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# Denali Project Update

## Alaska World Affairs Council

October 30, 2009

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# Denali - The Alaska Gas Pipeline

## Who are we?

- BP and ConocoPhillips formed "Denali – The Alaska Gas Pipeline"
- New company with legal entities in Alaska and Canada
- Project headquarters in Anchorage and Calgary

## Why were we formed?

- Large, known North Slope gas resource
- Gigantic, complex project to bring it to market
- Manage costs and schedule – must be cost competitive
- Strong balance sheet required

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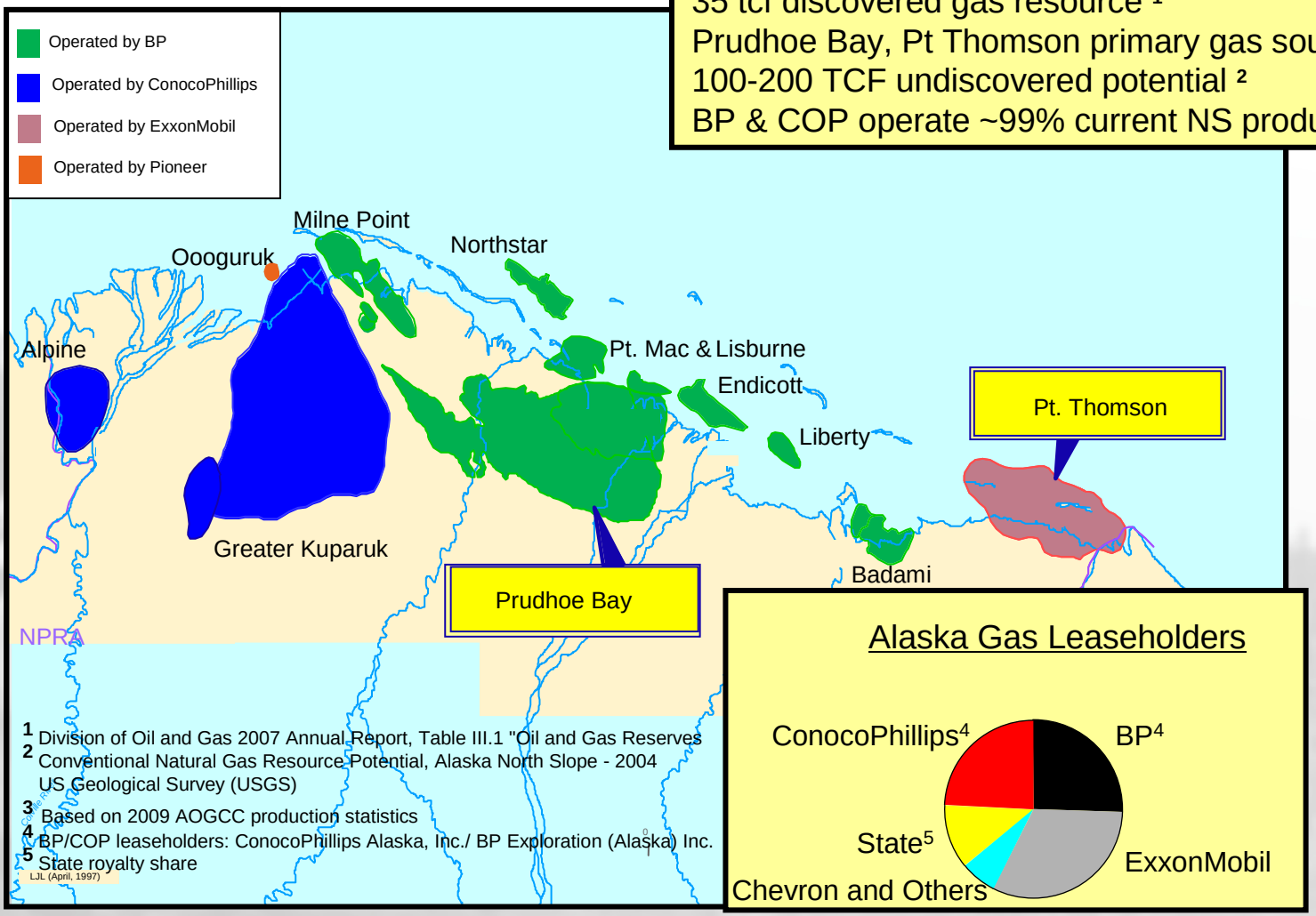
# North Slope Oil and Gas Fields

35 tcf discovered gas resource [1]
Prudhoe Bay, Pt Thomson primary gas sources
100-200 TCF undiscovered potential [2]
BP & COP operate ~99% current NS production[3]




## Alaska Gas Leaseholders



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# The Denali Project – 4 BCFD to North American consumers




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# Regulatory Frameworks – U.S. and Canada

*Denali will be an open access pipeline*

*No proponent has an exclusive right to build the pipeline*

**U.S.**

- Federal Energy Regulatory Commission (FERC) is responsible for authorizing and regulating the project
- Alaska Gasline Inducement Act (AGIA) is not a license to build a pipeline. Denali can proceed outside of AGIA

**Canada**

- National Energy Board (NEB) will authorize/regulate the Denali project.
- NEB process incorporates modern environmental regulations and is open to any project proponent
- Major Projects Management Office (MPMO) to act as single window for coordinating the federal government regulatory input for Denali

*NEB and FERC have a history of working together to approve cross-border energy projects*

# Significant Progress Towards Open Season

- Over $120 million spent to date
- Core team of 80 to 90 people with Anchorage and Canadian headquarters
- Major advancement on the regulatory front
- Field data gathering, analysis and integration
- Gas Treatment Plant engineering
- Pipeline and compressor station engineering
- Extensive stakeholder engagement
- Building the cost estimate
- Commercial preparations for open season in 2010

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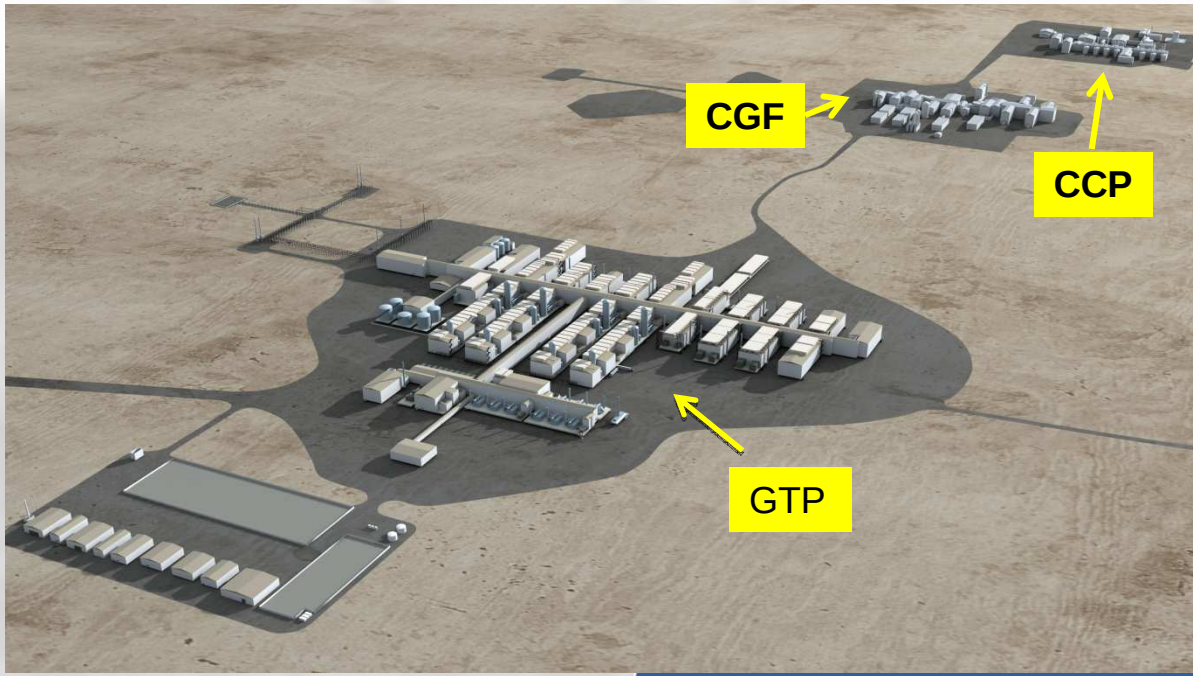
# Gas Treatment Plant (GTP)

- Removes CO2 /other impurities, dehydrates, compresses and chills gas
- Fluor/WorleyParsons supporting engineering and design work
- Largest sealift modules in history – over 8,000 tons
- Best practices from the North Slope and around the world
- “Green” design

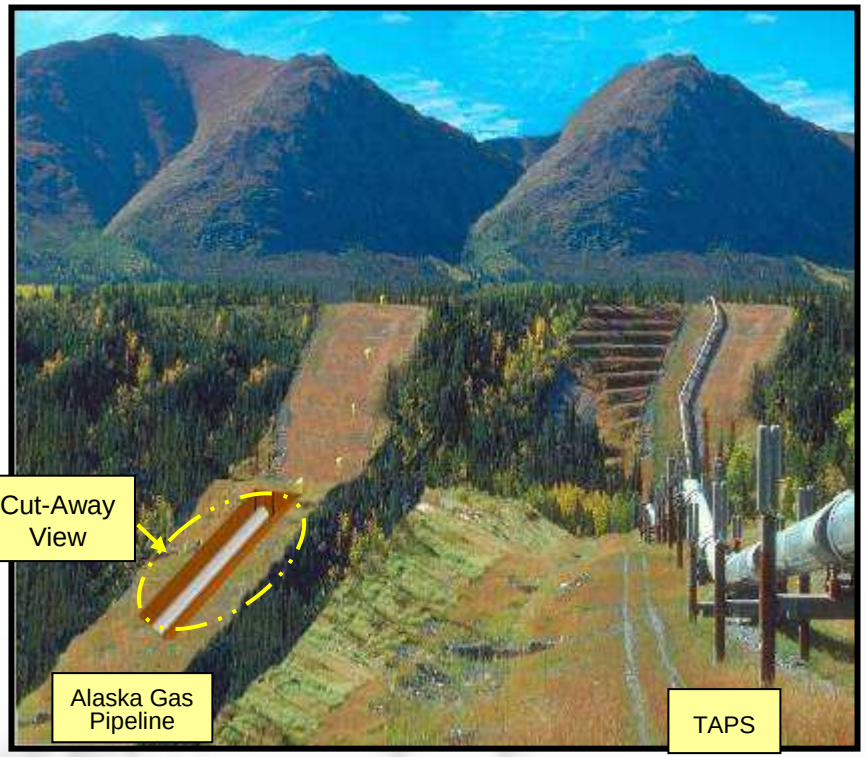
*5,000 ton module*



# The Pipeline

## What is it?

- Buried large diameter pipeline
- Operates at ~ 2,500 psi
- Compressor stations every 100 to 200 miles at >40,000 hp each
- Offtake points in Alaska (~5) & Canada
- ~4 BCFD to North American consumers




## How big is it?

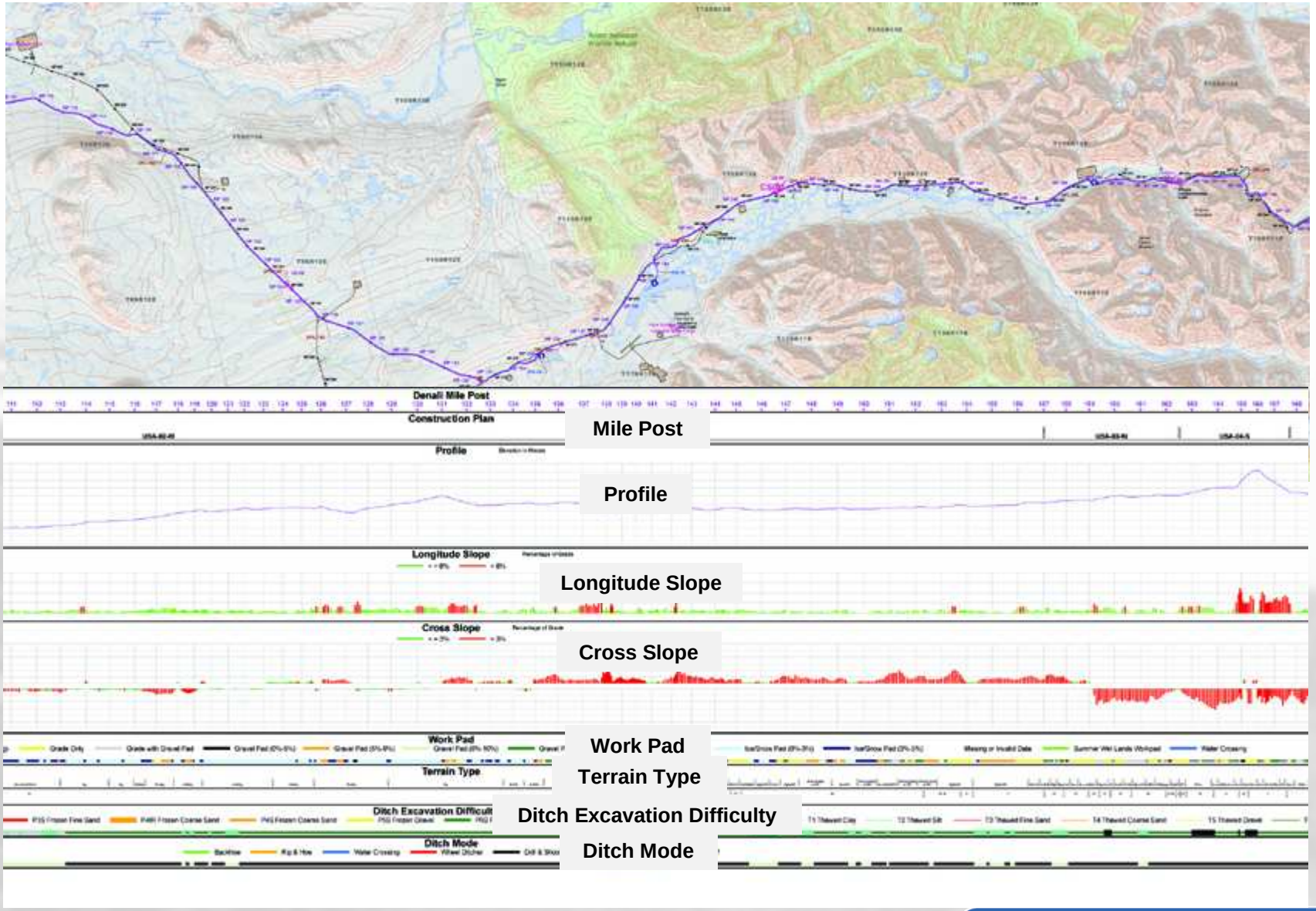
- About 2,000 miles to Alberta
  - ~2-3 million tons of steel
- Possibly another 1,500 miles to US markets
  - ~2 million tons of steel

## Bechtel – Supporting the pipeline and compressor station design

•Engineering, cost estimating, scheduling

•Extensive experience designing and constructing major pipelines and megaprojects worldwide.

# Pipeline Engineering Design



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# Stakeholder Engagement

- Community outreach meetings in Alaska and Canada
  - Met with all Alaska Native and Canadian Aboriginal groups along the pipeline route
  - Cooperation Agreements signed with several Aboriginal groups; negotiating with others
  - Over 200 public meetings
- Advanced workforce development
  - Archeology technician training
  - Surveyor apprentice training
- Established working relationships with Alaska, U.S. and Canadian government officials
  - Met with Canadian federal, provincial and territorial officials
  - Met with numerous U.S. federal officials
  - Ongoing dialogue with state of Alaska
  - Outreach to borough, community, and city officials


- Ongoing discussions with the NEB, CEAA, YESAB, MPMO, FERC, OFC, BLM, DNR and other regulatory agencies

# Cost Estimate – Putting it all together . . .

Process engineering
Thermo-hydraulic modeling
Regulatory framework
River crossings
Strain-based design
Field programs
Climate data
GTP process selection
Aerial imagery
Pipe storage yards
Environmental Studies
Construction plan
Labor and materials
Fabrication yard, port review
Camps, fuel, personnel movement
Geotechnical engineering
Stakeholder dialogue
Logistics


***. . . plus many other important pieces!***

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# Denali has a core team of 80-90 people and dozens of contractor companies supporting its work


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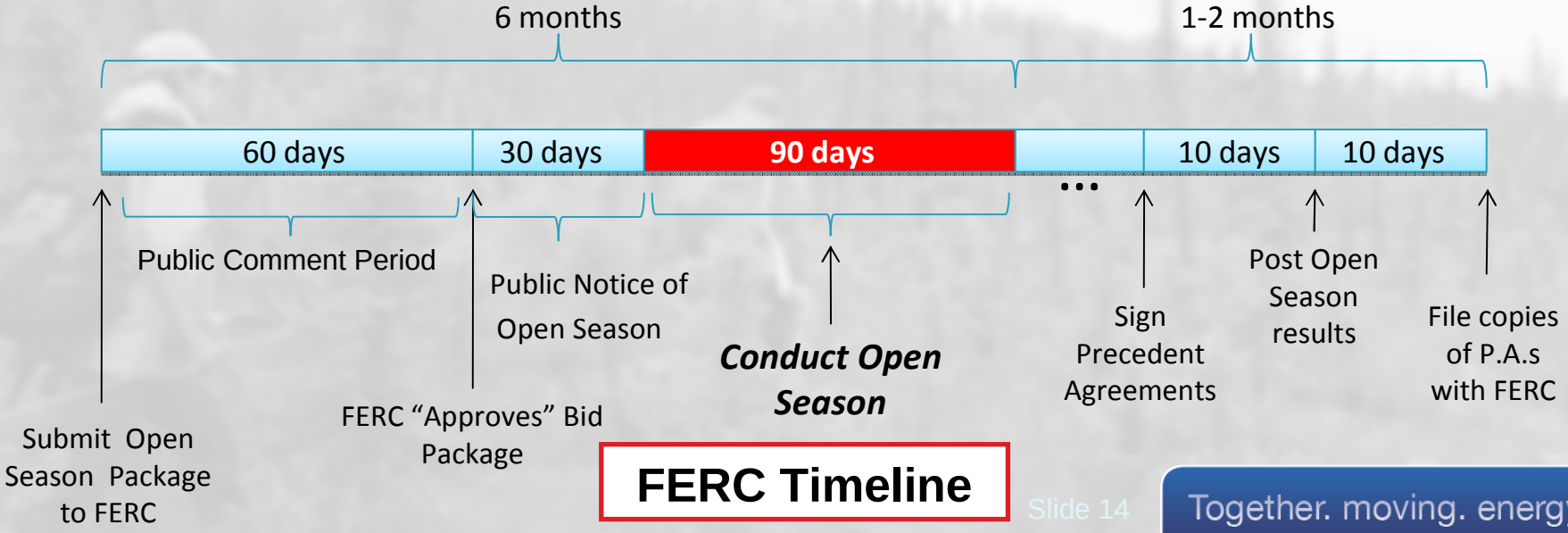
# Open Season

- Process that allows gas producers and other entities to reserve space on a pipeline by making long term financial commitments to the pipeline.
- Open season provides :
  - Open access to capacity on the pipeline
  - A forum for negotiating terms and conditions
  - Assessment that the project is "right-sized" for market needs
  - The basis for the next steps in project development
- Federally regulated by the Federal Energy Regulatory Commission (FERC) in the U.S. and overseen by the National Energy Board (NEB) in Canada.




**FERC Timeline**

# Denali - The Alaska Gas Pipeline

What a successful project means:

- Jobs and business opportunities
- Consumer, industry access to new gas supplies
- New exploration and development (gas and oil)
- Extended economic life of North Slope resources
- Major new revenue streams for Alaska and Canada
- Secure, domestic natural gas supply for North America

**Success depends upon addressing project risks**

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For additional information, please visit:

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