

**PERMIT TRACKING FORM**

X Permit Amendment    Exploration Permit    NOV Abatement    Division Order    Permit Transfer    Incidental Boundary Change  
 Permit Midterm (MT)    Permit Renewal (PR)    New Permit    Significant Revision    Bond Release

Date Received: 1/30/98	By: PFO	PERMIT NUMBER	ACT/007/038
Title of Proposal: Degassification Well		PERMIT CHANGE #	97K-1
Description:		PERMITTEE	Cyprus Plateau Mining Corp
# Copies Required: 5	# Copies Received: 5	MINE NAME	Willow Creek Mine

**PERMIT CHANGE APPLICATION SENT TO SLC**      Date: \_\_\_\_\_      Letter to Permittee: \_\_\_\_\_

**15 DAY INITIAL RESPONSE TO PERMIT CHANGE APPLICATION OR INITIAL COMPLETENESS REVIEW**

Date Due:	Date Done:	Letter to Permittee:
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**Notice of Affidavit of Publication. (If change is a Significant Revision, New Permit, or Permit Transfer.)**

Date Due:	Date Done:	Public Comment Received:
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PFO Review Tracking	Round 1		Round 2		SLC Review Tracking	Round 1		Round 2	
	Due	Done	Due	Done		Due	Done	Due	Done
<input type="checkbox"/> Lead <input type="checkbox"/> Generalist					<input type="checkbox"/> Lead <input type="checkbox"/> Generalist JK	11/17			
<input type="checkbox"/> Administrative					<input type="checkbox"/> Administrative				
<input type="checkbox"/> Land Use/ AQ					<input type="checkbox"/> Land Use/ AQ				
<input type="checkbox"/> Biology					<input type="checkbox"/> Biology PB	11/17			2/20
<input type="checkbox"/> Engineering PH	11/08	10/31			<input type="checkbox"/> Engineering JK	11/17	12/18		2/20
<input type="checkbox"/> Geology					<input type="checkbox"/> Geology JS	11/17	12/01		2/20
<input type="checkbox"/> Soils					<input type="checkbox"/> Soils				
<input type="checkbox"/> Hydrology					<input type="checkbox"/> Hydrology				

TA Review Due:	Date:	Permittee Response Due: X Stipulation <input type="checkbox"/> Condition <input type="checkbox"/> No Requirements	Date:	12/19/97	Division Decision Letter: <input type="checkbox"/> Approve   X Deny
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TA Review Done	Date:	Response Received:	Date:	01/30/98	Date:
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Coordinated Reviews:	Phone Cont.	Round 1		Round 2		Received:	Additional Tracking:	Date:
		Sent	Due	Sent	Due			
<input type="checkbox"/> OSM- C							Public Hearing	
<input type="checkbox"/> BLM- C							Letter from Comp. Super.	
<input type="checkbox"/> Water Rights-L							AVS Completed	
<input type="checkbox"/> DEQ- L							Approval Effective Date	
<input type="checkbox"/> DWR- L							Approved Copy to File	
<input type="checkbox"/> SITLA- L							Approve copy to Permittee	
<input type="checkbox"/> PFO- C		10/24		01/30				

Comments: *4cc's Received By SCH 2/4/98*

Approve copy to PFO/SLC
Approved copy to agencies
CHIA Modified



**CYPRUS PLATEAU  
MINING CORPORATION**  
A Cyprus Amax Company

Cyprus Plateau Mining Corporation  
Post Office Drawer PMC  
Price, Utah 84501  
(801) 637-2875

April 25, 1998

Utah Coal Regulatory Program  
1594 West North Temple, Suite 1210  
Box 145801  
Salt Lake City, Utah 84114-5801



Attention: Pamela Grubaugh-Littig

RE: Submittal of Two Additional Copies, January 29, 1998, Degassification Wells, Cyprus Plateau Mining Corporation, Willow Creek Mine, ACT/007/038-97K, File #2, Carbon County, Utah

#2

Dear Ms. Grubaugh-Littig:

Pursuant to Mr. Joe Helfrich's request, enclosed please find two more clean copies of the aforementioned. After a thorough search of the Division's facility, Mr. Helfrich requested two additional clean copies of CPMC's January 29, 1998, submittal, so that the appropriate replacement text and maps can be incorporated.

If you have any questions, please do not hesitate to contact me at (435) 472-4741, or speak with Joe Helfrich or Tiffini Tutorow.

Sincerely,

Johnny Pappas  
Sr. Environmental Engineer

Enclosure

File: ENV2.5.2.12.5.4  
Chrono: JP980407.LTR

# APPLICATION FOR PERMIT PROCESSING

<input checked="" type="checkbox"/> Permit Change	<input type="checkbox"/> New Permit	<input type="checkbox"/> Renewal	<input type="checkbox"/> Transfer	<input type="checkbox"/> Exploration	<input type="checkbox"/> Bond Release	Permit Number: ACT/007/038
Title of Proposal: Addition of two methane degassification wells and mine layout revision.						Mine: WILLOW CREEK
						Permittee: CYPRUS PLATEAU

Description, include reason for application and timing required to implement: Two methane degassification wells are needed in the longwall gob to help prevent possible dangerous accumulations of methane, and impacts to safety or mine employees.

**Instructions:** If you answer yes to any of the first 8 questions (gray), submit the application to the Salt Lake Office. Otherwise, you may submit it to an inspector.

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	1. Change in the size of the Permit Area? _____ acres Disturbed Area? <u>0.8</u> acres <input checked="" type="checkbox"/> increase <input type="checkbox"/> decrease.
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	2. Is the application submitted as a result of a Division Order? DO # _____
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	3. Does application include operations outside a previously identified Cumulative Hydrologic Impact Area?
<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	4. Does application include operations in hydrologic basins other than as currently approved?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	5. Does application result from cancellation, reduction or increase of insurance or reclamation bond?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	6. Does the application require or include public notice/publication?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	7. Does the application require or include ownership, control, right-of-entry, or compliance information?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	9. Is the application submitted as a result of a Violation? NOV # _____
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	10. Is the application submitted as a result of other laws or regulations or policies? Explain: <i>MSHA concerns</i>
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	11. Does the application affect the surface landowner or change the post mining land use?
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2? <i>No</i> )
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	13. Does the application require or include collection and reporting of any baseline information?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	15. Does application require or include soil removal, storage or placement?
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	16. Does the application require or include vegetation monitoring, removal or revegetation activities?
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	17. Does the application require or include construction, modification, or removal of surface facilities?
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	18. Does the application require or include water monitoring, sediment or drainage control measures?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	19. Does the application require or include certified designs, maps, or calculations?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	20. Does the application require or include subsidence control or monitoring? <i>No change to monitoring plan - same</i>
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	21. Have reclamation costs for bonding been provided for?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	22. Does application involve a perennial stream, a stream buffer zone or discharges to a stream?
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	23. Does the application affect permits issued by other agencies or permits issued to other entities? <i>BLM exploration</i>

Attach 5 complete copies of the application.

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations, herein. (R645-301-123)

*John Pappas - Sr. Envir. Engineer 1/29/98*  
 Signed Name - Position Date

Subscribed and sworn to before me this 29 day of JAN 19 98

*Jackie D. Bogdin*  
 Notary Public



Notary Public  
**JACKIE D. BOGDIN**  
 104 Helper Drive  
 Helper, Utah 84526  
 My Commission Expires  
 March 15, 2001  
 State of Utah

My Commission Expires  
 Attest STATE OF  
 COUNTY OF UTAH  
CARBON

Received by Oil, Gas & Mining



ASSIGNED TRACKING NUMBER

## Application for Permit Processing Detailed Schedule of Changes to the MRP

Title of Application:

Addition of two methane degassification wells and mine layout revision.

Permit Number: ACT/007/038

Mine: WILLOW CREEK

Permittee: CYPRUS PLATEAU

Provide a detailed listing of all changes to the mining and reclamation plan which will be required as a result of this proposed permit application. Individually list all maps and drawings which are to be added, replaced, or removed from the plan. Include changes of the table of contents, section of the plan, pages, or other information as needed to specifically locate, identify and revise the existing mining and reclamation plan. **Include page, section and drawing numbers as part of the description.**

			DESCRIPTION OF MAP, TEXT, OR MATERIALS TO BE CHANGED
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	List of Figures, page LOF-ii in Volumes 1, 2, & 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	List of Maps, page LOM-ii in Volumes 1, 2, 3, 4, 5, 6, & 7
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Map 19A in Volume 6
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.2-3a in Section 4.2, Volume 3
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.2-3b in Section 4.2, Volume 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-27 in Section 4.5, Volume 3
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-27a in Section 4.5, Volume 3
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Figure 4.5-17, Page 4.5-27b to Section 4.5, Volume 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-37 in Section 4.5, Volume 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-39 in Section 4.5, Volume 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-47 in Section 4.5, Volume 3
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-47a to Section 4.5, Volume 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-48 to Section 4.5, Volume 3
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-48a to Section 4.5, Volume 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-49 in Section 4.5, Volume 3
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-49a to Section 4.5, Volume 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-55 in Section 4.5, Volume 3
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-55a to Section 4.5, Volume 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Pages 5.4-1 and 5.4-2 in Section 5.4, Volume 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 5.4-11 in Section 5.4, Volume 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 5.4-14 in Section 5.4, Volume 3
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Map 30 to Volume 7
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	

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Any other specific or special instructions required for insertion of this proposal into the Mining and Reclamation Plan?

Where text has been revised, two copies of the revised pages are attached, one copy shows the revisions in redline/strikeout, and the second copy is revised for direct insertion into the MRP without redline/strikeout. In some cases, the addition of text shifts text to the next page of MRP text, in this case the page is given a number such as 4.5-23a and the text does not change. In this case simply insert the new page of text after the page 4.5-23.

## LIST OF FIGURES

<u>Figure No.</u>	<u>Description</u>	<u>Volume/ Page No.</u>
Volume 2		
3.7-9D	Flow/Iron Temporal Relationship - Station B151 .....	3.7-83
3.7-9E	Flow/Iron Temporal Relationship - Station B131 .....	3.7-84
3.7-9F	Flow/Iron Temporal Relationship - Station B211 .....	3.7-85
3.7-9G	Flow/Iron Temporal Relationship - Station B353 .....	3.7-86
3.7-9H	Flow/Iron Temporal Relationship - Station B26 .....	3.7-87
3.7-9I	Flow/Iron Temporal Relationship - Station B221 .....	3.7-88
Volume 3		
4.1-1	Typical Well Completion Diagram .....	4.1-6
4.5-1	Typical Mine Entry Development Configuration - (Two Entry) .....	4.5-19
4.5-2	Typical Mine Entry Development Configuration - (Three and Four Entry) .....	4.5-20
4.5.3	Typical Mine Entry Development Configuration - (Five Entry) .....	4.5-21
4.5-4	Typical Mine Entry Development Configuration - (Seven Entry) .....	4.5-22
4.5-5	Typical Longwall Development .....	4.5-23
4.5-6	Typical Room and Pillar Development .....	4.5-25
4.5-7	Typical Subsidence Profile - Zones of Deformation and Fracturing .....	4.5-30
4.5-8	Typical Subsidence Monument .....	4.5-36
4.5-9	Typical Primary Road Configuration .....	4.5-50
4.5-10	Typical Ancillary Road Configuration .....	4.5-51
4.5-11	Coal Handling Flow Sheet .....	4.5-58
4.5-12	Preparation Plant Flow Sheet .....	4.5-60
4.5-13	Administration/Bathhouse Configuration .....	4.5-65
4.5-14	Maintenance Shop Configuration .....	4.5-68
4.5-15	Warehouse Configuration .....	4.5-71
4.5-16	Proposed Sediment Storage Containment Berm .....	4.5-75
5.4-1	Reclamation Time Table - Mine Facilities .....	5.4-4
5.4-2	Typical Portal Seal .....	5.4-9

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JAN - 8 1997

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 PRICE FIELD OFFICE

of influence were calculated and then adjusted to reflect the percentage of each area where soil could not be salvaged due to rock ledges and boulders. Since the salvagable soil material would have to be pulled downslope onto the top of the refuse pile using a tracked backhoe due to the steep slopes and limited access, some mixing of this material with refuse and consequent loss is inevitable. Based on previous soil salvage experience, it is estimated that this loss will account for approximately three percent of the total volume of potentially salvageable soil material.

Based upon field measurements and the factors noted above, a calculated volume of approximately 15,500 cubic yards of additional soil material can be salvaged from the proposed expansion area associated with the School Canyon Refuse Pile Expansion. The additional soil material will be placed in either the Willow Creek topsoil stockpile or the existing Gravel Canyon stockpile. When the current permit commitment to place two feet of soil cover on the refuse pile is adjusted to reflect this additional soil salvage volume, the overall soil replacement depth is increased to approximately 2.34 feet. Table 4.2-1, Soil Recovery and Storage Plans, has been revised and updated to reflect the additional topsoil recovery from the refuse pile expansion area.

With respect to salvage of additional soil materials in the vicinity of Conveyors SC-6 and SC-7, minor quantities of additional plant growth media consisting of disturbed soils were identified by field inspection and have been salvaged from these areas. A total of approximately 600 cubic yards of additional disturbed soil material were removed from these areas and placed in the Willow Creek topsoil stockpile. Given that soils in the subject areas have been previously disturbed and that all reasonably available suitable soils have now been recovered and stockpiled for use in future reclamation, no additional soil salvage in this area is necessary or justified.

**4.2.2.2 Soil Suitability and Testing**

Given the lack of available natural soils and CPMC's resultant plans to recover disturbed soils for use as soil material, CPMC is relying primarily on the baseline soil sampling information presented in Section 3.1.2.4, Soil Availability and Suitability, to establish the relative suitability of disturbed soils as the best material available in the proposed disturbance area to support revegetation efforts. Based on the available soils sampling and testing information, which included undisturbed and disturbed soil and coal refuse materials, the following summarizes the overall suitability of disturbed soils as soil material based on the UDOGM Topsoil/Overburden Guidelines:

Parameter	Undisturbed Soils	Disturbed Soils
pH	Good to fair	Good
EC	Good to fair	Good to fair
SP	Good	Good
Texture	Good to unacceptable	Good to unacceptable
SAR	Good to fair	Good to fair
Selenium	Good	Good
Boron	Good	Good
AB Pot.	Good	Good
AWC	Good to fair	Good to fair

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As documented by this summary of all existing available soil sampling data, the disturbed soil materials are an equivalent or better vegetative growth media than natural undisturbed soils in this area based on the UDOGM suitability criteria. The only parameter of concern relative to suitability of the disturbed soils as soil material is texture. The designation of both disturbed and undisturbed soils as unacceptable relative to texture is a due to a high gravel or rock fragment content which is a direct reflection of natural geomorphic and soil development characteristics in this area. The rugged terrain and extensive rock outcrops result in significant mass wasting and colluvial deposition with the accompanying characteristic occurrence of a large percentage of boulders, rocks, and large rock fragments in essentially all surficial deposits. While this may be considered a limiting factor under the UDOGM Guidelines and may in fact limit maximum vegetation potentials, it does not appear to have had a significant adverse impact on natural vegetation communities in the area nor on the natural reinvasion of previously disturbed areas which have not been intentionally revegetated.

APR 1 1998

4.2-3a

UTAH DIVISION OIL, GAS AND MINING

Revised: July 1996

This fan will be used for approximately one year, or until development has progressed to the point where a second continuous miner can be placed in service. Use of the temporary mine fan will allow CPMC time to complete the permanent main mine ventilation raise and to install the permanent main mine ventilation fans and associated structures.

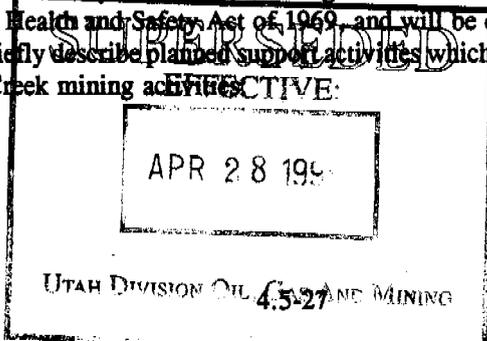
The main mine fan installation will be an blowing system with the fans, fan drive units, fan shroud structures, blow-out doors, heaters, and fan control systems located in an area just east of the proposed portal area as shown on the Mine Surface Facilities Map, (Map 18). The main mine fan will provide adequate ventilation for all development and mine workings planned during the first five years of mining. During the fourth year of mining, initial site work may begin for development of a new intake air shaft near the Willow Creek Canyon Road which is to the southeast off State Highway 191. Siting and detailed designs for this facility will be developed and submitted as a future permit revision if additional ventilation capacity is required. The new intake shaft would provide required additional airflow to support continuing mine development to the south and east.

Effective ventilation of mine workings will involve control of airflow within the mine workings to provide adequate airflow volumes and flow rates in all active working areas. Airflow will be controlled, under mine ventilation plans submitted to and approved by MSHA, by maintaining a pressure differential which will force the air to follow a pre-determined path through the mine workings. The pressure differential and desired airflow will be maintained by isolating intake and return airways with air-tight stoppings and utilizing the network of mine entryways to effectively route both clean (intake) and used (return) air through the mine.

Dewatering and Mine Drainage Control - Given the relatively low overall permeability of the geologic sequence, limited recharge, and consequent lack of a significant ground water aquifer in the area to be mined, ground water inflow to the active mine workings is expected to be limited. Ground water accumulations in abandoned underground workings in the area may result in localized increases in the amount and availability of ground water, particularly in down-dip areas to the north and east.

Any significant ground water inflows to the active mine workings will be controlled by intercepting the water near the point of inflow with either shallow ditches or sumps and transferring the water to either abandoned mine areas or temporary holding areas. Minor ground water inflows will not be addressed unless they interfere with mine operations or pose a potential safety hazard. Mine drainage will be transferred within the mine utilizing a series of ditches in combination with intermediate sumps and submersible pumps and pipelines. If adequate quantities of mine drainage are available to justify use of mine drainage as a supply source for operational mine water requirements, temporary holding areas within the mine may be developed and utilized as mine drainage storage areas and clarification basins. In the unlikely event that mine inflow exceeds operational mine water use requirements and suitable underground storage areas are not available, mine drainage may be pumped to the surface. On the surface, mine drainage will either be routed to the mine water storage tank through the mine water system piping, or may be discharged to Sedimentation Pond 001, which has been designed to provide temporary storage for approximately 1.0 acre-feet of mine water discharge. Any mine water discharge routed through the sedimentation pond will be subject to applicable effluent discharge limitations.

Maintenance and Miscellaneous Support Activities - A number of support activities including rock dusting; extension of mine electrical, communications, and water systems; equipment maintenance and repair; and material and equipment supply and storage are necessary to maintain safe, efficient underground operations, to prevent or minimize potential mining related environmental impacts, and to effect ongoing compliance with applicable regulatory provisions and requirements. Generally, mining support activities will occur either concurrently and as a part of ongoing mining operations or on a scheduled or as needed basis. Many of the necessary mining support functions including electrical distribution, mine ventilation, underground communications, and health and safety considerations are governed and monitored by MSHA under applicable provisions of the Coal Mine Health and Safety Act of 1969 and will be conducted under specific MSHA plan approvals. The following briefly describe planned support activities which CPMC will undertake in conjunction with the proposed Willow Creek mining activities:



### 4.5.2.3 Mine Structures and Facilities

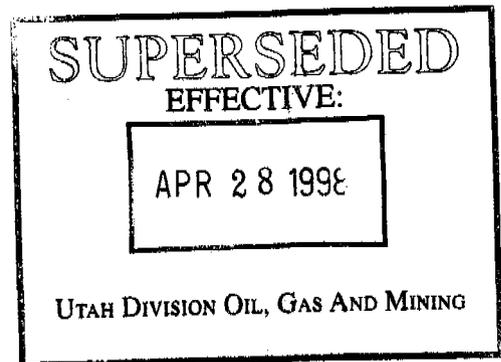
The proposed underground mining and related activities will require limited surface support facilities. The facilities to be utilized in conjunction with the proposed operations will include both existing facilities located in the Castle Gate, Gravel Canyon, and Crandall Canyon areas and new facilities to be constructed in the proposed Willow Creek mine surface facilities area. These facilities will provide the necessary infrastructure for effective management and handling of personnel, equipment, materials and supplies, and both coal and mine waste materials, and will include a number of structures specifically designed to control or mitigate potential mining related impacts.

Construction of required surface structures and facilities has previously been discussed in Section 4.5.2.2, General Description of Mine Plans, Mining Methods, and Related Design Requirements. The surface structures and facilities will be operated, maintained, and ultimately reclaimed in a manner that prevents or controls erosion and siltation, water pollution, and damage to public or private property; and to the extent possible using the best technology currently available, minimizes damage to fish, wildlife, and related environmental values, and minimizes additional contributions of suspended solids to streamflow or runoff outside the permit area. Any contributions of suspended solids from mine disturbance areas will not exceed applicable effluent limitations under Utah or Federal law.

Required surface facilities are shown and identified on the Mine Surface Facilities Map, (Map 18), and include the following specific structures and facilities:

#### Willow Creek Surface Facilities Area

- Willow Creek Realignment Segment 1
- Willow Creek Realignment Segment 2
- Sedimentation Pond 001
- Sedimentation Pond 002
- Portal Area Collection Sump
- Willow Creek Soil Stockpile
  
- Primary Road PR-1
- Main Access Road Bridge
- Willow Creek Culvert Crossing
- Primary Road PR-2
- Primary Road PR-5
- Primary Road PR-6
- Primary Road PR-7
  
- Mine Portal Structures
- Mine Ventilation Fans and Associated Structures
- Mine Ventilation Raise
- Rock Dust Storage Tank and Supply System
  
- Conveyor UG-1
- Run-of-Mine Coal Stacking Tube and Reclaim Tunnel
- Conveyor SC-1
- Conveyor SC-2
- Conveyor SC-3
- Conveyor SC-4
- Rock Tunnel No. 1
- Conveyor SC-5
- Rock Tunnel No. 2



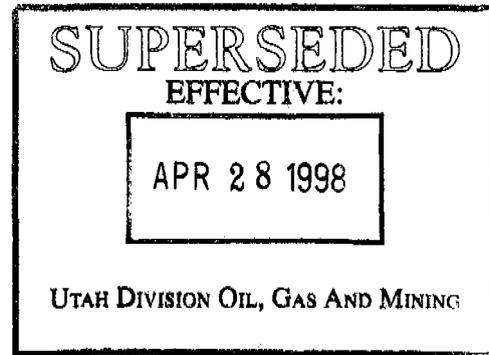
- Bathhouse/Warehouse Facility
- Storage Shed
- Miscellaneous Structures
- Water Tank and Pump House
- Pumphouse
- Raw Water Pond

#### Gravel Canyon

- Gravel Canyon Topsoil Stockpile
- Primary Road PR-10

#### Crandall Canyon

- Sedimentation Pond 014
- Crandall Canyon Topsoil Stockpile No. 1
- Crandall Canyon Topsoil Stockpile No. 2
- Primary Road PR-11
- Mine Ventilation Shaft No. 1
- Mine Ventilation Shaft No. 2
- Mine Ventilation Fans and Associated Structures
- Storage Facility
- Escape Hoist
- Escape House
- Mine Fan Substation



The following sections describe design and construction details and operation and maintenance plans for the identified structures.

#### **Drainage and Sediment Control Structures**

The drainage and sediment control structures which will be constructed and utilized in conjunction with the proposed mining and related activities will effectively route natural drainage through the mine surface disturbance area, intercept and route undisturbed drainage from upslope areas around surface disturbance areas, and collect and route disturbed area drainage to sedimentation structures to allow settlement of suspended solids prior to discharge to the natural drainages. Drainage and sediment control structures required under the proposed plans will include the two Willow Creek realignment segments, Sedimentation Ponds 001, 002, and 003, a collection sump in the portal area, a collection sump in the portal area, a number of temporary undisturbed drainage diversion ditches, disturbed area collection ditches, drainage culverts, containment berms, and various alternative drainage and sediment control measures including small sediment basins, silt fences, straw bales, and other localized control measures as appropriate. The proposed drainage and sediment control structures are shown on the Drainage and Sediment Control Plan Maps, (Maps 23A through 23F), and design information and calculations are included in Exhibit 13, Drainage and Sediment Control Plan. Existing drainage and sediment control structures in the Castle Gate preparation plant and loadout areas, the Gravel Canyon topsoil stockpile area, and the Crandall Canyon facilities area have been designed and constructed under existing permit approvals for each of these respective areas. The proposed Willow Creek activities will not require modification of any of the existing structures in these areas and the existing structures will be operated and maintained consistent with the plans presented in the following discussions.

area, and clarified discharge water from the mine equipment wash bay, with all runoff volumes calculated on the basis of the 25-year, 24-hour storm event. Sump design provides for initial reduction of suspended solids from the area, have the capacity to skim off any oil or petroleum products which may be in drainage flows, and provide controlled feed to the high capacity suction pump. Sump operation and maintenance will involve periodic inspection of the sump and pumping system components; scheduled maintenance and any required repair or replacement of the pump, piping, and valves; and periodic removal, on an as needed basis of accumulated sediments from the sump box. CPMC will stock a replacement pump which can be installed within 24 hours in the event of pump failure. The sump has been designed to facilitate cleanout which will involve removal of the baffle plate and the use of a skid steer loader, small wheel loader, or backhoe to remove the accumulated sediments which will be loaded into a truck and hauled to the coal refuse disposal area.

Alternative Drainage and Sediment Control Measures - Alternative drainage and sediment control measures will be utilized for initial construction activities and for required construction activities in or adjacent to Willow Creek as discussed in Section 4.5.2.1, General Description of Mine Construction and Development Activities, in conjunction with any disturbance adjacent to either Willow Creek or the Willow Creek buffer zone during the initial revegetation period, and in areas where the isolated nature of the area or specific site conditions would result in excessive disturbance for full scale drainage and sediment control or where full-scale controls are in feasible. Alternative drainage and sediment controls will be utilized in the following specific areas:

- Initial construction areas
- Construction areas in or adjacent to Willow Creek
- Road fill and embankment out slopes adjacent to the Willow Creek stream buffer zone
- The Willow Creek Soil/Substitute Stockpile
- A small area at the east end of Rock Tunnel No. 2
- The mine water and fire-fighting reserve tank area

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Detailed descriptions of these areas, discussion of the alternative sediment control measures to be implemented, and requests for individual small area exemptions, as appropriate, are included in Exhibit 13, Drainage and Sediment Control Plan. It should be noted that alternative sediment controls for road fill and embankment out slope areas will consist of silt fencing and will only be required as a interim control measure until temporary vegetative cover is established.

**Soil Stockpiles**

Soil stockpiles will be utilized for temporary storage of those materials which will be used as vegetative growth media in reclaiming mining related disturbance. Stockpile location and construction will, to the extent operationally feasible, minimize exposure to wind and water erosion and protect the soil resource from loss, contamination, or further disturbance prior to final use for site reclamation. There are three existing soil stockpiles, one located in Gravel Canyon immediately west of U.S. Highways 6 and 50 which will be utilized in reclaiming the Castle Gate preparation plant and loadout disturbance areas, and two in the Crandall Canyon area which will provide soil material for reclamation of the Crandall Canyon facilities area and access road. One new soil/substitute stockpile will be constructed using available material from the proposed Willow Creek mine surface facilities area. The new soil stockpile will be located on the west side of an existing rock outcrop known as "Devil's Slide" near the western limit of the proposed mine surface facilities area as shown on the Mine Surface Facilities Map, (Map 18). This area is isolated from the proposed surface disturbance and operations and the rock outcrop provides a natural barrier to protect the pile from wind erosion. The proposed soil stockpile will cover an area of approximately 1.5 acres and contain approximately 75,700 cubic yards of material.

Basic soil handling and stockpile construction practices are described in Section 4.2.2, Soil Salvage, Handling, and Storage. The stockpiled material will be protected from erosion, contamination, and loss by placement in a controlled manner with sideslopes at 3H:1V or less, seeding with a temporary vegetative cover, posting with durable signs reading "Soil Stockpile - Keep Off", and the use of appropriate drainage control measures.

Drainage control for the new stockpile will be provided by a perimeter berm at least 2 feet high with 3H:1V sideslopes which will provide sufficient retention capacity to contain all runoff from the pile resulting from a 25-year, 24-hour storm event. Stockpile maintenance for both the new and the existing stockpiles will involve periodic inspections of stockpile areas to verify that marker signs are in-place and readily visible, to identify any significant erosion, and to assure that the associated drainage control measures are in-place and functioning properly. Any problems noted during the inspections will be addressed in a timely manner with repair of any significant erosion, supplemental seeding if necessary, and clean-out and repair of drainage structures.

## Roads

In conjunction with the proposed mining and related operations CPMC will construct, operate and maintain a number of new roads and will operate and maintain several existing roads. Both new and existing roads will be utilized to access existing and proposed facilities and for transportation of personnel, equipment, and supplies. All roads are classified as primary roads. The primary road classification includes any road used for transporting coal or spoil, roads which are used frequently for periods exceeding 6 months, and roads which will be retained to support the postmining land use. Given that both coal and mine development waste will be transported by conveyor, the only road to be utilized for transportation of mine waste or coal processing waste will be Road PR-4 from the Castle Gate preparation plant to the Schoolhouse Canyon coal refuse stockpile. The other roads, however, will be utilized on a frequent, long-term basis to support the proposed mining and related operations. Existing and proposed roads which will be used in conjunction with the proposed mining and related operations include the following:

### Proposed Roads in Willow Creek Facilities Area

- PR-1 Primary mine access road for the proposed surface facilities area
- PR-2 Primary mine access road to the Willow Creek run-of-mine coal stockpile area
- PR-5 Primary access road to the mine water and fire-fighting reserve tank installation
- PR-6 Primary access road to the mine ventilation fan area
- PR-7 Primary access road to Sedimentation Pond 001 and Conveyor SC-4

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### Existing Roads in Castle Gate Preparation Plant and Loadout Areas

- PR-3 Primary access road for the preparation plant and loadout areas
- PR-4 Primary access road to the Schoolhouse canyon coal refuse facility
- PR-8 Primary access road to the west end of Rock Tunnel No. 2 and the transfer point between Conveyors SC-5 and SC-6
- PR-9 Primary access road to the truck dump grizzly

### Existing Road in Gravel Canyon Soil Stockpile Area

- PR-10 Primary access road to the Gravel Canyon soil stockpile

### Existing Road in Crandall Canyon Facilities Area

- PR-11 Primary access road to Crandall Canyon facilities area

All existing and proposed roads are shown on the Mine Surface Facilities Map, (Map 18) and in Exhibit 20, Crandall Canyon Operations Plans.

Design and Construction - All roads have been or will be located and constructed to the extent operationally feasible in the most stable areas available and outside of the channel of intermittent or perennial streams. Road design and construction plans will prevent damage to public or private property; minimize the potential for downstream flooding or sedimentation; reflect consideration of the size of vehicles which will be using the road, traffic volume, and normal speeds; and to the extent possible, using the best technology currently available, minimize adverse impacts on fish, wildlife and related environmental values.

All roads have been designed to provide for effective drainage, long-term stability, and safe vehicle operations under varying weather conditions. Design and construction of all primary roads will be certified by a qualified Registered Professional Engineer as meeting these criteria.

Design and construction practices for specific roads will be dependent primarily on site conditions and the nature and frequency of anticipated use. The primary mine access road (PR-1) will provide access to most of the mine surface facilities and will be utilized for transportation of personnel, equipment, and supplies. Because it will handle a relatively heavy traffic volume and must provide safe operating conditions year-round, Road PR-1 will be a paved asphalt road with all-weather travel surface. The other primary roads will also be utilized on a year-round basis but the associated traffic levels will be significantly lower so these roads have been designed and either are or will be constructed with an adequate compacted road base and gravel or similar durable granular surfacing. The ancillary roads will be used on a periodic or intermittent basis with relatively low traffic volumes and use will typically be year-round. These roads either have been or will be constructed with a graded road base and limited compaction, and will typically be surfaced with granular overburden material, although gravel may be used where appropriate to minimize maintenance requirements and improve access conditions.

Road construction will involve cut and fill earthwork operations using tractor scrapers, tracked dozers, and motor graders. No potential acid or toxic-forming materials will be utilized in road construction or as road surfacing materials. Cut and fill slopes will be established at maximum grades of 2.5H:1V except in rock where slopes may be as steep as 0.5H:1V dependent on the characteristics of the rock. Typical road construction practices, road configuration, and dimensions for the two road classifications are illustrated by Figure 4.5-9, Typical Primary Road Configuration. Road gradients will vary from flat to a maximum of approximately 10 percent and any required road embankments will be constructed and compacted in a controlled manner to provide a minimum static factor of safety of 1.3. All road cut and fill slopes will be revegetated as soon as reasonably practical following construction using the temporary revegetation seed mixture to stabilize the slopes and minimize erosion potential. Road surfaces will be graded or crowned to prevent accumulations of water on the road surface and adequately sized ditches and culverts will be installed and maintained to effectively carry road and other disturbed area drainage. Adequate cover will be provided over all culvert crossings to prevent damage or collapse of the culverts and culverts have been designed and will be installed to prevent plugging, erosion at the culvert inlet or outlet, and any drainage over the road surface. The locations of all proposed ditches are shown on the Drainage and Sediment Control Plan Maps, (Maps 23A through 23F) and ditch designs are included in Exhibit 13, Drainage and Sediment Control Plan.

Operation and Maintenance - Operation and maintenance procedures for all mine roads are designed to provide a smooth operating surface, assure safety, and minimize dust emissions. Road maintenance will involve periodic grading to provide a smooth surface, remove rocks or debris, and maintain effective drainage; repair and resurfacing as necessary; inspection, clean-out, and repair of ditches and drainage structures; and watering or application of surfactants to control dust during dry periods. Generally, speeds on roads and in active operating areas will be limited to 25 miles per hour by posted speed limits both as a safety consideration and to minimize dust emissions from unpaved roads. In the unlikely event that any road is damaged by a catastrophic event such as an earthquake or flood, CPMC will make appropriate repairs as soon as reasonably practicable and will limit the use of the road or provide an alternate access if unsafe conditions exist.

Description of Individual Structures - The following sections provide more detailed information for specific roads and associated structures:

Road PR-1, Willow Creek Stream Buffer Area and Stream Protection Berm, Main Road Culvert Crossing, and Main Access Road Bridge - The main mine access road (Road PR-1) will cross Willow Creek in two locations and will parallel the creek for almost the entire length of the proposed surface facilities area. Because construction of this road will involve crossing, alteration, and relocation of portions of a natural drainageway, specific UDOGM approvals under applicable provisions of Rules R645-301-527.220 and 742.412. It should be noted that much of the Willow Creek channel through the proposed mine surface facilities area has previously been relocated and modified and so does not represent a natural undisturbed stream channel. Where Road PR-1 parallels Willow Creek, a stream protection berm approximately three feet high with 3H:1V sideslopes will be constructed along the edge of the road or any associated roadside ditch on the side nearest the stream. This berm will provide a means of physically separating the proposed mining and related activities from the stream and will serve as one edge of a restricted access stream buffer zone.

temporarily stored in a designated scrap yards located in the equipment storage areas as shown on the Mine Surface Facilities Map, Proposed Configuration and Facilities, (Map 18B). Dumpsters will be located primarily near buildings during mine operations, however, during construction they may be located throughout the disturbed area. Most of the waste oil from the maintenance shop facility will be collected in a waste oil sump and recycled to a one of two waste oil storage tanks for use in the shop facility waste oil heater. The waste oil will be mixed with fuel oil only after sampling and analysis to verify that the waste oil meets strict EPA requirements. Waste oil and fuel oil feed rate and mixture will be adjusted as necessary based on waste oil availability and shop heating requirements. Any waste other waste oil and lubricants and any waste oil not meeting the applicable EPA requirements will be collected and stored in either closed drums or in the waste oil storage tank located in the maintenance shop building. Temporary storage areas for waste oil and lubricants will provide full containment to prevent accidental release of petroleum products to the surface drainage system.

CPMC does not currently plan or anticipate that any materials classified as hazardous waste will be utilized or generated in conjunction with the proposed mining and related operations. In the unlikely event that hazardous materials storage or disposal become necessary, CPMC will comply with all applicable storage, labelling, and documentation requirements, and disposal will occur off-site at a licensed hazardous waste disposal facility.

A contract disposal service will regularly collect and haul the noncoal solid wastes from the dumpsters to the permitted Carbon County municipal landfill. Dependent on the market for scrap materials, the larger noncoal solid waste and scrap will be collected periodically either by a salvage contractor for salvage and recycling or by a contract disposal firm which will haul these material off-site and dispose of it in a suitable disposal site. Any waste oil, lubricants, or other potentially combustible materials will be collected and either recycled or disposed of by a licensed disposal contractor in accordance with all applicable Utah and EPA regulations. No noncoal wastes will be disposed of on site during active operations except for mining waste generated in the mining process. As described in the previous section, this material will be disposed of in the Schoolhouse Canyon coal refuse stockpile.

## Mine Ventilation

The primary mine ventilation fans will be large diameter blowing axial vane fans capable of delivering over 600,000 cubic feet per minute of fresh air to the underground mine workings. Mine intake air from these fans will enter the underground mine workings through the 15 foot diameter primary ventilation raise previously described under the sub-heading of Mine Openings. From the ventilation raise, intake air will be distributed through the mine by the network of main, sub-main, headgate, and bleeder entries with airflow controlled by both permanent and temporary stoppings. From mine working areas, exhaust airflow will be carried by bleeder, tailgate, sub-main, and main entry exhaust airways discharging from the mine portals. The mine ventilation system has been designed using accepted mine ventilation design and engineering practices to meet all applicable MSHA requirements and provide for continuous effective ventilation of the active mine workings. Based on the planned extent of the mine workings, anticipated methane liberation and dust generation rates, and probable mining conditions the primary ventilation fan should provide adequate ventilation capacity for at least the first five years of mine development and production. Subsequent mine advance and expansion may require development of additional ventilation facilities to assure continued effective airflow and ventilation of the underground workings.

Mine ventilation facilities will include the primary ventilation raise, steel fan doors, the two primary ventilation fans and electric drives, fan control and monitoring systems, fan shroud structure with pressure relief panels, dual propane-fired fan heaters, the mine fan electrical substation, fan emergency generator, and propane storage tanks. The location and configuration of these structures are shown on the Mine Surface Facilities Map, (Map 18). Operation and maintenance of the mine ventilation system will involve regular inspection and monitoring of the ventilation fans and associated systems and structures to assure that they continue to operate at all times as designed and in compliance with applicable MSHA requirements. The mine fans will be controlled and monitored by automated systems which will provide a warning of any fan malfunctions.

## Mine Drainage Control and Dewatering

As described in both Sections 3.7.2, Ground Water Information, and 4.5.2.2, General Description of Mine Plans, Mining Methods, and Related Design Requirements, potential mine inflows are expected to be minimal and there will be sufficient storage capacity in both the existing abandoned underground mine workings and in inactive working areas that transfer of mine drainage to the surface water system is unlikely. If it becomes necessary to dispose of any excess mine drainage, the water would be pumped from the mine to the disturbed area surface drainage network which would route the water to Sedimentation Pond 001. Since the disturbed area collection ditches, associated culvert structures, and Pond 001 will all be constructed to provide significant excess water handling capacity, mine discharge to this system would not significantly reduce its capacity to

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## 5.4 RECLAMATION OF MINING DISTURBANCE

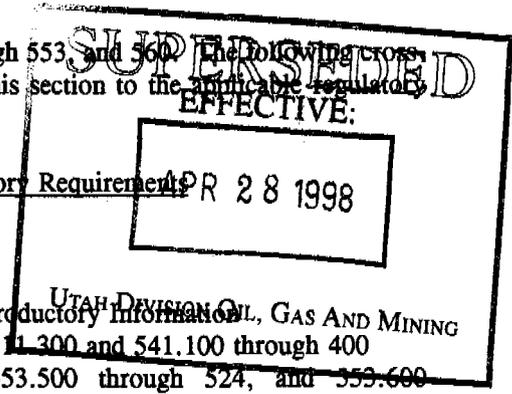
### 5.4.1 General Description of Reclamation Plans

This section presents and describes reclamation plans and practices to be used to restore disturbed areas resulting from mining and related activities to productive self-sustaining use. Information in this section was developed in accordance with applicable regulatory requirements (R645-301-500) for coal mine permitting in the State of Utah.

#### 5.4.1.1 Applicable Regulatory Sections Addressed

Specifically, this section addresses Rules R645-301-511, 541 through 553 and 560. The following cross-references headings and corresponding information presented in this section to the applicable regulatory provisions;

<u>Permit Section</u>	<u>Applicable Regulatory Requirements</u>
5.4.1	
5.4.1.1	General Introductory Information
5.4.1.2	R645-301-511.300 and 541.100 through 400
5.4.1.3	R645-301-553.500 through 524, and 553.600 through 653
5.4.1.4	R645-301-512.200 through 260 and 515.320 through 322
5.4.1.5	R645-301-512.200 through 260 and 542.200 through 320
5.4.2	
5.4.2.1	R645-301-542.100 and 500
5.4.2.2	R645-301-541.100 through 400 and 542.200
5.4.2.3	R645-301-542.300 through 800, 550 through 553.900, and 560
5.4.3	R645-301-542.800
Maps	R645-301-512.200 through 260 and 542.200 through 320
Exhibits	R645-301-542.800



#### 5.4.1.2 General Reclamation Objectives and Activities

Reclamation will be an integral part of the Willow Creek mining and related activities, however, because the mine will be an underground mine and the surface facilities and related surface disturbance areas will remain in place until the end of the mine life, mining and reclamation will not occur concurrently or, in the case of progressive mining activities, sequentially. Reclamation of surface disturbance areas will generally occur following the cessation of mining operations to complete the mining and reclamation cycle although CPMC will implement temporary stabilization measures in certain areas following initial construction or during ongoing operations, including progressive reclamation of the Seedhouse Canyon refuse stockpile.

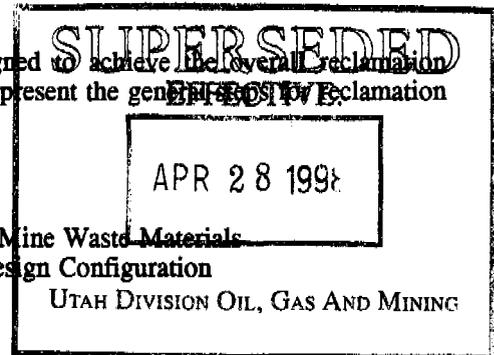
Objectives of the planned reclamation activities will be twofold; 1) For construction disturbance and ongoing surface disturbance such as that associated with expansion of the coal refuse stockpile, temporary stabilization and contemporaneous reclamation will serve to stabilize disturbance areas, minimize erosion, and limit potential surface water impacts; 2) For long-term use areas, final reclamation is designed to restore

disturbed areas to a safe, stable condition and to reestablish the productivity of the land consistent with the postmining land use(s). The proposed postmining land use of wildlife habitat reflects the predisturbance use of this and adjacent areas, existing land use plans and policies, the desires of affected surface landowners, and practical constraints relative to land use capability and condition. Specific land use considerations and constraints are discussed in Section 3.4, Land Use Information. The Willow Creek reclamation plan has been designed to successfully meet these objectives and will result in effective temporary stabilization, and a postmining configuration which blends with the surrounding terrain and provides environmental values consistent with or superior to those which existed prior to mining.

The Willow Creek reclamation plan has been developed utilizing available information on the existing environmental resources as described in Section 3.0, Environmental Information. In addition, CPMC has incorporated both available information on current successful reclamation technology and practices and their extensive operating experience in the area. While the plans presented in this permit represent what CPMC feels to be the most effective reclamation practices for this site, it is important to note that successful reclamation must be a dynamic process, incorporating new information to optimize overall effectiveness. In order to meet the reclamation objectives these plans may be modified as appropriate to reflect changing conditions, revised regulatory requirements, advances in reclamation technology, and the results on ongoing research and experience relative to the long-term effectiveness of various reclamation practices. Any future plan modifications will be addressed under applicable regulatory requirements for permit revision and modification.

Reclamation will involve a logical sequence of activities designed to achieve the overall reclamation objectives in an organized progressive manner. The following represent the general reclamation of any mine or mine related surface disturbance areas:

- Facility Demolition and Removal
- Stabilization and Sealing of Mine Openings
- Disposal of Coal Refuse, Non-Coal Wastes, and Mine Waste Materials
- Backfilling and Grading to Establish the Final Design Configuration
- Drainage Reestablishment
- Road Removal
- Soil/Substrate Replacement
- Revegetation
- Post-Reclamation Management, Maintenance, and Monitoring
- Removal and Reclamation of Sedimentation Ponds and Associated Structures



These activities are discussed in detail in the following sections.

#### 5.4.1.3 Proposed Variances from Regulatory Standards

Due to previous mining and other disturbance of the area there is not sufficient available spoil to completely backfill all highwalls. Given that the Willow Creek development activities effectively constitute remaining of the previously disturbed areas which included a preexisting highwall, under the applicable regulatory provisions dealing with remaining of previously mined areas (R645-301-553.500 through 524). Since the requirements of Rule R645-301-553.500 apply, a variance from the AOC restoration requirements is not necessary.

#### 5.4.1.4 Certification and Reporting

Rule R645-301-512 specifies that certain designated cross-sections, maps, and plans be prepared by or under the direction of a qualified Registered Professional Engineer (PE) and that certain maps and design plans be certified by a PE. Consistent with this requirement, the following components which relate to this permit section meet the regulatory supervision and certification requirements:

- Previous Mining Activity Map, (Map 10)
- Regional Land Use Map, (Map 9)
- Mine Surface Facilities Map, (Map 18)
- Sedimentation Pond Maps, (Maps 24 through 27)
- Willow Creek Diversion Design Maps, (Maps 28 through 29)
- Mine Surface Facilities Area - Postmining Topography Map, (Map 21)
- Mine Surface Facilities Area - Premining/Postmining Cross-Sections, (Map 22)

more stable slopes, reduce overall highwall and cut exposures, provide for more effective drainage, and offer better blending of the area with the surrounding terrain.

During final backfilling and grading operations, drainage and sediment will be controlled by those components of the drainage and sediment control network retained as part of the interim drainage system or by site-specific alternative sediment control practices.

Backfilling and grading will involve the use of tractor scrapers, tracked dozers, wheel loaders and trucks, and motor graders, as necessary to recover, move, place, grade, and compact backfill materials. Generally, backfill material will be placed in relatively uniform lifts and will be compacted by normal equipment traffic. Backfilled areas will be sloped and graded to promote effective drainage and to the extend operationally feasible long unbroken fill slopes will be avoided to minimize sheet flow and potential resultant erosion. Fill slopes will be limited to a maximum slope of approximately 3H:1V and graded slopes in native material will vary dependent on material from less than 5H:1V to as much as 0.5H:1V in competent rock consistent with slope stability considerations as documented in Exhibit 11, Geotechnical Investigations. Recommended slope limitations for final cut and fill slopes will result in slope configurations having a static factor of safety of at least 1.3. The design safety factor for any benched slopes is 1.5. Graded areas will incorporate undulations consistent with the surrounding terrain and the postmining drainage configuration and the surface of graded areas will be left in a roughened condition to minimize runoff and erosion in the interim before soil/substitute replacement, improve bonding between the regraded surface and soil/substitute materials, and increase infiltration to maximize soil moisture levels and promote revegetation. Regraded surfaces will be deep (up to 3 feet) ripped and finely chopped native hay from the current seasons crop will be applied to increase organic content, provide soil biota, and increase infiltration and moisture holding capacity.

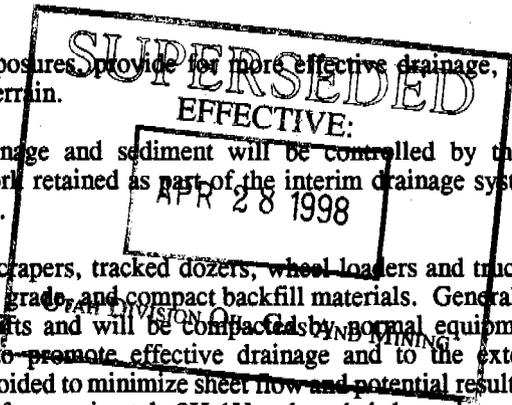
Under the applicable regulatory provisions dealing with remaining of previously mined areas (R645-301-553.500 through 524), the planned backfilling and grading operations will utilize all available spoil material to eliminate remaining highwall and cut slope exposures to the maximum extent technically practical. Fill material placed against highwall and cut slope areas will be placed and graded to assure long-term stability and final slopes will provide for effective drainage and be compatible with both natural slopes in the area and the postmining land use of wildlife habitat. Highwall and cut slope exposures remaining after backfilling and regrading will be no more than 10 to 30 feet high, will be in competent rock materials similar to the natural cliff exposures in the immediate area which range from 10 to over 100 feet in height, and will have an aesthetic appearance and geomorphic characteristics similar to these natural rock exposures.

### Drainage Reestablishment

In conjunction with final backfilling and grading activities, CPMC will establish a postmining drainage configuration which is compatible with the natural drainage pattern of the surrounding terrain, will effectively route natural drainage from upgradient areas through the reclaimed area with minimal erosion or increase in sediment concentrations, and will effectively control drainage and erosion in the reclaimed areas. The design postmining drainage configuration is shown by the Mine Surface Facilities Area - Postmining Topography Map, (Map 21A). Permanent diversions carrying undisturbed drainage have been designed and will be constructed through the reclaimed area to route undisturbed flow directly to Willow Creek. During the extended liability period, disturbed area runoff from the reclaimed areas will continue to be collected and routed to the sedimentation ponds which will be retained until UDOGM issues a determination of reclamation success based on successful vegetative reestablishment and restoration of pre-disturbance surface runoff water quality. Following this determination, all temporary ditches, sedimentation ponds, and the Willow Creek culvert crossing will be removed and reclaimed. Additional discussion of postmining drainage reestablishment is provided in Section 5.5, Hydrologic Restoration.

### Road Removal

Certain roads within the mine facilities area will continue to provide access to specific areas during both reclamation and the extended liability period, although most roads will be removed and reclaimed during final site reclamation. Generally, the primary access roads will be removed and reclaimed in two phases. The first phase will involve ripping of these roads and removal of the associated road surfacing materials. This phase will occur in conjunction with facility demolition and removal and the surfacing materials removed will be placed in the designated solid waste disposal areas as previously discussed. The second phase of road removal for primary roads will be sequenced to coincide with backfilling and grading of the areas that the roads either provide access to or pass through. When roads are no longer needed, they will be removed and the associated disturbance areas will be regraded and reclaimed.



For isolated erosional problems, where channelization of surface runoff has resulted in the creation of one or more gullies one foot or greater in depth, both upslope drainage and the nature of the erosional damage will be evaluated and addressed as appropriate. If upslope drainage is the primary causative factor, localized measures to control flow velocities or distribute flow will be implemented including placement of straw bales or large riprap to break up concentrated flows; establishment of berm or contour furrows to temporarily divert flows away from problem areas; and localized placement of fill, reseeding, and placement of straw bales, sediment fences, or erosion control materials to allow the damaged area(s) to stabilize.

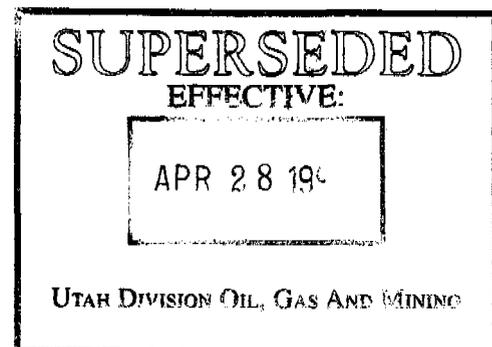
Any seeding failures or weed infestations identified by the post-reclamation management inspections will be addressed during appropriate time periods to achieve optimal mitigation. Any areas where partial or complete seeding failure is indicated by limited vegetative reestablishment or excessive dominance of one or more species will be addressed by reseeding the effected areas during either the early spring or late fall. Essentially the same seeding methods will be utilized as for initial seeding with the exception of seedbed preparation. Any significant weed infestations will be addressed through consultation with UDOGM to determine appropriate control measures. If the controls determined through this consultation process involve the application of herbicides, only those chemicals approved for use by the appropriate State and Federal agencies will be considered and control practices will be limited to spot application at the appropriate time period for best control of the problem species. selective herbicides

#### Removal of Drainage and Sediment Control Structures

Those drainage and sediment control structures necessary to collect and control disturbed area drainage from reclaimed areas will remain in place until the end of the extended liability period when UDOGM issues a determination that the site has been successfully reclaimed based on revegetation success and restoration of runoff water quality. Generally, reclamation of drainage and sediment control structures will involve backfilling and grading all temporary ditches to conform to the established grade of the surrounding terrain; draining sedimentation ponds, removing the discharge structures, pushing the pond berms into the open basin area, and regrading the pond area to blend with the surrounding terrain; replacing stockpiled soil/substitute materials on the regraded areas; and revegetating the reclaimed areas. During final pond removal and reclamation, drainage and sediment from the pond areas will be controlled by alternative sediment control measures including temporary berms, straw bales, silt fences, or other appropriate site specific control measures.

#### **5.4.3 Reclamation Cost Estimate**

Consistent with applicable regulatory provisions (R645-301-542.800 and R645-301-800) which require that reclamation bonding calculations be based on an approved reclamation plan, CPMC has developed a detailed reclamation cost estimate based on the preliminary UDOGM determination that the reclamation plan is acceptable. The detailed estimate includes costs for all activities described in the approved plan with specific consideration of the areas to be reclaimed and the nature and difficulty of required reclamation efforts. Additional information on the reclamation cost estimate and related bonding considerations is provided in Section 6.1, Bonding Information, and the detailed bond reclamation cost estimate has been provided for insertion as Exhibit 17, Bonding and Insurance Information.



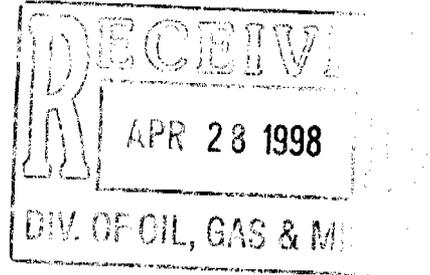


**CYPRUS PLATEAU  
MINING CORPORATION**  
A Cyprus Amax Company

Cyprus Plateau Mining Corporation  
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April 25, 1998

*extra  
copy*



Utah Coal Regulatory Program  
1594 West North Temple, Suite 1210  
Box 145801  
Salt Lake City, Utah 84114-5801

Attention: Pamela Grubaugh-Littig

RE: Submittal of Two Additional Copies, January 29, 1998, Degassification Wells, Cyprus Plateau Mining Corporation, Willow Creek Mine, ACT/007/038-97K, File #3, Carbon County, Utah

Dear Ms. Grubaugh-Littig:

Pursuant to Mr. Joe Helfrich's request, enclosed please find two more clean copies of the aforementioned. After a thorough search of the Division's facility, Mr. Helfrich requested two additional clean copies of CPMC's January 29, 1998, submittal, so that the appropriate replacement text and maps can be incorporated.

If you have any questions, please do not hesitate to contact me at (435) 472-4741, or speak with Joe Helfrich or Tiffini Tutorow.

Sincerely,

Johnny Pappas  
Sr. Environmental Engineer

Enclosure

File: ENV2.5.2.12.5.4  
Chrono: JP980407.LTR

# APPLICATION FOR PERMIT PROCESSING

<input checked="" type="checkbox"/> Permit Change	<input type="checkbox"/> New Permit	<input type="checkbox"/> Renewal	<input type="checkbox"/> Transfer	<input type="checkbox"/> Exploration	<input type="checkbox"/> Bond Release	Permit Number: ACT/007/038
Title of Proposal: Addition of two methane degassification wells and mine layout revision.						Mine: WILLOW CREEK
						Permittee: CYPRUS PLATEAU

Description, include reason for application and timing required to implement: Two methane degassification wells are needed in the longwall gob to help prevent possible dangerous accumulations of methane, and impacts to safety or mine employees.

**Instructions:** If you answer yes to any of the first 8 questions (gray), submit the application to the Salt Lake Office. Otherwise, you may submit it to an inspector.

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	1. Change in the size of the Permit Area? _____ acres Disturbed Area? <u>0.8</u> acres <input checked="" type="checkbox"/> increase <input type="checkbox"/> decrease.
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	2. Is the application submitted as a result of a Division Order? DO # _____
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	3. Does application include operations outside a previously identified Cumulative Hydrologic Impact Area?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	4. Does application include operations in hydrologic basins other than as currently approved?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	5. Does application result from cancellation, reduction or increase of insurance or reclamation bond?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	6. Does the application require or include public notice/publication?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	7. Does the application require or include ownership, control, right-of-entry, or compliance information?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	9. Is the application submitted as a result of a Violation? NOV # _____
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	10. Is the application submitted as a result of other laws or regulations or policies? Explain: <i>MSHA concerns</i>
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	11. Does the application affect the surface landowner or change the post mining land use?
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2? <i>No</i> )
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	13. Does the application require or include collection and reporting of any baseline information?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	15. Does application require or include soil removal, storage or placement?
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	16. Does the application require or include vegetation monitoring, removal or revegetation activities?
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	17. Does the application require or include construction, modification, or removal of surface facilities?
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	18. Does the application require or include water monitoring, sediment or drainage control measures?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	19. Does the application require or include certified designs, maps, or calculations?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	20. Does the application require or include subsidence control or monitoring? <i>No change to monitoring plan - same</i>
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	21. Have reclamation costs for bonding been provided for?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	22. Does application involve a perennial stream, a stream buffer zone or discharges to a stream?
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	23. Does the application affect permits issued by other agencies or permits issued to other entities? <i>BLM exploration</i>

Attach 5 complete copies of the application.

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations, herein. (R645-301-123)

*John Papp - Johnny Papp - Sr. Envr. Engineer 1/29/98*  
 Signed - Name - Position - Date

Subscribed and sworn to before me this 29 day of JAN 19 98

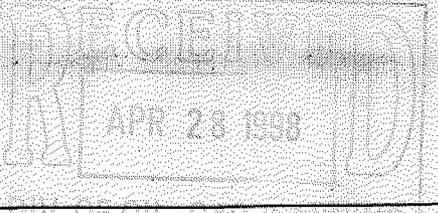
*Jackie D Bogdin*  
 Notary Public

My Commission Expires: 3-15 2001  
 Attest: STATE OF UTAH COUNTY OF CARBON



Notary Public  
**JACKIE D. BOGDIN**  
 104 Helper Drive  
 Helper, Utah 84526  
 My Commission Expires  
 March 15, 2001  
 State of Utah

Received by Oil, Gas & Mining



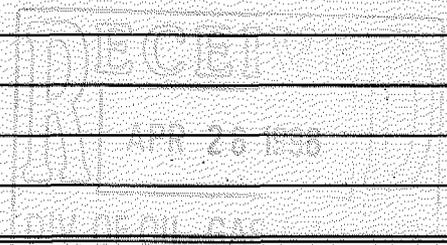
ASSIGNED TRACKING NUMBER

## Application for Permit Processing Detailed Schedule of Changes to the MRP

Title of Application:  Addition of two methane degassification wells and mine layout revision.	Permit Number: ACT/007/038
	Mine: WILLOW CREEK
	Permittee: CYPRUS PLATEAU

Provide a detailed listing of all changes to the mining and reclamation plan which will be required as a result of this proposed permit application. Individually list all maps and drawings which are to be added, replaced, or removed from the plan. Include changes of the table of contents, section of the plan, pages, or other information as needed to specifically locate, identify and revise the existing mining and reclamation plan. **Include page, section and drawing numbers as part of the description.**

			DESCRIPTION OF MAP, TEXT, OR MATERIALS TO BE CHANGED
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	List of Figures, page LOF-ii in Volumes 1, 2, & 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	List of Maps, page LOM-ii in Volumes 1, 2, 3, 4, 5, 6, & 7
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Map 19A in Volume 6
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.2-3a in Section 4.2, Volume 3
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.2-3b in Section 4.2, Volume 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-27 in Section 4.5, Volume 3
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-27a in Section 4.5, Volume 3
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Figure 4.5-17, Page 4.5-27b to Section 4.5, Volume 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-37 in Section 4.5, Volume 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-39 in Section 4.5, Volume 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-47 in Section 4.5, Volume 3
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-47a to Section 4.5, Volume 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-48 to Section 4.5, Volume 3
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-48a to Section 4.5, Volume 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-49 in Section 4.5, Volume 3
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-49a to Section 4.5, Volume 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-55 in Section 4.5, Volume 3
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-55a to Section 4.5, Volume 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Pages 5.4-1 and 5.4-2 in Section 5.4, Volume 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 5.4-11 in Section 5.4, Volume 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 5.4-14 in Section 5.4, Volume 3
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Map 30 to Volume 7
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	



Any other specific or special instructions required for insertion of this proposal into the Mining and Reclamation Plan?

Where text has been revised, two copies of the revised pages are attached, one copy shows the revisions in redline/strikeout, and the second copy is revised for direct insertion into the MRP without redline/strikeout. In some cases, the addition of text shifts text to the next page of MRP text, in this case the page is given a number such as 4.5-23a and the text does not change. In this case simply insert the new page of text after the page 4.5-23.

**REVISED WILLOW CREEK MINE RECLAMATION BOND ESTIMATE  
METHANE DEGASSIFICATION WELLS RECLAMATION COST SUMMARY  
JANUARY 1998**

DIRECT COSTS		
Rough Grading Excavation, Backfill, and Topsoil Distribution and Preparation Total		\$2,782
Demolition		1,947
Revegetation		2,491
Subtotal Direct Costs		7,220
INDIRECT COSTS		
Mobilization/Demobilization		1,500
Contingencies (4%)		217
Engineering Redesign Fee (4%)		217
Contractor Profit and Overhead (5%)		271
Reclamation Manager (3.2%)		173
Total Indirect Costs		2,378
Subtotal Reclamation Costs		9,598
Escalation - 13.1% (2.5%/yr over 5 yrs.)		1,261
<b>TOTAL RECLAMATION COST</b>		<b>\$10,859</b>
PREVIOUS BOND COST FOR WILLOW CREEK MINE IN 2001 \$		\$11,998,742
BOND COST FOR DEGASSIFICATION WELLS AND ROAD		\$10,859
<b>REVISED TOTAL REECLAMATION BOND FOR THE WILLOW CREEK MINE</b>		<b>\$12,009,601</b>



Willow Creek Mine Earthwork

	Hours	Hourly	Hourly	Eq. &	Oper.	Number	Total		Non-Eq. +	Non-Eq. +			# of	Escalated					Equip. +				
	Eq	Rental	Eq.	Oper.	Mat.	Of Men	Eq. & Lab.		Lab. Base	Lab. Base			Escal.	Years	Equip, Labor			Production	Labor				
	Costs	Period	Costs	Costs	O.H.	or Eq.	Costs	Units	Cost	Cost + O&	Units	Factor	Escal.	Material Cost	Units	Quantity	Units	Rate	Units	Time/Dis.	Units	Cost	
Degassification Wells																							
Regrading Well sites and Road																							
Trackhoe 235 (2CY)	8515.00	176.00	48.38	19.30	0.10	38.70	1.00	113.15	/Hr				0.02	0.00	113.15	ERR	4260.00	CY	300.00	CY/Hr	15.00	Hr	1700.00
Support Personnel & Equip																							
Foreman, Avg. Outside						43.65	1.00	45.45	/Hr											18.00	Hr	728.00	
Pickup, 4WD, 3/4 Ton	700.00	173.00	4.05	6.00	0.10		2.00	22.12	/Hr											18.00	Hr	354.00	
Total																						2782.00	

Willow Creek Mine Degassification Wells Revegetation

MAP REF.	DESCRIPTION	MATERIALS	UNIT COST	Inflation Rate	# YR	ADJUSTE COST	UNIT	LENGHT	WIDTH	HEGHT	DIA.	TIME	AREA	VOLUME	WEIGHT	#	UNIT	SWELL FACTOR	QUANTITY	UNIT	COST
30	Revegetation																				
	Soil Roughening	75 HP Dozer/Scarifier	3.14			3.14	MSF							65			MSF		85	MSF	204.00
	Seeding	Clover .67lb/MSF	12.60			12.60	MSF							65			MSF		85	MSF	819.00
	Straw Mulch	Hay 1" Deep, Power Mulch	20.50			20.50	MSF							65			MSF		85	MSF	1333.00
	Fertilizer - 200lbs/Ac	Water Sol. Hydro Spray	2.08			2.08	MSF							65			MSF		85	MSF	135.00
	Subtotal																				2491.00
	Subtotal																				
	Subtotal																				0.00
	Subtotal																				
	Total																				2491.00

# LIST OF FIGURES

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3.7-9F	Flow/Iron Temporal Relationship - Station B211 .....	3.7-85
3.7-9G	Flow/Iron Temporal Relationship - Station B353 .....	3.7-86
3.7-9H	Flow/Iron Temporal Relationship - Station B26 .....	3.7-87
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4.5-5	Typical Longwall Development .....	4.5-23
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28B	Stream Alteration Activities - Component Nos. 2 and 3, Lower Stream Crossing and Realignment .....	Volume 7
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29B	Stream Alteration Activities - Component No. 1, Upper Stream Realignment .....	Volume 7
30	Degassification Wells - Surface Facilities Map .....	Volume 7

of influence were calculated and then adjusted to reflect the percentage of each area where soil could not be salvaged due to rock ledges and boulders. Since the salvagable soil material would have to be pulled downslope onto the top of the refuse pile using a tracked backhoe due to the steep slopes and limited access, some mixing of this material with refuse and consequent loss is inevitable. Based on previous soil salvage experience, it is estimated that this loss will account for approximately three percent of the total volume of potentially salvagable soil material.

Based upon field measurements and the factors noted above, a calculated volume of approximately 15,500 cubic yards of additional soil material can be salvaged from the proposed expansion area associated with the School Canyon Refuse Pile Expansion. The additional soil material will be placed in either the Willow Creek topsoil stockpile or the existing Gravel Canyon stockpile. When the current permit commitment to place two feet of soil cover on the refuse pile is adjusted to reflect this additional soil salvage volume, the overall soil replacement depth is increased to approximately 2.34 feet. Table 4.2-1, Soil Recovery and Storage Plans, has been revised and updated to reflect the additional topsoil recovery from the refuse pile expansion area.

With respect to salvage of additional soil materials in the vicinity of Conveyors SC-6 and SC-7, minor quantities of additional plant growth media consisting of disturbed soils were identified by field inspection and have been salvaged from these areas. A total of approximately 600 cubic yards of additional disturbed soil material were removed from these areas and placed in the Willow Creek topsoil stockpile. Given that soils in the subject areas have been previously disturbed and that all reasonably available suitable soils have now been recovered and stockpiled for use in future reclamation, no additional soil salvage in this area is necessary or justified.

Topsoil will be bladed to the side of the access road to the methane degassification wells, and removed stockpiled at the well sites. The topsoil at the well sites will be protected from erosion. After installation of the well and wellhead topsoil will be redistributed on the drill site to provide for revegetation and stabilization. The drill site will be seeded during the first season. Final reclamation of the well sites will be completed as addressed in Section 5.4.

#### 4.2.2.2 Soil Suitability and Testing

Given the lack of available natural soils and CPMC's resultant plans to recover disturbed soils for use as soil material, CPMC is relying primarily on the baseline soil sampling information presented in Section 3.1.2.4, Soil Availability and Suitability, to establish the relative suitability of disturbed soils as the best material available in the proposed disturbance area to support revegetation efforts. Based on the available soils sampling and testing information, which included undisturbed and disturbed soil and coal refuse materials, the following summarizes the overall suitability of disturbed soils as soil material based on the UDOGM Topsoil/Overburden Guidelines:

<u>Parameter</u>	<u>Undisturbed Soils</u>	<u>Disturbed Soils</u>
pH	Good to fair	Good
EC	Good to fair	Good to fair
SP	Good	Good
Texture	Good to unacceptable	Good to unacceptable
SAR	Good to fair	Good to fair
Selenium	Good	Good
Boron	Good	Good
AB Pot.	Good	Good
AWC	Good to fair	Good to fair

As documented by this summary of all existing available soil sampling data, the disturbed soil materials are an equivalent or better vegetative growth media than natural undisturbed soils in this area based on the UDOGM suitability criteria. The only parameter of concern relative to suitability of the disturbed soils as soil material is texture. The designation of both disturbed and undisturbed soils as unacceptable relative to texture is a due to a high gravel or rock fragment content which is a direct reflection of natural geomorphic and soil development characteristics in this area. The rugged terrain and extensive rock outcrops result in significant mass wasting and

colluvial deposition with the accompanying characteristic occurrence of a large percentage of boulders, rocks, and large rock fragments in essentially all surficial deposits. While this may be considered a limiting factor under the UDOGM Guidelines and may in fact limit maximum vegetation potentials, it does not appear to have had a significant adverse impact on natural vegetation communities in the area nor on the natural reinvasion of previously disturbed areas which have not been intentionally revegetated.

This fan will be used for approximately one year, or until development has progressed to the point where a second continuous miner can be placed in service. Use of the temporary mine fan will allow CPMC time to complete the permanent main mine ventilation raise and to install the permanent main mine ventilation fans and associated structures.

The main mine fan installation will be an blowing system with the fans, fan drive units, fan shroud structures, blow-out doors, heaters, and fan control systems located in an area just east of the proposed portal area as shown on the Mine Surface Facilities Map, (Map 18). The main mine fan will provide adequate ventilation for all development and mine workings planned during the first five years of mining. During the fourth year of mining, initial site work may begin for development of a new intake air shaft near the Willow Creek Canyon Road which is to the southeast off State Highway 191. Siting and detailed designs for this facility will be developed and submitted as a future permit revision if additional ventilation capacity is required. The new intake shaft would provide required additional airflow to support continuing mine development to the south and east.

Effective ventilation of mine workings will involve control of airflow within the mine workings to provide adequate airflow volumes and flow rates in all active working areas. Airflow will be controlled, under mine ventilation plans submitted to and approved by MSHA, by maintaining a pressure differential which will force the air to follow a pre-determined path through the mine workings. The pressure differential and desired airflow will be maintained by isolating intake and return airways with air-tight stoppings and utilizing the network of mine entryways to effectively route both clean (intake) and used (return) air through the mine.

Two longwall gob degassification wells are needed to reduce the risk of methane gas ignitions and possible mine fires. The locations of the wells are shown on Map 19A, Mine Plan D-Seam. And on Map 30, Degassification Wells Surface Facilities Map. A detail of the degassification wells can be found on Figure 4.5-17. These degassification wells will be permitted through the Bureau of Land Management since they will lie on BLM land. The BLM requires that they be permitted under an exploration permit. Authority for the wells falls under federal regulations and case law which provide for degassification of methane for health and safety reasons. A gas company has expressed interest in developing the gas for commercial purposes if it is of adequate quality and quantity. The gas company will test the vented gas during initial venting and may develop the wells in the future. Permitting of the gas development project by the gas company will be done by the gas company in the future.

Dewatering and Mine Drainage Control - Given the relatively low overall permeability of the geologic sequence, limited recharge, and consequent lack of a significant ground water aquifer in the area to be mined, ground water inflow to the active mine workings is expected to be limited. Ground water accumulations in abandoned underground workings in the area may result in localized increases in the amount and availability of ground water, particularly in down-dip areas to the north and east.

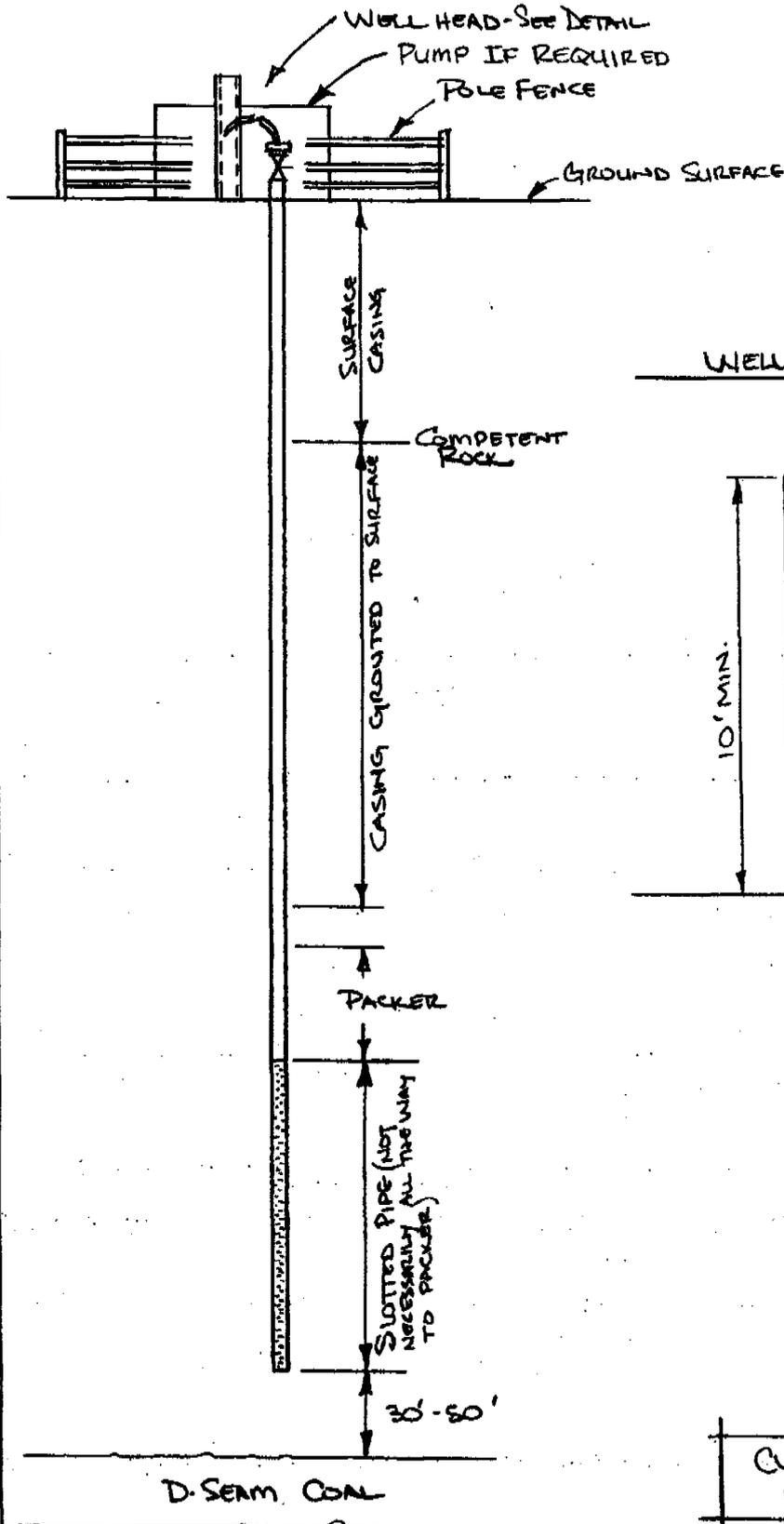
Any significant ground water inflows to the active mine workings will be controlled by intercepting the water near the point of inflow with either shallow ditches or sumps and transferring the water to either abandoned mine areas or temporary holding areas. Minor ground water inflows will not be addressed unless they interfere with mine operations or pose a potential safety hazard. Mine drainage will be transferred within the mine utilizing a series of ditches in combination with intermediate sumps and submersible pumps and pipelines. If adequate quantities of mine drainage are available to justify use of mine drainage as a supply source for operational mine water requirements, temporary holding areas within the mine may be developed and utilized as mine drainage storage areas and clarification basins. In the unlikely event that mine inflow exceeds operational mine water use requirements and suitable underground storage areas are not available, mine drainage may be pumped to the surface. On the surface, mine drainage will either be routed to the mine water storage tank through the mine water system piping, or may be discharged to Sedimentation Pond 001, which has been designed to provide temporary storage for approximately 1.0 acre-feet of mine water discharge. Any mine water discharge routed through the sedimentation pond will be subject to applicable effluent discharge limitations.

Maintenance and Miscellaneous Support Activities - A number of support activities including rock dusting; extension of mine electrical, communications, and water systems; equipment maintenance and repair; and material and equipment supply and storage are necessary to maintain safe, efficient underground operations, to prevent or minimize potential mining related environmental impacts, and to effect ongoing compliance with applicable regulatory provisions and requirements. Generally, mining support activities will occur either concurrently and as a part of ongoing mining operations or on a scheduled or as needed basis. Many of the necessary mining support functions including electrical distribution, mine ventilation, underground communications, and health and safety considerations are governed and

distribution, mine ventilation, underground communications, and health and safety considerations are governed and monitored by MSHA under applicable provisions of the Coal Mine Health and Safety Act of 1969, and will be conducted under specific MSHA plan approvals. The following briefly describe planned support activities which CPMC will undertake in conjunction with the proposed Willow Creek mining activities:

# DEGASSIFICATION WELL

## GENERAL ARRANGEMENT



## WELL HEAD DETAIL

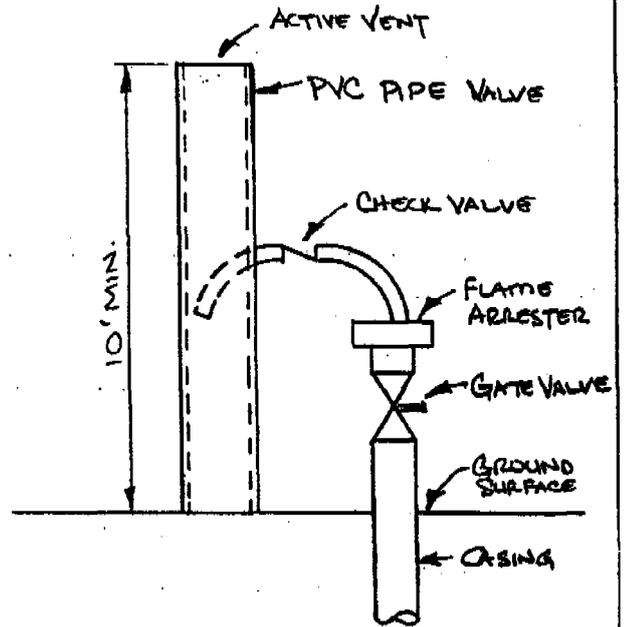


Figure 4.5-17

CYPRESS PLATEAU MINING CORP.  
WILLOW CREEK MINE

22-141 50 SHEETS  
22-142 100 SHEETS  
22-144 200 SHEETS



### 4.5.2.3 Mine Structures and Facilities

The proposed underground mining and related activities will require limited surface support facilities. The facilities to be utilized in conjunction with the proposed operations will include both existing facilities located in the Castle Gate, Gravel Canyon, and Crandall Canyon areas and new facilities to be constructed in the proposed Willow Creek mine surface facilities area. These facilities will provide the necessary infrastructure for effective management and handling of personnel, equipment, materials and supplies, and both coal and mine waste materials, and will include a number of structures specifically designed to control or mitigate potential mining related impacts.

Construction of required surface structures and facilities has previously been discussed in Section 4.5.2.2, General Description of Mine Plans, Mining Methods, and Related Design Requirements. The surface structures and facilities will be operated, maintained, and ultimately reclaimed in a manner that prevents or controls erosion and siltation, water pollution, and damage to public or private property; and to the extent possible using the best technology currently available, minimizes damage to fish, wildlife, and related environmental values, and minimizes additional contributions of suspended solids to streamflow or runoff outside the permit area. Any contributions of suspended solids from mine disturbance areas will not exceed applicable effluent limitations under Utah or Federal law.

Required surface facilities are shown and identified on the Mine Surface Facilities Map, (Map 18); two methane degassification wells are proposed and are shown on Map 30, Degassification Wells, Surface Facilities. The following lists the surface facilities:

#### Willow Creek Surface Facilities Area

- Willow Creek Realignment Segment 1
- Willow Creek Realignment Segment 2
- Sedimentation Pond 001
- Sedimentation Pond 002
- Portal Area Collection Sump
- Willow Creek Soil Stockpile
  
- Primary Road PR-1
- Main Access Road Bridge
- Willow Creek Culvert Crossing
- Primary Road PR-2
- Primary Road PR-5
- Primary Road PR-6
- Primary Road PR-7
  
- Mine Portal Structures
- Mine Ventilation Fans and Associated Structures
- Mine Ventilation Raise
- Rock Dust Storage Tank and Supply System
  
- Conveyor UG-1
- Run-of-Mine Coal Stacking Tube and Reclaim Tunnel
- Conveyor SC-1
- Conveyor SC-2
- Conveyor SC-3
- Conveyor SC-4
- Rock Tunnel No. 1
- Conveyor SC-5
- Rock Tunnel No. 2

- Bathhouse/Warehouse Facility
- Storage Shed
- Miscellaneous Structures
- Water Tank and Pump House
- Pumphouse
- Raw Water Pond

#### **Gravel Canyon**

- Gravel Canyon Topsoil Stockpile
- Primary Road PR-10

#### **Crandall Canyon**

- Sedimentation Pond 014
- Crandall Canyon Topsoil Stockpile No. 1
- Crandall Canyon Topsoil Stockpile No. 2
- Primary Road PR-11
- Mine Ventilation Shaft No. 1
- Mine Ventilation Shaft No. 2
- Mine Ventilation Fans and Associated Structures
- Storage Facility
- Escape Hoist
- Escape House
- Mine Fan Substation

#### **Section 30, Township 12 South, Range 10 East**

- 2 Methane Degassification Wells - see Map 30
- Ancillary Road - see Map30

The following sections describe design and construction details and operation and maintenance plans for the identified structures.

### **Drainage and Sediment Control Structures**

The drainage and sediment control structures which will be constructed and utilized in conjunction with the proposed mining and related activities will effectively route natural drainage through the mine surface disturbance area, intercept and route undisturbed drainage from upslope areas around surface disturbance areas, and collect and route disturbed area drainage to sedimentation structures to allow settlement of suspended solids prior to discharge to the natural drainages. Drainage and sediment control structures required under the proposed plans will include the two Willow Creek realignment segments, Sedimentation Ponds 001, 002, and 003, a collection sump in the portal area, a collection sump in the portal area, a number of temporary undisturbed drainage diversion ditches, disturbed area collection ditches, drainage culverts, containment berms, and various alternative drainage and sediment control measures including small sediment basins, silt fences, straw bales, and other localized control measures as appropriate. The proposed drainage and sediment control structures are shown on the Drainage and Sediment Control Plan Maps, (Maps 23A through 23F), and design information and calculations are included in Exhibit 13, Drainage and Sediment Control Plan. Existing drainage and sediment control structures in the Castle Gate preparation plant and loadout areas, the Gravel Canyon topsoil stockpile area, and the Crandall Canyon facilities area have been designed and constructed under existing permit approvals for each of these respective areas. The proposed Willow Creek activities will not require modification of any of the existing structures in these areas and the existing structures will be operated and maintained consistent with the plans presented in the following discussions.

area, and clarified discharge water from the mine equipment wash bay, with all runoff volumes calculated on the basis of the 25-year, 24-hour storm event. Sump design provides for initial reduction of suspended solids from the area, have the capacity to skim off any oil or petroleum products which may be in drainage flows, and provide controlled feed to the high capacity suction pump. Sump operation and maintenance will involve periodic inspection of the sump and pumping system components; scheduled maintenance and any required repair or replacement of the pump, piping, and valves; and periodic removal, on an as needed basis of accumulated sediments from the sump box. CPMC will stock a replacement pump which can be installed within 24 hours in the event of pump failure. The sump has been designed to facilitate cleanout which will involve removal of the baffle plate and the use of a skid steer loader, small wheel loader, or backhoe to remove the accumulated sediments which will be loaded into a truck and hauled to the coal refuse disposal area.

**Alternative Drainage and Sediment Control Measures** - Alternative drainage and sediment control measures will be utilized for initial construction activities and for required construction activities in or adjacent to Willow Creek as discussed in Section 4.5.2.1, General Description of Mine Construction and Development Activities, in conjunction with any disturbance adjacent to either Willow Creek or the Willow Creek buffer zone during the initial revegetation period, and in areas where the isolated nature of the area or specific site conditions would result in excessive disturbance for full scale drainage and sediment control or where full-scale controls are infeasible. Alternative drainage and sediment controls will be utilized in the following specific areas:

- Initial construction areas
- Construction areas in or adjacent to Willow Creek
- Road fill and embankment outcrops adjacent to the Willow Creek stream buffer zone
- The Willow Creek Soil/Substitute Stockpile
- A small area at the east end of Rock Tunnel No. 2
- The mine water and fire-fighting reserve tank area
- Methane degassification well sites and their access roads

Detailed descriptions of these areas, discussion of the alternative sediment control measures to be implemented, and requests for individual small area exemptions, as appropriate, are included in Exhibit 13, Drainage and Sediment Control Plan except for methane degassification wells and their access roads as discussed below. It should be noted that alternative sediment controls for road fill and embankment outslope areas will consist of silt fencing and will only be required as a interim control measure until temporary vegetative cover is established.

Degassification wells and their access roads will have alternative sediment controls consisting of roughening of the ground surface and vegetative cover for the well site. All of the well sites except for the immediate area of the well heads will be reclaimed as soon as the wellheads are constructed, therefore there will only be a very small area (generally 5 feet by 5 feet) with no control at each site. Degassification well access roads will remain until reclamation of the well sites; no special controls will be provided unless site specific drainage problems dictate controls are necessary. The two proposed well sites are located on the top of a ridge where the access road will be well protected from any drainage control problems.

## **Soil Stockpiles**

Soil stockpiles will be utilized for temporary storage of those materials which will be used as vegetative growth media in reclaiming mining related disturbance. Stockpile location and construction will, to the extent operationally feasible, minimize exposure to wind and water erosion and protect the soil resource from loss, contamination, or further disturbance prior to final use for site reclamation. There are three existing soil stockpiles, one located in Gravel Canyon immediately west of U.S. Highways 6 and 50 which will be utilized in reclaiming the Castle Gate preparation plant and loadout disturbance areas, and two in the Crandall Canyon area which will provide soil material for reclamation of the Crandall Canyon facilities area and access road. One new soil/substitute stockpile will be constructed using available material from the proposed Willow Creek mine surface facilities area. The new soil stockpile will be located on the west side of an existing rock outcrop known as "Devil's Slide" near the western limit of the proposed mine surface facilities area as shown on the Mine Surface Facilities Map, (Map 18). This area is isolated from the proposed surface disturbance and operations and the rock outcrop provides a natural barrier to protect the pile from wind erosion. The proposed soil stockpile will cover an area of approximately 1.5 acres and contain approximately 75,700 cubic yards of material.

Basic soil handling and stockpile construction practices are described in Section 4.2.2, Soil Salvage, Handling, and Storage. The stockpiled material will be protected from erosion, contamination, and loss by placement in a controlled manner with sideslopes at 3H:1V or less, seeding with a temporary vegetative cover, posting with durable signs reading "Soil Stockpile - Keep Off", and the use of appropriate drainage control measures.

Drainage control for the new stockpile will be provided by a perimeter berm at least 2 feet high with 3H:1V sideslopes which will provide sufficient retention capacity to contain all runoff from the pile resulting from a 25-year, 24-hour storm event. Stockpile maintenance for both the new and the existing stockpiles will involve periodic inspections of stockpile areas to verify that marker signs are in-place and readily visible, to identify any significant erosion, and to assure that the associated drainage control measures are in-place and functioning properly. Any problems noted during the inspections will be addressed in a timely manner with repair of any significant erosion, supplemental seeding if necessary, and clean-out and repair of drainage structures.

## **Roads**

In conjunction with the proposed mining and related operations CPMC will construct, operate and maintain a number of new roads and will operate and maintain several existing roads. Both new and existing roads will be utilized to access existing and proposed facilities and for transportation of personnel, equipment, and supplies. All roads are classified as primary roads except for a short access road to two methane degassification wells in Section 30, Township 12 South, Range 10 East as shown on Map 30, Degassification Wells, Surface Facilities Map.. The primary road classification includes any road used for transporting coal or spoil, roads which are used frequently for periods exceeding 6 months, and roads which will be retained to support the postmining land use. Given that both coal and mine development waste will be transported by conveyor, the only road to be utilized for transportation of mine waste or coal processing waste will be Road PR-4 from the Castle Gate preparation plant to the Schoolhouse Canyon coal refuse stockpile. The other roads, however, will be utilized on a frequent, long-term basis to support the proposed mining and related operations. One ancillary road is planned to access two degassification wells as previously mentioned. This road will be constructed during an exploration activity and will be of standard and ordinary exploration road design. Since access to the degassification wells will be very infrequent (2-3 times per year) and since no coal or spoil will be transported on it the road does not meet the primary road criteria. Existing and proposed roads which will be used in conjunction with the proposed mining and related operations include the following:

### **Proposed Roads in Willow Creek Facilities Area**

- PR-1 Primary mine access road for the proposed surface facilities area
- PR-2 Primary mine access road to the Willow Creek run-of-mine coal stockpile area
- PR-5 Primary access road to the mine water and fire-fighting reserve tank installation
- PR-6 Primary access road to the mine ventilation fan area
- PR-7 Primary access road to Sedimentation Pond 001 and Conveyor SC-4

### **Existing Roads in Castle Gate Preparation Plant and Loadout Areas**

- PR-3 Primary access road for the preparation plant and loadout areas
- PR-4 Primary access road to the Schoolhouse canyon coal refuse facility
- PR-8 Primary access road to the west end of Rock Tunnel No. 2 and the transfer point between Conveyors SC-5 and SC-6
- PR-9 Primary access road to the truck dump grizzly

### **Existing Road in Gravel Canyon Soil Stockpile Area**

- PR-10 Primary access road to the Gravel Canyon soil stockpile

### **Existing Road in Crandall Canyon Facilities Area**

- PR-11 Primary access road to Crandall Canyon facilities area

**Proposed Road To Degassification Wells**

AN-1 Ancillary access road to 2 methane degassification wells in Section 30, Township 12 South, Range 10 East

All existing and proposed roads are shown on the Mine Surface Facilities Map, (Map 18), on Map 30, Degassification Wells, Surface Facilities Map, and in Exhibit 20, Crandall Canyon Operations Plans.

Design and Construction - All roads have been or will be located and constructed to the extent operationally feasible in the most stable areas available and outside of the channel of intermittent or perennial streams. Road design and construction plans will prevent damage to public or private property; minimize the potential for downstream flooding or sedimentation; reflect consideration of the size of vehicles which will be using the road, traffic volume, and normal speeds; and to the extent possible, using the best technology currently available, minimize adverse impacts on fish, wildlife and related environmental values.

All roads have been designed to provide for effective drainage, long-term stability, and safe vehicle operations under varying weather conditions. Design and construction of all primary roads will be certified by a qualified Registered Professional Engineer as meeting these criteria.

Design and construction practices for specific roads will be dependent primarily on site conditions and the nature and frequency of anticipated use. The primary mine access road (PR-1) will provide access to most of the mine surface facilities and will be utilized for transportation of personnel, equipment, and supplies. Because it will handle a relatively heavy traffic volume and must provide safe operating conditions year-round, Road PR-1 will be a paved asphalt road with all-weather travel surface. The other primary roads will also be utilized on a year-round basis but the associated traffic levels will be significantly lower so these roads have been designed and either are or will be constructed with an adequate compacted road base and gravel or similar durable granular surfacing. The ancillary roads will be used on a periodic or intermittent basis with relatively low traffic volumes and use will typically be year-round. These roads either have been or will be constructed with a graded road base and limited compaction, and will typically be surfaced with granular overburden material, although gravel may be used where appropriate to minimize maintenance requirements and improve access conditions.

Road construction will involve cut and fill earthwork operations using tractor scrapers, tracked dozers, and motor graders. No potential acid or toxic-forming materials will be utilized in road construction or as road surfacing materials. Cut and fill slopes will be established at maximum grades of 2.5H:1V except in rock where slopes may be as steep as 0.5H:1V dependent on the characteristics of the rock. Typical road construction practices, road configuration, and dimensions for the two road classifications are illustrated by Figure 4.5-9, Typical Primary Road Configuration. Road gradients will vary from flat to a maximum of approximately 10 percent and any required road embankments will be constructed and compacted in a controlled manner to provide a minimum static factor of safety of 1.3. All road cut and fill slopes will be revegetated as soon as reasonably practical following construction using the temporary revegetation seed mixture to stabilize the slopes and minimize erosion potential. Road surfaces will be graded or crowned to prevent accumulations of water on the road surface and adequately sized ditches and culverts will be installed and maintained to effectively carry road and other disturbed area drainage. Adequate cover will be provided over all culvert crossings to prevent damage or collapse of the culverts and culverts have been designed and will be installed to prevent plugging, erosion at the culvert inlet or outlet, and any drainage over the road surface. The locations of all proposed ditches are shown on the Drainage and Sediment Control Plan Maps, (Maps 23A through 23F) and ditch designs are included in Exhibit 13, Drainage and Sediment Control Plan.

Ancillary roads will be constructed using cut and fill operations with equipment as necessary for the intended use. Typically, these roads will be side cast construction with drainage structures as required. The road surface will typically be native materials with no surfacing. Compaction of the top 4 inches of road surface will be accomplished with the same equipment used to excavate the road.

Operation and Maintenance - Operation and maintenance procedures for all mine roads are designed to provide a smooth operating surface, assure safety, and minimize dust emissions. Road maintenance will involve periodic grading to provide a smooth surface, remove rocks or debris, and maintain effective drainage; repair and resurfacing as necessary; inspection, clean-out, and repair of ditches and drainage structures; and watering or application of surfactants to control dust during dry periods. Generally, speeds on roads and in active operating areas will be limited to 25 miles per hour by posted speed limits both as a safety consideration and to minimize dust emissions from unpaved roads. In the unlikely event that any road is damaged by a catastrophic event such as an earthquake or flood, CPMC will make appropriate repairs as soon as reasonably practicable and will limit the use of the road or provide an alternate access if unsafe conditions exist.

Description of Individual Structures - The following sections provide more detailed information for specific roads and associated structures:

Road PR-1, Willow Creek Stream Buffer Area and Stream Protection Berm, Main Road Culvert Crossing, and Main Access Road Bridge - The main mine access road (Road PR-1) will cross Willow Creek in two locations and will parallel the creek for almost the entire length of the proposed surface facilities area. Because construction of this road will involve crossing, alteration, and relocation of portions of a natural drainageway, specific UDOGM approvals under applicable provisions of Rules R645-301-527.220 and 742.412. It should be noted that much of the Willow Creek channel through the proposed mine surface facilities area has previously been relocated and modified and so does not represent a natural undisturbed stream channel. Where Road PR-1 parallels Willow Creek, a stream protection berm approximately three feet high with 3H:1V

sideslopes will be constructed along the edge of the road or any associated roadside ditch on the side nearest the stream. This berm will provide a means of physically separating the proposed mining and related activities from the stream and will serve as one edge of a restricted access stream buffer zone.

temporarily stored in designated scrap yards located in storage areas as shown on the Mine Surface Facilities Map, Proposed Configuration and Facilities, (Map 18B). Dumpsters will be located primarily near buildings during mine operations, however, during construction they may be located throughout the disturbed area. Most of the waste oil from the maintenance shop facility will be collected in a waste oil sump and recycled to a one of two waste oil storage tanks for use in the shop facility waste oil heater. The waste oil will be mixed with fuel oil only after sampling and analysis to verify that the waste oil meets strict EPA requirements. Waste oil and fuel oil feed rate and mixture will be adjusted as necessary based on waste oil availability and shop heating requirements. Any waste other waste oil and lubricants and any waste oil not meeting the applicable EPA requirements will be collected and stored in either closed drums or in the waste oil storage tank located in the maintenance shop building. Temporary storage areas for waste oil and lubricants will provide full containment to prevent accidental release of petroleum products to the surface drainage system.

CPMC does not currently plan or anticipate that any materials classified as "hazardous waste" will be utilized or generated in conjunction with the proposed mining and related operations. In the unlikely event that hazardous materials storage or disposal become necessary, CPMC will comply with all applicable storage, labelling, and documentation requirements, and disposal will occur off-site at a licensed hazardous waste disposal facility.

A contract disposal service will regularly collect and haul the noncoal solid wastes from the dumpsters to the permitted Carbon County municipal landfill. Dependent on the market for scrap materials, the larger noncoal solid waste and scrap will be collected periodically either by a salvage contractor for salvage and recycling or by a contract disposal firm which will haul these material off-site and dispose of it in a suitable disposal site. Any waste oil, lubricants, or other potentially combustible materials will be collected and either recycled or disposed of by a licensed disposal contractor in accordance with all applicable Utah and EPA regulations. No noncoal wastes will be disposed of on site during active operations except for mining waste generated in the mining process. As described in the previous section, this material will be disposed of in the Schoolhouse Canyon coal refuse stockpile.

## **Mine Ventilation**

The primary mine ventilation fans will be large diameter blowing axial vane fans capable of delivering over 600,000 cubic feet per minute of fresh air to the underground mine workings. Mine intake air from these fans will enter the underground mine workings through the 15 foot diameter primary ventilation raise previously described under the sub-heading of Mine Openings. From the ventilation raise, intake air will be distributed through the mine by the network of main, sub-main, headgate, and bleeder entries with airflow controlled by both permanent and temporary stoppings. From mine working areas, exhaust airflow will be carried by bleeder, tailgate, sub-main, and main entry exhaust airways discharging from the mine portals. The mine ventilation system has been designed using accepted mine ventilation design and engineering practices to meet all applicable MSHA requirements and provide for continuous effective ventilation of the active mine workings. Based on the planned extent of the mine workings, anticipated methane liberation and dust generation rates, and probable mining conditions the primary ventilation fan should provide adequate ventilation capacity for at least the first five years of mine development and production. Subsequent mine advance and expansion may require development of additional ventilation facilities to assure continued effective airflow and ventilation of the underground workings.

Mine ventilation facilities will include the primary ventilation raise, steel fan doors, the two primary ventilation fans and electric drives, fan control and monitoring systems, fan shroud structure with pressure relief panels, dual propane-fired fan heaters, the mine fan electrical substation, fan emergency generator, and propane storage tanks. The location and configuration of these structures are shown on the Mine Surface Facilities Map, (Map 18). Operation and maintenance of the mine ventilation system will involve regular inspection and monitoring of the ventilation fans and associated systems and structures to assure that they continue to operate at all times as designed and in compliance with applicable MSHA requirements. The mine fans will be controlled and monitored by automated systems which will provide a warning of any fan malfunctions.

Two degassification wells are necessary to reduce the risk of methane gas ignitions and possible mine fires. The degassification wells will be installed before longwall mining begins and will be in the gob area after longwall mining passes the wells. The well casing with perforated pipe will end above the coal seam approximately 30 to 50 feet so the casing or collection pipe will not be damaged by the longwall machinery. After the longwall passes the location of the degassification wells the roof rock will crack creating conduits for the methane. The perforated casing or pipe will act as a stack or vent to the outside atmosphere thus preventing the buildup of potentially dangerous levels of methane.

## **Mine Drainage Control and Dewatering**

As described in both Sections 3.7.2, Ground Water Information, and 4.5.2.2, General Description of Mine Plans, Mining Methods, and Related Design Requirements, potential mine inflows are expected to be minimal and there will be sufficient storage capacity in both the existing abandoned underground mine workings and in inactive working areas that transfer of mine drainage to the surface water system is unlikely. If it becomes necessary to dispose of any

excess mine drainage, the water would be pumped from the mine to the disturbed area surface drainage network which would route the water to Sedimentation Pond 001. Since the disturbed area collection ditches, associated culvert structures, and Pond 001 will all be constructed to provide significant excess water handling capacity, mine discharge to this system would not significantly reduce its capacity to

## 5.4 RECLAMATION OF MINING DISTURBANCE

### 5.4.1 General Description of Reclamation Plans

This section presents and describes reclamation plans and practices to be used to restore disturbed areas resulting from mining and related activities to productive self-sustaining use. Information in this section was developed in accordance with applicable regulatory requirements (R645-301-500) for coal mine permitting in the State of Utah.

#### 5.4.1.1 Applicable Regulatory Sections Addressed

Specifically, this section addresses Rules R645-301-511, 541 through 553, and 560. The following cross-references headings and corresponding information presented in this section to the applicable regulatory provisions;

<u>Permit Section</u>	<u>Applicable Regulatory Requirements</u>
5.4.1	
5.4.1.1	General Introductory Information
5.4.1.2	R645-301-511.300 and 541.100 through 400
5.4.1.3	R645-301-553.500 through 524, and 553.600 through 653
5.4.1.4	R645-301-512.200 through 260 and 515.320 through 322
5.4.1.5	R645-301-512.200 through 260 and 542.200 through 320
5.4.2	
5.4.2.1	R645-301-542.100 and 500
5.4.2.2	R645-301-541.100 through 400 and 542.200
5.4.2.3	R645-301-542.300 through 800, 550 through 553.900, and 560
5.4.3	R645-301-542.800
Maps	R645-301-512.200 through 260 and 542.200 through 320
Exhibits	R645-301-542.800

#### 5.4.1.2 General Reclamation Objectives and Activities

Reclamation will be an integral part of the Willow Creek mining and related activities, however, because the mine will be an underground mine and the surface facilities and related surface disturbance areas will remain in place until the end of the mine life, mining and reclamation will not occur concurrently or, in the case of progressive mining activities, sequentially. Reclamation of surface disturbance areas will generally occur following the cessation of mining operations to complete the mining and reclamation cycle although CPMC will implement temporary stabilization measures in certain areas following initial construction or during ongoing operations, including progressive reclamation of the Schoolhouse Canyon refuse stockpile. Methane degassification wells will generally be reclaimed after the longwall district, or block of longwall panels has been completed and sealed. As a general rule, the degassification wells will be needed for approximately five years. Reclamation of degassification wells and access roads will follow the plan and practices discussed under sections 5.4.2.2, and 5.4.2.3, and well sealing and reclamation as discussed in Section 4.1.2.6.

Objectives of the planned reclamation activities will be twofold; 1) For construction disturbance and ongoing surface disturbance such as that associated with expansion of the coal refuse stockpile, temporary stabilization and contemporaneous reclamation will serve to stabilize disturbance areas, minimize erosion, and limit potential surface

water impacts; 2) For long-term use areas, final reclamation is designed to restore disturbed areas to a safe, stable condition and to reestablish the productivity of the land consistent with the postmining land use(s). The proposed postmining land use of wildlife habitat reflects the predisturbance use of this and adjacent areas, existing land use plans and policies, the desires of affected surface landowners, and practical constraints relative to land use capability and condition. Specific land use considerations and constraints are discussed in Section 3.4, Land Use Information. The Willow Creek reclamation plan has been designed to successfully meet these objectives and will result in effective temporary stabilization, and a postmining configuration which blends with the surrounding terrain and provides environmental values consistent with or superior to those which existed prior to mining.

The Willow Creek reclamation plan has been developed utilizing available information on the existing environmental resources as described in Section 3.0, Environmental Information. In addition, CPMC has incorporated both available information on current successful reclamation technology and practices and their extensive operating experience in the area. While the plans presented in this permit represent what CPMC feels to be the most effective reclamation practices for this site, it is important to note that successful reclamation must be a dynamic process, incorporating new information to optimize overall effectiveness. In order to meet the reclamation objectives these plans may be modified as appropriate to reflect changing conditions, revised regulatory requirements, advances in reclamation technology, and the results on ongoing research and experience relative to the long-term effectiveness of various reclamation practices. Any future plan modifications will be addressed under applicable regulatory requirements for permit revision and modification.

Reclamation will involve a logical sequence of activities designed to achieve the overall reclamation objectives in an organized progressive manner. The following represent the general steps for reclamation of any mine or mine related surface disturbance areas:

- Facility Demolition and Removal
- Stabilization and Sealing of Mine Openings
- Disposal of Coal Refuse, Non-Coal Wastes, and Mine Waste Materials
- Backfilling and Grading to Establish the Final Design Configuration
- Drainage Reestablishment
- Road Removal
- Soil/Substitute Replacement
- Revegetation
- Post-Reclamation Management, Maintenance, and Monitoring
- Removal and Reclamation of Sedimentation Ponds and Associated Structures

These activities are discussed in detail in the following sections.

#### **5.4.1.3 Proposed Variances from Regulatory Standards**

Due to previous mining and other disturbance of the area there is not sufficient available spoil to completely backfill all highwalls. Given that the Willow Creek development activities effectively constitute remaining of the previously disturbed areas which included a preexisting highwall, under the applicable regulatory provisions dealing with remaining of previously mined areas (R645-301-553.500 through 524). Since the requirements of Rule R645-301-553.500 apply, a variance from the AOC restoration requirements is not necessary.

#### **5.4.1.4 Certification and Reporting**

Rule R645-301-512 specifies that certain designated cross-sections, maps, and plans be prepared by or under the direction of a qualified Registered Professional Engineer (PE) and that certain maps and design plans be certified by a PE. Consistent with this requirement, the following components which relate to this permit section meet the regulatory supervision and certification requirements:

- Previous Mining Activity Map, (Map 10)
- Regional Land Use Map, (Map 9)
- Mine Surface Facilities Map, (Map 18A)
- Sedimentation Pond Maps, (Maps 24 through 27)
- Willow Creek Diversion Design Maps, (Maps 28 through 29)
- Mine Surface Facilities Area - Postmining Topography Map, (Map 21A)
- Mine Surface Facilities Area - Premining/Postmining Cross-Sections, (Map 22)

more stable slopes, reduce overall highwall and cut exposures, provide for more effective drainage, and offer better blending of the area with the surrounding terrain.

During final backfilling and grading operations, drainage and sediment will be controlled by those components of the drainage and sediment control network retained as part of the interim drainage system or by site-specific alternative sediment control practices.

Backfilling and grading will involve the use of tractor scrapers, tracked dozers, wheel loaders and trucks, and motor graders, as necessary to recover, move, place, grade, and compact backfill materials. Generally, backfill material will be placed in relatively uniform lifts and will be compacted by normal equipment traffic. Backfilled areas will be sloped and graded to promote effective drainage and to the extent operationally feasible long unbroken fill slopes will be avoided to minimize sheet flow and potential resultant erosion. Fill slopes will be limited to a maximum slope of approximately 3H:1V and graded slopes in native material will vary dependent on material from less than 5H:1V to as much as 0.5H:1V in competent rock consistent with slope stability considerations as documented in Exhibit 11, Geotechnical Investigations. Recommended slope limitations for final cut and fill slopes will result in slope configurations having a static factor of safety of at least 1.3. The design safety factor for any benched slopes is 1.5. Graded areas will incorporate undulations consistent with the surrounding terrain and the postmining drainage configuration and the surface of graded areas will be left in a roughened condition to minimize runoff and erosion in the interim before soil/substitute replacement, improve bonding between the regraded surface and soil/substitute materials, and increase infiltration to maximize soil moisture levels and promote revegetation. Regraded surfaces will be deep (up to 3 feet) ripped and finely chopped native hay from the current seasons crop will be applied to increase organic content, provide soil biota, and increase infiltration and moisture holding capacity.

Under the applicable regulatory provisions dealing with remaining of previously mined areas (R645-301-553.500 through 524), the planned backfilling and grading operations will utilize all available spoil material to eliminate remaining highwall and cut slope exposures to the maximum extent technically practical. Fill material placed against highwall and cut slope areas will be placed and graded to assure long-term stability and final slopes will provide for effective drainage and be compatible with both natural slopes in the area and the postmining land use of wildlife habitat. Highwall and cut slope exposures remaining after backfilling and regrading will be no more than 10 to 30 feet high, will be in competent rock materials similar to the natural cliff exposures in the immediate area which range from 10 to over 100 feet in height, and will have an aesthetic appearance and geomorphic characteristics similar to these natural rock exposures.

### **Drainage Reestablishment**

In conjunction with final backfilling and grading activities, CPMC will establish a postmining drainage configuration which is compatible with the natural drainage pattern of the surrounding terrain, will effectively route natural drainage from upgradient areas through the reclaimed area with minimal erosion or increase in sediment concentrations, and will effectively control drainage and erosion in the reclaimed areas. The design postmining drainage configuration is shown by the Mine Surface Facilities Area - Postmining Topography Map, (Map 21A). Permanent diversions carrying undisturbed drainage have been designed and will be constructed through the reclaimed area to route undisturbed flow directly to Willow Creek. During the extended liability period, disturbed area runoff from the reclaimed areas will continue to be collected and routed to the sedimentation ponds which will be retained until UDOGM issues a determination of reclamation success based on successful vegetative reestablishment and restoration of pre-disturbance surface runoff water quality. Following this determination, all temporary ditches, sedimentation ponds, and the Willow Creek culvert crossing will be removed and reclaimed. Additional discussion of postmining drainage reestablishment is provided in Section 5.5, Hydrologic Restoration.

### **Road Removal**

Certain roads within the mine facilities area will continue to provide access to specific areas during both reclamation and the extended liability period, although most roads will be removed and reclaimed during final site reclamation. Generally, the access roads will be removed and reclaimed in two phases. The first phase will involve ripping of these roads and removal of the associated road surfacing materials. This phase will occur in conjunction with facility demolition and removal and the surfacing materials removed will be placed in the designated solid waste disposal areas as previously discussed. The second phase of road removal will be sequenced to coincide with backfilling and grading of the areas that the roads either provide access to or pass through. When roads are no longer needed, they will be removed and the associated disturbance areas will be regraded and reclaimed.

For isolated erosional problems, where channelization of surface runoff has resulted in the creation of one or more gullies one foot or greater in depth, both upslope drainage and the nature of the erosional damage will be evaluated and addressed as appropriate. If upslope drainage is the primary causative factor, localized measures to control flow velocities or distribute flow will be implemented including placement of straw bales or large riprap to break up concentrated flows; establishment of berm or contour furrows to temporarily divert flows away from problem areas; and localized placement of fill, reseeding, and placement of straw bales, sediment fences, or erosion control materials to allow the damaged area(s) to stabilize.

Any seeding failures or weed infestations identified by the post-reclamation management inspections will be addressed during appropriate time periods to achieve optimal mitigation. Any areas where partial or complete seeding failure is indicated by limited vegetative reestablishment or excessive dominance of one or more species will be addressed by reseeding the effected areas during either the early spring or late fall. Essentially the same seeding methods will be utilized as for initial seeding with the exception of seedbed preparation. Any significant weed infestations will be addressed through consultation with UDOGM to determine appropriate control measures. If the controls determined through this consultation process involve the application of herbicides, only those chemicals approved for use by the appropriate State and Federal agencies will be considered and control practices will be limited to spot application at the appropriate time period for best control of the problem species. selective herbicides

#### **Removal of Drainage and Sediment Control Structures**

Those drainage and sediment control structures necessary to collect and control disturbed area drainage from reclaimed areas will remain in place until the end of the extended liability period when UDOGM issues a determination that the site has been successfully reclaimed based on revegetation success and restoration of runoff water quality. Generally, reclamation of drainage and sediment control structures will involve backfilling and grading all temporary ditches to conform to the established grade of the surrounding terrain; draining sedimentation ponds, removing the discharge structures, pushing the pond berms into the open basin area, and regrading the pond area to blend with the surrounding terrain; replacing stockpiled soil/substitute materials on the regraded areas; and revegetating the reclaimed areas. During final pond removal and reclamation, drainage and sediment from the pond areas will be controlled by alternative sediment control measures including temporary berms, straw bales, silt fences, or other appropriate site specific control measures.

#### **5.4.3 Reclamation Cost Estimate**

Consistent with applicable regulatory provisions (R645-301-542.800 and R645-301-800) which require that reclamation bonding calculations be based on an approved reclamation plan, CPMC has developed a detailed reclamation cost estimate based on the preliminary UDOGM determination that the reclamation plan is acceptable. The detailed estimate includes costs for all activities described in the approved plan with specific consideration of the areas to be reclaimed and the nature and difficulty of required reclamation efforts. Additional information on the reclamation cost estimate and related bonding considerations is provided in Section 6.1, Bonding Information, and the detailed bond reclamation cost estimate has been provided for insertion as Exhibit 17, Bonding and Insurance Information.



# State of Utah

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April 28, 1998

Johnny Pappas, Senior Environmental Engineer  
AMAX Coal Company  
P.O. Drawer PMC  
Price, Utah 84501

Re: Degasification Wells, Cyprus Plateau Mining Company, Willow Creek Mine, ACT/007/038-97K, File #3, Carbon County, Utah

Dear Mr. Pappas:

The referenced amendment is hereby approved effective April 28, 1998. A stamped approved incorporated copy is enclosed for insertion in your mining and reclamation plan.

If you have any questions please call.

Sincerely,

Joseph C. Helfrich  
Permit Supervisor

tat  
Enclosure

cc: Ranvir Singh, OSM  
Richard Manus, BLM  
Mark Page, Water Rights, w/o  
Dave Ariotti, DEQ, w/o  
Bill Bates, DWR, w/o  
David T. Terry, SITLA, w/o  
Price Field Office

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State of Utah  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt  
Governor  
Ted Stewart  
Executive Director  
James W. Carter  
Division Director

1594 West North Temple, Suite 1210  
Box 145801  
Salt Lake City, Utah 84114-5801  
801-538-5340  
801-359-3940 (Fax)  
801-538-7223 (TDD)

February 24, 1998

TO: File

THRU: Joe Helfrich, Permit Supervisor *JH*

FROM: Jess Kelley, Reclamation Specialist *JK*

RE: Inclusion of Degassification Well in Disturbed Area--Round 2, Cyprus Plateau Mining Corporation, Willow Creek Mine, ACT/007/038-AM97K, Folder #2, Carbon County, Utah

**SUMMARY:**

The permittee drilled 2 holes--designated 97-30-5-DG and 97-30-2A-DG-- during the Fall of 1997. The holes were drilled as exploration holes under an exploration permit and were drilled within the permit area. Now, however, the permittee intends to case and cap the holes and use them as degassification wells to remove gas from caved gob areas within the mine. As degassification wells, the holes will no longer be treated as exploration holes, but will be included within the disturbed area and will be subject to the same regulatory requirements--including final reclamation--as other operational surface facilities.

On October 24, 1997, the permittee submitted, for Division review, a plan for changing the exploration holes to degassification wells. The Division found a number of deficiencies in this plan and returned it to the permittee for correction. On January 30, 1998, the permittee resubmitted the plan with the deficiencies corrected. This memorandum constitutes this writer's review of the January 30 submittal. It is written in the standard Division Technical Analysis (TA) format so that it is compatible with the approved TA for this mine site.

**TECHNICAL ANALYSIS:**

**ENVIRONMENTAL RESOURCE INFORMATION**

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR Sec. 783., et. al.

**MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION**

Regulatory Reference: 30 CFR Sec. 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

**Analysis:**

**Affected Area Boundary Maps**

The permittee drilled 2 exploration holes--designated 97-30-5-DG and 97-30-2A-DG--during the Fall of 1997. The permittee intends to case and cap the holes and use them as degassification wells to remove gas from caved gob areas within the mine. As degassification wells, the holes are subject to the same regulatory requirements as other operational surface facilities. Thus, both the wells and the roads created to access them have been included in the disturbed area.

Map 19-A--D-Seam Mine Plan shows the locations of the degassification wells within the permit area. Map 30--Degassification Wells Surface Facilities Map shows the disturbed area as it has been modified to include the degassification wells and the access road. The disturbed area extends 10 feet on either side of the access road and 20 feet around each well.

**Findings:**

The January 30, 1998 submittal fulfills the requirements of this section.

## **OPERATION PLAN**

### **MINING OPERATIONS AND FACILITIES**

Regulatory Reference: 30 CFR Sec. 784.2, 784.11; R645-301-231, -301-526, -301-528.

**Analysis:**

**Facilities and Structures**

The permittee drilled 2 exploration holes--designated 97-30-5-DG and 97-30-2A-DG--during the Fall of 1997. The permittee intends to case and cap the holes and use them as degassification wells to remove gas from caved gob areas within the mine. As degassification wells, the holes will be subject to the same regulatory requirements as other operational surface facilities. Thus, the wells have been included among the other operational surface facilities and are shown on Map 30--Degassification Wells Surface Facilities Map.

**Findings:**

The January 30, 1998 submittal fulfills the requirements of this section.

### **ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES**

Regulatory Reference: 30 CFR Sec. 784.24, 817.150, 817.151; R645-301-521, -301-527, -301-534, -301-732.

**Analysis:**

## **Road Systems**

The permittee drilled 2 exploration holes--designated 97-30-5-DG and 97-30-2A-DG--during the Fall of 1997. The permittee intends to case and cap the holes and use them as degassification wells to remove gas from caved gob areas within the mine.

The degassification wells will not be treated as exploration holes, but will be subject to the same regulatory requirements as other operational surface facilities. Likewise, the road created to access the wells will be another operational road, subject to all the pertinent regulatory requirements.

The degassification well access road will only be used occasionally and is thus classified as an ancillary road. It will have no surfacing material beyond the native material upon it is constructed. It begins approximately 360 feet north of Degassification Well P97-30-2A-DG, extends past the site of that well, and ends at the site of Degassification Well P97-30-5-DG. It is thus approximately 1,000 feet in length.

The degassification wells and the access road are shown on Map 30--Degassification Wells Surface Facilities Map. The disturbed area, as noted on that map, extends 10 feet on either side of the access road and 20 feet around each degassification well.

### **Findings:**

The January 30, 1998 submittal fulfills the requirements of this section.

## **RECLAMATION PLAN**

### **MINE OPENINGS**

Regulatory Reference: 30 CFR Sec. 817.13, 817.14, 817.15; R645-301-513, -301-529, -301-551, -301-631, -301-748, -301-765, -301-748.

### **Analysis:**

The permittee drilled 2 exploration holes--designated 97-30-5-DG and 97-30-2A-DG--during the Fall of 1997. The permittee intends to case and cap the holes and use them as degassification wells to remove gas from caved gob areas within the mine.

The degassification wells will be subject to the same regulatory requirements as other operational surface facilities--including final reclamation. At the end of their useful life, which is expected to last approximately 5 years, the wells will be completely backfilled with cuttings and grouted through water-bearing stretches. Topsoil, which has been bladed to one side for storage, will be redistributed over the pad areas and the access road and the entire area will be reseeded.

### **Findings:**

The January 30, 1998 submittal fulfills the requirements of this section.

## **ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES**

Regulatory Reference: 30 CFR Sec. 701.5, 784.24, 817.150, 817.151; R645-100-200, -301-513, -301-521, -301-527, -301-534, -301-537, -301-732.

### **Analysis:**

The permittee drilled 2 exploration holes--designated 97-30-5-DG and 97-30-2A-DG-- during the Fall of 1997. The permittee intends to case and cap the holes and use them as degassification wells to remove gas from caved gob areas within the mine.

The degassification wells will be subject to the same regulatory requirements as other operational surface facilities. Likewise, the road created to access the wells will become another operational road, subject to all the pertinent regulatory requirements--including final reclamation.

At the end of their useful life, which is expected to last approximately 5 years, the wells will be completely backfilled with cuttings and grouted through water-bearing stretches. Topsoil, which has been bladed to one side for storage, will be redistributed over the pad areas and the access road and the entire area will be reseeded.

### **Findings:**

The January 30, 1998 submittal fulfills the requirements of this section.

## **BONDING AND INSURANCE REQUIREMENTS**

Regulatory Reference: 30 CFR Sec. 800; R645-301-800, et seq.

### **Analysis:**

#### **Determination of bond amount**

The permittee drilled 2 holes--designated 97-30-5-DG and 97-30-2A-DG-- during the Fall of 1997. The holes were drilled as exploration holes under an exploration permit and were drilled within the permit area. Now, however, the permittee intends to case and cap the holes and use them as degassification wells to remove gas from caved gob areas within the mine. As degassification wells, the holes will no longer be treated as exploration holes. Thus, both the wells and the road created to access them must be included within the disturbed area and subject to the same regulatory requirements, including final reclamation, as other operational surface facilities.

The permittee estimates the total cost of reclaiming the degassification wells, well pads and the access road to be \$10,859, in year 2001 dollars. When added to the reclamation cost estimate for the entire mine site, this raises that cost estimate to \$12,009,601, in year 2001 dollars. Since the present bond amount is \$11,949,205, the bond must be raised to at least \$12,009,601.

### **Findings:**

The January 30, 1998 submittal fulfills the requirements of this section. However, the

Page 5  
ACT/007/038-97K  
February 24, 1998

permittee must increase the bond from its present \$11,949,205 to *at least* \$12,009,601 in order to cover the additional costs associated with the reclamation of the degassification wells, well pads, and the access road.

**RECOMMENDATION:**

It is recommended that the Division approve this amendment and include it as part of the approved plan. It is further recommended that the Division require the permittee to increase the reclamation bond, as explained under **BONDING AND INSURANCE REQUIREMENTS** above.

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State of Utah  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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Governor  
Ted Stewart  
Executive Director  
James W. Carter  
Division Director

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Box 145801  
Salt Lake City, Utah 84114-5801  
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801-359-3940 (Fax)  
801-538-7223 (TDD)

February 23, 1998

TO: File

THRU: Joseph C. Helfrich, Permit Supervisor *JCH*

FROM: Jim Smith, Reclamation Specialist *JDS*

RE: Degassification Well Proposal, Cyprus Plateau Mining Corp, Willow Creek Mine, ACT/007/038-97K, File #2, Carbon County, Utah

**SUMMARY**

The Division received the Degassification Well Proposal from Cyprus Plateau Mining Corp on October 24, 1997. Separate Technical Analysis (TA) documents were prepared by James D. Smith and Jesse W. Kelley that were compiled into a final TA dated December 19, 1997.

Cyprus Plateau Mining Corporation's response to the December 1997 TA was received by the Division on January 30, 1998. This submittal contains two copies of most pages, one with redline and strikeout markings and the second ready for insertion into the MRP.

This TA is of that January submittal only and does not discuss sections that were determined to be adequate in the previous December TA.

The four paragraphs concerning soil reclamation that were deleted from pages 4.2-3 and 4.2-3a and three lines concerning erosional gullies that were missing at the top of page 5.4-14 in the October submittal have either been restored or the proposed replacement page has been withdrawn. The information on the pages with changes is adequate to be inserted into the MRP.

Map 19-A is now certified, as is Map 30, which was not included with the October submittal but has been included with this January submittal.

**ADMINISTRATIVE FINDINGS**

**COMPLETENESS**

The information in the proposed amendment is in a format that can be inserted directly into the Willow Creek Mine MRP.

**Findings:**

Information provided in the proposed Degassification Well amendment is considered adequate to meet the requirements of this section.

**TECHNICAL ANALYSIS**

**ENVIRONMENTAL RESOURCE INFORMATION**

**MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION**

Regulatory Reference: 30 CFR Sec. 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

**Analysis:**

**Mine Workings Maps**

Plate 19-A has been submitted in the proposed degassification wells amendment to show location of the degassification wells in relation to projected workings in the D-seam. Map 30 has been submitted to show the locations of surface facilities associated with the degassification wells.

**Certification**

Maps 19-A and 30 are certified.

**Findings:**

Information provided in the proposed Degassification Well amendment is considered adequate to meet the requirements of the Maps, Plans, and Cross-Sections Resource Information section.

**RECOMMENDATION**

Information on geology, hydrology and associated maps, plans, and cross sections in the Degassification Well Amendment is adequate and should be approved to be incorporated into the Willow Creek Mine MRP.



State of Utah  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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Governor  
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801-359-3940 (Fax)  
801-538-7223 (TDD)

March 11, 1998

TO: File DORZ  
PBB  
THRU: Daron Haddock, Permit Supervisor  
FROM: Paul Baker, Reclamation Biologist  
RE: Degasification Wells, Cyprus Plateau Mining Corporation, Willow Creek Mine,  
ACT/007/038-97K, Folder #2, Carbon County, Utah

**SUMMARY:**

Cyprus Plateau Mining Corporation is proposing to convert two exploration drill holes into degasification wells at its Willow Creek Mine. Also, because of some unexpected geological problems, the permittee is proposing to modify its mining plan for the "D" Seam.

Nothing in the proposal is expected to cause any serious problems for biological resources. The mining and reclamation plan identifies some eagle nests in Eagle Canyon and one nest in Price Canyon that would apparently be undermined, but it appears these areas would not be subsided. No other effects on wildlife or threatened or endangered species are anticipated.

**RECOMMENDATIONS:**

The applicant has complied with the requirements of R645-301-300.

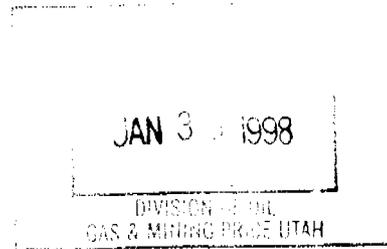


**CYPRUS PLATEAU  
MINING CORPORATION**  
A Cyprus Amax Company

Cyprus Plateau Mining Corporation  
Post Office Drawer PMC  
Price, Utah 84501  
(801) 637-2875

January 29, 1998

Ms. Pamela Grubaugh-Littig  
Utah Division of Oil, Gas and Mining  
1594 West North Temple, Ste 1210  
P.O. Box 145801  
Salt Lake City, Utah 84114-5801



Re: Degassification Well Deficiency Response, Cyprus Plateau Mining Corporation, Willow Creek Mine, ACT/007/038-97K, File #2, Carbon County, Utah

ACT/007/038 #2  
97K-2  
Joc

Dear Ms. Grubaugh-Littig:

Regarding the aforementioned, it is in response to the Division's December 19, 1997, letter. The enclosed has addressed each deficiency listed in the letter.

Please refer to the C1 and C2 forms for revised permit pages and maps. For each text page that required a revision, a copy of the page is included with redline and strikeout for your review, in addition, a copy of each page without redline and strikeout is included for direct insertion into the permit. Where additional text shifted onto a new page, a new page has been added with a lower case number (e.g. 4.2-3a); the new page should be inserted after the page with revised text, in the case of the example, after page 4.2.3. Page 5.4-2 has been included as revised because additional text on page 5.4-1 shifted text to it, and there is not redline strikeout version since there is no revised or added text. Regarding page 4.2-3, it does not change because text was modified during July 1996, under modification ACT/007/038-96C. Page 5.4-14 regarding language on erosional features has been placed back on to page following its unintentional removal.

If you have any questions, please do not hesitate to contact me at (435) 472-4741.

Sincerely,

Johnny Pappas  
Sr. Environmental Engineer

File: ENV2.5.2.12.5.4  
Chrono: JP980112.ltr

# APPLICATION FOR PERMIT PROCESSING

<input checked="" type="checkbox"/> Permit Change	<input type="checkbox"/> New Permit	<input type="checkbox"/> Renewal	<input type="checkbox"/> Transfer	<input type="checkbox"/> Exploration	<input type="checkbox"/> Bond Release	Permit Number: ACT/007/038
Title of Proposal: Addition of two methane degassification wells and mine layout revision.						Mine: WILLOW CREEK
						Permittee: CYPRUS PLATEAU

Description, include reason for application and timing required to implement: Two methane degassification wells are needed in the longwall gob to help prevent possible dangerous accumulations of methane, and impacts to safety or mine employees.

**Instructions:** If you answer yes to any of the first 8 questions (gray), submit the application to the Salt Lake Office. Otherwise, you may submit it to an inspector.

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	1. Change in the size of the Permit Area? _____ acres Disturbed Area? <u>0.8</u> acres <input checked="" type="checkbox"/> increase <input type="checkbox"/> decrease.
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	2. Is the application submitted as a result of a Division Order? DO # _____
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	3. Does application include operations outside a previously identified Cumulative Hydrologic Impact Area?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	4. Does application include operations in hydrologic basins other than as currently approved?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	5. Does application result from cancellation, reduction or increase of insurance or reclamation bond?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	6. Does the application require or include public notice/publication?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	7. Does the application require or include ownership, control, right-of-entry, or compliance information?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	9. Is the application submitted as a result of a Violation? NOV # _____
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	10. Is the application submitted as a result of other laws or regulations or policies? Explain: <u>MSHA concerns</u>
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	11. Does the application affect the surface landowner or change the post mining land use?
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2? <u>No</u> )
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	13. Does the application require or include collection and reporting of any baseline information?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	15. Does application require or include soil removal, storage or placement?
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	16. Does the application require or include vegetation monitoring, removal or revegetation activities?
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	17. Does the application require or include construction, modification, or removal of surface facilities?
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	18. Does the application require or include water monitoring, sediment or drainage control measures?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	19. Does the application require or include certified designs, maps, or calculations?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	20. Does the application require or include subsidence control or monitoring? <u>No change to monitoring plan - same</u>
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	21. Have reclamation costs for bonding been provided for?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	22. Does application involve a perennial stream, a stream buffer zone or discharges to a stream?
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	23. Does the application affect permits issued by other agencies or permits issued to other entities? <u>BLM exploration</u>

Attach 5 complete copies of the application.

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations, herein. (R645-301-123)

John Pappas - Johnny Pappas - Sr. Envir. Engineer 1/29/98  
 Signed - Name - Position - Date

Subscribed and sworn to before me this 29 day of JAN 19 98

Jackie D. Bogdin  
 Notary Public



My Commission Expires 3-15 2001  
 State of UTAH  
 County of CARBON

Notary Public  
**JACKIE D. BOGDIN**  
 104 Helper Drive  
 Helper, Utah 84526  
 My Commission Expires  
 March 15, 2001  
 State of Utah

RECEIVED  
 Received by Oil, Gas & Mining

JAN 30 1998

O&G & M

ASSIGNED TRACKING NUMBER

## Application for Permit Processing Detailed Schedule of Changes to the MRP

Title of Application:  Addition of two methane degassification wells and mine layout revision.	Permit Number: ACT/007/038 <hr/> Mine: WILLOW CREEK <hr/> Permittee: CYPRUS PLATEAU
--	---

Provide a detailed listing of all changes to the mining and reclamation plan which will be required as a result of this proposed permit application. Individually list all maps and drawings which are to be added, replaced, or removed from the plan. Include changes of the table of contents, section of the plan, pages, or other information as needed to specifically locate, identify and revise the existing mining and reclamation plan. **Include page, section and drawing numbers as part of the description.**

			DESCRIPTION OF MAP, TEXT, OR MATERIALS TO BE CHANGED
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	List of Figures, page LOF-ii in Volumes 1, 2, & 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	List of Maps, page LOM-ii in Volumes 1, 2, 3, 4, 5, 6, & 7
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Map 19A in Volume 6
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.2-3a in Section 4.2, Volume 3
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.2-3b in Section 4.2, Volume 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-27 in Section 4.5, Volume 3
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-27a in Section 4.5, Volume 3
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Figure 4.5-17, Page 4.5-27b to Section 4.5, Volume 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-37 in Section 4.5, Volume 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-39 in Section 4.5, Volume 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-47 in Section 4.5, Volume 3
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-47a to Section 4.5, Volume 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-48 to Section 4.5, Volume 3
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-48a to Section 4.5, Volume 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-49 in Section 4.5, Volume 3
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-49a to Section 4.5, Volume 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-55 in Section 4.5, Volume 3
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 4.5-55a to Section 4.5, Volume 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Pages 5.4-1 and 5.4-2 in Section 5.4, Volume 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 5.4-11 in Section 5.4, Volume 3
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Page 5.4-14 in Section 5.4, Volume 3
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Map 30 to Volume 7
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	

Any other specific or special instructions required for insertion of this proposal into the Mining and Reclamation Plan?

Where text has been revised, two copies of the revised pages are attached, one copy shows the revisions in redline/strikeout, and the second copy is revised for direct insertion into the MRP without redline/strikeout. In some cases, the addition of text shifts text to the next page of MRP text, in this case the page is given a number such as 4.5-23a and the text does not change. In this case simply insert the new page of text after the page 4.5-23.