From: Juarez, Catherine L
Sent: Tuesday, March 31, 2015 4:16 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; Schreiber, Arleen Thorn; Maestas, Pamela Therese; Hargis, Kenneth Marshall; Cabbil, Cheryl Denise; Young, Steven L; Erickson, Randy; Funk, David John; Alexander, Rick A; Frederici, Dave; Robinson, Bruce Alan; Lansing, Michael Alan; Tymkowych, John M; Branch, Yvette S; Guffee, Debi; Juarez, Catherine L; Armijo, Karen (CONTR); Diaz, Tammy; Haagenstad, Mark P
Subject: Daily Technical Submission - March 31, 2015

Sent on behalf of Mark Haagenstad.

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

March 31, 2015

Participants:

- New Mexico Environment Department: Katie Roberts, Tim Hall and Siona Briley
- LANL – Environmental Management -Los Alamos Field Office: Karen Armijo
- LANL – Los Alamos National Security: Alison Dorries, Tony Grieggs, Don Allen, Bruce Robinson, Mark Haagenstad, Luciana Vigil-Holterman and Cathy Juarez.

LANL Technical Update:

- **Location of Nitrate Salt-Bearing Wastes**
  - Remediated nitrate salt-bearing waste containers.
    - All containers remain in the 375 Permacon.
  - Unremediated nitrate salt-bearing waste containers.
    - All containers remain in the 231 Permacon.
  - Newly suspect nitrate salt-bearing waste containers.
    - Containers are located in 375 Permacon.
- **Monitoring - Daily Temperature**
  - Temperatures remain below 90°F.
    - Previous day's temperature data attached.
- **Monitoring – Visual Inspections**
  - No abnormal conditions were observed.
- **Monitoring – headspace gas (HSG)**
  - Containers (SWBs) 68685 and SB50522.
    - Continue daily head space gas (HSG) sample collection.
      - March 31, 2015 HSG data attached.
        - H_2, CO, CO_2 and N_2O
  - Other containers:
    - A minimum of once per month HSG sampling will be conducted.
      - To date in March, 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 other SWB overpacks (containing 55-gallon drums of remediated nitrate salt-bearing waste).

- Continue twice-weekly HSG sample collection.
  - H_2, CO, CO_2 and N_2O
- Four newly suspect nitrate salt-bearing waste containers located in 375 Permacon.
  - Continue daily HSG sample collection.
    - March 31, 2015 HSG data attached.
      - H_2, CO, CO_2 and N_2O

- **Anticipated Changes to Nitrate Salt-Bearing Waste Containers (e.g. movement, re-packaging)**
  - Currently, no further movements or re-packaging are occurring.

Other:

- HSG gas sampling discussion focused on addressing Item # 52 in Summary Chart. Report to follow in the coming months.
  - LANL personnel are working to understand the concentrations of major components within the HSG concentrations and the reactions that are controlling those concentrations
    - H_2 concentrations generally seem to correlate with Pu-equivalent Curies in each container, and do not correlate with temperature. These findings are consistent with radiolysis as the source of H_2.
    - CO_2 concentrations for 68685 have been modeled and temperature effects for both CO_2 and N_2O are apparent, with lower concentrations in the colder winter months.
    - Gas generation within the container is very small (3-4 cc/min) and air mixing with atmospheric air is greater than gas generated within the SWBs.
    - All levels of reactivity within the containers are very small and only some of them exhibit concentrations that would be considered to be above normal and indicative of enhanced reactivity.
      - 11 SWBs exceed 10,000 ppm CO_2.
      - 14 SWBs have concentrations between 5,000-10,000 ppm CO_2.
      - 30 SWBs have concentrations above 10,000 ppm CO_2.
    - NMED-HWB personnel a requested a spreadsheet of HSG data. This has been added as Item #54 in the Summary Chart.
- The data table included in Attachment F of Enclosure 1 of the Permittees' March 9, 2015 deliverable will be corrected and resubmitted to the NMED-HWB.
- Discussions associated with the Technical Assistance Team Report
  - The Permittees have been evaluating temperature measurement locations and changes for more effective measurements, but are not making changes to monitoring at this time.
  - NMED-HWB personnel requested additional discussion on engineering ideas to cool the Permacon in 375 this summer. This has been added as Item # 55 in the Summary Chart.
  - NMED-HWB personnel requested a copy of a document referenced within the report. This has been added as Item #56 in the Summary Chart.
- NMED-HWB personnel recommended that the Permittees ensure that the DOE Carlsbad Field Office and Washington TRU Solutions LLC are copied on the response to the NMED-HWB's March 20, 2015 letter.
- Revision to the LANL Isolation Plan to remove unremediated nitrate salt waste containers from isolation will be combined and submitted with the revision and to add the newly identified suspect nitrate salt-bearing waste containers. The NMED-HWB did not think a meeting to discuss these changes was necessary prior to submission.

Next Call: Thursday, April 2, 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 on-going 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_2 and LFL analytes).	LANL	---	Complete June 11, 2014
11.	Discuss potential sampling of HSG for NO_x.	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 salt-bearing 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. 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.	LANL	---	Complete July 9, 2014 (Letter sent addressing items 1-4 and 6-9 of the email 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 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_2, 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 (3rd 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 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	---	Complete Email- February 3, 2015 Letter- February 19, 2015
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	---	Complete January 29, 2015
49.	Fire suppression repair plan for Dome 231	LANL	---	This repair plan is no longer necessary because drum movement did not occur during the repair process. Repair is complete.
50.	NMED requested information regarding solution packages 36, 37, 57 and 78.	LANL	---	Complete. Email – February 17, 2015. Letter- March 19, 2015.
51.	NMED requested copies of any procedures regarding cementation in bags.	LANL	---	March 19, 2015 Confirmation that no specific procedure can be located for cementation in bags.
52.	NMED requested information on the percentage of the 55 SWBs that, based on SWB HSG data, appear to have chemical reactions occurring within the waste.	LANL	In progress	
53.	NMED requested the document "TA-55 Cement Fixation Drum Logbook" referenced in the CCP AK document.	LANL	In progress	
54.	NMED requested summary sheet for HSG data.	LANL	In Progress	
55.	NMED requested additional discussion on engineering options for cooling in Summer months.	LANL	In Progress	

	Requested Information	Actionee	Status	Completion Date
56.	NMED requested references in Technical Assessment Team report Waste Isolation Pilot Plant (WIPP): Chemical Reactivity and Recommended Remediation Strategy for Los Alamos Remediated Nitrate Salt (RNS) Wastes.	LANL	In Progress	
57.	Schedule an eighth LANL update meeting to continue technical discussions associated with remediation options, planning and other topics of interest.	LANL/ NMED	In Progress	

Remediated Nitrate Salt Container Headspace Gas Analysis

	68685				SB50522				87823			
Date	**H_2 ppm**	**CO ppm**	**CO_2 ppm**	**N_2O ppm**	**H_2 ppm**	**CO ppm**	**CO_2 ppm**	**N_2O ppm**	**H_2 ppm**	**CO ppm**	**CO_2 ppm**	**N_2O ppm**
03/31/15	149	394	8146	1966	2637	474	34277	962	169	143	4674	522

Remediated Nitrate Salt Container Headspace Gas Analysis

	87825				87826				87827			
Date	**H_2 ppm**	**CO ppm**	**CO_2 ppm**	**N_2O ppm**	**H_2 ppm**	**CO ppm**	**CO_2 ppm**	**N_2O ppm**	**H_2 ppm**	**CO ppm**	**CO_2 ppm**	**N_2O ppm**
03/31/15	195	212	7311	919	198	246	9226	910	31	64	2644	235

ATTACHMENT 2
Page 1 of 3

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

6.[6] Date: From 3-30-15 to 4-5-15

	Monday 6.[6] Start Time: 0812	Tuesday 6.[6] Start Time:	Wednesday 6.[6] Start Time:	Thursday 6.[6] Start Time:	Friday 6.[6] Start Time:	Saturday 6.[6] Start Time:	Sunday 6.[6] Start Time:
TA-54-231							
Calibrated Infrared Thermometer (4.2.1[1][B])	Brand: Fluke Model: 561 Cal. Due Date: 7/29/15 File Number 101974	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	Brand: Model: Cal. Due Date: File Number	Brand: Model: Cal. Due Date: File Number
Ambient Temperature (6.[7])	59.8 °F	°F	°F	°F	°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])
S818435	54.5						
S802833	53.9						
S801676	54.0						
S816810	55.3						
70069	55.3						
S822844	55.6						
S825879	55.1						
S793724	55.5						
S813545	55.4						
S822713	54.3						
S802739	54.0						
69907	53.9						
S804995	54.2						
S816434	55.5						

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ATTACHMENT 2
Page 2 of 3

6.[6] Date: From 3-30-15 to 4-5-15

Container ID #	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	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-54-231 (continued)							
S805289	54.9						
S862888	54.9						
70072	54.4						
S823184	54.5						
S822599	55.1						
69904	55.3						
S805051	55.4						
S864213	55.5						
S853714	55.4						
S803078	55.1						
S825878	55.5						
S823124	55.6						
S804948	54.9						
S813385	55.0						
S842446	55.9						
Ambient Temperature (6.[13])	57.2 °F	____ °F	____ °F	____ °F	____ °F	____ °F	____ °F
End Time (6.[14])	0819						
6.[14]	Operator: JR Operator: EC	Operator: ____ Operator: ____	Operator: ____ Operator: ____	Operator: ____ Operator: ____	Operator: ____ Operator: ____	Operator: ____ Operator: ____	Operator: ____ Operator: ____

ATTACHMENT 2
Page 3 of 3

6.[6] Date: From 3-30-15 to 4-5-15

6.[2] Comments: _____

6.[18] Performed by:

Operator (print)	Signature	Z#	Initials	Date
Jackie Romero	Jackie Romero	187066	JK	3-30-15
Edyd. Cardona	EDJ	114188	EC	3-30-15

9.1[2] Reviewed by:

SOM or designee (print)	Signature	Z#	Initials	Date

ATTACHMENT 3
Page 1 of 3

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

6.[6] Date: From 3-30-15 to 4-5-15

	Monday 6.[6] Start Time: 1419	Tuesday 6.[6] Start Time:	Wednesday 6.[6] Start Time:	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							
Calibrated Infrared Thermometer (4.2.1[1][B])	Brand: Fluke Model: 561 Cal. Due Date: 6/15 File Number 10915	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	Brand: Model: Cal. Due Date: File Number	Brand: Model: Cal. Due Date: File Number
Ambient Temperature (6.[7])	66.0 °F	°F	°F	°F	°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])
68685	67.3						
LA00000070503 68540	67.3						
LA00000070503 68553	67.3						
69445	66.9						
69618	67.0						
69013	66.9						
LASB50522	66.9						
LASB50452	67.0						
LASB50431	66.9						
LASB50069	66.8						
LASB50073	67.0						
69636	66.8						
69616	66.7						
69417	67.2						

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ATTACHMENT 3
Page 2 of 3

6.[6] Date: From 3.30.15 to 4.5.15

Container ID #	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	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 (continued)							
69620	66.9						
69520	67.1						
69641	67.3						
69298	67.2						
LASB02203	66.6						
Ambient Temperature (6.[13])	66.4 °F	____ °F	____ °F	____ °F	____ °F	____ °F	____ °F
End Time (6.[14])	1476						
6.[14]	Operator: [signature] Operator:	Operator: ____ Operator: ____	Operator: ____ Operator: ____	Operator: ____ Operator: ____	Operator: ____ Operator: ____	Operator: ____ Operator: ____	Operator: ____ Operator: ____

6.[2] Comments:

ATTACHMENT 3
Page 3 of 3

6.[6] Date: From 3-30-15 to 4-5-15

6.[18] Performed by:

Operator (print)	Signature	Z#	Initials	Date
THOMAS VIGIL		123638		3/30/15
Joshua Lopez		1116598		033015

Operator (print)	Signature	Z#	Initials	Date

9.1[2] Reviewed by:

SOM or designee (print)	Signature	Z#	Initials	Date

ATTACHMENT 4
Page 1 of 3

TA-54 AREA G TA-54-375 CELL 2 NITRATE SALT TRU WASTE CONTAINER DAILY TEMPERATURE DATA SHEET

6.[6] Date: From 3-30-15 to 4-5-15

	Monday 6.[6] Start Time: 1427	Tuesday 6.[6] Start Time:	Wednesday 6.[6] Start Time:	Thursday 6.[6] Start Time:	Friday 6.[6] Start Time:	Saturday 6.[6] Start Time:	Sunday 6.[6] Start Time:
TA-54-375 Cell 2							
Calibrated Infrared Thermometer (4.2.1[1][B])	Brand: Fluke Model: 561 Cal. Due Date: 6/15/15 File Number 109152	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	Brand: Model: Cal. Due Date: File Number	Brand: Model: Cal. Due Date: File Number
Ambient Temperature (6.[7])	66.1 °F	°F	°F	°F	°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])
LASB02198	65.9						
68638	66.8						
69615	66.7						
69635	67.1						
69642	66.8						
69630	66.6						
69633	66.9						
68430	66.6						
68631	67.0						
69634	66.3						
68567	65.5						
94227	66.1						
LASB50442	66.0						
69644	66.1						
LASB50443	66.2						
69638	66.0						

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Z# 187066
INITIAL JR DATE 3-30-15

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6.[6] Date: From 3-30-15 to 4-5-15

Container ID #	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	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 2 (continued)							
68624	66.3						
68507	66.2						
69568	66.1						
69553	65.3						
69598	66.1						
LASB50559	65.8						
69015	66.3						
69639	66.1						
69637	66.4						
Ambient Temperature (6.[13])	65.4 °F	____ °F	____ °F	____ °F	____ °F	____ °F	____ °F
End Time (6.[14])	1431						
6.[14]	Operator: [signature] Operator:	Operator: ____ Operator: ____	Operator: ____ Operator: ____	Operator: ____ Operator: ____	Operator: ____ Operator: ____	Operator: ____ Operator: ____	Operator: ____ Operator: ____

6.[2] Comments:

ATTACHMENT 4
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6.[6] Date: From 3-30-15 to 4-5-15

6.[18] Performed by:

Operator (print)	Signature	Z#	Initials	Date
Thomas Vigil	[signature]	136382	[initials]	3/30/15
Joshua Lopez	[signature]	116598	[initials]	03305

Operator (print)	Signature	Z#	Initials	Date

9.1[2] Reviewed by:

SOM or designee (print)	Signature	Z#	Initials	Date

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 3-30-15 to 4-5-15

	Monday 6.[6] Start Time: 1411	Tuesday 6.[6] Start Time:	Wednesday 6.[6] Start Time:	Thursday 6.[6] Start Time:	Friday 6.[6] Start Time:	Saturday 6.[6] Start Time:	Sunday 6.[6] Start Time:
TA-54-375 Cell 3							
Calibrated Infrared Thermometer (4.2.1[1][B])	Brand: Fluke Model: 574 Cal. Due Date: 6/12/13 File Number 10/9/6	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	Brand: Model: Cal. Due Date: File Number	Brand: Model: Cal. Due Date: File Number
Ambient Temperature (6.[7])	66.3 °F	°F	°F	°F	°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	67.1						
69645	67.5						
94068	67.7						
93605	67.8						
69548	67.5						
69604	67.2						
LASB50529	67.3						
LASB50418	67.4						
69036	68.4						
LASB50451	67.4						
69559	67.4						
LASB50448	67.2						
87823	67.8						
87825	66.6						
87826	66.9						
87827	67.0						

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6.[6] Date: From 3-30-15 to 4-5-15

Container ID #	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	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 3 (continued)							
Ambient Temperature (6.[13])	66.7 °F	____ °F	____ °F	____ °F	____ °F	____ °F	____ °F
End Time (6.[14])	1418						
6.[14]	Operator: [signature] Operator:	Operator: ____ Operator: ____	Operator: ____ Operator: ____	Operator: ____ Operator: ____	Operator: ____ Operator: ____	Operator: ____ Operator: ____	Operator: ____ Operator: ____

6.[2] Comments:

ATTACHMENT 5
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6.[18] Performed by:

Operator (print)	Signature	Z#	Initials	Date
Ivonne Ybarra	[signature]	273582	[initials]	3/30/15
Joshua Lopez	[signature]	416588	[initials]	033015

Operator (print)	Signature	Z#	Initials	Date

9.1[2] Reviewed by:

SOM or designee (print)	Signature	Z#	Initials	Date

ATTACHMENT 6
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TA-54 AREA G NITRATE SALT TRU WASTE CONTAINER HOURLY TEMPERATURE DATA SHEET

6.[6] Date: From 3·30·15 to 3·30·15 Location: Dome 375

	Start Time: 6.[6] 0641	Start Time: 6.[6] 0728	Start Time: 6.[6] 0928	Start Time: 6.[6] 0926	Start Time: 6.[6] 1025	Start Time: 6.[6] 1123	Start Time: 6.[6] 1220	Start Time: 6.[6] 1324	Start Time: 6.[6] 1426	Start Time: 6.[6] 1527	Start Time: 6.[6] 1624	Start Time: 6.[6] 1722	Start Time: 6.[6]	Start Time: 6.[6]
Calibrated Infrared Thermometer (4.2.1[1][B])	Brand: Model: N/A Cal. Due Date: File Number	Brand: Model: N/A Cal. Due Date: File Number	Brand: Model: N/A Cal. Due Date: File Number	Brand: Model: N/A Cal. Due Date: File Number	Brand: Model: N/A Cal. Due Date: File Number	Brand: Model: N/A Cal. Due Date: File Number	Brand: Model: N/A Cal. Due Date: File Number	Brand: Model: N/A Cal. Due Date: File Number	Brand: Model: N/A Cal. Due Date: File Number	Brand: Model: N/A Cal. Due Date: File Number	Brand: Model: N/A Cal. Due Date: File Number	Brand: Model: N/A Cal. Due Date: File Number	Brand: Model: Cal. Due Date: File Number	Brand: Model: Cal. Due Date: File Number
Ambient Temperature (6.[7])	53.0 °F	52.64 °F	53.06 °F	54.9 °F	57.91 °F	60.83 °F	64.21 °F	68.02 °F	66.08 °F	65.31 °F	65.16 °F	64.04 °F	°F	°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 T1	53.09	52.78	53.32	55.25	57.99	60.62	63.85	67.66	66.02	65.11	64.86	63.85		
68685 T2	52.71	52.45	53.01	54.90	57.52	59.95	62.91	66.43	64.86	64.12	63.99	62.98		
50522 T4	54.31	54.04	54.29	55.6	57.66	59.56	61.79	64.67	64.19	63.55	63.44	62.76		
50522 T5	54.14	53.84	54.18	55.68	57.75	59.70	62.11	64.97	64.03	63.37	63.3	62.56		

N/A

N/A

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INITIAL EC DATE 3·30·15

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6.[6] Date: From 3.30.15 to 3.30.15 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])
						N/A								N/A	
Ambient Temperature (6.[13])	52.95 °F	52.64	53.09	54.9 °F	57.99	60.83	64.38	68.01	66.08	65.31	65.16	64.08		°F	°F
End Time (6.[14])	0642	0729	0829	0927	1026	1126	1221	1325	1427	1527	1625	1723			
6.[14]	Operator: JR	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:	Operator:	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 3.30.15 to 3.30.15 Location: Dome 375

6.[2] Comments: Did not enter Permacon due to Standing Order 1247 R.2 all temps were taken at Dome 375 (Data Logger Computer)

N/A

6.[18] Performed by:

Operator (print)	Signature	Z#	Initials	Date
Jackie Romero	Jackie Romero	187066	JR	3-30-15
Tina Aguirre	Tina Aguirre	612992	TA	3-30-15
Gary Mally	Gary Mally	122657	GM	3-30-15

N/A

Operator (print)	Signature	Z#	Initials	Date

N/A

9.1[2] Reviewed by:

SOM or designee (print)	Signature	Z#	Initials	Date
Robert Harden		122492	RWH	3-30-15

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

6.[6] Date: From 3-30-15 to 3-31-15 Location: 375

	Start Time: 6.[6] 1830	Start Time: 6.[6] 1929	Start Time: 6.[6] 2030	Start Time: 6.[6] 2128	Start Time: 6.[6] 2230	Start Time: 6.[6] 2327	Start Time: 6.[6] 0027	Start Time: 6.[6] 0130	Start Time: 6.[6] 0229	Start Time: 6.[6] 0327	Start Time: 6.[6] 0429	Start Time: 6.[6] 0524	Start Time: 6.[6]	Start Time: 6.[6]
Calibrated Infrared Thermometer (4.2.1[1][B])	Brand: Model: N/A Cal. Due Date: File Number	Brand: Model: NA Cal. Due Date: File Number	Brand: Model: NA Cal. Due Date: File Number	Brand: Model: NA Cal. Due Date: File Number	Brand: Model: NA Cal. Due Date: File Number	Brand: Model: N/A Cal. Due Date: File Number	Brand: Model: NA Cal. Due Date: File Number	Brand: Model: NA Cal. Due Date: File Number	Brand: Model: NA Cal. Due Date: File Number	Brand: Model: NA Cal. Due Date: File Number	Brand: Model: NA Cal. Due Date: File Number	Brand: Model: NA Cal. Due Date: File Number	Brand: Model: Cal. Due Date: File Number	Brand: Model: Cal. Due Date: File Number
Ambient Temperature (6.[7])	62.68 °F	61.26 °F	59.87 °F	58.94 °F	57.57 °F	56.47 °F	55.43 °F	54.39 °F	53.50 °F	52.94 °F	52.22 °F	53.20 ~~53.20~~ °F	°F N/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.[8]/6.[9])
68685 T1	62.52	60.88	59.41	58.48	57.26	56.24	55.26	54.40	53.55	53.04	52.40	53.58		
69685 T2	61.72	60.28	58.87	57.96	56.77	55.73	54.77	53.95	53.18	52.68	51.95	53.36		
50522 T4	61.78	60.60	59.42	58.64	57.71	56.92	56.14	55.42	54.73	54.26	53.71	54.35		
50522 T5	61.52	60.39	59.18	58.43	57.48	56.68	55.94	55.25	54.57	54.14	53.52	54.35		
						N/A								

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6.[6] Date: From 3-30-15 to 3-31-15 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])	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])
						n/a								NA	
Ambient Temperature (6.[13])	62.60 °F	61.26 °F	59.87 °F	58.90 °F	57.57 °F	56.47 °F	55.43 °F	54.39 °F	53.48 °F	52.96 °F	52.22 °F	53.20 °F	____ °F	____ °F
End Time (6.[14])	1831	1929	2030	2129	2231	2327	0028	0131	0230	0328	0429	0524		
6.[14]	Operator: WJC / Operator: JH	Operator: WJC / Operator: JH	Operator: JH / Operator: WJC	Operator: JH / Operator: WJC	Operator: WJC / Operator: JH	Operator: WJC / Operator: JH	Operator: JH / Operator: WJC	Operator: JH / Operator: WJC	Operator: WJC / Operator: JH	Operator: WJC / Operator: JH	Operator: JH / Operator: WJC	Operator: WJC / Operator: JH	Operator: ____ / Operator: ____	Operator: ____ / Operator: ____

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6.[6] Date: From 3-30-15 to 3-31-15 Location: 375

6.[2] Comments:

6.[18] Performed by:

Operator (print)	Signature	Z#	Initials	Date
John Quintana		1190571	JQ	3-30-15
Willie J. Cook		1190507	WJC	3-30-15
	N/A			

Operator (print)	Signature	Z#	Initials	Date
	N/A			

9.1[2] Reviewed by:

SOM or designee (print)	Signature	Z#	Initials	Date
Gary Mally		226750		3-31-15