


# Chemical Sciences Division


Fiscal Year 2013

Environmental Health Safety and Security

Self-Assessment Report

## Emergency Notification System Assessment in Building 70A

Approved By:  6/28/2013  
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## Executive Summary

Personal interviews and emergency evacuation alarm bell sound level surveys were conducted in all occupied spaces in B70A. Analysis of the results demonstrated that a majority of the B70A spaces did not meet the acceptable criteria of 15 decibel (dB) above ambient. Furthermore, in a great many of the areas in B70A the emergency evacuation bells were completely inaudible. A number of temporary actions have been implemented as we strive toward a permanent resolution. We identified the building intercom system as a way to notify building occupants, and we implemented a protocol for intercom use in an emergency. Also temporary bells are being added with the goal of getting a sound level penetration of 6 dB or better in all occupied areas. This sound level is not up to code, but was chosen as we believe this is a loud enough audible sound level to get attention. To date, 35 temporary bells have been added to the B70A hallways. 22 additional bells are to be installed in the areas that had poor sound penetration in the last sound test, but that work has not been completed as of the preparation of this report. The permanent resolution of this issue is the installation of a new notification system of horn /strobe light units which will meet modern code requirements. This full upgrade is estimated to be completed sometime in FY15.

## Introduction

On January 12 of 2011, Wayne Lukens entered a Corrective Action Tracking System (CATS) item for the emergency evacuation bell outside his B70A office that was inaudible. Then on 04-13-2011 this CATS item was closed. Unbeknownst to Wayne Lukens, this CATS item was closed without the bell having been fixed (Please see CATS reports included in Appendix 1). The fire bell issue was further highlighted on October 31, 2012, when an incident occurred in B70A that sounded the emergency evacuation bells. Several employees, including the B70A Building Emergency Team (BET) Lead, did not hear the alarm and therefore did not evacuate. As the BET Lead did not evacuate with his radio, there was no communication with hill based emergency responders, and the emergency sweep teams could not perform their duties effectively. Fortunately no one was harmed as a result of this incident; however it became clear that an assessment of the effectiveness of the emergency evacuation bells was in order.

The ultimate goal of this institutional self-assessment is to fully evaluate the extent and severity of the problem, so that we may garner the needed resources to both mount an appropriate response for temporary measures and ultimately bring the building up to modern standards for alerting personnel to perform an emergency evacuation.

We are making progress toward full resolution to this problem area. However this self-assessment focus area report is a summary work-in-progress detailing the extent of changes realized up to the reporting deadline.

## Assessment Methodology

Throughout November of 2012, Jerry Bucher conducted interviews with B70A occupants. These interviews included occupants of all divisions representing all of the occupied spaces within B70A. It was determined that the problem was extensive and needed further and more formal analysis. For example, emergency alarm bells were not working on one entire side of one B70A floor.

Sound level surveys were conducted on December 26, 2012 and on January 21, 2013. For the December 26, 2012 survey, Floyd Colton (Fire Alarm Crew) was accompanied by David Shuh (Chemical Sciences). For the January 21 survey, Eric Klopp (Fire Alarm Crew) was accompanied by Jerry Bucher (Chemical Sciences Safety Coordinator), and David Hoover from HYT.

David Shuh and Jerry Bucher accompanied the Fire Alarm crew so that access to nearly every room in B70A was achieved. Prior to the actual surveys, much effort was invested by Chemical Sciences personnel to arrange release of all B70A spaces. As a consequence, permission to enter nearly every B70A space occurred. This is an excellent example of how collaboration between Facilities personnel and building stakeholders greatly increases the effectiveness of these surveys. For similar reasons, it would be very useful to include stakeholders in future planning meetings. The stakeholders have unique knowledge of the problems involved in planning and upgrading fire alarm installation in B70A work spaces. A select number of stakeholders can efficiently facilitate gaining work spaces access for completing the project in a timely manner.

## Assessment Results

Sound level results for B70A are presented in Table 1. The column labeled “Baseline” is the ambient sound level in each space expressed in audio hearing adjusted decibels (dbA). The column labeled “Noise Results” are dbA readings taken in each indicated space when the building emergency alarms are activated. Numbers in black color in columns “Baseline” and “Noise Results” are readings taken during the December 26, 2012 survey; numbers in red are readings taken during the January 21 survey. The results are expressed in audio hearing adjusted decibel units (dbA) with the same convention as noted before to indicate when the measurements were generated.

Column labeled “calc” is the difference between the “Noise Result” value and the “Baseline” (ambient) value. The results recorded are only for the December 26 survey data.

Column labeled “Results, 4-6dB level criteria” are color coded visual representations of whether the “calc” value meets or exceeds the 4-6dB criteria level over the ambient sound levels. Green colored entries indicate that measured bell sound levels exceed the 6 dB criteria and should be audible. Entries which are in the 4-6 dB range are color coded blue and this audibility is thought to be questionable. Entries which did not exceed the criteria level of 4 dB are labeled “inaudible”.



Column labeled “Results, 15 dB level criteria” are color coded visual representations of whether the sound level above ambient met the NFPA 72 National Fire Alarm Code 15 dB level criteria. Green colored entries met or exceeded the 15 dB sound level. Entries indicated by a red colored entry indicated that the 15dB sound level was not fulfilled. It is apparent by quickly glancing over Table 1 that a sizeable majority of B70A spaces do not meet the NFPA 72 National Fire Alarm Code 15 dB level criteria. Furthermore, the emergency notification bells are completely inaudible in far too many occupied areas in B70A.

Column labeled “Bell in Room” indicates where fire bells are installed. The 15 dB criteria sound levels were met in spaces that contained bells, if the bells were operable. If the bell is not working, the entry is found not to meet the 15 dB criteria (see result for B70A-4435).

### **Temporary Actions for Emergency Notification**

The poor state of the B70A emergency notification system is clearly unacceptable, and the Chemical Sciences Division has taken up the institutional task of taking appropriate steps to ensure that all B70A occupants are better protected. The ultimate goal is to bring the emergency notification system in B70A up to modern NFPA 72 standard, but this will take several years to complete. Working with Protective Services and Facilities, a number of temporary actions have been implemented as we strive toward a permanent resolution.

Our first thought was to find a simple, easy way to notify building occupants. Discussions between CSD and the B70A Building Emergency Team (BET) identified the intercom system limited to B70A as a way to notify more building occupants. The protocol is that in the event of an emergency, any member of the BET or any safety coordinator would call the local B70A phone extension number and say, “The fire alarm has been activated. Please evacuate to the assembly area”, and repeat several times. We realize that this is an imperfect solution, but we thought that some extra notification was better than doing nothing.

An additional temporary measure is to fix and augment the current bells. All of the original bells in B70A have been fixed and tested. To date, 35 additional bells have been added to the B70A hallways. Figure 1 shows sound level measurements for occupied areas in B70A for floors 1 to 4 after the addition of the 35 new bells. The sound of the bells now penetrates into most of the building occupied areas; however some areas are still deficient. 22 additional bells are to be installed in the areas that had poor sound penetration in the last sound test, but that work has not been completed as of the preparation of this report.

Full upgrade of the emergency notification system is progressing. Engineering drawings have been prepared that incorporate horn / strobe lights as the notification device. The full upgrade of the emergency notification system is estimated to be completed sometime in FY15.

### **Conclusion**

On October 31, 2012, an incident occurred that sounded the emergency evacuation bells, and several employees did not hear the alarm and therefore did not evacuate. Throughout November of 2012, Jerry Bucher conducted interviews with B70A occupants and determined that the problem was extensive and needed further analysis. On December 26, 2012 and on January 21, 2013, sound level surveys were conducted in all occupied spaces in B70A. Analysis of the results demonstrated that a majority of the B70A spaces did not meet the acceptable

NFPA 72 National Fire Alarm Code criteria of 15 decibel (dB). Temporary measures are being put in place with the sound level criterion of 6 dB or better achieved in all occupied areas. To date, 35 temporary bells have been added and an additional 22 bells are to be added soon. Permanent resolution of this issue is the installation of a new notification system of horn/strobe light emergency alarm units. This full upgrade is estimated to be completed sometime in FY15.

**Table 1: Sound level readings and results for rooms in building 70A.**

<b>Room</b>	<b>Comments</b>	<b>Baseline</b>	<b>Noise Results</b>	<b>calc</b>	<b>Results, 4-6 dB level criteria</b>	<b>Results, 15 dB level criteria</b>	<b>Bell in Room</b>
hall	North West corner hallway	62	82	20			
hall	North East corner hallway	50	75	25			
hall	South West corner hallway	62	71	9			
hall	South East corner hallway	No reading taken	64				
1101	Utility Room in Staircase	60	59	-1	inaudible		
1103	OK to enter - Laboratory	67	95, 104	28			YES
1104	Bldg. facilities - Fan room	89, 83	80, 83	-9	inaudible		
1104A	Bldg. facilities - Fan room	No reading taken	No reading taken				
1105	OK to enter - Laboratory	61	68, 64	7			
1107	? Room doesn't exist; same room as 70A-1109	49-66	58 87, 88	21			YES
1108	Bldg. facilities - Mens Restroom	68	69, 66	1	inaudible		
1109	OK to enter - Laboratory	66	87, 88	21			YES
1109A	? Room doesn't exist			0			
1110	OK to enter - Office space	61	60	-1	inaudible		
1112	OK to enter - Office Space	50	60	10			
1113	OK to enter - Office Space	61	64, 61	3	inaudible		
1114	OK to enter - Office Space	No entry	57, 58				
1115	OK to enter - Laboratory - Cardkey approved	No entry	77,				
1115A	Do not enter - Laboratory - Bell located inside room	No entry	103				YES
1115B	Not necessary		105	0			YES
1117	See ESD - Hoi-Ying Holman, 486-5943 - for special key	No entry					
1117A	See ESD - Hoi-Ying Holman, 486-5943 - for special key	No entry					
1118	OK to enter - Office	60	No reading taken				
1119	OK to enter - Laboratory - See David Shuh for escort	63	76, 76	13			
1120	OK to enter - Office	60	57, 53	-3	inaudible		
1121	OK to enter - Laboratory - See David Shuh for escort	No reading taken	70				
1121A	OK to enter - Laboratory - See David Shuh for escort	55	90, 91	35			YES
1121B	OK to enter - Laboratory - See David Shuh for escort	53	94, 98	41			YES
1121C	OK to enter - Laboratory - See David Shuh for escort	64	100, 98	36			YES
1129	OK to enter - Laboratory - Must see David Shuh for escort	70	69	-1	inaudible		



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1145	OK to enter - Laboratory - Must see David Shuh for escort	70	68	-2	inaudible		
1145A	OK to enter - Laboratory - Must see David Shuh for escort	62	60	-2	inaudible		
1145B	OK to enter - Laboratory - Must see David Shuh for escort	60	59	-1	inaudible		
1147	? Room doesn't exist, part of 1149			0			
1147A	? Room doesn't exist, part of 1149			0			
1148	Bldg. facilities - Elevator control room	65	No reading taken				
1149	OK to enter - Laboratory - Must see David Shuh for escort	69	66	-3	inaudible		
1150	OK to enter - Office	58	55	-3	inaudible		
1150A	OK to enter - Office	58	55	-3	inaudible		
1151	OK to enter - Laboratory - Must see David Shuh for escort	60	60	0	inaudible		
1152	OK to enter - Office	56	57	1	inaudible		
1154	OK to enter - Office	61	58	-3	inaudible		
1156	OK to enter - Office	61	60	-1	inaudible		
1158	OK to enter - Office	60	58	-2	inaudible		
1159	? Room doesn't exist			0			
1159A	OK to enter - Laboratory - Must see David Shuh for escort	60	54	-6	inaudible		
1159B	OK to enter - Laboratory - Must see David Shuh for escort	62	63	1	inaudible		
1160	OK to enter - Office	62	60	-2	inaudible		
1161	OK to enter - Office	No reading taken	No reading taken				
1161A	OK to enter - Office	57	63	6			
1161B	OK to enter - Office	53	59	6			
1164	Bldg. facilities	63	No reading taken				
1165	OK to enter - Laboratory - Must see David Shuh for escort	63	59	-4	inaudible		
1165A	OK to enter - Laboratory - Must see David Shuh for escort	53	55	2	inaudible		
1166	Bldg. Facilities	60	56	-4	inaudible		
1162	Bldg. facilities - Womens Restroom	69	60, 58	-9	inaudible		
1168	Bldg. facilities - janitor room	No reading taken	No reading taken				
1195	Bldg. facilities - Elevator	No reading taken	No reading taken				
1196	? Room doesn't exist			0			

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1197	? Room doesn't exist			0			
1198	Bldg. facilities - Stairwell	No reading taken	No reading taken				
1199	? Room doesn't exist			0			
hall	North West corner hallway	47	73, 73	26			
hall	North East corner hallway	51	70	19			
hall	South West corner hallway	49	No reading taken, 69				
hall	South East corner hallway	48	67	19			
2203	OK to enter - Laboratory	64	60, 57	-4	inaudible		
2205	OK to enter - Laboratory	58	60, 56	2	inaudible		
2205A	OK to enter - Office	60	61, 56	1	inaudible		
2205B	OK to enter - Office	54	54, 55	0	inaudible		
2211	OK to enter - Laboratory - Must see David Shuh for escort	65, 63	64, 63	-1	inaudible		
2212	OK to enter - Laboratory - ESD cardkey access	No Entry, 72	No Entry, 73				
2212A	merged into 2212	No Entry, 72	No Entry, 73				
2212B	merged into 2212	No Entry, 72	No Entry, 73				
2212C	merged into 2212	No Entry, 72	No Entry, 73				
2212D	merged into 2212	No Entry, 72	No Entry, 73				
2212E	merged into 2212	No Entry, 72	No Entry, 73				
2214	OK to enter - Office	61	60, 52	-1	inaudible		
2214A	OK to enter - Office		52	0			
2214B	OK to enter - Office		52	0			
2214C	OK to enter - Office		52	0			
2214D	OK to enter - Office		52	0			
2214E	OK to enter - Office		52	0			
2214F	OK to enter - Office		52	0			
2215	OK to enter - Laboratory - Must see David Shuh for escort	66	63, 62	-3	inaudible		
2216	OK to enter - Office	60	59, 53	-1	inaudible		
2217	OK to enter - Laboratory - Must see David Shuh for escort	69	67, 66	-2	inaudible		
2217A	OK to enter - Laboratory - Must see David Shuh for escort	64	63, 60	-1	inaudible		
2217B	OK to enter - Laboratory - Must see David Shuh for escort		68,	0			
2218	OK to enter - Office	61	60, 51	-1	inaudible		
2223	OK to enter - Laboratory - Must see David Shuh for escort	65	65, 66	0	inaudible		
2223A	OK to enter - Laboratory - Must see David Shuh for escort	65	61, 63	-4	inaudible		
2229	OK to enter - Laboratory - Must see David Shuh for escort	No reading taken	No reading taken, 63				



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2229A	OK to enter - Laboratory - Must see David Shuh for escort	60	60, 58	0	inaudible		
2229B	OK to enter - Laboratory - Must see David Shuh for escort	64	62, 57	-2	inaudible		
2229C	OK to enter - Office	46	48, 48	2	inaudible		
2229D	OK to enter - Office	60	58, 55	-2	inaudible		
2231	OK to enter - Office	60	56, 48	-4	inaudible		
2235	OK to enter - Laboratory	61	69, 69	8			
2237	? Room doesn't exist			0			
2239	? Room doesn't exist			0			
2239A	? Room doesn't exist			0			
2245	OK to enter - Laboratory - Bell inside	67	84, 80, 93	17			YES
2245A	? Room doesn't exist			0			
2245B	OK to enter - Laboratory - Bell inside	48	60, 63	12			
2250	OK to enter - Office	56	59, 53	3	inaudible		
2251	? Room doesn't exist			0			
2251A	? Room doesn't exist			0			
2252	OK to enter - Office	48	52, 50	4			
2253	OK to enter - Laboratory - Bell inside	55	87, 88	32			YES
2253A	? Room doesn't exist			0			
2253B	OK to enter - Laboratory	40	53, 51	13			
2255	OK to enter - Office Suite - 2255 A, B, C, D, E, F, G, H - Bell Inside		93	0			YES
2255A		59	67, 61	8			
2255B		62	65, 51	3	inaudible		
2255C		60	65, 65	5			
2255D		60	64, 64	4			
2255E		64	66, 64	2	inaudible		
2255F		64	67, 69	3	inaudible		
2255G	Open door	62	76, 75	14			
2255H		65	65, 63	0	inaudible		
2262	OK to enter - Offices - 2262 A, B, C, D, E, F			0			
2262A		No reading taken, 50	No reading taken, 53				
2262B		No reading taken, 50	No reading taken, 53				
2262C		No reading taken, 50	No reading taken, 53				
2262D		No reading taken, 50	No reading taken, 53				
2262E		No reading taken, 50	No reading taken, 53				
2262F		No reading taken, 50	No reading taken, 53				
2263	OK to enter - Laboratory -	57	66, 66	9			
2263A	OK to enter - Laboratory	59	58, 62	-1	inaudible		



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2263B	OK to enter - Laboratory	59	58, 62	-1	inaudible		
2263C	OK to enter - Laboratory-Office	57	66, 66	9			
2263D	OK to enter - Laboratory-Office	57	66, 66	9			
2272	Bldg. facilities - janitor room	57	60	3	inaudible		
2275	OK to enter - Laboratory - Hoi-Ying Holman 486-5943 Card key	No reading taken, 59	No reading taken, 60				
2275A	OK to enter - Laboratory - Hoi-Ying Holman 486-5943 Card key	No reading taken, 60	No reading taken, 61				
2275B	OK to enter - Laboratory - Hoi-Ying Holman 486-5943 Card key	No reading taken, 58	No reading taken, 57				
2275C	OK to enter - Laboratory - Hoi-Ying Holman 486-5943 Card key	No reading taken, 56	No reading taken, 56				
2201	Bldg. facilities - Stairway	No reading taken	No reading taken				
2208	Bldg. facilities - Mens Restroom	65	65, 62	0	inaudible		
2210	Bldg. facilities - Womens Restroom	64	64, 68	0	inaudible		
2248	Bldg. facilities - storage room	62	62, 68	0	inaudible		
2295	? Room doesn't exist			0			
2296	Bldg. facilities - Elevator	No reading taken	No reading taken	#VAL UE			
2297	Bldg. facilities - Electrical panels	No reading taken	No reading taken	#VAL UE			
2298	Bldg. facilities - Stairwell	54	No reading taken	#VAL UE			
2299	? Room doesn't exist			0			
3307	OK to enter - Office Suite 3307A, B, C, D, E			0			
3307A		50	51, 52	1	inaudible		
3307B		64	60, 54	-4	inaudible		
3307C		56	50, 54	-6	inaudible		
3307D		56	50, 54	-6	inaudible		
3307E		56	50, 54	-6	inaudible		
3310	Bldg. facilities - Womens Restroom	61	58, 63	-3	inaudible		
3314	OK to enter - Office	No reading taken	60, 66	#VAL UE			
3317	OK to enter - Office Suite 2217A, B, B2, B4, C, D, E, F, G, H, J, K, L,	53	80	27			YES
3317A		66	85, 80	19			
3317B	55 – door closed to conf. room	66, 63	58, 72, 55	-8	inaudible		
3317B1				0			
3317B2				0			
3317B3				0			



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3317B4				0			
3317C				0			
3317D		53	64, 61	11			
3317E		66	68, 55	2	inaudible		
3317F		67	70, 65	3	inaudible		
3317G		No reading taken	No reading taken, 80	#VAL UE			
3317H		42	62, 59	20			
3317J		52	No reading taken, 96				
3317K		No reading taken	No reading taken, 96				
3317L		62, 54	64, 57	2	inaudible		
3317M	OK to enter - Office 3317M, M1-M7 - ESD Card Key access for 3317 Bell in	72, 73	79, 72	7			
3317M1			72	0			
3317M2			72	0			
3317M3			72	0			
3317M4			72	0			
3317M5			72	0			
3317M6			72	0			
3317M7			72	0			
3318	OK to enter - Laboratory	67	88, 89	21			YES
3335A	Bldg. facilities - Bldg. doorway	No reading taken	No reading taken, 61				
3337	Not OK to enter - Hazardous Chemical Storage	56	61	5			
3343	OK to enter - Laboratory - Bell inside	63, 61	79, 83	16			YES
3343A		56	63	7			
3347	OK to enter - Laboratory	No access, 72, 78, 68	No access, 80, 83, 94				YES
3347A	OK to enter - Laboratory	No access, 65	No access, 78				YES
3347B	OK to enter - Laboratory	No access, 65	No access, 84				YES
3358	OK to enter - Laboratory	No access, 80	No access, 92				YES
3362	OK to enter - Office Suite - 3362A, B, C	49, 47	64, 58	15			
3362A			58	0			
3362B			58	0			
3362C			58	0			
3363	OK to enter - Office Suite - 3363A-F Bell Inside		101	0			YES
3363A		61	69, 72	8			
3363B		60	72, 73	12			
3363C		54	72, 76	18			
3363D		57	70, 71	13			
3363E		61	72, 73	11			
3363F		58	74, 74	16			



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3372	Bldg. facilities - Janitor room	56	58	2	inaudible		
3377	OK to enter - Conference room, meeting room	51	92, 92	41			YES
3301	Bldg. facilities - Bldg. entrance	No reading taken	No reading taken, 53				
3303	Bldg. facilities - Bldg. lobby	48, 47	No reading taken				
3308	Bldg. facilities - Mens Restroom	59	63, 58	4			
3310A	Bldg. facilities - Womens Restroom	61	68, 63	7			
3310B	OK to enter - Office	56	58, 64	2	inaudible		
3329	Bldg. facilities - Boiler room		77, 91	0			
3335	Bldg. facilities - Bldg. entrance	No reading taken	No reading taken, 61				
3345	OK to enter - Laboratory	50	59	9			
3348	OK to enter - storage room	63	64	1	inaudible		
3349	OK to enter - Laboratory		57	0			
3351	OK to enter - Laboratory	68	69	1	inaudible		
3353	OK to enter - Laboratory	67	68	1	inaudible		
3355	OK to enter - Laboratory	72	72	0	inaudible		
3357	? Bldg. facilities			0			
3359	OK to enter - Laboratory	No reading taken	65				
3361	OK to enter Laboratory	No reading taken	No reading taken				
3365	? Room doesn't exist			0			
3377A	OK to enter - Storage room for Conference-meeting room			0			
3392	? Room doesn't exist			0			
3394	Bldg. facilities	No reading taken	No reading taken				
3395	Bldg. facilities - Elevator	No reading taken	No reading taken				
3396	Bldg. facilities - Hallways	59	72	13			
3397	Bldg. facilities - Stairwell	No reading taken	No reading taken				
3398	? Room doesn't exist			0			
3399	? Room doesn't exist			0			
4403	Not OK to enter - 4403A, B, C, (4403)	No Access	No Access				
4403A		No Access	No Access				
4403B		No Access	No Access				
4405	Not OK to enter 4405, 4405B, 4405C, 4405D, 4405E	No Access, 50	No Access, 93				YES
4405A		No Access, 50	No Access, 78				
4405B		No Access	No Access, 68				
4405C		No Access, 72	No Access, 75				



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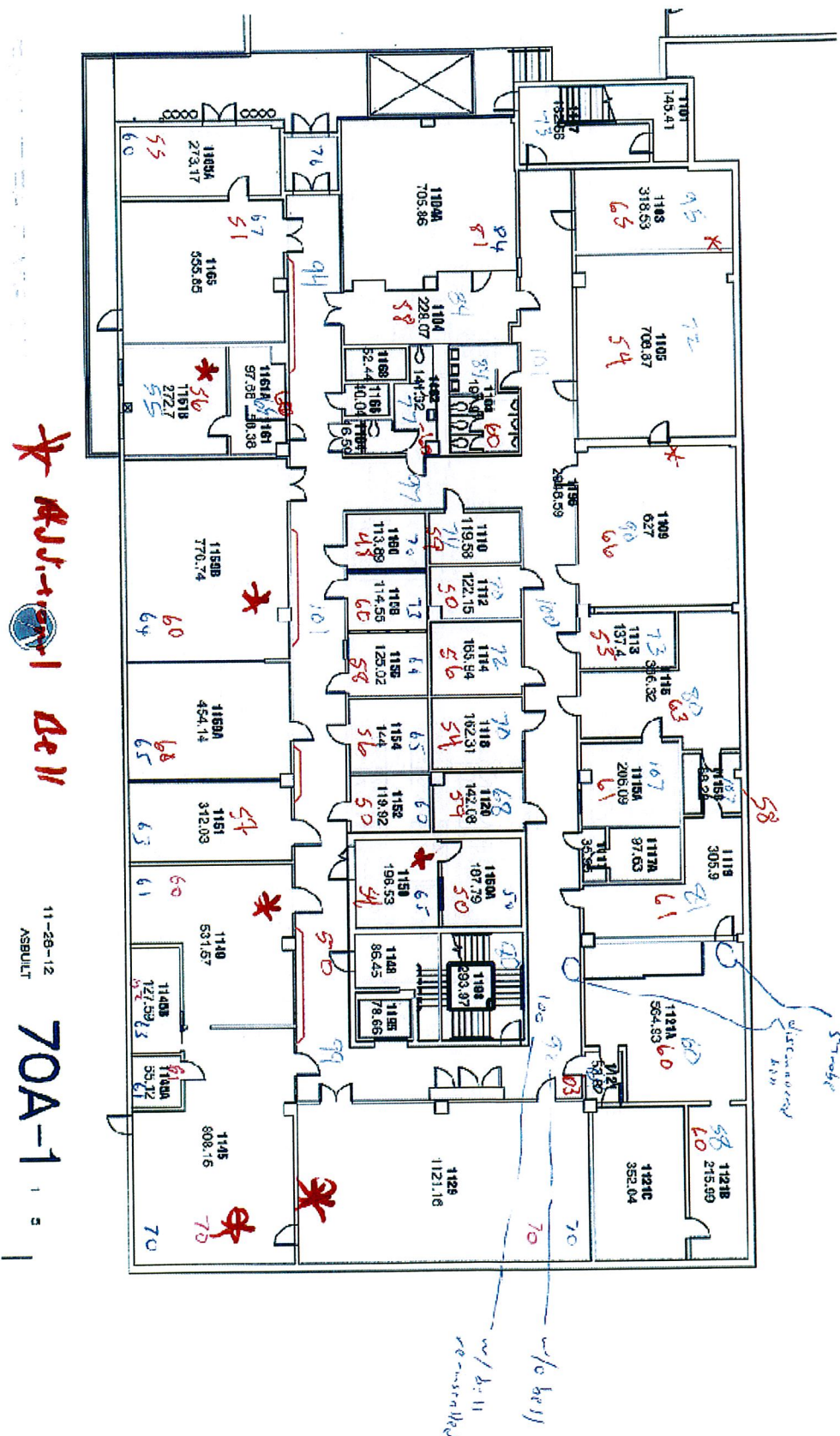
4405D	Needs a portable bell	No Access, 64	No Access, 62				
4405E				0			
4413	OK to enter - Laboratory	61, 63	69, 66	8			
4413A	? Room doesn't exist			0			
4414	OK to enter - Office Suite 4414A-E	No reading taken, 56	61, 58				
4414A		56	58	0			
4414B		56	58	0			
4414C		56	58	0			
4414D		56	58	0			
4414E		56	58	0			
4418	OK to enter Office Suite - 4418 A-D Bell Inside			0			YES
4418A		58, 52	93, 93	35			YES
4418A1		52	93	0			YES
4418A2		52	93	0			YES
4418A3		52	93	0			YES
4418A4		52	93	0			YES
4418B		48, 47	61, 60	13			
4418C		60, 63	61, 63	1	inaudible		
4418D		56	63, 65	7			
4419	OK to enter - Laboratory	71, 65	67, 65	-4	inaudible		
4421	OK to enter - Laboratory	65, 65	64, 65	-1	inaudible		
4425	OK to enter - Laboratory	No reading taken	No reading taken, 58				
4425A	OK to enter - Laboratory	54	64, 58	10			
4429	OK to enter - Laboratory	63, 64	69, 69	6			
4429A	OK to enter - Laboratory	81, 74	96, 93	15			YES
4429B	OK to enter - Laboratory - Changing room	No Access	No Access, 66				
4429C	NOT OK to enter - Cleanroom	No Access	No Access				
4431	OK to enter - Laboratory - only access changing room not cleanroom	No Access, 55	No Access, 56				
4435	Contact Nick Palaio, 486-7177 for permission to enter 4435-4445, 4445A, Broken bell!	74, 83	78, 83	4			YES
4445		No Access, 78, 76, 70, 74, 83	No Access, 77, 88, 80, 80, 88				YES
4445A		No Access, 64	No Access, 64				
4450	OK to enter - Office	48	58, 56	10			
4450A	OK to enter - Office	No reading taken	No reading taken, 56				
4450B	OK to enter - Office	No reading taken	No reading taken, 56				
4456	OK to enter - Office	61	69, 68	8			
4457	Contact Nick Palaio, 486-7177 for permission to	No Access, 71	No Access, 71				



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	enter 4457. 4457A						
4457A		No Access	No Access				
4458	No entry	64	65	1	inaudible		
4459	OK to enter - Laboratory	72	74, 67	2	inaudible		
4460	OK to enter - Office	61	62, 55	1	inaudible		
4461	OK to enter - Laboratory	66	67, 65	1	inaudible		
4462	OK to enter - Office	65	67, 64	2	inaudible		
4463	OK to enter - Laboratory	69	90, 88	21			YES
4463A	OK to enter - Laboratory	61	63, 65	2	inaudible		
4463B	OK to enter - Laboratory	57	75, 74	18			
4463C	OK to enter - Laboratory	62	57, 58	-5	inaudible		
4472	Bldg. facilities - Janitor room	No reading taken	61				
4473	OK to enter - Office	57	58, 53	1	inaudible		
4475	Contact Tomas Torok to arrange an escort - Laboratory has pathogens	No Access, 66	No Access, 63				
4475A	Contact Tomas Torok to arrange an escort - Laboratory has pathogens	No Access	No Access, 56				
4401	Bldg. facilities - Stairway	No reading taken	No reading taken				
4405F	Bldg. facilities			0			
4408	Bldg. facilities - Mens restroom	No reading taken	69, 68				
4410	Bldg. facilities - Womens Restroom	No reading taken	74, 70				
4448	Bldg. facilities - storage room	No reading taken	70, 67				
4991	Bldg. facilities - Causeway 70A-70	61	63	2	inaudible		
4992	Bldg. facilities - Hallways	No reading taken	80				
4993	Bldg. facilities - Elevator	No reading taken	No reading taken				
4994	Bldg. facilities	No reading taken	No reading taken				
4996	Bldg. facilities - Stairwell	No reading taken	90				
4997	? Room doesn't exist			0			
4998	? Room doesn't exist			0			
4999	? Room doesn't exist			0			
4999A	? Room doesn't exist			0			
5993	Bldg facilities - Roof	67	96	29			YES
5994	Bldg. facilities - Roof	60	77	17			YES
5995	Bldg. facilities - Roof	66	62	-4	inaudible		
5996	Bldg. facilities - Roof	No reading taken	No reading taken				
5997	Bldg. facilities - Roof	68	73	5			
5998	Bldg. facilities - Roof	73	80	7			
5999	Bldg. facilities - Roof	76	80	4			

Figure 1: Sound level measurements for occupied areas in building 70A floors 1 to 4.







70A-2



70A-3

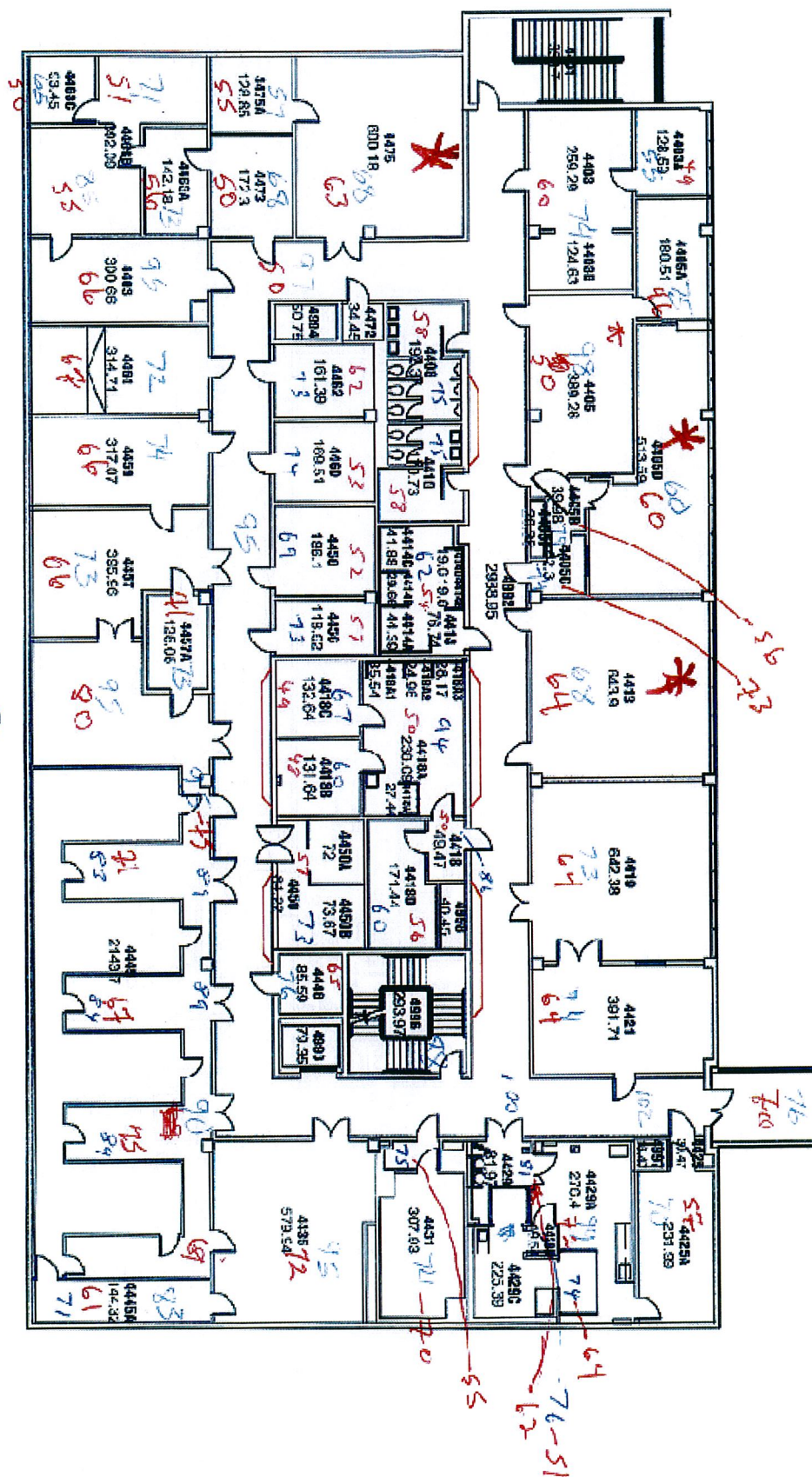


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CAFM

70A-4 4 5



# FY13 Chemical Sciences Division Self-Assessment Report

## Appendix 1; Work Requests for Emergency Evacuation Bells.

Issue No.: 8458 Status: Closed

Entered By: Lukens Jr, Wayne W Entry Date: 01/12/2011 Division: Chemical Sciences Closure Date: 04/13/2011

Discovery Date: 01/12/2010

\* Initiator: Lukens Jr, Wayne W

\* Division: CH - Chemical Sciences

Program/Project:

\* Issue Type: Adverse Condition

\* Assess. Type: N/A

\* Issue Description: Cannot hear the fire alarm on the first floor of building 70A in rooms 1150A, 1129, 1145, and 1149. The bell on the south hallway also seems less loud than it used to be (or my hearing is poorer).

Selected Location(s)

☐ 070A-

☐ 070A-1129

☐ 070A-1145

☐ 070A-1149

☐ 070A-1150A

\* Risk Level: Medium

\* Issue Category: Emergency Response

\* Trend Code: E Equipment/Design NI/LTA

\* Criteria Not Met: Fire alarm cannot be heard all rooms.

External Reporting  
or Significant  
Adverse Condition?:

☐ PAAA NTS 10CFR851

☒ PAAA INT 10CFR851

☐ ORPS CAT 1/R/2

☐ Significant Adverse Condition

☐ PAAA NTS 10CFR835

☐ PAAA INT 10CFR835

☐ ORPS CAT 3/4

OSHA Reference: L 1910.165

Corrective Action(s):

Corrective Action No.	Responsible Person	CM	CM Div.	Due Date	Completed Date	Closure Date	Total Time	WO	Inst.	Project ID
8458-1						04/13/2011		Y	Y	INSTITUTIONAL
8458-2	Eidson, Katherine M	Jang, Michael	FA	07/01/2011	04/13/2011	04/13/2011	79	Y	Y	NC

Review/Approval:

Status	Review Date	Comments
Approved	02/01/2011	
Approved	02/03/2011	



# FY13 Chemical Sciences Division Self-Assessment Report

Issue No.: 9277 Status: Open

Entered By: Lukens Jr, Wayne W Entry Date: 10/31/2012 Division: Chemical Sciences Closure Date:

Discovery Date: 01/12/2011

\* Initiator: Lukens Jr, Wayne W \* Division: FA - Facilities Program/Project:

\* Issue Type: Adverse Condition

\* Assess. Type: N/A

\* Issue Description: Fire alarm on 1st floor 70A, south hallway is BROKEN AND INAUDIBLE!!!! Facilities was notified of this almost two years ago and closed the CATS entry without fixing the problem.

Building: -Select- Room: Location Comments:

Selected Location(s)

☐ 1st floor south hallway

☐ 070A-

\* Risk Level: Medium \* Issue Category: Fire \* Trend Code: F. Maintenance N/A/LTA

\* Criteria Not Met: L 1910.165  
Fire alarm is inaudible except for rooms directly adjacent to the bell.

External Reporting  
or Significant  
Adverse Condition?: ☒

☐ PAAA NTS 10CFR851 ☒ PAAA INT 10CFR851 ☐ ORPS CAT 1/R/2 ☐ Significant Adverse Condition  
☐ PAAA NTS 10CFR835 ☐ PAAA INT 10CFR835 ☐ ORPS CAT 3/4

OSHA Reference: L 1910.165

Corrective Action(s):

Corrective Action No.	Status	Responsible Person	CM	CM Div.	Due Date	Completed Date	Closure Date	Total Time	WO Inst.	Project ID
9277-1	Open	Tsui, Allen	Sanchez, Eudes Cesar	FA	07/26/2013				N	N

Review/Approval:

Reviewer	Status	Review Date	Comments
Piermattei, Gary G	Approved	11/01/2012	
Wells, Willard H	Approved	11/01/2012	

# FY13 Chemical Sciences Division Self-Assessment Report

Issue No.: 9280 Status: Closed

Entered By: Lukens Jr, Wayne W Entry Date: 10/31/2012 Division: Chemical Sciences Closure Date: 11/16/2012

Discovery Date: 10/31/2012

\* Initiator: Lukens Jr, Wayne W

\* Division: FA - Facilities

Program/Project:

\* Issue Type: Adverse Condition

\* Assess. Type: N/A

\* Issue Description: On January 12, 2011, I reported that the fire alarms in 70A, first floor, south hallway were inaudible and created a CATS entry. Facilities sent someone out to measure the sound level and they verified that the alarm was indeed inaudible. Nevertheless, on 4/13/2011, the CATS item was closed WITHOUT CORRECTING THE PROBLEM!

I have not heard from Facilities in almost 9 months about this issue. I can only assume that they have ceased to work on it.

Selected Location(s)

☐ 070A-

\* Risk Level: Medium

\* Issue Category: Management Systems

\* Trend Code: A. Policies/Procedures/Instructions Not Used

\* Criteria Not Met: A CATS entry was closed without correcting the problem, which was clearly identified in the initial CATS entry

External Reporting or Significant Adverse Condition? ☒

☐ PAAA NTS 10CFR851

☒ PAAA INT 10CFR851

☐ ORPS CAT 1/R/2

☐ Significant Adverse Condition

☐ PAAA NTS 10CFR835

☐ PAAA INT 10CFR835

☐ ORPS CAT 3/M

OSHA Reference: L 1910 165

Corrective Action(s):

Corrective Action No.	Responsible Person	CM	CM Div.	Due Date	Completed Date	Closure Date	Total Time	WO Inst.	Project ID
9280-1									
9280-2	Peterson, Andrew Fitzgerald	Dionne, Joseph E.	EH	12/01/2012	11/16/2012	11/16/2012	15	N	N

Review/Approval:

Status	Review Date	Comments
Approved	11/02/2012	
Approved	11/02/2012	
Approved	11/02/2012	
Approved	11/07/2012	

## FY13 Chemical Sciences Division Self-Assessment Report

Issue No.: 9288 Status: Closed

Entered By: Bucher, Jerome J Entry Date: 11/06/2012 Division: Chemical Sciences Closure Date:

Discovery Date: 10/31/2012

\* Initiator: Bucher, Jerome J

\* Division: CH - Chemical Sciences

Program/Project:

\* Issue Type: Worker Safety & Health

\* Assess. Type: N/A

**\* Issue Description:** In response to an actual Fire alarm evacuation on 10/31/2012 in Bldg. 70A a survey was done to determine the extent of condition for personnel to hear clearly ringing fire-alarms in their workplaces. Floor by floor inspection was done of most labs and offices. to confirm whether people could or could not hear the fire alarms distinctly.

### 70A-1st floor

CATS items - 8458 (closed), 9280-2 (pending), 9283 (pending). These old and new CATS cover the failed Fire Alarm bell located outside 70A-1154, in the hallway. Replacement was done, but testing remains.

70A-1129, 1145, 1145A, 1145B, 1149, 1151, 1159A, 1159B, 1161, 1161A, 1161B, 1165, 1165A are all laboratories that have high level of ambient noise from equipment within the labs, or are rooms located inside the labs. The latter condition means an alarm may be required to penetrate through two doors. It is expected the signal would be much reduced.

Suggest installing alarms located internally in 70A-1129, 1149, 1159A, 1161, and 1165. Offices 70A-1110 through 1160 probably can hear the renewed hallway bells (70A-1154) or 70A-1114. Needs to be verified that the hallway bell has been repaired. Emergency responder in 70-1160 did not hear the 10/31 alarm and consequently didn't evacuate with the emergency radio setup.

North side laboratories in 70A - 1103 through 1121C (see Key Plan drawings) have internally installed fire alarm bells, performing satisfactorily

Unknown whether any fire alarm bells are installed in either 1104A or 1104. These are extremely noisy bldg. facility rooms

### 70A-2nd floor

Recommend installation of internally located fire alarm bells in following labs: Bell in interconnecting rooms - 70A-2203 and 2205, 2211, 2215, 2217B and 2217(one complex); 2223 - 2223A, and 2229A -2229B (key plan doesn't show these are permanently interconnecting labs.)

Occupants of 2235 through 2253B stated they heard Fire alarm bells loud and clear. These labs were recently remodeled so internally installed bells may be present

Occupants in 2255A-F and 2263 complex reported no problem hearing fire alarm bells. An internally located bell within the 2225 office complex reinforced the south hallway bell.

Occupants of 2275, 2275A, 2275B and 2275C reported serious problem with hearing the bells. These rooms are located far from either hallway alarm bells.

Personnel in offices (2214 through 2262X) reported no problem hearing the alarms. Need to verify if the new lab installation in 70-2212 can hear the alarms

### 70A-3rd floor

Difficulty in hearing fire alarm bells in Chemical Sciences Division offices (3307 through 3307E, especially in 3307A and 3307B, offices with a two door problem between the fire alarm and occupants) and no fire alarm heard in 70A-3362 complex.

The internally located fire alarm in the 70-3317 office complex was reported to operate intermittently. 10-15 personnel occupying this office complex

Unknown whether 70A boiler room facility (70A-3329) has an internally located alarm.

Other parts of 70A-3rd floor labs and offices all have internal fire alarms in addition to operating hallway fire alarms.

Consider installation of alarm in 70A-3377 a much used lab wide conference room.



## FY13 Chemical Sciences Division Self-Assessment Report

70A - 4th floor

70A-4403 reported existing alarm conditions are adequate. 70-4405 complex has an internal fire alarm bell. Occupants of 70A-4413 report they can hear the hallway fire alarm, 70A-4419 and especially 70A-4421 can only hear a faint ringing bell or not at all. Need to verify the alarm levels internally in these rooms. An alarm in 4419 would probably serve the interconnected rooms.

70A-4425 ? through 4431 laboratory complex are all recently remodeled and have internally installed fire alarms. The LBL Microsystem Lab - 70A-4435 through 4457 needs verification of alarm audibility within labs. These rooms are high level clean rooms so any personnel making tests must coordinate with facility manager

Labs in 70A-4458 throu

**Selected Location(s)**

☐ 070A-

\* Risk Level:  \* Issue Category:  \* Trend Code:

External ☐  
Reporting or  
Significant  
Adverse  
Condition?:

Corrective Action  
(s):

Corrective Action No.	Responsible Person	CM	CM Div.	Due Date	Completed Date	Closure Date	Total Time	WO	Inst.	Project ID
9288-1										

Review/Approval:

Status	Review Date	Comments
Approved	11/06/2012	
Approved	12/03/2012	
Approved	11/07/2012	