

GIS Implementation for Production Gathering & Transmission Pipelines

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Agenda

- Corporate Highlights
- Project Background
 - Business Justification
 - Business & Technical Requirements
 - Implementation Milestones & Current Status
 - Next Steps
- Lessons Learned
- Q & A

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Corporate Highlights

- One of the world's leading energy companies
- Oxy Oil and Gas – Three upstream E&P focus areas
 - North America
 - Largest oil producer in Texas
 - Largest natural gas producer in California
 - Middle East and North Africa
 - Major producing operations in UAE (Dolphin), Qatar, Oman, Libya and Yemen
 - Latin America
 - Major producing operations in Argentina and Colombia
 - Centurion Pipeline, LP
 - Wholly owned subsidiary of Occidental Petroleum
 - ~3000 miles of west Texas crude transmission lines

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Oxy's GIS Team

- Part of Oxy's Exploration and Production Systems group
- Centralized team located in Houston
- Responsible for implementing standard solutions and processes across the enterprise

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Gathering Systems for a Production Company

The diagram illustrates two star-like gathering systems. Each system has a central white square node connected to multiple red circular nodes. The two systems are connected by a black line that passes through an orange square node. A green diagonal line is visible in the bottom right corner.

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Gathering Systems for a Transmission Company

The diagram illustrates a hierarchical gathering system. It features several star-like structures (white squares connected to red circles) on the left, which are connected to a main black line. This main line branches out to several orange square nodes. A green diagonal line is visible in the bottom right corner.

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Project Background

- Project initiated by
 - Permian Business Unit (production)
 - Centurion Pipeline (transmission)

User-base

- Field Personnel
- Maintenance
- Construction
- Corrosion Techs
- Regulatory
- Public Education
- Land Administration (Right-of-Way)
- One Call
- HES

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Business Drivers

- Mature infrastructure
- Knowledge Management
- Regulations & One-Call
- Acquisitions



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Business Requirements

- Universal access to the data
- Output to a map
- Data entry mechanism
- GPS data upload
- Flexible reports



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Technical Requirements

- PODS (Pipeline Open Data Standard) compliant database
- Compatible with current ESRI and Oracle technology
- Scalable solution for large or small datasets
- Ability to extend capabilities beyond data storage and display
- Ability to integrate existing spatial datasets



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Technical Requirements – cont.

- Ability to integrate existing spatial datasets
- Direct read of Microstation, Autocad, ESRI and GPS formatted data.
- Accessible to non-technical users
- Supported in Citrix
- Ability to link to digital documents



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Implementation Milestones

- Vendor Selection
- Establishing standards
 - Line definitions
 - Line naming
 - Code lists
- Determine scope of data conversion
- Choose a standard GPS collection device



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Current Status

- Continued data conversion (on-going)
- Houston and field office users are able to utilize the following applications: Intrepid, ArcMap, AutoCAD, TrueView, Citrix, FileNet, & Adobe Writer
- Completed first One-Call implementation integrated with GIS



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Next Steps

- Texas Pipeline Mapping System
 - T4 Permitting
- Block Drawings/Truck Books
- Additional One-Call implementations
- Storage for risk analysis and integrity management data



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Lessons Learned

- Business rules are a necessity
- Minimize up-front software customizations
- Data conversion will require more time and more people than you predict
- Business sponsors must stay involved
- IT and Business cooperation is essential

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Q & A

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