



# *2009 New Pipeline Construction Workshop*

*April 23, 2009*

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## *Best Practices for Parallel Pipeline Construction*

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# System Make-up

Panhandle Eastern Pipe Line Company  
Trunkline Gas Company  
Sea Robin Pipeline Company  
Florida Gas Transmission





## *New Pipeline Construction: Parallel Encroachment*

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- Drivers – Energy Policy and FERC Project Siting Requirements, Incidents
- INGAA Foundation - Guidelines for Parallel Construction of Pipelines
- Case Study Experience – Panhandle Eastern and Rockies Express Project



## ***New Pipeline Construction: Parallel Encroachment – Discussion Drivers***

- Industry is experiencing a period of increased pipeline construction activity that is expected to continue through 2011, and possibly beyond.
  - The Federal Energy Regulatory Commission (FERC) and other Federal agencies are encouraging/requiring interstate natural gas pipeline operators to use existing rights-of-way (ROW) corridors
  - The Energy Policy Act of 2005, Section 368, stipulates the need for construction of pipelines in common corridors
  - This is occurring throughout the country, even in more rural, sparsely populated areas.
  - There have been incidents where existing pipelines have been damaged during parallel construction

# ***New Pipeline Construction: Parallel Encroachment – INGAA Foundation Guidance Document***



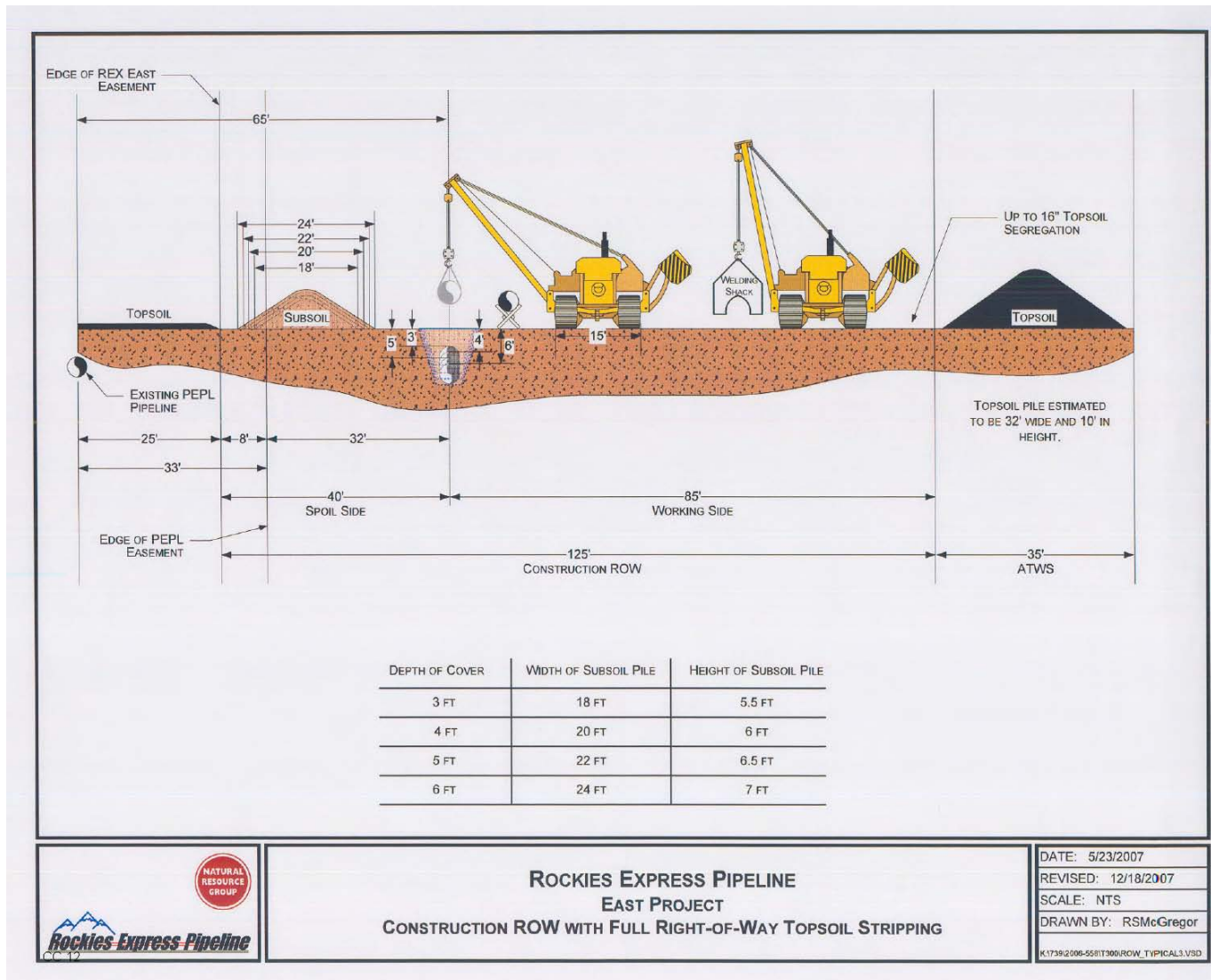
- INGAA Foundation and its members developed guidance for designers, constructors, operators and regulators to prevent personal injury or property damage to either the existing or new pipeline when new construction is undertaken parallel to existing facilities.
  - Workshops held to address the concerns that arise during parallel construction and defined a path forward to develop guidelines for parallel construction
  - Guidelines focus on precluding unsafe conditions by providing barriers to reduce the occurrence of incidents. This approach can be applied to other linear facilities.
  - Guidelines were developed using a consensus process by a work group formed by Foundation members. The guidelines draw upon the experience and leading practices of INGAA Foundation members as well as practices used throughout the industry (CGA, API 1166)
  - The primary emphasis of these guidelines is on the interaction between existing pipeline operators and those operators planning to construct in a parallel fashion
  - Expect contractors working on behalf of the pipeline operators, to engage in work practices that are in conformance with these guidelines
  - Encourage that these guidelines be referred to in contract documents executed with contractors and subcontractors



# ***Damage Prevention and Safety Control Plan - REX Pipeline Project***

- Provisions similar to those in the INGAA Guidelines were applied to the REX West project (3 parallel miles) and REX East (250 parallel miles). Commitments to these provisions are established in an agreement between parties.
- Establish the limits of construction work space and permanent easement to prevent any parallel construction activity that could impact a PEPL pipeline
  - REX easement (50' wide) and work space (125' wide) overlaps 8 feet with PEPL easement (66' wide). See next slide for typical R/W illustration.
- No construction activity, including spoil storage, allowed within twenty five feet of the outermost PEPL pipeline in order to prevent:
  - External loading and soil stress associated with the operation of heavy equipment.
  - Removal of existing cover over or near existing PEPL coupled pipelines.
  - Undermining, rutting or lateral forces as a result of surface loading due to heavy equipment.
  - Additional overburden loading that may be caused by spoil storage.
- Establish requirements to ensure that any adjacent construction activities undertaken will not cause soil instability or soil movement around the PEPL pipelines.
  - As required, install and maintain piling or other engineered structures, or increase the amount of construction offset to prevent undermining and soil slippage in areas that involve side-hill alignment either up-hill or down-hill relative to the PEPL pipelines.

# REX Typical R/W Cross Section





# ***Damage Prevention and Safety Control Plan - REX Pipeline Project***

- Accurately locate and mark the PEPL pipeline and the easement boundary.
- Accurately locate and mark the pipeline easement with “No Access Zone” signage on not less than 100’ centers.
- Enforce the “No Access Zone” and require reporting in the event the zone is violated.
  - Train REX inspection personnel regarding the safety hazards of working over and near PEPL pipelines.
  - Utilize PEPL personnel to monitor and audit enforcement of the “No Access Zone”.
- Accurately locate and mark all lateral, crossover, and inter-connect piping.
- Pre-approve all equipment crossings and establish design requirements per PEPL Standard Operating Procedures (SOP).
  - Require matting or other Company approved methods for distributing wheel loads on the pipelines at all equipment crossings.
  - As required, reinforce all pipeline couplings within 120’ of equipment crossings, evaluate the need to reinforce any acetylene welds that may fall within the equipment crossing boundaries.
  - Equipment crossings may not be approved in areas with less than 36” of cover. Encroachment, excavation and backfill issues will be handled per PEPL SOP’s.
  - Enforce equipment crossing procedures and maintain the crossings.



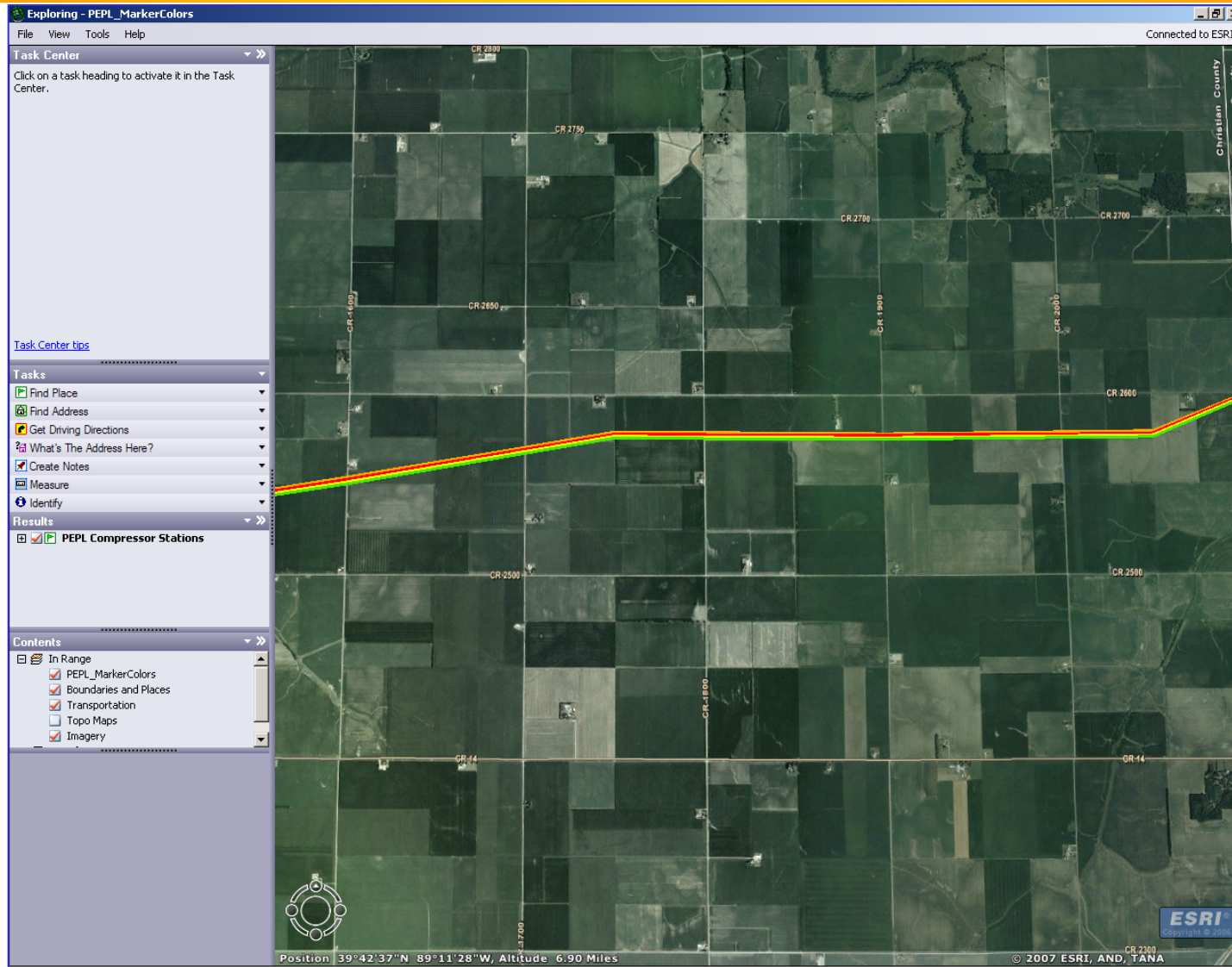


# *Lessons Learned*

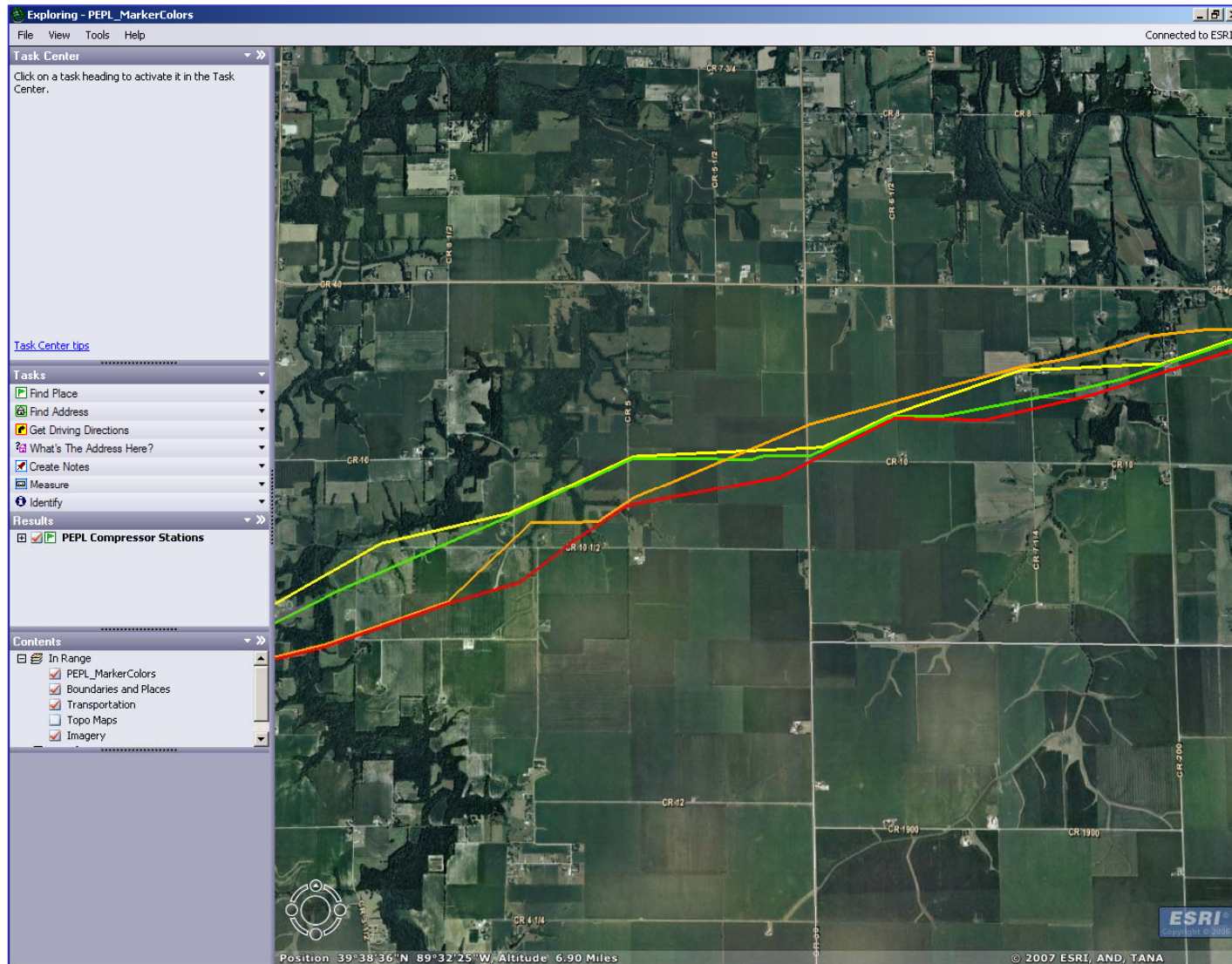
## *REX Pipeline Project*

- Effective, continuous communication and training is the only way to assure contract personnel remain informed, aware and engaged in the damage prevention measures. Their focus is construction production.
- Owner employees and representatives on site continuously will mitigate the possibility of damage, not guarantee it; they can't be everywhere all the time.
- Damage prevention is a shared responsibility and a key is having those that can actually cause damage be a part of the solution, i.e. the constructors must be a stakeholder including those operating the heavy equipment.
- Pressures to produce or get past a difficult situation can have unintended and devastating consequences; stick to the plan and procedures no matter what.
- Incumbent owners should be intolerant of failures to adhere to agreed upon procedures. Establish a reasonable standard of performance and enforce it.
- Incumbent owners should be willing to diligently work with the encroaching party to resolve difficult scenarios. Establish mutual respect and trust.
- Don't forget about first party parallel construction i.e. these practices go for YOU when building next to YOUR OWN facilities.
- And finally.....

*Never assume that the incumbent pipeline alignment.....*



*....remains constant and always expect ....*



*the unexpected while never forgetting  
to.....*



*.....plan for the worst and be careful what  
you ask for.....*



*.....you may get exactly that.*



***Thank You***