Bintrim, Tyler J LRP

From: [redacted] Exemption 6 - privacy
Sent: Sunday, August 30, 2009 3:02 PM
To: Bintrim, Tyler J LRP
Subject: ref public naotice .09-38

Attachments: Eskerattackletter.doc; mary annne 2 esker.doc

Eskerattackletter.doc (23 KB) mary annne 2 esker.doc (43 KB)...

Hello I have attached some of my concerns regarding the mining of the Esker in worth township. The Esker is a natural barrier to the wet land, my family and I have already noticed that there are less birds, duckks and herons from all the noise pollution. I am personally concerned over the quality of life and how the water issue needs will be straightened out. How this is going to effect the neighborhood.
Thankyou for your attention, [redacted]

Dept. Of Environmental Protection
White Memorial Building
PO Box 669
Knox, PA 16232-0669

RE: Application No. 10070304
Glacial Sand and Gravel

Dear Sirs,

Glacial Sand and Gravel Company has submitted a permit application for mining in Worth Township, Butler County. This request includes a site of significant geological and biological importance; the largest and best preserved esker in Pennsylvania, the West Liberty (Jacksville) Esker. It would also impact the accompanying wetland and kettle lake, along with the plants and wildlife of this habitat. It is one of the geological heritage sites currently being reviewed for inclusion in the Pennsylvania Natural Heritage Program (PNHP).

I am requesting that the complete environmental and ecological impact be considered, and that if this permit is approved, that care is taken to prevent the destruction of this rare geological treasure.

Sincerely,

Pennsylvania Department of Conservation and Natural Resources

3240 Schoolhouse Road
Middletown, PA 17057-3534
August 31, 2009

Bureau of Topographic and Geologic Survey (717) 702-2017

[redacted]

Exemption 6 - privacy

FAX (717) 702-2065

Dear [redacted]

Thanks for your informing us that Glacial Sand and Gravel Co. has recently submitted a mining permit application to the Department of Environmental Protection to mine sand and gravel in Worth Township, Butler County. Mining at this site would impinge upon West Liberty Esker geologic heritage site (also known locally as the Jacksville Esker, Miller Esker, and West Liberty Hogback).

This geologic feature will eventually be included in the Pennsylvania Natural Heritage Program (PNHP). It is one of the geologic heritage sites currently being reviewed for inclusion in the PNHP review database.

The particular location of the permit area includes the deposits and landforms where the esker, deposited by a subglacial stream, joins a large delta that was deposited at the end of the subglacial tunnel into an ice-dammed, proglacial lake during the Kent glaciation about 23,000 years ago. The esker is the largest and best preserved esker in northwestern Pennsylvania. Rarely, and nowhere else in northwestern Pennsylvania, is the relationship between an esker and a delta so well displayed. This site is of significant educational and scientific value.

We request that, if this permit is approved, that care is taken to prevent the destruction of this rare geologic feature. We are notifying Worth Township, the Knox DEP office and Glacial Sand and Gravel about our concerns.

If I can be of further assistance, feel free to write or call.

Sincerely,

James R. Shaulis
Geologist
jshaulis@state.pa.us

cc: Glacial Sand and Gravel Co.
Worth Township
Reading File

GLACIAL SAND AND GRAVEL COMPANY- PROPOSED MINE NO. 47 PROJECT

SURVEY RESULTS FOR AMERICAN BITTERN (*BOTAURUS LENTIGINOSUS*)

AT PROPOSED MINE NO. 47, BUTLER COUNTY, PENNSYLVANIA

MAY 2008

http://jerrysfoto.com/

Prepared by
Tetra Tech, Inc.
Portland, Maine

For
Glacial Sand and Gravel Company
Kittanning, Pennsylvania

July 2008

Glacial Sand and Gravel Company – Proposed Mine No. 47 Project

Survey Results for American Bittern (*Botaurus lentiginosus*) at Proposed Mine No. 47, Butler County, PA
May 2008

Final Report

Prepared by

Tetra Tech, Inc.
Portland, ME

For

Glacial Sand and Gravel Company
Kittanning, PA

July 2008

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Appendix C	Field Notes

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Table 1. Summary of Survey Dates, Locations and Times 3

1.0 INTRODUCTION

A habitat assessment and survey was conducted by Tetra Tech, Inc. (TT) to investigate and evaluate the proposed location of Glacial Sand and Gravel Company's Mine 47 as potentially suitable American Bittern (*Botaurus lentiginosus*) habitat. The proposed Mine No. 47 is located at the intersection of Swope Road and West Liberty Road in the Town of Slippery Rock, Butler County, Pennsylvania. The purpose of this habitat assessment and subsequent survey was to: 1) evaluate the area to determine whether the vegetative structure, vegetative species composition, and other habitat parameters represent suitable habitat for the American Bittern, and 2) if the habitat is deemed suitable for the American Bittern, define and survey specific areas within the proposed Mine 47 site via call-response surveys and visual searches to determine whether this species is present.

STUDY AREA

The total size of the study area, deemed potentially suitable for the American Bittern, is an estimated 15.0 acres, consisting of approximately 2.5 acres of open water marsh, surrounded by stands of mixed woody vegetation including several species of willow. The northeastern-most portion of this wetland, is approximately 2.0 acres, is dominated by cattail while the remainder of the emergent vegetation is dominated by sedges and rushes. Four survey locations were established to more efficiently survey the study area, which is adjacently located north of the proposed permit area for Mine No. 47. (Appendix A).

The study area is characterized by soft silty, sandy, gravelly substrate and impounded, slow moving still water. Based upon field observations, beaver activity in the area causes fluctuating water levels and changing vegetative composition on a year to year basis. Approximately 70 percent of the open water areas contain submergent and/or floating aquatic vegetation. Wetland cover types in the survey area include cattail-dominated, mixed native emergents, mixed invasive emergents, and willow (*Salix spp.)*-dominated shrub communities. These wetland cover types generally were distributed in low–lying areas adjacent to open water. Survey locations were generally surrounded by willow-dominated shrub or open areas dominated by mixed native and invasive emergents.

2.0 METHODS

2.1 BACKGROUND REVIEW

Tetra Tech conducted a review of existing data prior to performing field surveys. Data reviewed included information concerning the habitat requirements, species distribution, and element occurrences of American Bittern gathered from the Pennsylvania State Game Commission and other state and Federal agencies. Other information reviewed included recent literature and standard survey protocols for determining suitable habitat and presence/absence of American Bittern in areas of suitable habitat.

2.2 FIELD INVESTIGATION

2.2.1 Survey Locations

Following the review of existing data, Tetra Tech performed an on-site field investigation to evaluate existing habitat conditions and to determine the presence or absence of American bittern within the survey area. As part of the field investigations, four survey locations were established to provide complete coverage of all emergent vegetation (Appendix A). Locations were established along open water, willow-dominated shrub, and cattail dominated communities. Coordinates were determined for each location using Google Earth® and placed in the field by means of handheld GPS. Survey locations 1 through 4 were located at 41°00'26.33"N, 80°04'56.75"W; 41°00'24.48"N, 80°04'51.25"W; 41°00'24.71"N, 80°04'44.86"W; 41°00'29.45"N, 80°04'55.12"W respectively.

2.2.2 Survey Period

The study area was surveyed four times during the spring of 2008. The survey followed the guidelines set forth by the Pennsylvania Game Commission (PGC) in 2008, "Least Bittern and American Bittern Survey Protocol". This protocol states that surveys for the American bittern should be performed during the spring nesting period of April 25 to June 15. Surveys for the American Bittern were carried out during this nesting period as noted in Table 1.

Table 1. Survey dates and times by location

Survey Location	Date	Time
#1	April 30, 2008	06:40 – 07:00
#2	April 30, 2008	07:05 – 07:15
#3	April 30, 2008	07:25 – 07:40
#4	April 30, 2008	07:45 – 08:10
#1	May 3, 2008	06:30 – 06:45
#2	May 3, 2008	06:50 – 07:05
#3	May 3, 2008	07:10 – 07:25
#4	May 3, 2008	07:30 – 07:45
#1	May 9, 2008	06:35 – 06:50
#2	May 9, 2008	07:00 – 07:15

#3	May 9, 2008	07:20 – 07:35
#4	May 9, 2008	07:40 – 07:55
#1	May 23, 2008	07:00 – 07:15
#2	May 23, 2008	07:20 – 07:35
#3	May 23, 2008	07:45 – 08:00
#4	May 23, 2008	08:05 – 08:20

2.2.3 Survey Methods

All surveys performed by qualified professional biologists: Principal Biologist David Santillo, Ph.D. and Associate Biologist Justin Sweitzer. The call-response method, sometimes referred to as the tape playback method, was the primary survey method used for determining presence or absence of the American Bittern at the Proposed Mine No. 47 location. The call-response method was supplemented with visual observations before, during, and after tape playback. Visual observations were also conducted while changing survey locations.

The playback was structured as follows: passive listening prior to initiation of playback, three sessions of 30 seconds of calls, and listening for 5 minutes between sessions. Calls of the American Bittern included the primary advertising call. Calls were taken from the Lang Elliot Eastern Field Guide to Bird Sounds CD's.

The observer completed the broadcasts from a standing location at each of the four survey locations. Broadcasts were at 180 degrees from an Apple Ipod and portable speaker station. Surveys were conducted in the absence of rain and high winds. Surveys were conducted in the early morning (Table 1).

3.0 RESULTS

3.1 BACKGROUND REVIEW

American Bittern is currently listed as a Species of Management Concern by the U.S. Fish and Wildlife Service (USFWS 1995) and is listed as an endangered species by the Pennsylvania State Game Commission (PGC 2003). This listing results, in part, as a result of habitat losses and degradation within the State of Pennsylvania.

American Bittern preferred habitat includes emergent marsh characterized by cat-tail (*Typha spp.*) and bulrush (*Scurpus spp.*) (Andrle and Carroll 1988). The American Bittern is also known to nest in sedge meadows, beaver ponds, kettle-hole bogs, alder thickets, and shrub swamps. Materials used for construction of the nest depend on the local vegetation. Commonly used materials include cat-tail, cordgrass, bulrush, or sedge (Andrle and Carroll 1988).

3.2 FIELD INVESTIGATION

The field investigation revealed that suitable nesting habitat for American Bittern is present north of the proposed Mine No. 47 permit boundary, and is generally concentrated in the northwestern portion of the survey area, between West Liberty Road and Swope Road.

However, based upon the field survey, which was conducted following the survey guidelines set forth by the Pennsylvania Game Commission (PGC) in 2008, "Least Bittern and American Bittern Survey Protocol", it was determined that the American Bittern is not using this wetland for nesting. In addition, the mine plan proposes no disturbance to the wetland. Therefore, American Bittern would not be affected by the proposed mine project and the wetland area would remain as suitable habitat for potential future American Bittern use.

Sincerely,
Tetra Tech, Inc.

Justin L. Sweitzer
Associate Biologist

Dave Santillo, Ph.D.
Principal Biologist

LITERATURE CITED

Andrle, R.F., and J. R. Carroll. 1988. The Atlas of Breeding Birds in New York State. Cornell University Press.

Pennsylvania Game Commission-State Wildlife Management Agency. 2003. Endangered Species Program: List of Endangered and Threatened Bird and Mammal Species of Pennsylvania State. Available at: http://www.pgc.state.pa.us/pgc/cwp/view.asp?a=458&q=150321

Segraves, J. 2008. http://library.byways.org/view_details.html?MEDIA_OBJECT_ID=64092

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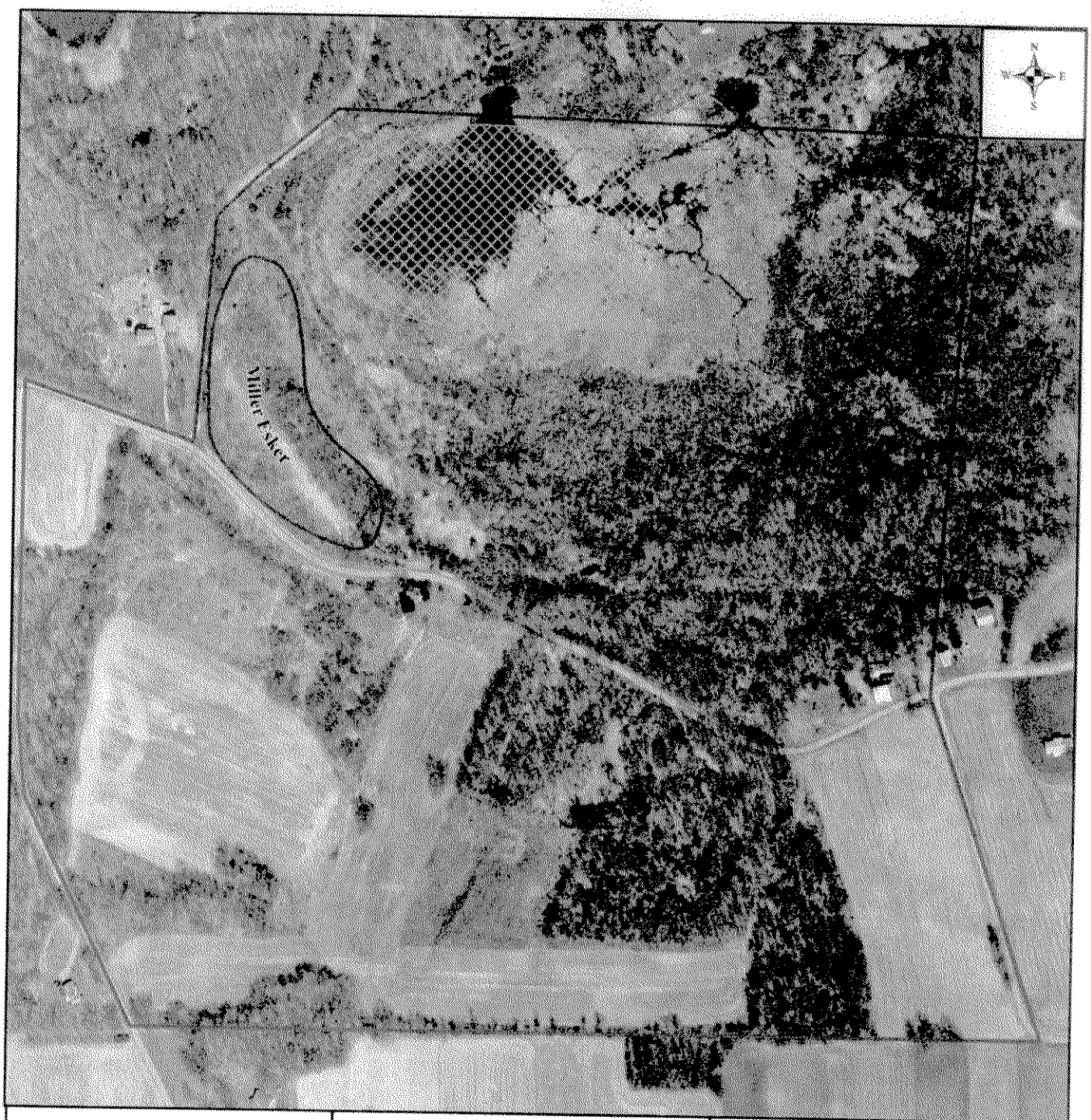
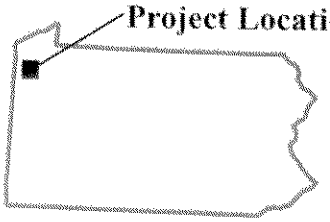
APPENDIX A

Site Map Showing Possible Bittern Habitat and Survey Locations





Source: 2006 Color Orthophotos of Pennsylvania, PAMAP Program, PA Department of Conservation and Natural Resources, Bureau of Topographic and Geologic Survey

250 125 0 250 500

Feet

LEGEND

Project Boundary

Potential American Bittern Habitat

Esker

Figure 1. 2008 Potential American Bittern Habitat Survey Areas at Proposed Mine NO. 47.

Client: Glacial Sand and Gravel Company

Prepared By: TETRA TECH, INC.

Date: 04/08

z:/projects/06-200/maps/figure1.mxd

APPENDIX B

Photo Documentation of 2008 Survey Effort

APPENDIX C

Field Notes

Field Investigation April 30, 2008

Temp: 45 F
Wind: 0 to 5 mph
Sky: 50 – 75 % cloudy
Tape playback initiated at Station 1 at 0640. Playback and listening sessions were alternated.
Playbacks initiated at: Station 2 at 0705; Station 3 at 0725; and Station 4 at 0745.
No American Bitterns were observed or heard.
Species recorded:
Green heron
Mallard
Canada geese
Song sparrow
Swamp sparrow
Yellow warbler
Common yellowthroat
Brown thrasher
Rufous-sided towhee
Red-winged blackbird
Brown cowbird

Field Investigation May 3, 2008

Temp: 55 F
Wind: 5 mph
Sky: 100 % cloudy
Tape playback initiated at Station 1 at 0630. Playback and listening sessions were alternated.
Playbacks initiated at: Station 2 at 0650; Station 3 at 0710; and Station 4 at 0730.
No American Bitterns were observed or heard.
Species recorded:
Mallard
Woodduck
Canada geese
Song sparrow
Swamp sparrow
Yellow warbler
Common yellowthroat
Rufous-sided towhee
American Crow
Red-winged blackbird
American goldfinch

Field Investigation May 9, 2008
Temp: 50 F
Wind: 0 to 5 mph
Sky: 25 % cloudy
Tape playback initiated at Station 1 at 0635. Playback and listening sessions were alternated.
Playbacks initiated at: Station 2 at 0700; Station 3 at 0720; and Station 4 at 0740.
No American Bitterns were observed or heard.
Species recorded:
Mallard
Canada geese
Song sparrow
Swamp sparrow
Yellow warbler
Common yellowthroat
American redstart
Red-winged blackbird

Field Investigation May 23, 2008

On May 23rd, at 06:45 hours (military time), Justin L. Sweitzer, TT Associate Biologist, arrived at the intersection of Stokes Road and West Liberty Road in Slippery Rock, PA. Weather conditions were sunny with some upper atmosphere clouds, temperature of 58°F, with a slight wind out of the southwest. Upon arrive at Location #1 the associate biologist encountered Four Green Herons (*Butorides virescens),* One White-tailed Deer (*Odocoileus virginianus*), Two Mallard Ducks (*Anas platyrhynchos,* One Red-winged Blackbird (*Agelaius phoeniceus*), and One American Crow (*Corvus brachyrhynchos).* Tape playback was initiated at 07:00 and played 2 times for 30 seconds each. Listening and visual searches followed until 07:15. During transition to Location #2 One Northern Cardinal (*Cardinalis cardinalis)*, One Turkey Vulture (*Cathartes aura)*, and One unknown Woodpecker species were encountered or heard. Once at Location #2 the tape playback was used from 07:20 to 07:35 in the same manner as at Location #1. The same was done at Location #3 from 07:45 to 08:00 and Location #4 from 08:05 to 08:20 with no new sightings. No American Bittern response or sights were noted.

TETRA TECH

August 19, 2008

Mr. Darrel Lewis
Glacial Sand and Gravel Company
One Glade Park East
Kittanning, Pennsylvania 16201

RE: Letter Report – Investigation of Potential Bald Eagle Habitat at Proposed Mine No. 47, Butler County, Pennsylvania

Dear Mr. Lewis:

Tetra Tech, Inc (TT) is pleased to submit to Glacial Sand and Gravel Company this letter report summarizing the purpose, background, and conclusion of an investigation of potential bald eagle (*Haliaeetus leucocephalus*) habitat conducted for the proposed Mine No. 47 site, in Butler County, Pennsylvania, on August 19, 2008.

PURPOSE

Per your request, TT has completed a literature review to assess the potential of the proposed mine site to provide bald eagle habitat. This literature review, combined with our familiarity with the project area and understanding of the project scope of work, was used to determine if potential habitat for bald eagle is present within the proposed Mine No. 47 site's permitted boundary.

BACKGROUND/LITERATURE REVIEW

The bald eagle is listed by the State of Pennsylvania and the Federal Government as a threatened species. The drastic decline and near extirpation of the bald eagle from Pennsylvania can be attributed to many factors. Loss of habitat, reduction in water quality, hunting, and use of DDT are the main factors contributing to their decline. At one point in the 1980's there were thought to be as few as 3 nesting pairs of bald eagles in the entire state of Pennsylvania. Since that time steps have been taken to ensure the return and survival of the bald eagle.

Bald eagles prefer habitat in which there are bodies of water that provide adequate food and limited human disturbance. Nesting eagles are particularly sensitive to human impacts and are most often located in low impact forested areas within close proximity to open water for hunting and scavenging (PGC 2006).

At present bald eagle numbers have climbed to around 100 nesting pairs throughout the state (PGC 2006). Two sites within Butler County are known nest sites for the bald eagle. The first site is Moraine State Park and Lake Arthur, which is located approximately 3 miles south of the proposed Mine No. 47 location. The second site is located approximately 10.5 miles northeast of

Tetra Tech, Inc.
[illegible]
Tel [illegible] Fax [illegible]
www.tetratech.com

AUG 22 2008

TETRA TECH

proposed Mine No. 47 at State Game Lands 95 and Glade Dam Lake, also known as "The Glades", in north central Butler County, Pennsylvania.

The proposed Mine No. 47 permit boundary is located within Glacial Sand and Gravel's property at the intersection of West Liberty Road and Swope Road in the Town of Slippery Rock, Butler County, Pennsylvania. The proposed Mine No. 47 site is characterized as open fallow fields, rolling terrain dominated by scrub shrub species, and early to mid successional forest. A large emergent wetland and associated forested wetland are located north of the permit boundary within the Glacial Sand and Gravel property.

CONCLUSION

Based on our literature review and knowledge of the proposed Mine No. 47 location, we believe that the property within the proposed Mine No. 47 permit boundary, although in close proximity to known nesting sites, would not likely support the bald eagle. This conclusion is based on two reasons: (1) the majority of the site is characterized by fallow fields and rolling terrain dominated by scrub/shrub that provides little to no habitat; and, (2) the majority of the emergent and forested wetland portion within Glacial Sand and Gravel's property is located outside of the proposed Mine No. 47 permit boundary and will not be directly impacted during mining activities.

Please feel free to contact me at (207) 879-9496, ext. 240, if you have questions regarding this submittal. We look forward to providing you with continued support on this important project.

Sincerely,
Tetra Tech, Inc.

Justin L. Sweitzer
Associate Biologist

David J. Santillo

Dave Santillo, Ph.D.
Principal Biologist

TETRA TECH

REFERENCES

Pennsylvania Game Commission-State Wildlife Management Agency. 2006. Endangered Species Program: List of Endangered and Threatened Bird and Mammal Species of Pennsylvania State. Available at: http://www.pgc.state.pa.us/pgc/cwp/view.asp?a=486&q=152498

GLACIAL SAND AND GRAVEL COMPANY- PROPOSED MINE NO. 47 PROJECT

SURVEY RESULTS FOR EASTERN MASSASAUGA RATTLESNAKE (*SISTRURUS CATENATUS CATENATUS*) AT PROPOSED MINE NO. 47, BUTLER COUNTY, PENNSYLVANIA

MAY – JUNE 2008

Prepared by
Tetra Tech, Inc.
Portland, Maine

For
Glacial Sand and Gravel Company
Kittanning, Pennsylvania

July 2008

Glacial Sand and Gravel Company – Proposed Mine No. 47 Project

Survey Results for Eastern Massasauga Rattlesnake (*Sistrurus Catenatus Catenatus*) at Proposed Mine No. 47, Butler County, PA
May – June 2008

Final Report

Prepared by

Tetra Tech, Inc.
Portland, ME

For

Glacial Sand and Gravel Company
Kittanning, PA

July 2008

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Appendix C	Field Notes

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1.0 INTRODUCTION

A habitat assessment and survey was conducted by Tetra Tech, Inc. (TT) to investigate and evaluate the proposed location of Glacial Sand and Gravel Company's Mine 47 as potentially suitable eastern massasauga rattlesnake (massasauga) habitat. The proposed Mine No. 47 is located at the intersection of Swope Road and West Liberty Road in town of Slippery Rock, Butler County, Pennsylvania. The primary purposes of this habitat assessment and subsequent survey periods were to: 1) evaluate this area to determine whether the vegetative structure, vegetative species composition, and other habitat parameters represent suitable habitat for the massasauga, and 2) if the habitat is deemed suitable for the massasauga, define and survey specific areas within the proposed Mine 47 site via visual encounter survey to determine whether this species is present.

The massasauga is listed by the Pennsylvania Fish and Boat Commission (PFBC) as endangered in the State of Pennsylvania. The massasauga is historically documented to occur in the vicinity of the proposed Mine 47 site; however, there is no historic documentation or information confirming the presence of the massasauga on site.

At the landscape level, massasauga are known to be found in habitats ranging from wet prairies, fens and sedge meadows to old open fields and adjacent forests. In many instances, massasauga show seasonal shifts in habitat use. Typically they can be found in wet prairie and meadow habitats in spring and fall, and in drier upland field or open wooded habitats in summer (Johnson et al. 2000).

More specifically, massasauga habitat consists of a complex of structural and vegetation features that provide opportunities for three key requisites: foraging, basking and overwintering. As their principal prey is rodents which they locate by olfactory means and then adopt a sit-and-wait strategy, adult massasaugas may be found wherever rodents occur. Basking opportunity is important for the thermoregulatory demands of digestion and ecdysis (shedding) for all individuals and is particularly critical for gestation by gravid females. Basking sites consist of areas exposed to the sun that also provide cover from predators. Overwintering sites are important components of massasauga habitat. These sites consist of situations where individual snakes can avoid lethal freezing temperatures and typically contain liquid water. Crayfish burrows, root mats of wetland trees and shrubs and vegetated hummocks in peatlands are examples. In eastern Pennsylvania and across most of the Midwestern United States, crayfish burrows are the principal overwintering site.

1.1 STUDY AREA

The study area consisting of open forb dominated fields in the vicinity of secondary growth forest, and wetland dominated forested and non-forested bottomlands containing hydrophytic soils and vegetation. To more efficiently survey the proposed mine area; two possible massasauga habitat (PMH) survey areas were developed (Appendix A). Of the two areas surveyed, PMH 1 is an estimated 2.0 acres; while, PMH 2 is an estimated 4.5 acres in size.

The study area includes all areas that meet the criteria needed to provide foraging, basking, or overwintering habitat. PMH 1 consists of maintained grass and shrub/willow habitat and is located south of an emergent wetland that is currently maintained by a resident beaver population. PMH 1 is characterized by having a number of chimney building crayfish holes which, in this part of Pennsylvania can be used by the massasauga as overwintering sites, and open grassland habitat to provide basking sites for spring emergence and the presence of gravid females. PMH 2 is located south of West Liberty Road and is dominated by cultivated grasses and palustrine emergent wetlands. The wetlands appear to be depressional drainage swales and low laying areas characterized by emergent sedges and rushes. Crayfish chimneys are also present.

2.0 METHODS

2.1 SURVEY PERIOD

Since massasauga activity is variable dependent on weather conditions it is best to perform visual searches under the following criteria: Weather conditions are best with at least 50% cloud cover, with a wind speed less than 15 mph, and temperatures between 50 and 80 degrees Fahrenheit. Surveys should be carried out in the morning and evening when massasauga are in open basking locations. The most productive survey periods tend to be during spring emergence and mid-summer when gravid females are seeking out open basking sites (Casper et al. 2001).

Visual encounter surveys were conducted Three times during the spring of 2008. The survey generally followed the guidelines set forth by the Pennsylvania Fish and Boat Commission (PFBC) in 1999, "Guidelines for Eastern Massasauga Rattlesnake Surveys" to determine presence or absence. These guidelines state that surveys for the eastern massasauga should be performed during the spring emergence period of May 1 to June 15. During this time of year the massasauga is known to remain close to the hibernaculum (overwintering site) while it forages and prepares for breeding. Surveys of PMH were carried out during this spring emergence period as noted in Table 1. Surveys generally occurred between 08:00 and 13:00 hours.

Table 1. Survey dates and times by location

Survey Location	Date	Time
PMH 1 / PMH 2	April 26, 2008	08:15 - 09:30 / 09:30 -10:30
PMH 1 / PMH 2	May 10, 2008	09:00 - 10:00 / 10:00 - 12:30
PMH 1 / PMH 2	May 24, 2008	08:50 -10:45 / 10:45 - 12:30
PMH 1 / PMH 2	June 9, 2008	08:00 - 09:30 / 09:30 - 11:30

2.2 SURVEY METHODS

All surveys were performed by PFBC-recognized surveyor Dr. Glenn Johnson and associate biologist Justin Sweitzer. The visual encounter survey method was used throughout the survey period. Actual survey dates occurred between May 10 and June 9, 2008. At the onset of each survey data such as time, air temperature, average wind speed, relative humidity, and current

weather conditions were collected to establish that the baseline criteria, as set forth by the PFBC, for conducting eastern massasauga surveys were met.

3.0 RESULTS

While the Proposed Mine No. 47 Site does contain habitat areas which are theoretically suitable for the massasauga, field surveys conducted by Tetra Tech, Inc. did not document the presence or other physical evidence of this species on the Site. Therefore, mining and related activities on the Mine No. 47 Site should not have an adverse impact on the massasauga.

Sincerely,
Tetra Tech, Inc.

Justin L. Sweitzer
Associate Biologist

Glenn Johnson, Ph.D.
Senior Biologist

LITERATURE CITED

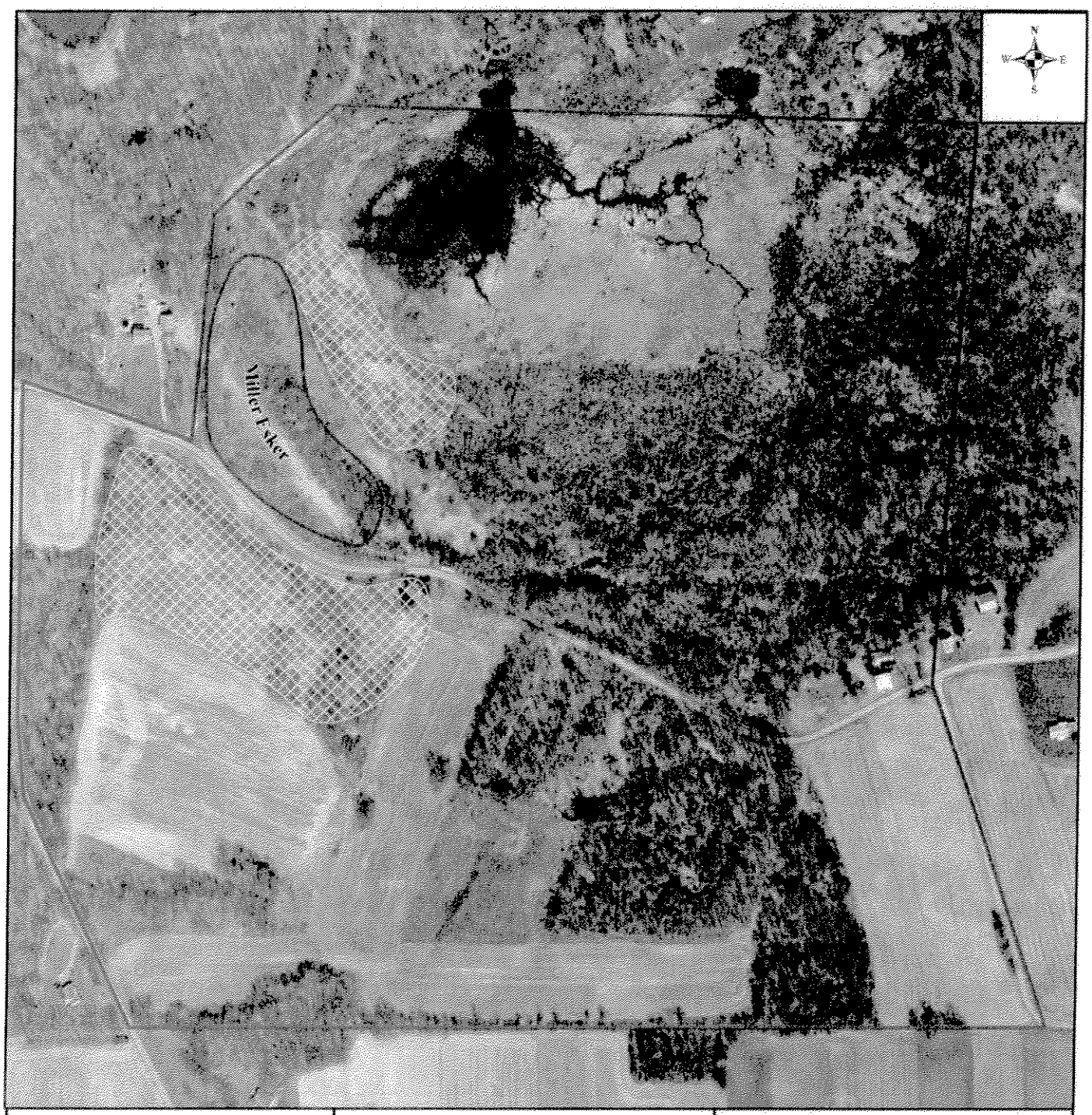
Casper, G.S., T.G. Anton, R.W. Hay, A.T. Holycross, R.S. King, B.A. Kingsbury, D. Mauger, C. Parent, C.A. Phillips, A. Resetar, and R.A. Seigel. In prep. Recommended standard survey protocol for the eastern massasauga, *Sistrurus catenatus catenatus*. Draft sub. to Herp Review, February 2000. 10 pp.

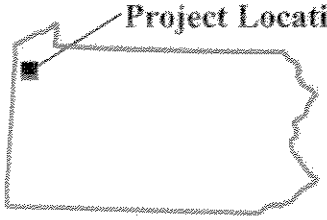
Johnson et al. 2000. The Eastern Massasauga Rattlesnake: A Handbook for Land Managers. U.S. Fish and Wildlife Service, Fort Snelling, MN 55111-4056 52 pp. + appdx.

Szymanski, J. 1998. Status assessment for the Eastern Massasauga (*Sistrurus c. catenatus*) 1998.U.S. Fish and Wildlife Service, Endangered Species Division, Fort Snelling, Minnesota. 30 pp. + appendices.

APPENDIX A

Site Map Showing Potential Massasauga Habitat





Source: 2006 Color Orthophotos of Pennsylvania, PAMAP Program, PA Department of Conservation and Natural Resources, Bureau of Topographic and Geologic Survey

250 125 0 250 500

Feet

LEGEND

Project Boundary

Potential Massasauga Habitat

Esker

Figure 1. 2008 Potential Eastern Massasauga Rattlesnake Habitat Survey Areas at Proposed Mine NO. 47.

Client: Glacial Sand and Gravel Company

Prepared By: TETRA TECH, INC.

Date: 04/08

z:/projects/oe-200/maps/figurex.mxd

APPENDIX B

Photo Documentation of 2008 Survey Effort

PROPOSED MINE NO. 47 – EASTERN MASSASAUGA SURVEY
PHOTO DOCUMENTATION

Company: Glacial Sand and Gravel Company

Project: Survey Results for Eastern Massasauga Rattlesnake (*Sistrurus catenatus catenatus*) at Proposed Mine No. 47

Photo No.: 1

Date: April 26, 2008

Direction: Northeast

Comments: View of wetland area and PMH 1 from Miller Esker. Vegetation in foreground is dominated by honeysuckle, arrow-wood viburnum, and autumn olive. Vegetation in the background, in the area of PMH 1 is dominated by forbs, grasses, and willow species.

Photo No.: 2

Date: April 26, 2008

Direction: West

Comments: View of PMH 1 from the eastern most side.

PROPOSED MINE NO. 47 – EASTERN MASSASAUGA SURVEY
PHOTO DOCUMENTATION

Company: Glacial Sand and Gravel Company

Project: Survey Results for Eastern Massasauga Rattlesnake (*Sistrurus catenatus catenatus*) at Proposed Mine No. 47

Photo No.: 3

Date: April 26, 2008

Direction: N/A

Comments: Chimney building crayfish burrows found in low lying areas at PMH 1.

Photo No.: 4

Date: April 26, 2008

Direction: West

Comments: View of western portion of PMH 1.

PROPOSED MINE NO. 47 – EASTERN MASSASAUGA SURVEY
PHOTO DOCUMENTATION

Company: Glacial Sand and Gravel Company

Project: Survey Results for Eastern Massasauga Rattlesnake (*Sistrurus catenatus catenatus*) at Proposed Mine No. 47

Photo No.: 5

Date: April 26, 2008

Direction: South

Comments: View of PMH 2 from intersection of Swope Road and West Liberty Road.

Photo No.: 6

Date: April 26, 2008

Direction: West

Comments: View of PMH 2 in area of depressional wetland. Small stream on western side of PHM 2 is within strip of trees. Field is dominated by soft rush and grass.

PROPOSED MINE NO. 47 – EASTERN MASSASAUGA SURVEY
PHOTO DOCUMENTATION

Company: Glacial Sand and Gravel Company

Project: Survey Results for Eastern Massasauga Rattlesnake (*Sistrurus catenatus catenatus*) at Proposed Mine No. 47

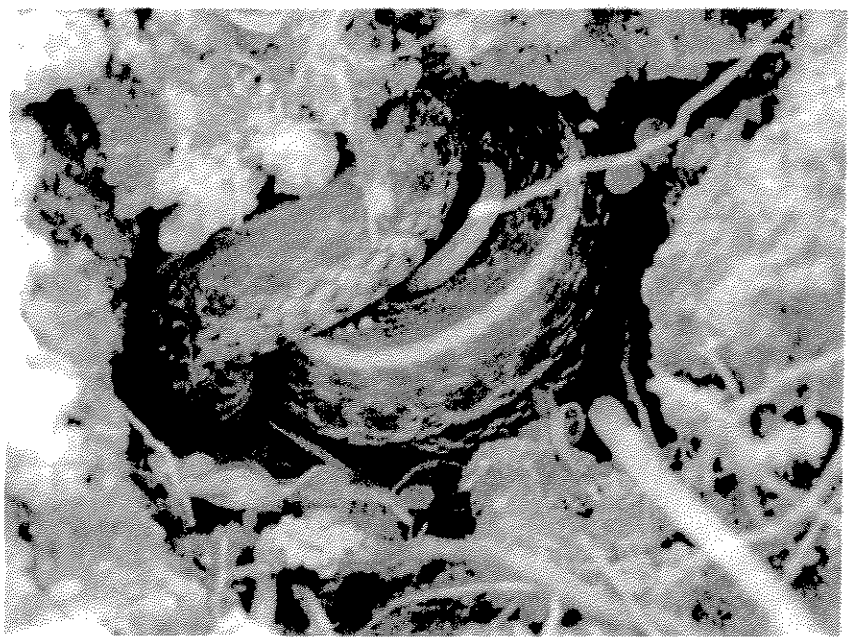


Photo No.: 7

Date: April 26, 2008

Direction: N/A

Comments: Eastern Garter snake (*Thamnophis sirtalis*) encountered at PMH 2 during initial habitat assessment.

Photo No.: 8

Date: April 26, 2008

Direction: Southeast

Comments: View of northeastern portion of PMH2 from intersection of Swope Road and West Liberty Road.

APPENDIX C

Field Notes

Field Investigation April 26, 2008

On April 26th, at 08:00 hours (military time), Justin L. Sweitzer, TT Associate Biologist, and Dr. Glenn Johnson, Professor of Biology at SUNY Potsdam (hereafter referred to as "the field crew"), arrived at the intersection of Stokes Road and West Liberty Road in Harrisville, PA. Upon arrival the field crew met with the client representatives, Darrel K. Lewis, Physical Engineer, and Jonathan Kolbe, Project/Operations Engineer. Following a brief overview of the site layout, the field crew and client representatives conducted a field survey of potential eastern massasauga habitat within the property boundaries as identified by Darrel K. Lewis, P.E.

At 08:15 hours, the field crew arrived at the first potential habitat survey area, depicted as PMH 1 in Figure 1 (Attachment A). This area is located on northeast side of the Miller Esker, north of West liberty Road and east of Stokes Road. PMH 1 consists of maintained grass and shrub/willow habitat. PMH 1 is located south of an emergent wetland that is currently maintained by a resident beaver population. Due to the beaver activity the water levels in the wetland fluctuate periodically and seasonally. PMH 1 has a number of chimney building crayfish holes which, in this part of Pennsylvania, can be used by the massasauga as overwintering sites; and open grassland habitat which could provide basking sites for spring emergence and the presence of gravid females.
At 09:30 hours, the field crew surveyed a second potential habitat area, PMH 2 in Figure 1 (Attachment A). This area is located south of West Liberty Road and is dominated by cultivated grasses and emergent wetlands. The wetlands appear to be depressional drainage swales and low laying areas characterized by emergent sedges and rushes. Crayfish chimneys scattered in the open field could provide suitable overwintering habitat for massasauga.
A garter snake was encountered at 09:45, gray tree frog and American toad heard at 09:00.

Field Investigation May 10, 2008

On May 10, 2008, at 09:00 hours, the field crew arrived at the site to begin the first survey period. Cloud cover was approximately 85% and it had rained the previous night; air temperature was 48.5°F; average wind speed of 0.7 m/sec; and a relative humidity (RH) of 90%. The field crew surveyed PMH1 from 09:00 to 10:00 with no reptile or amphibian encounters. Upon completion of PMH1 survey the field crew collected the following weather data and proceeded to PMH2. At 10:00 the air temperature was 55.8°F; average wind speed of 0.6 m/sec; RH 63%; with 70% cloud cover. No reptile or amphibian encounters were made during the survey of PMH2. The field crew discontinued the survey of Proposed Mine No. 47 at 12:30.

Field Investigation May 24, 2008

On May 24, 2008, at 08:50 hours, the field crew arrived at the site to begin the second survey period. There were no clouds; air temperature was 55.6°F; average wind speed of 0.0 m/sec; and a relative humidity (RH) of 73%. The field crew surveyed PMH1 from 09:00 to 10:45 with two garter snake encounters. Upon completion of PMH1 survey the field crew collected the following weather data and proceeded to PMH2. At 10:45 the air temperature was 63.2°F; average wind speed of 0.3 m/sec; RH 59%; with no cloud cover. No reptile or amphibian encounters were made during the survey of PMH2. The field crew discontinued the survey of Proposed Mine No. 47 at 12:30.

Field Investigation June 09, 2008

On June 9, 2008, at 08:00 hours, the field crew arrived at the site to begin the third survey period. There was 85% cloud cover; air temperature was 74.8°F; average wind speed of 0.6 m/sec' and a relative humidity (RH) of 89%. The field crew surveyed PMH1 from 08:00 to 10:00 with no reptile species encountered. The field crew heard a grey tree frog at 08:35. Upon completion of PMH1 survey the field crew continued on to survey PMH2. No reptile encounters were made during the survey of PMH2, however; the field crew heard multiple grey tree frogs. The field crew discontinued the survey of Proposed Mine No. 47 at 11:30.

Bintrim, Tyler J LRP

All Redactions - Exemption 6 - privacy

From: [redacted]
Sent: Tuesday, September 01, 2009 12:16 PM
To: Bintrim, Tyler J LRP
Cc: [redacted]
Subject: CELRPOOP-F #2008-280

Attachments: USACE permit comment p1.jpg; USACE permit comment p2.jpg; USACE permit comment p3.jpg

USACE permit :omment p1.jpg (6.. USACE permit :omment p2.jpg (7.. USACE permit :omment p3.jpg (1..

Dear Sir,

Please find the attached objection to the aforementioned permit application. If the document has not been successfully received, please reply and inform me.

Thank you for your consideration,

[redacted]

Mr. Tyler Bintrim
US Army Corps of Engineers, Pittsburgh District
1000 Liberty Avenue
Pittsburgh, PA 15222-4186

29 August 2009

Dear Mr. Bintrim,

RE: CELRP-OP-F #2008-280

We strongly urge you to deny permit application CELRP-OP-F #2008-280, application for an aggregate washing plant, mining of an esker, and mitigation of loss of both stream and wetland functions. We ask that you closely examine our assertions that the proposed activity impacts reasonable and prudent interpretations of the geologic and hydrologic values of the areas. We assert that the proposed activities should be unfavorably reviewed under oversight of (1) the Clean Water Act, Section 404, Part III, Section 47 – factors influencing wetness of an area, (2) 33 CFR Ch II (7-1-02 Edition), many subsections under 320.4, to be subsequently addressed, and (3) the Constitution of the Commonwealth of Pennsylvania. We are pleased to offer our objection under the auspices of 33 CFR Ch II (7-1-02 Edition), 320.4 (a) Public Interest Review, noting that our personal and professional familiarity with the setting involves over 100 years of accumulated experience in studying the Wisconsinan terminal moraine complex of northern Butler County, PA, its unique and uncertain natural history, and its vital ecological functions. We rely upon data contained in Module 14 of Glacial Sand and Gravel permit application for Mine 47, personal and professional knowledge, as well as usual and customary interpretations soundly lying within the bounds of our professional expertise.

Our first concern arises under the auspices of the Clean Water Act, Section 404, Part III – Watershed Characteristics, subsection 47 – Influencing Factors. Subsection 47 states that stratigraphy, topography, and soil permeability influence the wetness of an area. The permit proposes to locate mitigation wetlands north of West Liberty Road, east of Swope Road. In order that this footprint be so utilized, the portion of the Jacksville Esker (aka West Liberty or Miller Esker) so located must be mined and removed. The sand and gravel deposits contained in the esker are many tens of feet thick, according to geologic cross-sections drawn by the Eads Group (Cross-section C-C', for example), consultant to the applicants. An aggregate inventory measured and calculated by these parties describes the volume of sand and gravel to be removed from this segment of the esker at 273,267 cubic yards. A reasonable hydrogeologic interpretation of this setting would include 20% porosity that would be 80-90% saturated during wet periods. Thus, the ridge of the esker would reasonably contain 1.2 million cubic feet of water, or 8.8 million gallons, during wet periods. The esker is highly permeable, captures precipitation through rapid infiltration, stores this water as soil water and ground water, then subsequently provides baseflow seepage to maintain the wetness of the abutting wetland (Wetland One in application materials), which has been reported to possess habitat supportive of threatened and endangered species. Mining of this sand and gravel will completely remove the coarse stratigraphic units providing recharge to the wetland, and will significantly and permanently reconfigure the topography of the setting. Further downstream, Wetland One provides discharge and wetness to Tamarack Lake and its surrounding palustrian plains lying directly to the west. This hydrogeologic impact to the Wetland One is unacceptable.

Pursuant to 33 CFR Ch. II (7-1-02 Edition), 320.4, we raise the following objections. Given the impacts upon the seepage pathways and storage reservoirs providing wetness to Wetland One described above, we assert that permit activities will unacceptably impact its important wetland functionalities to public interest. We expect these impacts to include degraded natural biological functions (320.4 (b.2.i)), diminished potential for study (320.4 (b.2.ii)), and alteration that would detrimentally affect natural drainage characteristics (320.4 (b.2.iii)). We also recognize that the entire Wisconsinan terminal moraine complex, and abutting glaciofluvial deposits, comprise a corridor bounded generally by Moraine State Park to the south, the Borough of Slippery Rock to the north, Interstate 79 to the west, and State Route 8 to the east. Numerous and extensive tracts within these bounds are either under lease for mining or desirable targets for leasing by the aggregates industry. Past and current mining trends, including Mine

47, demonstrate that this largely rural, forested, and farming region will fall under immense pressure and landscape alteration from the aggregates industry in the next 50 years. Subsection 320.4 (3) requires that, although a particular alteration of a wetland may constitute a minor change, the cumulative effect of numerous piecemeal changes can result in a major impairment of wetland resources. We implore you to consider this context. Subsection 320.4 (4) requires that benefits of a proposed alteration must outweigh damage and we maintain that such is not the case. Mining of this section of the esker yields an inconsequential production of aggregates in comparison to the tonnage that the plant will eventually process, yet at great geologic and hydrologic impact. Subsection 320.4 (5d) addresses impacts upon the quality of waters and the CWA responsibility to control non-point sources of pollution. Module 14: Streams/Wetlands – Unnamed Tributary #1 to Black Run, concluding note, page 14-5, closing sentence states: "Water quality is characteristic of wetland drainage". Wetland drainage typically involves high quality flows, diminished stormwater flux, enhanced baseflows during dry periods, negligible suspended sediment, and low nutrient fluxes. Removal of the esker and its granular filtration provided by seepage through it, as well as its storage of waters for augmentation of low flows, in conjunction with installation of washing plant settling basins, will certainly impact the water quality currently characterizing this wetland complex.

Our final concern arises both from 33 CFR Ch. II (7-1-02 Edition), 320.4 and from the Constitution of the Commonwealth of Pennsylvania, which lies in accord with the Constitution of the United States, which the United States Army swears to defend within its Commission. Firstly, subsection 320.4 (5e) - Full evaluation of the general public interest, requires that due consideration be given to the effect that the proposed activities have on values, such as historic, scenic, and recreational values. The PA Constitution states in part: "The people have a right to clean air, pure water, the preservation of natural, scenic, historic and aesthetic values of the environment. Pennsylvania's public natural resources are the common property of all people, including generations yet to come. As trustees of these resources, the Commonwealth shall conserve and maintain them for the benefit of all people." Please recognize that the Jacksville esker is widely recognized and long examined as the best preserved esker in the state. In fact, the Field Conference of Pennsylvania Geologists will visit the feature during a forum this October. While the glaciologic feature is lengthy and partly preserved by the Western Pennsylvania Conservancy, the portion of the esker slated for mining under this permit lies in arguably the most understudied and most provocative portion – the ice marginal area where the esker meets the pro-glacial lake bed containing the massive delta, which itself is currently being mined. Insufficient scientific investigation has been completed to fully understand the dynamics of the esker, perhaps soon to be sold to market. Great loss of potential value to recreation, to interpretation of our natural history, and to the immense enjoyment arising from understanding the genesis of the Pennsylvania landscape are all threatened by permit application #2008-280.

In conclusion, 33 CFR Ch. II (7-1-02 Edition), 320.4 (3) (p.394) asserts that the district engineer should avoid authorizing floodplain developments whenever practical alternatives exist outside the floodplain. We assert that practical alternatives exist and implore you to direct the applicants to pursue them. We hold no hostile feelings toward Glacial Sand and Gravel, Snyder and Associates, their agents, or any of their principles or associates. On the contrary, we enjoy their collegial accommodations to access their mines and quarries, and have done so for decades. We appreciate their generous support, financial and otherwise, extended to our disciplines and academic institutions. We have personally met with the applicants to encourage their corporate stewardship of this portion of the esker, including parking, signage, interpretive displays, and boardwalk access to Wetland One. We do not seek to end their mining activities. We understand that they hold lands and leases duly granting them business rights. We appreciate the societal imperative to access raw materials in order to support commerce. We simply believe that far less impactful alternatives exist to mining this outstanding esker at its most intriguing segment, and we encourage them to pursue plant design options that portend far lessened impact upon Wetland One. Please deny permit application #2008-280. If doubt exists, please honor the public interest and call a public meeting to encourage open discussion and stakeholder input.

Believing you will find our words true, we remain,

Respectfully yours,

Patrick A. Burkhart, PhD
Associate Professor of Geology
Slippery Rock University

Robert W. Hinds, PhD
Emeritus Professor of Geology
Slippery Rock University

Charles H. Shultz, PhD
Emeritus Professor of Geology
Slippery Rock University

Gene Wilhelm, PhD
Emeritus Professor of Geography
Slippery Rock University

Pennsylvania Department of Environmental Protection

P.O. Box 669
Knox, PA 16232-0669
March 31, 2008

Knox District Office

814-797-1191

Glacial Sand & Gravel Co.
P.O. Box 1022
Kittanning, PA 16201

Re: Glacial Sand & Gravel Co.
Application No. 10070304
Worth Township
Butler County

Ladies and Gentlemen:

We have reviewed the information dated February 25, 2008, and received February 26, 2008, from your consultant The EADS Group. We have scheduled a meeting to discuss these issues on April 1, 2008, at 10 a.m. in the Knox District Mining Office. In order to continue processing your permit application, the following additions or corrections must be made:

The issues surrounding your proposed stream encroachments and wetland impacts have not yet been addressed. Depending on how these issues are resolved, you may need to make significant revisions to your application. Additional comments may be generated based on our review of the mining plan in accordance with the resolution of the stream and wetland encroachments. In accordance with Section 77.126(10), your application may be denied if you are unable to demonstrate that your proposed activities will not affect the continued existence of endangered or threatened species or result in the destruction or adverse modification of their known critical habitats.

2. We referred several issues to other agencies for their input and recommendations. Additional comments may be generated at the conclusion of our review of these issues.

Module 1

1. Technical Guidance Document No. 012-0700-002, Final Guidance – Substantive Revision Agricultural Land Preservation Policy, provides policy guidance to Departmental staff to consider ways to prevent the irreversible loss of prime agricultural land. We believe the cropland areas within the permit area meet the definition of prime agricultural land. We base that on the criteria that the land is in active agricultural use, the land has been devoted to active agricultural use in the preceding three years, and the land is included in an agricultural security area. Therefore, you should consider ways to prevent the irreversible loss of prime

agricultural land by avoiding or minimizing the impacts to prime agricultural land within the permit area. On page 1-4 of the application, you should indicate the alternatives to the disturbance of the prime agricultural land considered and the reasons they were not deemed feasible. In addition, your demonstration in Module 20.3(c) should show that the alternative to approximate original contour is consistent with these land use policies, plans, and programs.

Module 4

1 You state in Module 4.1 that the township has approved the road variance application and the approval is included in the application. We did not receive the approval in the packet of information you submitted. I spoke with the township secretary and she said that the requests for the road variances have not been made to the township. Please clarify.

2. You must demonstrate compliance with Section 77.504(b) for each of your variance requests in Module 4.1. Your responses must provide a demonstration that your requests satisfy each of the criteria listed in Section 77.504(b).

3 The Pa. Historical and Museum Commission (PHMC) contacted us regarding the discrepancies in the maps we sent them for their review as a part of our acceptance of the application and maps that were submitted by concerned citizens in the area. It was determined that the maps we sent to the PHMC for their review did not accurately reflect the permit boundary. Based on the revised maps, the PHMC has now indicated that there is a high probability that significant archaeological sites are located in this project area. It is recommended that a Phase 1 archaeological survey be conducted to locate potentially significant archaeological resources. If you choose to not do the survey, the permit will be special conditioned that should you encounter archaeological resources during mining, you will need to cease mining in that area and notify the appropriate agencies. If this project will require any federal permits, you may need to conduct the archaeological surveys as a part of the federal permitting process.

Module 5

1 We understand that Glacial Sand & Gravel Co. now owns the Raymond Tempalski property. However, there is no reference to that land transfer in Module 5.1. Therefore, it is not clear that the Raymond Tempalski Supplemental "C" is for one of the tracts of land owned by Glacial Sand & Gravel Co. Please revise Module 5.1 to further clarify that Glacial Sand & Gravel Co. is now the owner of the property that was formerly owned by Raymond Tempalski.

Module 6

1 The permit boundary shown on the Exhibit 6.1 map is not the same as the permit boundary shown on the Exhibit 6.2, 9, and 18 maps. Please revise the permit boundary so that it is consistent on all maps.

Module 7

1. Please provide clarification on cross-section D-D' that the projected final pool elevation/phase boundary, projected water impoundment and pit floor are extrapolated.

Module 8

1 Please revise the well depth listed for sample point 3A in Module 8.2(a)(5) to agree with the information provided in the narrative on page 8-45.

2. Please expand the narrative in Module 8.6(c) to specifically include mining north of West Liberty Road.

Module 9

1 You do not show the final working face limit for all areas to be mined on the Exhibit 9 map. In addition, the final working face limit that was shown on the Exhibit 9 map does not allow sufficient area for the reclamation of the highwall. Please revise your final working face limits on the Exhibit 9 map.

2. How will you access the Phase 1 area? The Exhibit 9 map does not show an access road. You should revise the Exhibit 9 map and Module 12 to provide access to Phase 1.

3 The areas within the permit boundary, but outside of Phases 1 and 2 should be labeled as not to be affected on the Exhibit 6.2, 9, and 18 maps.

Module 10

Module 10.1 states that the entire site will be bonded at one time. This is misleading since there is area within the permit boundary that is not included within Phase 1 or Phase 2 and is not being bonded.

2. In Module 10.5 you indicate the safety bench at the edge of the water impoundment will be 25 feet wide. The width of the safety bench is dependent upon the extent of the fluctuation of the water levels in the impoundment. Your safety bench must be developed in a manner that will have a minimum of a 25-foot wide safety bench at the full range of water levels within the impoundment. Your monitoring plan should

document the various water elevations over the different periods of the year and the extent of mining and the safety bench adjusted accordingly.

3. You must show the permit line setback on the reclamation cross-sections in accordance with Section 77.572.

4. You have different colored lines on your reclamation cross-sections. The meanings of these lines are not defined in your legend. Please revise your legend to include the meaning of the different colored lines.

5. The reclamation cross-sections show Phase 1 as being the area above the water table and Phase 2 as mining below the water table. These cross-sections were not revised to reflect the current mining plan in Module 10.1. Please revise accordingly.

6. You can extrapolate drill hole data to your geologic cross-sections, but your reclamation cross-sections should accurately portray the reclamation grades and the location of the cross-section. You should revise the cross-section D orientation so that it will transect through the water impoundment.

7. In Module 10.12, you must provide a description of the activities to be conducted within 100 feet of the right-of-way to the public roads and provide detailed plans and cross-sections of the proposed activities. As mentioned in Module 4 above, we have not received written approval from the township for the activities within the road barrier area.

8. Module 10.6 should provide the sequence of operations for the accomplishment of the major stages in the reclamation plan and demonstrate compliance with Section 77.595 (concurrent reclamation).

9. Depending on how Comment No. 1 in Module 1 of this letter is resolved, you may not be permitted to remove topsoil from the site. In Module 10.4, your calculations for the amount of topsoil required to be saved for reclamation are based on affecting 40.0 acres. According to the mining plan, you are proposing to affect close to 60.0 acres. In addition, the mining plan indicates you are not committed to mining Phase 2A. You must have enough topsoil for reclamation if mining Phase 2A, mining below the water table, does not occur. Therefore, the volume of topsoil you save for reclamation must be sufficient for the entire site. Before any topsoil can be removed from the site, you must demonstrate that the topsoil is in excess of the amount of topsoil required for reclamation.

Module 12

Please revise the erosion and sedimentation control plan and the Exhibit 9 map for the Phase 1 area to include additional perimeter controls for the earth disturbance activities in addition to directing runoff to the open pit.

2 Please revise the erosion and sedimentation control plan and the Exhibit 9 map to also include a collection ditch system to direct flow from the Phase 2 plant area to the process pond gallery. Please be advised that the location of the processing pond gallery may change pending the outcome of the wetland and unnamed tributary No. 3 to Black Run issues.

Module 14

We acknowledge that the wetland and stream encroachment issues will be addressed at a later date after you have had an opportunity to conduct a wetland delineation, joint determination with the US Army Corps of Engineers, and biological study for threatened or endangered species.

Module 17

You must provide a demonstration in Module 17 that your proposed activities are in compliance with Section 77.575; Chapters 121, 123, 127, and 129. You must provide the measures you will utilize to control fugitive dust.

2 Module 17 should address all access roads to the site. You should address how you will prevent mud and debris from being tracked onto the public roads. You should specifically address the access road to Phase 1 and its access to the plant area.

3 You must provide a more detailed plan for controlling the noise generated by all activities proposed at the site. The plan should take into effect the site conditions through all phases of mining. For example, you state that mining will be below natural ground. However, Phase 1 and portions of Phase 2 will be conducted in elevated areas and the equipment will be working above the elevation of your proposed berms. Your plan should also address the operation of the processing plant.

4. Officials of Glacial Sand & Gravel Co. made the comment at the public hearing that the hours of operations at the mine site will be restricted. If this is the case, you should revise Module 17.3 to reflect the hours of operation for the site.

Module 20

Your demonstration in Module 20.3(c) should address compliance with the Northwestern Butler County Multi-Municipal Comprehensive Plan, which Worth Township has signed, the Butler County Comprehensive Plan, as well as the policies and programs mentioned in Comment No. 1 of the letter, pertaining to the preservation of prime agricultural lands.

The revisions and additions you submit must satisfy the provisions of Title 25, Pa. Code Section 77.126 by providing an affirmative demonstration of compliance with all existing laws

and rules and regulations of the Department. All revised plan drawings must bear the date of revision and the seal or signature of the engineer or person who prepared the revision. All revised pages of the mining permit application, including the narrative, must indicate page number and date of revision. If revisions extend beyond the original page, each additional sheet should bear the original page number and a sequential letter of the alphabet.

Please submit 3 copies of all information within 30 days. You must also revise the copy of the application available for public review. If this information is not received in this office by April 30, 2008, your application will be returned as incomplete.

[redacted]

Exemption 6 - privacy

Michal Jones

From: Yeakle, Christopher [cyeakle@state.pa.us]
Sent: Monday, November 17, 2008 11:40 AM
To: mjones@eadsgroup.com
Subject: FW: re-determination

Follow Up Flag: Follow up
Flag Status: Flagged

Categories: Red Category

Here is the email

Chris Yeakle
Mining Permit & Compliance Specialist
PA Department of Environmental Protection
Knox District Mining Office
(814) 797-1191

-----Original Message-----
From: Buckley, Gordon
Sent: Monday, November 17, 2008 9:50 AM
To: Yeakle, Christopher
Subject: FW: re-determination

FYI

-----Original Message-----
From: [redacted] Exemption 6 - privacy
Sent: Sunday, November 16, 2008 11:31 PM
To: Buckley, Gordon
Subject: re-determination

Gordon,

The wood-rush collected June 3 on West Liberty Esker is not the rare *Luzula bulbosa*. It is a common wood-rush, *Luzula multiflora*.

On Saturday afternoon I was preparing the wood rush for mounting that I collected on West Liberty Esker with you and Chris. The most important character for separating *Luzula bulbosa* from other native wood-rushes is white tubers that develop within sterile, overwintering shoot buds at the base of the plant. The combination of white tubers, multiple-flowered spikes and ascending peduncles in the inflorescence separates the *Luzula bulbosa* from all other native wood rushes. I noticed the white tubers on one of the plants when we returned to our vehicles and that is why I stopped to collect it in the thunderstorm. I checked for the tubers on the specimen for the Museum Herbarium when I wrote the letter requested by Chris and even made a note to the person who would be mounting the specimen, asking her to make sure the two white tubers are facing up when she mounted the specimen. I also collected three duplicates. I was not concerned the tubers were not evident on the duplicate specimens because they are usually hidden by dead leaf bases at the base of the plant. I pulled away some of the dead leaf bases on the primary specimen and found no more tubers. I then decided to expose the tubers on the duplicates. In most cases there are a minimum of two white tubers at the base of *Luzula bulbosa* plants. I was unable to find any white tubers on the first duplicate and became immediately suspicious that the white tuber-like structures at the base of the plant may be a hard, dry fungus. I checked the second duplicate and then the third duplicate and found no tubers on them. After finding no tubers on all three duplicates I was convinced the structures on the main specimen were probably not tubers. I then pulled the specimen with the obvious white tubers. The surface of both tubers were damaged and this often happens in the process of

digging. I was especially ruthless in the digging process due to the close lightning and thunder. What appeared to be "white tubers" with the hard outer surface scratched away is probably a hard white fungus or some other white substance. The fact that the duplicate specimens had no tubers convinced me the plant I noticed with the very obvious white tubers is a red herring that threw me off. After convincing myself that the white, rather hard substance in the sterile shoots was not produced by the plant, I checked the secondary characters that separate *Luzula bulbosa* from *Luzula mutliflora*, and the tepals were a bit longer than the Luzula bulbosa specimens in our herbarium. The tepals on the West Liberty Esker plants are within the range for the species but many flower and spike characters of *Luzula bulbosa* and *Luzula multiflora* overlap.

I stayed a bit late and wrote a letter to Chris to inform him about the change from *Luzula bulbosa* to *Luzula multiflora*. The letter will be mailed tomorrow afternoon. **Would you please forward this email to Chris so that he can inform the gravel company there are no rare plants in the dry meadow on the south side of the road.**
Jim

23 October 2008

Chris Yeakle
Mining Permit & Compliance Specialist
PA Department of Environmental Protection
Knox District Mining Office
P.O. Box 669
Knox, PA 16232

Dear Chris,

Thank you for inviting me to join you and DEP biologist Gordon Buckley on June 3 and September 3 for a survey of the wetlands along the north slope of the West Liberty Esker in Butler County. It was a pleasure having Botanist Steve Grund and Ecology Peter Woods on the second day of the survey. All the historical Endangered and Threatened plants reported for the wetlands are species that occur in Sedge-Alder Fens or open emergent marshes associated with Sedge-Alder Fens. Only one State Threatened fen species, winged sedge (*Carex alata*), was found within the spring seeps on the north side of the esker during our two-day survey. However, several fen indicator species were encountered during the two-day survey, including winged sedge, interior sedge (*Carex interior*), swamp thistle (*Cirsium muticum*), poison sumac (*Toxicodendron vernix*), speckled alder (*Alnus incana*) and ninebark (*Physocarpus opulifolius*). The interior sedge and swamp thistle are exceptionally restricted to the glacial fen community. Poison sumac, speckled alder and ninebark are usually common within glacial fens but also occur in several other types of wetlands within Pennsylvania. Another rare plant, typical of Oak Barrens and new to Butler County, southern wood rush (*Luzula bulbosa*), was locally common in the dry meadow where we parked to the west of the high quality wetlands where we collected the sample of Canadian burnett. Based upon the winged sedge and the fen indicator species within the springs, the wetlands along the north slope of the esker are Exceptional Value Wetlands in Pennsylvania.

The current ranking of southern wood rush is S1/TU. The S1 status suggests there are few enough records to rank the species as Endangered in Pennsylvania. I checked the number of records known for this species in Pennsylvania. There are only seven previous records for southern wood rush in Pennsylvania, two of which are extirpated and the other five are historical records. Until collected by you, Gordon and myself on June 3, the plant had not been observed in PA since 1971. The Plant Technical Committee of the PA Biological Survey has approved ranking the plants as the Endangered level, but the status will not be official until the State Regulatory Statutes are changed.

The rare plants of Alder-Sedge Fens are generally restricted to the sedge meadow openings. Sedge meadow openings become invaded by shrubs and trees over time. Most of the rare species historically recorded for the fen only grow within open fens or open emergent marshes. As the fen meadow openings are shaded out, the rare fen species are not able to persist but remain at the site, dormant within the seed bank under the shade of trees and shrubs until a natural disturbance, such as massive blow-down of trees or beaver flooding, and the consequent killing of the trees renews the opening. There is a good probability all the rare species that documented this site historically will be restored to the site in response to a future disturbance and restoration of the fen. Some of the finest fens recently discovered within Pennsylvania are fen springs recently released by a breach of a beaver dam that flooded a seepage system formerly covered by trees and shrubs.

Enclosed is a map showing the site where the state threatened winged sedge was collected. The map also shows the collection site for the southern wood rush, the wetland that supports the Canadian burnett and one of two spring seeps where fen indicator species were observed. A list of plants observed within the wetlands near the esker is also enclosed. The GPS coordinates for the winged sedge are: 80.080332 and 41.006173.

The Museum is always willing to conduct inventories for the Knox District Mining Office.

Sincerely,

Dr. James K. Bissell
Curator of Botany
Director of Conservation

Enclosures

Plants of West Liberty Esker Wetlands

Acer rubrum (red maple),
Agrimonia gryposepala (agrimony),
Agrimonia parviflora (southern agrimony),
Alnus incana ssp. rugosa (speckled alder),
Amphicarpaea bracteata (hog-peanut),
Angelica sp. (angelica),
Apios americana (ground-nut),
Arctium sp. (burdock),
Bidens frondosa (beggar-ticks),
Carex alata (broad-winged sedge),
Carex atlantica ssp. capillacea (bog sedge),
Carex cristatella (sedge),
Carex interior (sedge),
Carex lurida (sedge),
Carex projecta (sedge),
Carex scoparia (sedge),
Chelone glabra (turtlehead),
Cinna arundinacea (stout woodreed),
Circaea sp. (enchanter's nightshade)
Cirsium muticum (swamp thistle),
Clematis virginiana (virgin's-bower),
Cornus amomum (silky dogwood),
Crataegus sp. (hawthorn),
Dichanthelium clandestinum (deer-tongue grass),
Dryopteris carthusiana (spinulose wood fern),
Dryopteris cristata (crested wood fern),
Echinochloa sp. (barnyard grass),
Epilobium coloratum (purple-leaved willow-herb),
Eupatoriadelphus maculatus var. maculatus (spotted Joe-Pye-weed),
Eupatorium perfoliatum (boneset),
Geum canadense (white avens),
Glechoma hederacea (gill-over-the-ground),
Glyceria canadensis (rattlesnake mannagrass),
Glyceria striata (fowl mannagrass),
Hackelia virginiana (beggar's-lice),
Hydrocotyle americana (marsh pennywort),
Impatiens capensis (jewelweed),
Leersia oryzoides (rice cutgrass),
Lemna minor (duckweed),
Lobelia siphilitica (great blue lobelia),
Lonicera morrowii (Morrow's honeysuckle),
Lycopus uniflorus (bugleweed),
Muhlenbergia sp. (muhly),
Nuphar sp. (spatterdock),
Onoclea sensibilis (sensitive fern),
Osmunda cinnamomea (cinnamon fern),
Osmunda regalis (royal fern),
Parthenocissus quinquefolia (Virginia-creeper),
Phalaris arundinacea (reed canary-grass),
Physocarpus opulifolius (ninebark),
Phytolacca americana (pokeweed),
Pilea pumila (clearweed),

Plants of West Liberty Esker Wetlands

Polygonum arifolium (halberd-leaved tear-thumb),
Polygonum punctatum (water-pepper),
Polygonum sagittatum (tearthumb),
Populus tremuloides (quaking aspen),
Prunella vulgaris (heal-all),
Ranunculus hispidus (buttercup),
Rosa multiflora (multiflora rose),
Rosa palustris (swamp rose),
Rubus idaeus (red raspberry),
Rubus pubescens (dwarf raspberry),
Salix sericea (silky willow),
Sambucus nigra ssp. canadensis (elderberry),
Schoenoplectus tabernaemontani (soft-stem bulrush),
Scirpus cf hattorianus (bulrush),
Solanum carolinense (horse-nettle),
Solidago altissima (late goldenrod),
Solidago canadensis (Canada goldenrod),
Solidago gigantea (late goldenrod),
Solidago patula (rough-leaved goldenrod),
Solidago rugosa (wrinkle-leaf goldenrod),
Spiraea alba (meadow-sweet),
Symphyotrichum lateriflorum (calico aster),
Symphyotrichum puniceum (purple-stemmed aster),
Symplocarpus foetidus (skunk-cabbage),
Thalictrum pubescens (tall meadow-rue),
Thelypteris palustris (marsh fern),
Toxicodendron radicans (poison-ivy),
Toxicodendron vernix (poison sumac),
Tussilago farfara (coltsfoot),
Urtica dioica (stinging nettle),
Verbena hastata (blue vervain),
Vernonia sp. (ironweed),
Viburnum lentago (nannyberry)
Viburnum recognitum (arrow-wood),
Viburnum sp. (viburnum),

WETLAND MITIGATION

Wetlands No. 2, 3 and 4; UNT #3 to Black Run

As per PA DEP Technical Guidance Document 363-0300-001 the following information is being provided:

The wetland mitigation plan proposes to replace the affected wetlands at a 1:1 ratio. The impacted acreage is calculated to be 1.89 acres. Additional acreage was added to the mitigation area to compensate for impacts to UNT #3 to Black Run (246 linear feet) since no suitable stream mitigation could be identified within the watershed on properties owned by Glacial Sand & Gravel. The total proposed wetland mitigation acreage is 2.00 acres.

The wetland functions and values identified to be present within the affected wetlands will be replaced equally and in some cases to a greater extent (i.e. food chain production, general habitat, food/cover/nesting) within the proposed replacement plan due to its immediate location to the large wetland area to the north and northwest and ability to function in conjunction with this wetland. As a result its location, design and concurrent functions, other functions such as aquatic habitat, natural water filtration and pollution prevention are expected to be enhanced.

Wetland replacement will occur within the Black Run watershed directly across West Liberty Road upon completion of mining activities and reclamation of the Phase I mining activity.

The replacement plan will initially consist of a Palustrine, Persistent, Emergent wetland community, succeeding into a Scrub Shrub, Broadleaved Deciduous wetland community supported by a soil saturated and seasonally flooded hydrological regime.

Soil saturated conditions are expected to occur throughout the growing season from the surface to one (1) foot below the surface based on the existing data gathered during the delineation of the adjacent wetland community and exploratory test pit data. The site exhibits a perched water table that outcropped in many places along the upland/wetland boundary of the adjacent wetland community. This supporting hydrology will be intercepted by excavation and grading as part of the Phase I reclamation plan to create and maintain soil saturated areas. The final grade (el. 1200) will also be as such to permit temporary inundation in some portions of or the entire replacement site during storm events and seasonal fluctuations from surface water runoff. The interfacing of perched ground water and surface water is expected to provide soil saturated conditions throughout and beyond the growing season.

Soil conservation measures will be used to transfer the hydric soils from the affected wetlands into the replacement site. The top 12 inches of soil within the affected wetlands will be excavated and stockpiled as necessary until the replacement site is grading is completed. This soil stockpile will be covered with a tarp(s) to reduce evaporation and maintain moisture within the soil. Watering will be done on an as needed basis during the stock piling period. The stock piled hydric soil will be placed in the wetland replacement site and brought to grade (final grade elevation = 1200) as depicted on the Exhibit 18 and the attached Cross Sections. At a minimum this soil will act as a planting medium for the selected plant species; however this soil will

contain a seed bank of indigenous hydrophytic plant species that, if properly stored, will likely germinate and proliferate within the wetland replacement site.

Plants and seed can be obtained from Ernst Conservation Seeds, 9006 Mercer Pike, Meadville, PA, 16335, 800-873-3321 or www.ernstseed.com. Exhibit 18 contains the planting plan proposed for the replacement site. Seed will be mechanically broadcasted on the replacement site and plant stock will be hand planted using a planting dibble or small shovel. Survival rate and percent aerial cover for seeded species are anticipated to be between 90 and 100 percent and survival rate and percent aerial cover for planted species are anticipated to be between 80 and 100 percent for survival and 75 to 90 percent for aerial cover after one (1) full growing season. The percent aerial cover at five (5) years of maturity is expected to be 100 percent and consisting of hydrophytic plant species.

Seed mix types that will be planted are OBL – FACW Perennial Food and Cover Wetland Mix (ERNMX-120) and Wildlife Food and Shelter Shrub Mix (ERNMX-138). The ERNMX-120 is composed of Fox sedge, *Carex vulpinoidea* (23%); Virginia wild rye, *Elymus virginicus* (20%); Giant bur reed, *Sparganium eurycarpum* (10%); Fringed (Nodding) sedge, *Carex crinita* (5%); Nodding sedge, *Carex gynandra* (5%); Hop sedge, *Carex lupulina* (5%); Lurid sedge, *Carex lurida* (5%); Blunt broom sedge, *Carex scoparia* (5%); Soft rush, *Juncus effusus* (5%); Wool grass, *Scirpus cyperinus* (5%); Eastern bur reed, *Sparganium americanum* (5%); Nodding bur marigold, *Bidens cernua* (3%); Cosmos bristly sedge, *Carex comosa* (2%); Rattlesnake grass, *Glyceria canadensis* (1%); and Rice cutgrass, PA Ecotype, *Leersia oryzoides, PA ecotype* (1%). The ERNMX-138 is composed of Fox sedge, *Carex vulpinoidea* (24%); Arrow wood, *Viburnum dentatum* (14%); Virginia wild rye, *Elymus virginicus* (11%); Lurid sedge, *Carex lurida* (10%); Silky dogwood, *Cornus amomum* (10%); Grey dogwood, *Cornus racemosa* (10%); Hop sedge, *Carex lupulina* (5%); Blunt broom sedge, *Carex scoparia* (7%); Hercules' club, *Aralia spinosa* (3%); Awl sedge, *Carex stipata* (2%); Cosmos bristly sedge, *Carex comosa* (1%); Buttonbush, *Cephalanthus occidentalis* (2%); and Meadow sweet, *Spiraea alba* (1%).

Rooted cuttings (8 to 12 inch heights) of Red-osier dogwood, *Cornus stolonifera*, Black willow, *Salix nigra*, and Silky willow, *Salix sericea* will be planted as specified on the planting plan details. These shrubs will be planted at 6 foot centers at the designated locations and quantities depicted on the attached planting plan. Shrub placement is intended to provide a border of shrub development around the seed herbaceous zone that will provide additional edge effect within the wetland mitigation site. This edge effect is enhanced due to the upland open field environment that will exist around the mitigation site.

Slopes throughout the wetland replacement site will be level. Upland slopes will approximate 17:1 (0.06 percent) on the north, northeast and southeast sides. On the south, southwest, northwest sides the upland slopes will approximate 3:1 (0.33 percent). The surface will be left rough to create micro environments that control and trap surface water as well as carbonaceous and inorganic nutrients.

Construction of the replacement site will begin concurrent with the Phase I post-mining reclamation. It is anticipated that upon beginning site reclamation activities, it will take one (1)

week for construction stakeout, three (3) to four (4) weeks to complete the final grading of the wetland replacement site and three (3) weeks to complete seeding, planting and mulching.

One (1) year after the wetland replacement site is completed it will function in full capacity for drainage and flow patterns, stormwater retention, sediment stabilization and surface water discharge. Biological functions such as food chain production, aquatic and terrestrial habitat, nesting, spawning, and resting sites will increase as the wetland replacement community matures and vegetation composition stabilizes. Natural filtration and pollution prevention functions will be partially exhibited in varying degrees and will increase in their representation and function as the wetland replacement community matures as well. All wetland functions that occurred within the affected wetlands will be fully exhibited and functional within the mitigation site at the end of five (5) full growing seasons; to include additional functions such as aquatic habitat, spawning sites, natural filtration, and pollution prevention.

Wetland replacement sites are generally monitored for a minimum of five (5) years which will include a site visit twice a year for the first three (3) years and once a year for the remaining two (2) years, as outlined in the PA DEP Technical Guidance Document 363-0300-001. Inspections are done within the growing season, as depicted by a PA DEP map for identifying growing seasons for wetland hydrology. These inspections are usually done between April 15 and October 15 for this location. A report is generated from each inspection that will discuss wetland determination parameters, succession of the wetland replacement site, success to date, function and value development, and a discussion of problems and remedial measures if warranted. A copy of the report will be submitted to the owner, COE and PA DEP.

Design details can be found on attached site plan and the included Cross Sections. A site plan of the wetland mitigation map and surrounding land uses, grading plan, planting plan, and planting specifications are included. The cross sections indicate existing wetland elevation data, mitigation site elevation data, water elevation data, underlying material information and slope data.

Wetland Restoration

Wetland No. 4

The wetland restoration plan proposes to restore the affected wetlands at a 1:1 ratio.

The wetland functions and values identified to be present within the affected wetland will be restored equally as a result of the proposed restoration plan based on being able to restore the affected area within the actual affected area and Black Run watershed.

The restoration plan will initially consist of a Palustrine, Persistent, Emergent wetland community, succeeding into a Scrub Shrub, Broadleaved Deciduous wetland community supported by a soil saturated and seasonally flooded hydrological regime.

Inundated and soil saturated conditions are expected to occur throughout the growing season above the surface to one (1) foot below the surface based on the existing data gathered during the delineation of the wetland community.

Soil conservation measures will be used to restore the hydric soils within the affected wetlands. The top 12 inches of soil within the affected wetlands will be excavated and stockpiled as necessary until the bedding and placement of the pipe is completed. This stockpile will be covered with a tarp(s) to reduce evaporation and maintain moisture within the soil. Upon completion of the bedding and placement of the pipe the trench will backfilled up to within a foot below the surface. The hydric soil will be placed within this portion of the trench and brought to the existing grade. At a minimum this soil will act as a planting medium for the specified seed mix; however this soil will contain a seed bank of indigenous hydrophytic plant species that, if properly stored and placed, will likely germinate and proliferate within the existing wetland community.

Once the trench has been graded to the existing contour it will be seeded with Wildlife Food and Shelter Shrub Mix (ERNMX-138) at a rate of 15 lbs per acre. The ERNMX-138 is composed of Fox sedge, *Carex vulpinoidea* (24%); Arrow wood, *Viburnum dentatum* (14%); Virginia wild rye, *Elymus virginicus* (11%); Lurid sedge, *Carex lurida* (10%); Silky dogwood, *Cornus amomum* (10%); Grey dogwood, *Cornus racemosa* (10%); Hop sedge, *Carex lupulina* (5%); Blunt broom sedge, *Carex scoparia* (7%); Hercules' club, *Aralia spinosa* (3%); Awl sedge, *Carex stipata* (2%); Cosmos bristly sedge, *Carex comosa* (1%); Buttonbush, *Cephalanthus occidentalis* (2%); and Meadow sweet, *Spiraea alba* (1%). As an E & S control crop the restored site will be seeded with Annual ryegrass, *Lolium multiflorum* at a rate of 15 lbs per acre.

Plants and seed can be obtained from Ernst Conservation Seeds, 9006 Mercer Pike, Meadville, PA, 16335, 800-873-3321 or www.ernstseed.com. Seed will be mechanically broadcasted on the restored site and the anticipated survival rate and percent aerial cover is expected to be between 90 and 100 percent after one (1) full growing season. The percent aerial cover at three (3) years of maturity is expected to be 100 percent and consisting of hydrophytic plant species.

Restoration of the wetland community shall begin immediately upon completion of the bedding and placement of the pipe. It is anticipated that upon beginning site reclamation activities, restoration measures will be completed the same day. Within one (1) year after the affected wetland community is restored it is expected to function in full capacity for drainage and flow patterns, stormwater retention, sediment stabilization and surface water discharge. Biological functions such as food chain production, aquatic and terrestrial habitat, nesting, spawning, and resting sites will increase as the restored area matures and vegetation composition stabilizes. Natural filtration and pollution prevention functions will be partially exhibited in varying degrees and will increase in their representation and function as the restored area matures as well. All wetland functions that occurred within the affected wetlands will be fully exhibited and functional within the restored area at the end of three (3) full growing seasons.

Bintrim, Tyler J LRP

From: WWC [wwc@consolidated.net]
Sent: Tuesday, September 01, 2009 1:06 PM
To: Bintrim, Tyler J LRP
Subject: Glacial Sand and Gravel Company Mine 47

Dear Mr. Bintrim,

I am a naturalist and board member of a land conservation organization (Wild Waterways Conservancy), owners of a 100 acre wetland property in Worth Twp., Butler County near the proposed mining operation - 2008-280 Glacial Sand And Gravel Co. Mine 47.

I am concerned about the possible negative impact that this mining operation will have on the natural environment including the wildlife of the surrounding area.

The most obvious impact would be the proposed excavation and removal of the eastern end of Jacksville Esker. This outstanding geological feature has been described in D.C.N.R.'s pamphlet titled "Trail of Geology" as being "The best preserved esker in Pennsylvania." This esker, formed 23.000 years ago during the last (Wisconsin) Glaciation, is listed in the Butler County Natural Heritage Inventory. A 32 acre portion of it called the Miller Esker Natural Area, owned and managed by the Western Pennsylvania Conservancy lies just west of the proposed esker excavation site.

Less obvious, but potentially more damaging impact of the esker excavation, in my opinion, would be the disruption of the underground hydrology in that area, impacting most likely the adjacent high quality wetland, West Liberty Bog, a fen harboring a number of "Plants of Special Concern" and possibly effecting WWC's wetland as well. Already, the noise and dust from the construction phase of the mining operation has been seen to disturb and drive away birds in the immediate area.

It is my hope that at the very least, the Jacksville Esker can be spared and that some respect for the environmental integrity of the area will be taken into account when and if the decision is made to grant Glacial Sand and Gravel a permit to mine.

Sincerely,

[redacted]

#6 - privacy

Dear Mr. Bintrim,

The purpose of this correspondence is to express concerns involving the mining of the land 1.7 miles west of the Borough of West Liberty. Through information provided in public notice number 09-38, it is clear that the mining operation may have a profound impact on the property that my wife and I purchased in May 23, 2008.

#6

We reside at [redacted] and the resulting outflow/ wetlands that spill from this waterway. This real estate supports a diverse ecosystem, permitting various plant and animal life to exist. During our short period of ownership, we have watched bald eagles and ospreys fish in the lake on a daily basis, followed great blue herons, green herons, wood ducks, mallard ducks, and Canada geese as they raised broods on the islands within the lake, followed the progress of painted turtle and snapping turtle nests, and simply enjoyed the landscape as the seasons progressed.

Due to the fact that this ecosystem depends on the streams and wetlands that feed the lake, I do not feel it is possible for the Glacial Sand and Gravel Company to fill one of the streams that feeds the waterway and create new lakes without disturbing, or altering, our property and ultimately the wildlife and plants that reside in this region. I am concerned that the mining operation will extrude sand and gravel from the esker, which borders the wetlands that directly feed our lake. I am concerned that the existence of lake will be impacted. I am concerned that pollution, in the form of sedimentation and erosion, thermal elevation, and water contamination will impact the ecosystem. I am concerned that a mine/ environmental inspector has not even attempted to contact us to discuss possible issues, or create a benchmark for water testing.

I am not requesting a public hearing because I feel that my thoughts and feelings, which are quite clear in this letter, are properly conveyed. Although, if future issues do arise, I will not hesitate to take further action.

As a former chemistry teacher, I am aware of the hazards of mining. As a current high school administrator, I am aware that the best-laid plans can turn for the worse. As an individual that loves the outdoors and is a member of Ducks Unlimited, I am aware of the value of wetlands and believe they are a natural resource that cannot be squandered or artificially replaced. Finally, my wife and I purchased this property with the full intent of preserving the integrity of real estate, which we do not want to change.

Sincerely,

[redacted]

All redactions - #6 - privacy

DOA Permits

Application No. 2008-280
Project Manager: Tyler Bintrim

Date Received: February 23, 2009
Date Application Complete: June 25, 2009

Public Notice No: 09-38
Public Notice Date: August 12, 2009
Date Public Notice Closes: September ~~2~~ 14, 2009

Name: Glacial Sand and Gravel Co. **Phone:**
Address: P.O. Box 1022, Kittanning, PA 16201

Activity Type: 404
Type of Work: Sand and Gravel washing and stockpile facility

Location:
Bank:
River Mile:

City: West Liberty
County: Butler County **State: PA**

Responses:

Date: 9 / 14 / 2009
Agency/Individual: USEPA Stephanie Chin
Type of Response: Recommend LEDPA + revised mitigation plan

Date: 9 / 14 / 2009
Agency/Individual: [redacted] # 6 - privacy
Type of Response: opposed

Date: 9 / 18 / 2009
Agency/Individual: [redacted] #6
Type of Response: opposed / Request Public Hearing

Date: 9 / 24 / 2009
Agency/Individual: [redacted] #6
Type of Response: opposed (request permit denial)

Date: 9 / 15 / 2009
Agency/Individual: Andrew Zadnik (Western PA Conservancy)
Type of Response: Hydrology concerns

Date: 9 / 14 / 2009
Agency/Individual: [redacted] #6
Type of Response: Request Public Hearing

Date: 9 / 14 / 2009
Agency/Individual: PA DCNR Emilee Boyer
Type of Response: unsure about hydrology impacts which may affect threatened + endangered plants

Date: 9 / 13 / 2009
Agency/Individual: [redacted] #6
Type of Response: wants to see esker avoided

Date: 9 / 4 / 2009
Agency/Individual: [redacted] #6
Type of Response: Request to comment on in kind mitigation plan + 401(B)(1) not believed to be in compliance

Date: 9 / 3 / 2009
Agency/Individual: [redacted] #6
Type of Response: opposed

Date: 8 / 25 / 2009
Agency/Individual: [redacted] #6
Type of Response: opposed

* 9/2/2009
[redacted] #6
opposed / Request Public Hearing

* 9/1/2009
Slippery Rock University
opposed to mining esker

9/1/2009
Wild Waterways Conservancy - Fred Lochner
opposed to mining esker

[redacted] #6
oppose to mining / concerned about potential impacts to Tamarack Lake

Public Notice

U.S. Army Corps
of Engineers
Pittsburgh District

In Reply Refer to
Notice No. below

US Army Corps of Engineers, Pittsburgh District
1000 Liberty Avenue
Pittsburgh, PA 15222-4186

Application No. 2008-280 Date: August 12, 2009

Notice No. 09-38 Closing Date: September 2, 2009

1. TO ALL 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.

2. APPLICANT: Glacial Sand and Gravel Company
P.O. Box 1022
Kittanning, Pennsylvania 16201

AGENT: The EADS Group, Incorporated
Clarion Office
15392 Route 322
Clarion, Pennsylvania 16214

3. LOCATION: 1.7 miles west of the Borough of West Liberty, along West Liberty Road in Worth Township, Butler County, Pennsylvania

4. PURPOSE AND DESCRIPTION OF WORK: The applicant proposes to construct a sand and gravel processing plant to wash and screen various grades of aggregate material and stockpile this material on site. The purpose of the plant is for the associated ponds to provide adequate water supply to be used as wash water and to allow for re- cycling of water. To facilitate construction of the plant and ponds the applicant proposes to fill 1.89 acres of wetland and approximately 240 linear feet of stream. Approximately 50 linear feet of stream has already been impacted for the construction of a 24" diameter culvert crossing to gain access to the site. An additional 0.01 acres of wetland and 10 linear feet of stream will be temporarily disturbed for the installation of a sanitary sewer line. To mitigate the loss of both wetland and stream function, two acres of wetland will be created north of West Liberty Road and south of the large existing wetland which will not be disturbed as a result. Drawings of the proposed project are attached to this notice.

5. ENCROACHMENT PERMIT: The applicant must obtain a Water Obstruction and Encroachment Permit which includes 401 Water Quality Certification from the:

Pennsylvania Department of Environmental Protection
Northwest Regional Office

Soils and Waterways Section
230 Chestnut Street
Meadville, Pennsylvania 16335

Telephone: 814-332-6984

6. IMPACT ON NATURAL RESOURCES: The District Engineer has consulted the most recently available information and has determined that the project is not likely to affect the continued existence of any endangered species or threatened species, or result in the destruction or adverse modification of habitat of such species which has been determined to be critical. This Public Notice serves as a request to the U. S. Fish and Wildlife Service for any additional information they may have on whether any listed or proposed to be listed endangered or threatened species may be present in the area which would be affected by the activity, pursuant to Section 7(c) of the Endangered Species Act of 1972 (as amended).

7. IMPACT ON CULTURAL RESOURCES: The National Register of Historic Places has been consulted, and it has been determined that there are no properties currently listed on the register which would be directly affected by the proposed work. If we are made aware, as a result of comments received in response to this notice, or by other means, of specific archeological, scientific, prehistorical, or historical sites or structures which might be affected by the proposed work, the District Engineer will immediately take the appropriate action necessary pursuant to the National Historic Preservation Act of 1966 - Public Law 89-665 as amended (including Public Law 96-515).

8. PUBLIC INVOLVEMENT: Any person may request, in writing, within the comment period specified in the paragraph below entitled "RESPONSES," that a public hearing be held to consider this application. The requests for public hearing shall state, with particularity, the reasons for holding a public hearing.

9. EVALUATION: 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 which reasonably may be expected to accrue from the proposals must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, flood plain 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. 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.

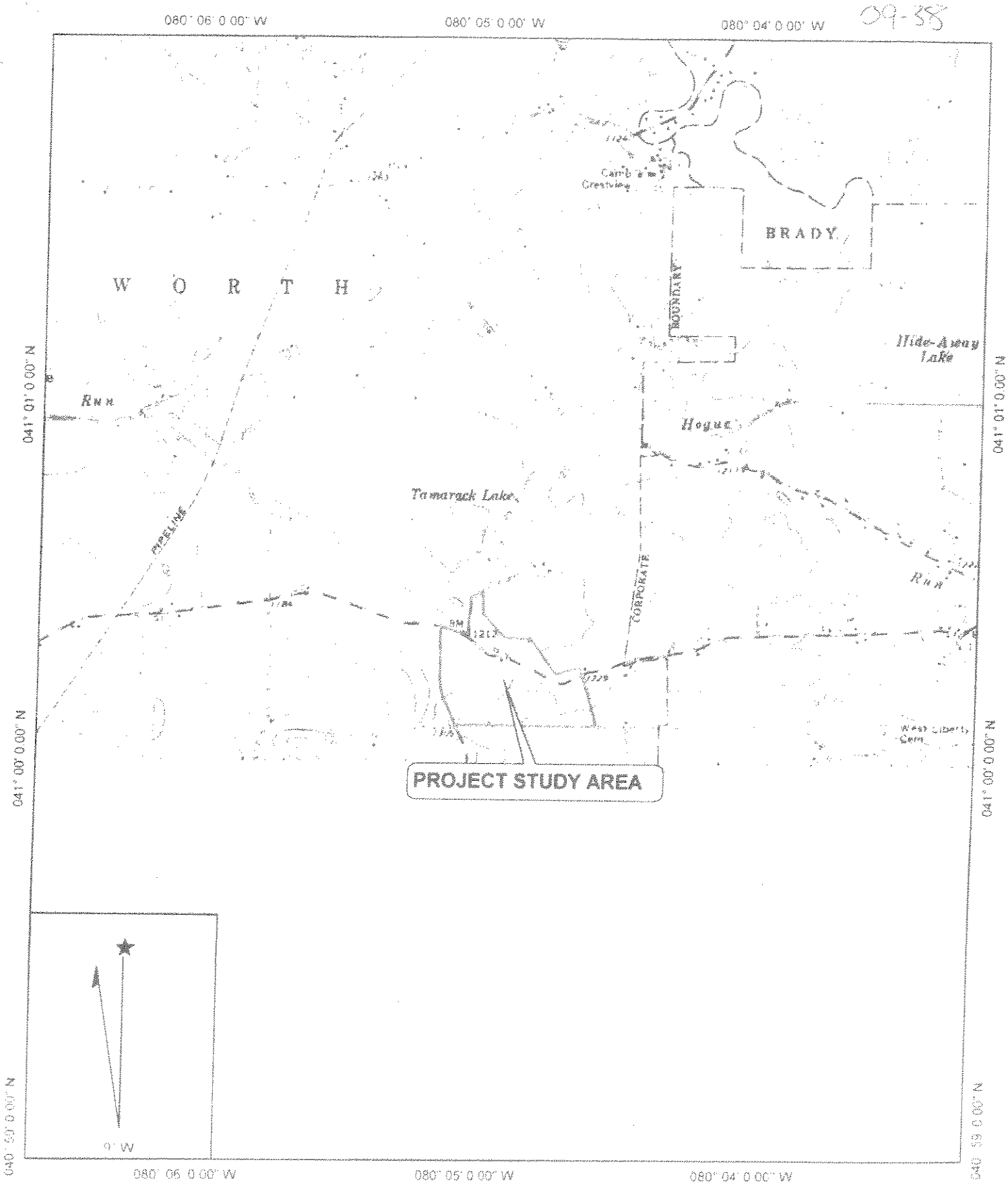
Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, 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 overall public interest of the proposed activity. 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 (40 CFR Part 230).

10. RESPONSES: A permit will be granted unless its issuance is found to be contrary to the public interest. Written statements concerning the proposed activity should be received in this office on or before the closing date of this Public Notice in order to become a part of the record and to be considered in the final determination. Any objections which are received during this period may be forwarded to the applicant for possible resolution before the determination is made whether to issue or deny the requested DA Permit. All responses to this notice should be directed to the Regulatory Branch, attn Tyler Bintrim at the above address, by telephoning (412) 395-7115, or by e-mail at tyler.j.bintrim@usace.army.mil. Please refer to CELRP-OP-F 2008-280 in all responses.

FOR THE DISTRICT ENGINEER:

Scott A. Hans
Chief, Regulatory Branch

09-38

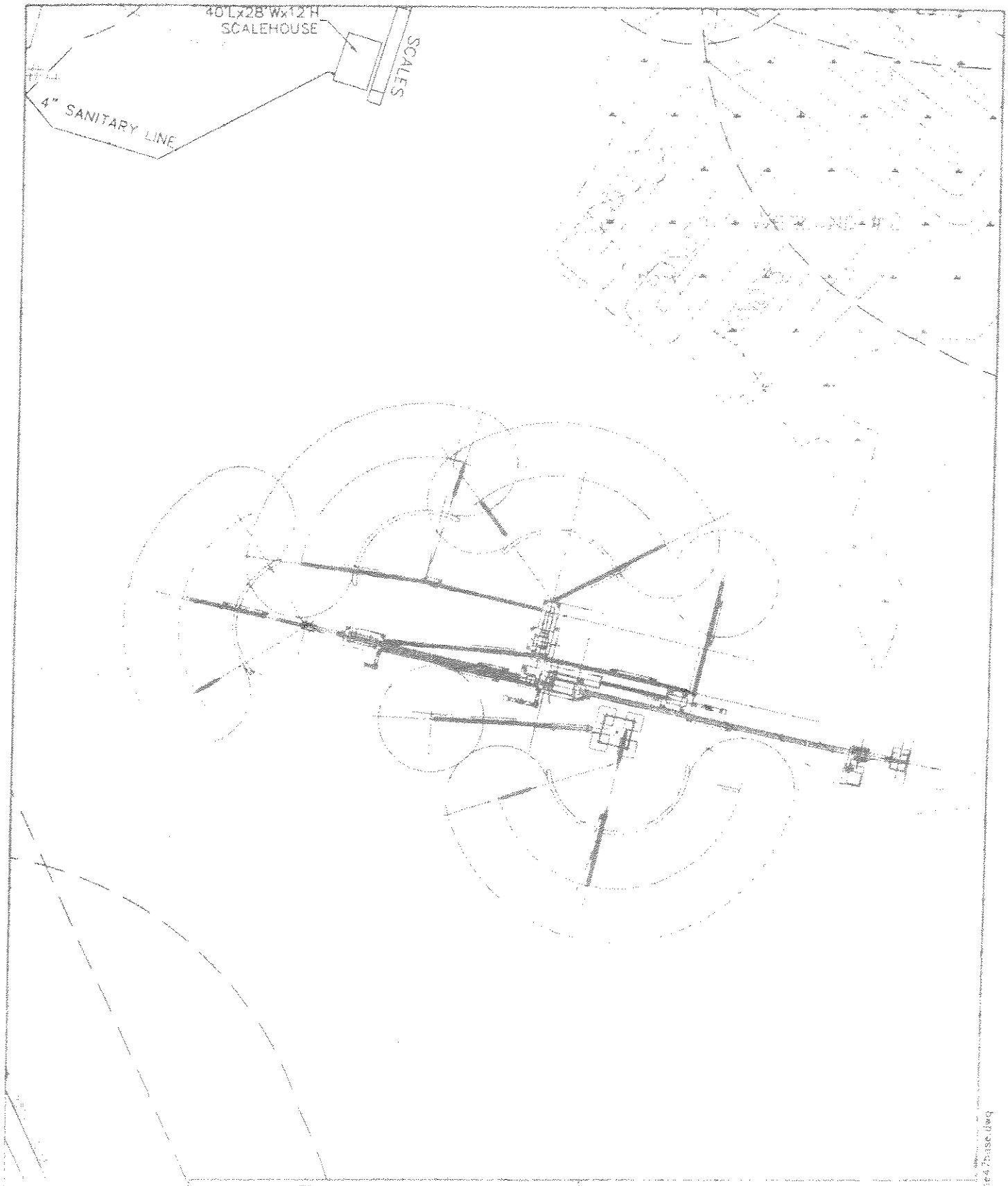


Name: SLIPPERY ROCK
Date: 1/23/2008
Scale: 1 inch equals 2000 feet

Location: 041° 00' 27.24" N 080° 04' 53.88" W
Caption: Glacial Sand and Gravel Co.
Mine 47 SMP
Worth Township, Butler County

Copyright © 2007 Mapteck Inc.

09-38



THE BADA GROUP

ENGINEERING ARCHITECTURE AND DESIGN SERVICES

CLARION OFFICE
15380 Route 322
CLARION, PA 16214
(814) 764-5050
(814) 764-5055 FAX

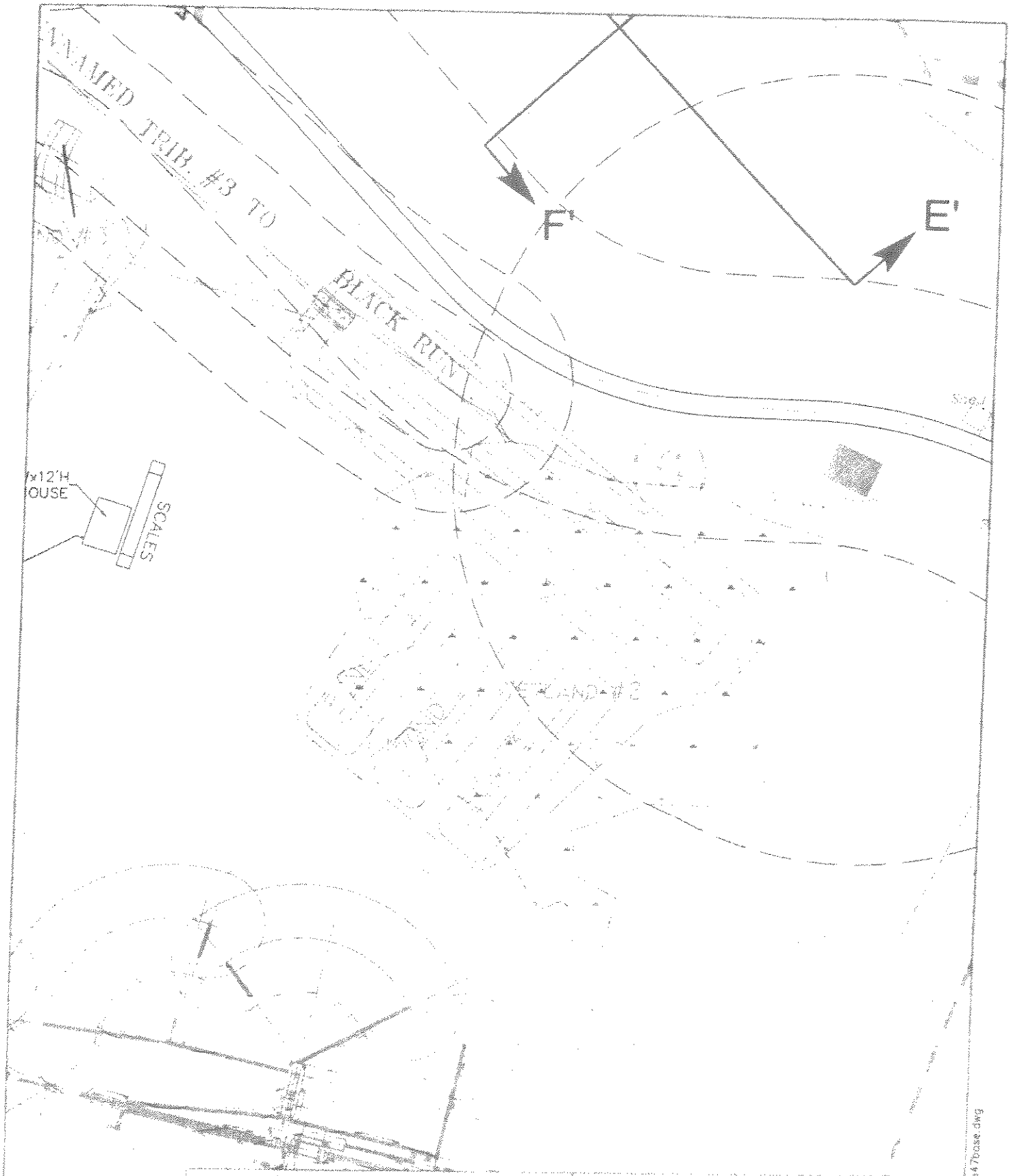
GLACIAL SAND AND GRAVEL CO.
P.O BOX 1022
KITTANNING, PA 16201

WORTH TOWNSHIP

BUTLER COUNTY

DWG NAME: Mine-Scale.dwg

CR-38



THE BADE GROUP
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WWW. thebadegroup.com

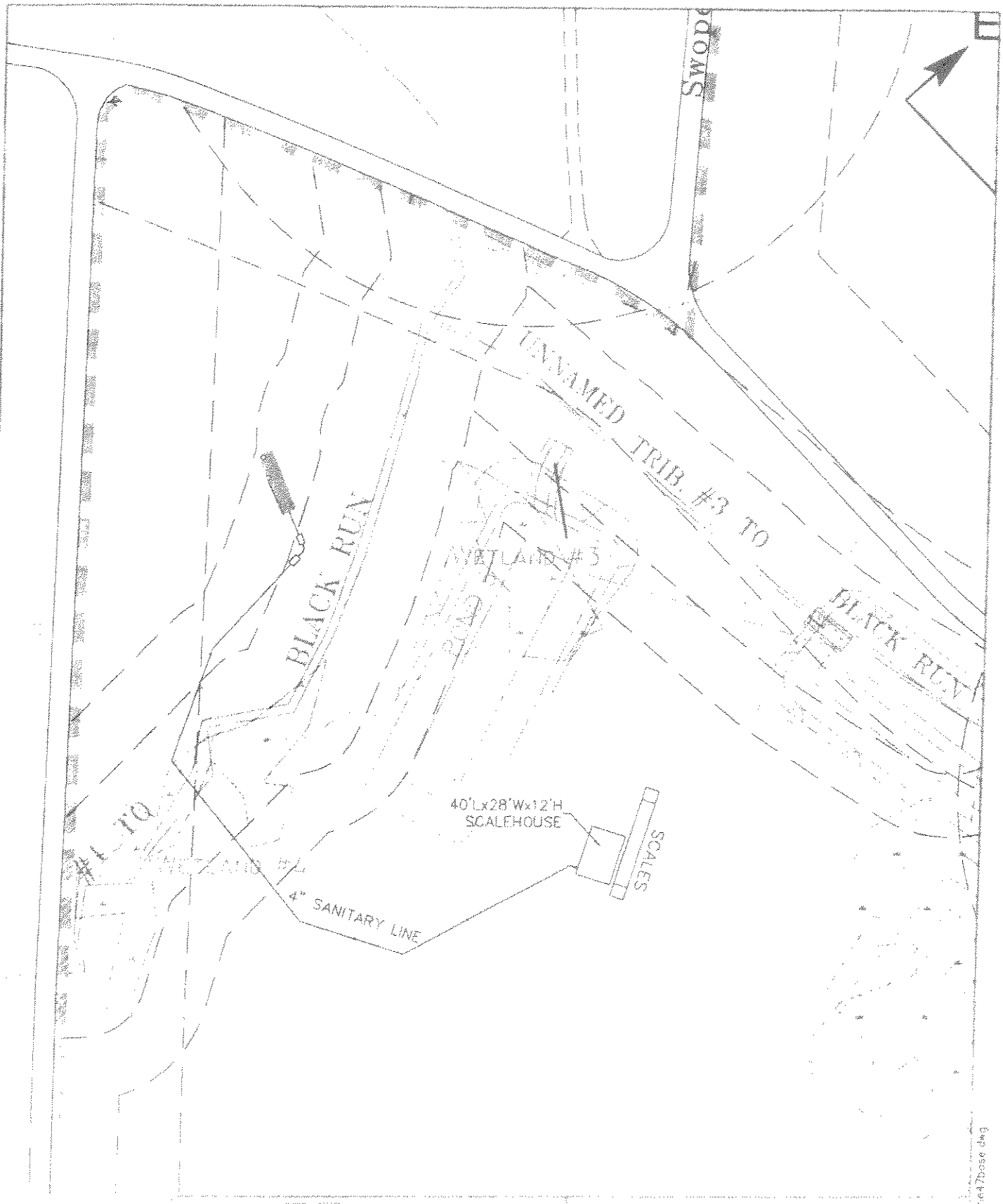
GLACIAL SAND AND GRAVEL CO.
P.O. BOX 1022
KITTANNING, PA 16201

WORTH TOWNSHIP

BUTLER COUNTY

DWG NAME: Mine47base.dwg

09-38



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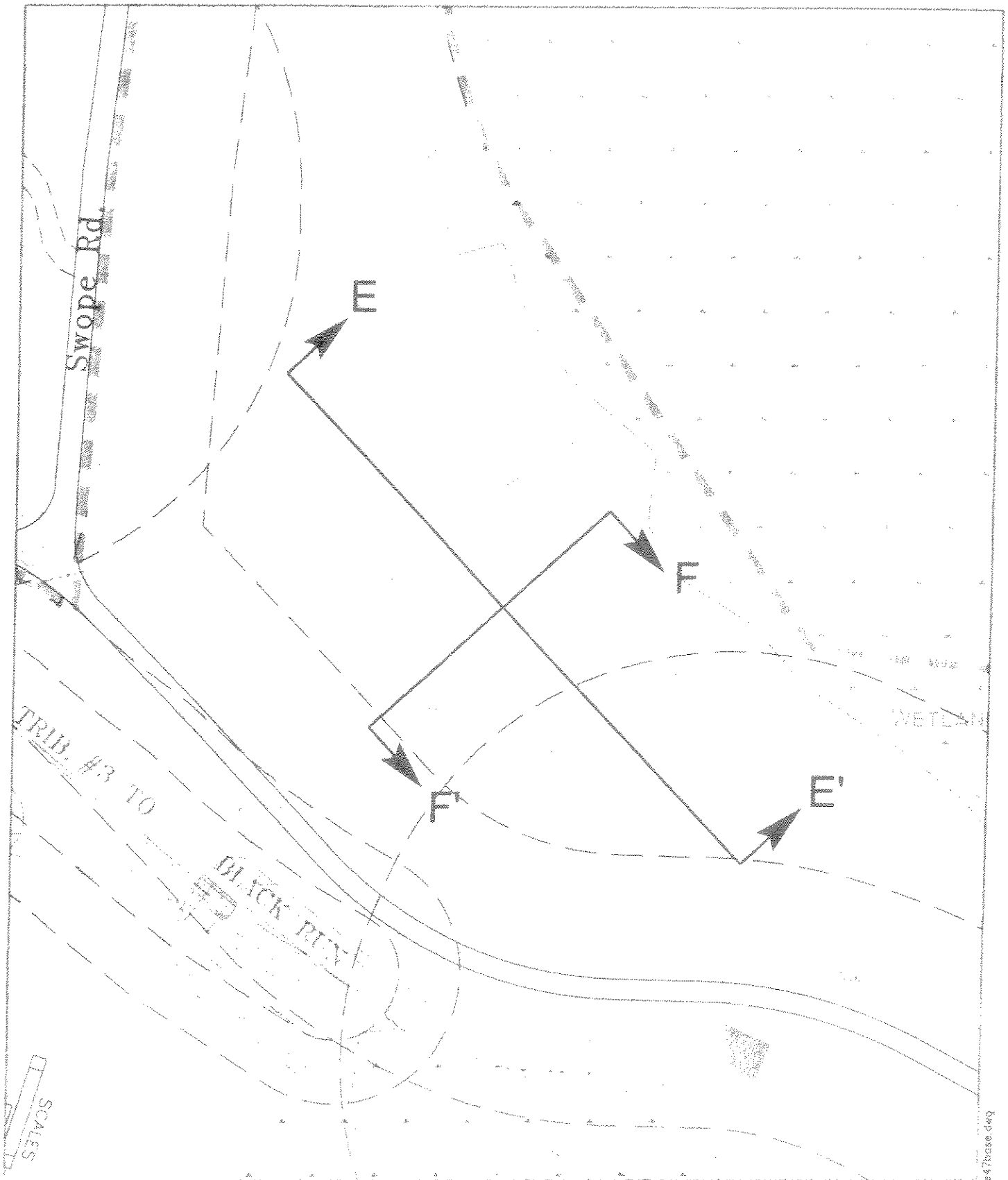
KITTANNING, PA 16201

MONTA TOWNSHIP BUTLER COUNTY

DWG NAME: M-647base.dwg

09-38



THE EADS GROUP
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GLACIAL SAND AND GRAVEL CO.
P.O. BOX 1022
KITTANNING, PA 16201

WORTH TOWNSHIP

BUTLER COUNTY

DWG NAME: Miles47hose.dwg

Bintrim, Tyler J LRP

From: Bintrim, Tyler J LRP
Sent: Friday, March 27, 2009 8:38 AM
To: 'Bud Davis'
Subject: 2008-280 Glacial Sand and Gravel Co. Mine 47

Mr. Davis:
I am in receipt of the subject referenced permit application. I will need the following items for Public Notice.

1. A location map that clearly depicts the project limits.

2. 8.5 by 11 inch drawings showing the construction of the ponds and mitigation area and showing impacts to existing resources.

3. A more detailed project description stating why impacts must be incurred and whether wetland 1 will be impacted in any way.

4. A mitigation statement explaining how 1.77 acres of wetland impact will be adequately mitigated.

Please submit this information in order to continue the 404 review process.

Thank you,

Tyler J. Bintrim
Regulatory Project Manager
U.S. Army Corps of Engineers Pittsburgh District Federal Building, 20th Floor 1000 Liberty Avenue Pittsburgh, PA 15222

P: 412-395-7115

Pennsylvania Department of Conservation and Natural Resources

March 13, 2009

Bureau of Forestry

Michal Jones-Stewart
The EADS Group
15392 Route 322
Clarion, PA 16214

Pennsylvania Natural Diversity Inventory Review, PNDI Numbers:
20071211120195, 20071024114200 and 20061010059358
Glacial Sand and Gravel - Mine 47 and Rodgers Plant
Worth Twp; Butler County

Dear Ms. Jones-Stewart,

This response is in reference to your Pennsylvania Natural Diversity Inventory (PNDI) coordination for potential impacts to resources of concern under the Department of Conservation and Natural Resources' responsibility, which includes plants, natural communities, terrestrial invertebrates and geologic features only.

Based on our PNDI reviews in October and November of 2007 and April 2008 we determined there could be potential impacts to species and/or resources of special concern under the jurisdiction of DCNR and subsequently requested surveys for *Carex alata*, *Carex pseudocyperus*, *Cladium mariscoides*, *Lobelia kalmii*, *Parnassia glauca*, *Carex prairea*, *Cypripedium reginae*, *Epilobium strictum*, *Oxypolis rigidior*, *Salix petiolaris*, *Solidago purshii*, *Spiranthes romanzoffiana*, *Stenanthium gramineum* and *Trollius laxus sensu stricto*. After thorough review of the survey reports, maps, and other documentation that you and Dr. Fred Brenner submitted to our office between the months of August 2008 and January 2009, we concur that *Schoenoplectus acutus* (syn. *Scirpus acutus*) and *Cladium mariscoides* (both currently state-listed as PA Endangered) were observed and are located within the delineated boundaries of Wetland 1 marked on the enclosed map titled "Rodgers Plant." Along with these two endangered species another state-listed plant, *Carex alata* (PA Threatened) was observed in the project vicinity by Dr. James Bissell during site visits on June 3 and September 3, 2008 (report enclosed). Additionally, our office has recently become aware that the onsite West Liberty Esker will be impacted as a result of the mining activities.

During the environmental review process the original project area was separated into two separate permit areas, the surface mine permit area, portions of which extend north of West Liberty Road, and the NPDES permit area, contained entirely South of West Liberty Road. Below you will find our project concerns separated based on activity and permit area.

<u>NPDES Application Area</u>

It is our understanding that the NPDES permit is a "stand alone" permit and is necessary to grade and construct the Rodgers processing plant, including a sediment/polishing pond which will process raw sand and gravel from Mine 31, Mine 47 and other mines in close proximity. As per a February 24, 2009 phone call with you and February 25, 2009 letter you provided to our office we are aware of a deep "production" well drilled to a depth of at least 160 feet from the earth's surface into the Homewood Sandstone that was tested for 72 hours pumped at a rate of 80 gallons per minute. Monitoring of several "observation" wells showed no effects on the local or regional water system from the 80 gal/min test pumping. Results of this study were provided to the DEP Bureau of Mining and Reclamation Knox District Office and the Butler County Conservation District. It is also our understanding that only the "production" well will be used for extraction of water to operate the processing plant.

Rec. 3/26/2009

Reclamation Knox District Office and the Butler County Conservation District. It is also our understanding that only the "production" well will be used for extraction of water to operate the processing plant.

Based on this information, our office has determined that the actions described above for this permit will not directly impact the state-listed endangered plants occurring in Wetland 1. There are no indirect impacts anticipated for the actions proposed in this permit contingent upon the prevention of runoff from activities involved in construction and operation of the Plant from entering Wetland 1 and strict adherence to the equipment/machinery washing request below under "Both Project Areas." Please coordinate further with our office to determine impacts to the endangered plants if the conditions above cannot be met, project plans or activities change, or if during the NPDES permit review the Conservation District determines that withdraw from the production well for the plant will affect the hydrology of Wetland 1 of West Liberty Road.

Surface Mine Permit Area

First and foremost we are concerned about the destruction and degradation of Wetland 1 and critical habitat for *Schoenoplectus acutus* (syn. *Scirpus acutus*), *Carex alata* and *Cladim marsicoides* as the Rodgers Plant map submitted January 9, 2009 (mentioned above) indicates the surface mine permit boundary extends into Wetland 1. Please be sure that none of the activities involved in the surface mine permit will harm Wetland 1 or critical habitat for the endangered species through either a change in the local water table or direct earth disturbance impact. Enclosed is a map from our PNDI records indicating the fen habitat onsite; please avoid impacts to the area within this polygon as well as critical habitats for the endangered species described below. Please contact our office for the polygon data and then map the data on project site plans to verify to PA Department of Environmental Protection that this critical habitat for the endangered plants will not be directly impacted.

Critical habitat for *S. acutus* is defined in *The Plants of Pennsylvania* (Rhoads and Block) as shallow water of lake and pond margins. Other habitats *S. acutus* occurs in within our state are open pond waters, sandy lake and bay shores, seepage areas with open/partially filtered light and power utility crossings in succeeding to emergent marshes, also a fen seepage, wet river bank, and sandy wooded border of a spring stream.

The Plants of Pennsylvania defines critical habitat for *C. alata* as swamps, peaty shores, wet thickets, and woods, usually on calcareous soils. More specific habitats *C. alata* is found in within our state include open light in wetlands; fens; marsh and sedge meadows; lake shores and quaking mats along lake shores; hummocks and flats in swamps, fens and bogs; and seepages in lakes, swamps or marshes.

Critical habitat for *C. mariscoides* defined by Rhoads and Block include marshes, floating bog mats and shallow lake margins. Other habitats *C. marsicoides* is found in within our state are inundated hydric soils; sphagnum mats, mudflats, edges and boggy hummocks in bogs, fens and marshes; bogs and fens associated with ponds and natural glacial lakes; open meadows and bottom areas and a driveway stream crossing associated with a fen.

Additionally, the maps provided to our office on February 18, 2009 and February 25, 2009 (Exhibit 9/Operations Map) was the first we became aware of the removal of the West Liberty Esker and the creation of the mitigated wetland in its place. We are concerned about these actions as this esker is the best preserved feature of this type in Pennsylvania. Please contact geologist Mr. Gary Fleeger of DCNR Bureau of Topography and Geology / PA Geologic Survey to discuss concerns regarding the esker. Mr. Fleeger can be reached at 717.702.2045 or gfleeger@state.pa.us.

We are also concerned that the species used for the wetland mitigation could possibly indirectly impact Wetland 1. In order to prevent indirect impacts from invasive plant species to endangered species in Wetland 1 please use only native species of local genetic material in the revegitation plan and avoid the use of *Schoenoplectus acutus* (syn. *Scirpus acutus*) and all other threatened, endangered or special concern plants listed in the Pennsylvania Natural Diversity Inventory. Contact our office if you would like guidance on native plant species to use in the mitigation wetland.

Both Project Areas

In order to prevent the spread of invasive plant species that may cause indirect impacts to the endangered plants in Wetland 1, please thoroughly wash all vehicles, equipment and machinery at a carwash offsite to remove any invasive plant propagules prior to bringing onsite and commencing any construction activity. Please avoid the use of invasive plant species and plants that are listed as endangered, threatened or special concern in any seed mixes or plantings within the project boundaries. If you would like more information on invasive plant species please visit http://www.dcnr.state.pa.us/forestry/invasivetutorial/index.htm and for a list of endangered, threatened, and special concern plants visit http://www.naturalheritage.state.pa.us/PlantsPage.aspx.

This response represents the most up-to-date summary of the PNDI data files and is applicable for one year. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered. Please me at 717-787-7067 if you have questions concerning this response.

Emilee C. Boyer, Environmental Review Specialist FOR Chris Firestone, Plant Program Mgr
DCNR/BOF/PNDI, PO Box 8552, Harrisburg, PA 17105 ~ Ph: 717-787-7067 ~ F: 717-772-0271 ~ c-eboyer@state.pa.us

Enclosures

Cc: Chris Yeakle, DEP Knox Office
Ian Harrell, Butler county Conservation District
Gary Fleeger, DCNR/PA Geologic Survey
Dr. James Bissell, Cleveland Museum of Natural History

DEPARTMENT OF THE ARMY
PITTSBURGH DISTRICT, CORPS OF ENGINEERS
WILLIAM S. MOORHEAD FEDERAL BUILDING
1000 LIBERTY AVENUE
PITTSBURGH, PA 15222-4186

February 27, 2009

Darrel Lewis
Glacial Sand & Gravel Company
P. O. Box 1022
Kittanning, PA 16201

Derwood B. Davis, Jr.
The EADS Group
15392 Route 322
Clarion, PA 16214

Marcia Haberman, Project Manager

We received your request on February 23, 2009 and your project, **Glacial Sand and Gravel Company - Mine 47, Surface Mine Permit Area, Worth Township, Butler County, PA,** has been assigned to **Marcia Haberman. Marcia** can be contacted at ***(412) 395-7361,*** or via e-mail at:

Marcia.H.Haberman@usace.army.mil

Your Corps of Engineers **File Number is ~~2009-426~~** 2008-280. Please contact Marcia with any questions and reference this file number in all correspondence with our office concerning this site.

Sincerely,

Scott A. Hans
Chief Regulatory Branch
Pittsburgh District USACE

DD processed under 2008-280

THE EADS GROUP

ENGINEERING ARCHITECTURE and DESIGN SERVICES

RECEIVED
2009 FEB 23 PM 12: 23
ARMY CORPS ENGINEERS
PITTSBURGH DISTRICT

February 20, 2009

Mr. Scott Hans, Chief
U.S. Army Corps of Engineers, Regulatory Branch
1834 Federal Office Building, 1000 Liberty Avenue
Pittsburgh, PA 15222

Attn: Marcia Haberman

RE: Glacial Sand and Gravel Co. – Mine 47
Surface Mine Permit Area
Worth Township, Butler County
Section 404 Permit Application

Ladies and Gentleman:

Enclosed is an Application for Department of The Army – Section 404 Permit for your review and consideration. Also included are copies of the PA DEP Module 14(s) and either clearance letters or reports for archaeology and E & T species. We are currently waiting on PA DCNR's clearance letter for Mr. Fred Brenner's and Mr. James Bissell's plant survey reports.

Also, please note that the page numbers on the enclosed plan pages are not sequential because they have been pulled from a larger set of plans that are part of the mining permit package.

Please contact me or Michal Jones either by telephone at 814-764-5050 or e-mail at ddavis@eadsgroup-clarion.com or mjones@eadsgroup-clarion.com if you have any questions or need additional information.

Sincerely,

The EADS Group, Inc. (Clarion)

By: Derwood B. Davis, Jr.
Environmental Specialist

Cc: Darrel Lewis – Glacial Sand & Gravel Co.

2008-280 ~~2009-426~~ Marcia

☐ 1126 Eighth Avenue, Altoona, PA 16602, (814) 944-5035, (814) 944-4862 Fax
■ 15392 Route 322, Clarion, PA 16214, (814) 764-5050, (814) 764-5055 Fax
☐ 227 Franklin St., Suite 208, Johnstown, PA 15901, (814) 535-5388, (814) 535-7654 Fax
☐ 450 Aberdeen Drive, Somerset, PA 15501, (814) 445-6551, (814) 443-2748 Fax
☐ 11045 Parker Drive, North Huntingdon, PA 15642, (412) 754-0801, (412) 754-0860 Fax
☐ 81 Baltimore St., Suite 600, Cumberland, MD 21502, (301) 777-7878, (301) 777-8391 Fax

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT (33 CFR 325)

OMB APPROVAL NO. 0710-003

Public reporting burden for this collection of information is estimated to average 5 hours per response, including the time for reviewing instructions, Searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Service Directorate of Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302; and to the Office of Management and Budget, Paperwork Reduction Project (0710-003), Washington, DC 20503. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authority: 33 USC 401, Section 10; 1413, Section 404. Principal Purpose: These laws require permits authorizing activities in, or affecting, navigable waters of the United States; the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters. Routine uses: Information provided on this form will be used in evaluating the application for a permit. Disclosure: Disclosure of requested information is voluntary. If information is not provided, however, the permit application cannot be processed nor can a permit be issued.

One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and instructions) and be submitted to the District Engineer having jurisdiction over the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETED

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME Glacial Sand and Gravel Company	8. AUTHORIZED AGENT'S NAME & TITLE (an agent is not required) Darrel K. Lewis, Engineer
6. APPLICANT'S ADDRESS P.O. Box 1022 Kittanning, PA 16201	9. AGENT'S ADDRESS P.O. Box 1022 Kittanning, PA 16201
7. APPLICANT'S PHONE NUMBERS WITH AREA CODE a. Residence b. Business 724-548-8101	10. AGENT'S PHONE NUMBERS WITH AREA CODE a. Residence b. Business 724-548-8101

11. **STATEMENT OF AUTHORIZATION**

I hereby authorize The EADS Group, Inc. to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

APPLICANT'S SIGNATURE — DATE 09-10-08

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions) Mine No. 47.	
13. NAME OF WATERBODY, IF KNOWN (if applicable) Unnamed Tributaries to Black Run	14. PROJECT STREET ADDRESS (if applicable) West liberty Road Worth Township, Butler County
15. LOCATION OF PROJECT Butler (COUNTY) PA (STATE)	

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)

The site is located 1.7 miles west of the Borough of West Liberty along West Liberty Road (T-860).

17. DIRECTIONS TO THE SITE

From Pittsburgh take I-79 north to Interchange 29, travel east on State Route 0422 to State Route 0528, travel north on State Route 0528 approximately 5.4 miles to State Route 4011 (West Liberty Road), make a left onto State Route 4011 (West Liberty Road) and travel north approximately 2.2 miles to the Borough of West Liberty, turn left onto T-860 (West Liberty Road) and travel approximately 1.7 miles to the project area on both sides of the road.

18. NATURE OF ACTIVITY (Description of project, include all features)

The proposed project consists of surface mining for sand and gravel. The proposed permit area is 77.6 acres. A processing plant will be constructed within the permit area to wash and screen the various grades of aggregate material and stockpile this material. These ponds are needed to provide a sufficient supply of plant processing water that will also allow for re-cycling the wash water as well. A total of 5,922 cubic yards of fill will be used to construct the wash water ponds.

19. PROJECT PURPOSE (Describe the reason or purpose of the project, see instructions)

The purpose of this project is to extract sand and gravel material from the permit area and process it for marketable aggregates to sell to industry.

USE BLOCKS 20-22 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. REASON(S) FOR DISCHARGE

The construction of the processing plant proposes to excavate and place fill material into 1.77 acres of wetlands in order to build the wash water storage ponds. Refer to the attached Module 14 Streams/Wetlands South of West Liberty Road - 14.4 Wetland Impact Analysis/Assessment.

21. TYPE(S) OF MATERIAL BEING DISCHARGED AND THE AMOUNT OF EACH TYPE IN CUBIC YARDS

The material that the wash water storage ponds will be built out of will consist of silt loam and silty clay material. The use of liners will be considered to prevent leaking or seepage within the embankments. Refer to the attached Erosion and Sedimentation Pollution Control Plan.

22. SURFACE AREA IN ACRES OF WETLANDS OR OTHER WATERS FILLED (see instructions)

The surface area affected by this fill activity is 1.77 acres of jurisdictional wetlands. Refer to the attached Module 14 Streams/Wetlands South of West Liberty Road - 14.5 Wetland Mitigation/Replacement.

23. IS ANY PORTION OF THE WORK ALREADY COMPLETE? YES ○ NO ◉ IF YES, DESCRIBE THE WORK

24. ADDRESSES OF ADJOINING PROPERTY OWNERS, LESSEES, ETC. WHOSE PROPERTY ADJOINS THE WATERBODY (If more than can be entered here, please attach a supplemental list)

Jaime L. Cooper,110 Swope Road, Slippery Rock, PA, 16057 Claire Pizor, 1310 Moore Road, Slippery Rock, PA, 16057 P A Musulin, 128 Mount Union Road, Portersville, PA, 16051 Wayne A Pizor, 141 Mount Union Road, Portersville, PA, 16051 Carl S Rodgers, Jr., 1016 West Liberty Road, Slippery Rock, PA, 16507 Brian R Rea, 1073 West Liberty Road, Slippery Rock, PA, 16057 Carol A Miller, 1153 West Liberty Road, Slippery Rock, PA 16057

25. LIST OF OTHER CERTIFICATIONS OR APPROVALS/DENIALS RECEIVED FROM OTHER FEDERAL, STATE, OR LOCAL AGENCIES FOR WORK DESCRIBED IN THIS APPLICATION

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
None					

* Would include but is not restricted to zoning, building and flood plain permits.

26. Application is hereby made for a permit or permits to authorize the work described in this application. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT	DATE	SIGNATURE OF AGENT	DATE
[signature]	09-10-08		

The application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and will fully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, facticious, or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

Module 14: Streams/Wetlands
Unnamed Tributary #1 to Black Run

14.1 *Mining Activities Within 100 Feet of a Stream*

*If the mining activities, including haul road crossings, are proposed within 100 feet of an intermittent or perennial stream provide the following information: (**Note**: Variance request for the expansion of pits must be included in the proof of publication. A separate Module 14.1 should generally be completed for each proposed encroachment.)*

a) *Name and location of the stream; and location, length, and acreage disturbed by the proposed activities (Identify the location of the proposed activities on Exhibits 9 and 18);*

Encroachment is proposed within the 100' stream barrier of perennial Unnamed Tributary #1 to Black Run. This stream is located along the western portion of the proposed permit area and to some extent parallels Mt Union Road (T-861). This stream section isolates the northwest corner of the permit area from the main project area. An encroachment up to 50 feet from the tributary is requested for support activities including the construction of a berm to act as an Erosion and Sedimentation Control Structure . The length of this request is 650'. The final Polishing Pond (Pond 5) is also proposed to be placed within the 100' barrier. This pond will act as the re-charge pond for the plant operations as well as an upslope sediment pond for the site. The total area within the variance area is approximately 1.3 acres.

A narrative giving a description and the purpose and justification of the proposed activities;

A 50' stream barrier is proposed to accommodate support activities which will enable a safer and more efficient working environment. Current operational area limitations reduce the area for potential support activities such as the processing plant and processing ponds. Preparation for a portion of the processing area will require the removal of some raw material from within the mining limits. To minimize the stockpiling and rehandling of this material maximum usage of the area outside the mining limits is requested. No mineral removal is proposed within 100' of this tributary.

b) *A hydrologic and hydraulic analysis which shall include: data on size, shape and characteristics of the watershed; the size and frequency of the design storm; the hydraulic capacity of any structures; the hydraulic capacity of the channel upstream and downstream; and, where flooding is a problem, flood damage and backwater analysis;*

At the downstream end of the encroachment area, the watershed drainage area is approximately 105 Ac and is comprised of a combination of cropland and non-commercial forestland. This area is currently fully vegetated and has an average slope of approximately 10%. Streambed slope within the variance area is approximately 4%.

Using a CN value of 65, the following storm data has been generated:

P_2 = 2.6"	Q_2 = 15 cfs
P_{10} = 3.8"	Q_{10} = 57 cfs
P_{25} = 4.3"	Q_{25} = 85 cfs
P_{50} = 4.8"	Q_{50} = 112 cfs

Since no structures are proposed to be placed in the stream channel, hydraulic capacities and backwater analysis are not necessary.

c) *A description of the character of the stream bed and banks, and a profile of the stream for a reasonable distance above and below the proposed site showing bed slopes, normal and flood water surfaces; and a description of the riparian vegetation;*

The stream bottom material consists of primarily sand, silt, and gravel cobbles, with a bed slope of approximately 4%. This drainage course is linear with few bends to slow discharge. The upper end of this stream encroachment is marked by the outfall of a 24" CMP which crosses Mt. Union Road. Based on the size of this existing culvert, significant flows to cause flooding do not visually appear to occur regularly. Stream banks, composed of silts and sand, are stabilized by stream side vegetation. Riparian vegetation consists of Multi Floral Rose, Jewelweed, Skunk Cabbage, scrub brush, and young mixed deciduous trees. Please see attached detail for plan view and cross sections with channel capacities.

d) *A plan and typical cross-sections showing stream channel and existing ground, activities proposed, barriers to be maintained, and normal and flood water surfaces;*

Please see attached detail, including sections D-F

e) *Where a bridge, culvert or other water obstruction is proposed, provide the following information:*

No water obstructions are proposed within this variance request.

1) *Plans and details showing the location, type, size, and height of the structure;*

2) *Calculations showing the hydraulic capacity of the structure;*

3) *A profile of the streambed for a reasonable distance above and below the proposed location showing normal and flood water surface elevations and backwater effects of the structure;*

4) *Cross-sections upstream, downstream, and at the proposed location of the structure showing normal and flood water surface elevations and other topographic features, elevations, etc., necessary for an appraisal of the hazard potential of the structure;*

5) *A narrative description of the construction methods and sequence including water handling during construction, and erosion and sedimentation controls;*

6) *Indicate if the structure will be temporary or permanent (include plans for removal of temporary structures).*

g) *A characterization of the existing water quality and quantity of the stream including downstream water uses, and 25 Pa Code Chapter 93 Protected Water Use Classification.*

***(Note:** General Permit (BMR-GP-102) is available for construction of access roads.)*

Unnamed tributary #1 to Black Run is classified as CWF, by Chapter 93 designation of Slippery Rock Creek. There are no designated downstream uses. Water quantity and quality are sufficient to sustain aquatic invertebrates. Upstream farming and timbering practices have been observed to temporarily affect turbidity within this stream. Otherwise, laboratory analysis indicate no water quality concerns.

14.2 Stream Relocation and Channel Changes Does Not Apply

*If the proposed mining activities involve a relocation or channel change of an intermittent or perennial stream provide the following information (**Note**: Stream variance request must be included in the proof of publication):*

a) Name and location of stream and location and length of the proposed channel change (identify the location of the proposed activities on Exhibits 9 and 18);

b) A narrative giving a description and the purpose and justification of the proposed relocation or channel change;

c) A characterization of the existing water quality and quantity of the stream including downstream water uses, and 25 Pa Code, Chapter 93 Protected Water Use Classification;

d) A characterization of the resident aquatic community, a description of the riparian vegetation and an assessment of the probable hydrologic consequences of the proposed activities on the water quality and quantity, and the resident aquatic communities. Provide the name(s), address(es) and telephone number(s) of the individual(s) responsible for the collection and analysis of this data and provide a description of the methodologies used to collect and analyze the data;

e) A hydrologic and hydraulic analysis which includes;

1) Data on size, shape and characteristics of the watershed;
2) The size and frequency of the design storm;
3) The hydraulic capacity of the proposed replacement channel;
4) The hydraulic capacity of the stream channel upstream and downstream of the proposed relocation or channel change.

f) A stream profile for the existing and proposed channel for a reasonable distance upstream, downstream and within the proposed change, showing bed slopes, pool-riffle ratios, normal and flood water surfaces, and existing obstructions;

g) A detailed plan and cross-sections of the existing and proposed channel upstream, downstream and within the proposed channel change showing the limits and configuration of the proposed activities, dimensions, channel linings, and normal and flood water surfaces;

h) A description of the construction methods and sequence including: water handling during construction, erosion and sedimentation controls, and measures to be taken to prevent adverse impacts to water quality and quantity, water users and the aquatic communities.

Module 14: Streams/Wetlands
Unnamed Tributary #3 to Black Run

14.1 *Mining Activities Within 100 Feet of a Stream*

If the mining activities, including haul road crossings, are proposed within 100 feet of an intermittent or perennial stream provide the following information: (Note: Variance request for the expansion of pits must be included in the proof of publication. A separate Module 14.1 should generally be completed for each proposed encroachment.)

f) *Name and location of the stream; and location, length, and acreage disturbed by the proposed activities (Identify the location of the proposed activities on Exhibits 9 and 18);*

Encroachment is proposed within the 100' stream barrier of intermittent Unnamed Tributary #3 to Black Run.

Access to the proposed mine site will require a stream crossing directly south of the intersection of West Liberty Road (T-860) and Swope Road (T-372). A 50' wide corridor is proposed to cross the stream barrier for this road and associated support activities. The maximum area of disturbance for this crossing will be approximately 0.2 Ac.

In addition, the placement of a polishing pond is proposed to be placed in within the 100' barrier immediately prior to the streams juncture with the Unnamed Tributary #1 to Black Run and a process pond to be placed in the headwaters of the stream. The total disturbed area for both activities associated with the water handling system is approximately 0.9 acres.

g) *A narrative giving a description and the purpose and justification of the proposed activities;*

Access to this operation will be from West Liberty Road, at the intersection with Swope Road, as requested by Worth Township officials. This location was chosen for safety purposes due to maximum visibility in both directions of West Liberty Road. From this site entrance it will be necessary to cross Unnamed Trib #3, an intermittent stream flowing from the wetland on property 6. An appropriately sized culvert will be placed in the channel to allow the roadbed to be constructed with minimal disturbance to the channel.

Placement of Pond 5 (Polishing Pond) is required due to the plant location and support site constraints. The placement of Process Pond # 3 in the headwaters of the stream is also required due to the site constraints and the elimination of a small wetland complex. (Please see below).

h) *A hydrologic and hydraulic analysis which shall include: data on size, shape and characteristics of the watershed; the size and frequency of the design storm; the hydraulic capacity of any structures; the hydraulic capacity of the channel upstream and downstream; and, where flooding is a problem, flood damage and backwater analysis;*

The current watershed drainage area for the proposed stream crossing is 30 Ac which is comprised of primarily cropland. This area is currently fully vegetated and has an average slope of approximately 10%. Streambed slope within the variance area is approximately 2%.

Using a CN value of 65, the following storm data has been generated:

P_2 = 2.6"	Q_2 = 6.5cfs
P_{10} = 3.8"	Q_{10} = 24 cfs
P_{25} = 4.3"	Q_{25} = 35 cfs
P_{50} = 4.8"	Q_{50} = 46 cfs

During the mining activities at the site the wetland recharge area will be eliminated and installation of the process ponds effectively reducing the stream channel to an ephemeral classification flowing only in response to storm events.

i) *A description of the character of the stream bed and banks, and a profile of the stream for a reasonable distance above and below the proposed site showing bed slopes, normal and flood water surfaces; and a description of the riparian vegetation;*

The stream bottom material consists of primarily sand, silt, and gravel, with a bed slope of approximately 2%. This drainage way appears to have been manipulated (mechanically dug drainage ditch) at some point as the cross sectional area of the channel is consistent along the entire linear length from the wetland source to Unnamed Trib #1. Riparian vegetation consists of Golden Rod, vines, briars, scrub brush, and young mixed deciduous trees. Please see attached detail for plan view and cross sections with channel capacities.

A plan and typical cross-sections showing stream channel and existing ground, activities proposed, barriers to be maintained, and normal and flood water surfaces;

Please see attached detail, including cross sections and profiles for both the stream crossing and the pond installation.

f) *Where a bridge, culvert or other water obstruction is proposed, provide the following information:*

7) *Plans and details showing the location, type, size, and height of the structure;*

Please see attached exhibit sheets submitted as part of the permit application.

8) *Calculations showing the hydraulic capacity of the structure;*

Stream Crossing

Please see the attached rating table for a 24" plastic culvert placed on a 2.5% slope. These calculations were computed by Haestad software.

Polishing Pond and Process Ponds

The Hydrologic calculations for the Process Ponds and Polishing Pond are found in Module 13. There will be no direct discharge to the stream from the ponds unless the emergency spillways are activated during high flow event.

9) *A profile of the streambed for a reasonable distance above and below the proposed location showing normal and flood water surface elevations and backwater effects of the structure;*

Stream Crossing

Please see attached detail

Polishing Pond and Process Ponds

Cross-section A-A' is provided for Pond 5 (Polishing Pond). Cross-sections and a profile are provided for the Process Ponds 3 and 4.

10) *Cross-sections upstream, downstream, and at the proposed location of the structure showing normal and flood water surface elevations and other topographic features, elevations, etc., necessary for an appraisal of the hazard potential of the structure;*

Please see attached detail

11) *A narrative description of the construction methods and sequence including water handling during construction, and erosion and sedimentation controls;*

Stream Crossing

Erosion and sedimentation controls will consist of both permanent and temporary measures. Initial construction will not begin until all necessary materials have been assembled at the site and at a time of low stream flow. Staked filter fencing will be placed downslope of the construction area prior to the initiation of any earth moving activities. The filter fencing will remain in place until all areas of disturbance have been stabilized by either rock cover or the establishment of a permanent vegetative cover.

Preparation of the crossing area will be conducted from the banks of the stream using a backhoe or similar equipment. At no time will equipment be in the channel itself. This preparation will consist of the smoothing of the stream bed itself for culvert placement. Once the culvert is in place, dumped rock (non-toxic) will be placed around and over the culvert. The fill will be compacted in 8" lifts by either the equipment on site or by hand. Rock rip-rap (R4) will be placed both up and down stream of the culvert at the outlet of the culvert and to line the banks adjacent to the newly installed crossing. Stone fill will be added as part of the cartway construction to further ensure stability of the road surface and control the sediment losses from the road in the encroachment area.

Any areas which have not been stabilized by rip-rap will be seeded with a permanent vegetative cover as found in the re-vegetation module of this permit or by an equivalent seed mixture.

Access road drainage will be controlled by either being upslope of other controls or by the inclusion of level spreaders located adjacent to the stabilized stream banks.

Polishing Pond and Process Ponds

Silt fencing will be placed downslope of the proposed pond embankment construction areas. Once the embankments have been built they will be seeded and mulched immediately as outlined in Module 23 of this application. The silt fencing will remain in place until the embankments have been stabilized by a minimum 70% permanent cover.

12) *Indicate if the structure will be temporary or permanent (include plans for removal of temporary structures).*

Stream Crossing

This structure will be permanent as to provide access to the property, which is owned by the operator.

Polishing Pond and Process Ponds

These ponds will remain as part of the post mining land use once the mining has been completed.

g) *A characterization of the existing water quality and quantity of the stream including downstream water uses, and 25 Pa Code Chapter 93 Protected Water Use Classification.*

***(Note:** General Permit (BMR-GP-102) is available for construction of access roads.)*

Unnamed tributary #3 to Black Run is classified as CWF, by Chapter 93 designation of Slippery Rock Creek. There are no designated downstream uses. Under seasonal conditions, the volume of water within this channel is minimal to non-existent. Only after periods of substantial precipitation does this channel convey surface water readily. Water quality is characteristic of wetland drainage.

14.2 Stream Relocation and Channel Changes

Does Not Apply

*If the proposed mining activities involve a relocation or channel change of an intermittent or perennial stream provide the following information (**Note**: Stream variance request must be included in the proof of publication):*

a) Name and location of stream and location and length of the proposed channel change (identify the location of the proposed activities on Exhibits 9 and 18);

b) A narrative giving a description and the purpose and justification of the proposed relocation or channel change;

c) A characterization of the existing water quality and quantity of the stream including downstream water uses, and 25 Pa Code, Chapter 93 Protected Water Use Classification;

d) A characterization of the resident aquatic community, a description of the riparian vegetation and an assessment of the probable hydrologic consequences of the proposed activities on the water quality and quantity, and the resident aquatic communities. Provide the name(s), address(es) and telephone number(s) of the individual(s) responsible for the collection and analysis of this data and provide a description of the methodologies used to collect and analyze the data;

e) A hydrologic and hydraulic analysis which includes;

1) Data on size, shape and characteristics of the watershed;
2) The size and frequency of the design storm;
3) The hydraulic capacity of the proposed replacement channel;
4) The hydraulic capacity of the stream channel upstream and downstream of the proposed relocation or channel change.

f) A stream profile for the existing and proposed channel for a reasonable distance upstream, downstream and within the proposed change, showing bed slopes, pool-riffle ratios, normal and flood water surfaces, and existing obstructions;

g) A detailed plan and cross-sections of the existing and proposed channel upstream, downstream and within the proposed channel change showing the limits and configuration of the proposed activities, dimensions, channel linings, and normal and flood water surfaces;

h) A description of the construction methods and sequence including: water handling during construction, erosion and sedimentation controls, and measures to be taken to prevent adverse impacts to water quality and quantity, water users and the aquatic communities.

Module 14: Streams/Wetlands
North of West Liberty Road
Wetland No. 1

14.3 *Wetland Related Information*

a) *Provide the name(s), address(es), telephone number(s) and qualifications of the person(s) who made the determination if wetlands exist within the proposed permit area.*

Derwood B. Davis (Biologist), The EADS Group, Inc., 15392 Rt 322, Clarion, PA 16214

b) *Show the location of wetlands on Exhibits 6.2, 9 and 18.*

Wetlands have been identified on the exhibit maps (Attached).

c) What is the total wetland acreage (which will be affected) for the proposed permit area? **0** acres.

d) *Provide responses to the following for each wetland which will be affected by the proposed mining activities:*

Exceptional Value Wetland Characteristics

1) *Does the wetland serve as habitat for flora and fauna listed as "threatened" or "endangered" under the Endangered Species Act of 1973, Wild Resource Conservation Act, Fish and Boat Code, or Game and Wildlife Code?* ☐ yes ☒ no

2) *Is the wetland hydrologically connected to or located within 1/2 mile of the wetlands identified in d)1) and does it maintain the habitat of the "threatened" or "endangered" species within the wetlands identified in d)1) above)?* ☐ yes ☒ no

NOTE: *If this wetland is located more than 1000 feet from the permit area, show its location (and the location of the wetland that is hydrologically connected to or located within ½ mile of) on the Exhibit 6.1 Map.*

3) *Is the wetland located in or along the floodplain of a wild trout stream (as designated by the Pennsylvania Fish and Boat Commission), or the floodplain of a tributary to a wild trout stream?* ☐ yes ☒ no

4) *Is the wetland located in or along the floodplain of a stream listed as exceptional value (under 25 Pa Code Chapter 93) or the floodplain of a tributary to an exceptional value stream?* ☐ yes ☒ no

5) *Is the wetland within the corridor of a waterway which has been designated as a wild or scenic river in accordance with the Wild and Scenic Rivers Act of 1968 or the PA Scenic Rivers Act?* ☐ yes ☒ no

6) *Is the wetland part of, or located along, an existing public or private drinking water supply and does it maintain the quality or quantity of the drinking water supply?* ☐ yes ☒ no

7) *Is the wetland located in areas designated by the Department as "natural" or "wild" areas within state forest or park lands?* ☐ yes ☒ no

8) *Is the wetland located in areas designated as Federal wilderness areas under the Wilderness Act or the Federal Eastern Wilderness Act of 1975?* ☐ yes ☒ no

9) *Is the wetland located in areas designated as National natural landmarks by the Secretary of the Interior under the Historic Sites Act of 1935?* ☐ yes ☒ no

NOTE: *If a "yes" response is indicated for any question in d)1) through d)9), the wetlands would be "exceptional value" (as defined in 25 Pa Code Section 105.17) and a demonstration must be made that the requirements of subsection (a) of 25 Pa Code Section 105.18(a) have been met.*

Wetland Functions

10)	*Does the wetland serve natural biological functions, including food chain production; general habitat; and nesting, spawning, or resting sites for aquatic or land species?*	☒ yes	☐ no
11)	*Does the wetland provide areas for study of the environment, or as sanctuaries or refuges?* **Slippery Rock University uses this site.**	☒ yes	☐ no
12)	*Does the wetland aid in, or maintain natural drainage characteristics, natural water filtration processes, current (flow) patterns or other environmental characteristics?*	☒ yes	☐ no
13)	*Does the wetland serve as storage areas for flood and storm waters, or does it shield other areas from erosion or storm damage?*	☒ yes	☐ no
14)	*Does the wetland provide a groundwater recharge area that maintains minimum baseflows?* **This wetland is supported by spring outcrops from a perched water table; providing recharge to an unnamed tributary.**	☐ yes	☒ no
15)	*Does the wetland serve as a prime natural recharge area where surface water and groundwater are directly connected?*	☒ yes	☐ no
16)	*Does the wetland aid in the prevention of pollution?* **This wetland has the potential however, significant pollutant sources are lacking within the upstream area.**	☒ yes	☐ no
17)	*Is the wetland used for, or does it provide the opportunity to be used for recreation?* **This wetland is not open to the public.**	☐ yes	☒ no

e) *If a "yes" response is indicated for the question in d)1) or d)2), identify how the determination was made and indicate any contacts with state or federal agency personnel.*

14.4 Wetland Impact Analysis/Assessment

This Wetland Community will not be permanently impacted by the proposed mining.

a) *Describe the alternatives to the proposed mining activities that have been considered to avoid or minimize impacts on wetlands. An alternative analysis should include alternatives to the proposed mining activities, including alternative locations, routings or designs to avoid adverse impacts on the wetlands (e.g. relocating spoil/topsoil storage areas, rerouting haul roads).*

b) *Discuss whether any of the alternatives are practical to achieve the basic purposes of the project taking into account availability, cost, technology and logistics of the other possible project sites which would not affect the wetlands.*

c) *If any wetlands within the proposed permit area will be directly affected, provide the following:*

1) *Identify and delineate the wetland and the areal extent of the impact (wetlands must be identified and delineated in accordance with 25 Pa Code Section 105.451 Identification and delineation of wetlands – statement of policy).*

2) *Submit a cross-sectional view showing the wetland and the proposed mining area.*

3) *Explain how the proposed mining activities will directly affect the wetlands.*

aa) *If the proposed mining activities will affect less than 1.0 acre of wetland and the wetland is not an exceptional value wetland (in accordance with 25 Pa Code Section 105.17), provide a description of the wetland functions which will be impacted by the proposed mining activities.* ***Note:*** *If a "yes" response is indicated for any question in Module 14.3 d)1) through d)9), the wetlands would be exceptional value (as defined in Section 105.17).*

bb) *If the proposed mining activities will affect 1.0 or more acres of wetlands or may affect an exceptional value wetland, provide a detailed assessment of the wetland functions identified in Module 14.3 d)10) through d)17).*

d) *If any wetlands within the proposed permit or adjacent area will be indirectly affected (e.g. altering the wetland hydrology), provide the following:*

1) *Identify and delineate the wetland and provide an estimate of the total wetland acreage affected (wetlands must be identified and delineated in accordance with 25 Pa Code Section 105.451 Identification and Delineation of Wetlands – statement of policy).*

2) *A description of how the proposed mining activities will indirectly affect the wetlands.*

e) *Will the cumulative impact of the proposed and anticipated mining activities result in a major impairment of the wetland resource in the general area?* ☐ yes ☐ no

Provide an explanation of the determination and identify any contacts with state or federal agencies involved in making the determination.

14.5 Wetland Mitigation/Replacement

This wetland community will not be affected therefore; no mitigation is required.

Note: *If a total of one-half (.5) acres or less of wetlands will be affected, participation in Pennsylvania's Wetlands Replacement Project may be authorized by the Department in lieu of onsite replacement of the wetlands.*

a) *If wetland mitigation measures or wetland replacement are proposed, address the following:*

1) *Identify the wetlands where mitigation measures will be employed.*

2) *Identify the wetlands that will be replaced and the location of the replacement wetland site. Provide the number of acres for each wetland to be replaced and the acreage of the replacement wetland.*

3) *Provide a plan for mitigation/replacement following the guidelines in the Department's technical guidance titled*

"Design Criteria - Wetlands Replacement Monitoring" document 363-0300-001. This guidance is available from the Division of Waterways, Wetlands and Erosion Control, Post Office Box 8854, Harrisburg, Pennsylvania 17105-8554 or through the Department's Web Site.

Show the location of replacement wetland sites on the Operations Map (Exhibit 9) and the Land Use and Reclamation Map (Exhibit 18).

Note: *At a minimum, wetland replacement must be at a 1:1 ratio (replacement acres: affected acres). The Department may require the ratio to exceed 1:1 based on the functions and values of the wetlands to be affected. Wetland replacement sites will generally not be approved unless the site is located within the same general area as the existing wetland to be replaced.*

Module 14: Streams/Wetlands
South of West Liberty Road
Wetlands No. 2, 3 and 4

14.3 Wetland Related Information

a) *Provide the name(s), address(es), telephone number(s) and qualifications of the person(s) who made the determination if wetlands exist within the proposed permit area.*

Derwood B. Davis (Biologist), The EADS Group, Inc., 15392 Rt 322, Clarion, PA 16214

b) *Show the location of wetlands on Exhibits 6.2, 9 and 18.*

Wetlands have been identified on the exhibit maps (Attached).

c) What is the total wetland acreage (which will be affected) for the proposed permit area? **1.84** acres.

d) *Provide responses to the following for each wetland which will be affected by the proposed mining activities:*

Exceptional Value Wetland Characteristics

1) *Does the wetland serve as habitat for flora and fauna listed as "threatened" or "endangered" under the Endangered Species Act of 1973, Wild Resource Conservation Act, Fish and Boat Code, or Game and Wildlife Code?* ☐ yes ☒ no

2) *Is the wetland hydrologically connected to or located within 1/2 mile of the wetlands identified in d)1) and does it maintain the habitat of the "threatened" or "endangered" species within the wetlands identified in d)1) above)?* ☐ yes ☒ no

NOTE: *If this wetland is located more than 1000 feet from the permit area, show its location (and the location of the wetland that is hydrologically connected to or located within ½ mile of) on the Exhibit 6.1 Map.*

3) *Is the wetland located in or along the floodplain of a wild trout stream (as designated by the Pennsylvania Fish and Boat Commission), or the floodplain of a tributary to a wild trout stream?* ☐ yes ☒ no

4) *Is the wetland located in or along the floodplain of a stream listed as exceptional value (under 25 Pa Code Chapter 93) or the floodplain of a tributary to an exceptional value stream?* ☐ yes ☒ no

5) *Is the wetland within the corridor of a waterway which has been designated as a wild or scenic river in accordance with the Wild and Scenic Rivers Act of 1968 or the PA Scenic Rivers Act?* ☐ yes ☒ no

6) *Is the wetland part of, or located along, an existing public or private drinking water supply and does it maintain the quality or quantity of the drinking water supply?* ☐ yes ☒ no

7) *Is the wetland located in areas designated by the Department as "natural" or "wild" areas within state forest or park lands?* ☐ yes ☒ no

8) *Is the wetland located in areas designated as Federal wilderness areas under the Wilderness Act or the Federal Eastern Wilderness Act of 1975?* ☐ yes ☒ no

9) *Is the wetland located in areas designated as National natural landmarks by the Secretary of the Interior under the Historic Sites Act of 1935?* ☐ yes ☒ no

NOTE: *If a "yes" response is indicated for any question in d)1) through d)9), the wetlands would be "exceptional value" (as defined in 25 Pa Code Section 105.17) and a demonstration must be made that the requirements of subsection (a) of 25*

Pa Code Section 105.18(a) have been met.

Wetland Functions

10) *Does the wetland serve natural biological functions, including food chain production; general habitat; and nesting, spawning, or resting sites for aquatic or land species?* **These wetland communities would provide some food chain production and general habitat for terrestrial and semi-aquatic species only.** ☒ yes ☐ no

11) *Does the wetland provide areas for study of the environment, or as sanctuaries or refuges?* **These wetlands are on private property and are not designated for study or resource protection.** ☐ yes ☒ no

12) *Does the wetland aid in, or maintain natural drainage characteristics, natural water filtration processes, current (flow) patterns or other environmental characteristics?* **These wetlands do provide some natural drainage of surface and ground waters to a tributary that establishes local surface water flow patterns.** ☒ yes ☐ no

13) *Does the wetland serve as storage areas for flood and storm waters, or does it shield other areas from erosion or storm damage?* **These wetlands contain a moderate grade to the northwest and a defined outlet that discharges water to tributaries. They are not part of a major waterway that floods.** ☐ yes ☒ no

14) *Does the wetland provide a groundwater recharge area that maintains minimum baseflows?* **These wetlands are supported by spring outcrops from a perched water table; providing recharge to an unnamed tributary.** ☐ yes ☒ no

15) *Does the wetland serve as a prime natural recharge area where surface water and groundwater are directly connected?* **These wetlands contain a defined outlet and are supported by spring outcrops.** ☒ yes ☐ no

16) *Does the wetland aid in the prevention of pollution?* **These wetlands have the potential however, significant pollutant sources are lacking within the upstream area.** ☒ yes ☐ no

17) *Is the wetland used for, or does it provide the opportunity to be used for recreation?* **These wetlands are located on private property and are not open to the general public.** ☐ yes ☒ no

e) *If a "yes" response is indicated for the question in d)1) or d)2), identify how the determination was made and indicate any contacts with state or federal agency personnel.*

14.4 Wetland Impact Analysis/Assessment

a) *Describe the alternatives to the proposed mining activities that have been considered to avoid or minimize impacts on wetlands. An alternative analysis should include alternatives to the proposed mining activities, including alternative locations, routings or designs to avoid adverse impacts on the wetlands (e.g. relocating spoil/topsoil storage areas, rerouting haul roads).*

Alternatives considered as part of this permit were: No Mining, Mining with Wetland Avoidance and Mining with Wetland Impacts.

b) *Discuss whether any of the alternatives are practical to achieve the basic purposes of the project taking into account availability, cost, technology and logistics of the other possible project sites which would not affect the wetlands.*

The No Mining Alternative is a feasible alternative but was considered not prudent due to the fact that Glacial Sand & Gravel currently owns the permit area and this alternative would not permit them to regain their investment and continue to provide aggregate products to a highly demanding market. Mining with Wetland Avoidance is not considered feasible or prudent due to the required area for constructing a processing plant,

the required area to construct sufficient wash water storage ponds to supply the processing plant and the inability to fit these required areas within an area that does not hinder the extraction of aggregate material and at the same time prevent wetland impacts. The location of the processing plant and storage ponds are located in an area that contains lower volumes of aggregate material in comparison to the rest of the permit area. The location of the storage ponds is such that permits the collection of as much surface water runoff as possible. Likewise, this area is selected for the construction of the processing plant and wash water ponds because it will not interfere with the extraction of aggregate material that economically supports the mobilization of mining equipment and the actual mining activity.

Re-locating the processing plant and wash water ponds in order to avoid impacting the wetland was evaluated and considered not feasible or prudent based on the following reasons: 1) Re-location of the wash water storage ponds would require shifting the location of the processing plant in order to fit both operations within this area of the permit. This results in an economical loss of aggregate material that could be mined during the proposed mining phases and 2) Construction of the processing plant and wash water ponds in order to not interfere with the extraction of marketable aggregate would need to be done within the upslope areas of the wetlands. Field observations of the hydrological regime that supports this wetland community indicates this wetland is supported predominantly by a perched water table that outcrops in several places along the upper boundary line of the wetland community.

This consensus is supported by the observation of the drying up of these springs and lack of visible water within the wetland community during the spring and summer of 2007. Test hole and monitoring well information upslope of the wetland community reveals there are varying clay and silty clay layers immediately below the surface and ground water elevations were recorded to be at elevations from 1216 to 1218. The surface elevation within the wetland community ranges from 1218 to 1222. These impervious layers are believed to exist below the wetland community and as a result form a bowl whereby ground water and surface water remains perched. Plant and wash water storage pond construction within the upslope area of the wetland community will negatively impact the wetland community due to: 1) diverting all surface water runoff around the processing plant to the wash water storage ponds, likewise around the wetland community as well and 2) Excavation into the hillside to construct the subgrade for the processing plant and wash water storage ponds will break these clay barriers and intercept the shallow ground water table lying below. This would have a negative impact on the wetland community downgrade by intercepting and redirecting the predominant hydrology that supports this wetland.

Wetland avoidance was also evaluated with a sub-alternative that eliminated the collection of surface water runoff and the construction of wash water storage ponds. This alternative depends solely on well water to provide the required wash water. This alternative would still have an indirect impact on the wetland community as well as a direct impact to surface water quality. The function of and need for wash water ponds is to: 1) recycle and store sufficient wash water from the processing plant that will conserve the use of and reduce the need for replacement water; 2) reduce the demand on groundwater resources from pumping water from wells to the processing plant and; 3) prevent sediment laden water from being discharged into adjoining tributaries. Construction of the processing plant will still result in the breaking up of the clay barrier that lies immediately underneath and the interruption of the shallow ground water table. This affect will again negatively impact the wetland community located downgrade. Providing the required water to operate the processing plant by using wells without recycling any wash water would likely result in a significant draw down of the ground water table. This again would negatively impact the wetland community. Sediment laden waters which would still require a detention basin to remove the sediment before discharging would potentially impact adjacent tributaries.

The Mining with Wetland Impacts alternative was considered feasible and prudent and reducing impacts to the wetland community is not feasible due to spatial constraints, already proposing the minimum wash water storage pond volume needed to support the processing plant and the unavoidable impact to the perched water table within the upstream area by plant construction. This alternative remains to be the alternative that achieves the goals and objectives of Glacial Sand & Gravel with the least environmental impact as a whole based on the following reasons: 1) It permits Glacial Sand & Gravel to streamline the mining process and extract the full intent of marketable aggregate within the permit area; 2) It provides the minimum required amount of wash water storage and recycling to support the processing plant therefore, reducing the draw on groundwater resources within and surrounding the permit area; 3) It provides a means to handle stormwater from the plant area and at the same time promotes water conservation as part of the plant operation; and 4) It provides detention time to settle out sediment and significantly reduces the need to discharge sediment laden waters to nearby tributaries.

c) *If any wetlands within the proposed permit area will be directly affected, provide the following:*

1) *Identify and delineate the wetland and the areal extent of the impact (wetlands must be identified and delineated in accordance with 25 Pa Code Section 105.451 Identification and delineation of wetlands – statement of policy).*

The affected wetlands are shown on the attached site plan. The aerial extent of wetland impacts to these wetland communities by mining operations is 1.84 acres.

2) *Submit a cross-sectional view showing the wetland and the proposed mining area.*

Cross sections of these wetland communities and mining area are attached.

3) *Explain how the proposed mining activities will directly affect the wetlands.*

The mining activities will directly affect these wetland communities by excavation, fill placement and grading to construct a series of wash water storage ponds that have the capacity to store sufficient water for processing plant operations. These ponds will also have the capacity to retain water and settle out the sediment that will be suspended in the wash water.

aa) *If the proposed mining activities will affect less than 1.0 acre of wetland and the wetland is not an exceptional value wetland (in accordance with 25 Pa Code Section 105.17), provide a description of the wetland functions which will be impacted by the proposed mining activities.* ***Note:*** *If a "yes" response is indicated for any question in Module 14.3 d)1) through d)9), the wetlands would be exceptional value (as defined in Section 105.17).*

bb) *If the proposed mining activities will affect 1.0 or more acres of wetlands or may affect an exceptional value wetland, provide a detailed assessment of the wetland functions identified in Module 14.3 d)10) through d)17).*

Plant accumulation and decomposition occurring within these wetland communities would be broken down into organic and inorganic nutrients. The affected wetlands would provide carbon and other inorganic nutrients to the unnamed tributary immediately adjacent to as well as downstream reaches. The affected wetlands provides general habitat for terrestrial and semi-aquatic organisms. This community would provide food and cover for these organisms during most of the year. Aquatic habitat is not provided due to the lack of open water habitat for a sufficient time during the growing season. Pollution prevention would be moderately exhibited by the affected wetlands however, the well defined outlet, lack of significant open water, low vegetation/water interfacing, and lack of potential pollution sources upslope of these wetlands reduces the opportunity for these wetland communities to fully exhibit this function.

d) *If any wetlands within the proposed permit or adjacent area will be indirectly affected (e.g. altering the wetland hydrology), provide the following:*

Wetland No. 4 will also be temporarily affected by the proposed mining activity as a result of sanitary line construction (See attached Module 14 – Wetland No. 4 Temporary Impacts).

1) *Identify and delineate the wetland and provide an estimate of the total wetland acreage affected (wetlands must be identified and delineated in accordance with 25 Pa Code Section 105.451 Identification and Delineation of Wetlands – statement of policy).*

2) *A description of how the proposed mining activities will indirectly affect the wetlands.*

e) *Will the cumulative impact of the proposed and anticipated mining activities result in a major impairment of the wetland resource in the general area?* ☐ yes ☒ no

Provide an explanation of the determination and identify any contacts with state or federal agencies involved in making the determination.

The affected wetlands are small to medium sized, perched, wetland communites providing some function and values at varying levels. Impacts to these wetlands are site specific and will not result in cumulative impacts to wetland resources in the surrounding area.

14.5 Wetland Mitigation/Replacement

Note: *If a total of one-half (.5) acres or less of wetlands will be affected, participation in Pennsylvania's Wetlands Replacement Project may be authorized by the Department in lieu of onsite replacement of the wetlands.*

a) *If wetland mitigation measures or wetland replacement are proposed, address the following:*

1) *Identify the wetlands where mitigation measures will be employed.*

Upon completion of the extraction of aggregate material located between West Liberty Road (T-860), Swope Road (T-382) and the large wetland community north and northeast of the permit area, the affected wetlands will be replaced as part of the reclamation of this immediate area. The Wetland Mitigation Plan can be found on the attached site plan and Cross Sections are included.

2) *Identify the wetlands that will be replaced and the location of the replacement wetland site. Provide the number of acres for each wetland to be replaced and the acreage of the replacement wetland.*

The wetlands that will be replaced are classified as a Palustrine, Persistent, Emergent and Scrub Shrub, Broad-leaved Deciduous communities that are located within the upper reach of an unnamed tributary to Black Run. The wetland replacement site is located across West Liberty Road within the watershed of Black Run. The affected wetland acreage is calculated to be 1.84 acres and the proposed replacement acreage is calculated to be 1.90 acres.

3) *Provide a plan for mitigation/replacement following the guidelines in the Department's technical guidance titled "Design Criteria - Wetlands Replacement Monitoring" document 363-0300-001. This guidance is available from the Division of Waterways, Wetlands and Erosion Control, Post Office Box 8854, Harrisburg, Pennsylvania 17105-8554 or through the Department's Web Site.*

As per PA DEP Technical Guidance Document 363-0300-001 the following information is being provided:

The wetland mitigation plan proposes to replace the affected wetlands at a 1:1 ratio.

The wetland functions and values identified to be present within the affected wetlands will be replaced equally and in some cases to a greater extent (i.e. food chain production, general habitat, food/cover/nesting) within the proposed replacement plan due to its immediate location to the large wetland area to the north and northwest and ability to function in conjunction with this wetland. As a result its location, design and concurrent functions, other functions such as aquatic habitat, natural water filtration and pollution prevention are expected to be enhanced.

Wetland replacement will occur within the Black Run watershed directly across West Liberty Road upon completion of mining activities and reclamation of the Phase I mining activity.

The replacement plan will initially consist of a Palustrine, Persistent, Emergent wetland community, succeeding into a Scrub Shrub, Broadleaved Deciduous wetland community supported by a soil saturated and seasonally flooded hydrological regime.

Soil saturated conditions are expected to occur throughout the growing season from the surface to one (1) foot below the surface based on the existing data gathered during the delineation of the adjacent wetland community and exploratory test pit data. The site exhibits a perched water table that outcropped in many places along the upland/wetland boundary of the adjacent wetland community. This supporting hydrology will be intercepted by excavation and grading as part of the Phase I reclamation plan to create and maintain soil saturated areas. The final grade (el. 1200) will also be as such to permit temporary inundation in some portions of or the entire replacement site during storm events and seasonal fluctuations from surface water runoff. The interfacing of perched ground water and surface water is expected to provide soil saturated conditions throughout and beyond the growing season.

Soil conservation measures will be used to transfer the hydric soils from the affected wetlands into the

replacement site. The top 12 inches of soil within the affected wetlands will be excavated and stockpiled as necessary until the replacement site is grading is completed. This soil stockpile will be covered with a tarp(s) to reduce evaporation and maintain moisture within the soil. Watering will be done on an as needed basis during the stock piling period. The stock piled hydric soil will be placed in the wetland replacement site and brought to grade (final grade elevation = 1200) as depicted on the Exhibit 18 and the attached Cross Sections. At a minimum this soil will act as a planting medium for the selected plant species; however this soil will contain a seed bank of indigenous hydrophytic plant species that, if properly stored, will likely germinate and proliferate within the wetland replacement site.

Plants and seed can be obtained from Ernst Conservation Seeds, 9006 Mercer Pike, Meadville, PA, 16335, 800-873-3321 or www.ernstseed.com. Exhibit 18 contains the planting plan proposed for the replacement site. Seed will be mechanically broadcasted on the replacement site and plant stock will be hand planted using a planting dibble or small shovel. Survival rate and percent aerial cover for seeded species are anticipated to be between 90 and 100 percent and survival rate and percent aerial cover for planted species are anticipated to be between 80 and 100 percent for survival and 75 to 90 percent for aerial cover after one (1) full growing season. The percent aerial cover at five (5) years of maturity is expected to be 100 percent and consisting of hydrophytic plant species.

Seed mix types that will be planted are OBL – FACW Perennial Food and Cover Wetland Mix (ERNMX-120) and Wildlife Food and Shelter Shrub Mix (ERNMX-138). The ERNMX-120 is composed of Fox sedge, *Carex vulpinoidea* (23%); Virginia wild rye, *Elymus virginicus* (20%); Giant bur reed, *Sparganium eurycarpum* (10%); Fringed (Nodding) sedge, *Carex crinita* (5%); Nodding sedge, *Carex gynandra* (5%); Hop sedge, *Carex lupulina* (5%); Lurid sedge, *Carex lurida* (5%); Blunt broom sedge, *Carex scoparia* (5%); Soft rush, *Juncus effusus* (5%); Wool grass, *Scirpus cyperinus* (5%); Eastern bur reed, *Sparganium americanum* (5%); Nodding bur marigold, *Bidens cernua* (3%); Cosmos bristly sedge, *Carex comosa* (2%); Rattlesnake grass, *Glyceria canadensis* (1%); and Rice cutgrass, PA Ecotype, *Leersia oryzoides, PA ecotype* (1%). The ERNMX-138 is composed of Fox sedge, *Carex vulpinoidea* (24%); Arrow wood, *Viburnum dentatum* (14%); Virginia wild rye, *Elymus virginicus* (11%); Lurid sedge, *Carex lurida* (10%); Silky dogwood, *Cornus amomum* (10%); Grey dogwood, *Cornus racemosa* (10%); Hop sedge, *Carex lupulina* (5%); Blunt broom sedge, *Carex scoparia* (7%); Hercules' club, *Aralia spinosa* (3%); Awl sedge, *Carex stipata* (2%); Cosmos bristly sedge, *Carex comosa* (1%); Buttonbush, *Cephalanthus occidentalis* (2%); and Meadow sweet, *Spiraea alba* (1%).

Rooted cuttings (8 to 12 inch heights) of Red-osier dogwood, *Cornus stolonifera*, Black willow, *Salix nigra*, and Silky willow, *Salix sericea* will be planted as specified on the planting plan details. These shrubs will be planted at 6 foot centers at the designated locations and quantities depicted on the attached planting plan. Shrub placement is intended to provide a border of shrub development around the seed herbaceous zone that will provide additional edge effect within the wetland mitigation site. This edge effect is enhanced due to the upland open field environment that will exist around the mitigation site.

Slopes throughout the wetland replacement site will be level. Upland slopes will approximate 17:1 (0.06 percent) on the north, northeast and southeast sides. On the south, southwest, northwest sides the upland slopes will approximate 3:1 (0.33 percent). The surface will be left rough to create micro environments that control and trap surface water as well as carbonaceous and inorganic nutrients.

Construction of the replacement site will begin concurrent with the Phase I post-mining reclamation. It is anticipated that upon beginning site reclamation activities, it will take one (1) week for construction stakeout, three (3) to four (4) weeks to complete the final grading of the wetland replacement site and three (3) weeks to complete seeding, planting and mulching.

One (1) year after the wetland replacement site is completed it will function in full capacity for drainage and flow patterns, stormwater retention, sediment stabilization and surface water discharge. Biological functions such as food chain production, aquatic and terrestrial habitat, nesting, spawning, and resting sites will increase as the wetland replacement community matures and vegetation composition stabilizes. Natural filtration and pollution prevention functions will be partially exhibited in varying degrees and will increase in their representation and function as the wetland replacement community matures as well. All wetland functions that occurred within the affected wetlands will be fully exhibited and functional within the mitigation site at the end of five (5) full growing seasons; to include additional functions such as aquatic habitat, spawning sites, natural filtration, and pollution prevention.

Wetland replacement sites are generally monitored for a minimum of five (5) years which will include a

site visit twice a year for the first three (3) years and once a year for the remaining two (2) years, as outlined in the PA DEP Technical Guidance Document 363-0300-001. Inspections are done within the growing season, as depicted by a PA DEP map for identifying growing seasons for wetland hydrology. These inspections are usually done between April 15 and October 15 for this location. A report is generated from each inspection that will discuss wetland determination parameters, succession of the wetland replacement site, success to date, function and value development, and a discussion of problems and remedial measures if warranted. A copy of the report will be submitted to the owner, COE and PA DEP.

Design details can be found on attached site plan and the included Cross Sections. A site plan of the wetland mitigation map and surrounding land uses, grading plan, planting plan, and planting specifications are included. The cross sections indicate existing wetland elevation data, mitigation site elevation data, water elevation data, underlying material information and slope data.

Show the location of replacement wetland sites on the Operations Map (Exhibit 9) and the Land Use and Reclamation Map (Exhibit 18).

Note: *At a minimum, wetland replacement must be at a 1:1 ratio (replacement acres: affected acres). The Department may require the ratio to exceed 1:1 based on the functions and values of the wetlands to be affected. Wetland replacement sites will generally not be approved unless the site is located within the same general area as the existing wetland to be replaced.*

Module 14: Streams/Wetlands
South of West Liberty Road
Wetland No. 4 (Temporary Impacts)

14.3 Wetland Related Information

a) *Provide the name(s), address(es), telephone number(s) and qualifications of the person(s) who made the determination if wetlands exist within the proposed permit area.*

Derwood B. Davis (Biologist), The EADS Group, Inc., 15392 Rt 322, Clarion, PA 16214

b) *Show the location of wetlands on Exhibits 6.2, 9 and 18.*

Wetlands have been identified on the exhibit maps

c) What is the total wetland acreage (which will be affected) for the proposed permit area? **0.01** acres.

d) *Provide responses to the following for each wetland which will be affected by the proposed mining activities:*

Exceptional Value Wetland Characteristics

1) *Does the wetland serve as habitat for flora and fauna listed as "threatened" or "endangered" under the Endangered Species Act of 1973, Wild Resource Conservation Act, Fish and Boat Code, or Game and Wildlife Code?* ☐ yes ☒ no

2) *Is the wetland hydrologically connected to or located within 1/2 mile of the wetlands identified in d)1) and does it maintain the habitat of the "threatened" or "endangered" species within the wetlands identified in d)1) above)?* ☐ yes ☒ no

NOTE: *If this wetland is located more than 1000 feet from the permit area, show its location (and the location of the wetland that is hydrologically connected to or located within ½ mile of) on the Exhibit 6.1 Map.*

3) *Is the wetland located in or along the floodplain of a wild trout stream (as designated by the Pennsylvania Fish and Boat Commission), or the floodplain of a tributary to a wild trout stream?* ☐ yes ☒ no

4) *Is the wetland located in or along the floodplain of a stream listed as exceptional value (under 25 Pa Code Chapter 93) or the floodplain of a tributary to an exceptional value stream?* ☐ yes ☒ no

5) *Is the wetland within the corridor of a waterway which has been designated as a wild or scenic river in accordance with the Wild and Scenic Rivers Act of 1968 or the PA Scenic Rivers Act?* ☐ yes ☒ no

6) *Is the wetland part of, or located along, an existing public or private drinking water supply and does it maintain the quality or quantity of the drinking water supply?* ☐ yes ☒ no

7) *Is the wetland located in areas designated by the Department as "natural" or "wild" areas within state forest or park lands?* ☐ yes ☒ no

8) *Is the wetland located in areas designated as Federal wilderness areas under the Wilderness Act or the Federal Eastern Wilderness Act of 1975?* ☐ yes ☒ no

9) *Is the wetland located in areas designated as National natural landmarks by the Secretary of the Interior under the Historic Sites Act of 1935?* ☐ yes ☒ no

NOTE: *If a "yes" response is indicated for any question in d)1) through d)9), the wetlands would be "exceptional value" (as defined in 25 Pa Code Section 105.17) and a demonstration must be made that the requirements of subsection (a) of 25*

Pa Code Section 105.18(a) have been met.

Wetland Functions

10) *Does the wetland serve natural biological functions, including food chain production; general habitat; and nesting, spawning, or resting sites for aquatic or land species?* **These wetland communities would provide some food chain production and general habitat for terrestrial and semi-aquatic species only.** ☒ yes ☐ no

11) *Does the wetland provide areas for study of the environment, or as sanctuaries or refuges?* **These wetlands are on private property and are not designated for study or resource protection.** ☐ yes ☒ no

12) *Does the wetland aid in, or maintain natural drainage characteristics, natural water filtration processes, current (flow) patterns or other environmental characteristics?* **These wetlands do provide some natural drainage of surface and ground waters to a tributary that establishes local surface water flow patterns.** ☒ yes ☐ no

13) *Does the wetland serve as storage areas for flood and storm waters, or does it shield other areas from erosion or storm damage?* **These wetlands contain a moderate grade to the northwest and a defined outlet that discharges water to tributaries. They are not part of a major waterway that floods.** ☐ yes ☒ no

14) *Does the wetland provide a groundwater recharge area that maintains minimum baseflows?* **These wetlands are supported by spring outcrops from a perched water table; providing recharge to an unnamed tributary.** ☐ yes ☒ no

15) *Does the wetland serve as a prime natural recharge area where surface water and groundwater are directly connected?* **These wetlands contain a defined outlet and are supported by spring outcrops.** ☐ yes ☒ no

16) *Does the wetland aid in the prevention of pollution?* **These wetlands have the potential however, significant pollutant sources are lacking within the upstream area.** ☒ yes ☐ no

17) *Is the wetland used for, or does it provide the opportunity to be used for recreation?* **These wetlands are located on private property and are not open to the general public.** ☐ yes ☒ no

e) *If a "yes" response is indicated for the question in d)1) or d)2), identify how the determination was made and indicate any contacts with state or federal agency personnel.*

14.4 *Wetland Impact Analysis/Assessment*

a) *Describe the alternatives to the proposed mining activities that have been considered to avoid or minimize impacts on wetlands. An alternative analysis should include alternatives to the proposed mining activities, including alternative locations, routings or designs to avoid adverse impacts on the wetlands (e.g. relocating spoil/topsoil storage areas, rerouting haul roads).*

These impacts are a result of temporary impacts from the construction of a 4 inch Schedule 40 PVC sanitary pipeline. Alternatives considered were No Build, Alignment Avoiding Wetland No. 4 and Alignment With Minimal Impact To Wetland No. 4.

b) *Discuss whether any of the alternatives are practical to achieve the basic purposes of the project taking into account availability, cost, technology and logistics of the other possible project sites which would not affect the wetlands.*

The No Build Alternative is a feasible alternative but was considered not prudent. Due to the length of time that the plant will be operating and the number of full time employee's onsite, a sanitary onsite septic system was warranted; not to mention required by the PA DEP.

The sewer line alignment avoiding impacts to Wetland No. 4 was not a feasible alternative due to weighing design standards, slope requirements and site development barriers. The stream crossing site was selected based on the shallower water depth, drainage area, required slope standards for sanitary pipelines and the ability to achieve a minimum of 3 feet of cover over the stream crossing. Design parameters for gravity flow sanitary pipelines require a minimum of a 1 percent slope and the sanitary pipeline between the septic and dosing tanks must be at a minimum of a 2 percent slope. The need to maintain a minimum 2 percent slope between the septic and dosing tanks required both tanks to be located on the west side of the stream; since the natural grade on the east side of the stream was too flat. Other stream crossing locations that would not impact Wetland No. 4 would not maintain the required slopes for gravity flow sanitary lines.

The sewer line alignment with minimal impact alternative was considered feasible and prudent based on meeting the required minimum of 3 feet of covering at the wetland and stream crossing, required slopes for sanitary line construction, the depth of water in the stream and the location of the sediment pond. The first alternative was located approximately 25 linear feet to the north of the current proposed crossing. Upon additional wetlands investigation this alternative resulted in 0.03 acres of temporary wetland impact as well as a stream crossing. The location was shifted south reducing temporary wetland impacts by crossing at a more narrow point within the wetland community resulting in 0.01 acres of temporary impact. This alternative achieves the goals and objectives of Glacial Sand & Gravel and the PA DEP with minimal environmental impacts to this wetland community that are temporary and can be mitigated through restoration methods.

c) *If any wetlands within the proposed permit area will be directly affected, provide the following:*

1) *Identify and delineate the wetland and the areal extent of the impact (wetlands must be identified and delineated in accordance with 25 Pa Code Section 105.451 Identification and delineation of wetlands – statement of policy).*

The affected wetlands are shown on the attached site plan. The aerial extent of temporary wetland impacts by the construction of this sanitary line is 0.01 acres.

2) *Submit a cross-sectional view showing the wetland and the proposed mining area.*

Cross sections of this wetland community and the sanitary line crossing are attached.

3) *Explain how the proposed mining activities will directly affect the wetlands.*

The construction of this sanitary line will directly affect this wetland community by excavation, backfilling and grading as part of standard pipeline construction methods.

aa) *If the proposed mining activities will affect less than 1.0 acre of wetland and the wetland is not an exceptional value wetland (in accordance with 25 Pa Code Section 105.17), provide a description of the wetland functions which will be impacted by the proposed mining activities.* ***Note:*** *If a "yes" response is indicated for any question in Module 14.3 d)1) through d)9), the wetlands would be exceptional value (as defined in Section 105.17).*

bb) *If the proposed mining activities will affect 1.0 or more acres of wetlands or may affect an exceptional value wetland, provide a detailed assessment of the wetland functions identified in Module 14.3 d)10) through d)17).*

Plant accumulation and decomposition occurring within this wetland community would be broken down into organic and inorganic nutrients. The affected wetland would provide carbon and other inorganic nutrients to the unnamed tributary immediately adjacent to as well as downstream reaches. The affected wetland provides general habitat for terrestrial and semi-aquatic organisms. This community would provide food and cover for these organisms during most of the year. Aquatic habitat is not provided due to the lack of open water habitat for a sufficient time during the growing season. Pollution prevention would be moderately exhibited by the affected wetland however, the well defined outlet, lack of significant open water, low vegetation/water interfacing, and lack of potential pollution sources upslope of the wetland reduces the opportunity for this wetland community to fully exhibit this function.

d) *If any wetlands within the proposed permit or adjacent area will be indirectly affected (e.g. altering the wetland*

hydrology), provide the following:

No other wetland communities will be indirectly affected by the proposed sanitary line construction.

1) *Identify and delineate the wetland and provide an estimate of the total wetland acreage affected (wetlands must be identified and delineated in accordance with 25 Pa Code Section 105.451 Identification and Delineation of Wetlands – statement of policy).*

2) *A description of how the proposed mining activities will indirectly affect the wetlands.*

e) *Will the cumulative impact of the proposed and anticipated mining activities result in a major impairment of the wetland resource in the general area?* ☐ yes ☒ no

Provide an explanation of the determination and identify any contacts with state or federal agencies involved in making the determination.

The affected wetland community is a small to medium sized, perched, wetland community providing functions at various levels. Impacts to these wetlands are site specific and temporary and, will not result in cumulative impacts to wetland resources in the surrounding area.

14.5 Wetland Mitigation/Replacement

Note: *If a total of one-half (.5) acres or less of wetlands will be affected, participation in Pennsylvania's Wetlands Replacement Project may be authorized by the Department in lieu of onsite replacement of the wetlands.*

a) *If wetland mitigation measures or wetland replacement are proposed, address the following:*

1) *Identify the wetlands where mitigation measures will be employed.*

Wetland restoration measures will be completed in-kind as part of the trench backfill procedures.

2) *Identify the wetlands that will be replaced and the location of the replacement wetland site. Provide the number of acres for each wetland to be replaced and the acreage of the replacement wetland.*

The wetland community to be restored is classified as a Palustrine, Scrub Shrub, Broad-leaved Deciduous community that is located within the upper reach of an unnamed tributary to Black Run. This wetland community will be restored onsite within the watershed of the unnamed tributary to and Black Run. The affected wetland acreage and the restored acreage is calculated to be 0.01 acres.

3) *Provide a plan for mitigation/replacement following the guidelines in the Department's technical guidance titled "Design Criteria - Wetlands Replacement Monitoring" document 363-0300-001. This guidance is available from the Division of Waterways, Wetlands and Erosion Control, Post Office Box 8854, Harrisburg, Pennsylvania 17105-8554 or through the Department's Web Site.*

The wetland restoration plan proposes to restore the affected wetlands at a 1:1 ratio.

The wetland functions and values identified to be present within the affected wetland will be restored equally as a result of the proposed restoration plan based on being able to restore the affected area within the actual affected area and Black Run watershed.

The restoration plan will initially consist of a Palustrine, Persistent, Emergent wetland community, succeeding into a Scrub Shrub, Broadleaved Deciduous wetland community supported by a soil saturated and seasonally flooded hydrological regime.

Inundated and soil saturated conditions are expected to occur throughout the growing season above the surface to one (1) foot below the surface based on the existing data gathered during the delineation of the wetland community.

Soil conservation measures will be used to restore the hydric soils within the affected wetlands. The top 12 inches of soil within the affected wetlands will be excavated and stockpiled as necessary until the bedding and placement of the pipe is completed. This stockpile will be covered with a tarp(s) to reduce evaporation and maintain moisture within the soil. Upon completion of the bedding and placement of the pipe the trench will backfilled up to within a foot below the surface. The hydric soil will be placed within this portion of the trench and brought to the existing grade. At a minimum this soil will act as a planting medium for the specified seed mix; however this soil will contain a seed bank of indigenous hydrophytic plant species that, if properly stored and placed, will likely germinate and proliferate within the existing wetland community.

Once the trench has been graded to the existing contour it will be seeded with Wildlife Food and Shelter Shrub Mix (ERNMX-138) at a rate of 15 lbs per acre. The ERNMX-138 is composed of Fox sedge, *Carex vulpinoidea* (24%); Arrow wood, *Viburnum dentatum* (14%); Virginia wild rye, *Elymus virginicus* (11%); Lurid sedge, *Carex lurida* (10%); Silky dogwood, *Cornus amomum* (10%); Grey dogwood, *Cornus racemosa* (10%); Hop sedge, *Carex lupulina* (5%); Blunt broom sedge, *Carex scoparia* (7%); Hercules' club, *Aralia spinosa* (3%); Awl sedge, *Carex stipata* (2%); Cosmos bristly sedge, *Carex comosa* (1%); Buttonbush, *Cephalanthus occidentalis* (2%); and Meadow sweet, *Spiraea alba* (1%). As an E & S control crop the restored site will be seeded with Annual ryegrass, *Lolium multiflorum* at a rate of 15 lbs per acre.

Plants and seed can be obtained from Ernst Conservation Seeds, 9006 Mercer Pike, Meadville, PA, 16335, 800-873-3321 or www.ernstseed.com. Seed will be mechanically broadcasted on the restored site and the anticipated survival rate and percent aerial cover is expected to be between 90 and 100 percent after one (1) full growing season. The percent aerial cover at three (3) years of maturity is expected to be 100 percent and consisting of hydrophytic plant species.

Restoration of the wetland community shall begin immediately upon completion of the bedding and placement of the pipe. It is anticipated that upon beginning site reclamation activities, restoration measures will be completed the same day. Within one (1) year after the affected wetland community is restored it is expected to function in full capacity for drainage and flow patterns, stormwater retention, sediment stabilization and surface water discharge. Biological functions such as food chain production, aquatic and terrestrial habitat, nesting, spawning, and resting sites will increase as the restored area matures and vegetation composition stabilizes. Natural filtration and pollution prevention functions will be partially exhibited in varying degrees and will increase in their representation and function as the restored area matures as well. All wetland functions that occurred within the affected wetlands will be fully exhibited and functional within the restored area at the end of three (3) full growing seasons.

Show the location of replacement wetland sites on the Operations Map (Exhibit 9) and the Land Use and Reclamation Map (Exhibit 18).

Note: *At a minimum, wetland replacement must be at a 1:1 ratio (replacement acres: affected acres). The Department may require the ratio to exceed 1:1 based on the functions and values of the wetlands to be affected. Wetland replacement sites will generally not be approved unless the site is located within the same general area as the existing wetland to be replaced.*

Commonwealth of Pennsylvania
Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Commonwealth Keystone Building, 2nd Floor
400 North Street
Harrisburg, PA 17120-0093
www.phmc.state.pa.us

29 August 2008

Thomas R. Baker
P.O. Box 512
Latrobe, PA 15650

Re: ER# 2007-1788-019-D
MINE: Glacial Sand and Gravel Co., SMP No. 10070304, Mine 47 Operation, Worth Twp., Butler Co.

Dear Mr. Baker:

The Bureau for Historic Preservation has reviewed the above named project under the authority of the Environmental Rights amendment, Article 1, Section 27 of the Pennsylvania Constitution and the Pennsylvania History Code, 37 Pa. Cons. Stat. Section 500 et seq. (1988). This review includes comments on the project's potential effect on both historic and archaeological resources.

This report meets our standards and specifications as outlined in *Cultural Resource Management in Pennsylvania: Guidelines for Archaeological Investigations* (BHP 1991) and the Secretary of the Interior's Guidelines for Archaeological Documentation. We agree with the recommendations of this report and in our opinion no further archaeological work is necessary for this project.

Please send four copies of the final report (one unbound and all with original photographs) for our files and distribution to the various repositories. If you need further information in this matter please consult Kira Presler at (717) 705-0700.

Sincerely,

(for)

Douglas C. McLearen, Chief
Division of Archaeology & Protection

cc: Mark McConaughy
Department of Environmental Protection, Knox District Office, ATTN: Chris Yeakle, White Memorial Building, Knox, PA 16232
Glacial Sand & Gravel Company, P.O. Box 1022, Kittanning, PA 16201

DCM/kmp

Bintrim, Tyler J LRP

From: [redacted] # 6 - privacy
Sent: Thursday, September 24, 2009 4:57 PM
To: stgustafso@state.pa.us
Cc: patrwillia@state.pa.us; cyeakle@state.pa.us; iharrell@co.butler.pa.us; Bintrim, Tyler J LRP; c-eboyer@state.pa.us; skepler@state.pa.us
Subject: Hydrology/Rogders Plant/Glacial Mine 47 from M. Hollinger

Attachments: Exhibits 1-11.pdf

Exhibits 1-11.pdf (6 MB)

September 21, 2009

Ms. Staci Gustafson

Assistant Regional Director

DEP Northwest Region

230 Chestnut Street

Meadville, PA 16335

RE: Glacial Sand and Gravel Rodgers Plant, Mine 47, related hydrology, and the permitting process

Dear [redacted] #6

I was speaking with Pat Williams regarding a rather complex hydrologic issue, and Pat suggested that I write to you. I have been in contact with Chris Yeakle, DEP, Ian Harrell, BCCD, and the EADS Group, the engineering firm for Glacial Sand and Gravel, in my attempts to better understand this issue. I have not yet found the answers to my questions, and I hope that you will be able to help me. Thank you.

I have also spoken with Emilee Boyer, DCNR, Tyler Bintrim, Army Corps, and Steven Kepler, Pennsylvania Fish and Boat about this topic.

My questions and concerns revolve around the Rodgers Plant, Glacial Sand and Gravel's processing plant to be located in Worth Township, Butler County, the proposed Mine 47 site adjacent to the Rodgers Plant, and hydrology.

I'm not sure how familiar you are with this project but originally both the processing plant and Mine 47 were on the same permit application which was submitted October 2007.

The DEP review has been on hold since March 31, 2008 awaiting Glacial's response to DEP's last deficiency letter.

Glacial had been working with Worth Township and received a permit for Land Development. Glacial also, if I understand correctly, worked with your office to gain approval to break the processing plant out of the mining permit application in order to proceed with the NPDES permit issued by BCCD. And again, if I now understand correctly, after talking with two separate agencies, this processing plant is to be "stand alone" meaning it can be used to process sand and gravel even without the Mine 47 permit being issued.

In driving past the Glacial property, it appears that the site is nearing completion - with the driveway entrance and road, the leveled platform area, what appears to be Pond 5, and a small building in place. I assume that when the site is ready, the processing plant will be dismantled from its current location at Elliott Mills and reassembled here. And then I assume it will begin to process sand and gravel from Mine 31, located on Mt. Union Road, which was opened early this year.

My main concern about hydrology is this:

In reading the Mine 47 permit application and again in the current Army Corps permit application, I noticed that Module 14: Streams/Wetlands South of West Liberty Road - Wetlands #2, 3, and 4, 14.4 Wetland Impact Analysis/Assessment-b) states, fourth paragraph, "Wetland avoidance was also evaluated with a subalternative that eliminated the collection of surface water runoff and the construction of wash water storage ponds. This alternative depends solely on well water to provide the required wash water. This alternative would still have an indirect impact on the wetland community as well as a direct impact to surface water quality. The function of and need for wash water ponds is to: 1) recycle and store sufficient wash water from the processing plant that will conserve the use of and reduce the need for replacement water; 2) reduce the demand on groundwater resources from pumping water from wells to the processing plant and; 3) prevent sediment laden water from being discharged into adjoining tributaries."

It further states, "Providing the required water to operate the processing plant by using wells without recycling any wash water would likely result in a significant draw down of the ground water table. This again would negatively impact the wetland community. Sediment laden waters which would still require a detention basin to remove the sediment before discharging would potentially impact adjacent tributaries." (Exhibit 1)

When I became aware that the Rodgers Plant was a separate entity, I began trying to understand if it is, indeed, going to be operated with just the one pond, Pond 5, which is called the polishing pond. I wrote to the EADS group about this and some other issues, and they asked me to refer the questions to DEP. I sent the questions to Chris Yeakle as requested and he answered the ones he could, but according to regulations sent back to EADS the questions referring to the processing plant because DEP Mining is no longer involved with the Rodgers Plant. I did ask Chris who would regulate the Plant once it was up and running and he said that the Northwest Regional Office would regulate various activities (Exhibits 2-6, 5 individual letters)..

Since the EADS group will neither deny nor confirm the operations of the Plant with one pond I am relying on the two agencies who said they believe the Rodgers Plant is "stand

alone".

As mentioned above, by their own calculations, Glacial states that by not constructing the four wash water ponds in the small wetland area and by using only well water to operate the processing plant they will likely significantly draw down the water table, affect surface water quality, and discharge sediment laden water into tributaries.

This concerns me greatly, and I am wondering,

1. Will DEP NW monitor the water table when the Rodgers Plant begins operations? If not, do you know who will?

2. Will DEP NW monitor the surface water quality? If not, do you know who will?

3. Will the sediment laden discharge be taken into consideration when Glacial applies for an industrial waste water permit?

4. Were these significant impacts to water taken into consideration when the Rodgers Plant was separated from the mining permit application?

I am concerned for the neighboring residents who depend on springs or wells for their domestic water supply. I am concerned for Black Run which will receive this sediment laden water. And I am concerned, as is DCNR, about the effects a significantly lowered water table would have on the hydrology to the Exceptional Value Wetland just north of West Liberty Road, a fen habitat and home to threatened and endangered species.

Concerns about the disjointed permitting process

I am concerned about the disjointed permitting process that has fragmented this project. This may all be controlled by regulations but it concerns me greatly because of the serious and immediate nature of these water issues.

I have heard that if one agency has information about an aspect of the application but no longer has jurisdiction that they will not be able to comment on it. That could be a problem because a different regulatory agency may be uninformed as to the scope of the project, its long range impacts, and how all the pieces fit together.

In addition, it appears as if each new agency is starting from scratch, and the volumes of information already collected, for example, by DEP Knox during the Mine 47 permit

application process to date, which contains reviewer comments and questions, deficiency letters, expert testimony, legal opinion, public comments and concerns, environmental group concerns, audio and written transcripts of the Public Hearing, the 27 page comment and response document, and the actual permit application, are not following the project as it moves from agency to agency.

Another concern is that the new regulatory agency may have different regulations to follow, and other agencies and the public may not have time to understand these new regulations and comment.

Finally, the citizens bear a tremendous burden as they try to follow the permitting process, resubmit data, and attempt to keep all the different agencies informed as to the citizens' local knowledge of the overall project.

As a result of this permitting process I have the following concerns:

Some issues regarding hydrology which may be going unaddressed as a result of the permitting process:

1. The above mentioned likelihood of significant draw down of the water table, compromised surface water quality, and sediment laden water being discharged to tributaries with the operation of the Rodgers Plant with only Pond 5 (Exhibit 1).

2. The possibility that if it is environmentally safe to operate the Rodgers Plant with just one pond and well water, then wetland and stream impacts and mitigation in the Mine 47 permit area may be unnecessary.

3. The connection between hydrology north and south of West Liberty Road and how draw down and mining will affect this hydrology, especially water to the EV wetland.

4. Experts have submitted calculations to the Army Corps stating the Esker's importance for water storage and baseflow seepage into the EV wetland (Exhibit 7). If the end of the Esker is mined and that water lost, how will the compromised water south of West Liberty Road add to the effect of the compromised water north of the road?

5. Glacial stated in the original mining permit application that mining anywhere in the mining permit area will disrupt hydrology to wetlands 2, 3, and 4 (Exhibit 8).

6. By breaking off the Rodgers Plant, Glacial was allowed by NPDES regulations to encroach the 100' stream barrier which was not allowed by DEP Mining regulations and was unacceptable to Pennsylvania Fish and Boat (Exhibit 9).

7. When the water table is breached, a deep, 20 plus acre lake is projected for the area right across the road from the EV wetland in the Mine 47 permit area.

8. A similar sized deeper lake is projected for the already open Mine 31.

9. Land has been leased adjacent to Mine 47, across Mt. Union Road, for limestone mining.

10. Other properties have been leased or purchased by Glacial within close proximity to Mine 47 for future mining.

11. The Rodgers Plant, which was originally projected to process sand and gravel from only Mine 31 and 47, will now "receive material from several mining operations that Glacial Sand and Gravel has in Worth Township or adjacent areas" This paragraph from the NPDES Storm Water Management Plan further mentions Mines 31, 47, and 24 and states that "Various other operations are anticipated to be permitted and operational during the life of the plants operation" (Exhibit 10). With this extended longevity what will be the cumulative effect on drawdown, discharge, and surface water quality?

12. At least one other mining company is currently mining within a few miles of Mine 47 at the Humphrey/Sonntag Mine and the Black Run Mine. What is the cumulative effect of past, present and future mining an all local waters? (Exhibit 11) (Please also see www.srboro.net <http://www.srboro.net/> Northwestern Butler County Multi -Municipal Comprehensive Plan Chapter 8 for more maps, and text regarding current and projected mining pressures in Worth Township, in particular, and surrounding municipalities)

13. Will any sand and gravel from future mining near Jennings Nature Reserve be processed at the Rodgers Plant, and if so what truck route will they take? If they use West Liberty Road, the curve located close to the Moore Road intersection may have to be straightened and widened which may involve EV wetland encroachment.

14. Water from the EV wetland flows into another wetland then into Tamarack Lake, a shallow 15 plus acre manmade lake. This lake has an accompanying swamp and is bordered on one side by the Western Pennsylvania Conservancy and on another by the Wild Waterways Conservancy. There are also other wetlands adjacent to Tamarack which was, until last year when the property changed hands, an Audubon Wildlife, Bird, and Butterfly Sanctuary. How will a compromised water table and surface water supply affect these hundreds of acres of property containing many acres of water and wetlands? What will happen to the watershed?

15. It appears that Glacial may have been permitted to operate a dry processing plant at Mine 31.

One last concern about project information:

Other agencies and citizens are reading various files with permit applications and

permits, and are depending on these papers to be factual and accurate in order to make informed decisions or opinions. But I recently learned that in at least one case, pages in a permit application may never be reviewed by the agency who issues the permit because they are not required to do so by regulation. Neither are the applicant's submissions always checked for accuracy. I am pointing this out to illustrate one more confusing aspect of this process.

And finally:

1. Is there some way we can be assured that decisions are being based on all the facts?

2. Is there some way that an ongoing dialogue among the concerned parties, agencies, and citizens can take place, so that everyone has a thorough understanding of all aspects of the project, as decisions are being made throughout the life of the project?

3. Is there anything that you feel you can do to help in this regard?

Thank you very much for your time, and consideration of these concerns.

I will carbon this letter and attachments to others I have spoken with about these issues over the past two years. This is, of course, just one set of issues in this complex project.

I would also like to thank the reviewers for all their hard work. I appreciate their patience as they speak with me about this challenging process and project.

And I appreciate very much your help with the hydrologic issues.

Thank you again. I will look forward to your written [redacted]

Sincerely,

[redacted]

All redactions - #6 - privacy

Cc: Chris Yeakle, DEP Mining Knox

Pat Williams, DEP Northwest Regional Office

Ian Harrell, BCCD

Emilee Boyer, DCNR

Tyler Bintrim, Army Corps

Steven Kepler, Pennsylvania Fish and Boat

Gary Fleeger, DCNR

Concerned citizens

Index for Exhibits

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2. July 22, 2009 letter to EADS Group
3. July 24, 2009 letter to EADS Group
4. July 30, 2009 reply from EADS Group
5. August 18, 2009 letter to Chris Yeakle, DEP Mining
6. August 31, 2009 reply from Chris Yeakle
7. August 29, 2009 letter from experts to Army Corps regarding hydrogeology of Esker
8. Module 14: Streams/Wetlands South of West Liberty Road 2007 permit application
9. December 20, 2007 review letter from Steven Kepler, Pennsylvania Fish and Boat
10. Stormwater Management Plan for Rodgers Plant
11. Map 8-3: Regional Land-Use Forecast

Pa Code Section 105.18(a) have been met.

(1a)

Wetland Functions

10) *Does the wetland serve natural biological functions, including food chain production; general habitat; and nesting, spawning, or resting sites for aquatic or land species?* **These wetland communities would provide some food chain production and general habitat for terrestrial and semi-aquatic species only.** ☒ yes ☐ no

11) *Does the wetland provide areas for study of the environment, or as sanctuaries or refuges?* **These wetlands are on private property and are not designated for study or resource protection.** ☐ yes ☒ no

12) *Does the wetland aid in, or maintain natural drainage characteristics, natural water filtration processes, current (flow) patterns or other environmental characteristics?* **These wetlands do provide some natural drainage of surface and ground waters to a tributary that establishes local surface water flow patterns.** ☒ yes ☐ no

13) *Does the wetland serve as storage areas for flood and storm waters, or does it shield other areas from erosion or storm damage?* **These wetlands contain a moderate grade to the northwest and a defined outlet that discharges water to tributaries. They are not part of a major waterway that floods.** ☐ yes ☒ no

14) *Does the wetland provide a groundwater recharge area that maintains minimum baseflows?* **These wetlands are supported by spring outcrops from a perched water table; providing baseflow to an unnamed tributary.** ☒ yes ☐ no

15) *Does the wetland serve as a prime natural recharge area where surface water and groundwater are directly connected?* **These wetlands contain a defined outlet and are supported by spring outcrops.** ☒ yes ☐ no

16) *Does the wetland aid in the prevention of pollution?* **These wetlands have the potential however, significant pollutant sources are lacking within the upstream area.** ☒ yes ☐ no

17) *Is the wetland used for, or does it provide the opportunity to be used for recreation?* **These wetlands are located on private property and are not open to the general public.** ☐ yes ☒ no

e) *If a "yes" response is indicated for the question in d)1) or d)2), identify how the determination was made and indicate any contacts with state or federal agency personnel.*

.4 *Wetland Impact Analysis/Assessment*

a) *Describe the alternatives to the proposed mining activities that have been considered to avoid or minimize impacts on wetlands. An alternative analysis should include alternatives to the proposed mining activities, including alternative locations, routings or designs to avoid adverse impacts on the wetlands (e.g. relocating spoil/topsoil storage areas, rerouting haul roads).*

Alternatives considered as part of this permit were: No Mining, Mining with Wetland Avoidance and Mining with Wetland Impacts.

b) *Discuss whether any of the alternatives are practical to achieve the basic purposes of the project taking into account availability, cost, technology and logistics of the other possible project sites which would not affect the wetlands.*

The No Mining Alternative is a feasible alternative but was considered not prudent due to the fact that Glacial Sand & Gravel currently owns the permit area and this alternative would not permit them to regain their investment and continue to provide aggregate products to a highly demanding market. Mining with Wetland Avoidance is not considered feasible or prudent due to the required area for constructing a processing plant,

the required area to construct sufficient wash water storage ponds to supply the processing plant and the inability to fit these required areas within an area that does not hinder the extraction of aggregate material and at the same time prevent wetland impacts. The location of the processing plant and storage ponds are located in an area that contains lower volumes of aggregate material in comparison to the rest of the permit area. The location of the storage ponds is such that permits the collection of as much surface water runoff as possible. Likewise, this area is selected for the construction of the processing plant and wash water ponds because it will not interfere with the extraction of aggregate material that economically supports the mobilization of mining equipment and the actual mining activity.

Re-locating the processing plant and wash water ponds in order to avoid impacting the wetland was evaluated and considered not feasible or prudent based on the following reasons: 1) Re-location of the wash water storage ponds would require shifting the location of the processing plant in order to fit both operations within this area of the permit. This results in an economical loss of aggregate material that could be mined during the proposed mining phases and 2) Construction of the processing plant and wash water ponds in order to not interfere with the extraction of marketable aggregate would need to be done within the upslope areas of the wetlands. Field observations of the hydrological regime that supports this wetland community indicates this wetland is supported predominantly by a perched water table that outcrops in several places along the upper boundary line of the wetland community.

This consensus is supported by the observation of the drying up of these springs and lack of visible water within the wetland community during the spring and summer of 2007. Test hole and monitoring well information upslope of the wetland community reveals there are varying clay and silty clay layers immediately below the surface and ground water elevations were recorded to be at elevations from 1,216 to 1,218. The surface elevation within the wetland community ranges from 1,218 to 1,222. These impervious layers are believed to exist below the wetland community, and as a result, form a bowl whereby groundwater and surface water remains perched. Plant and wash water storage pond construction within the upslope area of the wetland community will negatively impact the wetland community due to: 1) diverting all surface water runoff around the processing plant to the wash water storage ponds, likewise around the wetland community as well and 2) Excavation into the hillside to construct the subgrade for the processing plant and wash water storage ponds will break these clay barriers and intercept the shallow ground water table lying below. This would have a negative impact on the wetland community downgrade by intercepting and redirecting the predominant hydrology that supports this wetland.

Wetland avoidance was also evaluated with a sub-alternative that eliminated the collection of surface water runoff and the construction of wash water storage ponds. This alternative depends solely on well water to provide the required wash water. This alternative would still have an indirect impact on the wetland community as well as a direct impact to surface water quality. The function of and need for wash water ponds is to: 1) recycle and store sufficient wash water from the processing plant that will conserve the use of and reduce the need for replacement water; 2) reduce the demand on groundwater resources from pumping water from wells to the processing plant and; 3) prevent sediment laden water from being discharged into adjoining tributaries. Construction of the processing plant will still result in the breaking up of the clay barrier that lies immediately underneath and the interruption of the shallow ground water table. This affect will again negatively impact the wetland community located downgrade. Providing the required water to operate the processing plant by using wells without recycling any wash water would likely result in a significant draw down of the ground water table. This again would negatively impact the wetland community. Sediment laden waters which would still require a detention basin to remove the sediment before discharging would potentially impact adjacent tributaries.

The Mining with Wetland Impacts alternative was considered feasible and prudent and reducing impacts to the wetland community is not feasible due to spatial constraints, already proposing the minimum wash water storage pond volume needed to support the processing plant and the unavoidable impact to the perched water table within the upstream area by plant construction. This alternative remains to be the alternative that achieves the goals and objectives of Glacial Sand & Gravel with the least environmental impact as a whole based on the following reasons: 1) It permits Glacial Sand & Gravel to streamline the mining process and extract the full intent of marketable aggregate within the permit area; 2) It provides the minimum required amount of wash water storage and recycling to support the processing plant therefore, reducing the draw on groundwater resources within and surrounding the permit area; 3) It provides a means to handle stormwater from the plant area and at the same time promotes water conservation as part of the plant operation; and 4) It provides detention time to settle out sediment and significantly reduces the need to discharge sediment laden waters to nearby tributaries.

c) *If any wetlands within the proposed permit area will be directly affected, provide the following:*

The EADS Group
15392 Route 322
Clarion, PA 16214

July 22, 2009

Dear Michal,

Hello, and how are you? Well, I hope.

In reading the Stormwater Plan for the Rodgers Plant, from the BCCD office file, I noticed on page 2 that it states: "Any concerns raised by the residents during the hearing conducted by DEP for the adjacent permit which are under the jurisdiction of either DEP or the township have been addressed and the regulatory requirements been met."

Does this mean the concerns raised, for example, by Penn Future as representatives for some of the residents, by local geologists, and by local wildlife experts have been remedied? If so, could you please send me a copy of how these problems were addressed. I don't recall receiving anything from DEP in this regard, but perhaps I have misplaced it. So I would appreciate hearing how these concerns were addressed.

Thank you very much for your help. You may write to me at the address below. I look forward to hearing from you soon about these concerns.

Sincerely,

[redacted]

#6

(5)

The EADS Group
15392 Route 322
Clarion, PA 16214

July 24, 2009

Dear Michal,

Hello again. I have a few more questions about the Rodgers Plant which is located near proposed Mine 47.

Has Pond 5 been constructed at the Rodgers Plant? The original permit application for Mine 47 proposed that five ponds be built. If the permit for Mine 47 is not granted, will Glacial Sand and Gravel be able to use the processing plant with only one pond, Pond 5? And if so, what is the purpose for building four more ponds if one is adequate to run the processing plant?

How far is or will Pond 5 be located from the perennial stream? The original public notice for proposed Mine 47 requested a variance to encroach the 100' stream barrier. Who would grant this variance? Has it been granted?

And can you please tell me again why the processing plant was not placed in the Mine 31 permit area, where, if I am not mistaken, Glacial Sand and Gravel originally wanted it? I still don't understand how there will be a huge lake in the Mine 31 permit area when mining is complete, but there is not enough water there to support the processing plant. Are you certain there will be enough water to support processing at the Rodgers Plant site?

Again, I look forward to your written reply.

Thank you very much.

Sincerely,

#6

EADS GROUP
ENGINEERING ARCHITECTURE and DESIGN SERVICES

July 30, 2009

[redacted]

All redactions- Exemption #6 - privacy

RE: Glacial Sand and Gravel, Inc.
Rodgers Plant
NPDES Permit #: PAG 0010-09-011
Mine 47
SMP Application #: 10070304
Worth Township
Butler County

Dear [redacted]

In reference to your letters of July 22 and 24, 2009 the EADS Group, and by extension, Glacial Sand and Gravel, Inc. are unable to open a private dialogue regarding the questions you have posed.

The Department of Environmental Protection public review process offers an open avenue for your concerns where they can best be addressed based on the regulations.

The EADS Group

By: Michal Jones-Stewart, P.G.

☐ 1126 Eighth Avenue
Altoona, PA 16602
(814) 944-5035
(814) 944-4862 Fax

■ 15392 Route 322
Clarion, PA 16214
(814) 764-5050
(814) 764-5055 Fax

☐ 227 Franklin St., Suite 208
Johnstown, PA 15901
(814) 535-5388
(814) 535-7654 Fax

☐ 450 Aberdeen Drive
Somerset, PA 15501
(814) 445-6551
(814) 445-2748 Fax

☐ 11045 Parker Drive
North Huntingdon, PA 15642
(412) 754-0801
(412) 754-0860 Fax

☐ 81 Baltimore St., Suite 600
Cumberland, MD 21502
(301) 777-7878
(301) 777-8391 Fax

August 18,2009

DEP

P.O.Box 669

Knox, PA 16232-0669

Dear Chris:

Attached are two letters of July 22 and 24, 2009 that I sent to Michal Jones-Stewart of the EADS Group. She requested that I send them to you for the public review process. Her letter dated July 30, 2009 is also attached.

I had spoken with Michal on the phone several times in 2007 about various questions I had about the DEP permit application, and about the original plan for the washing plant to be located at Mine 31. I was hoping for continued open dialogue with her. In addition, my understanding was that DEP mining was not involved with the Rodgers plant, and that the review process for the mining permit application was on hold awaiting Glacial's response to your March 2008 letter. However, I hope you will be able to help me because I think all of the questions in these two letters are important.

Additional questions I have are:

1. As I understand it, BCCD said that once construction on the Rodgers plant site is complete they will no longer be involved. Do you know who will regulate the operation of the plant once it is up and running?

2. In a February 18, 2009 letter from EADS to Emilee Boyer, DCNR, with a cc to you, it states: "Any potential impacts that are hydrologically connected to the wetlands are being reviewed, considered and addressed as part of the Surface Mine Review process. Requirements regarding these issues and satisfying the Regulations as found in Chapter 77 are solely within their jurisdiction." Can you please explain this? Is DEP mining currently looking into, considering, and addressing the hydrology while the review process is on hold? If so, are the findings open to the public?

3. In Module 14:Streams/Wetlands Unnamed Trib#1 to Black Run (from original DEP Mine 47 permit application and sent to the Army Corps for their permit application) it states in 14.1a) "Preparation for a portion of the processing area will require the removal of some raw material from within the mining limits." Could you explain this, please, and explain how it relates now since the mining permit application and Plant permits were separated.

4. As I recall, you mentioned there is a way Glacial can add an access road to the adjacent permit so they can haul material from Mine 31 directly through the Plant Site instead of using Mt. Union Road. Is this correct, and if so, what paperwork would they have to submit?

Thank you so much for your time. I look forward to your answers. You may email me at

[redacted]

#6 - privacy

Pennsylvania Department of Environmental Protection

P.O. Box 669
Knox, PA 16232-0669
August 31, 2009

Knox District Office 814-797-1191

[redacted] #6 - privacy

Re: Glacial Sand & Gravel Co.
Application No. 10070304
Worth Township
Butler County

Dear [redacted] #6

I received your emails dated August 19, 2009 expressing your questions concerning Glacial Sand & Gravel Co.'s mining permit application. The questions you raised pertaining to the company's rationale for the decisions they have made need to be answered by Glacial. I can answer the questions you raised in your email concerning the mining permit application.

We sent a deficiency letter to Glacial on March 31, 2008. The deficiency letter included many of the concerns raised by the citizens during the public comment period. Glacial has requested, and we have granted numerous extensions to the suspense date to respond to that deficiency letter. As of this date, we have not received any revisions to the permit application. The responses to your questions are below:

1. You are correct that the permit issued by the Butler County Conservation District is for the earth disturbance activities necessary for the construction of the processing plant. The activities at the processing plant, if applicable, would be regulated by the various programs in the Northwest Regional Office. For example, the Bureau of Air Quality approved an air quality permit for the processing plant, and they would have the regulatory responsibility for air quality. If Glacial will have a surface water discharge from the processing plant to the streams, they will need to obtain an industrial waste water permit from the Bureau of Water Quality.

2. We requested that the applicant provide additional hydrogeologic data to better evaluate the potential for the proposed mining activities to influence the local groundwater. The West Liberty Bog is habitat for species of concern, and we must evaluate whether or not the proposed mining activities meet the criteria in Section 77.126(a)(10) (Criteria for permit approval or denial). I believe this is what Ms. Emilee Boyer was referring to in her letter.

3. Glacial needed to move material from the area where the processing plant is to be constructed in order to bring the area to the construction elevation and to build the pad for the plant to be built on. Glacial is using the material removed from this area

to construct berms around the site. Since the material will not be removed from the site for commercial purposes, it is not considered a mining activity.

4. Glacial could request to revise their adjacent mining permit (Mine 31) to add an access road through the area where the processing plant is being constructed. Plans for such a revision must be submitted to and approved by this office. This type of revision is subject to the public notice requirements in the regulations and must include various modules and maps contained within the issued permit. Glacial must also post a reclamation bond for the area in order to use it as an access road. There would be a 30-day public comment period following the public notice of the application.

You raised a question in your July 22 letter regarding a statement in the construction permit that, "Any concerns raised by the residents during the hearing conducted by DEP for the adjacent permit which are under the jurisdiction of either DEP or the township have been addressed and the regulatory requirements been met." Although some work may have been done to address these issues, they have not been submitted to us. We have not made a decision on this permit application. We will notify you in writing when a decision is made.

We are sending a copy of your comments to Glacial Sand & Gravel Co. as required by Section 77.122 of the Department's rules and regulations.

If you have any questions, please call me at the above telephone number. You may also schedule an appointment to visit our office to review the permit application or to talk with our staff personally.

Sincerely,

Christopher T. Yeakle
Mining Permit and Compliance Specialist
Bureau of District Mining Operations

cc: Glacial Sand & Gravel Co., w/Enc.

Mr. Tyler Bintrim
US Army Corps of Engineers, Pittsburgh District
1000 Liberty Avenue
Pittsburgh, PA 15222-4186

29 August 2009

Dear Mr. Bintrim,

RE: CELRP-OP-F #2008-280

We strongly urge you to deny permit application CELRP-OP-F #2008-280, application for an aggregate washing plant, mining of an esker, and mitigation of loss of both stream and wetland functions. We ask that you closely examine our assertions that the proposed activity impacts reasonable and prudent interpretations of the geologic and hydrologic values of the areas. We assert that the proposed activities should be unfavorably reviewed under oversight of (1) the Clean Water Act, Section 404, Part III, Section 47 – factors influencing wetness of an area, (2) 33 CFR Ch II (7-1-02 Edition), many subsections under 320.4, to be subsequently addressed, and (3) the Constitution of the Commonwealth of Pennsylvania. We are pleased to offer our objection under the auspices of 33 CFR Ch II (7-1-02 Edition), 320.4 (a) Public Interest Review, noting that our personal and professional familiarity with the setting involves over 100 years of accumulated experience in studying the Wisconsinan terminal moraine complex of northern Butler County, PA, its unique and uncertain natural history, and its vital ecological functions. We rely upon data contained in Module 14 of Glacial Sand and Gravel permit application for Mine 47, personal and professional knowledge, as well as usual and customary interpretations soundly lying within the bounds of our professional expertise.

Our first concern arises under the auspices of the Clean Water Act, Section 404, Part III – Watershed Characteristics, subsection 47 – Influencing Factors. Subsection 47 states that stratigraphy, topography, and soil permeability influence the wetness of an area. The permit proposes to locate mitigation wetlands north of West Liberty Road, east of Swope Road. In order that this footprint be so utilized, the portion of the Jacksville Esker (aka West Liberty or Miller Esker) so located must be mined and removed. The sand and gravel deposits contained in the esker are many tens of feet thick, according to geologic cross-sections drawn by the Eads Group (Cross-section C-C`, for example), consultant to the applicants. An aggregate inventory measured and calculated by these parties describes the volume of sand and gravel to be removed from this segment of the esker at 273,267 cubic yards. A reasonable hydrogeologic interpretation of this setting would include 20% porosity that would be 80-90% saturated during wet periods. Thus, the ridge of the esker would reasonably contain 1.2 million cubic feet of water, or 8.8 million gallons, during wet periods. The esker is highly permeable, captures precipitation through rapid infiltration, stores this water as soil water and ground water, then subsequently provides baseflow seepage to maintain the wetness of the abutting wetland (Wetland One in application materials), which has been reported to possess habitat supportive of threatened and endangered species. Mining of this sand and gravel will completely remove the coarse stratigraphic units providing recharge to the wetland, and will significantly and permanently reconfigure the topography of the setting. Further downstream, Wetland One provides discharge and wetness to Tamarack Lake and its surrounding palustrian plains lying directly to the west. This hydrogeologic impact to the Wetland One is unacceptable.

Pursuant to 33 CFR Ch. II (7-1-02 Edition), 320.4, we raise the following objections. Given the impacts upon the seepage pathways and storage reservoirs providing wetness to Wetland One described above, we assert that permit activities will unacceptably impact its important wetland functionalities to public interest. We expect these impacts to include degraded natural biological functions (320.4 (b.2.i)), diminished potential for study (320.4 (b.2.ii)), and alteration that would detrimentally affect natural drainage characteristics (320.4 (b.2.iii)). We also recognize that the entire Wisconsinan terminal moraine complex, and abutting glaciofluvial deposits, comprise a corridor bounded generally by Moraine State Park to the south, the Borough of Slippery Rock to the north, Interstate 79 to the west, and State Route 8 to the east. Numerous and extensive tracts within these bounds are either under lease for mining or desirable targets for leasing by the aggregates industry. Past and current mining trends, including Mine

47, demonstrate that this largely rural, forested, and farming region will fall under immense pressure and landscape alteration from the aggregates industry in the next 50 years. Subsection 320.4 (3) requires that, although a particular alteration of a wetland may constitute a minor change, the cumulative effect of numerous piecemeal changes can result in a major impairment of wetland resources. We implore you to consider this context. Subsection 320.4 (4) requires that benefits of a proposed alteration must outweigh damage and we maintain that such is not the case. Mining of this section of the esker yields an inconsequential production of aggregates in comparison to the tonnage that the plant will eventually process, yet at great geologic and hydrologic impact. Subsection 320.4 (5d) addresses impacts upon the quality of waters and the CWA responsibility to control non-point sources of pollution. Module 14: Streams/Wetlands – Unnamed Tributary #1 to Black Run, concluding note, page 14-5, closing sentence states: "Water quality is characteristic of wetland drainage". Wetland drainage typically involves high quality flows, diminished stormwater flux, enhanced baseflows during dry periods, negligible suspended sediment, and low nutrient fluxes. Removal of the esker and its granular filtration provided by seepage through it, as well as its storage of waters for augmentation of low flows, in conjunction with installation of washing plant settling basins, will certainly impact the water quality currently characterizing this wetland complex.

Our final concern arises both from 33 CFR Ch. II (7-1-02 Edition), 320.4 and from the Constitution of the Commonwealth of Pennsylvania, which lies in accord with the Constitution of the United States, which the United States Army swears to defend within its Commission. Firstly, subsection 320.4 (5e) - Full evaluation of the general public interest, requires that due consideration be given to the effect that the proposed activities have on values, such as historic, scenic, and recreational values. The PA Constitution states in part: "The people have a right to clean air, pure water, the preservation of natural, scenic, historic and aesthetic values of the environment. Pennsylvania's public natural resources are the common property of all people, including generations yet to come. As trustees of these resources, the Commonwealth shall conserve and maintain them for the benefit of all people." Please recognize that the Jacksville esker is widely recognized and long examined as the best preserved esker in the state. In fact, the Field Conference of Pennsylvania Geologists will visit the feature during a forum this October. While the glaciologic feature is lengthy and partly preserved by the Western Pennsylvania Conservancy, the portion of the esker slated for mining under this permit lies in arguably the most understudied and most provocative portion – the ice marginal area where the esker meets the pro-glacial lake bed containing the massive delta, which itself is currently being mined. Insufficient scientific investigation has been completed to fully understand the dynamics of the esker, perhaps soon to be sold to market. Great loss of potential value to recreation, to interpretation of our natural history, and to the immense enjoyment arising from understanding the genesis of the Pennsylvania landscape are all threatened by permit application #2008-280.

In conclusion, 33 CFR Ch. II (7-1-02 Edition), 320.4 (3) (p.394) asserts that the district engineer should avoid authorizing floodplain developments whenever practical alternatives exist outside the floodplain. We assert that practical alternatives exist and implore you to direct the applicants to pursue them. We hold no hostile feelings toward Glacial Sand and Gravel, Snyder and Associates, their agents, or any of their principles or associates. On the contrary, we enjoy their collegial accommodations to access their mines and quarries, and have done so for decades. We appreciate their generous support, financial and otherwise, extended to our disciplines and academic institutions. We have personally met with the applicants to encourage their corporate stewardship of this portion of the esker, including parking, signage, interpretive displays, and boardwalk access to Wetland One. We do not seek to end their mining activities. We understand that they hold lands and leases duly granting them business rights. We appreciate the societal imperative to access raw materials in order to support commerce. We simply believe that far less impactful alternatives exist to mining this outstanding esker at its most intriguing segment, and we encourage them to pursue plant design options that portend far lessened impact upon Wetland One. Please deny permit application #2008-280. If doubt exists, please honor the public interest and call a public meeting to encourage open discussion and stakeholder input.

Believing you will find our words true, we remain,

Respectfully yours,

Patrick A. Burkhart, PhD
Associate Professor of Geology
Slippery Rock University

Robert W. Hinds, PhD
Emeritus Professor of Geology
Slippery Rock University

Charles H. Shultz, PhD
Emeritus Professor of Geology
Slippery Rock University

Gene Wilhelm, PhD
Emeritus Professor of Geography
Slippery Rock University

(5a)

3 Wetland Related Information

a) *Provide the name(s), address(es), telephone number(s) and qualifications of the person(s) who made the determination if wetlands exist within the proposed permit area.*

Derwood Davis (Biologist), The EADS Group, Inc., 15392 Route 322, Clarion, PA 16214

b) *Show the location of wetlands on Exhibits 6.2, 9 and 18.*

Wetlands have been identified on the exhibit maps.

c) *What is the total wetland acreage (which will be affected) for the proposed permit area?*
1.8 acres.

d) *Provide responses to the following for each wetland which will be affected by the proposed mining activities:*

Exceptional Value Wetland Characteristics

1) *Does the wetland serve as habitat for flora and fauna listed as "threatened" or "endangered" under the Endangered Species Act of 1973, Wild Resource Conservation Act, Fish and Boat Code, or Game and Wildlife Code?* ☐ yes ☒ no

2) *Is the wetland hydrologically connected to or located within 1/2 mile of the wetlands identified in d)1) and does it maintain the habitat of the "threatened" or "endangered" species within the wetlands identified in d)1) above)?* ☐ yes ☒ no

Drill log and Test Pit data indicates there are two (2) clay layers below both wetland communities identified. Groundwater has been identified to be below the lower clay layer which prevents groundwater/wetland interfacing. Both wetland communities are considered to be entirely dependent on a perched water table influenced by surface water runoff and spring outcrops. Therefore, the two (2) wetland communities are not hydrologically connected.

NOTE: *If this wetland is located more than 1000 feet from the permit area, show its location (and the location of the wetland that is hydrologically connected to or located within ½ mile of) on the Exhibit 6.1 Map.*

3) *Is the wetland located in or along the floodplain of a wild trout stream (as designated by the Pennsylvania Fish and Boat Commission), or the floodplain of a tributary to a wild trout stream?* ☐ yes ☒ no

4) *Is the wetland located in or along the floodplain of a stream listed as exceptional value (under 25 Pa Code Chapter 93) or the floodplain of a tributary to an exceptional value stream?* ☐ yes ☒ no

5) *Is the wetland within the corridor of a waterway which has been designated as a wild or scenic river in accordance with the Wild and Scenic Rivers Act of 1968 or the PA Scenic Rivers Act?* ☐ yes ☒ no

6) *Is the wetland part of, or located along, an existing public or private drinking water supply and does it maintain the quality or quantity of the drinking water supply?* ☐ yes ☒ no

7) *Is the wetland located in areas designated by the Department as "natural" or "wild" areas within state forest or park lands?* ☐ yes ☒ no

8) *Is the wetland located in areas designated as Federal wilderness areas under the Wilderness Act or the Federal Eastern Wilderness Act of 1975?* ☐ yes ☒ no

9) *Is the wetland located in areas designated as National natural landmarks by the Secretary of the Interior under the Historic Sites Act of 1935?* ☐ yes ☒ no

NOTE: *If a "yes" response is indicated for any question in d)1) through d)9), the wetlands would be "exceptional value" (as defined in 25 Pa Code Section 105.17) and a demonstration must be made that the requirements of subsection (a) of 25 Pa Code Section 105.18(a) have been met.*

Wetland Functions

10)	*Does the wetland serve natural biological functions, including food chain production; general habitat; and nesting, spawning, or resting sites for aquatic or land species?* Semi-aquatic and terrestrial species only.	☒ yes	☐ no
11)	*Does the wetland provide areas for study of the environment, or as sanctuaries or refuges?*	☐ yes	☒ no
12)	*Does the wetland aid in, or maintain natural drainage characteristics, natural water filtration processes, current (flow) patterns or other environmental characteristics?*	☐ yes	☒ no
13)	*Does the wetland serve as storage areas for flood and storm waters, or does it shield other areas from erosion or storm damage?*	☐ yes	☒ no
14)	*Does the wetland provide a groundwater recharge area that maintains minimum baseflows?* This wetland is hydrologically separated from the underlying groundwater due to the two (2) clay layers.	☐ yes	☒ no
15)	*Does the wetland serve as a prime natural recharge area where surface water and groundwater are directly connected?* This wetland is hydrologically separated from the underlying groundwater due to the two (2) clay layers.	☐ yes	☒ no
16)	*Does the wetland aid in the prevention of pollution?*	☐ yes	☒ no
17)	*Is the wetland used for, or does it provide the opportunity to be used for recreation?*	☐ yes	☒ no

e) *If a "yes" response is indicated for the question in d)1) or d)2), identify how the determination was made and indicate any contacts with state or federal agency personnel.*

14.4 Wetland Impact Analysis/Assessment

a) *Describe the alternatives to the proposed mining activities that have been considered to avoid or minimize impacts on wetlands. An alternative analysis should include alternatives to the proposed mining activities, including alternative locations, routings or designs to avoid adverse impacts on the wetlands (e.g. relocating spoil/topsoil storage areas, rerouting haul roads).*

Due to the sole dependence of this wetland community on surface water runoff, spring outcrops and a perched water table as sources of hydrology, avoiding or minimizing impacts as part of this mining permit are not feasible. Mining within any portion of the permit area is very likely to significantly reduce or completely terminate the hydrological regime that supports this wetland community. Alternatives considered for this mining permit was to locate the wash plant and support operations (Scale house and access road(s)) of the mining process in the northwest, southwest, southeast, and northeast portion of the permit area.

b) *Discuss whether any of the alternatives are practical to achieve the basic purposes of the project taking into account availability, cost, technology and logistics of the other possible project sites which would not affect the wetlands.*

Locations for the wash plant and support operations in the northeast, southeast and southwest potions of the permit area would not be economically prudent based on the volume of sand and gravel reserves underlying these areas. These alternatives would result in the necessity of tearing down and relocating the wash plant which would increase operational costs and completion time. The wash plant and support operations are sited within the northwest location of the permit area where the underlying sand and gravel reserves are not as significant. This alternative results in lower operational costs and a quicker time frame to complete mining.

c) *If any wetlands within the proposed permit area will be directly affected, provide the following:*

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Fish and Boat Commission
Division of Environmental Services

DATE: December 20, 2007

SUBJECT: Glacial Sand & Gravel Co.
SMP No. 10070304
Mine 47
Worth Township, Mercer County

TO: Lori Odenthal, P.G., Chief
Technical Services
Bureau of District Mining Operations
Knox District Office

FROM: Steven R. Kepler, Fisheries Biologist
Division of Environmental Services
Pennsylvania Fish and Boat Commission

A field review was conducted for the subject site on 11 December 2007. The wetland delineation conducted for the site is not acceptable. From the field review it appears as though the wetland area extends beyond the current flagged area. The wetland area proposed to be impacted (1.8 acres) would be considered forested and scrub-shrub even though the area has been cleared. Once the delineation is completed, the area flagged and the supporting documentation is submitted, an additional field review with the mining company needs to be conducted. A complete alternative analysis also needs to be completed.

Additionally, the Pennsylvania Fish and Boat Commission has historical records in the watershed for the eastern massasauga (*Sistrurus catenatus catenatus*). Pennsylvania Fish and Boat Commission Natural Diversity Section personnel should also be included in the field review to evaluate potential habitat within and adjacent to the proposed minesite.

In summary, the Pennsylvania Fish and Boat Commission does not recommend the subject permit for approval. The wetlands within the permit boundary need to be correctly identified and an adequate buffer zone established to ensure protection, unless impacts can be justified through the alternative analysis. One hundred foot buffer zones should also be maintained on the perennial stream shown on Module 6.2.

SRK:dmc

c: PFBC – Nestor
PFBC – Hopkins
PFBC – Urban, Welte
PGC – Kost
DEP – Bowman, Yeakle

Storm Water Management Plan
for
Glacial Sand and Gravel, Inc.
Rodgers Plant

Worth Township, Butler County

Introduction:

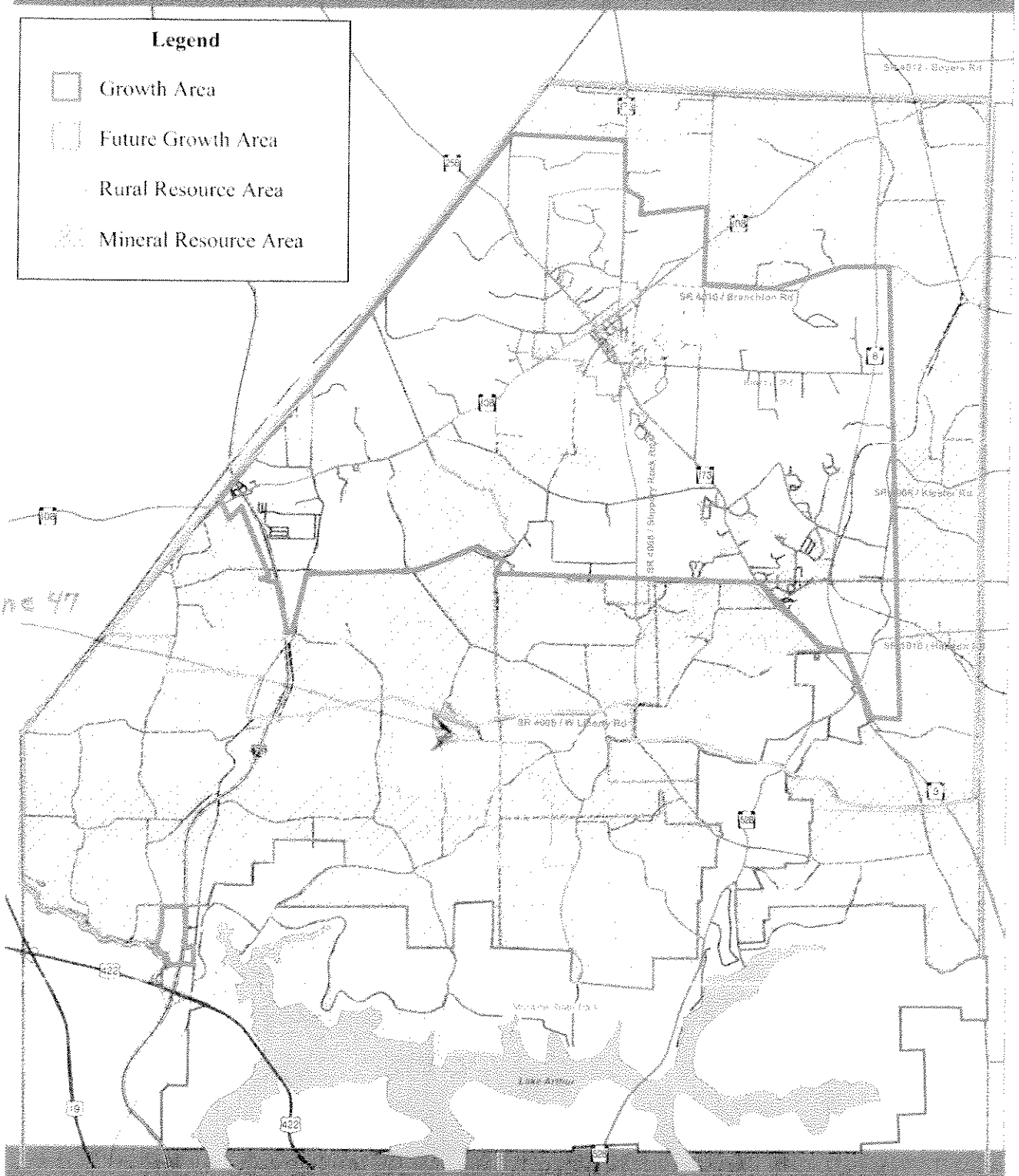
Glacial Sand and Gravel, Inc. proposes to construct a sand and gravel processing plant in Worth Township, Butler County. The total acres of disturbance will be approximately 20.5 acres out of a proposed 23.8 acre permit area. In addition to the Stormwater Management Plan, an Erosion and Sedimentation Control Plan has been prepared.

Site Description and Analysis:

This plant is to be moved from it's current location adjacent to I-79 due to the expiration of the lease on that property, will receive material from several mining operations that Glacial Sand and Gravel has in Worth Township or adjacent areas. The site has been designed to provide a "closed loop" system for the A Surface Mine Permit # 1001035 (Mine 31) is located adjacent to the proposed plant site to the south. A permit in progress 10070304 (Mine 47) is located to the east. Sand and Gravel is anticipated to be extracted from a sister companies permit SMP 10020306 (Mine 24) located along Barron Road to the north. Various other operations are anticipated to be permitted and operational during the life of the plants operations.

Additional permits for this site which are required by the Township have been approved and include a Highway Occupancy Permit, a Land Development Permit and Post Construction Stormwater Plan (Ordinance Number 04-08-98-02 and amendment 2001-C) and a sewage permit for a sand mound. These permit approvals have been attached to the application package.

Other environmental concerns have also been addressed. These include a physical survey of wetlands within and adjacent to the project area for the potential presence of plants as identified by the PNDI review. No threatened or endangered plants were found within the proposed permit area. A copy of the completed report is attached to this application. An Air Quality Permit Application has been made under separate cover to the Department of Environmental Resources and is pending approval. Wetlands within and adjacent to the permit area have been determined as being under the jurisdiction of the



Map 8-3: Regional Land-Use Forecast

Legend

- Project Area Boundary
- Water Body
- Interstate
- U.S. route
- State route
- Local Road
- Railroad
- Slippery Rock University
- Moraine State Park
- Jennings Environmental Education Center

Mackin

Bintrim, Tyler J LRP

From: Zadnik, Andrew [AZadnik@paconserve.org]
Sent: Tuesday, September 15, 2009 9:58 AM
To: Bintrim, Tyler J LRP
Subject: CELRP-OP-F 2008-280; Glacial Sand and Gravel Company; Worth Twp., Butler Co.

Attachments: 2009-05-11_ltr to DEP_Final.pdf

2009-05-11_ltr to DEP_Final.pd...

Dear Mr. Bintrim,

I understand the due date for comments on this project was yesterday, Sept. 14, 2009. However, if you are able, please consider the attached comments. You may have already received a copy of this letter from PA DEP.

Please contact me if you have any questions.

Thank you,

Andrew Zadnik

Land Stewardship Coordinator

Western Pennsylvania Conservancy

800 Waterfront Dr.

Pittsburgh, PA 15222

412-586-2318

412-231-1414 (fax)

azadnik@paconserve.org

May 11, 2009

Chris Yeakle
PA Dept. of Environmental Protection
Bureau of District Mining Operations
White Memorial Building
P. O. Box 669
Knox, PA 16232-0669

RE: Status of Application 10070304
Worth Township, Butler County

Dear Mr. Yeakle,

We respectfully inquire as to the status of the subject project, a proposed sand and gravel mine along West Liberty Road and Swope Road, Worth Township, Butler County. In April 2008, you informed me that the project applicant would be conducting further wetland delineation work to address proposed wetland impacts, and would conduct biological surveys to address potential impacts upon endangered or threatened species or known critical habitats.

As you are aware, Western Pennsylvania Conservancy (WPC) owns a property, Miller Esker, located in close proximity to the project site. This property is open to the public for passive recreation and nature study. We are concerned that the project may adversely impact our property by removing the adjoining esker. These impacts may result from increased rates of erosion and alterations to the local hydrologic regime. This regime currently supports wetlands on our property. Also, though likely outside your regulatory authority, it's possible that the project may affect the educational and recreational value of our property to the general public.

We understand the delineation work and biological surveys you referenced were to examine a wetland area found on the project site. As this work, and any subsequent permit, has some implications for our property, we recommend careful review of the results.

The wetlands in question are part of a wetland complex known as West Liberty Fen, an exceptional value wetland. Fens are calcareous (i.e., high pH) wetlands under significant influence from groundwater. It is possible that if parts of this fen have become dominated by woody plants, the full diversity of herbaceous vegetation will not be apparent, but with the removal of woody vegetation and control of invasive species, a wide array of herbaceous species may reappear from dormant seeds. By definition, fens are sensitive to

changes in hydrology, in terms of quantity and quality. They also are sensitive to changes in the pH of the groundwater.

Thank you for your consideration of our comments. Please contact me with any available information, or if we can be of further assistance.

Sincerely,

Andrew K. Zadnik
Land Stewardship Coordinator
412-586-2318
azadnik@paconserve.org

FAX TRANSMISSION

U.S. Environmental Protection Agency

To:	Tyler Bintrim	**Date:**	September 14, 2009
Fax #:	412-644-4211	**Pages:**	4, including this cover sheet.
From:	[redacted] Exemption 6 - privacy		
Subject:	PN 09-38 Comments, LRP 2008-280 Glacial Sand and Gravel Company		

COMMENTS:

Tyler,

Please see attached for comments regarding the above.

Thank you for the opportunity to comment.

[redacted] Exemption 6 - privacy

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Scott Hans, Chief
Regulatory Branch
Pittsburgh District
U.S. Army Corps of Engineers
1000 Liberty Avenue
Pittsburgh, PA 15222-4186

14 SEP 2009

Re: PN 09-38, LRP 2008-280 Glacial Sand and Gravel Company,
Worth Township, Butler County, Pennsylvania

Dear Mr. Hans,

The U.S. Environmental Protection Agency (EPA) has reviewed the public notice and associated documentation for Glacial Sand and Gravel Company's proposed construction of a sand and gravel processing plant in Worth Township, Butler County, Pennsylvania. The purpose of the plant is for its associated ponds to provide adequate water supply to be used as wash water as well as to allow for the recycling of water. The applicant proposes to fill 1.89 acres of wetland and approximately 240 linear feet of stream. An additional 0.01 acres of wetland and 10 linear feet of stream will be temporarily disturbed for the installation of a sanitary sewer line. Proposed mitigation will include the on-site creation of two acres of wetland. EPA has concerns that the proposed project may not be consistent with 404(b)(1) Guidelines, specifically regarding the identification of the least environmentally damaging practicable alternative and compensatory mitigation.

Alternatives Analysis – 40 CFR 230.10(a)

The Clean Water Act Section 404(b)(1) Guidelines provide the substantive environmental criteria upon which permit decisions are based. The Guidelines clearly state that upland alternatives are presumed to be available for non-water dependent activities that do not involve the use of the aquatic ecosystem, including jurisdictional wetlands. Only the least environmentally damaging practicable alternative (LEDPA) can be permitted. To identify the LEDPA, the applicant's alternatives analysis must examine a full range of alternatives that would avoid and minimize impacts to aquatic resources to the maximum extent practicable.

According to the submitted alternatives analysis, one of the goals and objectives of the applicant is to "extract the full intent of marketable aggregate within the permit area." The analysis states that relocating the processing plant and wash water ponds to avoid wetland impact is "not feasible or prudent" because this would result in "an economical loss of aggregate material that could be mined during the proposed mining phases." While economic factors can be considered in determining project viability, it should not be the single factor for developing justification for not avoiding non-water dependent development in waters of the United States.

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EPA recommends that the applicant thoroughly evaluate the project plans to identify upland alternatives that will avoid and minimize impacts to aquatic resources to the maximum extent practicable. The identification of alternatives under 230.10(a) should explore modifications to geographic siting as well as layout design; and be performed without the consideration of lost opportunity cost as the only factor for disqualification as a viable alternative. Evaluation of these alternatives should include a discussion of environmental impacts associated with each, identification of the LEDPA, and, if the least environmentally damaging alternative is not the preferred alternative, why less damaging alternatives are not practicable.

Minimization and Compensation for Unavoidable Impacts – 230.10(d)

The 404(b)(1) Guidelines require adherence to the mitigation sequence, in which impacts to waters of the United States should first be avoided, and any remaining impacts minimized. Appropriate compensatory mitigation is required for unavoidable adverse impacts which remain. As stated earlier, upland opportunities may exist to further avoid and minimize impacts; therefore, these should be explored prior to discussion of compensation.

The applicant is proposing to create two acres of wetland to mitigate for the loss of both wetland and stream functions. Any approved mitigation project should be in-kind and ensure the replacement of the lost functions and services for both streams and wetlands within the watershed; therefore, EPA recommends that the applicant identify stream mitigation opportunities in addition to the proposed wetland mitigation project. Opportunities for stream mitigation should not be limited by property ownership. The wetland mitigation plan should incorporate performance standards that include observable or measurable success criteria to determine if the compensatory mitigation project meets its objectives; standards for stream mitigation should include biological, chemical, and physical performance standards. Furthermore, EPA encourages that any mitigation project be in place prior to the discharge of fill material to ensure no temporal loss of wetland functions. EPA requests that a revised compensatory mitigation plan be submitted for review prior to issuance of a permit.

Secondary Impacts to Aquatic Resources

EPA has concerns that the project may cause potential indirect impacts to the surrounding high quality wetlands located north of West Liberty Road. Secondary impacts may include hydrologic modifications to the larger wetland complex due to the disturbance of springs which feed the wetland, plant community changes caused by nearby disturbance, or alterations to the functional performance of the wetland system. Any loss of functions experienced by surrounding wetlands as a result of this project should be adequately mitigated for, and addressed in the revised compensatory mitigation plan.

In light of these concerns, EPA recommends that the applicant work towards identification of the LEDPA by evaluating the project plans to find alternatives that will avoid and minimize impacts to aquatic resources to the maximum extent practicable. Mitigation for any unavoidable impacts should be in-kind and have associated measurable performance standards to ensure that lost aquatic resource functions are adequately replaced. Thank you for the opportunity

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to provide comments regarding this proposal. Should you have any questions please feel free to contact-[redacted]

Exemption 6 - privacy

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Customer Service Hotline: 1-800-438-2474

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Scott Hans, Chief
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14 SEP 2009

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Alternatives Analysis – 40 CFR 230.10(a)

The Clean Water Act Section 404(b)(1) Guidelines provide the substantive environmental criteria upon which permit decisions are based. The Guidelines clearly state that upland alternatives are presumed to be available for non-water dependent activities that do not involve the use of the aquatic ecosystem, including jurisdictional wetlands. Only the least environmentally damaging practicable alternative (LEDPA) can be permitted. To identify the LEDPA, the applicant's alternatives analysis must examine a full range of alternatives that would avoid and minimize impacts to aquatic resources to the maximum extent practicable.

According to the submitted alternatives analysis, one of the goals and objectives of the applicant is to "extract the full intent of marketable aggregate within the permit area." The analysis states that relocating the processing plant and wash water ponds to avoid wetland impact is "not feasible or prudent" because this would result in "an economical loss of aggregate material that could be mined during the proposed mining phases." While economic factors can be considered in determining project viability, it should not be the single factor for developing justification for not avoiding non-water dependent development in waters of the United States.

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EPA recommends that the applicant thoroughly evaluate the project plans to identify upland alternatives that will avoid and minimize impacts to aquatic resources to the maximum extent practicable. The identification of alternatives under 230.10(a) should explore modifications to geographic siting as well as layout design; and be performed without the consideration of lost opportunity cost as the only factor for disqualification as a viable alternative. Evaluation of these alternatives should include a discussion of environmental impacts associated with each, identification of the LEDPA, and, if the least environmentally damaging alternative is not the preferred alternative, why less damaging alternatives are not practicable.

Minimization and Compensation for Unavoidable Impacts – 230.10(d)

The 404(b)(1) Guidelines require adherence to the mitigation sequence, in which impacts to waters of the United States should first be avoided, and any remaining impacts minimized. Appropriate compensatory mitigation is required for unavoidable adverse impacts which remain. As stated earlier, upland opportunities may exist to further avoid and minimize impacts; therefore, these should be explored prior to discussion of compensation.

The applicant is proposing to create two acres of wetland to mitigate for the loss of both wetland and stream functions. Any approved mitigation project should be in-kind and ensure the replacement of the lost functions and services for both streams and wetlands within the watershed; therefore, EPA recommends that the applicant identify stream mitigation opportunities in addition to the proposed wetland mitigation project. Opportunities for stream mitigation should not be limited by property ownership. The wetland mitigation plan should incorporate performance standards that include observable or measurable success criteria to determine if the compensatory mitigation project meets its objectives; standards for stream mitigation should include biological, chemical, and physical performance standards. Furthermore, EPA encourages that any mitigation project be in place prior to the discharge of fill material to ensure no temporal loss of wetland functions. EPA requests that a revised compensatory mitigation plan be submitted for review prior to issuance of a permit.

Secondary Impacts to Aquatic Resources

EPA has concerns that the project may cause potential indirect impacts to the surrounding high quality wetlands located north of West Liberty Road. Secondary impacts may include hydrologic modifications to the larger wetland complex due to the disturbance of springs which feed the wetland, plant community changes caused by nearby disturbance, or alterations to the functional performance of the wetland system. Any loss of functions experienced by surrounding wetlands as a result of this project should be adequately mitigated for, and addressed in the revised compensatory mitigation plan.

In light of these concerns, EPA recommends that the applicant work towards identification of the LEDPA by evaluating the project plans to find alternatives that will avoid and minimize impacts to aquatic resources to the maximum extent practicable. Mitigation for any unavoidable impacts should be in-kind and have associated measurable performance standards to ensure that lost aquatic resource functions are adequately replaced. Thank you for the opportunity

to provide comments regarding this proposal. Should you have any questions please feel free to contact Ms. Stephanie Chin at 215-814-2747 or by email at chin.stephanie@epa.gov.

Sincerely,

Jeffrey Lapp, Associate Director
Office of Environmental Programs

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FAX COVER SHEET

(NOTE) THIS IS A REFAX OF DOCUMENTS SINCE THERE IS A CONCERN TRANSMISSION FAILED PREVIOUSLY.
HARD COPY BY MAIL — [redacted] #6

To: TYLER BINTRIM Exemption Date: 9/14/09

From [redacted] #6 No. of pages (~~not~~ including cover) 18 PAGES

Re: Application # CELRP-OP-E2008-280

Subject:

TYLER:

These attachments are to supplement my Letter SENT TO YOU BY EMAIL EARLIER TODAY.
THE ATTACHMENTS INCLUDE:

1) CONCEPTUAL SKETCHES OF REALIGNMENT OF WEST LIBERTY AND SNOPE ROAD SUPPORTING NO MINING NORTH OF WEST LIBERTY ROAD NO MAJOR DISTURBANCE OF ESKER.

2) LETTER AND SKETCH SUPPORTING NO DISTURBANCE OF ESKER DUE TO HYDROLOGICAL CONNECTION TO HIGH VALUE WETLAND (EXCEPTIONAL)

3) WETLAND ASSESSMENT/FIELD ANALYSIS BY DR GENE WILHEIM PHD.

4) MEMO 1) FROM PENN FUTURE (NOTE ITEM 8, 9, 10)

5) PREVIOUS COMMENTS REGARDING HYDROLOGICAL BALANCE AND WETLAND DELINEATION.

I hope All is in order,
Sincerely,

Exemption 6 -privacy [redacted]

Exemption 6 - privacy

[redacted]

September 14, 2009

Tyler Bintrim
U.S. Army Corp of Engineers, Pittsburgh District
1000 Liberty Avenue
Pittsburgh, PA 15222-4186

RE: Application # CELRP-OP-F 2008-280

Mr. Bintrim,

I am submitting additional comments regarding Glacial Sand & Gravel Mining Permit # 10070304. Since the public hearing held February 19, 2008, there have been various developments that have raised new concerns about the review and approval process and the overall impact the mining will have on the community. It is imperative that the U.S. Army Corp of Engineers recognizes its responsibility to protect environmentally sensitive areas such as high value wetlands and unique geological features. This is especially true when the local governments lack staff and organizational development to consider multiple planning ramifications and long-term impacts.

In such a case, the U.S. Army Corp of Engineers, as well as the Pennsylvania Department of Environmental Protection, have an obligation to the citizens of the greater community, and is required by its own regulations, to exercise leadership and institute controls to maintain balanced planning and impacts. The Worth Township Supervisors have granted a road setback variance allowing the mining company to excavate the entire esker north of West Liberty Road.

The PA DEP has encouraged public involvement, but as of this date, where has there been any attempt to involve the other municipalities, West Liberty Borough, Brady or Slippery Rock Townships. To the best of our knowledge, no community representatives were invited to the wetland tours. Public comment to the Worth Township road variance was limited to fifteen minutes of comment time immediately before the vote. There was no time allowed to the residents or general public to review or study the alternatives to the variance as set forth.

This is not due process and is counter to the reoccurring suggestions by the DEP in its Comments and Response document to involve the public. The variance, as adopted, is not an acceptable solution to protect the wetlands and the Esker as a natural buffer area. The PA DEP and the U.S. Army Corp of Engineers must pay special attention to this area. The March 13th letter from the Pennsylvania Department of Conservation and Natural Resources states that sufficient field

evidence indicates that the north wetland is one of exceptional value and requires special PA DEP protection. Three threatened or endangered plant species have been found and noted. They include: carax alata, schoenoplectus acutus, and cladium mariscoides. There is also winged sedge and the fen indicator species, one of which is the southern woodrush, which reinforces this determination.

The township supervisors granting a variance without regard to the ecological impact this mining activity will have on the northern wetland. The hydrological connection and filtering support from the Esker calls for both the U.S. Army Corp of Engineers and the PA DEP to prevent any mining activity north of West Liberty Road.

Swope Road can still be improved for safety concerns and limit the disturbance of the wetland and Esker. Sketches have been included to demonstrate how this can be done. Swope Road in its current location eliminates the need to change the mining and processing plant driveway. The culvert that Worth Township did not want altered is undersized and can be relocated and replaced rather than moving the location of the mine entrance road. Photos will be provided to emphasize how the improvements can be made without mining any of the Esker other than for road improvements.

The Esker is a true natural buffer berm for the whole north boundary of the mining activity. Relocation of West Liberty Road into the variance area south of the road after mining activity would improve safety along over 2,000' of roadway instead of 700'. (See sketch) This road configuration is offered as an alternative to what the mining company has proposed and would protect the integrity of the Esker and the adjacent wetland.

I have included additional attachments to support the importance of the Esker acting as a source of recharge water and a natural filtering system. Removing the Esker by mining to create replacement wetland acreage is absolutely shortsighted. The removal of the esker changes the total ecological balance and composition of the surrounding wetland denoted as exceptional value by the DCNR and collaborated by other observers including representatives from the Western Pennsylvania Conservancy.

To permit change to the adjoining soils natural stratification, and topographical features in such an environmentally sensitive area demands engineering justification and verifiable support. It is the U.S. Army Corps primary responsibility to provide this information, so it can therefore be held accountable before it grants permission to Glacial Sand and Gravel approval to mine the Esker.

The wetland relocation on the south side of West Liberty Road can be achieved successfully by other means, either by the creation of wetlands offsite or by utilizing mine owned property to the north and east of the esker.

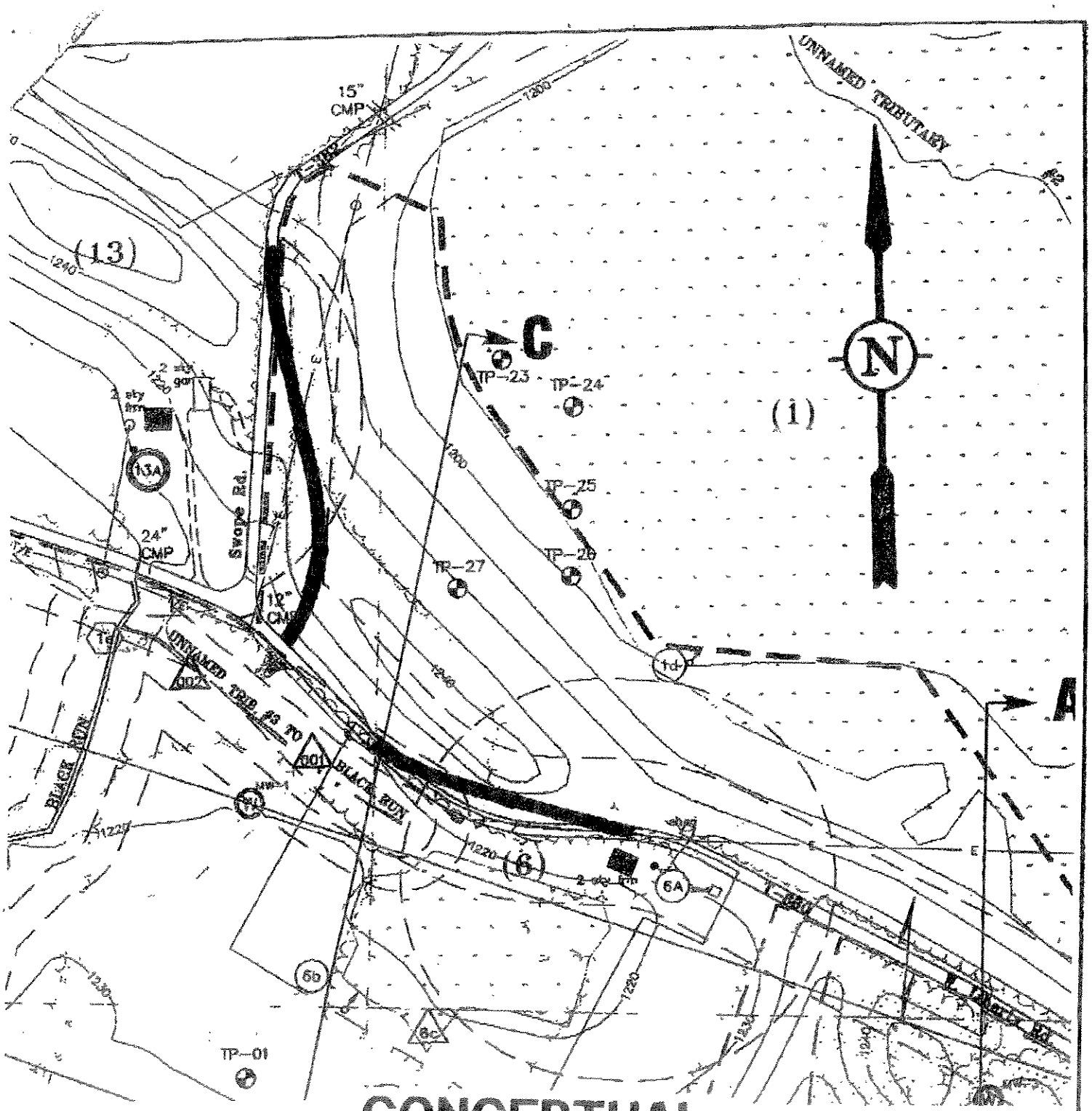
I hope these comments are timely and will be reviewed and incorporated in the U.S. Army Corp of Engineers' assessment to condition the mining activity at Glacial Sand and Gravel's Mine 47. To protect the high value wetland and Esker as a unique geological feature there should be no

mining permitted North of West liberty Road other than limited removal to improve road safety as shown in the attached sketches.

Finally I request the U.S. Army Corp of Engineers call for a public hearing to give the public ample opportunity to express their concerns and/ or support for the proposed mining activity.

[redacted]

Exemption 6 - privacy

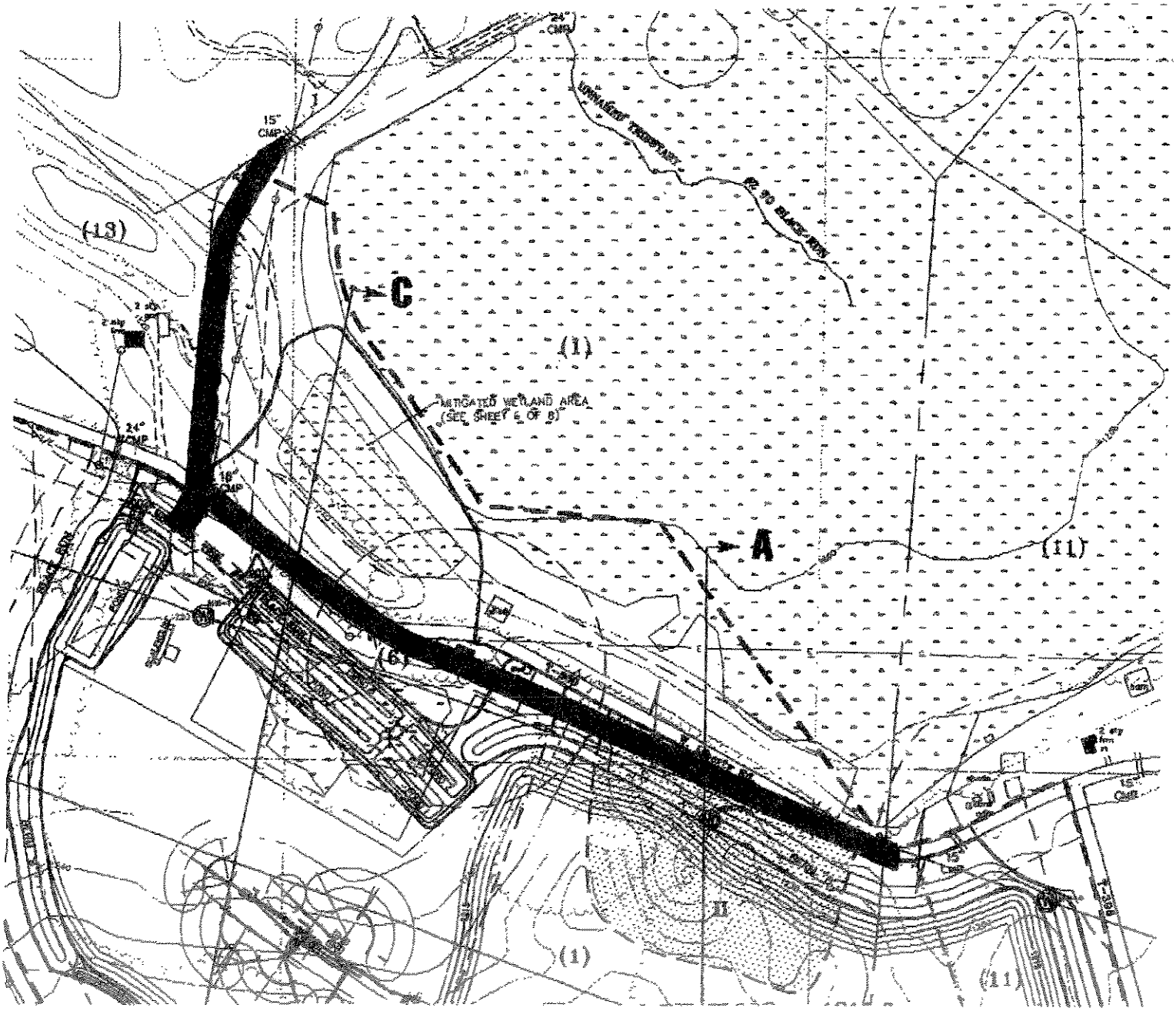


CONCEPTUAL ROAD RE-ALIGNMENTS

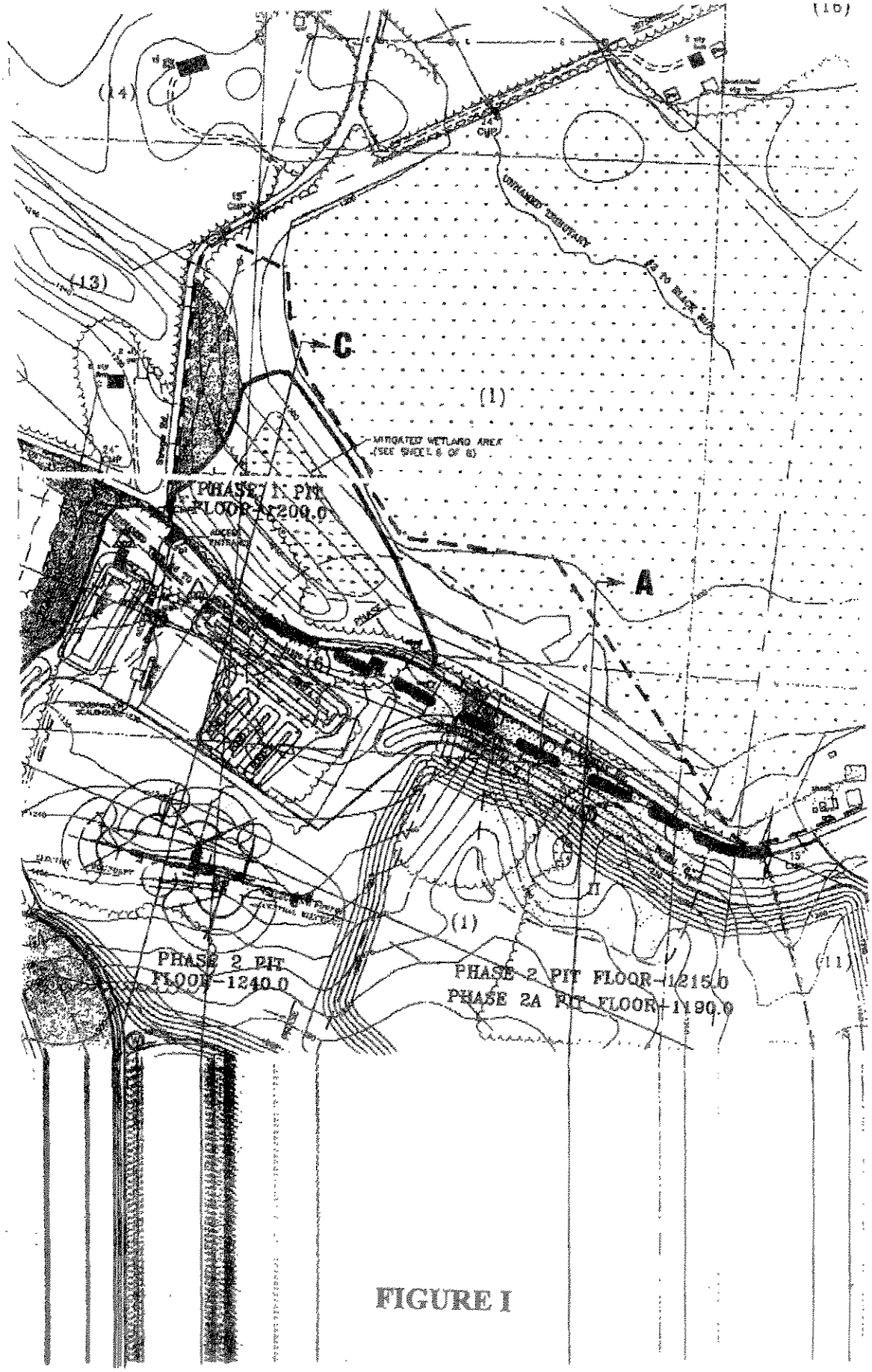
GLACIAL SAND AND GRAVEL PROPOSED

GLACIAL SAND & GRAVEL CO.
PO BOX 1022 KITTANNING, PA 16201

LIMITED IMPACT TO ESKER MOVE WEST LIBERTY ROAD TO SOUTH NO VARIANCE GRADING AND SHAPING TO REALIGNED SWOPE ROAD



ALTERNATE ALIGNMENT


(10)
(14)
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(1)
MITIGATED WETLAND AREA
(SEE SHEET 6 OF 6)
PHASE 1 PIT
FLOOR-1200.0
A
(1)
PHASE 2 PIT
FLOOR-1240.0
PHASE 2 PIT FLOOR-1215.0
PHASE 2A PIT FLOOR-1190.0
(11)

FIGURE I

2 March 2008
Department of Environmental Protection
White Memorial Building
P.O. Box 669
Knox, PA 16232-0669
Dear Sirs:

I am concerned about the hydrologic balance of the immediate and contiguous areas described in the permit application and revision for the Glacial Sand & Gravel Co., mine 47 in Worth Township, Butler County

Following rainstorms and also in those twelve weeks each year when the processing plant is dormant, it is unlikely that runoff from the processing site can be completely diverted to and contained in the holding ponds. The excess that is not contained will probably end up flowing into Black Run, the larger wetlands to the north of the site, the residual base of the mined esker's sands and gravels and across the surfaces traveled by trucks and other vehicles. None of these four scenarios is without possible environmental concern.
In the case of the runoff areas that receive vehicular traffic, the dried residue of the runoff has the potential to create a significant amount of airborne dust most of which would be silicate mineral particles. Has there been any estimate or concern about the percentage of crystalline silica in the dust? If so, I do not see it addressed in the original or revised mining plan. One of the contiguous landowners that lives on Swope Road has high sensitivity and allergic reactions to airborne pollutants. Some type of airborne pollutant monitoring device that will trigger dust control measures should be installed in order to insure that her health is not seriously compromised.

With respect to the runoff from the site that flows into Black Run, excess silt and clay will be feeding directly into a system that is a concern of not only the DEP, but also is under the jurisdiction of the U. S. Army Corps of Engineers. Adding silt and clay to this drainage system has the potential to adversely affect the water quality of that system.

Another of the impacts is one that I partially mentioned at the public hearing that was held in the Slippery Rock High School auditorium. Silt and clay that evades the containment ponds can only be blocked from entering the marsh if there is sufficient sand and gravel left after mining the esker. The silt and clay has the potential over the proposed duration of the materials processing to clog the pores and drastically reduce the viability of the marsh by starving its recharge waters. The esker itself is a reservoir of water that helps feed the marsh; after the esker is mined, the reservoir is gone. Also, the ultimate formation of a sizable lake on the south side of West Liberty Road at an elevation below that of the marsh may cause water to drain from the marsh toward this lake; this would further have adverse effects on the ability of the marsh to sustain itself and Tamarack Lake.

The final possible impact is that of direct contaminated runoff into the marsh. This increase in silt and clay has the potential to speed up the demise of the marsh and Tamarack Lake.
My professional opinion as a geologist is that the permit application and revision have not adequately addressed these potential problems. The hydrologic balance of the area's surface waters seems to have received inadequate concern in the extant permit application and revision. I would feel more comfortable if these issues were adequately studied, analyzed, and described as a part of the permit application. In view of the above potential problems that could easily have adverse effects, I recommend that the DEP require a predictive model or technique as provided in the Pennsylvania Code, paragraph 77.403 (b).

Sincerely,

[redacted]

Exemption 6 - privacy

What causes groundwater to flow?

Water is not just stored in the ground. It flows around grains and through the cracks within and the spaces between rock layers. What forces cause groundwater to move through rocks and sediments? The main force causing groundwater to flow is the same force that causes surface water to flow—*gravity*. Groundwater *always* flows downward from recharge areas on hills toward discharge areas in valleys. The water that you see in a stream came from a higher elevation, either from surface water upstream or from groundwater that recharged at a higher elevation.

There is an additional force on groundwater, however, that does not exist for surface water. Once groundwater has flowed down from a recharge area and entered a discharge area, *pressure* caused by the weight of the water above can cause water within the discharge area to flow upward. This means that, unlike surface water, groundwater can sometimes flow from a lower to a higher elevation. The pressure is always greater below the water table than it is at the water table. If the pressure difference is large enough, which happens only in discharge areas, groundwater may flow up into a stream from below. Gravity is the main influence on groundwater flow, but within some discharge areas, pressure can be great enough to overcome gravity.

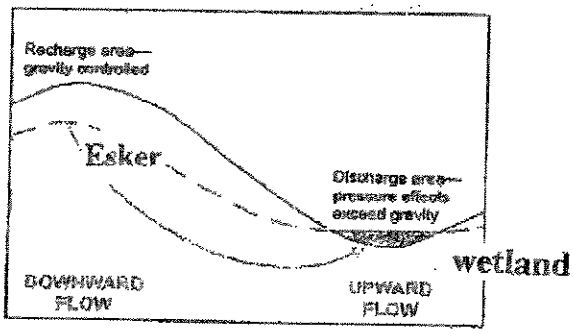
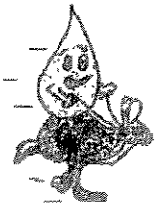


FIGURE II

How fast does groundwater flow?

The difference in elevation and pressure between two points controls the speed at which groundwater flows: the greater the combined difference in elevation and pressure between the two points, the faster the groundwater will flow between those points. The rocks or sediments containing the water also control the rate of flow. As water flows through a deposit of sediments or a rock, friction between the water and the sediment



ATTACHMENT I

WETLAND 43 D 55__2 FIELD ANALYSIS

Wetland 43 D 55__2 is located northeast of the junction of Swope and West Liberty Roads about one air mile west of West Liberty Borough in Worth Township, Butler County (see map). Unfortunately, the site has no access by road or trail and its topography to the south is a steep slope that blocks even a distant view from West Liberty Road until one walks hundreds of yards to the east. The properties adjoining the wetland to the east and to the north are privately owned residential households. Swope Road borders the site to the west. Immediately west of Swope Road are three nature preserves: 52-acre Tamarack Lake, a Certified Audubon Society Wildlife Sanctuary, .22-acre Certified Audubon Bird and Butterfly Sanctuary, both owned by Marion M. Mackey, and a 100-acre parcel called Glacier Wetlands Natural Area, donated to the Wild Waterways Conservancy by Glen and Grady Cooper in 2005.

The Butler County Natural Heritage Inventory (BCNHI, 1991) does not mention the wetland under its brief description of the 32-acre Miller Esker Natural Area that is owned and managed by the Western Pennsylvania Conservancy (WPC). The esker occurs southwest of the three preserves.

The wetland is currently owned by the Glacial Sand and Gravel Company of Kittanning, PA that is interested in mining the eastern part of the 18,000-year old esker. Likewise, the wetland is an important historical site for spring (March – April) and autumn (October – November) waterfowl migrants and summer breeding species too. Yet, the site was not mentioned in the first *Atlas of Breeding Birds in Pennsylvania* (1992). This changed with a telephone call to me this past late summer from a resident (who wants to remain anonymous) living near the wetland, requesting that I check a strange bird calling in the wetland at night. Results of my four August 2007 visits are attached on 2nd PBBA Marshbird Survey forms and a 2nd PBBA Special Species Report Form. Comments are:

The 2007 avian breeding season was a strange field experience. The months of June and July were almost totally devoid of rain save for a thunderstorm downpour on June 12. On the other hand, August was exceptionally wet with 3.8" rain the week of August 5 (3.3" on 8/7, .5" on 8/9). My first site visit was the evening of 8/10. And although the week of August 12 was dry, it rained profusely the week of August 19 (2" on 8/19, 1.5" on 8/20 and 2" on 8/21 for a total of 5.5" that week). August ended with 9.3"of rain. In just three weeks the local landscape changed dramatically from a parched, brown condition to a vibrant, refreshed and renewed green space everywhere. Indeed, this weather oscillation had tremendous impact on all breeding birds, land and water species alike. With so much rain in August, the water level of the wetland rose an average 12-15 inches as measured on trunks of trees and shrubs. Species that failed breeding in June and July were attempting a second try. I believe this was true for the wetland species involved in this field survey.

The wetland is located in a natural kettle, surrounded by four adjoining circles of micro-habitats: the outer circle consists of palustrine deciduous woodlands, the second circle by ericaceous shrubs with dense grasses and sedges; the third circle by dense cattail and bulrush marsh, the fourth circle by small floating islands of vegetation in open water.

The site was quite a frustrating challenge. I could not get onto the site because of lack of access. I did not want to ask permission to enter by canoe from the Snyder family because I was afraid of a 'NO' response, so my strategy was to play the tape and view the wetland from the best perimeter spot available: in the southwestern corner atop the esker next to Swope Road (see spot on map). I used 9 x 35 Bausch & Lomb wide-angle binoculars and a 45 x Bushnell spotting scope. Elation came on 8/10 at 1919 when the tape induced responses from SORA and COMO plus three species of special concern: MAWR, ALFL and WIFL. I consider these vocalizations this late in summer to be an anomaly due to the extremely erratic weather. The unseen bittern responded with five 'pump-er-lunk' calls to the tape the third time I played it and then remained silent for five minutes at a spot in the dense cattails that I estimated to be 350 yards away. Then the bird responded again but this time (1928) showed himself on the edge of the cattail, started flying short distances towards me, perhaps no more than 25 feet at a time, and disappearing in the dense cattail after each short flight. After some more waiting the bird called 'pump-er-lunk' three times and was about 50 feet in front of me, again exposed himself on the edge of the cattail marsh and maintained a challenging, crouching attitude with an arched back and a belly nearly touching the water. Then, the bird, still keeping the crouched posture, suddenly spread its wings and tail, started flapping the wings, all the time making grunting sounds and slowly made a trail to its left (south) in the cattails, finally disappearing in the dense marsh. What a quick show. I did not hear or see the bird again that evening. On 8/18 and 8/23 AMBI responded to the tape but did not leave its spot (nest? mate? young?) some 350 yards away and approach me like he did on 8/10. A BAEA chasing an OSPR with a fish was entertaining on 8/10 and a BAEA immature fishing on its own on 8/18 intriguing.

On the evening of 8/23, just two days after three consecutive days of rain, all wetland species were vocal with their characteristic call notes but the bittern made only one 'pump-er-lunk' from a 350-yard distance and again did not come closer. I visited the site one last time on 8/31 in the afternoon and the wetland was not only quiet but also I observed few birds of any kind and none of the true wetland species.

I am familiar with the bittern from many years of field research, most recently as field ornithologist for the Audubon Pennsylvania marsh bird survey. I am concerned about the future of this grand wetland because of the potential mining impact upon it. If the mining company receives a permit, noise pollution from the cleaning plant on the south side of West Liberty Road operating 24 hours per day, scores of trucks moving gravel from field to plant to storage piles, pollution from giant lights operating every night for an estimated twenty years, hydrological changes that will possibly drain the wetland of its water or at the minimum delete enough water so that the wetland will become too shallow and uninviting for the wetland species of special concern, and the loss of the aesthetic rural landscape that is so appealing now (the reason why local residents wanted to live there in the first place), will surely impact and destroy the wetland and its immediate area.

Conclusions: AMBI CO Code: DD; COMO CO Code: FL; OSPR CO Code: CF; BAEA CO Code: CF. Where are the nest sites? Along Black Run? Moraine State Park? Or atop unknown towers like seven other OSPR nest sites? Regardless, I plan to return to this area in the spring and hopefully answer those questions and find a higher CO code for AMBI.

2nd Pennsylvania Breeding Bird Atlas Special Species Report Form

Species Name: American Bittern (Botaurus lentiginosus) AMBI Dates: 8/10-18-23-31/08

Atlas Block: 43 D 55 Wetland ID: 43 D 55__2 County: Butler

Latitude: N41.00813 Longitude: W080.08271 gps site: Swope Road

Describe principal characteristics seen and/or heard for ID: Heard distinctive vocalization of AMBI 'pump-er-lunk' repeated many times after playing tape; heard on three visits of 8/10, 8/18 and 8/23 but not on 8/31. Seen only on 8/10 visit when bird came about 50 feet from my viewing site on southwest corner of wetland on Swope Road. Bird started calling about 350 yards from me but did see bird fly short distances from that original spot about 25 feet at a time then disappear in the dense cattail, then again repeat the short flights another five or six times until he reached a spot about 50 feet from me and exposed himself for perhaps two and one-half minutes, all that time maintaining a challenging, crouching attitude, with back strongly arched, belly almost touching the water, neck so shortened that the lower head and long bill seemed to project only a few inches beyond the breast. Then, the bird, still keeping the crouched, challenging posture, suddenly spread its wings and tail, started flapping the wings, all the time making a succession of low-clicking and gulping sounds, turned to its left (south) and slowly moved through the cattails and finally disappeared in silence. I had to change from my scope to my binoculars because the bird was that close and observed a stocky, mottled and streaked heron-like individual, standing about two feet high; brown color, mottled with buff above; wings and tail darker and more uniform brown; buff, broad brown streaks on underside of the bird, most numerous streaks on the neck and breast; throat white with brownish stripes down the middle as the bird faced me; prominent black stripe on either side of the upper part of the neck.

Viewing conditions: Light was sufficient, especially since setting sun was behind my right shoulder and shining on the spot occupied by the bird. I was using 45 x Bushnell spotting scope until the bird got within 50 feet of me, then switched to 9 x 35 Bausch & Lomb wide angle binoculars for close up view.

Previous experience with species: I am familiar with species over many years, first as a teenager in the marshes of St. Louis, MO area, later in PA with the 1st PBBA project undertaking wetland analyses in SGL 195 and 284; and currently with the 2nd PBBA investigating particular marsh birds/wetlands in Butler, Lawrence and Mercer Counties for Audubon PA in 2005-2006-2007. In fact, 43 D 55__2 wetland is a miniature replica of SGL 195 (Celery Swamp) in many ways. Finally, the species is a regular but rare spring migrant in the Rio Grande Valley and on South Padre Island, Texas. I am International Hawk Watch Station Master for the US Fish & Wildlife Service at Santa Ana NWR every spring (8th year in 2008). There is only ONE SPECIES that sounds like the thumping AMBI in the bird kingdom.

Highest Atlas breeding code used: DD because of the bird's crouching, challenging posture. It was like: "o.k. you see me now, but I can't see you too well (looking into light) so follow me if you can." Reminded me of the actions of the Killdeer.

Directions: Take PA Route 173 south of Slippery Rock 5 miles, to PA Route 528, turn south on that road for 2 miles until see West Liberty Road, again turn right, drive 3 miles through West Liberty Borough and wetland is one mile west of borough at junction with Swope Road.

Describe habitat and other features at site: Wetland is situated in a geological kettle formed 18,000 years ago by glaciation with the dominant feature being the Miller esker on its south side. The wetland itself has four distinctive habitats in the form of rings encircling the site: the outer ring being the perimeter with palustrine deciduous forest present mostly on its eastern side, but some to the south and west as well, dominated by swamp white oak, red maple, wild black cherry and tulip poplar. The next inner circle is dominated by woody shrubs, such as alder, willow, some dogwoods and ironwood. The third circle is a large, dense emergent cattail marsh with some bulrush that is the central focal point of the wetland. Finally, there is open water and floating vegetation islands in the middle of the site. Beaver and muskrat are residents here and are changing the wetland as time progresses.

For PNDI Inventory Database: Total # of individuals observed: 1adult bird, presumably a male because of its vocalizations and its behavior. The bird acted as if he could have had a female in the background but I never heard or saw but one male bird. The bird definitely seemed to challenge the tape of what he thought was another AMBI male leading me to believe that territory was still important. There is no known historical record of species prior to 2007 although site was visited for the 1st PBBA in daylight hours (not night) and in context with the whole block (not enough time at site).

Potential Threats: mining development, resource extraction, human activity associated with a large gravel mining operation, especially noise pollution of machinery and truck traffic associated with the mining and light pollution every night of the week, month and year for a minimum of twenty years of mining operation. The rural agricultural landscape will be changed forever, the biological diversity destroyed and the uniqueness of a glacial remnant – where the ice tunnel ended and spewed out materials forming a large delta – will be lost to all future science research and education. For these reasons, I rank these potential disturbances the most serious to the Butler County landscape and I call upon Audubon, the Western Pennsylvania Conservancy and the Wild Waterways Conservancy to do everything possible to stop this particular mining application.

Name: [redacted]

Date: December 31, 2007

Exemption 6 - privacy

cleary2

Lawyer

From: [redacted]
To:
Cc:
Sent: Wednesday, February 13, 2008 6:10 PM
Subject: Comments on permit

Exemption 6 -privacy

Hi, [redacted] My apologies for being delayed a day in getting this to you. [redacted] and I have reviewed the permit application and other documents to date. As I said, we will be preparing comments/testimony for the record on behalf of PennFuture and our members in the area, and I will be at the hearing next week. But these are some issues that popped out to us in our review. We agree that at this stage, it seems that the resource agencies and the DEP, with the help of the many excellent public comments already raised in writing to the DEP, are pretty comprehensive and on point.

If there are endangered species or exceptional value wetlands to be impacted, which it appears there well may be, then the current plan is not going to fly, and DEP makes that pretty clear in their letter.

I think it's important for the community to support the major points in the DEP's letter, but to make it known that you want ongoing information from the DEP/permittee about revisions, field investigations, etc. since that could significantly alter the size/scope/nature of their planned operation moving forward.

Let me know if you have questions!

General Issues

1. In order to facilitate good communication with the public moving forward, request that a process is established with DEP to host periodic meetings with group of leaders from community to keep them informed, or to agree to hold additional informal conferences open to the public once permit application revisions and field studies have been completed, since major changes to nature of project may occur based on the DEP deficiencies letter.

2. Major concerns are avoidance of impacts to threatened/endangered species, wetlands/hydrologic balance, the esker, and to air quality. These are all (excepting the esker) raised in the DEP's deficiencies letter, and so people should voice support for the letter and concentrate on these issues in permit revisions moving forward.

3. Lack of exploration of alternatives in the project is a major problem, and again one that the DEP raises strongly in their letter. This relates to the wetlands impacts, and should be closely monitored.

4. Residents in area with springs and wells should be acquiring monitoring data of their own ongoing, including both quality and quantity. This is important to establish baseline data should a permit be granted and water issues occur later.

Other Issues

Many of these issues are likely already on the radar screen in one form or another among concerned citizens and organizations, and this list is certainly not complete. I've included references to relevant sections of the regulations for noncoal mining permits in some areas for reinforcement. These are in no particular order.

1. Need to demonstrate that the activity proposed is in accordance with/out of accordance with area comprehensive plans.

2. Worth Township must approve the land development plan/waiver to 100-foot buffer from township roads (this is also an opportunity for the community to defeat these aspects of the project).

3. Applicant must submit and receive approval for air quality plan from DEP, and has failed to do so to date.

4. The public notice for the permit application did not include a location within Butler County, as required by the regulations. Did the applicant notify all adjacent landowners?

5. It is unclear whether the erosion and sedimentation controls are adequate; application refers to the controls being in place for weather events, but doesn't specify the scale or scope of those plans.

6. The mining is proposed to occur within 100 feet of the road right-of-ways; within 300 feet of an occupied dwelling; and within 100 feet of the bank of a stream. The regulations prohibit mining under these circumstances.

7. The permit application indicates in one spot that there will be no discharges from the site, but then identifies a number of discharge points in another module. What discharges will occur and why?

8. Mining is not supposed to impact areas that are "historical places" or that are used for study of the environment. The esker certainly qualifies as both, and the community and organizations should detail how and why.

9. Greater detail about the hydrologic regime [77.457], surface water quality/uses [77.406 (b)(1) and (b)(2)], and connectivity to nearby areas is required. Any data, analysis, or specific concerns that the community and professionals in the area can raise will be important.

10. Elimination of headwaters of stream is a significant problem. The polishing pond is to be located in the stream headwaters for UNT #1 to Black Run. There is insufficient information about the stream itself, and little to no biological information provided (no field sampling of biota).

11. The applicant states in permit that the wetland doesn't serve as storage area for flood or storm waters, or provide for pollution prevention or sediment control. In wetland delineation information submitted to DEP, however, it states the opposite.

12. Applicant states that the operational costs are "too high" for locating the wash plant elsewhere; however no economic information is provided to justify this assertion, and no alternatives are considered.

13. Significant lack of detail concerning the wetlands replacement plan.

14. Applicant asserts that post-mining land use will enhance wildlife habitat and increase diversity, as well as improve the watershed, and will not change the hydrologic regime. There is inadequate supporting information for any of those claims.

15. Should be a demonstration by the DEP that the violation history of the company/operator as it relates to noncoal mining activity has been conducted and that there are no ongoing violations.

16. If proof of publication isn't provided within 4 weeks after the last date of advertisement, the DEP must treat the application as incomplete and the applicant must "start the process again" [77.165]

17. Do they ID and describe status of other mining within or adjacent to the proposed permit area? [77.404(4)]

18. Indications are that portions of the land area are used for agriculture or could be; applicant is required to describe the yield (productivity) pre-mining [77.409(2)] so as to provide a basis for comparison that post-mining land use is as good or better.

19. Permit application is unclear as to whether Phase 2 mining will take place at all. How would impacts/operation differ if it did not occur? Would it be better to assume Phase 2 will not occur at all

(b) An application shall also contain the following in the detail required by the Department:

(4) A determination of the probable effects on the surface water and groundwater of the proposed mining activities, on the proposed permit and adjacent area, with respect to the hydrologic regime and the quantity and quality of water in surface water and groundwater systems, including the parameters the Department deems relevant.

HYDROLOGICAL BALANCE AND WETLAND DELINEATION

Mine Permit Application Issues - Preliminary Review Hydrological Balance and Wetland Delineation

- The applicant has not addressed the potential for a species of special concern to be located within the property. PA DCNR has identified the project as having a potential impact on *Carex pseudocyperus*.
- The species (*Carex pseudocyperus*) is a hydrophytic (wetland dependent) species.
- The site must be investigated by a qualified botanist.
- The investigation of the site must be done at an appropriate time of year (during the growing season and while the plant is in flower/seed).
- The applicant has not addressed the reported presence of other known Species of Special Concern (as reported by Dr. Gene Wilhelm).
- Since the applicant has not evaluated the site in an appropriate manner for the presence of Species of Special Concern, the applicant has inaccurately completed Module 14.3 d) 1 and 2.
- The applicant has not demonstrated that they have appropriately and accurately delineated the limits of the site's jurisdictional wetlands.
- Since at least one of the Species of Special Concern is a hydrophyte, the wetlands must be accurately delineated prior to conducting a search of the site for the species of special concern, as potential habitat areas of the species may be overlooked.
- The classification of the site's wetlands can only be determined at the completion of an appropriate investigation of the site for the species of special concern.
- The wetlands contained on the site may be of exceptional value and would need to be completely avoided. The applicant has failed to address this issue.
- The wetlands on the site may be of exceptional value and potential adverse impacts to the wetlands' hydrology must be avoided. The applicant has failed to address this issue.
- The applicant has not demonstrated that their proposed activity will not adversely affect the hydrology to on-site and off-site wetlands.
- The applicant has not demonstrated an understanding of the fluctuations in the groundwater table and therefore has not addressed potential indirect impacts to on-site and off-site streams and wetlands.
- The applicant, by their own admission, states that the wetland's hydrology is dependent upon surface water runoff, spring outcrops and perched water table and that mining ANY portion of the permit area is very likely to significantly

reduce or completely terminate the hydrological regime that supports the wetland community. Therefore, if the site's wetlands are determined to be of exceptional value, the entire permit must be denied based upon indirect impacts to the wetland's hydrology identified by the applicant.

- The applicant has not demonstrated that there are no available, practicable alternatives to the impacts proposed to the site's aquatic resources, including those proposed to the site's wetlands and UNT #3 to Black Run.
- The applicant has not provided an adequate plan for stream and wetland mitigation commensurate with the proposed impacts.
- The applicant has not demonstrated that there are no available practicable alternatives to encroaching within 100' of a stream.
- The description of the delineated wetlands' functions and values contained in Module 14 is not accurate.
- The applicant has not filed an appropriate Section 404 permit application with the U. S. Army Corps of Engineers for the proposed activity.
- The applicant has not completed a detailed assessment of the wetland functions identified in Module 14.3 d) 10). The claim made by the applicant under 14.4 c) 3) bb) (Page 14-10 of the application) that "Aquatic organisms would not be supported by this wetland community due to a lack of standing water and water/vegetation interfacing" is inaccurate and countered by the applicant's wetland consultant in their wetland Identification and Delineation – Addendum (Page 14-14) which states, among other facts, that "Supporting wetland hydrology for this wetland community (Study Area 1 Wetland No. 1) by visual observations of inundation within some portions and standing water in the test pits. Small pockets of inundated areas were observed to range from 1 to 10 inches in depth. Test pit locations were not in inundated areas however standing water was observed at the surface in most of the areas sampled." Similar language was used to describe the conditions observed in Study Area 2 Wetland No. 2 (Page 14-15 of the application).

The above referenced report also states (page 14-15 and 16 of the application) the functions and values of the identified wetlands. These findings are not consistent with the applicant's information as reported in Module 14.3 d) 3) through 17) or the applicant's information as reported in Module 14.4 c) 3) bb).

- The applicant has not demonstrated that all of the requirements of the NPDES permit have been met, including the requirements related to the Post-construction Storm water Management Plan.

In conclusion, the applicant has not prepared a complete, accurate and thorough application. Until such time that he applicant can address all of the significant, outstanding deficiencies, no action on the permit should be taken.

In order to address the potential for the presence of a Species of Special Concern on the site (*Carex pseudocyperus*), the applicant must have a qualified botanist perform an investigation of the site at the appropriate time of the year. Since the completion of such an investigation will not be possible until at least May of 2008, the applicant cannot

respond to the Departments's deficiency letter in an appropriate time frame. Therefore, the applicant must either request and be granted an extension of time, or the Department must return the application.

If the applicant submits additional technical information regarding this application, the public must be given an appropriate opportunity to review such information, and reserves the right to request and be granted an additional (or continued) public hearing.

HP Officejet 4300 series 1250 Personal Printer/Fax/Copier/Scanner

Fax Log for
Usace Pgh Regulatory
4126444211
Sep 18 2009 4:20p

NOTE: Blocked calls are not displayed on this report.
For more information, see Junk Fax Report and the Caller ID History report.

Last Transaction

Date	Time	Type	Station ID Caller ID	Duration	Pages	Result
Sep 18	04:11p	Received	724-867-1356	7:52	18	OK

Bintrim, Tyler J LRP

From: [redacted] Exemption 6 - privacy
Sent: Monday, September 14, 2009 4:39 PM
To: Bintrim, Tyler J LRP
Subject: Attached Comment Letter regarding Glacial Sand and Gravel CELRP-OP-F 2008-280

Attachments: [redacted]LettertoTylerBintrim.doc

[redacted]Letterto TylerBintrim...

Mr. Bintrim,

Attached is a comment letter regarding Glacial Sand and Gravel Mining Permit in Worth Township Butler County, Pennsylvania...CELRP-OP-F 2008-280. I am faxing a signed copy with attachments that I do not have in electronic format before the end of the day.

Sincerely,

[redacted]

All redactions - Exemption 6 - privacy

[redacted]

Sent: 9/14/2009 9:32:42 A.M. Eastern Daylight Time
Subj: Fwd: Letter to Tyler Bintrim

[redacted]

Sent: 9/1/2009 9:10:05 A.M. Eastern Daylight Time
Subj: RE: Letter to Tyler Bintrim

Exemption 6 - privacy

[redacted]

September 1, 2009

Tyler Bintrim
U.S. Army Corp of Engineers, Pittsburgh District
1000 Liberty Avenue
Pittsburgh, PA 15222-4186

RE: Application # 2008-280

Mr. Bintrim,

I am submitting additional comments regarding Glacial Sand & Gravel Mining Permit # 10070304. Since the public hearing held February 19, 2008, there have been various developments that have raised new concerns about the review and approval process and the overall impact the mining will have on the community. It is imperative that the U.S. Army Corp of Engineers recognizes its responsibility to protect environmentally sensitive areas such as high value wetlands and unique geological features. This is especially true when the local governments lack staff and organizational development to consider multiple planning ramifications and long-term impacts. In such a case, the U.S. Army Corp of Engineers, as well as the Pennsylvania Department of Environmental Protection, have an obligation to the citizens of the greater community, and is required by its own regulations, to exercise leadership and institute controls to maintain balanced planning and impacts. The Worth Township Supervisors have granted a road setback variance allowing the mining company to excavate the entire esker north of West Liberty Road.

The PA DEP has encouraged public involvement, but as of this date, where has there been any attempt to involve the other municipalities, West Liberty Borough, Brady or Slippery Rock Townships. To the best of our knowledge, no community representatives were invited to the wetland tours. Public comment to the Worth Township road variance was limited to fifteen minutes of comment time immediately before the vote. There was no time allowed to the residents or general public to review or study the alternatives to the variance as set forth.

This is not due process and is counter to the reoccurring suggestions by the DEP in its Comments and Response document to involve the public. The variance, as adopted, is not an acceptable solution to protect the wetlands and the Esker as a natural buffer area. The PA DEP and the U.S. Army Corp of Engineers must pay special attention to this area. The March 13th letter from the Pennsylvania Department of Conservation and Natural Resources states that sufficient field evidence indicates that the north wetland is one of exceptional value and requires special PA

DEP protection. Three threatened or endangered plant species have been found and noted. They include: carax alata, schoenoplectus acutus, and cladium mariscoides. There is also winged sedge and the fen indicator species, one of which is the southern woodrush, which reinforces this determination.

The township supervisors granting a variance without regard to the ecological impact this mining activity will have on the northern wetland. The hydrological connection and filtering support from the Esker calls for both the U.S. Army Corp of Engineers and the PA DEP to prevent any mining activity north of West Liberty Road.

Swope Road can still be improved for safety concerns and limit the disturbance of the wetland and Esker. Sketches have been included to demonstrate how this can be done. Swope Road in its current location eliminates the need to change the mining and processing plant driveway. The culvert that Worth Township did not want altered is undersized and can be relocated and replaced rather than moving the location of the mine entrance road. Photos will be provided to emphasize how the improvements can be made without mining any of the Esker other than for road improvements. No variances should be allowed north of West Liberty Road.

The Esker is a true natural buffer berm for the whole north boundary of the mining activity. Relocation of West Liberty Road into the variance area south of the road after mining activity would improve safety along over 2,000' of roadway instead of 700'. (See sketch) This road configuration is offered as an alternative to what the mining company has proposed and would protect the integrity of the Esker and the adjacent wetland.

I hope these comments are timely and will be reviewed and incorporated in the U.S. Army Corp of Engineers' assessment to condition the mining activity at Glacial Sand and Gravel's Mine 47.

Sincerely,

[redacted]

Exemption 6 - privacy

Bintrim, Tyler J LRP

From: [redacted]
Sent: Monday, September 14, 2009 4:58 PM
To: Bintrim, Tyler J LRP
Subject: Comment Letter Glacial Sand and Gravel CELRP-OP-F 2008-280

Attachments: [redacted]LettertoTylerBintrim.doc

[redacted]Letterto TylerBintrim...

Mr. Bintrim,

Attached is comment letter to Project # CELRP-OP-F 2008-280. Please use this letter there are minor changes. As indicated I will fax signed letter with attachments later today. Thank you for your time and consideration.

Sincerely,

[redacted]

All redactions - Exemption 6 - privacy

Exemption 6 - privacy

[redacted]

September 14, 2009

Tyler Bintrim
U.S. Army Corp of Engineers, Pittsburgh District
1000 Liberty Avenue
Pittsburgh, PA 15222-4186

RE: Application # CELRP-OP-F 2008-280

Mr. Bintrim,

I am submitting additional comments regarding Glacial Sand & Gravel Mining Permit # 10070304. Since the public hearing held February 19, 2008, there have been various developments that have raised new concerns about the review and approval process and the overall impact the mining will have on the community. It is imperative that the U.S. Army Corp of Engineers recognizes its responsibility to protect environmentally sensitive areas such as high value wetlands and unique geological features. This is especially true when the local governments lack staff and organizational development to consider multiple planning ramifications and long-term impacts.

In such a case, the U.S. Army Corp of Engineers, as well as the Pennsylvania Department of Environmental Protection, have an obligation to the citizens of the greater community, and is required by its own regulations, to exercise leadership and institute controls to maintain balanced planning and impacts. The Worth Township Supervisors have granted a road setback variance allowing the mining company to excavate the entire esker north of West Liberty Road.

The PA DEP has encouraged public involvement, but as of this date, where has there been any attempt to involve the other municipalities, West Liberty Borough, Brady or Slippery Rock Townships. To the best of our knowledge, no community representatives were invited to the wetland tours. Public comment to the Worth Township road variance was limited to fifteen minutes of comment time immediately before the vote. There was no time allowed to the residents or general public to review or study the alternatives to the variance as set forth.

This is not due process and is counter to the reoccurring suggestions by the DEP in its Comments and Response document to involve the public. The variance, as adopted, is not an acceptable solution to protect the wetlands and the Esker as a natural buffer area. The PA DEP and the U.S. Army Corp of Engineers must pay special attention to this area. The March 13th letter from the Pennsylvania Department of Conservation and Natural Resources states that sufficient field

evidence indicates that the north wetland is one of exceptional value and requires special PA DEP protection. Three threatened or endangered plant species have been found and noted. They include: carax alata, schoenoplectus acutus, and cladium mariscoides. There is also winged sedge and the fen indicator species, one of which is the southern woodrush, which reinforces this determination.

The township supervisors granting a variance without regard to the ecological impact this mining activity will have on the northern wetland. The hydrological connection and filtering support from the Esker calls for both the U.S. Army Corp of Engineers and the PA DEP to prevent any mining activity north of West Liberty Road.

Swope Road can still be improved for safety concerns and limit the disturbance of the wetland and Esker. Sketches have been included to demonstrate how this can be done. Swope Road in its current location eliminates the need to change the mining and processing plant driveway. The culvert that Worth Township did not want altered is undersized and can be relocated and replaced rather than moving the location of the mine entrance road. Photos will be provided to emphasize how the improvements can be made without mining any of the Esker other than for road improvements.

The Esker is a true natural buffer berm for the whole north boundary of the mining activity. Relocation of West Liberty Road into the variance area south of the road after mining activity would improve safety along over 2,000' of roadway instead of 700'. (See sketch) This road configuration is offered as an alternative to what the mining company has proposed and would protect the integrity of the Esker and the adjacent wetland.

I have included additional attachments to support the importance of the Esker acting as a source of recharge water and a natural filtering system. Removing the Esker by mining to create replacement wetland acreage is absolutely shortsighted. The removal of the esker changes the total ecological balance and composition of the surrounding wetland denoted as exceptional value by the DCNR and collaborated by other observers including representatives from the Western Pennsylvania Conservancy.

To permit change to the adjoining soils natural stratification, and topographical features in such an environmentally sensitive area demands engineering justification and verifiable support. It is the U.S. Army Corps primary responsibility to provide this information, so it can therefore be held accountable before it grants permission to Glacial Sand and Gravel approval to mine the Esker.

The wetland relocation on the south side of West Liberty Road can be achieved successfully by other means, either by the creation of wetlands offsite or by utilizing mine owned property to the north and east of the esker.

I hope these comments are timely and will be reviewed and incorporated in the U.S. Army Corp of Engineers' assessment to condition the mining activity at Glacial Sand and Gravel's Mine 47. To protect the high value wetland and Esker as a unique geological feature there should be no

mining permitted North of West liberty Road other than limited removal to improve road safety as shown in the attached sketches.

Finally I request the U.S. Army Corp of Engineers call for a public hearing to give the public ample opportunity to express their concerns and/ or support for the proposed mining activity.

Sincerely,

[redacted]

Exemption 6 - privacy

Bintrim, Tyler J LRP

From: [redacted] Exemption 6 - privacy
Sent: Sunday, September 13, 2009 9:31 PM
To: Bintrim, Tyler J LRP
Subject: Application No. 2008-280

September 13, 2009

US army Corps of Engineers, Pittsburgh District 1000 Liberty Avenue Pittsburgh, PA 15222-4186

Application No. 2008-280
Glacial Sand & Gravel

To Whom It May Concern:

The proposed mining application by Glacial Sand & Gravel for property at Swope Road and West Liberty Road in Worth Township, Butler County, has been and continues to be a matter of concern to many Worth Township residents and property owners, including myself. One of the main concerns seems to be that mining in this area would negatively impact and/or destroy unique geological features in the area, namely an esker, a wetland known as West Liberty Bog, and a lake known locally as Tamarack Lake. I was pleased to hear that Glacial Sand & Gravel will not be mining West Liberty Bog. Upon further research, however, I found that West Liberty Bog is actually a fen, and as such, is dependent on the esker as an underground water source. The fen, in turn, is the water source for Tamarack Lake. The three features are actually one interrelated, interdependent system. Both the fen and lake are dependent on the esker for survival. According to the U. S. Environmental Protection Agency's website, fens, such as the one in West Liberty, have disappeared at an alarming rate and should be protected:

"Like most peatlands, fens experienced a decline in acreage at a rate of about eight percent from 1950 to 1970, mostly from mining and draining for cropland, fuel, and fertilizer. Because of the large historical loss of this ecosystem type, remaining fens are that much more rare, and it is crucial to protect them. It is important to recognize that while mining and draining these ecosystems provide resources for people, up to 10,000 years are required to form a fen naturally."
(http://www.epa.gov/owow/wetlands/types/fen.html)

As I continued to research this issue, I found that the West Liberty fen is possibly home to at least one Endangered plant species, Carex pseudocyperus, and in the past was home to at least two additional Endangered plant species and one Threatened plant species, some of which might still be at the wetland. Subsequent studies have confirmed the presence of endangered plant species, and the fen is now classified as an Exceptional Value Wetland. If the esker is mined, however, changing the pH of the fen, these species may not survive, causing yet another environmental loss.

As the esker is a very small portion of the overall mining project proposed in this permit, it seems that leaving it in tact would not significantly impact the success of Glacial Sand & Gravel's endeavor but would significantly positively impact the geological, environmental, and biological heritage of Worth Township.

For all of the above reasons, I request that a public hearing be scheduled to fully examine these issues before any decisions regarding the granting of the permit are made, including any additional requests for variances that would negatively impact, either directly or indirectly, these valuable environmental features and species. I appreciate that Glacial Sand & Gravel has proven to be a good neighbor to many in the area, providing jobs, products, and philanthropic donations to various individuals and organizations. I truly hope that they will view careful examination of the environmental impact on the area as yet another way to be a good neighbor to the people of Worth Township and Pennsylvania.

Thank you for your consideration to these issues.

[redacted]

Exemption 6 - privacy

Bintrim, Tyler J LRP

From: [redacted]
Sent: Monday, September 14, 2009 8:31 PM
To: Bintrim, Tyler J LRP
Subject: Glacial Sand & Gravel

Dear Mr Bintrim,

I am writing because of my concern with the proposed mining at the West Liberty Fen, public code CELRP-OP-F 2008-280. I feel that this activity would have an adverse effect on the hydrology and unique habitat of a very sensitive area.

I would ask that a Public Hearing be held to address these issues.

Thank you,

[redacted]

All redactions - Exemption 6 - privacy

Bintrim, Tyler J LRP

From: Boyer, Emilee [c-eboyer@state.pa.us]
Sent: Monday, September 14, 2009 4:48 PM
To: Bintrim, Tyler J LRP
Cc: Yeakle, Christopher; 'Ian'; Fleeger, Gary
Subject: Mine 47/Rodgers Plant comments (CELRP-OP-2008-280)

Attachments: DCNR_comments_to_MINE 47_ CELPR-OP-F 2008-280_Army Corps.pdf; Exhibits to Army Corps Comments_ecb.pdf

DCNR_comments_to_MINE 47_ CELP... Exhibits to Army Corps Comment...

Ty, attached please find my comments regarding the Mine 47/Rodgers Plant application (Army Corps Application No. CELRP-OP-F 2008-280). Also enclosed are the exhibits that I refer to. Please confirm receipt of these documents.
Thank you for the opportunity to comment on this project,

Emilee C. Boyer | Environmental Review Specialist Bureau of Forestry | Ecological Services Section
Phone: 717.787.7067| Fax: 717.772.0271
www.dcnr.state.pa.us <http://www.dcnr.state.pa.us/> | www.iConservePA.org <http://www.iconservepa.org/>

pennsylvania
DEPARTMENT OF CONSERVATION
AND NATURAL RESOURCES

BUREAU OF FORESTRY

September 14, 2009

Application No. CELRP-OP-F 2008-280

Tyler Bintrim
US Army Corps of Engineers – Regulatory Branch
1000 Liberty Avenue
Pittsburgh, PA 15222-4186

Re: US Army Corps of Engineers Application No. CELRP-OP-F 2008-280
Section 404 Permit Review for Glacial Sand and Gravel Company
Mine 47 and Rodgers Plant in Worth Township, Butler County, Pennsylvania
PNDI Number: 20339, which includes 20071211120195, 20071024114200, 20061010059358

Dear Mr. Bintrim,

Thank you for the opportunity to comment on US Army Corps of Engineers **Application No. CELRP-OP-F 2008-280**. PA Department of Conservation and Natural Resources has assigned this project **PNDI # 20339** and reviewed the proposed activities for potential impacts to species and resources of concern under DCNR's responsibility, which includes plants, terrestrial invertebrates, natural communities, and geologic features only.

PNDI records indicate species or resources of concern are located in the project vicinity. **Based on a detailed PNDI review, DCNR has determined that there is insufficient information to assess potential impacts to the following threatened or endangered species or resources of special concern.**

Scientific name	Common Name	PA Current Status	PA Proposed Status	Location
Schoenoplectus acutus syn. *Scirpus acutus*	Hard-stemmed bulrush	Endangered	Endangered	Wetland 1; see "Rodgers Plant" map in Exhibit 1.
Cladium marscoides	Twig rush	Endangered	Endangered	Wetland 1; see "Rodgers Plant" map in Exhibit 1.
Carex alata	Broad-winged sedge	Threatened	Threatened	Wetland 1; see "Tamarack Lake" map in Exhibit 1.
Jacksville Esker known locally as West Liberty Hogback		SNR	SNR	Proposed wetland mitigation site

DCNR's Concerns

DCNR's primary concern with proposed Mine 47 and Rodgers Plant is preserving the state-listed plants noted above and their critical habitat. On March 13, 2009, I wrote a letter to Michal Jones-Stewart of the EADS Group stating this concern and defining critical habitat for these plants (see Exhibit 1). The letter stated that as long as the proposed activities during the construction and operation of Mine 47 or Rodgers Plant do not affect the water table or hydrology to Wetland 1, no impacts to *Schoenoplectus acutus* (syn. *Scirpus acutus;* PA Endangered), *Cladium marscoides* (PA Endangered), or *Carex alata* (PA Threatened) are anticipated. **As a result of new evidence (discussed below), DCNR now believes there is insufficient information to draw a conclusion on whether or not there may impacts to the hydrology of Wetland 1, and therefore impacts to the threatened and endangered plants via change in their critical habitat.**

Additionally, I would like to draw your attention to Exhibit 1, particularly the maps. Exhibit 1 is the entire letter, including attachments, I provided to the EADS Group on March 13, 2009. The map titled "Critical habitat for Schoenoplectus acutus and Cladium mariscoides" illustrates what DCNR believes is critical habitat for the threatened and endangered plants in Wetland 1. "Rodgers Plant," a map designed by the EADS Group, gives the point locations of *Schoenoplectus acutus* (syn. *Scirpus acutus*) and *Cladium mariscoides*. My final attachment was a letter by Mr. James Bissell, botanist, Cleveland Museum of Natural History, to Chris Yeakle of PA DEP showing the location of *Carex alata*. With the exception of Mr. Bissell's letter, I did not see these documents included in the communications packet of Application No. 2008-280, which I accessed through the "2008-280, Communications" link under FOIA on your Regulatory and Permits website. I want to be sure you have the opportunity to review them since they were critical components of my review.

Conflicting Information

Rodgers Plant

It has come to my awareness that there are conflicting sets of information regarding the effect of the Rodgers Plant to the hydrology of the water table. This conflicting information raises several concerns. DCNR believes more information is needed to determine whether this project has the potential to impact to state-listed threatened and endangered plants:

- DCNR was originally told during a February 24, 2009 phone call and subsequent February 25, 2009 letter from the EADS Group that extreme pumping of the existing "production" well at 80 gallons/minute for 72 hours would not affect the local water table and thus the hydrology of Wetland 1 (Exhibit 2). The Alternatives analysis, however, stated that without Ponds 1-4 additional water would be needed from the "production well" which would result in a significant draw down of the ground water table (Exhibit 3). What if DEP does not issue a permit for Mine 47 including Ponds 1-4, and the plant must operate with only Pond 5, thus increasing the demand on well water, which the applicant indicated will significantly draw down the ground water table? What indirect impacts will this have on the hydrology of Wetland 1? DCNR suggests tests by an independent party to assess secondary impacts to Wetland 1.

- During a February 24, 2009 phone call and subsequent February 25, 2009 letter from Ms. Jones-Stewart (Exhibit 2) I was told only one well, the "production well," would be used for the operation of the plant and the other "observation" wells are only for monitoring the water table. The Alternatives analysis mentions the need to pump from "wells" (i.e. more than one) should the additional ponds (Ponds 1-4) not be constructed (Exhibit 3). How many wells are onsite and how many will be used for the operation of the plant? How will the water table be affected if several wells are used to operate the plant?

DCNR requests during permit review that the Army Corps give consideration to potential secondary impacts Rodgers Plant may have on critical habitat for the threatened and endangered plants in Wetland 1 if Rodgers Plant is operated without the addition of Ponds 1-4.

Esker

The second set of conflicting information pertains to the hydrologic role the esker plays to Wetland 1. The project currently proposes to mine the sand and gravel material from the esker and replace it with a wetland used to mitigate impacts to Wetlands 2-4. The attached letter from Michal Jones-Stewart on February 25, 2009, lead me to believe that mining the esker and replacing it with a wetland, a "lake," as she called it, would not affect the hydrology of the Wetland 1 because "there will be no 'pumping' of the local ground water table once it is encountered [and] therefore the local water table will not be lowered during or after the mining process," (Exhibit 2). While it may be true that there will be no pumping of the water table, this letter does not address the effect on the water table from the loss of the esker. Through a letter from geologists at Slippery Rock University, it has come to my attention that the esker *does* play a hydrologic role to Wetland 1 as it "provides base-flow seepage to maintain the wetness of the abutting wetland (Wetland One)" (Exhibit 4).

DCNR is concerned about the effect on hydrology of Wetland 1 from mining the esker (area of proposed wetland mitigation site). We request further independent studies to determine how mining the esker will affect the water table and thus critical habitat for state-listed plants in Wetland 1.

This response represents the most up-to-date summary of the PNDI data files and is valid for one (1) year from the date of this letter. An absence of recorded information does not necessarily imply actual conditions on-site. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered.

This finding applies to impacts to DCNR species of concern only. To complete your review of state and federally-listed threatened and endangered species and species of special concern, please be sure the U.S. Fish and Wildlife Service, PA Game Commission, and the Pennsylvania Fish and Boat Commission have been contacted regarding this project as directed by the online PNDI ER Tool found at www.naturalheritage.state.pa.us. If you have any questions or concerns you may contact me at 717.787.7067 or c-eboyer@state.pa.us.

Sincerely,

Emilee C. Boyer

Emilee C. Boyer
Environmental Review Specialist FOR Chris Firestone, Plant Program Manager
Department of Conservation and Natural Resources
Bureau of Forestry, Pennsylvania Natural Heritage Program

Cc: Chris Yeakle, DEP Knox Office
Ian Harrell, Butler County Conservation District
Gary Fleeger, DCNR Topographic and Geographic Survey
Michal Jones-Stewart, EADS Group
Marian Hollinger

Exhibit 1

DCNR letter to EADS Group March 13, 2009

Pennsylvania Department of Conservation and Natural Resources

March 13, 2009

Bureau of Forestry

Michal Jones-Stewart
The EADS Group
15392 Route 322
Clarion, PA 16214

Pennsylvania Natural Diversity Inventory Review, PNDI Numbers:
20071211120195, 20071024114200 and 20061010059358
Glacial Sand and Gravel - Mine 47 and Rodgers Plant
Worth Twp; Butler County

Dear Ms. Jones-Stewart,

This response is in reference to your Pennsylvania Natural Diversity Inventory (PNDI) coordination for potential impacts to resources of concern under the Department of Conservation and Natural Resources' responsibility, which includes plants, natural communities, terrestrial invertebrates and geologic features only.

Based on our PNDI reviews in October and November of 2007 and April 2008 we determined there could be potential impacts to species and/or resources of special concern under the jurisdiction of DCNR and subsequently requested surveys for *Carex alata*, *Carex pseudocyperus*, *Cladium mariscoides*, *Lobelia kalmii*, *Parnassia glauca*, *Carex prairea*, *Cypripedium reginae*, *Epilobium strictum*, *Oxypolis rigidior*, *Salix petiolaris*, *Solidago purshii*, *Spiranthes romanzoffiana*, *Stenanthium gramineum* and *Trollius laxus sensu stricto*. After thorough review of the survey reports, maps, and other documentation that you and Dr. Fred Brenner submitted to our office between the months of August 2008 and January 2009, we concur that *Schoenoplectus acutus* (syn. *Scirpus acutus*) and *Cladium mariscoides* (both currently state-listed as PA Endangered) were observed and are located within the delineated boundaries of Wetland 1 marked on the enclosed map titled "Rodgers Plant." Along with these two endangered species another state-listed plant, *Carex alata* (PA Threatened) was observed in the project vicinity by Dr. James Bissell during site visits on June 3 and September 3, 2008 (report enclosed). Additionally, our office has recently become aware that the onsite West Liberty Esker will be impacted as a result of the mining activities.

During the environmental review process the original project area was separated into two separate permit areas, the surface mine permit area, portions of which extend north of West Liberty Road, and the NPDES permit area, contained entirely South of West Liberty Road. Below you will find our project concerns separated based on activity and permit area.

<u>NPDES Application Area</u>

It is our understanding that the NPDES permit is a "stand alone" permit and is necessary to grade and construct the Rodgers processing plant, including a sediment/polishing pond which will process raw sand and gravel from Mine 31, Mine 47 and other mines in close proximity. As per a February 24, 2009 phone call with you and February 25, 2009 letter you provided to our office we are aware of a deep "production" well drilled to a depth of at least 160 feet from the earth's surface into the Homewood Sandstone that was tested for 72 hours pumped at a rate of 80 gallons per minute. Monitoring of several "observation" wells showed no effects on the local or regional water system from the 80 gal/min test pumping. Results of this study were provided to the DEP Bureau of Mining and Reclamation Knox District Office and the Butler County Conservation District. It is also our understanding that only the "production" well will be used for extraction of water to operate the processing plant.

Based on this information, our office has determined that the actions described above for this permit will not directly impact the state-listed endangered plants occurring in Wetland 1. There are no indirect impacts anticipated for the actions proposed in this permit contingent upon the prevention of runoff from activities involved in construction and operation of the Plant from entering Wetland 1 and strict adherence to the equipment/machinery washing request below under "Both Project Areas." Please coordinate further with our office to determine impacts to the endangered plants if the conditions above cannot be met, project plans or activities change, or if during the NPDES permit review the Conservation District determines that withdraw from the production well for the plant will affect the hydrology of Wetland 1 of West Liberty Road.

Surface Mine Permit Area

First and foremost we are concerned about the destruction and degradation of Wetland 1 and critical habitat for *Schoenoplectus acutus* (syn. *Scirpus acutus*), *Carex alata* and *Cladim marsicoides* as the Rodgers Plant map submitted January 9, 2009 (mentioned above) indicates the surface mine permit boundary extends into Wetland 1. Please be sure that none of the activities involved in the surface mine permit will harm Wetland 1 or critical habitat for the endangered species through either a change in the local water table or direct earth disturbance impact. Enclosed is a map from our PNDI records indicating the fen habitat onsite; please avoid impacts to the area within this polygon as well as critical habitats for the endangered species described below. Please contact our office for the polygon data and then map the data on project site plans to verify to PA Department of Environmental Protection that this critical habitat for the endangered plants will not be directly impacted.

Critical habitat for *S. acutus* is defined in *The Plants of Pennsylvania* (Rhoads and Block) as shallow water of lake and pond margins. Other habitats *S. acutus* occurs in within our state are open pond waters, sandy lake and bay shores, seepage areas with open/partially filtered light and power utility crossings in succeeding to emergent marshes, also a fen seepage, wet river bank, and sandy wooded border of a spring stream.

The Plants of Pennsylvania defines critical habitat for *C. alata* as swamps, peaty shores, wet thickets, and woods, usually on calcareous soils. More specific habitats *C. alata* is found in within our state include open light in wetlands; fens; marsh and sedge meadows; lake shores and quaking mats along lake shores; hummocks and flats in swamps, fens and bogs; and seepages in lakes, swamps or marshes.

Critical habitat for *C. mariscoides* defined by Rhoads and Block include marshes, floating bog mats and shallow lake margins. Other habitats *C. marsicoides* is found in within our state are inundated hydric soils; sphagnum mats, mudflats, edges and boggy hummocks in bogs, fens and marshes; bogs and fens associated with ponds and natural glacial lakes; open meadows and bottom areas and a driveway stream crossing associated with a fen.

Additionally, the maps provided to our office on February 18, 2009 and February 25, 2009 (Exhibit 9/Operations Map) was the first we became aware of the removal of the West Liberty Esker and the creation of the mitigated wetland in its place. We are concerned about these actions as this esker is the best preserved feature of this type in Pennsylvania. Please contact geologist Mr. Gary Fleeger of DCNR Bureau of Topography and Geology / PA Geologic Survey to discuss concerns regarding the esker. Mr. Fleeger can be reached at 717.702.2045 or gfleeger@state.pa.us.

Pennsylvania Natural Diversity Inventory Review, PNDI Numbers:
20071211120195, 20071024114200 and 20061010059358
Glacial Sand and Gravel - Mine 47 and Rodgers Plant
Worth Twp; Butler County

We are also concerned that the species used for the wetland mitigation could possibly indirectly impact Wetland 1. In order to prevent indirect impacts from invasive plant species to endangered species in Wetland 1 please use only native species of local genetic material in the revegitation plan and avoid the use of *Schoenoplectus acutus* (syn. *Scirpus acutus*) and all other threatened, endangered or special concern plants listed in the Pennsylvania Natural Diversity Inventory. Contact our office if you would like guidance on native plant species to use in the mitigation wetland.

Both Project Areas

In order to prevent the spread of invasive plant species that may cause indirect impacts to the endangered plants in Wetland 1, please thoroughly wash all vehicles, equipment and machinery at a carwash offsite to remove any invasive plant propagules prior to bringing onsite and commencing any construction activity. Please avoid the use of invasive plant species and plants that are listed as endangered, threatened or special concern in any seed mixes or plantings within the project boundaries. If you would like more information on invasive plant species please visit http://www.dcnr.state.pa.us/forestry/invasivetutorial/index.htm and for a list of endangered, threatened, and special concern plants visit http://www.naturalheritage.state.pa.us/PlantsPage.aspx.

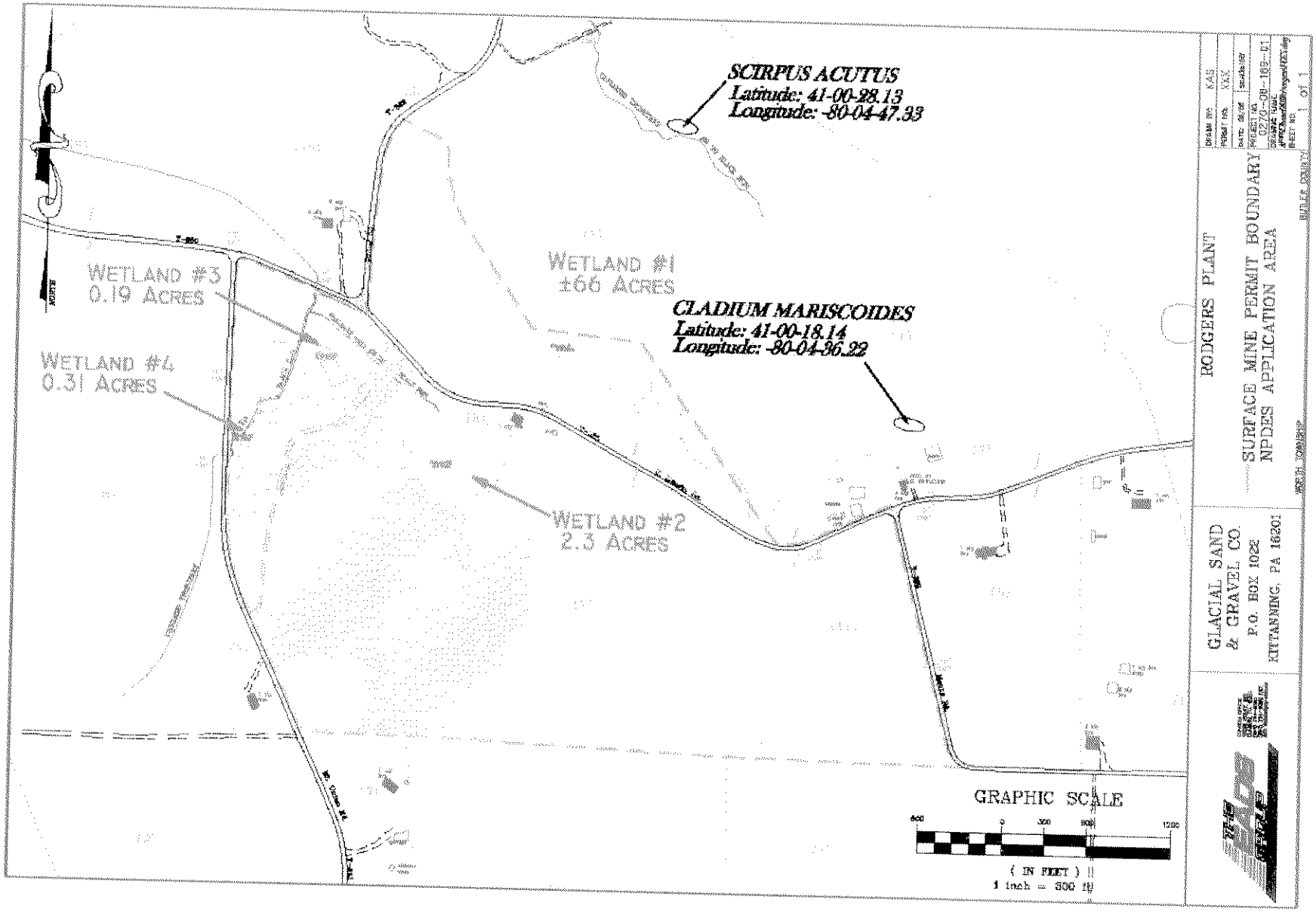
This response represents the most up-to-date summary of the PNDI data files and is applicable for one year. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered. Please me at 717-787-7067 if you have questions concerning this response.

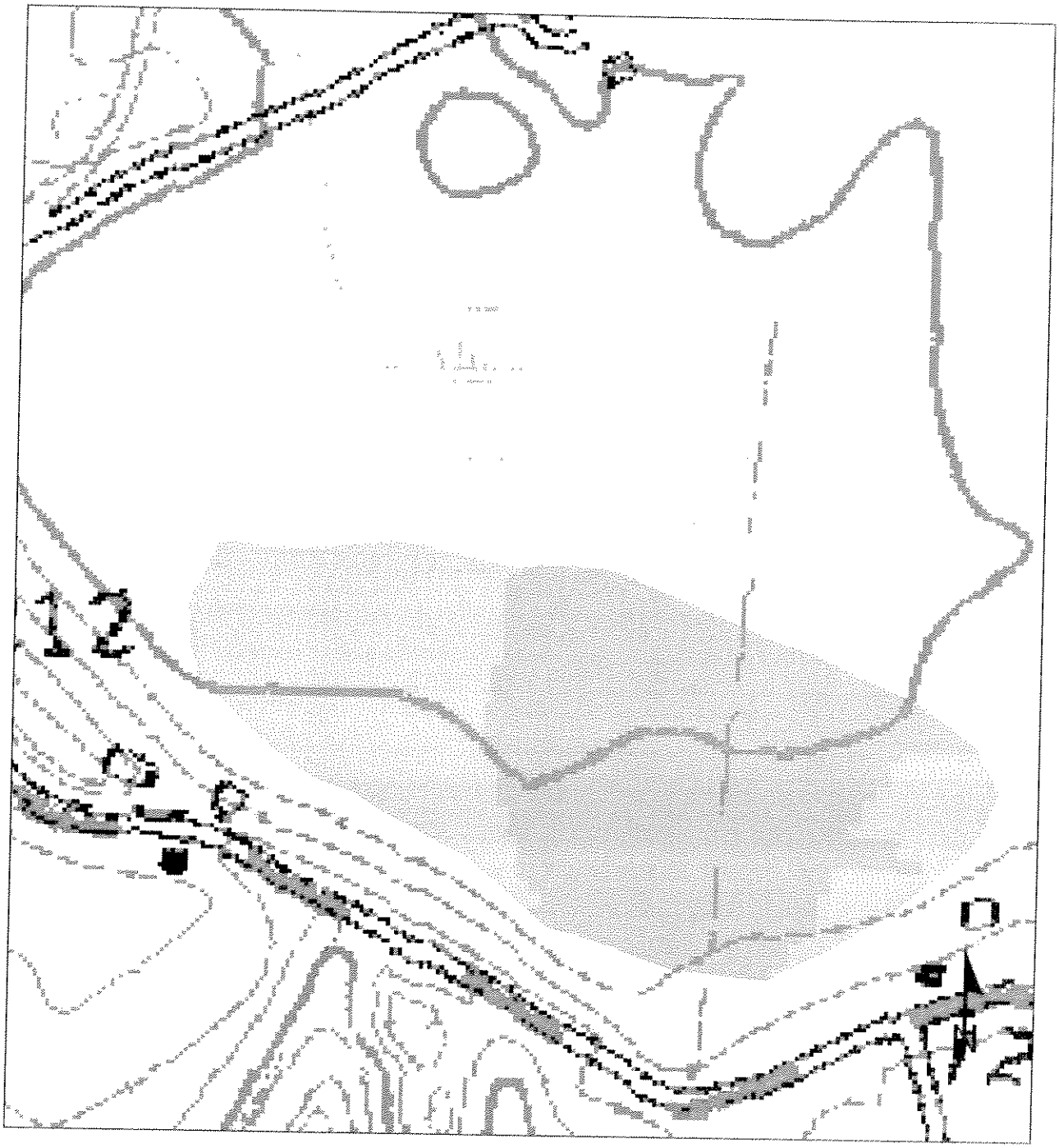
Emilee C. Boyer

Emilee C. Boyer, Environmental Review Specialist FOR Chris Firestone, Plant Program Mgr
DCNR/BOF/PNDI, PO Box 8552, Harrisburg, PA 17105 ~ Ph: 717-787-7067 ~ F: 717-772-0271 ~ c-eboyer@state.pa.us

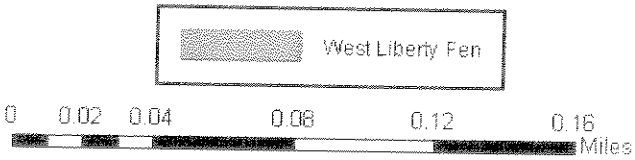
Enclosures

Cc: Chris Yeakle, DEP Knox Office
Ian Harrell, Butler county Conservation District
Gary Fleeger, DCNR/PA Geologic Survey
Dr. James Bissell, Cleveland Museum of Natural History


SCIRPUS ACUTUS
Latitude: 41-00-28.13
Longitude: -80-04-47.33
WETLAND #1
±66 ACRES
CLADIUM MARISCOIDES
Latitude: 41-00-18.14
Longitude: -80-04-36.22
WETLAND #3
0.19 ACRES
WETLAND #4
0.31 ACRES
WETLAND #2
2.3 ACRES
GRAPHIC SCALE
(IN FEET)
1 inch = 300 ft
RODGERS PLANT
SURFACE MINE PERMIT BOUNDARY
NPDES APPLICATION AREA
GLACIAL SAND
& GRAVEL CO.
P.O. BOX 1022
KITTANNING, PA 16201
DRAWN BY: KAS
PROJECT NO.: 0270-OP-189-01
SHEET NO.: 1 of 1



Critical habitat for Schoenoplectus acutus and Cladium mariscoides
Glacial Sand and Gravel - Mine 47 and Rodgers Plant
PNDI #s 20071211120195, 20071024114200, 20061010059358
Worth Twp., Butler County, PA



23 October 2008

Chris Yeakle
Mining Permit & Compliance Specialist
PA Department of Environmental Protection
Knox District Mining Office
P.O. Box 669
Knox, PA 16232

Dear Chris,

Thank you for inviting me to join you and DEP biologist Gordon Buckley on June 3 and September 3 for a survey of the wetlands along the north slope of the West Liberty Esker in Butler County. It was a pleasure having Botanist Steve Grund and Ecology Peter Woods on the second day of the survey. All the historical Endangered and Threatened plants reported for the wetlands are species that occur in Sedge-Alder Fens or open emergent marshes associated with Sedge-Alder Fens. Only one State Threatened fen species, winged sedge (*Carex alata*), was found within the spring seeps on the north side of the esker during our two-day survey. However, several fen indicator species were encountered during the two-day survey, including winged sedge, interior sedge (*Carex interior*), swamp thistle (*Cirsium muticum*), poison sumac (*Toxicodendron vernix*), speckled alder (*Alnus incana*) and ninebark (*Physocarpus opulifolius*). The interior sedge and swamp thistle are exceptionally restricted to the glacial fen community. Poison sumac, speckled alder and ninebark are usually common within glacial fens but also occur in several other types of wetlands within Pennsylvania. Another rare plant, typical of Oak Barrens and new to Butler County, southern wood rush (*Luzula bulbosa*), was locally common in the dry meadow where we parked to the west of the high quality wetlands where we collected the sample of Canadian burnett. Based upon the winged sedge and the fen indicator species within the springs, the wetlands along the north slope of the esker are Exceptional Value Wetlands in Pennsylvania.

The current ranking of southern wood rush is S1/TU. The S1 status suggests there are few enough records to rank the species as Endangered in Pennsylvania. I checked the number of records known for this species in Pennsylvania. There are only seven previous records for southern wood rush in Pennsylvania, two of which are extirpated and the other five are historical records. Until collected by you, Gordon and myself on June 3, the plant had not been observed in PA since 1971. The Plant Technical Committee of the PA Biological Survey has approved ranking the plants as the Endangered level, but the status will not be official until the State Regulatory Statutes are changed.

The rare plants of Alder-Sedge Fens are generally restricted to the sedge meadow openings. Sedge meadow openings become invaded by shrubs and trees over time. Most of the rare species historically recorded for the fen only grow within open fens or open emergent marshes. As the fen meadow openings are shaded out, the rare fen species are not able to persist but remain at the site, dormant within the seed bank under the shade of trees and shrubs until a natural disturbance, such as massive blow-down of trees or beaver flooding, and the consequent killing of the trees renews the opening. There is a good probability all the rare species that documented this site historically will be restored to the site in response to a future disturbance and restoration of the fen. Some of the finest fens recently discovered within Pennsylvania are fen springs recently released by a breach of a beaver dam that flooded a seepage system formerly covered by trees and shrubs.

Enclosed is a map showing the site where the state threatened winged sedge was collected. The map also shows the collection site for the southern wood rush, the wetland that supports the Canadian burnett and one of two spring seeps where fen indicator species were observed. A list of plants observed within the wetlands near the esker is also enclosed. The GPS coordinates for the winged sedge are: 80.080332 and 41.006173.

The Museum is always willing to conduct inventories for the Knox District Mining Office.

Sincerely,

Dr. James K. Bissell
Curator of Botany
Director of Conservation

Enclosures

Plants of West Liberty Esker Wetlands

Acer rubrum (red maple),
Agrimonia gryposepala (agrimony),
Agrimonia parviflora (southern agrimony),
Alnus incana ssp. rugosa (speckled alder),
Amphicarpaea bracteata (hog-peanut),
Angelica sp. (angelica),
Apios americana (ground-nut),
Arctium sp. (burdock),
Bidens frondosa (beggar-ticks),
Carex alata (broad-winged sedge),
Carex atlantica ssp. capillacea (bog sedge),
Carex cristatella (sedge),
Carex interior (sedge),
Carex lurida (sedge),
Carex projecta (sedge),
Carex scoparia (sedge),
Chelone glabra (turtlehead),
Cinna arundinacea (stout woodreed),
Circaea sp. (enchanter's nightshade)
Cirsium muticum (swamp thistle),
Clematis virginiana (virgin's-bower),
Cornus amomum (silky dogwood),
Crataegus sp. (hawthorn),
Dichanthelium clandestinum (deer-tongue grass),
Dryopteris carthusiana (spinulose wood fern),
Dryopteris cristata (crested wood fern),
Echinochloa sp. (barnyard grass),
Epilobium coloratum (purple-leaved willow-herb),
Eupatoriadelphus maculatus var. maculatus (spotted Joe-Pye-weed),
Eupatorium perfoliatum (boneset),
Geum canadense (white avens),
Glechoma hederacea (gill-over-the-ground),
Glyceria canadensis (rattlesnake mannagrass),
Glyceria striata (fowl mannagrass),
Hackelia virginiana (beggar's-lice),
Hydrocotyle americana (marsh pennywort),
Impatiens capensis (jewelweed),
Leersia oryzoides (rice cutgrass),
Lemna minor (duckweed),
Lobelia siphilitica (great blue lobelia),
Lonicera morrowii (Morrow's honeysuckle),
Lycopus uniflorus (bugleweed),
Muhlenbergia sp. (muhly),
Nuphar sp. (spatterdock),
Onoclea sensibilis (sensitive fern),
Osmunda cinnamomea (cinnamon fern),
Osmunda regalis (royal fern),
Parthenocissus quinquefolia (Virginia-creeper),
Phalaris arundinacea (reed canary-grass),
Physocarpus opulifolius (ninebark),
Phytolacca americana (pokeweed),
Pilea pumila (clearweed),

Plants of West Liberty Esker Wetlands

Polygonum arifolium (halberd-leaved tear-thumb),
Polygonum punctatum (water-pepper),
Polygonum sagittatum (tearthumb),
Populus tremuloides (quaking aspen),
Prunella vulgaris (heal-all),
Ranunculus hispidus (buttercup),
Rosa multiflora (multiflora rose),
Rosa palustris (swamp rose),
Rubus idaeus (red raspberry),
Rubus pubescens (dwarf raspberry),
Salix sericea (silky willow),
Sambucus nigra ssp. canadensis (elderberry),
Schoenoplectus tabernaemontani (soft-stem bulrush),
Scirpus cf hattorianus (bulrush),
Solanum carolinense (horse-nettle),
Solidago altissima (late goldenrod),
Solidago canadensis (Canada goldenrod),
Solidago gigantea (late goldenrod),
Solidago patula (rough-leaved goldenrod),
Solidago rugosa (wrinkle-leaf goldenrod),
Spiraea alba (meadow-sweet),
Symphyotrichum lateriflorum (calico aster),
Symphyotrichum puniceum (purple-stemmed aster),
Symplocarpus foetidus (skunk-cabbage),
Thalictrum pubescens (tall meadow-rue),
Thelypteris palustris (marsh fern),
Toxicodendron radicans (poison-ivy),
Toxicodendron vernix (poison sumac),
Tussilago farfara (coltsfoot),
Urtica dioica (stinging nettle),
Verbena hastata (blue vervain),
Vernonia sp. (ironweed),
Viburnum lentago (nannyberry)
Viburnum recognitum (arrow-wood),
Viburnum sp. (viburnum),

Cleveland Museum of NATURAL HISTORY

Tamarack Lake
Slippery Rock Quad, Butler County, PA

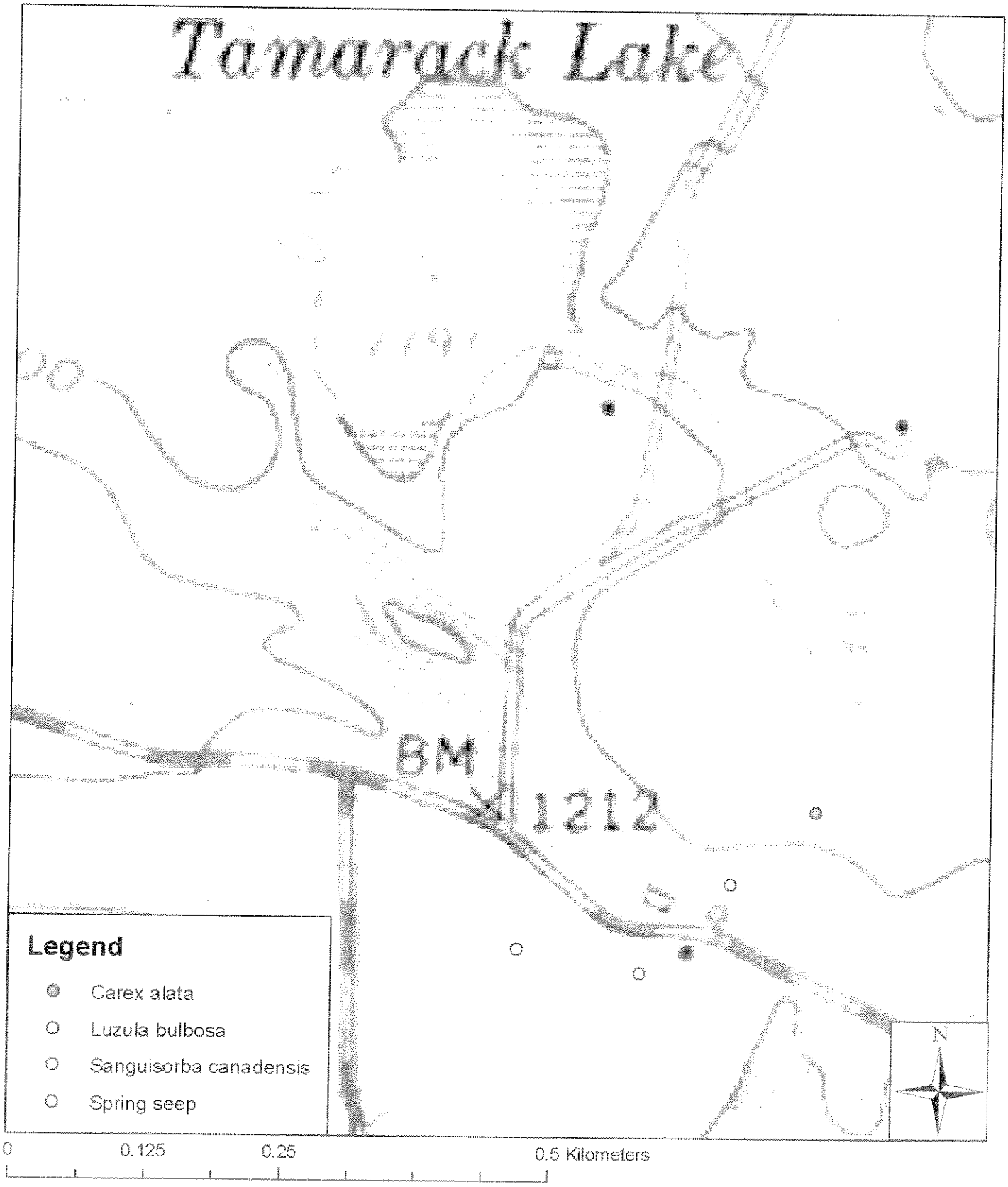


Exhibit 2

February 25, 2009 submission from EADS Group

THE EADS GROUP

ENGINEERING ARCHITECTURE and DESIGN SERVICES

February 25, 2009

Emilee C. Boyer
Ecological Species Section
Pa DCNR
Bureau of Forestry
PO Box 8552
Harrisburg, Pa 15105-8552

RE: Glacial Sand and Gravel, Co.
Mine 47
Worth Township
Butler County
Project ID 20071211120195
Previously Submitted 20061010059358 and 20071211120199

Dear Ms. Boyer,

Surface Mine Permit

In response to our phone conversation today, February 24, 2009, we are attaching a copy of the Exhibit 18, Landuse and Reclamation Map as well as the Exhibit 9, Operations Map which were submitted to the Knox District Mining Office as part of the Surface Mine Permit Application. The Exhibit 9, Operations Map, delineates the areas of disturbance during the actual mining processes. The Exhibit 18 depicts the final landuses and contours at the site. As part of the final reclamation at the site will be a permanent "lake" created during the removal of the sand and gravel reserves. It should be noted that there will be no "pumping" of the local ground water once it is encountered. Therefore the local water-table will NOT be lowered during or after the mining process. (We have numerous studies showing that this method of mining does not impact adjacent wetlands. This information is also on file with the Knox District Office).

NPDES Permit

FEB 25 2009

As we discussed, the NPDES permit is a "stand alone" permit. The NPDES permit is required to complete the grading necessary to move the processing plant from it's current location to the areas as shown on the NPDES application. The plant will process the raw sand and gravel from the adjacent Surface Mine Permit (Mine 31) as well as several other operations in close

☐ 1126 Eighth Avenue
Altoona, PA 16602
(814) 944-5035
(814) 944-4862 Fax

■ 15392 Route 322, PO Box 684
Clarion, PA 16214
(814) 764-5050
(814) 764-5055 Fax

☐ 450 Aberdeen Drive
Somerset, PA 15501
(814) 445-6551
(814) 443-2748 Fax

☐ 11045 Parker Drive
North Huntingdon, PA 15642
(412) 754-0801
(412) 754-0860 Fax

proximity which have been or are in the process of being issued. As part of the plant operations, a deep "production well" was drilled into the Homewood Sandstone, the regional water bearing zone. As I explained a 72 hour pump test was conducted on the well in the Spring of 2007. Numerous "observation" wells were monitored to determine if the pumping of this well would have any effects on the local/regional system. Our study determined that under this extreme stress pumping there were no effects on either system. The Knox District Office concurred with our conclusions during their initial review.

The Exhibit 9 Map shows both the NPDES Sediment/Polishing Pond location as well as an "alternative" location which is part of the Surface Mine Permit Application. The alternative location shown on the surface mine permit requires further review due to encroachment in a non-jurisdictional wetland and therefore cannot be considered for construction at this time. Therefore the operator is prepared to move forward with the pond location as shown on the NPDES permit. The process ponds for the Surface Mine Permit Application are also shown on the Exhibit's 9 and 18 which also encroach into wetlands and is under review by the department.

It is my understanding that you have enough information for the NPDES permit to finalize your comments for this aspect of the project and you will be issuing your finding in the next couple of days.

Hopefully this information will permit you to finalize your response(s) to both Glacial Sand and Gravel and DEP in reference to the Surface Mine Permit Application. As mentioned before, our position is that DEP has the jurisdiction over these permits and your office functions as an advisory role in the permitting processes.

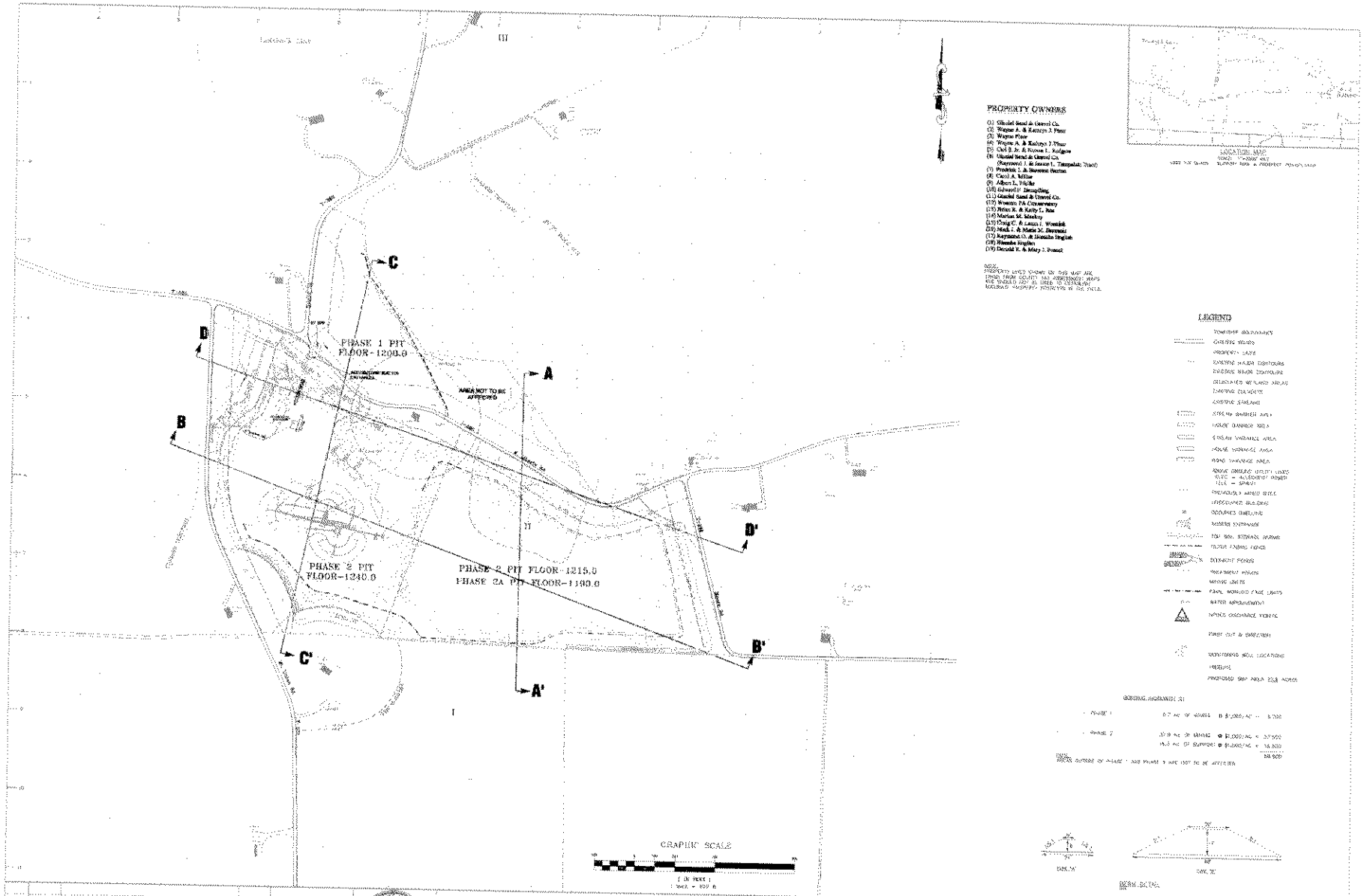
I look forward to hearing from you soon.

The EADS Group-Clarion,

Michal L. Jones-Stewart

By, Michal L. Jones-Stewart, P.G.

CC: Darrel K. Lewis, Glacial Sand and Gravel, Inc.
Sue Germanio, PCA
Christopher Yeakle, Bureau of Mining and Reclamation, Knox District Office
Ian Harrel, Butler County CCD



THE EADS GROUP

GLACIAL SAND & GRAVEL CO.

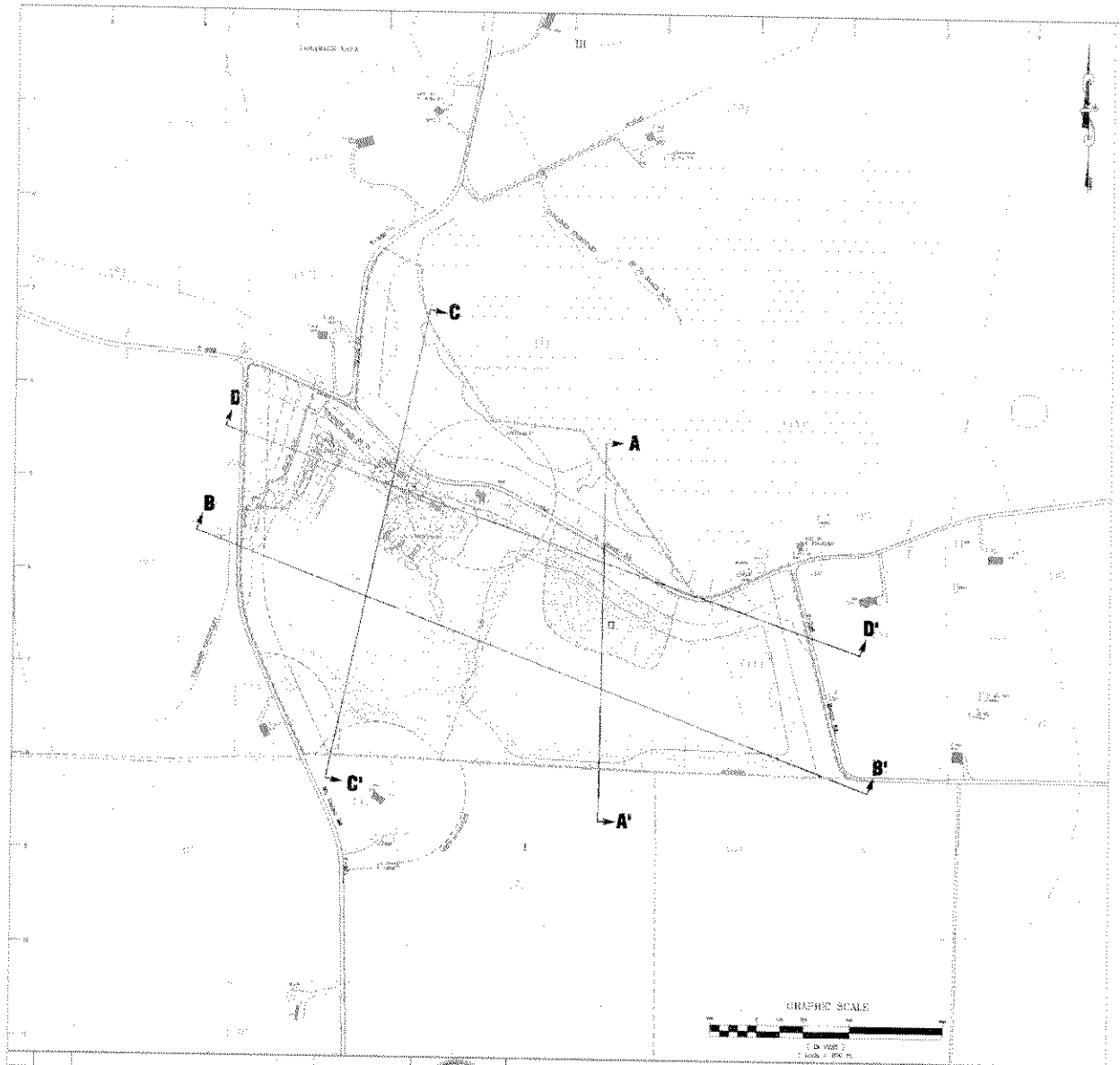
MINE 47

EXHIBIT 9

OPERATIONS MAP

BUTLER COUNTY

5 of 9



PROPERTY OWNERS

(1) Glacial Sand & Gravel Co.
(2) Wayne A. & Kathryn J. Ploar
(3) Wayne Ploar
(4) Wayne A. & Kathryn J. Ploar
(5) Carl S. Jr. & Bessie L. Rodgers
(6) Glacial Sand & Gravel Co.
(Raymond J. & Irene L. Zanzarella Trust)
(7) Frederick J. & Suzanne Bennett
(8) Janet A. Miller
(9) Albert L. Pfeifer
(10) Edward F. Stringfellow
(11) Glacial Sand & Gravel Co.
(12) Warren PA Conservancy
(13) Brian B. & Kathy L. Kan
(14) Marvin M. Mackey
(15) Craig C. & Laura T. Wozniak
(16) Mark J. & Marie M. Wozniak
(17) Raymond C. & Blanche English
(18) Blanche English
(19) Donald R. & Mary J. Pruett

NOTE:
PROPERTY LINES SHOWN IN THE MINE AREA BASED UPON COUNTY TAX ASSESSMENT MAPS AND SURVEY MAP BY JOHN & DAVID W. ZANDER ASSOCIATES, DATED 5 FEB 1993.

PRE MINING LANDUSES

UNDISTURBED
MINERAL
POST STRIPPING POST MINING
PARTIALLY/REGULARLY DISTURBED/ALL OUT FOR USE
STRIPPING PATTERN, IMMEDIATE
STRIPPING AREAS

NOTE: BARRIER AREAS ARE NOT SHOWN IN STRIPPING LANDUSE DESIGNATION

POST MINING LANDUSES

STRIPPING PATTERN, IMMEDIATE - NET MINING PIT (10 & PIT 10)

STRIPPING AREA UNDISTURBED

LEGEND

EXISTING POND
PROPOSED POND
EXISTING WATER STORAGE
EXISTING WATER DISTRIBUTION
DESIGNATED BUFFER AREAS
EXISTING DRAINAGE
EXISTING STREAM
WETLAND
STREAM BARRIER AREA
POND BARRIER AREA
STREAM DRAINAGE AREA
POND DRAINAGE AREA
ROAD DRAINAGE AREA
ABOVE GROUND UTILITY LINES (LEG - A ELECTRICITY POWER LEG - V TELEPHONE)
PROPOSED POND SITES
UNOCCUPIED BUILDING
OCCUPIED DWELLING
NOT TO SCALE DESIGNATION
STREAM FLOWS
DRAINAGE AREA AREA 22.6 ACRES

LOCATION MAP
SCALE: 1" = 2000' (±)
NOT TO SCALE
SOURCE: USGS & MONROE, PENNSYLVANIA

GRAPHIC SCALE
1 IN. = 100' (±)
SCALE: 1" = 100' (±)

2	06/30/98	REVISED TO REF BLAKE LETTER	
1	06/29/98	REVISED TO REF BLAKE LETTER	
REV.	DATE	DESCRIPTION	

THE EADS GROUP
ENGINEERING CONSULTANTS
CLARKS SUMMIT
CLARKS GREEN
CARBONDALE

GLACIAL SAND & GRAVEL CO.

MINE 47

NORTH HOMEBRIDGE TOWNSHIP — WAYNE COUNTY

EXHIBIT 18
LAND USE AND
RECLAMATION MAP

DRAWN BY: [illegible]
FIELD NO.: [illegible]
DATE: [illegible]
DRAWING NO.: [illegible]
SCALE: [illegible]
DATE: [illegible]
DRAWING NAME: [illegible]
JOB NO.: 49
6 of 6

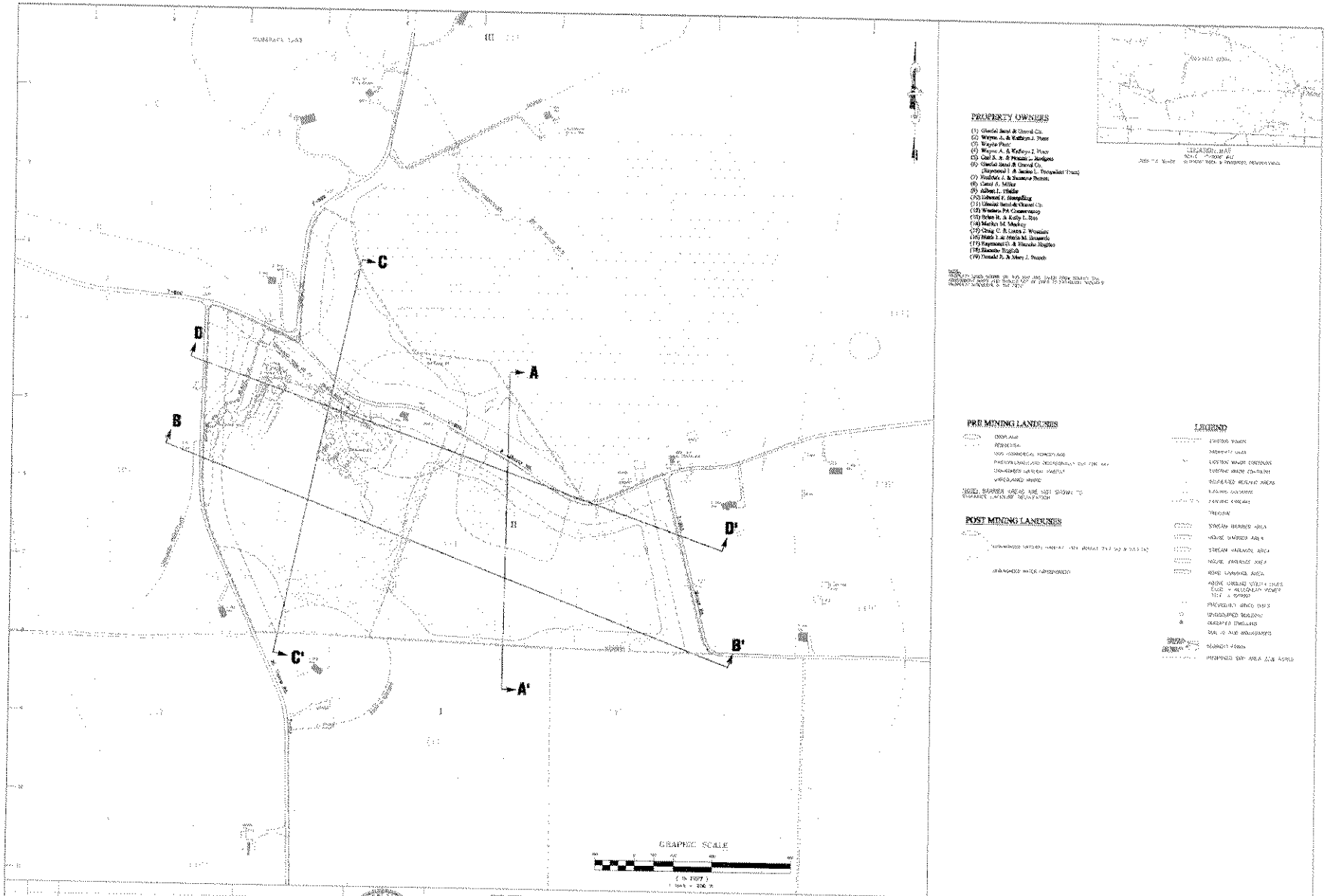

A
A'
B
B'
C
C'
D
D'
PROPERTY OWNERS
(1) Glacial Sand & Gravel Co.
(2) Wayne A. & Kathryn J. Ruse
(3) Wayne Platt
(4) Wayne A. & Kathryn J. Ruse
(5) Carl A. & B Frances J. Hodges
(6) Glacial Sand & Gravel Co.
(Raymond J. & Jacqu L. Dougalski Trust)
(7) Frederic J. & Suzanne Probst
(8) Carol A. Miller
(9) Albert L. Hafer
(10) Edward F. Hoagsling
(11) Glacial Sand & Gravel Co.
(12) Western PA Conservancy
(13) Brian R. & Kelly L. Ray
(14) Marilyn M. Morley
(15) Craig C. & Laura J. Wessner
(16) Mark J. & Maria M. Bennett
(17) Raymond G. & Blanche Hughes
(18) Blanche Hughes
(19) Donald R. & Mary J. Swank
LOCATION MAP
PRE MINING LANDUSES
POST MINING LANDUSES
LEGEND
GRAPHIC SCALE
THE EADS GROUP
GLACIAL SAND & GRAVEL CO.
MINE 47
EXHIBIT 18
LAND USE AND
RECLAMATION MAP
5 of 9

Exhibit 3

Alternatives Analysis
Army Corps Application No. 2008-280 – Communications

ALTERNATIVES

Permanent Impacts to Wetlands No. 2, 3 and 4

The No Mining Alternative is a feasible alternative but was considered not prudent due to the fact that Glacial Sand & Gravel currently owns the permit area and this alternative would not permit them to regain their investment and continue to provide aggregate products to a highly demanding market. Mining with Wetland Avoidance is not considered feasible or prudent due to the required area for constructing a processing plant, the required area to construct sufficient wash water storage ponds to supply the processing plant and the inability to fit these required areas within an area that does not hinder the extraction of aggregate material and at the same time prevent wetland impacts. The location of the processing plant and storage ponds are located in an area that contains lower volumes of aggregate material in comparison to the rest of the permit area. The location of the storage ponds is such that permits the collection of as much surface water runoff as possible. Likewise, this area is selected for the construction of the processing plant and wash water ponds because it will not interfere with the extraction of aggregate material that economically supports the mobilization of mining equipment and the actual mining activity.

Re-locating the processing plant and wash water ponds in order to avoid impacting the wetland was evaluated and considered not feasible or prudent based on the following reasons: 1) Re-location of the wash water storage ponds would require shifting the location of the processing plant in order to fit both operations within this area of the permit. This results in an economical loss of aggregate material that could be mined during the proposed mining phases and 2) Construction of the processing plant and wash water ponds in order to not interfere with the extraction of marketable aggregate would need to be done within the upslope areas of the wetlands. Field observations of the hydrological regime that supports this wetland community indicates this wetland is supported predominantly by a perched water table that outcrops in several places along the upper boundary line of the wetland community.

This consensus is supported by the observation of the drying up of these springs and lack of visible water within the wetland community during the spring and summer of 2007. Test hole and monitoring well information upslope of the wetland community reveals there are varying clay and silty clay layers immediately below the surface and ground water elevations were recorded to be at elevations from 1216 to 1218. The surface elevation within the wetland community ranges from 1218 to 1222. These impervious layers are believed to exist below the wetland community and as a result form a bowl whereby ground water and surface water remains perched. Plant and wash water storage pond construction within the upslope area of the wetland community will negatively impact the wetland community due to: 1) diverting all surface water runoff around the processing plant to the wash water storage ponds, likewise around the wetland community as well and 2) Excavation into the hillside to construct the subgrade for the processing plant and wash water storage ponds will break these clay barriers and intercept the shallow ground water table lying below. This would have a negative impact on the wetland community downgrade by intercepting and redirecting the predominant hydrology that supports this wetland.

Wetland avoidance was also evaluated with a sub-alternative that eliminated the collection of surface water runoff and the construction of wash water storage ponds. This alternative depends solely on well water to provide the required wash water. This alternative would still have an indirect impact on the wetland community as well as a direct impact to surface water quality. The function of and need for wash water ponds is to: 1) recycle and store sufficient wash water from the processing plant that will conserve the use of and reduce the need for replacement water; 2) reduce the demand on groundwater resources from pumping water from wells to the processing plant and; 3) prevent sediment laden water from being discharged into adjoining tributaries. Construction of the processing plant will still result in the breaking up of the clay barrier that lies immediately underneath and the interruption of the shallow ground water table. This affect will again negatively impact the wetland community located downgrade. Providing the required water to operate the processing plant by using wells without recycling any wash water would likely result in a significant draw down of the ground water table. This again would negatively impact the wetland community. Sediment laden waters which would still require a detention basin to remove the sediment before discharging would potentially impact adjacent tributaries.

The Mining with Wetland Impacts alternative was considered feasible and prudent and reducing impacts to the wetland community is not feasible due to spatial constraints, already proposing the minimum wash water storage pond volume needed to support the processing plant and the unavoidable impact to the perched water table within the upstream area by plant construction. This alternative remains to be the alternative that achieves the goals and objectives of Glacial Sand & Gravel with the least environmental impact as a whole based on the following reasons: 1) It permits Glacial Sand & Gravel to streamline the mining process and extract the full intent of marketable aggregate within the permit area; 2) It provides the minimum required amount of wash water storage and recycling to support the processing plant therefore, reducing the draw on groundwater resources within and surrounding the permit area; 3) It provides a means to handle stormwater from the plant area and at the same time promotes water conservation as part of the plant operation; and 4) It provides detention time to settle out sediment and significantly reduces the need to discharge sediment laden waters to nearby tributaries.

Temporary Impacts to Wetland No. 4

The No Build Alternative is a feasible alternative but was considered not prudent. Due to the length of time that the plant will be operating and the number of full time employee's onsite, a sanitary onsite septic system was warranted; not to mention required by the PA DEP.

The sewer line alignment avoiding impacts to Wetland No. 4 was not a feasible alternative due to weighing design standards, slope requirements and site development barriers. The stream crossing site was selected based on the shallower water depth, drainage area, required slope standards for sanitary pipelines and the ability to achieve a minimum of 3 feet of cover over the stream crossing. Design parameters for gravity flow sanitary pipelines require a minimum of a 1 percent slope and the sanitary pipeline between the septic and dosing tanks must be at a minimum of a 2 percent slope. The need to maintain a minimum 2 percent slope between the septic and dosing tanks required both tanks to be located on the west side of the stream; since the natural grade on the east side of the stream was too flat. Other stream crossing locations that

would not impact Wetland No. 4 would not maintain the required slopes for gravity flow sanitary lines.

The sewer line alignment with minimal impact alternative was considered feasible and prudent based on meeting the required minimum of 3 feet of covering at the wetland and stream crossing, required slopes for sanitary line construction, the depth of water in the stream and the location of the sediment pond. The first alternative was located approximately 25 linear feet to the north of the current proposed crossing. Upon additional wetlands investigation this alternative resulted in 0.03 acres of temporary wetland impact as well as a stream crossing. The location was shifted south reducing temporary wetland impacts by crossing at a more narrow point within the wetland community resulting in 0.01 acres of temporary impact. This alternative achieves the goals and objectives of Glacial Sand & Gravel and the PA DEP with minimal environmental impacts to this wetland community that are temporary and can be mitigated through restoration methods.

Exhibit 4

Slippery Rock University Geologists comments
on Army Corps Application No. 2008-280

Mr. Tyler Bintrim
US Army Corps of Engineers, Pittsburgh District
1000 Liberty Avenue
Pittsburgh, PA 15222-4186

29 August 2009

Dear Mr. Bintrim,

RE: CELRP-OP-F #2008-280

We strongly urge you to deny permit application CELRP-OP-F #2008-280, application for an aggregate washing plant, mining of an esker, and mitigation of loss of both stream and wetland functions. We ask that you closely examine our assertions that the proposed activity impacts reasonable and prudent interpretations of the geologic and hydrologic values of the areas. We assert that the proposed activities should be unfavorably reviewed under oversight of (1) the Clean Water Act, Section 404, Part III, Section 47 – factors influencing wetness of an area, (2) 33 CFR Ch II (7-1-02 Edition), many subsections under 320.4, to be subsequently addressed, and (3) the Constitution of the Commonwealth of Pennsylvania. We are pleased to offer our objection under the auspices of 33 CFR Ch II (7-1-02 Edition), 320.4 (a) Public Interest Review, noting that our personal and professional familiarity with the setting involves over 100 years of accumulated experience in studying the Wisconsinan terminal moraine complex of northern Butler County, PA, its unique and uncertain natural history, and its vital ecological functions. We rely upon data contained in Module 14 of Glacial Sand and Gravel permit application for Mine 47, personal and professional knowledge, as well as usual and customary interpretations soundly lying within the bounds of our professional expertise.

Our first concern arises under the auspices of the Clean Water Act, Section 404, Part III – Watershed Characteristics, subsection 47 – Influencing Factors. Subsection 47 states that stratigraphy, topography, and soil permeability influence the wetness of an area. The permit proposes to locate mitigation wetlands north of West Liberty Road, east of Swope Road. In order that this footprint be so utilized, the portion of the Jacksville Esker (aka West Liberty or Miller Esker) so located must be mined and removed. The sand and gravel deposits contained in the esker are many tens of feet thick, according to geologic cross-sections drawn by the Eads Group (Cross-section C-C', for example), consultant to the applicants. An aggregate inventory measured and calculated by these parties describes the volume of sand and gravel to be removed from this segment of the esker at 273,267 cubic yards. A reasonable hydrogeologic interpretation of this setting would include 20% porosity that would be 80-90% saturated during wet periods. Thus, the ridge of the esker would reasonably contain 1.2 million cubic feet of water, or 8.8 million gallons, during wet periods. The esker is highly permeable, captures precipitation through rapid infiltration, stores this water as soil water and ground water, then subsequently provides baseflow seepage to maintain the wetness of the abutting wetland (Wetland One in application materials), which has been reported to possess habitat supportive of threatened and endangered species. Mining of this sand and gravel will completely remove the coarse stratigraphic units providing recharge to the wetland, and will significantly and permanently reconfigure the topography of the setting. Further downstream, Wetland One provides discharge and wetness to Tamarack Lake and its surrounding palustrian plains lying directly to the west. This hydrogeologic impact to the Wetland One is unacceptable.

Pursuant to 33 CFR Ch. II (7-1-02 Edition), 320.4, we raise the following objections. Given the impacts upon the seepage pathways and storage reservoirs providing wetness to Wetland One described above, we assert that permit activities will unacceptably impact its important wetland functionalities to public interest. We expect these impacts to include degraded natural biological functions (320.4 (b.2.i)), diminished potential for study (320.4 (b.2.ii)), and alteration that would detrimentally affect natural drainage characteristics (320.4 (b.2.iii)). We also recognize that the entire Wisconsinan terminal moraine complex, and abutting glaciofluvial deposits, comprise a corridor bounded generally by Moraine State Park to the south, the Borough of Slippery Rock to the north, Interstate 79 to the west, and State Route 8 to the east. Numerous and extensive tracts within these bounds are either under lease for mining or desirable targets for leasing by the aggregates industry. Past and current mining trends, including Mine

47, demonstrate that this largely rural, forested, and farming region will fall under immense pressure and landscape alteration from the aggregates industry in the next 50 years. Subsection 320.4 (3) requires that, although a particular alteration of a wetland may constitute a minor change, the cumulative effect of numerous piecemeal changes can result in a major impairment of wetland resources. We implore you to consider this context. Subsection 320.4 (4) requires that benefits of a proposed alteration must outweigh damage and we maintain that such is not the case. Mining of this section of the esker yields an inconsequential production of aggregates in comparison to the tonnage that the plant will eventually process, yet at great geologic and hydrologic impact. Subsection 320.4 (5d) addresses impacts upon the quality of waters and the CWA responsibility to control non-point sources of pollution. Module 14: Streams/Wetlands – Unnamed Tributary #1 to Black Run, concluding note, page 14-5, closing sentence states: "Water quality is characteristic of wetland drainage". Wetland drainage typically involves high quality flows, diminished stormwater flux, enhanced baseflows during dry periods, negligible suspended sediment, and low nutrient fluxes. Removal of the esker and its granular filtration provided by seepage through it, as well as its storage of waters for augmentation of low flows, in conjunction with installation of washing plant settling basins, will certainly impact the water quality currently characterizing this wetland complex.

Our final concern arises both from 33 CFR Ch. II (7-1-02 Edition), 320.4 and from the Constitution of the Commonwealth of Pennsylvania, which lies in accord with the Constitution of the United States, which the United States Army swears to defend within its Commission. Firstly, subsection 320.4 (5e) - Full evaluation of the general public interest, requires that due consideration be given to the effect that the proposed activities have on values, such as historic, scenic, and recreational values. The PA Constitution states in part: "The people have a right to clean air, pure water, the preservation of natural, scenic, historic and aesthetic values of the environment. Pennsylvania's public natural resources are the common property of all people, including generations yet to come. As trustees of these resources, the Commonwealth shall conserve and maintain them for the benefit of all people." Please recognize that the Jacksville esker is widely recognized and long examined as the best preserved esker in the state. In fact, the Field Conference of Pennsylvania Geologists will visit the feature during a forum this October. While the glaciologic feature is lengthy and partly preserved by the Western Pennsylvania Conservancy, the portion of the esker slated for mining under this permit lies in arguably the most understudied and most provocative portion – the ice marginal area where the esker meets the pro-glacial lake bed containing the massive delta, which itself is currently being mined. Insufficient scientific investigation has been completed to fully understand the dynamics of the esker, perhaps soon to be sold to market. Great loss of potential value to recreation, to interpretation of our natural history, and to the immense enjoyment arising from understanding the genesis of the Pennsylvania landscape are all threatened by permit application #2008-280.

In conclusion, 33 CFR Ch. II (7-1-02 Edition), 320.4 (3) (p.394) asserts that the district engineer should avoid authorizing floodplain developments whenever practical alternatives exist outside the floodplain. We assert that practical alternatives exist and implore you to direct the applicants to pursue them. We hold no hostile feelings toward Glacial Sand and Gravel, Snyder and Associates, their agents, or any of their principles or associates. On the contrary, we enjoy their collegial accommodations to access their mines and quarries, and have done so for decades. We appreciate their generous support, financial and otherwise, extended to our disciplines and academic institutions. We have personally met with the applicants to encourage their corporate stewardship of this portion of the esker, including parking, signage, interpretive displays, and boardwalk access to Wetland One. We do not seek to end their mining activities. We understand that they hold lands and leases duly granting them business rights. We appreciate the societal imperative to access raw materials in order to support commerce. We simply believe that far less impactful alternatives exist to mining this outstanding esker at its most intriguing segment, and we encourage them to pursue plant design options that portend far lessened impact upon Wetland One. Please deny permit application #2008-280. If doubt exists, please honor the public interest and call a public meeting to encourage open discussion and stakeholder input.

Believing you will find our words true, we remain.

Respectfully yours,

Patrick A. Burkhart, PhD
Associate Professor of Geology
Slippery Rock University

Robert W. Hinds, PhD
Emeritus Professor of Geology
Slippery Rock University

Charles H. Shultz, PhD
Emeritus Professor of Geology
Slippery Rock University

Gene Wilhelm, PhD
Emeritus Professor of Geography
Slippery Rock University

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pennsylvania Field Office
315 South Allen Street, Suite 322
State College, Pennsylvania 16801-4850

September 4, 2009

Colonel Michael P. Crall, District Engineer
(ATTN: Tyler Bintrim)
U.S. Army Corps of Engineers
Pittsburgh District
William S. Moorhead Federal Building
1000 Liberty Avenue
Pittsburgh, PA 15222-4186

Dear Colonel Crall:

The Fish and Wildlife Service has reviewed Public Notice Number 09-38 (Application No. 2008-280), dated August 12, 2009. Glacial Sand and Gravel Company proposes to construct a sand and gravel processing plant near West Liberty Borough, in Worth Township, Butler County, Pennsylvania. The project would result in permanent impacts to 1.89 acres of wetlands and about 240 feet of tributaries to Black Run (for processing plant and pond construction), and temporary impacts to 0.01 acre of wetlands and 10 feet of a tributary to Black Run (for sanitary sewer line installation). The applicant has proposed creating about 2.0 acres of wetlands as compensatory mitigation for both wetland and stream impacts.

These comments are prepared in accordance with the requirements of the Fish and Wildlife Coordination Act (16 U.S.C. 661-667e) and the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*). They are to be used in your public interest review as they relate to protection of fish and wildlife resources.

Federally Listed and Proposed Species

Except for occasional transient species, no federally listed or proposed threatened or endangered species under our jurisdiction are known to occur within the project impact area. Therefore, no Biological Assessment nor further consultation under the Endangered Species Act (Act) is required with the Fish and Wildlife Service. Should project plans change, or if additional information on listed or proposed species becomes available, this determination may be reconsidered. A compilation of certain federal status species in Pennsylvania is enclosed for your information.

Federal Candidate Species

This project is within the known range of the eastern massasauga rattlesnake (*Sistrurus catenatus*), a federal candidate species. The massasauga is also listed as endangered by the Commonwealth of Pennsylvania.

Candidate species are species for which the Service currently has substantial information on file to support the appropriateness of proposing to list as threatened or endangered. These species are known to be facing various threats, and have usually suffered substantial population declines and/or habitat loss. Although these species receive no regulatory protection under the federal Endangered Species Act, the Service strongly encourages federal agencies and other planners to consider them when planning and implementing their projects. Efforts to conserve these species now may preclude the need to list them as endangered or threatened under the Act in the future.

The eastern massasauga has declined considerably over the past 10 to 20 years due to habitat destruction, degradation and fragmentation. The wetland habitat it uses for overwintering is threatened by hydrological alteration (*e.g.*, draining, ditching, filling, impoundment, and dredging). Its upland summer habitat, which includes open fields of golden rod, is threatened by development and agricultural practices. Additional threats include vehicle-caused mortality (which increases as suitable habitat becomes fragmented by roads) and illegal collection for the pet trade.

The eastern massasauga inhabits damp lowlands, including river bottom woodlands, shrub-swamps, bogs and fens, marsh borders, sedge meadows, and moist prairie. These snakes usually overwinter singly in crayfish or mammal burrows in wetlands, often close to the groundwater level, and emerge in May as water levels rise. In early summer, they move into adjacent well-drained uplands to bask and forage in shrubby fields or grassy areas (*e.g.*, pastures, hay fields, remnant prairie habitats). This species usually occurs in small, discrete populations occupying suitable habitat dispersed along a watershed. Further information about the eastern massasauga is enclosed.

As a federal candidate, the eastern massasauga receives no federal regulatory protection. However, the eastern massasauga is listed as endangered by the Commonwealth of Pennsylvania, and this may have regulatory implications for the project. Because the Service must focus its limited resources on species that are already on the Federal list, we are deferring to the Pennsylvania Fish and Boat Commission for their review and comment on projects that may affect the eastern massasauga. Please contact the Pennsylvania Fish and Boat Commission at:

Pennsylvania Fish and Boat Commission
Division of Environmental Services
450 Robinson Lane
Bellefonte, PA 16823

Alternatives Analysis and Minimization

The proposed project is not water-dependent. Glacial Sand and Gravel should consider ways to reduce impacts to aquatic resources. Alternatives may include considering off-site alternative locations that do not involve wetlands; reducing the scope of the project; reconfiguring the site; or relocating potentially affected streams.

Compensatory Mitigation

The applicant has proposed construction of an on-site wetland as compensatory mitigation for both wetland and stream impacts, but has not provided design details. If impacts to the tributaries to Black Run cannot be avoided, we recommend that the applicant develop a separate in-kind mitigation plan to compensate for any stream and riparian habitat losses. We request the opportunity to review and comment on the wetland and stream mitigation plans.

Summary

The 404(b)(1) guidelines require that discharging fill into waters of the United States not be permitted if there are practicable alternatives that would result in less environmental damage. We believe that there are practicable alternatives to filling in 1.89 acres of wetlands and 240 feet of streams for industrial development. For the reasons detailed above, the project should not be authorized as proposed.

Thank you for the opportunity to comment on this project. Please contact [redacted] if you have any questions or require further assistance regarding this matter.

[redacted] Exemption 6 -privacy

4211

FAX : 412-644-~~4[illegible]~~

To: Tyler Bintrim (tel. 412-395-7115)
Regulatory Branch
U.S. Army Corps of Engineers, Pittsburgh District
1000 Liberty Ave.
Pittsburgh, PA. 15222-4186

Subject:: Glacial Sand and Gravel
CELRP-F2008-280

Date: 9-2-09

Dear Mr. Binttrim,

I'm sorry to respond so late on the Subject Issue ... I recently got out of the hospital and am recovering from a leg infection, but I did want to forward documentation I had previously prepared and submitted on the Subject Issue for your consideration.

Thank uou.

Sincerely,

[redacted]

Exemption 6 - privacy

January 30, 2008

Mr. Jaret Gibbons
Pennsylvania State Representative
10 th. Legislative District
309 5th. Street
Ellwood City, PA 16117

Subject: Proposed Mining Operations In Worth Township
Tamerack Lake Area

Dear Representative Gibbons,

Several months ago I read with concerned interest a feature artical in the Butler Eagle newspaper dated November 23, 2007 regarding proposed mining operations near Tamerack Lake in Worth Township, Butler County. The artical makes note of an apparently significant geological formation called the Jacksville Esker.

I don't know if this area is part of your legislative district but the situation is quite relative to the Slippery Rock area. There appears to be increased activity in strip mining and logging activities which if allowed to go unchecked will change negitively what has traditionally been a rural area of rolling pastoral countryside with woods, streams and ponds.

The problem is one of fairly large tracts of land which are not zoned allowing investors or companies to purchase these tracts of land and then do pretty much what they want of which strip mining activities are hardly visually and environmentally compatable with the surrounding existing farms and residential areas.

In vast wilderness areas away from populated areas, strip mining activities create less impact than when they are allowed to co-exist adjacent to an area like the town of Slippery Rock which has recently undergone a revitalization program and consists of environmental centers, a growing regional university, increased residental development and relative supportive commercial development.

One need not wonder what negitive impact surface strip mining with blasting noise, air polution, heavy truck traffic over winding and hilly country roads, disturbance to native wildlife, nearby property values, and the visual impact during and then after the operations are complete - what is left?

I certainly don't have the answers to the above, but I believe citizens and legislators need to address this "rural problem" before many more beautiful and ecologically significant areas like Tamerack Lake and the Jacksville Esker are challenged with this kind of threat.

For your information, the matter will be addressed at a public meeting to be held at Slippery Rock High School on February 19, 2008 and chaired by the DEP.

Sincerely,

[redacted]

Exemption 6 - privacy

January 21, 2008

DEP Knox District Office
P.O. Box 669
Knox, PA 16232

Subject: Proposed Mining Operations in Worth Township,
Butler County

Dear DEP Officials:

Several months ago I read with concerned interest an artical in the Butler Eagle newspaper dated November 23, 2007 regarding proposed mining operations near Tamerack Lake in Worth Township, Butler County.

The artical makes note of an apparently significant geological formation called the Jacksville Esker.

The positive recent revitalization of the town of Slippery Rock and its rapidly expanding surrounding area with residential, educational, and supporting commercial development may be in danger of losing what traditionally has been a rolling pastorial countryside with woods, streams, and ponds.

The increase activity in strip mining and logging activities which if allowed to go unchecked will change the character of the Slippery Rock area which has been so attractive to the present and to future development mentioned above. It becomes a serious compatability issue because of the large amount of the surrounding area which is owned by companies with mineral rights and if exercised will leave scars for present and future generations.

Certainly of primary concerns are:

1. Noise levels from blasting and heavy trucks moving through the area.
2. Will the local winding and hilly roads accomodate the heavy truck traffic?
3. Native wildlife that may be driven from their adopted habitate.
4. Will existing property values and desirability of future rural

development be affected?

5. Extent of dust polutants from the operation on human and animal life.
6. Visual impact of the mining operations on the rural and scenic countryside.
7. When the mining operations are complete, what will be the final visual restoration of the land?

I trust the DEP will honor its Mission Statement and conduct an Environmental Impact Study which I'm sure will result in findings that the proposed mining operations are incompatable visually and environmentally with both wildlife and residents (present and future) in the area.

Sincerely,

[redacted]

Exemption 6 - privacy

January 24, 2008

Mr. John Martin, Supervisor
Worth Township
811 W. Park Road
Slippery Rock, PA 16057

Subject: Proposed mining operations in Worth Township
Tamerack Lake Area

Dear Mr. Martin,

Several months ago I read with concerned interest an artical in the Butler Eagle newspaper dated November 23, 2007 regarding proposed mining operations near Tamerack Lake in your township.

The artical makes note of an apparently significant geological formation called the Jacksville Esker.

My concern is that the Slippery Rock area which traditionally is viewed as a rolling pastoral countryside with woods, streams, and ponds is in danger of losing its character to increased activity in stripmining and logging activities.

I'm not sure what the answer is since rural areas don't have zoning laws to protect from incompatable use of land with regard to established surrounding properties which would deal with such factors as visual compatability, wild life habitat, noise and air polution, land values, and the continued desirability of farm and residential use.

I am hopeful whatever authority mandated to you, that you will consider the above factors before issuing approvals for mining operations in the Tamerack Lake area.

Sincerely,

[redacted]

Exemption 6 - privacy

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Pittsburgh Post-Gazette

Opinion

This land is our land

If the historic Jacksville Esker is destroyed, it will be gone forever

Wednesday, March 05, 2008
By Adam Lynch

Once again, the early skirmishing is under way as a prelude to the larger battle to come ...

Here in Western Pennsylvania it is another of the increasingly frequent clashes pitting environmental and historical concerns against industrial expansion. This time, the line is being literally "drawn in the sand." A unique concentration of sand and gravel a few miles north of Pittsburgh in Butler County, deposited here more than 20,000 years ago, is the centerpiece of the latest dispute.

Adam Lynch , a retired Pittsburgh news broadcaster, lives in Monroeville (adamelle@comcast.net).

It is not just ordinary sand and gravel. It is called an esker, an extraordinary leftover from the immense glacier that once covered much of the northern hemisphere. As the Ice Age slowly gave way, the 2-mile-thick glacier stopped its inexorable slide south and began melting up around what is now Moraine State Park. Geologists term that stop line the "moraine."

It took eons, but as the immense mass melted, the water ran over the glacier's sides and then underneath, creating deep rivulets that carried with them the rocks, stones and gravel the glacier had picked up during its slow crawl over the earth. These rivulets joined and formed a stream under the belly of the ice beast carving a prehistoric passage across the land.

Heavier stuff dropped out and eventually all that remained was the curious mass of sand and gravel that now appears as a long, snake-like ridge or "tube" that is often 50 to 70 feet higher than the surrounding land.

In this esker are some stones normally found only thousands of miles north of here. Over the years this valuable, dense mass of sand and gravel was indiscriminately dug away by contractors and builders with no regard to its historic value.

In 1973 the Western Pennsylvania Conservancy purchased a small 32-acre section of the esker to allow future geologists and historians to study the past. Over the years hikers, birders, students, scouts, university researchers and the curious have come to ponder this

strange, meandering remnant of long ago. Now, suddenly, this piece of what is called the Jacksville Esker is under threat.

As reported by the Post Gazette, ("Geologic Feature Is Battleground of Mining vs. Preservation," Feb. 25), Kittanning-based Glacial Sand and Gravel Company has purchased a 77-acre tract next to the conservancy property. The firm has filed an application with the Pennsylvania Department of Environmental Protection to strip mine 44 of those 77 acres. The company is asking for a variance to allow mining within the 100-foot road buffer now required by the state. The DEP hasn't approved the request yet and residents of the area, who attended a recent public hearing, seem divided on the issue.

Opponents of the proposed mining charge it would damage the esker and nearby wetlands. They are alarmed at the possible effect on Black Run, a cold-water fishery that feeds Slippery Rock Creek. Others point to a loss of future revenue and believe the rights of the landowner should be upheld.

Mark Snyder, an owner of Glacial Sand and Gravel, also wants to build a stone washing and preparation plant on the site and eventually expand mining in the area. "This is an important part of our business, so mining the formation is the logical thing for us," he told the Post-Gazette. Mr. Snyder apparently believes his company's profit transcends environmental concerns.

Years ago I produced a television news feature on the six-mile-long Jacksville Esker, known locally as the West Liberty Hogback. I remember the thrill I felt standing next to this curious geological formation created thousands and thousands of years ago. Its age has the ability to make one feel humble.

Admittedly, it lacks the grandeur of Pennsylvania's towering hemlocks or sparkling creeks, which are often the subject of environmental controversy, but the esker is a visible clue to our history and a vital link in the study of that history.

We have come a long way from the old days of irresponsible digging, drilling and timbering, but the war goes on. Right now a group called Friends of Allegheny Wilderness is fighting to have 50,000 additional acres in the Allegheny National Forest designated as "wilderness," where oil and gas drilling and timbering would be off limits. This would involve only 2.8 percent of the total timber acreage in the National Forest but so far Congress has been cool to the plan. The industries involved are a significant part of the economy in that area.

Recently, concerned citizens won a temporary victory when the DEP put on hold a plan that would have allowed 30 huge wind turbines in an ecologically sensitive watershed in northeastern Somerset County. The state said it found more than two dozen deficiencies in the proposal and has asked the developer to respond. Opponents charge the turbines would threaten the migratory pathway of several raptor species as well as damage the watershed and hurt tourism. So, another case of early skirmishing.

The use of our land and natural resources is a legitimate subject for debate, and a certain amount of give and take is necessary to maintain a balance between progress and preservation. But the striking fact about the Butler County dispute is that if the Jacksville

Esker and its surrounding beauty are destroyed, they will be gone forever. One hopes the DEP will remember that in dealing with this controversial mining-permit application.

, a retired Pittsburgh news broadcaster, lives in Monroeville (edamelia@comcast.net).

First published on March 5, 2008 at 12:00 am

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Bintrim, Tyler J LRP

From: [redacted]
Sent: Wednesday, September 02, 2009 4:51 PM
To: Bintrim, Tyler J LRP
Subject: CELRP-OP-F 2008-280

At a time when PA cannot even reach a budget and thousands of tax payers dollars are presently being used to reclaim mines and clean up our streams; it seems unthinkable to mine off the end of a geologic feature, jeopardize endangered and threatened species, and waste prime agricultural land.
Please let me know if a hearing will be scheduled.
Thank you,
[redacted]

All Redactions - Exemption 6 - privacy

Bintrim, Tyler J LRP

From: [redacted]
Sent: Tuesday, September 01, 2009 7:27 PM
To: Bintrim, Tyler J LRP
Subject: CELRP-OP-F 2008-280 All Redactions - Exemption 6- privacy

Attachments: Esker - Army Corps Request for Public Hearing.doc

Esker - Army Corps Request for...

Dear Mr. Bintrim,

As you asked in our phone conversation yesterday, I am requesting in writing for there to be a public hearing to discuss the Glacial Sand and Gravel permit application, CELRP-OP-F 2008-280. I have many concerns regarding the archaeological, environmental, and hydro-geological impact that this mining would have on the area. My concerns are detailed in the attachment.

Thank you for your attention to these concerns.

Sincerely,

[redacted]

Army Corps of Engineers
Request for Public Hearing re: Glacial Sand and Gravel permit, CELRP-OP-F 2008-280

Three miles north of this proposed mining site is the Elliott Mine Archaeological Complex. *Pennsylvania at Risk*, the annual publication of the Commonwealth's most **endangered historic places**, listed the Elliott Mine Archaeological Complex in 1999. A cluster of more than twenty prehistoric archaeological sites on 200 acres of glacial terraces overlooking Slippery Rock Creek, the area **had** the potential "to document the entire sequence of aboriginal occupation" in the Slippery Rock drainage area. With artifacts from nearly every prehistoric and contact period of the Native American cultures for the last 12,000 years, it was a rich record of our heritage.

A gravel mine permit was granted for the site, however, and the complex has been destroyed. The same company now wants to mine part of the Jacksville Esker. Eskers were traditionally used as burial sites for aboriginal people (http://www.acee.gc.ca/015/001/003/index_e.htm and this Jacksville Esker, according to the Department of Conservation and Natural Resources is the "best preserved esker in Pennsylvania", (http://www.dcnr.state.pa.us:80/topogeo/ParkGuides/pg4_9/site8.aspx).

The Pennsylvania Historical and Museum Commission (PHMC) re-evaluated this site after the DEP Public Hearing in February, 2008. They then revised their response to indicate that there is a "**high probability that significant archaeological sites are located within the project area.**" (*Comment Response Document in the Matter of Glacial Sand and Gravel Company Application Number 10070304 Mine 47, Worth Township, Butler Count, Public Hearing Held February 19, 2009, Slippery Rock High School, page 14)*

Many people believe this esker should be preserved and have written to the Department of Environmental Protection (DEP) The DCNR states that it is currently being reviewed for inclusion in the **Pennsylvania Natural Heritage Program**. The Pittsburgh Geological Society indicates that this terminal end of the esker has drawn many naturalists and students, and is more highly valued for research than the remaining vestiges of the six mile ridge.

This site is also valuable for environmental reasons. The mining will destroy an onsite wetland, and impact another wetland along the northern border of the site, the West Liberty Bog. The "Bog" is actually a fen, and according to the Environmental Protection Agency, fens reduce the risk of floods, improve water quality, and provide habitat for unique plant and animal communities and should be protected http://www.epa.gov/owow/wetlands/types/fen.html. Tamarack Lake, one of the most southern glacial lakes in western Pennsylvania, is also nearby and the three features – esker, fen, and lake – are actually one **interrelated, interdependent system** that will all be threatened, and possibly destroyed, by the mining.

The PA Fish and Boat Commission has requested a field review before the DEP makes its decision. They are concerned about the wetlands, as well as endangered species near the site. The Audubon Society has also documented an endangered bird near

the site. The Western Pennsylvania Conservancy, which owns an adjacent portion of the esker to the west, has stated that the wetlands north of the site **are "Exceptional Value"** due to the endangered species, and state that the mining "may adversely impact the unique geologic feature conserved on our property".

There is no evidence that this mining is compatible with the Butler County Comprehensive Plan nor the Northwestern Butler County Multi-Municipal Comprehensive Plan. In fact, the latter documents a goal to "preserve natural areas to ensure the protection of wildlife habitat and water quality". One of the "major issues" in land use planning is that "the protection of the rural character and farms must be actively pursued." Maps in this plan show that the mining will invade agricultural security area. Additionally, the maps reveal that Allegheny Mineral is planning extensive mining of what has been a beautiful rural area that we have all enjoyed.

We are grateful that the DEP recognizes the many problems with this application, as they documented 52 deficiencies, omissions, and illegalities that include disturbance of primary agricultural lands, missing details of the processing facility and water handling plans, and no air permit plans. In addition, state regulations prohibit mining within 100 feet of the road or within 100 feet of a perennial stream. The mining company has no good reason to ask the DEP or the Worth Township Supervisors to grant them variances for this destruction. Their only reason is financial.

In conclusion, we are requesting that the Army Corps of Engineers hold a public hearing to address many of these concerns, before further review of this permit application.

Thanking you in advance for your attention to these issues,

[redacted]

#6

Bintrim, Tyler J LRP

From: [redacted]
Sent: Monday, August 31, 2009 8:31 PM
To: Bintrim, Tyler J LRP
Subject: CELRP-OP-F 2008-280

Tyler Bintrim

Our concern is for the hydrology impacting Tamarack lake and the wet lands in the area.

We have enjoyed that lake and that area and it would be a tragedy if it were to go away.

Thanks

[redacted]

All Redactions - Exemption 6- privacy

Bintrim, Tyler J LRP

From: [redacted] Exemption 6 - privacy
Sent: Monday, August 31, 2009 6:17 PM
To: Bintrim, Tyler J LRP; Schwirian, Patricia LRP
Subject: celrp-op-f 2008-280

Hello Mr. Bintrim and Ms. Schwirian, [redacted] I am writing you because I am concerned with the permit for mining in my area. (Glacial Sand and Gravel Company Mine 47 Application Permit #2008-280 and celrp-op-f 2008-280)

Please forgive my lack of sophistication, I am a simple girl and I will be honest in that I do not understand much of the political/technical language used in most of the documents that I've read, or, well, tried to read. :)

My concerns are first for my family's safety and health. Because of the noise of the trucks my husband has to sleep with earplugs and we can not hear the television in our living room. We can not open the door or windows in the front of the house because of the dust created. I have planted trees to help with that, but, they will take awhile to mature. We moved to this area for the peace and quiet; we have easily put 3 times the amount of money that we paid for our home back into the property, and I fear, with the traffic, noise and pollution we will never get near that out of the house if we decide to move.

My second concern is for the environment. We are called to be God's stewards of all HIS creation. When we first moved here, I would see owls and heron, deer, bear and lots of other little critters, but, I have not seen the owl, heron or bear in a very long time. For sure, this entire summer, I haven't seen them, how long exactly, I do not know, but, I miss them and can't help but think it's from the mine and and the disturbance it has created. Also, once our natural resources are gone or changed it can not be fixed.

I would like to say that the driver's of the trucks have always been polite and cautious. I appreciate that they are making a living, too. I just wish there were a way to make less of an impact on our lives and that of "Mother Nature". I don't know what the answer is, I wish I did, unfortunately, I am just not that wise. I ask that you protect our homes and the environment as much as possible.

Would you please take our feelings into consideration for this permit?

Thank you very much. Your consideration is appreciated. My information is listed below.

[redacted] Exemption 6 - privacy

RECYCLE OR DIE

Bintrim, Tyler J LRP

From: [redacted] Exemption 6 - privacy
Sent: Saturday, August 29, 2009 8:25 AM
To: Bintrim, Tyler J LRP
Cc: patrick.burkhart@sru.edu; robert.hines@sru.com; [redacted] dogross@state.pa.us
Subject: CELRP-OP-fF2008-280

Attachments: WETLAND 43 D 55.doc

WETLAND 43 D 55.doc (40 KB)

U.S. Army Corps of Engineers
Glacial Sand & Gravel Company
Regulatory Branch
Box 1022
1000 Liberty Avenue
Kittanning, PA 16201
Pittsburgh, PA 15222-4186
2008-280

Re:

P. O.

CELRP-OP-F

ATTENTION: TYLER J. BINTRIM

August 29, 2009

Please accept this letter in reference to the Glacial Sand & Gravel Company's application, Point No. 6:
Impact on Natural Resources. The statement "that the project is not likely (my emphasis) to affect the continued existence of endangered species, or result in the destruction or adverse modification of habitat" is completely false for the following reasons:

1) The PA endangered American Bittern (AMBI) was confirmed breeding in the No. 1 wetland (43 D 55_2) by the 2nd PA Breeding Bird Atlas Project in 2007 and heard in 2008. This bird, and other avian species of special concern, will be severely impacted by proposed mitigations, stream encroachments and road variances in the application (Map P. 8, Points E and F).

2) No. 1 wetland is a fragile ecosystem depending upon stable water levels and a beaver dam for that stability. Proof of this fact was illustrated in the autumn of 2007 and the spring of 2008 when some unknown human, using a backhoe, purposely destroyed the beaver dam and in the process dropped wetland water levels tremendously. The AMBI could not be found in 2008 until it was later heard in August after beaver returned and rebuilt their dam.

3) Tetra Tech, Inc., Portland, Maine, was hired by Glacial Sand & Gravel to investigate the wetland on April 30, May 3-9-23, 2008 but did not see or hear the AMBI. TTI visits coincided with low water levels when the AMBI was not there, yet TTI concluded that suitable nesting habitat is present for the species. However, even if the species was present, It is noteworthy that TTI only sought the species during early morning daylight hours, never in evening hours or at night when the species is most active and often vocal.

4) Wetland avian species are super-sensitive to noise and light pollution as vividly illustrated by Glacial Sand & Gravel's operation on Route 108 west of I-79. Here, 24-hour cumulative noise and light pollution have taken their toll on all wetland avian species, not just species of special concern. That same cumulative pollution process, if allowed by approving this application, will repeat itself in No. 1 wetland.

In sum, Audubon is requesting a public hearing to discuss the critical concerns of No. 1 wetland's future, the wildlife value of it having the only known breeding site for the PA endangered AMBI in Butler County (perhaps in all of southwestern Pennsylvania), future water quality and quantity for local plant, animal and human life, and the value of a unique, ancient geomorphic feature and a present-day esthetic ecoscape.

Please refer to attached field reports for more detailed information about the above-listed points.

Sincerely,

[redacted]

-

Exemption 6 - privacy

WETLAND 43 D 55__2 FIELD ANALYSIS

Wetland 43 D 55__2 is located northeast of the junction of Swope and West Liberty Roads about one air mile west of West Liberty Borough in Worth Township, Butler County (see map). Unfortunately, the site has no access by road or trail and its topography to the south is a steep slope that blocks even a distant view from West Liberty Road until one walks hundreds of yards to the east. The properties adjoining the wetland to the east and to the north are privately owned residential households. Swope Road borders the site to the west. Immediately west of Swope Road are three nature preserves: 50-acre Tamarack Lake, a Certified Audubon Society Wildlife Sanctuary, a .22-acre Certified Audubon Bird and Butterfly Sanctuary, formerly owned by Marion M. Mackey, and a 100-acre parcel called Glacier Wetlands Natural Area, donated to the Wild Waterways Conservancy by Glen and Grady Cooper in 2005.

The Butler County Natural Heritage Inventory (BCNHI, 1991) does not mention the wetland under its brief description of the 32-acre Miller Esker Natural Area that is owned and managed by the Western Pennsylvania Conservancy (WPC). The esker occurs southwest of the three preserves.

The wetland is currently owned by the Glacial Sand and Gravel Company of Kittanning, PA that is interested in mining the eastern part of the 18,000-year old esker. Likewise, the wetland is an important historical site for spring (March – April) and autumn (October – November) waterfowl migrants and summer avian breeding species. Yet, the site was not mentioned in the first *Atlas of Breeding Birds in Pennsylvania* (1992). This changed with a telephone call to me this past late summer from a resident (who wants to remain anonymous) living near the wetland, requesting that I check a strange bird calling in the wetland at night. Results of my four August 2007 visits are attached on a 2nd PBBA Marshbird Survey form and a 2nd PBBA Special Species Report Form. Comments are:

The 2007 avian breeding season was a strange field experience. The months of June and July were almost totally devoid of rain save for a thunderstorm downpour on June 12. On the other hand, August was exceptionally wet with 3.8" rain the week of August 5 (3.3" on 8/7, .5" on 8/9). My first site visit was the evening of 8/10. And although the week of August 12 was dry, it rained profusely the week of August 19 (2" on 8/19, 1.5" on 8/20 and 2" on 8/21 for a total of 5.5" that week). August ended with 9.3"of rain. In just three weeks the local ecoscape changed dramatically from a parched, brown condition to a vibrant, refreshed and renewed green space everywhere. Indeed, this weather oscillation had tremendous impact on all breeding birds, land and water species alike. With so much rain in August, the water level of the wetland rose an average 12-15 inches as measured on trunks of trees and shrubs. Species that failed breeding in June and July were attempting a second try. I believe this was also true for the wetland species involved in this field survey.

The wetland is located in a natural kettle, surrounded by four adjoining circles of micro-habitats: the outer circle consists of palustrine deciduous woodlands; the second circle by ericaceous shrubs with dense grasses and sedges; the third circle by dense cattail and bulrush marsh; the fourth circle by small floating islands of vegetation in open water.

The site was quite a frustrating challenge. I could not get onto the site because of lack of access. I did not want to ask permission to enter by canoe from the Snyder family because I was afraid of a 'NO' response, so my strategy was to play the tape and view the wetland from the best perimeter spot available: in the southwestern corner atop the esker next to Swope Road (see spot on map). I used 9 x 35 Bausch & Lomb wide-angle binoculars and a 45 x Bushnell spotting scope. Elation came on 8/10 at 1919 when the tape induced responses from SORA and COMO plus three species of special concern: MAWR, ALFL and WIFL. I consider these vocalizations this late in summer to be an anomaly due to the extremely erratic weather. The unseen bittern responded with five 'pump-er-lunk' calls to the tape the third time I played it, and then remained silent for five minutes at a spot in the dense cattails that I estimated to be 300 yards away. Then the bird responded again but this time (1928) showed himself on the edge of the cattail, started flying short distances towards me, perhaps no more than 25 feet at a time, and disappearing in the dense cattail after each short flight. After some more waiting the bird called 'pump-er-lunk' three times and was about 50 feet in front of me, again exposed himself on the edge of the cattail marsh and maintained a challenging, crouching attitude with an arched back and a belly nearly touching the water. Then, the bird, still keeping the crouched posture, suddenly spread its wings and tail, started flapping the wings, all the time making grunting sounds and slowly made a trail to its left (south) in the cattails, finally disappearing in the dense marsh. What a quick show. I did not hear or see the bird again that evening. On 8/18 and 8/23 AMBI responded to the tape but did not leave its spot (nest? mate? young?) some 300 yards away and approach me like he did on 8/10. An adult BAEA chasing an adult OSPR with a fish was entertaining on 8/10; likewise an immature BAEA was fishing on its own on 8/18.

On the evening of 8/23, just two days after three consecutive days of rain, all wetland species were vocal with their characteristic call notes but the bittern made only one 'pump-er-lunk' from a 300-yard distance and again did not come closer. I visited the site one last time on 8/31 in the afternoon. The wetland was not only quiet but also few birds of any kind, including the true wetland species, were active. I am familiar with the bittern from many years of field research, most recently as field ornithologist for the Audubon Pennsylvania marsh bird survey. I am concerned about the future of this grand wetland because of the potential mining impact upon it. If the mining company receives a permit, noise pollution from the washing plant on the south side of West Liberty Road operating 24 hours per day, scores of trucks moving gravel from field to plant to storage piles, pollution from giant lights operating every night for an estimated twenty years, hydrological changes that will possibly drain the wetland of its water or, at the minimum, delete enough water so that the wetland will become too shallow and uninviting for the wetland species of special concern, and the loss of the aesthetic rural landscape that is so appealing now (the reason why local residents wanted to live there in the first place), will surely impact and destroy the wetland and its immediate area. This is exactly what happened at the company's washing plant site just west of I-79 and Route 108: Virginia Rail (VIRA), Sora (SORA) and Marsh Wren (MAWR) disappeared from the extensive wetland in just two years and to this day have never returned. (See more explicit comments in the next report.)

Conclusions: American Bittern, AMBI CO Code: DD; Common Moorhen, COMO CO Code: FL; Osprey, OSPR CO Code: CF; Bald Eagle, BAEA CO Code: CF. Where are the nest sites? Along Black Run? Moraine State Park? Or atop telecommunication towers?

2nd Pennsylvania Breeding Bird Atlas: Special Species Report Form

Species Name: American Bittern (Botaurus lentiginosus) AMBI Dates: 8/10-18-23-31/07
Atlas Block: 43 D 55 Wetland ID: 43 D 55__2 County: Butler
Latitude: N41.00813 Longitude: W080.08271 GPS site: Swope Road

Describe principal characteristics seen and/or heard for ID: Heard distinctive vocalization of AMBI 'pump-er-lunk' repeated many times after playing tape; heard on three visits of 8/10, 8/18 and 8/23 but not on 8/31. Seen only on 8/10 visit when bird came about 50 feet from my viewing site on southwest corner of wetland on Swope Road. Bird started calling about 300 yards from me but did see bird fly short distances from that original spot about 25 feet at a time then disappear in the dense cattail, then again repeat the short flights another five or six times until he reached a spot about 50 feet from me and exposed himself for perhaps two and one-half minutes, all that time maintaining a challenging, crouching attitude, with back strongly arched, belly almost touching the water, neck so shortened that the lower head and long bill seemed to project only a few inches beyond the breast. Then, the bird, still keeping the crouched, challenging posture, suddenly spread its wings and tail, started flapping the wings, all the time making a succession of low-clicking and gulping sounds, turned to its left (south) and slowly moved through the cattails and finally disappeared in silence. I had to change from my scope to my binoculars because the bird was that close and observed a stocky, mottled and streaked heron-like individual, standing about two feet high; brown color, mottled with buff above; wings and tail darker and more uniform brown; buff, broad brown streaks on underside of the bird, most numerous streaks on the neck and breast; throat white with brownish stripes down the middle as the bird faced me; prominent black stripe on either side of the upper part of the neck.

Viewing Conditions: Light was sufficient, especially since setting sun was behind my right shoulder and shining on the spot occupied by the bird. I was using 45 x Bushnell spotting scope until the bird got within 50 feet of me, then switched to 9 x 35 Bausch & Lomb wide angle binoculars for close up view.

Previous Experience with Species: I am familiar with species over many years, first as a teenager in the marshes of St. Louis, MO area; later in PA with the 1st PBBA project undertaking wetland analyses in SGL 195 and 284; and currently with the 2nd PBBA investigating particular marsh birds/wetlands in Butler, Lawrence and Mercer Counties for Audubon PA in 2005-2009. In fact, 43 D 55__2 wetland is a miniature replica of SGL 195 (Celery Swamp) in many ways. Finally, the species is a regular but rare spring migrant in the Rio Grande Valley and on South Padre Island, Texas. I am International Hawk Watch Station Master for the US Fish & Wildlife Service at Santa Ana NWR every spring (10th year in 2010). There is only ONE SPECIES that sounds like the thumping American Bittern (AMBI) in the bird kingdom. Highest Atlas breeding code used: CO (Confirmed) DD (Distraction Display) because of the bird's crouching, challenging posture. It was like: "o.k. you see me, but I can't see you (looking into light) so follow me if you can." Reminded me of the Killdeer's actions so commonly seen in the breeding season.

Directions: Take PA Route 173 south of Slippery Rock 5 miles, to PA Route 528, turn south on that road for 2 miles until see West Liberty Road, again turn right, drive 3

miles through West Liberty Borough and wetland is one air mile west of borough at junction with Swope Road.

Describe habitat and other features of site: Wetland is situated in a geological kettle formed 18,000 years ago by glaciation with the dominant feature being the Miller esker on its south side. The wetland itself has four distinctive habitats in the form of rings encircling the site: the outer ring being the perimeter with palustrine deciduous forest present mostly on its eastern side, but some to the south and west as well, dominated by swamp white oak, red maple, wild black cherry and tulip poplar. The next inner circle is dominated by woody shrubs, such as alder, willow, some dogwoods and ironwood. The third circle is a large, dense emergent cattail marsh with some bulrush that is the central focal point of the wetland. Finally, there is open water and floating vegetation islands in the middle of the site. Beaver and muskrat are residents here and the former species' dam keeps the wetland level stable that is so critical for the breeding AMBI.

For PNDI Database: Total # of individuals observed: 1 adult bird, presumably a male because of its vocalizations and its behavior. The bird acted as if he could have had a female in the background but I never heard or saw but one male bird. The bird definitely seemed to challenge the tape of what he thought was another AMBI male leading me to believe that territory was still important. There is no known historical record of species prior to 2007, although site was visited for the 1st PBBA in daylight hours (not night) and in context with the whole block (not enough time at site).

Potential Threats: mining development, resource extraction, human activity associated with a large gravel mining operation, especially noise pollution of machinery and truck traffic associated with the mining and light pollution every night of the week, month and year for a minimum of twenty years of mining operation. The rural agricultural landscape will be changed forever, the biological diversity destroyed and the uniqueness of a glacial remnant – where the ice tunnel ended and spewed out materials forming a large delta – will be lost to all future science research and education. For these reasons, I rank these potential disturbances the most serious to the Butler County ecoscape.

November 4, 2008: Update – I found no evidence in 5/08 and early 6/08 of AMBI or COMO due to low water level caused by human activity purposely destroying the beaver dam sometime in autumn 2007 and again early spring 2008 with a backhoe. Apparently, however, AMBI returned in 8/08 after beaver returned and rebuilt their dam, allowing depth of water to approach height of last year. The bird was not seen but heard at night/early mornings by local residents.

Gene Wilhelm, Ph.D.

UPDATED 2ND PA BREEDING BIRD ATLAS SPECIAL SPECIES REPORT FORM

Please review the 2007 Field Analysis and 2nd PBBA SRF for Wetland 43 D 55_2 details found in 2008. I felt that there was no need in repeating most details.

I visited the wetland under discussion on Tuesday 9 June 2009 from 0600 to 0700 hours on a mild, calm, sunny day and played tapes of the AMBI, VIRA, SORA, COMO and MAWR on both the N side (off Swope Road) and S side (aside West Liberty Road) of the wetland with some interesting results even with competitive noise pollution:

AMBI = 0 responses
VIRA = Code X 1 adult male was quite vocal (N side)
SORA = Code T 1 adult male vocal and challenged/chased VIRA
*COMO = Code FL/FY 2 adults (pair), 2 young in middle of wetland
MAWR = 0 responses

*Note that FL and FY codes do not apply here for this precocious marsh species but are the closest codes that can be used. Perhaps CF in adult mouths would be better?

Three major changes have occurred at the wetland since 2008: 1) It is recalled that the wetland is owned by the Glacial Sand and Gravel Company, Kittanning, PA, and is still awaiting a permit from DEP to mine the eastern part of the ancient esker. Nevertheless, the Worth Township Supervisors granted the firm a permit to transfer their washing plant from Rte 108 to the S side of West Liberty Road across from the wetland. Thus, my field research was challenged immediately before 0700 by loud noise pollution coming from heavy earth-moving equipment across the road from the site that quickly curtailed my planned recording time. 2) Unfortunately, the Marion Mackey property, on the W side of Swope Road and directly across from the wetland, has been sold. The property is the site of Tamarack Lake and its 50 acres of rich plant, animal and avian diversity. The property was a Bartramian Audubon Wildlife Sanctuary and a major segment of protected landscape on the W side of Swope Road with the Western Pennsylvania Conservancy and Wild Waterways Conservancy. It remains to be seen how the new owners treat the property. 3) Finally, although the Glacial Sand and Gravel Company has just recently begun its operations, already the noise pollution from heavy earth-moving equipment and truck traffic, according to local residents, has had impact on the number of fishing appearances of the OSPR and BAEA to Tamarack Lake and Wetland 43 D 55_2 (I saw neither species at either site on my visit). Furthermore, there is a cumulative impact process involved with a washing plant adjoining a wetland if the company's Route 108 operation is any indication: a) Noise and light pollution drive away the most sensitive avian species <u>first</u>, i.e., the VIRA, SORA; <u>next</u>, the less sensitive species, i.e., MAWR, SWSP; and <u>last</u>, the least sensitive to noise/light pollution, i.e., SOSP, RWBB. The extirpation <u>of all these species</u> took just two to three years on Rte 108 and the process may have already begun in 43 D 55_2 with the AMBI & MAWR. b) Potential calamity exists when the critical hydrology problem of having enough quality water in the wetland for avian breeding is added to the issue of noise and light pollution. Presently, with the help of beaver, there is a sufficient water supply at different micro-water depths, exposed soil edges and a variety of natural vegetation types to attract several avian wetland species. This fragile ecological balance is totally dependent upon the quality and sufficient amount of water that unfortunately is not guaranteed in the application.

Gene Wilhelm, Ph.D. July 29, 2009; Revised August 9, 2009

August 25, 2009

US Army Corps of Engineers
Pittsburgh District
1000 Liberty Ave.
Pittsburgh, PA 15222-4186

Re: Application no. 2008-280, Notice No. 09-38

Dear Mr. Bintrim:

I am writing you regarding the permit application for construction of Glacial Sand and Gravel's wash plant located in Worth Township, Butler County (see above application no. and notice no.). I would like to ask that you consider holding a public hearing regarding this application.

I have concerns about the impact this wash plant would have on environment, wildlife, natural historic value and beauty of the area in which the plant will be located. I am aware of many other citizens who have similar concerns.

I have reviewed documents on your website pertaining to this application. Because Glacial Sand and Gravel has already cleared land for the wash plant and I believe started removing large stone from the area as much as two years ago, I am not sure that the on-site visits gave a true portrayal of the wildlife in the area. Massasauga rattlesnakes are known to live in the area, but with the disturbances to the land and water they have most likely been forced out. One of the reports on your website stated that a Southern Woodrush was present in the mining area. The report stated that this bird had not been observed in PA since 1971. By allowing Glacial Sand and Gravel to remove wetlands and construct sewer lines and wash plants you are disturbing the critical habitat for wildlife such as this. In addition, I am concerned for the natural beauty and historic value of the esker. Glacial is not interested in preserving the esker, but rather excavating it, (and selling the excavated stone), under the pretense of mitigating a wetland. It is important to remember that just because Glacial owns the land, they don't have the right to harm the wildlife, the waterways, and the aesthetics of the immediate or surrounding area.

These are just a few of the concerns that would be presented at a public hearing, there are likely as many as there are concerned citizens. Please consider this when making your decision on the hearing and the approval of the permit.

Thank you,

[redacted]

Exemption 6 - privacy

RECEIVED
2009 AUG 28 AM 10: 58
ARMY CORPS
PITTSBURGH

Tyler Bintrim
Pittsburgh District Corps of Engineers
1000 Liberty Ave.
Pittsburgh, PA 15222-4186

August 24, 2009

RE: Public Notice # 09-38 CELRP-OP-F 2008-280

Dear Ty,

I am writing to request a public hearing for PN0938 for the following reasons. I would also like to submit these comments as my letter of concern.

The application states in #18 Nature of Activity, "These ponds are needed to provide a sufficient supply of plant processing water that will also allow for recycling the wash water as well". I am concerned because originally the processing plant was to be located at Mine 31(Exhibit1). Mine #31 was permitted in 2002 and reissued in 2003, but apparently, if I understand correctly, sufficient water for the plant was not found on site so Glacial did not open the mine, not wanting to truck the material to the Elliot Mills plant. When they purchased the Rodgers property in 2006 they believed they had found a source of water for the plant, plus they gained 39.8 acres of sand and gravel and 20 acres of topsoil to be mined as well.

In November 2007 I asked Michal Jones-Stewart of the EADS Group, Glacial's engineering firm, why, if after mining at mine #31, there will be a very large lake - 60 feet deep, 20 acres plus, but there was not sufficient water for the processing plant. I believe, if I remember correctly, that she said there was a better source of water at the bottom of the hill on the Rodgers property. Not being a hydrologist, this never made sense to me, so I asked again on July 24, 2009, for her to please clarify this for me. She responded, writing that she was not able to talk with me about it, and asked me to refer my questions to DEP. I have and am awaiting their reply.

In the meantime I reread the actual permit and noticed that in Part B Special Conditions or Requirements #2 it states, "the permitee shall not install and/or operate any wet processing systems until such time as a revision detailing the processing and waste water handling system has been approved by the department"(Exhibit 2). Items number 4,5 and 6, also refer to the lake, water discharge and the processing operation. The public notice shows intent to discharge treated wastewater to an named tributary of Hogue Run (Exhibit 3). So I was really confused. Then I found in Module 14: Air Pollution Control Plan revised July, 24 2001, that the type of processing facility permitted was dry, not wet, and for processing not more than 150 tons per hour - crushing screening, cleaning, stockpiling (Exhibit 4).

My questions and concerns are as follows:

1. If Glacial's calculations were off and they could not find water, even though they originally thought they could, are their calculations correct in assuming there will be sufficient water at the Rodgers plant to support operations?

2. If a dry processing plant was approved, why not use that? Why build a wet plant?

3. Has Pond 5 been constructed at the Rodgers Plant? The original permit application for Mine 47 proposed that 5 ponds be built. If the permit for Mine 47 is not granted, will Glacial be able to use the processing plant with only one pond, Pond5? And if so, what is the purpose for building 4 more ponds if one is adequate to run the processing plant?

4. If five ponds are needed, why is the site being readied for assembling the plant before the DEP permit is approved and Wetland Impacts approved?

5.If only one pond will be used, my concerns are that, based on Glacial's calculations, more well water will be used drawing down watertable levels and discharging sediment laden waters into the stream. Module 14:Streams/Wetlands South of West Liberty Road- Wetlands # 2, 3 and 4, 14.4 Wetland Impact Analysis/Assessment-b) states " Mining with Wetland Avoidance is not considered feasible or prudent due to the required area for constructing a processing pond, the required area to construct sufficient wash water storage ponds to supply the processing plant and the inability to fit these required areas within an area that does not hinder the extraction of aggregate material and at the same time prevent wetland impacts." It goes on to say," The location of the storage ponds is such as to permit the collection of as much surface runoff as possible". It also states that moving the plant would break the clay barrier, intercept the shallow ground water table and impact the wetlands.

In the fourth paragraph it states , " Wetland avoidance was also evaluated with a subalternative that eliminated the collection of surface water runoff and the construction of wash water storage ponds. This alternative depends solely on well water to provide the required wash water". This important paragraph ends by saying, "providing the required water to operate the processing plant by using wells without recycling any wash water would likely result in a significant draw-down of the ground water table. This again would negatively impact the wetland community. Sediment-laden waters which would still require a detention basin to remove the sediment before discharging would potentially impact adjacent tributaries ." So, if Glacial intends to operate the plant with one pond would that not also significantly draw down the ground water table and discharge sediment laden water into the stream?

However, if it is true that they can operate with only one pond, Pond5, then their above statements may be incorrect, and thus, the other 4 ponds and wetland impacts unnecessary.

6. I saw no alternative analysis other than economic which PA Fish and Boat says is not adequate (Exhibit5). I agree. Perhaps Glacial could put the washing plant on one of their other owned or leased neighboring properties: the McCoy farm, the Barron farm, or the recently acquired property purchased by their sister company Buffalo Valley, Limited. There is also the Miller lease, Reichert lease, and perhaps others within close proximity. All are either adjoining or within two to three miles of the Rodgers plant.

7. The original permit revision dated 2/25/08 said this plant would be used to process material from two permits (Mine 31 and 47) (Exhibit 6). But the more recent NPDES Storm Water Plan for the plant states it "will receive material from several mining operations that Glacial has in

Worth Township or adjacent areas. The site has been designed to provide a "closed loop" system for the A Surface Mine Permit# 1001035 (mine 31) is located adjacent to the proposed plant site to the south. A permit in progress 10070304 (Mine 47) is located to the East. Sand and Gravel is anticipated to be extracted from a sister companies permit SMP 10020306 (Mine 24) located along Barron Road to the north. Various other operations are anticipated to be permitted and operational during the life of the plants operations" (Exhibit 7).

Given the extended anticipated length of time of operation of the Rodgers plant ,I think it is imperative that these water issues be correctly identified, clarified and calculated. The impacts could be enormous.

Swope Road Relocation

I am concerned about the relocation of Swope Road. In January, 2009, the supervisors of Worth Township granted Glacial a variance to mine and remove sand and gravel within 100 feet along portions of Swope and West Liberty Roads. If Glacial receives the DEP permit for mining, they agree to realign and reconstruct at their sole cost and expense the turn just west of the former Tempalski residence along West Liberty Road. Glacial also agrees to realign and reconstruct Swope Road that crosses Glacial's property so as to remove the existing hill (the esker) and turn and align the reconstructed road with a driveway entrance into Glacial's plant on the Rodgers property, again, if the mining permit is issued (Exhibit 8).

If the roads are relocated, the area beside the EV wetland will be smaller. The question then will be, if wetland mitigation is permitted, is there still room for the mitigation, especially since DEP requests that the mitigation ratio should be greater than 1:1 to replace the functions and values lost by the impact? (Exhibit 9).

In the original permit application and in the revised copy sent to BCCD dated 2/25/08 Glacial states that the driveway intersection is directly across from Swope Road as requested by the supervisors for public safety reasons (Exhibit 6). Yet as early as 2/13/09 I saw that the stakes had been moved 50 feet east. This concerned me and I wrote to Chris Yeakle, also on 2/25/08 (Exhibit 10). DEP responded in the Comment Response Document to the Public Hearing which I received in the summer of 2008 stating that Swope Road is township jurisdiction and relocating the road is not a mining activity (Exhibit 11).

While the road location is not considered a mining activity, the other issues in the letter concern me now as they did then, especially since I have seen the evidence that Glacial's physical actions of 2/13/08 or before did not match their written statements of 2/25/08, then or now. It is now 2009 and the driveway entrance is in place- where the stakes were placed, not where their words said they would be.

The BCCD 2/25/08 revision letter also indicated that "a variance to conduct mining activities within 100 feet of the outside line of right of way of the public roadways is approved by the Worth Township supervisors and is included within this application. These activities will pose no threat to public safety and in some cases may improve upon existing conditions"(Exhibit 6). I did not see the actual variances in the BCCD file. The DEP 3/31/08 correction letter confirms

this. In Module 4 # 1) it says, "You state in Module 4.1 that the township has approved the road variance application and the approval is included in the application. We did not receive the approval in the packet of information you submitted. I spoke with the township secretary and she said that the requests for the road variances have not been made to the township. Please clarify"(Exhibit 12).

Thank you for addressing these concerns and questions.. I have more concerns which I will submit by the deadline.

Sincerely,

[redacted]

Redactions - Exemption 6

Module 9: Operational Information

9.1 Equipment and Operation Plan

For each phase of mining, identify the type and method of mining; engineering techniques; major equipment to be used; starting point; and the anticipated sequence in which the phases are to be mined.

Mining will be conducted utilizing a clamshell excavator, front end loaders, excavators, haulage trucks and dozers as necessary. There will be Four (4) phases of mining at the site as follows:

Phase 1: Prior to the commencement of mining, the construction of the access road will be concurrent with the removal of the topsoils for the construction of the 12.0' berm, its seeding and mulching; the leveling of the proposed plant area, and erection of the mobile processing equipment Once these activities have been completed, the mining of the first phase will begin. This phase is located in the western portion of the permit area and will be worked from the processing area eastward. This phase will remove approximately 500 feet of material north and south. This phase will be bermed on the east and west sides until completed when the topsoil berm will be expanded. Due to the nature of the extraction of sand and gravel, several areas maybe worked simultaneously prior to the breaching of the water table and the underwater extraction processes in the southern section of this phase. Maximum depth for this phase will be reached at the 1227' elevation or approximately 60' deep. Please see attached typical benching pattern.

Phase 2: This phase will commence with the removal of topsoils to the north of the mining areas and the construction of the berm. Mining in this phase will continue to extract the sand and gravel. Maximum depth will be reached at the 1237' elevation or approximately 60.0'. The water table in this area is not expected to be breached.

Phase 3: Located in the southern most portion of the site, this phase will be mined in a southerly direction from phase 1. Topsoils will be removed and the berm for this area constructed. Maximum depths are anticipated to be reached at the 1227' elevation or approximately 60.0' and the pool elevation is assumed to be at the 1246' level.

It is anticipated that a permanent lake area will develop with the removal of the sand and gravel with the water surface at approximately the 1246' elevation. This lake is expected in the central and southern section of the permit area including the southern section of Phase 1 and the entire Phase 3. This may, however, fluctuate with the seasonal variations of rainfall and other climatic factors.

Phase 4: Depending on the market conditions and the quality of the sand and gravel, this phase (the plant area), maybe mined out. Should this occur, the processing area would be dismantled and the material trucked off site for refinement. Total depth for this phase would reach 60.0' or at the approximate elevation of 1230'. This area is expected to breach the water table as with Phase 1 and 3.

9.2 Pit Dimensions

Identify the length, width, elevation of pit floor at maximum proposed depth and the maximum highwall height to be encountered for the pit.

The initial pit configuration will be that of a sand and gravel quarry. With the removal of material, dependant on the market conditions and quality of the gravel, the mining areas within the phase may change. As each area within the phase is mined to the maximum mining limits, the sideslopes will be regraded to 35° and topsoils

spread at the 1st favorable time for planting. In this way reclamation will remain concurrent with the mining activities. Once the water table is breached, the operations will continue below the water levels as described above. The maximum depth from surface to bottom of mineral will be approximately 60.0' or an elevation of 1227' for Phase I, 1237' for Phase II, and 1220' for Phase III. As the attached geologic cross-sections show, the elevation of the pit floor varies with the depth of mineral. However, it will average 60' in depth.

9.3 Existing Structures

Identify and describe the intended use of all existing structures or facilities to be used in connection with or to facilitate mineral removal activities. (Common existing structures include impoundments, stream crossing facilities, water obstruction and processing waste dams).

No existing structures will be utilized on the site.

9.4 Final Grade and Drainage

Identify the final grading and drainage pattern, including topographic contours on Module 15 and a description of compaction and stabilization techniques.

The Exhibit 15 shows that the mining will create a lake within the central and southern section of the permit area. The final pool elevation will be at approximately 1246' with a strip approximately 100' wide around its perimeter. To the north, the extraction of the sand and gravel will not breach the water table and will leave unmanaged natural habitat. Due to the porous nature of the sand and gravel found at this site and the topography, there is little to no runoff leaving the site, but rather it percolates through the material and enters the ground water system. The establishment of the lake and unmanaged natural habitat will not alter this drainage pattern as the water will continue to follow the established flow pattern. Stabilization will be accomplished by the methods of mining. The slopes will be maintained at a 35^0 slope which is less than the natural angle of repose of this type of material. In addition a safety bench will be constructed . (Please see Exhibit 15). This safety bench will be adjusted for the normal fluctuations within the pool once mining in the center sections of the permit breach the ground water. This will allow a precise measurement of the seasonal fluctuations within the pool, which will be applied to the safety benching along the limits of mining.

9.5 Reclamation Time-table

Provide a sequence of operations (relative time-table) for the accomplishment of major stages in the reclamation plan.

Reclamation of the areas which have had all sand and gravel removed will be timed so that the berm can be dismantled during favorable growing seasons. The berm material will be regraded to conform to the original drainage patterns and material used as top cover for the slopes above the water levels in the lake. The newly distributed soils will be seeded and mulched immediately upon reclamation.

9.6 Identification of Toxic Materials

<u>When applicable</u> (i.e., noncoal operation in coal measures) provide a detailed description of the methods used in the identification of potentially acid and toxic forming materials (boney, rooster, blossom or other inferior coal and non-coal strata) which will be encountered and separately handled. Correlate and identify these strata in the test hole data.

There have been no toxic materials identified at this site.

PART B

(2)

NONCOAL SURFACE MINING PERMIT NO. 10010305

SPECIAL CONDITIONS OR REQUIREMENTS

The following special conditions or requirements are hereby incorporated into the permit and represent permit conditions.

1. Prior to the activation of this mining operation, the applicant shall construct the erosion and sedimentation facilities in accordance with the specifications contained in the surface mining permit. All facilities shall be inspected and approved by the Mine Conservation Inspector prior to the activation of mining.

2. The permittee shall not install and/or operate any wet processing systems until such time as a revision, detailing the processing and wastewater handling systems has been approved by the Department.

3. Pursuant to 25 Pa. Code §77.231(c) there shall be NO BLASTING, including any and all use of explosives, on any portion of Permit No. 10010305 by the permittee, his assigns, successors, directors, officers, agents, servants, privies, and all persons, contractors, subcontractors, contract blasters and consultants acting under or for the permittee. This permit condition remains in effect until the permittee: (1) obtains a certificate of insurance covering any and all blasting activities pursuant to 25 Pa. Code §77.231(c), (2) files said certificate with the Department and (3) receives written confirmation from the Department that this condition has been deleted and a blast plan has been approved.

4. In order to verify the proposed post-mining lake level and to determine appropriate placement of the safety bench, the pit water elevations are to be monitored in phases 1 and 3. Starting one year in advance of activating phase 3, monitoring wells 1, 3 and 5 must also be monitored monthly for water elevation. Water level measurement must be reported quarterly. The depth and width of the safety bench must be adjusted if necessary, to accommodate the results of the groundwater level measurement.

5. There shall be no surface water discharge from the surface mining permit. Should the mining plans change or the geologic conditions be such that a surface water discharge will occur, the surface mining permit shall be revised accordingly.

6. Prior to commencing processing operations on the site, the operator must obtain approval to operate under the General Permit for portable processing systems.

THE FOLLOWING REVISIONS ARE INCORPORATED INTO THIS PERMIT:

March 11, 2003 :

7. This permit has been revised to clarify Module 7.7 (page 7-30) to show that wells MW-1 through MW-6 are to be measured for static water levels only.

3

PUBLIC NOTICE

Notice is hereby given that Glacial Sand & Gravel Co. Inc., P.O. Box 1022, Kittanning PA 16201, has made application to the Department of Environmental Protection for a N.P.D.E.S. permit and Non-Coal Surface Mine Permit to discharge treated waste water to an un-named tributary of Hogue Run in Worth Township, Butler County.

The permit area is 104.6 acres with 87.8 acres proposed for the removal of sand and gravel. The site is located on lands owned by Scheidemantle and Pizor. The permit area is located on lands east of Township Road 861 (Mt Union Road) from a point 2500 feet south of the intersection of Township Road 861 and Township Road 860 (West Liberty Road) and extending south an additional 3000 feet along Township Road 861.

This application includes a variance request to mine within 100 feet of the eastern outside right-of-way of Township Road 861 from a point 2500 feet south of the intersection of TR 861 and TR 860 and continuing south along TR 861 approximately 3000 feet.

The application proposes a land use change from cropland to undeveloped water impoundment and unmanaged wildlife habitat.

A copy of this application is available for public inspection at the Butler County Conservation District, 122 McCune Drive, Butler, PA 16001-6501.

Pursuant to the Surface Mining Conservation and Reclamation Act, written comments and objections may be submitted to the Department of Environmental Protection, Bureau of Mining and Reclamation, White Memorial Building, Box 669, Knox, PA 16232, within thirty (30) days from the date of the final publication of the notice. Written comments or objections must include the person's name, address, telephone number, and a brief statement as to the nature of his or her objection.

This application for permit is made under the provisions of the Act of June, 1937, P.L. 1987 as amended.

MODULE 14: Air Pollution Control Plan

4

14.1 Processing Facilities

a) *Indicate whether or not there are any processing facilities in the permit area (Key to Module 8)*

Type of Processing Facility	YES	NO	If YES: DRY	WET
Crushing	X		X	
Screening	x		X	
Cleaning	x			
Stock Piling	x			

b) *Air Quality Permits*

1. *All crushing and screening of noncoal minerals other than sand and gravel will require a separate Air Quality Permit from the Bureau of Air Quality unless BAQ makes a determination to grant an exemption.*

2. *All crushing and/or screening of sand and gravel will require a separate Air Quality Permit from the Bureau of Air Quality except for wet sand and gravel operations (screening only) and wet or dry sand and gravel operations processing less than 150 tons per hour of unconsolidated materials unless BAQ makes a determination to grant an exemption.*

   The amount of sand and gravel processed at this site will not exceed 150 tons per hour All appropriate Air Quality Permits will be applied for and obtained before any mining has commenced on the permit area.

14.2 Fugitive Dust Control

Describe the fugitive dust control practices that will be utilized for the following activities:

a) *Access roads, haul roads and adjoining portions of the public road.*

Access to the site will be confined to the cartway shown on the Exhibit Maps. Once the access road enters the mining/processing areas, dust will be controlled by limiting the speed limits to less than 15 mph, watering the roads in dry weather or placing a chemical binder on the roadways to maintain as free a dust environment as possible.

b) *Truck traffic (including fugitive particulate material from truck loads).*

The access road will be constructed of hard, durable gravel which will be compacted and developed into a construction entrance will be maintained for the initial 100' of the haul road. This will eliminate the problems associated with dirt roads. The cartway construction will also eliminate the potential for the tracking of mud and debris onto the township road. The trucks will be tarped as needed to prevent fugitive particulates from leaving the vehicles. If mud and debris is tracked onto the roadway, it will be cleaned up immediately and no less than once a day at the end of the normal shift hours.

5

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Fish and Boat Commission
Division of Environmental Services

DATE: November 8, 2007

SUBJECT: Glacial Sand & Gravel Co.
SMP No. 10070304
Stream No. 4950-10070304-E-1
Stream No. 4950-10070304-E-2
Worth Township, Mercer County

TO: Lori Odenthal, P.G., Chief
Technical Services
Bureau of District Mining Operations
Knox District Office

FROM: Steven R. Kepler, Fisheries Biologist SRK dmc
Division of Environmental Services
Pennsylvania Fish and Boat Commission

A field review needs to be conducted to evaluate the wetland delineations conducted for this proposed permit. The justification given for impacting 1.8 acres does not appear to justify the proposed impacts. Indirect wetland impacts should also be evaluated due to the mining area and depth of mining. A complete alternative analysis needs to be submitted rather than an economic analysis for moving the process area. No mitigation plan was submitted (missing map 6 of 8). If mitigation is adequately justified, then up-front or concurrent mitigation needs to be required.

Until the above field review can be conducted the Pennsylvania Fish and Boat Commission does not recommend SMP No. 10070304 and encroachments for approval. Additional comments will be sent following the field review and evaluation of additional information.

SRK:dmc

c: PFBC – Nestor
PFBC - Kay
PGC – Kost

6

Module 4: Areas Where Mining is Prohibited or Limited

4.1 Are mining activities proposed within any of the following?

Yes	No	
☒	☐	Within 100 feet of the outside line of right-of-way of a public highway.
☒	☐	Within 300 feet of an occupied dwelling house or commercial or industrial building, unless released by the owner thereof. (Attach the notarized, written waiver by the current owner)
☐	☒	Within 300 feet of a public building, school or community or institutional building.
☐	☒	Within 300 feet of a public park.
☐	☒	Within 100 feet of a cemetery.
☒	☐	Within 100 feet of the bank of a perennial or intermittent stream.
☐	☒	Within 125 feet of an oil or gas well.

Note: If the answer to any of the above is "yes", the applicant must demonstrate compliance with 25 Pa Code Section 77.504 (b) (relating to exceptions to the distance limitations).

A variance to conduct mining activities within 100' of the outside line of right-of-way of the public roadways is approved by the Worth Township supervisors and is included within this application. These activities will pose no threat to public safety and in some cases may improve upon existing conditions.

An agreement has been reached between Glacial Sand and Gravel, and the owner of Property 3 (Pizor) so that mining activities may take place within the 300' barrier of the Pizor residence. Self imposed mining setbacks and berm placement will ensure safety for both the public and property. The notarized waiver by the current owner has been included.

A request, to the Department, is made to conduct mining activities within the 100' stream barrier of Unnamed Tributaries #1, and #3. No mineral extraction is proposed within these barrier areas. As required by the Worth Township officials, access to this site will be from W. Liberty Road, at the intersection with Swope Road. This location will require the crossing of Unnamed Tributary #3, an intermittent stream which when flowing travels through a man made drainage way. This access point location was chosen by Worth Township with public safety being the main consideration.

As discussed in detail in Module 14, support activities are proposed within the 100' barriers of these two tributaries. These activities include soil storage and basin construction. It will be necessary to utilize all available space for the construction of the processing facility, which will include stockpile areas for both pre and post processed material. The plant will be constructed prior to mineral removal in the area where little to no raw product is available. This will reduce the chances of material being double handled prior to processing. This plant will be supplied by material from two separate mining permits and will be operational for an estimated 15-20 years, and will require sufficient space for overflow stockpiling during the production season. Additionally, water retention basins, both for production and erosion and sedimentation control will be constructed within the lowest areas of the property, which falls along the stream corridors. The locations and sizes of these basins were chosen to maximize E&S control, as well as maximize surface water collection and reduce the amount of groundwater to be withdrawn for production purposes.

4.2 Is the proposed permit area within or adjacent to a stream or river designated as part of the Federal or State Wild and Scenic River System? ☐ Yes ☒ No

4.3 ***Cultural or Historic Resources.*** Attach the completed Cultural Resource Notice Form (0120-PM-PY0003) for this proposed permit area along with the certified mail return receipt as proof of submission to PA Historical and Museum Commission (PHMC).

Please see attached

Storm Water Management Plan
for
Glacial Sand and Gravel, Inc.
Rodgers Plant

Worth Township, Butler County

Introduction:

Glacial Sand and Gravel, Inc. proposes to construct a sand and gravel processing plant in Worth Township, Butler County. The total acres of disturbance will be approximately 20.5 acres out of a proposed 23.8 acre permit area. In addition to the Stormwater Management Plan, an Erosion and Sedimentation Control Plan has been prepared.

Site Description and Analysis:

This plant is to be moved from it's current location adjacent to I-79 due to the expiration of the lease on that property, will receive material from several mining operations that Glacial Sand and Gravel has in Worth Township or adjacent areas. The site has been designed to provide a "closed loop" system for the A Surface Mine Permit # 1001035 (Mine 31) is located adjacent to the proposed plant site to the south. A permit in progress 10070304 (Mine 47) is located to the east. Sand and Gravel is anticipated to be extracted from a sister companies permit SMP 10020306 (Mine 24) located along Barron Road to the north. Various other operations are anticipated to be permitted and operational during the life of the plants operations.

Additional permits for this site which are required by the Township have been approved and include a Highway Occupancy Permit, a Land Development Permit and Post Construction Stormwater Plan (Ordinance Number 04-08-98-02 and amendment 2001-C) and a sewage permit for a sand mound. These permit approvals have been attached to the application package.

Other environmental concerns have also been addressed. These include a physical survey of wetlands within and adjacent to the project area for the potential presence of plants as identified by the PNDI review. No threatened or endangered plants were found within the proposed permit area. A copy of the completed report is attached to this application. An Air Quality Permit Application has been made under separate cover to the Department of Environmental Resources and is pending approval. Wetlands within and adjacent to the permit area have been determined as being under the jurisdiction of the

(8)

AGREEMENT

This Agreement made this 5th day of January, 2009, by and between Glacial Sand and Gravel Company, with offices at One Glade Park East, Kittanning, PA 16201 (hereinafter referred to as "Glacial")

A
N
D

Worth Township, with offices at 815 West Park Road, Slippery Rock, PA 16057 (hereinafter referred to as "Worth Township").

W I T N E S S E T H

In consideration of One Dollar ($1.00) and other good and valuable consideration, with the intent to be legally bound, the parties hereto agree as follows:

1. ***Grant of Variance***. Worth Township covenants and agrees to grant Glacial a variance to mine and remove sand and gravel within one hundred feet (100') and up to the Township right of way along portions of Swope and West Liberty Roads as more fully set forth and described on the map marked as Exhibit "A" attached hereto and made a part hereof. Glacial is also granted the right to construct erosion and sedimentation controls, haul roads and the stockpiling of topsoil within the one hundred foot (100') barrier of the said roads.

2. ***Description***. The variance being granted by Worth Township to Glacial is the area within one hundred feet (100') of the Township Road up to the Township right of way along the following road:

a. *T-860* – West Liberty Road, beginning at the intersection with T-861 extending east two thousand seven hundred (2,700) feet to the intersection with T-396.

b. *T-372* – Swope Road beginning at the intersection of T-860 West Liberty Road extending north seven hundred fifty (750) feet.

3. ***West Liberty Road***. Should Worth Township grant the variance referenced above and the Pennsylvania Department of Environmental Protection grant approval for mining sand and gravel North of West Liberty Road, Glacial agrees to realign and reconstruct at its sole cost and expense the turn just west of the former Tempalski residence along West Liberty Road.

4. ***Swope Road***. Should Worth Township grant the variance referenced above and the Pennsylvania Department of Environmental Protection grant approval for mining sand and gravel North of West Liberty Road, Glacial shall realign and reconstruct at its sole cost and expense the portion of Swope Road (T-372) that crosses Glacial's property so as to remove the existing hill and turn and align the reconstructed road with the driveway entrance into Glacial's plant on the former Rodgers' property.

5. ***Construction Standards***. The reconstructed roads or portions thereof will be located and reconstructed to standards mutually agreed upon by the parties. The parties further agree to finalize these standards within three months after the variance has been granted. Said standards shall be based upon Worth Township Street Construction Specification Ordinance, Ordinance No. 04-08-98-1. Should the parties be unable to agree and finalize said standards, a third party, independent engineer shall be hired, the cost of which shall be shared equally between the parties, to arbitrate between the parties regarding said standards. The decision of the third party independent engineer shall be binding, final, and non-appealable.

6. ***Road Easements.*** Glacial shall acquire and grant to Worth Township all necessary rights of way for the road easement at no cost to Worth Township. Worth Township covenants and agrees to take all necessary action to adopt the realigned/reconstructed roads as described herein.

7. ***Reconveyance.*** Worth Township covenants and agrees to abandon and convey to Brian and Kellie Rea the "Land" between the relocated road and the property owned by Rea. Glacial agrees to join with Worth Township in the conveyance of Land to Rea. .

8. ***Integration.*** The agreement including the exhibit hereto constitutes and represents the entire understanding and agreement of the parties with respect to the subject matter hereof and supersedes all prior negotiations, understandings, agreements, representations, relating to the subject matter hereof. No change, waiver, modification, or amendment of this agreement shall be binding or of any effect unless in writing duly signed by the party against which such change, waiver, modification or amendment is sought to be enforced.

9. ***Binding.*** This agreement shall be binding upon the parties hereto, and their respective successors and assigns.

IN WITNESS WHEREOF, the parties have hereunto set their hands and seals the day and year first above written with the intent to be legally bound.

ATTEST:

Mark A. Snyder, Secretary
(Corporate Seal)

Glacial Sand and Gravel Company

Richard G. Snyder, President

Worth Township

Ken Harley, Supervisor

John Martin, Supervisor

Brian McMurdy, Supervisor

COMMONWEALTH OF PENNSYLVANIA :
: SS:
COUNTY OF Butler :

On this the 5th day of January, 2009, before me, the undersigned officer, personally appeared RICHARD G. SNYDER, who acknowledged himself to be President of GLACIAL SAND AND GRAVEL COMPANY, a Pennsylvania Corporation, and that he as such President, being authorized to do so, executed the foregoing instrument for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
JEFFREY A. MILLER, NOTARY PUBLIC
EAST FRANKLIN TWP., ARMSTRONG COUNTY
MY COMMISSION EXPIRES MARCH 28, 2012

(SEAL)
NOTARY PUBLIC

(8)

ROAD VARIANCE

Department of Environmental Protection
Bureau of Mining & Reclamation
White Memorial Building
P.O. Box 669
Knox, PA 16232-0669

To Whom It May Concern:

The **Board of Supervisors of Worth Township**, Butler County, 815 West Park Road, Slippery Rock, PA 16057, hereby grants permission to **Glacial Sand & Gravel Company**, P. O. Box 1022, Kittanning, PA 16201, to conduct surface mining activities within the 100 foot barriers including construction of erosion and sedimentation controls, haulroads, stockpiling topsoil, mining and removing sand and gravel along portions of township roads as follows:

T860 West Liberty Road beginning at the intersection with T861 extending east two thousand seven hundred (2,700) feet to the intersection with T396.

T372 Swope Road beginning at the intersection of T860 West Liberty Road extending north seven hundred fifty (750) feet.

This document shall be construed for the purpose of obtaining mining permits on the above-mentioned portions of township roads and does not necessarily contain all the provisions agreed upon by and between the **Supervisors of Worth Township** and **Glacial Sand & Gravel Company.**

ATTEST:

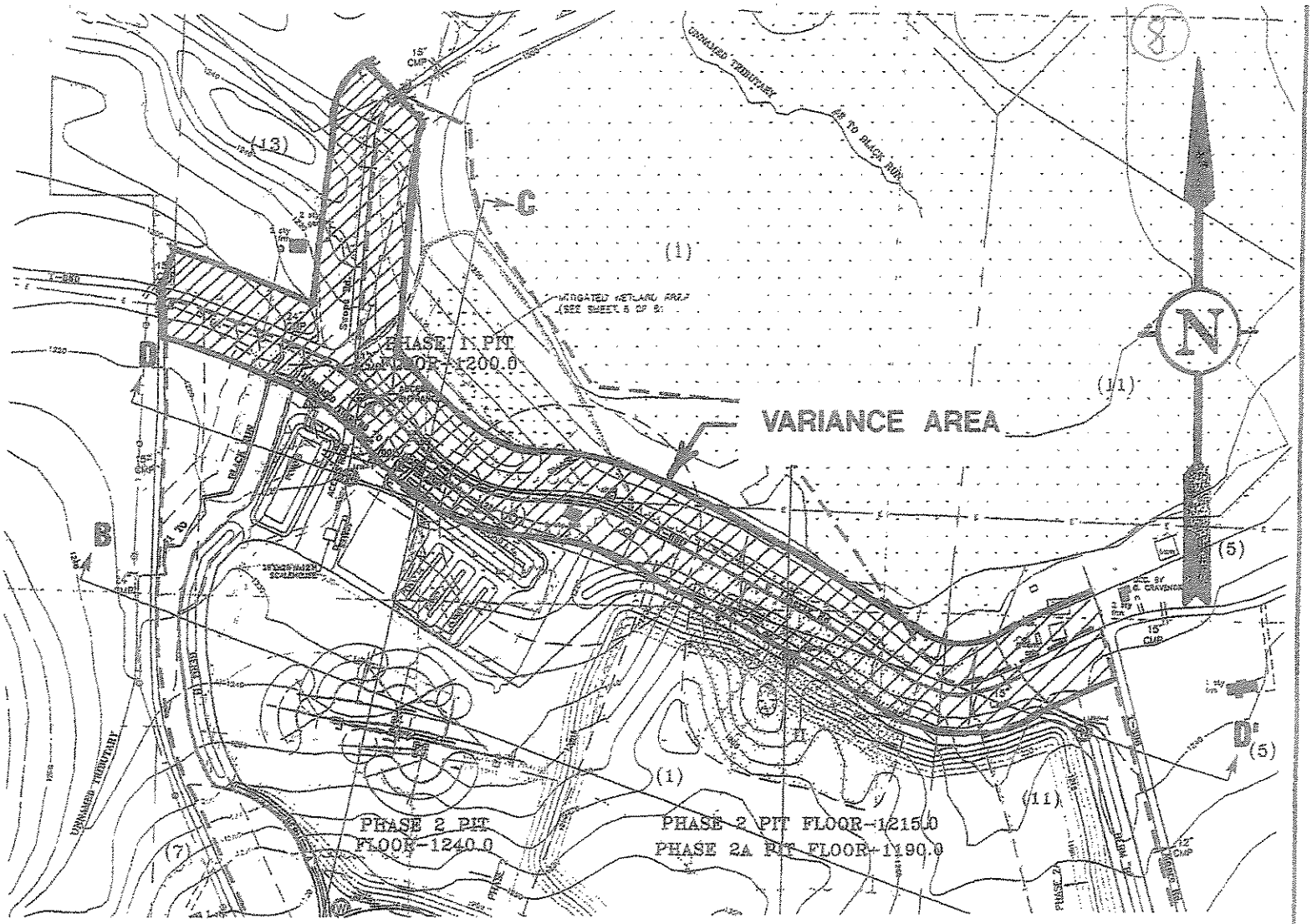
Claire A. Martin, Secretary

BOARD OF SUPERVISORS
WORTH TOWNSHIP
BUTLER COUNTY

Ken Harley — 1-05-09
Ken Harley, Chairman — Date

John Martin — 1-05-09
John Martin, Supervisor — Date

Brian McMurdy — 1-5-09
Brian McMurdy, Supervisor — Date



T382 SWOPE ROAD

T880 WEST LIBERTY ROAD

WORTH TOWNHIP - BUTLER COUNTY

EXHIBIT A

GLACIAL SAND & GRAVEL CO.
PO BOX 1022 KITTANNING, PA 16201
DRWG D480 DKL 01-02-09

functions and values assessment of the existing wetlands to more accurately reflect what is in the field.

6. Please be advised that your Module 14.5 wetland mitigation plan does not follow guidelines and address all issues according to Technical Guidance Document No. 363-0300-001 as requested in Module 14.5(a)(3). Please revise as needed provided that you adequately justify the impacts through your Module 14.4 alternatives analysis. In addition, your wetlands replacement ratio should be greater than 1:1 to replace the functions and values lost by the impact.

7. Please be advised that you may be required to obtain a US Army Corps of Engineers' Section 404 permit for any proposed wetland impacts on-site.

8. Your stream encroachment proposal for unnamed tributary No. 3 to Black Run includes direct placement of the polishing pond gallery in an approximate 200-foot segment of the channel. Please revise your proposal by moving the gallery out of the channel or provide a plan for environmental enhancements to an impacted stream as an environmental benefit to offset the impacts to unnamed tributary No. 3 to Black Run. Please revise your stream encroachment proposal for unnamed tributary No. 3 to Black Run as needed.

Module 17

1. Either submit a copy of the Air Quality permit or negative determination from the Bureau of Air Quality in the Northwest Regional Office.

2. Module 17.1 should include details of the processing facility and water handling plan.

3. The statements in Module 17.3 are not accurate in stating that there is no processing equipment on-site and that no residences are within the immediate area. Please revise Module 17.3 accordingly.

Module 18

1. Please key in the seed and woody plant mixture numbers to the proposed post-mining land use on the Exhibit 18 map. Also, to avoid confusion, if no woody plants will be planted, please delete the information from Module 23.4 and mark as N/A.

Module 20

1. In Module 20.3(c) you should explain how the proposed alternative to AOC is consistent with the programs discussed in Module 1 above.

Bonding Increment:

1. Please submit a notarized letter from Glacial Sand & Gravel Co. granting permission to conduct mining activities within 300 feet of their occupied dwelling.

(10)

Chris Yeakle
DEP
PO Box 669
Knox, PA 16232

February 25, 2008

Dear Chris,

It has come to my attention that Swope Road may be relocated into mining permit area #47. I am concerned that this may be a way to begin mining the esker before the permit has gone through review. The reason I feel this way is because the anticipated project is to move Swope Road 50 feet to the east in order to get truck traffic away from the Rea residence. This is not a project the township was going to do on its own, but is the result of the proposed mining project. Is this allowed?

On January 10, 2008 the Reas signed a Waiver of Restrictions giving Glacial Sand and Gravel the right to mine within 300 feet of their home. This was recorded along with a Contractual Consent of Landowner on January 11, 2008. In a conversation with Mrs. Rea, if I am correct, the purpose for signing the waiver was solely for the purpose of moving the road 50 feet east.

At the next Supervisors meeting, February 5, 2008 I mentioned the above situation and asked if such a project would be part of the long term road maintenance agreement with Glacial Sand and Gravel. I was told, no, it would be a separate project.

Since then I have learned that on January 11, 2008 Glacial Sand and Gravel also submitted a driveway permit application for the washing plant to be located south of West Liberty Road. The plans are now with the Township engineer. After the township engineer and Glacial's engineer have worked things out, a driveway permit will be issued. I do not know if the application was submitted for the entrance currently represented on Exhibit 9 or if it is for a driveway located 50 feet east on West Liberty Road where new stakes have already been placed. (The old stakes are gone.) Time will tell.

As stated above, I have several concerns –delineated below:

1. Module14, page 4 section 14.1 b) states: "Access to this operation will be from West Liberty Road, at the intersection with Swope Road, as requested by Worth Township officials. This location was chosen for safety purposes due to maximum visibility in both directions of West Liberty Road." Glacial showed this entrance on Exhibit 9 and stated this safety issue in the permit application yet they continued to seek Rea's variance in order to relocate the road knowing full well that this might put the public at greater risk from the trucks. Glacial originally wanted the driveway on Mt. Union Road.

Moving the driveway 50 feet east to where survey stakes are now placed, will bring the truck traffic closer to the curve on West Liberty Road. Perhaps the next suggestion will be that the township should give Glacial Sand and Gravel the waiver on West Liberty Road to straighten the curve by cutting into the esker so that the intersection would again have maximum visibility. Again, under the guise of helping the residents, mining could begin in the permit area.

2. Has Glacial Sand and Gravel revised Module 14 to reflect a change in stream encroachment due to the driveway relocation?

3. Module 10 page 4 section 10.12 will also need to be modified to reflect mining north of West Liberty Road and mining east of Swope Road.

4. Module 10 section 10.12 will also need to be modified regarding a public notice advertisement which will need to be run for a variance on Swope Road beyond a point 100 feet north of West Liberty Road. This was not listed in the initial public notice.

5. Module 10-12 states that if the road is to be relocated, detailed plans, cross-sections, etc. along with the Township waiver need to be submitted. Would a road relocation such as the one proposed for Swope Road be a township project or fall under these guidelines?

6. Module 10 section 10.14 will also need to state that utility poles, currently located in the township right of way east of Swope Road will need to be relocated.

7. Wetland Delineation- A letter from Steven Kepler, PA Fish and Boat, dated December 20, 2007, states that the wetland delineation for the small wetland was not acceptable. If it turns out that the area does extend beyond the current flagged area would it not be possible that the large wetland is also incorrectly delineated? This would be a concern with any road relocation because a larger wetland area north of West Liberty Road would leave less room for mitigation of the small wetland, if that is approved, especially since the small wetland needs to be replaced at greater than 1:1. Also Swope Road relocation itself might then be too close to the wetland and need special permits. And, if the large wetland is deemed exceptional value, road encroachment with runoff, etc. might be a problem. Cutting into the esker and removing large portions under present Swope Road might also affect hydrology to the wetland as experts have recently indicated.

8. The esker will be included in the PNHP review database layer and it would be unwise to forget that in the rush to start this project. Please refer to DCNR letter from Jim Shaulis dated November 6, 2007.

next page →

In summary, my main concern here is that actions to move the driveway or Swope Road will result in a start to the project before the review is complete. We are also expecting a complete Environmental Impact Study to assess habitat, hydrology, endangered species, etc, before anything proceeds and we don't want to see the environment disturbed in any way or any actions taken that involve land on or close by the permit area. I trust that the issues I have raised will cause alarm on your part, too.

Thank you for your time and consideration. I look forward to your actions and written response to the concerns raised in this letter.

Sincerely,

[redacted]

#6 - privacy

~~Sentenia Certified Mail~~

cc: John Baillie, Sr. Attorney – Penn Future
Steven Kepler, Fisheries Biologist – PA Fish & Boat Commission

(10)

Pennsylvania Department of Conservation and Natural Resources

3240 Schoolhouse Road
Middletown, PA 17057-3534
November 6, 2007

Bureau of Topographic and Geologic Survey (717) 702-2017

Dept of Environmental Protection
White Memorial Building
PO Box 669
Knox, PA 16232-0669

FAX (717) 702-2065

Dear: Sirs,

Glacial Sand and Gravel Co. recently submitted a mining permit application to your office to mine sand and gravel in Worth Township, Butler County. Mining at this site would impinge upon West Liberty Esker geologic heritage site (also known locally as the Jacksville Esker, Miller Esker, and West Liberty Hogback).

This geologic feature will eventually be included in the Pennsylvania Natural Heritage Program (PNHP). It is one of the geologic heritage sites currently being reviewed for inclusion in the PNHP review database.

The particular location of the permit area includes the deposits and landforms where the esker, deposited by a subglacial stream, joins a large delta that was deposited at the end of the subglacial tunnel into an ice-dammed, proglacial lake during the Kent glaciation about 23,000 years ago. The esker is the largest and best preserved esker in northwestern Pennsylvania. Rarely, and nowhere else in northwestern Pennsylvania, is the relationship between an esker and a delta so well displayed. This site is of significant educational and scientific value.

We request that, if this permit is approved, that care is taken to prevent the destruction of this rare geologic feature.

If I can be of further assistance, feel free to write or call.

Sincerely,

James R. Shaulis

James R. Shaulis
Geologist
jshaulis@state.pa.us

cc: Glacial Sand and Gravel Co.
Worth Township
Reading File

11

The maintenance of the public roads is the responsibility of the owner of the road. Townships have the responsibility for maintaining their roads. They can require maintenance agreements with companies utilizing the roads. It would be up to the township to document the conditions of the roads prior to the roads being used by the mining company.

COMMENT:

Glacial has not obtained a Section 404 permit from the U.S. Army Corps of Engineers for the proposed wetland impacts. (Commentators 1 and 6)

RESPONSE:

The mining program does not have a memorandum of understanding with the U.S. Army Corps of Engineers. Our permit actions do not supersede any federal requirements for permitting activities in wetland areas. The burden is on the mine operator to obtain all necessary permits for the activities they plan to undertake. We have advised Glacial that their activities may require a Section 404 permit. A joint determination was conducted on April 30, 2008, and the initial indications from the U.S. Army Corps of Engineer representative is some of the wetlands are jurisdictional.

COMMENT:

Swope Road may be relocated into the area currently within the permit boundary. This may be an effort to begin mining the esker before the permit is approved. (Commentators 2)

RESPONSE:

Swope Road is subject to Worth Township jurisdiction. Relocating the road is not a mining activity and does not require a mining permit, although other permits, such as for soil and erosion control measures, may be required.

COMMENT:

Glacial has not received an Air Quality permit for the processing plant. The site where the plant currently sits creates a lot of dust and air pollution. (Commentators 1, 4, 6, 11, 17, 20, 29, 38, 41, 46, 47, 49, 54, 55, 57, and 58)

RESPONSE:

The Air Quality plan approval for Glacial Sand & Gravel is being coordinated with the mining permit as required by the Department's policy on the coordination of issuance of permits.

agricultural land by avoiding or minimizing the impacts to prime agricultural land within the permit area. On page 1-4 of the application, you should indicate the alternatives to the disturbance of the prime agricultural land considered and the reasons they were not deemed feasible. In addition, your demonstration in Module 20.3(c) should show that the alternative to approximate original contour is consistent with these land use policies, plans, and programs.

Module 4

1. You state in Module 4.1 that the township has approved the road variance application and the approval is included in the application. We did not receive the approval in the packet of information you submitted. I spoke with the township secretary and she said that the requests for the road variances have not been made to the township. Please clarify.

2. You must demonstrate compliance with Section 77.504(b) for each of your variance requests in Module 4.1. Your responses must provide a demonstration that your requests satisfy each of the criteria listed in Section 77.504(b).

3. The Pa. Historical and Museum Commission (PHMC) contacted us regarding the discrepancies in the maps we sent them for their review as a part of our acceptance of the application and maps that were submitted by concerned citizens in the area. It was determined that the maps we sent to the PHMC for their review did not accurately reflect the permit boundary. Based on the revised maps, the PHMC has now indicated that there is a high probability that significant archaeological sites are located in this project area. It is recommended that a Phase 1 archaeological survey be conducted to locate potentially significant archaeological resources. If you choose to not do the survey, the permit will be special conditioned that should you encounter archaeological resources during mining, you will need to cease mining in that area and notify the appropriate agencies. If this project will require any federal permits, you may need to conduct the archaeological surveys as a part of the federal permitting process.

Module 5

1. We understand that Glacial Sand & Gravel Co. now owns the Raymond Tempalski property. However, there is no reference to that land transfer in Module 5.1. Therefore, it is not clear that the Raymond Tempalski Supplemental "C" is for one of the tracts of land owned by Glacial Sand & Gravel Co. Please revise Module 5.1 to further clarify that Glacial Sand & Gravel Co. is now the owner of the property that was formerly owned by Raymond Tempalski.

August 29, 2009

Tyler Bintrim
Pittsburgh District Corps of Engineers
1000 Liberty Ave. Federal Building
Pittsburgh, PA 15222-4186

Re: Public Notice 09-38 CLERP-OP-F 2008-280

Dear Ty,

Here are some additional comments regarding PN 09-38.

I believe Chris Yeakle told me that there is a way Glacial can add an access road to their adjacent permit so they can haul material directly through the Plant site instead of using Mt. Union Road. Mt. Union Road is narrow so when the trucks are running traffic is limited to one lane, with a flagman at the pit entrance and one at the bottom of the hill. Would this involve any Army Corps permits?

Also, I noticed in the Mine 31 permit application (Exhibit 13) that there is an unnamed tributary to Tamarack Lake. Do you know how this stream reaches Tamarack Lake and if it will be impacted by mining in either Mine 31 or proposed Mine 47?

Module 14: Streams/Wetlands North of West Liberty Road Wetland No. 1 states that this wetland is not exceptional value. However, a letter from Jim Bissell to Chris Yeakle, dated 10/23/08, also included in the application states that it is an Exceptional Value Wetland. The EADS group, in a letter to Emilee Boyer, DCNR, 2/18/09 states, "We are aware that it's designation is as an Exceptional Value wetland." This letter was in the NPDES file. (Exhibit 14)

The 3/13/09 DCNR, PNDI review letter states on Page 2 that a map is enclosed showing the fen habitat where impacts should be avoided. I can't seem to find this map in my copy of the application. Do you have a copy, and if so, could you send a copy to me, please? Thank you. Also, do you have the map where the polygram data was entered for verification to DEP? I'd like to see this, please.

Could you please explain the legend in Jim Bissell's report? In the black and white copy I received the indicators for two plants and spring seep all look the same.

In the EADS letter to Emilee Boyer (Exhibit 14) it says, "...as the maps submitted with Dr. Brenner and Dr. Bissell's report show, there are no threatened or endangered species within 1,000' of the proposed activities." I realize they were referring to activities for the Rodgers Plant but is there some significance to the 1000'? Is a 1000' setback from threatened and endangered species required? If so, I believe the proposed #47 mining and wetland mitigation will be within 1,000'.

RECEIVED
2009 SEP -2 AM 10:32
ARMY

If 1000' is not required, is there some other specified buffer required?

I am also concerned about the boundaries of the large wetland. This letter goes on to say, " although the northern boundary of the permit overlays the wetland (Wetland #1) in the area, there is no intention of encroaching or affecting this wetland in any manner." (Exhibit 14) Would you know why the permit boundary goes into the wetland if they have no intention of affecting it? Perhaps this is not your jurisdiction. Perhaps they could just remap and move the boundary out of the EV wetland.

Also, if the mining permit is granted and Swope and West Liberty Roads relocated, what is the actual size of land left for mitigation should it be approved here? I would like to see an actual survey done on this. Because DEP requests mitigation be larger than 1:1 (Exhibit 9) but at this point how much larger is unknown I would like to be assured that if mitigation to this area is approved it will not encroach the EV wetland.

Another point to consider is that Swope Road continues to grow wider with the heavy truck traffic. There is now a steep 2-3 foot dropoff on the wetland/esker side near the end of the Slamecka driveway. I do not believe the proposed road relocation will come to this point on the road, and I wonder if in times to come, an expanding road may also shrink the area for mitigation in unpredicted ways.

How far away does construction for a mitigated wetland have to be to not encroach the EV wetland? How much buffer will be left between the two wetlands?

The PNDI review letter in the application states, " please thoroughly wash all vehicles, equipment and machinery at a carwash off site to remove any invasive plant propagules prior to bringing onsite and commencing any construction activity." What car wash will be used and who will monitor this process to ensure that no invasive plants will be brought onsite that may cause secondary adverse impacts to the endangered plants in Wetland 1?

I am concerned about the Esker. The West Liberty (Jacksville) Esker has been listed as one of The Outstanding Scenic Geologic Features of Pennsylvania since at least 1979. Environmental Geology Report 7, 1979. ((Exhibit 15) While it was not yet listed in the PNHP when Glacial purchased their property in 2006, the company was informed in a letter from James Shaulis, geologist, DCNR, 11/6/07, of the rare scientific and educational value of the part of the esker they owned and asked that it not be destroyed. He also informed them that the Jacksville Esker was in process and was slated for inclusion in the PNHP (Exhibit 10 pg 3). The Jacksville Esker is part of Pennsylvania's geologic heritage.

At the DEP Public Hearing 2/19/2008, Mark Snyder listed the Jacksville Esker as the most commonly sited concern in the public comment letters. He explained what they planned to do with the esker but did not address public concerns. Perhaps he intended to but at that point in his presentation he was asked to hurry along. In the 27 page Comment Response Document for the Public Hearing, DEP states that while they do not provide

special protection to geologic features, they recognize the public interest and educational and scientific value and have recommended to Glacial that they consider the public comments on the esker as a part of the development of their mining plan (Exhibit 16). The Document later states that they have encouraged Glacial to maintain an open dialogue with the concerned citizens on unresolved issues since another public hearing is not permitted by regulation.

I know that citizens have approached Glacial, in testimony at the Public Hearing and in person, and asked that they consider leaving this small portion of the mining permit area untouched and perhaps use it for educational purposes with a trail at the top and observation points looking into the EV wetland. In this way Glacial could continue to support the SRU Geology students and Boy Scouts as they do now, and other interested citizens. Protection would be left for the plants and wildlife, and the hydrology to the wetland and lake from the esker would be protected as well. The company could mitigate the small wetland off site if mitigation is approved.

Glacial's present application indicates that their plans to mine the esker and mitigate in its place remain, in spite of public concern and interest. There has been no open dialogue that I am aware of concerning this or other unresolved issues.

When I personally wrote to the EADS group in July 2009 seeking open dialogue, I was told that they and by extension Glacial could not open a private dialogue with me and was advised to refer my questions to DEP for the public review process. This confused me because the DEP review is on hold awaiting Glacial's response to DEP's 3/31/08 corrections letter. I have referred my questions to DEP and am awaiting their reply as stated in my first letter to you. There is also now the added complication since the Rodgers Plant was separated from the mining permit application and was permitted separately under Township Land Development and the NPDES permit. DEP had no involvement with the Rodgers Plant so I do not know if they will be able to answer questions regarding it and related hydrology. I also do not know who will have regulatory oversight of the Plant once it is up and running. I am concerned that my and other citizens' concerns and questions regarding all aspects of the proposed mine and processing plant may go unanswered and unaddressed, and the public interest will not be served.

When the PNDI review letter was sent on 3/13/09, Glacial was informed that the West Liberty Esker was a resource of concern and they were asked to contact Gary Fleeger, geologist, to discuss it. I see no report indicating that they did. There are reports on the other resources of concern but not the Esker? Why is that? Are they not required to provide this information, and if not, why not.

I am still concerned about hydrology. I realize that Glacial did pump tests, but no where do I see mention of the effect mining of the esker will have on the water in the EV wetland and Tamarack Lake. Resident scientific experts point out that removing the end of the esker Will affect hydrology because the esker captures and stores precipitation as soil and ground water and then provides baseflow seepage to the wetland. This concern

was raised at the Public Hearing in 2008. Other experts had also told me of this concern when the mining permit application process started in 2007. Where does Glacial address this issue? Why has this issue been ignored?

This issue is critical because of the immediate and secondary impacts to the EV wetland, to potential critical habitat, and to the threatened and endangered plants, birds, and reptiles who either presently or potentially depend on the wet soil and water for their growing medium(plants), breeding grounds (American Bittern), feeding grounds (Bald Eagle, Osprey), and overwintering habitat, (Massasauga rattlesnake). Other rare marsh birds also live in the wetland and depend on the water as well as the egrets who have been seen at Tamarack Lake. Please address this enormous concern of the hydrologic effects of removing this end of the esker. Please tell us how new calculations and conclusions will be drawn. Also, please assure us that DCNR , the PA Game Commission, and PA Fish and Boat will be made aware of this issue and given time to reevaluate their findings. I would also ask that Glacial's experts who all expressed that mining would not affect the species be contacted for reevaluation. Thank you.

At the DEP hearing Mark Snyder said that they don't anticipate any discharge directly into Tamarack Lake, and that there will be discharge from their E and S control facilities to the wetland that feeds the lake (taken from DVD of the Public Hearing). What E&S control facilities will be north of West Liberty Road and how will they work? Could you please explain this, and the implications of discharge to the EV wetland? Is this discharge allowed?

The PNDI review letter states that based on the NPDES permit, "There are no direct impacts anticipated for the actions proposed in this permit contingent upon the prevention of runoff from activities involved in construction and operation of the Plant from entering Wetland 1" It further states, "Please be sure that none of the activities involved in the surface mine permit will harm Wetland 1 or critical habitat for the endangered species through either a change in the local water table or direct earth disturbance." Do you know if DCNR was aware of the E&S discharge into Wetland 1or the above mentioned effects of removing the esker?

I am concerned about endangered geologic features and species. According to the DCNR website's Heritage Geology Criteria, (Exhibit 17), the Jacksville Esker would qualify as Scenic, Educational, Scientific, Significant, and Endangered. And if all goes according to the mining plan, this end of the esker will be Destroyed.

I would even go so far to say that the esker, or Hogback as it has been locally called, gives a "Sense of Place." I grew up with the Hogback, as have many others before me, and I can't imagine Swope Road and the surrounding area without it. In fact it is so locally known as the Hogback that when this process started in 2007, I and others had to educate ourselves regarding its extreme Statewide Significance, and to use its geologic name. To us it is just part of "Home". But as the outpouring of sentiment in 2007 and 2008 indicates, many others feel similarly and to destroy this feature would not be in the Public's best Interest.

The website states that "Heritage geologic features are recognized special places of intertwined geology and landscape. Heritage geologic features may include unique or exemplary outcrops, scenic views, or other geologically significant features that together represent the geologic diversity of the Commonwealth."

We hope that this feature will be preserved not only for its geologic importance, but for the hydrologic importance and protective barrier it provides to other threatened or endangered species as well. It's interesting to me how in this instance one endangered species depends on another for its existence. That's how ecosystems work. They can't be broken into isolated parts. The fact that all of these species and features are in peril indicates, at least to me, that some humans still do not understand the interconnectedness of life, and that if given the chance may unwittingly endanger us all.

An article in the Endangered Species Bulletin – Spring 2009 Vol.34 No.1 says, "Precluding the need to list: The most effective way to save a species is to conserve it before it reaches extinction." I hope this advice will be considered as this permit application is being reviewed.

When the American Bittern study was done the wetland was extremely dry, and I am concerned that this may be why the bird was not spotted. The DCNR website says "American Bittern require wetland habitats. They are most likely found in marshes and wetland borders along lakes ponds, rivers, and streams." I am also concerned because the wetland was lowered as the result of an unauthorized backhoe trespassing and breaking down the beaver dam at the Swope Road culvert. This was the second time this had happened, the first being in the fall of 2007. Neither the Township nor the land owner had authorized or performed the work. When I saw that the water was quickly dropping well below normal levels, I contacted DEP to see if this was allowed, or if permits were needed for dredging, etc. My concern was referred to DEP Meadville who referred it to BCCD. I never heard any more about it and later on the beavers rebuilt the dam. I was concerned because I knew a study was needed to document the bird nesting and the bird needed the wet habitat to nest.

In early 2009, out of curiosity, I began to make calls to see what had transpired. I found out that BCCD had forwarded the complaint back to DEP Meadville. Somehow, as a result of miscommunication, my concern had fallen through the cracks and was never investigated. DEP Meadville did come down to look at the culvert after my call, but by 2009, as previously stated, the water level was back up so there was no way to make an accurate determination. It was also interesting to discover, when I received a copy of the permit application, that the American Bittern study began on April 23, 2008. I had contacted DEP about the disappearing water on April 9, 2008.

It would be nice if another study could be carried out under normal conditions. However, with the heavy truck traffic and heavy equipment operating in the Plant site, I don't think conditions will ever be normal.

I am extremely concerned by the study's conclusion that, based on their field survey, "it was determined that the American Bittern is not using this wetland for nesting. In addition, the mine proposes no disturbance to the wetland. Therefore, American Bittern would not be affected by the proposed mine project and the wetland area would remain as suitable habitat for potential future American Bittern use."

Again, no mention is made of the loss of water to the wetland from mining the esker, or that the wetland was compromised due to unusual human activity. These two points, in my opinion would invalidate their conclusions. Please remember that the American Bittern was seen and heard in the wetland the previous year.

Similarly, the plant and rattlesnake studies do not address the hydrologic effects of removing the Esker so I believe their conclusions are invalid. In addition, in the fall of 2007 I noticed land disturbance on the property, and mowing and cutting of vegetation in and near the small wetland. I don't remember exactly when it was done. Could this have frightened the snake from the area?

Because of heavy truck traffic, grey dust now coats plants near the side of Swope Road, by the esker and large wetland. If the esker is removed I am concerned that the endangered plants will have no protection from dust or other pollution such as road oil. Is DCNR aware of this?

I have other concerns but time constraints do not allow me to present them. I am enclosing a draft of a letter to Chris Yeakle, never sent, is regards to Glacial's 2/25/08 revisions submitted in response to DEP's correction letter(Exhibit 16). Some of my comments no longer apply since the Rodgers Plant was separated from the mining application and some do. I present them for content and as an illustration of the irregularities, contradictions, omissions and errors I have personally seen in several of their applications (I am referring to Allegheny Mineral applications as well.) Their submissions concern me greatly, and I hope you will carefully consider the accuracy of everything while making your decision.

I would also like to state that it gives me no great pleasure to write about these things. When this mining process began I innocently believed that we could sit down with Glacial and a plate of cookies and talk. DEP said the miners wanted to be good neighbors and Glacial echoed this. But as time went on and my questions became more complex and pointed, their friendliness wore off and I was left to carefully study their words and deeds to try and figure out what was going on. DEP encourages public participation but I discovered it takes a lot of hard work and often heartache to accomplish this. Yet I and others carry on because we care so passionately for our beautiful home place and wish to protect it. I don't know of one person who would not welcome the opportunity to sit down and talk with the company and the Snyders if they felt an honest, open minded and open hearted discussion would follow, with compromises and promises fulfilled.

I think the impasse comes because we have different goals. Most citizens want to protect their water, air, health, roadways, children, the animals, birds, etc – their rural way of life. The miners are in a business that requires destroying the very land these people live on and depend on for food, water, lumber, recreation, hunting, fishing and so forth. Granted much land will become wildlife habitat so maybe hunting and fishing will be allowed in the future. But frankly, I think most of us will be dead before all the proposed mining in our area stops. Even so most people realize we all use mineral resources. It just seems our needs have become tremendously excessive all of a sudden if so much aggregate is needed within a 35 mile radius of Worth Township, where Mark Snyder said it was primarily used.

Again, as I contended at the Public Hearing it would be great to sit down with citizens, agencies, and Glacial to discuss ways the company could still make money but in a more sustainable, earth friendly way. A bit idealistic and hopeful I know, but the Snyders are a diverse corporation with agriculture being one of their concerns. So maybe this idea is not so farfetched. I hope not. Because I feel the times demand it, the Earth demands it and our children demand it. And we will be held accountable to the future in some way.

Thank you for your patience in reading this. I respectfully request that this permit application be denied.

Sincerely,

[redacted]

#6 - privacy

Ex. 13

There are also two permitted areas in close proximity to the proposed permit area. Lineal Industries, Inc. (MDP No. 3075SM10) is located on property No. 11 to the west and Emlenton Limestone (MDP No. 3073BSM4) is located on property No. 5 to the north. These two permits do not appear to be active at the time, but no effects on the quantity and quality of the ground water has been observed.

7.4 *Surface Water Information.*

a) *Identify each stream receiving drainage from the proposed operation and the 25 Pa. Code Chapter 93 projected water use classification.*

Stream	***Classification***
Hogue Run	CWF
Unnamed tributary to Hogue Run	CWF
Unnamed tributary to Tamarack Lake	CWF

b) *Identify the effects which previous mining has had on the quantity and quality of the surface waters in this area. Include the source, rock unit involved, and reasons for the effect.*

There has been no effect of the previous mining of the sand and gravel deposits to the north of the site on the surface waters of the immediate area. Please see Module 7.3(d) above.

7.5 Public Water Supply Information

Provide the name, type, and location of all current public (community and non-community) surface water supplies that have intakes on the receiving stream within 10 miles downstream of the proposed permit area, and public (community and non-community) water supplies (wells or springs) in or within one half miles of the proposed permit area (Public water supplies, community, and non-community water supplies are as defined in Chapter 109 Pennsylvania DEP Safe Drinking Water Regulations).

There are no known public waters supplies along the receiving stream within 10 miles downstream of the proposed area of mining.

7.6 Hydrologic Assessment

a) *Describe the ground water hydrology in relation to the proposed mining operation (at maximum depth and lateral development) - i.e. - intercept regional water table, above regional water table, intercept perched water table, etc.*

The glacial sand and gravel unconsolidated deposits are very porous and permeability will be fast. The groundwater movement is influenced by the topography and by the underlying structure. This local groundwater flow would be from the northwest to the southeast as evidenced by the wetland environments found along Hogue Run and its unnamed tributary and static water levels within private water supply wells and monitoring wells. The small apparent perched water table within the north central section of the permit may be intercepted, but will not affect the hydrology of the site or the groundwater movement since the next aquifer down is confined by the Brookville coal immediately beneath the glacial deposits. The deeper regional aquifer is believed to be associated with the Kittanning Formation which will remain unaffected by this mining operation.

THE EADS GROUP

ENGINEERING ARCHITECTURE and DESIGN SERVICES

Ex. 14

February 18, 2009

Emilee C. Boyer
Ecological Species Section
Pa DCNR
Bureau of Forestry
PO Box 8552
Harrisburg, Pa 15105-8552

RE: Glacial Sand and Gravel, Co.
Mine 47
Worth Township
Butler County
Project ID 20071211120195
Previously Submitted 20061010059358 and 20071211120199

Dear Ms. Boyer

Enclosed please find an additional map delineating the maximum area of disturbance for the areas North of West Liberty Road. There is, nor has there been, any intent to encroach into Wetland # 1. We are aware that it's designation is as an Exceptional Value Wetland however, as the maps submitted with Dr. Brenner and Dr. Bissell's' report show, there are no threatened or endangered species within 1,000' of the proposed activities.

Previously submitted maps incorporated the Surface Mine Permit Boundaries which included the areas North of West Liberty Road. A map showing the project areas (the surface mine permit boundaries and NPDES boundaries) was sent to your office on November 5, 2008. In my cover letter I pointed out that *"although the northern boundary of the permit overlaps the wetland (Wetland # 1) in this area, there is no intention of encroaching or affecting this wetland in any manner"*. In addition I would like to refer you to the initial PNDI search (230061010059358) completed on 10-10-06 which actually includes a major portion of the wetland complex # 1. On December 11, 2007 two new PNDI searches were done. The first (20071211120199) shows the area as is currently shown on the Surface Mine Permit Application, and deletes the larger area(s) initially shown for the wetland on the 10-10-06 request. The third request (200712111120195) (also done on 12-11-07) includes **only** the NPDES permit area which does not include any areas north of West Liberty Road.

☐ 1126 Eighth Avenue
Altoona, PA 16602
(814) 944-5035
(814) 944-4862 Fax

■ 15392 Route 322
Clarion, PA 16214
(814) 764-5050
(814) 764-5055 Fax

☐ 227 Franklin St., Suite 208
Johnstown, PA 15901
(814) 535-5388
(814) 535-7654 Fax

☐ 450 Gaskill Street
Somerset, PA 15501
(814) 445-6551
(814) 443-2748 Fax

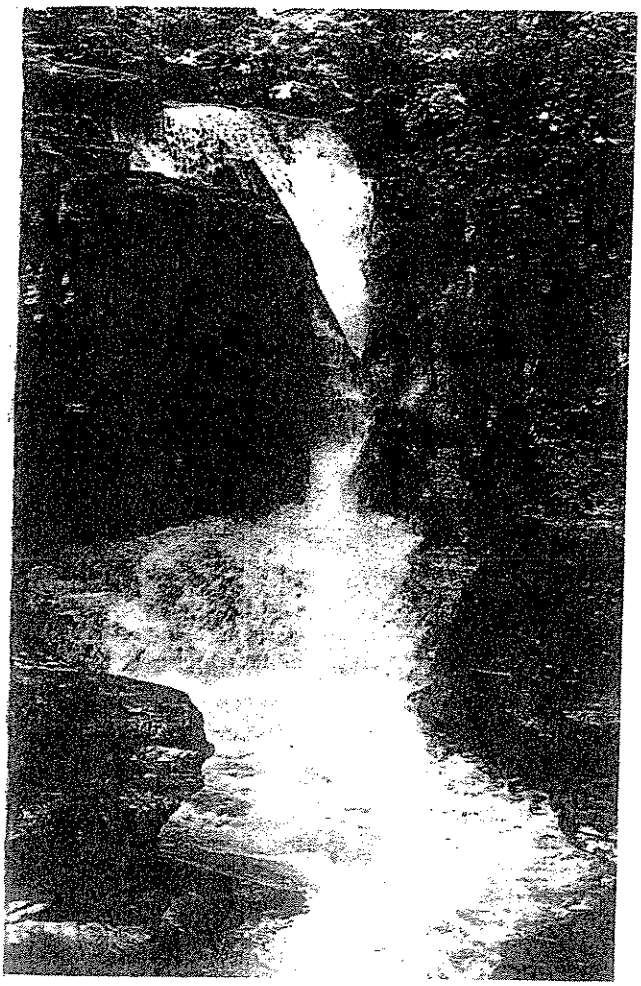
☐ 1041 Mill St.
North Huntingdon, PA 15642
(412) 754-0801
(412) 754-0860 Fax

☐ 51 Baltimore St., Suite 600
Cumberland, MD 21502
(301) 777-7878
(301) 777-8391 Fax

Ex 15

Environmental Geology Report 7
1979

OUTSTANDING SCENIC GEOLOGICAL FEATURES OF PENNSYLVANIA



ark, Luzerne County

Alan R. Geyer
Pennsylvania Department of Environmental Resources
Bureau of Topographic and Geologic Survey

William H. Bolles
Pennsylvania Department of Education
Bureau of Curriculum Services

Library
Topographic and Geologic Survey
Harrisburg, Pa.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF
TOPOGRAPHIC AND GEOLOGIC SURVEY
Arthur A. Socolow, State Geologist

Ex 15

NSYLVANIA

ımity

: Union City

Approximate-
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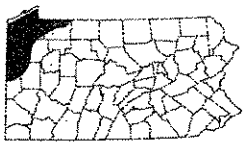
APPALACHIAN PLATEAUS PROVINCE

GLACIATED SECTION



23. WEST LIBERTY ESKER

COUNTY: Butler TOWNSHIP: Worth

QUADRANGLE: Slippery Rock

LOCATION: Between West Liberty and Jacksonville.

REMARKS: This 3-mile-long esker is probably the best remaining example of this type of glacial deposit in western Pennsylvania. The esker was formed during the close of the Wisconsinan glaciation, and is also known as the **Miller Esker** and **West Liberty "Hogback."**

Eskers are ridge-shaped sand and gravel deposits formed during the melting of a glacier. The ridge form marks the trace of a glacial meltwater stream that is confined within the ice mass. Esker ridges are always associated with the stagnation phase of the glacial episodes.

There are two major ways that the esker ridge can form: 1) in an ice tunnel along the base of or within the stagnated ice mass, and 2) as a meltwater channel deposit or crevasse filling on the surface of the ice.

Ex 16

The public hearing was held on February 19, 2008, at the Slippery Rock High School. Testimony began at 6:25 P.M. and concluded at 9:15 p.m. The record was held open until March 4, 2008, for additional comments to be submitted in this matter. The written documents submitted at the public hearing and sent to the Department are a part of the record in this matter. The comments submitted and the Department's response to those comments includes the testimony given at the hearing and all written documents submitted as a matter of the record on this application. The comments and the Department's response are as follows:

COMMENT:

A portion of the Jacksville Esker is included within the area covered by the permit application and is proposed to be affected by the mining operation. Specifically, the terminus of the Jacksville Esker is located in the northeastern section of the intersection of West Liberty Road and Swope Road. The esker is a very important geologic heritage area and has value to educators and scientists studying geology and glaciers. The DCNR is reviewing the esker for inclusion in the Pa. Natural Heritage Program. (Commentators 1, 3, 4, 8, 9, 10, 11, 13, 14, 15, 18, 22, 24, 29, 33, 36, 37, 39, 42, 44, 46, 47, 48, 50, 51, 52, 53, 54, 55, 57, 58, and 59)

RESPONSE:

We recognize the public interest in the Jacksville Esker and its educational and scientific value. The portion of the esker contained within Glacial's permit application is located on private lands and is approximately 500 feet from the portion of esker owned by the Western Pennsylvania Conservancy.

The Noncoal Surface Mining Conservation and Reclamation Act (The Act) and the regulations 25 PA Code Chapter 77, Noncoal Mining, provide special protection to public parks but not to geologic features.

We have recommended to Glacial that they consider the public's comments on the esker as a part of the development of their mining plans.

COMMENT:

The proposed mine site is located within an area where there are competing land uses of agriculture, natural uses, and rural residential communities. (Commentators 1, 4, 11, 17, 20

RESPONSE:

Acts 67, 68 and 127 of 2000 amended the Municipalities Planning Code to provide new tools for local governments to plan for and manage growth. The townships and counties through their land use planning and zoning ordinances are better able to

Ex 17

Heritage Geology Criteria

What makes a place a heritage geology site? The significance of a site is based on values and criteria that define a heritage geology site. As shown in the table below, the criteria used are based on an assessement of a site's value. For example, if a site has potential value because of the educational merits of the site, then the degree of excellence displayed by the site is used to evaluate its inclusion into the program. In addition, the conservation status and the type of significance is important to consider.

Value	*Criteria*
Scenic	Degree of excellence and beauty of a scenic natural landscape that clearly displays the result of geologic processes over time.
Educational; scientific	Degree of excellence with which a feature displays aspects of the nature and development of geological, landform, or soil systems in its region; use as a teaching site to show geologic concept; frequency of citation in scientific papers; site of important measurement or discovery.
Recreational	Frequency of recreational usage.
Social/historical	Degree to which a feature has played a role in the life or development of past or present human communities.
"Sense of place"	Degree to which a human community regards a feature as integral to the identity of their place.
Spiritual/religious	Degree to which a feature figures as sacred or holy in a community's spiritual life.

Significance

Outstanding significance is displayed by a feature that exemplifies an aspect of geodiversity that is rare, unique, or exceptionally represents an example of its type, or otherwise of special importance. A representative significance is displayed by a feature that may be considered rare or common, but is considered significant as a well-developed or well-exposed example of its type.

Conservation

The condition of the natural values of a feature and the degree to which current land uses and land management practices are likely to protect those natural values given their inherent sensitivity.

Conservation Status Categories

Secure	Values not likely to be degraded under existing landuse conditions.
Potentially threatened	If landuse conditions change, or if vandalism occurs or continues, degradation of values is likely.
Threatened	Values actively being subject to degradation.
Endangered	Values have been subject to degradation.
Destroyed	Features whose values have been lost due to degradation.

For information regarding geologic features and PNHP, contact Jim Shaulis of the Pennsylvania Geological Survey at **717–702–2037**.

Bintrim, Tyler J LRP

All Redactions - Exemption 6-privacy

From: [redacted]
Sent: Thursday, August 20, 2009 2:00 PM
To: Bintrim, Tyler J LRP
Subject: Slippery Rock PA esker impact

Dear Mr. Bintrim:

It has come to my attention that the mining company is making further request to negatively impact the Esker and related wetlands in Slippery Rock, PA. I am re-emphasizing my earlier correspondence of November 8, 2007 to the Department of Environmental Protection:

It has come to my attention that Glacial Sand and Gravel has applied for a mining permit (application #10070304) at the property intersecting Swope Road and West Liberty Road, Worth Township, Butler County, Pennsylvania. This property contains a noteworthy geological feature, an esker and associated wetland, which needs particular consideration in the mining permit process. As a resident of Worth Township, I have specific concerns regarding the eco-environment of the esker/wetland feature and the subsequent impact that mining this environment will have in the future. Recent correspondence from the DCNR indicates that the engineering company conducting the background research may not have been fully aware of the esker/wetland geological feature, and therefore unaware of the scope of the issues.

I am requesting that the environmental/ecological impact be fully considered (including the esker/wetland) when establishing permit boundaries, setbacks and limitations. Additionally, I am urging that any requested variance, which negatively impacts the esker/wetland feature, be denied. Mining is a valuable industry in our area and my intention is that Glacial Sand & Gravel have a safe, successful business at this location without destroying or creating a negative trickle-down effect on the future ecological environment related to the esker/wetland feature.

Please contact the DEP regarding application #10070304 as they are certain to have a complete reference of the public's concern on this matter. The mining in this area has already impacted the environment, and the citizens are looking to you for the appropriate protections. [redacted]

Thank you for your kind attention in this regard.
[redacted]

Bintrim, Tyler J LRP

From: Kepler, Steven [skepler@state.pa.us]
Sent: Thursday, August 20, 2009 2:34 PM
To: Bintrim, Tyler J LRP
Subject: RE: Glacial Sand and gravel,SMP #10070304

This application involves an application to DEP for a sand and gravel mining permit. The wetland issues had been initially addressed through the mining permit application process. The company has not successfully addressed the issues through the DEP process and since this will be a 105 permitting issue, won't this be going through a joint permit application. There are Endangered Species concerns along with other issues including an alternatives analysis which again has not been accomplished. Could you get me a copy of proposed project and details or give me a call to discuss.

Steven Kepler
Pennsylvania Fish and Boat Commission
Fisheries Biologist
814-359-5117

-----Original Message-----
From: Bintrim, Tyler J LRP [mailto:tyler.j.bintrim@usace.army.mil]
Sent: Thursday, August 20, 2009 2:05 PM
To: Kepler, Steven
Subject: RE: Glacial Sand and gravel,SMP #10070304

What from the application would you like to receive? I'm assuming this email is in response to the Public Notice?

Please let me know.
Sincerely,

Tyler J. Bintrim
Regulatory Project Manager
U.S. Army Corps of Engineers Pittsburgh District Federal Building, 20th Floor 1000 Liberty Avenue Pittsburgh, PA 15222

P: 412-395-7115

-----Original Message-----
From: Kepler, Steven [mailto:skepler@state.pa.us]
Sent: Thursday, August 20, 2009 1:34 PM
To: Bintrim, Tyler J LRP
Subject: Glacial Sand and gravel,SMP #10070304

I have not received the Corps permit application for this site. We have some real concerns about the wetland impacts and proposed mitigation plan.

Steven Kepler

Pennsylvania Fish and Boat Commission

Fisheries Biologist

814-359-5117

Bintrim, Tyler J LRP

From: Chin.Stephanie@epamail.epa.gov
Sent: Wednesday, August 19, 2009 2:50 PM
To: Bintrim, Tyler J LRP
Subject: LRP 2008-280 Glacial Sand and Gravel Company - Mine 47

Tyler,

With regards to the above-referenced project, EPA would like to request an alternatives analysis and compensatory mitigation plan for our review.

Thank you,

Stephanie

Stephanie S. Chin
U.S. Environmental Protection Agency - Region III Office of Environmental Programs (3EA30)
1650 Arch Street Philadelphia, PA 19103
Office: 215.814.2747
Fax: 215.814.2783
chin.stephanie@epa.gov

Bintrim, Tyler J LRP

From: Gail Thompson [gail.thompson@sni.org]
Sent: Tuesday, August 18, 2009 10:42 AM
To: Bintrim, Tyler J LRP
Subject: RE: CELRP-OP-F 2008-280

RE: CELRP-OP-F 2008-280

Dear Mr. Bintrim:

A determination of "No Effect" has been concluded for the above referenced project location. Immediate notification is requested, however, in the event of an inadvertent discovery made over the course of the project's construction phase.

Respectfully,

Gail Thompson
Tribal Archaeologist
Seneca Nation of Indians Tribal Historic Preservation Office
467 Center Street
Salamanca, NY 14779

Bintrim, Tyler J LRP

From: Kyle Schwabenbauer [kschwabenbauer@eadsgroup.com]
Sent: Thursday, June 25, 2009 9:21 AM
To: Bintrim, Tyler J LRP
Cc: 'Rick Tote'; 'Rob Stormer'; mjones@eadsgroup.com
Subject: RE: 2008-280 Glacial Sand and Gravel Co. Mine 47

Attachments: Mod 14 UNT#1 6-24-09.doc; Mod 14 UNT#3 6-24-09.doc; Mod 14 Wetland 1 6-24-09.doc; Mod 14 Wetland 4 Temp 6-24-09.doc; Mod 14 Wetlands 2-4 6-24-09.doc; Impact Summary Table 6-24-09.xlsx

Mod 14 UNT#1 6-24-09.doc (53 ... | Mod 14 UNT#3 5-24-09.doc (52 K... | Mod 14 Wetland 1 6-24-09.doc (... | Mod 14 Wetland 4 Temp 6-24-09.... | Mod 14 Wetlands 2-4 6-24-09.do... | Impact Summary Table 6-24-09.x...

Tyler,

I've attached revised Module 14 forms for each of the streams and wetlands as well as an impact summary table that should clarify the proposed temporary and permanent impacts to each aquatic resource. To answer your questions:

1. No impacts to the perennial UNT #1 are anticipated. Stream mitigation for the 190' of impacts to the intermittent UNT #3 has not been proposed due to the constructed nature of the channel (farm ditch) and the fact that the stream provides very limited ecological functions and values.

2. Proposed stream impacts are listed in linear feet. Acreages of proposed stream impacts have not been calculated and are not included in the proposed acreage of the wetland mitigation area.

3. Acreage of the non-jurisdictional (per USACE) Wetland 3 (0.19 acre) have been included in the total impact acreage (1.89 acres) so that it is accounted for in the mitigation acreage (1.90 acres).

Please let me know if you have any additional questions. Thank you!

Kyle Schwabenbauer

Environmental Specialist

The EADS Group, Inc.

15392 Route 322

Clarion, PA 16214

(814) 764-5050

www.eadsgroup.com

528 to ~~Covert Rd.~~

W. Liberty Rd. L, R, L

-----Original Message-----
From: Bintrim, Tyler J LRP [mailto:tyler.j.bintrim@usace.army.mil]
Sent: Monday, June 08, 2009 3:13 PM
To: Michal Jones
Cc: Kyle Schwabenbauer; Rick Tote; Rob Stormer
Subject: RE: 2008-280 Glacial Sand and Gravel Co. Mine 47

Michal,

I left you a voice mail also pertaining to the Mine 47 project in Butler County. I'm not sure which figures are the most up to date with regards to the proposed impact. In order to prepare the public notice I need to have accurate figures.

The application form proposes to fill 1.77 acres of wetland. The Module 14 sheets propose 650 Linear Feet to UNT 1 and 0.2 and 0.9 acres to UNT 3. It is preferred to have the stream impact in linear feet. Has any stream mitigation been considered for these impacts? Are these impacts lumped into the 1.77 acres?

It appears from Module 14 that 1.84 acres is proposed to impact wetland 2, 3, and 4 with an additional 0.01 acres being temporarily impacted for a sewer line in wetland 4. Remember wetland 3 is considered non jurisdictional to the Corps as it is isolated.

I think a impact table might be the best way to clear this up. Please respond within 30 days with the impact so the Public Notice may be prepared.

Sincerely,

Tyler J. Bintrim

Regulatory Project Manager

U.S. Army Corps of Engineers Pittsburgh District

Federal Building, 20th Floor

1000 Liberty Avenue

Pittsburgh, PA 15222

P: 412-395-7115

-----Original Message-----

From: Bud Davis [mailto:ddavis@eadsgroup-clarion.com]

Sent: Friday, April 03, 2009 3:23 PM

To: Bintrim, Tyler J LRP

Cc: Kyle Schwabenbauer; Michal Jones; Rick Tote; Rob Stormer

Subject: RE: 2008-280 Glacial Sand and Gravel Co. Mine 47

Mr. Bintrim:

As requested we are providing the following information for the Public Notice pertaining to Glacial Sand and Gravel Company's Section 404 permit application:

1. Attached is a copy of the USGS Slippery Rock quadrangle that indicates the permit boundary.

2. Attached are 8 ½ x11 pages of the ponds, processing plant and wetland mitigation construction that shows the resource impacts.

3. Wetland No. 1 will not be directly or indirectly impacted by the proposed mining and wetland mitigation construction. Ground water elevations

to the south of Wetland No. 1 will remain the same within and surrounding the permitted area. Due to no anticipated impacts to this wetland community, a separate module was completed for this resource. Please refer to PA DEP Module 14, Streams/Wetlands, North of West Liberty Road, Wetland No. 1.

4. Because Wetlands No. 2, 3 and a portion of 4 will be permanently impacted as a result of the mining operation and Wetland No. 4 will also be temporarily impacted as a result of the construction of a sanitary pipeline crossing, two (2) separate Module 14 documents (Wetland No. 2, 3 and 4 and Wetland No. 4 (Temporary Impacts)) were completed. Attached is the text from the alternatives discussion from both modules for your convenience and these discussions can be found in Module 14, Section 14.4(b).

5. Also, discussions for specific wetland mitigation and restoration measures can be found within the same modules discussed above in Section 14.5(a)(3). Attached for your convenience is the text from these modules.

I hope this information meets your need for the Public Notice and Section 404 Permit. If you have any questions please contact Michal L. Jones - Stewart, Project Manager at 814-764-5050 or mjones@eadsgroup.com.

From: Bintrim, Tyler J LRP [mailto:tyler.j.bintrim@usace.army.mil]

Sent: Friday, March 27, 2009 8:38 AM

To: Bud Davis

Subject: 2008-280 Glacial Sand and Gravel Co. Mine 47

Mr. Davis:

I am in receipt of the subject referenced permit application. I will need the following items for Public Notice.

1. A location map that clearly depicts the project limits.

2. 8.5 by 11 inch drawings showing the construction of the ponds and mitigation area and showing impacts to existing resources.

3. A more detailed project description stating why impacts must be incurred and whether wetland 1 will be impacted in any way.

4. A mitigation statement explaining how 1.77 acres of wetland impact will be adequately mitigated.

Please submit this information in order to continue the 404 review process.

Thank you,

Tyler J. Bintrim
Regulatory Project Manager
U.S. Army Corps of Engineers Pittsburgh District Federal Building, 20th Floor
1000 Liberty Avenue Pittsburgh, PA 15222

P: 412-395-7115

Module 14: Streams/Wetlands
Unnamed Tributary #1 to Black Run

14.1 *Mining Activities Within 100 Feet of a Stream*

*If the mining activities, including haul road crossings, are proposed within 100 feet of an intermittent or perennial stream provide the following information: (**Note**: Variance request for the expansion of pits must be included in the proof of publication. A separate Module 14.1 should generally be completed for each proposed encroachment.)*

a) *Name and location of the stream; and location, length, and acreage disturbed by the proposed activities (Identify the location of the proposed activities on Exhibits 9 and 18);*

No direct impacts to the perennial Unnamed Tributary (UNT) #1 to Black Run are anticipated as a result of mining activities. However, encroachment is proposed within the 100' stream barrier of the stream. This stream is located along the western portion of the proposed permit area and to some extent parallels Mt Union Road (T-861). This stream section isolates the northwest corner of the permit area from the main project area. An encroachment up to 50 feet from the tributary is requested for support activities including the construction of a berm to act as an Erosion and Sedimentation Control Structure. The final Polishing Pond (Pond 5) is also proposed to be placed within the 100' barrier. This pond will act as the re-charge pond for the plant operations as well as an upslope sediment pond for the site.

A narrative giving a description and the purpose and justification of the proposed activities;

A 50' stream barrier is proposed to accommodate support activities which will enable a safer and more efficient working environment. Current operational area limitations reduce the area for potential support activities such as the processing plant and processing ponds. Preparation for a portion of the processing area will require the removal of some raw material from within the mining limits. To minimize the stockpiling and re-handling of this material, maximum usage of the area outside the mining limits is requested. No mineral removal is proposed within 100' of this tributary.

b) *A hydrologic and hydraulic analysis which shall include: data on size, shape and characteristics of the watershed; the size and frequency of the design storm; the hydraulic capacity of any structures; the hydraulic capacity of the channel upstream and downstream; and, where flooding is a problem, flood damage and backwater analysis;*

At the downstream end of the encroachment area, the watershed drainage area is approximately 105 acres and is comprised of a combination of cropland and non-commercial forestland. This area is currently fully vegetated and has an average slope of approximately 10%. Streambed slope within the variance area is approximately 4%.

Using a CN value of 65, the following storm data has been generated:

P_2 = 2.6"	Q_2 = 15 cfs
P_{10} = 3.8"	Q_{10} = 57 cfs
P_{25} = 4.3"	Q_{25} = 85 cfs
P_{50} = 4.8"	Q_{50} = 112 cfs

Since no structures or activities are proposed within the stream channel, hydraulic capacities and backwater analysis are not necessary.

c) *A description of the character of the stream bed and banks, and a profile of the stream for a reasonable distance above and below the proposed site showing bed slopes, normal and flood water surfaces; and a description of the riparian vegetation;*

The stream bottom material consists of primarily sand, silt, and gravel cobbles, with a bed slope of approximately 4%. This stream is linear with few bends to slow discharge. The upper end of this stream encroachment is marked by the outfall of a 24" CMP, which crosses Mt. Union Road. Based on the size of this existing culvert, significant flows to cause flooding do not visually appear to occur regularly. Stream banks composed of silts and sand are stabilized by streamside vegetation. Riparian vegetation consists of Multi Floral Rose, Jewelweed, Skunk Cabbage, scrub brush, and young mixed deciduous trees. Please see attached detail for plan view and cross sections with channel capacities.

d) *A plan and typical cross-sections showing stream channel and existing ground, activities proposed, barriers to be maintained, and normal and flood water surfaces;*

Please see attached detail, including sections D-F

e) *Where a bridge, culvert or other water obstruction is proposed, provide the following information:*

No water obstructions are proposed within this variance request.

1) *Plans and details showing the location, type, size, and height of the structure;*

2) *Calculations showing the hydraulic capacity of the structure;*

3) *A profile of the streambed for a reasonable distance above and below the proposed location showing normal and flood water surface elevations and backwater effects of the structure;*

4) *Cross-sections upstream, downstream, and at the proposed location of the structure showing normal and flood water surface elevations and other topographic features, elevations, etc., necessary for an appraisal of the hazard potential of the structure;*

5) *A narrative description of the construction methods and sequence including water handling during construction, and erosion and sedimentation controls;*

6) *Indicate if the structure will be temporary or permanent (include plans for removal of temporary structures).*

g) *A characterization of the existing water quality and quantity of the stream including downstream water uses, and 25 Pa Code Chapter 93 Protected Water Use Classification.*

***(Note:** General Permit (BMR-GP-102) is available for construction of access roads.)*

Unnamed tributary #1 to Black Run is classified as CWF, by Chapter 93 designation of Slippery Rock Creek. There are no designated downstream uses. Water quantity and quality are sufficient to sustain aquatic invertebrates. Upstream farming and timbering practices have been observed to temporarily affect turbidity within this stream. Otherwise, laboratory analysis indicate no water quality concerns.

14.2 Stream Relocation and Channel Changes Does Not Apply

*If the proposed mining activities involve a relocation or channel change of an intermittent or perennial stream provide the following information (**Note**: Stream variance request must be included in the proof of publication):*

a) *Name and location of stream and location and length of the proposed channel change (identify the location of the proposed activities on Exhibits 9 and 18);*

b) *A narrative giving a description and the purpose and justification of the proposed relocation or channel change;*

c) *A characterization of the existing water quality and quantity of the stream including downstream water uses, and 25 Pa Code, Chapter 93 Protected Water Use Classification;*

d) *A characterization of the resident aquatic community, a description of the riparian vegetation and an assessment of the probable hydrologic consequences of the proposed activities on the water quality and quantity, and the resident aquatic communities. Provide the name(s), address(es) and telephone number(s) of the individual(s) responsible for the collection and analysis of this data and provide a description of the methodologies used to collect and analyze the data;*

e) *A hydrologic and hydraulic analysis which includes;*

1) Data on size, shape and characteristics of the watershed;
2) The size and frequency of the design storm;
3) The hydraulic capacity of the proposed replacement channel;
4) The hydraulic capacity of the stream channel upstream and downstream of the proposed relocation or channel change.

f) *A stream profile for the existing and proposed channel for a reasonable distance upstream, downstream and within the proposed change, showing bed slopes, pool-riffle ratios, normal and flood water surfaces, and existing obstructions;*

g) *A detailed plan and cross-sections of the existing and proposed channel upstream, downstream and within the proposed channel change showing the limits and configuration of the proposed activities, dimensions, channel linings, and normal and flood water surfaces;*

h) *A description of the construction methods and sequence including: water handling during construction, erosion and sedimentation controls, and measures to be taken to prevent adverse impacts to water quality and quantity, water users and the aquatic communities.*

Module 14: Streams/Wetlands
Unnamed Tributary #3 to Black Run

14.1 *Mining Activities Within 100 Feet of a Stream*

*If the mining activities, including haul road crossings, are proposed within 100 feet of an intermittent or perennial stream provide the following information: (**Note**: Variance request for the expansion of pits must be included in the proof of publication. A separate Module 14.1 should generally be completed for each proposed encroachment.)*

a) *Name and location of the stream; and location, length, and acreage disturbed by the proposed activities (Identify the location of the proposed activities on Exhibits 9 and 18);*

The proposed location of Pond 4 upstream from the confluence of Unnamed Tributary (UNT) #1 to Black Run will require approximately 190 linear feet of impacts to UNT #3 to Black Run. In addition, Pond 5 will be located within the 100' barrier to UNT #3, but will not directly impact the stream.

b) *A narrative giving a description and the purpose and justification of the proposed activities;*

Placement of Pond 5 (Polishing Pond) is required due to the plant location and support site constraints. The placement of Process Pond 4 in the headwaters of the stream is also required due to the site constraints and the elimination of a small wetland complex. (Please see below).

c) *A hydrologic and hydraulic analysis which shall include: data on size, shape and characteristics of the watershed; the size and frequency of the design storm; the hydraulic capacity of any structures; the hydraulic capacity of the channel upstream and downstream; and, where flooding is a problem, flood damage and backwater analysis;*

The current watershed drainage area for the proposed stream crossing is 30 acres, which is comprised of primarily cropland. This area is currently fully vegetated and has an average slope of approximately 10%. Streambed slope within the variance area is approximately 2%.
Using a CN value of 65, the following storm data has been generated:

P_2 = 2.6"	Q_2 = 6.5cfs
P_{10} = 3.8"	Q_{10} = 24 cfs
P_{25} = 4.3"	Q_{25} = 35 cfs
P_{50} = 4.8"	Q_{50} = 46 cfs

During the mining activities at the site, the wetland recharge area will be eliminated and installation of the process ponds will effectively reduce the stream channel to an ephemeral classification, flowing only in response to storm events.

d) *A description of the character of the stream bed and banks, and a profile of the stream for a reasonable distance above and below the proposed site showing bed slopes, normal and flood water surfaces; and a description of the riparian vegetation;*

The stream bottom material consists of primarily sand, silt, and gravel, with a bed slope of approximately 2%. This drainageway appears to have been manipulated (mechanically dug drainage ditch) at some point, as the cross sectional area of the channel is consistent along the entire length from the wetland source to UNT #1. Riparian vegetation consists of goldenrod, vines, briars, scrub brush, and young mixed deciduous trees. Please see attached detail for plan view and cross sections with channel capacities.

A plan and typical cross-sections showing stream channel and existing ground, activities proposed, barriers to be maintained, and normal and flood water surfaces;

Please see attached detail, including cross sections and profiles for both the stream crossing and the pond installation.

f) *Where a bridge, culvert or other water obstruction is proposed, provide the following information:*

1) *Plans and details showing the location, type, size, and height of the structure;*

Please see attached exhibit sheets submitted as part of the permit application.

2) *Calculations showing the hydraulic capacity of the structure;*

The hydrologic calculations for the Process Ponds and Polishing Pond are found in Module 13. There will be no direct discharge to the stream from the ponds unless the emergency spillways are activated during high flow

events.

3) *A profile of the streambed for a reasonable distance above and below the proposed location showing normal and flood water surface elevations and backwater effects of the structure;*

Cross-section A-A' is provided for Pond 5 (Polishing Pond). Cross-sections and a profile are provided for the Process Ponds 3 and 4.

4) *Cross-sections upstream, downstream, and at the proposed location of the structure showing normal and flood water surface elevations and other topographic features, elevations, etc., necessary for an appraisal of the hazard potential of the structure;*

Please see attached detail

5) *A narrative description of the construction methods and sequence including water handling during construction, and erosion and sedimentation controls;*

Erosion and sedimentation controls will consist of both permanent and temporary measures. Initial construction will not begin until all necessary materials have been assembled at the site and at a time of low stream flow. Staked filter fencing will be placed downslope of the construction area prior to the initiation of any earth moving activities. The filter fencing will remain in place until all areas of disturbance have been stabilized by either rock cover or the establishment of a permanent vegetative cover.

After the embankments have been built, they will be seeded and mulched immediately as outlined in Module 23 of this application. The silt fencing will remain in place until the embankments have been stabilized by a minimum 70% permanent cover.

6) *Indicate if the structure will be temporary or permanent (include plans for removal of temporary structures).*

The ponds will remain as part of the post mining land use once the mining has been completed.

g) *A characterization of the existing water quality and quantity of the stream including downstream water uses, and 25 Pa Code Chapter 93 Protected Water Use Classification.*

***(Note:** General Permit (BMR-GP-102) is available for construction of access roads.)*

UNT #3 to Black Run is classified as CWF, by Chapter 93 designation of Slippery Rock Creek. There are no designated downstream uses. Under seasonal conditions, the volume of water within this channel is minimal to non-existent. Only after periods of substantial precipitation does this channel convey surface water readily. Water quality is characteristic of wetland drainage.

14.2 Stream Relocation and Channel Changes

Not applicable

*If the proposed mining activities involve a relocation or channel change of an intermittent or perennial stream provide the following information (**Note**: Stream variance request must be included in the proof of publication):*

a) Name and location of stream and location and length of the proposed channel change (identify the location of the proposed activities on Exhibits 9 and 18);

b) A narrative giving a description and the purpose and justification of the proposed relocation or channel change;

c) A characterization of the existing water quality and quantity of the stream including downstream water uses, and 25 Pa Code, Chapter 93 Protected Water Use Classification;

d) A characterization of the resident aquatic community, a description of the riparian vegetation and an assessment of the probable hydrologic consequences of the proposed activities on the water quality and quantity, and the resident aquatic communities. Provide the name(s), address(es) and telephone number(s) of the individual(s) responsible for the collection and analysis of this data and provide a description of the methodologies used to collect and analyze the data;

e) A hydrologic and hydraulic analysis which includes;

1) Data on size, shape and characteristics of the watershed;
2) The size and frequency of the design storm;
3) The hydraulic capacity of the proposed replacement channel;
4) The hydraulic capacity of the stream channel upstream and downstream of the proposed relocation or channel change.

f) A stream profile for the existing and proposed channel for a reasonable distance upstream, downstream and within the proposed change, showing bed slopes, pool-riffle ratios, normal and flood water surfaces, and existing obstructions;

g) A detailed plan and cross-sections of the existing and proposed channel upstream, downstream and within the proposed channel change showing the limits and configuration of the proposed activities, dimensions, channel linings, and normal and flood water surfaces;

h) A description of the construction methods and sequence including: water handling during construction, erosion and sedimentation controls, and measures to be taken to prevent adverse impacts to water quality and quantity, water users and the aquatic communities.

Module 14: Streams/Wetlands
North of West Liberty Road
Wetland No. 1

14.3 Wetland Related Information

a) *Provide the name(s), address(es), telephone number(s) and qualifications of the person(s) who made the determination if wetlands exist within the proposed permit area.*

Derwood B. Davis (Biologist), The EADS Group, Inc., 15392 Rt 322, Clarion, PA 16214

b) *Show the location of wetlands on Exhibits 6.2, 9 and 18.*

Wetlands have been identified on the exhibit maps (Attached).

c) What is the total wetland acreage (which will be affected) for the proposed permit area? **0** acres.

d) *Provide responses to the following for each wetland which will be affected by the proposed mining activities:*

Exceptional Value Wetland Characteristics

1) *Does the wetland serve as habitat for flora and fauna listed as "threatened" or "endangered" under the Endangered Species Act of 1973, Wild Resource Conservation Act, Fish and Boat Code, or Game and Wildlife Code?* ☐ yes ☒ no

2) *Is the wetland hydrologically connected to or located within 1/2 mile of the wetlands identified in d)1) and does it maintain the habitat of the "threatened" or "endangered" species within the wetlands identified in d)1) above)?* ☐ yes ☒ no

NOTE: *If this wetland is located more than 1000 feet from the permit area, show its location (and the location of the wetland that is hydrologically connected to or located within ½ mile of) on the Exhibit 6.1 Map.*

3) *Is the wetland located in or along the floodplain of a wild trout stream (as designated by the Pennsylvania Fish and Boat Commission), or the floodplain of a tributary to a wild trout stream?* ☐ yes ☒ no

4) *Is the wetland located in or along the floodplain of a stream listed as exceptional value (under 25 Pa Code Chapter 93) or the floodplain of a tributary to an exceptional value stream?* ☐ yes ☒ no

5) *Is the wetland within the corridor of a waterway which has been designated as a wild or scenic river in accordance with the Wild and Scenic Rivers Act of 1968 or the PA Scenic Rivers Act?* ☐ yes ☒ no

6) *Is the wetland part of, or located along, an existing public or private drinking water supply and does it maintain the quality or quantity of the drinking water supply?* ☐ yes ☒ no

7) *Is the wetland located in areas designated by the Department as "natural" or "wild" areas within state forest or park lands?* ☐ yes ☒ no

8) *Is the wetland located in areas designated as Federal wilderness areas under the Wilderness Act or the Federal Eastern Wilderness Act of 1975?* ☐ yes ☒ no

9) *Is the wetland located in areas designated as National natural landmarks by the Secretary of the Interior under the Historic Sites Act of 1935?* ☐ yes ☒ no

NOTE: *If a "yes" response is indicated for any question in d)1) through d)9), the wetlands would be "exceptional value" (as defined in 25 Pa Code Section 105.17) and a demonstration must be made that the requirements of subsection (a) of 25 Pa Code Section 105.18(a) have been met.*

Wetland Functions

10)	*Does the wetland serve natural biological functions, including food chain production; general habitat; and nesting, spawning, or resting sites for aquatic or land species?*	☒ yes	☐ no
11)	*Does the wetland provide areas for study of the environment, or as sanctuaries or refuges?* **Slippery Rock University uses this site.**	☒ yes	☐ no
12)	*Does the wetland aid in, or maintain natural drainage characteristics, natural water filtration processes, current (flow) patterns or other environmental characteristics?*	☒ yes	☐ no
13)	*Does the wetland serve as storage areas for flood and storm waters, or does it shield other areas from erosion or storm damage?*	☒ yes	☐ no
14)	*Does the wetland provide a groundwater recharge area that maintains minimum baseflows?* **This wetland is supported by spring outcrops from a perched water table; providing baseflow to an unnamed tributary.**	☒ yes	☐ no
15)	*Does the wetland serve as a prime natural recharge area where surface water and groundwater are directly connected?*	☒ yes	☐ no
16)	*Does the wetland aid in the prevention of pollution?* **This wetland has the potential however, significant pollutant sources are lacking within the upstream area.**	☒ yes	☐ no
17)	*Is the wetland used for, or does it provide the opportunity to be used for recreation?* **This wetland is not open to the public.**	☐ yes	☒ no

e) *If a "yes" response is indicated for the question in d)1) or d)2), identify how the determination was made and indicate any contacts with state or federal agency personnel.*

14.4 Wetland Impact Analysis/Assessment

This Wetland Community will not be permanently impacted by the proposed mining.

a) *Describe the alternatives to the proposed mining activities that have been considered to avoid or minimize impacts on wetlands. An alternative analysis should include alternatives to the proposed mining activities, including alternative locations, routings or designs to avoid adverse impacts on the wetlands (e.g. relocating spoil/topsoil storage areas, rerouting haul roads).*

b) *Discuss whether any of the alternatives are practical to achieve the basic purposes of the project taking into account availability, cost, technology and logistics of the other possible project sites which would not affect the wetlands.*

c) *If any wetlands within the proposed permit area will be directly affected, provide the following:*

1) *Identify and delineate the wetland and the areal extent of the impact (wetlands must be identified and delineated in accordance with 25 Pa Code Section 105.451 Identification and delineation of wetlands – statement of policy).*

2) *Submit a cross-sectional view showing the wetland and the proposed mining area.*

3) *Explain how the proposed mining activities will directly affect the wetlands.*

aa) *If the proposed mining activities will affect less than 1.0 acre of wetland and the wetland is not an exceptional value wetland (in accordance with 25 Pa Code Section 105.17), provide a description of the wetland functions which will be impacted by the proposed mining activities.* ***Note:*** *If a "yes" response is indicated for any question in Module 14.3 d)1) through d)9), the wetlands would be exceptional value (as defined in Section 105.17).*

bb) *If the proposed mining activities will affect 1.0 or more acres of wetlands or may affect an exceptional value wetland, provide a detailed assessment of the wetland functions identified in Module 14.3 d)10) through d)17).*

d) *If any wetlands within the proposed permit or adjacent area will be indirectly affected (e.g. altering the wetland hydrology), provide the following:*

1) *Identify and delineate the wetland and provide an estimate of the total wetland acreage affected (wetlands must be identified and delineated in accordance with 25 Pa Code Section 105.451 Identification and Delineation of Wetlands – statement of policy).*

2) *A description of how the proposed mining activities will indirectly affect the wetlands.*

e) *Will the cumulative impact of the proposed and anticipated mining activities result in a major impairment of the wetland resource in the general area?* ☐ yes ☐ no

Provide an explanation of the determination and identify any contacts with state or federal agencies involved in making the determination.

14.5 Wetland Mitigation/Replacement

This wetland community will not be affected. Therefore, no mitigation is required.

Note: *If a total of one-half (.5) acres or less of wetlands will be affected, participation in Pennsylvania's Wetlands Replacement Project may be authorized by the Department in lieu of onsite replacement of the wetlands.*

a) *If wetland mitigation measures or wetland replacement are proposed, address the following:*

1) *Identify the wetlands where mitigation measures will be employed.*

2) *Identify the wetlands that will be replaced and the location of the replacement wetland site. Provide the number of acres for each wetland to be replaced and the acreage of the replacement wetland.*

3) *Provide a plan for mitigation/replacement following the guidelines in the Department's technical guidance titled*

"Design Criteria - Wetlands Replacement Monitoring" document 363-0300-001. This guidance is available from the Division of Waterways, Wetlands and Erosion Control, Post Office Box 8854, Harrisburg, Pennsylvania 17105-8554 or through the Department's Web Site.

Show the location of replacement wetland sites on the Operations Map (Exhibit 9) and the Land Use and Reclamation Map (Exhibit 18).

Note: *At a minimum, wetland replacement must be at a 1:1 ratio (replacement acres: affected acres). The Department may require the ratio to exceed 1:1 based on the functions and values of the wetlands to be affected. Wetland replacement sites will generally not be approved unless the site is located within the same general area as the existing wetland to be replaced.*

Module 14: Streams/Wetlands
South of West Liberty Road
Wetland No. 4 (Temporary Impacts)

14.3 *Wetland Related Information*

a) *Provide the name(s), address(es), telephone number(s) and qualifications of the person(s) who made the determination if wetlands exist within the proposed permit area.*

Derwood B. Davis (Biologist), The EADS Group, Inc., 15392 Rt 322, Clarion, PA 16214

b) *Show the location of wetlands on Exhibits 6.2, 9 and 18.*

Wetlands have been identified on the exhibit maps

c) What is the total wetland acreage (which will be affected) for the proposed permit area? **0.01** acres.

d) *Provide responses to the following for each wetland which will be affected by the proposed mining activities:*

Exceptional Value Wetland Characteristics

1) *Does the wetland serve as habitat for flora and fauna listed as "threatened" or "endangered" under the Endangered Species Act of 1973, Wild Resource Conservation Act, Fish and Boat Code, or Game and Wildlife Code?* ☐ yes ☒ no

2) *Is the wetland hydrologically connected to or located within 1/2 mile of the wetlands identified in d)1) and does it maintain the habitat of the "threatened" or "endangered" species within the wetlands identified in d)1) above)?* ☐ yes ☒ no

NOTE: *If this wetland is located more than 1000 feet from the permit area, show its location (and the location of the wetland that is hydrologically connected to or located within ½ mile of) on the Exhibit 6.1 Map.*

3) *Is the wetland located in or along the floodplain of a wild trout stream (as designated by the Pennsylvania Fish and Boat Commission), or the floodplain of a tributary to a wild trout stream?* ☐ yes ☒ no

4) *Is the wetland located in or along the floodplain of a stream listed as exceptional value (under 25 Pa Code Chapter 93) or the floodplain of a tributary to an exceptional value stream?* ☐ yes ☒ no

5) *Is the wetland within the corridor of a waterway which has been designated as a wild or scenic river in accordance with the Wild and Scenic Rivers Act of 1968 or the PA Scenic Rivers Act?* ☐ yes ☒ no

6) *Is the wetland part of, or located along, an existing public or private drinking water supply and does it maintain the quality or quantity of the drinking water supply?* ☐ yes ☒ no

7) *Is the wetland located in areas designated by the Department as "natural" or "wild" areas within state forest or park lands?* ☐ yes ☒ no

8) *Is the wetland located in areas designated as Federal wilderness areas under the Wilderness Act or the Federal Eastern Wilderness Act of 1975?* ☐ yes ☒ no

9) *Is the wetland located in areas designated as National natural landmarks by the Secretary of the Interior under the Historic Sites Act of 1935?* ☐ yes ☒ no

NOTE: *If a "yes" response is indicated for any question in d)1) through d)9), the wetlands would be "exceptional value" (as defined in 25 Pa Code Section 105.17) and a demonstration must be made that the requirements of subsection (a) of 25*

Pa Code Section 105.18(a) have been met.

Wetland Functions

10) *Does the wetland serve natural biological functions, including food chain production; general habitat; and nesting, spawning, or resting sites for aquatic or land species?* **This wetland community would provide some food chain production and general habitat for terrestrial and semi-aquatic species only.** ☒ yes ☐ no

11) *Does the wetland provide areas for study of the environment, or as sanctuaries or refuges?* **This wetland is on private property and is not designated for study or resource protection.** ☐ yes ☒ no

12) *Does the wetland aid in, or maintain natural drainage characteristics, natural water filtration processes, current (flow) patterns or other environmental characteristics?* **This wetland provides some natural drainage of surface and ground waters to a tributary that establishes local surface water flow patterns.** ☒ yes ☐ no

13) *Does the wetland serve as storage areas for flood and storm waters, or does it shield other areas from erosion or storm damage?* **This wetland is located adjacent to UNT #1.** ☒ yes ☐ no

14) *Does the wetland provide a groundwater recharge area that maintains minimum baseflows?* **This wetland is supported by periodic flooding of UNT #1 and does not likely contribute to baseflow.** ☐ yes ☒ no

15) *Does the wetland serve as a prime natural recharge area where surface water and groundwater are directly connected?* **This wetland is supported by a high groundwater table provides recharge functions.** ☒ yes ☐ no

16) *Does the wetland aid in the prevention of pollution?* **This wetland has the Potential, however significant pollutant sources are lacking within the upstream area.** ☒ yes ☐ no

17) *Is the wetland used for, or does it provide the opportunity to be used for recreation?* **This wetland is located on private property and is not open to the general public.** ☐ yes ☒ no

e) *If a "yes" response is indicated for the question in d)1) or d)2), identify how the determination was made and indicate any contacts with state or federal agency personnel.*

14.4 Wetland Impact Analysis/Assessment

a) *Describe the alternatives to the proposed mining activities that have been considered to avoid or minimize impacts on wetlands. An alternative analysis should include alternatives to the proposed mining activities, including alternative locations, routings or designs to avoid adverse impacts on the wetlands (e.g. relocating spoil/topsoil storage areas, rerouting haul roads).*

These impacts are a result of temporary impacts from the construction of a 4 inch Schedule 40 PVC sanitary pipeline. Alternatives considered were No Build, Alignment Avoiding Wetland No. 4 and Alignment With Minimal Impact To Wetland No. 4.

b) *Discuss whether any of the alternatives are practical to achieve the basic purposes of the project taking into account availability, cost, technology and logistics of the other possible project sites which would not affect the wetlands.*

The No Build Alternative is a feasible alternative but was considered not prudent. Due to the length of time that the plant will be operating and the number of full time employee's onsite, a sanitary onsite septic system was warranted; not to mention required by the PA DEP.

The sewer line alignment avoiding impacts to Wetland No. 4 was not a feasible alternative after considering

design standards, slope requirements and site development barriers. The stream crossing site was selected based on the shallower water depth, drainage area, required slope standards for sanitary pipelines and the ability to achieve a minimum of 3 feet of cover over the stream crossing. Design parameters for gravity flow sanitary pipelines require a minimum of a 1 percent slope and the sanitary pipeline between the septic and dosing tanks must be at a minimum of a 2 percent slope. The need to maintain a minimum 2 percent slope between the septic and dosing tanks required both tanks to be located on the west side of the stream, since the natural grade on the east side of the stream was too flat. Other stream crossing locations that would not impact Wetland No. 4 would not maintain the required slopes for gravity flow sanitary lines.

The sewer line alignment with minimal impact alternative was considered feasible and prudent based on meeting the required minimum of 3 feet of covering at the wetland and stream crossing, required slopes for sanitary line construction, the depth of water in the stream and the location of the sediment pond. The first alternative was located approximately 25 linear feet to the north of the current proposed crossing. Upon initial wetland investigation, this alternative resulted in 0.03 acre of temporary wetland impact as well as a stream crossing. The location was shifted south reducing temporary wetland impacts by crossing at a more narrow point within the wetland community resulting in 0.01 acre of temporary impact. This alternative achieves the goals and objectives of Glacial Sand & Gravel and the PA DEP with minimal environmental impacts to this wetland community that are temporary and can be mitigated through restoration methods.

c) *If any wetlands within the proposed permit area will be directly affected, provide the following:*

1) *Identify and delineate the wetland and the areal extent of the impact (wetlands must be identified and delineated in accordance with 25 Pa Code Section 105.451 Identification and delineation of wetlands – statement of policy).*

The affected wetlands are shown on the attached site plan. The aerial extent of temporary wetland impacts by the construction of this sanitary line is 0.01 acres.

2) *Submit a cross-sectional view showing the wetland and the proposed mining area.*

Cross sections of this wetland community and the sanitary line crossing are attached.

3) *Explain how the proposed mining activities will directly affect the wetlands.*

The construction of this sanitary line will directly affect this wetland community by excavation, backfilling and grading as part of standard pipeline construction methods.

aa) *If the proposed mining activities will affect less than 1.0 acre of wetland and the wetland is not an exceptional value wetland (in accordance with 25 Pa Code Section 105.17), provide a description of the wetland functions which will be impacted by the proposed mining activities.* ***Note:*** *If a "yes" response is indicated for any question in Module 14.3 d)1) through d)9), the wetlands would be exceptional value (as defined in Section 105.17).*

bb) *If the proposed mining activities will affect 1.0 or more acres of wetlands or may affect an exceptional value wetland, provide a detailed assessment of the wetland functions identified in Module 14.3 d)10) through d)17).*

Plant accumulation and decomposition occurring within this wetland community would be broken down into organic and inorganic nutrients. The affected wetland would provide carbon and other inorganic nutrients to the unnamed tributary immediately adjacent to as well as downstream reaches. The affected wetland provides general habitat for terrestrial and semi-aquatic organisms. This community would provide food and cover for these organisms during most of the year. Aquatic habitat is not provided due to the lack of open water habitat for a sufficient time during the growing season. Pollution prevention would be moderately exhibited by the affected wetland however, the well defined outlet, lack of significant open water, low vegetation/water interfacing, and lack of potential pollution sources upslope of the wetland reduces the opportunity for this wetland community to fully exhibit this function.

d) *If any wetlands within the proposed permit or adjacent area will be indirectly affected (e.g. altering the wetland hydrology), provide the following:*

No other wetland communities will be indirectly affected by the proposed sanitary line construction.

1) *Identify and delineate the wetland and provide an estimate of the total wetland acreage affected (wetlands must be identified and delineated in accordance with 25 Pa Code Section 105.451 Identification and Delineation of Wetlands – statement of policy).*

2) *A description of how the proposed mining activities will indirectly affect the wetlands.*

e) *Will the cumulative impact of the proposed and anticipated mining activities result in a major impairment of the wetland resource in the general area?* ☐ yes ☒ no

Provide an explanation of the determination and identify any contacts with state or federal agencies involved in making the determination.

The affected wetland community is a small to medium-sized, perched, wetland community providing functions at various levels. Impacts to these wetlands are site specific and temporary in nature and will not result in cumulative impacts to wetland resources in the surrounding area.

14.5 Wetland Mitigation/Replacement

Note: *If a total of one-half (.5) acres or less of wetlands will be affected, participation in Pennsylvania's Wetlands Replacement Project may be authorized by the Department in lieu of onsite replacement of the wetlands.*

a) *If wetland mitigation measures or wetland replacement are proposed, address the following:*

1) *Identify the wetlands where mitigation measures will be employed.*

Wetland restoration measures will be completed in-kind as part of the trench backfill procedures.

2) *Identify the wetlands that will be replaced and the location of the replacement wetland site. Provide the number of acres for each wetland to be replaced and the acreage of the replacement wetland.*

The wetland community to be restored is classified as a Palustrine, Scrub Shrub, Broad-leaved Deciduous community that is located within the upper reach of an unnamed tributary to Black Run. This wetland community will be restored onsite within the watershed of the UNT #1 to Black Run. The affected wetland acreage and the restored acreage was calculated to be 0.01 acres.

3) *Provide a plan for mitigation/replacement following the guidelines in the Department's technical guidance titled "Design Criteria - Wetlands Replacement Monitoring" document 363-0300-001. This guidance is available from the Division of Waterways, Wetlands and Erosion Control, Post Office Box 8854, Harrisburg, Pennsylvania 17105-8554 or through the Department's Web Site.*

The wetland restoration plan proposes to restore the affected wetlands at a 1:1 ratio.

The wetland functions and values identified to be present within the affected wetland will be restored equally as a result of the proposed restoration plan based on being able to restore the affected area within the actual affected area and Black Run watershed.

The restoration plan will initially consist of a Palustrine, Persistent, Emergent wetland community, succeeding into a Scrub Shrub, Broadleaved Deciduous wetland community supported by a soil saturated and seasonally flooded hydrological regime.

Inundated and soil saturated conditions are expected to occur throughout the growing season above the surface to one (1) foot below the surface based on the existing data gathered during the delineation of the wetland community.

Soil conservation measures will be used to restore the hydric soils within the affected wetlands. The top 12 inches of soil within the affected wetlands will be excavated and stockpiled as necessary until the

bedding and placement of the pipe is completed. This stockpile will be covered with a tarp(s) to reduce evaporation and maintain moisture within the soil. Upon completion of the bedding and placement of the pipe, the trench will backfilled to within a foot below the surface. The hydric soil will be placed within this portion of the trench and brought to the existing grade. At a minimum, this soil will act as a planting medium for the specified seed mix. However, this soil will contain a seed bank of indigenous hydrophytic plant species that, if properly stored and placed, will likely germinate and proliferate within the existing wetland community.

Once the trench has been graded to the existing contour, it will be seeded with Wildlife Food and Shelter Shrub Mix (ERNMX-138) at a rate of 15 lbs per acre. The ERNMX-138 is composed of Fox sedge, *Carex vulpinoidea* (24%); Arrow wood, *Viburnum dentatum* (14%); Virginia wild rye, *Elymus virginicus* (11%); Lurid sedge, *Carex lurida* (10%); Silky dogwood, *Cornus amomum* (10%); Grey dogwood, *Cornus racemosa* (10%); Hop sedge, *Carex lupulina* (5%); Blunt broom sedge, *Carex scoparia* (7%); Hercules' club, *Aralia spinosa* (3%); Awl sedge, *Carex stipata* (2%); Cosmos bristly sedge, *Carex comosa* (1%); Buttonbush, *Cephalanthus occidentalis* (2%); and Meadow sweet, *Spiraea alba* (1%). As an E & S control crop the restored site will be seeded with Annual ryegrass, *Lolium multiflorum* at a rate of 15 lbs per acre.

Plants and seed can be obtained from Ernst Conservation Seeds, 9006 Mercer Pike, Meadville, PA, 16335, 800-873-3321 or www.ernstseed.com. Seed will be mechanically broadcasted on the restored site and the anticipated survival rate and percent aerial cover is expected to be between 90 and 100 percent after one (1) full growing season. The percent aerial cover at three (3) years of maturity is expected to be 100 percent and consisting of hydrophytic plant species.

Restoration of the wetland community shall begin immediately upon completion of the bedding and placement of the pipe. It is anticipated that upon beginning site reclamation activities, restoration measures will be completed the same day. Within one (1) year after the affected wetland community is restored it is expected to function in full capacity for drainage and flow patterns, stormwater retention, sediment stabilization and surface water discharge. Biological functions such as food chain production, aquatic and terrestrial habitat, nesting, spawning, and resting sites will increase as the restored area matures and vegetation composition stabilizes. Natural filtration and pollution prevention functions will be partially exhibited in varying degrees and will increase in their representation and function as the restored area matures as well. All wetland functions that occurred within the affected wetlands will be fully exhibited and functional within the restored area at the end of three (3) full growing seasons.

Show the location of replacement wetland sites on the Operations Map (Exhibit 9) and the Land Use and Reclamation Map (Exhibit 18).

Note: *At a minimum, wetland replacement must be at a 1:1 ratio (replacement acres: affected acres). The Department may require the ratio to exceed 1:1 based on the functions and values of the wetlands to be affected. Wetland replacement sites will generally not be approved unless the site is located within the same general area as the existing wetland to be replaced.*

Module 14: Streams/Wetlands
South of West Liberty Road
Wetlands No. 2, 3 and 4

14.3 *Wetland Related Information*

a) *Provide the name(s), address(es), telephone number(s) and qualifications of the person(s) who made the determination if wetlands exist within the proposed permit area.*

Derwood B. Davis (Biologist), The EADS Group, Inc., 15392 Rt 322, Clarion, PA 16214

b) *Show the location of wetlands on Exhibits 6.2, 9 and 18.*

Wetlands have been identified on the exhibit maps (Attached).

c) What is the total wetland acreage (which will be affected) for the proposed permit area? **1.89** acres.

d) *Provide responses to the following for each wetland which will be affected by the proposed mining activities:*

Exceptional Value Wetland Characteristics

1) *Does the wetland serve as habitat for flora and fauna listed as "threatened" or "endangered" under the Endangered Species Act of 1973, Wild Resource Conservation Act, Fish and Boat Code, or Game and Wildlife Code?* ☐ yes ☒ no

2) *Is the wetland hydrologically connected to or located within 1/2 mile of the wetlands identified in d)1) and does it maintain the habitat of the "threatened" or "endangered" species within the wetlands identified in d)1) above)?* ☐ yes ☒ no

NOTE: *If this wetland is located more than 1000 feet from the permit area, show its location (and the location of the wetland that is hydrologically connected to or located within ½ mile of) on the Exhibit 6.1 Map.*

3) *Is the wetland located in or along the floodplain of a wild trout stream (as designated by the Pennsylvania Fish and Boat Commission), or the floodplain of a tributary to a wild trout stream?* ☐ yes ☒ no

4) *Is the wetland located in or along the floodplain of a stream listed as exceptional value (under 25 Pa Code Chapter 93) or the floodplain of a tributary to an exceptional value stream?* ☐ yes ☒ no

5) *Is the wetland within the corridor of a waterway which has been designated as a wild or scenic river in accordance with the Wild and Scenic Rivers Act of 1968 or the PA Scenic Rivers Act?* ☐ yes ☒ no

6) *Is the wetland part of, or located along, an existing public or private drinking water supply and does it maintain the quality or quantity of the drinking water supply?* ☐ yes ☒ no

7) *Is the wetland located in areas designated by the Department as "natural" or "wild" areas within state forest or park lands?* ☐ yes ☒ no

8) *Is the wetland located in areas designated as Federal wilderness areas under the Wilderness Act or the Federal Eastern Wilderness Act of 1975?* ☐ yes ☒ no

9) *Is the wetland located in areas designated as National natural landmarks by the Secretary of the Interior under the Historic Sites Act of 1935?* ☐ yes ☒ no

NOTE: *If a "yes" response is indicated for any question in d)1) through d)9), the wetlands would be "exceptional value" (as defined in 25 Pa Code Section 105.17) and a demonstration must be made that the requirements of subsection (a) of 25*

Pa Code Section 105.18(a) have been met.

Wetland Functions

10) *Does the wetland serve natural biological functions, including food chain production; general habitat; and nesting, spawning, or resting sites for aquatic or land species?* **These wetland communities would provide some food chain production and general habitat for terrestrial and semi-aquatic species only.** ☒ yes ☐ no

11) *Does the wetland provide areas for study of the environment, or as sanctuaries or refuges?* **These wetlands are on private property and are not designated for study or resource protection.** ☐ yes ☒ no

12) *Does the wetland aid in, or maintain natural drainage characteristics, natural water filtration processes, current (flow) patterns or other environmental characteristics?* **These wetlands do provide some natural drainage of surface and ground waters to a tributary that establishes local surface water flow patterns.** ☒ yes ☐ no

13) *Does the wetland serve as storage areas for flood and storm waters, or does it shield other areas from erosion or storm damage?* **These wetlands contain a moderate grade to the northwest and a defined outlet that discharges water to tributaries. They are not part of a major waterway that floods.** ☐ yes ☒ no

14) *Does the wetland provide a groundwater recharge area that maintains minimum baseflows?* **These wetlands are supported by spring outcrops from a perched water table; providing baseflow to an unnamed tributary.** ☒ yes ☐ no

15) *Does the wetland serve as a prime natural recharge area where surface water and groundwater are directly connected?* **These wetlands contain a defined outlet and are supported by spring outcrops.** ☒ yes ☐ no

16) *Does the wetland aid in the prevention of pollution?* **These wetlands have the potential however, significant pollutant sources are lacking within the upstream area.** ☒ yes ☐ no

17) *Is the wetland used for, or does it provide the opportunity to be used for recreation?* **These wetlands are located on private property and are not open to the general public.** ☐ yes ☒ no

e) *If a "yes" response is indicated for the question in d)1) or d)2), identify how the determination was made and indicate any contacts with state or federal agency personnel.*

14.4 Wetland Impact Analysis/Assessment

a) *Describe the alternatives to the proposed mining activities that have been considered to avoid or minimize impacts on wetlands. An alternative analysis should include alternatives to the proposed mining activities, including alternative locations, routings or designs to avoid adverse impacts on the wetlands (e.g. relocating spoil/topsoil storage areas, rerouting haul roads).*

Alternatives considered as part of this permit were: No Mining, Mining with Wetland Avoidance and Mining with Wetland Impacts.

b) *Discuss whether any of the alternatives are practical to achieve the basic purposes of the project taking into account availability, cost, technology and logistics of the other possible project sites which would not affect the wetlands.*

The No Mining Alternative is a feasible alternative but was considered not prudent due to the fact that Glacial Sand & Gravel currently owns the permit area and this alternative would not permit them to regain their investment and continue to provide aggregate products to a highly demanding market. Mining with Wetland Avoidance is not considered feasible or prudent due to the required area for constructing a processing plant,

the required area to construct sufficient wash water storage ponds to supply the processing plant and the inability to fit these required areas within an area that does not hinder the extraction of aggregate material and at the same time prevent wetland impacts. The location of the processing plant and storage ponds are located in an area that contains lower volumes of aggregate material in comparison to the rest of the permit area. The location of the storage ponds is such that permits the collection of as much surface water runoff as possible. Likewise, this area is selected for the construction of the processing plant and wash water ponds because it will not interfere with the extraction of aggregate material that economically supports the mobilization of mining equipment and the actual mining activity.

Re-locating the processing plant and wash water ponds in order to avoid impacting the wetland was evaluated and considered not feasible or prudent based on the following reasons: 1) Re-location of the wash water storage ponds would require shifting the location of the processing plant in order to fit both operations within this area of the permit. This results in an economical loss of aggregate material that could be mined during the proposed mining phases and 2) Construction of the processing plant and wash water ponds in order to not interfere with the extraction of marketable aggregate would need to be done within the upslope areas of the wetlands. Field observations of the hydrological regime that supports this wetland community indicates this wetland is supported predominantly by a perched water table that outcrops in several places along the upper boundary line of the wetland community.

This consensus is supported by the observation of the drying up of these springs and lack of visible water within the wetland community during the spring and summer of 2007. Test hole and monitoring well information upslope of the wetland community reveals there are varying clay and silty clay layers immediately below the surface and ground water elevations were recorded to be at elevations from 1,216 to 1,218. The surface elevation within the wetland community ranges from 1,218 to 1,222. These impervious layers are believed to exist below the wetland community, and as a result, form a bowl whereby groundwater and surface water remains perched. Plant and wash water storage pond construction within the upslope area of the wetland community will negatively impact the wetland community due to: 1) diverting all surface water runoff around the processing plant to the wash water storage ponds, likewise around the wetland community as well and 2) Excavation into the hillside to construct the subgrade for the processing plant and wash water storage ponds will break these clay barriers and intercept the shallow ground water table lying below. This would have a negative impact on the wetland community downgrade by intercepting and redirecting the predominant hydrology that supports this wetland.

Wetland avoidance was also evaluated with a sub-alternative that eliminated the collection of surface water runoff and the construction of wash water storage ponds. This alternative depends solely on well water to provide the required wash water. This alternative would still have an indirect impact on the wetland community as well as a direct impact to surface water quality. The function of and need for wash water ponds is to: 1) recycle and store sufficient wash water from the processing plant that will conserve the use of and reduce the need for replacement water; 2) reduce the demand on groundwater resources from pumping water from wells to the processing plant and; 3) prevent sediment laden water from being discharged into adjoining tributaries. Construction of the processing plant will still result in the breaking up of the clay barrier that lies immediately underneath and the interruption of the shallow ground water table. This affect will again negatively impact the wetland community located downgrade. Providing the required water to operate the processing plant by using wells without recycling any wash water would likely result in a significant draw down of the ground water table. This again would negatively impact the wetland community. Sediment laden waters which would still require a detention basin to remove the sediment before discharging would potentially impact adjacent tributaries.

The Mining with Wetland Impacts alternative was considered feasible and prudent and reducing impacts to the wetland community is not feasible due to spatial constraints, already proposing the minimum wash water storage pond volume needed to support the processing plant and the unavoidable impact to the perched water table within the upstream area by plant construction. This alternative remains to be the alternative that achieves the goals and objectives of Glacial Sand & Gravel with the least environmental impact as a whole based on the following reasons: 1) It permits Glacial Sand & Gravel to streamline the mining process and extract the full intent of marketable aggregate within the permit area; 2) It provides the minimum required amount of wash water storage and recycling to support the processing plant therefore, reducing the draw on groundwater resources within and surrounding the permit area; 3) It provides a means to handle stormwater from the plant area and at the same time promotes water conservation as part of the plant operation; and 4) It provides detention time to settle out sediment and significantly reduces the need to discharge sediment laden waters to nearby tributaries.

c) *If any wetlands within the proposed permit area will be directly affected, provide the following:*

1) *Identify and delineate the wetland and the areal extent of the impact (wetlands must be identified and delineated in accordance with 25 Pa Code Section 105.451 Identification and delineation of wetlands – statement of policy).*

The affected wetlands are shown on the attached site plan. The aerial extent of wetland impacts to these wetland communities by mining operations is 1.89 acres.

2) *Submit a cross-sectional view showing the wetland and the proposed mining area.*

Cross sections of these wetland communities and mining area are attached.

3) *Explain how the proposed mining activities will directly affect the wetlands.*

The mining activities will directly affect these wetland communities by excavation, fill placement and grading to construct a series of wash water storage ponds that have the capacity to store sufficient water for processing plant operations. These ponds will also have the capacity to retain water and settle out the sediment that will be suspended in the wash water.

aa) *If the proposed mining activities will affect less than 1.0 acre of wetland and the wetland is not an exceptional value wetland (in accordance with 25 Pa Code Section 105.17), provide a description of the wetland functions which will be impacted by the proposed mining activities.* ***Note:*** *If a "yes" response is indicated for any question in Module 14.3 d)1) through d)9), the wetlands would be exceptional value (as defined in Section 105.17).*

bb) *If the proposed mining activities will affect 1.0 or more acres of wetlands or may affect an exceptional value wetland, provide a detailed assessment of the wetland functions identified in Module 14.3 d)10) through d)17).*

Plant accumulation and decomposition occurring within these wetland communities would be broken down into organic and inorganic nutrients. The affected wetlands would provide carbon and other inorganic nutrients to the unnamed tributary immediately adjacent to as well as downstream reaches. The affected wetlands provide general habitat for terrestrial and semi-aquatic organisms. This community would provide food and cover for these organisms during most of the year. Aquatic habitat is not provided due to the lack of open water habitat for a sufficient time during the growing season. Pollution prevention would be moderately exhibited by the affected wetlands however, the well defined outlet, lack of significant open water, low vegetation/water interfacing, and lack of potential pollution sources upslope of these wetlands reduces the opportunity for these wetland communities to fully exhibit this function.

d) *If any wetlands within the proposed permit or adjacent area will be indirectly affected (e.g. altering the wetland hydrology), provide the following:*

No wetland areas will be indirectly affected by the proposed mining operation. However, Wetland No. 4 will be temporarily impacted by the proposed mining activity as a result of sanitary line construction (See attached Module 14 – Wetland No. 4 Temporary Impacts).

1) *Identify and delineate the wetland and provide an estimate of the total wetland acreage affected (wetlands must be identified and delineated in accordance with 25 Pa Code Section 105.451 Identification and Delineation of Wetlands – statement of policy).*

2) *A description of how the proposed mining activities will indirectly affect the wetlands.*

e) *Will the cumulative impact of the proposed and anticipated mining activities result in a major impairment of the wetland resource in the general area?* ☐ yes ☒ no

Provide an explanation of the determination and identify any contacts with state or federal agencies involved in making the determination.

The affected wetlands are small to medium-sized, perched, wetland communites providing some function and values at varying levels. Impacts to these wetlands are site specific and will not result in cumulative impacts to wetland resources in the surrounding area.

14.5 Wetland Mitigation/Replacement

Note: *If a total of one-half (.5) acres or less of wetlands will be affected, participation in Pennsylvania's Wetlands Replacement Project may be authorized by the Department in lieu of onsite replacement of the wetlands.*

a) *If wetland mitigation measures or wetland replacement are proposed, address the following:*

1) *Identify the wetlands where mitigation measures will be employed.*

Upon completion of the extraction of aggregate material located between West Liberty Road (T-860), Swope Road (T-382) and the large wetland community north and northeast of the permit area, the affected wetlands will be replaced as part of the reclamation of this immediate area. The Wetland Mitigation Plan can be found on the attached site plan and Cross Sections are included.

2) *Identify the wetlands that will be replaced and the location of the replacement wetland site. Provide the number of acres for each wetland to be replaced and the acreage of the replacement wetland.*

The wetlands that will be replaced are classified as a Palustrine, Persistent, Emergent and Scrub Shrub, Broad-leaved Deciduous communities that are located within the upper reach of an unnamed tributary to Black Run. The wetland replacement site is located across West Liberty Road within the watershed of Black Run. The affected wetland acreage is calculated to be 1.89 acres and the proposed replacement acreage is calculated to be 1.90 acres.

3) *Provide a plan for mitigation/replacement following the guidelines in the Department's technical guidance titled "Design Criteria - Wetlands Replacement Monitoring" document 363-0300-001. This guidance is available from the Division of Waterways, Wetlands and Erosion Control, Post Office Box 8854, Harrisburg, Pennsylvania 17105-8554 or through the Department's Web Site.*

As per PA DEP Technical Guidance Document 363-0300-001 the following information is being provided:

The wetland mitigation plan proposes to replace the affected wetlands at a 1:1 ratio.

The wetland functions and values identified to be present within the affected wetlands will be replaced equally and in some cases to a greater extent (i.e. food chain production, general habitat, food/cover/nesting) within the proposed replacement plan due to its immediate location to the large wetland area to the north and northwest and ability to function in conjunction with this wetland. As a result its location, design and concurrent functions, other functions such as aquatic habitat, natural water filtration and pollution prevention are expected to be enhanced.

Wetland replacement will occur within the Black Run watershed directly across West Liberty Road upon completion of mining activities and reclamation of the Phase I mining activity.

The replacement plan will initially consist of a Palustrine, Persistent, Emergent wetland community, succeeding into a Scrub Shrub, Broadleaved Deciduous wetland community supported by a soil saturated and seasonally flooded hydrological regime.

Soil saturated conditions are expected to occur throughout the growing season from the surface to one (1) foot below the surface based on the existing data gathered during the delineation of the adjacent wetland community and exploratory test pit data. The site exhibits a perched water table that outcropped in many places along the upland/wetland boundary of the adjacent wetland community. This supporting hydrology will be intercepted by excavation and grading as part of the Phase I reclamation plan to create and maintain soil saturated areas. The final grade (elev. 1,200') will also permit temporary inundation in some portions of or the entire replacement site during storm events and seasonal fluctuations from surface water runoff. The interfacing of perched ground water and surface water is expected to provide soil saturated conditions throughout and beyond the growing season.

Soil conservation measures will be used to transfer the hydric soils from the affected wetlands into the replacement site. The top 12 inches of soil within the affected wetlands will be excavated and stockpiled as necessary until the replacement site grading is completed. This soil stockpile will be covered with a tarp(s) to reduce evaporation and maintain moisture within the soil. Watering will be conducted on an as needed basis during the stockpiling period. The stockpiled hydric soil will be placed in the wetland replacement site and brought to grade (elev. 1,200') as depicted on the Exhibit 18 and the attached Cross Sections. At a minimum, this soil will act as a planting medium for the selected plant species. However, this soil will contain a seed bank of indigenous hydrophytic plant species that, if properly stored, will likely germinate and proliferate within the wetland replacement site.

Plants and seed can be obtained from Ernst Conservation Seeds, 9006 Mercer Pike, Meadville, PA, 16335, 800-873-3321 or www.ernstseed.com. Exhibit 18 contains the planting plan proposed for the replacement site. Seed will be mechanically broadcasted on the replacement site and plant stock will be hand planted using a planting dibble or small shovel. Survival rate and percent aerial cover for seeded species are anticipated to be between 90 and 100 percent and survival rate and percent aerial cover for planted species are anticipated to be between 80 and 100 percent for survival and 75 to 90 percent for aerial cover after one (1) full growing season. The percent aerial cover at five (5) years of maturity is expected to be 100 percent, consisting of hydrophytic plant species.

Seed mix types that will be planted are OBL – FACW Perennial Food and Cover Wetland Mix (ERNMX-120) and Wildlife Food and Shelter Shrub Mix (ERNMX-138). The ERNMX-120 is composed of Fox sedge, *Carex vulpinoidea* (23%); Virginia wild rye, *Elymus virginicus* (20%); Giant bur reed, *Sparganium eurycarpum* (10%); Fringed (Nodding) sedge, *Carex crinita* (5%); Nodding sedge, *Carex gynandra* (5%); Hop sedge, *Carex lupulina* (5%); Lurid sedge, *Carex lurida* (5%); Blunt broom sedge, *Carex scoparia* (5%); Soft rush, *Juncus effusus* (5%); Wool grass, *Scirpus cyperinus* (5%); Eastern bur reed, *Sparganium americanum* (5%); Nodding bur marigold, *Bidens cernua* (3%); Cosmos bristly sedge, *Carex comosa* (2%); Rattlesnake grass, *Glyceria canadensis* (1%); and Rice cutgrass, PA Ecotype, *Leersia oryzoides, PA ecotype* (1%). The ERNMX-138 is composed of Fox sedge, *Carex vulpinoidea* (24%); Arrow wood, *Viburnum dentatum* (14%); Virginia wild rye, *Elymus virginicus* (11%); Lurid sedge, *Carex lurida* (10%); Silky dogwood, *Cornus amomum* (10%); Grey dogwood, *Cornus racemosa* (10%); Hop sedge, *Carex lupulina* (5%); Blunt broom sedge, *Carex scoparia* (7%); Hercules' club, *Aralia spinosa* (3%); Awl sedge, *Carex stipata* (2%); Cosmos bristly sedge, *Carex comosa* (1%); Buttonbush, *Cephalanthus occidentalis* (2%); and Meadow sweet, *Spiraea alba* (1%).

Rooted cuttings (8 to 12 inch heights) of Red-osier dogwood (*Cornus stolonifera)*, Black willow (*Salix nigra)*, and Silky willow (*Salix sericea)* will be planted as specified on the planting plan details. These shrubs will be planted at 6 foot centers at the designated locations and quantities depicted on the attached planting plan. Shrub placement is intended to provide a border of shrub development around the seed herbaceous zone that will provide additional edge effect within the wetland mitigation site. This edge effect is enhanced due to the upland open field environment that will exist around the mitigation site.

Slopes throughout the wetland replacement site will be level. Upland slopes will approximately 17:1 (0.06 percent) on the north, northeast and southeast sides. On the south, southwest, northwest sides the upland slopes will approximate 3:1 (0.33 percent). The surface grading will be left rough to create micro environments that control and trap surface water as well as carbonaceous and inorganic nutrients.

Construction of the replacement site will begin concurrent to the Phase I post-mining reclamation. It is anticipated that upon beginning site reclamation activities, it will take approximately one (1) week for construction stakeout, three (3) to four (4) weeks to complete the final grading of the wetland replacement site, and three (3) weeks to complete seeding, planting and mulching.

One (1) year after the wetland replacement site is completed it will function in full capacity for drainage and flow patterns, stormwater retention, sediment stabilization and surface water discharge. Biological functions such as food chain production, aquatic and terrestrial habitat, nesting, spawning, and resting sites will increase as the wetland replacement community matures and vegetation composition stabilizes. Natural filtration and pollution prevention functions will be partially exhibited in varying degrees and will increase in their representation and function as the wetland replacement community matures. All wetland functions that occurred within the affected wetlands will be fully exhibited and functional within the mitigation site at the end of five (5) full growing seasons and will include additional functions such as aquatic habitat, spawning sites, natural filtration, and pollution prevention.

Wetland replacement sites are generally monitored for a minimum of five (5) years which will include a site visit twice a year for the first three (3) years and once a year for the remaining two (2) years, as outlined in the PA DEP Technical Guidance Document 363-0300-001. Inspections will be conducted within the growing season, as depicted by a PA DEP map for identifying growing seasons for wetland hydrology. These inspections are usually completed between April 15 and October 15 for this region. A report will be generated from each inspection that will discuss wetland determination parameters, succession of the wetland replacement site, success to date, function and value development, and a discussion of problems and remedial measures if warranted. A copy of the report will be submitted to the owner, COE and PA DEP.

Design details can be found on attached site plan and the included Cross Sections. A site plan of the wetland mitigation map and surrounding land uses, grading plan, planting plan, and planting specifications are included. The cross sections indicate existing wetland elevation data, mitigation site elevation data, water elevation data, underlying material information and slope data.

Show the location of replacement wetland sites on the Operations Map (Exhibit 9) and the Land Use and Reclamation Map (Exhibit 18).

Note: *At a minimum, wetland replacement must be at a 1:1 ratio (replacement acres: affected acres). The Department may require the ratio to exceed 1:1 based on the functions and values of the wetlands to be affected. Wetland replacement sites will generally not be approved unless the site is located within the same general area as the existing wetland to be replaced.*

Proposed Impacts to Aquatic Resources
Mine 47
Worth Township, Butler County, PA
Glacial Sand & Gravel Co.

Wetland	Area within Permit Boundary (ac)	Temporary Impact (ac)	Permanent Impact (ac)
1	2.49	0.00	0.00
2	2.30	0.00	1.70
3*	0.19	0.00	0.19
4	0.31	0.01	0.00
Total	**5.29**	**0.01**	**1.89**

*Wetland 3 is considered non-jurisdictional by the USACE

Stream	Length within Permit Boundary (linear feet)	Temporary Impact (linear feet)	Permanent Impact (linear feet)
UNT 1	780	10	0
UNT 2	0	0	0
UNT 3	580	0	190
Total	**1,360**	**10**	**190**

Bintrim, Tyler J LRP

From: Bud Davis [ddavis@eadsgroup-clarion.com]
Sent: Friday, April 03, 2009 3:32 PM
To: Bintrim, Tyler J LRP
Subject: RE: 2008-280 Glacial Sand and Gravel Co. Mine 47

Tyler,

Just to let you know next Monday April 6, 2009 will be my last day at EADS. Please contact and send all correspondence pertaining to the above project to Michal L. Jones - Stewart, Project Manager at 814-764-5050 or mjones@eadsgroup.com. Thank you.

Bud Davis

From: Bintrim, Tyler J LRP [mailto:tyler.j.bintrim@usace.army.mil]
Sent: Friday, March 27, 2009 8:38 AM
To: Bud Davis
Subject: 2008-280 Glacial Sand and Gravel Co. Mine 47

Mr. Davis:
I am in receipt of the subject referenced permit application. I will need the following items for Public Notice.

1. A location map that clearly depicts the project limits.

2. 8.5 by 11 inch drawings showing the construction of the ponds and mitigation area and showing impacts to existing resources.

3. A more detailed project description stating why impacts must be incurred and whether wetland 1 will be impacted in any way.

4. A mitigation statement explaining how 1.77 acres of wetland impact will be adequately mitigated.

Please submit this information in order to continue the 404 review process.

Thank you,

Tyler J. Bintrim
Regulatory Project Manager
U.S. Army Corps of Engineers Pittsburgh District Federal Building, 20th Floor 1000 Liberty Avenue Pittsburgh, PA 15222

P: 412-395-7115

4/3/2009 via email

Bintrim, Tyler J LRP

From: Bud Davis [ddavis@eadsgroup-clarion.com]
Sent: Friday, April 03, 2009 3:23 PM
To: Bintrim, Tyler J LRP
Cc: Kyle Schwabenbauer; Michal Jones; Rick Tote; Rob Stormer
Subject: RE: 2008-280 Glacial Sand and Gravel Co. Mine 47

Attachments: Project Location Map.pdf; ALTERNATIVES.docx; WETLAND MITIGATION & RESTORATION.docx; Mine 47 Plan Sheets.pdf

Project Location Map.pdf (634 ... ALTERNATIVES.docx (15 KB) WETLAND GATION & RESTOR Mine 47 Plan Sheets.pdf (2 MB)...

Mr. Bintrim:

As requested we are providing the following information for the Public Notice pertaining to Glacial Sand and Gravel Company's Section 404 permit application:

1. Attached is a copy of the USGS Slippery Rock quadrangle that indicates the permit boundary.

2. Attached are 8 ½ x11 pages of the ponds, processing plant and wetland mitigation construction that shows the resource impacts.

3. Wetland No. 1 will not be directly or indirectly impacted by the proposed mining and wetland mitigation construction. Ground water elevations to the south of Wetland No. 1 will remain the same within and surrounding the permitted area. Due to no anticipated impacts to this wetland community, a separate module was completed for this resource. Please refer to PA DEP Module 14, Streams/Wetlands, North of West Liberty Road, Wetland No. 1.

4. Because Wetlands No. 2, 3 and a portion of 4 will be permanently impacted as a result of the mining operation and Wetland No. 4 will also be temporarily impacted as a result of the construction of a sanitary pipeline crossing, two (2) separate Module 14 documents (Wetland No. 2, 3 and 4 and Wetland No. 4 (Temporary Impacts)) were completed. Attached is the text from the alternatives discussion from both modules for your convenience and these discussions can be found in Module 14, Section 14.4(b).

5. Also, discussions for specific wetland mitigation and restoration measures can be found within the same modules discussed above in Section 14.5(a)(3). Attached for your convenience is the text from these modules.

I hope this information meets your need for the Public Notice and Section 404 Permit. If you have any questions please contact Michal L. Jones – Stewart, Project Manager at 814-764-5050 or mjones@eadsgroup.com.

From: Bintrim, Tyler J LRP [mailto:tyler.j.bintrim@usace.army.mil]
Sent: Friday, March 27, 2009 8:38 AM
To: Bud Davis
Subject: 2008-280 Glacial Sand and Gravel Co. Mine 47

Mr. Davis:
I am in receipt of the subject referenced permit application. I will need the following items for Public Notice.

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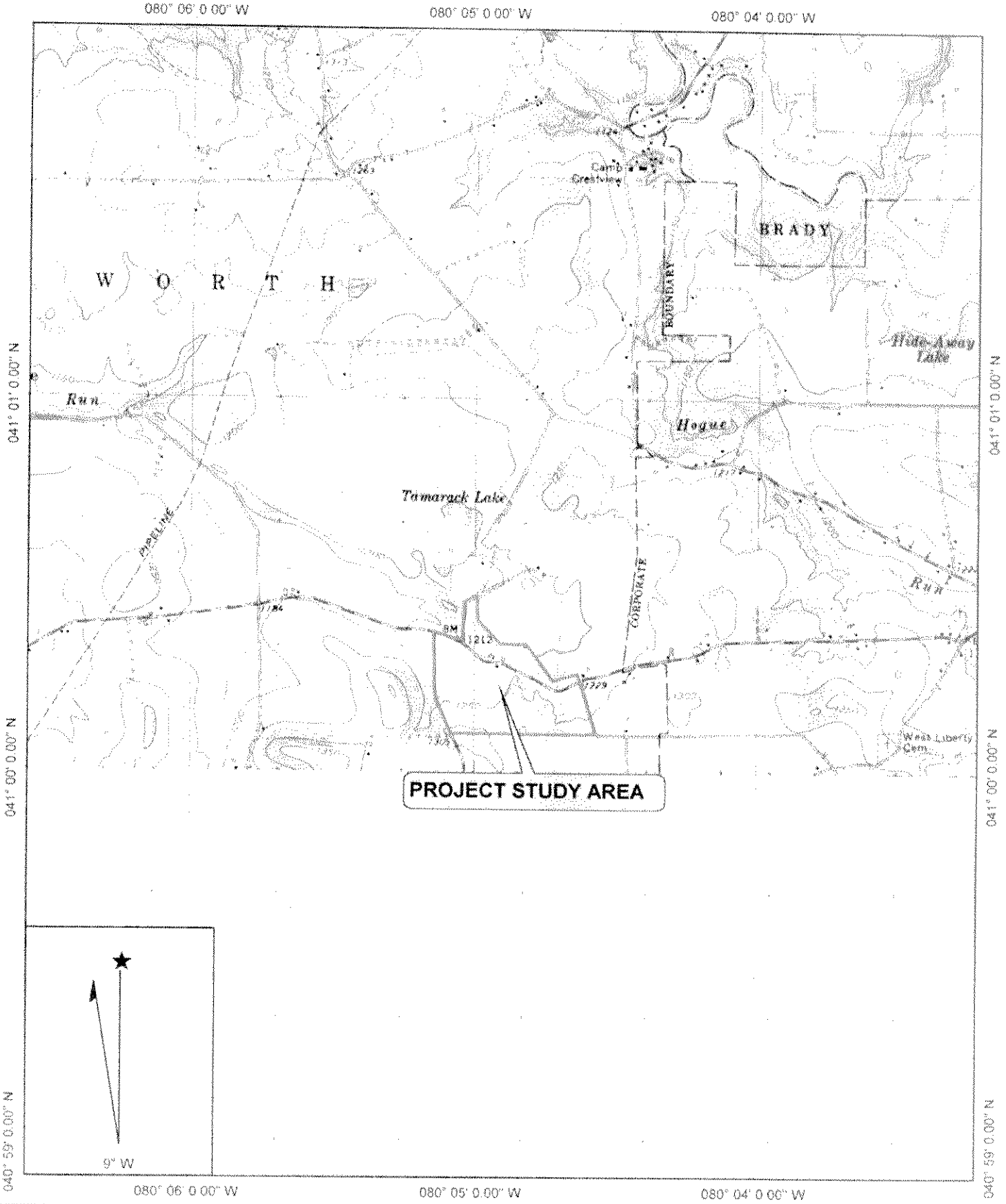
Thank you,

Tyler J. Bintrim
Regulatory Project Manager
U.S. Army Corps of Engineers Pittsburgh District Federal Building, 20th Floor 1000 Liberty Avenue Pittsburgh, PA 15222

P: 412-395-7115



Name: SLIPPERY ROCK
Date: 1/23/2008
Scale: 1 inch equals 2000 feet

Location: 041° 00' 27.24" N 080° 04' 53.88" W
Caption: Glacial Sand and Gravel Co.
Mine 47 SMP
Worth Township, Butler County

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ALTERNATIVES

Permanent Impacts to Wetlands No. 2, 3 and 4

The No Mining Alternative is a feasible alternative but was considered not prudent due to the fact that Glacial Sand & Gravel currently owns the permit area and this alternative would not permit them to regain their investment and continue to provide aggregate products to a highly demanding market. Mining with Wetland Avoidance is not considered feasible or prudent due to the required area for constructing a processing plant, the required area to construct sufficient wash water storage ponds to supply the processing plant and the inability to fit these required areas within an area that does not hinder the extraction of aggregate material and at the same time prevent wetland impacts. The location of the processing plant and storage ponds are located in an area that contains lower volumes of aggregate material in comparison to the rest of the permit area. The location of the storage ponds is such that permits the collection of as much surface water runoff as possible. Likewise, this area is selected for the construction of the processing plant and wash water ponds because it will not interfere with the extraction of aggregate material that economically supports the mobilization of mining equipment and the actual mining activity.

Re-locating the processing plant and wash water ponds in order to avoid impacting the wetland was evaluated and considered not feasible or prudent based on the following reasons: 1) Re-location of the wash water storage ponds would require shifting the location of the processing plant in order to fit both operations within this area of the permit. This results in an economical loss of aggregate material that could be mined during the proposed mining phases and 2) Construction of the processing plant and wash water ponds in order to not interfere with the extraction of marketable aggregate would need to be done within the upslope areas of the wetlands. Field observations of the hydrological regime that supports this wetland community indicates this wetland is supported predominantly by a perched water table that outcrops in several places along the upper boundary line of the wetland community.

This consensus is supported by the observation of the drying up of these springs and lack of visible water within the wetland community during the spring and summer of 2007. Test hole and monitoring well information upslope of the wetland community reveals there are varying clay and silty clay layers immediately below the surface and ground water elevations were recorded to be at elevations from 1216 to 1218. The surface elevation within the wetland community ranges from 1218 to 1222. These impervious layers are believed to exist below the wetland community and as a result form a bowl whereby ground water and surface water remains perched. Plant and wash water storage pond construction within the upslope area of the wetland community will negatively impact the wetland community due to: 1) diverting all surface water runoff around the processing plant to the wash water storage ponds, likewise around the wetland community as well and 2) Excavation into the hillside to construct the subgrade for the processing plant and wash water storage ponds will break these clay barriers and intercept the shallow ground water table lying below. This would have a negative impact on the wetland community downgrade by intercepting and redirecting the predominant hydrology that supports this wetland.

Wetland avoidance was also evaluated with a sub-alternative that eliminated the collection of surface water runoff and the construction of wash water storage ponds. This alternative depends solely on well water to provide the required wash water. This alternative would still have an indirect impact on the wetland community as well as a direct impact to surface water quality. The function of and need for wash water ponds is to: 1) recycle and store sufficient wash water from the processing plant that will conserve the use of and reduce the need for replacement water; 2) reduce the demand on groundwater resources from pumping water from wells to the processing plant and; 3) prevent sediment laden water from being discharged into adjoining tributaries. Construction of the processing plant will still result in the breaking up of the clay barrier that lies immediately underneath and the interruption of the shallow ground water table. This affect will again negatively impact the wetland community located downgrade. Providing the required water to operate the processing plant by using wells without recycling any wash water would likely result in a significant draw down of the ground water table. This again would negatively impact the wetland community. Sediment laden waters which would still require a detention basin to remove the sediment before discharging would potentially impact adjacent tributaries.

The Mining with Wetland Impacts alternative was considered feasible and prudent and reducing impacts to the wetland community is not feasible due to spatial constraints, already proposing the minimum wash water storage pond volume needed to support the processing plant and the unavoidable impact to the perched water table within the upstream area by plant construction. This alternative remains to be the alternative that achieves the goals and objectives of Glacial Sand & Gravel with the least environmental impact as a whole based on the following reasons: 1) It permits Glacial Sand & Gravel to streamline the mining process and extract the full intent of marketable aggregate within the permit area; 2) It provides the minimum required amount of wash water storage and recycling to support the processing plant therefore, reducing the draw on groundwater resources within and surrounding the permit area; 3) It provides a means to handle stormwater from the plant area and at the same time promotes water conservation as part of the plant operation; and 4) It provides detention time to settle out sediment and significantly reduces the need to discharge sediment laden waters to nearby tributaries.

Temporary Impacts to Wetland No. 4

The No Build Alternative is a feasible alternative but was considered not prudent. Due to the length of time that the plant will be operating and the number of full time employee's onsite, a sanitary onsite septic system was warranted; not to mention required by the PA DEP.

The sewer line alignment avoiding impacts to Wetland No. 4 was not a feasible alternative due to weighing design standards, slope requirements and site development barriers. The stream crossing site was selected based on the shallower water depth, drainage area, required slope standards for sanitary pipelines and the ability to achieve a minimum of 3 feet of cover over the stream crossing. Design parameters for gravity flow sanitary pipelines require a minimum of a 1 percent slope and the sanitary pipeline between the septic and dosing tanks must be at a minimum of a 2 percent slope. The need to maintain a minimum 2 percent slope between the septic and dosing tanks required both tanks to be located on the west side of the stream; since the natural grade on the east side of the stream was too flat. Other stream crossing locations that

would not impact Wetland No. 4 would not maintain the required slopes for gravity flow sanitary lines.

The sewer line alignment with minimal impact alternative was considered feasible and prudent based on meeting the required minimum of 3 feet of covering at the wetland and stream crossing, required slopes for sanitary line construction, the depth of water in the stream and the location of the sediment pond. The first alternative was located approximately 25 linear feet to the north of the current proposed crossing. Upon additional wetlands investigation this alternative resulted in 0.03 acres of temporary wetland impact as well as a stream crossing. The location was shifted south reducing temporary wetland impacts by crossing at a more narrow point within the wetland community resulting in 0.01 acres of temporary impact. This alternative achieves the goals and objectives of Glacial Sand & Gravel and the PA DEP with minimal environmental impacts to this wetland community that are temporary and can be mitigated through restoration methods.

WETLAND MITIGATION

Wetlands No. 2, 3 and 4

As per PA DEP Technical Guidance Document 363-0300-001 the following information is being provided:

The wetland mitigation plan proposes to replace the affected wetlands at a 1:1 ratio.

The wetland functions and values identified to be present within the affected wetlands will be replaced equally and in some cases to a greater extent (i.e. food chain production, general habitat, food/cover/nesting) within the proposed replacement plan due to its immediate location to the large wetland area to the north and northwest and ability to function in conjunction with this wetland. As a result its location, design and concurrent functions, other functions such as aquatic habitat, natural water filtration and pollution prevention are expected to be enhanced.

Wetland replacement will occur within the Black Run watershed directly across West Liberty Road upon completion of mining activities and reclamation of the Phase I mining activity.

The replacement plan will initially consist of a Palustrine, Persistent, Emergent wetland community, succeeding into a Scrub Shrub, Broadleaved Deciduous wetland community supported by a soil saturated and seasonally flooded hydrological regime.

Soil saturated conditions are expected to occur throughout the growing season from the surface to one (1) foot below the surface based on the existing data gathered during the delineation of the adjacent wetland community and exploratory test pit data. The site exhibits a perched water table that outcropped in many places along the upland/wetland boundary of the adjacent wetland community. This supporting hydrology will be intercepted by excavation and grading as part of the Phase I reclamation plan to create and maintain soil saturated areas. The final grade (el. 1200) will also be as such to permit temporary inundation in some portions of or the entire replacement site during storm events and seasonal fluctuations from surface water runoff. The interfacing of perched ground water and surface water is expected to provide soil saturated conditions throughout and beyond the growing season.

Soil conservation measures will be used to transfer the hydric soils from the affected wetlands into the replacement site. The top 12 inches of soil within the affected wetlands will be excavated and stockpiled as necessary until the replacement site is grading is completed. This soil stockpile will be covered with a tarp(s) to reduce evaporation and maintain moisture within the soil. Watering will be done on an as needed basis during the stock piling period. The stock piled hydric soil will be placed in the wetland replacement site and brought to grade (final grade elevation = 1200) as depicted on the Exhibit 18 and the attached Cross Sections. At a minimum this soil will act as a planting medium for the selected plant species; however this soil will contain a seed bank of indigenous hydrophytic plant species that, if properly stored, will likely germinate and proliferate within the wetland replacement site.

Plants and seed can be obtained from Ernst Conservation Seeds, 9006 Mercer Pike, Meadville, PA, 16335, 800-873-3321 or www.ernstseed.com. Exhibit 18 contains the planting plan

proposed for the replacement site. Seed will be mechanically broadcasted on the replacement site and plant stock will be hand planted using a planting dibble or small shovel. Survival rate and percent aerial cover for seeded species are anticipated to be between 90 and 100 percent and survival rate and percent aerial cover for planted species are anticipated to be between 80 and 100 percent for survival and 75 to 90 percent for aerial cover after one (1) full growing season. The percent aerial cover at five (5) years of maturity is expected to be 100 percent and consisting of hydrophytic plant species.

Seed mix types that will be planted are OBL – FACW Perennial Food and Cover Wetland Mix (ERNMX-120) and Wildlife Food and Shelter Shrub Mix (ERNMX-138). The ERNMX-120 is composed of Fox sedge, *Carex vulpinoidea* (23%); Virginia wild rye, *Elymus virginicus* (20%); Giant bur reed, *Sparganium eurycarpum* (10%); Fringed (Nodding) sedge, *Carex crinita* (5%); Nodding sedge, *Carex gynandra* (5%); Hop sedge, *Carex lupulina* (5%); Lurid sedge, *Carex lurida* (5%); Blunt broom sedge, *Carex scoparia* (5%); Soft rush, *Juncus effusus* (5%); Wool grass, *Scirpus cyperinus* (5%); Eastern bur reed, *Sparganium americanum* (5%); Nodding bur marigold, *Bidens cernua* (3%); Cosmos bristly sedge, *Carex comosa* (2%); Rattlesnake grass, *Glyceria canadensis* (1%); and Rice cutgrass, PA Ecotype, *Leersia oryzoides, PA ecotype* (1%). The ERNMX-138 is composed of Fox sedge, *Carex vulpinoidea* (24%); Arrow wood, *Viburnum dentatum* (14%); Virginia wild rye, *Elymus virginicus* (11%); Lurid sedge, *Carex lurida* (10%); Silky dogwood, *Cornus amomum* (10%); Grey dogwood, *Cornus racemosa* (10%); Hop sedge, *Carex lupulina* (5%); Blunt broom sedge, *Carex scoparia* (7%); Hercules' club, *Aralia spinosa* (3%); Awl sedge, *Carex stipata* (2%); Cosmos bristly sedge, *Carex comosa* (1%); Buttonbush, *Cephalanthus occidentalis* (2%); and Meadow sweet, *Spiraea alba* (1%).

Rooted cuttings (8 to 12 inch heights) of Red-osier dogwood, *Cornus stolonifera*, Black willow, *Salix nigra*, and Silky willow, *Salix sericea* will be planted as specified on the planting plan details. These shrubs will be planted at 6 foot centers at the designated locations and quantities depicted on the attached planting plan. Shrub placement is intended to provide a border of shrub development around the seed herbaceous zone that will provide additional edge effect within the wetland mitigation site. This edge effect is enhanced due to the upland open field environment that will exist around the mitigation site.

Slopes throughout the wetland replacement site will be level. Upland slopes will approximate 17:1 (0.06 percent) on the north, northeast and southeast sides. On the south, southwest, northwest sides the upland slopes will approximate 3:1 (0.33 percent). The surface will be left rough to create micro environments that control and trap surface water as well as carbonaceous and inorganic nutrients.

Construction of the replacement site will begin concurrent with the Phase I post-mining reclamation. It is anticipated that upon beginning site reclamation activities, it will take one (1) week for construction stakeout, three (3) to four (4) weeks to complete the final grading of the wetland replacement site and three (3) weeks to complete seeding, planting and mulching.

One (1) year after the wetland replacement site is completed it will function in full capacity for drainage and flow patterns, stormwater retention, sediment stabilization and surface water discharge. Biological functions such as food chain production, aquatic and terrestrial habitat,

nesting, spawning, and resting sites will increase as the wetland replacement community matures and vegetation composition stabilizes. Natural filtration and pollution prevention functions will be partially exhibited in varying degrees and will increase in their representation and function as the wetland replacement community matures as well. All wetland functions that occurred within the affected wetlands will be fully exhibited and functional within the mitigation site at the end of five (5) full growing seasons; to include additional functions such as aquatic habitat, spawning sites, natural filtration, and pollution prevention.

Wetland replacement sites are generally monitored for a minimum of five (5) years which will include a site visit twice a year for the first three (3) years and once a year for the remaining two (2) years, as outlined in the PA DEP Technical Guidance Document 363-0300-001. Inspections are done within the growing season, as depicted by a PA DEP map for identifying growing seasons for wetland hydrology. These inspections are usually done between April 15 and October 15 for this location. A report is generated from each inspection that will discuss wetland determination parameters, succession of the wetland replacement site, success to date, function and value development, and a discussion of problems and remedial measures if warranted. A copy of the report will be submitted to the owner, COE and PA DEP.

Design details can be found on attached site plan and the included Cross Sections. A site plan of the wetland mitigation map and surrounding land uses, grading plan, planting plan, and planting specifications are included. The cross sections indicate existing wetland elevation data, mitigation site elevation data, water elevation data, underlying material information and slope data.

Wetland Restoration

Wetland No. 4

The wetland restoration plan proposes to restore the affected wetlands at a 1:1 ratio.

The wetland functions and values identified to be present within the affected wetland will be restored equally as a result of the proposed restoration plan based on being able to restore the affected area within the actual affected area and Black Run watershed.

The restoration plan will initially consist of a Palustrine, Persistent, Emergent wetland community, succeeding into a Scrub Shrub, Broadleaved Deciduous wetland community supported by a soil saturated and seasonally flooded hydrological regime.

Inundated and soil saturated conditions are expected to occur throughout the growing season above the surface to one (1) foot below the surface based on the existing data gathered during the delineation of the wetland community.

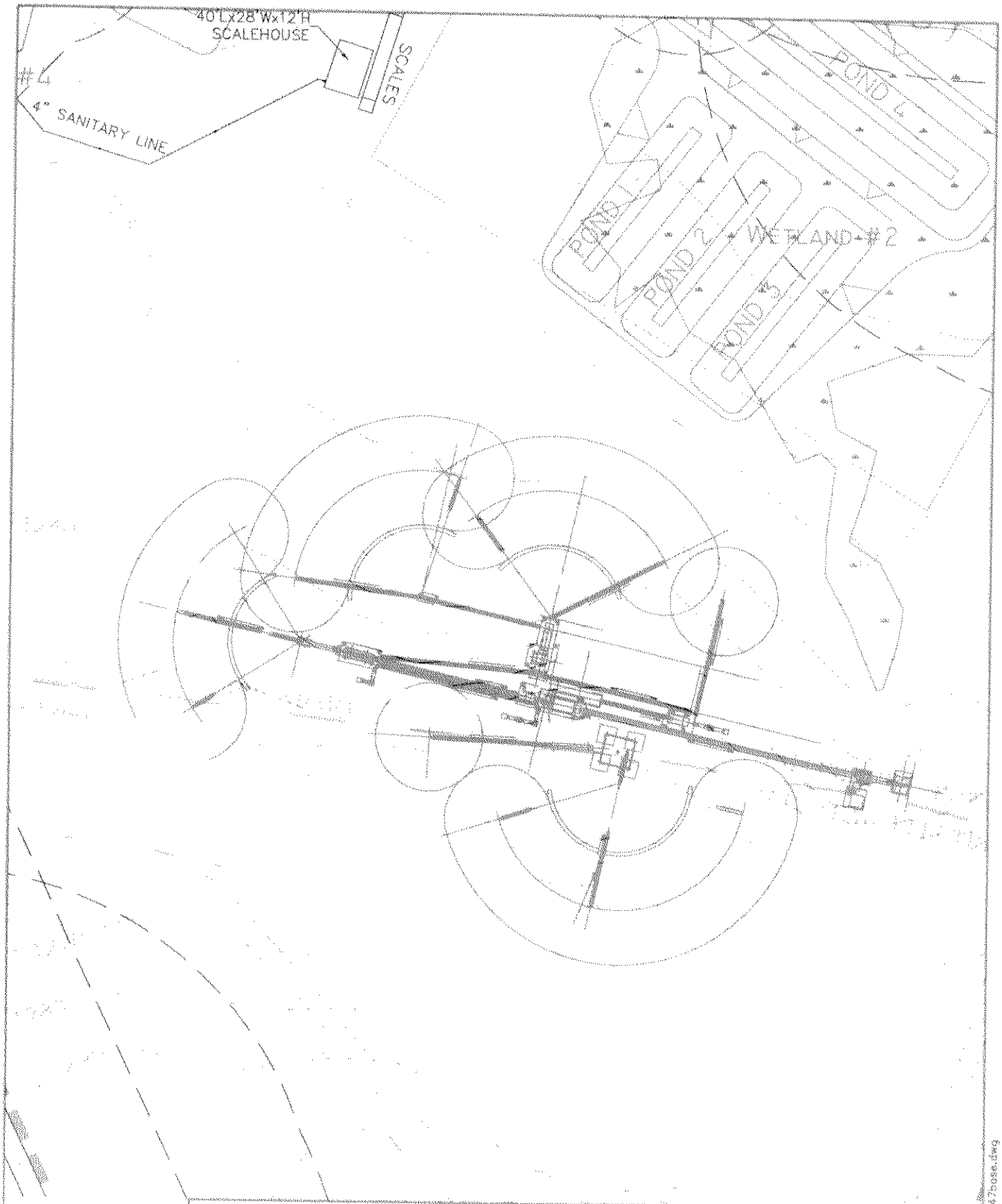
Soil conservation measures will be used to restore the hydric soils within the affected wetlands. The top 12 inches of soil within the affected wetlands will be excavated and stockpiled as necessary until the bedding and placement of the pipe is completed. This stockpile will be covered with a tarp(s) to reduce evaporation and maintain moisture within the soil. Upon completion of the bedding and placement of the pipe the trench will backfilled up to within a

foot below the surface. The hydric soil will be placed within this portion of the trench and brought to the existing grade. At a minimum this soil will act as a planting medium for the specified seed mix; however this soil will contain a seed bank of indigenous hydrophytic plant species that, if properly stored and placed, will likely germinate and proliferate within the existing wetland community.

Once the trench has been graded to the existing contour it will be seeded with Wildlife Food and Shelter Shrub Mix (ERNMX-138) at a rate of 15 lbs per acre. The ERNMX-138 is composed of Fox sedge, *Carex vulpinoidea* (24%); Arrow wood, *Viburnum dentatum* (14%); Virginia wild rye, *Elymus virginicus* (11%); Lurid sedge, *Carex lurida* (10%); Silky dogwood, *Cornus amomum* (10%); Grey dogwood, *Cornus racemosa* (10%); Hop sedge, *Carex lupulina* (5%); Blunt broom sedge, *Carex scoparia* (7%); Hercules' club, *Aralia spinosa* (3%); Awl sedge, *Carex stipata* (2%); Cosmos bristly sedge, *Carex comosa* (1%); Buttonbush, *Cephalanthus occidentalis* (2%); and Meadow sweet, *Spiraea alba* (1%). As an E & S control crop the restored site will be seeded with Annual ryegrass, *Lolium multiflorum* at a rate of 15 lbs per acre.

Plants and seed can be obtained from Ernst Conservation Seeds, 9006 Mercer Pike, Meadville, PA, 16335, 800-873-3321 or www.ernstseed.com. Seed will be mechanically broadcasted on the restored site and the anticipated survival rate and percent aerial cover is expected to be between 90 and 100 percent after one (1) full growing season. The percent aerial cover at three (3) years of maturity is expected to be 100 percent and consisting of hydrophytic plant species.

Restoration of the wetland community shall begin immediately upon completion of the bedding and placement of the pipe. It is anticipated that upon beginning site reclamation activities, restoration measures will be completed the same day. Within one (1) year after the affected wetland community is restored it is expected to function in full capacity for drainage and flow patterns, stormwater retention, sediment stabilization and surface water discharge. Biological functions such as food chain production, aquatic and terrestrial habitat, nesting, spawning, and resting sites will increase as the restored area matures and vegetation composition stabilizes. Natural filtration and pollution prevention functions will be partially exhibited in varying degrees and will increase in their representation and function as the restored area matures as well. All wetland functions that occurred within the affected wetlands will be fully exhibited and functional within the restored area at the end of three (3) full growing seasons.



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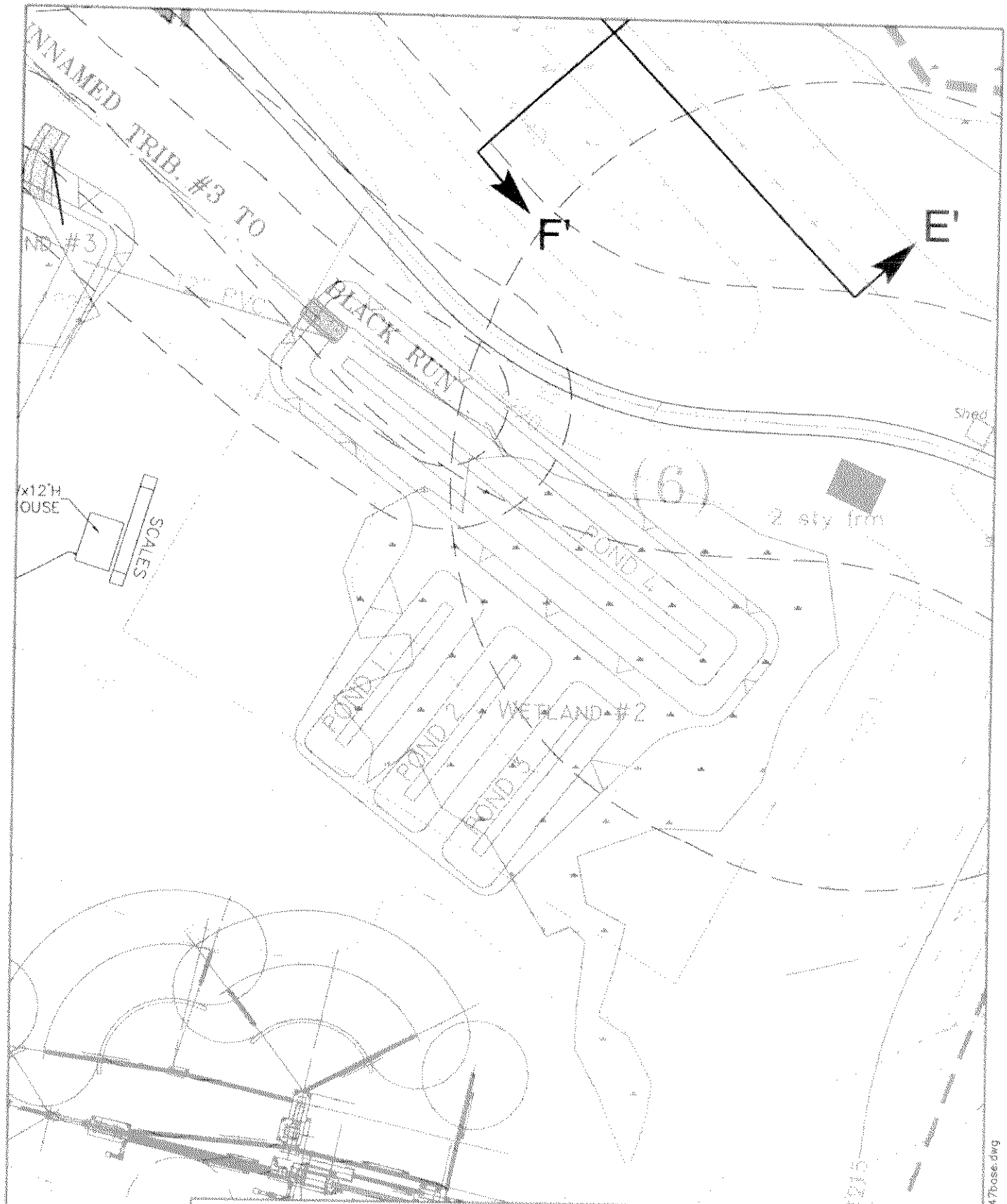
KITTANNING, PA 16201

WORTH TOWNSHIP

BUTLER COUNTY

DWG NAME: Mine47base.dwg



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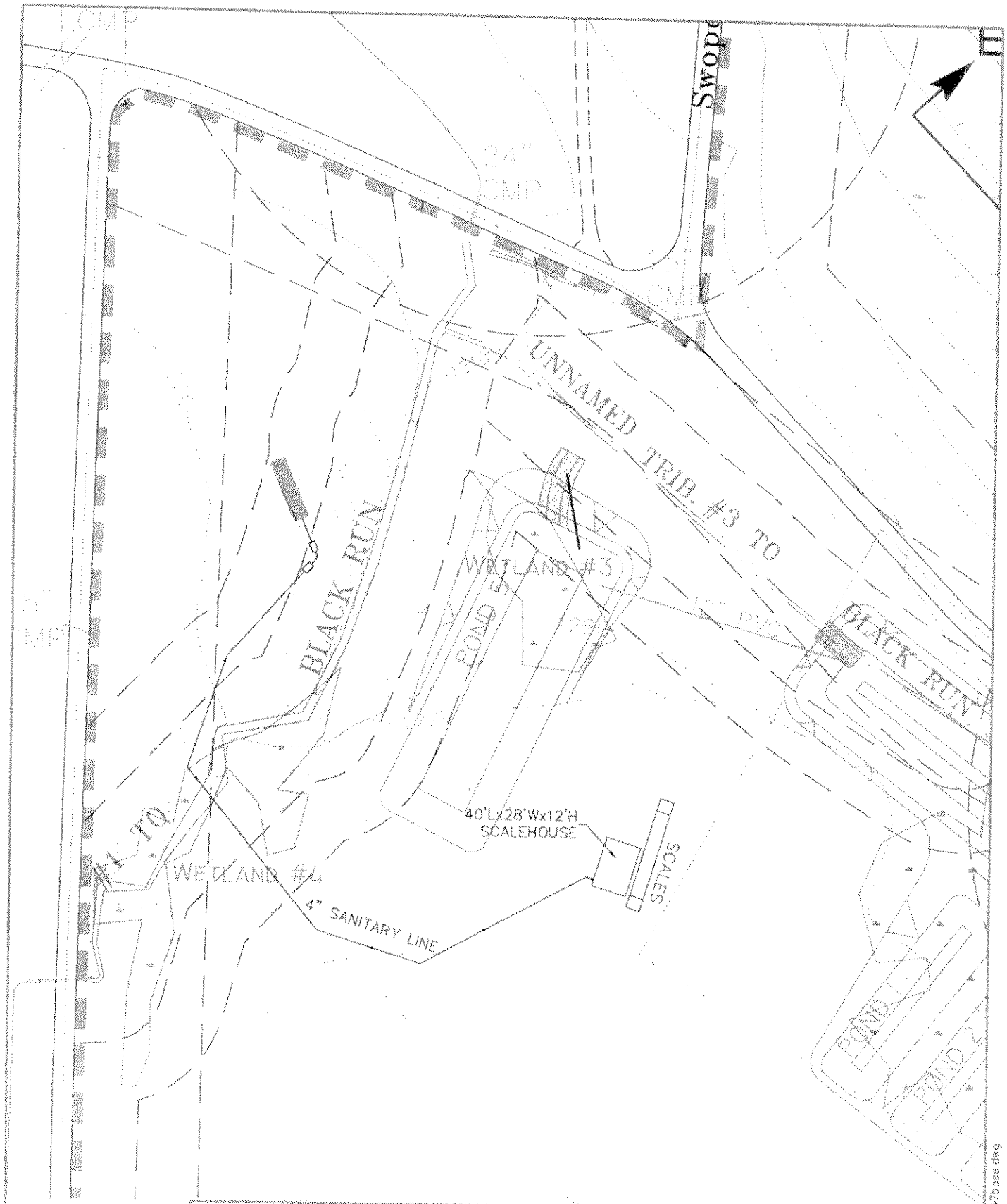

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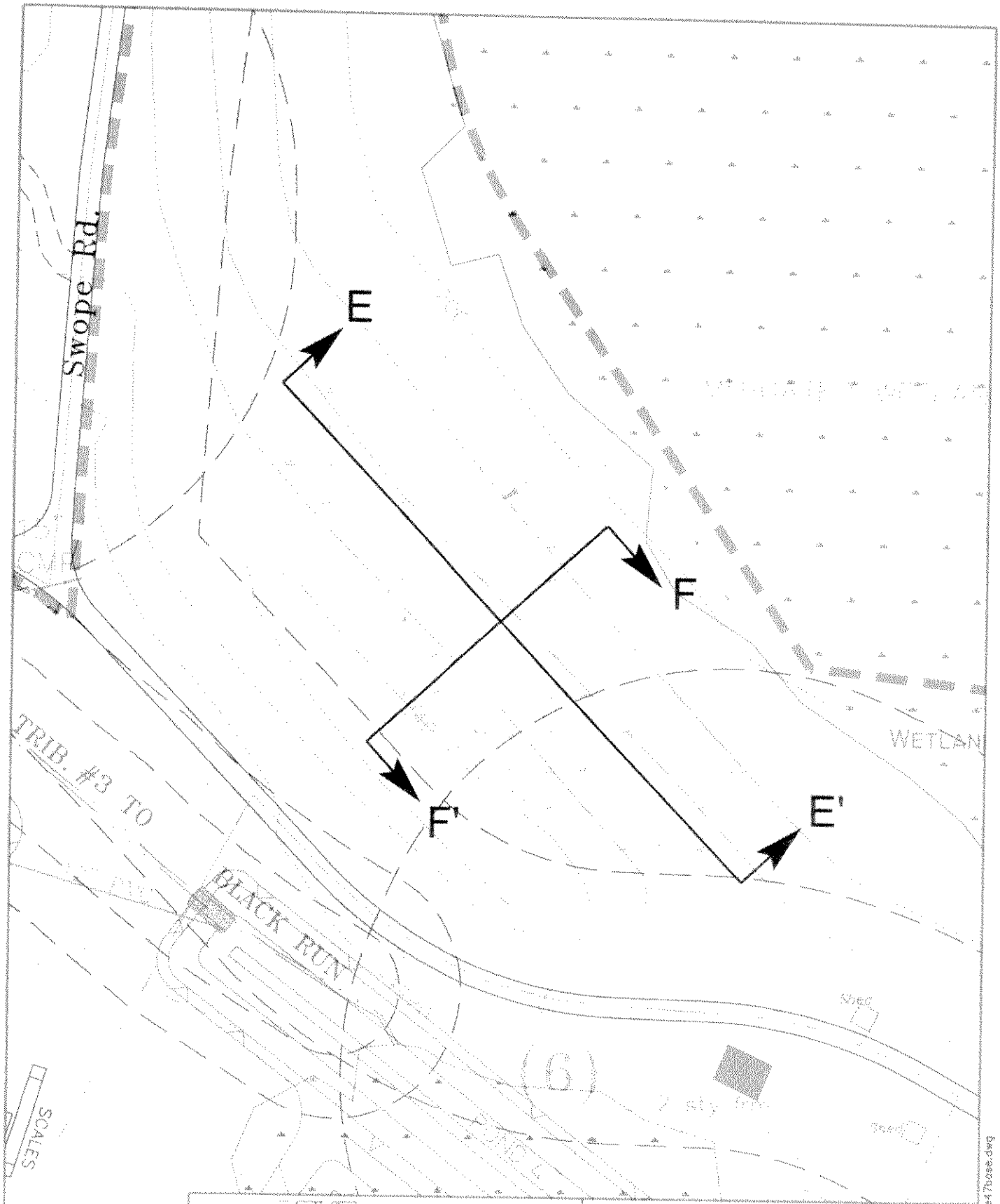
WORTH TOWNSHIP

BUTLER COUNTY

DWG NAME: Mine4/base.dwg



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FRED J. BRENNER, PhD.
Consulting Ecologist and Biologist
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LAND RECLAMATION
ECOLOGICAL SURVEY
WETLAND DELINEATION
FISH and WILDLIFE MANAGEMENT
WATER ANALYSIS

789 NORTH LIBERTY ROAD • GROVE CITY, PENNSYLVANIA 16127

Certified Senior Ecologist
Professional Wetland Scientist
Certified Wildlife Biologist

December 23, 2008

Emilee C. Boyer
Environmental Review Specialist
FOR Chris Firestone
Plant Program Specialist
DCNR/BOF/PNDI
P.O. Box 8552

RE: Response to request in review letter dated December 12, 2008 Received December 20, 2008.

Cladium mariscoides was observed on 30 September 2008 in the wetland below the spring on the Carl S. Jr. and Norma L. Rodgers (Lat. 41-00-17.60 Long. 80-04-37.83). This property is north of the road outside the boundaries of proposed Mine 47 Permit and will not be impacted by the proposed and and gravel mining operation. The location of *Scirpus acutus* (syn. *Schoenoplectus acutus* (Lat. 41-00-28.13 Long. 80—4-47-33) is also north of the road outside the proposed permit boundaries.

The wetland referred to in the second paragraph is the large wetland system located north of the road outside of the permit boundaries. This is the same wetland complex referred to the first paragraph on page 2 of my report and the same wetland referred to previously in paragraph 1 of this response to your December 12, 2008 review letter.

The locations of wetland 1-4 are located on Exhibit 6.2 Environmental Resource Map previous received by your office. The reference to *Carex alata* was a mistake and this species does not occur in any of the four wetlands within the permit boundaries as indicated in my report dated July 10, 2008.

I am not sure of the exact date of when wetlands 3 and 4 were brush hogged but it was some time between the middle of July and the Middle of September, 2008.

Respectively,

Fred J. Brenner, Ph.D.
Certified Senior Ecologist
Certified Wildlife Biologist
Professional Wetland Scientist

FRED J. BRENNER, PhD.
Consulting Ecologist and Biologist
(724) 748-4310

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Certified Senior Ecologist
Professional Wetland Scientist
Certified Wildlife Biologist

November 20, 2008: Revised December 23, 2008

Darrell Lewis
Glacial Sand and Gravel
P.O. Box 1022
Kittanning, PA 16201

RE: Distribution of plant species in the four wetlands located on proposed boundaries of Mine 47, Worth Township, Butler County, Pennsylvania

	Species Distribution			
Species	Wetland 1	Wetland 2	Wetland 3	Wetland 4
Acer rubrum				X
Almuus incana				X
Bidens frondosa		X	X	
Carex atlantica			X	
Carex cristella			X	
Carex lacustris			X	
Carex lurida			X	
Cornus amomum	X			X
Crataegus spp				X
Echinochloa muricata			X	
Eupatoriadelphus fisulosus				X
Eupatoriadelphus maculates				X
Glycaria heneracea			X	
Glycaria striata			X	
Impatiens capensis				X
Juncus effuses		X	X	
Leersia oryzoides		X	X	
Lemma minor	X			
Lobelia cardinalis			X	
Lobelia siphilitica			X	
Nupha luteum	X			
Onoclea sensibilis		X	X	
Osmunda cinnamonea		X	X	
Osmunda claytoniana	X	X		
Osmunda regalis		X		
Phalaris arundinacea		X	X	
Physocarpus opulifolius				X

Species Distribution Cont.

Species	Wetland 1	Wetland 2	Wetland 3	Wetland 4
	Species Distribution			
Polygonum arifolium		X	X	
Polygonum punctatum		X	X	
Polygonum arifolium		X	X	
Polygonum punctatum		X	X	
Polygonum sagitalum		X	X	
Populus tremuloides				X
Quercus palustris	X			X
Rosa multifolia				X
Rosa palustris	X			
Salix nigra	X			X
Sambucus Canadensis				X
*Scirpus acutus**				
Scirpus atrovirons	X		X	
Scirpus validus	X			
Solidago Canadensis		X	X	
Solidago patula		X	X	
Sparganium americanum		X		
Sparganium eurycarpum		X		
Spiraea alba		X	X	X
Spiraea tomentosa		X	X	
Symplocarpus foetidus	X			X
Toxicodendron radicans	X			X
Toxicodentron vernix	X			
Verbena hastate		X	X	
Vernonia oveboracensis				X
Vibnonia lentago				X
Verburnum recognitum	X			X
Ulmus americana	X			X

* located outside of permit boundaries north of road

Cornus stolonifera occurs outside of the permit area

Scirpus hattorianus also occurs in wetlands 1 and 2 but it is listed as non wetland Indictor species.

Wetland 3 has been brush-hogged for an archeological investigation and wetland 4 was bush-hogged along the road and power-line.

In the previous report dated 20 November 2008, *Carex alata* was reported to occur in Wetland 3 but this was a mistake and this species does not occur with the permit boundaries.

Submitted by,

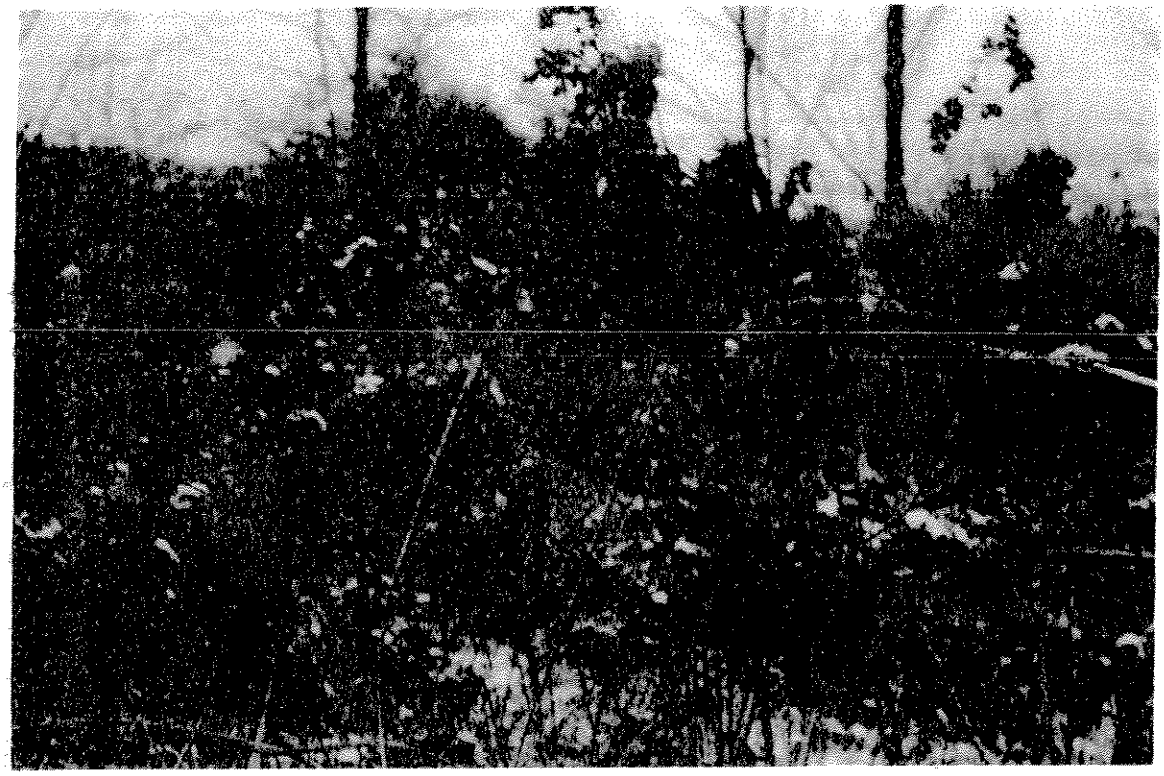
Fred J. Brenner, Ph.D., Certified Senior Ecologist, Certified Wildlife Biologist
Professional Wetland Scientist

Close up photograph of (*Scirpus acutus*) (Syn.*Schoeoplectus acutus*) located at the same location as previous photograph.

Note: A photograph of specimen of *Cladium mariscoides* for the following reasons: 1. the species exists on private property and although wetlands are considered waters of the commonwealth, the species is private property of the property owner. Therefore the collection of this species or trespass on to the property would be an infringement of personal property rights. 2. This species was also identified at this location by Dr. James Bissel and Gordon Buckley and confirmed by Dr. Fred Brenner and 3. In my opinion, it would be unprofessional and unethical to collect or disturb an endangered species especially since the species has been confirmed to exist as this location by three biologists.

Photograph of a stand of (*Scirpus acutus*) (Syn. *Schoenoplectus acutus*) (Lat. 41-00-28.13 Long. 80-04-47.83) located in the large wetland complex north of the road and outside of proposed permit boundaries. This is on of over 12 known locations of this species in the glaciated region of northwest Pennsylvania and this species is available at a least three commercial nurseries.

Photograph of a stand of (*Scirpus acutus*) (Syn. *Schoenoplectus acutus*) (Lat. 41-00-28.13 Long. 80-04-47.83) located in the large wetland complex north of the road and outside of proposed permit boundaries. This is on of over 12 known locations of this species in the glaciated region of northwest Pennsylvania and this species is available at a least three commercial nurseries.



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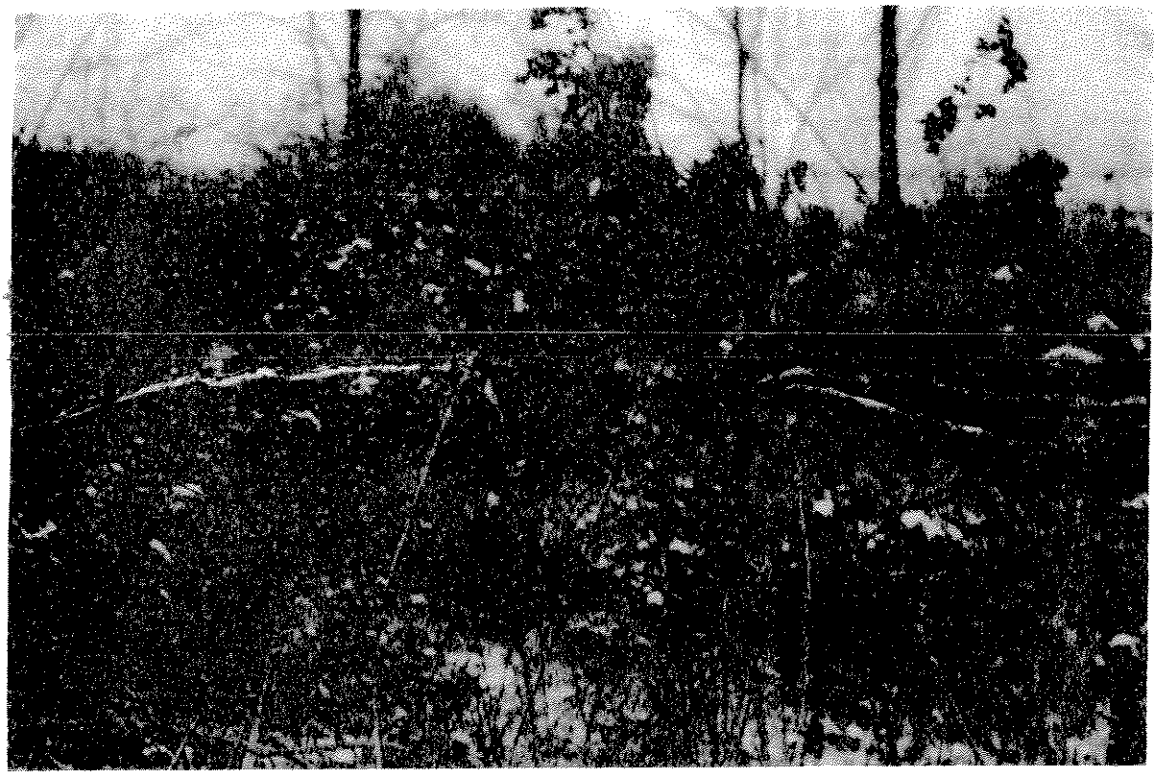

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Identification References

Britten and Brown – An Illustrated Flora of the Northern United States and Canada
Brown – Grasses an Identification Guild (3 volumes)
Conard and Redfearn – How to Know the Mosses and Liverworts
Cronquist – How to Know the Seed Plants
Fassett – Manual of Aquatic Plants
Fernald – Grays Manual of Botany
Gleason and Cronquist Manual of Vascular Plants
Hale – How to know the Lichens
Jaques – Plant Familes
Little – Field Guide to North American Trees
Magee – Freshwater Wetlands – A guide to Common Indicator Plants of the Northeast
Mickel – How to Know the Ferns
Petrides and Wehr – Eastern Trees
Prescott – How to Know the Aquatic Plants
Prescott – How to Know the Freshwater Algae
Prescott – Algae of the Western Great Lakes
Pohl – How to Know the Ferns
Rhodes and Block – The Plants of Pennsylvania
Straubaugh and Core – Flora of West Virginia (4 volumes)
Symonds – The Shrub Identification Book
Over 300 other biological reference books and journals are available in my personnel library.

Submitted by

Fred J. Brenner, Ph.D.
Certified Senior Ecologist,
Certified Wildlife Biologist
Professional Wetland Scientist

Return to Autumn E. Sabo, Ecological Services Section, DCNR/BOF/PNDI, P.O. Box 8552, Harrisburg, PA 17105-8552

Botanical Field Survey Form for Environmental Review

If botanist finds species of special concern on site, immediately contact our office at 717-787-7067 or c-ausabo@state.pa.us as we will likely want to revisit the population while it is still an appropriate time. Failure to contact our office immediately may result in a delay until next year's growing season.

Fill out form multiple times if searched different habitats for species of special concern (SOSC).

PNDI # 20071211201 85

County Butler | Quad Slippery Rock-Prospect

Survey Date/s 6/30, 7/3, 9/30, 10/8 2008 | Surveyor Fred J. Brenner Ph.D.

Amount of time spent surveying area Approximately 20 hours

Name of site owner Carl S. Jr. & Norma L. Rodgers

Directions to site west Liberty Road south of Slippery Rock

GPS Coordinates of approximate site center (decimal degrees preferred) Lat. 41-00-17.00 Long. 80-04-37.83

Scientific name/s of target species Cladium mariscoides

Site habitat description wetland below spring

Substrate/soil type Hydric Frenchtown Silt Loam

System: Terrestrial X Palustrine Estuarine

Community Description (describe below)

Strata/life form	*Height*	*% Cover*	*Most abundant/characteristic species*
Emergent tree			
Tree canopy			
Tree sub-canopy			
Tall shrub(>1 m)			
Short shrub(<1 m)			
Herbaceous	X	80	Juncus & Sedge wetland
Non-vascular			
Epiphyte/liana			

Other PA listed species that were not targeted for survey but may potentially exist on site-review PNDI list (http://www.dcnr.state.pa.us/forestry/pndi/fullplants.asp) for species with similar preferred habitat No other SOSC were identified in association with Cladium mariscoides

Estimate of immediate area that is potential habitat for target SOSC Possible Beaver meadow - off site

Return to Autumn E. Sabo, Ecological Services Section, DCNR/BOF/PNDI, P.O. Box 8552, Harrisburg, PA 17105-8552

Identification problems? If yes, explain.

References used (flora, experts, herbaria, etc.)
Refer to enclosed list of references

Include topographic map with development site, potential target species habitat, and found populations of SOSC all clearly delineated. Additional detail is welcome.

Include photographs of habitat and, if found, SOSC. Submit digital photos electronically.

If SOSC was/were not found, check all reasons that apply:

Ambiguous directions	Disturbances	Exotics	Habitat destroyed
____ Time of year	____ Unsuitable habitat	____ Weather	____ Insufficiently/incompletely surveyed

Elements may have never occurred here – 1st time area searched

Other:

If previously known from this site, do you believe the species is/are now extirpated? ____ yes ____ no
Explain:

Botanist only needs to continue if SOSC was/were found on site. Fill out form that follows multiple times if more than one SOSC was located.

Directions (within site) to SOSC
Area below spring on Rodgers property

GPS coordinates (decimal degrees preferred)
Lat. 41-00.17.60 Long. 80-04-37.83

Small populations – GPS center point and list radius necessary to enclose whole population
Large populations – GPS multiple points around population perimeter

Habitat of SOSC (describe below)

Aspect	*Slope*	*Light*	*Topo Position*	*Moisture*	*Elevation*
X N	X Flat	X Open	Crest	____ Inundated (hydric)	Min
E	0-10%	Partial	Upper slope		Max
S	10-35%	Filtered	Mid-slope	X Saturated (wet-mesic)	
W	35+%	Shaded	Lower slope		
NE	Vertical		X Bottom	____ Moist (mesic)	
NW					
SE				____ Dry (mesic)	
SW					
None				____ Dry (xeric)	

Plant Biology (describe below)

Phenology	*Ramets*[1]	*Genets*[2]	*Population Area*	*Age Structure*	*Vigor*
In leaf		1-10 X	X 1 YD 2	X Annuals	Very feeble
In bud		11-50	1-5 YD 2	% Seedlings	Feeble
X In flower		51-100	5-10 YD 2	% Immature	X Normal
Immature fruit		101-1000	10-100 YD 2	% 1st year	Vigorous
Mature fruit		1001-10K	100 YD 2 – 2 AC	% Mature	Exceptional vigor
Seed dispersing		10K+	2+ ACRES	% Senescent	
		EST #	EST AREA		

[1]Ramet: individual reproduced vegetatively (a clone)
[2]Genet: individual generated by sexual reproduction (a seedling)

Return to Autumn E. Sabo, Ecological Services Section, DCNR/BOF/PNDI, P.O. Box 8552, Harrisburg, PA 17105-8552

Botanical Field Survey Form for Environmental Review

If botanist finds species of special concern on site, immediately contact our office at 717-787-7067 or c-ausabo@state.pa.us as we will likely want to revisit the population while it is still an appropriate time. Failure to contact our office immediately may result in a delay until next year's growing season.

Fill out form multiple times if searched different habitats for species of special concern (SOSC).

PNDI # 200712111201 95	
County Butler	Quad Slippery Rock & Prospect
Survey Date/s 8/30, 9/3, 8/8, 10/14 and 8	Surveyor Fred di Brenner
Amount of time spent surveying area Approximately 2 hours	
Name of site owner Glacial Sand & Gravel	
Directions to site West Liberty Road South of Slippery Rock	
GPS Coordinates of approximate site center (decimal degrees preferred) Lat. 41-00-28.13 Long. 80-04-47.33	
Scientific name/s of target species Scirpus acutus	
Site habitat description Jurisdictional wetland	
Substrate/soil type Hydric Frenchtown silt Loam	

System: Terrestrial Palustrine Estuarine

Community Description (describe below)

Strata/life form	*Height*	*% Cover*	*Most abundant/characteristic species*
Emergent tree			
Tree canopy			
Tree sub-canopy			
Tall shrub(>1 m)			
Short shrub(<1 m)			
Herbaceous	X	80	Typha latifolia, Juncus spp.
Non-vascular			
Epiphyte/liana			

Other PA listed species that were not targeted for survey but may potentially exist on site-review PNDI list (http://www.dcnr.state.pa.us/forestry/pndi/listpnhs.asp) for species with similar preferred habitat No other SOSC were identified in association with Scirpus latifolia

Estimate of immediate area that is potential habitat for target SOSC Large wetland system - North of West Liberty Road - Potential for Scirpus acutus

Return to Autumn E. Sabo, Ecological Services Section, DCNR/BOF/PNDI, P.O. Box 8552, Harrisburg, PA 17105-8552

Biology comments

Population size, relative to other occurrences you have observed (state whether full extent of occurrences is known) Similar to other known populations in Northwest Pennsylvania

Age, successional stage of system
System developed as result of Glacial Activity

____ Known or ____ Inferred land use history
May have been Farmed

Chemical treatment (known or suspected) with herbicides, pesticides, other
Not in recent history

Other anthropogenic or unnatural disturbance

Integrity/fragmentation of community
NA

List of invasive species (alien or native)
Multiflord Rose

Threats (on-site) None

Threats (off-site) None

List other members of this genus that occur on site. Hybridization?
Scirpus validus also occurs on site

Specimen taken? Specimen label data, repository and number
Endangered species should not be collected.

Conservation recommendations (include details on how to best avoid, minimize, and mitigate impacts)

Develop a recovery plan for Scirpus acutus and other species of special concern in Pennsylvania

Return to Autumn E. Sabo, Ecological Services Section, DCNR/BOF/PNDI, P.O. Box 8552, Harrisburg, PA 17105-8552

Identification problems? If yes, explain.

References used (flora, experts, herbaria, etc.)
Refer to enclosed references

Include topographic map with development site, potential target species habitat, and found populations of SOSC all clearly delineated. Additional detail is welcome.

Include photographs of habitat and, if found, SOSC. Submit digital photos electronically.

If SOSC was/were not found, check all reasons that apply:

Ambiguous directions	Disturbances	Exotics	Habitat destroyed
____ Time of year	____ Unsuitable habitat	____ Weather	____ Insufficiently/incompletely surveyed

Elements may have never occurred here – 1st time area searched

Other:

If previously known from this site, do you believe the species is/are now extirpated? ____ yes ____ no
Explain:

Botanist only needs to continue if SOSC was/were found on site. Fill out form that follows multiple times if more than one SOSC was located.

Directions (within site) to SOSC
Approximately in center of large wetland north of West Liberty Road

GPS coordinates (decimal degrees preferred)
Lat. 41-00-28.13
Long. 80-04-47.88

Small populations – GPS center point and list radius necessary to enclose whole population
Large populations – GPS multiple points around population perimeter

Habitat of SOSC (describe below)

Aspect	*Slope*	*Light*	*Topo Position*	*Moisture*	*Elevation*
X N	X Flat	X Open	Crest	____ Inundated	Min
E	0-10%	Partial	Upper slope	(hydric)	Max
S	10-35%	Filtered	Mid-slope	X Saturated	
W	35+%	Shaded	Lower slope	(wet-mesic)	
NE	Vertical		X Bottom	Moist	
NW				(mesic)	
SE				____ Dry	
SW				(mesic)	
None				Dry (xeric)	

Plant Biology (describe below)

Phenology	*Ramets*[1]	*Genets*[2]		*Population Area*	*Age Structure*	*Vigor*
In leaf		1-10	X	1 YD 2	Annuals	Very feeble
In bud		11-50		X 1-5 YD 2	% Seedlings	Feeble
In flower		51-100		5-10 YD 2	% Immature	Normal
Immature fruit		101-1000		10-100 YD 2	% 1st year	X Vigorous
Mature fruit		1001-10K		100 YD 2 – 2 AC	X % Mature	Exceptional vigor
X Seed dispersing		10K+		2+ ACRES	% Senescent	
		[illegible]		[illegible]		

[1]Ramet: individual reproduced vegetatively (a clone)
[2]Genet: individual generated by sexual reproduction (a seedling)

Return to Autumn E. Sabo, Ecological Services Section, DCNR/BOF/PNDI, P.O. Box 8552, Harrisburg, PA 17105-8552

Biology comments
Population size, relative to other occurrences you have observed (state whether full extent of occurrences is known) Do not know of other populations
Age, successional stage of system Beaver Activity
____ Known or X Inferred land use history Agriculture adjacent to site
Chemical treatment (known or suspected) with herbicides, pesticides, other Not Known
Other anthropogenic or unnatural disturbance
Integrity/fragmentation of community Isolated Population
List of invasive species (alien or native) Multiflora Rose
Threats (on-site) Farming
Threats (off-site) Farming
List other members of this genus that occur on site. Hybridization?
Specimen taken? Specimen label data, repository and number Should not collect endangered species
Conservation recommendations (include details on how to best avoid, minimize, and mitigate impacts) Develop Recovery Plan for Cladium mariscoides and other species of special concern in Pennsylvania

WETLAND MITIGATION

Wetlands No. 2, 3 and 4; UNT #3 to Black Run

As per PA DEP Technical Guidance Document 363-0300-001 the following information is being provided:

The wetland mitigation plan proposes to replace the affected wetlands at a 1:1 ratio. Additional acreage was added to the mitigation area to compensate for impacts to UNT #3 to Black Run (246 linear feet) since no suitable stream mitigation could be identified within the watershed on properties owned by Glacial Sand & Gravel.

The wetland functions and values identified to be present within the affected wetlands will be replaced equally and in some cases to a greater extent (i.e. food chain production, general habitat, food/cover/nesting) within the proposed replacement plan due to its immediate location to the large wetland area to the north and northwest and ability to function in conjunction with this wetland. As a result its location, design and concurrent functions, other functions such as aquatic habitat, natural water filtration and pollution prevention are expected to be enhanced.

Wetland replacement will occur within the Black Run watershed directly across West Liberty Road upon completion of mining activities and reclamation of the Phase I mining activity.

The replacement plan will initially consist of a Palustrine, Persistent, Emergent wetland community, succeeding into a Scrub Shrub, Broadleaved Deciduous wetland community supported by a soil saturated and seasonally flooded hydrological regime.

Soil saturated conditions are expected to occur throughout the growing season from the surface to one (1) foot below the surface based on the existing data gathered during the delineation of the adjacent wetland community and exploratory test pit data. The site exhibits a perched water table that outcropped in many places along the upland/wetland boundary of the adjacent wetland community. This supporting hydrology will be intercepted by excavation and grading as part of the Phase I reclamation plan to create and maintain soil saturated areas. The final grade (el. 1200) will also be as such to permit temporary inundation in some portions of or the entire replacement site during storm events and seasonal fluctuations from surface water runoff. The interfacing of perched ground water and surface water is expected to provide soil saturated conditions throughout and beyond the growing season.

Soil conservation measures will be used to transfer the hydric soils from the affected wetlands into the replacement site. The top 12 inches of soil within the affected wetlands will be excavated and stockpiled as necessary until the replacement site is grading is completed. This soil stockpile will be covered with a tarp(s) to reduce evaporation and maintain moisture within the soil. Watering will be done on an as needed basis during the stock piling period. The stock piled hydric soil will be placed in the wetland replacement site and brought to grade (final grade elevation = 1200) as depicted on the Exhibit 18 and the attached Cross Sections. At a minimum this soil will act as a planting medium for the selected plant species; however this soil will contain a seed bank of indigenous hydrophytic plant species that, if properly stored, will likely germinate and proliferate within the wetland replacement site.

Rec 8/20/2009 email

Plants and seed can be obtained from Ernst Conservation Seeds, 9006 Mercer Pike, Meadville, PA, 16335, 800-873-3321 or www.ernstseed.com. Exhibit 18 contains the planting plan proposed for the replacement site. Seed will be mechanically broadcasted on the replacement site and plant stock will be hand planted using a planting dibble or small shovel. Survival rate and percent aerial cover for seeded species are anticipated to be between 90 and 100 percent and survival rate and percent aerial cover for planted species are anticipated to be between 80 and 100 percent for survival and 75 to 90 percent for aerial cover after one (1) full growing season. The percent aerial cover at five (5) years of maturity is expected to be 100 percent and consisting of hydrophytic plant species.

Seed mix types that will be planted are OBL – FACW Perennial Food and Cover Wetland Mix (ERNMX-120) and Wildlife Food and Shelter Shrub Mix (ERNMX-138). The ERNMX-120 is composed of Fox sedge, *Carex vulpinoidea* (23%); Virginia wild rye, *Elymus virginicus* (20%); Giant bur reed, *Sparganium eurycarpum* (10%); Fringed (Nodding) sedge, *Carex crinita* (5%); Nodding sedge, *Carex gynandra* (5%); Hop sedge, *Carex lupulina* (5%); Lurid sedge, *Carex lurida* (5%); Blunt broom sedge, *Carex scoparia* (5%); Soft rush, *Juncus effusus* (5%); Wool grass, *Scirpus cyperinus* (5%); Eastern bur reed, *Sparganium americanum* (5%); Nodding bur marigold, *Bidens cernua* (3%); Cosmos bristly sedge, *Carex comosa* (2%); Rattlesnake grass, *Glyceria canadensis* (1%); and Rice cutgrass, PA Ecotype, *Leersia oryzoides, PA ecotype* (1%). The ERNMX-138 is composed of Fox sedge, *Carex vulpinoidea* (24%); Arrow wood, *Viburnum dentatum* (14%); Virginia wild rye, *Elymus virginicus* (11%); Lurid sedge, *Carex lurida* (10%); Silky dogwood, *Cornus amomum* (10%); Grey dogwood, *Cornus racemosa* (10%); Hop sedge, *Carex lupulina* (5%); Blunt broom sedge, *Carex scoparia* (7%); Hercules' club, *Aralia spinosa* (3%); Awl sedge, *Carex stipata* (2%); Cosmos bristly sedge, *Carex comosa* (1%); Buttonbush, *Cephalanthus occidentalis* (2%); and Meadow sweet, *Spiraea alba* (1%).

Rooted cuttings (8 to 12 inch heights) of Red-osier dogwood, *Cornus stolonifera*, Black willow, *Salix nigra*, and Silky willow, *Salix sericea* will be planted as specified on the planting plan details. These shrubs will be planted at 6 foot centers at the designated locations and quantities depicted on the attached planting plan. Shrub placement is intended to provide a border of shrub development around the seed herbaceous zone that will provide additional edge effect within the wetland mitigation site. This edge effect is enhanced due to the upland open field environment that will exist around the mitigation site.

Slopes throughout the wetland replacement site will be level. Upland slopes will approximate 17:1 (0.06 percent) on the north, northeast and southeast sides. On the south, southwest, northwest sides the upland slopes will approximate 3:1 (0.33 percent). The surface will be left rough to create micro environments that control and trap surface water as well as carbonaceous and inorganic nutrients.

Construction of the replacement site will begin concurrent with the Phase I post-mining reclamation. It is anticipated that upon beginning site reclamation activities, it will take one (1) week for construction stakeout, three (3) to four (4) weeks to complete the final grading of the wetland replacement site and three (3) weeks to complete seeding, planting and mulching.

One (1) year after the wetland replacement site is completed it will function in full capacity for drainage and flow patterns, stormwater retention, sediment stabilization and surface water discharge. Biological functions such as food chain production, aquatic and terrestrial habitat, nesting, spawning, and resting sites will increase as the wetland replacement community matures and vegetation composition stabilizes. Natural filtration and pollution prevention functions will be partially exhibited in varying degrees and will increase in their representation and function as the wetland replacement community matures as well. All wetland functions that occurred within the affected wetlands will be fully exhibited and functional within the mitigation site at the end of five (5) full growing seasons; to include additional functions such as aquatic habitat, spawning sites, natural filtration, and pollution prevention.

Wetland replacement sites are generally monitored for a minimum of five (5) years which will include a site visit twice a year for the first three (3) years and once a year for the remaining two (2) years, as outlined in the PA DEP Technical Guidance Document 363-0300-001. Inspections are done within the growing season, as depicted by a PA DEP map for identifying growing seasons for wetland hydrology. These inspections are usually done between April 15 and October 15 for this location. A report is generated from each inspection that will discuss wetland determination parameters, succession of the wetland replacement site, success to date, function and value development, and a discussion of problems and remedial measures if warranted. A copy of the report will be submitted to the owner, COE and PA DEP.

Design details can be found on attached site plan and the included Cross Sections. A site plan of the wetland mitigation map and surrounding land uses, grading plan, planting plan, and planting specifications are included. The cross sections indicate existing wetland elevation data, mitigation site elevation data, water elevation data, underlying material information and slope data.

Wetland Restoration

Wetland No. 4

The wetland restoration plan proposes to restore the affected wetlands at a 1:1 ratio.

The wetland functions and values identified to be present within the affected wetland will be restored equally as a result of the proposed restoration plan based on being able to restore the affected area within the actual affected area and Black Run watershed.

The restoration plan will initially consist of a Palustrine, Persistent, Emergent wetland community, succeeding into a Scrub Shrub, Broadleaved Deciduous wetland community supported by a soil saturated and seasonally flooded hydrological regime.

Inundated and soil saturated conditions are expected to occur throughout the growing season above the surface to one (1) foot below the surface based on the existing data gathered during the delineation of the wetland community.

Soil conservation measures will be used to restore the hydric soils within the affected wetlands. The top 12 inches of soil within the affected wetlands will be excavated and stockpiled as

necessary until the bedding and placement of the pipe is completed. This stockpile will be covered with a tarp(s) to reduce evaporation and maintain moisture within the soil. Upon completion of the bedding and placement of the pipe the trench will backfilled up to within a foot below the surface. The hydric soil will be placed within this portion of the trench and brought to the existing grade. At a minimum this soil will act as a planting medium for the specified seed mix; however this soil will contain a seed bank of indigenous hydrophytic plant species that, if properly stored and placed, will likely germinate and proliferate within the existing wetland community.

Once the trench has been graded to the existing contour it will be seeded with Wildlife Food and Shelter Shrub Mix (ERNMX-138) at a rate of 15 lbs per acre. The ERNMX-138 is composed of Fox sedge, *Carex vulpinoidea* (24%); Arrow wood, *Viburnum dentatum* (14%); Virginia wild rye, *Elymus virginicus* (11%); Lurid sedge, *Carex lurida* (10%); Silky dogwood, *Cornus amomum* (10%); Grey dogwood, *Cornus racemosa* (10%); Hop sedge, *Carex lupulina* (5%); Blunt broom sedge, *Carex scoparia* (7%); Hercules' club, *Aralia spinosa* (3%); Awl sedge, *Carex stipata* (2%); Cosmos bristly sedge, *Carex comosa* (1%); Buttonbush, *Cephalanthus occidentalis* (2%); and Meadow sweet, *Spiraea alba* (1%). As an E & S control crop the restored site will be seeded with Annual ryegrass, *Lolium multiflorum* at a rate of 15 lbs per acre.

Plants and seed can be obtained from Ernst Conservation Seeds, 9006 Mercer Pike, Meadville, PA, 16335, 800-873-3321 or www.ernstseed.com. Seed will be mechanically broadcasted on the restored site and the anticipated survival rate and percent aerial cover is expected to be between 90 and 100 percent after one (1) full growing season. The percent aerial cover at three (3) years of maturity is expected to be 100 percent and consisting of hydrophytic plant species.

Restoration of the wetland community shall begin immediately upon completion of the bedding and placement of the pipe. It is anticipated that upon beginning site reclamation activities, restoration measures will be completed the same day. Within one (1) year after the affected wetland community is restored it is expected to function in full capacity for drainage and flow patterns, stormwater retention, sediment stabilization and surface water discharge. Biological functions such as food chain production, aquatic and terrestrial habitat, nesting, spawning, and resting sites will increase as the restored area matures and vegetation composition stabilizes. Natural filtration and pollution prevention functions will be partially exhibited in varying degrees and will increase in their representation and function as the restored area matures as well. All wetland functions that occurred within the affected wetlands will be fully exhibited and functional within the restored area at the end of three (3) full growing seasons.

Proposed Impacts to Aquatic Resources
Mine 47
Worth Township, Butler County, PA
Glacial Sand & Gravel Co.

Wetland	Area within Permit Boundary (ac)	Temporary Impact (ac)	Permanent Impact (ac)
1	2.49	0.00	0.00
2	2.30	0.00	1.70
3*	0.19	0.00	0.19
4	0.31	0.01	0.00
Total	**5.29**	**0.01**	**1.89**

*Wetland 3 is considered non-jurisdictional by the USACE

Stream	Length within Permit Boundary (linear feet)	Temporary Impact (linear feet)	Permanent Impact (linear feet)
UNT 1	780	10	0
UNT 2	0	0	0
UNT 3	580	0	246
Total	**1,360**	**10**	**246**

Module 14: Streams/Wetlands
Unnamed Tributary #3 to Black Run

14.1 Mining Activities Within 100 Feet of a Stream

*If the mining activities, including haul road crossings, are proposed within 100 feet of an intermittent or perennial stream provide the following information: (**Note**: Variance request for the expansion of pits must be included in the proof of publication. A separate Module 14.1 should generally be completed for each proposed encroachment.)*

a) *Name and location of the stream; and location, length, and acreage disturbed by the proposed activities (Identify the location of the proposed activities on Exhibits 9 and 18);*

The proposed location of Pond 4 upstream from the confluence of Unnamed Tributary (UNT) #1 to Black Run will require approximately 190 linear feet of impacts to UNT #3 to Black Run. Approximately 56 linear feet of impacts will also be necessary to construct an access/haul road to the site. Pond 5 will be located within the 100' barrier to UNT #3, but will not directly impact the stream. Total impacts to the stream will be approximately 246 linear feet.

Mitigation for the proposed stream impacts is not feasible onsite due to the limited amount of space and the satisfactory condition of the streams. Also, no suitable streams could be identified on other properties owned by Glacial Sand & Gravel within the watershed for mitigation purposes. As a result, additional acreage was added to the wetland mitigation area to compensate for the proposed 246 linear feet of stream impacts to UNT #3 to Black Run. Assuming an average width of 3 feet, 246 linear feet yields approximately 0.02 acre. However, at the request of the US Army Corps of Engineers, 0.10 acre was added to the original mitigation plan so that a total of 2.00 acres of mitigation wetlands are proposed.

A narrative giving a description and the purpose and justification of the proposed activities;

Access to the site can only be gained by crossing UNT #3 or UNT #1. Since UNT #3 is a much smaller stream, the access/haul road would be much easier to construct over UNT #3. Placement of Pond 5 (Polishing Pond) is required due to the plant location and support site constraints. The placement of Process Pond 4 in the headwaters of the stream is also required due to the site constraints and the elimination of a small wetland complex. (Please see below).

b) *A hydrologic and hydraulic analysis which shall include: data on size, shape and characteristics of the watershed; the size and frequency of the design storm; the hydraulic capacity of any structures; the hydraulic capacity of the channel upstream and downstream; and, where flooding is a problem, flood damage and backwater analysis;*

The current watershed drainage area for the proposed stream crossing is 30 acres, which is comprised of primarily cropland. This area is currently fully vegetated and has an average slope of approximately 10%. Streambed slope within the variance area is approximately 2%.
Using a CN value of 65, the following storm data has been generated:

P_2 = 2.6"	Q_2 = 6.5cfs
P_{10} = 3.8"	Q_{10} = 24 cfs
P_{25} = 4.3"	Q_{25} = 35 cfs
P_{50} = 4.8"	Q_{50} = 46 cfs

During the mining activities at the site, the wetland recharge area will be eliminated and installation of the process ponds will effectively reduce the stream channel to an ephemeral classification, flowing only in response to storm events.

c) *A description of the character of the stream bed and banks, and a profile of the stream for a reasonable distance above and below the proposed site showing bed slopes, normal and flood water surfaces; and a description of the riparian vegetation;*

The stream bottom material consists of primarily sand, silt, and gravel, with a bed slope of approximately 2%. This drainageway appears to have been manipulated (mechanically dug drainage ditch) at some point, as the cross sectional area of the channel is consistent along the entire length from the wetland source to UNT #1. Riparian vegetation consists of goldenrod, vines, briars, scrub brush, and young mixed deciduous trees. Please see attached detail for plan view and cross sections with channel capacities.

A plan and typical cross-sections showing stream channel and existing ground, activities proposed, barriers to be maintained, and normal and flood water surfaces;

Please see attached detail, including cross sections and profiles for both the stream crossing and the pond installation.

f) *Where a bridge, culvert or other water obstruction is proposed, provide the following information:*

1) *Plans and details showing the location, type, size, and height of the structure;*

Please see attached exhibit sheets submitted as part of the permit application.

2) *Calculations showing the hydraulic capacity of the structure;*

The hydrologic calculations for the Process Ponds and Polishing Pond are found in Module 13. There will be no direct discharge to the stream from the ponds unless the emergency spillways are activated during high flow events.

3) *A profile of the streambed for a reasonable distance above and below the proposed location showing normal and flood water surface elevations and backwater effects of the structure;*

Cross-section A-A' is provided for Pond 5 (Polishing Pond). Cross-sections and a profile are provided for the Process Ponds 3 and 4.

4) *Cross-sections upstream, downstream, and at the proposed location of the structure showing normal and flood water surface elevations and other topographic features, elevations, etc., necessary for an appraisal of the hazard potential of the structure;*

Please see attached detail

5) *A narrative description of the construction methods and sequence including water handling during construction, and erosion and sedimentation controls;*

Erosion and sedimentation controls will consist of both permanent and temporary measures. Initial construction will not begin until all necessary materials have been assembled at the site and at a time of low stream flow. Staked filter fencing will be placed downslope of the construction area prior to the initiation of any earth moving activities. The filter fencing will remain in place until all areas of disturbance have been stabilized by either rock cover or the establishment of a permanent vegetative cover.

After the embankments have been built, they will be seeded and mulched immediately as outlined in Module 23 of this application. The silt fencing will remain in place until the embankments have been stabilized by a minimum 70% permanent cover.

6) *Indicate if the structure will be temporary or permanent (include plans for removal of temporary structures).*

The ponds will remain as part of the post mining land use once the mining has been completed.

g) *A characterization of the existing water quality and quantity of the stream including downstream water uses, and 25 Pa Code Chapter 93 Protected Water Use Classification.*

***(Note:** General Permit (BMR-GP-102) is available for construction of access roads.)*

UNT #3 to Black Run is classified as CWF, by Chapter 93 designation of Slippery Rock Creek. There are no designated downstream uses. Under seasonal conditions, the volume of water within this channel is minimal to non-existent. Only after periods of substantial precipitation does this channel convey surface water readily. Water quality is characteristic of wetland drainage.

14.2 Stream Relocation and Channel Changes

Not applicable

*If the proposed mining activities involve a relocation or channel change of an intermittent or perennial stream provide the following information (**Note**: Stream variance request must be included in the proof of publication):*

a) Name and location of stream and location and length of the proposed channel change (identify the location of the proposed activities on Exhibits 9 and 18);

b) A narrative giving a description and the purpose and justification of the proposed relocation or channel change;

c) A characterization of the existing water quality and quantity of the stream including downstream water uses, and 25 Pa Code, Chapter 93 Protected Water Use Classification;

d) A characterization of the resident aquatic community, a description of the riparian vegetation and an assessment of the probable hydrologic consequences of the proposed activities on the water quality and quantity, and the resident aquatic communities. Provide the name(s), address(es) and telephone number(s) of the individual(s) responsible for the collection and analysis of this data and provide a description of the methodologies used to collect and analyze the data;

e) A hydrologic and hydraulic analysis which includes;

1) Data on size, shape and characteristics of the watershed;
2) The size and frequency of the design storm;
3) The hydraulic capacity of the proposed replacement channel;
4) The hydraulic capacity of the stream channel upstream and downstream of the proposed relocation or channel change.

f) A stream profile for the existing and proposed channel for a reasonable distance upstream, downstream and within the proposed change, showing bed slopes, pool-riffle ratios, normal and flood water surfaces, and existing obstructions;

g) A detailed plan and cross-sections of the existing and proposed channel upstream, downstream and within the proposed channel change showing the limits and configuration of the proposed activities, dimensions, channel linings, and normal and flood water surfaces;

h) A description of the construction methods and sequence including: water handling during construction, erosion and sedimentation controls, and measures to be taken to prevent adverse impacts to water quality and quantity, water users and the aquatic communities.

Module 14: Streams/Wetlands
South of West Liberty Road
Wetlands No. 2, 3 and 4

14.3 Wetland Related Information

a) *Provide the name(s), address(es), telephone number(s) and qualifications of the person(s) who made the determination if wetlands exist within the proposed permit area.*

Derwood B. Davis (Biologist), The EADS Group, Inc., 15392 Rt 322, Clarion, PA 16214

b) *Show the location of wetlands on Exhibits 6.2, 9 and 18.*

Wetlands have been identified on the exhibit maps (Attached).

c) What is the total wetland acreage (which will be affected) for the proposed permit area? **1.89** acres.

d) *Provide responses to the following for each wetland which will be affected by the proposed mining activities:*

Exceptional Value Wetland Characteristics

1) *Does the wetland serve as habitat for flora and fauna listed as "threatened" or "endangered" under the Endangered Species Act of 1973, Wild Resource Conservation Act, Fish and Boat Code, or Game and Wildlife Code?* ☐ yes ☒ no

2) *Is the wetland hydrologically connected to or located within 1/2 mile of the wetlands identified in d)1) and does it maintain the habitat of the "threatened" or "endangered" species within the wetlands identified in d)1) above)?* ☐ yes ☒ no

NOTE: *If this wetland is located more than 1000 feet from the permit area, show its location (and the location of the wetland that is hydrologically connected to or located within ½ mile of) on the Exhibit 6.1 Map.*

3) *Is the wetland located in or along the floodplain of a wild trout stream (as designated by the Pennsylvania Fish and Boat Commission), or the floodplain of a tributary to a wild trout stream?* ☐ yes ☒ no

4) *Is the wetland located in or along the floodplain of a stream listed as exceptional value (under 25 Pa Code Chapter 93) or the floodplain of a tributary to an exceptional value stream?* ☐ yes ☒ no

5) *Is the wetland within the corridor of a waterway which has been designated as a wild or scenic river in accordance with the Wild and Scenic Rivers Act of 1968 or the PA Scenic Rivers Act?* ☐ yes ☒ no

6) *Is the wetland part of, or located along, an existing public or private drinking water supply and does it maintain the quality or quantity of the drinking water supply?* ☐ yes ☒ no

7) *Is the wetland located in areas designated by the Department as "natural" or "wild" areas within state forest or park lands?* ☐ yes ☒ no

8) *Is the wetland located in areas designated as Federal wilderness areas under the Wilderness Act or the Federal Eastern Wilderness Act of 1975?* ☐ yes ☒ no

9) *Is the wetland located in areas designated as National natural landmarks by the Secretary of the Interior under the Historic Sites Act of 1935?* ☐ yes ☒ no

NOTE: *If a "yes" response is indicated for any question in d)1) through d)9), the wetlands would be "exceptional value" (as defined in 25 Pa Code Section 105.17) and a demonstration must be made that the requirements of subsection (a) of 25*

Pa Code Section 105.18(a) have been met.

Wetland Functions

10)	*Does the wetland serve natural biological functions, including food chain production; general habitat; and nesting, spawning, or resting sites for aquatic or land species?* **These wetland communities would provide some food chain production and general habitat for terrestrial and semi-aquatic species only.**	☒ yes	☐ no
11)	*Does the wetland provide areas for study of the environment, or as sanctuaries or refuges?* **These wetlands are on private property and are not designated for study or resource protection.**	☐ yes	☒ no
12)	*Does the wetland aid in, or maintain natural drainage characteristics, natural water filtration processes, current (flow) patterns or other environmental characteristics?* **These wetlands do provide some natural drainage of surface and ground waters to a tributary that establishes local surface water flow patterns.**	☒ yes	☐ no
13)	*Does the wetland serve as storage areas for flood and storm waters, or does it shield other areas from erosion or storm damage?* **These wetlands contain a moderate grade to the northwest and a defined outlet that discharges water to tributaries. They are not part of a major waterway that floods.**	☐ yes	☒ no
14)	*Does the wetland provide a groundwater recharge area that maintains minimum baseflows?* **These wetlands are supported by spring outcrops from a perched water table; providing baseflow to an unnamed tributary.**	☒ yes	☐ no
15)	*Does the wetland serve as a prime natural recharge area where surface water and groundwater are directly connected?* **These wetlands contain a defined outlet and are supported by spring outcrops.**	☒ yes	☐ no
16)	*Does the wetland aid in the prevention of pollution?* **These wetlands have the potential however, significant pollutant sources are lacking within the upstream area.**	☒ yes	☐ no
17)	*Is the wetland used for, or does it provide the opportunity to be used for recreation?* **These wetlands are located on private property and are not open to the general public.**	☐ yes	☒ no

e) *If a "yes" response is indicated for the question in d)1) or d)2), identify how the determination was made and indicate any contacts with state or federal agency personnel.*

14.4 *Wetland Impact Analysis/Assessment*

a) *Describe the alternatives to the proposed mining activities that have been considered to avoid or minimize impacts on wetlands. An alternative analysis should include alternatives to the proposed mining activities, including alternative locations, routings or designs to avoid adverse impacts on the wetlands (e.g. relocating spoil/topsoil storage areas, rerouting haul roads).*

Alternatives considered as part of this permit were: No Mining, Mining with Wetland Avoidance and Mining with Wetland Impacts.

b) *Discuss whether any of the alternatives are practical to achieve the basic purposes of the project taking into account availability, cost, technology and logistics of the other possible project sites which would not affect the wetlands.*

The No Mining Alternative is a feasible alternative but was considered not prudent due to the fact that Glacial Sand & Gravel currently owns the permit area and this alternative would not permit them to regain their investment and continue to provide aggregate products to a highly demanding market. Mining with Wetland Avoidance is not considered feasible or prudent due to the required area for constructing a processing plant,

the required area to construct sufficient wash water storage ponds to supply the processing plant and the inability to fit these required areas within an area that does not hinder the extraction of aggregate material and at the same time prevent wetland impacts. The location of the processing plant and storage ponds are located in an area that contains lower volumes of aggregate material in comparison to the rest of the permit area. The location of the storage ponds is such that permits the collection of as much surface water runoff as possible. Likewise, this area is selected for the construction of the processing plant and wash water ponds because it will not interfere with the extraction of aggregate material that economically supports the mobilization of mining equipment and the actual mining activity.

Re-locating the processing plant and wash water ponds in order to avoid impacting the wetland was evaluated and considered not feasible or prudent based on the following reasons: 1) Re-location of the wash water storage ponds would require shifting the location of the processing plant in order to fit both operations within this area of the permit. This results in an economical loss of aggregate material that could be mined during the proposed mining phases and 2) Construction of the processing plant and wash water ponds in order to not interfere with the extraction of marketable aggregate would need to be done within the upslope areas of the wetlands. Field observations of the hydrological regime that supports this wetland community indicates this wetland is supported predominantly by a perched water table that outcrops in several places along the upper boundary line of the wetland community.

This consensus is supported by the observation of the drying up of these springs and lack of visible water within the wetland community during the spring and summer of 2007. Test hole and monitoring well information upslope of the wetland community reveals there are varying clay and silty clay layers immediately below the surface and ground water elevations were recorded to be at elevations from 1,216 to 1,218. The surface elevation within the wetland community ranges from 1,218 to 1,222. These impervious layers are believed to exist below the wetland community, and as a result, form a bowl whereby groundwater and surface water remains perched. Plant and wash water storage pond construction within the upslope area of the wetland community will negatively impact the wetland community due to: 1) diverting all surface water runoff around the processing plant to the wash water storage ponds, likewise around the wetland community as well and 2) Excavation into the hillside to construct the subgrade for the processing plant and wash water storage ponds will break these clay barriers and intercept the shallow ground water table lying below. This would have a negative impact on the wetland community downgrade by intercepting and redirecting the predominant hydrology that supports this wetland.

Wetland avoidance was also evaluated with a sub-alternative that eliminated the collection of surface water runoff and the construction of wash water storage ponds. This alternative depends solely on well water to provide the required wash water. This alternative would still have an indirect impact on the wetland community as well as a direct impact to surface water quality. The function of and need for wash water ponds is to: 1) recycle and store sufficient wash water from the processing plant that will conserve the use of and reduce the need for replacement water; 2) reduce the demand on groundwater resources from pumping water from wells to the processing plant and; 3) prevent sediment laden water from being discharged into adjoining tributaries. Construction of the processing plant will still result in the breaking up of the clay barrier that lies immediately underneath and the interruption of the shallow ground water table. This affect will again negatively impact the wetland community located downgrade. Providing the required water to operate the processing plant by using wells without recycling any wash water would likely result in a significant draw down of the ground water table. This again would negatively impact the wetland community. Sediment laden waters which would still require a detention basin to remove the sediment before discharging would potentially impact adjacent tributaries.

The Mining with Wetland Impacts alternative was considered feasible and prudent and reducing impacts to the wetland community is not feasible due to spatial constraints, already proposing the minimum wash water storage pond volume needed to support the processing plant and the unavoidable impact to the perched water table within the upstream area by plant construction. This alternative remains to be the alternative that achieves the goals and objectives of Glacial Sand & Gravel with the least environmental impact as a whole based on the following reasons: 1) It permits Glacial Sand & Gravel to streamline the mining process and extract the full intent of marketable aggregate within the permit area; 2) It provides the minimum required amount of wash water storage and recycling to support the processing plant therefore, reducing the draw on groundwater resources within and surrounding the permit area; 3) It provides a means to handle stormwater from the plant area and at the same time promotes water conservation as part of the plant operation; and 4) It provides detention time to settle out sediment and significantly reduces the need to discharge sediment laden waters to nearby tributaries.

c) *If any wetlands within the proposed permit area will be directly affected, provide the following:*

1) *Identify and delineate the wetland and the areal extent of the impact (wetlands must be identified and delineated in accordance with 25 Pa Code Section 105.451 Identification and delineation of wetlands – statement of policy).*

The affected wetlands are shown on the attached site plan. The aerial extent of wetland impacts to these wetland communities by mining operations is 1.89 acres.

2) *Submit a cross-sectional view showing the wetland and the proposed mining area.*

Cross sections of these wetland communities and mining area are attached.

3) *Explain how the proposed mining activities will directly affect the wetlands.*

The mining activities will directly affect these wetland communities by excavation, fill placement and grading to construct a series of wash water storage ponds that have the capacity to store sufficient water for processing plant operations. These ponds will also have the capacity to retain water and settle out the sediment that will be suspended in the wash water.

aa) *If the proposed mining activities will affect less than 1.0 acre of wetland and the wetland is not an exceptional value wetland (in accordance with 25 Pa Code Section 105.17), provide a description of the wetland functions which will be impacted by the proposed mining activities.* ***Note:*** *If a "yes" response is indicated for any question in Module 14.3 d)1) through d)9), the wetlands would be exceptional value (as defined in Section 105.17).*

bb) *If the proposed mining activities will affect 1.0 or more acres of wetlands or may affect an exceptional value wetland, provide a detailed assessment of the wetland functions identified in Module 14.3 d)10) through d)17).*

Plant accumulation and decomposition occurring within these wetland communities would be broken down into organic and inorganic nutrients. The affected wetlands would provide carbon and other inorganic nutrients to the unnamed tributary immediately adjacent to as well as downstream reaches. The affected wetlands provide general habitat for terrestrial and semi-aquatic organisms. This community would provide food and cover for these organisms during most of the year. Aquatic habitat is not provided due to the lack of open water habitat for a sufficient time during the growing season. Pollution prevention would be moderately exhibited by the affected wetlands however, the well defined outlet, lack of significant open water, low vegetation/water interfacing, and lack of potential pollution sources upslope of these wetlands reduces the opportunity for these wetland communities to fully exhibit this function.

d) *If any wetlands within the proposed permit or adjacent area will be indirectly affected (e.g. altering the wetland hydrology), provide the following:*

No wetland areas will be indirectly affected by the proposed mining operation. However, Wetland No. 4 will be temporarily impacted by the proposed mining activity as a result of sanitary line construction (See attached Module 14 – Wetland No. 4 Temporary Impacts).

1) *Identify and delineate the wetland and provide an estimate of the total wetland acreage affected (wetlands must be identified and delineated in accordance with 25 Pa Code Section 105.451 Identification and Delineation of Wetlands – statement of policy).*

2) *A description of how the proposed mining activities will indirectly affect the wetlands.*

e) *Will the cumulative impact of the proposed and anticipated mining activities result in a major impairment of the wetland resource in the general area?* ☐ yes ☒ no

Provide an explanation of the determination and identify any contacts with state or federal agencies involved in making the determination.

The affected wetlands are small to medium-sized, perched, wetland communites providing some function and values at varying levels. Impacts to these wetlands are site specific and will not result in cumulative impacts to wetland resources in the surrounding area.

14.5 ***Wetland Mitigation/Replacement***

Note: *If a total of one-half (.5) acres or less of wetlands will be affected, participation in Pennsylvania's Wetlands Replacement Project may be authorized by the Department in lieu of onsite replacement of the wetlands.*

a) *If wetland mitigation measures or wetland replacement are proposed, address the following:*

1) *Identify the wetlands where mitigation measures will be employed.*

Upon completion of the extraction of aggregate material located between West Liberty Road (T-860), Swope Road (T-382) and the large wetland community north and northeast of the permit area, the affected wetlands will be replaced as part of the reclamation of this immediate area. The Wetland Mitigation Plan can be found on the attached site plan and Cross Sections are included.

2) *Identify the wetlands that will be replaced and the location of the replacement wetland site. Provide the number of acres for each wetland to be replaced and the acreage of the replacement wetland.*

The wetlands that will be replaced are classified as a Palustrine, Persistent, Emergent and Scrub Shrub, Broad-leaved Deciduous communities that are located within the upper reach of an unnamed tributary to Black Run. The wetland replacement site is located across West Liberty Road within the watershed of Black Run. The affected wetland acreage is calculated to be 1.89 acres and the proposed replacement acreage is calculated to be 2.00 acres.

3) *Provide a plan for mitigation/replacement following the guidelines in the Department's technical guidance titled "Design Criteria - Wetlands Replacement Monitoring" document 363-0300-001. This guidance is available from the Division of Waterways, Wetlands and Erosion Control, Post Office Box 8854, Harrisburg, Pennsylvania 17105-8554 or through the Department's Web Site.*

As per PA DEP Technical Guidance Document 363-0300-001 the following information is being provided:

The wetland mitigation plan proposes to replace the affected wetlands at a 1:1 ratio. Additional acreage was added to the mitigation area to compensate for impacts to UNT #3 to Black Run (246 linear feet) since no suitable stream mitigation could be identified within the watershed on properties owned by Glacial Sand & Gravel.

The wetland functions and values identified to be present within the affected wetlands will be replaced equally and in some cases to a greater extent (i.e. food chain production, general habitat, food/cover/nesting) within the proposed replacement plan due to its immediate location to the large wetland area to the north and northwest and ability to function in conjunction with this wetland. As a result its location, design and concurrent functions, other functions such as aquatic habitat, natural water filtration and pollution prevention are expected to be enhanced.

Wetland replacement will occur within the Black Run watershed directly across West Liberty Road upon completion of mining activities and reclamation of the Phase I mining activity.

The replacement plan will initially consist of a Palustrine, Persistent, Emergent wetland community, succeeding into a Scrub Shrub, Broadleaved Deciduous wetland community supported by a soil saturated and seasonally flooded hydrological regime.

Soil saturated conditions are expected to occur throughout the growing season from the surface to one (1) foot below the surface based on the existing data gathered during the delineation of the adjacent wetland community and exploratory test pit data. The site exhibits a perched water table that outcropped in many places along the upland/wetland boundary of the adjacent wetland community. This supporting hydrology will be intercepted by excavation and grading as part of the Phase I reclamation plan to create and maintain soil saturated areas. The final grade (elev. 1,200') will also permit temporary inundation in some portions of or the entire replacement site during storm events and seasonal fluctuations from

surface water runoff. The interfacing of perched ground water and surface water is expected to provide soil saturated conditions throughout and beyond the growing season.

Soil conservation measures will be used to transfer the hydric soils from the affected wetlands into the replacement site. The top 12 inches of soil within the affected wetlands will be excavated and stockpiled as necessary until the replacement site grading is completed. This soil stockpile will be covered with a tarp(s) to reduce evaporation and maintain moisture within the soil. Watering will be conducted on an as needed basis during the stockpiling period. The stockpiled hydric soil will be placed in the wetland replacement site and brought to grade (elev. 1,200') as depicted on the Exhibit 18 and the attached Cross Sections. At a minimum, this soil will act as a planting medium for the selected plant species. However, this soil will contain a seed bank of indigenous hydrophytic plant species that, if properly stored, will likely germinate and proliferate within the wetland replacement site.

Plants and seed can be obtained from Ernst Conservation Seeds, 9006 Mercer Pike, Meadville, PA, 16335, 800-873-3321 or www.ernstseed.com. Exhibit 18 contains the planting plan proposed for the replacement site. Seed will be mechanically broadcasted on the replacement site and plant stock will be hand planted using a planting dibble or small shovel. Survival rate and percent aerial cover for seeded species are anticipated to be between 90 and 100 percent and survival rate and percent aerial cover for planted species are anticipated to be between 80 and 100 percent for survival and 75 to 90 percent for aerial cover after one (1) full growing season. The percent aerial cover at five (5) years of maturity is expected to be 100 percent, consisting of hydrophytic plant species.

Seed mix types that will be planted are OBL – FACW Perennial Food and Cover Wetland Mix (ERNMX-120) and Wildlife Food and Shelter Shrub Mix (ERNMX-138). The ERNMX-120 is composed of Fox sedge, *Carex vulpinoidea* (23%); Virginia wild rye, *Elymus virginicus* (20%); Giant bur reed, *Sparganium eurycarpum* (10%); Fringed (Nodding) sedge, *Carex crinita* (5%); Nodding sedge, *Carex gynandra* (5%); Hop sedge, *Carex lupulina* (5%); Lurid sedge, *Carex lurida* (5%); Blunt broom sedge, *Carex scoparia* (5%); Soft rush, *Juncus effusus* (5%); Wool grass, *Scirpus cyperinus* (5%); Eastern bur reed, *Sparganium americanum* (5%); Nodding bur marigold, *Bidens cernua* (3%); Cosmos bristly sedge, *Carex comosa* (2%); Rattlesnake grass, *Glyceria canadensis* (1%); and Rice cutgrass, PA Ecotype, *Leersia oryzoides, PA ecotype* (1%). The ERNMX-138 is composed of Fox sedge, *Carex vulpinoidea* (24%); Arrow wood, *Viburnum dentatum* (14%); Virginia wild rye, *Elymus virginicus* (11%); Lurid sedge, *Carex lurida* (10%); Silky dogwood, *Cornus amomum* (10%); Grey dogwood, *Cornus racemosa* (10%); Hop sedge, *Carex lupulina* (5%); Blunt broom sedge, *Carex scoparia* (7%); Hercules' club, *Aralia spinosa* (3%); Awl sedge, *Carex stipata* (2%); Cosmos bristly sedge, *Carex comosa* (1%); Buttonbush, *Cephalanthus occidentalis* (2%); and Meadow sweet, *Spiraea alba* (1%).

Rooted cuttings (8 to 12 inch heights) of Red-osier dogwood (*Cornus stolonifera)*, Black willow (*Salix nigra)*, and Silky willow (*Salix sericea)* will be planted as specified on the planting plan details. These shrubs will be planted at 6 foot centers at the designated locations and quantities depicted on the attached planting plan. Shrub placement is intended to provide a border of shrub development around the seed herbaceous zone that will provide additional edge effect within the wetland mitigation site. This edge effect is enhanced due to the upland open field environment that will exist around the mitigation site.

Slopes throughout the wetland replacement site will be level. Upland slopes will approximately 17:1 (0.06 percent) on the north, northeast and southeast sides. On the south, southwest, northwest sides the upland slopes will approximate 3:1 (0.33 percent). The surface grading will be left rough to create micro environments that control and trap surface water as well as carbonaceous and inorganic nutrients.

Construction of the replacement site will begin concurrent to the Phase I post-mining reclamation. It is anticipated that upon beginning site reclamation activities, it will take approximately one (1) week for construction stakeout, three (3) to four (4) weeks to complete the final grading of the wetland replacement site, and three (3) weeks to complete seeding, planting and mulching.

One (1) year after the wetland replacement site is completed it will function in full capacity for drainage and flow patterns, stormwater retention, sediment stabilization and surface water discharge. Biological functions such as food chain production, aquatic and terrestrial habitat, nesting, spawning, and resting sites will increase as the wetland replacement community matures and vegetation composition stabilizes. Natural filtration and pollution prevention functions will be partially exhibited in varying degrees and will increase in their representation and function as the wetland replacement community matures. All wetland functions that occurred within the affected wetlands will be fully exhibited and

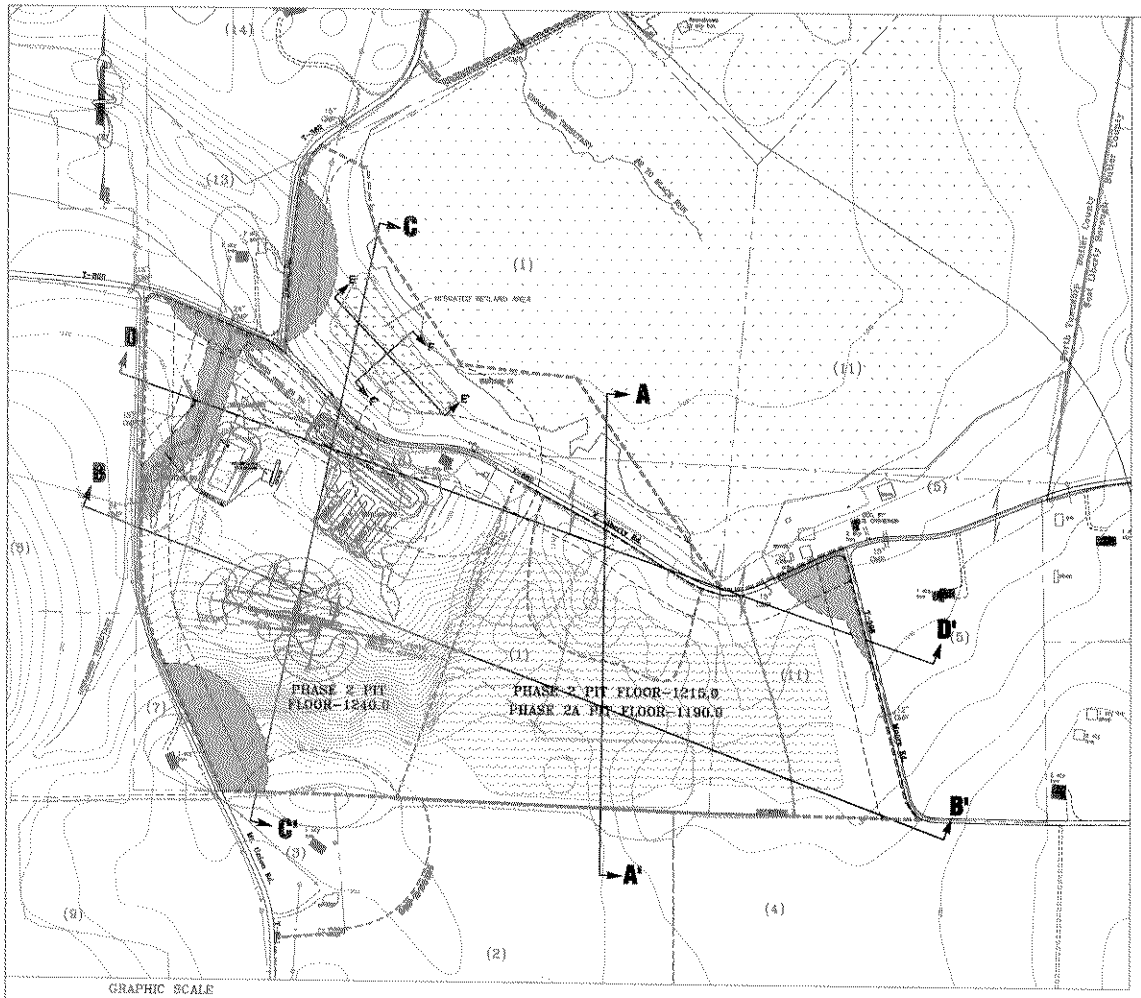
functional within the mitigation site at the end of five (5) full growing seasons and will include additional functions such as aquatic habitat, spawning sites, natural filtration, and pollution prevention.

Wetland replacement sites are generally monitored for a minimum of five (5) years which will include a site visit twice a year for the first three (3) years and once a year for the remaining two (2) years, as outlined in the PA DEP Technical Guidance Document 363-0300-001. Inspections will be conducted within the growing season, as depicted by a PA DEP map for identifying growing seasons for wetland hydrology. These inspections are usually completed between April 15 and October 15 for this region. A report will be generated from each inspection that will discuss wetland determination parameters, succession of the wetland replacement site, success to date, function and value development, and a discussion of problems and remedial measures if warranted. A copy of the report will be submitted to the owner, COE and PA DEP.

Design details can be found on attached site plan and the included Cross Sections. A site plan of the wetland mitigation map and surrounding land uses, grading plan, planting plan, and planting specifications are included. The cross sections indicate existing wetland elevation data, mitigation site elevation data, water elevation data, underlying material information and slope data.

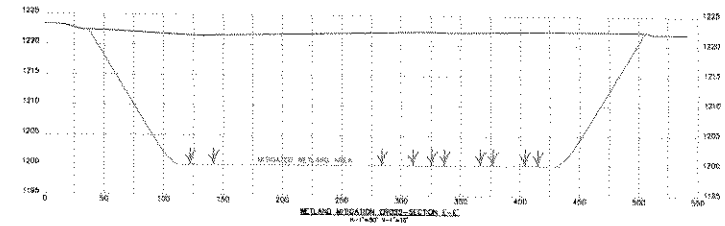
Show the location of replacement wetland sites on the Operations Map (Exhibit 9) and the Land Use and Reclamation Map (Exhibit 18).

Note: *At a minimum, wetland replacement must be at a 1:1 ratio (replacement acres: affected acres). The Department may require the ratio to exceed 1:1 based on the functions and values of the wetlands to be affected. Wetland replacement sites will generally not be approved unless the site is located within the same general area as the existing wetland to be replaced.*



GRAPHIC SCALE

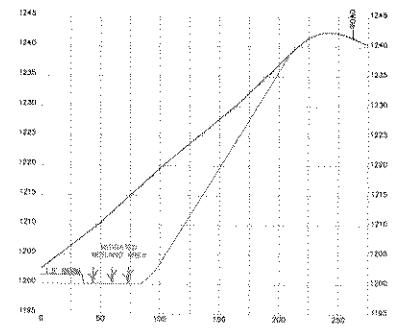
(IN FEET)
1 inch = 100' JL



WETLAND MITIGATION CROSS-SECTION C-C'

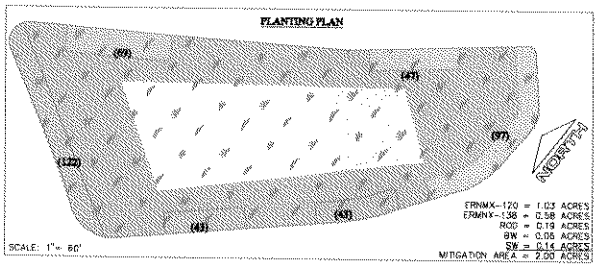
LEGEND

- EXISTING ROADS
- PROPERTY LINES
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- RELOCATED WETLAND AREAS
- EXISTING CULVERTS
- EXISTING STREAMS
- TREELINE
- STREAM BARRIER AREA
- HOUSE BARRIER AREA
- STREAM VARIANCE AREA
- HOUSE VARIANCE AREA
- ROAD VARIANCE AREA
- ABOVE GROUND UTILITY LINES
  ELEC. = ALLEGHENY POWER
  TELE. = SPRINT
- PREVIOUSLY MINED SITES
- UNOCCUPIED BUILDING
- OCCUPIED DWELLING
- SEDIMENT PONDS
- PROPOSED SMP AREA 77.6 ACRES



WETLAND MITIGATION CROSS-SECTION F-F'

PLANTING PLAN



ERNMX-120 = 1.03 ACRES
ERNMX-138 = 0.58 ACRES
ROD = 0.19 ACRES
BW = 0.05 ACRES
SW = 0.14 ACRES
MITIGATION AREA = 2.00 ACRES

SCALE: 1"= 60'

PLANTING KEY/DETAILS

SYMBOL	COMMON NAME	SCIENTIFIC NAME	UNIT SIZE	SPACING/RATE	WETLAND INDICATOR	STRATUM	PLANT QUANTITY
ERNMX-120	GRL = FACW PERENNIAL FOLD & COVER WETLAND MIX-120		SEED	15lbs/ACRE	SEE NOTE 3	HERBACEOUS	12.0 lbs
ERNMX-138	WILDLIFE FOOD & SHELTER SHRUB MIX-138		SEED	15lbs/ACRE	SEE NOTE 4	SHRUB	12.0 lbs.
ROD	Red-osier Dogwood	*Cornus stolonifera*	ROOTED CUTTING	5' O.C.	FACW+	SHRUB	209
BW	Black Willow	*Salix nigra*	ROOTED CUTTING	5' O.C.	FACW+	TREE	69
SW	Silky Willow	*Salix sericea*	ROOTED CUTTING	5' O.C.	OBL	SHRUB	144

NOTES:

1. ( ) Signifies the quantity of individual plants to be planted in the highlighted area.
2. Broadcast Annual Ryegrass seed over areas to be planted with Red-osier Dogwood and Black Willow for a cover crop the first year. Seed at a rate of 50lbs. per acre (Kent Conservation Seeds, 2007).
3. Seed mix consists of - Fox Sedge: *Carex vulpinoidea* (OBL); Virginia Wild Rye: *Elymus virginicus* (FACW); Blunt Broom Sedge: *Carex scoparia* (FACW); Fringed (Nodding) Sedge: *Carex crinita* (OBL); Lurid (Shallow) Sedge: *Carex lurida* (OBL); Nodding Bur Marigold: *Bidens cernua* (OBL); Soft Rush: *Juncus effusus* (FACW+); Wool Grass: *Scirpus cyperinus* (FACW+); Eastern Lesser Bur Reed: *Sparganium americanum* (OBL); Giant Bur Reed: *Sparganium eurycarpum* (OBL); Rice Cutgrass, PA Ecotype: *Leersia oryzoides, PA Ecotype* (OBL); Common (Bristly) Sedge: *Carex comosa* (OBL); Nodding Sedge: *Carex gynandra* (No Indicator); Hop Sedge: *Carex lupulina* (OBL); Rattlesnake Grass: *Glyceria canadensis* (OBL).
4. Seed mix consists of - Fox Sedge: *Carex vulpinoidea* (OBL); Arrow Wood: *Viburnum dentatum* (FAC); Virginia Wild Rye: *Elymus virginicus* (FACW); Lurid (Shallow) Sedge: *Carex lurida* (OBL); Silky Dogwood: *Cornus amomum* (FACW); Gray Dogwood: *Cornus racemosa* (FAC); Hop Sedge: *Carex lupulina* (OBL); Blunt Broom Sedge: *Carex scoparia* (FACW); Elevation' Club: *Juncus spinosus* (FAC); Awl Sedge: *Carex stipata* (OBL); Common (Bristly) Sedge: *Carex comosa* (OBL); Button Bush: *Cephalanthus occidentalis* (OBL); Meadow Sweet: *Spiraea alba* (FACW+).

REV.	DATE	DESCRIPTION	BY
1	08-10-08	ENLARGED WETLAND MITIGATION AREA	GAB

SEAL

SEAL

THE EADS GROUP
ENGINEERS • ENVIRONMENTAL CONSULTANTS

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GLACIAL SAND & GRAVEL CO.

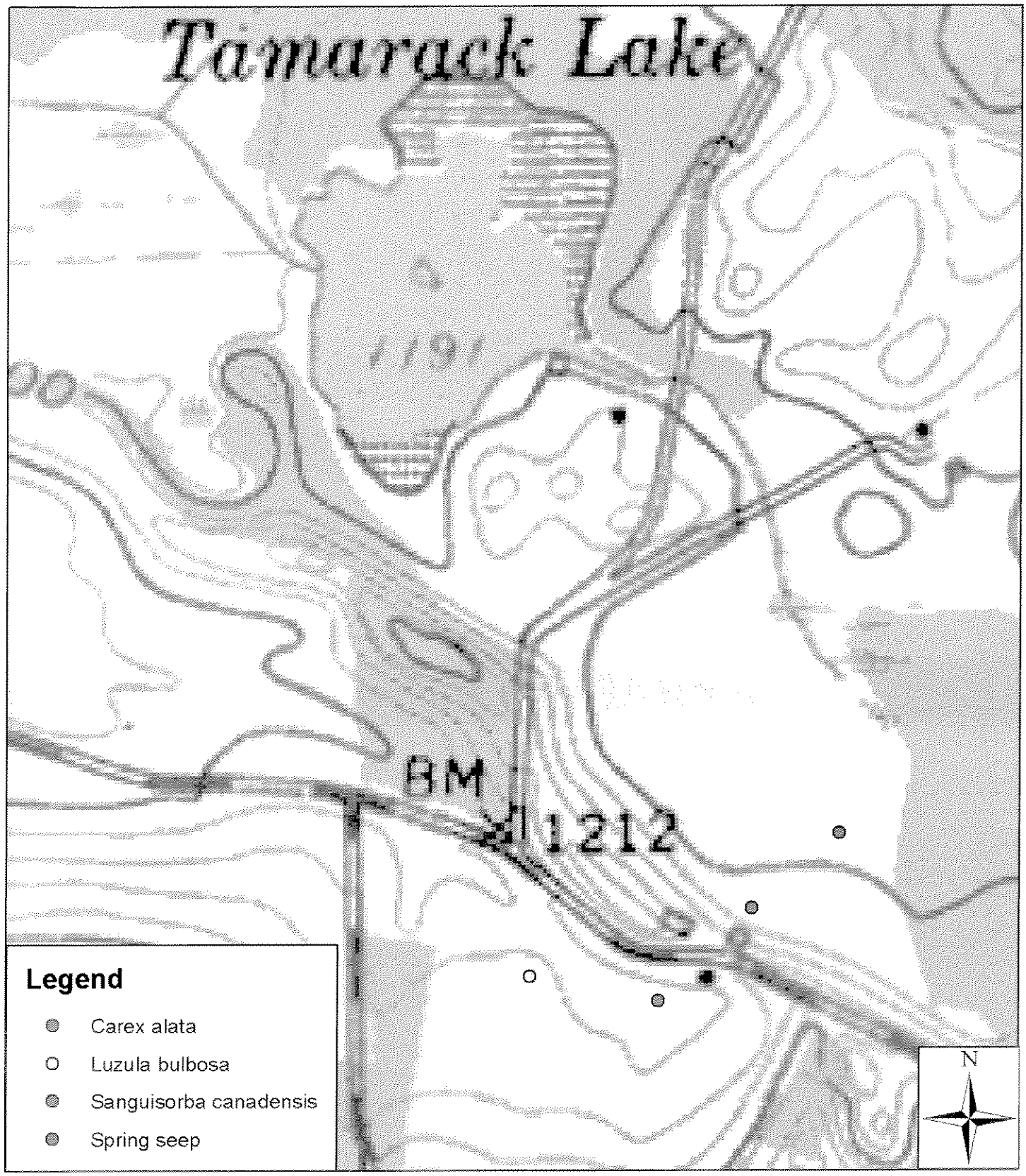
MINE 47

WORTH TOWNSHIP

BUTLER COUNTY

WETLAND MITIGATION PLAN

DRAWN BY:	KAS
PERMIT NO:	10070304
DATE: 02/09	SCALE: AS SHOWN
PROJECT NO.	0270-06-169-01
DRAWING NAME:	Mine47bose.dwg
SHEET NO.	7 of 9

Cleveland Museum of NATURAL HISTORY

Tamarack Lake
Slippery Rock Quad, Butler County, PA