

Date:

4-26-11

CHPRC CRITIQUE PERSONAL STATEMENT FORM

Revision:

Critique Title: WB leaking drum

Critique Number:

INSTRUCTIONS:

In your own words, write down what happened in the event. Include any information from before the event began until after it was over. Include the following:

- 1. Plant conditions as you know them prior to the event
- 2. Any indications that a problem existed
- 3. List any equipment malfunctions
- 4. What you were doing immediately prior to the event
- 5. Your actions in response to the indications
- 6. List any inadequacies in the procedures, practices, or training

NOTE: If additional sheets are used sign, date, and record time on each page. Include critique number and title.

Before the event plant conditions were normal. The indication I had was visible liquid at base of drum and on pallet. From what I could tell it seemed the integrity of the drum may have been compromised but I could not see any damage. Prior to the event I was looking for a drum. Once the leak was noticed (b)(6) and I notified our lead (b)(6) (b)(6) who then in turn notified Red Con and management. Everything went smoothly thanks to my training and plant practices.

4 1 26 11 8 : 45 am pm (Circle one)

Completed By:

(b)(6)

(b)(6)

Name (First, Middle Initial, Last)

Signature

Date:

04-26-2011

CHPRC CRITIQUE PERSONAL STATEMENT FORM

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On or about 08:30 am when getting up to 2404-WB for our daily activities. I was walking down a trash with a (b)(6) when (b)(6) working on a manifest list for a shipment notified me that a wet drum was observed in WB-08 (Southeast end of 2404-WB). We checked it from a distance and it did appear to be leaking so we notified FLM and called Radcon. We all went to the west end of 2404-WB by the roll up door away from the drum. When radcon arrived we informed them about the suspected leaking drum. Radcon took a survey and found contamination. At this point we were all out of 2404-WB and got surveyed by Radcon. We then manned all entry doors to 2404-WB till they were posted. After doors were posted we got directed to go to the process area to go through the fum.

04126 12011 1336:

am pm (Circle one)

Completed By:

(b)(6)

(b)(6)

Name (First, Middle Initial, Last)

Date: 4/26/11

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Plant was in operations mode-
 There was no problems present - no equipment malfunctions -
 I was in (b)(6) in Room 8
 when I noticed liquid on a bottom pallet - I noticed liquid on seam of Drum - I left area - notified lead - called Pat to check - (b)(6) check liquid found elevated levels - Retrieved Drum number for DOS - All employees left Building and were surveyed by Rots - 4 employees secured Dams until building was posted - employees were then escorted 2336 W to go thru Pems -

4/26/11 13:30

am (pm) (Circle one)

Completed By:

(b)(6)

(b)(6)

Name (First, Middle Initial, Last)

Signature

Date: 4/26/11

CHPRC CRITIQUE PERSONAL STATEMENT FORM

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I was notified by the (b)(6) via radio requesting my presence in 2404 WB and I asked (b)(6) to give me a call. In that conversation (b)(6) told me they had found/identified a drum #0062288 which had liquid around the bottom rolling hoop, pallet and some on the floor. (b)(6) also stated that (b)(6) had surveyed it and found contamination. I then instructed (b)(6) and all other employees in the building to exit immediately, survey outside by RCT's and then control access to the building. I then hung up the phone & informed the DOS, FM, IS/IT. After they had been informed I headed up to the West side of 2404 WB. When I arrived the RCT's were surveying (b)(6) who were working in the building. Minutes later they were all surveyed clean and I instructed ^{Joseph} them to gather postings (HRA HCA/ARA as per RadCon) and get them hung. The (b)(6) went

4/26/11 13:00 am pm (Circle one)

Completed By: (b)(6)

Name (First, Middle Initial, Last)

Signature

Date:

4/26/11

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Continuation Page:

and acted as postings at each of the four access doors to WB. Around 10 minutes later the doors had all been marked as per RadCom with HCA/ARA postings as well as "Contact DOS prior to entry". After the building was posted the RadCom Supervisor instructed (b)(6) (b)(6) to go survey at the ACM in the process area due to the beta/gamma background being high. At that point the building was secure, posted and the entrance surveyed. I then headed up to 2336W conference room to help the KP.

4/26/11

1:00

am pm (Circle one)

Completed By:

(b)(6)

Signature

Date:

4-26-2011

CHPRC CRITIQUE PERSONAL STATEMENT FORM

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On 4-26-2011 I was assigned to work in the (b)(6) 200 west /WRAP. Plant conditions were normal and in operations mode. At approximately 9:30 am I was in MO 446 (b)(6) for the morning (b)(6) when I received a radio call from operation (b)(6) in 2404WB Open arrival as was shown a drum (0062288) with clear liquid along the lower rolled edge and pooling one slat of the pallet. After

(b)(6)

sensitivity (b)(6)

(b)(6)

(b)(6)

All personnel exited 2404WB and were surveyed to 4500 except for myself. I had 200 cpm/direct and was gloved up and sent to Decon

4 120 12011 16 : 30

(AM) pm (Circle one)

Completed By:

(b)(6)

(b)(6)

Name (First, Middle Initial, Last)

Date: 4-26-11

CHPRC CRITIQUE PERSONAL STATEMENT FORM

Revision:

Critique Title: WB LEAKING DRUM - CONTAMINATION

Critique Number: _____

INSTRUCTIONS:

In your own words, write down what happened in the event. Include any information from before the event began until after it was over. Include the following:

1. Plant conditions as you know them prior to the event
2. Any indications that a problem existed
3. List any equipment malfunctions
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NOTE: If additional sheets are used sign, date, and record time on each page. Include critique number and title.

(b)(6)

(b)(6) IDENTIFIED LEAKING DRUM, ROW 8,

(b)(6) INFORMED OF POTENTIAL ISSUE.

(b)(6) CALLED, USA RADIO, (b)(6)

(b)(6) AND RAD CON.

112611 ~ 08:30

am pm (Circle one)

Completed By: (b)(6)

(b)(6)

Name (First, Middle initial, Last)

Date:

4/26/11

CHPRC CRITIQUE PERSONAL STATEMENT FORM

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NOTE: If additional sheets are used sign, date, and record time on each page. Include critique number and title.

(b)(6) met in WB, I split up to locate
 Drums in RW-8. One stopped and said (b)(6) spotted
 liquid on the bottom of the drum. (b)(6)
 contacted (b)(6) to survey the drum and also contacted
 FLM/DSS. All (b)(6) had moved away from
 location and then exited when the survey
 showed contamination. We left WB to the west
 and waited for RET support, once we were full body
 surveyed we posted doors and went to the
 PCMS to check for beta gamma.

4 / 26 / 11 12 : 55 am pm (Circle one)

Completed By:

(b)(6)

(b)(6)

Name (First, Middle Initial, Last)

Signature

CHPRC CONDITION REPORT FORM

Status: Corrective Action

CR NUMBER: CR-2011-1577

Issue Identification and Processing		
Initiator: Mellgren, Shawn O	Initiating Document: N/A	Date Identified: 4/28/2011
Title of Issue: Response To Radiological Spill In 2404 WB Was Less Than Adequate		
Description of Issue: A radiological spill from a TRU waste drum occurred in the 2404WB storage building (Occurrence Report EM-RL-CHPRC-WRAP-2011-0002). This CR addresses issues that were identified as extraneous to the main sequence of events, but that require specific actions to address.		
(6) Contrary to training the contaminated [] did not receive a whole body survey at the time contamination was detected on [] wrist/palm. The whole body survey was not performed until the [] was moved to the Decontamination Room. (b)(6)		
(6) The contaminated [] wore a glove to "sweat out" the final remnants of contamination from [] palm. When (b)(6) (6) [] removed that glove, neither [] nor the attending [] recognized that the glove was personnel decontamination material, therefore required to be retained. Retention of these materials is required by PRC-PRO-RP-40067, 4.4.9: Save all decontamination materials and any clothing items taken from the contaminated individual.		
Requirements Not Met: (Orders, Requirements, Procedures) PRC-PRO-RP-40067, 4.4.9	Responsible Project/Program: WASTE AND FUELS MANAGEMENT PRO	
Date Submitted: 5/11/2011	Other Related Documents: CR-2011-1403 & EM-RL-CPRC-WRAP-2011-0002	
Immediate Action(s) Taken: The glove that was part of the personnel decontamination materials was retrieved and stored in accordance with PRC-PRO-RP-40067. WRAP RCTs briefed on the event and the errors described.		
Recommended Corrective Actions: Perform Operational Drill(s) at WRAP with ensuring SWIMS is demonstrated. Jonathan Uilman as actionee.		
Initiator Comments: Oldfield		
Associated Files		

Issue Significance, Analysis, Extent of Condition, Action Assignment, and Closure		
Significance Level: Track Until Fixed	Date Submitted to Responsible Manager: 5/23/2011 - Oldfield, Brian	Date CAP was approved by Responsible Manager/Delegate: 6/28/2011 - Oldfield, Brian
<input type="checkbox"/> ORPS <input checked="" type="checkbox"/> Compliance Determination <input type="checkbox"/> NTS		
PAAA Compliance Determination Number: CHPRC-PAAA-2011-0461		
Significant Level Justification: This condition is screened as a Track Until Fixed (TUF). As stated in the description of issue, the actual event is documented in CR-2011-1403 (screened as significant) and is currently undergoing a root cause analysis and extent of condition review. CR-2011-1577 condition represents a specific non compliance with the requirements of PRC-PRO-RP-40067, 4.4.9., that was identified as extraneous to the main sequence of events (determined from root cause analysis), but will require specific actions to address. As such, the screening level as a TUF is assigned to this CR. PLH		

Assigned To: Meilgren, Shawn O	Date Assigned: 5/23/2011
Extent of Conditions:	
Causal Analysis Method Used:	Analysis Completion Date: 6/27/2011
Analysis Results:	
Trend Codes: EMP0507 - Actual Events - Initial Response Actions OP1605 - Chapter 16, Technical Procedures - Procedure Use RP1502 - Rad. Admin/Mgmt Issue - Conduct of Operations	
Cause Codes:	
PAAA/851 Citations: 830.122(e)(1)	
ISMS: CF-E - Provide Feedback and Continuous Improvement	

Corrective Action Items	
Action #: 1	Actionee: Ullman, Jonathan
Action Statement: Perform Operational Drills that ensure whole body surveys are performed on personnel leaving the event scene.	Due Date: 8/1/2011
Closure Requirements: Statement of completion with results on whole body survey performance and operational drill numbers.	
Action Taken:	Completed Date:
Action Approved By:	Action Approval Date:

Action #: 2	Actionee: Meilgren, Shawn O
Action Statement: Brief 90% of WRAP RCTs and all RadCon FLMS on need to recognise and retain all personal decontamination materials.	Due Date: 8/1/2011
Closure Requirements: Statement of completion with roster.	
Action Taken:	Completed Date:
Action Approved By:	Action Approval Date:

CHPRC CONDITION REPORT FORM

Status: Corrective Action

CR NUMBER: CR-2011-1606

Issue Identification and Processing		
Initiator: Wegner-Jorgensen, Anne L	Initiating Document:	Date Identified: 5/12/2011
Title of Issue: Evaluation of Drums that are in the same HEDL waste stream as drum 0062288 which has breached in 2404WB		
Description of Issue: There are 15 parent drums in the same HEDL waste stream as 0062288 which are stored in CWC or WRAP. RTR has been performed on all of the parent drums and the LDA scans are very similar. It appears that the plastic liners are intact for all of the parent drums. Two of these parent drums have been repacked at WRAP since February 2011 into 4 "daughter" drums that are all located in 2404WB. One of these is the breached drum. None of the daughter drums have been RTR'd. During repack operations at WRAP, both parent drums exhibited liquids with a pH<2.		
Requirements Not Met: (Orders, Requirements, Procedures)	Responsible Project/Program: WASTE AND FUELS MANAGEMENT PRO	
Date Submitted: 5/16/2011	Other Related Documents:	
Immediate Action(s) Taken: RTR has been performed on all of the parent drums and the LDA scans are very similar. It appears that the plastic liners are intact for all of the parent drums. 0062288 has been over packed into 0059303 on 5/3/2011		
Recommended Corrective Actions: These actions are for tracking only. Perform a visual for integrity of related drums located inside and outside of 2404WB. Place parent and daughter drums on spill pallets. Add drums to the ACMP as appropriate. Determine appropriate hazard labels and apply.		
Initiator Comments: for tracking only Ed McCarthy		
Associated Files 2404WBresponse.docx CRRSReportAnalysis-CR-2011-1606.doc EmailsassociatedwithlabelingofHEDLdrumsandplacementonspillpalletsorinsecondarycontainment.doc ExtentofConditionsS3000wastestreams_review_06_20_11jmk.xlsx HEDLDrums.pdf		

Issue Significance, Analysis, Extent of Condition, Action Assignment, and Closure		
Significance Level: Track Until Fixed	Date Submitted to Responsible Manager: 5/16/2011 - McCarthy, Edward T	Date CAP was approved by Responsible Manager/Delegate: 6/21/2011 - Stratman, Cindy
ORPS	Compliance Determination	NTS
Significant Level Justification: Screened as Track Until Fixed (TUF). The CR does not identify a compliance issue, but was instead written to track actions to closure that address the stated conditions. As a TUF, this CR will be the document that tracks those actions. DBW		
Assigned To: Bannister, Roland J	Date Assigned: 5/16/2011	
Extent of Conditions:		
Causal Analysis Method Used:		Analysis Completion Date: 6/21/2011

Analysis Results:

See attached report (CRRS Report Analysis CR-2011-1606)

Trend Codes:MS06 - Hazard Identification/Analysis
WM08 - Radioactive and Hazardous Waste Management**Cause Codes:**A3B3C01 - Attention was given to wrong issues
A1B3C01 - Design / documentation not complete
A4B1C01 - Management policy guidance/expectations not well-defined, understood or enforced
A2B5C04 - Product acceptance requirements LTA
A3B2C02 - Signs to stop were ignored and step performed incorrectly**PAAA/851 Citations:****ISMS:**CF-B - Identify and Analyze the Hazards
CF-C - Develop and Implement Hazard Controls
CF-D - Perform Work within Controls**Corrective Action Items**

Action #: 1	Actionee: Fulton, Timothy J
Action Statement: 1. Repack the 4 daughter drums. Ensure all liquids are neutralized and absorbed. Prevent waste matrix from coming in direct contact with the steel drum. PRIOR TO REPACK: a. RTR the 4 daughter drums. b. Revise procedures regarding the preparation and dissemination of repack instructions to ensure the preparatory work prior to repack is comprehensive and robust. This includes the Pre-Job meetings. c. Revise the procedures for repacking and treatment of waste to increase controls and minimize inappropriate reliance on the repack workforce.	
Due Date: 8/24/2011	
Closure Requirements: 1. Repack data sheet (DMS Waste Container Inventory (WCI) screen) created to describe actual repack operation performed on the 4 daughter drums.	
Action Taken:	Completed Date:
Action Approved By:	Action Approval Date:

Action #: 2	Actionee: Bannister, Roland J
Action Statement: 2. Review databases to establish if there are other HEDL drums with a similar waste matrix. Evaluate if these should be placed on spill pallets or in secondary containment.	
Due Date: 6/30/2011	
Closure Requirements: Extent of Conditions report regarding other HEDL drums with a similar waste matrix and packaging configuration.	
Action Taken: These containers are addressed in "Extent of Condition Review for RL-CPRC-WRAP-2011-0002" (attached) as part of the S3000 RLM325 Waste Stream. The list of HEDL containers is attached in document titled "Other Suspect HEDL Drums"(HEDLDrums.pdf). All 17 HEDL drums have been labeled and placed on spill pallets or within secondary containment. Attached emails refer.	
Completed Date: 6/23/2011	
Action Approved By: Stratman, Cindy	Action Approval Date: 6/28/2011

EM-RL--CPRC-WRAP-2011-0002

UPDATE

Occurrence Report

After 2003 Redesign

WASTE RECEIVING & PROCESSING FACILIT

(Name of Facility)

Nuclear Waste Operations/Disposal

(Facility Function)

Hanford Site

CH2MHILL Plateau Remediation Company

(Site)

(Contractor)

Name: McCarthy, Edward T

Title: Director, TRU Project

Telephone No.: (509) 373-0044

(Facility Manager/Designee)

Name: POOLE, M ELIZABETH

Title:

Telephone No.: (509) 373-0522

(Originator/Transmitter)

Name:

Date:

(Authorized Classifier (AC))

1. Occurrence Report Number: EM-RL--CPRC-WRAP-2011-0002

Contamination Found on Waste Drum (ARRA)

2. Report Type and Date: UPDATE

	Date	Time
Notification:	04/27/2011	18:28 (ETZ)
Initial Update:	06/12/2011	12:22 (ETZ)
Latest Update:	06/12/2011	12:22 (ETZ)
Final:		(ETZ)

3. Significance Category: 2

4. Division or Project: Waste and Fuels Management Project

5. **Secretarial Office:** EM - Environmental Management

6. **System, Bldg., or Equipment:** 2404WB

7. **UCNI?:** No

8. **Plant Area:** 200 West

9. **Date and Time Discovered:** 04/26/2011 09:00 (PTZ)

10. **Date and Time Categorized:** 04/26/2011 11:30 (PTZ)

11. **DOE HQ OC Notification:**

Date	Time	Person Notified	Organization
NA	NA	NA	NA

12. **Other Notifications:**

Date	Time	Person Notified	Organization
04/26/2011	09:00 (PTZ)	AS Mortensen	WRAP
04/26/2011	12:17 (PTZ)	S Baker	MSA ONC
04/26/2011	11:55 (PTZ)	JE Trevino	DOE RL

13. **Subject or Title of Occurrence:**

Contamination Found on Waste Drum (ARRA)

14. **Reporting Criteria:**

6B(2) - Identification of onsite radioactive contamination greater than 100 times the total contamination values in 10 CFR 835 Appendix D and that is found outside of the following locations: Contamination Areas, High Contamination Areas, Airborne Radioactivity Areas, Radiological Buffer Areas, and areas controlled in accordance with 10 CFR 835.1102(c). For tritium, the reporting threshold is 100 times the removable contamination values in 10 CFR Part 835, Appendix D.

Notes:

(a) This does not apply to contamination from residual radioactive material meeting applicable DOE-approved authorized limits.

(b) This also does not apply to legacy radioactive contamination, which will be reported under a separate criterion below.

(c) The exclusion from reporting contamination in a Radiological Buffer Area applies only when the area has been established next to a Contamination Area, High Contamination Area or Airborne Radioactivity Area and its exit requirements have adopted guidance from Article 338.2 of DOE-STD-1098-99.

15. Description of Occurrence:

While inspecting drums in preparation for a waste shipment, a WRAP (b)(6) (b)(6) and (b)(6) identified a drum in the 2404WB Building with fluid toward the bottom of the drum, on the pallet beneath it, and on the floor. The amount of fluid was estimated to be twenty milliliters. Surveys indicated greater than 1,200,000 disintegrations per minute (dpm) per 100 centimeters squared (100 cm²) direct alpha contamination. No beta gamma contamination was identified. No air sampling was in place at the time of discovery. At the time of the event, the area was posted as a Radiation Area (RA) / Radioactive Material Area (RMA).

16. Is Subcontractor Involved? No

17. Operating Conditions of Facility at Time of Occurrence:

Normal Operations

18. Activity Category:

03 - Normal Operations (other than Activities specifically listed in this Category)

19. Immediate Actions Taken and Results:

Personnel left the building and the area was posted as a High Contamination Area (HCA), Airborne Radioactivity Area (ARA) and a Beryllium Controlled Area (BCA). The Incident Command Post was staffed and determined that an emergency level had not been reached. Co-located facilities were notified of the event.

Personnel radiological surveys were conducted. Exit surveys of the (b)(6) revealed a non-reportable level of contamination (3,205 dpm/100 cm² alpha) on the individual's wrist and palm. Nasal smears were conducted of personnel with negative results. Decontamination procedures were implemented. All other personnel in the building completed a whole body survey with no contamination found.

Recovery planning actions were commenced.

20. ISM:

21. Cause Code(s):

22. Description of Cause:

23. Evaluation (by Facility Manager/Designee):

Update 6/12/2011

The final date for this occurrence report will be extended to July 1, 2011. This extension allows for review and approval of the draft causal analysis by Waste and Fuels Management Project senior management and CHPRC senior management. The DOE Facility Representative was notified of this extension on June 12, 2011.

24. Is Further Evaluation Required?: Yes

If YES - Before Further Operation? No

By whom? WRAP

By when? 06/16/2011

25. Corrective Actions

Local Tracking System Name: Corrective Action Management

26. Lessons Learned:

27. Similar Occurrence Report Numbers:

28. User-defined Field #1:

29. User-defined Field #2:

30. HQ Keyword(s):

01I--Inadequate Conduct of Operations - Safety System Actuation/Evacuation
05I--Mechanical/Structural - Container/Package Failure
06B--Radiological - Facility/Equip/Site Contamination
06C--Radiological - Skin Contamination
12M--EH Categories - Radiological Control (Other)
13H--Management Concerns - American Recovery and Reinvestment Act (ARRA)
14L--Quality Assurance - No QA Deficiency

31. HQ Summary:

On April 26, 2011, while inspecting drums in preparation for a waste shipment, a WRAP (b)(6) (b)(6) and a (b)(6) identified a drum in the 2404WB Building with fluid on the bottom of the drum, on the pallet beneath it, and on the floor. The drum was

located in a posted Radiation Area / Radioactive Material Area. The amount of fluid was estimated to be 20 milliliters. Radiological surveys indicated greater than 1,200,000 dpm/100cm² direct alpha contamination (no beta-gamma). No air sampling was in place at the time of the discovery. Personnel left the building and the area was posted as a High Contamination Area, Airborne Radioactivity Area, and a Beryllium Controlled Area. The Incident Command Post was staffed and it was determined that an emergency level had not been reached. Co-located facilities were notified of the event. Personnel radiological surveys were conducted. Exit surveys of the RCT revealed 3,205 dpm/100cm² alpha (a non-reportable level) on the (b)(6) wrist and palm. Nasal smears were conducted of personnel with negative results. Decontamination procedures were implemented. All other personnel in the building completed a whole body survey with no contamination found. Recovery planning actions were started.

32. DOE Facility Representative Input:

33. DOE Program Manager Input:

**CH2M HILL Plateau Remediation Company
IH WBGT Monitoring Field Log**

Survey ID: 11-24014 - 2404 WB Recovery

Survey Date: 05/11/2011

Survey ID: 11-24014	Survey Date: 05/11/2011
Survey Title: 2404 WB Recovery	
Sample Plan: N/A	
WO/Procedure: _____	
Field Work Supervisor: Campbell, Robert A	Phone: (509)373-9599 Cell Phone: (b)(6)
Signature/Date: _____	
Comments:	

WBGT Instrument: 3228 - hs-32 Metrosonics **Zone:** 200W General **Outdoors:** Yes No

Reading Number	Time	Activity/Location	WBGT
1	1000	2404WB Recovery	64.9 °F
2	1030	2404WB Recovery	64.5 °F
3	1100	2404WB Recovery	64.5 °F
4	1145	2404WB Recovery	67.4 °F
5			
6			
7			
8			
9			
10			
11			

**CH2M HILL Plateau Remediation Company
IH WBGT Monitoring Field Log**

Survey ID: 11-24015 - 2404 WB Recovery

Survey Date: 05/12/2011

Survey ID: 11-24015		Survey Date: 05/12/2011	
Survey Title: 2404 WB Recovery			
Sample Plan: N/A			
WO/Procedure: _____			
Field Work Supervisor: Campbell, Robert A		Phone: (509)373-9599	Cell Phone: (b)(6)
Signature/Date: _____			
Comments:			
WBGT Instrument: 1167 - QUESTemp 10 Quest		Zone: 200W General	Outdoors: <input type="checkbox"/> Yes <input type="checkbox"/> No
Reading Number	Time	Activity/Location	WBGT
1	1004	2404WB Recovery	57.2 °F
2	1030	2404WB Recovery	57.7 °F
3	1430	2404WB Recovery	61.7 °F
4	1500	2404WB Recovery	64.5 °F
5			
6			
7			
8			
9			
10			
11			

014				
11-22990-015	100 cm2	2404WB	SCBA bottle	SCBA gear serial number #2205
11-22990-016	100 cm2	2404WB	SCBA bottle	SCBA gear serial number #SP011
11-22990-017	Blank Sample			

**CH2M HILL Plateau Remediation Company
IH Sampling Field Log**

Survey ID: 11-22991 - WRAP - 2404WB Recovery Plan; East Door

Survey Date: 05/01/2011

Survey ID: 11-22991	Survey Date: 05/01/2011
Survey Title: WRAP - 2404WB Recovery Plan; East Door	
Sample Plan: IHSP-0001 - Beryllium Characterization	
WO/Procedure: n/a	
Job Contact: Sweesy, Jason J	Phone: (509)373-1304
Cell Phone:	(b)(6)
Signature/Date: _____	
Engineering/Administrative Controls: _____	
Comments: (Describe activity within the farm during sampling period.)	

Inst ID: 1409	Calibration Device: 1532	Cal Unit of Meas: l/min
Sample Usage: Area		
Sample ID: 11-22991-1-A1	Sampling Media: 37 mm MCE Filter (general)	
Flow Rate: 3.978 l/min	Time On: _____	Time Off: _____
	Post Use Flow Rate: _____	
Sample ID: 11-22991-1-A2 (Blank)	Sampling Media: 37 mm MCE Filter (general)	
Zone: WM Zone		
Location: 2404WB		
Specific Location: East door in CA		

**CH2M HILL Plateau Remediation Company
IH Surface Sampling Field Log**

Survey ID: 11-23063 - WRAP - 2404WB Recovery Plan; Step-off pad

Survey Date: 05/03/2011

Survey ID: 11-23063	Map: No	Survey Date: 05/03/2011
Survey Title: WRAP - 2404WB Recovery Plan; Step-off pad		
Sample Plan: IHSP-0001 - Beryllium Characterization		
WO/Procedure: n/a		
Job Contact: Sweesy, Jason J	Phone: (509)373-1304	Cell Phone: (b)(6)
Signature/Date: _____		

Comments:

Sampling Media - Required Analysis: Ghost Wipe (Env Exp) Beryllium

Sample Number	Dimensions	Location	Specific Location	Location Details
11-23063-001	100 cm2	2404WB	step-off pad	post Team 1 exit; left side
11-23063-002	100 cm2	2404WB	step-off pad	post Team 1 exit; center
11-23063-003	100 cm2	2404WB	step-off pad	post Team 1 exit; right side
11-23063-004	Blank Sample			

**CH2M HILL Plateau Remediation Company
IH Surface Sampling Field Log**

Survey ID: 11-23079 - WRAP - 2404WB Recovery Plan; SCBA bottles

Survey Date: 05/04/2011

Survey ID: 11-23079	Map: No	Survey Date: 05/04/2011
Survey Title: WRAP - 2404WB Recovery Plan; SCBA bottles		
Sample Plan: IHSP-0001 - Beryllium Characterization		
WO/Procedure: n/a		
Job Contact: Sweesy, Jason J	Phone: (509)373-1304	Cell Phone: (b)(6)
Signature/Date: _____		

Comments:

Sampling Media - Required Analysis: Ghost Wipe (Env Exp) Beryllium

Sample Number	Dimensions	Location	Specific Location	Location Details
11-23079-001	100 cm2	2404WB	SCBA bottle	SCBA bottle #2002
11-23079-002	100 cm2	2404WB	SCBA bottle	SCBA bottle #2091
11-23079-003	100 cm2	2404WB	SCBA bottle	SCBA bottle #2189
11-23079-004	100 cm2	2404WB	SCBA bottle	SCBA bottle #2099
11-23079-005	100 cm2	2404WB	SCBA bottle	SCBA bottle #2208
11-23079-006	100 cm2	2404WB	SCBA bottle	SCBA bottle #2134
11-23079-007	Blank Sample			

**CH2M HILL Plateau Remediation Company
IH Surface Sampling Field Log**

Survey ID: 11-23198 - 2404 WB Recovery Laundry

Survey Date: 05/09/2011

Survey ID: 11-23198	Map: No	Survey Date: 05/09/2011
Survey Title: 2404 WB Recovery Laundry		
Sample Plan: N/A		
WO/Procedure: 2404 WB Recovery Plan		
Job Contact: Campbell, Robert A	Phone: (509)373-9599	Cell Phone: (b)(6)
Signature/Date: _____		

Comments:
samples taken 05/09/2011 and 05/10/2011

Sampling Media - Required Analysis: Ghost Wipe (Env Exp) Beryllium

Sample Number	Dimensions	Location	Specific Location	Location Details
11-23198-001	100cm2	200W General	2404 WB	clothes in bag dated 05/06/2011
11-23198-002	100cm2	200W General	2404 WB	bag itself dated 05/06/2011
11-23198-003	100cm2	200W General	2404 WB	clothes in bag dated 05/09/2011
11-23198-004	100cm2	200W General	2404 WB	bag itself dated 5/09/2011
11-23198-005	100cm2	200W General	2404 WB	clothes in bag dated 05/09/2011
11-23198-006	100cm2	200W General	2404 WB	bag itself dated 05/09/2011
11-23198-007	100cm2	200W General	2404 WB	clothes in bag dated 05/06/2011
11-23198-008	100cm2	200W General	2404 WB	bag itself dated 05/06/2011
11-23198-009	100cm2	200W General	2404 WB	clothes in bag dated 05/09/2011
11-23198-010	100cm2	200W General	2404 WB	bag itself dated 05/09/2011
11-23198-013	100cm2	200W General	2404 WB	clothes inside bag dated 05/10/2011
11-23198-014	100cm2	200W General	2404 WB	bag itself dated 05/10/2011
11-23198-015	100cm2	200W General	2404 WB	clothes inside bag 05/10/2011
11-23198-016	100cm2	200W General	2404 WB	bag itself dated 05/10/2011

11-23198-011	Blank Sample
11-23198-012	Blank Sample

**CH2M HILL Plateau Remediation Company
IH Surface Sampling Field Log**

Survey ID: 11-23249 - 2404 WB Recovery West end samples

Survey Date: 05/16/2011

Survey ID: 11-23249	Map: No	Survey Date: 05/16/2011
Survey Title: 2404 WB Recovery West end samples		
Sample Plan: N/A		
WO/Procedure: _____		
Job Contact: Campbell, Robert A	Phone: (509)373-9599	Cell Phone: (b)(6)
Signature/Date: _____		

Comments:

Sampling Media - Required Analysis: Ghost Wipe (Env Exp) Beryllium:

Sample Number	Dimensions	Location	Specific Location	Location Details
11-23249-001	100cm2	200W General	2404 WB	Survey point 133 row 34
11-23249-002	100cm2	200W General	2404 WB	survey point 159 row 28
11-23249-003	100cm2	200W General	2404 WB	0062288 row 24 overpacked problem drum
11-23249-004	100cm2	200W General	2404 WB	0061308 row 24 sister of problem drum
11-23249-005	100cm2	200W General	2404 WB	Survey point 123 row 18
11-23249-006	100cm2	200W General	2404 WB	Hot pallet row 19
11-23249-007	100cm2	200W General	2404 WB	Survey point 274 row 23
11-23249-008	100cm2	200W General	2404 WB	0067469 row 27
11-23249-009	100cm2	200W General	2404 WB	0069944 row 31
11-23249-010	100cm2	200W General	2404 WB	survey point 329 row 39
11-23249-011	Blank Sample			
11-23249-012	Blank Sample			

**CH2M HILL Plateau Remediation Company
IH Surface Sampling Field Log**

Survey ID: 11-23277 - Ghost Wipe 2404 be sample

Survey Date: 05/17/2011

Survey ID: 11-23277	Map: No	Survey Date: 05/17/2011
Survey Title: Ghost Wipe 2404 be sample		
Sample Plan: N/A		
WO/Procedure: _____		
Job Contact: Carter, Steve B	Phone: (509)372-3969	Cell Phone: (b)(6)
Signature/Date: _____		

Comments:

Sampling Media - Required Analysis: Ghost Wipe (Env Exp) Beryllium

Sample Number	Dimensions	Location	Specific Location	Location Details
11-23277-001	100cm2	2404WB	East end	drum 0061231
11-23277-002	100cm2	2404WB	East end	Forklift 40-75-04878
11-23277-003	100cm2	2404WB	East end	floor crate
11-23277-004	100cm2	2404WB	East end	south east spill
11-23277-005	100cm2	2404WB	East end	south west spill
11-23277-006	Blank Sample			

**CH2M HILL Plateau Remediation Company
IH Sampling Field Log**

Survey ID: 11-23271 - 2404 WB be Area and Personal sampling

Survey Date: 05/17/2011

Survey ID: 11-23271	Survey Date: 05/17/2011
Survey Title: 2404 WB be Area and Personal sampling	
Sample Plan: N/A	
WO/Procedure: _____	
Job Contact: Carter, Steve B	Phone: (509)372-3969
Cell Phone:	(b)(6)
Signature/Date: _____	
Engineering/Administrative Controls: _____	
Comments: (Describe activity within the farm during sampling period.) The due dates are wrong in the IH data base. 3528 expires 10-28-2011, 1798 expires 10-28-2011 and 2141 expires 10-21-2011. The bios calibrator information is also incorrect the current due date is 12-29-2011	

Inst ID: 1798	Calibration Device: 1851	Cal Unit of Meas: l/min
Sample Usage: Area		
Sample ID: 11-23271-1-A2	Sampling Media: 37 mm MCE Filter (general)	
Flow Rate: 2.512 l/min	Time On: _____	Time Off: _____
Post Use Flow Rate: _____		
Zone: WM Zone	Location: 2404WB	
Specific Location: 2404 WB row 18 BE boundary		

Inst ID: 2141	Calibration Device: 1851	Cal Unit of Meas: l/min
Sample Usage: Personal	Sample Type: TWA	Worn By: _____
Sample ID: 11-23271-1-P1	Sampling Media: 37 mm MCE Filter (general)	
Flow Rate: 2.513 l/min	Time On: _____	Time Off: _____
Post Use Flow Rate: _____		
Zone: WM Zone	Location: 2404WB	
Specific Location: 2404 WB row 18 BE boundary		

Inst ID: 3528	Calibration Device: 1851	Cal Unit of Meas: l/min
Sample Usage: Area		
Sample ID: 11-23271-1-A1	Sampling Media: 37 mm MCE Filter (general)	
Flow Rate: 2.499 l/min	Time On: _____	Time Off: _____
Post Use Flow Rate: _____		
Sample ID: 11-23271-1-BK (Blank)	Sampling Media: 37 mm MCE Filter (general)	
Zone: WM Zone	Location: 2404WB	

Specific Location: 2404 WB row 18 BE boundary

**CH2M HILL Plateau Remediation Company
IH Sampling Field Log**

Survey ID: 11-23271 - 2404 WB be Area and Personal sampling

Survey Date: 05/17/2011

Worn By:	_____				
	(2141 11-23271-1-P1)				
Task:	_____				
Respirator Protection					
Respirator Use:	<input type="checkbox"/> NA	<input type="checkbox"/> Required	<input type="checkbox"/> Voluntary		
Respirator Type:	_____		Cartridge Type:	_____	
Other PPE					
Clothing:	<input type="checkbox"/> Coveralls	<input type="checkbox"/> Impermeable	<input type="checkbox"/> SWP		
Eye Wear:	<input type="checkbox"/> Face Shield	<input type="checkbox"/> Goggles	<input type="checkbox"/> Safety Glasses		
Hearing Protection:	<input type="checkbox"/> Muffs	<input type="checkbox"/> Plugs			
Other:	<input type="checkbox"/> Gloves	<input type="checkbox"/> Hard Hat	<input type="checkbox"/> Ice Vest	<input type="checkbox"/> Substantial Footwear	<input type="checkbox"/> Safety Shoes

**CH2M HILL Plateau Remediation Company
IH Sampling Field Log**

Survey ID: 11-23650 - 2404 WB East side additional clearance

Survey Date: 06/01/2011

Survey ID: 11-23650	Survey Date: 06/01/2011
Survey Title: 2404 WB East side additional clearance	
Sample Plan: N/A	
WO/Procedure: _____	
Job Contact: Campbell, Robert A	Phone: (509)373-9599
Cell Phone:	(b)(6)
Signature/Date: _____	
Engineering/Administrative Controls: _____	
Comments: (Describe activity within the farm during sampling period.)	

Inst ID: 2182	Calibration Device: 1532	Cal Unit of Meas: l/min
Sample Usage: Area		
Sample ID: 11-23650-1-A-1		
Sampling Media: 37 mm MCE Filter (general)		
Flow Rate: 3.129 l/min	Time On: _____	Time Off: _____
Post Use Flow Rate: _____		
Zone: 200W General		
Location: 200W General		
Specific Location: 2404WB		

Inst ID: 2420	Calibration Device: 1532	Cal Unit of Meas: l/min
Sample Usage: Personal	Sample Type: TWA	Worn By: _____
Sample ID: 11-23650-1-Blank (Blank)		
Sampling Media: 37 mm MCE Filter (general)		
Sample ID: 11-23650-1-P-1		
Sampling Media: 37 mm MCE Filter (general)		
Flow Rate: 3.901 l/min	Time On: _____	Time Off: _____
Post Use Flow Rate: _____		
Zone: 200W General		
Location: 200W General		
Specific Location: 2404WB		

Inst ID: 518	Calibration Device: 1532	Cal Unit of Meas: l/min
Sample Usage: Area		
Sample ID: 11-23650-1-A-2		
Sampling Media: 37 mm MCE Filter (general)		
Flow Rate: 3.906 l/min	Time On: _____	Time Off: _____
Post Use Flow Rate: _____		
Zone: 200W General		
Location: 200W General		

Specific Location: 2404WB

Inst ID: 522 **Calibration Device:** 1532 **Cal Unit of Meas:** l/min
Sample Usage: Area

Sample ID: 11-23650-1-A-3 **Sampling Media:** 37 mm MCE Filter (general)
Flow Rate: 3.876 l/min **Time On:** _____ **Time Off:** _____ **Post Use Flow Rate:** _____

Zone: 200W General **Location:** 200W General
Specific Location: 2404WB

**CH2M HILL Plateau Remediation Company
IH Sampling Field Log**

Survey ID: 11-23650 - 2404 WB East side additional clearance

Survey Date: 06/01/2011

Worn By:	_____
Task:	_____
Respirator Protection	
Respirator Use:	<input type="checkbox"/> NA <input type="checkbox"/> Required <input type="checkbox"/> Voluntary
Respirator Type:	_____ Cartridge Type: _____
Other PPE	
Clothing:	<input type="checkbox"/> Coveralls <input type="checkbox"/> Impermeable <input type="checkbox"/> SWP
Eye Wear:	<input type="checkbox"/> Face Shield <input type="checkbox"/> Goggles <input type="checkbox"/> Safety Glasses
Hearing Protection:	<input type="checkbox"/> Muffs <input type="checkbox"/> Plugs
Other:	<input type="checkbox"/> Gloves <input type="checkbox"/> Hard Hat <input type="checkbox"/> Ice Vest <input type="checkbox"/> Substantial Footwear <input type="checkbox"/> Safety Shoes

**CH2M HILL Plateau Remediation Company
IH Surface Sampling Field Log**

Survey ID: 11-23649 - 2404 WB East side additional clearance

Survey Date: 06/08/2011

Survey ID: 11-23649	Map: No	Survey Date: 06/08/2011
Survey Title: 2404 WB East side additional clearance		
Sample Plan: N/A		
WO/Procedure: _____		
Job Contact: Campbell, Robert A	Phone: (509)373-9599	Cell Phone: (b)(6)
Signature/Date: _____		

Comments:

Sampling Media - Required Analysis: Ghost Wipe (Env. Exp.) Beryllium

Sample Number	Dimensions	Location	Specific Location	Location Details
11-23649-001	100cm2	200W General	2404WB	tarp bordering spill
11-23649-002	100cm2	200W General	2404WB	tarp bordering spill
11-23649-003	100cm2	200W General	2404WB	tarp bordering spill
11-23649-004	100cm2	200W General	2404WB	tarp bordering spill
11-23649-005	100cm2	200W General	2404WB	tarp bordering spill
11-23649-006	100cm2	200W General	2404WB	tarp bordering spill
11-23649-007	100cm2	200W General	2404WB	tarp bordering spill
11-23649-008	100cm2	200W General	2404WB	tarp bordering spill
11-23649-009	100cm2	200W General	2404WB	tarp bordering spill
11-23649-010	100cm2	200W General	2404WB	tarp bordering spill
11-23649-011	100cm2	200W General	2404WB	masslin on floor East BCA Boundary
11-23649-012	Blank Sample			

CHPRC CRITIQUE/INVESTIGATION REPORT FORM

1. Critique/ Investigation Report Date and Time. Date: 4-26-2011 Time: 1:00 [] AM [x] PM

1a. Critique/ Investigation Leader: James W. Smith

2. Critique/ Investigation Title: Contamination on Drum, Pallet, and Floor in 2404WB

3. Critique/ Investigation Report Number: EM-RL--CPRC-WRAP-2011-0002

4. Location of Event/ Issue: 2404WB / WRAP Complex / 200W

5. Date and Time Discovered. Date: 4-26-2011 Time: 8:40 [x] AM [] PM

6. Associated Occurrence Report Number (if known): EM-RL--CPRC-WRAP-2011-0002

7. NOTIFICATIONS

NAME	ORGANIZATION	DATE	TIME
Les Sutton	CHPRC, WRAP Operations DOS	4/26/2011	0840
Ed McCarthy	CHPRC, TRU Project Director	4/26/2011	0900
John Trevino	DOE Facility Representative	4/26/2011	0905
Ty Blackford	CHPRC, W&FMP VP	4/26/2011	0907
Connie Simiele	CHPRC, W&FMP Deputy VP	4/26/2011	0908
Ben Wallace	DOE Facility Representative	4/26/2011	0910
On Duty Manager	Occurrence Notification Center	4/26/2011	0910
Don Pyzel	CHPRC, CWC Facility Manager	4/26/2011	0915
Brian Oldfield	CHPRC, RADCON Program Manager	4/26/2011	0920
Wayne Toebe	CHPRC, Single ECO FCC	4/26/2011	0920
Les Tuott	CHPRC, WRAP ECO	4/26/2011	0920
Jack Griffith	HAMTC Safety Representative	4/26/2011	0925

8. NATURE OF ISSUE

Event Condition Concern Successful Evolution/ Lessons Learned

9. SUMMARY/GENERAL COMMENTS

At approximately 0840 hrs, 4/26/2011, while inspecting drums for a waste shipment, a WRAP (b)(6) and (b)(6) identified drum 0062288 in the 2404WB Building with fluid on the bottom of the drum, on the pallet beneath it, and on the floor. The amount of fluid was estimated to be twenty milliliters. Surveys indicated greater than 1,200,000 disintegrations per minute (dpm) per 100 centimeters squared (100 cm²) direct alpha contamination. No beta gamma contamination was identified. At the time of the event, the area was posted as a Radiation Area (RA)/ Radioactive Material Area (RMA). No building ventilation was on at the time. No air sampling was in place at the time of discovery.

(b)(6) who took a tech smear of the liquid along the base of the pallet, was contaminated with 3,205 dpm/100 cm² direct alpha on the right hand where the wrist and palm meet. The (b)(6) was surveyed out of 2404WB and escorted to the WRAP Decontamination Room in 2336W. Nasal smears were collected from (b)(6) with negative results. The contaminated skin was decontaminated down to 36 dpm/100 cm² direct alpha. (b)(6) was fitted with a cotton liner and rubber surgical glove on the right hand. The contaminated skin area was evaluated by medical staff for acid burns - there were none - and the right hand was re-gloved. (b)(6) was allowed to leave at the end of the day shift after being instructed to wear the cotton liner and glove until they return to work. At approximately 0700 hours, 4/27/2011 at the WRAP Facility, (b)(6) was surveyed with no detectable levels of contamination on the hand.

CHPRC CRITIQUE/INVESTIGATION REPORT FORM

OCCURRENCE REPORT CRITERIA: Group 6B, Spread of Radioactive Contamination, (2) SC2: Identification of onsite radioactive contamination greater than 100 times the total contamination values in 10 CFR 835 Appendix D and that is found outside of the following locations: Contamination Areas, High Contamination Areas, Airborne Radioactivity Areas, Radiological Buffer Areas, and areas controlled in accordance with 10 CFR 835.1102(c). For tritium, the reporting threshold is 100 times the removable contamination values in 10 CFR Part 835, Appendix D.

Immediate Actions:

- Notifications were made to the Shipping and Receiving (S/R) First Line Manager (FLM), WRAP Duty Operations Supervisor (DOS), Facility Manager, Industrial Safety/Industrial Hygiene (IS/IH) and WRAP RADCON Supervisor.
- Workers were surveyed out of 2404WB with whole body surveys, except for (b)(6) was partially surveyed with focus on the upper torso, right hand, and right arm, since alpha contamination was found on the (b)(6) right wrist/palm area.
- (b)(6) was escorted to a decontamination area and decontaminated.
- The DOS opted to staff the WRAP Incident Command Post (ICP) to gather personnel and information related to this event.
- The S/R FLM, RADCON Supervisor and workers posted Building 2404WB as a High Contamination Area (HCA) and Airborne Radioactivity Area (ARA).
- Building 2404WB was also posted as a Beryllium Contamination Area (BCA) after further review of the suspect drum inventory contents and consultation with industrial hygiene (IH).

Post Critique Information: On 5-01-2011 a recovery team entered 2404WB and confirmed that the contaminated liquid did leak out of Drum 0062288. A pin head size hole was discovered on the side of the drum approximately two inches up from the bottom edge of the drum. When the drum was moved liquid was observed coming out of this hole. SWITS lists drum 0062288 at 178.75 kg gross weight, 3.55 Pu-PGE Pu and 5.07 Total De-Ci.

10. DESCRIBE AFFECTED BUILDING, SYSTEM, OR EQUIPMENT

Building 2404WB is a low-level and Transuranic waste storage unit with a sloped floor and two collection sumps designed as secondary containment. It is part of the Waste Receiving and Processing (WRAP) Facility, which is located in the 200 West Area of the Hanford Site.

11. DESCRIBE CHRONOLOGY OF OCCURRENCE

NOTE: Attach record of relevant alarms, annunciators, and time of receipt. Obtain official copies of logs, procedures, strip charts, and other pertinent documentation necessary for subsequent investigations.

Time line of the event:

Time	Log Entry
4/25/2011 - 0800	The S/R FLM conducted a pre-job briefing for WRAP Operations, including waste shipment preparations, NDE/NDA, SuperHENC, High Energy RTR, and waste movements throughout the WRAP facility. Monday's pre-job briefing was thorough in going over all sections of the pre-job form; e.g., emergency response actions, spills, SWIM, etc. Note: (b)(6) was not at this pre-job briefing. The (b)(6) was in attendance while (b)(6) and (b)(6) were (b)(6) then briefed these (b)(6) and made task assignments to support the work scope covered in the pre-job. This is a normal practice among the (b)(6) operations.
4/25/2011 - 0730	The S/R FLM conducted a graded pre-job briefing for WRAP Operations involving shipment preparations, NDE/NDA, SuperHENC, High Energy RTR, and waste movements throughout the WRAP facility. This was a graded pre-job briefing following Monday's more thorough briefing. Again, (b)(6) was not at this pre-job briefing, and the (b)(6) subsequently briefed (b)(6) and made task assignments.
- 0800	S/R NCOs arrived at Building 2404WB. Five NCOs were separated into work teams to walk-down and locate drums to be mined, staged and prepared for out-going shipments.
- 0915	(b)(6) noticed fluid at the bottom of a drum (0062288) located in Row WE_08, located on the Southeast section of 2404WB. The drum is one of four banded together on a wooden pallet. There are two similar pallets (4 drums each) stacked directly on top of this pallet of drums. (b)(6) was very observant to spot this drum, since it was not on the list of those to be staged for the out-going shipment. (b)(6) informed the (b)(6) of the liquid. (b)(6) personally confirmed the report from a distance of

CHPRC CRITIQUE/INVESTIGATION REPORT FORM

	approximately 10 to 15 feet away. (b)(6) then moved all (b)(6) to the West-end of Building 2404WB.
- 0830	(b)(6) contacted S/R FLM via radio. FLM requested that (b)(6) call him on the land line. (b)(6) contacted (b)(6) via radio and requested support at the West-end of 2404WB. (b)(6) called FLM using 2404WB land line and provided details on the discovered liquid. FLM asked if the drum package identification number (PIN) was known. (b)(6) stated that it was not, but that it could be obtained.
- 0830	The S/R FLM made the following notifications regarding the liquid outside of the drum: WRAP Duty Operations Supervisor (DOS), WRAP Facility Manager, WRAP Industrial Safety/Industrial Hygiene (IS/IH), and WRAP RADCON Supervisor.
- 0830 to 0840	(b)(6) arrived at the West-end of 2404WB and was informed of the liquid outside of the drum. (b)(6) and donned surgeon gloves. (b)(6) headed to the drum. (b)(6) to obtain the drum PIN. (b)(6) side of Drum 0062288, which indicated no contamination. (b)(6) "clear liquid" (bottom of the drum, side of the wooden pallet, and floor), which "pegged" the PAM off scale at X-1 and X-100. (b)(6) edge of the liquid along approximately 25 centimeters of the pallet, which "pegged" the PAM off scale at X-100.
- 0840	(b)(6) returned to the West-end of 2404WB. (b)(6) dotted the surgeon gloves with the tech smear inside the palm of one glove. Upon survey, (b)(6) discovered contamination on the right hand (wrist and palm area).
- 0840	FLM and RADCON Supervisor arrived at West-end of 2404WB. (b)(6) was in route to the Decontamination Room in 2336W. (b)(6) was being surveyed out. 2404WB roof repair contractor personnel and equipment were moved away from 2404WB. They were preparing to access the roof when they were notified of the situation.
- 0850	DOS completed a PAX/Radio announcement for personnel not involved in response to keep clear of 2404WB. DOS also requested that WRAP Incident Command Post (ICP) personnel staff the ICP.
- 0900	WRAP ICP was staffed. This was not an activation of the ICP.
- 0900 to 0930	All personnel were out of 2404WB, access and egress points had been surveyed and posted as High Contamination Area (HCA) and Airborne Radioactivity Area (ARA). All doors were secured. (b)(6) surveyed using the Personnel Contamination Monitor (PCMs) in 2336W - no contamination. CWC and T-Plant facilities were notified of the situation.
- 0900 - 1015	WRAP ICP actions included reviewing emergency response, notification, and reporting procedures. DOS called the Occurrence Notification Center (ONC) to review event information and both agreed that an emergency action level (EAL) had not been reached. Both also agreed that the level of personnel contamination was not reportable. The contamination level on the drum was not reviewed for reporting criteria. The BED checklist and WRAP Spill Response Procedure were also used and did not trigger additional actions, notifications or reports. At 1015, DOS concluded that WRAP did not require any outside assistance.
- 0945 - 1015	Building 2404WB was also posted as a Beryllium Contamination Area (BCA) after further review of the suspect drum's SWTS inventory contents and consultation with industrial hygiene (IH). The ICP stood down.
- 1115	Review of RADCON survey information performed on the liquid outside of the waste drum(s), prompted categorization of this event as a Reportable Occurrence under Group 6B, Spread of Radioactive Contamination, (2) SC2.
- 1130	(b)(6) right hand was evaluated by CSC Hanford Occupational Health and Safety medical staff for acid burns. No signs of acid burns were noted.
- 1530	(b)(6) right hand (wrist and palm areas) was decontaminated down to 36 dpm/100 cm ² . The right hand was gloved using a cotton liner and surgeons glove with instructions to leave them in place until RCT 1's return to work on 4/27/2011.
4/27/2011 - 0700	(b)(6) right hand (wrist and palm areas) was surveyed clean.
4/27/2011 1300	A critique meeting was conducted for this event.

(6)

CHPRC CRITIQUE/INVESTIGATION REPORT FORM

12. DESCRIBE IMMEDIATE ACTIONS TAKEN AND RESULTS

- Drum handling operations were stopped in 2404WB, and the building was placed in the Stand-By Mode.
- Notifications were made - WRAP S/R FLM, DOS, FM, RADCON Supervisor, IS/IH.
- Personnel surveyed out of Building 2404WB.
- The WRAP Incident Command Post (ICP) was staffed and determined that an emergency action level had not been reached.
- Co-located facilities were notified of the event.
- The 2404WB Building was posted as a High Contamination Area (HCA) and Airborne Radioactivity Area (ARA). It was also posted with a "Contact DOS Prior to Entry" sign.
- Contractor personnel who were preparing to start work on the 2404WB roof were cleared out of the immediate area, including repositioning equipment away from the building.
- Building 2404WB was also posted a Beryllium Controlled Area (BCA).
- Personnel radiological surveys were conducted.
- (b)(6) right hand was decontaminated, surveyed, and evaluated by medical staff.
- All other personnel, who entered 2404WB, were surveyed and completed a whole body survey using a Personnel Contamination Monitor (PCM) with no contamination found.
- Additional notifications were made.
- Recovery planning actions were initiated.

13. DESCRIBE OPERATING CONDITIONS OF FACILITY AT TIME OF OCCURRENCE

Building 2404WB was in an Operational Mode, without ventilation systems on (normal configuration during cooler weather).

The building was occupied by (b)(6) when fluid on a drum, a pallet and the floor was discovered. (b)(6) were walking down drums to prepare for an out-going shipment of waste drums.

14. APPARENT CAUSES TO INCLUDE THE CONTEXT OF PERSONNEL ACTIONS, POTENTIAL ERROR PRECURSORS, FLAWED OR FAILED DEFENSES, AND POTENTIAL LATENT ORGANIZATIONAL WEAKNESSES

Human Error: (b)(6) right hand (wrist and palm area) became contaminated when doffing surgical gloves worn (b)(6) a contaminated liquid (b)(6) (b)(6) contaminated liquid.

Human Error: (b)(6) may have spread contamination (b)(6) the contaminated liquid. Less than adequate techniques (b)(6) (b)(6) contaminated materials.

Inappropriate PPE: (b)(6) donned a small pair of surgeon gloves upon entering 2404WB. Donning these smaller sized gloves may have contributed to cross contamination during glove doffing. Additionally, chemical gloves should have been worn given that an unknown liquid was observed outside of a TRU waste drum.

Mind Set (S/R FLM, (b)(6) Upon being notified by phone by the (b)(6) of the "leaking drum," the S/R FLM asked if the drum package identification number (PIN) was available. The S/R FLM believed obtaining the PIN was necessary to assist the decision-makers in addressing the situation. (b)(6) over heard the phone conversation between the S/R FLM and the (b)(6) (b)(6) told the (b)(6) that (b)(6) would show (b)(6) the drum and obtain (b)(6) the PIN. Neither the S/R FLM nor (b)(6) realized that (b)(6) the liquid. The request for obtaining the drum PIN gave an indication that "investigative actions" were appropriate. In hindsight, the key opportunity to ensure all work activities were STOPPED was missed by the S/R FLM, (b)(6) All were focused on obtaining additional information of the situation.

Can Do Attitude: (b)(6) believed it was an expectation (b)(6) information to assist in addressing the liquid.

CHPRC CRITIQUE/INVESTIGATION REPORT FORM

15. POSITIVE ASPECTS

(b)(6) attention to detail in noticing and promptly reporting the liquid outside of the TRU waste drum was admirable.

The (b)(6) response to leave the immediate area of the liquid outside of a drum, notify supervision, and await further direction was admirable.

The rapid response by RCTs to the West-end of 2404WB and the survey, contamination control and exit of personnel was noteworthy.

RADCON was quick to survey and confirm there was no release of contamination from 2404WB.

Posting of 2404WB by NCOs and RCTs was timely.

Decontamination and follow up surveys of (b)(6) were timely and professional.

Utilization of the WRAP ICP to gather personnel, information, and make decisions regarding this event was noteworthy. The DOS and Occurrence Notification Center worked together to determine that an emergency action level had not been reached. It also expedited the decision that no additional or outside resources were needed to address this event.

Follow up on the estimated 1.2 M dpm/100 CM² alpha contamination by the WRAP Facility Manager resulted in the proper occurrence report classification of the Group 6, Spread of Radioactive Contamination, (2) SC 2 event.

16. RECOMMENDED ITEMS FOR FURTHER REVIEW

A formal causal analysis should be performed.

A review of the suspect drum(s) should be performed once additional information can be obtained during implementation of the recovery plan.

17. SUGGESTED CORRECTIVE ACTIONS

Corrective actions will be developed as part of the Occurrence Reporting process.

18. CRITIQUE/INVESTIGATION REPORT LEADER APPROVAL

J. W. Smith

Name (First, Middle Initial, Last)

Signature

5-3-2011

Date

372-3012

Phone
Number

19. CRITIQUE/INVESTIGATION REPORT APPROVAL

A. S. Mortensen

Name (First, Middle Initial, Last)

Signature

5/03/2011

Date

373-1486

Phone
Number

CHPRC CONDITION REPORT FORM

Status: Analysis

CR NUMBER: CR-2011-1403

Issue Identification and Processing		
Initiator: Poole, Beth	Initiating Document: EM-RL--CPRC-WRAP-2011-0002	Date Identified: 4/27/2011
Title of Issue: High Levels of Contamination Found on Waste Drum		
Description of Issue: While inspecting drums in preparation for a waste shipment, a WRAP (b)(6) and (b)(6) identified a drum in the 2404WB building with fluid toward the bottom of the drum, on the pallet beneath it, and on the floor. The amount of fluid was estimated to be twenty milliliters. Surveys indicated greater than 1,200,000 disintegrations per minute (dpm) per 100 centimeters squared (100 cm ²) direct alpha contamination. No beta gamma contamination was identified. No air sampling was in place at the time of discovery. At the time of the event, the area was posted as a Radiation Area (RA)/ Radioactive Material Area (RMA).		
Requirements Not Met: (Orders, Requirements, Procedures)	Responsible Project/Program: WASTE AND FUELS MANAGEMENT PRO	
Date Submitted: 4/27/2011	Other Related Documents:	
Immediate Action(s) Taken: Personnel left the building and the area was posted as a High Contamination Area (HCA), Airborne Radioactivity Area (ARA) and a Beryllium Controlled Area (BCA). The Incident Command Post was staffed and determined that an emergency level had not been reached. Co-located facilities were notified of the event. Personnel radiological surveys were conducted. Exit surveys of the (b)(6) revealed a non-reportable level of contamination (3,205 dpm/100 cm ² alpha) on the individual's wrist and palm. Nasal smears were conducted of personnel with negative results. Decontamination procedures were implemented. All other personnel in the building completed a whole body survey with no contamination found. Recovery planning actions were commenced.		
Recommended Corrective Actions:		
Initiator Comments: Assign to McCarthy		
Associated Files Change-Assignes.pdf EM-RL--CPRC-WRAP-2011-0002CritiqueReport.pdf WRAP-2011-0002NotificationReport.doc		

Issue Significance, Analysis, Extent of Condition, Action Assignment, and Closure		
Significance Level: Significant	Date Submitted to Responsible Manager: 4/28/2011 - McCarthy, Edward T	Date CAP was approved by Responsible Manager/Delegate:
<input checked="" type="checkbox"/> ORPS <input checked="" type="checkbox"/> Compliance Determination <input type="checkbox"/> NTS		
Occurrence Report Number: EM-RL--CPRC-WRAP-2011-0002		
PAAA Compliance Determination Number: CHPRC-PAAA-2011-0401		
Significant Level Justification: Screened as Significant. This CR documents high levels of contamination on a waste drum at which the levels reached greater than 100X the total contamination values in 10 CFR 835 Appendix D outside of an area posted for the control of		

contamination. Per Occurrence Reporting criteria, this is reported on an SC-2 Occurrence Report and per PRC-PRO-QA-052 Table 1 criteria this is considered Significant. As a result, this will require the performance of a causal analysis to determine the Root Cause, Extent of Condition and an action plan with the goal of preventing recurrence.

DBW

Assigned To: Poole, Beth	Date Assigned: 5/3/2011
Extent of Conditions:	
Causal Analysis Method Used:	Analysis Completion Date:
Analysis Results:	
Trend Codes: RP0304 - Contamination Control-Outside Posted Area MS06 - Hazard Identification/Analysis	
Cause Codes:	
PAAA/851 Citations: 830.122(e)(1)	
ISMS:	

TRU Retrieval Project (WRAP, T Plant, LPCS, & TRU)

Ben Wallace

WRAP

Rpt #:
37087

Date Entered:
04/26/2011

Date Observed:
04/26/2011

Last Modified Date:
04/26/2011

Entry Type: Routine Oversight

Include in CIR: No

Hours in Field:

Title:

WRAP Drum Leak- Tuesday 04/26/2011

Summary:

The DOE-RL Facility Representative (FR) was notified at 0931 hrs on Tuesday 04/26/2011 by the WRAP Director of a leaking waste drum. The FR was also notified that the event scene had been secured and the Incident Command Post (ICP) was activated.

The following information was obtained at the ICP:

0840hrs

- Spill/leaking drum was found in the 2404WB building and located in Row 8, Bottom Tier, and mid row.
- Off Scale Limit Direct Reading >100K Alpha
- Off Scale Smear > 100K Alpha
- No Beta/Gamma readings
- Aprox. (20-50)ml visible liquid over an affected Area aprox. 1 ft²
- Drum identification number (0062288)
- Drum (0062288) was one of two drums that was created from one drum during repackaging at WRAP on 02/09/11. During drum processing at WRAP baking Soda was used to neutralize acid soaked Vermiculite found inside the original drum. This drum also contained Beryllium.

- Initial (b)(6) and became contaminated on right Palm/Wrist.

(6) - Contamination on Palm/Wrist at aprox. 40 cm² area and was initially thought to read 1200 dpm/probe area (Alpha) in the field, but was determined to actually be reading 5000 dpm (Alpha) in the Decon room.

0900hrs

- ICP Activated

0905hrs

- 2404WB building posted as HCA/ARA.

0912hrs

- All doors surveyed and no contamination found.

- All personel exited with no Contamination and then resurveyed in Portal Contamination Monitor (PCM) located in Process Area of 2336W building.

0914hrs

- Notification made to the Occurrence Notification Center.

0920hrs

- All contractor activities around 2404WB were halted.

0926hrs

(6) - All personnel, except (b)(6) cleared Personal Contamination Monitor (PCM).

0931hrs

- Notifications made to Management and DOE-RL FRs.

(b)(6) nasal smears performed and returned with no contamination found on nasal smears.

(b)(6) hand was initially decontaminated with wet wipes and then placed in rubber glove in an attempt to sweat the contamination out of the skin.

- Four decontamination attempts reduced the contamination level to 50 dpm/probe area (Alpha).

1015hrs

- ICP was terminated and facility turned focus to developing a recovery plan.

1130 hrs

-Event Categorized as 6B(2), SC-2.

1300hrs

- WRAP reported contamination levels of liquid at base of drum and floor at 1.2 million dpm/cm².

Issue Type: Finding

Significance Level: 2

Statement:

Initial response from RCT to obtain smear of liquid from drum not authorized.

Discussion:

The (b)(6) of the liquid from the drum was not authorized. Obtaining the (b)(6) resulted in contamination being on the (b)(6) right Palm/Wrist.

The (b)(6) who first discovered the leaky drum and the (b)(6) who supported the (b)(6) both failed to follow Section (b)(6) (2.1) "Immediate actions" of the facilities Emergency Response Procedure WRP-ERP-014 (Respond to Spill/Release). This represents a lack of understanding of the "SWIMS" concept for spill response.

- S – STOP non-emergency activities.
- W – WARN others.
- I – ISOLATE area, if possible and safe.
- M – MINIMIZE exposure and contamination.
- S – SECURE ventilation, if possible and safe.

The facilities Emergency Response Procedure WRP-ERP-014, section 2.2 "Follow-up actions", only provides direction to report the information to the Shift Duty Officer. The decision to obtain a smear is not procedurally authorized, after the immediate actions.

Requirements:

WRP-ERP-014, Respond to Spill/Release, Section 2.1, Immediate Action states:

- 2.1 Immediate actions
 - 2.1.1 INITIATE SWIMS.
 - a. S – STOP non-emergency activities.
 - b. W – WARN others.
 - c. I – ISOLATE area, if possible and safe.
 - d. M – MINIMIZE exposure and contamination.
 - e. S – SECURE ventilation, if possible and safe.

WRP-ERP-014, Respond to Spill/Release, Section 2.2, Follow-up actions states in part:

2.2.5 IF spill/release event is in 2404-WB or 2404-WC Buildings,
THEN NOTIFY Central Waste Complex (CWC) Shift Duty Officer (SDO) of the event by communicating with CWC Dispatch at 373-6319.

Funct. Area:	Trend Code:	ISMS Funct.:	Causal Code:	
MT	CONOPS-COM	WORK	Competent	Issue Number: 9834

TRU Retrieval Project (WRAP, T Plant, LPCS, & TRU)

John Trevino

WRAP

Rpt #:

Date Entered:

Date Observed:

Last Modified Date:

37096

04/26/2011

04/26/2011

04/26/2011

Entry Type: ARRA

Include in CIR: No

Hours in Field:

Title:

WRAP Reportable Occurrence – spread of alpha contamination – leak from a waste drum likely an acid pinhole to the floor of building 2404-WB which is not posted for contamination control.

Summary:

The FR was notified of the subject event and later notified that the event was categorized as a reportable occurrence.

On April 26, while inspecting drums in preparation for a waste shipment, a WRAP (b)(6) (b)(6) identified a drum in the 2404WB Building with fluid toward the bottom of the drum, on the pallet beneath it, and on the floor. The amount of fluid was estimated to be twenty milliliters. Surveys indicated greater than 1,200,000 disintegrations per minute (dpm) per 100 centimeters squared (100 cm²) direct alpha contamination. No beta gamma contamination was identified. No air sampling was in place at the time of discovery. At the time of the event, the area was posted as a Radiation Area (RA)/ Radioactive Material Area (RMA).

Immediate Actions:

Personnel left the building and the building was placed on restricted access and posted as a High Contamination Area (HCA), Airborne Radioactivity Area (ARA) and a Beryllium Controlled Area (BCA). The Incident Command Post was staffed and determined that an emergency level response was not reached. Co-located facilities were notified of the event.

Personnel radiological surveys were conducted. Exit surveys of the (b)(6) identified contamination (skin (b)(6) contamination) on the individual's wrist and palm; the levels of skin contamination were less than the reportable level (3,205 dpm/100 cm squared alpha). Nasal smears were conducted of personnel with negative results. Decontamination procedures were implemented. A bioassay will be analyzed for the (b)(6) to verify potential (b)(6) internal deposition. All other personnel in the building completed a whole body survey with no contamination found.

WRAP initiated planning for recovery from the event. In addition, a critique will be conducted for the event at 1 pm tomorrow (April 27).

Additional information:

- 0840 - Liquid discovered on a bottom tier drum (#006228) in row 8 in 2404WB.
- The (b)(6) requested a (b)(6) check the liquid.
- (b)(6) (b)(6) OFF-SCALE direct PAM reading (>1,000,000 dpm/probe alpha)
- (b)(6) Tech Smear (Ill advised) which was OFF-SCALE on the PAM. RCT discovered 1,200 dpm/probe alpha on palm/wrist of right hand and covered it with a glove and sent to Decon Room.
- In the Decon room actual level was determined to be 5,000 dpm/probe alpha no beta/gamma contamination
- Contaminated area ~40cm² at palm/wrist (most likely cross-contamination from doffing gloves)
- 4 decon attempts reduced to 50 dpm/probe
- Nasal smears were negative.
- All personnel surveyed out of 2404WB w/ hand survey and PCM, no additional contamination detected (1 are of low level on elbow of a sweater worn by worker remote to the spill, which is saved for Radon decay)
- All thresholds to 2404WB surveyed with no contamination found.
- 2404WB was posted HCA/ARA

Drum Info:

- Drum was exited from TRU Glovebox 2/9/11.
- Baking soda neutralized acid soaked up in Vermiculite.
- 6.2 m³/hr on contact.
- The drum is listed as containing Beryllium.
- Drum was a splitter so there is a sister drum.

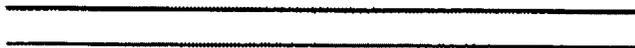
- ~20 – 50 ml visible liquid covering ~1 ft squared.

Discovery: 4/26/2011, 0900 Hrs

Categorized: 4/26/2011, 1130 Hrs

Categorized as: 6B (2), SC-2

FR Notified: JE Trevino, 4/26/2011, 1155 hrs



TRU Retrieval Project (WRAP, T Plant, LPCS, & TRU)

John Trevino

WRAP

Rpt #:

Date Entered:

Date Observed:

Last Modified Date:

37165

04/28/2011

04/27/2011

05/24/2011

Entry Type: ARRA

Include in CIR: No

Hours in Field:

Title:

Critique for WRAP waste drum leak event - likely involving acid attack of the steel drum wall.

Summary:

The W&FM Project FRs, the RL RAD subject matter experts, and an RL project director representative attended the critique. The critique was well attended and conducted expect that after the fact finding discussions, PRC did not identify the problems, causes, and corrective actions (both remedial and longer term) in a manner to support a clear path forward. Most of the problems involving the event and response were discussed but not clearly outlined as problems. Corrective actions associate with taking the radiological smear (that should not have been taken due to high direct readings) were not determined as Rad management wanted to evaluate further and then identify meaningful corrective actions. The critique did not discuss the potential direct or contributing causes related to the source of the acid, why it was not adequately neutralized when it was repackaged in the WRAP TRU glovebox, or why the acid ate through the wall of the drum. The PRC project director stated that the repackaging questions were being evaluated and would be discussed in detail once adequate information and evaluation is available.

Summary of significant information from the critique:

- (6) • The [redacted] should not have taken the rad smear after (b)(6) off scale both at 1X and 100X for (b)(6) instrument.
- The (b)(6) cross contaminated himself (b)(6) and likely touched his wrist while removing his glove.
- Prior to the critique the FR was told that a bioassay was being done for the (b)(6) on the spilled material. The FR questioned the need for bioassay of the operator and was told that he did not approach close proximity to the spill are. During the critique the FR questioned the operators proximity and determine that [redacted] did come within 5 ft of the spill. Thus it was determined that two individuals were close to the area of the spill (versus one) [within approx 5 feet]. Nasal smears of the [redacted] were negative (but these aren't (b)(6) conclusive to reflect no internal deposition). Bioassays with be analyzed for both personnel. • The WRAP training and expectations appear to have emphasized getting the rad smear even when getting high direct readings. This training and expectation is not good and needs to be evaluated and revised.
- The operations management and DOS felt that their spill/release Emergency Response Procedure (ERP) was not applicable to the event. This is not correct in that there was a spill and a release of hazardous material which makes the procedure directly applicable.; therefore the applicable steps of the procedure have to be followed. Although the facility incorrectly felt that they were not in the spill/release ERP, they did make sure that the needed spill response steps were taken.

This OA only summarized part of the things discussed during the critique. The FR will write a follow-up OA after the critique report is written. The issues identified in the last 2 bullet above will be addressed in the follow-up OA (depending upon how they are addressed in the critique report).
