From: Haagenstad, Mark P
Sent: Tuesday, February 17, 2015 4:46 PM
To: kathryn.roberts@state.nm.us; John Kieling; Timothy.Hall@state.nm.us; siona.briley@state.nm.us
Cc: Brandt, Michael Thomas; Sharp-Geiger, Raeanna Racine; Dorries, Alison Marie; Grieggs, Tony; Erickson, Randy; Vigil-Holterman, Luciana R; Schumann, Paul B; Christensen, Davis V; Torres, Enrique; Pete Maggiore; Nickless, David J; Turner, Gene E
Subject: FW: Clarification of use for Solution Packages 36, 37, 57, 72, and 78
Attachments: SP #57 Cement Cans.pdf

Dear Mrs. Roberts, Mr. Kieling, and Mr. Hall:

This email is provided in response to a request from the New Mexico Environment Department-Hazardous Waste Bureau (NMED) during the LANL-NMED technical phone calls held on January 20 and February 10, 2015. Tim Hall (NMED) requested copies of the Solution Packages to which nitrate salt parent containers were assigned in Attachment 3 of the *LANL Nitrate Salt-Bearing Waste Container Isolation Plan, Revision 2*, submitted to the NMED-HWB on September 19, 2014.) That document (Attachment 3) explained how the original nitrate salt-bearing waste containers were identified, and lists the solution packages to which the containers were assigned at that time, namely Solution Packages 72, 36, 37, 57 and 78. A copy of Solution Package 72 has been provided to the NMED-HWB. Mr. Hall requested copies of Solution Packages 36, 37, 57 and 78.

Below is a summary of the solution packages in question, and a brief description of how they were applied to the waste containers and their current status.

Original No. of Parent Containers in Summary Document	Solution Package in Summary Evaluation Document	Solution Package Description	No. Containers Addressed by Solution Package	Current Solution Package/Status
194	72	SP Salt Waste - This Solution Package represents 55 gallon drums that were believed to be in good condition. The waste matrix is unconsolidated (non-cemented) Nitrate Salts in bags placed in the drum.	193	3 containers remain unremediated and remain at LANL.
44	57	SP AG Cement Cans No Issues - This Solution Package represents 55 gallon drums that are in good enough condition. The waste matrix is considered to be cemented waste in cans.	38	6 of the 44 containers did not require remediation and were shipped off-site without prior remediation.

LA-UR-15-21139

Original No. of Parent Containers in Summary Document	Solution Package in Summary Evaluation Document	Solution Package Description	No. Containers Addressed by Solution Package	Current Solution Package/Status
8	36	SP CIN01 Container Issues (Cans) - This Solution Package represents 55 gallon drums that have been overpacked into 85 gallon drums. The waste matrix is considered to be cemented waste in cans.	0	Solution package not yet developed. All 8 containers remain unremediated and remain at LANL.
18	37	SP Unvented CIN Cans - This Solution Package represents 55 gallon drums that have been overpacked into 85 gallon drums. The 55 gallon drum inside is not adequately vented and will require a venting step prior to processing. The waste matrix is considered to be cemented waste in cans.	0	Solution package not yet developed. All 18 containers remain unremediated and remain at LANL.
1	78	AG 110-GAL Unvented - This Solution Package represents 55 gallon drums that have been overpacked into 85 gallon drums, and then overpacked into 110 gallon drums. The inner drum(s) may not be adequately vented, and will require a venting step prior to processing. The waste matrix is from various waste streams.	0	Solution package not yet developed. One container (S825664) was remediated under Solution Package #72, but remains at LANL in Dome 375.

A copy of Solution Package 57 is attached to this submittal. Please contact me at (505) 665-2014 if you have further questions additional information would be helpful.

Mark Haagenstad
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Solution Package Scope Definition

SP # 57, CIN01 Cement Cans (AG Debris) Rev.1

Developed By:	Julie Gallegos	11/5/12 Date
CCP Review:	Craig Simmons	11/14/12 Date
Approved By:		
Tech Solutions	Davis Christensen	11/5/2012 Date
Disposition Project Owner	Dave Frederici	11.06.2012 Date
ESH&Q	Garry Schramm	11-7-12 Date
Shipping and Safe Storage	Scotty Miller	11/6/12 Date
FOD	Steven Henry	11/7/12 Date
Projects / Services	Mark Shepard	11/8/2012 Date
WDP Program	Steve Clemmons	11/16/12 Date

Inventory Description

Solution package (SP) # 57 currently consists of eight hundred and seventy-one (871) 55- and 85-gallon waste containers in two (2) approved waste streams, including homogenous solids (cans and monoliths) and heterogeneous debris. All but four (4) 85-gallon containers are part of the Governor's Goal (GG) and all are legacy. Revision 0 of this report included 1142 containers; all have been pre-screened at RTR or HE-RTR. As of October 21, 2012, twenty-four (24) containers have been remediated, four (4) were transferred from SP 1 and two hundred and ninety-seven (297) containers have been dispositioned to WIPP. Four hundred and forty-one (441) containers have passed RTR or HE-RTR and are continuing through the certification process. This revision 1 report addresses the four hundred and thirty (430) containers that require remediation for prohibited items prior to certification, but focuses on the containers proposed to go to WCRRF. The current population and status of containers in SP 57 is summarized in the table below.

Waste Group Legacy/NG	GG Status	Ctr. Type	Waste Stream	Count	GG Vol (m^3)	GG MAR PE-Ci
AG Cement Cans Legacy				871	175.8	7159.3
	Remediation Planned			**426**	**88.5**	**4023.9**
		55-GAL		406	84.4	3851.5
			LA-CIN01.001-Cans	331	68.8	2721.7
			LA-CIN01.001-Monoliths	4	0.8	85.9
			LA-MHD01.001	71	14.8	1043.8
		85-GAL		19	4.0	159.2
			LA-CIN01.001-Cans	18	3.7	104.1
			LA-CIN01.001-Monoliths	1	0.2	55.1
		POC	LA-CIN01.001-Cans	1	0.1	13.3
	Non-GG Remediation Planned			**4**	**0.0**	**0.0**
		85-GAL	LA-CIN01.001-Cans	4	0.0	0.0
	In Characterization			**130**	**23.6**	**1425.8**
		55-GAL		116	22.2	1171.6
			LA-CIN01.001-Cans	86	16.0	798.8
			LA-CIN01.001-Monoliths	1	0.2	9.5
			LA-MHD01.001	29	6.0	363.4
		POC	LA-CIN01.001-Cans	14	1.4	254.2
	Characterization Complete			**296**	**60.5**	**1580.9**
		55-GAL		289	59.9	1503.1
			LA-CIN01.001-Cans	284	58.8	1420.4
			LA-CIN01.001-Monoliths	1	0.2	9.2
			LA-MHD01.001	4	0.8	73.5
		POC	LA-CIN01.001-Cans	7	0.7	77.8
	Approved In WDS			**15**	**3.1**	**128.7**
		55-GAL		15	3.1	128.7
			LA-CIN01.001-Cans	13	2.7	73.0
			LA-CIN01.001-Monoliths	2	0.4	55.7
Grand Total				**871**	**175.8**	**7159.3**

AK Waste Stream

Waste Stream LA-CIN01.001 (Homogeneous Cemented)
TRUPACT-II Content Code (TRUCON): LA214*, LA226*
Layers of Confinement: Maximum of two layers
Waste Stream Description:

Waste stream LA-CIN01.001 consists of solidified homogeneous solid waste (cemented TRU waste) generated TA-55 R&D/fabrication and associated recovery, facility and equipment maintenance, D&D, waste repackaging, and below-grade retrieval operations. The waste includes cemented materials such as aqueous and organic liquids from the six operational areas (e.g. nitrate operations), ash, calcium chloride salts, chloride solutions, evaporator bottoms, filter aid, filter cakes, plutonium/uranium filings and fines, glovebox sweepings, graphite powder, HEPA filter media, leached ash residues, leached particulate solids (e.g., ash, sand, slag, and crucible parts), oxides(e.g., americium, metal, and uranium), miscellaneous oils (e.g., pump oil), silica solids, solvents, spent ion exchange resins, trioctyl phosphineoxide and iodine in kerosene, and uranium solutions. The waste packaged prior to 1981, was placed into plastic bags and mixed with Portland cement powder and water by hand-kneading. After cementation the bags were placed in one-gallon containers and loaded into 55-gallon drums (Reference AK6-U005). Prior to mid-1988, waste was mixed with cement in one-gallon cans and packaged in a certified 55-gallon drum with a 1/16-inch thick lead liner, a 5-mil plastic liner bag, and a 12-mil plastic liner bag. The typical arrangement of cans in the drum was five layers with each layer containing seven cans for a total of 35 cans. However, a 55-gallon drum could contain any number up to 40 one-gallon cans. Cans with americium oxide were placed in the center of the drum. After mid-1988, waste was mixed with cement in a 90-mil/125-mil rigid polyethylene liner and packaged in a 55-gallon drum with two 12-mil plastic liner bags and a 1/16-inch thick lead liner. When the drum was full the bags were closed using the twist and tape method or the twist, tie, and tape method.

Based on the review of container documentation and documented waste management practices prohibited items are known to be present in the waste stream. Procedures allowed containers greater than four liters, sealed with tape, to be used for waste packaging until WIPP certification procedures were implemented. In addition, the potential for prohibited quantities of liquid due to dewatering is anticipated. Furthermore, the results of available headspace gas sampling and analysis of 50 drums in this waste stream indicated that FVOCs are not present in significant amounts. The total FVOCs measured for each of the drums is well below 500 ppm. Based on the final waste form and sample data, containers in waste stream LA-CIN01.001 are not expected to exceed a total FVOC concentration of greater than or equal to 500 ppm. The two predominant isotopes by mass for waste stream LA-CIN01.001 are Pu-239 and U-238, and over 95 percent of the total activity is from Am-241, Pu-238, Pu-239, and Pu-241.

Waste Stream LA-MHD01.001 (Heterogeneous Debris Waste)
TRUPACT-II Content Code (TRUCON): LA225*, LA154**
Layers of Confinement: Maximum of six layers***
Waste Stream Description:

Waste stream LA-MHD01.001 consists of mixed heterogeneous debris waste generated during TA-55 R&D/fabrication and associated recovery, facility and equipment maintenance, decontamination and decommissioning (D&D), waste repackaging, and below-grade retrieval operations. The debris waste includes paper, rags, plastic, rubber, wood-based high-efficiency particulate air (HEPA) filters, other plastic-based and cellulose-based items, noncombustible items such as metal and glass, and lesser quantities of homogeneous solids (less than 50 percent by volume) contaminated with

nuclear materials such as americium oxide. Plastic-based waste includes (but may not be limited to): bottles, dry-box gloves (unleaded neoprene base), gloves including leaded gloves, rigid liner lids, Plexiglas, polyethylene and vinyl, polystyrene, polyvinyl chloride plastic, sheeting, tags and labels, tape, Teflon products, ties, Tygon tubing, and vials Cellulose-based waste includes (but may not be limited to): booties, cardboard, cotton gloves, coveralls, laboratory coats, paper, rags and wipes (Kimwipes), tags and labels, wood/plywood, and similar materials Noncombustible debris waste includes (but may not be limited to): bottles, cans, composite HEPA filters, crucibles, equipment, fluorescent bulbs, glass, gloveboxes, glovebox windows, graphite, metal pipes, miscellaneous labware, motors, pumps, slag, small tools, ventilation ductwork, and wire tires. Homogeneous solid waste includes: hydroxide cake/filter materials, salts, and ash residues. Hydroxide cake/filter materials are composed of precipitated materials such as americium cadmium, calcium, chromium, iron, lead, magnesium, mercury, neptunium, plutonium potassium, silver, sodium hydroxide, thorium, and uranium. Salt waste can include varying mixtures of calcium chloride, cesium chloride, lithium chloride, magnesium chloride, potassium chloride, sodium chloride, zinc chloride, residual entrained calcium and zinc metal, and various plutonium and americium compounds. Ash residues originate from the thermal reduction of organic-based waste products that were contaminated with plutonium (e.g., plastics, rubber, wood, cellulosics, and oils) and may include incomplete combustion products such as small pieces of plastic and metal debris items. The waste stream also includes a small fraction of absorbent materials which may include Ascarite, diatomaceous earth, vermiculite, Waste Lock 770, or zeolite with trace contamination (less than one weight percent [wt. %]) of absorbed materials such as waste oils and organics. Any payload container consisting of more than 50 percent by volume of homogeneous solids will be excluded from this waste stream.

Prohibited items are known to be present in the waste stream. Procedures allowed containers greater than four liters, sealed with tape, to be used for waste packaging until LANL WIPP-approved procedures were implemented. The presence of containerized (e.g., butane lighter, lighter fluid can, unpunctured aerosol cans, vials) and uncontainerized liquids have also been observed. Lead shielding is often used to increase handling safety, and thick shielding can obscure RTR observations.

Additionally, based on interviews with site personnel performing VE and prohibited item disposition repackaging, internal cans (both shielded and unshielded) have been measured for dose rate during repackaging and found to contain waste with radiation levels exceeding 200 millirem per hour (mRem/hr). Waste packages containing prohibited items identified during characterization activities will be segregated then dispositioned appropriately and/or repackaged to remove the items prior to certification and shipment.

Disposition Strategy

This report addresses the two hundred and seventy-nine (279) containers proposed to be remediated at WCRR Facility. This population is based on a thorough review of the HE-RTR or RTR pre-screen results, type of remediation and prohibited item, generator data (Radioactive Solid Waste Disposal Record), waste matrix and weights of containers and individual items. The waste matrix included chloride melts, leached solids, salts, nitrate salts, crucibles, graphite, bulk fusion, hydroxide precipitate (OH/PPT) and Cement, and PU Cement, etc. The individual item weights ranged from approximately five (5) pounds (lbs) to over three-hundred (300) lbs. The table below summarizes the number of containers tentatively assigned to each facility. The containers selected for remediation in 54-412 (B412) were based on container gross weight over six-hundred and twenty-four (624) lbs and individual item weights greater than fifty (50) lbs. The resulting one hundred and fifty-one (151) containers are proposed to be remediated in B412 and will be addressed in revision 2 of this report.

Remediation Facility	Container Type	Remediation Type	Count
WCRRF			**279**
	55-GAL		273
		LIQ	9
		LIQ/NITRATE	31
		NITRATE	2
		PE-CI SPLIT	4
		SC>4L	197
		SC>4L/LIQ	6
		SC>4L-30MIN	24
	85-GAL		5
		Repack	2
		SC>4L	3
	POC		1
		LIQ	1
B412			**151**
	55-GAL		133
		LIQ	116
		MATERIAL SPLIT	3
		PECI SPLIT	4
		SC>4L	10
	85-GAL		18
		LIQ	1
		Repack	16
		SC>4L	1
			430

Container Description

PE-Ci, FGE, Weight and Dose (average and max)

The container data in the table below is applicable to the two hundred and seventy-nine (279) containers proposed to be remediated at the WCRR Facility. Based on WCRR's facility limitations, the PE-Ci content , generator FGE, weight and dose values of these containers meet the WCRRF acceptance criteria.

Waste Stream/ Container Type	Count	Max PECi	Max Gen. FGE	Avg GROSS WT	Max GROSS WT	Avg DOSE	Max DOSE
LA-CIN01.001-Cans							
55-GAL	203	36.10	192.90	219.32	532.29	7.16	100.00
85-GAL	5	17.13	189.22	157.82	264.54	5.40	9.00
POC	1	13.28	26.60	350.80	350.80	3.50	3.50
LA-MHD01.001							
55-GAL	70	34.40	197.70	166.88	289.52	9.30	45.00
	279	**36.10**	**197.70**	**205.53**	**532.29**	**7.65**	**100.00**

* Dose rate on contact (mRem/hr)

Material Type

The most common material type (MT) present in LANL TRU waste are weapons-grade plutonium (MT-51 and -52): fuel grade (MT-53 and -54); reactor-grade plutonium (MT-55 and MT-57); enriched Pu-242 (MT-42); heat-source plutonium (MT-83), depleted uranium U-234(MT-12), and Am-241 (MT-44). The LANL-Carlsbad Office reported that packages with mixed material types will need to be split, with the exception of MT5X combinations in order to get an acceptable assay on NDA. MT5X indicates mixtures of MT that range from 51 to 57, e.g., 51, 52 and 54. Per clarification from Sean Stanfield (Canberra Industries), the only material type splits required are any combinations of MT 42, 83, or 5X. Packages with any of these MT alone or in combination with other MT do not have to be remediated. The following table lists twenty-three drums with specific material type combinations, which may need to be split to eliminate unallowable MT combinations as well as remediated for prohibited items at the WCRR Facility.

PKG_ID	Material Type	Remediation Facility	Remediation Type
S793739	52; 83	WCRRF	SC>4L
S802612	52; 54; 83	WCRR	SC>4L
S802970	52; 54; 83	WCRRF	SC>4L
S813549	52; 83	WCRRF	SC>4L
S813562	42; 52	WCRRF	LIQ/NITRATE
S814899	42; 52	WCRRF	SC>4L/NITRATE
S816342	42; 52	WCRRF	LIQ/NITRATE
S816394	42; 52	WCRRF	LIQ/NITRATE
S816468	52; 83	WCRRF	SC>4L-30MIN
S816697	42; 52	WCRRF	SC>4L
S816809	52; 83	WCRRF	SC>4L
S816828	42; 52	WCRRF	LIQ/NITRATE
S817522	52; 83	WCRRF	SC>4L
S822571	36; 52; 83	WCRRF	SC>4L
S822683	52; 54; 83	WCRRF	SC>4L
S822743-NGG	52; 83	WCRRF	REPACK
S824461	52; 56; 83	WCRRF	SC>4L
S824688	52; 53; 54; 83	WCRRF	SC>4L
S832480	52; 54; 56; 83	WCRRF	SC>4L
S832554	38; 52; 53; 56; 83	WCRRF	SC>4L
S833923	52; 56; 83	WCRRF	SC>4L
S835372	42; 52; 53	WCRRF	LIQ/NITRATE
S844284	38; 52; 54; 83	WCRRF	SC>4L

Disposition Path

The following table provides a summary of the two hundred and seventy-nine (279) containers proposed to be remediated at the WCRR Facility, subdivided by type of container and prohibited item. The prohibited item categories were discussed with operations and determined to be remediated in a series of priority order campaigns to achieve remediation efficiency.

Count	Container Type	Prohibited Item	Path
16	15 55-GAL 1 POC	9 Liquids 6 SC>4L/Liquid 1 Liquid	Remediate Campaign A PID at WCRRF
209	205 55-GAL 4 85-GAL	182 SC>4L 23 SC>4L-30MIN 3 SC>4L 1 Repack for container Integrity	Remediate Campaign B PID at WCRRF
4	4 55-GAL	4 PE-CI Split Am-241 activity greater than 3.9Ci	PE-Ci split to be determined (D. Miko) Remediate Campaign C PID at WCRRF along with gamma spec
23	22 55-Gal 1 85-Gal	MT Combo Split (42;83;5X) 15 SC>4L 1 SC>4L-30MIN 1 Repack 5 Liquid/Nitrate Salts 1 Nitrate Salts/SC>4L	NDA Pre-Screen Remediate Campaign D PID at WCRRF
27	27 55-GAL	26 Liquid/Nitrate Salts 1 Nitrate Salts/SC>4L	Remediate Campaign E PID at WCRRF Remediate unconsolidated nitrate salt according to established recipe SP72
279			

Since this SP is scheduled for remediation during the winter months, there are sixteen (16) containers that failed for liquids that are proposed to be remediated as first priority, before the onset of freezing temperatures. This will facilitate the observation of free liquids and mitigate the necessity for heating the drums. If free liquids are found in non-cemented material, the liquids and homogeneous materials must be remediated as nitrate salt in accordance with the recipe discussed below. The largest group of two hundred and eight (208) containers were identified with sealed containers greater than 4 liters (>4L), including paint cans, 5 gallon buckets, and 20- and 30-gallon metal containers. One (1) 85-gallon drum has an inner, 55-gallon drum that requires re-packaging for container integrity. There may be others in this category that may be identified in the future. There are four (4) 55-gallon drums that require splitting because the americium-241 content is too high. The nature of each split (number of daughter drums required to lower the inventory) is to be determined.

There are also twenty-three (23) containers, which may also need to be split for material type combinations of MT 42, 83, or 5X, as well as an identified PID. Thirteen (13) containers with similar material type combinations, within SP 57, have been fully characterized and shipped to WIPP without the need of remediation. In some cases the fraction of mixed material types is so small that these containers pass through NDA without requiring remediation. To ensure that a container is remediated properly the first time and to follow ALARA practices, it is proposed to perform the MT split

during PID remediation. The MT split may be facilitated by review of generator information, such as an ID reference to MT markings on individual containers, but this may not be reliable after so many years of container storage. An alternative method may be to employ a hand-held detector in the glovebox.

Twenty-seven (27) containers were identified through the RSWD forms to contain unconsolidated nitrate salts. These were confirmed during pre-screen at HE-RTR and must be remediated in accordance with the procedure established for nitrate salts in SP 72 (recipe for mixing homogeneous material with kitty litter/zeolite according to recipe). These containers must also be labeled with EPA hazardous waste codes D007, D008, and D009. Cemented matrices do not require the nitrate salt recipe as EPA code D001 is not applicable.

Proposed Remediation at B412

The table below summarizes the one hundred and fifty-one (151) containers tentatively identified to be remediated at B412. This will be considered sort, segregate and size reduce (SSSR) activity. There are four (4) 85-gallon containers with certified BDRs, but in uncertified shipping containers. CCP may allow for these containers to be over-packed in an SWB thus meeting the certified shipping container requirement. One hundred and forty-seven (147) containers were identified through HE-RTR or RTR pre-screen results, type of remediation and prohibited item, generator data (Radioactive Solid Waste Disposal Record), waste matrix and weights of containers and individual items. To ensure there aren't additional WCRRF candidates, the available HE-RTR or RTR video record for each container will be reviewed by engineering and SME personnel.

B412-SSSR			
Count	Container Type	PID/Issue	Path
4	85-gallon	3 good BDR's w/ container integrity	Overpack in SWB(s) for shipment to WIPP
147	133 55-gallon 14 85-gallon	116-Liquid 3 Material Split (2 CIN01.001-Monoliths) 4 PE-Ci Split 10 SC>4L 1 Liquid 9 Repack 1 SC>4L	Review RTR/HE-RTR video Engineering and SME Determine remediation Facility Revise list of containers for B412 in Rev. 2, as appropriate
151			

Containers Considered Characterization Complete

The table below describes the multiple issues affecting the two-hundred and ninety-six (296) containers in *Characterization Complete* from shipping to WIPP. One-hundred and twenty (120) containers have run on FGA, but failed for layers of confinement and are currently under CCP review. Eighty-four (84) containers have additionally failed FGA, but are planned for re-run FGA and are anticipated to pass this time. The other containers have issues as described.

Characterization Complete			
Count	Container Type	Issue	Path
120	55-gallon	FGA Reject Layers of Confinement	CCP Review-TBD New TRUCON Code Remediate as appropriate
84	55-gallon	Re-run FGA	Schedule re-sample
5	55-gallon	CCP: AK Evaluation- Waste appears to be greater than 50 percent heterogeneous;	Re-assign waste stream Re-start certification process
1	55-gallon	CCP: NDA rerun	Provide list to TRU Storage Personnel/CCP
1	55-gallon	CCP: Review Am-241 activity is greater than 40 Ci as specified in CCP-SO-LANL-54 Rev. 3.	CCP Review
2	55-gallon	LANL: provide additional rad surveys	Request RCTs to perform additional Rad Surveys
47	55-gallon	Pending FGA	Provide list to TRU Storage Personnel/CCP
7	POC	TRUCON Code Required	CCP-to be determined
1	55-gallon	85- gallon Repack(3 good BDR's w/ container integrity issues)	Add to Build list Overpack in a SWB(s) with the TCO Submit TWSR change form to update 55-85
28	55-gallon	Pending WDS Approval S816461 & S816813-selected for coring	CCP Review Ship two (2) drums to INL
296			

Containers In Characterization

The table below describes the multiple issues affecting the one-hundred and thirty (130) containers considered to be *In Characterization* from continuing through the certification process. Sixty-one (61) have largely failed for greater than 50 percent heterogeneous material or other waste stream issues and will need to restart the certification process after AK is reassigned. The other containers have issues as described.

In Characterization			
Count	Container Type	PID/Issue	Path
61	47 55-gallon 14 POC	CCP: AK Evaluation 43 55-gal & 10 POC greater than 50 percent heterogeneous 2 55-gal Fiberboard liners are not described in waste packaging description LA CIN 01. 1 55-gal Waste appears to be packaged with in a lead lined container, which is not an allowable packaging configuration as stated in the AK Summary Report; MHD01 4 Pipe over-pack (POC) configuration is not an allowable packaging configuration for this waste stream LA CIN01. 1 55-gal Open 30-gal. drum; the waste does not match the waste stream LA CIN01	Re-assign Waste Stream Re-start certification process

1	55 gallon	Classified as MLLW ("Suspect LLW")	Hazard Type Determination LANL/CCP
42	55 gallon	Pending NDA	Provide list to TRU Storage Personnel/CCP
26	55 gallon	Pending FGA	Provide list to TRU Storage Personnel/CCP
130			

Pre-Characterization

LFL

Number of 55 gallon Containers to be sampled prior to transfer to WCRRF: 228

Description: The WCRR TSR requires that waste containers be sampled for LFL within the 55-gallon drum and the results satisfy the following acceptance criteria:

Hydrogen ≤ 32,000 ppm VOC ≤ 7,000 ppm

Characterization Equip: GCMS ***Rate:*** 20 drums per day

Processing/Remediation (PID removal, Re/Over-pack, De-water)

There are two hundred and seventy-nine (279) containers to be remediated at WCRR Facility for PIDs. The PIDs include; sealed containers greater than four liters, liquid, repackaging for container integrity, PE-Ci splits, nitrate salts with liquids and sealed containers and MT splits. The containers selected for remediation at WCRRF do not exceed the 624 lbs weight limit of the drum lift and do not contain individual items that exceed fifty (50) lbs. The drums in waste stream LA-CIN01.001 may or may not contain 1/16-inch thick lead liner. In addition more than 50% of the waste stream has more than one radioisotopic material type (MT) packaged in as many as thirty-five (35) 1-gal cans within a drum. The typical arrangement of cemented cans in drums was reportedly up to 5 layers with each layer containing 7 cans for a total of 35 cans. One can with americium oxide was typically placed in the center of a six-can outer ring configuration. The packaging was weight and FGE limiting, therefore the arrangement of cans could range from as little as three up to 35 cans. Per RTR operator interview, drums that were observed to be ninety-five percent (95%) utilized on average had up to 30 1-gallon cans, whereas drums that were observed to be only forty percent (40%) utilized had 10 to 15 1-gallon cans.

Twenty-three (23) drums are to be run for NDA fast-scan on a HENC instrument to determine if MT splits are necessary. If the HENC pre-screen indicates that NDA measurements cannot be performed accurately, MT splits are necessary, and these must be performed with the remediation of liquids or sealed containers. The MT splits are forecasted to be required for any combinations of MT 42, 83, or 5X. MT5X indicates mixtures of MT that range from 51 to 57, e.g., 51, 52 and 54. Routine processing operations require each individual item to be measured for dose on contact and placed into a POC when the dose rate exceeds 190 mRem/hr to meet the WIPP ≤200mRem/hour surface dose criteria for contact-handled waste.

Rate: (4 days/week and 10hr/day) 5 drums/day*70% Plant Efficiency=3.5 drums/day
(7 days/week and 12hr/day) 5 drums/day*70% Plant Efficiency=3.5 drums/day

Daughters Produced: 1 55-gallon and 1 POC per parent
Duration:

Certification Path

RTR

Description: *The 279 parent w*aste containers are estimated to create 558 daughters drums that will be examined through RTR.

Rate: 14 drums/day ***Special Requirements:*** N/A

HENC (1&2)

Description: 558 55- gallon daughter drums and POCs that have passed RTR Certification will be examined through HENC.

Rate: 16 drum/ per day ***Special Requirements:*** N/A

FGA

Description: All 558 55-gallon drums and POCs that have passed HENC Certification will require FGA. Per the AK, the containers in waste stream LA-CIN01.001 are exempt from FGA as the results of available headspace gas sampling and analysis in this waste stream indicated that FVOCs are not present in significant amounts. However, it was recently determined that the LA-CIN01.001 waste stream requires FGA because of high decay heat.

Rate: 20/day ***Special Requirements:*** N/A

Shipping

RANT

Description: 55-gallon drums will be shipped with no special requirements. However, the payload must not exceed 6,000 pounds or dunnage drums will need to be used to make up the payload configuration (14-55-gallon or 2 SWB's not to exceed a cumulative weight of 6k lbs).

Rate: 16 55-gal drums per shipment (FY2012 average) ***High Wattage/Controlled:*** NA

Work Required for Disposition (detailed descriptions of scope)

AK Documentation

Description: All waste containers are currently on an approved AK waste stream.

Procedure Change

Description: ***EP-WCRR-WO-DOP-0233, WCRRF Waste Characterization Glovebox Operations***: Modified to include the material type split process.

EP-WCRR-RM-AO-0208, Special Shapes: Ensure procedure and waste stream are evaluated and approved prior to processing by security team.

RWP Change

Description: No RWP change is required as the maximum dose is 100 mRem/hr, however RP-1 should initiate an ALARA review, along with RWP controls applicable to evolution.

Readiness

Description: No formal readiness assessment or startup approval is required for operations under this solution package, (M. Shepard, pers. Comm. 2012).

Secondary Waste

Description: The two-hundred and seventy-nine parent waste container requiring remediation, will result with the empty 55 gallon parent in an 85 gallon overpack.

Commodities needed for this Solution Package

This commodity list is an estimate of the two-hundred and seventy-nine (279) containers to be remediated at WCRRF. The assumption is that each parent will produce one 55-gallon, one POC, and one 85-gallon drum. The 85-gallon drum is used to over-pack the empty, parent 55-gallon drum and transport back to Area G.

Item *	Number Needed
Filters: NUC-FIL-019DS (1 per 55; 1 per POC; 1 per 85)	837
Bags:	558
55 gallon drums	279
85 gallon drums	279
POC's	279

Schedule Assumptions

- 279 containers will be remediated at WCRRF for prohibited items
- 23 of the 279 containers also require MT splits at WCRRF during PID remediation
- 3.5 drums can be remediated per day based on 12 hr day, 7 day per week work schedule
- No mock-up operations are required for WCRRF
- Each parent drum will generate 2 daughter drums
- 558 daughter drums require RTR, HENC and FGA sampling for certification

Attachments

- Preliminary Schedule
- List of SP 57 containers proposed for WCRRF

LA-UR-15-21139

Code	PKG_ID	Remediation Type	Container Type	Waste Stream	PECi	Generator FGE	GROSS_WT	TOTAL_DOSE
57	91872	LIQ	POC	LA-CIN01.001-Cans	13.3	26.6	350.8	3.5
57	S793683	SC>4L	55-GAL	LA-CIN01.001-Cans	3.6	39.0	173.1	4
57	S793709	SC>4L-30MIN	55-GAL	LA-CIN01.001-Cans	8.9	98.1	163.8	1
57	S793712	SC>4L	55-GAL	LA-CIN01.001-Cans	1.5	17.0	192.5	0
57	S793739	SC>4L	55-GAL	LA-CIN01.001-Cans	12.1	92.3	192.7	2
57	S793762	SC>4L	55-GAL	LA-MHD01.001	1.7	18.8	129.2	1
57	S793772	SC>4L	55-GAL	LA-MHD01.001	3.2	35.8	159.2	2
57	S793779	SC>4L	55-GAL	LA-CIN01.001-Cans	0.6	4.5	119.3	4
57	S802524	SC>4L	55-GAL	LA-CIN01.001-Cans	2.8	30.1	156.8	21
57	S802612	SC>4L	55-GAL	LA-CIN01.001-Cans	5.9	27.3	100.1	4
57	S802641	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	1.4	10.3	378.4	2
57	S802678	SC>4L	55-GAL	LA-CIN01.001-Cans	5.3	37.3	253.6	8
57	S802732	SC>4L	55-GAL	LA-MHD01.001	18.2	181.1	161.0	8
57	S802743	SC>4L/LIQ	55-GAL	LA-MHD01.001	2.3	24.3	214.8	2
57	S802756	SC>4L	55-GAL	LA-MHD01.001	6.3	66.5	142.2	9
57	S802767	SC>4L	55-GAL	LA-CIN01.001-Cans	13.8	160.3	191.6	6
57	S802789	SC>4L	55-GAL	LA-CIN01.001-Cans	18.1	164.1	250.0	6
57	S802808	SC>4L	55-GAL	LA-CIN01.001-Cans	11.3	125.2	181.5	1
57	S802832	SC>4L	55-GAL	LA-CIN01.001-Cans	11.8	110.1	169.8	13
57	S802834	PECI SPLIT	55-GAL	LA-MHD01.001	28.6	168.6	77.0	22
57	S802928	SC>4L	55-GAL	LA-CIN01.001-Cans	10.1	108.3	226.2	5
57	S802940	SC>4L	55-GAL	LA-CIN01.001-Cans	8.8	95.4	212.8	3
57	S802952	SC>4L	55-GAL	LA-CIN01.001-Cans	14.9	164.7	114.0	5
57	S802959	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	0.7	6.8	267.7	3
57	S802970	SC>4L	55-GAL	LA-CIN01.001-Cans	16.4	174.5	171.8	4
57	S802976	SC>4L	55-GAL	LA-CIN01.001-Cans	18.0	191.4	111.6	11
57	S803036	SC>4L	55-GAL	LA-CIN01.001-Cans	13.1	144.0	196.0	3
57	S803048	SC>4L	55-GAL	LA-MHD01.001	17.3	150.4	177.3	7
57	S803055	LIQ	55-GAL	LA-MHD01.001	5.7	63.1	137.2	3
57	S803074	SC>4L	55-GAL	LA-CIN01.001-Cans	11.7	104.3	130.3	10
57	S803592	SC>4L	55-GAL	LA-CIN01.001-Cans	3.6	24.9	114.9	4
57	S803606	SC>4L	55-GAL	LA-CIN01.001-Cans	3.6	39.9	221.8	2
57	S805034	SC>4L	55-GAL	LA-CIN01.001-Cans	11.8	117.7	203.3	8
57	S811613	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	0.4	4.5	363.8	0
57	S811630	SC>4L	55-GAL	LA-MHD01.001	4.8	51.7	164.9	30
57	S811734	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	0.6	6.6	379.9	7
57	S811781	SC>4L	55-GAL	LA-CIN01.001-Cans	6.8	118.1	142.4	22

57	S811799	SC>4L	55-GAL	LA-CIN01.001-Cans	17.6	186.5	212.1	3
57	S811812	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	2.5	28.2	424.0	1
57	S811834	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	0.6	6.6	428.0	1
57	S811871	SC>4L	55-GAL	LA-CIN01.001-Cans	16.0	177.0	110.7	10
57	S811872	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	0.6	6.3	387.0	3
57	S813212	SC>4L	55-GAL	LA-CIN01.001-Cans	16.5	182.6	133.4	1
57	S813221	SC>4L	55-GAL	LA-CIN01.001-Cans	16.2	178.9	127.0	4
57	S813223	LIQ	55-GAL	LA-CIN01.001-Cans	2.3	24.9	489.1	1
57	S813287	SC>4L-30MIN	55-GAL	LA-MHD01.001	17.6	193.9	218.5	1
57	S813371	SC>4L	55-GAL	LA-CIN01.001-Cans	17.4	178.6	163.6	13
57	S813416	SC>4L	55-GAL	LA-CIN01.001-Cans	6.9	76.3	135.6	4
57	S813420	SC>4L-30MIN	55-GAL	LA-CIN01.001-Cans	10.9	120.5	104.1	5
57	S813446	SC>4L	55-GAL	LA-CIN01.001-Cans	13.0	145.4	182.4	7
57	S813458	SC>4L	55-GAL	LA-CIN01.001-Cans	17.0	172.6	111.1	3
57	S813459	SC>4L	55-GAL	LA-CIN01.001-Cans	9.4	103.1	207.0	7
57	S813467	SC>4L	55-GAL	LA-CIN01.001-Cans	16.5	181.7	121.7	5
57	S813469	SC>4L	55-GAL	LA-CIN01.001-Cans	19.6	147.7	197.8	4
57	S813472	SC>4L	55-GAL	LA-MHD01.001	17.0	187.3	128.3	7
57	S813475	NITRATE	55-GAL	LA-CIN01.001-Cans	0.0	0.0	200.4	1
57	S813512	SC>4L	55-GAL	LA-CIN01.001-Cans	16.5	178.6	184.1	13
57	S813525	SC>4L	55-GAL	LA-CIN01.001-Cans	17.0	188.3	156.8	4
57	S813536	PECI SPLIT	55-GAL	LA-MHD01.001	22.1	184.2	126.3	42
57	S813549	SC>4L	55-GAL	LA-CIN01.001-Cans	16.9	135.7	220.0	16
57	S813562	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	1.1	7.6	428.4	1
57	S813601	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	0.8	8.5	411.9	5
57	S813620	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	0.0	0.0	407.9	2
57	S813657	SC>4L	55-GAL	LA-MHD01.001	13.5	185.5	227.6	10
57	S813685	SC>4L	55-GAL	LA-CIN01.001-Cans	17.1	187.1	91.7	4
57	S813693	SC>4L	55-GAL	LA-MHD01.001	15.7	148.9	146.9	6
57	S814853	SC>4L	55-GAL	LA-MHD01.001	1.5	16.9	91.3	1
57	S814854	SC>4L	55-GAL	LA-CIN01.001-Cans	2.1	23.5	93.1	1
57	S814855	SC>4L-30MIN	55-GAL	LA-CIN01.001-Cans	2.0	21.7	112.2	1
57	S814859	SC>4L	55-GAL	LA-CIN01.001-Cans	1.4	13.1	415.4	1
57	S814899	NITRATE	55-GAL	LA-CIN01.001-Cans	1.0	9.1	471.0	3
57	S814927	SC>4L-30MIN	55-GAL	LA-CIN01.001-Cans	8.1	89.4	126.3	2
57	S814961	SC>4L-30MIN	55-GAL	LA-MHD01.001	2.2	21.3	93.5	5
57	S815162	SC>4L-30MIN	55-GAL	LA-CIN01.001-Cans	6.4	68.2	177.7	10

57	S815176	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	0.8	6.4	377.9	1
57	S816304	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	1.9	20.9	469.0	1
57	S816305	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	0.8	9.2	441.9	1
57	S816342	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	6.0	62.2	532.3	9
57	S816374	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	0.8	9.2	343.8	1
57	S816385	SC>4L	55-GAL	LA-MHD01.001	13.8	150.7	160.3	22
57	S816394	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	1.1	9.5	413.9	1
57	S816409	SC>4L	55-GAL	LA-MHD01.001	15.9	170.3	155.5	32
57	S816433	SC>4L	55-GAL	LA-CIN01.001-Cans	17.1	172.6	147.1	50
57	S816440	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	1.0	11.6	404.8	1
57	S816468	SC>4L-30MIN	55-GAL	LA-CIN01.001-Cans	6.1	67.8	102.8	11
57	S816469	LIQ	55-GAL	LA-CIN01.001-Cans	2.4	26.0	438.8	6
57	S816664	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	1.1	12.6	422.9	1
57	S816665	SC>4L	55-GAL	LA-CIN01.001-Cans	17.0	187.3	136.5	16
57	S816667	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	1.8	19.9	451.1	1
57	S816673	SC>4L	55-GAL	LA-MHD01.001	16.5	181.7	136.9	23
57	S816697	SC>4L	55-GAL	LA-MHD01.001	20.9	130.9	139.8	13
57	S816701	SC>4L	55-GAL	LA-CIN01.001-Cans	17.3	191.1	89.7	3
57	S816717	SC>4L	55-GAL	LA-CIN01.001-Cans	15.1	166.6	129.7	10
57	S816723	SC>4L	55-GAL	LA-CIN01.001-Cans	13.8	171.3	138.3	3
57	S816741	SC>4L	55-GAL	LA-CIN01.001-Cans	13.3	152.4	205.5	3
57	S816755	SC>4L	55-GAL	LA-MHD01.001	16.7	175.9	147.1	7
57	S816766	SC>4L	55-GAL	LA-CIN01.001-Cans	17.0	187.3	136.9	2
57	S816773	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	1.6	17.6	307.6	1
57	S816794	SC>4L-30MIN	55-GAL	LA-CIN01.001-Cans	14.5	159.0	205.3	4
57	S816802	SC>4L-30MIN	55-GAL	LA-CIN01.001-Cans	4.0	44.2	114.0	6
57	S816809	SC>4L	55-GAL	LA-CIN01.001-Cans	6.6	72.5	178.2	4
57	S816825	SC>4L	55-GAL	LA-CIN01.001-Cans	16.4	175.5	166.5	4
57	S816828	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	1.4	13.8	414.8	1
57	S816861	SC>4L	55-GAL	LA-CIN01.001-Cans	14.2	157.2	168.0	5
57	S816869	SC>4L/LIQ	55-GAL	LA-CIN01.001-Cans	11.1	120.2	145.1	6
57	S816879	SC>4L	55-GAL	LA-MHD01.001	12.9	142.2	159.4	6
57	S816887	SC>4L	55-GAL	LA-MHD01.001	16.6	181.5	103.4	5
57	S816900	LIQ	55-GAL	LA-CIN01.001-Cans	0.8	8.7	433.9	2
57	S816901	SC>4L/LIQ	55-GAL	LA-CIN01.001-Cans	17.5	187.5	157.2	6
57	S816915	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	0.4	4.7	402.9	1
57	S816916	SC>4L	55-GAL	LA-MHD01.001	17.1	187.3	163.2	6

57	S816928	SC>4L	55-GAL	LA-CIN01.001-Cans	16.3	161.3	167.4	17
57	S816933	SC>4L	55-GAL	LA-CIN01.001-Cans	15.3	179.7	143.5	5
57	S816950	SC>4L	55-GAL	LA-MHD01.001	16.8	185.5	168.0	8
57	S816951	SC>4L	55-GAL	LA-MHD01.001	15.4	170.4	145.5	13
57	S817522	SC>4L	55-GAL	LA-CIN01.001-Cans	14.5	132.7	125.0	8
57	S818311	SC>4L	55-GAL	LA-CIN01.001-Cans	17.3	184.9	189.6	42
57	S818317	SC>4L	55-GAL	LA-CIN01.001-Cans	17.3	191.1	110.5	22
57	S818325	SC>4L	55-GAL	LA-MHD01.001	16.5	169.6	129.9	10
57	S818346	SC>4L	55-GAL	LA-CIN01.001-Cans	16.6	183.6	106.3	2
57	S818354	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	5.2	57.3	402.9	2
57	S818357	SC>4L	55-GAL	LA-MHD01.001	18.1	186.2	209.3	3
57	S818370	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	3.4	37.8	401.8	2
57	S818379	SC>4L	55-GAL	LA-CIN01.001-Cans	16.6	183.6	137.6	25
57	S818397	SC>4L	55-GAL	LA-CIN01.001-Cans	17.9	188.9	157.9	11
57	S818411	SC>4L	55-GAL	LA-CIN01.001-Cans	18.1	189.8	155.0	10
57	S818431	SC>4L	55-GAL	LA-CIN01.001-Cans	28.4	183.6	182.8	2
57	S818432	SC>4L	55-GAL	LA-CIN01.001-Cans	15.4	168.2	160.7	40
57	S822541	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	3.5	39.0	399.1	2
57	S822542	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	13.4	148.3	310.2	44
57	S822544	SC>4L	85-GAL	LA-CIN01.001-Cans	15.5	171.3	111.6	2
57	S822571	SC>4L	55-GAL	LA-CIN01.001-Cans	16.6	184.0	175.7	5
57	S822572	SC>4L	55-GAL	LA-CIN01.001-Cans	18.1	185.5	213.0	6
57	S822578	SC>4L	55-GAL	LA-MHD01.001	16.7	184.5	112.5	19
57	S822611	SC>4L	85-GAL	LA-CIN01.001-Cans	16.6	183.6	135.8	7
57	S822627	SC>4L	55-GAL	LA-CIN01.001-Cans	16.5	182.6	163.2	7
57	S822635	SC>4L	55-GAL	LA-MHD01.001	12.1	133.7	160.1	13
57	S822683	SC>4L	55-GAL	LA-CIN01.001-Cans	36.1	188.3	185.7	12
57	S822743	REPACK	85-GAL	LA-CIN01.001-Cans	17.1	189.2	135.6	9
57	S822785	SC>4L	55-GAL	LA-MHD01.001	16.4	180.7	208.6	10
57	S822828	SC>4L	55-GAL	LA-CIN01.001-Cans	17.1	189.2	164.5	2
57	S822848	SC>4L	55-GAL	LA-CIN01.001-Cans	14.2	162.9	139.4	9
57	S822849	SC>4L	55-GAL	LA-CIN01.001-Cans	17.0	187.3	162.9	26
57	S822857	SC>4L	55-GAL	LA-CIN01.001-Cans	16.5	181.7	101.9	4
57	S822862	sC>4L	55-GAL	LA-MHD01.001	17.9	197.7	147.1	12
57	S822863	SC>4L	55-GAL	LA-MHD01.001	16.9	186.4	100.1	4
57	S822883	SC>4L	55-GAL	LA-CIN01.001-Cans	18.2	192.9	159.2	4
57	S822915	SC>4L	55-GAL	LA-CIN01.001-Cans	14.8	155.3	182.1	5

57	S822927	SC>4L	55-GAL	LA-CIN01.001-Cans	14.6	161.0	232.6	6
57	S822989	SC>4L	55-GAL	LA-MHD01.001	13.3	141.5	160.3	10
57	S823002	SC>4L	55-GAL	LA-CIN01.001-Cans	16.5	181.7	207.0	3
57	S823024	SC>4L	55-GAL	LA-CIN01.001-Cans	13.1	145.0	185.7	6
57	S823057	SC>4L	55-GAL	LA-CIN01.001-Cans	4.5	1.0	183.0	4
57	S823114	SC>4L	55-GAL	LA-CIN01.001-Cans	8.1	89.4	245.9	2
57	S823144	SC>4L	55-GAL	LA-CIN01.001-Cans	9.7	107.3	162.7	8
57	S823150	SC>4L	55-GAL	LA-CIN01.001-Cans	16.8	171.3	190.3	21
57	S823153	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	7.5	82.8	439.9	100
57	S823165	SC>4L	55-GAL	LA-CIN01.001-Cans	17.0	187.3	203.5	9
57	S823178	SC>4L	55-GAL	LA-MHD01.001	14.3	158.2	180.8	16
57	S823186	SC>4L	55-GAL	LA-CIN01.001-Cans	10.7	118.6	245.4	8
57	S823215	SC>4L	55-GAL	LA-CIN01.001-Cans	13.7	152.5	195.4	6
57	S823305	SC>4L	55-GAL	LA-CIN01.001-Cans	17.0	188.3	107.2	7
57	S824461	SC>4L	55-GAL	LA-CIN01.001-Cans	14.2	121.7	165.2	10
57	S824468	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	9.5	104.7	396.9	25
57	S824548	SC>4L/LIQ	55-GAL	LA-CIN01.001-Cans	14.4	154.8	153.5	8
57	S824610	SC>4L	55-GAL	LA-CIN01.001-Cans	10.3	108.5	161.8	7
57	S824614	SC>4L	55-GAL	LA-CIN01.001-Cans	17.3	183.5	307.6	8
57	S824688	SC>4L	55-GAL	LA-CIN01.001-Cans	18.3	182.9	130.8	9
57	S824990	SC>4L	55-GAL	LA-CIN01.001-Cans	0.8	4.2	156.3	22
57	S825026	SC>4L	55-GAL	LA-CIN01.001-Cans	15.5	165.1	140.0	9
57	S825701	SC>4L-30MIN	55-GAL	LA-CIN01.001-Cans	17.2	186.3	114.7	25
57	S825702	SC>4L	55-GAL	LA-CIN01.001-Cans	1.1	12.2	133.8	2
57	S825732	SC>4L	55-GAL	LA-CIN01.001-Cans	3.2	0.7	185.0	3
57	S832146	SC>4L	55-GAL	LA-CIN01.001-Cans	18.9	177.7	334.7	1
57	S832152	SC>4L	55-GAL	LA-CIN01.001-Cans	14.0	139.4	176.2	10
57	S832480	SC>4L	55-GAL	LA-MHD01.001	16.7	153.2	221.4	10
57	S832482	LIQ	55-GAL	LA-CIN01.001-Cans	1.7	14.4	260.6	7
57	S832554	SC>4L	55-GAL	LA-CIN01.001-Cans	4.5	27.9	170.2	15
57	S833356	SC>4L/LIQ	55-GAL	LA-MHD01.001	18.0	176.6	123.5	16
57	S833566	SC>4L	55-GAL	LA-CIN01.001-Cans	0.3	3.8	300.3	1
57	S833843	SC>4L	55-GAL	LA-CIN01.001-Cans	1.3	26.1	391.8	9
57	S833881	SC>4L/LIQ	55-GAL	LA-CIN01.001-Cans	13.3	133.9	143.1	13
57	S833923	SC>4L	55-GAL	LA-MHD01.001	9.4	101.4	183.9	45
57	S834419	LIQ	55-GAL	LA-CIN01.001-Cans	4.1	45.2	164.7	4
57	S834480	SC>4L-30MIN	55-GAL	LA-CIN01.001-Cans	0.4	4.7	109.4	1

57	S835372	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	7.8	83.0	374.9	7
57	S842411	REPACK	85-GAL	LA-CIN01.001-Cans	8.4	92.3	141.6	4
57	S843626	SC>4L	55-GAL	LA-CIN01.001-Cans	18.0	165.6	135.6	3
57	S844189	LIQ	55-GAL	LA-CIN01.001-Cans	8.4	76.4	230.2	7
57	S844284	SC>4L	55-GAL	LA-CIN01.001-Cans	11.1	67.7	160.7	5
57	S844668	SC>4L	55-GAL	LA-CIN01.001-Cans	5.0	41.8	216.2	1
57	S844670	SC>4L	55-GAL	LA-CIN01.001-Cans	16.4	146.4	77.8	4
57	S845337	SC>4L-30MIN	55-GAL	LA-CIN01.001-Cans	11.1	119.1	143.8	4
57	S851852	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	15.2	167.8	410.4	3
57	S852911	SC>4L-30MIN	55-GAL	LA-CIN01.001-Cans	11.8	129.9	138.9	5
57	S852913	SC>4L-30MIN	55-GAL	LA-CIN01.001-Cans	17.0	188.3	294.8	5
57	S852952	SC>4L-30MIN	55-GAL	LA-MHD01.001	17.0	188.3	286.0	25
57	S852974	SC>4L-30MIN	55-GAL	LA-MHD01.001	16.8	188.8	175.7	1
57	S852975	SC>4L	55-GAL	LA-CIN01.001-Cans	16.5	189.5	246.3	2
57	S853273	SC>4L	55-GAL	LA-MHD01.001	16.3	179.8	213.0	7
57	S853316	SC>4L	55-GAL	LA-CIN01.001-Cans	16.2	178.9	132.5	3
57	S853318	SC>4L	55-GAL	LA-MHD01.001	17.0	187.3	149.5	5
57	S853327	SC>4L	55-GAL	LA-CIN01.001-Cans	17.0	187.3	239.5	2
57	S853466	SC>4L	55-GAL	LA-CIN01.001-Cans	17.0	187.3	160.3	6
57	S853482	LIQ/NITRATE	55-GAL	LA-CIN01.001-Cans	8.1	87.4	494.6	8
57	S853548	SC>4L	55-GAL	LA-MHD01.001	16.9	186.4	182.8	8
57	S853625	SC>4L	55-GAL	LA-CIN01.001-Cans	17.0	188.3	281.6	3
57	S853627	SC>4L	55-GAL	LA-CIN01.001-Cans	17.0	187.3	241.9	2
57	S853707	SC>4L	55-GAL	LA-CIN01.001-Cans	17.7	183.4	141.3	11
57	S853723	SC>4L	55-GAL	LA-MHD01.001	16.6	183.6	192.3	7
57	S853734	SC>4L	55-GAL	LA-CIN01.001-Cans	16.8	185.5	222.0	4
57	S853774	SC>4L	55-GAL	LA-CIN01.001-Cans	16.5	181.7	195.4	3
57	S853861	SC>4L	55-GAL	LA-MHD01.001	16.5	182.6	87.5	10
57	S853876	LIQ	55-GAL	LA-CIN01.001-Cans	18.2	154.9	204.6	8
57	S854623	SC>4L	55-GAL	LA-CIN01.001-Cans	14.1	156.3	326.3	3
57	S854624	SC>4L-30MIN	55-GAL	LA-CIN01.001-Cans	6.7	74.4	153.9	23
57	S854625	SC>4L-30MIN	55-GAL	LA-MHD01.001	7.1	78.1	289.5	5
57	S854635	SC>4L	55-GAL	LA-MHD01.001	15.3	165.4	253.8	7
57	S855132	SC>4L	55-GAL	LA-MHD01.001	24.2	168.8	170.7	5
57	S855142	SC>4L	55-GAL	LA-CIN01.001-Cans	8.2	90.4	222.0	2
57	S855196	SC>4L-30MIN	55-GAL	LA-CIN01.001-Cans	5.0	34.7	151.7	2
57	S855228	SC>4L-30MIN	55-GAL	LA-MHD01.001	17.0	187.3	245.0	2

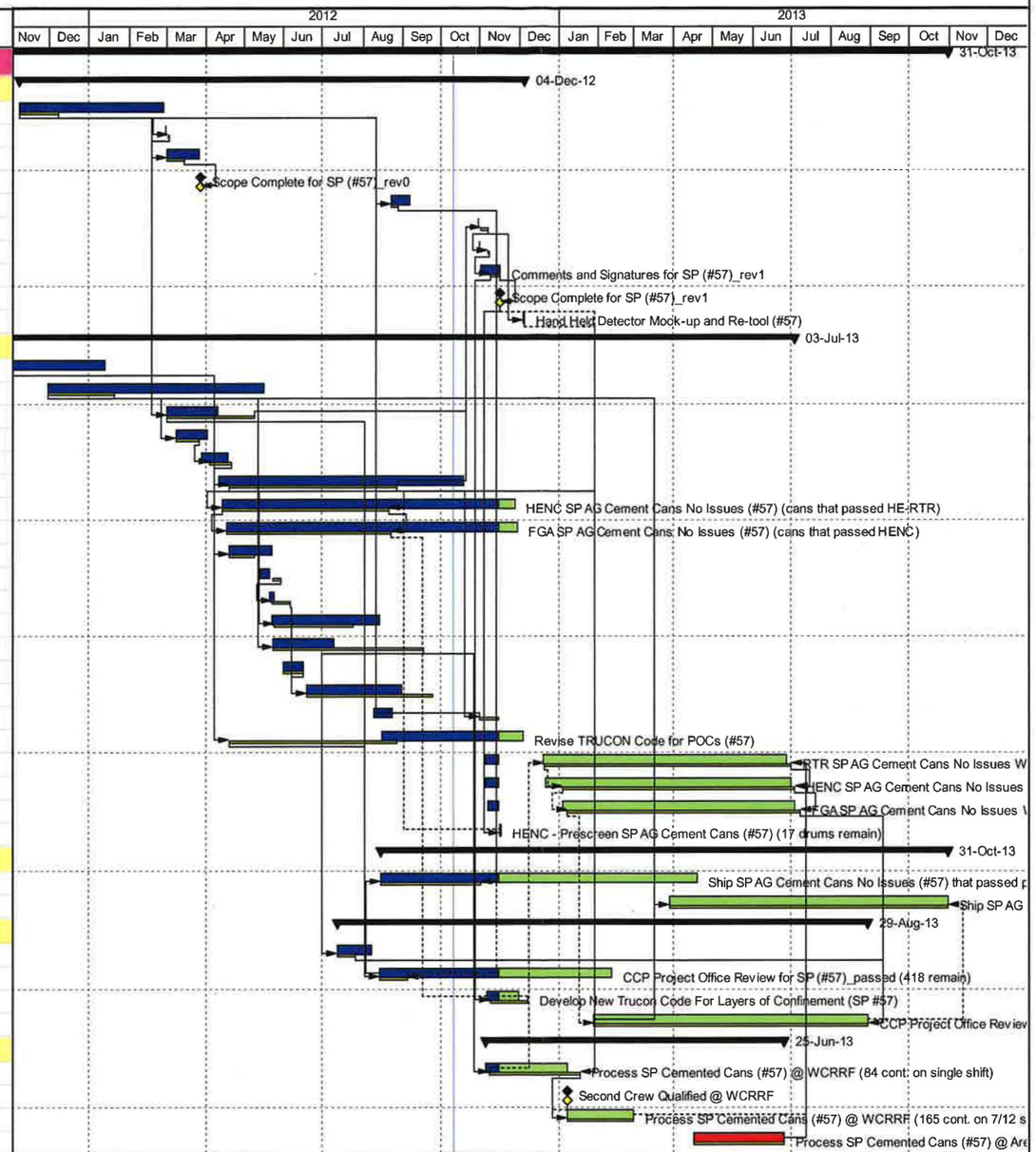
57	S855229	SC>4L-30MIN	55-GAL	LA-MHD01.001	16.9	186.4	219.4	1
57	S855230	SC>4L-30MIN	55-GAL	LA-MHD01.001	15.1	175.6	215.6	2
57	S855293	SC>4L-30MIN	55-GAL	LA-MHD01.001	17.9	181.0	168.2	4
57	S855295	PECI SPLIT	55-GAL	LA-MHD01.001	34.4	148.6	69.2	6
57	S855310	SC>4L	55-GAL	LA-CIN01.001-Cans	16.1	180.1	216.3	3
57	S855522	SC>4L	55-GAL	LA-MHD01.001	24.9	166.2	103.2	13
57	S855537	SC>4L	55-GAL	LA-CIN01.001-Cans	16.7	184.5	214.5	1
57	S855538	SC>4L	55-GAL	LA-CIN01.001-Cans	17.0	188.3	256.2	1
57	S855539	SC>4L	55-GAL	LA-CIN01.001-Cans	9.8	108.3	306.3	2
57	S855541	SC>4L	55-GAL	LA-CIN01.001-Cans	19.1	182.2	136.0	11
57	S855551	SC>4L	55-GAL	LA-MHD01.001	17.0	187.3	127.7	9
57	S855573	LIQ	55-GAL	LA-CIN01.001-Cans	17.0	188.3	279.4	2
57	S855574	SC>4L	55-GAL	LA-CIN01.001-Cans	16.6	184.8	308.3	3
57	S855767	PECI SPLIT	55-GAL	LA-MHD01.001	19.4	161.2	243.2	5
57	S855786	SC>4L	55-GAL	LA-CIN01.001-Cans	19.2	185.2	249.2	15
57	S855797	SC>4L	55-GAL	LA-CIN01.001-Cans	16.5	181.7	301.4	4
57	S855799	SC>4L	85-GAL	LA-CIN01.001-Cans	13.6	135.8	264.5	5
57	S855888	SC>4L	55-GAL	LA-MHD01.001	20.1	178.7	224.9	10
57	S855901	SC>4L	55-GAL	LA-MHD01.001	21.5	179.4	222.7	10
57	S860006	SC>4L	55-GAL	LA-CIN01.001-Cans	19.8	180.8	219.4	6
57	S860085	SC>4L	55-GAL	LA-CIN01.001-Cans	16.1	177.9	133.6	6
57	S860147	SC>4L	55-GAL	LA-MHD01.001	21.6	186.4	150.2	2
57	S861754	SC>4L	55-GAL	LA-CIN01.001-Cans	16.4	180.7	91.9	2
57	S861769	SC>4L	55-GAL	LA-CIN01.001-Cans	15.1	181.2	122.6	3
57	S861796	SC>4L	55-GAL	LA-MHD01.001	16.5	182.6	158.8	4
57	S861969	SC>4L	55-GAL	LA-CIN01.001-Cans	14.9	164.7	132.5	5
57	S861977	SC>4L	55-GAL	LA-MHD01.001	15.5	171.3	96.6	5
57	S861998	SC>4L	55-GAL	LA-MHD01.001	27.4	171.3	184.3	8
57	S862005	SC>4L	55-GAL	LA-CIN01.001-Cans	16.9	186.3	215.4	4
57	S862050	SC>4L	55-GAL	LA-CIN01.001-Cans	14.1	155.3	363.8	4
57	S862287	SC>4L	55-GAL	LA-MHD01.001	16.9	186.4	104.3	3
57	S862288	SC>4L	55-GAL	LA-CIN01.001-Cans	16.3	179.8	142.2	4
57	S862399	SC>4L	55-GAL	LA-CIN01.001-Cans	18.5	176.0	110.7	3
57	S862462	SC>4L	55-GAL	LA-CIN01.001-Cans	15.4	170.4	120.0	11
57	S862475	SC>4L	55-GAL	LA-CIN01.001-Cans	15.9	176.0	121.9	8
57	S862897	SC>4L	55-GAL	LA-CIN01.001-Cans	16.4	180.7	158.3	7
57	S862925	SC>4L	55-GAL	LA-CIN01.001-Cans	20.2	185.5	178.6	5

57	S862969	SC>4L	55-GAL	LA-MHD01.001	15.5	171.3	219.4	8
57	S863023	SC>4L	55-GAL	LA-CIN01.001-Cans	16.4	182.9	150.2	9
57	S863623	SC>4L	55-GAL	LA-MHD01.001	16.0	163.8	165.6	7
57	S863723	SC>4L	55-GAL	LA-CIN01.001-Cans	17.3	188.3	112.7	8
57	S863738	SC>4L	55-GAL	LA-MHD01.001	16.0	176.2	169.3	2
57	S864173	SC>4L	55-GAL	LA-CIN01.001-Cans	20.8	183.0	136.0	16
57	S864232	SC>4L	55-GAL	LA-CIN01.001-Cans	13.2	145.9	171.5	4
57	S864356	SC>4L	55-GAL	LA-CIN01.001-Cans	17.0	187.3	168.5	3
57	S864358	SC>4L	55-GAL	LA-MHD01.001	12.5	138.4	101.7	1
57	S864605	SC>4L	55-GAL	LA-CIN01.001-Cans	16.3	186.4	176.4	6
57	S864645	SC>4L	55-GAL	LA-CIN01.001-Cans	11.2	123.3	264.8	5
57	S864647	SC>4L	55-GAL	LA-CIN01.001-Cans	16.1	184.5	190.3	5
57	S864710	SC>4L	55-GAL	LA-CIN01.001-Cans	17.0	187.3	271.0	4
57	S864713	SC>4L	55-GAL	LA-CIN01.001-Cans	12.1	186.4	196.5	5
57	S865323	SC>4L	55-GAL	LA-MHD01.001	16.5	181.7	210.4	5
57	S870135	SC>4L	55-GAL	LA-CIN01.001-Cans	13.0	144.0	237.9	5
57	S870151	SC>4L	55-GAL	LA-CIN01.001-Cans	16.6	183.6	255.6	5
57	S871838	SC>4L	55-GAL	LA-MHD01.001	13.6	147.4	243.7	3
57	S871870	SC>4L	55-GAL	LA-CIN01.001-Cans	13.9	156.3	234.2	4
57	S871917	SC>4L	55-GAL	LA-MHD01.001	16.7	184.5	226.2	2

POD Schedule for 04/12/2012

19-Nov-12 11:30

Activity ID	Activity Name	Remaining Duration	Start	Finish	Responsible
WASTE - Solution Package: 57 SP AG Cement Cans No Issues		236	21-Sep-11 A	31-Oct-13	
1.4.2.7-35.1.4.2.7.01.CD.W2.TK.02.1		12	07-Nov-11 A	04-Dec-12	
4380	Define Scope for SP AG Cement Cans No Issues (#57)	0	07-Nov-11 A	28-Feb-12 A	Davis Christensen
01420	Roundtable for SP (#57)_rev0	0	29-Feb-12 A	29-Feb-12 A	Davis Christensen
01430	Comments and Signatures for SP (#57)_rev0	0	01-Mar-12 A	27-Mar-12 A	Davis Christensen
01440	Scope Complete for SP (#57)_rev0	0		27-Mar-12 A	Davis Christensen
08690	Drum Ring Locking Nut Issue (#57) (7 remain)	0	23-Aug-12 A	06-Sep-12 A	Davis Christensen
02520	Revise Scope for SP AG Cement Cans No Issues (#57)_rev1	0	30-Oct-12 A	30-Oct-12 A	Davis Christensen
02530	Roundtable for SP (#57)_rev1	0	31-Oct-12 A	31-Oct-12 A	Davis Christensen
02540	Comments and Signatures for SP (#57)_rev1	1	01-Nov-12 A	15-Nov-12	Davis Christensen
02550	Scope Complete for SP (#57)_rev1	0		15-Nov-12	Davis Christensen
04500	Hand Held Detector Mock-up and Re-tool (#57)	1	04-Dec-12	04-Dec-12	Davis Christensen
1.4.2.7-35.1.4.2.7.01.CD.W2.TK.02.5		153	21-Sep-11 A	03-Jul-13	
3130	Mod for HE-RTR 3 Drum Fixture (only for 55 gal)	0	21-Sep-11 A	13-Jan-12 A	Craig Simmons
02210	HENC #2 - EPA Tier I (lead lined homogenous)	0	30-Nov-11 A	16-May-12 A	Craig Simmons
02560	Pre-Cert Representative Sample Population (20%) HE-RTR SP (#57)	0	01-Mar-12 A	10-Apr-12 A	Davis Christensen
02211	Complete TMU Modeling	0	08-Mar-12 A	02-Apr-12 A	Craig Simmons
02212	Issue TMU Report	0	28-Mar-12 A	18-Apr-12 A	Craig Simmons
5050	Pre-Cert HE-RTR SP AG Cement Cans No Issues (#57) (0 remain)	0	11-Apr-12 A	18-Oct-12 A	Craig Simmons
5060	HENC SP AG Cement Cans No Issues (#57) (cans that passed HE-RTR)	7	13-Apr-12 A	27-Nov-12	Craig Simmons
5070	FGA SP AG Cement Cans No Issues (#57) (cans that passed HENC)	9	17-Apr-12 A	29-Nov-12	Craig Simmons
02213	Incorporate changes in BDRs (TMU Modeling)	0	19-Apr-12 A	23-May-12 A	Craig Simmons
05880	CCP Review of Cal Report for HENC-1	0	14-May-12 A	21-May-12 A	Craig Simmons
05890	CBFO Review of Cal Report for HENC-1	0	21-May-12 A	24-May-12 A	Craig Simmons
06150	Carousel for HE-RTR	0	23-May-12 A	13-Aug-12 A	Craig Simmons
06160	Complete Hydrogen Testing on Slip Lid Cans w/ Tape	0	23-May-12 A	10-Jul-12 A	Craig Simmons
05900	NDA Drums and Prepare BDRs for HENC-1	0	31-May-12 A	15-Jun-12 A	Craig Simmons
05910	Complete Cal Activities for HENC-1	0	18-Jun-12 A	30-Aug-12 A	Craig Simmons
5052	FGA FY12 Backlog Drums in Dm231 (#57) (0 remain)	0	09-Aug-12 A	23-Aug-12 A	Craig Simmons
08520	Revise TRUCON Code for POCs (#57)	11	16-Aug-12 A	03-Dec-12	Craig Simmons
04510	RTR SP AG Cement Cans No Issues WCRR (#57) (525 drums)	126	05-Nov-12 A	27-Jun-13	Craig Simmons
04520	HENC SP AG Cement Cans No Issues WCRR (#57) (540 drums)	126	05-Nov-12 A	01-Jul-13	Craig Simmons
04530	FGA SP AG Cement Cans No Issues WCRR (#57) (539 drums)	126	06-Nov-12 A	03-Jul-13	Craig Simmons
060560	HENC - Prescreen SP AG Cement Cans (#57) (17 drums remain)	1	16-Nov-12	16-Nov-12	Craig Simmons
1.4.2.7-35.1.4.2.7.01.CD.W4.J6.06		236	14-Aug-12 A	31-Oct-13	
07270	Ship SP AG Cement Cans No Issues (#57) that passed pre-cert (425 remain)	73	14-Aug-12 A	18-Apr-13	Scotty Miller
9790	Ship SP AG Cement Cans No Issues WCRR (#57) (400 remain)	151	29-Mar-13	31-Oct-13	Scotty Miller
1.4.2.7-35.1.4.2.7.01.CD.W4.JY		193	12-Jul-12 A	29-Aug-13	
06880	Revise TRUCON Code for Slip Lid Cans	0	12-Jul-12 A	07-Aug-12 A	Craig Simmons
07280	CCP Project Office Review for SP (#57)_passed (418 remain)	53	13-Aug-12 A	11-Feb-13	Craig Simmons
060570	Develop New Trucon Code For Layers of Confinement (SP #57)	10	06-Nov-12 A	30-Nov-12	Craig Simmons
8610	CCP Project Office Review for SP WCRR (#57) (543 Remain)	151	28-Jan-13	29-Aug-13	Craig Simmons
1.4.2.7-40.1.4.2.7.01.CD.W2.TK.02		147	05-Nov-12 A	25-Jun-13	
02550	Process SP Cemented Cans (#57) @ WCRRF (84 cont. on single shift)	29	05-Nov-12 A	07-Jan-13	Dave Frederici
07010	Second Crew Qualified @ WCRRF	0	07-Jan-13*		Dave Frederici
07740	Process SP Cemented Cans (#57) @ WCRRF (165 cont. on 7/12 shift)	71	07-Jan-13	28-Feb-13	Dave Frederici
05240	Process SP Cemented Cans (#57) @ Area G (125 placeholder)	50	16-Apr-13	25-Jun-13	Dave Frederici



TASK filter: Specific Solution Packages.

Remaining Level of Effort | Primary Baseline | Remaining Work

Actual Level of Effort | Actual Work | Critical Remaining Work

LA-UR-15-21139