Roster_All.aspx

DOE Beryllium-Associated Worker Registry (BAWR)

TEST - Roster (Roster) - Total Number Of Records = 983

[Home](#)
 [View Records With Syntax Errors](#)
 [View Records With Inconsistencies](#)
 [View All Records](#)
 [Export Selection to CSV](#)

View Records For A unique ID: Selection contains 531 record(s).

View Record Fields	BeReg RecordID	unique ID	year born	gender	race	employer type	first hire on site date	year employment ended	date of death	immediate cause of death	first cause of death	second cause of death	other causes of death	old unique ID	previous site	re sit
Select	90033	5000160	1953	M		C	03/19/1984									
Select	90038	5000295	1964	M		C	03/13/1989									
Select	90039	5000315	1950	M		C	10/02/1989									
Select	90042	5000535	1959	F		C	06/25/1990	2008								
Select	90046	5000795	1954	M		C	01/16/1978	2007								
Select	90048	5000885	1961	M		C	02/11/1985									
Select	90049	5000970	1930	M		C	06/22/1953									
Select	90052	5001140	1942	F		S	09/24/1990	2006								

1 2 3 4 5 6 7 8 9 10 ... Last

Local intranet



Conclusions



- ◆ The increasing depth of data in the BAWR is making it a more useful tool for managing DOE CBDPPs
- ◆ Closing gaps in work history data would be helpful
- ◆ Exposure monitoring data quality objectives are difficult to meet
 - Lab reporting limits near the action level
 - Monitoring frequently enough to reach confident conclusions
- ◆ We are requesting comments and suggestions for
 - Improved reporting in the future
 - How can we support more in depth analyses



For More Information



◆ Beryllium-Associated Worker Registry Web Site

- http://www.hss.energy.gov/healthsafety/IIPP/hservices/bery_wr.html

OFFICE of HEALTH, SAFETY AND SECURITY

Wednesday, June 17, 2009
Latest News

Beryllium-Associated Worker Registry

The Office of Illness and Injury Prevention Programs support the operation of a surveillance registry of current workers who are exposed to beryllium in their current job, or may have been exposed to beryllium in the past from work conducted at a DOE site. The goal of the registry is to determine the incidence and prevalence of beryllium sensitization and chronic beryllium disease (CBD). The data will be analyzed to better understand CBD and to identify those at risk. Another goal is to monitor and evaluate the effectiveness of DOE's Chronic Beryllium Disease Prevention Program.

Current Worker Medical Surveillance Program Screening Results (Cumulative through December 31, 2007)

Number Screened	Number Sensitized	Number with CBD
13,583	236 (1.7%)	111 (0.8%)

Related Documents and Links

- 2009 Current Beryllium Associated Worker Registry Summary - The most recent periodic report on data collected by the registry.
- Archived reports:
 - 2008 Current Beryllium-Associated Worker Registry Summary
 - Beryllium Current Worker Health Surveillance Through 2005
- Report on Screening for Beryllium Sensitization and Disease in Former DOE Federal and Contractor Workers through 2008 - the most recent periodic summary of information collected through operation of former worker medical surveillance programs.
- Chronic Beryllium Disease Prevention Program - provides information on DOE rules and guides for CBD prevention.
- Beryllium-Associated Worker Registry Data Collection and Management Guidance - DOE Technical Standard DOE-STD-1187-2007, June 2007 establishes procedures used to collect, analyze and report data.
- Statistical Methods and Software for the Analysis of Occupational Exposure Data with Non-Detectable Values - Oak Ridge National Laboratory Technical Report ORNL/TM-2005/52, which provides methods used to analyze exposure monitoring data.
- DOE-SPEC-1142-2001, April 2001, which provides a purchase specification for a screening test used in medical surveillance programs.
- DOE's Former Worker Medical Screening Program - Provides information on medical surveillance of former workers who are retired or separated from employment at a DOE site.

Program Manager: Paul Wambach Phone: 301-903-7373