From: Haagenstad, Mark P

Sent: Friday, January 23, 2015 4:45 PM

**To:** Ryan.Flynn@state.nm.us; Jeff.Kendall@state.nm.us; John Kieling; steve.pullen@state.nm.us; 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; butch.tongate@state.nm.us; Cobrain, Dave, NMENV; kathryn.roberts@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; 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; Cabbil, Cheryl Denise; Young, Steven L; Erickson, Randy; Funk, David John; Alexander, Rick A; Frederici, Dave; Diaz, Tammy; Juarez, Catherine L; Robinson, Bruce Alan; Lansing, Michael Alan; Haagenstad, Mark P

Subject: Daily Technical Submission - January 23, 2015

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

#### **January 23, 2015**

#### **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 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.
      - January 23, 2015 HSG data attached.
        - o H<sub>2</sub>, CO, CO<sub>2</sub> and N<sub>2</sub>O
  - Other containers
    - A minimum of once per month HSG sampling will be conducted.
      - To date in January, LANL has conducted HSG sampling on 55 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.
- Anticipated Changes to Nitrate Salt-Bearing Waste Containers (e.g. movement, repackaging)
  - o Currently, no further movements or re-packaging are occurring.

#### Other:

- Verbal and written notifications were provided to NMED-HWB's Steve Pullen on December 29, 2014 regarding the Fire Watch that was established within Dome 231 at 2:30 am on December 29, 2014 after a nitrogen leak was discovered in the dry pipe suppression system located within the Permacon in Dome 231. The Fire Watch will be in effect until the system can be repaired.
  - o Repair of multiple sprinkler heads inside Dome 231 is being planned and will be executed after notification to NMED on how the repair plan meets isolation plan requirements if waste containers must be moved.

Next Call: Tuesday, January 27, 2015

### **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)

	Requested Information	Actionee	Status	Completion Date
13.	Respond to NMED email request for information associated with the nitrate salt-bearing parent and daughter waste containers.	LANL		Complete July 9, 2014 (Letter sent addressing items 1-4 and 6-9 of the email request)
	WIPP Recovery Daily Meeting Action List item #84 – NMED requested a copy of the LANL remediation records for waste stored in			July 17, 2014 (Letter sent with updated spreadsheet)
	Panel 6 (Trais Kliphuis) – is a subset of the information in item 5 of this action.			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 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 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 8, 2014
				(Twelfth submittal in response to item 5)
				October 16, 2014 (Thirteenth 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 28, 2014 (Sixteenth submittal in response to item 5)
				November 3, 2014 (Seventeenth 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		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) November 20, 2014 (Revised table submitted)

	Requested Information	Actionee	Status	Completion Date
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. Submitted RTR Videos 151-200 on November 20, 2014. Submitted RTR Videos 201-250 on December 1, 2014. Submitted RTR Videos 201-250 on December 19, 2014. Submitted RTR Videos 251-300 on December 19, 2014. Submitted RTR Videos 301-312 on January 15, 2015.
39.	NMED requested a diagram of the location of the thermocouples on 68685 and SB50522.	LANL		Complete October 27, 2014
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

	Requested Information	Actionee	Status	Completion Date
43.	Schedule a fifth update on LANL efforts – including teams.	LANL/ NMED		Complete November 20, 2014
44.	Schedule a sixth update on LANL efforts – including teams.	LANL/ NMED		Complete December 9, 2014
45.	NMED requested documentation regarding CIN01 drums.	LANL	In Progress Additions to original questions added during technical phone call December 9, 2014.	
46.	NMED requested documentation regarding duplicate drum number.	LANL	In Progress	
47.	NMED requested the ESS plan for temperature control and sampling once finalized.	LANL	Document is currently in Draft.	
48.	Schedule a seventh update on LANL efforts – including teams.	LANL/ NMED	Meeting is scheduled for January 29, 2015.	
49.	Fire suppression repair plan for Dome 231	LANL	In Progress	
50.	NMED requested information regarding solution packages 36, 37, 57 and 78.	LANL	In Progress	

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

		680	685			SB50	0522	
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
01/23/15	115	412	9820	2585	1451	419	33614	863

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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 1.19.15 to 1.25.15

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]
	Start Time: 0845	Start Time: <u>8954</u>	Start Time: <u>0950</u>	Start Time: <u>1253</u>	Start Time: 0941	Start Time:	Start Time:
TA-54-231							
Calibrated Infrared	Brand: Fluke	Brand: Fluid	Brand: FILK-C	Brand: Fluke	Brand: Fluke	Brand:	Brand:
Thermometer	Model: 561	Model: 56	Model: 561	Model: 56/	Model: 561	Model:	Model:
(4.2.1[1][B])	Cal. Due Date 7/29/15	Cal. Due Date: 07 page 5	Cal. Due Date: 07/29/5	Cal. Due Date: 07/29/15	Cal. Due Date:7/29/15	Cal. Due Date:	Cal. Due Date:
	File Number 101974	File Number 101974	File Number C1974	File Number 101974	File Number 101974	File Number	File Number
Ambient Temperature (6.[7])	45.7 °F	56.3°F	49.3 °F	53.0 °F	46.6 °F	°F	°F
Container ID #	Temp (°F)	Temp (°F)	Temp (°F)	Temp (°F)	Temp (°F)	Temp (°F)	Temp (°F)
501010	(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])
S818435	47.7	52.1	50:5	50.3	48.7		
S802833	48.1	49.4	51.1	50.	48.5		
S801676	47.9	50.5	51.1	50.4	49.8		
S816810	52.4	52.7	52.6	35.9	51.2		
70069	52.7	53.5	52.5	54.7	51.3		
S822844	52.7	52.4	52.4	55.4	52.5		
S825879	51.4	53.0	53.0	54.2	50.8		
S793724	51.7	53.5	53:7	<i>6</i> 5.2	50.8		
S813545	51.6	53.2	53.6	54.0	50.6	-	
S822713	49.8	52.5	52.9	53.3	51.0		
S802739	49.5	52.2	528	52.1	49.7		
69907	49.1	52.5	52.0	51.5	49.4		
S804995	49.6	52.0	51.3	51.6	50.5		
S816434	49.8	51.8	31.6	52.8	50.9		

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### **ATTACHMENT 2**

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6.[6] Date: From 1-19-15 to 1-25-15

•	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])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])
FA-54-231 (continue	d)						
S805289	50.5	51.7	516	52.6	506		
S862888	49.7	51.8	51-3	51.8	50-4		
70072	50.2	53.4	51.4	51.7	49.8		
S823184	50.4	54.7	57.9	53.	50.4		
S822599	51.3	52.3	53.3	54.6	51.1		
69904	52.1	55.8	519	55.0	50.4		
S805051	51.5	53.3	53,O	545	50.3		
S864213	52.5	53.3	55.7	55.2	50.3		
S853714	52.0	53.4	55.655.6	55.40	50.7		
S803078	51.7	53.1	51.6	54.7	49.7		
S825878	52.3	<b>33.</b> ち	529	55.4	50.6		
S823124	51.4	53.2	52.5	55.4	50.3		
S804948	50.1	53.7	52.8	53.0	50-4		
S813385	49.5	53.0	51.7	52.0	49.7	-	
S842446	50.2	52.0	51.4	52.9	50.1		
Ambient Temperature	46.2 °F	64.1 °F	49.1 °F	52.6°F	46.2 °F	°F	°F
6.[12])					·		
End Time (6.[13])	0853	1004	1054	1300	D948		
6.[13]	Operator: TR	Operator:	Operator:	Operator:	Operator: TR	Operator:	Operator:
	Operator: 💈 C	Operator:	Operator:	Operator:	Operator: 2c	Operator:	Operator:

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6.[6] Date: From <u>1-19-15</u> to <u>1-25-75</u>					
6.[2] Comments:					
6.[17] Performed by:	1				
Jackie Romero / Jackie Romero 1/87066/ JR 11-19-15	1+6MS YICE	1 + 1/2	1230382		11/22/2
Operator (print) Stenature Z# Initials Date  \[ \langle \langle T.V. \tag{114188} \rangle \tag{2} \cdot \langle \langl	Operator (print)  Tackie Romero	Signature 1 Garkie Romero	Z#	Initials	
Operator (print) Signature Z# Initials Date	Operator (print)	≸ignature	Z# //14188	Initials	/1/23/13 Date
Operator (print) Signature   Z# Lectials Date	Operator (print)	/ Do D \ Signature	//19100 Z#	/ > C Initials	/ 1-23-75 Date
Dosua - 100 / 11/05/8/8/1 10/00/5	Operator (print)	/ Signature		/ Initials	<u>/</u>
Operator (print)   Sygnature   Z# Initials Date  Alfredo Aguilar   Share to fait   29318   At   1/21/15		/	/	/	Date /
Operator (print)  Signature  Z# Initials Date  / (CFI) / SV / UL 21/5	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	/	/ Initials	/ Date
Signature 2 martials Direct					
8.1[2] Reviewed by:					
SOM or designee (print)  Signature  Z# Initials Date					

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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 1-19-15 to 1-25-15

		Monday	Tuesday	Wadaadaa	Tl	F-11-	0 . 1	0 1
		6.[6]	6.[6]	Wednesday 6.[6]	Thursday 6.[6]	Friday	Saturday	Sunday
		Start Time: 0152	Start Time:	Start Time:	Start Time:	6.[6] Start Time:	6.[6] Start Time:	6.[6] Start Time:
		Start Time.	1018	1137	1437	0853	Start Time.	Start Time.
TA-54-375 Cell 1								
Calibrated Infrared	d	Brand: Flyke	Brand: Fluke	Brand: Flake	Brand: Fire	Brand: fuke	Brand:	Brand:
Thermometer		Model: 561	Model: 501	Model: 561	Model: SL)	Model: 56	Model:	Model:
(4.2.1[1][B])		Cal. Due Date: GIZ 13	Cal. Due Date: 20 125	Cal. Due Date: 65 11/15	Cal. Due Date: Gras	Cal. Due Date: 61215	Cal. Due Date:	Cal. Due Date:
		File Number <u>101115</u>	File Number 101915	File Number 101915	File Number	File Number	File Number	File Number
Ambient Tempera (6.[7])	ture	<u>4</u> 5.1 ∘ <sub>F</sub>	<u>50.5</u> °F	43.4 °F	52.2 of	40.7 °F	°F	oF
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	-	49.3	53.1	52.5	53.3	44.1		
	68540	48.5	53.1	52.7	52.4	43.9		
LA00000070503	68553	49.5	53.0	525	52.3	42.4		
69445		47.9	529	52.7	2.55	43.1		
69618		46.8	52.4	51.2	0.12	42-8		
69013		48.7	53.0	52.6	34.6	42.7	-	
LASB50522	2	20-8	53.8	53.9	<b>34.9</b>	44.7		
LASB50452	2	51.4	54.1	541	54.6	44.4		
LASB5043	1	51.1	54.0	54.5	54.4	45.1		
LASB50069	9	49.7	53.5	57.5	53.5	44.8		
LASB50073	3	50.7	53,4	53.5 53.7	53.4	44.9		
69636		51.3	54.0	54.3	73. Y	45.2		
69616		50.5	53.0	53.8	54.0	45-7		
69417		56.5	53.7	54.7	53.8	45.5		

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6.[6] Date: From <u>1-19-15</u> to <u>1-25-15</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])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])
TA-54-375 Cell 1 (co	ntinued)						
69620	50.1	53,5	53.4	52.6	45.0		
69520	505	53.7	-538	53.0	44.3		
69641	50.8	54.2	w 543 54.3	53.4	46.3		
69298	51.3	54.7	in 54.4	53.7	46.2		
LASB02203	5).5	544	54.6	53.8	45.9		
Ambient Temperature (6.[12])	<u>45.9</u> °F	48.4 of	50.1 °F	51.7 °F	4 <u>1.5</u> °F	or	°F
End Time (6.[13])	0159	1023	1141	1443	0856		
6.[13]	Operator: Operator:	Operator:	Operator:	Operator:	Operator: The Operator:	Operator:Operator:	Operator: Operator:

6.[2] Comments:		

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6.[6] Date: From 1-19-15 to 1-25-15						
6.[17] Performed by:  Operator (print)  Operator (print)  Operator (print)  Signature  Z# Initial Init	tials Date  N/01915  tials Date  N/17015  tials Date	Operator (print)  Arry Br. to Operator (print)  Ancho Miera Operator (print)	Signature Signature Signature		Initials Initials	Date  // 23/ Date  //-23-2
Operator (print)  Signature  Z# Initi  A 150-000 Agrician Advance Annals 1243124 /	ials Date 11/21/15	Operator (print)	Signature /	Z# /	/ Initials /	Date /
operator (print) Signature Z# Initi		Operator (print)	Signature /	Z# /	Initials	Date /
Operator (print) Signature Z# Infiti	ials Date	Operator (print)	Signature /	Z# _/	Initials /	Date /
Operator (print) Signature Z# Initia	ials Date	Operator (print)	Signature	Z#	Initials	Date
8.1[2] Reviewed by:						
SOM or designee (print) Signature Z# Initia	ials Date					

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#### **ATTACHMENT 4**

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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 <u>1-19-15</u> to <u>1-25-15</u>

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]	6.[6]
	Start Time: 0860	Start Time: 1024	Start Time: 1143	Start Time: 1949	Start Time: 0858	Start Time:	_ Start Time:
TA-54-375 Cell 2							
Calibrated Infrared	Brand: Flyke	Brand: Fluke	Brand: FUKE	Brand: Fluce	Brand: fluke	Brand:	Brand:
Thermometer	Model: S(1)	Model: 501	Model: 561	Model: 56)	Model: 561	Model:	Model:
(4.2.1[1][B])	Cal. Due Date: 6 12 5 File Number 16 912	Cal. Due Date: Velnics File Number 101912	Cal. Due Date: Alalu File Number   1912	Cal. Due Date: 6/12/15 File Number 10/9/2	Cal. Due Date: 6/2/15 File Number 10/9/2	Cal. Due Date: File Number	Cal. Due Date:
Ambient Temperature (6.[7])	<u>51.0</u> °F	55.4°F	52.4 of	53.4 °F	45.3 ∘ <sub>F</sub>	°F	°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])
LASB02198	50.0	54.2	51.7	57.1	45.2		
68638	SI, o	55.5	53.9	57.6	45.6		
69615	51.5	55.9	540	53.8	46.5		
69635	52.2	56.5	54.W	54.3	47.7		
69642	S1.2	55.7	53.7	34.8	46.7		
69630	50.9	= 55.5	53.4	54.2	46.9		
69633	52.0	55.8	56.0	53.4	47.4		
68430	51.9	55.4	54.3	53.8	46.6		
68631	5).0	55.5	53.4	530	46.4		
69634	52.2	56.2	53.0	52.5	46.3		
68567	49.4	53.6	521	51.3	45.7		
94227	51.4	55.0	55.7	22.4	45.7		
LASB50442	51.5	55.0	53.9	52.4	45.9		
69644	5).	55.2	53.7	57.6	47.3		
LASB50443	50.6	54.5	53.4	53,5	47.7		
69638	51.1	55.5	53.4	33.2	46.6		

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#### **ATTACHMENT 4**

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6.[6] Date: From 1-19-15 to 1-25-15

	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])	Temp (°F) (6.[8]/6.[9])	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	53.7	57.3	53.8	34.7	48.4		
68507	51,0	55.1	53.9	57.6	47.4		
69568	56.9	54.0	53.4	37.4	48.1		
69553	48.6	53.3	51.9	52.5	45.5		
69598	49.4	52.8	51.7	51.5	45.1		
LASB50559	49.8	54.2	52.2	51.8	46.6		
69015	52.0	<i>5</i> 5.5	54.4	53.2	48.1		
69639	57.1	56.4	54.1	53.5	47.9		
69637	5),8	56.0	54.8	54.8	47.6		
mbient Temperature .[12])	<u>51.3</u> °F	_55.7F	519 °F	<u>5</u> . ≤ <sub>°F</sub>	45.4°F	°F	°F
nd Time (6.[13])	0806	_1029	1146	14501	0900		
6.[13]	Operator:	Operator:	Operator: Operator:	Operator: Operator:	Operator: Operator:	Operator:	Operator:

[-]	 		

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# ATTACHMENT 4 Page 3 of 3

6.[6] Date: From /-/9-15 to /-25-15						
Operator (print)  Operator (print)  Operator (print)  Operator (print)  Operator (print)  Operator (print)  Signature  Z#  Operator (print)  Signature  Z#  Operator (print)  Signature  Z#	Initials Date  STAGEN / OLI 915  Initials Date  1/20/5  Iffitials Date  1/20/5  Iffitials Date	Operator (print)  Lary Brito Operator (print)  Pancho Micra Operator (print)  Operator (print)	Signature Signature Signature	/// // // // // // // // // // // // //	nitials nitials	Date //-23-/ Date //-23-/ Date // Date
Operator (print) Signature Z#	1751 A 1 1 7 1 1 1 5 Initials Date	Operator (print)	Signature	Z# Ir	nitials	Date
Operator (print) Signature Z#	578 / St / 613 113 Initials Date	Operator (print)	/ Signature	//	/	Date
Operator (print) Signature Z#	Initials Date	Operator (print)	Signature	Z# 1r	nitials	Date
3.1[2] Reviewed by:						
/ / SOM or designee (print) Signature Z#	/ / Initials Date					

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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 1-19-15 to 1-25-15

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	Monday 6.[6]	Tuesday 6.[6]	Wednesday 6.[6]	Thursday	Friday	Saturday	Sunday
	Start Time: 6198	Start Time: 1012		6.[6] Start Time: 1430	6.[6] Start Time: <b>0849</b>	6.[6] Start Time:	6.[6] Start Time:
TA-54-375 Cell 3					Start Time.	Start Time.	_ Start Time
Calibrated Infrared Thermometer	Brand: Klyke Model: 56	Brand: Flute Model: 500	Brand: WKE	Brand: Floke	Brand: fluce	Brand:	Brand:
(4.2.I[I][B])	Cal. Due Date: 6 12	Cal. Due Date: 10 1215	Model: 51, Vola 12,5 Cal. Due Date: 12,14	Model: 56 + Cal. Due Date: 2 12 2		Model:	Model:
–	File Number 101910	File Number 101910	File Number 10416	File Number 101919	File Number 101916	File Number	File Number
Ambient Temperature (6.[7])	46.6°F	53.   °F	57.7 °F	48, Zof	44.7 °F	°F	°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	51.7	55.4	54.8	56.3	46.9		( 1 1 1 )
69645	51.4	55.3	54.7	50.1	47.6		
94068	50.3	<u>රතු.0</u>	54.2	50.2	46.8		
93605	49.3	54.1	53.3	49.6	46.3		
69548	49.8	54.3	54.W	49.6	45.5		
69604	49.8	54.8	54.7	50.3	46.5		
LASB50529	50.5	55.1	55.7	50.4	47-1		
LASB50418	50.8	55.2	54.1	496	46-9		
69036	49.9	54.9	52.8	49)	46.2		
LASB50451	48.4	53.4	53.4	49.6	45.8		
69559	49.7	53.9	53.3	49.9	45-6		
LASB50448	48.4	53.3	51.7	49.0	45.2		
Ambient Temperature (6.[12])	<u>47.3</u> °F	52.9 °F	<u>52.0</u> °F	49.3°F	44.8 °F	°F	°F
End Time (6.[13])	0751	1017	_1130 .	1436	0853		
6.[13]	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:
	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:

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#### **ATTACHMENT 5** Page 2 of 2

6.[6] Date: From 1-19-15 to 1-25-15 6.[2] Comments: 6.[17] Performed by: THOMAS VICTU perator (print) Signature Larry 116578 Operator (print) Signature Initials Date perator (print) Initials Date Kancho Mipra 12357651 72 11-23-15 1157971 Operator (print) Signature Operator (print) **Z**# Initials Date Initials Date 0/30/4 Operator (print) Signature Z# Initials Date Signature Operator (print) Signature Operator (print) Z# Initials Date Signature 14578 Operator (print) Operator (print) Signature Z# Initials Date Operator (print) Operator (print) Signature Z# Signature Initials Initials Date Date 8.1[2] Reviewed by: SOM or designee (print) Signature Z# Initials Date

Location Dome 375

6 [6] Date: From 1-22-15 to 1-22-15

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#### ATTACHMENT 6

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

Start Time: Start Time: Start Time Start Time: Start Time: 0629 Start Time: Start Time: 0727 6.[6] 6.[6] 6,[6] 0931 1323 1032 1528 130 1624 Brand Thermometer Cal Due Date File Numbe File Number 47.43 47.20 47.41 47.55°F 43.80 45,70°F 45.9 S1280 51,02 49,93 Temperature Container ID# 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]) 68685 (T1) 49,71 49.33 49,53 46,40 49.59 47.07 48.8 S7.85 5275 51.85 5217 68685 (12) 48.75 48.59 48.53 48.76 45.10 46.30 46.7 48,4 51.90 51.3 (14) 49.69 49.54 49.36 47.40 46.20 49.Si 51.92 48,6 5/26 50592 (15) 49.42 49.24 49.07 47.17 49.17 46-80 48,4 51,2 51.55 50,93

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6.[6] Date: From 1-22-15 to 1-22-15 Location: DOME 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])	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])
\$44***********************************														
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				2										
Ambient Femperature 6.[12])	47.65	47.41°F	47.25°F	47.60°F	43.89	45.70 <sub>F</sub>	46.10	47.9	51, 10°F		51.07F	49.88	oF	°F
End Time 6.[13])	0630	0727	0833	0933	1033	1131	1220	1324	1427	1529	1625	1726		
6.[13]	Operator	Operator:	Operator	Operator:	Operator	Operator:	Operato:	Sperator:	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:
	Operator:	Operator	Operator:	Operator	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:	Operator	Operate	Operator:	Operator:

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## ATTACHMENT 6 Page 3 of 3

6.[6] Date: From 1-22-15 to 1-22-15 Location: Dome 37	1 tage 3 o	3			
6.[2] Comments: Did not enter Dome 375 Perma Co	on per Ste	nder order	1247	Rev.2 +	emperiatures
ave taken from Done 375 Control Rum/	US.by data	- 105900	60	fuller	-entry s
		JJ 1			
			1		
6.[17] Performed by:	_	g.	/	1 1	
Operator (Arms) Signature 7.4 Initials Date	Operator (print)	Signature		Initials Date	
Operator (Arm) Signature 7.11 Initials Date  Ohn (Dum Funct Tel. 1 150:57 70) 1-22-15		/	1	1 1	
Operator (print) Signature Zii Initials Date	Operator (print)	Signature 1)	Z#	Initials Date	
William were roulling 201458 w 1-7245		/ []	/		
Operator (print) Signature Z# Initials Date	Operator (print)	Signature /4	Z#	Initials Date	
Jesse Chart for 214598 3C 11-22-15	Operator (print)	Signature	/	Initials Date	
Operator (print) Signature Z# Initials Date	Operator (print)	Signature	<i>i</i>	/ /	
Operator (print) Signature ZH Initials Date	Operator (print)	Signature	Z#	Initials Date	
Operator (print) Signature 2" Initials Date		/	/	/ /	
Operator (print) Signature Z# Initials Date	Operator (print)	Signature	Z#	Initials Date	
			/	/ /	
Operator (print) Signature Z# Initial Date	Operator (print)	Signature	7.#	Initials Date	
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8.1[2] Reviewed by:					
CARIMPULL Duy Pally 226245 Len 1-22-15	-				
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 +22-15 to 1-23-15 Location: 375

	Start Time: 6.[6] /\$18	Start Time: 6.[6]	Start Time: 6.[6] 2027	Start Time: 6.[6]	Start Time: 6,[6]	Start Time: 6.[6]	Start Time: 6.[6]	Start Time: 6.[6]	Start Time: 6.[6] 0224	Start Time: 6.[6]	Start Time: 6.[6] 0426	Start Time: 6.[6]	Start Time	Start Time: 6.[6]
Calibrated Infrared Thermometer (4.2.1[1][B])	Brand:  Mod II: Cal. Due Date:	Brand: Model:	Brand: Model:	Brand:  Model:  Cal. Due Qate:	Brand: Model: A	Modul:  Cal. Due Qate:	Modul: Cal. Due Qate:	Brand:	Rrand: ModN: A	Model: A	Brand:	Brand: Model:	Brand: Model: A	Brand: Model:
([-][-])	Cal. Due Date: File Number	Cal. Due Date:	Cal. Due Date:	Cal. Due Oate:	Cal. Due Date:	Cal. Due Oate:	Cal. Due Oate: File Number	Cal. Due Nate:	Cal. Due Date:	Cal. Due Bate: File Number	Cal. Due Date: File Number	Cal. Due Date:	Cal. Due Date: File Number	Ca . Due Date:
Ambient Temperature (6.[7])	47.29	46.40°F	45.59F	44.5°F	43,79°F	43,22°F	42.72	4231°F	41.52°F	41.08F	40.73F	40.70°F	°F	√A °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.[876.[9])
68685 (TI	4962	48.30	47.94	46.98	46.47	48.88	45.39	44.94	44.41	43.97	43.68	43.54		
68685 512	48.56	47.27	46.97	46.12	45.51	45.01	44.51	44.06	43,57	43,02	42.82	42.77		
50522 TH	49.63		48.38	47.75	47.08	46.57	46.15	45,75	45,34	44.88	44.62	44.53	NA	
50522 (15)	49.24	48.89	47.98	47.09	46.73	46.26	45.85	45,48	45,0	44.60	44.40	44.28		
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6.[6] Date: From <u>1-22-15</u> to <u>1-23-15</u> Location: <u>375</u>

Container ID # (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9])	Temp (°F) (6.[8]/6.[9]											
														1
					N	A								
					147								A	MA
				-									NA	NIT
nbient	./4	in stell	45.54 of	p. 1	112:30	(17.10	4.2.42				4			
[12])	47.29F	46.44 <sub>F</sub>		445°F	43.7%F	43.19°F	42.68°F	4220F	41.85°F	41.08°F	40.73°F	40.70 °F		
d Time [13])	1829	1930	2028	2122	2225	2331	0025	0124	0225	0325	0428	0520		
6 [13]	Operator:	Operator:	Operator:	Operator: Operator:	Operator:	Operator: Operator:	Operator: Operator:	Operator: Operator	Operator: Operator	Operator: Operator	Operator: Operator:	Operator: Operator:	Operator:	Operator:
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6.[6] Date: From \( \frac{1}{2} \)	2-15 10 1-23-15	Location: 375							
6.[2] Comments: I		iter permacon Data logger in		anding ord			17 R2	All	temps
			100						
6.[17] Performed by:  Willie J. Corole  Operator (print)  Timny Rome	Signature		Operator (print)	/ Signature	/ 	/ Initials	/		
Operator-(print)	Signature Clob	2# Initials Date //50557 370 / 1~13-15	Operator (print)	Signature	Z# /	Initials	/		
Operator (print) Operator (print)	Signature / Signature	Z# Initials Date  / / / Z# Initials Date	Operator (print) Operator (print)	Signature // Signature	Z# / Z#	Initials / Initials	/		
Operator (print)	Signature Signature	Z# Initials Date	Operator (print)	/ Signature	Z#	/ Initials	/		
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							