

**NEW MEXICO ENVIRONMENT DEPARTMENT’S RESPONSE TO PUBLIC COMMENT RECEIVED ON THE
JANUARY 2024 MIXED WASTE LANDFILL SECOND FIVE-YEAR REPORT
U. S. DEPARTMENT OF ENERGY/ NATIONAL TECHNOLOGY AND ENGINEERING SOLUTIONS OF SANDIA, LLC
SANDIA NATIONAL LABORATORIES**

Public comments concerning the January 2024 Mixed Waste Landfill Second Five-Year Report, at the U. S. Department of Energy/National Technology & Engineering Solutions of Sandia, LLC (NTESS) Sandia National Laboratories (SNL) Facility was accepted by the New Mexico Environment Department (NMED) from June 14, 2024, to September 10, 2024. The May 2005 Final Order requires that NMED provide a process whereby members of the public may comment on the Mixed Waste Landfill (MWL) Five-Year Report and its conclusions and respond to those comments in its final approval of the MWL Five-Year Report. On January 8, 2014, NMED approved the MWL Long-Term Monitoring and Maintenance Plan (LTMMP), which started the first five-year evaluation period. The first five-year report was approved by NMED on July 9, 2021.

Table 1 of this document lists the members of the public who commented on the MWL Second Five-Year Report. Table 2 summarizes the comments and contains the NMED’s responses to the comments received. NMED’s response to public comment includes a description of any modifications that are made to the Second Five-Year Report because of public comment.

Commenter ID	Date of Letter, email, or comment	Commenter / Organization	Response #(s)
A	August 10, 2024	Dave McCoy, Citizen Action New Mexico (6 emails)	R1, R6, R8, R9, R10, R11, R14, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40
B	August 11, 2024	Janet Greenwald, Citizens for Alternatives to Radioactive Dumping (2 emails)	R2, R14
C	August 11, 2024	John E. Wilks III, Veterans for Peace (2 emails)	R3, R4, R9,
D	September 5, 2024	William P. Moats	R5
E	September 5, 2024	Cynthia McNamara	R1, R2, R6, R8, R9, R10, R11, R14
F	September 9, 2024	Elizabeth Smith	R1, R2, R6, R8, R9, R10, R11, R14
G	September 9, 2024	Barb O'Connor	R1, R2, R6, R8, R9, R10, R11, R14
H	September 9, 2024	Emilia Sanchez	R1, R2, R6, R8, R9, R10, R11, R14

I	September 9, 2024	Garrett Sylvia	R1, R2, R6, R8, R9, R10, R11, R14
J	September 9, 2024	McKenna Nilsson	R1, R2, R6, R8, R9, R10, R11, R14
K	September 9, 2024	Omkulthoom Qassem	R1, R2, R6, R8, R9, R10, R11, R14
L	September 10, 2024	Emmaline Miller	R1, R2, R6, R8, R9, R10, R11, R14
M	September 10, 2024	Naya Anllo-Valdo	R1, R2, R6, R8, R9, R10, R11, R14
N	September 10, 2024	Cail Cron	R9, R10, R11, R12
O	September 10, 2024	Gwendolyn Pieper	R6, R7, R9, R10, R11,
P	September 10, 2024	Patricia Gonzalez	R1, R2, R6, R8, R9, R10, R11, R14
Q	September 10, 2024	Pilar Anllo	R1, R2, R6, R8, R9, R10, R11, R14
R	September 11, 2024	Alheli Caton-Garcia, Southwest Organizing Project	R1, R2, R6, R8, R9, R10, R11, R14
S	September 11, 2024	Ashton Nichols	R1, R2, R6, R8, R9, R10, R11, R14
T	September 11, 2024	Barbara Grothus	R1, R9, R10, R11, R13,
U	September 11, 2024	Ella Joan Fenoglio	R13,
V	September 11, 2024	Eric Garcia	R13,
W	September 11, 2024	Geneva Harstine	R6, R7, R8, R9, R10, R11, R14
X	September 11, 2024	Selah Burson	R15
Y	September 12, 2024	Amanda Cortes	R16
Z	September 12, 2024	Joni Arends, Concerned Citizens for Nuclear Safety	R7, R8, R9, R10, R11, R14, R17, R18
AA	September 12, 2024	Ross Lockridge	R1
BB	September 12, 2024	Deborah Reade	R1, R8, R19
CC	September 12, 2024	Demand Nuclear Abolition	R1, R2, R6, R8, R9, R10, R11, R14
DD	September 12, 2024	Green Party of the Albuquerque Metropolitan Area	R20
EE	September 12, 2024	Jennie Pakradooni	R1, R2, R6, R8, R9, R10, R11, R14
FF	September 12, 2024	Meredith Maines	R1, R2, R6, R8, R9, R10, R11, R14

NMED Response Number	Commenter ID	Summary of Public Comment	NMED Response
R1	A, C, E, F, G, H, I, J, K, L, M, P, Q, R, S, T, AA, BB, CC, EE, FF	Commenters state that Sandia National Laboratories agree that it is time to excavate the Mixed Waste Landfill (MWL) and process and remove the waste to an offsite disposal site in full consultation with communities and tribes along the transportation routes and the site.	The Second Five-Year Report (Report) does affirm that excavation and offsite disposal of mixed waste is feasible, and that off-site excavation and disposal is preferable to on-site excavation and disposal; it does not state that it is time to excavate the MWL. The Report reviews the results of monitoring under the Long-Term Monitoring and Maintenance Plan (LTMMP), which includes required periodic sampling of groundwater, soil moisture, soil vapor, radon, soil tritium, and biota. There is no past or current evidence that any constituents of concern, including radionuclides and chlorinated solvents, are migrating downward toward groundwater. The data indicate that the MWL, in its current condition with the cover installed, does not pose a threat to human health or the environment. NMED recognizes that continued monitoring is necessary to ensure protection of human health and the environment. Monitoring will continue to be conducted under the LTMMP to identify any releases, should any occur. Given that currently the landfill does not pose unacceptable risk, there is no immediate justification for NMED to require excavation of the landfill. Modification: None.

R2	A, B, E, F, G, H, I, J, K, L, M, P, Q, R, S, CC, EE, FF	Commenters state that the comment period for the 5-year-review be extended so that they can dialogue with NMED about this very important issue.	The comment period for the Second Five-Year Report was extended from sixty days to ninety-two days. The public comment period began on June 14, 2024, and was extended an additional 30 days to end on September 10, 2024. However, a typographical error on one of NMED's public notice platforms listed September 12, 2024, as the end of the comment period. To avoid confusion, NMED accepted comments through 5 pm on September 12, 2024. Additionally, NMED met with Concerned Citizens for Nuclear Safety, Citizens for Alternatives to Radioactive Dumping, and other members of the public on September 9, 2024, to hear their concerns and discuss the MWL. Modification: None.
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R3	C	Commenter wants NMED to issue a civil administrative financial penalty to DOE for operating the MWL without a permit. Commenter states that the current permit dates back to 1992 and is incomplete. PCE, TCE and PCB's are leaking to the aquifer with inadequate monitoring. Sandia has no TSCA permit for the PCB's. Contaminants have been found in ground water, including PCBs, PCE, TCE, chromium and nickel at times exceeding state and federal drinking water standards.	The SNL has operated under a RCRA permit since 1992. The MWL has been managed as a SWMU under the SNL Permit, with a current status of Corrective Action Complete with Controls. There is a robust groundwater monitoring well network at the MWL. Sporadic detections of PCE and TCE have occurred at monitoring wells at the MWL; however, there has been no exceedance of EPA MCLs or New Mexico WQCC groundwater standards, and no increases in concentration have occurred. PCBs have not been detected in groundwater. Chromium and nickel have been detected in groundwater in MWL-MW1 and MWL-MW3; however, these detections were due to corrosion of stainless steel well screens. The wells were plugged and abandoned in approximately 2008. There have been no exceedances of nickel or chromium standards in groundwater monitoring wells since the removal of the stainless steel wells. Additionally, EPA does not issue TSCA permits, but clean up of PCBs is conducted under EPA direction in accordance with TSCA regulations. Modification: None.
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R4	C	Commenter states that SNL generates and stores extremely large amounts of solid and liquid hazardous and radioactive wastes. Sandia should present a plan for reducing the more than 120,000 pounds of hazardous waste produced annually at the Kirtland AFB site. Sandia should explain why it is exceeding prior estimates of radioactive waste. Sandia should describe current tritium, strontium-90, americium-241 and plutonium-238/239/240, and other radioactive inventories in New Mexico. These inquiries are relevant to the design of emergency contingency plans for the lab, the base, the neighborhood, and the traveling public at the Sunport as well as the near-by interstate highways. Commenter states that the toxic and radioactive wastes from prior Sandia operations are contaminating the soil and groundwater that serves Albuquerque drinking water wells and pose great threats to public health and the environment. This is true at TA-V, the Tijeras Arroyo, the Mixed Waste Landfill, the Chemical Waste Landfill and other locations which Sandia must fully identify. Finally, NMED, for permitting purposes, should give consideration to the fact that Sandia Lab is currently disposing of more than 1 million gallons per day of waste water into the Albuquerque city sewer system.	This comment is not relevant to the MWL Second Five-Year Report. SNL generates, treats, and stores hazardous waste in accordance with its Hazardous Waste Permit, and has contingency plans on file as required by the Permit. Groundwater monitoring events have occurred for multiple decades, and groundwater monitoring is planned to continue on a recurring basis at sites TA-V, Tijeras Arroyo, the MWL, and the Chemical Waste Landfill. Additionally, SNL buildings are connected to ABCWUA sewer lines, and domestic wastewater from the use of restroom facilities is treated at the Southside Water Reclamation Plant under a NPDES permit. Modification: None.
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R5	D	Commenter states that the remedy is protective of human health and the environment, and that the remedy was not meant to “buy time”, but rather that it would function as intended for perpetuity, and that contaminants would not escape from the landfill at concentrations or activity levels that would cause harm to human health or the environment. The commenter states that the landfill cover shields the surface from harmful gamma radiation, which is important as the radiation hazard exceeds the chemical hazard. Commenter states that Permittees and NMED must conduct inspections, complete maintenance, and verify compliance as part of their responsibilities to the public. Commenter states that excavating classified waste will cause complications to waste management, increase costs, and greatly increase the time needed to plan and complete excavation, including problems with waste determinations, overlapping TSCA regulations, and identifying, securing and demilitarizing classified radioactive waste. Excavation is not warranted because the remedy is protective. The 2nd Five Year Report should be approved by NMED.	NMED agrees that the remedy is protective of human health and the environment, and that there is currently no cause for excavation of the MWL. Monitoring will continue to be conducted under the LTMMP to monitor for releases, and NMED would take appropriate action if any releases from the site are detected. Modification: None.
R6	A, E, F, G, H, I, J, K, L, M, O, P, Q, R, S, W, CC, EE, FF	Commenters state that NMED should consult with impacted tribes including the Pueblos of Isleta, Sandia, Laguna, Santa Ana, and San Felipe, which was not fully addressed in the Second Five-Year Review.	The Second Five-Year Report indicates that the remedy is protective of human health and the environment and has a negligible effect on any of the Pueblos named in the comment. As always, NMED continues to welcome input from Pueblo tribal members and governments. Modification: None.

R7	O, W, Z	Commenters state that the Pueblos of Isleta, Sandia, and Laguna, as well as other indigenous people affected by the landfill's presence must be consulted and informed consent and collaboration of the tribes must be obtained prior to transportation of the MWL's contents. The Navajo Nation's Radioactive Materials Transportation Act of 2012, must be followed.	Currently, there is no plan to excavate the MWL as the remedy is protective of human health and the environment. If monitoring results ever indicate that it is no longer true, NMED would require SNL to submit a work plan for excavation, and the transportation of wastes will involve coordination with many jurisdictions. At that time, NMED will make every effort to ensure the involvement of all stakeholders and affected entities. Additionally, the Radioactive and Related Substances Equipment, Vehicles, Person and Materials Transportation Act of 2012 applies to the transportation of regulated materials on the Navajo Nation and therefore does not apply here. Modification: None.
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R8	A, E, F, G, H, I, J, K, L, M, P, Q, R, S, W, Z, BB, CC, EE, FF	Commenters state that according to 4.5.1, 'Risk Assessment Result for the Mixed Waste Landfill', sentences 12 to 14, 'The assessment did not consider risk posed by the waste constituents in the pits and trenches that have not been released into the environment.' Commenters state that their major concern is metallic sodium. Canisters containing spent fuel from reactor meltdown experiments with up to potentially explosive 5 kg of metallic sodium in each were placed in Pits 35 and 36. Additional canisters containing spent fuel were placed in vertical small diameter holes drilled in the bottom of trenches, but their locations are unknown. The canisters are subject to corrosion and explosion as occurred at a mixed waste facility in Beatty, NV, in 2015.	This issue has been previously addressed by NMED (see Response R38 for the Corrective Action Complete (CACⁱ) and Response R1 for the Corrective Measures Study (CMSⁱⁱ)). Metallic sodium can react violently when mixed with water. If sodium is present in the canisters, provided that the canisters remain buried and are not exposed to water beyond typical soil moisture contents, chemical reaction of the sodium will not proceed at a rate that will threaten human health or the environment. As an example that an explosion is unlikely, metallic sodium residue was present in large concrete crucibles which were buried in soil at SNL SWMU 117, located at the Large Melt Facility. Fifteen tests, each utilizing 220-440 lbs of sodium were conducted at the facility to study reactor safety concerns. Sodium residue in the crucibles disposed of in the small landfill at SWMU 117 was in direct contact with soil for many years before the crucibles were excavated. Upon being excavated, it was found that the metallic sodium had not reacted explosively as a result of being directly exposed to soil moisture. There simply was not enough moisture in the soil to react with the sodium metal residue in a substantial manner, much less in an explosive manner. Corrective action sites must be evaluated on an individual basis to assess risk, because, in general, conditions at any given site are often different from other sites, including sites that may be located near to or adjacent to other sites. The Beatty, Nevada site referenced in the comment is not an exception to this rule as climatic and other conditions at these sites are dissimilar to those found at the MWL. Regardless, the NMED has the authority to reopen sites for corrective action should a remedy fail to be protective of human health and the environment with respect to hazardous wastes and constituents. Modification: None.
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R9	A, C, E, F, G, H, I, J, K, L, N, M, O, P, Q, R, S, T, W, Z, CC, EE, FF	Commenters state that NMED must issue a timely order, called a Corrective Measures Implementation Plan (CMI Plan), for the excavation and offsite disposal of the toxic and radioactive chemicals contained in the 2.6-acre unlined dump.	This matter has been addressed, in part, previously by the NMED in Response R42 for the LTMMPⁱⁱⁱ and Response 6 in the CAC petitionⁱ. There is no compelling reason to excavate the landfill, which, in its current condition, does not pose unacceptable risk to the environment or human health under an industrial land use scenario, which is the foreseeable future land use for the site. Modification: None.
R10	A, E, F, G, H, I, J, K, L, N, M, O, P, Q, R, S, T, W, Z, CC, EE, FF	Commenters state that Sandia’s Second Five-Year Report states: • Planning and implementation for excavation is feasible and could begin by NMED issuing an Order for a CMI Plan; • The preferred alternative is excavation with offsite disposal; • To protect workers, excavation could be accomplished by conventional and remote-controlled robotic equipment; and • Dangerous radionuclides, such as Cobalt 60 and Tritium, have decayed to “acceptable” levels.	The commenter paraphrased statements that are in the Second Five-Year Report. Off-site disposal is feasible, and excavation can be accomplished with technology that is available today. NMED does not have regulatory authority over radionuclides; DOE self-regulates radionuclides. The data indicate that the MWL, in its current condition with the cover installed, does not pose unacceptable risk to human health or the environment. NMED recognizes that continued monitoring is necessary to ensure protection of human health and the environment. Monitoring will continue to be conducted under the LTMMP to monitor for any releases, should any occur. NMED would take appropriate action if releases from the site are detected. Modification: None.

R11	A, E, F, G, H, I, J, K, L, N, M, P, Q, R, S, T, W, Z, CC, EE, FF	Commenter states that NMED has recommended excavation of another dump in New Mexico – the Material Disposal Area C at Los Alamos National Laboratory. Commenter states that addressing these leaking Department of Energy dumps is an important step in protecting regional drinking water aquifers.	NMED has indeed recommended excavation of the MDA C at LANL due to high concentrations of volatile organic compounds including TCE in soil vapor, a lack of adequate groundwater monitoring network, a complex geological environment and a residential population approximately a mile away. In contrast, decades of data from a robust groundwater and soil vapor monitoring network indicate that releases from the MWL were minor and do not pose unacceptable risk to human health or the environment. Groundwater is not contaminated. Monitoring under the LTMMP will continue to ensure that the ET Cover remains protective of human health and the environment. Modification: None.
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R12	N	Commenter states that they are troubled by the serious potential threats posed by the unlined landfill, which contains extremely hazardous chemicals and explosive materials that could endanger the health and safety of residents in Albuquerque and nearby Pueblos. Commenter states that the fact that landfill remains unlined makes it especially dangerous. With no barrier to prevent leakage, these toxic substances pose a grave risk to our aquifer. The potential contamination of our water supply would have devastating and long-term consequences for public health, particularly for those of us who live near the landfill. It would also jeopardize the health and safety of our neighboring Indigenous communities, who rely on this land and its resources. Commenter states that given the volatility of the waste buried in this landfill, including explosive chemicals, the risks extend far beyond contamination. There is a very real threat of a catastrophic event that could put thousands of lives at risk, both from the immediate hazards of an explosion and from the long-term effects of exposure to toxic substances.	The evapotranspirative cover (ET cover) prevents wastes from endangering human health, ground water, and the environment by minimizing the infiltration and percolation of moisture into the landfill, preventing the intrusion of small animals into waste, and shielding people, workers, and the environment from harmful radiation. Because the cover limits contact of waste with air and water, mobilization of waste is unlikely, and the risk of fire or explosions is expected to be very low. The Second Five-Year Report reviews the results of monitoring under the LTMMP, which includes required periodic sampling of groundwater, soil moisture, soil vapor, radon, soil tritium, and biota. There is no past or current evidence that any constituents of concern, including radionuclides and chlorinated solvents, are migrating downward toward groundwater. The data indicate that the MWL, in its current condition with the cover installed, does not pose a significant threat to human health or the environment. NMED recognizes that continued monitoring is necessary to ensure protection of human health and the environment. Monitoring will continue to be conducted under the LTMMP to monitor for any releases, should any occur. Should a release of a hazardous waste or constituent that occurs in the future pose an unacceptable risk, NMED has the authority to require corrective action as necessary to protect human health and the environment from the release. Modification: None
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R13	T, U, V	Commenters state that the dump is only a mile away from a children's park. This Landfill/dump is close to the communities of the International District and Mountain View as well as Isleta Pueblo.	The MWL is located within TA-III of Sandia National Laboratories, within Kirtland Air Force Base. The closest community is Mesa del Sol, which is over three miles to the west of the MWL. There is no children's park near the MWL. Regardless of the location of nearby communities, monitoring is occurring under the LTMMP, which includes required periodic sampling of groundwater, soil moisture, soil vapor, radon, soil tritium, and biota. The data indicate that the MWL, in its current condition with the cover installed, does not pose a threat to human health or the environment. NMED recognizes that continued monitoring is necessary to ensure protection of human health and the environment. Monitoring will continue to be conducted under the LTMMP to identify any releases, should any occur. Should a release of a hazardous waste or constituent that occurs in the future pose an unacceptable risk, NMED has the authority to require corrective action as necessary to protect human health and the environment from the release. Modification: None
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R14	A, B, E, F, G, H, I, J, K, L, M, P, Q, R, S, W, Z, CC, EE, FF	Commenters state that the potential volatileness of the landfill has many Albuquerque citizens on edge. Commenters state they appreciate NMED's efforts to keep rainfall from pooling and entering the facility through altering the terrain, putting up natural barriers and planting and maintaining a cover of plants of the southwest. However, no account was taken in the most recent 5 year report (2024) of climate change. Commenters state that many climatologists believe that our environment will grow drier; however, there is also surmise that the rising temperature of the ocean will increase rainfall in our region.	The Second Five-Year Report does not mention climate change. However, climate change was considered during remedy selection, and also considered during establishing the requirements for monitoring under the LTMMP. Prior to remedy selection, fate and transport models were used to indicate whether an ET cover would meet EPA technical equivalency criteria of net annual percolation below 31.5 mm/year for a Subtitle C landfill cover. As discussed in the reports, <i>Probabilistic Performance-Assessment Modeling of the Mixed Waste Landfill at Sandia National Laboratories (2nd Edition)</i>, and <i>Calculation Set for Design and Optimization of Vegetative Soil Covers</i>, modeling was used to predict results for current climate, for a 50% increase in precipitation, and for a 100% increase in precipitation. The model was conservative in that runoff was not considered, and indicated that even with a 100% increase in precipitation the ET cover would meet and exceed the EPA landfill cover technical equivalency criteria. Additionally, as required under the LTMMP, soil moisture monitoring data is collected annually in three angled access tubes that measure soil moisture at 1-ft increments from 4 ft to 25 ft bgs, then 5-ft increments to total depth of the access tube (200 linear ft). Soil moisture measurements have remained consistent during nine years of monitoring, indicating a dry vadose zone. Soil moisture monitoring will continue as required under the LTMMP. Modification: None.
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R15	X	The commenter states that disposing of hazardous material such as this proposal sets forth requires oversight, an extraordinary amount of care, and consideration for any and all entities it might affect. The commenter states that it seems that none of these factors have been considered. In good conscience, Sandia Labs should revise their proposal to include tribal community communication, strict safety regulations with rigorous oversight, as well as reconsidering location to minimize environmental impacts. Set so close to the aquifer that supplies Albuquerque with drinking water is NOT an appropriate dump site. Not only that, but the proximity to neighborhoods makes this a set up for all manner of health and environmental issues down the road.	Contrary to the comment, NMED has overseen the MWL through the corrective action process, including the RCRA Facility Investigation, Corrective Measures Study and Remedy Selection, the Corrective Measures Implementation Plan, the Corrective Measures Implementation Report, the Long-Term Monitoring and Maintenance Plan, and the Corrective Action Complete process. Throughout this process, NMED has given great thought to safety of human health and the environment, and has strived to facilitate public participation, including that with tribes, and to explain its decisions with each step. Releases from the MWL were minor and do not pose unacceptable risk to human health or the environment. Groundwater is not contaminated. Monitoring under the LTMMP will continue to ensure that the ET Cover remains protective of human health and the environment. Modification: None.
R16	Y	The commenter states that they live within five miles of the proposed site for mixed waste. The commenter urges NMED to deny Sandia Labs mixed waste landfill permit request. The area in which this permit is requested is close to places where people live, go to school, go to work and grow food. Sandia labs has not show sufficient long term safeguards for protecting the public health and lands against mixed waste contamination. Managing even the half life of nuclear waste is beyond Sandia Lab's capacity.	The MWL is a SWMU with the status of Corrective Action Complete with Controls under the RCRA permit for SNL; there is no permit request for the MWL. Monitoring and maintenance of the ET cover under the LTMMP has occurred over the past nine years and indicates there is no unacceptable risk to human health and the environment. Monitoring will continue in the future to ensure that the ET Cover remains protective. Modification: None.

R17	Z	Commenter has the following questions: 1. Would climate change be addressed in a permit modification process? 2. Would it be a Class 2 or Class 3 permit modification request? 3. Would climate change be addressed in the corrective action complete determination? 4. How well is the NMED approved remedy working to protect human health and the environment? 5. Has the non-Resource Conservation and Recovery Act (RCRA) approved evapotranspiration (EV) cover worked to protect human health and the environment in the same manner as a RCRA approved cover would?	The MWL is a SWMU whose current status is Corrective Action Complete with Controls. Because climate change was considered during remedy selection and during establishing the requirements for monitoring under the LTMMP, a permit modification process is unnecessary at this time. The design and construction requirements of hazardous waste landfills, as defined in the RCRA regulations, also may be applied under RCRA corrective action, as they have in the case of the MWL. Alternative final cover systems, such as evapotranspiration (ET) cover systems, are increasingly being used at waste disposal sites, including hazardous waste landfills when equivalent performance to conventional final cover systems can be demonstrated. Monitoring under the LTMMP indicates the ET Cover is working to protect human health and the environment, and that there is little to no infiltration of water into the MWL. The Airport Landfill at Los Alamos National Laboratories is another example of an ET cover that is protective of human health and the environment. Modification: None.
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R18	Z	Commenter states that In April 2023 President Biden signed his “Justice 40” Executive Order 14096 on Revitalizing Our Nation’s Commitment to Environmental Justice for All. The Executive Order was not mentioned in the December 1, 2023 submitted Second Five-Year Review of the MWL even though it was signed by President Biden at least seven months prior to submittal. Given the diversity of population surrounding the MWL, the DOE’s oversight of its responsibilities to address its Justice 40 obligations require NMED to acknowledge that the Justice 40 “trigger” or “variable” was not addressed in the Second Five-Year Review. the Department of Energy is a Justice 40 Initiative Covered Program. https://www.whitehouse.gov/wp-content/uploads/2023/11/Justice40-Initiative-Covered-Programs-List_v2.0_11.23_FINAL.pdf Beginning on p. 8 of the pdf, the DOE has 167 Justice 40 covered programs. These include the following that may be applicable to NMED’s decision making about next steps for the MWL: Under the title Office of Environmental Management (EM) (p. 10 of the pdf), 75. Community Engagement Cooperative Agreements Related to Soil & Groundwater Remediation 76. Community Engagement Grants Related to Soil & Groundwater Remediation 80. Non-Superfund Soil & Groundwater Remediation Sandia National Lab Under the title National Nuclear Security Administration (NNSA) (p. 12 of the pdf), 133. Long-term Stewardship (LTS)	NMED is committed to EJ both internally and as required by the EPA and has considered environmental justice during its review of the first and second Five-Year Reports. This includes a Public Involvement Plan that indicates that there are 22 households within a four mile radius of the MWL, and no unacceptable risk to those communities. The decision to excavate the MWL should be data driven and determined by monitoring results. Data indicate that the remedy is protective of human health and the environment and is expected to remain protective as there are currently no trends showing any change. Monitoring will continue to be conducted under the LTMMP to monitor for releases, should any occur. NMED would take appropriate action if releases from the site are detected. Modification: None.
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R19	BB	Commenter states that the current plan to cover the Mixed Waste Landfill is insufficient. It is only pushing the problem into the future and threatening the aquifer that lies below and the neighborhoods, including low income neighborhoods of color, that are nearby. Please actually fix the problem of this highly toxic, hazardous and radioactive dump site and issue an order to excavate the Mixed Waste Landfill. Commenter states that this unlined dump threatens Albuquerque's municipal water aquifer and we really can't take any chances with that. One of the contaminants, metallic sodium, explodes when exposed to water. Commenter states that a mixed waste disposal site similar to the MWL, containing metallic sodium, exploded in Beatty, Nevada in 2015. The official report concluded: "Although the original cover was designed and sloped to drain rainwater, there was evidence to indicate that portions of the cover were compromised due to settling and collapse of underlying waste containers and resulting subsidence and cracking of the cover, allowing the migration of rainwater into these areas." Commenter states that it's obvious that a cover, no matter how well designed and constructed, will over time, develop problems. Commenter states that this dump site is a running sore that needs to be gotten rid of—not just bandaged over—or the infection will spread and contaminate the precious drinking water that serves so many New Mexicans in Albuquerque. Please don't just close your eyes to the problem and push it down the line. Eventually this will have to be excavated but hopefully not because there's been an explosion or massive contamination to the aquifer. Let's do things right this time and excavate before one of these disasters occurs.	As discussed in previous responses to public comment, the ET cover of the MWL does not currently pose an unacceptable level of risk to the public, workers, and the environment, is a proven reliable and effective technology, and will further reduce waste mobility. The cover will prevent wastes from endangering human health, ground water, and the environment by minimizing the infiltration and percolation of moisture into the landfill, preventing the intrusion of small animals into waste, and shielding people, workers, and the environment from harmful radiation. Maintenance under the LTMMP, including quarterly inspections of the ET Cover system, is required and any needed repairs completed to ensure the integrity of the ET Cover. Data indicate that the remedy is protective of human health and the environment and is expected to remain protective as there are currently no trends showing any change. Monitoring and maintenance will continue to be conducted indefinitely under the LTMMP to ensure protection of human health and the environment.
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R20	DD	The commenter strongly urges responsible parties to mitigate the hazards of the toxic dump known as the Mixed-Waste Landfill (MWLF) affiliated with Sandia National Lab (SNL) in Albuquerque, New Mexico. The commenter states that since the completion of the second five-year report, the Albuquerque Metro Area has experienced two earthquakes. The commenter states that there is no mention of seismological effects on this unlined collection of poisons with the potential to contaminate our drinking water and surrounding soil. While reported monitoring indicates so far, so good, increased subsurface permeability following an earthquake increases the risk of a sudden release of toxicants and toxins into the aquifer. With global warming and climate change, there may be increased stresses along fault lines from both torrential rains and prolonged droughts. The commenter requests rejection of this report and a requirement to include seismological effects on the movement of contaminants toward surrounding but as yet untainted land and, critically, our precious water supply.	The purpose of the five-year reevaluation reports is to summarize the Long-Term Monitoring and Maintenance Report (“LTMMR”) results presented in previous five annual LTMM Reports and: a. Reevaluate the feasibility of excavation; b. Analyze the effectiveness of the Evaporative Transportation (ET) Cover and the likelihood of contaminants reaching groundwater based on current monitoring results; c. Review of monitoring results and other pertinent data; d. Update fate and transport model of current results are outside the range of previously modeled results; and e. Include all efforts to ensure any future releases are detected and addressed before any effect on groundwater or increased risk to public health and the environment. The Second Five-Year Report achieves this purpose. Seismological activity was beyond the scope of the Report. However, in response to this comment, NMED requested supplemental information from SNL on seismic activity and potential effects on the MWL, and SNL provided the following information. The Mixed Waste Landfill (MWL) is located near the east-central edge of the Albuquerque Basin. The Albuquerque Basin (also known as the Middle Rio Grande Basin) is one of a series of north-south trending basins that was formed during the extension of the Rio Grande Rift. Rift formation began in the late Oligocene and continued into the early Pleistocene, with the primary period of extension occurring between 30 and 5 million years ago. The Rio Grande Rift extends from central Colorado to northern Mexico. While the Rio Grande Rift is associated with faulting and seismic activity, the Albuquerque area has a relatively low seismic hazard compared to other tectonically active regions in the United States. (continued)
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R20			(continued from above) An average magnitude earthquake (e.g., magnitude less than 4.0) would be unlikely to cause significant settlement of the ET Cover or subsidence of the contents from movement or compaction. A highest recorded magnitude earthquake (e.g., magnitude 5.2 earthquake) could potentially cause minor settlement of the ET Cover and subsidence of the contents. However, the ET Cover is designed to accommodate minor shifts in subsurface conditions with little or no effect on itself or the contents. The site response to and damage from an earthquake are difficult to determine, as other factors such as the location of the epicenter and depth of the earthquake, ground displacement, rupture patterns, and ground accelerations must be considered. However, the ET Cover design is a “soft cover” design (i.e., no liners or leachate collection systems) that is resilient to minor seismic activity and minimizes containment integrity issues. Additionally, the solid nature of the waste, very high evapotranspiration rate, and thick vadose zone (i.e., unsaturated sediments between the surface and top of the Regional Aquifer) further minimize the probability of waste migration due to minor seismic activity. Modification: None.
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R21	A	Commenter states that the nuclear weapons era wastes disposed of between 1959 to 1988 are leaking from the unlined disposal pits and trenches above Albuquerque's drinking water aquifer. The 2.6 acre site has a classified (0.6 acres of pits) and unclassified area of trenches. It is unknown fully what are the contents of the secret area. In 1964, a records purge was made for earlier years of the MWL disposal operations.	The issues surrounding the MWL inventory have been previously addressed by the NMED (see Response R5, R6, R8, R9, R13, R18, and R75 for the CMSⁱⁱ, and Response R47 of the CAC petitionⁱ). The Facility provided both Citizen Action New Mexico (CANM) and the public with the complete set of MWL inventory disposal records and supporting information in 2002. The MWL inventory uncertainty was a major topic at the December 2004 public hearing for selection of the MWL final remedy, and the MWL inventory was extensively discussed and considered. During the July 2015 public hearing for the CAC with controls determination, selected disposal records were cited as proof of high-level radioactive waste disposal by CANM; these records were confirmed to be low-level radioactive waste. As required by the Final Order issued February 12, 2016, by NMED Secretary Flynn, DOE and Sandia provided a records disclosure affirmation on May 16, 2016. The affirmation states that all historical MWL disposal records and supporting information have been previously provided and made available to the public. Modification: None
R22	A	Commenter states for a fifty year period, precipitation entered the pits and open trenches of the dump. 270,000 gallons of reactor wastewater containing hexavalent chromium was disposed of in Trench D. Another 5,000 gallons of water was used to extinguish a uranium chip fire in trench B. A second uranium fire also occurred. Protective berms around the MWL were breached by powerful storms in 2006-07 with pooling of water. A RCRA Facility Investigation failed to consider any risk from a possible pathway between the dump and the aquifer below.	Management of the MWL prior to the construction of the ET cover has been previously addressed by NMED (see Response R19 for the CMSⁱⁱ, and Response R67 and R75 in the CAC petitionⁱ). Berms are addressed in Response R40 below. The issue of groundwater not being considered as a pathway was addressed previously by the NMED in Response R2 for the CMI Report^{iv}, Response 68 of the CAC petitionⁱ, and Response 18 of the Five-Year Report^v. Modification: None.

R23	A	Commenter states that the MWL never received a RCRA permit. It received hazardous waste after July 26, 1982 and should have been, according to the NMED (Dinwiddie, April 1998), treated as a "regulated unit" with strict ground water monitoring, a closure and a post closure plan. The MWL is currently treated as a Solid Waste Management Unit which is the least protective standard, especially considering the character of the radioactive and chemical wastes without separation from the aquifer serving Albuquerque's population.	This issue has been previously addressed by NMED (see Response R13 for the LTMMPⁱⁱⁱ, Response R39 for the CMI Plan, Response 30 for the CMI Report, R71 for the CAC petitionⁱ, and Response R36 to the Five-Year Report^v). The MWL did not receive hazardous or mixed waste after 1982. The MWL is a Solid Waste Management Unit (SWMU) subject to corrective action pursuant to 20.4.1.500 NMAC incorporating 40 CFR § 264.101. The EPA designated the MWL as a SWMU prior to delegating the corrective action authority to NMED for RCRA subtitle C. The requirements for a regulated unit do not apply to the MWL. Groundwater monitoring has been and will continue to be conducted under the LTMMP to detect a release of a contaminant to groundwater, should any unexpected release occur. The LTMMP provides for groundwater monitoring that is similar with respect to the technical requirements for regulated units subject to compliance monitoring. Modification: None.
R24	A	Commenter states that the dirt cover is unsuitable for the long-term. Commenter cites a 2006 TechLaw, Inc. report as evidence. Commenter states that the dirt cover above the dump is not a Resource Conservation and Recovery Act ("RCRA") Subtitle C cover. Commenter states that the 2016 Final Order indicates that the dirt cover "may not be the most appropriate long-term solution for the [MWL] site. Commenter states that the fact that the 2016 Final Order identifies that the cover on the MWL is not RCRA qualified remains a knowingly ongoing violation of RCRA law that the 2016 Final Order Identified by implication and continues as a term of the 2016 Order for which there is no discussion or compliance in the 2024 review.	This issue has been previously addressed by the NMED (see Response R82, R83, and R93 for the CAC petitionⁱ and Response R39 to the Five-Year Report^v). Modification: None.

R25	A	Commenter states that according to the Environmental Protection Agency (EPA), all landfills will leak. The MWL dirt cover cannot protect the public and environment for the lengthy half-lives of the radionuclides in the MWL and volatile organic chemicals and semi-volatile organic compounds and included Perchloroethylene (PCE) and Tetrachloroethylene (TCE) carbon tetrachloride, organic acids, scintillation cocktails (toluene based) believed to also contain radioactive waste. PCE and TCE are already diffusing 400 ft into soil beneath the dump near to or entering groundwater. TCE was dumped in 1 cu. ft. amounts (7.5 gal). Two-hundred and fifty-one cu. yd. of Polychlorinated biphenyls ("PCBs") are in the dump and require, but do not have, an EPA Toxic Substances Control Act ("TSCA") permit for disposal. These solvents alone are capable of contaminating hundreds of millions of gallons of water. Commenter states that tons of heavy metals were disposed of in the MWL such as lead, cadmium, nickel, beryllium, and uranium. Incompatible, potentially explosive lead azide, lithium and metallic sodium were disposed. Commenter states that the dirt cover placed above the dump cannot remain protective of the public considering the long-term danger of 71 cu yd. of Transuranic waste ("TRU") that legally requires deep geologic disposal due to lengthy half-lives. 10 CFR § 61.55(a)(2)(iv). Such long-lasting radionuclides include: Plutonium-239 (half-life 24,000 years), Neptunium-237 (half-life 2,000,000 years), Uranium-235 (half-life 704,000,000 years), Technetium-99 (half-life 211,000 years), and Americium-241 (half-life 432.7 years). There are 119 55 gal drums of plutonium laced waste from Lovelace Laboratory. DOE Order 435.1 includes in its definition of HLW "other highly radioactive material that requires permanent isolation."	This issue has been previously addressed by the NMED (see Response R49 and R89 for the CAC petitionⁱ, and Response R22 to the Five-Year Report^v). NMED agrees that there are radionuclides in the MWL that have long half-lives. NMED does not have regulatory authority over radionuclides. Solvents (several volatile organic compounds such as PCE and TCE) and a heavy metal (cadmium) have been released from the landfill. These releases, identified under the RCRA Facility Investigation, are minor and do not pose unacceptable risk to human health or the environment. Continued monitoring as required under the LTMMP will ensure that any future releases will be identified. PCBs releases are regulated by EPA under TSCA regulations, but TSCA permits are not issued. Modification: None.
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R26	A	Commenter states that the dump has been claimed to only contain low-level mixed radioactive waste, disposal records show the presence of High Level Waste. Among the 6,000+ Radioactive and Toxic Disposal sheets for the MWL (obtained under the FOIA) are sheets that indicate disposal of irradiated fuel pins (also referred to as “rod” or “fuel element ends”) and toxic chemicals from nuclear reactor meltdown tests, testing of fuel for a nuclear rocket program (Space Nuclear Auxiliary Program or “SNAP”), military testing and disposal from nuclear weapons testing at the Nevada Test Site, Kwajalein Island and White Sands. Disposal records show radioactive wastes from nuclear weapon tests with names such as: Fin Foot, Diesel Train, Mighty Epic, Camphor, Cypress, Ming Blade, Hudson Moon, Hudson Seal, Midi Mist, Bagpipe, Chardonnay, Minute Stools, Diana Mist, Mint Leaf, Misty North, Husky Pup, Husky Ace, Dido Queen and Diamond Sculls. Commenter states that Internal Sandia memoranda indicate the disposal of “packages” of metallic sodium and canisters containing metallic sodium mixed with melted irradiated fuel pins. Four such canisters were disposed of in pits 35 and 36 and other canisters were disposed of in unknown locations drilled in vertical small diameter holes in the bottom of trenches. There was a metallic sodium/uranium loading facility for nuclear reactor meltdown experiments. The 1984 Excess Special Nuclear Materials (list 15c) stated: "However, I believe it is no longer possible to bury packages of metallic sodium [in the MWL].(Hence, we are between a rock and a hard place.)" Corroded containers with metallic sodium at a Beatty Nevada waste dump, similar to the MWL, exploded in October 2015 during a heavy rain storm, sending a radioactive waste cloud over four states.	This issue has been previously addressed by the NMED (see Responses R10 and R23 of the CMSⁱⁱ, Response R55 for the CAC petitionⁱ, and Response R11 for the Five-Year Report⁴). The SNL Facility is a DOE facility and engages in research involving the use of nuclear materials. It is obvious from the unclassified inventory that radioactive substances were disposed of in the MWL, including radioactive wastes generated from nuclear weapons testing and nuclear experiments. However, NMED does not have regulatory authority over radionuclides. Should a release of a hazardous waste or constituent that occurs in the future pose an unacceptable risk, the NMED has the authority to require corrective action as necessary to protect human health and the environment from the release. Modification: None
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R27	A	Commenter states that the defective MWL groundwater monitoring network data did not justify leaving radioactive and toxic wastes in place at the MWL as a final remedy. The USEPA Inspector General issued a Hotline Report on April 14, 2010 entitled Region 6 Needs to Improve Oversight Practices. EPA Inspector General Interviews of Region 6 technical staff (obtained by a FOIA lawsuit) for the Hotline Report indicated that the team’s initial analysis of the MWL groundwater monitoring network would not have supported the “solution” [of a dirt cover].	This issue of the adequacy of groundwater monitoring wells has been extensively addressed by the NMED (see Response R2 R10, R18, and R32 for the LTMMPⁱⁱⁱ, R29, R38, R39, R40, R42, R44, R46, R47, R48, R49, R50, R52, R53, R54 and R56 for the CMI Plan^{vi}, Responses 4, 6, 7, 8, 11, 17, 19, 25, 26, and 28 for the CMI Report^{iv}, Response R18 for the CAC petitionⁱ, and Response R14 to the Five-Year Report^v). The groundwater monitoring well network at the MWL is not defective, and is adequate to detect contamination, if any, as well as trends in contaminant concentrations. The EPA Office of Inspector General (OIG) report of April 14, 2010 disagreed with the EPA conclusion that the MWL does not present a hazard to the public. The documents in the FOIA request describe a lack of information and some internal disagreements within EPA due to that lack. In December 2007, EPA National Risk Management Research Laboratory reviewed “Evaluation of the Representativeness and Reliability of Groundwater Monitoring Well Data, Mixed Waste Landfill, Sandia National Laboratories” written by Mr. William P. Moats and other NMED staff, and determined that NMED’s overall actions and decisions with respect to the groundwater monitoring system were technically sound and consistent with applicable RCRA requirements. This was affirmed in a letter to the commenter dated June 10, 2010. Modification: None.
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R28	A	Commenter states that on February 24, 2014, the WPAB sent a letter to NMED employee Tom Blaine citing the history of its concerns for the MWL including the need for 5-year re-evaluations and reporting. The WPAB stated, “a legitimate case can be made that the clock on the five-year reports should have started when the Final Order was issued in 2005, which would have required the first five-year report in 2010.” The Albuquerque Bernalillo County Water Protection Advisory Board (WPAB) advised that the re-evaluation should be produced by the end of 2014. The WPAB also hosted a forum for public comment on the Long Term Monitoring and Maintenance Plan (LTMMP) for the MWL. The 2016 Final Order for the MWL ordered the Sandia 5-Year Review to take place in 2019.	This issue has been previously addressed by the NMED (see Response R3 for the LTMMPⁱⁱⁱ, Response R39 for the CAC petitionⁱ, and Response R38 for the Five-Year Report^v). Modification: None.
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R29	A	Commenter states that the remedy does not follow applicable Federal Codes: - Federal regulations clearly state that institutional controls cannot be assumed to last for over 100 years in 10 CFR 61.59(b). 40 CFR 264.111(a) requires closure in a way that “minimizes the need for further maintenance.” Leakage of waste at the MWL could continue for the next several thousands of years well beyond ability to continue institutional controls for maintenance. 40 CFR 264.310 (a)(2) and 265.310 (a)(2) require that the final cover of the landfill must be designed and constructed to “function with minimum maintenance.” 264.310 (a)(4) and 265.310 (a)(4) state the final cover must be designed and constructed to “accommodate settling and subsidence so that the cover’s integrity is maintained.” Substantial geological instability exists in the area of the MWL with four different fault zones. 40 CFR 265.111(b) and 264.111(b) (closure must control, minimize or eliminate post-closure escape of hazardous waste to the ground, surface waters or atmosphere). Hazardous waste has already escaped from beneath the MWL . 40 CFR 264.310 (a)(1) and 265.310 (a)(1) landfill cover must be designed and constructed “to provide long-term – minimization of migration of liquids through the closed landfill...” 40 CFR 264.314 (f)(2) and 265.315 (g)(2) (must not be “risk of contamination of any underground source of drinking water” from placement of liquids in the landfill). The Corrective Measures Study did not assess the risk that migration of water through the MWL will have on aquifers, human health and the environment canisters in the MWL that contain metallic sodium and high level spent fuel from nuclear reactor meltdown experiments can corrode and catastrophically explode, breaching the landfill’s dirt cover and spreading radiation into Albuquerque’s air, soil, and water. - A vegetative cover is not sufficient to prevent accidental ignition or explosion of ignitable wastes in the MWL. 40 CFR 264.312 and 265.17 outline requirements for storage of ignitable waste. Sections 265.17(b)(1) and 264.17(b)(1) require precautions to prevent the generation of “extreme heat or pressure, fire or explosion, or violent reaction.	This issue has been previously addressed by the NMED (see Response R13 for the LTMMMPⁱⁱⁱ, Response R39 for the CMI Plan^{vii}, Response 30 for the CMI Report^{iv}, Response R39 and R71 for the CAC petition^j, and Response R38 for the Five-Year Report⁴). NMED does not have regulatory authority for the Nuclear Regulatory Commission regulations, which include 10 CFR 61.59(b). Regardless, monitoring, maintenance, and institutional controls are required to be maintained under the LTMMMP. The MWL is not subject to 40 CFR 264.111(a), 40 CFR 264.111 (b), or 40 CFR 265.111 (b), as these regulations apply to regulated units. The MWL is also not subject to 40 CFR 264.312, 40 CFR 264.17(b)(1), 40 CFR 265.17, or 40 CFR 265.17(b)(1), as these regulations apply to regulated units or interim status units. The MWL is a solid waste management unit (SWMU) subject to the cleanup authority under 40 CFR § 264.101 (and the SNL Consent Order and the May 2005 Final Order). As a SWMU (and as is the case for all SWMUs at the Facility), the MWL is tracked in the RCRA permit for the Facility. The RCRA permit is for treatment and storage, but not for disposal, of hazardous and mixed waste. EPA designated the MWL as a SWMU. Because the MWL was not a permitted hazardous waste management unit, it is not subject to the closure and post-closure care requirements under 40 CFR Part 264 Subpart G. The MWL is also not subject to the hazardous waste landfill regulations (referred to as Subtitle C requirements, which include 40 CFR 264.310 (a)(1) and 265.310 (a)(1), 40 CFR 264.310 (a)(2) and 265.310 (a)(2), 264.310 (a)(4) and 265.310 (a)(4), and 40 CFR 264.314 (f)(2) and 265.315 (g)(2). However, these regulations were used as guidance under the corrective action program, in order to ensure that the ET cover would minimize or eliminate the migration of hazardous waste to the ground, surface waters or atmosphere, minimize infiltration of moisture, and be protective of human health and the environment for the long term. Modification: None.
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R30	A	Commenter states that the continuing violations of RCRA law at the MWL are not subject to any statute of limitations and are fair game in relation to the need for and feasibility of MWL excavation to be discussed in the 2024 five year review.	This issue has been previously addressed by the NMED (see Response R1 (C) of the LTMMPⁱⁱⁱ, Response R42, R44, R45 of the CAC petitionⁱ, and Response R37 of the Five-Year Report^v.) There are no violations of RCRA regulations at the MWL. The MWL is a SWMU with a status of Corrective Action Complete with Controls, and has been characterized and remediated in accordance with 40 CFR 264.101, the NMED Compliance Order on Consent, and the May 2005 Final Order. Monitoring and maintenance is occurring as required under the LTMMP. Data indicate that the remedy is working and is protective of human health and the environment. The commenter is correct in that if there were a release of a hazardous waste or constituent that poses an unacceptable risk, NMED has the authority to require corrective action as necessary to protect human health and the environment from the release. This includes discussion of any corrective action, including excavation, in the five-year review. Modification: None.
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R31	A	Commenter states that if an onsite RCRA landfill were constructed it would have to meet specific landfill requirements for construction as well as post-closure care requirements found in 40 CFR part 264 or 265 Subpart N. The types of mixed chemical, metal and radioactive wastes currently in the MWL would be poor onsite disposal candidates for meeting Subtitle C goals for long-term maintenance, resisting the generation of leachate and emissions that could penetrate the liners, and provide containment for what would be perpetuity. DOE Order 435.1 requires that the MWL would need at least one thousand (1,000) years of post-closure care to remain protective. There is no Closure Plan and no Post-Closure Plan for the MWL.	The “onsite disposal option” described in the MWL Five-Year Report dated January 2019 and reiterated in the 2024 Second Five-Year Report would need to meet Subtitle C as required in the Final Order dated February 12, 2016. The ET cover is an engineered cover and is designed to reduce the infiltration of moisture into the landfill contents. The ET cover with biointrusion barrier was chosen as the selected remedy, in part, because it would be protective of human health and the environment for both the chemical and radiological hazards. As a reminder, NMED does not have regulatory authority over radioactivity, nor the regulatory authority to enforce DOE Orders. The commenter is correct in that there is no Closure Plan and no Post-Closure Plan for the MWL, as it is a SWMU and not a regulated unit. However, the Corrective Measures Implementation Plan and the Long-Term Monitoring and Maintenance Plan serve essentially the same function as a Closure Plan and Post-Closure Plan. Modification: None.
R32	A	Commenter states that after nearly two and a half decades of the public requesting clean up of the MWL, it is incomprehensible why NMED passed up the opportunity offered five years ago by SNL to begin excavation of the MWL. Commenter questions how long NMED intends to delay and further obstruct the cleanup of this dangerous dump and states there really is no satisfactory reason.	The decision to excavate the MWL should be data driven and determined by monitoring results. Data indicate that the remedy is protective of human health and the environment, and the remedy is expected to remain protective as there are currently no trends showing any change. Monitoring will continue to be conducted under the LTMMP to identify any releases, should any occur. Modification: None.

R33	A	Commenter states that under terms of the 2006 Final Order, paragraph 5, there is an ongoing requirement for review in each five year review of the “feasibility of excavation and the effectiveness of the remedy,” which is a dirt cover. The current 2024 review fails to examine the feasibility of excavation for the period since the last review in 2019. Commenter states that the failure to conduct the five-year reevaluation for excavation allows the further horizontal and vertical release and spreading of VOCs. There is no reason the NMED might not choose to extend the five-year review again. NMED already granted nine years extension ignoring the 2005 Final Order.	To the contrary, the feasibility of MWL excavation is addressed in Section 5 of the MWL Second-Five Year Report. The section affirms that while excavation with offsite disposal is feasible, the ET cover with controls remedy is performing as designed as confirmed by ongoing multi-media monitoring, inspection, maintenance, and repair results. No trigger levels have been exceeded, and land-use restrictions are being maintained. The ET cover is protective of human health and the environment. Ongoing monitoring, inspection, and maintenance under the LTMMP will continue as required under the Permit. The reason for the timing of the first Five-Year report has been previously explained (see response R28). The LTMMP was approved in 2014; the five-year evaluation of data collected under the LTMMP must therefore be due in 2019. SNL submitted the first Five-Year Report in 2019 as NMED directed. Modification: None.
R34	A	The commenter states that under terms of RCRA, the 2016 and 2006 Final Orders, no “opener” is required to again set forth a discussion for the feasibility of excavation that may have increased in the interim since the 2019 five year report. The issue of feasibility of excavation remains an issue for each MWL five year review.	NMED has the authority to require corrective action as necessary to protect human health and the environment from the release; no “opener” is required. Data indicate that the remedy is protective of human health and the environment, and the remedy is expected to remain protective as there are currently no trends showing any change. Monitoring will continue to be conducted under the LTMMP to identify any releases, should any occur. The feasibility of excavation must be reevaluated during each five-year review as required by the 2016 Final Order; both the 2019 and 2024 Five-Year Reports evaluated the need for excavation, and based on the data, the remedy is protective of human health and the environment. Modification: None.

R35	A	The commenter states that on July 9th, 2021, NMED approved the Five-Year Review without evaluating, recommending or ordering either option outlined in its 2016 Final Order to proceed with excavation for the MWL dump. The Environment Department issued a 2016 Final Order for the dump that called for Sandia to meet one of two options. The first was to install a landfill that meets hazardous waste management laws and regulations. The waste would be excavated and placed in a licensed landfill with double liners and leachate collection systems beneath both the cover and the liners. The second option was to excavate the radioactive and hazardous wastes, treat them and dispose of them onsite or ship them offsite. The Environment Department chose neither. The commenter states that in January 2019, Sandia submitted the first Five-Year Review and stated: "Complete excavation with offsite and onsite disposal are remedial alternatives that could be implemented, if necessary." Sandia explained that there have been significant changes over time that makes excavation of the 2.6 acre dump a reasonable option. These include the decay of the radioactive cobalt-60 in the dump to levels where it no longer poses a threat to workers and the public; and use of conventional excavation approaches and streamlined waste management systems. Sandia MWL Five Year Rpt. Ex. Sum. 12-14-18 See p. iii of Executive Summary, pdf p. 8.	The 2016 Final Order requires an evaluation of excavation to an on-site landfill and off-site excavation. The 2019 Five-Year Report fulfilled this requirement. NMED approved the Five-Year Report and did not require excavation of the MWL because the current remedy is protective of human health and the environment. Modification: None
R36	A	The commenter states that for reasons supplied in sworn written testimony by Michael Barcelona, provided by Citizen Action, the MWL dirt cover without liners beneath it and under the dump and without a leachate collection system is worthless.	Michael Barcelona's testimony, submitted for the July 2015 hearing, was considered by the hearing officer during the July 2015 hearingⁱ. As the content of Dr. Barcelona's testimony is repeated in the comments received for the Second Five-Year Review, the comments have been addressed in this Response to Comments. Modification: None

R37	A	The commenter states that hazardous waste such as volatile organic compounds are escaping from the MWL and as of 2015 had reached as far as 400 feet below the MWL.	Low concentrations of VOCs have been detected in the soil vapor monitoring wells. Total VOC concentrations are at 1.1 ppmv or less since soil vapor monitoring began in 2014 under the LTMMP, and are currently under 0.55 ppmv. This is below trigger level of 20 ppmv for total VOCs and is not high enough to contaminate groundwater. Modification: None.
R38	A	The commenter states that the MWL contains legacy waste from atomic bomb testing combined with RCRA hazardous waste. Consideration for the removal of such legacy waste should be considered to protect Albuquerque's drinking water aquifer. Documents previously submitted by Citizen Action identify waste from specific nuclear weapons tests disposed of in the MWL.	This issue has been previously addressed by the NMED (see Response 26 above, Responses R10 and R23 of the CMS ⁱⁱ , Response R55 for the CAC petition ⁱ , and Response R11 for the Five-Year Report ^{vi}). Modification: None.
R39	A	Commenter states that climate change in relationship to the MWL dirt cover and contents was not discussed in the 2024 MWL five year review. Commenter requests that the review and NMED response be extended for public comment until accomplished.	The public comment period was extended as described in Response R2 (above). Additionally, NMED sent SNL a request for supplemental information (RSI) on the effects of climate change on the MWL (see response R14 above). Modification: None.

R40	A	The commenter states that there has been no consideration for climate change. Severe rainfall events can and have previously occurred at the location of the MWL. Heavy rainfall and a pooling effect was identified as causing berm destruction at the MWL.	Climate change is discussed in Response R14 (above). In response to this comment, NMED requested supplemental information from SNL on the 2006 berm breach, and SNL provided the following information. The breaches of a temporary soil berm occurred in August 2006, before subgrade preparation of the ET Cover had begun. The localized breaches were caused by a strong monsoonal storm that dropped approximately 2.6 inches of rain within approximately 2.5 hours on August 16, 2006. The intensity of the August 16, 2006 monsoonal storm over a short time caused rainwater to accumulate rapidly on the surface and follow the topography. The surface water followed the perimeter road that intersected the temporary soil berm immediately north and east of the MWL. The surface water breached the soil berm there and flowed west along a topographically low area on the north side of the MWL. The surface water accumulated behind the soil berm along the west side of the MWL (topographically downgradient side) and eventually breached the soil berm there in a small localized area. After breaching the soil berm in that area, the surface water flowed west for approximately 45 yards along the two-track MWL-MW6 access road. The soil berm was subsequently repaired and continued to perform as designed, with no other breaches or significant damage. At no time did pooled surface water flow across the MWL (i.e., surface of the disposal areas), which was topographically higher. As part of the ET Cover design, a perimeter engineered stormwater diversion swale was installed as a permanent erosion and surface water control feature. The stormwater diversion swale is an important component of the final site conditions. It diverts stormwater around the ET Cover, reducing the potential for cover erosion from severe stormwater events such as the August 16, 2006 monsoonal storm. It is inspected and maintained quarterly in accordance with LTMMP requirements. Modification: None.
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R41	A	Commenter states that climate change events in relation to dirt cover settlement and subsidence for the soil type of the MWL should be sufficiently investigated. Commenter states that there is apparently no predictable numeric model used by NMED or SNL for the totality of climate change and other physical events, including collapsible container types disposed in the MWL, that can affect the MWL cover integrity. MWL site characterization is not considered in relation to such events. There should be a worst case analysis for climate change events in relationship to the MWL cover. Commenter states that NMED should address the MWL cover in relation to evidence of disposal of canisters containing metallic sodium combined with high level nuclear waste from nuclear reactor meltdown experiments that has been provided to NMED. These containers may be corroding and subject to explosion from entry of water into the dump. Commenter states that the collapse of containers within the MWL from a severe and possibly prolonged rainfall event could lead to potential settlement or subsidence of the dirt cover. The entry of water into the MWL from such severe climate change events has not been previously or sufficiently analyzed for the MWL. Such an analysis should also encompass an investigation into the relation between soil type used for the MWL dirt cover, possible crevices, intrusions caused by animals, insects, human activity, maintenance, tornadoes or increased severe wind events, earthquake activity (there are four known faults near the sandia site) causing erosion over time that would facilitate subsidence and entry of water. Commenter states that differential locations for the settlement or subsidence across the MWL cover should be considered in relation to these events, such as for the location and vertical or horizontal positioning of drums or other hollow structures or containers. (continued)	Climate change has been previously addressed (see Response R14 above.) Prior to remedy selection, fate and transport models were used to indicate whether an ET cover would meet EPA technical equivalency criteria of net annual percolation below 31.5 mm/year for a Subtitle C landfill cover. Modeling was used to predict results for current climate, for a 50% increase in precipitation, and for a 100% increase in precipitation. Modeling indicates that the ET cover would meet and exceed the EPA landfill cover technical equivalency criteria. The MWL contains solid waste materials encased in containers. Some of the containers (i.e., polyethylene bags, fiberboard drums, cardboard boxes, steel drums) are susceptible to degradation over time. Routine operational waste such as personal protective equipment, laboratory waste, decontamination waste, etc., was typically disposed of in such containers. Radiological sources were sealed in lead and/or concrete casks, which are less susceptible to degradation. Before the engineered ET Cover subgrade was placed, low spots in the existing site surface and disposal pits with void space were filled and compacted to minimize the potential for settlement from the overlying weight of the cover and subsidence from the collapsible containers (SNL/NM, June 1998). The ET cover design is a “soft cover” design (i.e., no liners or leachate collection systems) that minimizes containment integrity issues. The LTMMP includes requirements for soil moisture monitoring and for repair of the cover if erosion occurs in exceedance of the limit in the LTMMP. This includes any settlement or subsidence that may occur. Since LTMMP implementation (2014), all monitoring and inspection results have demonstrated that the ET Cover is performing as designed, with no significant erosion or subsidence observed, and no change in moisture levels. The ET cover remains protective of human health and the environment. Modification: None.
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R41	A	(continued from above) Commenter states that NMED should consider the following types of factors in settlement and subsidence potential (Not a complete list): • How the underlying pits and trenches were excavated and whether there was the presence of water from being open to precipitation or Introduced water • Presence of liquid wastes disposed in pits and trenches • Dimensions and depths of the pits and trenches • Presence of leachate monitoring and collection for the various specific pits and trenches • Is the MWL cover equipped with settlement plates for monitoring The above analyses go directly to the effectiveness of the cover remedy as required by paragraph 5 of the 2006 Final Order.	
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- i [Response to Public Comments on SNL MWL Proposal for Corrective Action Complete with Controls, February 2016](#)
ii [Response to Public Comments on the SNL MWL Permit Modification for Corrective Measures Study, August 2, 2005](#)
iii [Response to Public Comments SNL MWL Long-Term Monitoring and Maintenance Plan January 2014](#)
iv [Response to Public Comments of SNL MWL CMI Report, May 2011](#)
v [Response to Public Comments on the SNL MWL Five-Year Report, July 2023](#)
vi [Response to Public Comments on SNL MWL Corrective Measures Implementation Plan](#)
vii [Response to Public Comments on SNL MWL Corrective Measures Implementation Plan](#)