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DIVISION OF OIL, GAS AND MINING

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February 25, 2002

Mike Glasson, Environmental Coordinator  
Andalex Resources, Inc.  
P. O. Box 902  
Price, Utah 84501

Re: Midterm Review, Andalex Resources Inc., Wildcat Loadout, C/007/033-MT01, Outgoing File

Dear Mr. Glasson:

The Division received your response to the Midterm review at the Wildcat Loadout on January 15, 2002. The review has been completed and the results are enclosed for your information and further attention.

You will note that two deficiencies still remain in your plan. Please examine the findings of deficiency carefully and provide a response that addresses them by no later than March 29, 2002.

If you have any questions, please don't hesitate to call.

Sincerely,

A handwritten signature in black ink that reads "Daron R. Haddock".

Daron R. Haddock  
Permit Supervisor

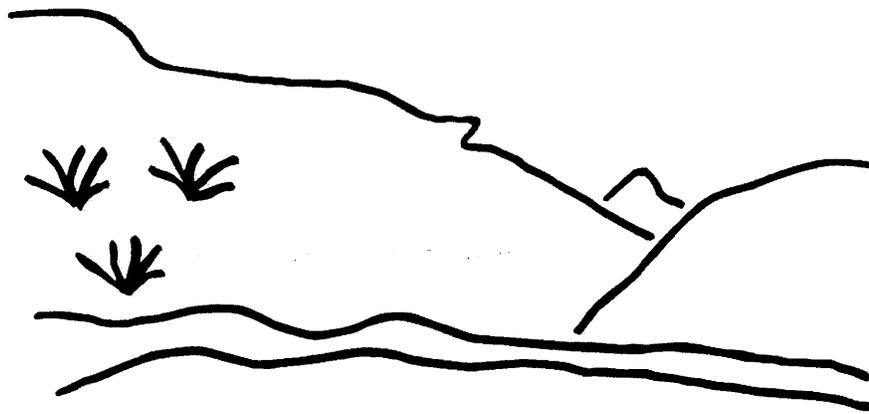
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Enclosure

cc: Price Field Office

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# State of Utah



## Utah Oil Gas and Mining

### Coal Regulatory Program

Wildcat Loadout  
Midterm Review  
C/007/033-MT01-1  
Technical Analysis  
February 21, 2002

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INTRODUCTION

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## TECHNICAL ANALYSIS

### INTRODUCTION

As part of the Division's midterm permit review process, sections of the Wildcat mining and reclamation plan were reviewed for compliance with the R645 Coal Mining Rules. A field visit / partial inspection was made on November 8, 2001, with Mike Glasson representing the permittee, and Wayne Western, Daron Haddock, Jim Smith and Peter Hess representing the Division.

The inspection of the Wildcat site and the review of certain sections of the MRP indicated that three items needed to be addressed:

#### **Findings:**

**R645-301-731.211, -221, -222.1,** 1) Total iron needs to be added to Table IV-10 (Water Quality Parameter List) in the Wildcat MRP. 2) Table IV-10 is unclear in that analyses for metals and ions should be for dissolved rather than total concentrations (except for total iron and total manganese). Analyses should be performed for total and dissolved iron, and for total and dissolved manganese.

**R645-301-742.200,** 1) The berm at the east end of the south part of ASCA #1 needs to be rebuilt to reestablish the integrity of the sediment control in this area. 2) It appears that some runoff from the south part of ASCA #1 is not treated but reports to sediment pond "E". If the water that leaves this ASCA does not report to the pond, the straw bales at the outlet of the culvert that drains the ASCA need to be maintained. If this runoff reports to sediment pond "E", the plan should be modified to clearly show the sediment pond is the treatment for this area. 3) At ASCA #1 north of the tracks, straw bales or silt fence need to be placed at the drain points through the berm, specifically along the railroad right-of-way. 4) Part of ASCA #3 and all of ASCA #4 are using vegetation as sediment control, but this is not indicated on Plate 2. If vegetation is to be one of the sediment control methods to be used in these areas, the effectiveness of vegetation as sediment control needs to be evaluated and the plan needs to be updated to show sediment control by vegetation in these areas. 5) The permittee should consider changing the treatment for the smaller area of ASCA #5, which is outside the berm, from straw bales to vegetation only. This would require showing that the established vegetation is as effective as the bales, via hydrologic / engineering analysis.

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**R645-301-121.200, -512.100, -512.200**, All maps in the MRP, but especially Plate 2, should be checked for completeness and accuracy and corrected as needed.

Each regulation, with its requirements will be addressed in conjunction with the permittee's response.

**SUMMARY OF OUTSTANDING DEFICIENCIES**

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## SUMMARY OF DEFICIENCIES

*The Technical Analysis of the proposed permit changes cannot be completed at this time. Additional information is requested of the permittee to address deficiencies in the proposal. A summary of deficiencies is provided below. Additional comments and concerns may also be found within the analysis and findings made in this Draft Technical Analysis. Upon finalization of this review, any deficiencies will be evaluated for compliance with the regulatory requirements. Such deficiencies may be conditioned to the requirements of the permit issued by the Division, result in denial of the proposed permit changes, or may result in other executive or enforcement action as deemed necessary by the Division at that time to achieve compliance with the Utah Coal Regulatory Program.*

*Accordingly, the permittee must address those deficiencies as found within this Draft Technical Analysis and provide the following, prior to approval, in accordance with the requirements of:*

### ***Regulations***

- R645-301-121.200, -512.100, -512.200, All maps in the MRP**, but especially Plate 2, and Plate 13 should be checked for completeness and accuracy and corrected as needed. .... 14
- R645-301-742.200**, The information provided by the submitted Plate 2 is either inaccurate, missing or indistinguishable. The requirements of R645-301-742.200 have not been adequately addressed. .... 12

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**SUMMARY OF OUTSTANDING DEFICIENCIES**

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## OPERATION PLAN

# OPERATION PLAN

## HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

### Minimum Regulatory Requirements:

#### Surface Water Monitoring

In order to protect the hydrologic balance, underground mining activities shall be conducted according to the approved plan, and the following: surface-water quality shall be protected by handling earth materials, ground-water discharges, and runoff in a manner that minimizes the formation of acidic or toxic drainage; prevents, to the extent possible using the best technology currently available, additional contribution of suspended solids to streamflow outside the permit area; and otherwise prevent water pollution. If drainage control, restabilization and revegetation of disturbed areas, diversion of runoff, mulching, or other reclamation and remedial practices are not adequate to meet water-quality standards and effluent limitations, the operator shall use and maintain the necessary water-treatment facilities or water-quality controls. Surface-water quantity and flow rates shall be protected by handling earth materials and runoff in accordance with the steps outlined in the approved plan.

Surface-water monitoring shall be conducted according to the approved surface-water monitoring plan. The Division may require additional monitoring when necessary. Surface-water monitoring data shall be submitted every 3 months to the Division or more frequently as prescribed by the Division. Monitoring reports shall include analytical results from each sample taken during the reporting period. When the analysis of any surface-water sample indicates noncompliance with the permit conditions, the operator shall promptly notify the Division and immediately provide for any accelerated or additional monitoring necessary to determine the nature and extent of noncompliance and the results of the noncompliance. Plans and hydrologic information to evaluate and mitigate the noncompliance situation and information relevant to the PHC shall be submitted to the Division as required. The reporting requirements of the water monitoring plan do not exempt the operator from meeting any National Pollutant Discharge Elimination System (NPDES) reporting requirements.

Surface-water monitoring shall proceed through mining and continue during reclamation until bond release. The Division may modify the monitoring requirements, except those required by the NPDES permitting authority, including the parameters covered and sampling frequency if the operator demonstrates, using the monitoring data obtained, that: the operation has minimized disturbance to the hydrologic balance in the permit and adjacent areas and prevented material damage to the hydrologic balance outside the permit area; water quantity and quality are suitable to support approved postmining land uses; and, monitoring is no longer necessary to achieve the purposes set forth in the approved monitoring plan.

Equipment, structures, and other devices used in conjunction with monitoring the quality and quantity of surface water onsite and offsite shall be properly installed, maintained, and operated and shall be removed by the operator when no longer needed.

#### Siltation Structures: General

All surface drainage from disturbed areas shall be passed through a siltation structure before leaving the permit area. Siltation structures shall mean a sedimentation pond, a series of sedimentation ponds, or other treatment facility. Other treatment facilities means any chemical treatments, such as flocculation, or mechanical structures, such as clarifiers, that have a point-source discharge and that are utilized to prevent additional contribution of suspended solids to streamflow or runoff outside the permit area.

Disturbed area requiring treatment through a siltation structure shall not include those areas in which the only underground mining activities include: diversion ditches, siltation structures, or roads that are designed, constructed and maintained in accordance with the regulatory requirements; and, for which the upstream area is not otherwise disturbed by the operator.

Additional contributions of suspended solids and sediment to streamflow or runoff outside the permit area shall be prevented to the extent possible using the best technology currently available. Siltation structures for an area shall be constructed before beginning any underground mining activities in that area, and upon construction shall be certified by a qualified registered professional engineer, or when authorized under the regulations, by a qualified registered professional land surveyor, to be

## OPERATION PLAN

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constructed as designed and as approved in the reclamation plan.

Any siltation structure which impounds water shall be designed, constructed and maintained in accordance with the requirements for impoundments.

Siltation structures shall be maintained until removal is authorized by the Division and the disturbed area has been stabilized and revegetated. In no case shall the structure be removed sooner than 2 years after the last augmented seeding. When the siltation structure is removed, the land on which the siltation structure was located shall be regraded and revegetated in accordance with the reclamation plan. Sedimentation ponds approved by the Division for retention as permanent impoundments may be exempted from this requirement.

Any point-source discharge of water from underground workings to surface waters which does not meet effluent limitations shall be passed through a siltation structure before leaving the permit area.

### Siltation Structures: Sedimentation ponds

Sedimentation ponds, when used, shall: be used individually or in series; be located as near as possible to the disturbed area and out of perennial streams unless approved by the Division; and, be designed, constructed, and maintained to:

- 1.) Provide adequate sediment storage volume;
- 2.) Provide adequate detention time to allow the effluent from the ponds to meet State and Federal effluent limitations;
- 3.) Contain or treat the 10-year, 24-hour precipitation event ("design event") unless a lesser design event is approved by the Division based on terrain, climate, other site-specific conditions and on a demonstration by the operator that the effluent limitations will be met;
- 4.) Provide a nonclogging dewatering device adequate to maintain the required time;
- 5.) Minimize, to the extent possible, short circuiting;
- 6.) Provide periodic sediment removal sufficient to maintain adequate volume for the design event;
- 7.) Ensure against excessive settlement;
- 8.) Be free of sod, large roots, frozen soil, and acid- or toxic-forming coal-processing waste; and
- 1.) Be compacted properly.

A sedimentation pond shall include either a combination of principal and emergency spillways or a single open-channel spillway configured as specified in this section, designed and constructed to safely pass the applicable design precipitation event. The Division may approve a single open-channel spillway that is: of nonerodible construction and designed to carry sustained flows; or earth- or grass-lined and designed to carry short-term infrequent flows at non-erosive velocities where sustained flows are not expected.

The required design precipitation event for a sedimentation pond meeting the spillway requirements of this section is: for a sedimentation pond meeting the size or other criteria of 30 CFR Sec. 77.216(a), a 100-year 6-hour event, or greater event as specified by the Division; or, for a sedimentation pond not meeting the size or other criteria of 30 CFR Sec. 77.216(a), a 25-year 6-hour event, or greater event as specified by the Division.

In lieu of meeting the above spillway requirements, the Division may approve a sedimentation pond that relies primarily on storage to control the runoff from the design precipitation event when it is demonstrated by the operator and certified by a qualified registered professional engineer or, as applicable, a qualified registered professional land surveyor that: the sedimentation pond will safely control the design precipitation event; the water from which shall be safely removed in accordance with current, prudent, engineering practices; and, such a sedimentation pond shall be located where failure would not be expected to cause loss of life or serious property damage. If the sediment pond is located where failure would be expected to cause loss of life or serious property damage, a sedimentation pond that relies primarily on storage to control the runoff from the design precipitation event may be allowed if, in addition to the design event, is: in the case of a sedimentation pond meeting the size or other criteria of 30 CFR Sec. 77.216(a), designed to control the precipitation of the probable maximum precipitation of a 6-hour event, or greater event as specified by the Division; or, in the case of a sedimentation pond not meeting the size or other criteria of 30 CFR Sec. 77.216(a), designed to control the precipitation of a 100-year 6-hour event, or greater event as specified by the Division.

### Siltation Structures: Other treatment facilities

Other treatment facilities shall be designed to treat the 10-year, 24-hour precipitation event unless a lesser design event is approved by the Division based on terrain, climate, other site-specific conditions and a demonstration by the operator that the effluent limitations will be met. Other treatment facilities shall be designed, constructed and maintained accordance with the applicable requirements as described under sediment ponds.

### Siltation Structures: Exemptions

Exemptions to the requirements of this section may be granted if: the disturbed drainage area within the total disturbed

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area is small; and, the operator demonstrates that siltation structures and alternate sediment control measures are not necessary for drainage from the disturbed drainage areas to meet effluent limitations and applicable State and Federal water-quality standards for the receiving waters.

If the structure is 20 feet or higher or impounds more than 20 acre-feet, each plan of this section shall include a stability analysis of each structure. The stability analysis shall include, but not be limited to, strength parameters, pore pressures, and long-term seepage conditions. The plan shall also contain a description of each engineering design assumption and calculation with a discussion of each alternative considered in selecting the specific design parameters and construction methods.

### Analysis:

#### Surface-Water Monitoring

During the review of water monitoring information from the third and fourth quarter of 2000, and the first quarter of 2001, it was noted that several minor problems existed with the surface and ground water monitoring regimes. The currently approved surface water-monitoring plan includes a required parameter to analyze for total manganese, but an analysis for total iron is not indicated as being required. The analysis for total iron is a parameter required by the Coal Mining Rules. Table IV-10 is unclear, in that the analyses for metals and ions (cation/anion balance) is not specifically stated as being determined using the concentrations of **dissolved** metals. The required surface water monitoring parameter list needed clarification, such that **both total and dissolved concentrations for both iron and manganese** are performed for each submitted water sample.

On January 15, 2002, the permittee submitted a response to the Division's November 23, 2001 midterm review deficiency document. That submittal contained a revised TABLE IV-4, Surface Water Baseline and Operational Water Quality Parameter List which includes the following changes:

- 1) The analysis for **total** iron has been added for both baseline and operational parameters.
- 2) The analysis for **dissolved** manganese has been added for both baseline and operational parameters.
- 3) The revised TABLE IV-10 specifically requires that "**IONS AND METALS ANALYSES ARE DISSOLVED, EXCEPT AS NOTED**".

**The revisions made to TABLE IV-10 clarify and adequately addressed the deficiencies aired in the Division's November 23, 2001 technical analysis.**

#### Siltation Structures

The permittee submitted a revised Plate 2, Wildcat Loadout Surface Facilities Topography (Watershed & Drainage) with the January 15 submittal which depicts the sites surface drainage diversions as well as the sites six alternate sediment control areas. This map

was revised by the Blackhawk Engineering Company and certified by Mr. Dan Guy, Utah registered professional engineer. The revised Plate 2 utilizes a very intense method of cross-hatching to delineate the area of each of five numbered ASCA's. This new cross-hatching obliterates the surface contours in several of the ASCA's as well as some of the drainage control structures depicted on the currently approved Plate 2. Also, although the various topsoil piles are discussed in the MRP as ASCA's, they are not enumerated on Plate 2, nor are the sediment control measures for each. Page 146 of the approved plan (Section K-9, paragraph 2) indicates that all topsoil piles will be surrounded by earth berms, except for a discharge notch which utilizes straw bales to filter out any topsoil sediment eroded off by the event. All topsoil piles have become well vegetated over the length of time which they have existed in their present locations. Plate 2 does not depict where the topsoil piles are located; hence, no control measures are shown for any of same. One must reference Plate 1 to determine where the topsoil storage piles, which have been classified by the permittee as ASCA's, are located on the topography, watershed, and drainage map, (i.e., Plate 2).

Technical Directive 003A, Sediment Control Measures for Disturbed Coal Mine Lands, Table 1, Permitting Standards and R645-301-742.231 require a "design" for areas utilizing alternate sediment control methods. Table 1 also indicates that the following are required in addition to a design for each ASCA. These are:

- 1) **DOGM approval.**
- 2) **Must meet effluent standards** by incorporating necessary safeguards against additional contributions of suspended solids to stream flow or runoff outside the permit area. Success of the design will be measured by the inspection process. The inspection process requires **certified "as-built" drawings** in order to confirm that the DOGM approved design has been implemented in the field.
- 3) **Must be shown on an MRP map.**
- 4) **Must be discussed in the MRP.**
- 5) **Must be maintained.**
- 6) **Must have adequate storage.**
- 7) **Sediment Removal** is required, as part of the maintenance cycle.
- 8) **Must treat runoff.**

The submitted revised Plate 2 is the permittee's attempt to meet the requirements of the deficiency aired in the Division's November 23, 2001 midterm review deficiency response, in reference to **MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS**, Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323, which required that all maps in the mining and reclamation plan, but especially **Plate 2 should be checked for completeness and accuracy and corrected as needed.**

It appears that the submitted revised Plate 2 is the permittee's attempt to meet the certified "as-built" drawing requirement mentioned above. However, the intense cross-hatching

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used by the draftsman on the revised plate makes the surface contours difficult to read, and berms that were barely visible on the currently approved version of Plate 2 are now difficult, if not impossible, to see.

Chapter 4, page 92 of the Wildcat mining and reclamation plan makes specific reference to “six small areas on the site that do not drain to the sediment ponds.” These areas are all equipped with alternate sediment control consisting of straw bales, berms and/or vegetation. The areas are designated BTCA Areas and are shown on Plate 2. Complete descriptions of each of the areas is provided under Section K.9 of this chapter.

Section K, part 9, under Other Sediment Control – ASCA, discusses the fact that the sites numerous topsoil piles “are equipped with berms and have been revegetated. The areas around these topsoil piles have been graded and revegetated to prevent erosion.” Regular monthly inspections at the site have confirmed that these piles do have protective berms in place, although some of the piles have vegetation that dies off during the dry summers in the area. The topsoil piles are not depicted as ASCA’s on Plate 2. **This should be corrected.**

In addition, Chapter IV, Part F, Section 3, (page 79 of the approved MRP), Removal and Storage of Topsoil and Subsoil, includes verbiage that indicates that the topsoil storage areas depicted on Plate 2 “are to be considered small area exemptions.” Thus, text exists in the mining and reclamation plan that describes the six ASCA areas depicted on Plate 2 both as ASCA’s and as SAE’s (small area exemptions). This cannot be, as the requirements for SAE’s as described in TABLE 1—PERMITTING STANDARDS of Tech Directive 003A are different from those required for ASCA’s.

TABLE IV-15 ASCA lists ASCA Area 6 as having an area of 0.54 acres. It is assumed that the areas of the four topsoil piles depicted on Plate 1 (A, B, E, and F) make up this acreage, but if one scales topsoil pile E, and utilizes a 550-foot length, and a minimum width of 250 feet, the area of pile E calculates to be 3.15 acres by itself. Thus, the total acreage for ASCA 6 is incorrect.

*ASCA #1*

This ASCA is separated into two sections by the Utah Railway right-of-way, and is adjacent to the County road close to the upper NW access gate. The acreage here consists of 1.71 acres as confirmed from Plate 2 and TABLE IV-15, ASCA. The railroad right-of-way itself **is not included** within the Wildcat permit area. A berm contains runoff in the eastern section of ASCA #1.

The intended sediment control method on the portion on the east side of the tracks is a berm that directs runoff to a 12-inch culvert, where the currently approved plan (Plate 2) indicates straw bales are to provide sediment control as the water leaves the bermed area. During the inspection, it was determined that the straw bales did not exist at the exit of the

culvert. The revised Plate 2 submitted on January 15, 2002 does not show the straw bales mentioned. The flow from the east section of ASCA #1 reports to a half-round that in turn reports to a ditch that is collinear with the permit boundary. This ditch flows south and eventually runs into a 12-inch half round paralleling an ancillary road. This drainage ends up in sediment pond "E". This area is generally flat and water simply evaporates or infiltrates. Adjacent to the upper NW gate entrance, the berm for ASCA #1 needed enhancement, as determined during the November 8, 2001 site inspection. The permittee addressed this by re-enhancing this berm prior to the December 20<sup>th</sup> inspection.

The portion of ASCA #1 on the northern side of the Utah Railway right-of-way is fairly flat, and the designed sediment control is total containment via a berm. There is no other method of treatment. The berm was observed to have breeched in several locations during the November 8<sup>th</sup> inspection. The permittee also restored this berm prior to the December 20<sup>th</sup> inspection. Notes on Plate 2 located within the mining and reclamation plan indicate that straw bales will be used at possible drain points of ASCA's. Although it was suggested to the permittee that bales or silt fence be placed where the berm was breeched, the permittee has chosen to restore the approved design.

#### *ASCA #2*

This is a small, (0.44 acres, TABLE IV-15, and Plate 2) well-vegetated area that lies directly north of sediment pond "D" and east of sediment pond "E". In addition to the vegetation, straw bales are effective in providing sediment control. New bales have recently been installed along the crest of the west embankment adjacent to ND-1. As the bales are part of the design, their location(s) should be depicted on Plate 2 in order to meet the certified "as-built" drawing requirement. TABLE IV-15 indicates that the only treatment method utilized in ASCA 2 is straw bales. As vegetation is prevalent in this area, it should also be added as a treatment method both on Plate 2, and on TABLE IV-15.

#### *ASCA #3*

This area is considered to be a disturbed area because of wind-blown coal-fines. Hence, it is large (7.54 acres per Plate 2, but shown as 1.08 acres on TABLE IV-15 ASCA). Other than the construction of sediment pond "B" and the fence, there has not been any other activity to disturb the native vegetation. Hence, the area is well vegetated. As noted, a discrepancy exists in the disturbed area acreage for this ASCA when you compare the Plate 2 reported acreage with the TABLE IV-15 ASCA (Page 147) reported acreage, (i.e., 7.54 vs. 1.08). TABLE IV-15 was last revised in November '94. Straw bales run parallel with the fence that bisects the ASCA. These, in addition to those that have been placed in the drainage below sediment pond B provide the sediment control for part of this ASCA. Between the fence and the permit boundary, vegetation is the sediment control. The plan (Chapter 4, page 147, TABLE IV-15, ASCA) indicates straw bales/vegetation are the treatment for the area. Plate 2 indicates that the treatment for the area is straw bales only for the sediment control method for the entire area. As

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the bales are part of the design, their location(s) should be depicted on Plate 2 in order to meet the certified "as-built" drawing requirement. The permittee must revise Plate 2 to show that the area also utilizes vegetation, such that this does agree with TABLE IV-15 ASCA.

*ASCA #4*

ASCA #4 consists of 2.45 acres (Plate 2) (TABLE IV-15 ASCA says 2.69 acres) and lays SW of ASCA#3, but ENE of sediment pond "A". TABLE IV-15 ASCA indicates that straw bales and vegetation are the sediment control method, but no bales were seen. Plate 2 indicates that bales are the sole means of treatment. As in ASCA #3 there are wind-blown fines. The vegetation has not been disturbed and is providing sediment control. ASCA #4 contains topsoil storage pile "A", as determined by checking Plate 1.

*ASCA #5*

This size of this ASCA is not known because the acreage indicated on TABLE IV-15 ASCA does not correlate with the acreage depicted on Plate 2. ASCA 5 lies on the SW side of the permit area and treats the runoff from a small area adjacent to topsoil piles "B" and "E". Treatment is indicated on Plate 2 to be via straw bales, although TABLE IV-15 ASCA indicates that vegetation is also utilized. Plate 2 should be corrected to reflect the usage of bales and vegetation as the utilized treatment methods. The methods should also be depicted either on Plate 2, or on a drawing of a larger scale that can effectively show where the treatment methods are implemented. All ASCA certified "as-built" drawings should be capable of being used as an inspection tool for that particular ASCA.

Bales effectively treat flow from ASCA 5 before it leaves the permit area. The large number of bales needed to treat the smaller area outside the bermed soil piles is disproportionate to the size of the area. These bales were recently enhanced with a secondary row of bales. The area is well vegetated, and it was suggested to the permittee that consideration be given to changing the treatment for this small area from straw bales to vegetation only. The permittee has elected to not submit the required hydrologic evaluation that would permit same, upon Division approval, to no longer maintain the straw bales in this area. Therefore, the inspection of the currently approved treatment method will continue.

**SUMMARY:**

Plate 2 is inaccurate for the following reasons:

- 1) Topsoil piles A, B, E, and F are not depicted as ASCA's, even though Plate 2 is labeled as a topography, water shed, and drainage map, (i.e., a surface drainage/treatments map).
- 2) The acreages and treatment methods listed at the bottom of Plate 2 do not correspond with those shown on TABLE IV-15 ASCA.

- 3) The methods of sediment control/effluent treatment are not depicted on Plate 2, although five ASCA areas are highlighted by intense cross-hatching. The scale of Plate 2 is one inch = 100 feet. In order to meet the certified "as-built" drawing requirement specified by Technical Directive 003A for ASCA's, the permittee should either depict the treatment methods and their respective locations for each ASCA on Plate 2, or submit new drawings for each ASCA on a larger scale which would allow a clear depiction of the treatments utilized as well as the location of the various treatment method. These would require P.E. certification in order to meet the certified "as-built" requirement.

### Findings:

The requirements of R645-301-731.211, -731.221, and -731.222.1 have been adequately addressed.

R645-301-742.200, The information provided by the submitted Plate 2 is either inaccurate, missing or indistinguishable. The requirements of R645-301-742.200 have not been adequately addressed.

## MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: 30 CFR 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

### Minimum Regulatory Requirements:

Each application shall contain maps, plans, and cross sections which show the mining activities to be conducted, the lands to be affected throughout the operation, and any change in a facility or feature to be caused by the proposed operations, if the facility or feature was shown and described as an existing structure.

The following shall be shown for the proposed permit area:

#### Affected area maps

The boundaries of all areas proposed to be affected over the estimated total life of all mining activities and reclamation activities, with a description of size, sequence, and timing of phased reclamation activities and treatments. All maps and cross sections used for mining design and mining operations shall clearly show the affected and permit area boundaries in reference to the reclamation work being accomplished.

#### Mining facilities maps

Location of each facility used in conjunction with mining operations. Such structures and facilities shall include, but not be limited to: buildings, utility corridors, roads, and facilities to be used in mining and reclamation operations or by others within the permit area; each coal storage, cleaning, and loading area; each topsoil, spoil, coal preparation waste, underground development waste, and noncoal waste storage area; each water diversion, collection, conveyance, treatment, storage and discharge facility; each source of waste and each waste disposal facility relating to coal processing or pollution control; each facility to be used to protect and enhance fish and wildlife related environmental values; each explosives storage and handling facility; location of each sedimentation pond, permanent water impoundment, coal processing waste bank, and coal processing water dam and embankment, and disposal areas for underground development waste and excess spoil; and, each plan or profile, at cross sections specified by the Division, of the anticipated surface configuration to be achieved for the affected areas during mining operations.

#### Mine workings maps

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Location and extent of known workings of proposed, active, inactive, or abandoned underground mines, including mine openings to the surface within the proposed permit and adjacent areas. Location and extent of existing or previously surface-mined areas within the proposed permit area.

Monitoring and sampling location maps

Elevations and locations of test borings and core samplings. Elevations and locations of monitoring stations used to gather data on water quality and quantity, subsidence, fish and wildlife, and air quality, as required during mining operations.

Certification Requirements

Cross sections, maps, and plans required to show the design, location, elevation, or horizontal or vertical extent of the land surface or of a structure or facility used to conduct mining and reclamation operations shall be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, a professional geologist, or in any State which authorizes land surveyors to prepare and certify such cross sections, maps, and plans, a qualified, registered, professional land surveyor, with assistance from experts in related fields such as landscape architecture.

Each detailed design plan for an impounding structure that meets or exceeds the size or other criteria of the Mine Safety and Health Administration, 30 CFR Section 77.216(a) shall: be prepared by, or under the direction of, and certified by a qualified registered professional engineer with assistance from experts in related fields such as geology, land surveying, and landscape architecture; include any geotechnical investigation, design, and construction requirements for the structure; describe the operation and maintenance requirements for each structure; and, describe the timetable and plans to remove each structure, if appropriate.

Each detailed design plan for an impounding structure that does not meet the size or other criteria of 30 CFR Section 77.216(a) shall: be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, or in any State which authorizes land surveyors to prepare and certify such plans, a qualified, registered, professional land surveyor, except that all coal processing waste dams and embankments shall be certified by a qualified, registered, professional engineer; include any design and construction requirements for the structure, including any required geotechnical information; describe the operation and maintenance requirements for each structure; and, describe the timetable and plans to remove each structure, if appropriate.

### Analysis:

#### Mining Facilities Maps

Plate 2, as approved was found to be inaccurate or unclear, including, but not limited to:

- the road through ASCA #1 (north of the railroad tracks) is not shown.
- the disturbed area boundary and berm at the east end of ASCA #1 are not accurately shown. This is now barely visible.
- the drainage of water from the south part of ASCA #1 to sediment pond E is now clearly shown.
- the topsoil pile in ASCA #4 is not shown on Plate 2. This has not been corrected.
- the fences and roads south of or within ASCA's #3 and #4 are accurately shown on Plate 2.
- the sediment control method in ASCA's #3 and #4 is not clear.

Some, but not all, of these features are shown correctly on Plate 1, but Plate 2 has several problems, such as:

- 1) The treatment methods used are not depicted within the boundaries of the ASCA, for each of the five areas depicted.

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- 2) The topsoil piles, which have been established as ASCA's are not depicted as such on Plate 2.
- 3) Notes at the bottom of Plate 2 do not correlate with the ASCA acreages shown on TABLE IV-15 ASCA in the MRP.
- 4) No treatment methods are shown on Plate 2 for the topsoil pile areas, which are classified as ASCA's. In order that Plate 2 can meet the certified "as-built" drawing requirement such that the maps can be used as an inspection tool, the treatments and their respective locations must be shown, and the map(s) must be P.E. certified.

Plate 13, Wildcat Topsoil Storage Pile Facilities, needs to be updated, as it presently depicts six topsoil piles and their associated soil volumes. Only four piles exist at the Wildcat site.

**Findings:**

R645-301-121.200, -512.100, -512.200, All maps in the MRP, but especially Plate 2, and Plate 13 should be checked for completeness and accuracy and corrected as needed.