**St. Anthony Mine**

**UNC Responses to New Mexico Energy, Minerals and Natural Resources Department's Mining and Minerals Division's Comments on 30% CCOP**

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| 1 | MMD | CCOP | Exec. Summary | Provide the results from the 2022 Supplemental Radiological Survey. | UNC is providing the 2022 Supplemental Radiological Characterization South of Pit 1 Report with this response to comments. |
| 2 | MMD | CCOP | Plan Summary | Explain why the topsoil/overburden pile is planned to be reclaimed in place rather than used for cover. | Cedar Creek authored a Materials Characterization in 2018 (included in Appendix H of the CCOP) which evaluated and described the benefits and drawbacks of using different stockpiled or borrow materials for reclamation. The basis of the evaluation were the chemical and physical parameters of the available materials. The most suitable materials were selected for closure. |
| 3 | MMD | CCOP | 1.2 | Plan Objectives: include a proposed PMLU Map with associated acreages. | A PMLU map will be included depicting PMLU and associated acreages and incorporated into the 90% CCOP. |
| 4 | MMD | CCOP | 3.7.1 | Wildlife: 2 large stick nests were discovered on the cliffs near Pit 1 during the January 10, 2023 inspection. Coordinate with NMG&F to assess if these nests are currently being used and by what species. | Members of the closure team were accompanied by NMG&F and NMMMD personnel to evaluate identified stick nests. The June 6, 2023 inspection revealed three stick nests on the property. Only one active red tailed hawk nest was found. These nests along with a comprehensive nest survey will be implemented in February/March ahead of planned construction activities, so that appropriate spatial and temporal buffer during construction activities can be applied. A report summarizing the findings of the raptor nest survey and coordination with NMG&F will be provided following the field survey. |
| 5 | MMD | CCOP | 4.2.4 | 2021-22 Highwall Investigation: When will this data be available to the agencies? | UNC is providing the Pit 1 Highwall Stability - Phase 2 Report with this response to comments. |
| 6 | MMD | CCOP | 5.0 | Post-Mining Land Use: Please utilize MMD's current SSE, Vegetation, and Soils Guidelines (2022) for PMLU decisions and Soils/Vegetation work on the site. | The Materials Characterization and Revegetation Plan were prepared prior to the guidelines but principally adhere to the guidelines without substantive differences. Ecosystems within the surrounding life zone of the reclamation activities were evaluated to inform the revegetation plan. The Materials Characterization efforts closely follows the soils guideline and the revegetation plan also closely follows the revegetation guideline. |
| 7 | MMD | CCOP | 5.4 | Pit Waiver: The applicant indicates that before submitting a final CCOP, a pit waiver will be submitted, consistent with NMAC 19.10.5.507.B. MMD suggests that the applicant indicate that a pit waiver may be submitted in the future. At this point it is unknown that a pit waiver will be necessary, or that MMD would approve a pit waiver without additional information required by 19.10.5.507.B NMAC. | The current design plan includes partial backfill of Pit 1 and the potential for eventual expressed water that may not be suitable for wildlife use and may require engineering controls consistent with Comment #2 below from the NM F&G. UNC will conduct an ecological risk assessment (ERA) to evaluate whether ecological risks exist to wildlife. The results of the ERA will determine if a pit waiver is required. |
| 8 | MMD | CCOP | 6.1 | Plan Summary: Please be aware of MMD's concern with the reclamation of Piles 3, 4, and 5 as related to set-back and stability to prevent further erosion into Meyer Draw. The current designs with a setback of 50 ft. from the center of Meyer Draw and the longer slope lengths may not be sufficient to ensure long term stability. | Stantec evaluations estimate that an 80-foot channel cross section bottom width and 0.75% channel slope will provide a geomorphologically stable arroyo through the project reach. These dimensions are supported by the following:<br>A. Observation of historical/pre-mine arroyo channel as shown in the 1935 aerial image. The average channel slope is 0.76%, based on interpolation between points up- and downstream of the mine disturbed area from the 2011 topographic survey.<br>B. Study of a relatively undisturbed reference reach located upstream of the project reach. The reference reach is located upstream of the mine impacted project reach. The reference reach slope is 0.73% and channel bottom width through the upstream reach varies roughly between 75-feet and 100-feet.<br>C. Analytical evaluations for stable arroyo dimensions. The computation of a stable arroyo using the methods from the Southern Sandoval County Arroyo Flood Control Authority (SSCAFCA, 2008) yield a channel bottom width equal to 80-feet and a channel slope equal to 0.75% for sediment continuity through the reach.<br><br>With that said, UNC will conduct a setback analysis to evaluate a design scenario with a wider arroyo corridor through the site near the waste piles and will update the 90% CCOP if a design change is proposed. |
| 9 | MMD | CCOP | 6.2 | Excavation and Placement: As a general guideline MMD encourages UNC to place as much material as feasible from the site into Pit 2 while prioritizing the more radioactive materials. | As described in Section 6.2 of the CCOP, the more impacted materials on site are being prioritized for placement beneath an earthen cover and below the top of Pit 2. In the 90% CCOP, UNC will evaluate placing additional materials above the current design surface in Pit 2 and the approach to provide long-term erosion protection. |
| 10 | MMD | CCOP | 6.3.2 | Design: Provide a detailed design regarding the full-scale application of Sodium Tripolyphosphate (STPP) to the pit water area. | Detailed procedures for the full-scale application of the STPP prior to partial backfill of Pit 1 will be included in the 90% CCOP. |
| 11 | MMD | CCOP | 6.4 | Regrading Waste Piles: MMD has the following comments and concerns regarding the preliminary designs for regrading waste piles on the site. These comments also apply to the preliminary construction designs. | - |

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| 11a | MMD | CCOP | 6.4 | MMD utilizes a maximum of 200' interbench slope lengths at a maximum of 3H:1V. Because of the environmental impacts of uranium waste rock MMD recommends the NM Copper Rule minimum slope length guidance be used for a more protective design. | The piles are being designed per NMAC 19.10.5 to "minimize mass movement". Generally, 5:1 slopes at 400 feet, 4:1 slopes at 300 feet, 3:1 at 300 or 200 feet each result in industry standard acceptable factors of safety for erosional stability for the Pile 4 cover. The calculations are included as Appendix G.2 and are based on Temple (1987) and the Revised Universal Soil Loss Equation (RUSLE). UNC will evaluate the incorporation of shorter and steeper slopes at St. Anthony as part of the 90% CCOP. |
| 11b | MMD | CCOP | 6.4 | Because of the saline and sodic nature of the soils surrounding the St. Anthony mine, borrow and/or cover systems will need to be built with this in mind. Important factors to keep in mind regarding minimizing erosion include, but not limited to, rock armoring, thickness of cover in the store and release system to allow for erosion, plant species selection, slope length/angle, bench frequency, and down drains designs. | The Materials Characterization at St. Anthony was implemented to identify the best growth media materials (considering soil chemical and physical parameters) for reclamation of the facilities. Sodium Adsorption Ratios (SAR), an agronomic indicator of dispersion, were evaluated in the Materials Characterization (Cedar Creek 2018). The SAR results on the proposed growth media materials were found to exhibit 'Good' suitability in accordance with the new soils guideline for sandy loams (<12) and sandy soils (<4). In addition, salinity was evaluated using Electrical Conductivity (EC). While the new soils guidelines do not provide thresholds for EC, the measured results on the proposed growth media materials were generally below the typical salinity threshold for rangeland soils (<6 mmhos/cm).<br><br>UNC agrees that the soils exhibit some erosion risk, primarily because they are sandy in texture. The soils proposed for revegetation were not found to be sodic and only mildly saline. An erosion evaluation based on the proposed slopes and growth media materials is included with the CCOP (Appendix G). In general, the underlying materials are not expected to preclude vegetation rooting. Based on their experience on more than 40 mine closure revegetation plans, Cedar Creek recommended placement depths, which were based on the chemical and physical parameters of proposed materials (Cedar Creek 2018). |
| 11c | MMD | CCOP | 6.4 | With climatic weather patterns trending toward less frequent, but more intense storm events, UNC might want to consider designing over the 100 year/24 hour storm event. At a minimum MMD will require that UNC conduct a precipitation analysis to determine the frequency of specific storm events over the last 20 years. Because of the increased need for erosion controls on reclaimed uranium mine sites, design for storm event frequency becomes more important. | UNC is unaware of a legal or regulatory obligation to perform a precipitation analysis or design for uncertain future climatic changes. Nonetheless, UNC will conduct a precipitation analysis to determine the frequency of specific storm events over the last 20 years and consider revising the design for storms with less frequent return periods up to the 500-year return period in the 90% CCOP. |
| 11d | MMD | CCOP | 6.4 | Because of the environmental impacts of contaminated waste materials from the site eroding into Meyer Draw, the reclamation of this area will need special consideration regarding erosion and long-term stability. Please address NMED's Surface Water Bureau comments on this topic, especially the questions regarding the 50 ft setback from the edge of the natural channel. How is the natural channel defined, and what is it about 50 ft that makes this particular number functional, given the environmental parameters of the site. Additionally, MMD advises addressing the particular issue of waste rock stability, erosion and sediment loading of Meyer Draw by applying a geomorphological solution to the reclamation of waste rock pile adjacent to Meyer Draw. | Please see response to comment 8 regarding pile setbacks and comment 16 regarding erosion into Meyer Draw. Piles 1-4 have been designed using a geomorphological approach to present natural-looking features that fit within the surrounding landscape, rather than linear or rectangular piles with uniform slopes. To further enhance the geomorphological design of the piles, spreading the footprints of the piles over larger areas and flattening the slopes would be necessary; however space constraints on site and the goal of long-term protectiveness limit UNC's ability to spread the material over larger areas. |
| 12a. | MMD | CCOP | 6.5 | Surface Hydrology: With climatic weather patterns trending towards less frequent, but more intense storm events, MMD recommends designing over the 100 year/24 hour storm requirement currently found for existing mines in the NM Mining Act Rules. MMD is specifically requesting this in response to the NM Executive Order 2019-003 Executive Order on Addressing Climate Change and Energy Waste Prevention, Directive No. 3. | Please see response to Comment 11C. |
| 12b. | MMD | CCOP | 6.5 | Will berms be constructed at the toe of the piles adjacent to Meyer Draw to catch eroded sediments? | Sediment berms and/or other temporary sediment capture devices, including stormwater BMPs, will be incorporated in key areas along Meyer Draw to manage sediments prior to vegetation establishment as part of the 90% CCOP. |
| 12c. | MMD | CCOP | 6.5 | Because of the current failure of the berm system surrounding Pit 1 on the west and southwest boundaries, the operator will need to design a more robust diversion system to keep surface water run-on out of Pit 1. Keeping surface water run-on out of Pit 1 will be essential for the success of the Pit 1 evaporative sink design. | The proposed stormwater controls for the west side of Pit 1 are designed to redirect surface water around the pit for the prescribed storm event. Additional berms along the proposed diversion channel upstream of Pit 1 will be evaluated and incorporated into the 90% CCOP, if appropriate. |
| 13a. | MMD | CCOP | 6.6 | Soil Covers: All borrow areas will be required to be reclaimed to the same vegetative and erosional standards as the reclaimed areas. | Comment noted, the revegetation plan applies to the future reclamation of the borrow areas. Proposed final grading is included in the plan set for the Lobo Tract East Borrow area and the West Borrow area. Expanded details will be included in the 90% CCOP. UNC will further address erosional stability details for the borrow areas in the 90% CCOP. |
| 13b. | MMD | CCOP | 6.6 | Will a clay layer be included in the cover designs to help achieve the radon flux standard? | UNC is not aware of a State design standard for radon flux. RADON modeling have demonstrated that radon flux recommendations provided in the State's 2016 Reclamation guidance can be achieved with the available cover materials from the borrow areas, in the proposed cover configurations for the activity levels of the disposed materials. A clay layer will not be included in the cover designs. Radon modeling calculations are included in Appendix G. |

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| 13c. | MMD | CCOP | 6.6.3.3 | Regraded In-Place Piles: MMD views uranium waste as similar to copper mining waste which requires a minimum 3 ft. cover system to be considered a functional evapotranspirative system. This is particularly important when trying to stabilize uranium waste rock piles and establish long term erosional stability. | UNC disagrees that uranium waste is similar to copper mining waste to require a minimum 3 foot cover. Based on the proposed grades for the piles, and up to 2.5:1 slopes as recommended by NMED (NMED Comment 3) under NMAC 20.6.7.33.C.4, a 2-foot thick cover is considered adequate to address the potential for infiltration since most surface water will runoff the covered pile slopes. Currently, the design includes 24-inches of cover over Piles 1-5. The cover thickness for the Pit 1 and Pit 2 covers is proposed to be 48 inches and 96 inches respectively. The cover thicknesses have been shown by calculations to be adequate for erosion protection and radon emanation control based on the activity levels of the materials to be disposed at each location. The calculations are included in Appendix G. UNC will evaluate cover infiltration for the cover configurations in the 90% CCOP. |
| A1 | MMD | CCOP - A.1 | 1.4 | Precipitation: Provide more recent precipitation data from the last 20 years as opposed to data ending in 2005. | The data / report this is in reference to is from 2005. The 2022 Revegetation Plan Update is included as Appendix H and includes precipitation data through 2016. |
| A2 | MMD | CCOP - A.1 | 2 | Sampling Methods: Refer to MMD's 2022 SSE and Revegetation Guidelines for guidance on an acceptable revegetation plan. In addition to ground cover, vegetative productivity, and shrub density, MMD also requires plant diversity as a component to be evaluated for vegetative success. | This comment was addressed in the updated Revegetation Plan included as Appendix H. |
| A3 | MMD | CCOP - A.1 | - | Please propose Vegetative Success Criteria for the site using the extended reference area data. | This comment was addressed in the updated Revegetation Plan included as Appendix H. |
| A4 | MMD | CCOP - A.1 | 3.6 | Wildlife: Please exclude Burro and Wild Horse from Wildlife Data. Feral horses and burros are not considered native wildlife. | This data will be removed from the 90% CCOP. |
| A5 | MMD | CCOP - A.1 | 4.1 | Growth Medium Characteristics and Reapplication Depths:<br>a. Please describe the proposed cover system in detail including all components such as spoil/contaminated material/waste rock, clean overburden or cover, clay liner, topsoil or growth media.<br>b. Because of the erodibility of local soils it is required that a minimum of 3 ft of clean cover with 2 ft of that being topsoil or growth media be used as a minimum in the cover system.<br>c. How is rock content being measured in the cover system to help decrease erosion? | a. This comment pertains to a document drafted before the covers were designed. Please refer to section 6.6. of CCOP main text for these details.<br>b. The Materials Characterization provides recommended placement depths which are based on the chemical and physical characteristics of the potential materials used for reclamation.<br>c. In the present design, other than in drainage features, rock is not proposed as additional erosion protection. The covers are to be vegetated. |
| A6 | MMD | CCOP - A.1 | 4.2.2 | Fertilization Recommendations: MMD generally does not recommend the use of synthetic fertilizers for reclamation, however organic amendments such as biosolids, or other organic amendments can be useful in giving plants help during the early stages of establishment. Please refer to MMD's Soils and Revegetation Guidelines for more information on this topic. | This comment was addressed in the updated Revegetation Plan included as Appendix H. |
| A7 | MMD | CCOP - A.1 | - | Please align the proposed seeding rates with the 2022 Vegetation Guidelines. | This comment was addressed in the updated Revegetation Plan included as Appendix H. |
| A8 | MMD | CCOP - A.1 | 5.2 | Sample Site Selection: Please better explain how a specific reference area is proposed to be associated with a specific reclaimed area for purposes of proving vegetative success. MMD recommends a simpler approach than is described in this plan. Again, please refer to MMD's 2022 Vegetation Guidelines. | This comment was addressed in the updated Revegetation Plan included as Appendix H. |
| A9 | MMD | CCOP - A.1 | - | Regarding the Vegetative Recommendations found in this document, please present to the agencies a precise proposal for revegetation and monitoring on the site for approval. | This comment was addressed in the updated Revegetation Plan included as Appendix H. |
| B1 | MMD | CCOP - B | - | Please provide MMD the 2022 Supplemental Radiological Survey in addition to the Appendix B.1, B.2, and B.3 data so that the agencies can fully evaluate the material characterization on-site. | UNC is providing the 2022 Supplemental Radiological Characterization South of Pit 1 Report with this response to comments. |
| C1 | MMD | CCOP - C1 | - | Does the Excavation Control Plan address the 2022 Supplemental Radiological Survey Data? If not, this information may need to be addressed to include the additional clean-up work. | The Excavation Control Plan does not address the 2022 Supplemental Radiological Survey Data. The Excavation Control Plan will be updated in the 90% CCOP to address this area. |
| C2 | MMD | CCOP - C2 | - | Does the Verification Survey Plan address the 2022 Supplemental Radiological Survey Data? If not, this information may need to be addressed to include the additional clean-up work. | The Verification Survey Plan does not address the 2022 Supplemental Radiological Survey Data. The Verification Survey Plan will be updated in the 90% CCOP to address this area. |

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| C3 | MMD | CCOP - C2 | 4.4.1 | Verification Survey Units: Section 2.0 (1) of the Joint Guidance for the Clean-up and Reclamation of Existing Uranium Mining Operations in NM (2016) specifies that the concentration of Ra-226 is averaged over an area of 100 square meters. Survey Units within this Closeout Plan will need to meet this criterion. | The verification approach for confirming impacted soils have been removed from areas planned for excavation includes multiple data collection and assessment steps, consisting of:<br>1. Excavation Control Survey – following excavation of a lift a gamma survey of 100% coverage of the area will be conducted and repeated until impacted soil exceeding the Soil Action Level (SAL) has been removed (Appendix C.1, Section 5.1) .<br>2. Verification Gamma Scan – when excavation in an area is complete as determined based on the excavation control survey, systematic gamma scan surveys of the excavated areas will be conducted, prior to the one-minute gamma static survey described in 3 below. The gamma scan surveys will be performed over excavated soil surfaces by walking along transects. A 30-foot transect spacing will be used for this gamma scan survey at a rate of three feet per second which results in five data points every 100 square meters (Appendix C.2, Section 5.1).<br>3. Verification Static Scan Survey - after the gamma scan described above in 2 is completed, a final static survey will be conducted for each 2.5-acre survey over a 125-foot triangular grid area determined consistent with MARSSIM (Appendix C.2, Section 5.2).<br>The overall cleanup verification approach described above and in the CCOP consisting of two systematic gamma scans, and static gamma measurements will provide adequate coverage to assess average Ra-226 concentrations within an area of 100 square meters. |
| C4 | MMD | CCOP - C2 | 4.4.2, 4.4.3 | Sections 4.4.2 and 4.4.3 will also need to be adjusted in reference to comment # 2 in this section. | Sections 4.4.2 and 4.4.4 will be updated in the 90% CCOP to address the 2022 Supplemental Radiological Survey per Comment C2. |
| C5 | MMD | CCOP - C2 | - | What is the verification survey process for the areas labeled as "Backfilled, Stabilized, and Covered Areas" and "Regraded, Stabilized and Covered Areas"? | The verification process for the waste disposed, regraded, radon covered and stabilized areas will consist of radon flux emission measurement to demonstrate the areas meet the 20 pCi/m2/sec guidance limit over the disposal area specified in the MMD 2016 Joint Guidance. The verification procedures will be included in the 90% CCOP. (see also response to comment G4). |
| D1a | MMD | CCOP-D | - | Borrow sources: Will the soils from the borrow sources be evaluated regarding the known sodic soil conditions in the area? From previous experience at a nearby mine, MMD has experienced these saline and sodic soils to be highly erodible. | Sodium Adsorption Ratios (SAR), an agronomic indicator of dispersion, were evaluated in the 2018 Materials Characterization. The SAR results on the proposed growth media materials were found to exhibit 'Good' suitability in accordance with the new soils guideline for sandy loams (<12) and sandy soils (<4). While the new soils guidelines do not provide thresholds for EC, the measured results on the proposed growth media materials were generally below the typical salinity threshold for rangeland soils (<6 mmhos/cm). By comparison, the measured SAR and EC at the L-Bar Mine were 17.7 and 8.3 mmhos/cm, respectively. The values encountered within the potential growth media materials at St. Anthony are much more favorable. See also response to Comment 11b. |
| D1b | MMD | CCOP-D | - | Have borrow sources with ample clay content been found for use in a radon attenuation barrier? | No, limited clayey material was encountered in the Lobo Tract borrow area but was not widespread. A clay layer will not be included in the cover design. See Appendix D for geotechnical properties of the available borrow and responses to Comments 13b and G-4 regarding the cover designs. |
| D1c | MMD | CCOP-D | - | Does the operator have a known borrow area for rip-rap or rock to increase the rock content in cover materials? | Riprap sources will be identified and included in the 90% CCOP when the specific sizes and quantities of rock needed are more clearly defined. We anticipate that rock from an offsite quarry will be required for the project. |
| D2 | MMD | CCOP-D | - | Summary and Conclusions: What H2S precautions will be taken onsite to ensure the safety of personnel? | Precautions will be included in the Health and Safety Plans in the 90% CCOP for implementation during earthwork, and may include the use of gas meters, fans, or other ventilation methods for personnel performing work in enclosed cabins of mobile equipment. |
| E | MMD | CCOP-E | - | Material Balance Calculations: Why aren't the Topsoil/Overburden, Topsoil South, or Borrow Area South considered as material suitable for cover on the site? | The 2018 Materials Characterization rated the revegetation potential of available materials on site. The ratings are based on evaluation of physical and chemical parameters of potential growth media along with the required haul distances to determine the best materials for use as cover. More desirable materials generally exhibited more favorable conditions for plant growth, based on better plant water holding capacity or EC / SAR.<br><br>Topsoil/Overburden - was rated less desirable than other sources by Cedar Creek and Stantec decided it was more economical to regrade in-place than handle twice and use poor soil somewhere else.<br>Topsoil South - Also ranked poorly by Cedar Creek as a growth media. Stantec determined that this material could be used as unimpacted overburden to attenuate radon emanation in the reclaimed Pit 2, with another 2 feet of growth media overlying the Topsoil South material.<br>Borrow Area South - has limited available borrow volume to use for cover and surface radiological impacts that have to be addressed before material could be used. |
| F1 | MMD | CCOP-F.1 | - | Flow Characterization: As mentioned before in this document UNC may want to consider designing surface water conveyance facilities and cover designs at a more robust design level. | Please see response to Comment 11C. |

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| F2 | MMD | CCOP-F.2 | - | Design of Hydraulic Stabilization for Meyer Draw and East Tributary Arroyo: MMD requests that the operator provide a presentation with diagrams and construction drawings of the various hydraulic stabilization structures described in this section for discussion with MMD and the NMED. | The overview of the proposed site hydraulic structures is shown in the drawing set on Sheet 14. Additional information showing the structures related to the Arroyos is shown on Sheets 15-16, and 23-26 of the CCOP Drawings. Additional information will be prepared and presented to NMED and MMD in the 90% CCOP pending changes to the surface water designs for the site. |
| G1 | MMD | CCOP-G.1 | - | Per the Joint Guidance for the Clean-up and Reclamation of Existing Uranium Mining Operations in NM (2016) Section 2.0 (1) a radon flux limit of 20pCi/mÂ²/s is required for areas where contaminated materials exceeding the target radium activity level is emplaced in an on-site repository. Please explain why a compacted clay layer is not included in the cover design for radon attenuation on the site. | The RADON model results provided in Appendix G demonstrate that radon fluxes less than 20 pCi/m2/s can be achieved with the available unimpacted materials in the proposed cover configurations. |
| G2 | MMD | CCOP-G.1 | - | Does the operator plan any density/porosity testing in the future for the Pit 1 Highwall Excavation, Pit 1 Infill, or Surface Excavation areas? If not, please provide additional justification regarding how this material is comparable to Pit 2 material. | No additional pre-testing is planned. The density/porosity of the waste layers in the cover design are dependent on the placed, compacted density of the waste material, as opposed to the density/porosity of the materials in their current condition. Therefore, placed densities will be driven by the placement requirements in the specifications. Compacted densities will be confirmed during construction as defined by the Construction Specifications to be prepared as part of the 90% CCOP. Further, RADON models for the Pit 2 cover system indicate that the calculated surface flux remains unchanged when applying either native soil geotechnical properties or Pile 3 geotechnical properties to the Surface Excavation material (see sensitivity analysis presented in Appendix G of the 30% CCOP). |
| G3 | MMD | CCOP-G.1 | - | Why was data limited regarding the West Borrow and North Topsoil pile? Please explain in more detail to justify combining the density/porosity data for these two locations. | Lab data was "limited" due to the number of samples selected for testing. Soils in the North Topsoil pile and West Borrow area were found to be similar and relatively consistent spatially and with depth, as described in the boring logs and shown by lab results provided in Appendix D. Additional lab tests were not performed at the time due to the consistent nature of the soils and limited perceived value of numerous tests. As described in Appendix G of the 30% CCOP, similarities in the materials in the North Topsoil and West Borrow areas, as well as the proximity of the source locations of the materials, led Stantec to conclude that they could be combined into a single dataset for evaluation of material properties. |
| G4 | MMD | CCOP-G.1 | - | How will radon emanation be monitored on reclaimed areas to ensure the radon flux limit of 20pCi/m²/s has been achieved? Please provide the method and details on the monitoring plan. | Radon flux measurements over the radon covers on waste disposal areas will be performed in accordance with 40 CFR part 61, Appendix B, Method 115 to confirm that the mean flux guidance limit of 20 pCi/m2/s over the covered areas have been achieved. Measurement procedures will be included in the 90% CCOP. |
| G5 | MMD | CCOP-G.2 | - | Cover Erosional Stability and Soil Loss Analysis: As previously stated, MMD recommends that the operator utilize guidance from the NM Copper Rules for determining and apply a maximum of 200' interbench slope lengths for Piles 1, 2, 3, and 4. The current slope lengths for these specific areas seem to be too long. | The piles are being designed per NMAC 19.10.5 to "minimize mass movement" UNC will give consideration to shorter and steeper slopes as part of the 90% CCOP. Please see response to Comment 11A. |
| H1 | MMD | CCOP-H | - | St. Anthony Mine Materials Characterization: MMD has concerns regarding the K-factor of sodic (highly erodible) soils found in the region of the mine site. 24 inches of soil cover may not be sufficient without a certain amount of rock armoring on sloped reclamation areas. Additionally, 24 inches of soil cover may not be adequate for plant growth as an evapotranspirative cover as mentioned in Section 3.2.2 of this appendix. This comment stems from our experience with erosion issues found on two nearby mine sites. | See response to comment 11B |
| H2 | MMD | CCOP-H | - | In reference to statements made in Section 5.0 Summary of the appendix, please describe industry best management practices that will be utilized to maximize success for reclamation on this site. | This section will be updated in the 90% CCOP. |
| H3 | MMD | CCOP-H | - | Any soil or borrow material used for cover must be evaluated for soil suitability. Please refer to the MMD 2022 Guidance for Soil and Cover Material Handling and Suitability for Part 5 Existing Mines. | Cover soil suitability has been evaluated consistent with the 2022 Guidance and is addressed in the 2018 Materials Characterization which is included as Appendix H. |
| H4 | MMD | CCOP-H | - | MMD is in support of the biosolid application described in Section 2.2. | Comment noted. |
| H5 | MMD | CCOP-H | - | Where will rock mulch be sourced from as mentioned in Section 2.3? | Riprap sources will be identified during the 90% CCOP process when the specific sizes and quantities of rock needed are more clearly defined. We anticipate that rock from an offsite quarry will be required for the project. |
| H6 | MMD | CCOP-H | - | Will the same type of reference areas be used as described in Appendix A.1 | Suitable reference areas, in accordance with the new guidelines, will be presented in the 90% CCOP for MMD for approval. |
| H7 | MMD | CCOP-H | - | If any of the comments on Appendix A.1 are addressed in this new 2022 Revegetation Plan, please make note to MMD in your response and disregard. | Comments on A.1 were addressed were in the revised 2022 Revegetation Plan have been marked as such in the responses above. |

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| F3 | NMED-SWQB | CCOP-F1 | - | The computed runoff values in "APPENDIX F.1 Flow Characterization" rely on numerous assumptions and simplifications and do not report model uncertainty or account for climate change. The computed runoff values are compared to USGS regional estimates for validation; however, the USGS estimates have high prediction errors, so this method of validation should be interpreted with caution. The USGS regression equation estimates the 100-year peak-flow to be 4,460 cubic feet per second (cfs) and has an average standard error of prediction of 68%. The computed runoff value of 4,067 cfs is 9% less than the USGS estimate. If the USGS estimate is under predicting the actual 100-year discharge, then the computed runoff may significantly underestimate the actual 100-year discharge.<br><br>Furthermore, the USGS regression equations are based off historical data and have not been adjusted for future climate scenarios. Southern Sandoval County Arroyo Flood Control Authority reports that the 100-yr storm event in 2099 will see a 25% increase in peak-flow2 The New Mexico Bureau of Geology and Mineral Resources reports in "Climate Change in New Mexico Over the Next 50 Years: Impacts on Water Resources" that the true precipitation from the 100-yr storm may actually be closer to that which is currently projected for a 500-yr storm 3. Grade control structures, riprap, bench channels, and diversion channels must account for model uncertainty and climate change. | See response to comment 11C |
| 14 | NMED-SWQB | CCOP | - | Additional information is needed to support a sufficient setback distance between the material piles and the natural channels. Previous closeout plans and reports include the following:<br>-The January 2006 St. Anthony Mine Site Closeout Plan says, "material piles will be set back 50 feet from the edge of the natural channels."<br>-The 2018 Supplemental Investigations Work Plan states that "A preliminary arroyo setback analysis will be conducted and Stantec will communicate up to 2 design alternatives for arroyo stabilization in addition to a setback consideration (if necessary)."<br>-The 2019 Updated St. Anthony Mine Closeout Plan says the "proposed closure plan for Pile 4 is to push the pile material to the borders of the Meyer Draw and the East Tributary arroyos."<br>-The 2022 30% CCOP Design Report says, "re-graded and covered waste piles that will remain more than 50 feet from the centerline of the arroyo."<br><br>A setback distance of "more than 50 feet from the arroyo centerline" as proposed in the 2022 30% CCOP is less than the "50 feet from the edge of the natural channels" that was originally proposed in the 2006 Closeout Plan - the rationale for this change is not provided in the 2022 30% CCOP. NMED-SWQB provided comments dated April 3, 2018 requesting additional information regarding how the original setback distance of 50 feet from the edge of the natural channels was determined to be protective of state surface water quality standards. A setback analysis is necessary and must be provided to ensure the material piles will not impact water resources. A sufficient setback distance (i.e., buffer distance) is needed to protect Meyer Draw from potential slope failures, lateral migration of the natural channels towards the cover piles, and infiltration and runoff from the cover piles. | Initial "setback" was based on existing Arroyo configuration, and changes in proposed Arroyo configuration resulted in changes to the "'setback." Stantec evaluations of the Arroyo completed between 2019 and 2022 estimate that an 80-foot channel cross section bottom width and 0.75% channel slope will provide a geomorphologically stable arroyo through the project reach which is proposed in the 30% CCOP. The summary of the Arroyo geomorphological evaluation is included as Appendix F.2. These dimensions are supported by the following:<br>A. Observation of historical/pre-mine arroyo channel as shown in the 1935 aerial image (See Figure 2). The average channel slope is 0.76%, based on the 2011 topographic survey.<br>B. Study of a relatively undisturbed reference reach located upstream of the project reach. The reference reach is illustrated in Figure 6 and is located upstream of the mine impacted project reach. The reference reach slope is 0.73% and channel bottom width through the upstream reach varies roughly between 75-feet and 100-feet.<br>C. Analytical evaluations for stable arroyo dimensions. The computation of a stable arroyo using the methods from the Southern Sandoval County Arroyo Flood Control Authority (SSCAFCA, 2008) yield a channel bottom width equal to 80-feet and a channel slope equal to 0.75% for sediment continuity through the reach.<br><br>UNC will re-evaluate the overall site grading plan in the 90% CCOP along the arroyo to potentially allow for a wider arroyo corridor through the site near the original location of the arroyo and conduct a lateral scour analysis for the 90% CCOP design configuration to demonstrate that the waste piles will not be affected by the Arroyo. |
| 15 | NMED-SWQB | CCOP | - | Appendix F.2 Design of Hydraulic Stabilization for Meyer Draw and East Tributary Arroyo describes that Meyer Draw has been "heavily influenced by mining activity" and that the arroyo gradients "appear to be in a state of non-equilibrium as they continue to adjust to impacts of these mining activities." Meyer draw was straightened and realigned to accommodate the expansion of pile numbers 5, 6, 3, and the shale pile which reduced the channel length and increased the channel gradient. Increased channel gradients cause increased flow velocities and stream power. In addition to being vertically unstable as a result of the increased stream power, Meyer Draw is also horizontally unstable as evident by the large pile failures shown in Figures 6 and 7 in Appendix F.2. The proposed solution to install concrete grade control structures and riprap lining is only a temporary measure and does not restore the non-equilibrium conditions caused by the mining activity. The concrete will deteriorate over time, and the riprap will be at risk of failure during each large storm event. NMED-SWQB provided comments dated May 31, 2019 that sinuosity and meander pattern should be incorporated into the restoration design to protect water quality in the long-term. | A screening level review of alternatives was conducted to select an alignment for development in the 30% CCOP. From this review, the drop structure design alignment was selected over a separate alignment alternatively designed to maintain the equilibrium slope by increasing the channel sinuosity through the reach.<br><br>Stantec selected the drop structure arroyo alignment for further design development for the following reasons:<br>A. A narrower arroyo corridor allows for longer, gentler, and more stable slopes for the mine waste piles to be stabilized in-place long term, which minimizes the potential for environmental impacts from the waste.<br>B. A narrower arroyo corridor would require less stockpiled material to be moved and avoid movement of waste materials to previously undisturbed ground potentially outside of the existing mine permit boundary. Minimizing movement of mine waste materials results in lesser potential environmental and health and safety impacts, as well as lower greenhouse gas emissions associated with the project.<br>C. The engineered grade control structures are considered to provide more dependable performance for protecting the stockpiled material with consideration for uncertainties in the arroyo morphology.<br><br>UNC will evaluate design alternatives for the arroyo corridor in the 90% CCOP. |

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| 16 | NMED-SWQB | CCOP | 7.4.1 | Section 7.4.1 Water Quality Monitoring and Reporting of the 30% CCOP only describes a groundwater quality monitoring plan. The 2006 St. Anthony Mine Site Closeout Plan includes five surface water quality sampling events from 2004 that indicate impacts to surface water quality (see NMED-SWQB comments dated April 3, 2018). The Final CCOP must include a plan to monitor and sample surface water in Meyer Draw. | As described in Section 2.3.2 of the St. Anthony Stage 1 Abatement Plan, the results from the five sampling events did not show statistically significant loading of constituents of concern (COC) from the St. Anthony mine when compared to variations in COC loading from upstream sources and background COC concentrations. Accordingly, pile stabilization and runoff control were identified to address potential surface water impacts to Meyer Draw. The 30% CCOP further proposed removal of mine material from Meyer Draw. The 90% CCOP will include monitoring of these control measures and compliance with NPDES requirements (if applicable). |
| 17 | NMED-SWQB | CCOP | 7.4.3 | Section 7.4.3 Inspections of the 30% CCOP briefly mentions that inspections will be conducted on an annual basis until bond release, and that revegetation inspections will continue until bond release or up to 12 years. Meyer Draw will not "self-sustain" the proposed engineered channel configuration. The final closeout plan should include an inspection, maintenance and repair plan for the concrete grade control structures, riprap, bench channels, and diversion channels. All future costs, in perpetuity, should be considered prior to bond release. | The 90% CCOP will include a monitoring and maintenance plan to define the necessary inspections and need for repairs in accordance with applicable laws and regulations. |
| 18 | NMED-AQB | CCOP | - | The New Mexico Mining Act of 1993 states that "Nothing in the New Mexico Mining Act shall supersede current or future requirements and standards of any other applicable federal or state law." Thus, the applicant is expected to comply with all requirements of federal and state laws pertaining to air quality.<br><br>20.2.15 NMAC, Pumice, Mica and Perlite Processing. Including 20.2.15.110 NMAC, Other Particulate Control: "The owner or operator of pumice, mica or perlite process equipment shall not permit, cause, sufferer allow any material to be handled, transported, stored or disposed of or a building or road to be used, constructed, altered or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne." | If the proposed activities are determined to exceed the minimum requirements for air quality permits in the 90% CCOP, the appropriate permits will be obtained prior to earthmoving activities. |
| 19 | NMED-AQB | CCOP | - | Paragraph (1) of Subsection A of 20.2. 72.200 NMAC, Application for Construction, Modification, NSPS, and NESHAP - Permits and Revisions, states that air quality permits must be obtained by:<br><br>"Any person constructing a stationary source which has a potential emission rate greater than 10 pounds per hour or 25 tons per year of any regulated air contaminant for which there is a National or New Mexico Ambient Air Quality Standard. If the specified threshold in this subsection is exceeded for any one regulated air contaminant, a II regulated air contaminants with National I or New Mexico Ambient Air Quality Standards emitted are subject to permit review."<br>Further, Paragraph (3) of this subsection states that air quality permits must be obtained by:<br>"Any person constructing or modifying any source or installing any equipment which is subject to<br>20. 2. 77 NMAC, New Source Performance Standards, 20. 2. 78 NMAC, Emission Standards for Hazardous Air Pollutants, or any other New Mexico Air Quality Control Regulation which contains emission limitations for any regulated air contaminant."<br>Also, Paragraph (1) of Subsection A of 20. 2. 73.200 N MAC, Notice of Intent, states that:<br>"Any owner or operator intending to construct a new stationary source which has a potential I emission rate greater than 10 tons per year of any regulated air contaminant or 1 ton per year of lead shall file a notice of intent with the department."<br>The above is not intended to be an exhaustive list of all requirements that could apply. The applicant should be aware that this evaluation does not supersede the requirements of any current federal or state air quality requirement. | If the proposed activities are determined to exceed the minimum requirements for air quality permits in the 90% CCOP, the appropriate permits will be obtained prior to earthmoving activities. |

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| 20 | NMED-AQB | CCOP | - | Fugitive Dust:<br>Air emissions from this project should be evaluated to determine if an air quality permit is required pursuant to 20.2.72.200.ANMAC (e.g. 10 lb./hour or 25 TPY). Fugitive dust is a common problem at mining sites and this project will temporarily impact air quality as a result of these emissions. However with the appropriate dust control measures in place, the increased levels should be minimal. Disturbed surface areas, within and adjacent to the project area, should be reclaimed to avoid long-term problems with erosion and fugitive dust. EPA's Compilation of Air Pollutant Emission Factors, AP-42, Miscellaneous Sources lists a variety of control strategies that can be included in a comprehensive facility dust control plan. A few possible control strategies are listed below:<br>Paved roads: covering of loads in trucks to eliminate truck spillage, paving of access areas to sites, vacuum sweeping, water flushing, and broom sweeping and flushing.<br>Material handling: wind speed reduction and wet suppression, including watering and application of surfactants (wet suppression should not confound track out problems).<br>Bulldozing: wet suppression of materials to "optimum moisture" for compaction.<br>Scraping: wet suppression of scraper travel routes.<br>Storage piles: enclosure or covering of piles, application of surfactants.<br>Miscellaneous fugitive dust sources: watering, application of surfactants or reduction of surface wind speed with windbreaks or source enclosures. | The 90% CCPP will include specifications for the future earthwork contractor will be required to implement a dust control plan during ground disturbance and hauling throughout the active period of construction. |
| 21 | NMED-MCS | CCOP | General | Due to the two regulatory processes of MMD and NMED needing to proceed independently and in support of each other, NMED recommends adjusting the process as discussed below: | |
| | | | - | 1) In order to delineate a clearly defined boundary between the CCOP and the S2AM, NMED-MECS will comment on Pit 1 (large pit) and groundwater under separate letterhead to be sent directly to the Permittee and copy MMD. The comments on Pit 1 and groundwater need to be addressed separately to ensure that the applicable requirements of 20.6.2 NMAC are being met. | UNC recognizes that the CCOP and the S2AM are subject to different governing laws and regulatory programs. At St. Anthony, however, a clearly defined boundary does not exist between the CCOP and the S2AM because the Stage 2 Abatement Plan is implemented through the CCOP. This intermingling is recognized in the WQCC 2017 Order where the Commission states: "... Petitioner and the Department shall take the necessary steps to implement the institutional controls proposed in the Petition, namely ... [through undertaking] the closure plan pursuant to the New Mexico Mining Act." Acceptance of the proposed hydraulic sink approach with respect to Pit 1 dictates, in large measure, how and when other aspects of the project may be addressed. Obtaining agency concurrence on the proposed Pit 1 approach is of paramount importance in expediting meaningful reclamation activity. Accordingly, UNC believes that efforts should be directed, in the first instance, toward reaching agreement on the Pit 1 proposal. To date, UNC has not received substantive agency feedback on the technical bases provided for the Pit 1 proposal. |
| | | | - | 2) NMED-MECS proposes that the CCOP work be separated into two phases. Phase 1 would be site-wide CCOP work. Phase 2 would be work directly tied to the S2AM. The Agencies will work with the Permittee to determine which activities belong in each phase. The purpose of phasing is to ensure that site-wide closure/closeout work can commence without having an approved S2AM in place. NMED will need to issue an environmental determination for the Mining Act Permit. NMED does not want to delay surface reclamation, and therefore, will work with the Permittee and MMD to determine the appropriate pathway and timing of issuance of the environmental determination. This may require issuance of an interim environmental determination when all parties have agreed to the final design and work distribution in each phase. | UNC considers work required by the S2AM as integral to the overall closure and therefore does not propose to separate the work into 2 phases at this time. Additional approvals are required from both agencies before any site work could proceed. The interconnected nature of critical aspects of the CCOP and S2AM processes are such that significant risks exist of potential for re-work if these processes run on parallel but separate tracks. As the NMED and MMD regulatory processes proceed and the necessary approvals are provided, particularly with respect to the proposal for Pit 1, UNC will re-evaluate potentially performing the project in phases. |
| F4 | NMED-MCS | CCOP-F | - | Attachment F, Page ii = The supplemental characterization and laboratory testing is estimated to be completed in December 2022. Considering characterization is not completed at this time, NMED recommends final calculations of Financial Assurance (FA) and design approval wait until the December2022 data is incorporated into the design. | UNC has posted Interim Financial Assurance in an amount that is within the high-end range of estimated costs to fulfill its obligations under MMD Director's Order dated April 22, 2011. Upon approval of a final CCOP that complies with all applicable requirements of the Mining Act and the Water Quality Act, UNC will propose final financial assurance for the CCOP. |
| F5 | NMED-MCS | CCOP-F | 1.1 | Attachment F, Page 1.1 = Industrial use for specific areas is also under consideration. It is not practicable to evaluate the CCOP at this time without all PMLUs defined. NMED will withhold final approval until all PMLUs for the site have been defined. NMED recommends providing a figure that designates all site PMLUs and that the PMLUs need to be agreed upon as a requirement prior to final approval. | UNC will finalize the PMLUs for the site and provide in the 90% CCOP. |

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| F6 | NMED-MCS | CCOP-F | 6.12 | Attachment F, Page 6.12 = Table 6-6. By NMAC 20.6.7.33.C.4 "the uninterrupted slope length shall be no greater than 300 feet for 4.0:1, 200 feet for 3:1 slopes and 175 feet for 2.5:1 slopes. Alternative slope lengths may be allowed if the permittee provides information showing that the cover performance objectives specified in Subsection F of this section will be achieved and the exception is approved by the department." Revise the design or provided additional information. Please indicate if the slope lengths as designed meet the substantive requirements of 20.6. 7.33.C.4 NMAC. NMED recognizes that St. Anthony Mine is not a copper mine, and therefore, not regulated pursuant to 20.6.7 NMAC. However, the Copper Rule reflects current engineering best practices. | Please see response to comment 11A. The calculations are included as Appendix G.2 and are based on Temple (1987) and the Revised Universal Soil Loss Equation (RUSLE) for the design slope angles and cover material characteristics from site-specific data. UNC will evaluate the incorporation of shorter and steeper slopes at St. Anthony as part of the 90% CCOP. The cover grades do meet the substantive requirements of 20.6.7.33.C4 for slope lengths, albeit with an alternative length and grade than what is explicitly listed in the regulation for copper mines. In general, state of practice for reclamation of uranium tailings facility covers is based on USNRC (Appendix A to 10 CFR Part 40) which says that in general reclaimed slopes should be 5:1 or flatter for considerations of greater potential for long-term erosion due to extreme storm events. |
| F7 | NMED-MCS | CCOP-F | 6.13 | Attachment F, 6.13 Please provide a precipitation analysis to determine the frequency of 24-hour, 100-year events within the last 20 years of record. Based on NMED's experience, larger storm events are occurring at greater frequencies across New Mexico. This has deleterious effects on reclamation design if stormwater channels and conveyance systems are undersized. | Please see response to Comment 11C. |
| F8 | NMED-MCS | CCOP-F | 6.22 | Attachment F, Page 6.22 = soil loss of 12.6 tons/acre/year .... 8.9 tons/acre/year. Based ...on the values of soil loss predicted please indicate how GE/UNC plan to account for this in annual repair and maintenance schedules and costs. NMED-MECS recommends increasing FA for the site to account for the future loss and associated repairs. | Soil loss values will be re-evaluated in the 90% CCOP after considering revisions to the cover slopes / slope lengths and possible consideration of lower frequency storm events. Depending on the final amount of soil loss calculated, UNC will incorporate necessary maintenance and repair plans into the detailed design and monitoring and maintenance plan. Adjustments to the FA will be provided after approval of the Final CCOP. |
| 22 | NM Game and Fish | CCOP | - | UNC proposes to partially backfill Pit 1 so that it will continue to function as a hydraulic sink for contaminated groundwater. The partial backfill design feature will keep the backfill elevation below the Jackpile-Dakota contact zone, thus preventing flow into the uncontaminated aquifer. UNC expects the extent and duration of expressed water in Pit 1 to be significantly smaller in future, after the pit is partially backfilled. Since partial backfilling will not fully eliminate the pit lake, the Department recommends installation of appropriate fencing around the lake to prevent deer, elk, and other wildlife species from accessing contaminated water. The above ground fence height should be a minimum of eight feet, and the fence should extend an additional two feet below ground (where practical) to deter animals from burrowing under. The Department also recommends that the bottom two feet of the above ground fence include a permanent, solid plastic or sheet metal barrier, preferably with a horizontal lip at the top, to exclude smaller animals from accessing the pit lake. The Department also recommends that UNC provide wildlife safe, clean water sources that would help attract wildlife away from the pit lake. | UNC plans to install fencing to restrict access to Pit 1, consistent with controls typical of grazing lands. An Ecological Risk Assessment will be conducted to evaluate whether eventual expressed water chemistry will cause risk to wildlife. UNC will complete an ERA of wildlife risks for future expressed water in Pit 1. The ERA will follow New Mexico State and United States Environmental Protection Agency (USEPA) guidance on conducting ERAs. Consistent with guidance, steps in the ERA process will include identification of constituents of potential concern (COPCs); problem formulation elements, including a conceptual site model (CSM) development; exposure assessment; selection of effects concentrations; and risk characterization. Wildlife receptors selected to quantify risks will include mammalian and avian herbivores, omnivores, and carnivores. If the results indicate that there is ecological risk, then engineering controls will be considered in the 90% CCOP. |
| 23 | NM Game and Fish | CCOP | - | Department staff observed approximately 40 mallard ducks on the pit lake during the site inspection. If water quality in the pit lake is determined to be potentially hazardous to birds or bats, the installation of bird balls or netting may also be necessary to prevent flying animals from accessing the contaminated pit lake water. If netting is utilized, monofilament nylon netting should not be used due to its tendency to ensnare wildlife and cause injury or death. Extruded plastic, knit or woven netting material with a mesh size of 31a inch to exclude smaller animals is recommended. All materials should be resistant to corrosion and ultraviolet radiation. During the life of the remediation, snow loading is probable, therefore, a maximum mesh size of 1½ inches is acceptable, however significant maintenance will still be required. Netting must be held taut and securely fastened to a rigid and adequately supportive frame or cross-hatched wire cables to prevent sagging. Regular inspection and maintenance are critical to repair holes and to restore tension to prevent sagging. The Department recommends conducting a site inspection as soon as possible following heavy snow or high wind events to identify any damage to the netting or to clear any excessive snow loading. Alternatively, commercially available wind resistant bird balls, such as Bird-X (bird-x.com) may more effectively deter birds and bats with reduced maintenance requirements. However, high wind events and fluctuating water levels can cause some bird balls to pile up or become redistributed in such a way that open water can become accessible to wildlife. Regular inspections would still be necessary to maintain proper bird ball distribution. | See response to comment 22 above. |

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| A10 | NM Game and Fish | CCOP-A1 | - | As part of the original CCOP, vegetation and wildlife surveys were conducted in 2006 by Cedar Creek Associates, Inc. The wildlife survey report documented a relatively small number of species, especially migratory birds. Wildlife survey dates were not stated in the report, and the relatively low avian species count could be the result of the surveys being conducted outside of the primary breeding and migration periods. The wildlife report also stated that "no evidence of nests along cliff faces was observed within the rimrock immediately adjacent to the permit area". Department staff observed two large stick nests that appeared to be in good condition located on a sandstone cliff approximately 0.3 miles from the pit lake. In order to obtain a more complete, current inventory of the wildlife that utilizes the area near the St. Anthony Mine, the Department recommends that UNC conduct new wildlife surveys including: one in April, two in May (one early, one late), and one in June (early). The Department also recommends at least one winter wildlife survey. The wildlife surveys should include a 0.5 miles buffer area around the mine permit boundary to identify any raptor nests that could be disturbed by reclamation activities during the breeding season. | Please see response to comment 4.<br><br>The primary data collection for wildlife in 2005 was conducted outside the primary breeding and migration seasons. At this stage in the design, it does not appear that a full wildlife inventory would benefit the remaining design. In general, we are aware of the species likely to use the reclamation area following closure activities. However, it is recognized that active raptor nests in close proximity to construction activities during nesting season should be protected using spatial and temporal buffers. Therefore, raptor nests will be identified and checked for status prior to, and during, construction activities to maintain compliance with MBTA. |
| A11 | NM Game and Fish | CCOP-A1 | - | For the undisturbed, topsoil borrow areas that will be used for reclamation, the Department recommends that ground disturbance and vegetation removal activities be conducted outside of the primary breeding season for migratory songbirds and raptors (1 March - 1 September; 1 January-15 July for great horned owl). If ground disturbing and clearing activities must be conducted during the breeding season, the area should be surveyed for active nest sites (with birds or eggs present in the nesting territory), and avoid disturbing active nests until young have fledged. For active nests, establish adequate buffer zones to minimize disturbance to nesting birds. Buffer distances should be a minimum of 100 feet from songbird and raven nests, 0.25 miles from most raptor nests; and 0.5 miles from golden eagle and prairie falcon nests. Active nest sites in trees or shrubs that must be removed should be mitigated by qualified biologists or wildlife rehabilitators. Department biologists are available to consult on nest site mitigation and can facilitate contact with qualified personnel. | See response to comment 4. |
| A12 | NM Historical Preservation | CCOP-A.2 | - | In the plan Stantec proposes establishing a 50-foot avoidance buffer around these archaeological locations prior to initiating earthwork. The plan also states that they will employ a qualified archaeologist to review sites located within soil cleanup areas once the buffers have been established.<br><br>The SHPO concurs that, with the implementation of these measures, this permit will have no adverse impacts to cultural resources located within the project area. | Noted, no change. UNC will base the procedures for protection on the cultural resources survey included as Appendix A.2. |
| 32 | NMOSE | CCOP | - | The NMOSE Hydrology Bureau received the MMD's November 2, 2022 request for comments on the subject St. Anthony Mine 30% Closeout Plan 2019 Update, and have reviewed said Plan and attachments. The applicant submitted a request for modification of the 2015 Stage 2 Abatement Plan ("Stage 2 Plan"). Modifications include reducing the backfill elevation in the large pit proposed in the Stage 2 Plan to a level below the Jackpile Sandstone-Dakota Sandstone contact. This modification is to prevent poor quality water from migrating into the Dakota Sandstone. An additional modification to the Stage 2 Plan is the establishment of vegetation on the pit cover to increase water losses from the pit through evapotranspiration.<br>These modifications appear to exclude new use of surface or ground water, as did the original Stage 2 Plan. In addition, local surface water impoundment will be decreased by reclamation of the project pits and constructed channels will intercept and divert rainfall away from the pit. Should proposed reclamation activities require the development or use of onsite water resources for compaction, contamination, remediation, or other purposes, the NMOSE District 1 Office (5550 San Antonio Drive NE, Albuquerque, NM 7109-4127; 505-383-4000) should be contacted to discuss the need for water rights.<br><br>Previous drilling activities at the site did not penetrate water-bearing strata. On site, water was often conducted into surface stockpiles of mine waste and therefore NMOSE well construction permits were not required. Should future drilling deeper than 30' encounter groundwater, the Applicant must follow NMOSE permitting for the drilling, and the drilling be conducted by a New Mexico-licensed well driller. | No change, note that UNC did obtain NMOSE permits for geotechnical drilling on the highwall and the drilling was conducted by a NM licensed well driller. |