# Optimizing Information Management To Connect People To Information and Expertise

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Integrating Knowledge & Information Management Summit for E&P
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MARATHON

## Marathon Statistics at a Glance

- Fortune 50 company
- Established in 1887
- 4th largest US integrated oil & gas company
- 5th largest US refiner
- Market Cap: ~ $20 billion
- 2009 Revenues: $54 billion
- 2009 Net income: $1.46 billion
- 2009 Net Oil & Gas Production Sold: 407,000 BOE/D
- 2009 Net Synthetic Crude Oil Sold: 32,000 BPD
- 2009 Net Proved Reserves: 1.679 billion barrels
- Employees: ~30,000
- Headquartered in Houston, Texas

## Marathon's Business Segments

*Integrated Gas*

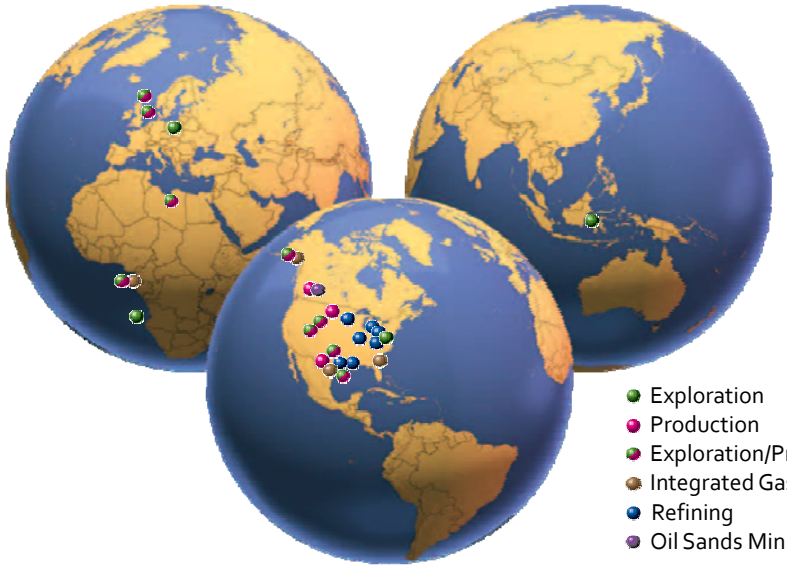
*Exploration & Production*

*Refining, Marketing & Transportation*

*Oil Sands Mining*

MARATHON 3

## Global Operations

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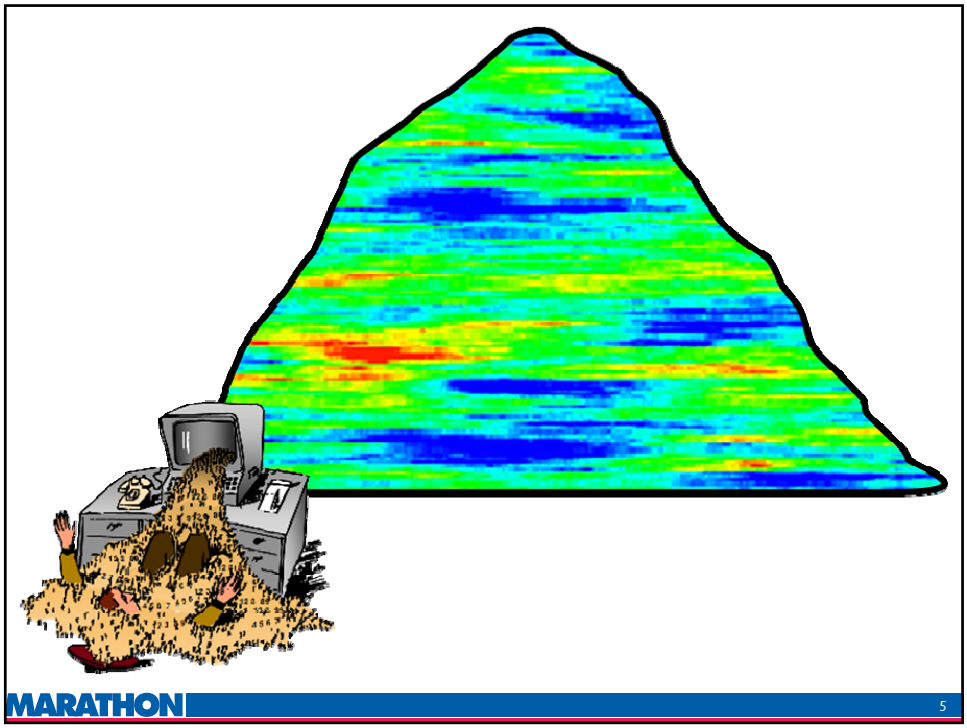

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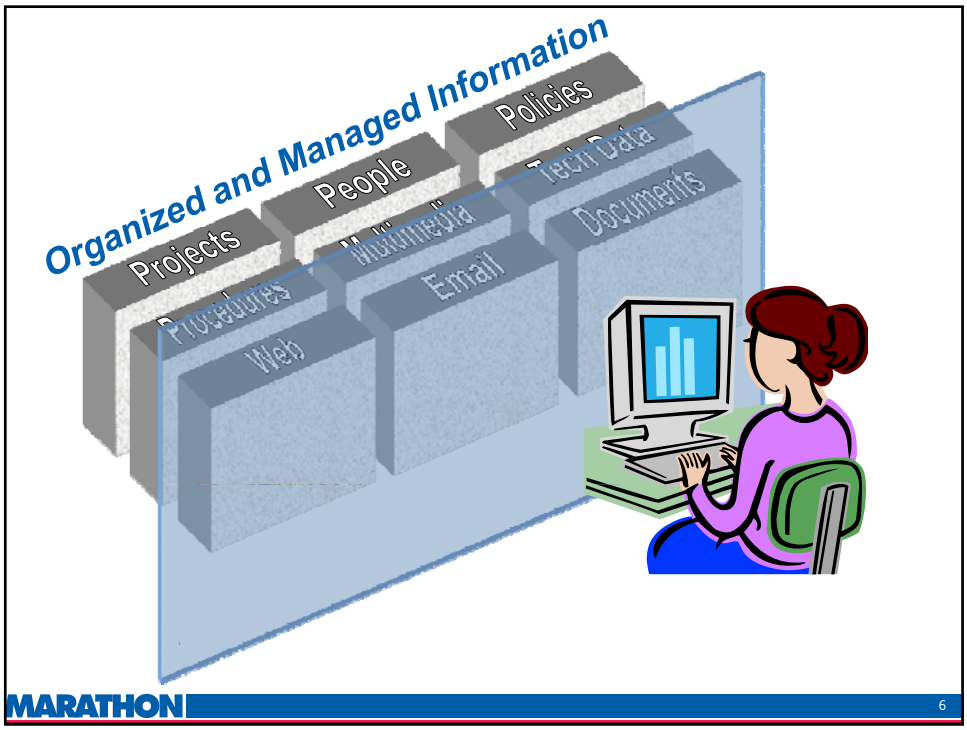


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## Knowledge & Information Management Scope

- **Information Channels**
  - Electronic & Physical
  - Email
  - Instant Message
  - Web (Intranet & Internet)
    - *Collaboration & Social Media: blog, wiki, discussion, …*
    - *Content Types: video, webcast, podcast, RSS, …*
  - File Shares / PCs … *"unstructured"*
  - Applications … *"structured"*

- **Information Types**
  - Policies & Standards
  - Daily Market Assessment
  - Jobber Contracts
  - Interpreted Log Curves
  - Pipe Line Operating Procedures
  - Refinery Process Safety Management Documents
  - Reserves Estimates
  - Reservoir Models
  - Trading Deals
  - People Profiles
  - Best Practices
  - Lessons Learned
  - …



## Motivation

- **Business Drivers**
  - Productivity
  - Decision Quality
  - Cycle Time
  - Cost
  - Consistency
  - Collaboration
  - …

- **Risk Mitigation**
  - Operational
  - Technical
  - Financial
  - Safety
  - Environmental
  - Regulatory
  - Legal
  - Security
  - …

## Security

- **Confidentiality, Integrity, Availability**
- **Standards**
  - NIST
    - Standards for Security Categorization of Federal Information and Information Systems, National Institute of Science and Technology, FIPS PUB 199, February 2004
  - American Petroleum Institute
    - API IT Security Forum, May 2009
- **Challenges**
  - Balancing the tension between "knowledge sharing" and "need to know"
  - Sustainability as organizations and technologies change



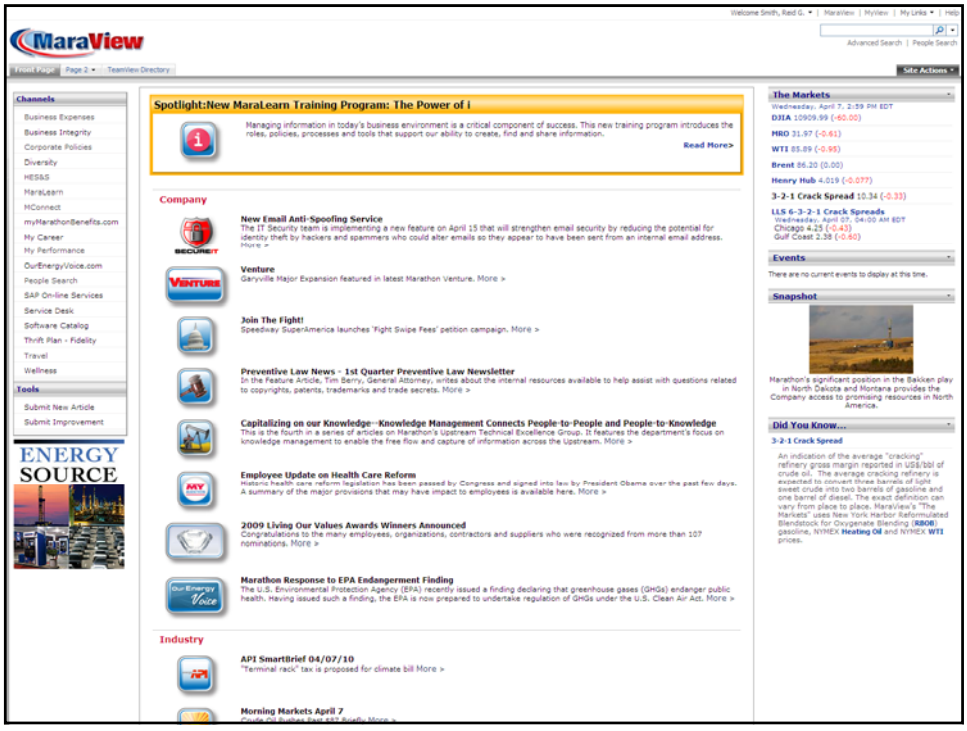
## Engaging on multiple fronts

- **Scope**
  - Policies
  - Roles & Responsibilities
  - Processes
  - Technology
  - Ongoing Support
- **Stakeholders**
  - Business
  - Law
  - HR
  - Internal Audit
  - Finance
  - Public Affairs
  - IT
  - …

## Examples of Marathon Systems

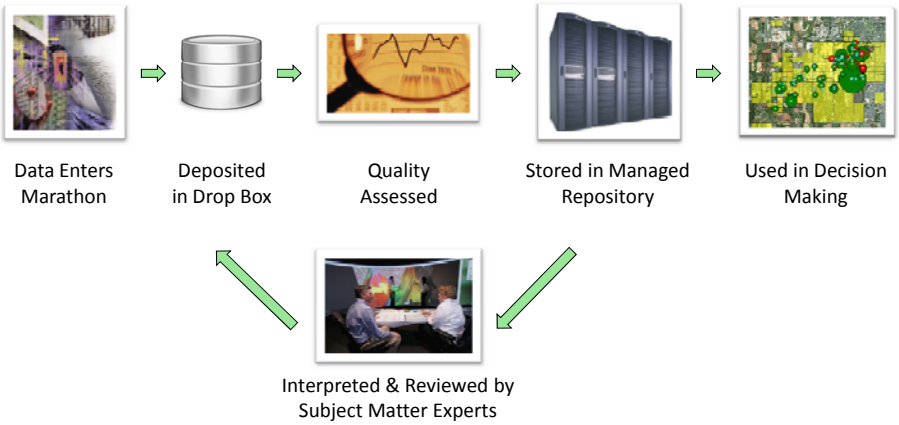
- **MaraView** – Enterprise Information & Records Management
- **ViewPoint** – Data Dashboards
- **MIDAS** – Well headers
- **PWE/Recall** – Well Logs
- **MaraGIS** – Data Mining
- **Technical Information Center** – Physical Records





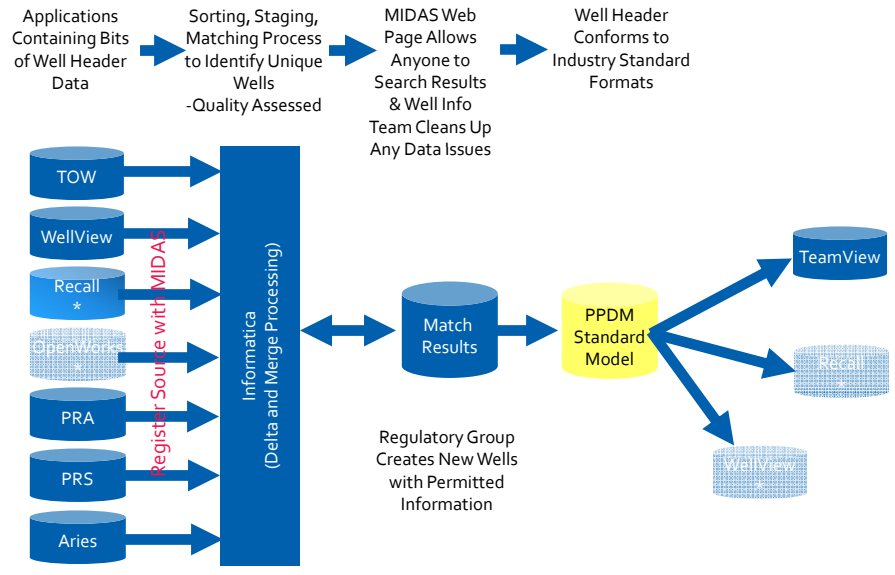
## Subsurface Well Data Workflow

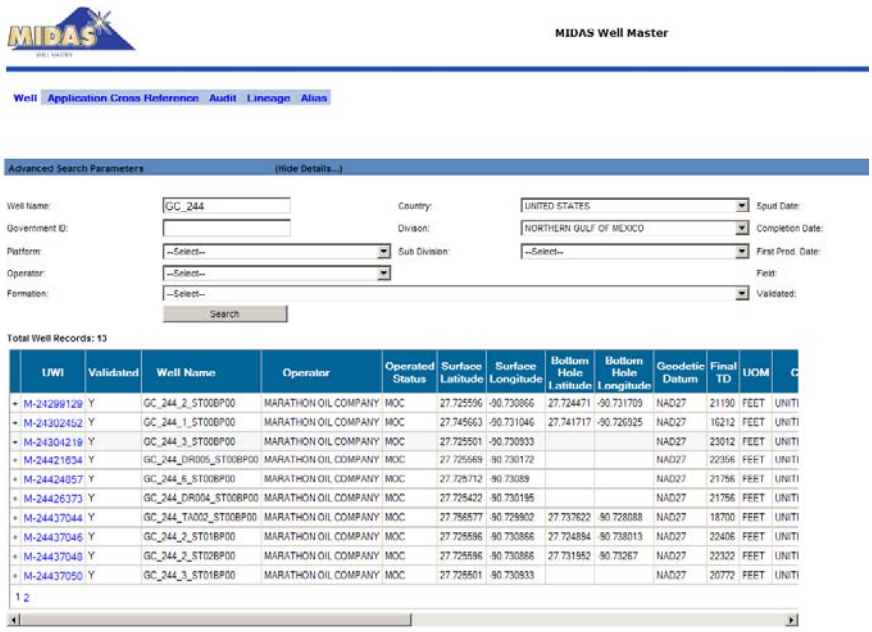
*Future State Facilitates Collaboration Between Disciplines & Within Teams*






## MIDAS Well Header Database – Workflow






| UWI | Validated | Well Name | Operator | Operated Status | Surface Latitude | Surface Longitude | Bottom Hole Latitude | Bottom Hole Longitude | Geodetic Datum | Final TD | UOM | C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M-24299129 | Y | GC_244_2_ST00BP00 | MARATHON OIL COMPANY | MOC | 27.725596 | -90.730866 | 27.724471 | -90.731709 | NAD27 | 21190 | FEET | UNITI |
| M-24302452 | Y | GC_244_1_ST00BP00 | MARATHON OIL COMPANY | MOC | 27.745663 | -90.731046 | 27.741717 | -90.726925 | NAD27 | 16212 | FEET | UNITI |
| M-24304218 | Y | GC_244_3_ST00BP00 | MARATHON OIL COMPANY | MOC | 27.725501 | -90.730933 | | | NAD27 | 23012 | FEET | UNITI |
| M-24421634 | Y | GC_244_DR005_ST00BP00 | MARATHON OIL COMPANY | MOC | 27.725569 | -90.730172 | | | NAD27 | 22356 | FEET | UNITI |
| M-24424857 | Y | GC_244_5_ST00BP00 | MARATHON OIL COMPANY | MOC | 27.725712 | -90.73089 | | | NAD27 | 21756 | FEET | UNITI |
| M-24426373 | Y | GC_244_DR004_ST00BP00 | MARATHON OIL COMPANY | MOC | 27.725422 | -90.730195 | | | NAD27 | 21756 | FEET | UNITI |
| M-24437044 | Y | GC_244_TA002_ST00BP00 | MARATHON OIL COMPANY | MOC | 27.755577 | -90.729902 | 27.737622 | -90.728088 | NAD27 | 18700 | FEET | UNITI |
| M-24437046 | Y | GC_244_2_ST01BP00 | MARATHON OIL COMPANY | MOC | 27.725596 | -90.730866 | 27.724884 | -90.738013 | NAD27 | 22406 | FEET | UNITI |
| M-24437048 | Y | GC_244_2_ST02BP00 | MARATHON OIL COMPANY | MOC | 27.725596 | -90.730866 | 27.731952 | -90.73267 | NAD27 | 22322 | FEET | UNITI |
| M-24437050 | Y | GC_244_3_ST01BP00 | MARATHON OIL COMPANY | MOC | 27.725501 | -90.730933 | | | NAD27 | 20772 | FEET | UNITI |

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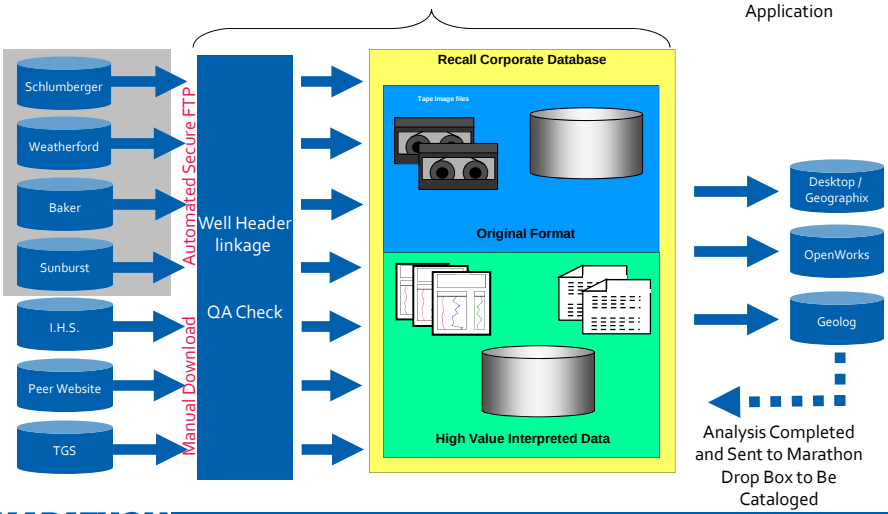
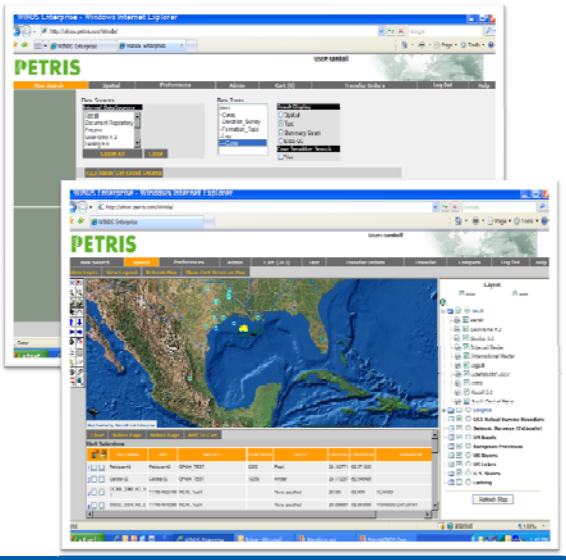
## PWE/Recall Well Log Database – Workflow

Data Delivered to Marathon Drop Box → Data is Standardized, Formatted, and Stored. Quality is assessed based on requirements of asset / project teams. → Catalog for Data and Transfer the Data to Another Application

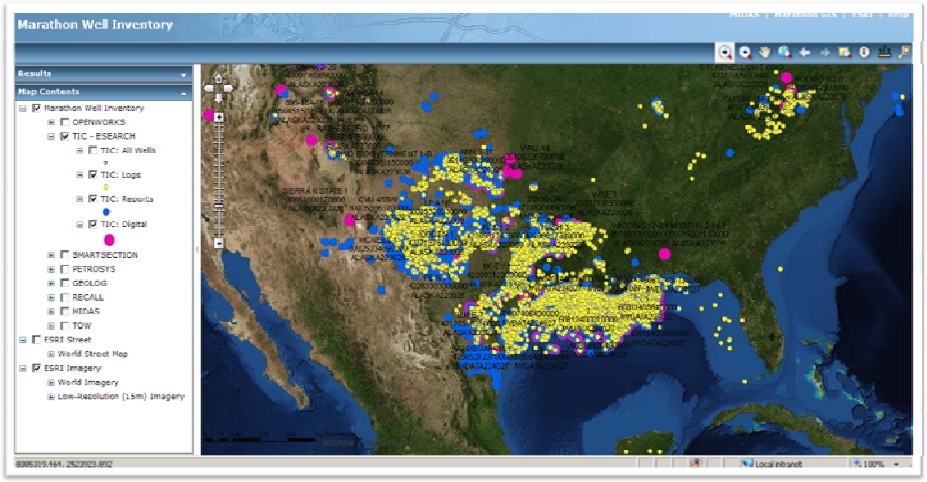


## PWE/Recall Well Log Database

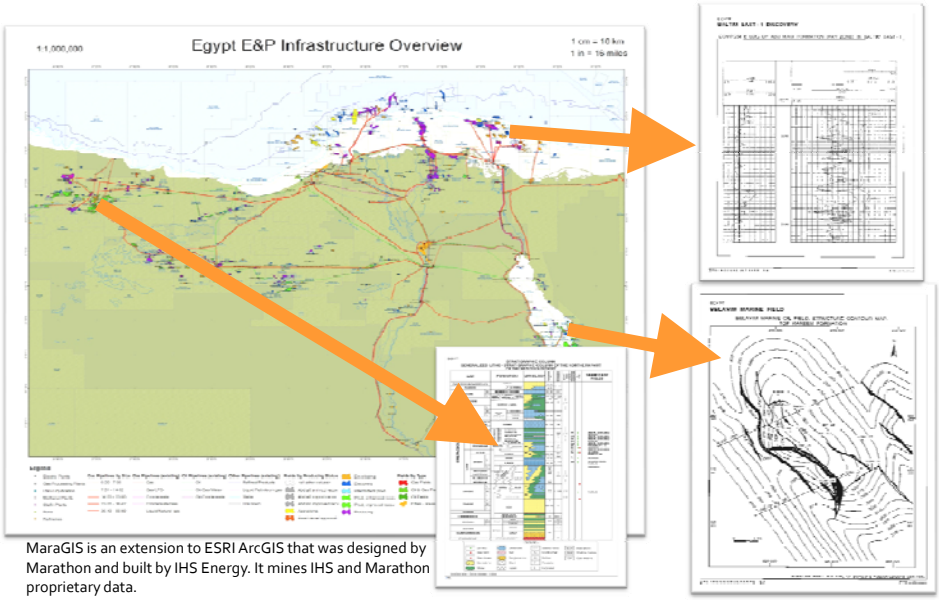
- **Digital Logs**
  - Raw
  - Composited
  - Final interpreted data sets
  - Depth Calibrated
  - Scanned
  - Thin Section Photos
- **Drilling Data**
  - Mud logs
  - Dipmeter
- **Pressure Data**
  - Wireline
  - RFT
  - MDT





## MaraGIS – Data Mining




MaraGIS is an extension to ESRI ArcGIS that was designed by Marathon and built by IHS Energy. It mines IHS and Marathon proprietary data.



## Technical Information Center

*IHS Data Management Specialists managing Marathon Physical Petrotechnical Records*

***Roles and Responsibilities***

- Design & implement effective systems for maintenance, protection & disposition of technical records
- Establish filing procedures, and determine standards for data entry
- Store and maintain technical data using established procedures and business rules
- Maintain database integrity through accurate inventories, timely data entry, retrieval and refiling
- Coordinate the transfer and retrieval of technical data to and from offsite storage
- Maintain inventories of data stored in multiple locations with multiple vendors
- Coordinate destruction of records in accordance with Marathon's records retention schedule

## State of Information Management at Marathon

- **Policies, Standards, Procedures**
  - Enterprise Records & Information Management Policy
  - Information Classification Standard
- **Roles & Responsibilities**
  - Executive Sponsors, Information Champions
  - Asset Data Stewards, TeamView Editors, Records Coordinators, IT Analysts
- **Processes**
  - Classification, Migration, Data Handling, Offsite Storage, eDiscovery
- **Technology**
  - Knowledge Connections: people to information and people to people
  - Ongoing performance improvement & system integration
  - Hold Order Management, eDiscovery
- **Ongoing Support**
  - Training, Help Desk, Compliance Readiness Assessments, Physical Records Management



## Guiding Principles

- Information must be managed as an asset
- Relevant, up-to-date and trusted information offers maximum value
- Standardized processes and technology offer significant benefits
- Embed legal and regulatory compliance in business processes
- Support spans processes and technology
- Individual ownership and accountability are necessary for success

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