

EM-LA/N3B
Environmental Management Cleanup Forum
Stakeholder feedback from meetings in
Los Alamos, Espanola, Taos, and Santa Fe
June-August 2019

TEXT OF CARDS

Note: The text has not been edited. The handwriting for a few people was difficult to read, so the following represents what EM-LA/N3B believes was written.

Community	Interest in Legacy Cleanup	#1 Question	Response
Tesuque	As the principal planner for the County, legacy cleanup is a significant issue when considering land use decisions.	<p>What is the best way to provide outreach/solicit support from the County's many boards and commissions such as the planning commission?</p> <p>[Note: This question was offered at the Los Alamos meeting. The answer presumes the County in question is Los Alamos.]</p>	Cleanup at TA-21 will require close communication with the Los Alamos County government and the New Mexico Environment Department. County officials, along with other stakeholders, can participate in cleanup discussions and decisions through the Environmental Management Cleanup Forums, Technical Working Group meetings, Community Values Workshops, Northern New Mexico Citizens' Advisory Board meetings, Regional Coalition of LANL Communities meetings, and other public meetings.
Los Alamos	I live and work in the community	Complete cleanup of TA-21 and land transfer so more housing can be built should be a high priority. What is the realistic timeframe for this? And can it be remediated to residential cleanup levels? If not, what are some options for beneficial use of this mesa?	EM-LA and N3B are working to identify cleanup alternatives, the costs associated with those alternatives, the risk to workers and the communities, and associated issues. There are a number of decisions that need to be made to define the final cleanup levels and, in turn, determine how long remediation will take. The eventual use of this mesa by the County will be determined by various factors, including cleanup levels.

Los Alamos	Assuring that Los Alamos and our surrounding counties will have safe, healthy environment in the future that sustain and grow an outstanding quality of life.	What do you (EM, NMED) call “cleanup?” How will the decision regarding that definition be made?	“Cleanup” means that legacy wastes and materials (pre-1999) will be remediated to comply with all applicable laws and regulations. “Cleanup” could include source removal, water treatment, water and air monitoring, and stabilizing contaminants that remain in place. The details of many of the decisions still need to be determined and will substantively involve local governments, tribal governments and community members.
Albuquerque	Demonstrating remediation over time	How can you transparently show compliance with the consent order to the community? Infographics, dashboards, GIS maps	Openness and transparency are central to EM-LA’s stakeholder engagement strategy. EM-LA and N3B publish documents related to cleanup via sites such as the Electronic Public Reading Room (EPRR), the EM-LA website and the N3B website. GIS maps are not what the majority of the community is seeking, however technical data is available on the EPRR and also on the Intellus website . EM-LA and N3B are also preparing information related to cleanup so that it is readily understandable by the general public
Pueblo of Jemez/Albuquerque	The involvement of Pueblos		Pueblos will be substantively involved in clean up decisions.
Los Alamos	I want to help ensure that cleanup is performed effectively and efficiently in a way that minimizes human risk.	How can people get access to a comprehensive, complete and transparent set of documents that describe environmental risks, cleanup plans, project completion and regulatory compliance?	Information is available in multiple locations. It ranges from raw sampling data to correspondence between DOE and the state to all technical material related to the project. Some of these databases are complex and require some knowledge of search capabilities to best utilize them. EM-LA and N3B are in the process of compiling

			some of the more relevant and requested information in a few easily accessible locations. As soon as that is ready, notice will be issued regarding how to access it.
Valley (El Rancho) right down the hill	Remove priority sources where feasible. Reduce pathways of contamination off the hill to communities, tribal lands, and Rio Grande. As a property owner in both Los Alamos and Santa Fe counties, desire is legacy contamination is vastly removed and/or reduced to lowest risk levels achievable to protect groundwater for future use.	What is the timeline for complete TA-21 remediation and land transfer to Los Alamos County?	For budgeting and planning purposes, EM-LA and N3B have made certain assumptions regarding cleanup levels, approaches and timelines regarding TA-21. However, decisions regarding final cleanup and the use of the land by Los Alamos County at TA-21 still need to be made and a projected timeline has not been determined. Cleanup will be done in a manner that is protective of the workers, the public and the environment.
Los Alamos	That it be done sooner than later.	How many legacy sites remain to be cleaned up (from 2120 originally identified)?	As of November 2019, fewer than 1,000 potential release sites remain.
Los Alamos	I live here and want to leave a future of improved and safe environment. Cleanup permits economic development.	How can we come to convergence on appropriate cleanup final state?	EM-LA and N3B are developing a number of public engagement opportunities, including working with community members on determining community values, making available detailed technical information, hosting various public forums dedicated to the exchange of information, meeting with elected officials, working with the Northern New Mexico Citizens' Advisory Board, the Regional Coalition of LANL Communities, local pueblos and providing other opportunities for community members to engage decision-makers throughout the process. These efforts are designed to help determine final cleanup levels that best meet a variety of interests.

Los Alamos	Making sure that current DOE lands are cleaned up for maximum public benefit. Addressing off-site releases and exposures to neighboring communities.	How quickly can TA-21 be completed?	For budgeting and planning purposes, EM-LA and N3B have made certain assumptions regarding cleanup levels, approaches, and timelines regarding TA-21. However, decisions regarding final cleanup and the use of the land by Los Alamos County at TA-21 still need to be made and a projected timeline has not been determined. Cleanup will be done in a manner that is protective of the workers, the public and the environment.
Los Alamos Townsite	County of Los Alamos Assistant County Attorney and resident	N3B and DOE actions in/around County.	All cleanup actions, regardless of the proximity to residents, must meet or exceed all applicable laws and regulations.
Los Alamos	Protection and improvements to conditions that can impact human health and the environment.	How can we safely clean up our environment in an efficient (cost, time) manner?	Safety is EM-LA's and N3B's top priority, with worker safety at the forefront of decision-making. Protection of public health and the environment is equally of paramount importance, as is the appropriate use of taxpayer money. EM-LA and N3B plan and execute cleanup efficiently so that the most work is done for the available funding. EM-LA and N3B's commitment to transparency and openness enables the public to help keep EM-LA and N3B accountable.
Richland, WA	Completing the cleanup quickly and efficiently. Don't study it to death.	Do the cleanup standards make technical sense for this site? Are they risk-based and technically-sound?	Legacy cleanup works is performed in a manner that is technically sound and is based on applicable state and federal standards. Risk is an important factor in determining cleanup actions, including final site conditions, but is not the only factor.

Los Alamos (Western Area)	I live, work and play in Los Alamos	Re: your professional transparency, will you make contaminant measurements and maps (chromium, soil, contaminants, etc.) publicly available at a reasonable frequency (e.g., monthly or quarterly)? The County will pave/build where they can on remediated sites. This changes run-off volumes and flow directions substantially. Will you recommend, where appropriate, what the County must design for run-off control to keep residual contaminants safely sequestered in the soil, canyons, drainages, etc.?	EM-LA and N3B already make available much of this information on the Electronic Public Reading Room and will continue to do so. Regarding run-off controls, those requirements are determined for each based on the remedy decision. Los Alamos County is responsible for its own compliance with environmental laws and regulations, and support is provided as requested.
Santa Fe	Remediation of toxic elements such as chromium, chromium 6, arsenic, antimony, lead, selenium, etc.	Understanding of legacy waste, oxidation, and reduction processes [explaining how chemistry works]. PG (?) 1,2 3 is important of remediation of legacy TRU waste.	The Technical Working Group, a public forum that EM-LA and N3B will initiate in 2020, will provide the venue for stakeholders to dive more deeply into technical issues such as this.
Out of state	Critical subcontractor to N3B		N/A
Santa Fe	Protect the environment, air, land & water. The health of the people for generations to come. To push for excavation of all buried wastes @ LANL; stop pollutants to the Rio Grande.	After attending these types of meetings for over 30 years, this the first without an opportunity for oral public comments. It is not good optics for LANL/N3B/DOE. Why 17 violations found by NMED? Stop support of RCLC. It is bad optics for N3B/DOE/LANL. Please honor and respect the Pueblo calendar when scheduling public meetings. Make sure maps show entire LANL site and the RG boundaries (e.g. Slide 5). Regarding EPRR Postings:	The decision to take public comment at the Environmental Management Cleanup Forum using the comment cards and Slido was designed to allow for more voices to be heard. Additionally, using both the comment cards and Slido was intended to provide alternate opportunities for engagement during the meeting, including for people who do not have cell phones with internet service. When scheduling public meetings, EM-LA works to accommodate a number of

		<p>many of the posts forwarding lg. docs do not include the large docs. The cover letters are all that are directly available; if you are not going to post the large docs please include a direct link to the large docs in the post. Bring a cell phone dedicated to Slido for those who do not have cell phones with internet services. Neighbor Values: Allowing the building of new homes for families downstream and downwind of Area G? In White Rock? What government approved the plans? LAC? Where are the air monitors for the earth going on? Baseline soil sample results?</p>	<p>calendars, including but not limited to Pueblo calendars. Conflicts with external schedules is unfortunately sometimes inevitable.</p> <p>The Electronic Public Reading Room (EPRR) continues to evolve, and N3B will work to address better availability for large documents.</p> <p>Land use decisions for non-federal lands adjacent to LANL are by local jurisdiction's determinations, not the Department of Energy. The local jurisdiction is also responsible for its own compliance with environmental laws and regulations.</p>
Taos	Community leader and activist member of Regional Coalition of LANL Communities.	How close to its original condition will the land be returned?	The answer to this question will vary across the Laboratory property. Some areas, such as those where the Laboratory continues to operate, cannot currently be returned to their original condition. Other areas, depending on where they are found, have the potential to be returned close to their natural condition.
Taos	Our children's future depends on legacy clean up.	None yet, I am interested in learning more.	EM-LA and N3B are currently providing, and will continue to provide, a variety of opportunities for community members to be involved.
Los Alamos	I am interested in reducing the footprint of environmental contamination, in Los Alamos and the rest of the world.	Would EM-LA consider providing public tours of cleanup sites? Full Disclosure: I work on this project as a subcontractor.	Yes, EM-LA plans to host tours for the public. Future tours will be announced on the EM-LA website and in public meetings.

Espanola	Clean up in the valley. Oral history tells of dumping from LA in the valley.	Are there any studies on illegal dumping in the valley or would that have made its way from LA to Espanola and what efforts are being made for that clean up? Have you reached out to the acequia associations? Water/soil conservation groups?	No studies exist that identify illegal dumping in the Española area, and any verifiable evidence that dumping occurred outside of the LANL site boundary would be investigated and remediated as necessary. EM-LA and N3B have not yet specifically reached out to acequia associations and water/soil conservation groups but intend to.
Santa Fe	All the waste at Area G.	Legacy waste was defined as “Pre-1999”. What date does legacy waste start? Post 1970? How much waste is buried at Area G?	<p>Legacy waste is defined as waste generated from the beginning of the Manhattan Project until 1999. However, many regulations control management of legacy waste, and some waste generated before 1970 has been legally disposed at Area G. Future decisions will determine how Area G and any contamination or disposed waste will be remediated to protect the public.</p> <p>Approximately 300,000 cubic meters (m³) of low-level radioactive waste (LLRW) was located at Los Alamos National Laboratory’s (LANL) Technical Area 54. Of that amount, 10,000 m³ was classified as retrievable transuranic (TRU) waste, low level waste, and mixed low-level waste.</p>
Santa Fe	I am a taxpayer.	What is the source of the chromium contamination? Is Area G the location of the old DP complex on DP road?	From 1956 to 1972, workers at a non-nuclear power plant periodically flushed chromium-contaminated water from the cooling towers into Sandia Canyon. Chromate was commonly used worldwide in that era as a corrosion inhibitor. The water flowed down Sandia Canyon as surface water, penetrated the underlying rock layers, and in time seeped into the regional

			<p>aquifer beneath Sandia and Mortandad canyons. LANL ceased releasing chromium-contaminated water in 1972.</p> <p>Area G is not on DP Road. It is in Technical Area 54.</p>
Eldorado	Safety, security and leaving our inherited beauty for future generations.	What are the standards and matrices for determining whether a site have been cleaned up?	Cleanup standards are set by state and federal regulations. "Cleanup" means that legacy wastes and materials will be remediated to comply with all applicable laws and regulations. That effort could include source removal, water treatment, and stabilizing contaminants that remain in place.
Eldorado & Santa Fe	In general, I have an historical interest in waste from the Manhattan Project. Specifically, I want to know why a renewed nuclear arms race is being green lighted.	Why is more TRU waste being planned to be generated before the TRU legacy waste is hauled to WIPP?	EM-LA's and N3B's scope of work is to store, remediate and ship for offsite disposal legacy TRU waste. Any waste generated after 1999, including today, is outside of EM-LA's and N3B's mission.
Santa Fe	Journalist- writing a story for the Santa Fe New Mexican.	Is the public in any way in health danger right now from cleanup operations be it contamination of water, air, land or skin?	No. The safety of the public, workers, and the environment is EM-LA's and N3B's primary concern in the execution of cleanup work. Environmental monitoring, such as surface water, ground water, and air, is central to our mission and will continue to ensure that workers, the public and the environment are protected.
Santa Fe		On Chromium: you say treatment is working to contain the plume. Has injection pushed chromium unto San Ildefonso Pueblo? How do you know the plume is contained to the northeast? Did the pilot project	November 2019 chromium levels of the monitoring well on LANL property closest to the boundary with the Pueblo de San Ildefonso were below the state standard of 50 parts per billion. A monitoring well downgradient of the plume on Pueblo de

		screw up both the wells and the aquifer?	<p>San Ildefonso land indicates background levels of chromium.</p> <p>An extensive network of monitoring wells has been installed in and around the plume. Additional monitoring wells will be installed to help further characterize the northeast edge of the plume.</p>
Santa Fe	Environmental protection & Protecting water	You claim both transparency and that LANL cleanup is more than half-complete, but doesn't that represent hidden decisions to leave most wastes permanently buried?	Legacy cleanup involves the use of a variety of remedies, ranging from removal to cap and cover. Future decisions will determine how any contamination or disposed waste will be remediated to protect the public. All decisions will be informed by a public process and will met or exceed state and federal regulations.
Santa Fe	Ever since 1971, when I moved to Santa Fe, I heard of continual pollution and continual clean up talk, will any clean up include tributaries and the Rio Grande? What is LANL contamination impact on San Ildefonso Pueblo and other neighbors?	<p>What is your definition of cleanup? How thorough will cleanup be? No waste should go to WIPP, which is not qualified by WIPP regulations. Is all waste sent to WIPP qualified to be there. Only WIPP qualified waste to WIPP. We do not want just surface cleanup.</p> <p>Will there be an inspection of cleanup afterwards and will there be contractor liability if not satisfactory-cleanup effectiveness should be evaluated by an independent agency not affiliated with DOE or contractors. Please advise concerned citizens for Nuclear Safety (CCNS-Santa Fe). Ongoing preventative cleanup is</p>	<p>"Cleanup" means that legacy wastes and materials will be remediated to comply with all applicable laws and regulations. That effort could include source removal, water treatment, water and air monitoring, and protection of contamination that remains in place. The details of many of the decisions still need to be made and will substantively involve local governments, tribal governments and community members.</p> <p>Under the Consent Order, final determinations regarding compliance with applicable laws and regulations are made by the New Mexico Environment Department. The Department of Energy and N3B provide analyses and make recommendations. Remediation actions always require verification of effectiveness, and usually</p>

		mandatory Chromium cleanup is paramount.	require a longer-term monitoring commitment to ensure effectiveness of the remedy, sometimes for several decades. All waste sent to WIPP must meet the WIPP waste acceptance criteria.
--	--	--	---

Additional comments (from contact information cards):

1. "Online website with function to easily search for the technical data reports with summary/executive summary of reports."
2. "As County Attorney, knowing what is happening is important."
3. "#1 Issue: Chromium plume"
4. "Field reviews of work in progress and final stabilization."
5. Re: accessing information via social media: "Too serious a subject for this method."
6. "Hear more directly from other stakeholder groups, receive information from additional sources."
7. "Public presentation in Taos, Santa Fe, Pueblos, Las Vegas."

SLIDO QUESTIONS (from Espanola, Taos and Santa Fe Forums)

Questions	Response
How does N3B plan on keeping people in the valley involved? Will there be more meetings here?	There will be additional public meetings in the valley going forward. The public can stay involved by attending public meetings and accessing information about EM-LA's and N3B's cleanup efforts via online resources.
How will the public get notified of these meetings?	Notice will be provided by a variety of methods, including email, social media, and newspaper and online advertisements.
When is the decision on cleanup of MDAs A & T due to be made? What will that process be?	EM-LA and N3B are analyzing cleanup alternatives, the costs associated with those alternatives, and the risk to workers and the communities, and associated issues. The timeline for making cleanup decisions is primarily during the next ten years, and the

	public will be involved through a variety of public forums.
Are there are potential opportunities for local small businesses here in Taos to work with N3B with small contracts?	Yes. N3B requests for proposals are posted at www.FedBizOpps.gov . Additional information is posted at: www.N3B-LA.com . Additionally, N3B periodically hosts forums for small business to encourage involvement.
Will there be more meetings in the future for specific cleanup projects such as hazardous waste removal, ground water contamination etc.?	Yes. Notice will be provided by a variety of methods, including email, social media, and newspaper and online advertisements.
There was mention of N3B giving back to the community, is Taos included?	Yes. N3B's community commitment plan includes Taos.
What impact can storm water runoff from LANL have on Taos?	None. Taos is significantly upstream of LANL.
Will N3B be doing anything to support workforce growth in the [Taos] community?	Yes. N3B welcomes applications from qualified personnel. N3B emphasizes hiring local people and businesses, especially from Northern New Mexico. Job postings are listed on the N3B website at www.N3B-LA.com .
How does worker safety impact how you decide to clean up waste?	Yes. Worker safety is EM-LA and N3B's primary concern in the execution of cleanup work. EM-LA and N3B will not perform work that cannot be done safely.
Will tonight's presentation be available for viewing online?	Yes. The presentation can be found here
What is the plan for the Lab to keep the waters downstream clean and safe?	The Lab and LANL legacy cleanup have separate water programs. The legacy cleanup program, executed by N3B, has primary responsibility for monitoring of groundwater, surface water, and

	<p>storm water. The Storm Water Individual Permit and Integrated Facility Groundwater Monitoring Program are two of the most significant efforts for ensuring waters are protected. Site personnel treat water, remove contamination sources, and undertake other actions as indicated by monitoring results.</p>
Are tonight's handouts on line?	Yes. The presentation can be found here
How frequently do you monitor storm water flow from LANL?	<p>Storm water is regularly monitored to identify and evaluate legacy contamination, confirm that concentrations are not increasing due to ongoing operations, and determine the effectiveness of storm water control measures.</p> <p>Water samples are collected either by hand or by automated samplers that are activated during periods of storm water runoff. The samples are then analyzed at off-site laboratories for radionuclides, chemicals, and metals. The program determines the extent of potential contamination and identifies remediation strategies.</p>
What is the source of the chromium contamination? Is area 21 the location of the old complex on DP road	<p>From 1956 to 1972, workers at a non-nuclear power plant periodically flushed chromium-contaminated water from the cooling towers into Sandia Canyon. Chromate was commonly used worldwide in that era as a corrosion inhibitor. The water flowed down Sandia Canyon as surface water, penetrated the underlying rock layers, and in time seeped into the regional aquifer beneath Sandia and Mortandad canyons. LANL ceased releasing chromium-contaminated water in 1972.</p> <p>Yes, TA-21 is at the eastern end of DP Road.</p>

<p>Please describe the current status of the chromium in-situ test that used molasses.</p>	<p>The molasses test did not accomplish the intended goals and the results of that pilot study are still being evaluated. Other treatment options are being successfully implemented.</p>
<p>You claim honesty and that cleanup is half complete. But decisions have already been made to leave most wastes buried. How is that honest and half complete?</p>	<p>“Cleanup” is not limited to removal actions, but includes a range of remedies. All remedial actions must comply with federal and state laws and regulations.</p>
<p>How much transuranic and low-level waste will be left at Area G after current cleanup plans are complete, which is currently scheduled for 2037?</p>	<p>All above-ground and below ground retrievably stored TRU waste will be removed. Some waste legally disposed underground may remain buried at TA-54. EM-LA and N3B expect that future public forums will clarify the specific nature, quantity, and location of various materials and contamination.</p>