

BHP Billiton Mine Management Company



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Mr. Mychal Yellowman
Pinabete Permit Team Leader
Office of Surface Mining Reclamation and Enforcement
Western Region Program Support Division
1999 Broadway, Suite 3320
Denver, Colorado 80202-3050

**Re: Pinabete Permit (OSM Project Tracking Code NM-0042-A-P-01) Technical Evaluation
Comment Response (MMCo Pinabete Permit update 1401b)**

Dear Mr. Yellowman,

BHP Billiton Mine Management Company (MMCo) is submitting for your review and approval our responses to technical deficiencies identified in the Office of Surface Mining Reclamation and Enforcement's (OSM) October 28, 2013 technical evaluation. MMCo is submitting seven copies of our responses in their native format (i.e., Word and Excel) with track changes shown.

During the technical evaluation of the Pinabete permit application package (PAP) (OSM Project Tracking Code NM-0042-A-P-01), OSM identified several deficiencies. MMCo submitted responses to the majority of OSM's technical deficiencies on December 13, 2013 and January 27, 2014. This submittal provides responses to the remaining technical deficiencies. It includes updates to Section 1 Permitting History, Section 11 Cultural Resources, Section 34 Post-Reclamation Topography, Section 35 Hydrologic Reclamation Plan, and Section 41 Probable Hydrologic Consequences. A summary of each technical deficiency is described in Attachment A (MMCo's Response to Technical Comments).

MMCo is also providing further updates to Section 22 Support Facilities, Section 42 Monitoring, Maintenance, Inspections, and Examinations, and Section 51 Reclamation Schedule. Initial updates to these sections were submitted to OSM on December 13, 2013. The Section 22 Support Facilities section text has been updated to include conditions of the Navajo Nation Department of Fish and Wildlife Biological Resources Compliance Form for the Pinabete Permit area. The Section 42 Monitoring, Maintenance, Inspections, and Examinations section text has been updated to describe the discontinuation of monitoring the vibrating wire piezometers (VWP). The VWP were originally installed to collect additional groundwater baseline data and grouted in place. As these devices fail they are not able to be repaired. The Table 51.1-1 Backfilling and Grading Schedule, in Section 51 Reclamation Schedule, has been revised as a result of the changes to the final surface configuration and reclamation blocks revisions.

A summary of the revised and updated files is included in Attachment B (Revised and Updated File

Summary).

Instructions for the replacement of the updated permit contents follow:

Part 1 Legal, Financial, Compliance, and Related Information

Section 1 Permitting History

- Overwrite the entire "Section 1 Permitting History" directory with the revised "Section 1 Permitting History" directory.

Part 2 Premining Environmental Resources Information

Section 11 Cultural Resources

- Overwrite the entire "Section 11 Cultural Resources" directory with the revised "Section 11 Cultural Resources" directory.

Section 13 Topography

- Overwrite the "Table 13.1-1.docx" file, submitted on December 13, 2013, with the revised "Table 13.1-1.docx" file.
- Overwrite the "Exhibit 13.1-2.pdf" file, submitted on December 13, 2013, with the revised "Exhibit 13.1-2.pdf" file.

Part 3 Operation Plan

Section 22 Support Facilities

- Overwrite "Section 22 Support Facilities.docx" file, submitted on December 13, 2013, with the revised "Section 22 Support Facilities.docx" file.

Part 5 Reclamation Plan

Section 34 Post-Reclamation Topography

- Overwrite the entire "Section 34 Post-Reclamation Topography" directory with the revised "Section 34 Post-Reclamation Topography" directory.

Section 35 Hydrologic Reclamation Plan

- Overwrite the entire "Section 35 Hydrologic Reclamation Plan" directory with the revised "Section 35 Hydrologic Reclamation Plan" directory.

Part 6 Environmental Protection, Probable Hydrologic Consequences, and Monitoring

Section 41 Probable Hydrologic Consequences

- Overwrite the entire "Section 41 Probable Hydrologic Consequences" directory with the revised "Section 41 Probable Hydrologic Consequences" directory.

Section 42 Monitoring, Maintenance, Inspections, and Examinations

- Overwrite the "Section 42 Mon, Maint, Insp.docx" file, submitted on December 13, 2013, with the revised "Section 42 Mon, Maint, Insp.docx" file.

Part 7 Bonding

Section 51 Reclamation Schedule

- Overwrite "Table 51.1-1.xlsx" file, submitted on December 13, 2013, with the revised "Table 51.1-1.xlsx" file

If you have any questions, please contact me at 505-598-3269.

Sincerely,



C. Kent Applegate

Superintendent Environmental Projects

CC: Sam Woods, NTEC Acting Management Committee Executive

Enclosure: Attachment A – MMCo's Response to Technical Comments
Attachment B – Revised and Updated File Summary
Seven (7) Native file format CDs

Attachment A

Response to OSM's Technical Comments on the
Pinabete Permit SMCRA Application

Note: OSM comment numbering corresponds to comment numbers provided in Attachment A of BHP Billiton Mine Management Company's (MMCo) response to OSM's Technical Comments on the Pinabete Permit SMCRA Application, dated December 13, 2013.

GEOLOGY TE COMMENTS (OSM NO. 554 NM-0042-A-P-01 GEOLOGY TE ARMS12-04-03-01)

3) OSM Comment (page2):

"...if a paleontological resource is discovered during mining and related operations, the find will be reported to OSM immediately. OSM will contact the Navajo Mineral Department informing them of the find. OSM, in conjunction with the Navajo Minerals Department and the mine management will arrange for the find to be professionally investigated within 2 days of the find. The Navajo Nation and the mine management must determine their paleontological professional, then set up response and investigation procedures.

Mining activities will be suspended within 100 feet of said find. An evaluation of the paleontological discovery will be made by an approved professional paleontologist within five (5) working days, weather permitting, to determine the appropriate action(s) to prevent the potential loss of any significant paleontological resources.

The Navajo Minerals Department will issue appropriate perm its and the recovered materials remain the property of the tribe.

Operations within 100 feet of such discovery will not be resumed until written authorization to proceed is issued by OSM.

The permittee will bear the cost of any required paleontological evaluations, surface collection of fossils, or salvage of any large conspicuous fossils of significant interest discovered during the operation."

MMCo Response:

On December 19, 2013, MMCo notified OSM that a paleontological resource management plan (PMRP) was being developed in coordination with the Navajo Nation Minerals Department. The PRMP was completed and to OSM on February 10th, 2014.

HYDROLOGY TE COMMENTS (OSM NO FPD08554 NM-0042-A-P-01 HYDROLOGY TE ARMS 12-04-03-01)

13) OSM Comment (page 2):

"Some in text hyperlinks did not function correctly also some in text references to exhibits, figures and tables are not hyperlinked. Therefore hyperlinks must be verified within the permit text."

MMCo Response:

MMCo has conducted a review of the section text and revised, where applicable, the document hyperlinks.

16) OSM Response (page 2):

"Therefore, [MMCo] should complete a comprehensive assessment to assure that text throughout the permit application package is clear and concise."

MMCo Response:

MMCo has conducted a thorough review of the permit application package and believes the text it is submitting is clear and concise.

17) OSM Response (page 2):

"Those items specifically pointed out in this review are not all inclusive and there may be additional inconsistencies which OSM does not specifically note within this evaluation, therefore, [MMCo] must complete a comprehensive assessment to assure that data is consistent between tables and text throughout the permit application package."

MMCo Response:

MMCo has conducted a thorough review of the permit application package and believes the data is consistent between the tables and text.

51) OSM Comment (pages 14-15):

"However, the following comments regarding Appendix 41.A and Table 41.1-1 need to be addressed;

- *Text on page 3-1 of Appendix 41.A states, "Detected values below the EPA drinking water criteria are included in Table 3-1 with the reported value listed in the table after the PQL value. However, the PQL is the lowest level of quantification that a laboratory can reliably achieve based on specified limits of precision and accuracy relating to instrumentation and sample interferences. Thus, the values below the PQL reported in Table 3-1 are not considered reliable and should be considered non-detect." While OSM understands that values detected below the PQL do not meet the reliability and confidence reporting criteria of the lab and should be clearly flagged as such. Values below the PQL but above the MCL are nonetheless real values (although they are less accurate) and can provide useful insights, indications or trends and should be reported. **OSM requests that all values below the PQL but above the MCL be recorded not just "...values below the EPA drinking water criteria..." in both Table 3-1 of Appendix 41.A and in Table 41.1-1.**"*

MMCo Responses:

Table 41.1-1 and the Appendix 41.A Table 3-1 and relevant text have been revised as requested.

53) OSM Comment (page 16):

"Note Appendix 41.D will likely need to be revised based on necessary changes to the post-mining subwatershed configuration due to the fact that [MMCo] must revise

the grading limit shown on Exhibit 35.2-1 such that no grading is shown outside of the 25-year mine plan. See the comment under 780.21(h) hydrologic reclamation plan concerning Exhibit 35.2-1."

MMCo Response:

MMCo has revised Appendix 41.D as a result of the revised final surface configuration (FSC) design.

Additionally, MMCo has also revised this appendix to include a discussion on the K-factor sampling (consistent with Appendix 18.B) and to incorporate minor editorial changes.

54) OSM Comment (pages 16-17):

"...there are some general editorial comments concerning Appendix 41.B as follows;

- All references to Navajo Mine PAP sections within Appendix 41.B must clearly state that they are referencing the Navajo PAP. For example, the third sentence of the last paragraph of page 1-2 of Appendix 41.B states, "The sulfate and fluoride concentrations at most monitoring locations exceed recommended criteria for livestock use (Appendix 6.G)." This is a reference to the Navajo PAP, but does not explicitly say so and could therefore be confusing please specify the reference as follows; [NTEC's] Navajo Mine permit application package (PAP) NM-0003F, Chapter 6, Appendix 6.G.*
- Appendix 41.B text discussion references the Navajo Mine Area IV North mining plan and PAP throughout the appendix this text discussion should be updated to reference the Pinabete Permit mining plan and PAP."*

MMCo Response:

All references to Navajo Mine PAP sections within Appendix 41.B have been modified to include the references to Navajo Mine permit application package (PAP) NM-0003F. However, Appendix 41.B text still needs to include references to the Navajo Mine Area IV North mining plan because the model results at the end of proposed mining under the Pre-2016 mine plan are used as starting conditions to simulate the effects of proposed mining and reclamation under the Pinabete Permit. This is the only place in the Pinabete Permit PAP where this relevant information can be presented. A more detailed explanation of the relationship of the mine plans in the two PAPs to the groundwater model simulations has been included in the revision to Appendix 41.B.

55) OSM Comment (page 17):

"If [MMCo] provides temporary livestock water tanks they must identify locations where water replacement is provided to water users, and provided an estimate of water quantity provided annually to area residents in the PHC."

MMCo Response:

MMCo has inserted a new exhibit, Exhibit 35.1-1, to show the location of temporary livestock water tanks within the Pinabete Permit area. Additionally, MMCo has inserted text into Section 35.5 to provide an annual estimate of water quantity delivered to the tanks within the Pinabete permit area.

56) OSM Comment (page 17):

"In general the PHC should avoid making statements to the effect that mining and reclamation will improve water quality and should rather qualify these statements by saying that it is not anticipated to impair water quality and may improve it."

MMCo Response:

MMCo has revised the text in Section 41.3.2.3 Post-reclamation Surface Water Changes to state; "Reclamation of disturbed areas and replacement of poor quality sodic soils with suitable topdressing materials is not anticipated to impair water quality, and may result in improvement in surface water quality under post-reclamation conditions." and "[f]ollowing reclamation, surface water quality in Cottonwood Arroyo and Pinabete Arroyo is not anticipated to be impaired as a result of mining operations and may be an improvement from pre-mine water quality..."

57) OSM Comment (page 18):

"Water wells completed in the alluvium of the Chaco River, Pinabete Arroyo (including one in a Pinabete Arroyo tributary) and Cottonwood Arroyo support marginal stock water use. These wells are identified in Section 18. Potential impacts to these uses are satisfactorily outlined in the PHC. The primary use of surface water in the area is for livestock watering, specifically through the use of impoundments, and aquatic and wildlife habitat. Discussion of impoundment water quality and impacts to the aquatic and wildlife habitat use should be expanded in the PHC."

MMCo Response:

A discussion of the expected impoundment water quality with respect to livestock and chronic aquatic and wildlife use criteria has been included in Section 41.3.2.3.

58) OSM Comment (pages 18-19):

"Note Appendix 41.D will likely need to be revised based on necessary changes to the post-mining subwatershed configuration due to the fact that [MMCo] must revise the grading limit shown on Exhibit 35.2-1 such that no grading is shown outside of the 25-year mine plan. See the comment under 780.21(h) hydrologic reclamation plan concerning Exhibit 35.2-1."

MMCo Response:

MMCo has revised Appendix 41.D as a result of the revised final surface configuration (FSC) design.

Additionally, MMCo has also revised this appendix to include a discussion on the K-factor sampling (consistent with Appendix 18.B) and minor editorial changes.

59) OSM Comment (page 19):

*"The PHC contains analysis of important water quality parameters; however **this discussion needs to be expanded to address water quality criteria for all NNEPA designated uses not just stock watering.** [OSM] does not designate use; however, [OSM] is responsible for protecting uses as designated by the NNEPA. **Language in the PHC needs to clarify that NNEPA standards, including livestock watering***

standards, are only enforceable for surface water and are only used as a reference for groundwater. The PHC discusses important water quality parameters of local impact in the following sections, which all require expansion to address additional water quality parameters of local impact including but not limited to acidity, sulfate, and iron:

MMCo Response:

The following text has been included (emphasis added) in Section 41.1 "The Lardy et.al. livestock use criteria *and the Navajo Nation Surface Water Quality Standards* are not enforceable standards for groundwater but are *used* as guidelines for suitability of groundwater supplies for livestock use". The surface water quality discussions in Section 41.2.2.3 have been expanded to address water quality criteria for all four designated uses for surface water: livestock watering, aquatic and wildlife habitat, secondary human contact and fish consumption.

- *Section 41.2.1.2 Groundwater Quality Changes During Mining and Reclamation Operations text discusses TDS but does not mention acidity*

MMCo Response:

A discussion of acidity has been included in the groundwater quality text in Section 41.2.1.2. Acidity is also discussed in Section 17 and in Section 41.1.

- *Section 41.2.2.3 Surface Water Quality Changes During Mining and Reclamation Operations text mentions TSS and TDS but does not mention acidity, however, pH information is available in Table 41.1-1 Summary of Spoil Leaching Test Results*

MMCo Response:

A discussion of acidity has been included in the surface water quality text in Section 41.2. 2.3.

- *Section 41.3.1.2 Post-reclamation Groundwater Quality Changes discussed TDS but acidity is not mentioned, however, pH information is available in Table 41.1-1 Summary of Spoil Leaching Test Results*

MMCo Response:

A discussion of acidity has been included in the groundwater quality text in Section 41.3.1.2.

- *Section 41.3.2.3 Post-reclamation Surface Water Quality Changes mentions TDS and sediment yields but does not mention acidity.*

MMCo Response:

A discussion of acidity has been included in the surface water quality text in Section 41.3. 2.3.

- *Section 41.4 Impacts to Surface Water and Groundwater Availability mentions TDS but not acidity*

- *Section 41.1 Acid-Forming and Toxic-Forming Materials discusses acid and pH."*

MMCo Response:

A discussion of acidity has been included in Section 41.1, Section 41.2.1.2, Section 41.2.2.3, Section 41.3.1.2, and Section 41.3.2.3 of the PHC and is not repeated again in the discussion of Surface Water and Groundwater Availability in Section 41.4.

60) OSM Comment (page 20):

"Note Appendix 41.D will likely need to be revised based on necessary changes to the post-mining subwatershed configuration due to the fact that [MMCo] must revise the grading limit shown on Exhibit 35.2-1 such that no grading is shown outside of the 25-year mine plan. See the comment under 780.21(h) hydrologic reclamation plan concerning Exhibit 35.2-1."

MMCo Response:

MMCo has revised the grading limits and the final surface configuration (FSC) to represent the 25-year mine plan disturbance. These changes have required revisions to post-reclamation watersheds represented on Exhibit 35.2-1 and the SEDCAD modeling found in Appendix 41.D.

Additionally, MMCo has also revised this appendix to include a discussion on the K-factor sampling (consistent with Appendix 18.B) and minor editorial changes.

61) OSM Comment (page 20):

"Discussion should be expanded in the PHC to more fully address impoundment water quality impacts."

MMCo Response:

A discussion of the expected impoundment water quality with respect to livestock and chronic aquatic and wildlife use criteria has been included in Section 41.3.2.3.

62) OSM Comment (page 21):

"Per 780.21(h) this replacement must be insured post-mining as well, therefore language in section 35.5 should state, "[MMCo] will replace the lost water sources that existed pre-mine in coordination with the Navajo Nation."

MMCo Response:

MMCo's Pinabete mine plan will impact the surface water availability to four pre-mine livestock impoundments. These impoundments are the Gilmore Depression, Area 4N Pond, Area 4N/4S Pond, and Stevenson Well Pond which are described in Section 18.1.2. The previous description of the number of wells impacted was incorrect and has been corrected. MMCo has revised the text in Section 35.5 and 33.7 to commit to replacing four pre-mine livestock impoundments with impoundments of similar water quality and quantity near the pre-mine impoundment locations.

The Pinabete mine plan will also impact one pre-mine well, the Stevenson Well (W-0343 or 13-5-1), which is described in Section 18.2.2. MMCo has revised the text in Section 33.6 to commit to the replacement of this well with a well of similar quantity and quality.

The revisions to Section 18 and Section 33 were submitted to OSM on December 13, 2013.

63) OSM Comment (page 22):

*“Exhibit 35.2-1 shows a grading limit while outside of the 25-year mine plan as shown on Exhibit 20.1-1. [MMCo] must not propose any mining-related disturbance outside of areas disturbed during the 25-year mine plan. **Therefore, [MMCo] must revise the grading limit shown on Exhibit 35.2-1 such that no grading is shown outside of the 25-year mine plan.** This will likely have ramifications on the entire hydrologic reclamation plan and specifically the subwatershed configuration and drainages that extend outside of and/or boarder the 25-year mine plan as areas outside of this must be left undisturbed and all channels and subwatersheds within the 25-year mine plan must be configured so as to blend with the undisturbed land at the boundary.”*

MMCo Response:

MMCo has revised the grading limits on Exhibit 35.2-1 to represent the 25-year mine plan presented on Exhibit 20.1-1. MMCo notes that there will be ancillary disturbance outside of this disturbance limits for the construction of support facilities such as haulroads, stockpiles, powerlines, etc.

64) OSM Comment (page 22):

“Part 13 of the reconstructed Pinabete Arroyo tributaries is outside of the 25-year mine plan disturbance area as shown on Exhibit 20.1-1 and is therefore not applicable.”

MMCo Response:

MMCo has revised the final surface configuration (FSC) to represent the proposed disturbance from the 25-year mine plan presented on Exhibit 20.1-1. The reconstructed Pinabete Arroyo tributary, Part 13, has been redesigned to reflect the revised mining disturbance limits. This watershed is now represented by four smaller tributary designs (Part 13a, Part 13b, Part 13c, and Part 13d) which flow directly into the Pinabete Arroyo. None of the four tributary watersheds are larger than 1-square mile and therefore do not require detailed channel designs.

The reconstructed Pinabete Arroyo tributary watershed for Part 10 is larger than 1-square mile and is therefore classified as an intermittent stream channel as defined by 30 CFR 701.5. Therefore MMCo has prepared a detailed channel design for Part 10 and SEDCAD modeling. The channel plan and profile and SEDCAD modeling are provided as Exhibit 35.2-2 and Appendix 35.A, respectively, in Section 35 Hydrologic Reclamation Plan.

65) OSM Comment (page 22):

"...this Exhibit [34.1-1] must be modified in a similar manner to Exhibit 35.2-1 as it also shows a grading limit outside of the 25-year mine plan disturbance area. This will likely require a complete reworking of the FSC.

- *OSM requests that the new FSC be submitted in native format e.g. CAD and Natural Regrade files for more in depth review of the hydrologic design.*
- *Additionally, the FSC features many long, linear slopes and linear drainages that intersect at 90 degree angles and do not appear to feature the characteristics of Rosgen Type A or Type C channels as discussed in Section 35.2.2.2 and do not appear to conform to the design parameters in Appendix 34.A."*

MMCo Response:

MMCo has revised the final surface configuration (FSC), shown on Exhibit 34.1-1 and Exhibit 35.2-1, to represent the 25-year mine plan presented on Exhibit 20.1-1. MMCo has minimized the long, linear slopes and linear drainages to better represent the Rosgen Type A and C channels.

MMCo has agreed to supply OSM the FSC and channel design files in their native formats. These individual design files are not included in the Pinabete Surface Mining Control and Reclamation Act (SMCRA) permit application package and are being submitted under a separate submittal as supplemental information to assist OSM in their technical review.

66) OSM Comment (pages 22-23):

"Appendix 34.A has inconsistencies which must be addressed as follows;

- *Text in Appendix 34.A states that the 50-year/6-hour storm precipitation depth is 1.75 inches, but Attachment 34.A states that the 50-year storm precipitation depth is 2.67 inches. [MMCo] must explain this inconsistency and which rainfall depth is appropriate and why it is appropriate for use in the Natural Regrade model.*

MMCo Response:

MMCo used a 50-year, 6-hour (50yr-6hr) precipitation depth of 1.72 to redesign the final surface configuration (FSC) for the Pinabete Permit. This precipitation depth is consistent with other geomorphic designs at Navajo Mine. MMCo has revised Appendix 34.A and Appendix 35.A to describe a 50yr-6hr precipitation depth of 1.72 inches.

- *The Executive Summary of Attachment 34.A states that the rational method runoff coefficient is 0.75, but Section 3.3 of Attachment 34.A and Appendix 34.A states that the rational method runoff coefficient is 0.89. [MMCo] must explain this inconsistency and which runoff coefficient is appropriate and why it is appropriate for use in the Natural Regrade model.*

MMCo Response:

MMCo used a runoff coefficient of 0.89 to model the surface water flows and redesign the final surface configuration for the Pinabete Permit. Although field investigations determined

a 0.75 runoff coefficient is representative of existing conditions, MMCo used 0.89 to be conservative and add a factor of safety in the channel designs.

MMCo has revised Appendix 34.A to describe the use of a 0.89 runoff coefficient and why it is appropriate for use in the Natural Regrade model.

- *Appendix 34.A references the Approximate Original Contour Technical Report for the Navajo Mine Extension Project (Attachment 34.A). Based on text in Appendix 34.A this report is only used as a reference for the drainage basins and watershed analysis data from field investigations for the Navajo Mine Extension Project (NMEP). Given the close proximity of the NMEP area and the Pinabete permit area and the similarity in the natural environment OSM finds it appropriate to use this data for the purposes of the FSC design. However, the report contains significant superfluous information not used for the design of the FSC, this includes references to ash disposal and diversion of Pinabete Arroyo into No Name Wash. This can be confusing within the Pinabete permit even though it is presented in relations to an unrelated project. **Therefore [MMCo] must clarify in Appendix 34.A that though the NMEP report references ash disposal and diversion of Pinabete Arroyo neither of these actions will occur as part of the Pinabete mine.***

MMCo Response:

MMCo has revised Appendix 34.A and removed references to the Navajo Mine Extension Project and Attachment 34.A. The removal of this attachment will eliminate the superfluous information from the previously proposed mine plan. The proposed Pinabete Permit and mine plan will not require a diversion of the Pinabete Arroyo, nor does it propose the use of coal combustion residue (CCR) as mine backfill material.

68) OSM Comment (page 24):

*"...the Pinabete groundwater monitoring program does not use reference criteria as used in the Navajo groundwater monitoring program. OSM does not believe that reference criteria are necessary, however, if reference criteria exceedances in the Navajo Mine may result in monitoring of additional parameters which are not part of the Pinabete Groundwater Monitoring Program. **These parameters (dissolved iron, dissolved manganese, nitrate-nitrite, boron) should be included in the Pinabete Groundwater Monitoring Program or satisfactory justification for their absence must be provided.**"*

MMCo Response:

MMCo has included dissolved iron, dissolved manganese, and dissolved boron to the Pinabete groundwater monitoring parameter list. However, MMCo disagrees that Nitrate-Nitrite should be included on the parameter list. During a recent conversation, OSM stated that Nitrate-Nitrite might affect groundwater due to influences from Navajo Agricultural Products Industry (NAPI) located northeast of the Pinabete Permit area. However, inclusion of Nitrate-Nitrite in the Pinabete groundwater monitoring parameter list due to potential NAPI influences would not be appropriate

since MMCo's monitoring program is intended to monitor mine impacts and not off-site impacts from operations not under MMCo's control.

72) OSM Comment (pages 30-31):

"Exhibit 35.2-1 Reconstructed Stream Channels and SEDCAD Subwatersheds for the Pinabete Permit Area map shows locations of reconstructed stream channels for parts 1 through 13, however, this Exhibit will need to be revised based on comments under 780.21(h)."

MMCo Response:

MMCo has revised the reconstructed stream channels and SEDCAD subwatersheds, shown on Exhibit 35.2-1, to represent revised final surface configuration (FSC) presented on Exhibit 34.1-1. The revised Exhibit 25.2-1 presents the revised reconstructed tributaries drainages, label Parts 1 through 13d).

73) OSM Comment (page 31):

"Exhibit 35.2-2 Part 13 Main Channel Reconstructed Geofluv Design shows map and cross section for Main Channel of Part 13 reconstruction. Appendix 35.A SEDCAD Model Results for Pinabete Tributary Part 13 provides greater detail on design. However, the specific design for part 13 is not applicable based on comments under 780.21(h)."

MMCo Response:

MMCo has revised the grading limits and final surface configuration (FSC) to represent the proposed disturbance from the 25-year mine plan presented on Exhibit 20.1-1. Portions of the reconstructed Pinabete Arroyo tributary, Part 13, have been redesigned to reflect the revised mining disturbance limits. The Part 13 watershed is now represented by four smaller tributary designs (Part 13a, Part 13b, Part 13c, and Part 13d) which flow directly into the Pinabete Arroyo. None of the four tributary watersheds are larger than 1-square mile and therefore do not require detailed channel designs.

The reconstructed Pinabete Arroyo tributary watershed for Part 10 is larger than 1-square mile and is therefore classified as an intermittent stream channel as defined by 30 CFR 701.5. Therefore MMCo has prepared a detailed channel design for Part 10 and SEDCAD modeling. The channel plan and profile and SEDCAD modeling are provided as Exhibit 35.2-2 and Appendix 35.A, respectively, in Section 35 Hydrologic Reclamation Plan.

74) OSM Comment (page 31):

"Exhibit 34.1-1 is referenced as showing the design for all other reconstructed tributary miscellaneous flow channels and Appendix 34.A is referenced as containing design assumptions and details. OSM concurs that the FSC in conjunction with Appendix 34.A is sufficient for analyzing the hydrologic design of these minor channels. However, this Exhibit and Appendix must be modified based on comments under 780.21(h)."

MMCo Response:

MMCo has revised the final surface configuration (FSC), shown on Exhibit 34.1-1, to reflect the 25-year mine plan presented on Exhibit 20.1-1. MMCo has also revised Appendix 34.A to address OSM comments.

ENGINEERING TE COMMENTS (OSM NO. FPD08554 NM-0042-A-P-01 ENGINEERING TE ARMS 12-04-03-01)

97) OSM Comment (page 10):

“...the grading and reclamation plans shown on Exhibits 34.1-1, 34.2-1, and 34.2-2 do not coincide with the proposed 25-year disturbance schedule shown on Exhibit 20.1-1. Exhibits 34.1-1, 34.2-1, and 34.2-2 show grading and reclamation of all areas disturbed under the 25-year mine plan; however, Exhibits 34.1-1, 34.2-1, and 34.2-2 also show grading and reclamation of a substantial area outside of the 25-year mine plan as shown on Exhibit 20.1-1. [MMCo] must not propose any mining-related disturbance outside of areas disturbed during the 25-year mine plan. [MMCo] must revise the Post-Mining Configuration shown on Exhibit 34.2-1 and Reclamation Cut & Fill Blocks Timing Map presented on Exhibit 34.2-2 such that no grading and reclamation actions outside of the 25-year mine plan are shown. [MMCo] must revise the Final Surface Configuration shown on Exhibit 34.1-1 such that it only shows reclamation of lands disturbed under the 25-year mine plan. [MMCo] must make these changes to comply with 30 CFR 780.18.”

MMCo Response:

MMCo has revised the grading limits on Exhibit 34.1-1, Exhibit 34.2-1, Exhibit 34.2-2, and Exhibit 35.2-1 to reflect the 25-year mine plan presented on Exhibit 20.1-1. This grading limit represents disturbance from mining the striplines in the proposed 25-year mine plan. MMCo notes that there will be ancillary disturbance outside of this disturbance limits for the construction of support facilities such as haulroads, stockpiles, powerlines, etc.

98) OSM Comment (page 11):

“OSM notes that Exhibit 34.2-1 and Exhibit 34.2-2 do not reflect the contemporaneous reclamation plan proposed by [MMCo] in Section 51. Rather, they are conceptual diagrams that [MMCo] uses to balance spoil movement in its reclamation plan. OSM finds Exhibits 34.2-1 and 34.2-1 to comply with the requirements of 30 CFR 780.18. OSM notes that the cut/fill scenario shown on Exhibit 34.2-2 is described by the data shown on Table 51.1-1. [MMCo] does not provide a reference pointing to Table 51.1-1 in the text of Section 34 or on Exhibit 34.2-2. [MMCo] must reference add a reference to Exhibit 34.2-2 and to the text of Section 34 that points to Table 51.1-1 in order to comply with 30 CFR 777.11.”

MMCo Response:

MMCo has provided a reference to Table 51.1-1 (Backfilling and Grading Schedule) on page 34-3 of Section 34 (Post Reclamation Topography) and on Exhibit 34.2-2 Reclamation Blocks.

99) OSM Comment (page 11):

"[MMCo] describes in Appendix 34.A previous mining operations (see Appx 34.A, page A-1) including development box-cuts, historic material movement and mining techniques relating to the 8a2 and 8b2 coal seams. This language is referring to previously-conducted operations. However, the context of this description in relation to the proposed operations plan for the Pinabete Permit is unclear. [MMCo] must clarify the context of this language with respect to the proposed Pinabete Mine in order to comply with 30 CFR 777.11 and 30 CFR 780.11."

MMCo Response:

MMCo has revised Appendix 34.A to address OSM comment. The revised appendix directs the reader to Sections 20 (Mining Operations) and 22 (Support Facilities) of the Pinabete Permit for further discussion on the mining operations and support facilities.

100) OSM Comment (page 11):

"[MMCo] describes the hydrologic reclamation plan including use of hydrologic parameters in Appendix 34.A, page A-4. [MMCo] refers to storm events creating various flow conditions. In the first bulleted statement at the top of the page, [MMCo] has a typographic error. The bullet describes "backfull" flows; it should describe "bankfull" flows. [MMCo] must make this change to comply with 30 CFR 777.11."

MMCo Response:

MMCo has revised the text on page 34.A-3 to address OSM's comment.

101) OSM Comment (page 11):

"OSM is very concerned about text, appendices, attachments exhibits, tables, and figures that explicitly references [Navajo Mine Extension Project (NMEP)] plans and finds that language from the NMEP project plan may be inappropriate for inclusion in the Pinabete Application."

MMCo Response:

MMCo has revised Section 34 and Appendix 34.A to remove references to the previously proposed Navajo Mine Extension Project (NMEP). However, MMCo feels the inclusion of the Area 4 South and Area 5 baseline environmental reports, found in Part 2 Pre-mining Environmental Resources Information, developed for NMEP are applicable to the Pinabete Permit.

102) OSM Comment (page 11):

"...it unclear what parts of the [Navajo Mine Extension Project] report are relevant to the proposed Pinabete Mine reclamation plan described in Section 34 of the Application. [MMCo] must add a clear, detailed description to the text in Section 34 that describes its intentions in using information from the NMEP plan with respect to its plan for development of the unique postmine FSC for the Pinabete Mine in order to comply with 30 CFR 777.11 and 30 CFR 780.18."

MMCo Response:

MMCo has revised the text in Section 34 and Appendix 34.A to remove references to the Navajo Mine Extension Project.

103) OSM Comment (page 12):

*“OSM is also very concerned about language in Attachment 34.A describing how the FSC was developed. [MMCo] includes mass-balance figures in Attachment 34.A that support the disturbance schedule proposed for the NMEP plan. **The [Navajo Mine Extension Project] mass balance calculations shown in Attachment 34.A do not clearly support text in Section 50 or in Appendix 34.A. Furthermore, these mass balance calculations reference disposal of ash as part of the overall mass balance. [MMCo] is not permitted to dispose of ash in the Pinabete Mine area and shall not include any language that describes ash disposal, either directly or by reference anywhere in the Pinabete Permit including text, appendices, attachments exhibits, tables, and figures. If [MMCo] wants to include the URS report in the Pinabete Permit, then it must clearly state that mass balance language in the URS report does not apply to the Pinabete Permit reclamation plan. [MMCo] must remove any and all language describing ash disposal and must revise any mass-balance figures that include ash volume in the URS report. [MMCo] must complete these actions to comply with 30 CFR 780.18.”***

MMCo Response:

MMCo has removed Attachment 34.A (URS Report) from the Appendix 34.A Final Surface Configuration Technical Report – Pinabete Mine Plan Permit Area and revised Appendix 34.A to remove references to the Navajo Mine Extension Project. In addition, MMCo has revised the mass balance calculation to describe only the calculations for the proposed Pinabete Permit.

The Pinabete mine plan does not propose to place coal combustion residue (CCR) in the mine backfill during backfilling operations.

104) OSM Comment (page 12):

*“OSM notes that technical information in Attachment 34.A conflicts with similar information described in Appendix 34.A text. Specifically, [MMCo] states in Attachment 34.A that the 50-year storm precipitation depth is 2.67 inches. The text in Appendix 34.A states that the 50-year/6-hour storm precipitation depth is 1.75 inches. Furthermore, the Executive Summary of Attachment 34.A states that the rational method runoff coefficient is 0.75 while Section 3.3 of Attachment 34.A and Appendix 34.A states that the rational method runoff coefficient is 0.89. **[MMCo] must clarify which coefficient and rainfall depth is appropriate for use in the Natural Regrade model to comply with 30 CFR 777.11.”***

MMCo Response:

MMCo has revised Appendix 34.A to provide consistent values for the precipitation depth and runoff coefficient. MMCo used a 50-year, 6-hour (50yr-6hr) precipitation depth of 1.72 a runoff coefficient of 0.89 to redesign the final surface configuration (FSC) for the Pinabete

Permit. These precipitation depth and runoff coefficient inputs are consistent with other geomorphic designs at Navajo Mine.

105) OSM Comment (page 12):

*"OSM has reviewed this Technical Memorandum [included in Appendix 34.A] (herein referred to as the Tech Memo) and noted that the Tech Memo is inconsistent with the proposed Pinabete Mine plan. The Tech Memo describes a situation where Pinabete Arroyo would be diverted into No Name Arroyo. This appears to contradict the Pinabete Mine plan described in other Sections of the Application. The mine plan described in other Sections of this Application indicates that Pinabete Arroyo would not be impacted by mining. The Tech Memo also refers to the position of geographic features with respect to the [Navajo Mine Extension Project] mining plan in several of its field observations. However, the NMEP mine plan differed from the proposed Pinabete Mine plan. **[MMCo] must clarify text in Attachment 34.A to clearly state that Pinabete Arroyo would not be routed into No Name Arroyo, nor would Pinabete Arroyo be impacted by the mining actions proposed in this Application. [MMCo] must make these changes to comply with 30 CFR 777.11 and 30 CFR 780.11.**"*

MMCo Response:

MMCo has removed Attachment 34.A, the Tech Memo described in OSM's comment, from the revised Appendix 34.A. MMCo has also revised Appendix 34.A to remove references to the Navajo Mine Extension Project. The proposed Pinabete Permit will not impact the Pinabete Arroyo nor will it require the Pinabete Arroyo to be diverted into the No Name Arroyo.

108) OSM Comment (pages 13-14):

*"...OSM notes that the FSC shown on Exhibit 34.1-1 features long, linear slopes along contours, especially when adjacent to drainages. Long, linear slopes are undesirable and are not considered best practices in reclamation to Approximate Original Contour (AOC) and do not accurately represent premining conditions or adjacent undisturbed lands. **[MMCo] must revise the FSC shown on Exhibit 34.1-1 to feature less linear, more curved slopes that more-closely resemble pre-mining conditions and adjacent undisturbed areas in order to comply with AOC requirements of 30 CFR 816.102.**"*

MMCo Response:

MMCo has revised the final surface configuration (FSC), shown on Exhibit 34.1-1, to represent the 25-year mine plan presented on Exhibit 20.1-1. MMCo has attempted to minimize the long, linear slopes and linear drainages to more-closely resemble the pre-mining conditions and adjacent undisturbed areas.

109) OSM Comment (page 14):

"...Table 34.1-1 does not point to any pre-mining slope data, nor does it provide a comparison of pre-mine slopes to post-mine slopes on Table 34.1-1. In order to provide a more-complete picture of how the FSC described in Section 34 achieves

AOC, [MMCo] must add some sort of tabular data to Table 34.1-1 and histogram information that shows how the postmine slopes compare to pre-mining slopes. [MMCo] has presented similar information in Table 12-8 and on Figure 12.3 of the Navajo Mine PAP. OSM considers this a requirement of the reclamation plan and requires this information under 30 CFR 816.102."

MMCo Response:

MMCo has included a new figure, Figure 34.1-1 Histogram Comparison of Pre-mine and Post-reclamation Slopes, to Section 34. This new figure provides a comparison of the pre-mine and post-reclamation slopes and references to the pre-mine and post-reclamation slopes analysis, Table 13.1-1 and Table 34.1-1, respectively.

110) OSM Comment (page 14):

"OSM notes that the FSC shown on Exhibit 34.1-1 shows drainages which do not appear to conform to the design watershed reclamation specifications described in Appendix 34.A. [MMCo] must add additional detail to Exhibit 34.1-1 that shows how the proposed post-mine drainages will be constructed as described in Appendix 34.A. Specifically, the proposed FSC as shown on Exhibit 34.1-1 features linear drainages that intersect tributaries at 90-degree angles and do not appear to feature any of the characteristics of Rosgen Type A, C and E channels. OSM finds that [MMCo] must revise the FSC shown on Exhibit 34.1-1 to create post-mine drainages that complement the post-mine landform and conform to the design parameters described in Appendix 34.A to comply with 30 CFR 816.102."

MMCo Response:

MMCo has revised the final surface configuration (FSC), shown on Exhibit 34.1-1. The revised FSC was designed according to the parameters described in Appendix 34.A. The redesigned FSC minimizes 90-degree confluences of tributary channels and better represents Rosgen Type A, C, or E channels characteristics.

112) OSM Comment (page 15):

"The effect of immediate concentration of runoff into the drainage is conservative and has similar characteristics to the 100-yr/6-hr storm event. OSM considers [MMCo's] use of the 50-yr/6-hr storm in lieu of the 100-yr/6-hr storm to be reasonable in context of the Natural Regrade model. However, [MMCo] must add a brief explanation to the text of Appendix 34.A that clearly explains why the 50-yr/6-hr storm is conservative and effectively models a 100-yr/6-hr storm in context of the Natural Regrade model. [MMCo] must provide this explanation to comply with 30 CFR 777.11 and 30 CFR 816.43."

MMCo Response:

MMCo has revised Appendix 34.A to include a discussion why the 50-year, 6-hour (50yr-6hr) is conservative and effectively models a 100yr-6hr storm event in the context of the Natural Regrade model.

114) OSM Comment (page 16):

"...OSM notes that [MMCo] must stabilize any remaining box-cut spoil material or other spoil material not contemporaneously graded to prevent erosion and fugitive dust from this material. [MMCo] must describe how it will stabilize ungraded box-cut spoil in order to comply with 30 CFR 816.95."

MMCo Response:

MMCo has added language to page 34.3 stating, "Ungraded, spoil areas of the mine are subject to applicable effluent standards and fugitive dust emissions. Refer to Sections 25 Sediment Control Plan, Section 26 Drainage Control Plan and Section 40.8 for detail discussions of the control measures associated with these plans."

123) OSM Comment (page 19):

"[MMCo] must add a reference to Exhibit 34.2-2 and to Section 34 that points to Table 51.1-1."

MMCo Response:

MMCo has revised Section 34 and Exhibit 34.2-2 to include references to Table 51.1-1.

124) OSM Comment (page 19):

"MMCo must add some sort of tabular data to Table 34.1-1 and histogram information that shows how the post-mine slopes compare to pre-mining slopes."

MMCo Response:

MMCo has included a new figure, Figure 34.1-1 Histogram Comparison of Pre-mine and Post-reclamation Slopes, to Section 34. This new figure provides a comparison of the pre-mine and post-reclamation slopes and references to the pre-mine and post-reclamation slopes analysis, Table 13.1-1 and Table 34.1-1, respectively.

125) OSM Comment (page 19):

"[MMCo] must revise the FSC shown on Exhibit 34.1-1 to feature less linear, more curved slopes that more-closely resemble pre-mining conditions and adjacent undisturbed areas."

MMCo Response:

MMCo has revised the final surface configuration (FSC), shown on Exhibit 34.1-1, to address OSM's comment.

126) OSM Comment (page 19):

"[MMCo] must revise the FSC shown on Exhibit 34.1-1 to create post-mine drainages that complement the landform and conform to the design parameters described in Appendix 34.A."

MMCo Response:

MMCo has revised the final surface configuration (FSC), shown on Exhibit 34.1-1, to address OSM's comment.

127) OSM Comments (page 19):

"[MMCo] must clarify mining and reclamation operations language in Appendix 34.A to clearly reflect the proposed operations plan for the proposed Pinabete Mine application."

MMCo Response:

MMCo has revised Appendix 34.A to address OSM comments.

128) OSM Comment (page 19):

"[MMCo] has a typographic error in Appendix 34.A. The bullet describes "backfull" flows; it should describe "bankfull" flows. [MMCo] must make this change to comply with 30 CFR 777.11."

MMCo Response:

MMCo has revised Appendix 34.A to address OSM's comment.

129) OSM Comment (page 19):

"[MMCo] must add a clear, detailed description to the text in Section 34 that describes its intentions in using information from the [Navajo Mine Extension Project] plan with respect to its plan for development of the unique postmine FSC for the Pinabete Mine."

MMCo Response:

MMCo has revised the Section 34 text and removed references to the Navajo Mine Extension Project.

130) OSM Comment (page 19):

*"The NMEP mass balance calculations shown in Attachment 34.A do not clearly support text in Section 50 or in Appendix 34.A. The mass balance calculations reference disposal of ash as part of the overall mass balance. **[MMCo] is not permitted to dispose of ash in the Pinabete Mine area and shall not include any language that describes ash disposal,** either directly or by reference anywhere in the Pinabete Permit including text, appendices, attachments exhibits, tables, and figures. If MMCo wants to include the URS report in the Pinabete Permit, then it must clearly state that mass balance language in the URS report does not apply to the Pinabete Permit reclamation plan. **[MMCo] must remove any and all language describing ash disposal** and must revise any mass-balance figures that include ash volume in the URS report."*

MMCo Response:

MMCo has removed Attachment 34.A, i.e. the URS Report, from Appendix 34.A. MMCo has also revised the mass balance calculation to represent post mining configuration resulting from 25-years

of mining in the Pinabete Permit area. MMCo is not proposing nor does it have any future operational plans to place coal combustion residue (CCR) in the mine backfill of the Pinabete Permit.

MMCo would like to clarify that while both Section 34 and Section 50 describe mass balance calculations, the two sections describe different scenarios. Section 34 describes a conceptual mass balance for the entire proposed 25-year mine plan created to model the final surface configuration. While, Section 50 describes an anticipated mass balance for the bonding period, i.e. through the end of the first permit term. Therefore, there will be differences between the Section 34 and Section 50 mass balance discussions..

131) OSM Comment (page 19):

"[MMCo] should clarify the text to clearly tie mass-balance information discussed in Appendix 34.A to the bonding information shown in Section 50 and must clarify the text in Attachment 34.A describing the overall cut/fill projected for the project."

MMCo Response:

MMCo has revised the mass balance calculations described in Appendix 34 and removed Attachment 34.A. The revised calculation describes the conceptual mass balance calculation used to develop the Pinabete Permit final surface configuration.

MMCo would like to clarify that while both Section 34 and Section 50 describe mass balance calculations, the two sections describe different scenarios. Section 34 describes a conceptual mass balance for the entire proposed 25-year mine plan created to model the final surface configuration. While, Section 50 describes an anticipated mass balance for the bonding period, i.e. through the end of the first permit term. Therefore, there will be differences between the Section 34 and Section 50 mass balance discussions. .

132) OSM Comment (page 19):

"[MMCo] presents conflicting runoff coefficients and storm depths in Attachment 34.A and Appendix 34.A. [MMCo] must clarify which coefficient and rainfall depth is appropriate for use in the Natural Regrade model."

MMCo Response:

MMCo used a 50-year, 6-hour (50yr-6hr) precipitation depth of 1.72 to redesign the final surface configuration (FSC) for the Pinabete Permit. This precipitation depth is consistent with other geomorphic designs at Navajo Mine. MMCo has revised Appendix 34.A and Appendix 35.A to describe a 50yr-6hr precipitation depth of 1.72 inches.

133) OSM Comment (page 19):

"[MMCo] must clarify text in Attachment 34.A to clearly state that Pinabete Arroyo would not be routed into No Name Arroyo, nor would Pinabete Arroyo be impacted by the mining actions proposed in this Application. [MMCo] must make these changes to comply with 30 CFR 777.11 and 30 CFR 780.11."

MMCo Response:

MMCo has removed Attachment 34.A from Appendix 34.A. Appendix 34.A has been revised to clarify that the Pinabete Arroyo will be diverted or impacted as a result of mining activities associated with the Pinabete Permit.

134) OSM Comment (page 19):

"[MMCo] must add a brief explanation to the text of Appendix 34.A that clearly explains why the 50-yr/6-hr storm is conservative and effectively models a 100-yr/6-hr storm in context of the Natural Regrade model."

MMCo Response:

MMCo has revised Appendix 34.A to include text that explains why the 50-year, 6-hour storm is conservative and effectively models a 100-year, 6-hour storm in the context of the Natural Regrade model designs.

135) OSM Comment (page 20):

"[MMCo] must add text to Section 34 that commits to stabilizing any box-cut spoil material or other spoil material not contemporaneously graded to prevent erosion and fugitive dust from this material."

MMCo Response:

MMCo has added language to page 34.3 stating, "Ungraded, spoil areas of the mine are subject to applicable effluent standards and fugitive dust emissions. Refer to Sections 25 Sediment Control Plan, Section 26 Drainage Control Plan and Section 40.8 for a detailed discussion of the control measures associated with these plans."

LEGAL AND FINANCIAL TE COMMENTS (OSM NO FPD08554 NM-0042-A-P-01 LEGAL & FINANCIAL TE ARMS12-04-03-01)

142) OSM Comments (page 4):

"None of the links within Section 11 work, even Appendix A which is not in the separate confidential file."

MMCo Response:

MMCo has revised Section 11 Cultural, Historic, and Archeological resources to remap the hyperlinks in the document.

BOND ESTIMATE TE COMMENTS (OSM NO. FPD08554 NM-0042-A-P-01 BOND ESTIMATE TE ARMS12-04-03-01)

149) OSM Comment (page 2):

"Sections 35.5 (Protection and Replacement of Water Rights of Present Users), 33.6 (Post-Reclamation Wells), and 33.7 (Other Post-Reclamation Structures and Facilities) include the statement "[MMCo] may replace the lost water sources should MMCo find the water user are still in need of the sources that existed pre-mine". In addition, Sections 35.5 and 33.7 include the statement, "Should the customary land user require alternate water sources after reclamation, [MMCo] may replace livestock impoundments/ ponds affected by mining with post-

reclamation/replacement livestock impoundments/ livestock ponds or wells/livestock tanks, as deemed appropriate by [MMCo]." In all sentences, it infers that [MMCo's] replacement of water sources is optional when in fact 30 CFR 816.41(h) requires that the "person who conducts surface mining activities shall replace the water supply of an owner of interest in real property who obtain all or part of his or her supply of water for domestic, agricultural, industrial or other legitimate use from an underground or surface source, where the water supply has been adversely impacted by contamination, diminution, or interruption proximately resulting from the surface mining activities." [MMCo] must revise the language in these sections to reflect the requirement of the 30 CFR 816.41(h) which requires [MMCo] to replace every pre-mining water source that has been affected by surface coal mining operations."

MMCo Response:

MMCo's Pinabete mine plan will impact the surface water availability to four pre-mine livestock impoundments. These impoundments are the Gilmore Depression, Area 4N Pond, Area 4N/4S Pond, and Stevenson Well Pond which are described in Section 18.1.2. The previous description of the number of wells impacted was incorrect and has been corrected. MMCo has revised the text in Section 35.5 and 33.7 to commit to replacing four pre-mine livestock impoundments (Gilmore Depression, Area 4N Pond, Area 4N/4S Pond, and Stevenson Well Pond). The post-mining impoundments will be constructed near their pre-mine location.

The Pinabete mine plan will also impact one pre-mine well, the Stevenson Well (W-0343 or 13-5-1), which is described in Section 18.2.2. MMCo has revised the text in Section 33.6 to commit to the replacement of this well. However, MMCo questions whether or not this is a producing well. The well was apparently built to collect the seepage from the upstream Stevenson Well Pond. During a field investigation in December 2013, MMCo was not able to verify the function of this well. MMCo is committing to conduct further investigation regarding the status of this well and will update the permit accordingly based on its findings.

MMCo submitted the revised Section 18 and Section 33 to OSM on December 13, 2013.

FISH AND WILDLIFE TE COMMENTS (OSM NO. FPD08554 NM-0042-A-P-01 FISH & WILDLIFE TE ARMS12-04-03-01)

161) OSM Comments (page 13):

"The advancing mining operations are likely to impact the pre-mine livestock impoundments. [MMCo] will construct impoundments (i.e., highwall impoundments and sediment control ponds) ahead of the mining pits for sediment and drainage control. Wildlife may seasonally utilize these impoundments during mining operations when water is present. However, these are temporary impoundments designed to meet permitted storm water standards and enhance the safety of the mining area. These impoundments may be removed and reclaimed or they may remain in the post-mine reclamation as permanent impoundments. [MMCo] may also take advantage of low-lying areas during the backfilling and grading operations to create small area depressions, described in Section 34 (Post-Reclamation Topography). These small depressions will be

established on an opportunistic basis to enhance topographic diversity and to function as seasonal surface water collection sites. Unlike the larger permanent impoundments, or replacement stock ponds, which function as water sources for livestock and wildlife, these small depressions will create microtopographic niches for establishment of mesic and/or hydric plant species. [MMCo] expects these impoundments and small area depressions to have similar water quality and respond similarly to seasonal water quantity fluctuations as the pre-mine impoundment water quality and quantity monitoring conditions discussed in Section 18 (Water Resources). Further discussion on [MMCo's] replacement of pre-mine water features and use is presented in the hydrologic reclamation plan presented in Section 35."

MMCo Response:

MMCo's Pinabete mine plan will impact the surface water availability to four pre-mine livestock impoundments. These impoundments are the Gilmore Depression, Area 4N Pond, Area 4N/4S Pond, and Stevenson Well Pond which are described in Section 18.1.2. The previous description of the number of ponds impacted was incorrect and has been corrected. MMCo has revised the text in Section 35.5 and 33.7 to commit to replacing four (4) pre-mine livestock impoundments. The post-mining impoundments will be constructed near their pre-mine location.

MMCo submitted the revised Section 18 and Section 33 to OSM on December 13, 2013.

162) OSM Comments (page 13):

"Section 35 (Hydrologic Reclamation Plan) states that during mining development, [MMCo] will disturb surface water availability to six ephemeral or intermittent impoundments (Exhibit 18.1-2) and that [MMCo] may provide alternative sources for livestock watering (e.g., water tanks) to customary land users holding grazing permits for affected areas within the [MMCo] lease. [MMCo] may replace the lost water sources should [MMCo] find that the water users are still in need of the sources that existed pre-mine. Should the customary land user require alternative water sources after reclamation, [MMCo] may replace livestock impoundments affected by mining with post reclamation livestock impoundments or wells, as deemed appropriate by [MMCo]. The replacement livestock impoundments or wells will provide comparable water quantity and quality for use in livestock watering to pre-mine impoundments. [MMCo] does not intend for any impoundments or tanks to be used as a source of domestic water, as local sources of surface and groundwater do not meet drinking water standards. [MMCo] will coordinate with OSM and with customary land users to determine the locations of potential impoundments or wells as a part of preparations for Phase III bond release.

OSM is concerned about the apparent lack of commitment in the proposed PAP to replacing wildlife watering sources in this arid environment during post mining reclamation. As such OSM finds this to be a deficiency in the submitted PAP. In sum, [MMCo] needs to better address permanent water features available for wildlife use during reclamation and post mining, to mitigate or replace the potential loss of the existing man made (for livestock use) water impoundments."

MMCo Response:

MMCo's Pinabete mine plan will impact the surface water availability to four pre-mine livestock impoundments. These impoundments are the Gilmore Depression, Area 4N Pond, Area 4N/4S Pond, and Stevenson Well Pond which are described in Section 18.1.2. The previous description of the number of wells impacted was incorrect and has been corrected. MMCo has revised the text in Section 35.5 and 33.7 to commit to replacing four pre-mine livestock impoundments (Gilmore Depression, Area 4N Pond, Area 4N/4S Pond, and Stevenson Well Pond). The post-mining impoundments will be constructed near their pre-mine location.

The Pinabete mine plan will also impact one pre-mine well, the Stevenson Well (W-0343 or 13-5-1), which is described in Section 18.2.2. MMCo has revised the text in Section 33.6 to commit to the replacement of this well. However, MMCo questions whether or not this is a producing well. The well was apparently built to collect the seepage from the upstream Stevenson Well Pond. During a field investigation in December 2013, MMCo was not able to verify the function of this well. MMCo is committing to conduct further investigation regarding the status of this well and will update the permit accordingly based on its findings.

MMCo submitted the revised Section 18 and Section 33 to OSM on December 13, 2013.

Attachment B

Response to OSM's Oct 28, 2013 Technical Evaluation Comments

Updated and Revised Files

The following list describes the updates and revisions to the individual files included in BNCC's response to OSM's technical evaluation comments. Files not mentioned within this list remain unchanged from the original March 30, 2012 submittal.

Part 1 Legal, Financial, Compliance, and Related Information

Section 1 Permitting History

- Section 1 Permitting History section text – Revised section text to address OSM Comments.
- Appendix 1.A Permit Application Package Submittal Form – Revised Appendix 1.A Attachment 1 to update permit application package attached document naming and numbering and to include new attached documents from the December 13, 2013; January 27, 2014 and March 6, 2014 technical comment Responses.

Part 2 Premining Environmental Resources Information

Section 11 Cultural Resources

- Section 11 Cultural Resources section text – Revised section text to address OSM comments.

Section 13 Topography

- Exhibit 13.1-2 Premining Slope Classes – Revised exhibit due to re-analysis of slope classes raster dataset.
- Table 13.1-1 Premining Topography Slope Analysis for Area 4 North, Area 4 South, and Pinabete Permit Area – Revised table due to re-analysis of slope classes raster data set.

Part 3 Operation Plan

Section 22 Support Facilities

- Section 22 Support Facilities section text – Revised section text submitted on December 13, 2013 to include conditions of Navajo Nation Department of Fish and Wildlife Biological Resources Compliance Form.

Part 5 Reclamation Plan

Section 34 Post-Reclamation Topography

- Section 34 Post-Reclamation Topography section text – Revised section text to address OSM's comments.
- Table 34.1-1 Post-Reclamation Final Surface Configuration Slope Analysis for Area 4 North, Area 4 South, and the Pinabete Permit Area – Revised table to address revised final surface configuration slope analysis.
- Figure 34.1-1 Histogram Comparison of Pre-mine and Post-reclamation Slopes – Created new figure to address OSM's comments.
- Exhibit 34.1-1 Final Surface Configuration – Revised exhibit to address OSM's comments.
- Exhibit 34.2-1 Post Mining Configuration – Revised exhibit to address OSM's Comments.
- Exhibit 34.2-2 Reclamation Cut & Fill Blocks Timing Map – Revised exhibit to address OSM's comments

- Appendix 34.A Final Surface Configuration Technical Report – Pinabete Mine Plan Permit Area – Revised appendix to address OSM's comments.

Section 35 Hydrologic Reclamation Plan

- Section 35 Hydrologic Reclamation Plan section text – Revised section text to address OSM comments.
- Exhibit 35.2-1 Pinabete Permit Stream Channels and Watersheds – Revised exhibit to address OSM's comments.
- Exhibit 35.2-2 Pinabete Permit Part 10 Main Channel Reconstructed Geofluid Design (sheet 1 of 2) – New exhibit to address OSM's comments.
- Exhibit 35.2-2 Pinabete Permit Part 10 Main Channel Reconstructed Geofluid Design (sheet 2 of 2) – New exhibit to address OSM's comments.
- Exhibit 35.5-1 Replacement Water Features – New exhibit to address OSM's comments.

Part 6 Environmental Protection, Probable Hydrologic Consequences, and Monitoring

Part 41 Probable Hydrologic Consequences

- Section 41 Probable Hydrologic Consequences section text – Revised section text to address OSM's comments.
- Table 41.2-1 Transient Modeling Scenarios – Revised table to address OSM's comments.
- Table 41.3-2 Summary of Transport Model Sensitivity Runs – Revised table to address OSM's comments.
- Table 41.3-3 Estimation of Cottonwood Alluvial Groundwater TDS Concentrations From Transport Modeling Scenarios – Revised table to address OSM's comments.
- Table 41.3-4 Comparison of Pre-mine and Post-reclamation Flows for Pinabete Arroyo, Cottonwood Arroyo, and Unnamed Tributary to Chaco River – Revised table to address OSM's comments.
- Table 41.3-5 Comparison of Sediment Yield Pre-mining and Post-mining for Pinabete Arroyo, Cottonwood Arroyo, and Unnamed Tributary to Chaco River – Revised table to address OSM's comments.
- Figure 41.3-1 Mine Backfill and Prediction Locations for Water Level Plots – Revised table to address OSM's comments.
- Figure 41.3-2 Base Scenario - Rate of Groundwater Recovery in the Mine Backfill – Revised table to address OSM's comments.
- Figure 41.3-3 Flow Scenario 1 - Rate of Groundwater Recovery in the Mine Backfill – Revised table to address OSM's comments.
- Figure 41.3-4 Flow Scenario 2 - Rate of Groundwater Recovery in the Mine Backfill – Revised table to address OSM's comments.
- Figure 41.3-5 Flow Scenario 3 - Rate of Groundwater Recovery in the Mine Backfill – Revised table to address OSM's comments.
- Figure 41.3-6 Base Scenario - Rate of Groundwater Recovery at Well Locations near Backfill – Revised table to address OSM's comments.

- Figure 41.3-7 Flow Scenario 1 - Rate of Groundwater Recovery at Well Locations near Mine Backfill – Revised table to address OSM's comments.
- Figure 41.3-8 Flow Scenario 2 - Rate of Groundwater Recovery at Well Locations near Mine Backfill – Revised table to address OSM's comments.
- Figure 41.3-9 Flow Scenario 3 - Rate of Groundwater Recovery at Well Locations near Mine Backfill – Revised table to address OSM's comments.
- Figure 41.3-10 Base Scenario - Rate of Groundwater Recovery at Upgradient Well Location VWP2007-02 – Revised table to address OSM's comments.
- Figure 41.3-11 Flow Scenario 1 - Rate of Groundwater Recovery at Upgradient Well Location VWP2007-02 – Revised table to address OSM's comments.
- Figure 41.3-12 Flow Scenario 2 - Rate of Groundwater Recovery at Upgradient Well Location VWP2007-02 – Revised table to address OSM's comments.
- Figure 41.3-13 Flow Scenario 3 - Rate of Groundwater Recovery at Upgradient Well Location VWP2007-02 – Revised table to address OSM's comments.
- Figure 41.3-14 Base Scenario – Post Reclamation Potentiometric Surface – No. 8 Coal Seam (S8) – Revised table to address OSM's comments.
- Figure 41.3-15 Base Scenario – Post-Reclamation Potentiometric Surface – No. 3 Coal Seam (S3) – Revised table to address OSM's comments.
- Figure 41.3-16 Base Scenario – Post-Reclamation Potentiometric Surface – Pictured Cliffs Sandstone (PCS) – Revised table to address OSM's comments.
- Figure 41.3-17 Transport Scenario 1 - TDS Transport in the L1 after 500-years with Constant Source of 11,500 mg/L – Revised table to address OSM's comments.
- Figure 41.3-18 Transport Scenario 2 - TDS Transport in the L1 after 500-years with Constant Source of 11,500 mg/L – Revised table to address OSM's comments.
- Figure 41.3-19 Transport Scenario 3 - TDS Transport in the L1 after 500-years with Constant Source of 11,500 mg/L – Revised table to address OSM's comments.
- Figure 41.3-20 Transport Scenario 4 - TDS Transport in the L1 after 500-years with Constant Source of 11,500 mg/L – Revised table to address OSM's comments.
- Figure 41.3-21 Transport Scenario 5 - TDS Transport in the L1 after 500-years with Constant Source of 3,550 mg/L – Revised table to address OSM's comments.
- Figure 41.3-22 Transport Scenario 1 - TDS Transport in the PCS after 500-years with Constant Source of 11,500 mg/L – Revised table to address OSM's comments.
- Figure 41.3-23 Transport Scenario 2 - TDS Transport in the PCS after 500-years with Constant Source of 11,500 mg/L – Revised table to address OSM's comments.
- Figure 41.3-24 Transport Scenario 3 - TDS Transport in the PCS after 500-years with Constant Source of 11,500 mg/L – Revised table to address OSM's comments.
- Figure 41.3-25 Transport Scenario 4 - TDS Transport in the PCS after 500-years with Constant Source of 11,500 mg/L – Revised table to address OSM's comments.
- Figure 41.3-26 Transport Scenario 5 - TDS Transport in the PCS after 500-years with Constant Source of 3,550 mg/L – Revised table to address OSM's comments.

- Figure 41.3-27 Transport Scenario 1 - TDS Transport in the No. 8 Coal Seam after 500-years with Constant Source of 11,500 mg/L – Revised table to address OSM's comments.
- Figure 41.3-28 Transport Scenario 2 - TDS Transport in the No. 8 Coal Seam after 500-years with Constant Source of 11,500 mg/L – Revised table to address OSM's comments.
- Figure 41.3-29 Transport Scenario 3 – TDS Transport in the No. 8 Coal Seam after 500-years with Constant Source of 11,500 mg/L – Revised table to address OSM's comments.
- Figure 41.3-30 Transport Scenario 4 – TDS Transport in the No. 8 Coal Seam after 500-years with Constant Source of 11,500 mg/L – Revised table to address OSM's comments.
- 41.3-31 Transport Scenario 5 – TDS Transport in the No. 8 Coal Seam after 500-years with Constant Source of 3,550 mg/L – Revised table to address OSM's comments.
- 41.3-32 Transport Scenario 1 – TDS Transport in the No. 3 Coal Seam after 500-years with Constant Source of 11,500 mg/L – Revised table to address OSM's comments.
- 41.3-33 Transport Scenario 2 – TDS Transport in the No. 3 Coal Seam after 500-years with Constant Source of 11,500 mg/L – Revised table to address OSM's comments.
- 41.3-34 Transport Scenario 3 – TDS Transport in the No. 3 Coal Seam after 500-years with Constant Source of 11,500 mg/L – Revised table to address OSM's comments.
- 41.3-35 Transport Scenario 4 – TDS Transport in the No. 3 Coal Seam after 500-years with Constant Source of 11,500 mg/L – Revised table to address OSM's comments.
- 41.3.36 Transport Scenario 5 – TDS Transport in the No. 3 Coal Seam after 500-years with Constant Source of 3,550 mg/L – Revised table to address OSM's comments.
- Exhibit 41.2-1 SEDCAD Subwatersheds – Revised exhibit to address OSM's comments.
- Appendix 41.A Pinabete Permit Project: Mine Spoil Leachate Test Analyses – Revised appendix to address OSM's comments.
- Appendix 41.B Groundwater Model for Assessment of Probable Hydrologic Consequences – Revised appendix to address OSM's comments.
- Appendix 41.D SEDCADTM 4 Modeling of Flood Flows and Sediment Yields for Post-reclamation Conditions – Revised appendix to address OSM's comments.

Section 42 Monitoring, Maintenance, Inspections, and Examinations

- Section 42 Monitoring, Maintenance, Inspections, and Examinations section text– Revised section text submitted on December 13, 2013 to address the discontinuation of monitoring the vibrating wire piezometers as they begin to fail.

Part 7 Bonding

Section 51 Reclamation Schedule

- Table 51.1-1 Backfilling and Grading Schedule – Revised table based on changes to the final surface configuration and reclamation blocks.