From: Haagenstad, Mark P

Sent: Thursday, November 13, 2014 3:55 PM

To: Ryan.Flynn@state.nm.us; Jeff.Kendall@state.nm.us; tom.blaine@state.nm.us; John Kieling; steve.pullen@state.nm.us; Kliphuis, Trais, NMENV; Timothy.Hall@state.nm.us; siona.briley@state.nm.us; ricardo.maestas@state.nm.us; Gregory.Lauer@state.nm.us; steve.holmes@state.nm.us; coleman.smith@state.nm.us

Cc: Pete Maggiore; Silas DeRoma; Cummings, Lisa K; Nickless, David J; Bishop, M. Lee; Turner, Gene E; Armijo, Karen
(CONTR); Wallace, Terry C; Torres, Enrique; Woitte, Deborah Kay; Clemmons, Steve; Allen, Don; Roberts, Kathryn
Margaret; Brandt, Michael Thomas; Sharp-Geiger, Raeanna Racine; Dorries, Alison Marie; Grieggs, Tony; Bacigalupa,
Gian A; Vigil-Holterman, Luciana R; Alexander, Rick A; Baumer, Andy; Martinez, Saundra; Sauer, Selena Z; Wood, Yvonne
Barbara; Schreiber, Arleen Thorn; Maestas, Pamela Therese; Hargis, Kenneth Marshall; Diaz, Tammy; Juarez, Catherine L;
Beard, Carl Allen; Cabbil, Cheryl Denise; Young, Steven L; Erickson, Randy; Funk, David John; Alexander, Rick A; Frederici,
Dave; Diaz, Tammy; Juarez, Catherine L; Haagenstad, Mark P

Subject: Daily Technical Submission - November 13, 2014

Attached is the written daily technical submission for today. The Permittees are submitting the attached information pursuant to: Section 19 of the May 19, 2014, *Administrative Order*; the July 10, 2014 letter from NMED regarding *Modification to May 19, 2014, Administrative Order*; and Section IX of the September 19, 2014, *LANL Nitrate Salt-Bearing Waste Container Isolation Plan, Revision 2*.

Please contact me if additional information would be helpful.

Mark Haagenstad Environmental Protection Division Compliance and Permitting Group Los Alamos National Laboratory

Office: (505) 665-2014 Mobile: (505) 699-1733

## NMED / LANL Technical Summary

## **November 13, 2014**

#### **Participants:**

- New Mexico Environment Department: Tim Hall and Siona Briley.
- LANL Los Alamos Field Office: Gene Turner.
- LANL Los Alamos National Security: Alison Dorries, Randy Erickson, Don Allen, Mark Haagenstad and Catherine Juarez.

#### **LANL Technical Update:**

- Location of Nitrate Salt-Bearing Wastes
  - o Remediated nitrate salt-bearing waste containers.
    - All containers remain in the 375 Permacon.
  - O Unremediated nitrate salt-bearing waste containers.
    - All containers remain in the 231 Permacon.

### • Monitoring - Daily Temperature

- o Temperatures remain below 90°F.
  - Previous day's daily temperature data attached.

#### • Monitoring – Visual Inspections

- o No abnormal conditions were observed.
- Monitoring headspace gas (HSG)
  - o Containers (SWBs) 68685 and SB50522.
    - Continue daily head space gas (HSG) sample collection.
      - November 13, 2014 HSG data attached.
        - o H<sub>2</sub>, CO, CO<sub>2</sub> and N<sub>2</sub>O
  - o Other containers
    - A minimum of once per month HSG sampling will be conducted.
      - To date in November, LANL has conducted HSG sampling on 47 SWBs.

#### Additional measures currently underway

- As a conservative measure, LANL is currently conducting additional monitoring. This additional monitoring includes:
  - Containers (SWB) 68685 and SB50522.
    - LANL continuing solid phase micro-extraction.
    - Hourly temperature measurements are currently being performed on SWB 68685 and SB50522.
  - Five (5) other SWB overpacks (containing 55-gallon drums of remediated nitrate salt-bearing waste).

- Continue twice-weekly HSG sample collection.
- November 13, 2014 HSG data attached.

# Anticipated Changes to Nitrate Salt-Bearing Waste Containers (e.g. movement, repackaging).

o Currently, no further movements or re-packaging are planned.

### • Other:

Next Call: Tuesday, November 18, 2014

## **Summary Chart - Requested Information / Pending Issues:**

	Requested Information	Actionee	Status	Completion Date
1.	NMED contact / process for LANL to notify NMED under the Revised Isolation Plan (e.g., 24 hour notices).	NMED		Complete June 5, 2014
2.	Keep NMED informed on the status of ongoing chemistry / analytical work.	LANL		Complete June 9, 2014
3.	On upcoming daily call, provide additional discussion on the potential for liquids in the 350 post-1991 cemented containers (including a discussion of the review of RTR tapes).	LANL		Complete  July 6, 2014 (Discussion on call)  July 18, 2014 (Meeting held)
4.	On upcoming call, provide additional discussion on why 231 and 375 Permacon fire suppression systems are not part of the LANL RCRA Hazardous Waste Facility Permit Contingency Plan.	LANL		Complete June 5, 2014
5.	Send copy of June 4, 2014 written daily submission to Trais Kliphuis. Also, include her on future daily submissions.	LANL		Complete June 5, 2014
6.	Provide LANL procedures and example records associated with post-1991 TA-55 cementation process discussed on June 6.	LANL		Complete July 3, 2014
7.	Provide information on numbers of containers in the post-1991 cemented waste streams from the TA-55 process discussed on June 6. This should include numbers regarding RTR status (RTR'd, meet WIPP criteria, requiring remediation).	LANL		Complete  June 17, 2014  (Supplemental Info provided July 3)
8.	Provide RTR video and pre-screening information associated with those containers requiring remediation from the post-1991 cemented waste streams from the TA-55 process discussed on June 6.	LANL		Complete July 3, 2014
9.	Provide copy of CCP/LANL Interface Document.	LANL		Complete June 9, 2014
10.	Provide a list of the analytes for which LANL is sampling HSG (CO <sub>2</sub> and LFL analytes).	LANL		Complete June 11, 2014
11.	Discuss potential sampling of HSG for NO <sub>x</sub> .	LANL		Complete June 16, 2014

	Requested Information	Actionee	Status	Completion Date
12.	Follow-up with Tim Hall regarding LANL Hazardous Waste Facility Permit and procedures that LANL is developing for possible future sampling of empty parent containers and unremediated nitrate saltbearing containers at LANL.	LANL		Complete  Empty Parent June 16, 2014  Unremediated August 14, 2014 (Supplemental information discussed on sampling of parent containers)  August 26, 2014 (Letter on applicability of LANL HWFP for opening waste containers)

13. Respond to NMED email request for information associated with the nitrate saltbearing parent and daughter waste containers.  WIPP Recovery Daily Meeting Action List item #84 – NMED requested a copy of the LANL remediation records for waste stored in Panel 6 (Trais Kliphuis) – is a subset of the information in item 5 of this action.	Date  Complete July 9, 2014 (Letter sent addressing items 1-4 and 6-9 of the email
item #84 – NMED requested a copy of the LANL remediation records for waste stored in Panel 6 (Trais Kliphuis) – is a subset of the	
	request) July 17, 2014 (Letter sent with updated spreadsheet) August 7, 2014 (First submittal in response to item 5) August 14, 2014 (Letter addressing items 2 & 8 - Second submittal in response to item 5) August 18, 2014 (Third submittal in response to item 5) August 18, 2014 (Fourth submittal in response to item 5) August 21, 2014 (Fourth submittal in response to item 5) August 27, 2014 (Fifth submittal in response to item 5) September 4, 2014 (Sixth submittal in response to item 5) September 9, 2014 (Seventh submittal in response to item 5) September 9, 2014 (Geventh submittal in response to item 5) September 11, 2014 (Eighth submittal in response to item 5) September 22, 2014 (Ninth submittal in response to item 5) September 23, 2014 (Tenth submittal in response to item 5) October 1, 2014 (Eleventh submittal in response to item 5) October 1, 2014 (Twelfth submittal in response to item 5) October 3, 2014 (Twelfth submittal in response to item 5) October 23, 2014 (Fourteenth submittal in response to item 5) October 23, 2014 (Fourteenth submittal in response to item 5) October 27, 2014 (Fifteenth submittal in response to item 5) October 27, 2014 (Fifteenth submittal in response to item 5)

	Requested Information	Actionee	Status	Completion Date
14.	NMED will review the Round Sheets (provided in June 11 summary) and inform LANL if these should be attachments to the Revised Plan, or if they fall under the provision in Section I of the Revised Isolation Plan and their identification during this technical call is sufficient.	NMED	NMED has reviewed Round Sheets – no comments / direction at this time. NMED will address any comments in their formal response to Revised Container Isolation Plan.	Complete June 23, 2014
15.	NMED has requested 'copies of any waste processing, treatment, characterization stop orders issued since Feb 14, 2014.'	LANL		Complete  June 13, 2014 (Included w/ daily summary)  June 16, 2014 (Discussed current TA-54 & WCRRF operations)
16.	NMED requested information on the location of drums 68327 and 68328. Request made June 14.	LANL		Complete June 14, 2014
17.	Update on LANL efforts – including LANL teams. (On June 20 call, LANL offered to schedule an update meeting).	LANL / NMED		Complete July 2, 2014
18.	Neutralizer use in association with container S855793 (parent of 68660 and 68685).	LANL		Complete June 25, 2014
19.	List of nitrate salt-bearing waste containers that LANL records indicate contain absorbed liquids with the same neutralizer, as discussed during June 25 technical call.	LANL		Complete  September 30, 2014 (with August 26, 2014 response)
20.	Schedule follow-on update on LANL efforts – including teams.	LANL / NMED		Complete August 14, 2014 (Meeting held)
21.	NMED requested information on document approval / review (as discussed on July 3 call).	LANL		Complete July 29, 2014
22.	What analyses will be conducted on samples taken from empty drums that previously contained nitrate salt-bearing waste.	LANL		Complete July 7, 2014
23.	NMED requested the following information on cemented waste containers generated from TA-55, that are currently stored above-ground at Area G: container id number; location; form (cans or monoliths); and type of concrete. Additionally, NMED requested information on pH adjustment during waste generation process, and information on anticipated pH of free liquids (and rationale).	LANL		Complete  July 17, 2014 (Letter sent w/ information)  July 18, 2014 (Meeting held)

	Requested Information	Actionee	Status	Completion Date
24.	NMED requested the procedure for sampling empty parent drums that previously contained nitrate salt-bearing waste.	LANL	EP-AREAG-WO-DOP- 1245 is included in Enclosure 1 to LANL's July 3, 2014 Response to Request for Information on Management of Waste at LANL.	Complete July 8, 2014
25.	NMED requested an additional discussion on a future technical call regarding CO <sub>2</sub> , including data.	LANL		Complete August 14, 2014 (Meeting held)
26.	NMED requested additional discussion on CIN-01 waste containers and absorbent, including confirmation and extent of use.	LANL		Complete  July 18, 2014 (Meeting held)
27.	NMED requested historic analytical information on pH of liquids associated with gypsum cemented waste.	LANL		Complete August 7, 2014
28.	NMED requested link to pdf of Actinide Quarterly edition (3 <sup>rd</sup> Q 2008).	LANL		Complete July 21, 2014
29.	NMED requested a copy of lessons learned	LANL		Complete August 11, 2014
30.	NMED request regarding empty drum sampling presentation.	LANL	Presentation is a pre- decisional draft/working document not for external release	August 25, 2014
31.	Respond to NMED email request dated 8/12/2014 for information associated with the nitrate salt-bearing waste containers.	LANL		Complete September 11, 2014
32.	NMED request regarding technical presentation.	LANL	Presentation is a pre- decisional draft/working document not for external release	August 25, 2014
33.	NMED request regarding literature review of catalytic reactions.	LANL	Literature review is a pre-decisional draft/working document not for external release	August 25, 2014
34.	LANL requested to schedule a meeting with NMED on remediation planning and schedules.	LANL / NMED	In Progress Meeting scheduled for Monday September 29th	Complete September 29, 2014 (meeting held)
35.	Schedule a third update on LANL efforts – including teams.	LANL / NMED		Complete October 20, 2014

	Requested Information	Actionee	Status	Completion Date
36.	NMED request regarding LANL Causal Analysis associated with processing of nitrate salt-bearing waste at WCRRF – when document is Final.	LANL	Document is currently Draft.	
37.	NMED requested a diagram illustrating the current locations within the 375 Permacon of the 55 SWBs that contain the 57 remediated nitrate salt-bearing waste containers. NMED also requested a list of these 55 SWBs and the waste drums within each SWB (including the container numbers and waste stream type).	LANL		Complete  October 27, 2014 (Diagram submitted)  November 3, 2014 (Table submitted)
38.	NMED requested documentation regarding CIN01.001 waste containers that are not part of the September 19, 2014 Nitrate Salts-Bearing Waste Container Isolation Plan, Revision 2.	LANL	In Progress LANL will submit this documentation in batches as it is becomes available.	Submitted 100 out of 586 RTRs and documentation on October 3, 2014. Submitted documentation for 101-200 containers on October 10, 2014. Submitted documentation for 201-300 containers on October 16, 2014. Submitted documentation for 301-400 containers on October 23, 2014. Submitted documentation for 401-500 containers on October 27, 2014. Submitted documentation for 501-586 containers on November 12, 2014. Submitted RTR Videos 101-150 on November 12, 2014.
39.	NMED requested a diagram of the location of the thermocouples on 68685 and SB50522.	LANL		Complete October 27, 2014

	Requested Information	Actionee	Status	Completion Date
40.	NMED requested a copy of the safety basis document for remediation planning when it is finalized.	LANL	Document is currently in Draft.	
41.	Trending and correlation of temperature and HSG monitoring data.	LANL	In progress	
42.	Schedule a fourth update on LANL efforts – including teams.	LANL/ NMED		Complete November 3, 2014
43.	Schedule a fifth update on LANL efforts – including teams.	LANL/N MED	In progress: Site visit scheduled for November 17, 2014 - postponed; Follow-up meeting scheduled for November 20, 2014 in Santa Fe.	

## **Remediated Nitrate Salt Container Headspace Gas Analysis**

68685					69553 69615							
Date	H <sub>2</sub> ppm	CO ppm	CO <sub>2</sub> ppm	N₂O ppm	H <sub>2</sub> ppm	CO ppm	CO <sub>2</sub> ppm	N <sub>2</sub> O ppm	H <sub>2</sub> ppm	CO ppm	CO <sub>2</sub> ppm	N <sub>2</sub> O ppm
11/13/14	134	639	15710	4648	173	578	19488	2880	86	271	5996	297

## **Remediated Nitrate Salt Container Headspace Gas Analysis**

	69616				SB50069					SB50452		
Date	H <sub>2</sub> ppm	CO ppm	CO <sub>2</sub> ppm	N <sub>2</sub> O ppm	H <sub>2</sub> ppm	CO ppm	CO <sub>2</sub> ppm	N <sub>2</sub> O ppm	H <sub>2</sub> ppm	CO ppm	CO <sub>2</sub> ppm	N <sub>2</sub> O ppm
11/13/14	313	1005	26779	5764	193	587	16004	2346	548	786	19664	3819

## Remediated Nitrate Salt Container Headspace Gas Analysis

		SB50522					
Date H <sub>2</sub> ppm		CO ppm	CO <sub>2</sub> ppm	N <sub>2</sub> O ppm			
11/13/14	2646	414	43153	866			



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## **ATTACHMENT 2**

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#### TA-54 AREA G TA-54-231 NITRATE SALT TRU WASTE CONTAINER DAILY TEMPERATURE DATA SHEET

6.[6] Date: From 11-10-14 to 11-16-14

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	6.[6]	6.[6] 0721	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]
	Start Time: <u>0751</u>	Start Time: 6726	Start Time: <u>0923</u>	Start Time:	Start Time:	Start Time:	_ Start Time:
TA-54-231		مالا الله الله					
Calibrated Infrared	Brand: Fluke	Brand: HUKe	Brand: Fluke	Brand:	Brand:	Brand:	Brand:
Thermometer	Model: 5le1	Model: 50	Model: 54	Model:	Model:	Model:	Model:
(4.2.1[1][B])	Cal. Due Date: 7/29/15	Cal. Due Date: 7/29/15	Cal. Due Date: 7/29/15	Cal. Due Date:	Cal. Due Date:	Cal. Due Date:	Cal. Due Date:
	File Number 101974	File Number 101974	File Number <u>181974</u>	File Number	File Number	File Number	File Number
Ambient Temperature (6.[7])	44.5 °F	42.0 oF	34.5 °F	°F	oF	oF	°F
Container ID #	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])
S818435	45.1	44.3	38.7			(13 13)	(-12-112-17
S802833	44.6	43.7	38.5				
S801676	43.8	43.1	37.9				
S816810	42.4	40.8	36.0				
70069	41.7	40.5	35.9				
S822844	42.0	41.0	34.3				
S825879	41.9	40.7	35.9				
S793724	42.5	40.9	34.2				
S813545	42.3	41.5	34.3				
S822713	44.4	42.8	37.7				
S802739	44.2	43.1	37.8				
69907	44.3	41.4	38.0				
S804995	44.7	41.5	38.5				
S816434	46.2	41.8	39.4				

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6.[6] Date: From 11-10-14 to 11-16-14

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Container ID #	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])				
TA-54-231 (continued	d)						
S805289	46.5	144.5	39.6				
S862888	46.0	44.7	1 29.3				
70072	45.0	44.7	38.4				
S823184	44.6	43.1	38.0				
S822599	43.9	42.5	31.3				
69904	43.5	42.0	34.5				
S805051	42.7	41.3	36.5				
S864213	42.8	41.le	34.4				
S853714	42.3	40.7	36.0				
S803078	42.3	40.5	35.8				
S825878	42.9	41.3	36.4				
S823124	43.2	41.6	37.3				
S804948	45.2	43.9	38.8				
S813385	45.5	44.0	39.0				
S842446	47.5	41.7	41.0				
Ambient Temperature (6.[12])	45.0°F	41.7 °F	36.7°F	oF	oF:	°F	°F
End Time (6.[13])	_0757	0729	0929				
6.[13]	Operator: R	Operator: Operator:	Operator:	Operator:	Operator:	Operator:	Operator:



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6.[6] Date: From <u>//</u>	-10-14 to 11-16-14	-					
6.[2] Comments:			<u>-</u>			-1416	
				***************************************			
6.[17] Performed by: Jackie Romer	o Dackie Romero	11870661 JR 111-10-14		/		/	/
Operator (print)	6 ignature	Z# Initials Date //(65%/ S&V / 1/ 10/ 4	Operator (print)	Signature	Z# /	Initials	Date /
Operator (print)	Signature	Z# Initials Date	Operator (print)	Signature	Z#	Initials	Date
Africa Aguilar Operator (print)	Signature Southar	Z# Initials Date )	Operator (print)	/ Signature	/ 	/ Initials	/ Date
THOMAS GO	al/ t-17	1236382 / 42 /11/11/14	0	/	/	/	/
Operator (print)  Isuphul Duri	Signature	Z# Initials Date //51971/ 100 / 11/12/14	Operator (print)	Signature /	Z# /	Initials /	Date
Operator (print)	Signature	Z# Initials Date	Operator (print)	Signature	Z#	Initials	Date
Operator (print)	Signature	/23(3%/ / /11/12/14 Z# Initials Date	Operator (print)	/ Signature	/ Z#	/ Initials	/ Date
		/ /	Operator (print)	/ Signature	/ 	/ Initials	/
Operator (print)	Signature	Z# Initials Date	Орегатог (рини)	Signature	Z_#	minuais	Date
8.1[2] Reviewed by:							
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or assigned (print)	~-B. 100 5 10 5 W	initials Date					

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## **ATTACHMENT 3**

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## TA-54 AREA G TA-54-375 CELL 1 NITRATE SALT TRU WASTE CONTAINER DAILY TEMPERATURE DATA SHEET

6.[6] Date: From 11-10-14 to 11-16-14

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	Monday 6.[6] Start Time: 1049	Tuesday 6.[6] Start Time: <u>5879</u>	Wednesday 6.[6] Start Time: 1057	Thursday 6.[6] Start Time:	Friday 6.[6] Start Time:	Saturday 6.[6] Start Time:	Sunday 6.[6] Start Time:
TA-54-375 Cell 1							Harris & Walnut Education
Calibrated Infrared Thermometer (4.2.1[1][B])	Brand: Fluke  Model: 36)  Cal. Due Date: 6 (2-15)  File Number 1915	Brand: Fulo Model: Stol Cal. Due Date: 6 12 15 File Number	Brand: Fluke Model: 561 Cal. Due Date: 61213 File Number +019	Brand:  Model:  Cal. Due Date:  File Number	Brand:  Model:  Cal. Due Date:  File Number	Brand:  Model: Cal. Due Date: File Number	Brand:  Model:  Cal. Due Date:  File Number
Ambient Temperature (6.[7])	64.0°F	<u>53.1</u> °F	<u>51.4</u> °F	°F	oF		°F
Container ID #	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])
68685	63.8	53.9	54.3				V 6 4 6 47
68540	63-7	54.1	53.60	,			
LA00000070503 68553 69445	64.2	53.4 54.0	53. 1 53. 7				
69618	64.0	53.4					
69013	24.0	54.8	57.7 54.2				
LASB50522	63.9	55.)	54.6				
LASB50452	63.7	55.6	54.8	-			
LASB50431	43.5	55.2	54.7				
LASB50069	63.7	54.3	55.0				
LASB50073	63.4	55.4	54.3				
69636	63.5	22,7	55.2				
69616	63.9	55.2	59.6				
69417	64.0	55.5	Ju.9				

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6.[6] Date: From <u>11-10-14</u> to <u>11-16-14</u>

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Container ID #	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])				
TA-54-375 Cell 1 (cor	itinued)						
69620	63.7	55.2	54.7				
69520	63.7	55.6	74.7				
69641	63.4	56.0	55.6				
69298	63.4	56.	55.6				
LASB02203	63.4	55.9	\$5.3				
Ambient Temperature 6.[12])	64,25	<u>55.3</u> °F	<u>51.7</u> °F	oF	°F	°F	°F
End Time (6.[13])	105!	0835	1102				
6.[13]	Operator: Operator:	Operator: Operator:	Operator:	Operator:	Operator:	Operator:Operator:	Operator:

6.[2] Comments:			
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6.[6] Date: From _//-	10-14 to 11-16-14	***						
6.[17] Performed by:	414	222000	1.1		,	,	,	,
Operator (print)	Signature	/236382 / <del>1</del>	11/10/14	Operator (print)	Signature	/ Z#	/ Initials	/ Date
[05 Jun 1000		Z# Initials //(56/24/	Date \	()	/	/	/	/
Operator (print)	Signature	Z# lortials	Date	Operator (print)	Signature	Z#	/ Initials	Date
THUMAS VILL	71 \ \ 12	1236382 / 4/	/ 11/11/19		/	/	/	/
Operator (print)	Signature	Z# Initials	Date	Operator (print)	Signature	Z#	Initials	Date
Doslyelson	A solver has	11165981 Ser	111114		/	/	/	/
Operator(print)	Signature /	Z# Initials	Date \	Operator (print)	Signature	Z#	Initials	Date
THOMAS VIGIL	11/4-17	136382 / Az	111214		/	/	/	/
Operator (print)	Signature 1	Z# Initials	Date	Operator (print)	Signature	Z#	Initials	Date
1 Blevelop 2	resus 1002	116598 1 Den 1	111214		/	/	/	/
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## TA-54 AREA G TA-54-375 CELL 2 NITRATE SALT TRU WASTE CONTAINER DAILY TEMPERATURE DATA SHEET

6.[6] Date: From 11-10-14 to 11-16-14

	Monday	T 1	777 1 1	T .			
	Monday 6.[6]	Tuesday 6.[6]	Wednesday 6.[6]	Thursday	Friday	Saturday	Sunday
	Start Time: 1055	Start Time: 0836	Start Time: (103	6.[6] Start Time:	6.[6]	6.[6]	6.[6]
TA-54-375 Cell 2	Start Time. 1433	Start Time. <u>0606</u>	Start Time: (103	Start Time:	Start Time:	Start Time:	_ Start Time:
		011					
Calibrated Infrared Thermometer	Brand: Fluke	Brand: Flyce	Brand: Fluke	Brand:	Brand:	Brand:	Brand:
	Model: 56 Cal. Due Date: 6 12 5	Model: S6) Cal. Due Date: 6 12 15	Model: Sa	Model:	Model:	Model:	Model:
(4.2.1[1][B])	File Number 10 1912	File Number 10/9/2	Cal. Due Date: 6 12 5 File Number 101912	Cal. Due Date:	Cal. Due Date:	Cal. Due Date:	Cal. Due Date:
Ambient Temperature				riie Number	File Number	File Number	File Number
(6.[7])	57.5°F	53.4 °F	56.4 °F	°F	°F	oF	op
Container ID#	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F)	Temp (°F)	Temp (°F)	Temp (°F)
LASB02198		S3.7		(6.[8]/6.[9])	(6.[8]/6.[9])	(6.[8]/6.[9])	(6.[8]/6.[9])
68638	57.6 57.1		20.0				
69615	58.0	53.9					
		53.7	20.6				
69635	58.5	54.3	51.6				
69642	59.0	55.4	54.6				
69630	58.5	73.7	50.3				
69633	58.3	53.1	49.5				
68430	57.8	52.4	48.0				
68631	56.8	53.4	48.6				
69634	56.7	53.1	48.3				
68567	56.4	52.9	47.5				
94227	56.7	52.2	48.0				
LASB50442	\$6.5	51.0	47.5				
69644	56.0	51.4	47.8				
LASB50443	56.60	33.5	5.02				
69638	57.6	52.4	48.7				

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## ATTACHMENT 4 Page 2 of 3

6.[6] Date: From <u>11-10-14</u> to <u>11-16-14</u>

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Container ID#	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])				
A-54-375 Cell 2 (con	ntinued)						
68624	57.4	51.8	47.8				
68507	56.8	50.3	L) 5, 6				
69568	56.5	51.1	43.8				
69553	56.5	52.5	47. 4				
69598	56.7	52.2	47.7				
LASB50559	56.3	51.5	46.4				
69015	56.8	51.1	46.5				
69639	57.4	52.3	48.6				
69637	57.6	53.7	49.9				
mbient Temperature .[12])	57.8°F	52.9°F	49.0°F	°F	oF	°F	oF.
nd Time (6.[13])	1104	0842	1109				
6.[13]	Operator: Operator:	Operator: Operator:	Operator: Operator:	Operator:	Operator:	Operator: Operator:	Operator:

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#### **ATTACHMENT 4** Page 3 of 3

6.[6] Date: From 11-10-14 to 11-16-14 6.[17] Performed by: 1236382/ Operator (print) **Z**# Signature Operator (print) Signature Date THOMAS VILLE 123(38L/ V/11/11/14 Operator (print) Signature Initials Date W/11/114 1165981-05 leean Signature Operator (print) Initials Date 1 40 117AMX 126382 111/12/14 Operator (print) Z# Signature Initials Date 13 leatoper 111578 Signature Operator (print) Z# Initials Date Operator (print) Signature Z# Initials Date

	/	/	/ /
Operator (print)	Signature	Z#	Initials Date
	/	/	/ / **
Operator (print)	Signature	Z#	Initials Date
	/	/	/ /
Operator (print)	Signature	Z#	Initials Date
		/	//
Operator (print)	Signature	Z#	Initials Date
	/	/	/ /
Operator (print)	Signature	Z#	Initials Date
	/	/	/ /
Operator (print)	Signature	Z#	Initials Date
	/	/	/
Operator (print)	Signature	Z#	Initials Date

#### 8.1[2] Reviewed by:

	/	/	/	/	
SOM or designee (print)	Signature	Z#	Initials	Date	

Document No.: EWMO-AREAG-FC OP-1246

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### **ATTACHMENT 5**

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## TA-54 AREA G TA-54-375 CELL 3 NITRATE SALT TRU WASTE CONTAINER DAILY TEMPERATURE DATA SHEET

6.[6] Date: From 11.10.14 to 11.16.14

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]
	Start Time: 1043	Start Time: 0824	Start Time: 165)	Start Time:	Start Time:	_ Start Time:	_ Start Time:
TA-54-375 Cell 3							APRILL STATE OF THE STATE OF TH
Calibrated Infrared Thermometer (4.2.1[1][B])	Brand: Fluke  Model: 56  Cal. Due Date: 6215  File Number 10016	Brand: FURP Model: So ) Cal. Due Date: 6 12 S File Number 10 9 1	Brand: Fluke Model: Scal Cal. Due Date: Scal File Number 10,916		Brand: Model: Cal. Due Date:	Brand: Model: Cal. Due Date:	Brand:
Ambient Temperature (6.[7])	54.3°F	<u>43.9</u> °F	40.6 °F	File Number°F	File Number°F	File Number°F	File Number°F
Container ID#	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])
69519	Sy. 2	45.6	91.6				(
69645	54.2	449	41.6				
94068	54.3	44.6	41.2				
93605	54.5	45.0	41.5				
69548	S4.3	44.8	41.2				
69604	59.1	44.6	41.1				
LASB50529	84.3	45.2	41.3				
LASB50418	54.0	44.4	40.7				
69036	54.5	42.0	40.7				
LASB50451	54.4	44.4	40.7				
69559	54.6	449	41.8 44. Bulkly				
LASB50448	54.3	44.6	41.5				
Ambient Temperature 6.[12])	S4.3°F	43.8°F	412°F	oF.	oF	°F	ol:
End Time (6.[13])	1047	0878	1056				
6.[13]	Operator: Operator:	Operator: Operator:	Operator: Operator:	Operator:	Operator:Operator:	Operator:Operator:	Operator:

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Nitrate Salt-Bearing TRU Waste Container Montoring

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6.[6] Date: From 11.10.14 to 11.16.14						
6.[2] Comments:						
			· · · · · · · · · · · · · · · · · · ·			
9 1						
6.[17] Performed by:						
TITOMAS VICILLA STATE	123638C1 tv/ 11/10/14		/	/	/	/
Operator (print) Signature	Z# Initials Date	Operator (print)	Signature	Z#	Initials	Date
( )65 relatives hother to	115781 12/11/01	Ψ	/	/	/	/
Operator (print) Signature	Z# Initials Date	Operator (print)	Signature	Z#	Initials	Date
Operator (print) Signature	123/382 / 4/ 11/11/11	Operator (print)	/ Signature	/ 	/	/
65 water I hap	Z# Initials Date / / / / / / / / / / / / / / / / / / /	1	/	Z# /	Initials	Date /
Operator (print) Signature	Z# Initials Date	Operator (print)	Signature	/ Z#	Initials	/ Date
Thomas Vices / St. (3)	1236382/ 4/ / 11/12/11	4	/	/	/	/
pperator (print) Signature	Z# Initials Date	Operator (print)	Signature	Z#	Initials	Date
Shales / Herry	114598/ /~/ 11/21	4		/	1	/
Operator (print) Signature	Z# Initials Date	Operator (print)	Signature	Z#	Initials	Date
Operator (print) Signature	Z# Initials Date	Operator (print)	/ Signature	/ 	/ / /	/ Date
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8.1[2] Reviewed by:						
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SOM or designee (print) Signature	Z# Initials Date	-				

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#### TA-54 AREA G NITRATE SALT TRU WASTE CONTAINER HOURLY TEMPERATURE DATA SHEET

6.[6] Date: From 11-12-14 Location: (1-12-14

		1		-			_		-			,	1	,
	. Start Time:	Start Time:	Start Time:	Start Time:	Start Time:	Start Time:	Start Time:	Start Time:	Start Time:	Start Time:	Start Time:	Start Time:	Start Time:	Start Time:
	(6.[6]	10 6 C	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]	1328	6.[6]	6.[6]	6.[6]	6.[6]	6,[6]	6.[6]
	0621	0 100	0821	0926	1024	1127	1224		1426	1521	1625	1723		
Calibrated Infrared	Brand:	Brand:	Brand:	Brand:	Brand:	Brand:	Brand:	Brand:	Brand:	Brand:	Brand:	Brand:	\Brand:	Brand:
Thermometer	Model:	Model:	Model: A	Model: 30	Model:	Model:	Model:	Model:	Model:	Model:	Model:	Model:	Model:	Model:
(4.2.1[1][B])	1		H	H	- H	_ / D	1 A	A	1 N	1	A	mode.	14 Odel	Woder.
(	Cal Due Date:	Cat Due Date	Cal. Due Date:	Cat Due Date:	Cal. Due Date:	Cal Due Date	Gal. Due Date:	Cal. Due Date:	Cal. Due Date:	Call Due Date:	Cal. Due Date:	Cal. Due Date:	Cal Due Date:	Cal. Due Date:
	File Number	File Number	File Number	File Number	File Number	File Number	File Number	File Number	File Number	File Number	File Number	File Number	File Number	File Number
					- The Trumber	The Humber	The Number	The ivalides	The Number	File (valide)	1316 Nulliber	File Ivanioer	. The indiniber	riie Number
Ambient	11000	110 00	11001			. 01					51×90_			
Temperature	49.29	48,93°F	49.24	50.04F	51.79F	51.96	52.9°F	53,71F	52,29	52,90	34.80	50.63		°F
(6.[7])				`					J	(	DA 11-12-14			
Container ID #	Temp (°F)	Temp (°F)	Temp (°F)	Temp (°F)	Temp (°F)	Temp (°F)	Temp (°F)	Temp (°F)	Temp (°F)	Temp (°F)	Temp (°F)	Temp (°F)	Temp (°P)	Temp (°F)
(6.[8]/6.[9])	(6.[8]/6.[9])	(6.[8]/6.[9])	(6.[8]/6.[9])	(6.[8]/6.[9])	(6.[8]/6.[9])	(6.[8]/6.[9])	(6.[8]/6.[9])	(6.[8]/6.[9])	(6.[8]/6.[9])	(6.[8]/6.[9])	(6,[8]/6,[9])	(6.[8]/6.[9])	(6.[8]/6.[9]	(6.[8]/6.[9])
68685 11	51,50	5111	51.16	56.84	53,28	5315	53.71	54,27	52.38	53.41	52.66	5270	\	
6468512		50,41	50.56	51.16	52.72	52.45	52.92	53.77	51,59	52,67	51.95	51, 41	\	X
5052514	52.04	51.71	5174	52,22	53,31	53.38	53,97	44,26		53.68	52.94	52,49		1 1
5052215	51.72	51.37	51.45	52.09	53,05				53,02		52,93	5237	1	1
10000	0 11 (70	000	3.(14)	0000	07100	12101	2107	5 11,00	33,60	0 21 (1	20115	2001/1	1	<del>                                      </del>
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6.[6] Date: From <u>U-12-14</u> to <u>11-12-14</u> Location: <u>37</u>

Container 1D # (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6,[8]/6,[9])								
					\.								<del>\</del> -	
						7								A
							1							1
							7							
													10	
Ambient Temperature (6.[12])	49.32	48.93	49.24	50.04	51.79	51-9EFE	52.9	53.24	51,17	52.54	51.88	50,60	°F	°F
	0629	0726	0428	0927	1025	1128	1225	1329	1427	1528	1626	1725		
6.[13]	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:
	Operator	Operator:	Operator	Operator	Oper trof:	Operatur.	Operator:	Operator	Operator	Operator:	Operator.	Operator:	Operator:	Operator:
200723-20 10														

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	rage 3 o	1 3		
6.[6] Date: From <u>U-12-14</u> to <u>11-12-14</u> Location: <u>37.5</u>				
6.[2] Comments: Did wot ender Perma al Temps were taken from	con Per	Standin	ng Order Area G-1247	1R.5
Dome 375.		) /		
1, v,				
		1		
Operator (print)  Signature  Operator (print)  Signature  Operator (print)  Signature  Z# Initials Date	Operator (print) Operator (print) Operator (print)	Signature  Signature  Signature  Signature  Signature  Signature  Signature	Z# Initials Date  / / / Z# Initials Date	
8.1[2] Reviewed by:	.,			

SOM or designee (print) Signature Z# Initials Date

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## ATTACHMENT 6 Page 1 of 3

#### TA-54 AREA G NITRATE SALT TRU WASTE CONTAINER HOURLY TEMPERATURE DATA SHEET

6.[6] Date: From 11-12-14 to 11-13-14 Location: 375

	Start Time: 6.[6]	Start Time: 6.[6] 1928	Start Time: 6.[6] 2027	Start Time: 6.[6]	Start Time: 6.[6] 2228	Start Time: 6.[6] 2327	Start Time: 6.[6]	Start Time: 6.[6]	Start Time: 6.[6]	Start Time: 6.[6]	Start Time: 6,[6] 0428	Start Time: 6.[6]	Start Time: 6.[6]	Start Time: 6.[6]
Calibrated Infrared Thermometer (4.2.1[1][B])	Model: A Cal. Duo Date: File Number	Brand:  Model: At Cal. Due Oate:  File Number	Brand: Model: Cal. Due Date: File Number	Brand:  Model: A Cal. Due Date:  File Number	Brand:  Mood: A Cal. Due Date: File Number	Model: Cal. Due Date: File Number	Brand:  Model: Cal. Due Date:  File Number	Rrand:  Model:  Cal. Due Date:  File Number	Brand: Model: Cal. Due Date: File Number	Brand: Modul: Cal. Due Date: File Number	Brand: Model: Cal. Due Date: File Number	Brand:  Model: Cal. Due Date: File Number	Brand: Model: Call Due Date: File Number	Model  Cal Due Date  File Number
Ambient Temperature (6.[7])	L/854.F	50,25°F	48.22°F	47.18.	47.08°F	4669 °F	4632°F	46.05°F	45,77°F	4554°F	<u>4538</u> ∘ғ	45,21 °F	NA °F	NA °F
Container ID # (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])
68685	50,49	50.25	49.45	49.4	49.34	49.11	48.75		48.16	47.91	47.84	16 41.74		
68682	50.17	50.01	49.22	48.8	48.72	48.42	48.015	47.80	47.55	47.30	47.25	47.12		
50522	51.25	50.89	5052	50.22	50.21	49.9	49.62	49.41	49.14	48.88	48.79	48,73		
50522	51.17	50.64	50.41	49.95	49.92	49.61	49,32	49.07	48.82	48.59	48.52	48.43		
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									3.					1

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6.[6] Date: From 1-12-14 to 11-13-/4 Location: 375

Container ID # (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6 [8]/6 [9])	Temp (°F) (6 [8]/6 [9])	Temp (°F) (6 [8]/6 [9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6,[8]/6,[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])						
<u> </u>														
_														
					1 //	A								
					M									
Ambient														
Temperature (6.[12])	48.52°F	50.23°F	48.17∘F	47.19°F	47.08°F	<b>46.68</b> ° F	46.41°F	46.01 °F	45.76 °F	45.52°F	<u>45.38</u> ∘ <sub>F</sub>	45.24 <sub>F</sub>	o <sub>F</sub>	oF
End Time (6.[13])	1829	1929	2028	2128	2229	2228	0034	0128	0229	0329	0429	0528	-\1	AL
6 [13]	Operator	Operator:	Operator:	Operator:	Operator:									
	Operator:	<b>260</b>	LOC.	Operator:	Operator:	Operator:	Operator:							
									_					

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[6] Date: From 11-12-14 to 11-13-14 Location: 37 5
[2] Comments: Did Not Enter permacon per Standing order Area G 1247 R.S. All temps are taken from data logger in control room in done 375
are taken from data logger in control room in dome 3/3
NA NA

6. [7] Performed by:	Domm	Bauk /14474	de	/ 11-13·14
Operator (print)	Signature	Z#	Initials	Date
Willies. Bak	1200	111280	71400	16-13-19
Operator (print)	Signature	7 Z#	Initials	Date
I.MMY Romero.	1. Jane	23425	3/18	111-13-14
Operator (print)	Signature	Z#	Initials	Date
		/	/	/
Operator (print)	Signature	/ Z#	Initials	Date
		11	/	/
Operator (print)	Signature /	Z#	Initials	Date
-	/		7	_/
Operator (print)	Signature	Z#	Initials	Date
	/	/	/	
Operator (print)	Signature	Z#	Initials	Date

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Operator (print)	Signature		Z#	Initials Date
	/_		/	_//
Operator (print)	Signature		Z#	Initials Date
	/		/	/ /
Operator (print)	Signature	H	Z#	Initials Date
		X	/	/ /
Operator (print)	Signature		Z#	Initials Date
	/		1	///
Operator (print)	Signature		Z#	Initials Date
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Operator (print)	Signature		Z#	Initials Date
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Operator (print)	Signature		Z#	Initials Date

8.1[2] Reviewed by:

SOM or designee (print)