Interstate Mining Compact Commission

"Education: the Key to Maintaining Public License to Operate- Lessons Learned in Ohio"

Pat Jacomet

Ohio Aggregates & Industrial Minerals Association

April 15, 2013

OAIMA – Ohio Aggregates & Industrial Minerals Association – Our Mission

- Represent the Ohio industrial minerals industry
- Promote members' interests in public and private sector
- Promote responsible regulatory compliance
- Provide timely education, training and communications
- Meet the evolving needs of members

OAIMA Members

- 94 Active Members
  - Producing sand, gravel, limestone and industrial minerals
- Nearly 100 Associate Members
  - Providing goods, services, consultation and equipment to the association and it's member companies

Resource Demand

- **Trends Mirror Economic and Social Issues and Needs**
- **Excellent Economic Indicator**
- **For Example:**
  - **Limestone Production (tons)**
  - **Trends in last Century**

Year	Limestone Production in Millions of Tons
1939	12.8
1940	14.7
1941	18.5
1942	15.8
1943	16.2
1944	13.2
1945	15.0
1946	20.6
1947	24.1
1955	37.4
1957	39.1
2008	57.4
2011	53.6 (7%)

20th-21st Century Trends

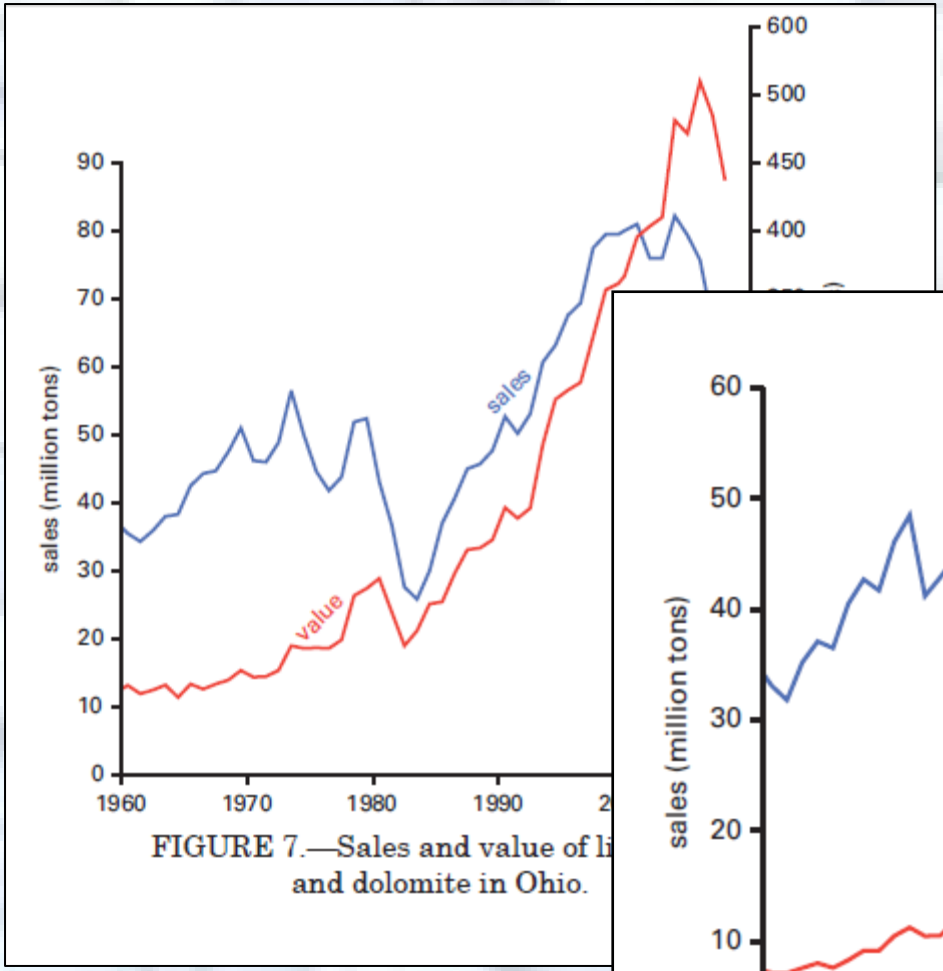


FIGURE 7.—Sales and value of li
and dolomite in Ohio.

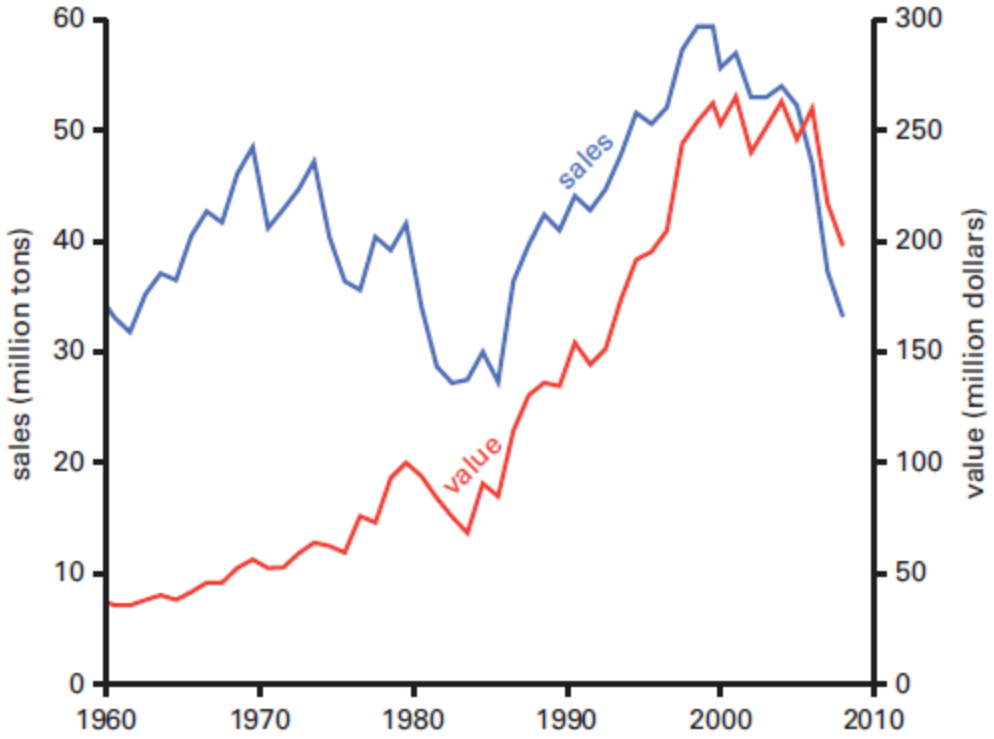


FIGURE 9.—Sales and value of sand and gravel in Ohio. Sales and values from 1984 to 2008 include Lake Erie dredged material.

Economic Recovery and Vitality:

- Directly related to locally available resources
- Prudent use of public and private funds mandate local resource availability
- Land Use Planning is Critical to long-term viability
- Funding, funding, funding!

Regulatory Climate

- Safety
- Land Use – Nimby
- New Regulations – Must be Reasonable and Achievable
- Regulatory Reform
  - Streamlined Permitting
- Working with Regulator is Key!

OHIO AGGREGATES & INDUSTRIAL

Ohio Aggregate and Industrial Minerals Association (OAIMA) members statewide are concerned about the short- and long-term impact of the current punitive approach taken by MSHA and are frustrated by the increased penalties and citations, many of which are minor and are corrected immediately.

OAIMA member are struggling to keep the doors open and Ohioans employed. Recent penalty assessments and continued pressure on financial resources will have a negative impact on our workforce.

- Direct MSHA officials to visit Ohio in order to foster a dialogue with our aggregate producers. We feel a visit will allow MSHA officials to hear industry concerns and collaborate to foster a better understanding of MSHA regulations;

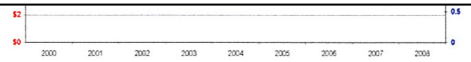
regulations;

- Direct MSHA officials to provide **fair notice** of proposed changes to regulatory interpretations. **Fair notice** will allow mine operators to provide feedback to the proposed regulatory interpretations. This will ensure workplace safety is not compromised while giving mine operators time to bring their sites into compliance and thus avoid MSHA citations; and

- Recommend that MSHA officials schedule Compliance Assistance Visits for all Ohio mines prior to the start of active production so the operations can be assured of full compliance of health and safety requirements.

We believe that by working together, MSHA officials and Ohio aggregate producers can find a solution to these concerns. After all, the health and safety of our miners is the primary concern of all of us.

Respectfully Submitted by the OAIMA Board of Directors,




WORK VEST
WORK VEST


MSHA
MSHA
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OHIO AGGREGATES & INDUSTRIAL MINERALS ASSOCIATION
OAIMA

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Ohio Aggregates & Industria... | MSHA | mshaalerts - Google Search

Page | Safety | Tools

MSHA
Enforcement Alerts

Home | All Citations | Inspection Conduct | Guest Opinion | Contact Us | Safety Links | Safety Alerts

WELCOME

This site is dedicated to achieving highly effective safety programs. Its core function is to provide a forum where safety professionals can share and discuss current MSHA actions.

Goals:

- To keep members aware of the latest MSHA actions.
- To provide the safest workplace possible through cost effective compliance.

Click here to learn more

ATTENTION VISITORS:

This site is free and open for all to visit, however we restrict submissions to members of supporting associations listed in the masthead. All comments will be monitored for content. We encourage members to submit citations of high interest. Those might include unusual and challenging citations to citations which might indicate a new MSHA initiative. Citations that assess high penalties as well as citations for conditions not cited before would also be of interest.

MOST RECENT POSTINGS

SUBMIT A CITATION

Part/Section of Title 30 CFR: 56.14205 Date: 02/24/2010 Negligence: Low District:

Condition or Practice:

On 08/17/2009 a miner was removing a bearing from the housing. Proper tool were not being used

The following firms help make this site possible

The Law Office of Adele L. Abrams PC is a full service law firm.

Internet | 100%

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Page | Safety | Tools

MOST RECENT POSTINGS

SUBMIT A CITATION

Part/Section of Title 30 CFR: 56.14205 Date: 02/24/2010 Negligence: Low District:

Condition or Practice:
On 08/17/2009 a miner was removing a bearing from the housing. Proper tool were not being used when removing the bearing, the miner was using a maul when striking the bearing a piece of the bearing chipped off striking the mine in the arm causing a laceration resulting in three...

Action to Terminate:
The miner now uses the press to remove bearings from the houseing, terminating this citation.

VIEW ENTIRE CITATION

Part/Section of Title 30 CFR: 56.11001 Date: 02/12/2010 Negligence: High District: NE

Condition or Practice:
Safe access was not provided to the elevated platform of the motor base platform, of the portable plant. Three persons were working on the elevated platform of approx. 8' at this time, 1 was a contractor, 1 was a miner and the other person was the person listed on the...

Action to Terminate:
The 3 persons removed themselves for(sic) the elevated platform

VIEW ENTIRE CITATION

More Citations

The following firms help make this site possible

The Law Office of Adele L. Abrams PC is a full service law firm, focusing on employment, occupational and mine safety and health, and family law.

Laura E. Beverage is a Member of Jackson Kelly PLLC and manages the Firm's Denver, Colorado Office. She also serves as Chair of the Firm's Occupational Safety and Health Practice Group.

JACKSON KELLY PLLC

Internet | 100%

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Land Use & Long Range Planning

- Challenges

- Solution

NIMBY

Not In My Back Yard

LULU

Locally Unwanted Land Use

CAVE

Citizens Against Virtually Everything

NOPE

Not On Planet Earth

Aggregates Industry Public Relations

- Past practice
  - stay below the radar
  - hide operation from view
  - let others take credit
- Current practice
  - openly engage surrounding community
  - publicize what we do
    - visit schools, open houses
    - let people see what we really do
    - Take Credit!


Ohio Aggregates & Industrial Minerals Association
1-800-OH-ROCKS
126th Ohio General Assembly
House Legislative Districts
LAKE ERIE
Cassell
Fende
46-49
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Outreach

- Community
- Educators
- Transportation Officials
- Legislators
- End Users

Regulatory Reform Task Force - Testimony

Air Permitting


OHIO AGGREGATES & INDUSTRIAL MINERALS ASSOCIATION
OAIMA

General Air Permit

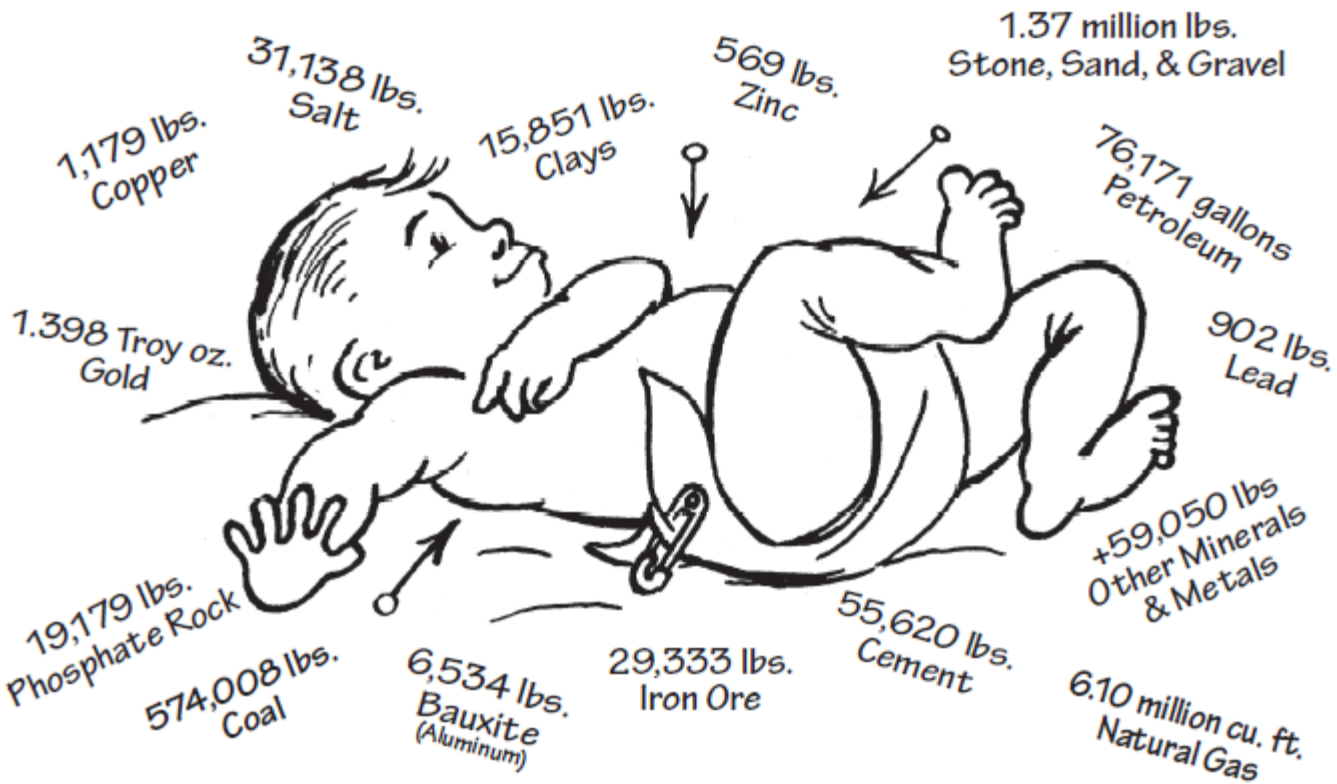
- Working with OEPA to develop General Air Permits for Mineral Extraction and Plant Operation
- Result of work with Regulatory Task Force and testimony of our members.
- Presented at 2009 Annual Meeting
- Public Comment and Implementation in 2010

Education

"They don't know if we don't tell 'em"

Why Education Matters!

Every American Born Will Need...



3.3 million pounds of minerals, metals, and fuels in their lifetime

Learn more at www.mii.org

Asphalt Concrete - HMA

- About 95% Aggregate

Portland Cement Concrete

- About 85% Aggregate per Cubic Yard

OAIMA Legislative Reception

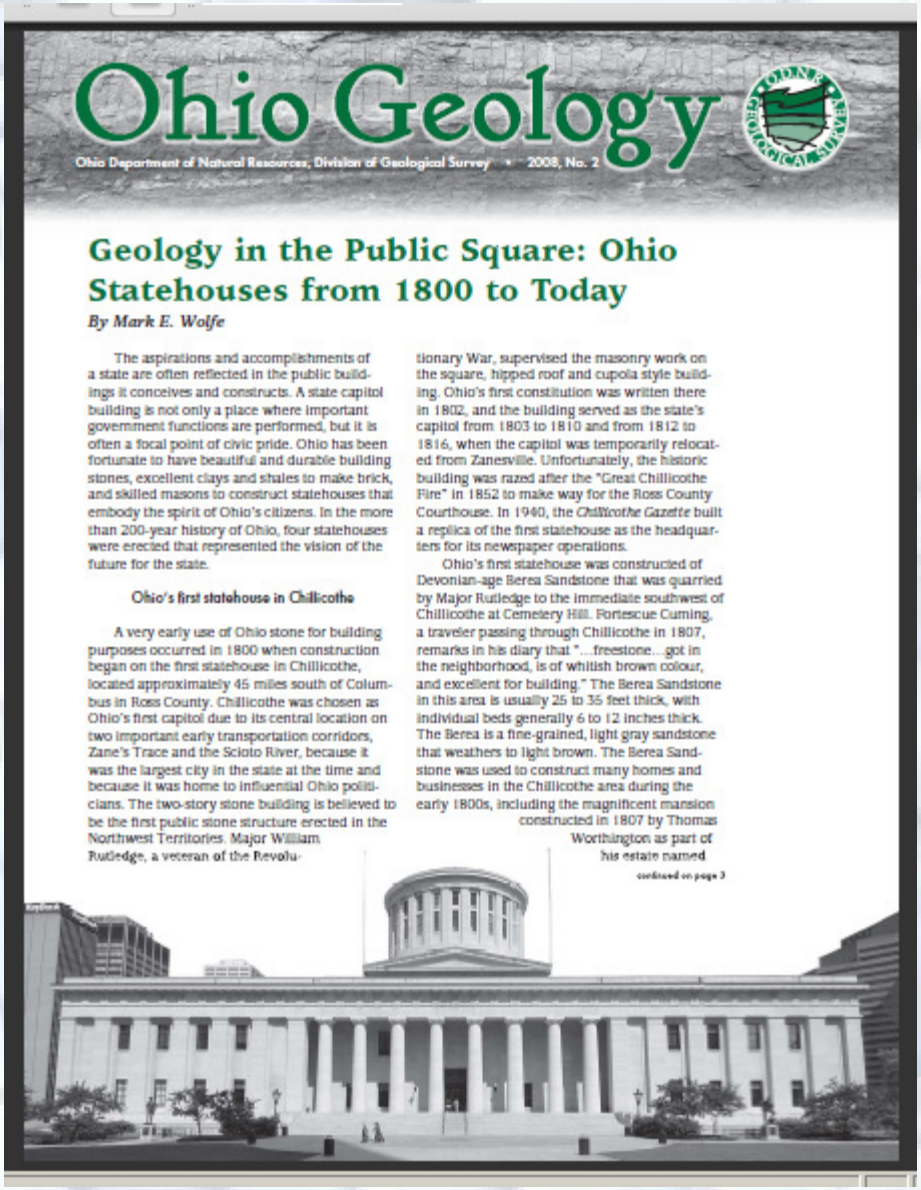
Reinforcing Our Contributions To the state and local economy and protecting our Funding

“They don’t know if we don’t tell ‘em”


hio Ag ime
Council
Mac


Ohio Department
DIVISION OF GEO


Tom



Ohio Geology

Ohio Department of Natural Resources, Division of Geological Survey • 2008, No. 2

Geology in the Public Square: Ohio Statehouses from 1800 to Today

By Mark E. Wolfe

The aspirations and accomplishments of a state are often reflected in the public buildings it conceives and constructs. A state capitol building is not only a place where important government functions are performed, but it is often a focal point of civic pride. Ohio has been fortunate to have beautiful and durable building stones, excellent clays and shales to make brick, and skilled masons to construct statehouses that embody the spirit of Ohio's citizens. In the more than 200-year history of Ohio, four statehouses were erected that represented the vision of the future for the state.

Ohio's first statehouse in Chillicothe

A very early use of Ohio stone for building purposes occurred in 1800 when construction began on the first statehouse in Chillicothe, located approximately 46 miles south of Columbus in Ross County. Chillicothe was chosen as Ohio's first capitol due to its central location on two important early transportation corridors, Zane's Trace and the Scioto River, because it was the largest city in the state at the time and because it was home to influential Ohio politicians. The two-story stone building is believed to be the first public stone structure erected in the Northwest Territories. Major William Rutledge, a veteran of the Revolutionary War, supervised the masonry work on the square, hipped roof and cupola style building. Ohio's first constitution was written there in 1802, and the building served as the state's capitol from 1803 to 1810 and from 1812 to 1816, when the capitol was temporarily relocated from Zanesville. Unfortunately, the historic building was razed after the "Great Chillicothe Fire" in 1852 to make way for the Ross County Courthouse. In 1940, the *Chillicothe Gazette* built a replica of the first statehouse as the headquarters for its newspaper operations.

Ohio's first statehouse was constructed of Devonian-age Berea Sandstone that was quarried by Major Rutledge to the immediate southwest of Chillicothe at Cemetery Hill. Fortescue Cuming, a traveler passing through Chillicothe in 1807, remarks in his diary that "...freestone...got in the neighborhood, is of whitish brown colour, and excellent for building." The Berea Sandstone in this area is usually 25 to 35 feet thick, with individual beds generally 6 to 12 inches thick. The Berea is a fine-grained, light gray sandstone that weathers to light brown. The Berea Sandstone was used to construct many homes and businesses in the Chillicothe area during the early 1800s, including the magnificent mansion constructed in 1807 by Thomas Worthington as part of his estate named

continued on page 3

Ohio Geological Survey Provides Great Resources – Publications and Staff

Federal Level Education

Why?


Trial Version


Congressman
Driehaus


SPEAKER

Educating
Ohio Stakeholders and End-users


IF IT CAN'T BE GROWN,
IT HAS TO BE MINED


OAIMA
www.oaima.org


Ohio Aglime Council
www.ohioaglime.org
OHIO AGLIME
PRODUCERS
OHIO AGGREGATES & INDUSTRIAL MINERALS ASSOCIATION
OAIMA
AGLIME
THE REAL DEAL!
NOT A BY-PRODUCT
09/21/2009

GEOFACTS No. 26
OHIO DEPARTMENT OF NATURAL RESOURCES • DIVISION OF GEOLOGICAL SURVEY

AGLIME: AGRICULTURAL LIMESTONE AND DOLOMITE IN OHIO

WHAT IS AGLIME?

Aglime, also known as agricultural limestone or dolomite, is a crushed stone product used primarily to control acidity (pH) in soils by making them more basic (alkaline). Crop fertilizers and herbicides can then work more efficiently, and plants can more readily absorb the nutrients that help them grow.

Aglime is made from naturally occurring Ohio limestones and dolomites, which have been used to improve crop yields since pioneer days. Limestone and dolomite contain varying proportions of calcium carbonate ($CaCO_3$) and magnesium carbonate ($MgCO_3$). The carbonates react strongly to acids in the soils, such as sulfuric acid. This reaction forms water, carbon dioxide, and calcium or magnesium salts, thus creating a soil that is less acidic and more productive. The composition of these carbonates includes a low percentage (approximately 3%) of silica, aluminum, and iron compounds, as well as trace elements such as strontium, sulfur, and zinc, which contribute to vigorous plant growth.

Aglime is produced by mining limestone and dolomite from selected quarries and crushing it into a finely ground product. Smaller aglime particles have greater surface area to contact and react with soil particles than larger particles in the same amount (mass) of aglime. To achieve a fine particle size, crushed limestone and dolomite is sieved through a series of screens until the required fineness is reached. The final product is often a mixture of very fine to fine particles (0.01 to 0.05 inches) that together produce a rapid (from very fine particles) and sustained (from fine particles) reaction with the soil.

WHY IS AGLIME IMPORTANT?

Food and agriculture represent Ohio's top industry: In 2005, Ohio ranked seventh in the nation for the amount of soybeans harvested by a state and eighth in the nation for the amount of corn harvested (U.S. Department of Agriculture, 2006). Each year, large amounts of calcium (Ca) and magnesium (Mg) are taken up by Ohio's crops and not returned to the soil. The most common agricultural products produced in Ohio and the amount of Ca and Mg removed from the soil during their production is shown in Table 1. According to the Ohio Department of Agriculture (2006), 3,250,000 acres of corn were harvested during 2005 in Ohio. At an average yield of 143 bushels of corn per acre, a total of 56,875 tons of Ca and 76,375 tons of Mg were removed from the soil in 2005. The 4,480,000 acres of soybeans harvested in Ohio during 2005 removed an additional 44,800 tons of Ca and 40,320 tons of Mg from the soil. The estimated total of Ca and Mg annually removed from Ohio soil by agricultural commodities is more than 300,000 tons. It is apparent that Ca and Mg must be periodically replenished for the soil in agricultural fields to remain fertile. Aglime introduces Ca and Mg back into the soil.

Spreading aglime on a farm field in Ohio. Photo courtesy of David L. Ashworth, aglime and specialty product sales for Shelly Materials, Inc.

- Aglime also neutralizes soil pH and cuts fertilizer costs by making fertilizer more available to plant roots, so less fertilizer is needed. Fertilizers that contain nitrogen, phosphorous, potassium, and other essential nutrients are dramatically affected by soil acidity. Most fertilizers are more effective in slightly acidic to neutral soils.
- Aglime boosts the performance of certain herbicides. As with fertilizer, modern herbicides are most effective when soil pH is slightly acidic (pH of 6.5) to neutral (pH of 7.0). When soils are more acidic, herbicides attach to soil particles, reducing their ability to control weed growth.
- Aglime improves the chemical, biological, and physical conditions of the soil. Water infiltration, drainage, and the healthy growth of beneficial microorganisms are improved by the proper application of aglime, which also cuts down on the amount of fertilizer and herbicides needed and the amount of agricultural runoff produced from them. Aglime can also correct toxic levels of aluminum and manganese that are sometimes found in acidic soils.

WHAT ARE THE GEOLOGIC CHARACTERISTICS OF AGLIME AND WHERE IN OHIO IS IT PRODUCED?

The majority of the aglime produced in Ohio comes from bedrock of Devonian and Silurian age located near the surface in central, western, and northwestern Ohio. These rocks were formed in vast,

Table 1—*Major Ohio agricultural commodities produced in 2005 and the amount of calcium and magnesium estimated to have been taken up by the crops*

Agricultural commodity	Acres harvested (2005)	Average yield per acre	Depletion of calcium (lbs/acre)	Depletion of magnesium (lbs/acre)
Corn	3,250,000	143 bu.	35	47
Soybeans	4,480,000	45 bu.	20	18
Wheat	830,000	71 bu.	19	21
Hay	1,200,000	3 tons	66	15

Data source: Ohio Department of Agriculture (2006)

continued


The Louise H. and David S. Ingalls
Foundation Sand Dune Garden
Dedication
September 8, 2006
By Governor and Mrs. Bob Taft
with grateful appreciation to
Ohio Aggregates and
Industrial Minerals Association.


WARNING
TO USE RAMP
TOWING
WARNING
2EC-852
Till Plains
Lake Plains
Allegheny Plateaus
Glaciated Allegheny Plateaus


Huron-Erie
Lake
Plains
Courtesy of Ohio Aggregates & Industrial Minerals Association


Thank You!
OPERATION:
MILITARY KIDS
MILITARY FAMILIES IN OUR OWN BACKYARD.
OHIO!
LAFARGE
USO
Until Every One Comes Home.
U.S. Army
Child, Youth & School
Services
THE Ohio 4-H FOUNDATION
American Red Cross
OHIO STATE UNIVERSITY EXTENSION
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AMERICAN LEGION
DEPARTMENT OF DEFENSE
DKG
INTERNATIONAL SOCIETY FOR KEY WOMEN EDUCATORS
usbancorp
Pioneers
XVIII
OHIO HOUSE OF REPRESENTATIVES
ATTORNEY GENERAL
RICHARD CORDRAY
ATTORNEY GENERAL


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Ohio Operation: Military Kids
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Future Home of the
World Trade Center Steel &
Westerville Fire Fighters' Memorial
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WFFM Board
Thomas Ullom, Founder
Larry Flowers, Campaign Chair
Greg Chamblin
Kirk Hummer
Kathy Cocuzzi
Philip S. Price
Marc Hogenbirk
Kathy Ullom
Gina & Jim Saltz, Artistic Designers
Stephen Geddes, Robert L. Moore, Sculptors
Richard Lakeman, Gator-Wolfe Masonry
Donte Dado, Pavers
Funding provided by the State of Ohio through
the Cultural Facilities Commission,
Ted Strickland, Governor
In Cooperation with
Mt. Carmel St. Ann's
Rosati Windows
CME Federal Credit Union
Diamond Site Development
FastSigns
M-Engineering
Meacham & Apel Architects
Olen Corporation
RKE Trucking
Sundance Excavation & Landscape Co.
The UPS Store
City of Westerville's
Electric Division, Fire Department,
Parks and Recreation Department,
Planning and Development Department,
Police Department, Service Department
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$400,000
$300,000
$200,000
$100,000
Goal: $500,000
HELP US REACH OUR GOAL
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Project STONE

Project STONE

an

EARTH & SPACE SCIENCE INQUIRY-BASED PROFESSIONAL DEVELOPMENT PROGRAM

for

OHIO'S CLASSROOM EDUCATORS of GRADES 4-12

Wright State University

In Partnership with the

Ohio Aggregates & Industrial Minerals Association

Announces a New Summer & Fall Program for 2009

Teachers Workshop

2010-2013

STONE

- Two Week Comprehensive Accredited Teachers Workshop in Partnership With Wright State University

WRIGHT STATE UNIVERSITY

OHIO AGGREGATES & INDUSTRIAL MINERALS ASSOCIATION • OAIMA

Mine Planning & Regulations


Army Corp of Engin
Waters of U. S.
Wetlands

Reclamation/Wildlife Habitat


Martin Marietta Aggregates
Troy Gravel
250 Dye Mill Rd.
NO PARKING ANY TIME

Reclamation


HUDSON
23/07/2009


United We Stand
23/07/2009


If It Can't Be
Grown,
It has to be
Mined
23/07/2009


22/07/2009


44
44


EXPLOSIVES
SAFE
BACK
HOOK

National Heritage Academies

Pathway School of Discovery
[illegible]

Pat Jacomet
Ohio Aggregate and Industrial Mining Association
162 N. Hamilton Rd.
[illegible]

I think the most important aspects of the mining industry that I was able to take with me from Project S.T.O.N.E. are the varied job opportunities available for my students to look forward to, the invaluable impact that aggregate mining industry plays in the lives of all citizens, and the focus on the environmental impact that the mining industry keeps at the forefront of their planning.

I am fully aware that had OAIMA not put forth so much effort into making Project S.T.O.N.E. a reality, that I would not have been able to gain such knowledge of the mining industry to take back to my students and my classroom. So it is to you, OAIMA, that I send my sincere thanks and appreciation!

Sincerely,

Christy Hahn-Suttle

Christy Hahn-Suttle
6th grade Science and Social Studies Teacher
Pathway School of Discovery

OHIO AGGREGATES & INDUSTRIAL MINERALS ASSOCIATION • OAIMA

Dear Mr. Jacomet,

Thankyou for coming to the schoo and teaching us about gravel and your job. I learned about gravel, sandstone, and limestone. Thankyou for the gifts too. My favorite rock is flint I dont know why I like flint. I wanna do what you do when I grow up.

From,

Loressa

PS. Your job Rocks


Human Res
Blaster
Lab technician
Environmental
Equipment Operat
Accountant
Mine Engineer
Estimator
Other Science W
Diversity=differe
Sphere=ball
Degradable=able
Compose=put to
Decompose=brea
System=a group
Erosion
Volcanoes
BUGS
Weather
RESPECT
EARN IT.
THINK POSITIVE
01/27/2010


can do something.
THE WATER CYCLE
CONDENSATION
PRECIPITATION
EVAPORATION
Solids
Liquids
Gases
T • E • A • M
Class of 2011
The Water Cycle
TREES PLEASE!
01/27/2010


FBI
OHIO STATE

Resources & Projects

Education

Promotion

Facts


935 lbs.
Copper
1,460 Troy oz.
Gold
16,904 lbs.
Phosphate Rock
527,097 lbs.
Coal
5,064 lbs.
Bauxite
(Aluminum)
12,766 lbs.
Clays
467 lbs.
Zinc
2.96 million pounds of minerals, me
©2011 Mineral Information Institute, SME Foundation
If it can't be grown, It has to be


U-HAUL


OHIO AGGREGATES & INDUSTRIAL MINERALS ASSOCIATION
OAIMA
If It Can't Be Grown
It Has To Be Mined
www.oaima.org
TEACHERS
ONLY
BIC


Adam
Tyler B.
Drew
MARKS-A-LOT


STUDEBAKER
6
THINK IT
BELIEVE IT
ACHIEVE IT

Aggregates are the Elemental Building Blocks of Ohio's Economy.

Aggregates are the elemental building blocks of Ohio's economy.

Over half of all aggregate is paid for by tax dollars. Major users are the state, counties, townships and municipalities in their road and infrastructure programs.

Ohio's non-fuel raw mineral production is valued at over $1 billion.

The industry employs nearly 5,000 people with an average wage exceeding $44,000.

Another 40,000 people are employed indirectly in Ohio's mineral industry as truck drivers, electricians, mechanics and other supporting professions.

Construction of an average size school or hospital requires 15,000 tons of aggregates.

Aggregates make up 95% of asphalt and 85% of concrete.

Aggregate production accounts for more than half of the non-fuel mining volume in the United States.

Aggregates mined in Ohio generally stay in Ohio.

Only about 1% of the construction aggregates used annually in the United States are imported.

Source: Mineral Information Institute, Ohio Geological Survey Annual Report.

Aggregates are Essential to Maintaining the Quality of American Life.

Virgin aggregates of crushed stone, sand and gravel, slag and supporting industries contribute an annual total of $38 billion to the U.S. economy.

Ohio is the seventh largest aggregate producing state in the United States.

There are more than 10,000 construction aggregate operations nationwide and approximately 450 in Ohio. Proximity to market is critical due to high transportation and fuel costs.

Nearly all aggregates produced in Ohio are used in Ohio, usually within 50 miles of the production site. Over 90% of all aggregates are moved by dump truck.

Because aggregate is a heavy, low cost per ton product, haul distance largely controls the price of aggregate.

The cost nearly doubles for every ten miles that a ton of aggregate is transported by truck.

If it can't be grown, it has to be mined!

Ohio Aggregates & Industrial Minerals Association
OAIMA
162 N. Hamilton Rd.
Gahanna, OH 43230

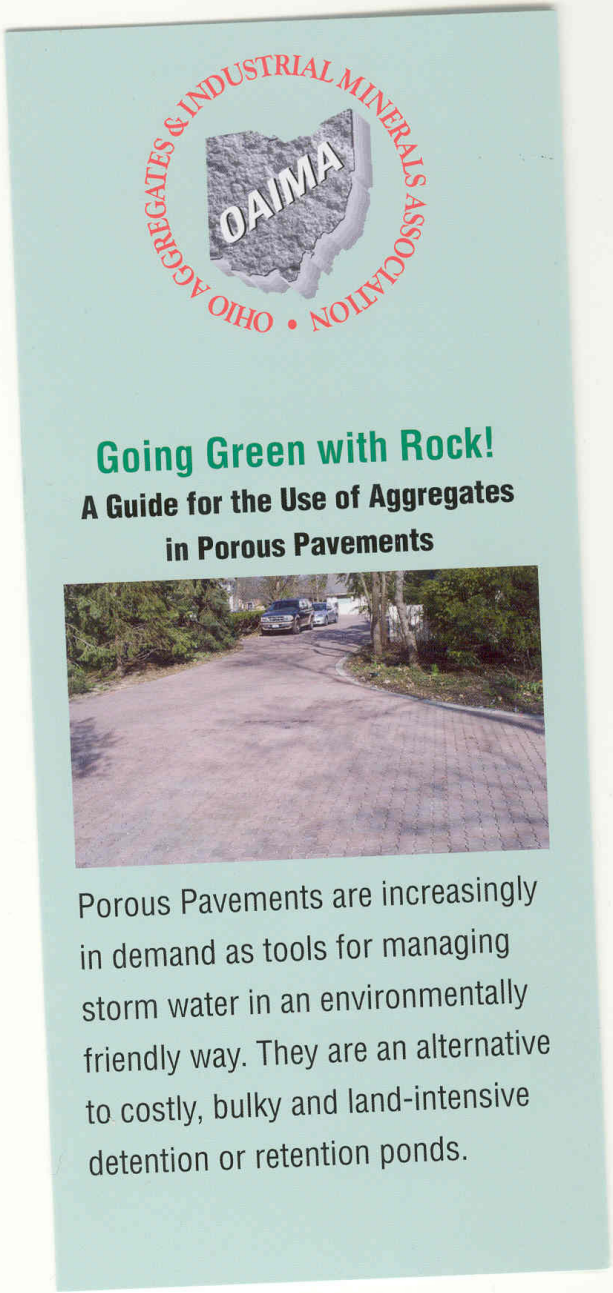
(614) 428-7954
Fax (614) 428-7919
800 OH ROCKS (647-6257)

Ohio's Aggregate Industry...

Producing crushed stone, sand and gravel & slag for Economic Development and Environmental Enhancement

OHIO AGGREGATES & INDUSTRIAL MINERALS ASSOCIATION • OAIMA

www.oaima.org



New reference guide for use of aggregate in Porous Pavement

In addition to the obvious environmental and land use benefits, installation of porous pavements can qualify for significant LEED® (Leadership in Energy and Environmental Design) points under the Green Building Rating System, developed by the United States Green Building Council (USGBC).

This document is intended to offer guidance to the designer who is interested in the storage capacity potential of the underlying aggregate layers.

In general the designer is seeking clean, uniformly graded aggregate. Rainfall events dictate the design capacity of the aggregate storage system and take into account local historical conditions and events with additional consideration for the permeability of the underlying soils.

Porous Pavement surfaces can include Asphalt, Portland Cement Concrete, Paving Brick or Block as well as natural stone or other innovative products and materials.

The following information is intended for guidance in the design process for material selection. It is suggested that all materials be tested in accordance with ASTM C29, "Standard Test Method for Bulk Density ("Unit Weight") and Voids in Aggregate" Section 13.2.

Voids are defined as the space between the aggregate particles that is available for storage of water. Voids are reported as a percent of the total volume of the aggregate. The percent of these voids is influenced by the gradation (or particle size range) of the specified material, particle shape or angularity, as well as the amount of compaction or compactive effort use in placement of the materials.

Size (ODOT 703.01)	Voids, Percent	
	Range	Average
No. 2 Limestone	39.6-43.3	41.2
No. 4 Gravel	36.9-39.7	37.7
No. 4 Limestone	37.0-43.0	41.1
No. 57 Gravel	33.9-41.2	36.6
No. 57 Limestone	38.7-42.6	41.3
No. 8 Gravel	33.5-43.2	36.4
No. 8 Limestone	38.2-44.3	41.7
No. 7 Gravel	—(1)	41.3
No. 7 Limestone	—(1)	42.2
Natural Sand	31.2-36.6	32.5
Limestone Sand	33.2-39.0	36.2

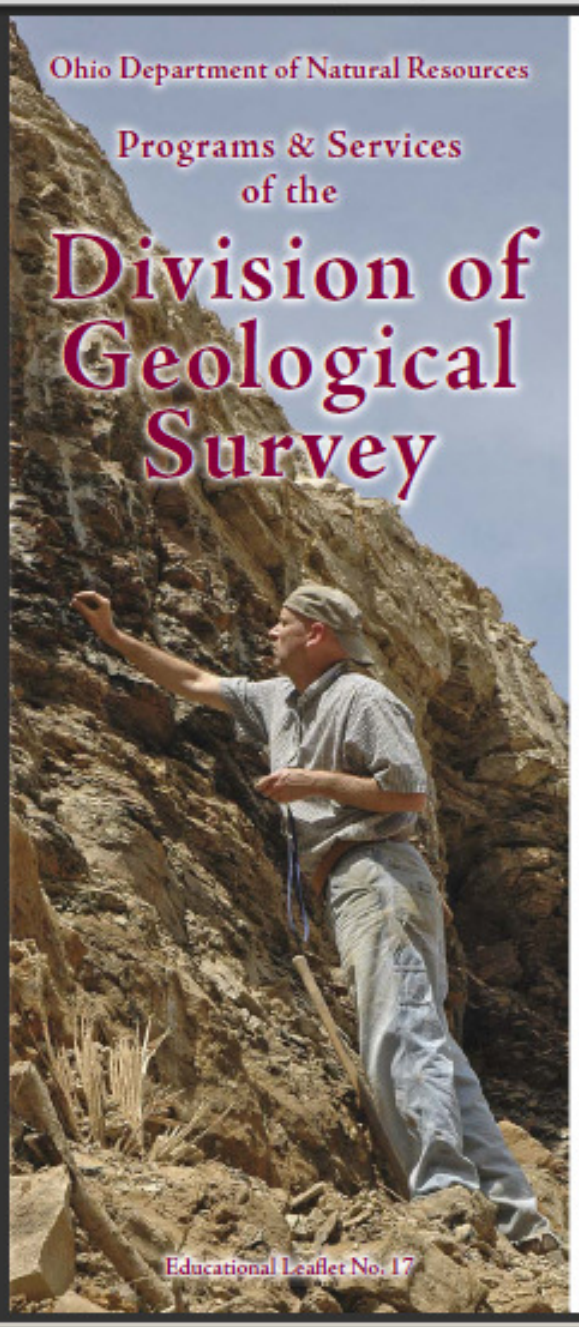
(1) One (1) sample submitted

Disclaimer: This information is provided courtesy of the Ohio Aggregates & Industrial Minerals Association and its many fine members and is intended for informational purposes only. All aggregate is unique and should be tested prior to placement. Contact the design engineer for additional information.

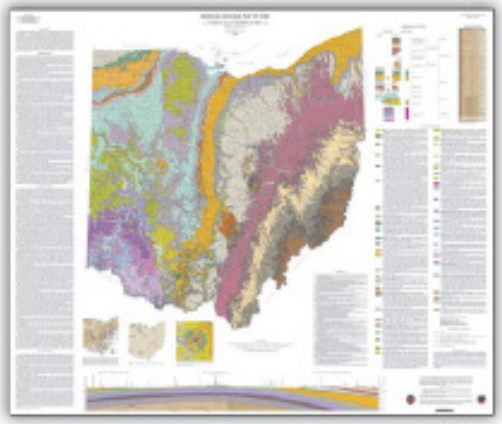
Porous Paver-Unit Driveway with Aggregate Storage Bed for storm water retention.

Porous Asphalt Pavement Parking Area with Aggregate Storage Bed base.

Water flows uninhibited through Portland Cement Concrete Porous Pavement.



The Ohio Department of Natural Resources (ODNR), Division of Geological Survey (commonly known as the Ohio Geological Survey) is Ohio's oldest natural resource agency, dating back to 1837. The Survey researches and maps Ohio's geology to support industry, commerce, environment, safety, and education, thereby ensuring Ohio's strong economic foundation. As Ohio's permanent archive and public access point for geologic data, the Survey supports:



Bedrock Geologic Map of Ohio

- Environmental protection.
- Proper land use development.
- Regulation of fossil fuel and mineral extraction.
- Groundwater development.
- Mitigation of geologic hazards.
- Mineral and petroleum exploration.
- Economic development.

Bedrock and Glacial Geologic Maps—The Need for Basic Information

Geologic maps provide framework information needed to help us build highways, safeguard drinking water, prepare for disasters, protect wildlife, discover minerals, locate fuel sources, and much more. Consequently, such maps are useful to citizens at various levels, including geologists, hydrogeologists, engineers, mineral and fossil fuel producers, geotechnical consultants, land use planners, educators, government officials, and others interested in Ohio's Earth science.

In 2006 the Survey released the updated *Bedrock Geologic Map of Ohio*, culminating nearly 25 years of remapping the bedrock geology of Ohio. Nearly 3,850 individual maps were drafted by hand, converted to digital format, and compiled to create the new statewide geologic map.

Since 1997, the Survey's Geologic Mapping and Industrial Minerals Group has focused on 3-D mapping of Ohio's glacial deposits—unconsolidated deposits that cover about two-thirds of the state. The new mode of mapping reveals all glacial materials from the earth's surface to the top of the bedrock.

The Survey has also developed a unique computer application to create custom, on-demand map products that feature data on locations of oil and gas wells, abandoned underground mines, earthquake epicenters, and more.

Ohio now has one of the most comprehensive, up-to-date sets of basic geologic maps in the nation. The Survey continually updates and improves geologic maps to efficiently convey extraordinary amounts of information vital to all Ohioans.

Geologic map uses

The Survey distributes approximately 500 geologic quadrangle maps per year. However, as the Survey releases more digitally formatted maps, this number will significantly increase. Quadrangle maps have a variety of uses:

- Groundwater exploration, development, and planning - Water resource professionals use the Survey's geologic maps and data to create accurate groundwater potential and pollution potential maps.
- Environmental consulting - Professionals rely on geologic map products in mitigating polluted sites, reclaiming brownfield and toxic release sites for construction of new projects, and reusing once-abandoned land.
- Exploration and development of minerals and fuels - In 2008, Ohio's 141 coal-mining operations, 423 active industrial-mineral-mining operations, and 1,049 new oil and gas wells accounted for nearly $3.3 billion of revenue and the employment of approximately 10,000 Ohioans.
- Infrastructure - Geologic maps are utilized on large-scale construction projects, such as roads, pipelines, dams, sewers, utilities, and railroads, to help predict conditions and cost, determine slope requirements, and develop mitigation plans for construction in geohazardous areas.
- Understanding and preventing geologic hazards - Geologic maps are invaluable for identifying, understanding, and mitigating Ohio's geohazards, including:

Life without Minerals or Aggregate is pretty desolate ...
Not many people realize that no Aggregates means no flat screen TVs, no automobiles, no clothing, etc.

That's why Ohio Aggregates & Industrial Minerals Association proposes the creation of a high-quality video that can be used to better educate the public and other groups.

Ohio Aggregates is looking to team up with others who would be interested in helping fund the production. In return, you would receive a version of this video, branded with your logo and contact information. Production starts soon!

Less is ... Well, Less

The Message

I think the message rings pretty clear in this concept:
No mining ... no nothing!

Approximate length 2-3 Minutes.

Shot 1: Man in studio full of stuff

Music: Quirky

Shot 1: Man in studio with less stuff

Music: Quirky

Shot 1: Man in white limbo

Music: Quirky

The Look

Shot in a studio, we start with a spokesperson talking to the camera. Behind him we see his world is populated by all of the things we take for granted — a car, a computer, a desk, sofa, etc. Gradually, as he talks about the importance of mining and how it affects our daily lives, we see things being removed from the scene – things we would have to do without if mining were not part of our lives. In the end, our spokesperson is left in a white void, empty of anything, in fact, if we want to really make it memorable, he is left with only a superimposed black bar covering his vital parts since clothing is also something that is dependent on mining! And to take it one step further, the screen goes black (since even making this commercial is impossible without mining.) But alas, all is not lost! Since we live in a world WITH mining the last 10 seconds of the video reverses all that we have lost during the spot. The light comes on, our actor gets his clothes back, and all the things that were taken away get returned in a rapid reverse effect ending the piece on a positive note.

The Sound

Basically, the sound would be a professional actor delivering a script that tells about how important mining, minerals and aggregate are for our daily lives. An inquisitive musical bed would accompany this voice to keep the energy high and imbue the piece with a sense of whimsical irony.

For more information, please contact: Patrick A. Jacomet Executive Director, Ohio Aggregates & Industrial Minerals Association 1-800 OH ROCKS or patj@oaima.org

OAIMA | Welcome to the Ohio Aggregates & Industrial Minerals Association - Windows Internet Explorer

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Ohio Aggregates & Industrial Minerals Association

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Welcome

The Ohio Aggregates & Industrial Minerals Association is the trade association in Ohio that represents all of the state's mining operations, except coal. These commodities include mostly construction materials, both natural and manmade, such as aggregates (which are sand, gravel, slag, and crushed limestone, dolomite, and sandstone), salt, clay, shale, gypsum, industrial sand, building stone, lime, cement, and recycled concrete.

Learn More »

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News and Information RSS

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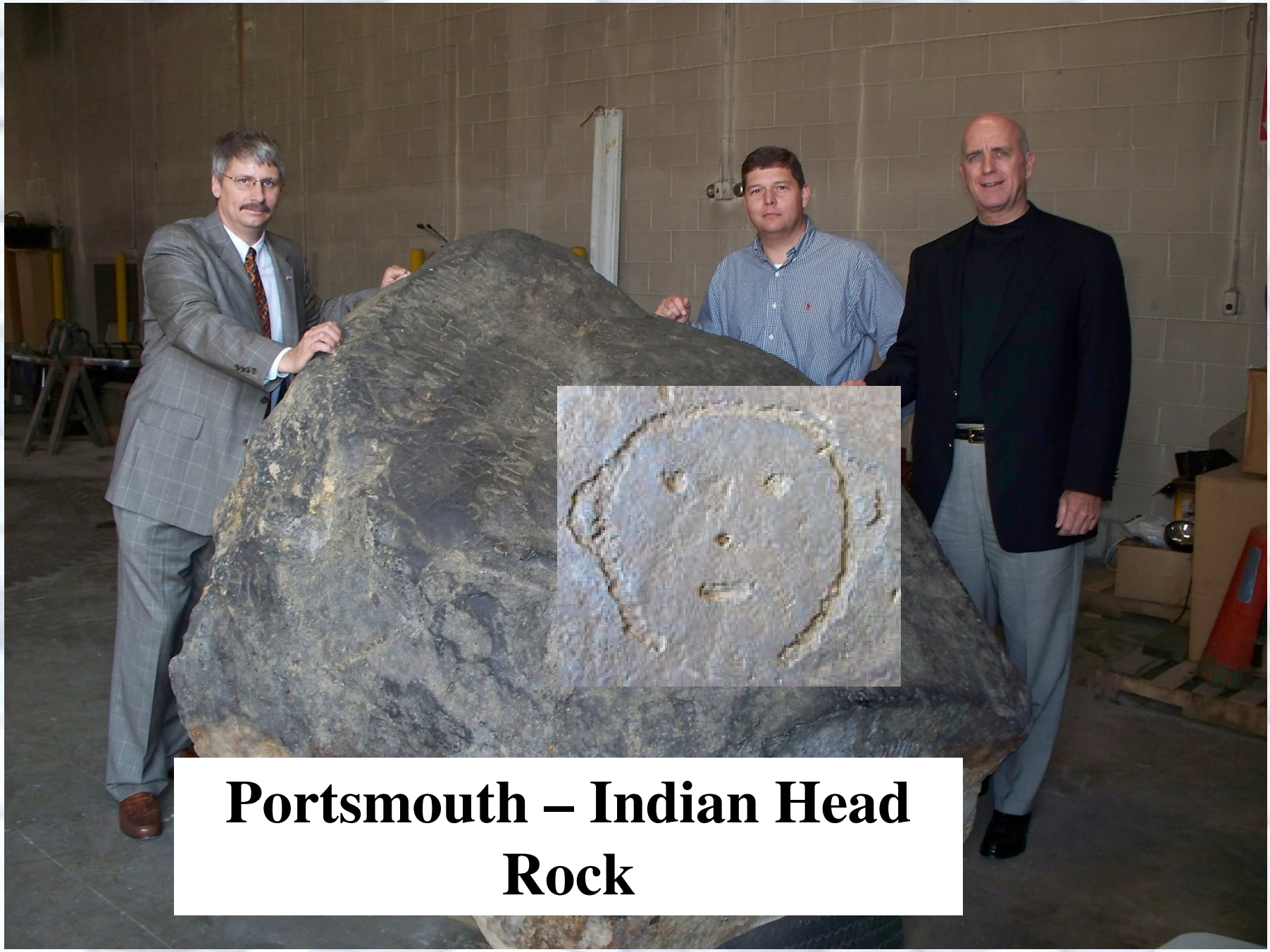
Interesting Projects

Indian Head Rock



Portsmouth – Indian Head Rock

The Future

- **Education Key to maintaining public license to Operate**


Questions?
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