planting season following completion of grading unless precluded by climatic conditions.

- Resoiling should normally occur between April 1 and October 1.
- Permanent seeding will follow resoiling operations within 30 days unless precluded by climatic conditions.

The cost of water pollution controls associated with the project area is as follows:

Diversion Ditches	@$8.00 per linear foot	$26,744
Reclamation of 99.1 Acres	@$8000 per acre	$234,400
Sediment Pond	@$10,000	$30,000
Total		**$291,166**

IMPACTS TO HUMAN HEALTH AND THE OVERALL QUALITY AND VALUE OF THE WATER RESOURCE (10G)

Preferred Design

No impacts are expected to occur to human health due to implementation of the Preferred Design. The receiving watershed may temporarily experience a small temporal loss of water quality during the mining operation. However, the impact would be minimized by proposed mitigation methods and Best Management Practices. The integrity of the overall water resource will be kept intact through the use of sediment ponds, sumps, and accepted stream restoration techniques. Specific techniques are discussed in greater detail in Section 10K. Additional mitigation techniques include on-site stream restoration and riparian corridor plantings.

Minimal Degradation Alternative

No impacts are expected to occur to human health due to implementation of the Minimal Degradation Alternative.

Non-Degradation Alternative

No impacts are expected to occur to human health or to the overall quality and value of the water resource due to implementation of the Non-Degradation Alternative.

SOCIAL AND ECONOMIC BENEFITS TO BE GAINED (10H)

Preferred Design

Oxford Mining Company, LLC (fka Oxford Mining Company, Inc.), is a coal company, striving to wisely harvest and use Ohio's coal resources. This company is obligated by contract to deliver several million tons of coal annually. In order to meet these requirements, Oxford must constantly permit areas with sufficient coal reserves at a reasonable depth for strip mining. The most recent area in which the applicant wishes to surface mine has been explored for several years prior to the actual start of mining. As a mining operation begins to slow and prepares to

leave the area, it is crucial for other areas to be ready for mining. This is essential for the survival of the mining company and also ensures the steady supply of coal for the State of Ohio to use.

The National Mining Association considers Ohio's mining industry to be vital to the State's economy. The coal industry's current estimated total economic benefit to the state of Ohio exceeds $3 billion. This industry provides jobs to more than 2,600 Ohioans, most of which are high paying jobs that contribute directly and indirectly to the local tax base in a depressed portion of Appalachia. Ohio, the third largest coal consuming state, produces 88% of its electricity at a fraction of the cost of other fuels.

Oxford Mining Company, while obligated to deliver coal resources that provide necessary energy for local communities, is dedicated to the preservation and enhancement of natural resources and water quality within the watershed. To meet these obligations, the company must permit adequate surface acreage with underlying coal. An important consideration in site selection is the depth of coal, which determines economical recovery by surface mining equipment. The choice of the area included in this permit application is the result of several years of consolidated exploration efforts to determine coal reserves and property acquisitions in fee or by lease to legally allow mining. As Oxford Mining Company depletes its existing permitted reserves; its continued economic viability is dependent upon permitting new areas.

Mining is a basic industry. As such, it creates jobs in ancillary businesses. Most directly, equipment suppliers and manufacturers, fuel companies, the electric service provider, and others who provide mining supplies and services will benefit. Additional employment will be created from downstream operations, including transportation, handling, and processing of the coal. The majority of these jobs will pay more than the average pay for the area. The local housing, food, clothing, and other retail businesses will benefit. Economic studies have shown that for every direct mining job, 3 to 7 ancillary jobs are created. It is obvious this operation will generate a significant amount of tax revenue for state and local governments.

The quality of the No. 8 coal seam is good, providing ease of marketability. This quality of coal is in high demand now and should be in demand even during poor market times. Direct sale of this coal would bring a premium price. Blending of this coal with coals of poorer quality will make the poorer coals marketable at a viable price. Consequently, this coal is essential for flexibility in marketing strategy. As such, it is a key element to the financial success of Oxford Mining Company.

Affordable energy is essential to the sustained growth of the United States and to preservation of the comfortable lifestyle its citizens enjoy. Coal is currently the fuel used to generate more than half the electricity in the US. Consumers have recently experienced higher energy costs due to increasing cost of natural gas and oil. These fuels are 2-3 times more expensive than coal on a cents-per-million-BTU basis. This price disparity will increase due to the limited natural gas and oil reserves that are available to the US.

Studies have estimated the US has a 300-year reserve of coal. All of this coal can be mined within the borders of the US, decreasing dependence on foreign sources for fuel.

The economic advantages to be realized by the mining of this coal are very significant. High paying jobs will be provided for an extended period of time. The direct jobs will create additional jobs in ancillary businesses within the local area. Tax revenues will be enhanced. The financial health of Oxford Mining Company will also be enhanced.

The social benefits are also significant. Increased tax revenues to local governments relate to better roads, schools, etc. Maintaining and increasing the use of coal, as the fuel of choice, will provide the lowest possible energy cost to consumers and decrease our dependence on foreign sources of fuel. For the reasons just stated, coal is essential as a component to any national energy policy and this operation should be given a high priority for permit issuance.

Social and economic benefits from the preferred alternative are significant. The continued successful operation of Oxford Mining Company will allow them to maintain over 550 jobs. This project will enable Oxford to continue to provide approximately 10-15 direct jobs in the counties where the work is taking place. In February 2007, the market value for coal was set at $30-34/ton. Under this alternative, mining will produce approximately 278,400 tons of coal. The "coal value" is therefore approximately $8,352,00 - $9,465,600. It is also important to realize that the vast majority of this coal value will be directly invested in the local and state economies for salaries, fuel, equipment, equipment maintenance, shipping, and materials, including seed and vegetation purchased for reclamation of the site. This coal value will secondarily be invested local restaurants, gas stations, mechanics shops, hardware stores, grocery stores, car dealerships, and housing. Oxford Mining Company is clearly a vital industry in the State of Ohio. Lost energy production may also seem inconsequential, but consider the impact of a 3-day power outage in a major metropolitan area. Every day of energy production is vital to our State.

Several taxes are assessed on each ton of coal mined within Ohio. Oxford will pay $0.55 per ton in federal excise taxes (black lung and other various federal programs), $0.35 per ton for reclamation of abandoned mine lands from the pre SMCRA era, and $0.25 per ton to the State for various programs. Oxford will pay $1.15 in state and federal taxes per each ton of coal mined from this site. Based on the estimated tonnage yield proposed within the mining application of 278,400 tons of coal removed, estimated combined state and federal tax revenue will total $320,160 which directly funds several state a federal programs. The proposed temporary lowering of water quality is necessary to accommodate important economic development and to meet a demonstrated public need as defined in rule 3745-1-50 of the Administrative Code:

3745-1-50(11)
"Public need" means an activity or project that provides important tangible and intangible gains to society that satisfies the expressed or observed needs of the public where accrued benefits significantly outweigh reasonably foreseeable detriments.

Minimal Degradation Alternative

The Minimal Degradation Alternative proposes to produce approximately 222,762 tons of coal. Based on the previously noted average market coal value this alternative is valued at $6,682,860 - $7,573,908. Oxford will pay $1.15 in state and federal taxes per each ton of coal mined from this

site. Based on the estimated tonnage yield proposed, 222,762 tons of coal removed, estimated combined state and federal tax revenue will total $256,176 which directly funds several state and federal programs.

Non-Degradation Alternative

The Non-Deg Alternative proposes to produce approximately 129,508 tons of coal. As previously discussed, with these recoverable tons the state and federal agencies stand to gain approximately $148,934.

Due to increased permitting, the process to obtain a coal-mining permit has slowed tremendously. This economically destroys coal-mining operators as they operate on a strict time frame. When this time frame is encroached upon, people lose jobs, and Ohio loses its coal supply. With this loss of coal, comes a loss of tax money, which Ohio collects per-ton of mined coal. This tax money is a substantial part of Ohio's economy, and without it, Ohio would be in extreme economic distress. This should be an important factor when considering the alternatives proposed within this application.

These 10-15 employees are supported by approximately 130 other workers such as welders, mechanics, truck drivers, local businesses, engineers, and consultants. Approximately 140 local workers could be unemployed if this site does not operate on a timely and efficient level. In 2004, the average wage for surface mine workers was $43,117 and in 2006 the average wage increased by almost ten percent to $47,361. In comparison, the median household income in Guernsey and Noble Counties averages $31,500 (Ohio Department of Development).

The quality of life for the mine workers, as well as workers associated with the mining industry will greatly benefit by the development of this site and the smooth, timely transition of mining from one permitted area to the next. The majority of the workers directly and indirectly affected by this mine come from the local labor pool.

SOCIAL AND ECONOMIC BENEFITS TO BE LOST (10I)

Preferred Design

No jobs or tax revenues are expected to be lost as a result of the project. Property values are not expected to be lowered as a result of the project and no negative impacts to either recreational or commercial opportunities associated with the site are expected as none currently exist.

Minimal Degradation Alternative

Social and economic benefits will taper as a result of the implementation of this alternative.

Non-Degradation Alternative

Significant social and economic benefits will be lost as a result of the implementation of the Non-Degradation Alternative. The site will not be feasible to mine under this alternative due to technical and financial constraints.

ENVIRONMENTAL BENEFITS TO BE GAINED AND LOST (10J)

Preferred Design

Affects on Aquatic Life
Aquatic life benefits within the project area are limited. A minimum of aquatic life benefits provided by the site will be temporarily lost. The affected areas will be restored as shown and described in part 10k of this application.

Effects on Wildlife
For the short term, wildlife benefits will be lost with the removal of the vegetated area within the area of coal removal and the area of stockpiled spoil material. Upon completion of the project, the area will gain a grassland/prairie habitat.

Effects on Threatened or Endangered Species
There are no benefits lost as a result of the completion of the preferred alternative for threatened or endangered species.

Environmental benefits are expected to be restored through the mitigation of impacted stream habitat with the establishment of meanders, reestablishment of aquatic habitat in the form of riffles and pools, revegetation with native plants, and preservation of the mitigated corridors.

Minimal Degradation Alternative

Affects on Aquatic Life
Aquatic life benefits within the project area are limited. A minimum of aquatic life benefits provided by the site will be temporarily lost. The affected areas will be restored as shown and described in part 10k of this application.

Effects on Wildlife
For the short term, wildlife benefits will be lost with the removal of the vegetated area within the area of coal removal and the area of stockpiled spoil material. Upon completion of the project, the area will gain a grassland/prairie habitat.
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There are no benefits lost as a result of the completion of the preferred alternative for threatened or endangered species.

Environmental benefits are expected to be restored through the mitigation of impacted stream habitat with the establishment of meanders, reestablishment of aquatic habitat in the form of riffles and pools, revegetation with native plants, and preservation of the mitigated corridors.

Non-Degradation Alternative

Affects on Aquatic Life
Aquatic life benefits within the project area are limited. A minimum of aquatic life benefits provided by the site will be temporarily lost. The affected areas will be restored as shown and described in part 10k of this application.

Effects on Wildlife
For the short term, wildlife benefits will be lost with the removal of the vegetated area within the area of coal removal and the area of stockpiled spoil material. Upon completion of the project, the area will gain a grassland/prairie habitat.

Effects on Threatened or Endangered Species
There are no benefits lost as a result of the completion of the preferred alternative for threatened or endangered species.

Environmental benefits are expected to be restored through the mitigation of impacted stream habitat with the establishment of meanders, reestablishment of aquatic habitat in the form of riffles and pools, revegetation with native plants, and preservation of the mitigated corridors.

PROPOSED MITIGATION TECHNIQUES (10K)

Preferred Design – Stream Mitigation

The Preferred Design impacts approximately 1,345 ft intermittent and 663 ft ephemeral stream channel. These impacts will occur as a result of several mining activities including coal removal and diversion construction. These impacts are unavoidable if coal extraction is maximized.

As stated in the mining application, these stream impacts are required to be reclaimed on-site by the Ohio Department of Natural Resources. Oxford Mining Company, LLC proposes to reclaim and restore 1,345 linear feet of intermittent stream channel on-site. This reflects the ODNR stream reconstruction length and plans.

Of the 2,008 linear feet of affected channel, 663 linear feet is considered to be ephemeral channels, which are unregulated entities through ODNR. Therefore, they are not addressed in the ODNR stream reconstruction plans. This ephemeral length of stream will be mitigated for on-site, *and in-kind at a 1:1 ratio in approximate original locations.*

Please see the engineering sheets titled "Natural Stream Restoration", which represent the proposed stream reconstruction and wetland construction under the Preferred Design Alternative. Please see **Appendix C** for Stream Reconstruction Plans.

The water balance within the permit boundary will not be altered as a result of the proposed project. Therefore, the amount of water with which to work should not change. What will be altered is the location of the origin of groundwater to surface water transitions (seeps and springs) As a result the operator will be required to identify the location of groundwater erupting

from the highwall. These locations cannot be identified until the final highwall is exposed. During the reclamation of the site, the operator will direct water from the highwall to the origin of each mitigated stream which had its water source mined through. This can be accomplished in several ways including grading and/or draining the accumulated groundwater via a simple drain. Considering the number of variables involved with such a project (location of hydrology, amount of hydrology, construction success, and ecological factors), it is impossible to guarantee the success of each mitigated resource. This is true regardless of the type or magnitude of the proposed project. Despite this fact, hydrology manipulation is the only method for restoring these streams onsite.

The goals for on-site reclamation/restoration for streams is to restore the physical and biological integrity to current stream conditions. There are several important objectives within the mitigation plan:

- provide a naturally stable stream channel
- improve the physical aquatic habitat features
- minimize mining impacts to the maximum extent practical

Streams will be replaced on-site utilizing natural channel designs which will provide all the desired habitat and stability features necessary to return the streams to pre-impact quality. This type of restoration is widely recommended by officials within ODNR and OEPA as well as across the country, as solutions to stream restoration as a means to improve the long term environmental quality of streams. There are many long term benefits derived from the efforts to restore streams, such as:

- stabilizing banks against erosion
- development of in-stream habitat features
- promoting vegetation of corridors will occur with native, wildlife friendly plants
- restoration of sediment and nutrient storage will be restored

The restoration techniques proposed for streams would provide a stable and functional stream channel and all the desirable channel habitat "features" currently found within the streams.

Preferred Design – Wetland Mitigation

The Preferred Design impacts no jurisdictional wetlands. No mitigation is proposed.

Minimal Degradation Alternative – Stream Mitigation

The natural channel design as explained for the Preferred Design will apply to the Minimal Degradation Alternative with the exception of additional restored stream length. Impacts have been reduced to 946 linear feet of ephemeral and intermittent stream channel.

As stated in the mining application previously filed by the applicant, these stream impacts are required to be reclaimed on-site by the Ohio Department of Natural Resources.

Of the 1,101 linear feet of affected channel, 155 linear feet is considered to be ephemeral channel, which are unregulated entities through ODNR. Therefore, they are not addressed in the ODNR stream reconstruction plans. This channel would be mitigated *onsite and in-kind at a 1:1 ratio in the approximate original locations.*

Minimal Degradation Alternative – Wetland Mitigation

The Preferred Design impacts no jurisdictional wetlands. No mitigation is proposed.

STREAM MITIGATION PLAN

Proposed Construction Techniques – Pools and riffles are proposed to be constructed at the outside meander bends and runs, respectively. Natural movement of material through the channel will aid in further shaping those pools over time. Riffles will be constructed using practiced construction techniques for successful, functioning riffles that mimic natural riffle slope and produce accelerated flows that create the downstream pools.

Natural recruitment of native plants will be allowed in the on-site wetland mitigation areas. After permanent vegetation is established on the reclaimed areas, sediment loads in runoff should approximate pre-mining levels, which would result in satisfactory water quality. Post-mining surface water quantity should approximate quantities that existed prior to mining in the area. Therefore, there should be sufficient base flow for the reconstructed streams.

Planting - Significant planting of native trees along the relocated/restored riparian corridors and constructed wetland buffer is planned. Plantings will encompass 50 ft on each side of the reconstructed streams and 50 ft around the wetland perimeter. Trees and shrubs will be slightly staggered, per the ODNR plan, to increase shade coverage. The plan calls for 4 foot rows, with 8 foot spacing. This usually equates to 600 trees per acre.

Species that have been selected for planting are native to the region and are cold hardy. Value to wildlife was also considered when preparing the plant species list. Disturbed areas, such as side slopes, will be seeded with a rapidly germinating annual cover mixture to provide erosion control and prevent the establishment of undesirable species. Planting will take place in the first growing season *following topsoil and subsoil replacement*. All plant materials will be inspected prior to planting, and those showing signs of stress will be replaced. Plantings will be periodically inspected to ensure success.

On the basis of the above criteria, a list of species to be planted along the riparian corridors was developed and is included below. Final planting quantities and species types will be dependent on market availability at the time of planting.

Proposed Typical Tree Planting List

Riparian Corridor – Trees

Acer spp.	Maple(s)
Betula nigra	River birch

Carya spp.	Hickory(s)
Celtis occidentalis	Common hackberry
Cercis Canadensis	Eastern redbud
Crataegus phaenopyrum	Washington hawthorne
Crataegus crusgalli	Cockspur hawthorne
Fagus grandifolia	Beech
Fraxinus pennsylvanica	Green ash
Fraxinus Americana	White ash
Gleditsia triacanthos 'inermis'	Honeylocust
Hamamelis virginiana	Common witchhazel
Liriodendron tulipifera	Tulip poplar
Liquidambar styraciflua	Sweetgum
Platanus occidentalis	Sycamore
Populus deltoids	Eastern cottonwood
Prunus serotina	Black cherry
Quercus alba	White oak
Quercus palustris	Pin oak
Quercus rubra	Red oak

Upland Areas
Temporary and Permanent Vegetation

Temporary Vegetation: 2 lbs. Rye Grass and 1 BU. Cereal Grain per acre
Permanent Planting: 20 lbs. Orchard Grass; 3 lbs. Timothy; 2 lbs. Perennial Ryegrass; 6 lbs. Red Clover and 1 lb. Ladino Clover.

Temporary and permanent planting will be done simultaneously and will commence as soon as weather allows upon the completion of topsoil distribution.

An average of 2 tons of hay/straw per acre will be distributed by commercial mulching machines.

Preservation of Restored/Reclaimed Streams
The mitigated areas will be protected using a conservation easement or environmental covenant. Oxford is currently working with the landowners to establish a protective mechanism for the reconstructed mitigation areas. This restriction will be implemented upon the reconstruction activities and will be included with the annual monitoring reports.

Stream Monitoring Methodology
The objective of stream monitoring is to ascertain whether restored or enhanced channels are meeting the criteria to replace lost functions. Several permanent sampling points on-site have been selected for specific monitoring activities. Sample point locations will be permanently marked in the field. The entire length of the stream will also be evaluated to look for any areas of concern.

Several photographs of the streams will be taken during monitoring. Monitoring will take place once annually between June 15 and September 30. Parameters to be monitored within the reconstructed channel include:

- planted riparian corridor plantings will be checked for survivability.
- intermittent streams will be checked for appropriate flow.
- Ensure stream banks are not eroding.

Data collected during sampling periods will be compiled into an annual report to be provided to the COE and Ohio EPA by December 31 of each of the monitoring years. These reports will provide information on habitat development and will include cross-sectional measurements. They will also include a photographic documentation of the restored reaches from fixed positions, as well as discussion on whether the stream is meeting the design goals.

Wetland Monitoring Methodology

No wetlands are proposed for impacts, no monitoring is necessary.

Mitigation Timing

Due to the complexity and duration of the coal mining process, mitigation for stream impacts on-site are tied to the phasing and reclamation schedule for a mine. The applicant is willing to make the following commitments regarding mitigation requirements.

- Impacted streams will be reclaimed on-site. Reclamation will occur following completion of each section of the mine per requirements of the ODNR mining permit.

- Mitigation construction will begin after the conclusion of site reclamation and during the first appropriate growing season as field conditions permit. This will ensure that the site is properly prepared with grading and topsoil dispersal completed by mining equipment on-site.

BEST MANAGEMENT PRACTICES FOR CONSTRUCTION

All sediment controls that are utilized will be kept in place during mining activities and until the site has been stabilized and reclaimed. All areas disturbed during mining will be seeded to encourage the establishment of a vegetative cover and decrease erosion potential.

MANAGEMENT AND MAINTENANCE

Site maintenance and management during mining and post mining will be conducted by Oxford Mining and/or subcontractors. Invasive species will be monitored and eradicated with local

herbicide application, physical removal, or similar method as needed. Specifications for any necessary repairs will be developed as needed for the site.

CONCLUSIONS

A permit application requesting authorization for impacts to waters of the United States on a mineral extraction project has been prepared by Oxford Mining Company, LLC. This document provides information to address permit application requirements for a Section 401 Water Quality Certification from the Ohio Environmental Protection Agency. An alternatives analysis in the form of information required for a state Antidegradation Review is also provided. Information requested by the COE and the Ohio EPA was presented for Preferred Design, Minimal Degradation, and Non-Degradation alternatives and mitigation techniques were proposed for site impacts.

A total of 2,836 linear feet of stream features were identified on the proposed site; with 1,924 linear feet of intermittent stream, and 912 linear feet of ephemeral stream channel. The majority of streams within the permit boundary originate as steep, rocky outcrops and/or hillside seeps. One wetland, Wetland A, is within the permit boundary. No impacts are proposed to this wetland.

Under the Preferred Design, the applicant proposes to surface mine and auger mine resulting in impacts to 2,008 linear feet of stream and no acres of wetlands. The Preferred Design will yield approximately 278,400 tons of coal. Under the Minimal Degradation Alternative, the applicant proposes to surface mine and auger mine resulting in impacts to 1,101 feet of stream and no acres of wetland. The Minimal Degradation Alternative will yield approximately 222,762 tons of coal. The Non-Degradation Alternative makes mining economically infeasible. Oxford Mining is prepared to start work with the only economically feasible alternative, which is the Preferred Design.

CITATIONS

Clark, B. K., et.al. 1987. Summer Status of the Endangered Indiana Bat in Iowa. The American Midland Naturalist. 118(1): 32-39.

FWS. United States Department of the Interior, Fish & Wildlife Service. 7/29/96. Federally Endangered, Threatened & Proposed Species; Ohio. Available from the FWS, 6950-H Americana Parkway, Reynoldsburg, Ohio 43068.

Kurta, A., et. al. 1993. Summer Roosts of the Endangered Indiana Bat (Myotis sodalis) on the Northern Edge of its Range. The American Midland Naturalist. 129: 132-138.

Ohio EPA. 10/1/96. A Listing of Special Category Waters Identified in Ohio's Antidegradation Rule. Prepared by the Ohio EPA, Division of Surface Water. 1800 WaterMark Drive, PO Box 1049, Columbus, Ohio 43216-1049.

Ohio Revised Code. Title XV Conservation of Natural Resources. Chapter 1513 – Coal Surface Mining and Reclamation Permit.

----------. 10/16/97. State of Ohio Water Quality Standards. Prepared by the Ohio EPA, Division of Surface Water, 1800 WaterMark Drive, PO Box 1049, Columbus, Ohio 43216-1049.

USDA-SCS. United States Department of Agriculture-Natural Resources Conservation Service. 1992. Soil Survey of Guernsey County, Ohio.

USDA-SCS. United States Department of Agriculture-Natural Resources Conservation Service. 1986. List of Hydric Soils for Noble County, Ohio.

USGS. United States Geological Service. Revised 1994. Quaker City, Ohio Quadrangle, 7.5 minute Series (Topographic)

OXFORD MINING COMPANY, LLC.

544 CHESTNUT STREET
COSHOCTON, OH 43812

INDIVIDUAL 404 PERMIT

for

GIBSON

SURFACE COAL MINING AND RECLAMATION

Located In:
Sections 1 & 7, T-9-N, R-7-W
Millwood Township, Guernsey County
and
Sections 6 & 12, T-8-N, R-7-W
Beaver Township
Noble County, Ohio

Prepared By:
Bair, Goodie and Associates, Inc.
153 North Broadway
New Philadelphia, Ohio 44663

Date Prepared: March 2013

I. GENERAL DESCRIPTION OF THE AQUATIC ENVIRONMENT DIRECTLY AFFECTED

STREAM HABITAT

Bair, Goodie and Associates, Inc. conducted a stream survey and a jurisdictional delineation. This survey concluded that all 13 stream complexes located within the final permit boundaries are jurisdictional due to their connectivity to other jurisdictional waters. The streams delineated were given the designation of perennial, intermittent, or ephemeral stream channel. Please see **Appendix B** for a list of each stream and its' designation.

A total of 22,703 linear feet of stream features were identified on the site; one (1) stream is perennial, seventeen (17) streams are intermittent, two (2) streams have both intermittent and ephemeral stream length, and twelve (8) streams are ephemeral. In total, 6,085 linear feet of perennial, 11,643 linear feet of intermittent, and 5,366 linear feet of ephemeral stream channel is located within the delineated limits.

The majority of streams within the permit boundary originate as steep, rocky outcrops and/or hillside seeps. The predominant streams substrates are primarily composed of leaf pack and silt, with smaller amounts of cobble, boulder, gravel, and sand. Channel development is typically fair to good with little to average sinuosity. In general, stream cover is moderate and consists of overhanging vegetation, logs, and woody debris.

It was found that all of the ephemeral features were dry during the field reconnaissance while a few of the intermittent streams were found to have moist channels. The joint field review with the Corps and EPA was conducted in the rain and found all streams to have flowing water. Riparian zone width along the identified streams was mostly wide, and primarily included forestland.

None of the streams occurring on the site is listed in the Ohio EPA's *A Listing of Special Category Waters Identified in Ohio's Antidegradation Rule* (10/1/96) or the *State of Ohio Water Quality Standards* (Ohio EPA, 10/16/97). In addition, none of the listed streams are monitored by Ohio EPA.

WETLANDS

Bair, Goodie and Associates identified one (1) wetland feature within the delineation boundary totaling 0.48 acres. Wetland WLA was determined to be jurisdictional due to connectivity to jurisdictional waters. This wetland is associated with man-made surface disturbance activity.

The "Eastern Mountains and Piedmont" regional supplement to the Corps of Engineers Wetland Delineation Manual" was used to delineate the wetland boundaries.

II. STREAM / WETLAND FUNCTIONAL ASSESSMENT

EXISTING STREAMS

The streams within the project area are all unnamed headwater tributaries to Leatherwood Creek, which eventually flows into the Wills Creek Drainage Basin and then the Muskingum River. The quantity and quality of the headwater streams on site have been inventoried in "USACE Jurisdictional Stream Impact Summary Table" found in this submittal.

The majority of streams within the permit boundary originate as steep, rocky outcrops and/or hillside seeps. The predominant streams substrates are primarily composed of cobble, gravel, sand, and leafy pack. Channel development is typically fair to good with little to average sinuosity. In general, stream cover is moderate and consists of overhanging vegetation, logs, and woody debris.

None of streams occurring on the site are listed in the Ohio EPA's A Listing of Special Category Waters Identified in Ohio's Antidegradation Rule (10/1/96) or the State of Ohio Water Quality Standards (Ohio EPA, 10/16/97). In addition, none of the streams are currently monitored by OEPA.

STORMWATER ATTENUATION

Stormwater attenuation was determined to be minimal for all the streams located within the proposed mining area because most of the channels have steep gradients, small channel dimensions (i.e., limited channel storage) and narrow flood prone areas (i.e., entrenched channels with limited floodplain storage).

GROUNDWATER RECHARGE

Groundwater recharge was determined to be of minimal function for streams within the study area because steep channel gradients reduce the residence time of water and the opportunity for infiltration.

WILDLIFE HABITAT

On-site habitat is dominated by undeveloped immature forest associated with some grassland, which provide abundant wildlife habitat for a wide variety of animal species. The trees on-site provide a relatively closed canopy cover and the forest floor is covered with shrub and herbaceous species.

NUTRIENT CYCLING

Nutrient cycling functions were determined to be low for streams within the study area. This is due to the steep channel gradient and embedded channel substrates create a self-cleaning condition. Streams on-site retain more woody debris and leaf packs that help aid in nutrient cycling functions. However, limited watershed sizes and limited solar exposure prevent these streams from providing higher nutrient cycling function. Very little deposition of sediment

occurs in these high gradient streams.

WATER QUALITY

In general, the streams on-site were located within a wooded area where the trees helped to stabilize the soil. Forb species were present on the forest floor adjacent to the streams on site. The forbs help to dissipate water energy and to slow the water before it enters the stream channels, thus reducing the amount of sediment entering into the streams.

PROPOSED STREAMS

AQUATIC LIFE HABITAT

The proposed stream mitigation includes the reconstruction of the impacted streams in their approximate pre-mining location. Grasses planted along the stream banks will eventually hang into the water and provide nutrients and cover for aquatic life. Trees and shrubs planted within the riparian zone will shade portions of the streams and create varying microclimates. As these grasses, trees, and shrubs mature, their roots will infiltrate the stream bank and create additional habitat. Trees not adjacent to the streambed will also function to improve water quality via stormwater management, filtration, wildlife habitat and contaminant sequestration. Riparian enhancement will be self-maintaining and given time to develop will improve the aquatic life habitat of the reconstructed channel providing very high aquatic life habitat function.

STORM WATER ATTENUATION

Stormwater attenuation was determined to be minimal for the streams on-site due to the high stream gradients and small channel dimensions. However, riparian enhancement and sediment ponds will increase stormwater attenuation on-site. The proposed reconstructed stream channels will be designed using a natural channel design that allows for the streams to naturally modify the channel to provide changing depth, width, and channel bank slope that accommodate changes in flow. Planted riparian stream buffers will also improve stormwater attenuation by slowing stormwater runoff from the site while creating a functional floodplain that will reduce storm flow velocities and regulate discharge rates.

GROUNDWATER RECHARGE

Due to the high gradient and small drainage area streams on site, no more than minimal groundwater recharge functions can be expected due to stream reconstruction. Mining, in general, contributes to the groundwater in the form of backfilled spoil. This spoil acts as a 'sponge' and holds a large amount of groundwater, typically discharging as seeps (springs) along the toe of the spoil at the edge of the affected area. After mining, the area will have a larger capacity to withhold groundwater than the pre-mined area.

WILDLIFE HABITAT

Wildlife habitat functions are expected to be replaced through the planting of riparian vegetation along stream banks and buffers. The post-mining land use will be grazingland. Given the time to develop, intact riparian corridors will provide a refuge and travel corridor for wildlife in the project area. The streams also provide a source of water and food (e.g., aquatic invertebrates, frogs, salamanders) for area wildlife.

NUTRIENT CYCLING

Reconstructed streams will take time to achieve nutrient cycling as grasses and trees will need time to become established. Once they have established, grasses planted along the stream banks will hang into the water and provide additional nutrients to the stream, which will aid in nutrient cycling as well.

WATER QUALITY

Sediment ponds will trap sediment resulting from mining and reclamation activities reducing sedimentation and pH impacts while maintaining water quality standards in the watershed. Diversion ditches will also be constructed and maintained to assure that all runoff from the permit area will be directed to the sediment ponds to reduce sedimentation. Because sedimentation is occurring in the Wills Creek watershed, the proposed mining and reclamation is expected to improve water quality within the watershed.

WETLAND FUNCTIONAL ASSESSMENT

EXISTING WETLANDS

Bair, Goodie and Associates identified one (1) wetland feature within the delineation boundary totaling 0.48 acres. Wetland WLA was determined to be jurisdictional due to connectivity to jurisdictional waters. This wetland is associated with man-made surface disturbance activity.

The "Eastern Mountains and Piedmont" regional supplement to the Corps of Engineers Wetland Delineation Manual" was used to delineate the wetland boundaries.

AQUATIC LIFE HABITAT

One wetland was delineated onsite and was entirely avoid in the mining plan.

STORMWATER ATTENUATION

Stormwater attenuation was determined to be minimal for the wetland located within the proposed mining area because of its relatively small size and inability to store storm water.

WILDLIFE HABITAT

On-site habitat is dominated by forest associated with some grassland, which provide abundant wildlife habitat for a wide variety of animal species. The trees on-site provide a relatively closed canopy cover and the forest floor is covered with shrub and herbaceous species.

NUTRIENT CYCLING

Nutrient cycling functions were determined to be low for the wetland within the study area. This is due to the size and position on the landscape.

WATER QUALITY

The wetlands typically exhibit good water quality. Wetland plant species help to dissipate water energy and to slow the water before it enters the stream channels, thus reducing the amount of sediment entering into the streams and surrounding habitats.

PROPOSED WETLANDS

AQUATIC LIFE HABITAT

One (1) wetland was delineated on this site, Wetland A. Impacts to this wetland have been intentionally avoided. No wetland mitigation is necessary as no impacts will be made to wetlands.

WATER QUALITY

Sediment ponds will trap sediment resulting from mining and reclamation activities reducing sedimentation and pH impacts while maintaining water quality standards in the watershed. Diversion ditches will also be constructed and maintained to assure that all runoff from the permit area will be directed to the sediment ponds to reduce sedimentation. Because sedimentation is occurring in the Wills Creek watershed, the proposed mining and reclamation is expected to improve water quality within the watershed.

III. USACE NEPA REQUIREMENTS

APPLICANT: Oxford Mining Company, LLC

PROJECT: Gibson

APPLICANT: Oxford Mining Company, LLC
544 Chestnut St., P.O. Box 427
Coshocton, OH 43812

INTRODUCTION

The project site is referred to as Gibson.

DESCRIPTION OF THE PROPOSED PROJECT

The preferred alternative is proposing to affect approximately 1,345 linear feet of intermittent stream channel and 663 linear feet of ephemeral stream channel for a total of 2,008 feet of stream impacts. These impacts are necessary to develop the No. 8 coal seam. All affects are described in the charts used to assess impacts (see **Appendix A**). These streams will need to be disturbed by coal removal.

The preferred alternative is proposing to affect no acres of jurisdictional wetlands on site.

This alternative was designed to maximize coal seam development of the No. 8 coal seam. Coal yields from strip and auger mining (No. 8) have been estimated at 278,400 tons. As a result of this design, 2,008 linear feet of stream channel (perennial, intermittent, and ephemeral) and no acres of wetland will be impacted. These impacts will result from coal removal and the supporting activities.

The Ohio Revised Code, Chapter 1513 Coal Surface Mining, §1513.16 Performance Standards, states the following:

> *.....conduct coal mining operations so as to maximize the utilization and conservation of the solid fuel source being recovered so that re-affecting the land in the future through coal mining can be minimized;*

Essentially, the statute requires that the applicant maximize mined resources on a site so there is no need to return at a later date and re-mine a reclaimed site. By removing as much coal as is technologically and feasibly reasonable, this standard is met.

Tables "USACE Jurisdictional Stream Impact Summary Table" represents the proposed stream and wetland impacts under the Preferred Design.

LOCATION OF THE PROPOSED PROJECT

The subject property lies within Millwood Township, Guernsey County, Ohio and Beaver Township, Noble County, Ohio on the Quaker City 7.5 Minute USGS Quadrangle Map. The site is approximately 3 miles southeast of Quaker City, OH on CR-265 and is located on the south side of the road at the Guernsey/Noble county line. The site consists of undeveloped land with early successional forest traits.

PURPOSE AND NEED FOR THE PROPOSED PROJECT

Purpose: The project purpose is to recover the No. 8 coal seam to meet market energy demands. The proposed project is not a water dependent activity.

Need: Oxford Mining Company, LLC is proposing to conduct surface mining activities on the Gibson site in order to meet contractual obligations to deliver coal. This project will enable Oxford to continue to provide approximately 15-20 direct jobs in the counties where the work is taking place. The secondary economic effects of the project cannot be quantified, but are certainly significant. Input to the local economy, including tax revenues generated by the proposed mining, justifies the proposed impacts and the need for the project.

PRACTICABLE ALTERNATIVE ANALYSIS DETERMINATION

PREFERRED ALTERNATIVE:

The preferred alternative is to recover the No. 8 coal seam from approximately 132 acres as described in the Ohio DNR Permit Application (see map). Conventional surface and auger mining methods would be used to recover the coal, which requires removal of covering soil and rock (overburden), extraction of coal, and replacement of rock and soil to approximate original contours. This alternative considered impacts to cultural and natural resources and includes only those areas for which there is substantial economic justification. Removal of coal, as proposed, will impact approximately 2,008 linear feet of stream and no acres of wetland.

Description of Construction or Placement of Fill:

This alternative would impact 2,008 feet of jurisdictional unnamed tributaries to Leatherwood Creek within the Wills Creek watershed. For specific stream impacts, refer to the **Appendix A**. Materials, which would be discharged to surface waters, are those which overlie the coal and include clay, limestone, shale, and sandstone. These materials are further described in the Drilling Reports located in **Appendix D**. Following redistribution of overburden, stockpiled topsoil will be redistributed over the entire site.

Magnitude of Lowering Water Quality:

Preliminary studies pertaining to water quality on-site were conducted as required by the ODNR permitting process. Overburden contained within the permit area is generally non-toxic and non-acidic. The overburden has a good buffering capacity. The coal seams, as well as any binders, partings, etc. are typically toxic and acidic. The coal seams will be removed by mining, and therefore removed as a toxic and acid-forming stratum. If these toxic and acid

producing strata are disposed of properly, the mining and reclamation of this area should result in acceptable levels of water quality. Therefore, this area will result in a neutral spoil and acid mine drainage will not be a concern.

The majority of streams within the permit boundary originate as steep, rocky outcrops and/or hillside seeps. The predominant streams substrates are primarily composed of cobble, leaf pack, gravel, and sand. Channel development is typically fair to good with little to average sinuosity. In general, stream cover is moderate and consists of overhanging vegetation, logs, and woody debris. Although surface mining will permanently impact several of these seeps and streams, the geology of the area, as well as abandoned and backfilled horizontal auger holes, will allow water to find a similar route as in pre-mining conditions. It will be possible during the reclamation process to manipulate hydrology and return the original flow regime to these seeps and streams.

Reclaimed and restored streams will be designed using natural channel design techniques to establish meanders and incorporate habitat features including pools and riffles and gravel/cobble substrate. Riparian vegetation including trees and shrubs will be reestablished along the banks.

No impacts are anticipated to occur to threatened/ endangered species or important commercial or recreational sport fish species as none are known to be found on the site. According to the Ohio Department of Natural Resources Natural Heritage Database, no existing or proposed state nature preserves or scenic rivers exist at the site. Please see **Appendix D**.

Technical Feasibility:
Oxford has considered impacts to waters of the United States, as well as other concerns and constraints. Impacts to streams, for example, were minimized to only those places required for access or erosion/sediment controls. The chosen mining alternative addressed the cost-effectiveness and technical feasibility of extracting the coal seam. In areas where overburden is too great, the cost-effectiveness of coal extraction decreases and the coal is left behind. One consideration in determining cost-effectiveness is the cost of moving equipment around objects (such as streams and wetlands). While some small areas may not contain adequate coal reserves, it is sometimes more cost-effective to continue mining through the area to the next reserve. As proposed, the chosen mine plan (preferred alternative) is the most technically feasible and cost-effective method of coal extraction for the project area.

Social and Economic Benefits:
Oxford Mining Company, LLC is a coal company, striving to wisely harvest and use Ohio's coal resources. This company is obligated by contract to deliver several million tons of coal annually. In order to meet these requirements, Oxford must constantly permit areas with sufficient coal reserves at a reasonable depth for strip mining. The most recent area in which the applicant wishes to surface mine has been explored for several years prior to the actual start of mining. As a mining operation begins to slow and prepares to leave the area, it is crucial for other areas be ready for mining. This is essential for the survival of the mining company and also ensures the steady supply of coal for the State of Ohio to use.

The National Mining Association considers Ohio's mining industry to be vital to the State's economy. The coal industry's current estimated total economic benefit to the state of Ohio exceeds $3 billion. This industry provides jobs to more than 2,600 Ohioans, most of which are high paying jobs that contribute directly and indirectly to the local tax base in a depressed portion of Appalachia. Ohio, the third largest coal consuming state, produces 88% of its electricity at a fraction of the cost of other fuels.

Oxford Mining Company, while obligated to deliver coal resources that provide necessary energy for local communities, is dedicated to the preservation and enhancement of natural resources and water quality within the watershed. To meet these obligations, the company must permit adequate surface acreage with underlying coal. An important consideration in site selection is the depth of coal, which determines economical recovery by surface mining equipment. The choice of the area included in this permit application is the result of several years of consolidated exploration efforts to determine coal reserves and property acquisitions in fee or by lease to legally allow mining. As Oxford Mining Company depletes its existing permitted reserves; its continued economic viability is dependent upon permitting new areas.

Mining is a basic industry. As such, it creates jobs in ancillary businesses. Most directly, equipment suppliers and manufacturers, fuel companies, the electric service provider, and others who provide mining supplies and services will benefit. Additional employment will be created from downstream operations, including transportation, handling, and processing of the coal. The majority of these jobs will pay more than the average pay for the area. The local housing, food, clothing, and other retail businesses will benefit. Economic studies have shown that for every direct mining job, 3 to 7 ancillary jobs are created. It is obvious this operation will generate a significant amount of tax revenue for state and local governments.

The quality of the No. 8 coal seam is good, providing ease of marketability. This quality of coal is in high demand now and should be in demand even during poor market times. Direct sale of this coal would bring a premium price. Blending of this coal with coals of poorer quality will make the poorer coals marketable at a viable price. Consequently, this coal is essential for flexibility in marketing strategy. As such, it is a key element to the financial success of Oxford Mining Company.

Affordable energy is essential to the sustained growth of the United States and to preservation of the comfortable lifestyle its citizens enjoy. Coal is currently the fuel used to generate more than half the electricity in the US. Consumers have recently experienced higher energy costs due to increasing cost of natural gas and oil. These fuels are 2-3 times more expensive than coal on a cents-per-million-BTU basis. This price disparity will increase due to the limited natural gas and oil reserves that are available to the US.

Studies have estimated the US has a 300-year reserve of coal. All of this coal can be mined within the borders of the US, decreasing dependence on foreign sources for fuel.

The economic advantages to be realized by the mining of this coal are very significant. High paying jobs will be provided for an extended period of time. The direct jobs will create additional jobs in ancillary businesses within the local area. Tax revenues will be enhanced. The financial health of Oxford Mining Company will also be enhanced.