

Document Information Form

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To: DOGM

From:

Person N/A

Company Willow Creek Mine

Date Sent: December, 1995

Explanation:

Environmental Resource Information

cc:

File in:
C/007, 0039, Internal

Refer to:

- Confidential
- Shelf
- Expandable

Date _____ For additional information

**WILLOW CREEK MINE
TECHNICAL ADEQUACY RESPONSES
DECEMBER 1995**

ENVIRONMENTAL RESOURCE INFORMATION

General Deficiencies

- 1) R645-301-521.120 - The pipes carrying water through the proposed permit area from the Price water treatment plant to Price are not shown on any map.

Response: All known existing water and sewer lines have been added to Map 18, Mine Surface Facilities Map.

- 2) R645-301-521.120 - Maps 11 and 18 are confusing in that they show both existing and projected surface facilities, contours, etc.

Response: Map 11, Facilities Area Cultural Resources, is intentionally formatted to show both the existing cultural resource features and the proposed mine facilities in order to highlight potential conflicts between the proposed disturbance and existing resource values and, conversely, to indicate that there will be no conflicts in most areas. In order, however, to clarify the information presented on Map 18, Mine Surface Facilities Map, and to allow the existing facilities and configuration to be readily distinguished from the proposed facilities and configuration, Map 18 has been separated into two sheets, Map 18A, Mine Surface Facilities - Premining Configuration and Facilities, and Map 18B, Mine Surface Facilities - Proposed Configuration and Facilities.

- 3) R645-301-521.120 - There is no map that clearly identifies existing surface facilities and features.

Response: Refer to the response to Comment 2 above.

- 4) In the table "Permit Section Regulatory Provisions Addressed" in Section 3.6.1.1, 3.6.1.1 is cross-referenced to R645-301-610 through 612. R645-301-611 concerns general requirements for descriptions of the geology and operations, which are covered by reference to subsequent sections of the MRP, however, R645-301-612 concerns certification of cross-sections, maps, and plans as described under R645-301-512.100. There is nothing in 3.6.1.1 nor in the rest of Section 3.6.1.1 nor in the rest of Section 3.6.1.1 sections, maps, and plans. Certification is consistent with applicable regulatory mapping information Sections 3.4.1.4, 3.6.1.4, a reference to certification of the requirements "Regulatory Provisions Addressed" have been used in that section in 3.6.1.1.

Response: Consistent with applicable regulatory mapping information Sections 3.4.1.4, 3.6.1.4, a reference to certification of the requirements "Regulatory Provisions Addressed" have been used in that section in 3.6.1.1.

File in:

- Confidential
 Shelf
 Expandable

Refer to Record No. 0002 Date 12-95
In C/ 007, 0038, Internal
For additional information

- 5) 3.6.1.2 is cross-referenced to R645-301-130, 140 and 624, however, R645-301-140 concerns map scales and maps and plans used to distinguish among each of the phases

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Response: All known existing water and sewer lines have been added to Map 18, Mine Surface Facilities Map.

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Response: Map 11, Facilities Area Cultural Resources, is intentionally formatted to show both the existing cultural resource features and the proposed mine facilities in order to highlight potential conflicts between the proposed disturbance and existing resource values and, conversely, to indicate that there will be no conflicts in most areas. In order, however, to clarify the information presented on Map 18, Mine Surface Facilities Map, and to allow the existing facilities and configuration to be readily distinguished from the proposed facilities and configuration, Map 18 has been separated into two sheets, Map 18A, Mine Surface Facilities - Premining Configuration and Facilities, and Map 18B, Mine Surface Facilities - Proposed Configuration and Facilities.

- 3) *R645-301-521.120 - There is no map that clearly identifies existing surface facilities and features.*

Response: Refer to the response to Comment 2 above.

- 4) *In the table "Permit Section Regulatory Provisions Addressed" in Section 3.6.1.1, 3.6.1.1 is cross-referenced to R645-301-610 through 612. R645-301-611 concerns general requirements for descriptions of the geology and operations, which are covered by reference to subsequent sections of the MRP, however, R645-301-612 concerns certification of cross-sections, maps, and plans as described under R645-301-512.100. There is nothing in 3.6.1.1 nor in the rest of Section 3.6 addressing certification of cross-sections, maps, and plans. Certification is covered in 4.5.1.8, but there is no reference to that section in 3.6.1.1.*

Response: Consistent with applicable regulatory requirements for certification of specific mapping information Sections 3.4.1.4, 3.6.1.4, and 3.7.1.5 have been revised to incorporate a reference to certification of the required maps and the corresponding listings of "Regulatory Provisions Addressed" have been update to reflect inclusion of these references.

- 5) *3.6.1.2 is cross-referenced to R645-301-130, 140 and 624, however, R645-301-140 concerns map scales and maps and plans used to distinguish among each of the phases*

of the coal mining and reclamation operation, specifically between pre- and post-SMCRA operations. There is nothing in 3.6.1.2 addressing these subjects.

Response: The reference for 3.6.1.2 is incorrect, it should refer to R645-301-624.100, 130, and 210 through 340 and has been revised accordingly.

- 6) *3.6.2.3 is cross-referenced to R645-301-634.210 and 310, it should be R645-301-624.210 and 310.*

Response: The cross-reference for Section 3.6.2.3 has been corrected consistent with the UDOGM's comment.

Identification of Interests

- 1) *The application needs to include right of entry information for the entire proposed permit area.*

Response: The possibility exists that pending Federal Coal Leases (applications filed 3/23/95) which would provide full right of entry for the subject lease tracts may not be approved prior to permit approval and issuance. In the event that lease issuance is delayed, restrictions on mining activities within the subject areas could be incorporated into the permit approval as stipulations. Please refer to the clarifying statement which has been added to Section 2.1.2.4 for clarification of CPMC's intent and schedule relative to the pending Federal leases.

Unsuitability Claims

Permit Term, Insurance, Proof of Publication, Facilities or Structures Used in Common, Filing Fee, Notarized Signature

- 1) *Cyprus must include a copy of the proof of publication in its application.*

Response: Copies of the required Proof of Publication accompany these responses for insertion in Exhibit 3.

- 2) *Before the Division issues a permit, Cyprus will need to submit a certificate of insurance or other evidence of insurance satisfying the requirements of R645-301-800.*

Response: CPMC recognizes and accepts the obligation to submit a certificate of insurance documenting compliance with applicable provisions of R645-301-800. The required certificate has been requested from CPMC's insurance carrier and copies will be submitted to UDOGM for insertion in Exhibit 17, Bonding and Insurance Information, upon receipt. Please refer to Section 2.1.8.1 for documentation of this commitment.

Response: This comment duplicates Comment 1 above, which has been previously addressed.

Historical and Archaeological Resource Information

- 1) *The applicant references Map 3-8 for cultural resources information. It appears this should be a reference to Map 11.*

Response: There are several map referencing errors in Section 3.4 which apparently carried over from a previous working draft. These map references have been corrected to correspond to the present map numbering designations.

- 2) *Map 11 and some of the cultural resources information in the text of the plan should be considered confidential. These materials contain enough detail for a person to easily locate the significant cultural resource sites identified in the application.*

Response: The referenced materials have been reviewed and as appropriate have been moved to Volume 15, Confidential Permit Information.

- 3) *The application needs to contain evidence of clearances from the Division of State History.*

Response: Clearance from the SHPO was recently received noting that no potential adverse impacts are anticipated on identified cultural resource values so long as CPMC is sensitive to their existence and takes reasonable steps to minimize unnecessary disturbance during mine development. Copies of the SHPO clearance accompany these responses for insertion in either Exhibit 8, Cultural Resources Information. The cultural resource consultant has recommended that certain cultural resource sites be documented through archival photography and CPMC will notify the SHPO and, if appropriate, temporarily suspend operations if any potential cultural resource values are identified during mine construction and development activities. Cultural resource protection measures have been incorporated into Section 4.5.2.1, General Description of Mine Construction and Development Activities.

Climatological Resource Information

Vegetation Resource Information

- 1) *The applicant needs to include baseline vegetation information for all areas proposed to be disturbed.*

Response: (Response from Kent Crofts pending)

- 2) *The applicant has proposed to use the baseline method for the revegetation success standard, but the baseline information in the plan was not gathered during a "normal precipitation year" as defined in the "Vegetation Information Guidelines. Also since much of the previously disturbed area has been redisturbed, it is impossible to gather this information of these areas. If the applicant decides to use a reference area or range site, the application will need to include the baseline vegetation information for this area.*

Response: (Response from Kent Crofts pending)

Fish and Wildlife Resource Information

- 1) *Section 3.3.2.1 contains generalizations and opinions not necessarily supported by data and which may be irrelevant to the application. The applicant is apparently trying to show the value of the area to wildlife is minimal. These types of statements need to either be supported with data or eliminated from the application.*

Response: The discussion of existing fish and wildlife resources attempts to characterize existing site resources and conditions while also reflecting specific limiting conditions including location (ie: very steep adjoining cliffs), previous historic mining and other disturbance, and proximity to human activity (Highways 191, U.S. 6 and 50, and the Carbon Generating Station). The information presented reflects existing available resource information from DWR, the results of site specific reconnaissance, and the observations of both CPMC personnel and qualified professional wildlife ecologists. It would be inaccurate and technically incorrect to neglect consideration of either site values or site limitations. In order to address general concerns relative to the emphasis of the resource discussions, all fish and wildlife sections have been reviewed and revised as appropriate to present a balanced approach.

- 2) *The application says comprehensive wildlife baseline studies are not required based on applicable Division and Wildlife Resources guidelines and conversations with representatives of these agencies. This statement should be modified. The extent of wildlife informational requirements is not yet known. R645-301-322 says the scope and level of detail of wildlife information is to be determined by the Division based on consultations with State and Federal Information Agencies with responsibilities for fish and wildlife. These State and Federal agencies have not provided their comments to the Division. Further baseline information could be needed.*

Response: The statement relative to wildlife baseline studies is based primarily on discussions with both UDOGM and DWR personnel. CPMC recognizes that consultation requirements provide for identification of supplemental wildlife information which may be required to address agency concerns. The text statement has been modified to address this consideration.

- 3) *The applicant has committed to check cliff areas for "sensitive species" such as canyon sweetvetch and golden eagles, in advance of mining that could cause subsidence. In addition, the applicant should check areas with potential habitat for tree-nesting birds of special interest, such as raptors.*

Response: CPMC is currently working with DWR to define operational monitoring requirements for fish and wildlife resources, including raptors. It is anticipated that required monitoring will include specific golden eagle monitoring measures for any nests in close proximity to the mine facilities area during construction and periodic aerial raptor surveys similar to the current monitoring program for CPMC's Star Point Mine. Aerial surveys of potential tree-nesting habitat will be incorporated into the ultimate wildlife monitoring plans

and will focus on any areas having high potential for nesting sites including large stands of timber and smaller stands in close proximity to water sources. Discussion of specific golden eagle and raptor monitoring plans will be incorporated into the permit document following plan development and DWR concurrence.

- 4) *The applicant discusses habitat requirements for some bird and mammal species that are not known to occur in the West Tavaputs Plateau and that are unlikely to inhabit the mine plan area. Discussions about these species should be eliminated from the plan unless they are relevant.*

Response: The discussion of habitat requirements was based on DWR documents indicating the presence of the identified species in the West Tavaputs Plateau. Admittedly, the West Tavaputs Plateau covers a relative large region and some of the species identified and discussed may not occur in the immediate permit and adjacent areas. Any additional information that either DWR or UDOGM could provide relative to species occurrence would be welcomed and would allow CPMC to modify the permit discussions to more accurately reflect current knowledge of wildlife occurrence.

- 5) *The Division of Wildlife Resources considers the proposed facilities area to be marginal critical deer winter range. The area may not produce as much forage as adjacent undisturbed areas, but because of the terrain, water availability, and other factors, deer tend to congregate there. This use should be identified in the application.*

Response: CPMC's concern relative to the designation as "Critical Winter Range" stems from perceptions of the general public and misuse by environmental interest groups of this terminology to indicate that such areas are critical to the survival of the associated wildlife species and that any disturbance of these areas will result in direct animal mortality, which is generally not the case. In order to accurately characterize the use and value of the proposed facilities area for mule deer, relevant text sections have been reviewed and edited as appropriate to identify both use and limitations.

Soils Resource Information

- 1) *R6450301-222 Soil Survey. The application must include an organized, clear and concise description of the pre-mining soils resource, including a map delineating the different soils, soil identification, and description.*

Response: (Response from Kent Crofts pending)

- 2) *The text implies greater understanding of the Willow Creek mine site soils resource than the provided documents can confirm. A site specific investigation of the soils prior to disturbance is warranted to establish present conditions in the 6.8 acres of new disturbance. This information and the results of the proposed sampling (pg 4.2-5) prior to removal of the refuse cover material should be disclosed in Section 3.1. An isopach map of the removal depth for the undisturbed sites and the disturbed regolith should be sketched to identify those areas where soil will not be salvaged and to ensure that all suitable cover material is identified for salvage. This is very important considering that*

6.8 acres of disturbance will be added to the site, but not all of those acres will contribute additional topsoil for reclamation.

Response: (Response from Kent Crofts pending)

- 3) *All soil sampling locations discussed in the text must be included in the map legend and located on the map. All notations on the map must be in the legend. All soil analyses discussed in Section 3.1 must be included in Exhibit 5. Exhibit 5 must be prefaced by a table of contents for easy reference. Exhibit 7, Documentation of Existing Site Conditions, must be completed.*

Response: (Response from Kent Crofts pending)

- 4) *Castle Gate mine plan soils information (found in Chapter 8 of the Castle Gate Mine Plan and its appendix) must be included as an exhibit, since this chapter provides a complete description of the Crandall Canyon, Preparation Plant, and Refuse soils and analyses.*

Response: (Response from Kent Crofts pending)

Land Use Resource Information

- 1) *The application references Maps 3-9 and 3-10, but these maps could not be located in the application.*

Response: This comment is similar to Comment 1 under the heading of Environmental Resource Information and the subheading of Historical and Archaeological Resource Information. There are several map referencing errors in Section 3.4 which apparently carried over from a previous working draft. These map references have been corrected to correspond to the present map numbering designations.

- 2) *The application needs further information about the current uses of the proposed permit area. In particular, the applicant should include landowner comments about current uses so it can be determined if certain areas are undeveloped land or if they can be classified as wildlife habitat or grazing lands.*

Response: Section 3.4, Land Use Information, characterizes and describes existing land uses in the proposed permit area. The information presented is based on the information sources noted in Section 3.4.1.2 but also reflects consideration of personal communications between CPMC staff and landowners in the permit area. Specifically, as noted in Section 4.3.3.4 (page 4.3-11) CPMC has discussed current grazing uses with the principal landowner involved in such use. CPMC has also contacted both the BLM and DWR relative to any land use management practices or enhancements which have been implemented for lands within the permit area. Section 3.4 has been reviewed and edited as appropriate to provide additional information on land use information sources and management.

- 3) *The application needs to describe the industrial use in the area of the formerly permitted Willow Creek Mine. This may have been terminated.*

Response: Section 3.4.2.2, Description of Existing Land Uses, has been edited to include a brief discussion of the light industrial land use approved as a postmining land use for areas disturbed by previous mining activities in the proposed facilities area. As indicated, this use has been terminated and is not being considered as a potential future postmining land use.

Alluvial Valley Floors

Geologic Resource Information

- 1) *No potentiometric surface map has been made.*

Response: Ground water aquifers are identified and discussed in Section 3.7.2.2 and ground water occurrence is characterized in Section 3.7.2.3. As addressed in these sections and specifically discussed in Section 3.7.2.3 (page 3.7-12 through 3.7-13) the combination of perched aquifers which result from truncation of water-bearing units by deeply eroded valleys, stored mine water occurrences, localized effects on the water table in the vicinity of historic mining operations, and the generally low but highly variable permeability of most of the geologic units, result in a poorly defined and highly variable water table. Given that the Utah regulations do not specifically require a potentiometric surface map, the referenced text discussion along with supporting drill logs and hydrographs and notation of ground water intercepts on the Geologic Cross-Sections (Maps 13A through 13D) provide all information currently available to characterize ground water occurrence and seasonal variations.

- 2) *The statement on p. 3.6-13 concerning well W94-31-1, "Water inflow was suspected at 62 feet with loss at the fractures at 19 feet." is unclear, indicating among other possibilities, either that water is flowing into the borehole at 62 feet, flowing up the borehole, and flowing into fractures at 19 feet; or that drilling mud was lost at 19 feet as drilling progressed downward. The hole completion report and cuttings log in Exhibit 9 provide no information on this.*

Response: The text discussion is misleading and has been corrected, with the appropriate revised pages accompanying these responses for replacement in the permit application document. Circulation was lost in drillhole W94-31-1 (Well B311) at 19 feet due to apparent fracture flow at that level. Minor ground water inflows were encountered at 62 feet and a stable static water level established at approximately 95 feet following well completion. The observed static water level corresponds to the thick water-bearing sandstone unit which overlies the D Coal Seam and was the targeted completion interval for this well.

- 3) *It is unclear whether or not W93-33-1 on Map 12 is the same as W94-33-1 on Cross-Section A-A' - Map 13A (and B331-1 and 1A on Map 15 and W94-33-1 and 1A on page 3.6-13)?*

Response: The well was mislabelled on Map 12, which has been corrected. Wells 94-33-1 and 1A as now shown on Maps 12 and 13A and described on text page 3.6-13 are the same

as drillholes B331-1 and 1A as shown on Map 15. Drillholes were given a designation consistent the previous drillhole numbering system. Any drillholes subsequently completed as monitoring wells were also given a well designation consistent with monitoring well labelling practices. Any drillholes completed as monitoring wells will, therefore, have a dual designation.

- 4) *W94-31-1 is designated as BW311 on Map 15, not B311 as stated on page 3.6-13.*

Response: Page 3.6-13 has been revised to show the corrected designation.

- 5) *The monitoring well at Castle Gate and labelled BW36 on Map 15 is not mentioned in the text on page 3.6-13. It is unclear whether or not BW36 is the same as CG045 on Map 12.*

Response: Well BW361 is a geotechnical sampling hole located near the existing truck scale on the Castle Gate side which was subsequently completed and is being monitored as a ground water monitoring well. Well BW36 is not the same as drillhole CG045, shown on Map 12. They are in the same general vicinity but CG045 is on the west side of the Price River and Highways 6 and 50.

- 6) *It is unclear whether or not the "1994 Site" on Map 12 is the same as B51 on Map 15 (and W94-5-1 in the text on page 3.6-13).*

Response: Map 12 reflects the preliminary "1994 Site" designation for Drillhole B51 and Well 94-5-1. As previously described in the response to Comment 3, as a monitoring well this site has a dual designation. The preliminary designation has been changed to 94-5-1 on Map 12.

- 7) *In the statement concerning W94-5-1 on p. 3.6-13, "...5-7 gpm at 325 feet (Aberdeen Sandstone). One day after pump tests were completed, the water level was measured at over 310 feet deep; over 45 feet below the top of the Aberdeen Sandstone indicating a recharge rate of about 0.25 gpm." The relationships between the top of the Aberdeen Sandstone, the water level before the test, the water level during the test, and the water level after the test are unclear; is there an artesian head in this sandstone, and in this context does "...over 310 feet deep, over 45 feet below the top of the Aberdeen Sandstone..." mean deeper or shallower than 310 feet?*

Response: Minor amounts of ground water were encountered at a depth of 85 feet during drilling, the top of the Aberdeen Sandstone was encountered at a depth of approximately 265 feet, and ground water inflow was noted at a depth of 325 feet in the Aberdeen Sandstone. Well 94-5-1 was completed in the Aberdeen Sandstone and a pumping test was subsequently conducted to evaluate aquifer characteristics. Following the pumping test, the ground water level was allowed to stabilize in the well and was measured at a depth of 310 feet or 45 feet below the top of the Aberdeen Sandstone unit. This information indicates that the upper portion of the Aberdeen Sandstone has lower permeability due to smaller grain size, greater consolidation, or increased cementation and that a slight artesian head (15 feet) may exist within the unit probably due to the combination of structural dip and the gradient of the regional water table aquifer. The text on Page 3.6-13 has been revised to clarify the water level relationships.

- 8) *It is unclear whether either DH001 or W94?201 on Map 12 are the same as B121 on Map 15 (and W94-12-1 in the text on page 3.6-13).*

Response: B121 (Map 15) is the same as Well 94-12-1 which is mislabelled as W94?201 on Map 12. Map 12 has been corrected to show the correct designation.

- 9) *It is unclear if MC049 on Map 12 is the same as B311 on Map 15 (and W94-31-1 in the text on page 3.6-13).*

Response: Well BW311 is a shallow geotechnical borehole which was completed as a monitoring well. Because the borehole was not a conventional exploration drillhole it is not shown on Map 15 and does not correlate with any of the exploration boreholes shown on that map.

- 10) *It is not clear that the large (approximately 550') apparent artesian head in well B331 is a real indication of the static water level in the regional aquifer.*

Response: (Response pending further evaluation)

- 11) Response: This comment duplicates Comment 7 under the heading of Environmental Resource Information and the sub-heading of Geologic Resource Information which has already been addressed.

Hydrologic Resource Information

- 1) *The PHC section on surface water consequences does not give specific information about how the disturbed area will be minimized (see page 4.7-28, paragraph 4).*

Response: The discussion presented on page 4.7-28 indicates that minimization of surface disturbance will focus on limiting required surface facilities to the smallest area possible. A detailed discussion of surface disturbance and specific documentation, including affected acreages, is presented in Section 4.5.1.5 (pages 4.5-3 and 4.5-4). This discussion notes that the area to be affected by the proposed new surface facilities is relatively small (55.8 acres) and that to the extent reasonably feasible, previously disturbed areas will be utilized. A reference to Section 4.5.1.5 has been added to page 4.7-28 to clarify this matter.

- 2) *The PHC does not cover the stream alteration proposed for Willow Creek which should be specifically covered under surface water consequences.*

Response: On page 4.7-28, in the bullet list near the top of the page, realignment of the Willow Creek channel is identified as an activity which may impact surface water resources. A brief discussion of the potential effects of stream realignment is then presented in the same section on page 4.7-30. An expanded discussion of the proposed stream realignments is presented under Section 4.7.2.2, Surface Water Protection Measures, (page 4.7-9) which also references other relevant information regarding the proposed stream realignments.

- 3) *There is no information about the quantity of water withdrawn from the Price River.*

Response: Water supply withdrawals from the Price River are discussed and quantified in Section 4.7.2.2, Surface Water Protection Measures, under the subheading of Mine Water Supply Withdrawals (pages 4.7-10 and 4.7-11). There is also a discussion in the wildlife impacts section, Section 4.3.2.2, addressing potential impacts of water supply withdrawals on aquatic life, and aquatic and riparian habitat values.

- 4) *Page 4.7-29 in the PHC speaks of surficial materials, but the source of this material is not clear from this information (see page 4.7-30, also).*

Response: The surficial materials referenced in the discussions of surface water chemical changes and increases in TDS, TSS, and individual chemical constituents include any materials which would be exposed by mining related surface disturbance. Included in this category would be any subsoil materials unsuitable for salvage, existing surface exposures of coal refuse and mine waste materials, and both weathered and unweathered overburden materials. These materials are identified in the first full sentence on page 4.7-30. Generally, potential concerns relating to leaching of these materials stem from exposure of materials which were previously buried to increased infiltration, oxidation, and weathering with resultant potential for increases in the rate of chemical dissolution, reaction, and release.

- 5) Response: This comment duplicates Comment 1 under the heading of Environmental Resource Information and the sub-heading of Geologic Resource Information which has previously been addressed.
- 6) *Water rights for springs and ponds in Sections 23 and 24, T12S, R10E, are marked on Map 17 but the municipal water wells and water rights of the Price River Water Improvement District in the same area are not shown.*

Response: Page 3.7-27 references the Price River Water Improvement District water wells/rights in Sections 23 and 24, T12S, R10E. In addition, the water district also filed water rights applications on exploratory wells completed to evaluate coal gassification potential in Sections 15, 16, and 18 of T12S, R10E as indicated by the water rights summary included as Exhibit 10. Water rights applications for these wells are currently pending, however, well data indicated limited water quantities and generally poor water quality and there is a strong probability that the water rights applications will be withdrawn. Page 3.7-27 has been revised to reflect these additional water rights and Map 17 has been revised to reflect all Price River Water Improvement District water/rights as well as the PacifiCorp UGW well which is also referenced on page 3.7-27.

- 7) *PacifiCorp's UGW well in Section 35, T12S, R9E, is also not marked on Map 17.*

Response: The UGW well is at the same general location as a river diversion (water right numbers 198 and 199) and consequently is not readily apparent as a well, however, State Engineer records indicate Well UGW as being in Section 12 not 35. Map 17 has been revised to address this limitation as noted in the previous response.

- 8) *Locations of fifteen boreholes that were drilled in 1994 in the alluvial/colluvial aquifers along Willow Creek and the Price River are shown on Map 2 of Exhibit 11 but not shown on Map 16, and the boreholes are not in Exhibit 9.*

Response: The subject boreholes were shallow geotechnical test holes which were drilled to characterize foundation conditions in the proposed facilities area. While water levels were measured in any of the holes where ground water was encountered, the purpose of these borings was not to characterize ground water conditions with the exception of two holes which were completed as shallow monitoring wells (BW311 and 361). Given that the boreholes do provide some supplemental hydrologic information, the borehole locations have been added to Map 16. Since these holes were intended primarily to provide foundation design information, their inclusion in Exhibit 9 is unnecessary and would be redundant.

- 9) *Drillholes MC-205 and MC-206; springs MC-207, B-32, and B-33; and mine water sample locations BM-25, BM-26, BM-27, and BM-28 (Table 3.7-4) are not shown on Map 15. It is unclear whether or not B-001 is the same as 001 on Map 15.*

Response: The noted drillholes, springs, and mine water sampling locations included as historical sampling points on Table 3.7-4 have been added to Map 15. It should be noted that these sampling locations are no longer being sampled for the following reasons:

- Drillholes MC-205 and MC-206, and spring MC-207 - All are located outside the effected area;
- Springs B32 and B33 - Dried up, no longer in existence;
- Mine water sampling locations - In old Royal Mine workings, presently sealed and inaccessible.

As noted on Table 3.7-4, B-001 was the sampling point for mine discharge from the old Castle Gate No. 3 Mine. While sealing has eliminated discharge from the old portals, Site B-001 does correspond to site 001 as shown on Map 15.

- 10) *Spring B321 is identified as "Willow Creek Spring" in Table 3.7-4 but as "Sulphur Spring" on Map 15?*

Response: Spring B321 is located immediately adjacent to the Willow Creek channel and discharges to the creek during low flow periods. During high flows, the spring discharge point is inundated by the creek and this site is inaccessible for monitoring. The previous historic site designation (Table 3.7-4) focused on the location of the spring while the more recent designation highlights the fact that spring discharge is high in sulfur with a distinct and very noticeable sulfur odor in the vicinity of the spring.

- 11) *Surface water monitoring points 492, BN131, and B3N (Surface and Ground Water Analysis Results - Exhibit 10) cannot be located on Map 15, and it is unclear whether they are samples from the Willow Creek project or from another project/area, similar to the "Nuck Woodward", etc. samples.*

Response: In reviewing Exhibit 10 we were unable to locate or identify site 492 (believed to be a Star Point Mine monitoring site). BN131 is an erroneous designation and all references to BN131 relate to site B131 on Antony Creek as shown on Map 15 (T12S, R10E, Section 13). Site B3N is a new surface water monitoring site on lower Willow Creek, replacing previous historical site B3, which could not be located in the field. Site B3N is mis-designated on Map 15 as site BN3. Map 15 has been revised to correct this error.

- 12) *It is not clear whether or not B3N is the same as BN3 on Map 15.*

Response: Please see the previous response.

Maps, Plans, and Cross-Sections of Resource Information

- 1) *The operator must include cross-references for all required maps and cross-sections in the operational section of the PAP.*

Response: Throughout the permit text relevant resource mapping information is directly referenced in the corresponding text discussions. In addition, each environmental resource section includes a separate section identifying the mapping information presented and the specific map(s) on which it is presented (refer to Sections 3.1.1.4, 3.2.1.4, 3.3.1.4, 3.4.1.4, 3.6.1.4, and 3.7.1.5), a list of maps is included in each of the permit text volumes, and reference maps are included following the Table of Contents in Volume 1.

- 2) *A statement that maps and cross-sections required in Section R645-301-521.111, 521.112, 521.121, 521.122, 521.123, 521.124, 521.132, 521.141, 521.150, 521.151, 521.152, and 521.190 have been properly certified must be included in the text of the PAP.*

Response: Section 2.1.12 has been revised to include the required certification statement.

- 3) *CPMC must show the permit boundary on all maps in which the boundary lies.*

Response: The permit boundary is both shown and labelled in the legend on all maps which include the permit boundary including Maps 1, 2, 3, 5, 7, 9, 10, 12, 15, 17, 19A-19D, and 20.

- 4) *Strike and dip of major coal beds and coal seams are not explicitly portrayed on any map.*

Response: Map 12, Regional Geology has been revised to reflect the strike and dip of major coal seams with general strike and dip shown at the coal seam outcrops.

- 5) *The locations of other gas wells in the region, namely wells located northeast of the permit area that were installed to extract gas from the coal seams, are not in the PAP.*

Response: The noted wells are well outside the proposed permit area and are, in fact outside of both the adjacent area and the extended area covered by the permit mapping. Rule R645-301-622.400 only requires mapping of those gas and oil wells within the permit area.

- 6) Response: This comment duplicates Comment 1 under the heading Environmental Resource Information and the sub-heading of Geologic Resource Information which has been previously addressed.
- 7) Response: This comment duplicates Comment 1 under the heading Environmental Resource Information and the sub-heading of Geologic Resource Information, which has been previously addressed.

OPERATION PLAN

Existing Structures

- 1) *The operator needs to state if there are any pre-existing structures in the Willow Creek area that will be used for mining.*

Response: Section 4.5.1.4, Existing Configuration, Conditions, Structures, and Facilities, identifies existing structures in both the Willow Creek and Castle Gate areas and specifies which structures will be utilized in conjunction with the proposed mining and related activities. This section has been edited to include the existing mine face-up area, powerlines, railroad tunnels and portions of the existing associated railbed, substation, rock gabion structures, and office trailer as the only existing structures and facilities in the Willow Creek area which will be utilized in conjunction with proposed future activities. Also see the response to Comment 2 under the heading of Environmental Resource Information and the subheading of General Deficiencies.

Relocation and Use of Public Roads

- 1) *The operator must address requirements for Section R645-301-521.133 through R645-301-521.133.2.*

Response: Applicable provisions of R645-301-521.133 are addressed by Section 2.1.6.2 (page 2.1-25a) and by the documentation of the required public notice, hearing, and agency determination which have been provided for insertion in Exhibit 3, Public Notice and Proof of Publication, Hearing Notices and Documentation (provided with the October 16, 1995 update package).

Air Pollution Control Plan

Coal Recovery

- 1) *The operator has not shown that the BLM has approved the coal recovery plan for Federal coal. Either a copy of the R2P2 or a letter from the BLM saying that the recovery plan has been approved would solve this deficiency.*

Response: An R2P2 for the existing Federal coal leases was submitted to the BLM by Blackhawk Coal Company covering all Federal coal within the proposed permit area except that contained in the pending Federal lease tract along the northern permit boundary. With proposed plans for longwall extraction, CPMC has effectively increased the recovery potential for the Federal reserves significantly over the room and pillar mining methods proposed by Blackhawk. CPMC has submitted a revised and updated R2P2 for all Federal coal within the proposed permit area to the BLM and, based on recent conversations with the BLM, anticipates BLM approval by February 1, 1996. Upon receipt of the BLM approval CPMC will edit the discussion of Use and Conservation of Coal Resources (page 4.5-16) and provide the revised text along with documentation of the BLM approval to UDOGM.

Subsidence Control Plan

- 1) *The operator needs to set up a subsidence monitoring program that will be able to detect an angle of draw up to 45°.*

Response: Based on available information, and as documented in Exhibit 11, Geotechnical Investigations, the anticipated angle of draw for the proposed mining operations is 22.5 degrees. In order to address the UDOGM concern and to verify the actual maximum angle of subsidence, CPMC will extend the proposed subsidence monitoring network for the initial mining area in the D Coal Seam to provide for measurement of subsidence up to a maximum angle of draw of 45 degrees. Since the D Seam is the uppermost coal seam and so represents the minimal depth of cover it would also be associated with the maximum surface subsidence potential and represents the probable worst-case subsidence situation. The text discussion of subsidence monitoring (page 4.5-35) and the Subsidence Monitoring Plan Map, (Map 20), have been revised to reflect extension of the monitoring network for the initial mining area to confirm the maximum angle of draw.

- 2) *The sensitivity of the subsidence monitoring program must be stated.*

Response: As a practical matter, the sensitivity of the subsidence monitoring program may be constrained by limitations on physical access to the monitoring points. To the extent possible, monitoring points will be located in the most accessible locations available, however, the rugged terrain and limited number of roads or trails in the area still make access to most areas difficult at best. Practical access constraints generally preclude conventional ground surveys for most proposed monitoring locations as a reasonable means of measuring potential changes in the elevation of subsidence monuments. Other available measurement options include aerial photogrammetry and GPS systems.

Currently, CPMC proposes to utilize a combination of ground surveys, aerial photogrammetry, and GPS methods to measure any changes in position and elevation of subsidence monitoring points. Ground surveys may be utilized in areas where effective access allows the establishment of the required horizontal control network and allow accuracies of ± 0.1 foot. Photogrammetry effectively avoids the problem of ongoing access constraints inherent in other available measurement options and can provide an accuracy of ± 1 foot if adequate control can be established. GPS systems offer varying accuracies dependent on the number of receiving stations and system cost. The permit discussion of

subsidence monitoring has been revised to reflect the proposed monitoring methods and associated sensitivity. GPS offers increased accuracy but, at present, may be prohibitively expensive for accuracies greater than those offered by photogrammetry. CPMC continues to evaluate the available measurement options. With advances in GPS technology and corresponding decreases in pricing for the more accurate systems, there is a potential that GPS may become a more practical measurement alternative in the near future.

- 3) *The operator needs to address what the potential effects of subsidence beneath State Highway 191, Willow Creek, and the powerlines that parallel those structures could be.*

Response: As described in the Subsidence Control and Monitoring discussion (pages 4.5-29 through 36) and Exhibit 11, Geotechnical Investigations, the proposed mining activities have been designed to preclude subsidence under a corridor associated with Highway 191, Willow Creek, and the powerlines. A barrier pillar extending under this corridor and designed entries for the K Seam main entry crossing with limited extraction and permanent pillars will provide the required protection to prevent subsidence in this area. Retention of permanent pillars and limited extraction in the main entry crossing prevent the mine openings from reaching the critical width which could result in surface subsidence. CPMC has also filed an application with UDOT for an Encroachment Permit addressing the K Seam main entry crossing under Highway 191. On approval of the Encroachment Permit, the PAP will be revised, as appropriate, to reflect any specific conditions for approval.

In the unlikely event that subsidence within the Willow Creek corridor were to occur, seepage from the creek could enter the K Seam main entries, flows in Willow Creek could be reduced, and the highway and powerlines could be damaged. The discussion of Subsidence Control and Monitoring has been revised to identify and discuss these potential subsidence related impacts and potential related mitigation measures.

- 4) *The operator also needs to address the potential for rock fall damage due to escarpment failure.*

Response: CPMC recognizes the potential for escarpment failure and has addressed this concern through evaluation and design of mine workings to minimize the potential for escarpment failure. Specific design considerations to minimize the potential for escarpment failure include retention of a barrier pillar along the Willow Creek corridor which limits mining directly under most of the cliff escarpments paralleling Willow Creek, orientation of mine workings perpendicular or near perpendicular to escarpment alignments, and limitations on full extraction mining in escarpment areas as discussed in Exhibit 11, Geotechnical Investigations (Measures for Controlling Subsidence).

Generally, the level of control measures to be implemented to minimize the potential for escarpment failure corresponds directly with the sensitivity of the potentially effected resource values. Thus, for the Willow Creek corridor, all reasonably available control measures will be utilized to minimize the potential for escarpment failure while for some of the more remote side canyons control measures may be limited to efforts to obtain the most favorable alignment of mine workings with escarpment lineaments.

CPMC has committed to evaluate escarpment areas subject to potential subsidence for potential effects on sensitive resources including T&E plants and cliff-nesting raptors. Other than the existing structures and facilities in Willow Creek Canyon which will be protected by the Willow Creek barrier pillar, the only other existing structure which would potentially be subject to rockfall damage from escarpment failure is the existing UP&L powerline which currently extends up Barn Canyon as shown the Regional Surface Ownership Map, (Map 1). CPMC is currently in the process of negotiating with UP&L to relocate this powerline, with powerline relocation to be handled by UP&L independent of the UDOGM mine permitting process. At the present time it appears that the preferred relocation alignment would extend up Price River Canyon turning to the northeast up Sulphur Canyon. The proposed Sulphur Canyon alignment would not be effected by potential mining related subsidence. It should also be noted that initial mining will occur in an area well away from any areas potentially sensitive to subsidence effects. The experience gained from initial mining and any subsequent subsidence will provide valuable information for planning and implementation of future mine development.

The discussion of Subsidence Control and Monitoring has been revised to briefly address escarpment failure and associated rockfall concerns.

- 5) *State what mitigation measures will be used in the event of subsidence damage to State Highway 191, Willow Creek, and the powerlines that parallel those structures.*

Response: In the unlikely event that surface subsidence damage were to occur, CPMC would immediately notify UDOGM, UDOT, and other appropriate jurisdictional agencies and in consultation with UDOGM, UDOT, and any other concerned agencies would immediately develop and implement appropriate control and remediation measures. Control and remediation measures would focus first on any immediate safety or environmental concerns and then address repair and mitigation of any subsidence related damage. The discussion of Subsidence Control and Monitoring has been revised to address these additional notification and mitigation considerations.

- 6) *Mitigation due to escarpment failure needs to be addressed.*

Response: In the event that escarpment failure and associated rockfalls were to occur, CPMC would conduct a preliminary reconnaissance and evaluation of effected areas and notify UDOGM. Since potentially effected structures have been addressed, the potential for associated damage would generally be limited to any resource values in downslope areas. The potential for damage to surface drainages or surface water features is negligible given the lack of perennial streams, ponds, and other surface water features in potentially effected areas. Cooperative discussions with UDOGM would focus on identification of any necessary control or remedial measures and consideration of any appropriate modification of mining plans and methods. The discussion of Subsidence Control and Monitoring has been revised to address these additional notification and evaluation considerations.

- 7) *The operator must present copies of the mitigation agreements with the surface owners in the PAP.*

Response: Copies of additional available subsidence agreements accompany these responses for insertion in Exhibit 16, Subsidence Information. Agreements with PacifiCorp and Boyd Marsing are pending and copies will be provided to UDOGM on receipt.

- 8) *Six months prior to mining the operator must notify the surface owner.*

Response: Consistent with the commitment stated in the Subsidence Control and Monitoring discussion (page 4.5-34) CPMC will notify affected surface owners of mine development and other activities which could result in subsidence at least 6 months prior to initiation of such activities. Copies of the required notifications will be submitted to UDOGM for insertion in Exhibit 16, Subsidence Information, at the time of notification.

Slides and Other Damage

- 1) *The operator must include a plan for reporting slides that have the potential for adverse effects on the public, property, health, safety or the environment to the Division by the fastest possible means.*

Response: Page 4.6-2, addressing reporting of slides, was previously revised and submitted (refer to 8/8/95 Administrative Completeness submittal).

- 2) *A commitment to comply with any remedial measures required by the Division must be included in the PAP.*

Response: The required commitment is inherent in CPMC's plan to develop and implement appropriate remedial measures in consultation with UDOGM as referenced in the revised text section identified in the response to Comment 1 above.

Topsoil and Subsoil

- 1) *Results of the sampling program (proposed in Section 4.2) should be reported in Section 3.1 prior to approval of the permit. The results of such a study will enable CPMC to present exact information on the quantity, quality, and availability of soil substitute material.*

Response: (Response from Kent Crofts pending)

- 2) *Table 4.2-1 should be revised to reflect the actual volume of soil recovered from the refuse removal project and to reflect the results of the site specific field study requested in the deficiencies listed under Soils Resource.*

Response: (Response from Kent Crofts pending, soil recovery volume was approximately 21,200 cy)

- 3) *Soil stockpiles must be seeded promptly, allowing 6 months to pass between stockpiling and seeding is too long. Six months will allow the weather to erode the pile and the soil*

will be hardened and crusted which is not a good environment for germinating seeds. A shorter time period should be specified.

Response: There is apparently some confusion relative to the statements in Section 4.2, Soil Handling Plans, which state that any soil stockpiles which will remain in-place for over 6 months will be seeded with a quick-growing cover to stabilize the pile surface and minimize erosion potential. This statement addresses the need to stabilize any long-term soil stockpiles while recognizing that there may also be very short-term temporary stockpiles for which seeding would be impractical since they would not exist long enough for the seed to germinate. The surface of all soil stockpiles will be left in a roughened condition to minimize erosion and runoff and any long-term (remaining in place for more than 6 months) will be seeded with a temporary cover. Seeding will normally occur as soon as reasonably feasible once active soil placement operations on a given pile are completed. Section 4.2 has been revised to clarify this issue.

Interim Stabilization

- 1) *The discrepancy between Section 5.3.2.2 and Table 5.3-1 in the amount of seed to be used for interim revegetation needs to be resolved.*

Response: In response to other UDOGM comments relating to species and seeding rates, the revegetation seed mixtures have been modified. Section 5.3.2.2 has been reviewed and revised accordingly to assure consistency between the descriptive text and the tables which summarize the revegetation seed mixtures.

Fish and Wildlife Protection

- 1) *Broad general statements that impacts to wildlife will be minimal are not appropriate except where data confirms these statements. Statements that the vegetation and habitat are of poor quality are probably not correct, and unless they are substantiated, they should be eliminated from the application.*

Response: The discussion of potential mining related wildlife impacts reflects practical limitations on wildlife use of the proposed mine facilities area, the relatively small area which will be affected by mining related surface disturbance, the limited period of actual mining use, and the potential for effective restoration and enhancement of mine disturbance areas.

The principal limitations on wildlife use include the adjacent steep cliffs which may limit wildlife movement into and out of this area, previous mining related disturbance of the subject area, resulting alteration of habitat characteristics and condition, and proximity to Highways 191, 6 and 50, and the Carbon Generating Station. Specific data on habitat conditions are presented in Section 3.2.2.3, Vegetation Parameters, indicating relatively low values of both vegetative cover (less than 30 percent for all types except the Riparian Vegetation Community) and production (less than 800 pounds of air dry forage per acre for all types except the Riparian Community). Disturbance will be limited to approximately 133 acres (refer to Table 4.5-1) of which 127 acres have been previously disturbed and only approximately 6 acres will represent new disturbance (refer to Tables 4.2-1 and 4.5-1). The

total surface disturbance, and particularly the new disturbance, are so small as to be negligible when compared with both the total permit area of approximately 14,700 acres and the extensive areas of undeveloped lands in the immediate vicinity which are available for and generally provide comparable or better potential wildlife habitat than the proposed disturbance area. As stated in Section 4.5.1.5, Affected Areas and Timing of Disturbance, the projected mine life will be limited to approximately 20 years. Following mining all surface disturbance areas will be reclaimed with reclamation resulting in habitat conditions and values comparable to or better than the existing conditions.

The noted considerations are the basis for characterization of potential wildlife impacts. It would be inaccurate and technically incorrect to neglect consideration of site limitations, regional habitat considerations, temporal factors, and mitigation potential in assessing the magnitude and nature of potential mining related wildlife impacts.

UDOGM is correct in their statement that characterization of vegetation resources and habitat as "poor" may not be appropriate. A more accurate and technically correct approach is characterization of these resources based on both value and limitations as addressed in the previous response to Comment 1 under the heading of Environmental Resource Information and the subheading of Fish and Wildlife Resource Information. In order to address general concerns relative to the emphasis of the impact discussions, all fish and wildlife sections have been reviewed and revised as appropriate to reflect this more balanced approach.

- 2) *On page 4.3-5 is a statement that the use of construction equipment near the Willow Creek stream channel represents a minor potential risk since a petroleum spill or leak could result in stream contamination and potential toxic effects on fish and macroinvertebrates. This sentence needs to be modified. The latter part of the sentence does not explain why using construction equipment near the stream constitutes a minor risk for oil spill contamination.*

Response: The referenced discussion has been reviewed and revised to more clearly explain the nature and level of risk associated with required use of construction equipment in the vicinity of the Willow Creek stream channel.

- 3) *The application says that no areas were identified as potential wetland areas, but the applicant intends to realign portions of Willow Creek. Riparian areas are considered wetlands although they may not be jurisdictional wetlands regulated by the Army Corps of Engineers. This issue should be clarified.*

Response: Characterization of all riparian areas as wetlands is not technically accurate and may be misleading relative to the significance of such areas given the ecological and regulatory connotations which attach to a designation as wetlands. Given, however, that a formal wetlands delineation as outlined by the U.S. Army Corps of Engineers Wetlands Delineation Manual (COE, 1987) has not been completed for this area, the referenced statement has been revised to focus on riparian values.

- 4) *The applicant needs to check its power pole design with the Fish and Wildlife Service. The design presented in the application differs from designs available to the Division.*

Response: In order to provide additional flexibility for the design and installation of any new power transmission lines required in conjunction with the proposed mining and related activities, the reference in Section 4.3.3.5 to "raptor-proof" power poles has been revised to accommodate other approved designs and the figure illustrating a typical raptor-proof power pole configuration has been eliminated.

- 5) *The application needs to give more detail about designs for the conveyor. Although most deer and elk would pass under the conveyor if it is elevated 40 inches, large bucks and bulls may not be able to. The application needs to show where the conveyor would be elevated, how high it would be, and there needs to be some indication of what human activities will happen at those locations.*

Response: Studies conducted at CPMC's Star Point Mine verify that a minimum conveyor height of 40 inches does not represent a barrier to mule deer movements. In addition, the DWR (Bill Bates, 1994 and 12/95, personal communications) has indicated that the proposed mine facilities area is not utilized by elk and no elk sign has been observed in this area by either CPMC personnel or the professional wildlife ecologists who conducted site baseline evaluations. As stated in Section 4.3.3.6, there will be areas on the coal handling conveyor where clearances will exceed 40 inches. These areas have been designated on the Mine Surface Facilities Map, (Map 18), and Section 4.3.3.6 has been revised to reference the map designation and briefly discuss proposed human activity in these areas.

- 6) *Section 4.3.3.7 says the applicant does not plan to use, store, or generate potentially hazardous or toxic materials. This sentence conflicts with the next sentence which says that materials potentially hazardous to wildlife, such as petroleum products, will be contained within closed areas or containers. These two statements need to agree.*

Response: The initial reference to hazardous/toxic materials refers to materials defined under these categories by applicable regulatory provisions (RCRA/TSCA) which do not include most petroleum products which would potentially be utilized in the proposed mining operations. The referenced section has been reviewed and revised to clarify both this distinction and the purpose of the planned protective measures.

- 7) *The application needs to contain a commitment to periodically evaluate the stream buffer zone and other undisturbed areas and to clean coal fines if necessary. It should also contain a threshold depth limit telling when fines would be cleaned. A suggested limit is one inch.*

Response: Section 4.3.2.2, Potential Effects on Aquatic and Riparian Resources, has been revised to include a commitment to clean any coal fines accumulations once they reach a threshold depth of 1 inch.

- 8) *The regulations require the applicant to use the best technology currently available to enhance wildlife habitat for both reclamation and operational phases. Because the proposed disturbance area contains critical deer winter range, the Division of Wildlife Resources (DWR) requests mitigation in the form of habitat enhancement at the rate of about one or two acres enhanced for every acre disturbed for the operational portion of the project. The application needs to give some detail of what enhancement measures are*

planned and a commitment to do it. This could include mention of whatever project is carried out as part of the refuse removal project.

Response: Section 5.3.3, Habitat Enhancement Plans, discusses specific habitat enhancement measures which have been incorporated as an integral component of the proposed mining and reclamation plans. In addition, CPMC is currently working with DWR to define mitigation requirements for fish and wildlife resources, including mule deer winter range. It is anticipated that required mitigation will include the proposed site revegetation measures as well as funding for some off-site habitat enhancement projects. Discussion of wildlife mitigation plans will be incorporated into Section 5.3.3 following plan development and DWR concurrence.

Road Systems and Other Transportation Facilities

- 1) *The operator needs to classify each road in the Willow Creek area as primary and supply the Division with all required design certifications.*

Response: The discussion of Roads under Section 4.5.2.3, Mine Structures and Facilities, identifies and describes each existing or proposed road as either a primary or ancillary road consistent with the definition of these road classifications in R645-301-527. The discussion also identifies each road by a unique road designation number. The Mine Surface Facilities Map, (Map 18), has been revised to identify each road separately by the numeric road designations consistent with the designations presented in the text. CEntry Engineers and Constructors of Salt Lake City is currently proceeding with final design of all mine road. The required road design certifications will be provided to UDOGM for insertion in Exhibit 11, Geotechnical Investigations, upon completion.

- 2) *The operator must identify each road on the surface facilities map with a unique identification number.*

Response: Please see the response to Comment 1 above.

- 3) *All maps and cross-sections for the roads in the Willow Creek area must be certified.*

Response: At the present time, basic road design information included in the PAP includes general road alignment information as shown on the Mine Surface Facilities Map, (Map 18) and the typical road configuration drawings included as Figures 4.5-9 and 4.5-10. Map 18 includes the required certification. As noted in the Response to Comment 1 above, detailed road designs are pending and certified designs will be provided to UDOGM on completion.

- 4) *The operator must state if any fords will be used while the new bridge is being installed.*

Response: Installation of the bridge and replacement culvert for the upper and lower stream crossings, respectively will involve temporary closure of the associated access road and any flows will be diverted around the construction areas by either temporary stream diversions or culverts, so no stream fords or low-water crossings will be required

- 5) *The operator must state if any low-water crossings will be used when the bridge is constructed.*

Response: Please see the response to Comment 4 above.

- 6) *The operator must show that the roads will be constructed of non-acid and non-toxic forming materials.*

Response: Sections 3.1.2.4, Soil Availability and Suitability, and 3.6.3.2, Chemical Characteristics of Coal and Associated Strata, document that available site materials which could potentially be utilized for road construction are non-acid and non-toxic forming. The discussion of road construction (page 4.5-49) presented in Section 4.5.2.3, Mine Structures and Facilities, has been edited to include a commitment that no acid or toxic forming materials will be utilized in road construction.

- 7) *The operator needs to have certified plans and cross-sections for all primary roads that will be in the Willow Creek area.*

Response: Please refer to the response to Comment 1 above.

- 8) *Slope stability analysis showing that the roads have a factor of safety of no less than 1.3 must be included in the PAP.*

Response: As noted in the response to Comment 1 above, CEntry is in the process of completing final road designs. As a component of the overall design process, Rollins, Brown and Gunnell of Provo, Utah will conduct a stability analysis to verify compliance with design factor of safety requirements. Documentation of the stability analysis will be provided to UDOGM upon completion for insertion in Exhibit 11, Geotechnical Investigations.

Spoil and Waste Materials

- 1) *The operator must explain how any hazardous waste will be handled and disposed of.*

Response: The discussion of Non-Coal Waste Disposal (pages 4.5-54 and 55) presented under Section 4.5.2.3, Mine Structures and Facilities, describes procedures for collection and disposal of all non-coal wastes. While there are no current plans to use, store, or generate any hazardous wastes as defined under applicable regulatory provisions (RCRA/TSCA), the discussion has been revised to address the unlikely eventuality that storage and disposal of any hazardous waste may be required.

- 2) *The PAP must show documentation that the Schoolhouse Canyon refuse area has been approved to accept material from the Willow Creek Mine.*

Response: On September 15, 1995, UDOGM approved a permit revision to the existing approved Castle Gate Mine Permit involving placement of materials from the Willow Creek area in the existing Schoolhouse Canyon Refuse Facility. Documentation of this approval accompanies these responses for inclusion in the permit correspondence file. In addition, the

design of the Schoolhouse Canyon Refuse Facility reflects consideration of the full range of materials which could be placed in the refuse pile from the Willow Creek Mine. This design consideration is detailed (pages 77-79) in Appendix 3.4A to the Castle Gate Mine Permit (Exhibit 19) - Design of a Coal Refuse Disposal System, Phase II; Detailed Design Schoolhouse Canyon Refuse Disposal Facility (Golder Associates, 1978).

- 3) Response: This comment duplicates Comment 2 above which has already been addressed.
- 4) *The operator must document that any coal processing waste used in impoundment construction meets the material qualifications.*

Response: No coal processing waste will be utilized in impoundment construction.

- 5) *The operator must demonstrate the stability of any ponds constructed with coal processing waste.*

Response: Please refer to the response to Comment 4 above.

- 6) *The operator must address the potential for acid mine seepage through the impoundment.*

Response: As noted and described in Section 4.7.2.4, Acid or Toxic Forming Materials, the potential for acid mine drainage is minimal due to the general absence of potential acid or toxic forming materials. There is, therefore, no need to address this specific concern.

- 7) *The operator needs to address how coal mine waste fires will be handled. If the procedure is in the MRP of permitted sites then that information should be referenced.*

Response: Page 4.5-62, which addresses coal processing waste handling and disposal, was previously revised to address this concern and submitted to UDOGM (refer to 8/8/95 Administrative Completeness Responses)

- 8) *The operator needs to discuss if coal processing waste will be returned to abandoned underground workings.*

Response: The existing approved Castle Gate Permit includes an approval for injection of process water and coal fines to abandoned underground workings. CPMC may utilize this existing approval for disposal of coal fines consistent with the terms of the approved Injection Permit. Section 4.5.2.3, Mine Structures and Facilities, has been revised to briefly describe potential coal fines injection which are also described in Exhibit 19, Castle Gate Information.

Hydrologic Information

- 1) *CPMC must develop a specific surface water monitoring plan for operational mining. This monitoring plan must be developed based on the baseline monitoring data and the PHC. The Division's Water Monitoring directive signed May 23, 1995 can be used for guidance in developing the surface water monitoring plan.*

Response: The baseline hydrologic monitoring plan as presented in Exhibit 12 was developed to address baseline, operational, and reclamation monitoring requirements. This intent is indicated by both the discussion of operational and post-operational monitoring presented in Section 4.7.2.3 and the hydrologic monitoring plan itself which includes a schedule (Exhibit 12, Table 2 - Sample Frequency) for ongoing monitoring through the period of active mine operations, reclamation, and the extended liability period. The apparent confusion relative to applicability of the monitoring plan for ongoing operational monitoring may be due to the designation of this plan as the "Baseline Hydrologic Monitoring Plan".

In order to clarify this issue and assure that the plan adequately addresses all applicable monitoring requirements consistent with UDOGM's current Water Monitoring Directive the relevant descriptive text (pages 4.7-11 through 4.7-13) and monitoring plan (Exhibit 12) have been reviewed and edited for consistency with applicable water monitoring requirements.

- 2) *Ground water monitoring will be conducted according to the ground water monitoring plan and ground water monitoring data will be submitted every 3 months to the Division. Ground water monitoring will proceed through mining and continue during reclamation until bond release. Equipment, structures, and other devices used in conjunction with monitoring the quality and quantity of ground water onsite and offsite will be properly installed, maintained, and operated and shall be removed by the operator when no longer needed.*

Response: The appropriate text section (4.7.2.3) has been reviewed for consistency with these specific requirements and revised as appropriate.

- 3) *The statement in the PAP concerning notification when the analysis of any water sample indicates noncompliance with the permit conditions is not adequate. The operator shall promptly notify the Division and immediately provide for any accelerated or additional monitoring necessary to determine the nature and extent of noncompliance and the results of the noncompliance. Plans and hydrologic information to evaluate and mitigate the noncompliance situation and information relevant to the PHC shall be submitted to the Division as required.*

Response: Pages 4.7-12 and 4.7-13, which discuss compliance reporting, have been reviewed relative to specific applicable regulatory requirements and revised as appropriate consistent with full compliance with the applicable regulatory requirements.

- 4) *The comment numbering sequence did not include a Comment 4.*
- 5) *The analysis reports that indicate weathered and oxidized soil, mine waste, and coal refuse and that show no significant acid, alkaline, or toxicity potentials are not found in the PAP.*

Response: Chemical characteristics for existing surficial materials including soils and weathered coal, coal refuse, and mine development waste are discussed in Section 3.1.2.3,

Soil Physical and Chemical Characteristics (pages 3.1-17 through 3.1-29), and available corresponding sample analysis results are included in Exhibit 5, Soils Information (Soil Sample Analysis Data). Chemical characterization of coal, overburden, and interburden materials which may be placed on the surface in the future as either coal refuse or mine development waste is addressed in Section 3.6.3.2, Chemical Properties of Coal/Overburden/Interburden (pages 3.6-16 through 3.6-26), and available corresponding sample analysis data are included in Exhibit 9, Geologic Information (Roof/Floor Analyses).

- 6) *There are currently no plans to transfer wells to another party for further use. The proposed operation plan for transfer of wells is complete and accurate.*

Response: No response required.

- 7) *The discharge will contain solids in excess of effluent limitations for total suspended solids. The Division has previously approved this injection plan including this exceedance of the total suspended solids limitations, however, there is no specific documentation of this approval other than inclusion in the Castle Gate MRP.*

Response: In order to document approval and compliance with the terms of the existing Injection Well Permit, copies of relevant approval and permit documents are being provided with these responses for insertion in Exhibit 10, Hydrologic Information.

- 8) *The plan does not at present appear to have the required approval of the Mine Safety and Health Administration (MSHA).*

Response: A letter requesting approval was previously submitted to the MSHA Technical Support Group in Denver, Colorado. Contacts with that group indicate no record of a response to the letter or approval of the plan. CPMC is pursuing this issue with MSHA and will provide UDOGM with appropriate documentation of the required approval as soon as all issues are resolved.

- 9) *The proposed operation plan for gravity discharges from the underground mines is complete and accurate.*

Response: No response required.

- 10) *CPMC must show the location of stream buffer zones that will be established within 100 feet of the Willow Creek stream channel. They must show that activities within the 100-foot buffer zone will not cause or contribute to the degradation of water quality or the violation of any effluent limits, and they must describe the methods that will be used to minimize the effects of stream alteration on the water quality. Primarily, CPMC must show how they will minimize the effects during construction and after construction, prior to stabilization, of the stream buffer zone.*

Response: Map 16, the Facilities Area Hydrology Map, has been revised to show the Willow Creek stream buffer zone. Detailed information relative to establishment and maintenance of the buffer zone and specific hydrologic protection measures for any activities within the buffer zone is provided in several different sections of the PAP. Establishment and

maintenance of the buffer zone are described in Section 4.5.2.3, Mine Structures and Facilities (pages 4.5-49 through 4.5-53). Those activities which would occur within the buffer zone are identified and discussed in Section 4.3.2.2, Potential Effects on Aquatic and Riparian Resources, and in Exhibit 14, Willow Creek Realignment Plans. Specific protective measures for those activities which will occur within the stream buffer zone are detailed in Section 4.3.3, Provisions for Protection of Fish and Wildlife, Associated Habitat Values, and Vegetation Resources, and in Exhibit 14. Section 4.3.3 and Exhibit 14 have been reviewed and revised as appropriate to more clearly address sediment control requirements for the proposed construction activities. Section 4.7.2.6, Stream Buffer Zones, summarizes relevant information on buffer zone establishment and protection.

- 11) *CPMC must clearly define a sediment control plan for the two segments of Willow Creek that will be realigned. The plan must include the construction and post-construction phases of the realignment.*

Response: This concern is addressed by the response to Comment 10 above.

- 12) *In Exhibit 19, Section 3.10 is a statement that a Small Area Exemption (SAE) has been requested for the runoff from the site of the well that will recover water from the slurry injection system. It isn't clear that such an exemption has been granted.*

Response: CPMC's research resulted in no documentation for an SAE for the recovery well area, however, review of available maps indicates that drainage from this area could be effectively conveyed to existing Castle Gate Pond 008. CPMC is evaluating this option and anticipates preparation and submittal of a modification to the existing approved Castle Gate permit to address this issue.

- 13) *Sediment traps 020 and 030 must be adequately designed as impounding structures. These impoundments must meet the requirements of R645-301-734. CPMC must summarize the design parameters for all sediment control structures including the Portal Collection Sump, sediment ponds, and sediment traps in the text of the Drainage and Sediment Control Exhibit, Exhibit 13. Both sediment traps are not necessary to meeting the regulations and could be removed from the PAP.*

Response: After reviewing potential alternatives for control of runoff and sediment from the subject areas and consistent with UDOGM's recommendations, it has been determined that Sediment Traps 020 and 030 are not necessary. Sediment Trap 020, located at the east end of the long tunnel, will be replaced by alternative sediment controls consisting of a basin lined with coarse riprap material with a silt fence on the downgradient side. What was previously identified as Sediment Trap 030 is an existing natural basin which receives natural runoff from upgradient areas. This basin will not be removed or altered and will still receive undisturbed runoff from Diversion UD-24, however, the upgradient Diversion UD-25 will be eliminated. Detailed engineering designs for the mine portal area have eliminated the need for the Portal Collection Sump. Appropriate permit materials have been revised to reflect these changes including text pages 4.5-39 and 46, 4.7-19 and 20, Exhibit 13, and Maps 23A, 23D, and 27.

- 14) *All alternative sediment control areas and their treatment must be clearly shown on a map. The alternative sediment control methods must be adequate designs per R645-301-742.110 by meeting the requirements of the Division's Sediment Control Directive.*

Response: CPMC has reviewed the Drainage and Sediment Control Plan Maps (Maps 23A through 23F) and revised the maps as appropriate to clearly show the location, configuration, and nature of all alternative sediment control installations. All alternative sediment control installations have been designed and will be installed and maintained to meet applicable regulatory requirements and guidelines as outlined in Exhibit 13, Drainage and Sediment Control Plan.

- 15) *All diversions must be designed to convey the appropriate design storms as described in R645-301-742.323 and R645-301-742.333. Most diversions meet or exceed these design specifications except diversions that involve flexible tubing. FET-1 and FET-2 must be designed to convey, at minimum, the 10-year, 6-hour storm event.*

Response: Flexible elongated tubing (FET) will be utilized in place of conventional CMP culverts for culvert installations DC-6A/B (FET-1) and UC-11 (FET-2) in order to address steep slope gradients in the installation areas and take advantage of the discharge velocity control characteristics of the FET material. Under low flow conditions, the FET tubing remains partially collapsed inherently decreasing the effective hydraulic radius, increasing resistance to flow, and consequently reducing flow and discharge velocity. As flow increases, however, the FET expands with an increase in cross-sectional area and corresponding reduction in resistance to flow, up to the maximum material diameter.

FET installations were sized to correspond to the CMP culvert diameter required to pass the design flow, however because the FET material has a smooth interior surface as opposed to the corrugated surface of CMP, resistance to flow (Mannings n) is considerably less when carrying full flow and discharge capacity is significantly greater than that of a comparably sized CMP culvert. Specifications for the FET material are being provided with these responses for insertion in Exhibit 13 as Appendix H as a basis for design evaluation.

- 16) *UD-25 drains into a depression where flow is trapped. This depression must be designed or CPMC must show that water collected in the depression will be minimal and will not result in any environmental or physical hazards.*

Response: As noted in the response to Comment 13 above, Diversion UD-25 is being eliminated. Diversion UD-24, which is being retained, will drain to an existing natural depression which is part of the natural drainage configuration of the area. The existing natural depression is relatively small in size and has a natural outlet which discharges to an existing drainage.

- 17) *The proposed operation plan for casing and sealing of wells is complete and accurate.*

Response: No response is necessary.

Support Facilities and Utility Installations

Utility Installations**Signs and Markers****Use of Explosives**

- 1) *The operator must commit not to conduct night time blasts except in emergency situations.*

Response: Exhibit 15, Blasting Plan, notes that construction related blasting will be conducted only during daylight hours and that operational blasting involving the use of more than 5 pounds of explosives will be conducted only during daylight hours except in emergencies consistent with applicable regulatory provisions.

Maps, Plans, and Cross-Sections of Mining Operations

- 1) *The operator needs to cross-reference the maps and cross-sections with the text.*

Response: This comment duplicates Comment 1 under the heading of Environmental Resource Information and the subheading of Maps, Plans, and Cross-Sections of Resource Information.

- 2) *The operator needs to cross-reference the maps and cross-sections with the minimum regulatory requirements.*

Response: This comment duplicates Comment 1 under the heading of Environmental Resource Information and the subheading of Maps, Plans, and Cross-Sections of Resource Information.

RECLAMATION PLAN

General Requirements**Postmining Land Uses**

- 1) *The application needs to contain comments from legal and equitable owners of lands in the proposed permit area concerning the postmining land use. It also needs to contain comments from governmental agencies that would have to authorize or initiate the use.*

Response: A transmittal letter requesting comments from both landowners and jurisdictional agencies and a listing of individuals and agencies accompany these responses for insertion in Exhibit 1, Ownership Information. Upon receipt of the requested comments copies will be submitted to UDOGM for inclusion in Exhibit 1.

- 2) *The application is required to contain a detailed description of the proposed use following reclamation, of the land within the proposed permit area, including a discussion of the utility and capacity of the reclaimed land to support a variety of alternative uses, and the*

relationship of the proposed use to existing land use policies and plans. This description should particularly relate to the landowner's desires. The plan must explain how the proposed postmining land use is to be achieved and the necessary support activities which may be needed to achieve it. If the postmining land use is considered a change from the premining land use, the application must provide information in compliance with R645-301-413.

Response: Section 3.4.2, Land Use Information, presents detailed descriptions of current land uses, as well as an extensive discussion of land use capability and constraints which may limit alternative land uses. Section 5.3.1.2, General Habitat Restoration Requirements, identifies the proposed postmining land use as wildlife habitat (page 5.3-2) and the other parts of Section 5.3, Habitat Restoration Plans, describe how the proposed postmining land use will be achieved.

As noted in the previous response to Comment 1 above, CPMC has solicited comments on the proposed postmining land use from landowners. If landowner comments require consideration of postmining land uses other than wildlife habitat, as proposed, relevant text sections may be revised as appropriate. This is considered unlikely, because the only areas to be affected by surface disturbance are owned by Blackhawk Coal Company and leased by Cyprus Western Coal Company. Previous conversations with BCC representatives indicate concurrence with the postmining land use of wildlife habitat. The proposed postmining land use does not represent a change from the premining use and is consistent with local land use classifications and zoning designations as documented by Section 3.4.2.5, Land Use Classifications and Zoning Restrictions.

In order to clarify the framework for the reclamation objectives discussed in Section 5.4.1.2, General Reclamation Objectives and Activities, a brief summary of postmining land use considerations has been added to this section.

- 3) Response: This comment duplicates Comment 1 above which has already been addressed.
- 4) Response: This comment duplicates Comment 2 above which has already been addressed.

Approximate Original Contour Restoration

Backfilling and Grading

- 1) *The operator must submit information on slope stability factor calculations.*

Response: As noted in the previous response to Comment 8 under the heading of Operation Plan and the subheading of Road Systems and Other Transportation Facilities, CEntry is in the process of completing final facility designs. As a component of the overall design process, Rollins, Brown and Gunnell of Provo, Utah will conduct a stability analysis. Information from this stability analysis will include allowable slope limits and static and pseudostatic safety factors for design operational and postmining slope configurations. Documentation of the stability analysis will be provided to UDOGM upon completion for insertion in Exhibit 11, Geotechnical Investigations.

Mine Openings

Topsoil and Subsoil

- 1) *More detail in the plan regarding the soil salvage (as requested in deficiencies listed under Topsoil and Subsoil) is required before the Division can approve the 10" cover over the Willow Creek Mine site and the preparation plant as well as the reduction in cover at the Crandall Canyon site.*

Response:

- 2) *Information in the plan should include a statement concerning the location of information on the planned cover over the Schoolhouse Canyon refuse pile.*

Response: Because they are already addressed in the existing approved Castle Gate Permit designs and operating plans for the Castle Gate facilities are not separately addressed in the Willow Creek PAP except through inclusion of Castle Gate Permit information as Exhibit 19. Given, however that refuse cover requirements for the Schoolhouse Canyon Refuse Facility are an important component of the overall project soil balance, relevant information presented in Exhibit 19 (page 3.4-27) has been summarized in Section 5.2, Soil Replacement Plans.

- 3) *The soil stabilization practices described in each section should not be conflicting.*

Response: Sections 4.2.2.3, Soil Handling and Storage; 5.1, Reclamation of Exploration Disturbance; 5.2.2, Soil Replacement Plans and Practices; and 5.4.2.3, Reclamation Practices, have been reviewed and revised for consistency.

Road Systems and Transportation Facilities

Hydrologic Information

- 1) *The permit application does not specifically address surface water protection, although the operational hydrology section of Chapter 4 has some information that is pertinent to reclamation. CPMC must either address surface water protection in the reclamation section or make references in the reclamation section to necessary information in the operational section.*

Response: Sections 5.4.2, Reclamation Plans and Practices, and 5.5, Hydrologic Resource Restoration, describe the proposed reclamation activities including general drainage and sediment control measures and provisions for establishment of the post-mining drainage configuration. In response to this comment, CPMC has reviewed and revised both Sections 5.4.2 and 5.5, and Exhibit 13, Drainage and Sediment Control Plan, to provide additional details on how the transition from the operational drainage and sediment control

configuration to the post-mining drainage configuration will be accomplished and to describe the specific surface water protection measures to be utilized during the transition to effectively control runoff and sedimentation.

- 2) *The permit application does not specifically describe the reclamation monitoring plan, but does imply that the baseline monitoring will be continued through operation and reclamation of the mine site. CPMC must clarify their intent for surface water monitoring during the reclamation phase of the mine.*

Response: The baseline hydrologic monitoring plan as presented in Exhibit 12 was developed to address baseline, operational, and reclamation monitoring requirements. This intent is indicated by both the discussion of operational and post-operational monitoring presented in Section 4.7.2.3 and the hydrologic monitoring plan itself which includes a schedule (Exhibit 12, Table 2 - Sample Frequency) for ongoing monitoring through the period of active mine operations, reclamation, and the extended liability period. In order to clarify the intent and plans for hydrologic monitoring during and following reclamation, Section 5.4.2.3, Reclamation Practices, and Exhibit 12, Hydrologic Monitoring Plan, have been reviewed and revised to demonstrate compliance with all applicable reclamation monitoring requirements.

- 3) Response: This comment duplicates Comment 3 under the Operation Plan heading and the sub-heading of Hydrologic Information, which has been previously addressed.
- 4) Response: This comment duplicates Comment 5 under the Operation Plan heading and the sub-heading of Hydrologic Information, which has been previously addressed.
- 5) Response: This comment duplicates Comment 6 under the Operation Plan heading and the sub-heading of Hydrologic Information, which has been previously addressed.
- 6) Response: This comment duplicates Comment 7 under the Operation Plan heading and the sub-heading of Hydrologic Information, which has been previously addressed.
- 7) Response: This comment duplicates Comment 8 under the Operation Plan heading and the sub-heading of Hydrologic Information, which has been previously addressed.
- 8) Response: This comment duplicates Comment 9 under the Operation Plan heading and the sub-heading of Hydrologic Information, which has been previously addressed.
- 9) *The permit application does not specifically address reclamation within a 100-foot buffer zone of Willow Creek. This includes the stream alteration. CPMC must address reclamation activities within the stream buffer zone and show that these activities will not cause or contribute to degradation of stream quality.*

Response: As described in Sections 4.3.3.2, Avoidance and/or Enhancement of Wetlands, Riparian Areas, and Aquatic Habitat, 4.5.2.3, Mine Structures and Facilities (pages 4.5-43 and 44), and Exhibit 14, Willow Creek Realignment Plans, the proposed stream realignment areas and the associated Willow Creek segments, as well as the lower road crossing will be stabilized and/or reclaimed at the time of and in conjunction with stream realignment

activities. Associated water quality protection measures are described in the noted sections and will include the use of protective berms and silt fences to control runoff and sedimentation and regrading and revegetation of all associated disturbance areas.

The only other significant reclamation activities which will occur within the stream buffer zone will include the grading necessary to blend reclaimed areas with the surrounding terrain, partial reclamation of Primary Road PR-01, and final reclamation of Sedimentation Pond 001. The discussing of final grading in Section 5.4.2.2, Reclamation Plan, has been reviewed and revised as appropriate to identify specific hydrologic protection measures. As described in Section 5.4.2.2 (pages 5.4-11 and 12), Phase 1 reclamation, which will include ripping and removal of road surfacing materials, will be conducted for Primary Road PR-01 at the time of general site reclamation. Remaining protective berms and drainage structures will preclude any impacts from Phase 1 road reclamation on Willow Creek. Following Phase 1 reclamation road PR-01 will be retained as an ancillary road to provide access to the reclaimed areas and the lower stream crossing will, consequently, not be redisturbed. Pond 001 will be removed following effective drainage restoration as measured by restoration of runoff water quality characteristics consistent with applicable effluent limitations. Pond reclamation is discussed in Section 5.4.2.2, which has been edited to refer back to the hydrologic protection measures which will be applicable for all reclamation grading activities.

- 10) *The permit application does not adequately address sediment control for the reclaimed water tank area. CPMC must provide for some sediment control in the area of the water tank and the road to the water tank after mining is complete.*

Response: Runoff and sediment control in the reclaimed water tank area will consist of silt fence installed at the lower end of the reclaimed area and alternative sediment controls (pitting and surface roughening) on associated sideslope and road outslope areas. Because it is an existing road, the access road, Ancillary Road AR-1, will be retained and road drainage will be controlled by water bars installed at the time of site reclamation. Section 5.4.2.2, Reclamation Plan, has been revised to clarify the reclamation plan an intent for this area.

- 11) Response: This comment duplicates Comment 12 under the Operation Plan heading and the sub-heading of Hydrologic Information, which has been previously addressed.

- 12) *CPMC must either show that Pond 001 is adequate to contain runoff from the 10-year, 24-hour storm event during reclamation, or create a modified design for the reclamation pond. They must include a reclamation time schedule for removal of sediment control measures and show interim sediment control measures that will be used in each phase of reclamation.*

Response: An interim drainage and sediment control plan has been developed which bridges the transition period between mine operations and post-reclamation conditions. This plan details the methods and designs which will be utilized to assure effective drainage and sediment control in compliance with all applicable regulatory requirements during this transition period. Sections 5.4.2.2, Reclamation Plan, 5.5, Hydrologic Restoration, and

Exhibit 13, Drainage and Sediment Control Plan have been edited to reflect the interim control measures.

- 13) *CPMC has not included diversion designs that are specific to reclamation. Drainages will be restructured and drainage areas altered, so that diversions that are left-over from operations may have different sizing requirements. CPMC must create reclamation specific designs for all diversions that will be retained past mining operations.*

Response: All diversion ditches and culverts which will be retained through the reclamation period were designed to accommodate the differential flows which will result from changes in drainage areas and conditions due to planned reclamation activities. In most cases, this approach resulted in these drainage structures being significantly over-design for operational period flows. Documentation of the adequacy of proposed drainage structures to carry reclamation flows is provided by incorporation of the interim drainage control design information addressed in the response to Comment 12 above.

- 14) Response: This comment duplicates Comment 17 under the Operation Plan heading and the sub-heading of Hydrologic Information, which has been previously addressed.

- 15) *CPMC has not addressed the reclamation of the new facilities on the Castle Gate side. They must include regrading and timetable plans for removing Sediment Pond 003 and other facilities outside of the currently approved Castle gate permit area.*

Response: Section 5.4.2.2, Reclamation Plan, and Maps 21 and 22 have been reviewed and revised as appropriate to address plans for reclamation of those new facilities on the Castle Gate side which do not fall within the currently approved Castle Gate permit area.

Revegetation

- 1) *The applicant intends to drill seed most areas. Broadcasting is recommended over drilling. However, if the applicant chooses to drill seed, at least three species in the upland permanent reclamation seed mixture, big sage, rubber rabbitbrush, and prostrate summer cyprus, need to be broadcast seeded.*

Response: CPMC prefers to retain the option of either drill or broadcast seeding since each of these methods offers certain advantages dependent on the size and topographic configuration of the area to be seeded, however, UDOGM's recommendations relative to broadcast seeding of the noted species are valid and have been incorporated into the revegetation plan. The discussion of revegetation methods provides sufficient information to support the use of either method.

- 2) *In Section 5.3.2.2, the applicant says all areas to be revegetated on a permanent basis, including the Willow Creek realignment sections, will be drill seeded at a rate of 13.5 pounds PLS per acre. This conflicts with the permanent seed mixes shown in Tables 5.3-2 and 5.3-3. This discrepancy needs to be resolved. Also, under the heading "Woody Species Transplanting", the application mentions several woody species included in the*

seed mixture that can be effectively transplanted from seed. Included in this list is fringed sage, but fringed sage is not in the seed mixes in Tables 5.3-2 and 5.3-3.

Response: This comment in part duplicates Comment 1 under the heading of Operation Plan and the subheading of Interim Stabilization which has previously been addressed. In addition, the woody species specified for transplanting have been reviewed and the seed mixtures have been revised to include any species which can be effectively established through seeding.

- 3) *The permanent reclamation seed mixtures include several introduced species. Use of most of these is justified, but it does not appear that intermediate wheatgrass and orchard grass are both desirable and necessary to achieve the postmining land use. These species need to either be eliminated from the mixture or the applicant needs to include further justification for including them.*

Response: Consistent with UDOGM's recommendations, intermediate wheatgrass and orchardgrass have been eliminated from the proposed revegetation seed mixtures.

- 4) *Bluebunch wheatgrass needs to be included in the permanent seed mixture for upland areas. A recommended rate is two pounds PLS per acre (drilled).*

Response: Bluebunch wheatgrass has been added to the Upland Permanent seed mixture consistent with UDOGM's recommendations.

- 5) *The applicant needs to adjust the quantity of seed to be planted in upland areas. As proposed 68% of the seeds will come from just two species, rubber rabbitbrush and sagebrush. The amount of these species needs to be reduced and the amounts of other species needs to be increased. In particular it is suggested that the amount of four-wing saltbush be increased to three pounds per acre PLS (drilled). Also suggested is the addition of blue leaf aster and yarrow to this mixture.*

Response: The Upland Permanent seed mixture has been reviewed in light of UDOGM's comments and revised to decrease the percentages of dominant seed types, and increase the diversity of revegetation species.

- 6) *The application needs to clarify how many cuttings and transplants will be used along the stream channel.*

Response: The proposed transplant rates specified (page 5.3-4) in Section 5.3.2.2, Revegetation Practices, are as stated per 100 lineal feet of channel. The proposed transplant rate includes both sides of the channel and it is anticipated that woody species would be planted in groupings or "clumps" to increase the potential for effective reestablishment. The related text discussion has been edited to clarify this commitment.

- 7) *The applicant should commit to try to eliminate any noxious weed infestation regardless of its size.*

Response: As stated in Section 5.4.2.3, Reclamation Practices, CPMC will conduct regular quarterly inspections of reclaimed areas (page 5.4-13). If noxious weed infestations are

noted during these inspections, they will be addressed through spraying or other appropriate control methods as noted (refer to page 5.4-14). Recognizing UDOGM's concerns relative to the potential spread of noxious weeds, CPMC will commit to address any noxious weed infestations in a timely manner and has revised the text to reflect this commitment.

- 8) Response: This comment essentially duplicates Comment 2 under the heading of Environmental Resource Information and the sub-heading of Vegetation Resource Information which has already been addressed.
- 9) *It appears the applicant proposes to use a weighted average of vegetation cover for all reclaimed areas to compare to the revegetation success standard. This is acceptable for previously disturbed areas but not for areas not previously disturbed by mining.*

Response: (Response from Kent Crofts pending)

- 10) *Section 5.3.2.6 of the application says absolute values for cover and production from reclaimed areas will be compared with a confidence interval for the baseline data to determine if the applicant has met revegetation success standards. Since the values for both baseline data and reclaimed area data are from samples, it is necessary to pool the variances to perform a t-test for equality.*

Response: (Response from Kent Crofts pending)

- 11) *The application needs to include revegetation success standards for certain parameters in the general requirements, including erosion control, diversity, seasonality, and permanence.*

Response: (Response from Kent Crofts pending)

- 12) *The applicant is required to use the best technology currently available to enhance wildlife habitat in the postmining phase of operations. The applicant discusses methods for restoring the stream channel, but it does not discuss whether this will constitute enhancement. The application does not show how upland areas will be enhanced. If the application does not include enhancement measures, it needs to include a statement showing why enhancement is not practicable.*

Response: Please refer to Section 5.3.3, Habitat Enhancement Plans and the previous response to Comment 8 under the heading Operation Plan and the subheading Fish and Wildlife Protection.

Maps, Plans, and Cross-Sections of Reclamation Operations

- 1) *CPMC must show the final reclamation land configuration for the new facilities proposed in the area of the old Castle Gate facilities.*

Response: CPMC has generated a new map, Map21B which accompanies these responses, showing the design postmining configuration for those new facilities on the Castle Gate side which fall outside of the permit boundary for the existing approved Castle Gate Mine Permit.

Bonding and Insurance Requirements