US Army Corps of Engineers
Huntington District

Public Notice

In reply refer to:
Public Notice No. 200400593

Issuance Date:
August 11, 2004

Stream:
Cabin Creek

Expiration Date:
September 10, 2004

Address comments to:
US Army Corps of Engineers, Huntington District
502 Eighth Street
ATTN: CELRH-F
Huntington, West Virginia 25701-2070

PUBLIC NOTICE

TO WHOM IT MAY CONCERN: The following application has been submitted for a Department of the Army Permit under the provisions of Section 404 of the Clean Water Act. This notice serves as the Corps of Engineers' request to the West Virginia Department of Environmental Protection to act on Section 401 Water Quality Certification for the following application.

APPLICANT: Alex Energy, Inc.
Post Office Box 857
Summersville, West Virginia 26651

LOCATION: The proposed project is located in Cabin Creek and an unnamed tributary of Cabin Creek, near the town of Republic, in Fayette County, West Virginia (latitude 37° 59' 02" and longitude 81° 28' 24") as depicted on the attached **Drawing 1** titled "Skitter Creek Mine No. 2 ~ Proposal and Drainage Map".

DESCRIPTION OF THE PROPOSED WORK: The applicant proposes to place fill material into waters of the U.S. in conjunction with the construction of two hollow fills and two sediment ponds associated with the proposed 350± acre surface mine. The applicant's purpose for this project is to provide adequate operating area for maximum bituminous coal removal in a safe, cost effective and environmentally sound manner. The project proposes to surface mine the Upper Mercer, Stockton, Coalburg, Winifrede, Chilton A, Chilton Rider, Chilton and Chilton Leader seams and associated splits of coal. The project would involve the construction of two hollow fills in the headwaters of Cabin Creek and in an unnamed tributary of Cabin Creek. Plans of the proposed hollow fill configuration may be referenced on the attached **Drawing 2** titled "Skitter Creek Mine No. 2 Stream Delineation Map". The construction of Hollow Fill No. 1 would result in the permanent discharge of fill material into approximately 2,580 linear feet or 0.18-acre of intermittent and perennial stream impacts and 60 linear feet or 0.003-acre of ephemeral stream impacts. Hollow Fill No. 1 would also involve temporary impacts to 800 linear feet of intermittent and perennial stream. The construction of Hollow Fill No. 2 would result in the permanent discharge of fill material into approximately 770 linear feet or 0.09-acre of intermittent and perennial stream impacts and 1,005 linear feet or 0.10-acre of ephemeral stream impacts. Hollow Fill No. 2 would also involve temporary impacts to 500 linear feet or 0.07-acre of intermittent and perennial stream impacts. The project has an estimated construction life of approximately three years.

The West Virginia Department of Environmental Protection (WVDEP) has authorized the proposed mining operation by Article 3 Permit No. S-3022-99 (dated July 18, 2001) pursuant to the Surface Mining Control and Reclamation Act of 1977. A National Pollutant Discharge Elimination System (NPDES) Permit No. WV1019252 (dated July 11, 2001) has been issued by the WVDEP, which includes a General Mitigation and Compensation Agreement.

MITIGATION PLAN: The applicant has submitted a conceptual compensatory mitigation plan (CCMP) to compensate for permanent and temporary impacts to waters of the U.S. regulated by the Department of the Army, Corps of Engineers. The CCMP indicates temporarily impacted streams would be restored on a 1:1 ratio to their approximate original contour or a post mining backfill location. Additional stream restoration and enhancement would be performed on a 2:1 ratio for permanent impacts. All stream restoration and enhancement would be completed in accordance with best management practices and natural stream design techniques. A riparian buffer zone would be re-established with native vegetation along all disturbed stream segments extending 60 feet from each stream bank. Plans of the proposed stream enhancement may be referenced on the attached **Drawings 3 and 4** titled "Stream Enhancement Construction Details 1 of 2" and "Stream Enhancement Construction Details 2 of 2".

WATER QUALITY CERTIFICATION: A Section 401 Water Quality Certification is required for this project. It is the applicant's responsibility to obtain certification from the West Virginia Department of Environmental Protection.

HISTORIC AND CULTURAL RESOURCES: The National Register of Historic Places (NRHP) has been consulted and it has been determined there are no properties currently listed on the register that are in the area affected by the project. This public notice serves as coordination with the State Historic Preservation Officer regarding historic properties. If the West Virginia Division of Culture and History (WVDCH) believe any potential effects to historic properties may result from the proposed permitting action, we request the WVDCH provide information to this office pursuant to Section 106 of the National Historic Preservation Act.

ENDANGERED/THREATENED SPECIES REVIEW: The West Virginia Division of Natural Resources Wildlife Resources Lands Inquiry Response indicates no known rare, threatened or endangered plant or animal species, sensitive habitat, high quality stream, special management area or regulated plant or animal species are in the proximity of the proposed operation. The applicant has provided a two-mile radius forest evaluation and proposes a seasonal timber harvest (between November 15th and March 31st).

This public notice also serves as coordination with the U. S. Fish and Wildlife Service regarding threatened or endangered species. If the Service believes any potential effects to federally listed species would be attributable to the Huntington District's proposed permitting action, we request the Service provide any additional information pursuant to Section 7(c) of the Endangered Species Act of 1972 (as amended).

PUBLIC INTEREST REVIEW AND COMMENT: Any person who has an interest that may be adversely affected by the issuance of a permit may request a public hearing. The request must be submitted in writing to the District Engineer on or before the expiration date of this notice and must clearly set forth the interest which may be adversely affected and the manner in which the interest may be adversely affected by the activity.

Interested parties are invited to state any objections they may have to the proposed work. The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit that reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors that may be relevant to the proposal will be considered including the cumulative effects thereof; of those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people. In addition, the evaluation of the impact of the activity on the public interest will include application of the guidelines promulgated by the Administrator, Environmental Protection Agency, under the authority of Section 404(b) of the Clean Water Act. Written statements on these factors received in this office on or before the expiration date of this public notice will become a part of the record and will be considered in the final determination. A permit will be granted unless its issuance is found to be contrary to the public interest.

The Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Persons wishing to submit comments, objections or requests for public hearings concerning the Corps of Engineers permit should write:

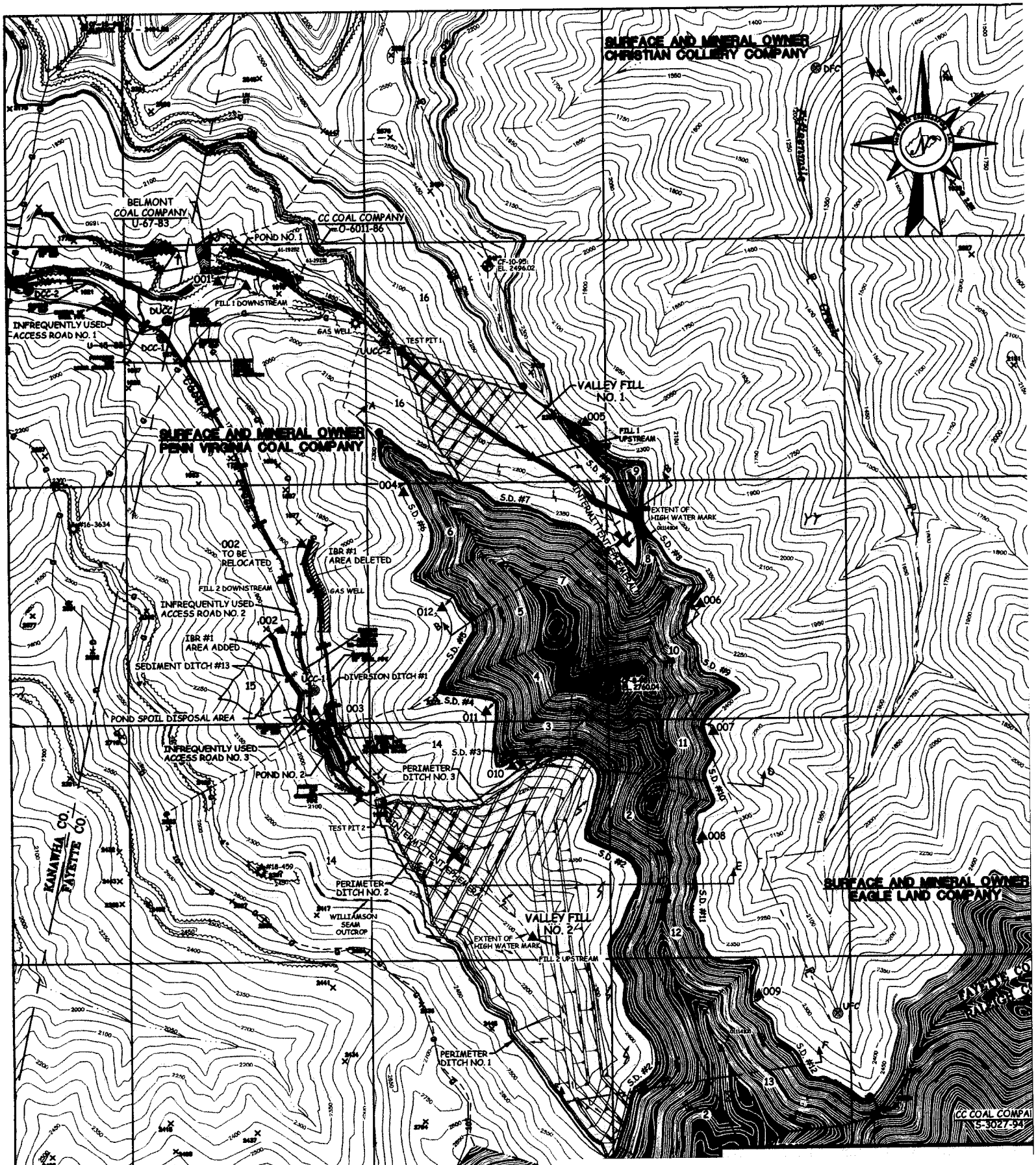
U. S. Army Corps of Engineers
ATTN: CEORH-OR-F Public Notice No. **200400593**
502 Eighth Street
Huntington, West Virginia 25701-2070

If you have any questions concerning this public notice, please call Mr. Mike Hatten of the South Regulatory Section at 304-399-5710.

Tammy R. Judge

Ginger Mullins, Chief
Regulatory Branch

(W)



Drawing Date:	Drawn By:
02/25/04	G. Grubbs
Computer No.:	Topo Contour Interval:
04074	20'
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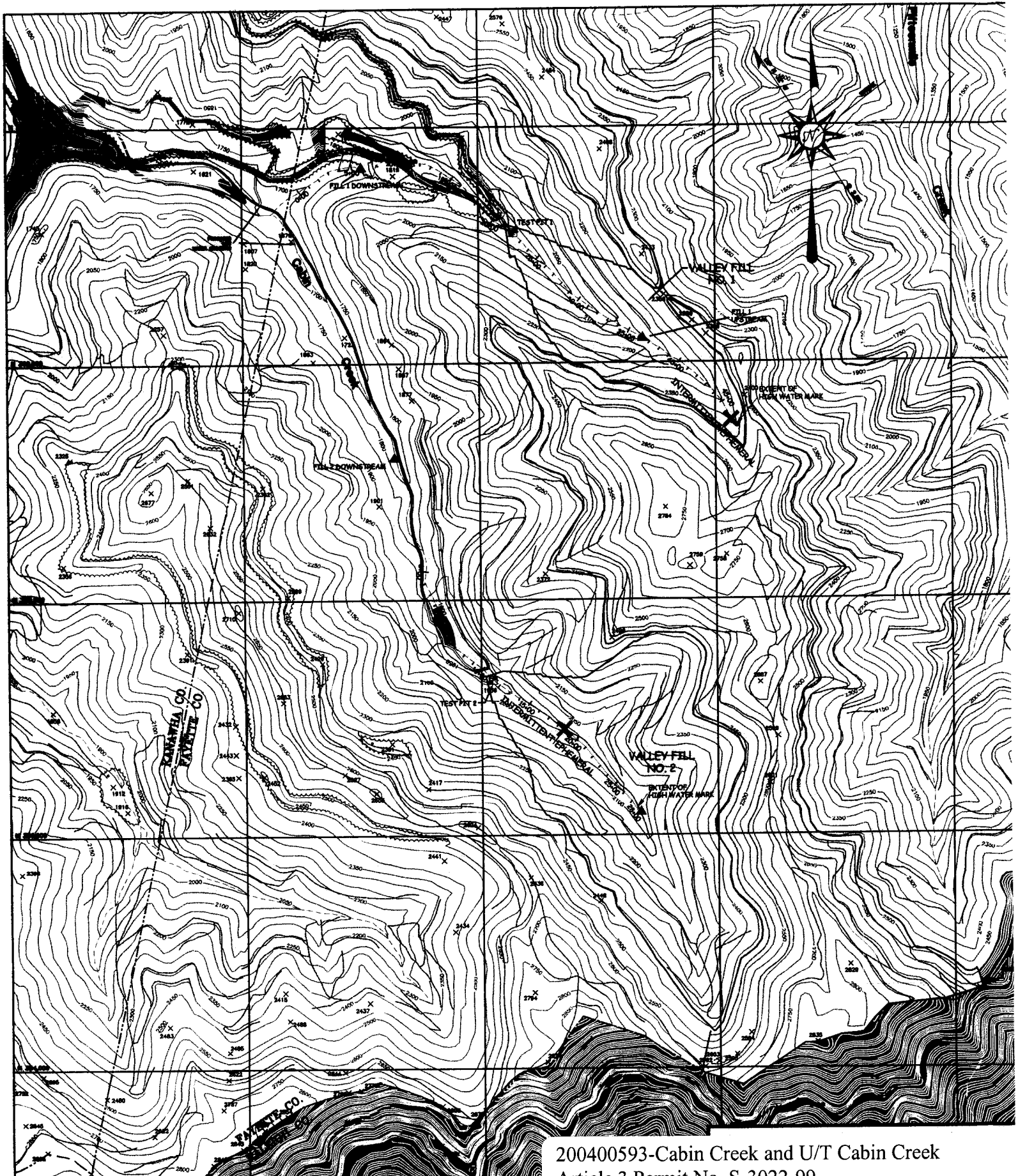
1" = 1000'	1 of 1

200400593-Cabin Creek and U/T Cabin Creek
Article 3 Permit No. S-3022-99
Alex Energy, Inc.~Skitter Creek Mine No. 2
Title: Proposal and Drainage Map

Drawing No. 1 of 4



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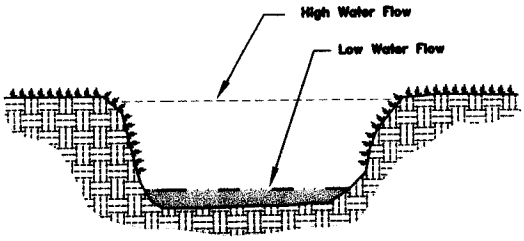
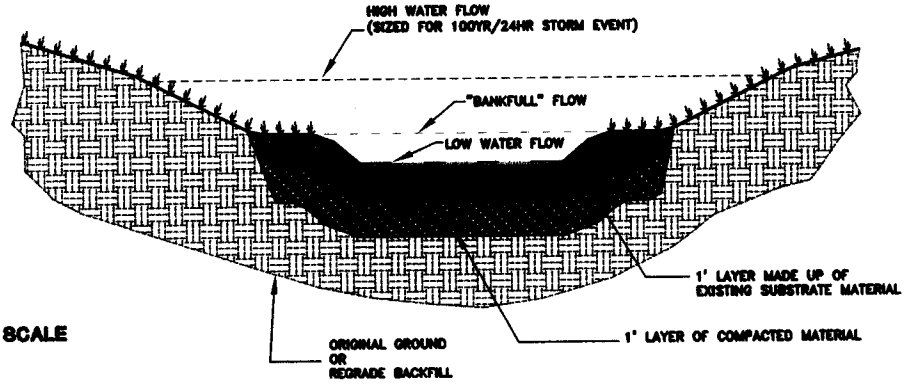
1" = 1000'	1 of 1

200400593-Cabin Creek and U/T Cabin Creek
Article 3 Permit No. S-3022-99
Alex Energy, Inc.~Skitter Creek Mine No. 2
Title: Stream Delineation Map

Drawing No. 2 of 4



EXISTING STREAM CHANNEL



NOT TO SCALE

PERMANENT RELOCATED STREAM CHANNEL 'CHANNEL WITHIN A CHANNEL' DESIGN

CONSTRUCTION SPECIFICATIONS FOR STREAM CHANNEL ALTERATION

Site Preparation:
The existing stream channel will be surveyed with regard to dimension, pattern and profile and the records of this survey will be maintained for use as reference in the relocation and restoration process. Prior to the construction of the relocated channel, obstructions, such as trees, shrubs and boulders, shall be removed, as necessary, to establish suitable line and grade for the relocated stream. In addition to the proposed, during mining, sediment control structures (ponds), temporary drainage control devices will be installed as needed during construction. These temporary devices may consist of any one, or a combination of, the following: silt fencing, straw bales, rock checks, level spreaders and/or sumps.

Excavating and Shaping:
Construction of the relocated channel will begin at the farthest downstream end and progress upstream. Areas of stream channel relocation that extend into the proposed mineral removal area will be compacted and/or lined, to lessen infiltration into the backstack, prior to the shaping of the actual channel. Areas which receive small drainage flow or are located near the base of existing valley fills will be compacted by mechanical means using the equipment on site. Areas receiving larger drainage flows, such as 4th Right Fork of Ballard Fork, Spring Branch and 1st Right Fork of Spring Branch will be lined with a one foot thick compacted layer of clay soil beneath the reconstructed channel (see attached section drawing). Abundant clay soil material is present in the overburden located above the coal seam. This material will be separated and stored on site for use during stream channel reconstruction.

The last step of the construction will be to divert the existing flow into the reconstructed channel.The completed channel shall conform to the line, grade, and cross section of the existing streambed as determined from the pre-construction survey. By using the dimensional data of the existing stream as a model for the relocated stream, the relocated stream will essentially retain its original shape and profile and merely be 'shifted' laterally on the valley floor.
The reconstructed channel profile shall be generally free draining, with low spots kept to a minimum. All portions of the completed construction area are to be finished and smoothed as needed for the establishment of vegetative cover. See the attached cross sections and profiles of the existing and proposed channels for additional details.

Protection Against Erosion:
The completed relocated channel shall be seeded and mulched immediately after construction, as described in the following stream stabilization plan. During construction of the relocated channel (or in areas where the existing streambed is being mined through), normal stream flow will be diverted though a 24" corrugated plastic pipe. The bypass pipe will be extended downstream, around the construction/mining area. The proposed temporary stream bypass pipe will be anchored on the upstream end with a check dam constructed of sand bags and sheet plastic (see 'Stream Relocation Construction Sequence' drawing). The check dam will insure that all stream flow is directed to the temporary culvert bypass. Should any leakage occur around the check dam, it is anticipated that this leakage will be minimal and a pump will be maintained on site to divert such leakage away from the construction area and into the temporary culvert bypass. If during construction additional temporary drainage control structures are needed they may consist of any one or combination of the following: silt fencing, straw bales, rock checks, level spreaders and/or sumps.

STREAM ENHANCEMENT

As stated previously, stream channel relocation will be permanent and will take place before mining activities are conducted in those particular areas. It is preferable to relocate the existing channel away from the proposed mining activities and away from any possible future operations. The relocated stream channel will be 'enhanced' in section to a "channel within a channel" type or flow design. After the existing stream channel has been relocated laterally along the valley floor, the area above the 'bankfull' elevation will be raised using excess material from the contour excavation. This "channel within a channel" design will allow for the more frequent storm events (1.1 to 1.8 year return period) to have the ability to maintain the balance between natural channel scour and sediment deposition processes, thereby resulting in a stable, self-cleaning channel. Additional hydraulic capacity required to handle the more severe storm events is provided outside (above) the "bankfull" channel. The existing stream channel will be surveyed with regard to dimension, pattern and profile and the records of this survey will be maintained for use as reference in the relocation and restoration process.

Composition of the relocated stream sections will be based on the average existing substrate listed in the Benthic Survey in this application. This composition consists of 0% bedrock, 10% boulders, 42% cobble, 33% gravel and 5% Sand, 5% Silt and 5% Clay. All of these materials will be abundant and readily available on site as reclamation progresses.

Streambeds along trapezoidal sections that are not in bedrock will be modified and will not be installed so they are level from bank to bank. Instead, the streambed will be sloped toward the outside bank in curves and toward either the right bank or left bank along straight sections as dictated by conditions in the field. During periods of low flow, the modified streambed will prevent stream flow from being evenly and shallowly distributed along the bottom of the stream. Instead, stream flow will be concentrated in the depression created by the modified streambed.

Benthic organism recovery will be monitored for a period of two (2) years beyond the final reclamation of the operation.

The monitoring program shall adhere to the following minimum requirements:
At lease one (1) benthic collection per year to be collected and analyzed by a certified laboratory.
Benthic will be collected during the spring collection season.
Benthic will be collected at Benthic stations 45, 48, 49, 50 and 54.
Additional monitoring sites or collection periods may be added as necessary.

Prepared by:
PA ENGINEERS & CONSULTANTS

Drawing Date	Drawn By
02/26/04	G. Grubbs
Computer No.: Stream	Topo Contour Interval: N/A
Scale: No Scale	Sheet No.: 1 of 2

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200400593-Cabin Creek and U/T Cabin Creek
Article 3 Permit No. S-3022-99
Alex Energy, Inc.~Skitter Creek Mine No. 2
Title: Stream Enhancement Construction Details 1 of 2

The Cross-Vane, W-Weir and J-Hook Vane are structures that can be implemented to maintain or enhance river stability and function to facilitate multiple objectives.

Descriptions, design specifications, placement locations, spacing and various applications of Cross-Vane, W-Weir and J-Hook Vane structures are shown here. These structures were developed and should be subsequently applied to: 1) establish grade control, 2) reduce streambank erosion, 3) facilitate sediment transport, 4) provide for irrigation diversion structures, 5) enhance fish habitat, 6) maintain width/depth ratio, 7) improve recreational qualities, 8) maintain river stability, 9) dissipate excess energy, 10) withstand large floods, 11) maintain channel capacity, 12) be compatible with natural channel design, and 13) be visually acceptable to the public.

DESIGN SPECIFICATIONS

Cross-Vanes, W-Weirs and J-Hook Vanes

Vane Angle
The vane arm portion of all three structures is generally 20-30 degrees measured upstream from the tangent line where the vane intercepts the bank. The 20-30 degree angle provides the longest vane length and protects the greatest length of streambank. The vane portion of the structure should occupy ⅓ of the bankfull width of the channel, while the "hook" should occupy the center ⅓. Maximum velocity, shear stress, stream power and velocity gradients are decreased in the near-bank region and increased in the center of the channel. Sediment transport competence and capacity can be maintained as a result of the increased shear stress and stream power in the center ⅓ of the channel. Backwater is created only in the near-bank region, and the small departure angle gently redirects the velocity vectors from the near-bank region, reducing active bank erosion. The scour pool in the center ⅓ of the channel provides energy dissipation and holding cover for fish. The "hook" portion of the vane produces a longer, wider and deeper pool than that created by vane-only structures. The downstream pool dissipates energy and provides fish habitat. The ¼ - ½ rock diameter gaps between the rocks associated with the hook creates a vortex or cortacorex flow that diversions. The flatter and smaller vane angle arm will extend farther upstream to intercept proportionately more water and increase the length of bank protected.

Vane Slope
The slope of the vane extending from the bankfull stage bank should vary between 2-7percent. Vane slope is defined by the ratio of bank height/vane length. For installation in meander bends, ratios of J-Hook Vane length/bankfull width is calculated as a function of the ratio of radius of curvature/bankfull width and departure angle (Table 1). Equations for predicting ratios of J-Hook Vane spacing/bankfull width on meander bends based on ratio of radius of curvature/bankfull width and departure angle is shown in Table 2. Vane length is the distance measured from the bankfull bank to the intercept with the invert elevation of the streambed at ⅓ of the bankfull channel width for either Cross-Vanes or J-Hook Vanes.

Table 1. Equations for predicting ratio of vane length/bankfull width (VL) as a function of ratio of radius of curvature/width and departure angle, where W = bankfull width. (SI units)

Rc/W	Departure Angle (degrees)	Equation
3	20	VL = 0.0057 W + 0.9462
3	30	VL = 0.0089 W + 0.5933
5	20	VL = 0.0057 W + 1.0462
5	30	VL = 0.0057 W + 0.8462

Table 2. Equations for predicting ratio of vane spacing/width (Vs) as a function of ratio of radius of curvature/width and departure angle, where W = bankfull width (SI units)

Rc/W	Departure angle (degrees)	Equation
3	20	Vs = - 0.006 W + 2.4781
3	30	Vs = - 0.0114 W + 1.9077
5	20	Vs = - 0.0057 W + 2.5536
5	30	Vs = - 0.0089 W + 2.2067

The spacing of J-Hook Vanes can be increased by 0.40W if there exists a low bank erosion hazard rating (BEHI) of less than 30.

Bank Height
The structure should only extend to the bankfull stage elevation. If the bank is higher, a bankfull bench is constructed adjacent to the higher bank and the structure is integrated into the bench.

Footers
The minimum footer depth at the invert for cobble and gravel bed streams should be a ratio of three times the protrusion height of the invert rock. This measurement is used for all three structures. For sand bed streams, the minimum depth is doubled due to the deeper scour depths that occur. All rocks for all three structures require footers. If spaces are left between the invert rocks for Cross-Vane and W Weirs, then the top of the footer rocks becomes the invert elevation for grade control. If no gaps are left, then the top of the surface rock becomes the base level of the stream.

Materials
The Cross-Vane can be constructed with boulders, logs and a combination of both. A geotextile fabric is required to prevent scour under the structure when logs are used or when rocks are used in sand or silt/clay bed channels.

APPLICATIONS

Irrigation Diversions
Cross-Vanes and W-Weirs have both been used successfully for irrigation structures. Both the Cross-Vane and W-Weir create a differential head in the near-bank region due to the flat slope of the vane leading to the bank. This condition provides the head to deliver water to the head gate at very low flows so that it is not necessary to construct sacrificial dams at low flows. When the head gate is closed during high flows, fine sediments often accumulate. To prevent the sediment deposition at the head gate and in the irrigation canal, a sediment sluice gate is installed so that the sediment is delivered back to the channel during normal high flows.

Grade Control
The Cross-Vane is used to maintain base level in both riffle/pool channels, rapids-dominated stream types and in step-pool channels. The Cross-Vane, as used for grade control, maintains the near width/depth ratio, entrenchment ratio, reduces bank erosion, dissipates energy and improves fish habitat. Spacing of the structures is based on a negative power function relationship of the ratio of pool spacing / bankfull width as a function of slope.

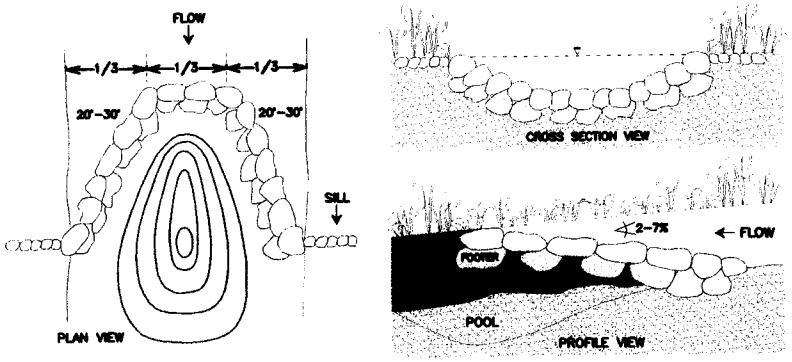
$$Ps = 8.2513\ S^{-0.8769}$$

Where Ps = the ratio of pool to pool spacing/bankfull width
S = channel slope in percent

Bridge Protection
Bridges constructed on a skew to the channel and/or placed on an outside bend often experience abutment scour and embankment erosion. This problem can be reduced by the placement of an offset Cross-Vane in the upstream reach. The vane on the outer bank in the bend has a flatter slope and smaller angle (20°), while the vane arm on the inside bank has a steeper slope and a larger angle (30°). W-Weirs are particularly useful for reducing center pier scour. Both the Cross-Vane and W-Weir can provide grade control, prevent lateral migration of channels, eliminate fish migration barriers, increase sediment transport capacity and competence and reduce footer scour. J-Hook Vanes can reduce bank erosion on outside banks both for the approach and downstream reaches of the bridge.

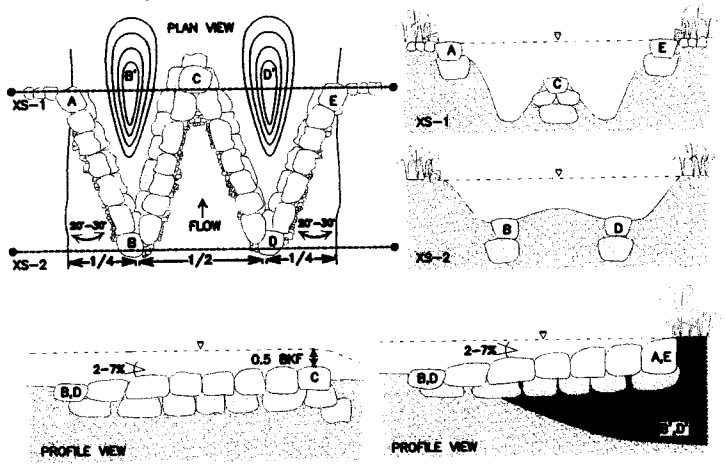
Streambank Stabilization
The J-Hook Vane is designed to reduce accelerated streambank erosion on the outside bend of meanders. As a minimum, the amount of bank protected is two times the vane length, while maximum spacing provides approximately three times the bank protection to vane length. If both banks are eroding due to confinement (lateral containment) and entrenchment (vertical containment), then the Cross-Vane decreases the stream power and shear stress concurrently on both banks. This avoids lining or hardening both banks through a reach to provide protection.

CROSS-VANE ROCK WEIR
Cross-vane Rock Weirs are grade control structures designed to slow the energy of a stream that would otherwise increase stream bank erosion. These devices are appropriate in areas of high gradient (large elevation change in a short distance). The function of the Cross-vane Rock Weir is to concentrate the effects of large elevation change in a stream channel into a more controlled situation while at the same time allowing fish passage and a low-flow stream channel. The stone should be trenched into the stream bank at sharp angles in a general "V" shape pointing upstream. Two lines of rock are utilized to create a stable structure, utilizing the principle that water will flow off of immovable objects at right angles (90° angles). The downstream line of rock should be trenched into the stream bottom so that the tops of the rock are approximately level with the stream bottom. The upstream line of rock should be overlapped onto the downstream line of rock and the device should be elevated appropriately, the center lower than at the stream banks, to concentrate the flow into the center of the stream channel. The Cross-vane Rock Weir will provide mid-channel scour pool that will provide fish habitat as well as the ability for fish to maneuver and migrate past them upstream.



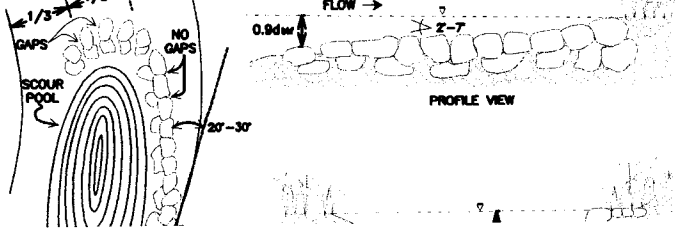
ROSGEN DESIGN - CROSS VANE ROCK WEIR

W-Weir
The design of the W-Weir (W as looking in the downstream direction) was initially developed to resemble bedrock control channels on larger rivers. The W-Weir is similar to a Cross-Vane in that both sides are vanes directed from the bankfull bank upstream toward the bed with similar departure angles. From the bed at ¼ and ¾ channel width, the crest of the weir rises in the downstream direction to the center of the bankfull channel creating two thalwegs. The objectives of the structure are to provide grade control, enhance fish habitat, stabilize stream banks, facilitate irrigation diversions, reduce bridge center pier and foundation scour, and increase sediment transport at bridge locations. Habitat for fish may be enhanced by maximizing usable holding, feeding and spawning areas. Fish hold in the multiple feeding lanes created by the two thalweg locations and pools. Spawning habitat is created in the tail-out of the pools due to upwelling currents and a sorting of gravel bed material sizes.



ROSGEN DESIGN - W-WEIR

J-Hook Vane
The J-Hook Vane is an upstream directed, gently sloping structure composed of natural materials. The structure can include a combination of boulders, logs and root wads and should be located on the outside of stream bends where strong downwelling and upwelling currents, high boundary stress, and high velocity gradients generate high stress in the near-bank region. The structure is designed to reduce bank erosion by reducing near-bank slope, velocity, velocity gradient, stream power and shear stress. Redirection of the secondary cells from the near-bank region does not cause erosion due to back-eddy re-circulation. The vane portion of the structure occupies ⅓ of the bankfull width of the channel, while the "hook" occupies the center ⅓. The ¼ -½ rock diameter gaps between the rocks associated with the hook creates a vortex or cortacorex flow that increases the "center-channel" shear stress. The center of the channel associated with the hook is efficient at transporting sediment, debris and improving channel capacity and sediment competence. Width/depth ratios are maintained by decreasing bank erosion rate and increasing bankfull channel depth, even following major floods.



200400593-Cabin Creek and U/T Cabin Creek
Article 3 Permit No. S-3022-99
Alex Energy, Inc.~Skitter Creek Mine No. 2
Title: Stream Enhancement Construction Details 2 of 2

Stream Enhancement

Drawing No. 4 of 4