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# Data Management: the root of successful, long-term pipeline integrity management

**Shaun Healy**

**Southern California Gas Company**

Technical Computing Advisor -Gas Engineering  
Operations Technology

[SHealy@semprautilities.com](mailto:SHealy@semprautilities.com)

Tel: 213-244-5113

Fax: 213-244-8242

# Impact of PHMSA Requirements on SoCalGas

**PHMSA**  
U.S. Department of Transportation  
Pipeline and Hazardous  
Materials Safety Administration

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PHMSA ensures safe and secure movement of hazardous materials to industry and consumers by all transportation modes, including the nation's pipelines.

**SAFETY**

**Latest News & Announcements**

- ▶ August 10, 2006: PHMSA Issues [Additional Safety Order to BP for North Slope Pipelines](#)
- ▶ August 7, 2006: Acting Secretary Cino Announces Gerard Will Serve as PHMSA's First Assistant Administrator and Chief Safety Officer
- ▶ August 2, 2006: PHMSA July 2006 [Notice of Hazardous Materials Regulations Enforcement](#)
- ▶ July 27, 2006: PHMSA Issues Safety Order to Tennessee Gas Pipeline Following Recent Pipeline Incident in Kentucky
- ▶ July 20, 2006: BP Exploration Directed to Complete [Testing on North Slope Pipelines](#)

**Hurricane Special Permits**

Our thoughts remain with the individuals and families affected by Hurricanes Katrina and Rita.

To learn more about PHMSA hurricane response activities, please select the following links.

- ▶ Hurricane Katrina Emergency Permits
- ▶ Hurricane Rita Emergency Permits

**PHMSA Calendar**

- ▶ August 10, 2006: PHMSA Issues [Additional Safety Order to BP for North Slope Pipelines](#)
- ▶ August 7, 2006: PHMSA July 2006 Notice of Hazardous Materials Regulations Enforcement
- ▶ August 2, 2006: Acting Secretary Cino Announces Gerard Will Serve as PHMSA's First Assistant Administrator and Chief Safety Officer
- ▶ July 27, 2006: PHMSA Issues Safety Order to Tennessee Gas Pipeline Following Recent Pipeline Incident in Kentucky

**PHMSA Focus**

Check out the new issue of PHMSA focus. It has news and information about PHMSA.

- ▶ Summer 2006



# PHMSA Requirements Drove Our Technology Acquisitions

NOTICE: This report is required by 49 CFR Part 191. Failure to report can result in a civil penalty not to exceed \$1,000 for each violation. Form Approved OMB No. 2137-0522

U.S. Department of Transportation  
Pipeline and Hazardous Materials Safety Administration

## ANNUAL REPORT FOR CALENDAR YEAR 20\_\_ GAS TRANSMISSION & GATHERING SYSTEMS

INITIAL REPORT   
SUPPLEMENTAL REPORT

**INSTRUCTIONS**

**Important:** Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the Office of Pipeline Safety Web Page at <http://ops.dot.gov>

**PART A - OPERATOR INFORMATION** DOT USE ONLY

1. NAME AND COMPANY OR ESTABLISHMENT \_\_\_\_\_

2. LOCATION OF OFFICE WHERE ADDITIONAL INFORMATION MAY BE OBTAINED  
Number & Street \_\_\_\_\_  
City & County \_\_\_\_\_  
State & Zip Code \_\_\_\_\_

3. STATE IN WHICH SYSTEM OPERATES: \_\_\_\_\_ (provide a separate report for each state in which system operates)

4. OPERATOR'S 5-DIGIT IDENTIFICATION NUMBER \_\_\_\_\_

5. HEADQUARTERS NAME & ADDRESS, IF DIFFERENT  
Number & Street \_\_\_\_\_  
City & County \_\_\_\_\_  
State & Zip Code \_\_\_\_\_

**PART B - SYSTEM DESCRIPTION**

1. GENERAL - MILES OF PIPELINE IN THE SYSTEM

TRANSMISSION	CATHODICALLY PROTECTED	
	BARE	COATED
ONSHORE		
OFFSHORE		
GATHERING		
ONSHORE		
OFFSHORE		
SYSTEM TOTALS		

2. MILES OF PIPE BY NOMINAL SIZE

Nominal Size	Miles
1/2"	
3/4"	
1"	
1 1/2"	
2"	
3"	
4"	
6"	
8"	
10"	
12"	
14"	
16"	
18"	
20"	
24"	
30"	
36"	
42"	
48"	
60"	
72"	
84"	
96"	
108"	
120"	
144"	
168"	
192"	
216"	
240"	
288"	
336"	
384"	
432"	
480"	
576"	
672"	
768"	
864"	
960"	
1056"	
1152"	
1248"	
1344"	
1440"	
1536"	
1632"	
1728"	
1824"	
1920"	
2016"	
2112"	
2208"	
2304"	
2400"	
2496"	
2592"	
2688"	
2784"	
2880"	
2976"	
3072"	
3168"	
3264"	
3360"	
3456"	
3552"	
3648"	
3744"	
3840"	
3936"	
4032"	
4128"	
4224"	
4320"	
4416"	
4512"	
4608"	
4704"	
4800"	
4896"	
4992"	
5088"	
5184"	
5280"	
5376"	
5472"	
5568"	
5664"	
5760"	
5856"	
5952"	
6048"	
6144"	
6240"	
6336"	
6432"	
6528"	
6624"	
6720"	
6816"	
6912"	
7008"	
7104"	
7200"	
7296"	
7392"	
7488"	
7584"	
7680"	
7776"	
7872"	
7968"	
8064"	
8160"	
8256"	
8352"	
8448"	
8544"	
8640"	
8736"	
8832"	
8928"	
9024"	
9120"	
9216"	
9312"	
9408"	
9504"	
9600"	
9696"	
9792"	
9888"	
9984"	
10080"	
10176"	
10272"	
10368"	
10464"	
10560"	
10656"	
10752"	
10848"	
10944"	
11040"	
11136"	
11232"	
11328"	
11424"	
11520"	
11616"	
11712"	
11808"	
11904"	
12000"	

NOTICE: This report is required by 49 CFR Part 191. Failure to report may result in a civil penalty not to exceed \$100,000 for each violation. Form Approved OMB No. 2137-0522

U.S. Department of Transportation  
Pipeline and Hazardous Materials Safety Administration

## ANNUAL REPORT FOR CALENDAR YEAR 20\_\_ GAS DISTRIBUTION SYSTEM

INITIAL REPORT   
SUPPLEMENTAL REPORT

**PART A - OPERATOR INFORMATION** DOT USE ONLY

1. NAME OF OPERATOR \_\_\_\_\_

2. LOCATION OF OFFICE WHERE ADDITIONAL INFORMATION MAY BE OBTAINED  
Number and Street \_\_\_\_\_  
City and County \_\_\_\_\_  
State and Zip Code \_\_\_\_\_

3. OPERATOR'S 5-DIGIT IDENTIFICATION NUMBER \_\_\_\_\_

4. HEADQUARTERS NAME & ADDRESS, IF DIFFERENT  
Number and Street \_\_\_\_\_  
City and County \_\_\_\_\_  
State and Zip Code \_\_\_\_\_

5. STATE IN WHICH SYSTEM OPERATES: \_\_\_\_\_ (provide a separate report for each state in which system operates)

**PART B - SYSTEM DESCRIPTION** Report miles of main and number of services in system at end of year.

NOTICE: This report is required by 49 CFR Part 191. Failure to report can result in a civil penalty not to exceed \$25,000 for each violation. Form Approved OMB No. 2137-0522

U.S. Department of Transportation  
Pipeline and Hazardous Materials Safety Administration

## INCIDENT REPORT - GAS TRANSMISSION AND GATHERING SYSTEMS

Report Date: \_\_\_\_\_  
No. \_\_\_\_\_ (DOT Vap-594)

**INSTRUCTIONS**

**Important:** Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the Office of Pipeline Safety Web Page at <http://ops.dot.gov>

**PART A - GENERAL REPORT INFORMATION** Check one  Original Report  Supplemental Report  Final Report

**Operator Name and Address**

a. Operator's 5-digit Identification Number (when known) \_\_\_\_\_

b. If Operator does not own the pipeline, enter Owner's 5-digit Identification Number (when known) \_\_\_\_\_

c. Name of Operator \_\_\_\_\_

d. Operator street address \_\_\_\_\_

e. Operator address \_\_\_\_\_  
City, County or Parish, State and Zip Code \_\_\_\_\_

2. Time and date of the incident  
Month \_\_\_\_\_ Day \_\_\_\_\_ Year \_\_\_\_\_

3. Location of incident

a. Nearest street or road \_\_\_\_\_

b. City and County or Parish \_\_\_\_\_

c. State and Zip Code \_\_\_\_\_

d. Mile Post/Valve Station \_\_\_\_\_

e. Service Station No. \_\_\_\_\_

f. Latitude \_\_\_\_\_ Longitude \_\_\_\_\_  
(If available, see instructions for how to provide geographic location)

g. Class location description  
Onshore  Class 1  Class 2  Class 3  Class 4

5. Consequences (check and complete all that apply)

a.  Fatality Total number of people \_\_\_\_\_  
Employee: \_\_\_\_\_ General Public: \_\_\_\_\_  
Non-employee Contractors: \_\_\_\_\_

b.  Injury requiring inpatient hospitalization Total number of people \_\_\_\_\_  
Employee: \_\_\_\_\_ General Public: \_\_\_\_\_  
Non-employee Contractors: \_\_\_\_\_

c.  Property damage/loss (estimated) Total \$ \_\_\_\_\_  
Gas loss \$ \_\_\_\_\_ Operator damage \$ \_\_\_\_\_  
Public/private property damage \$ \_\_\_\_\_

d.  Release Occurred in a High Consequence Area

e.  Gas ignited - No explosion  Explosion

f.  Evacuation (general public only) \_\_\_\_\_ people

INCIDENT TYPE	PLASTIC	CAST/WROUGHT IRON	DUCTILE IRON	COPPER	OTHER	OTHER	TOTAL
COATED							
OTHER							
TOTAL							

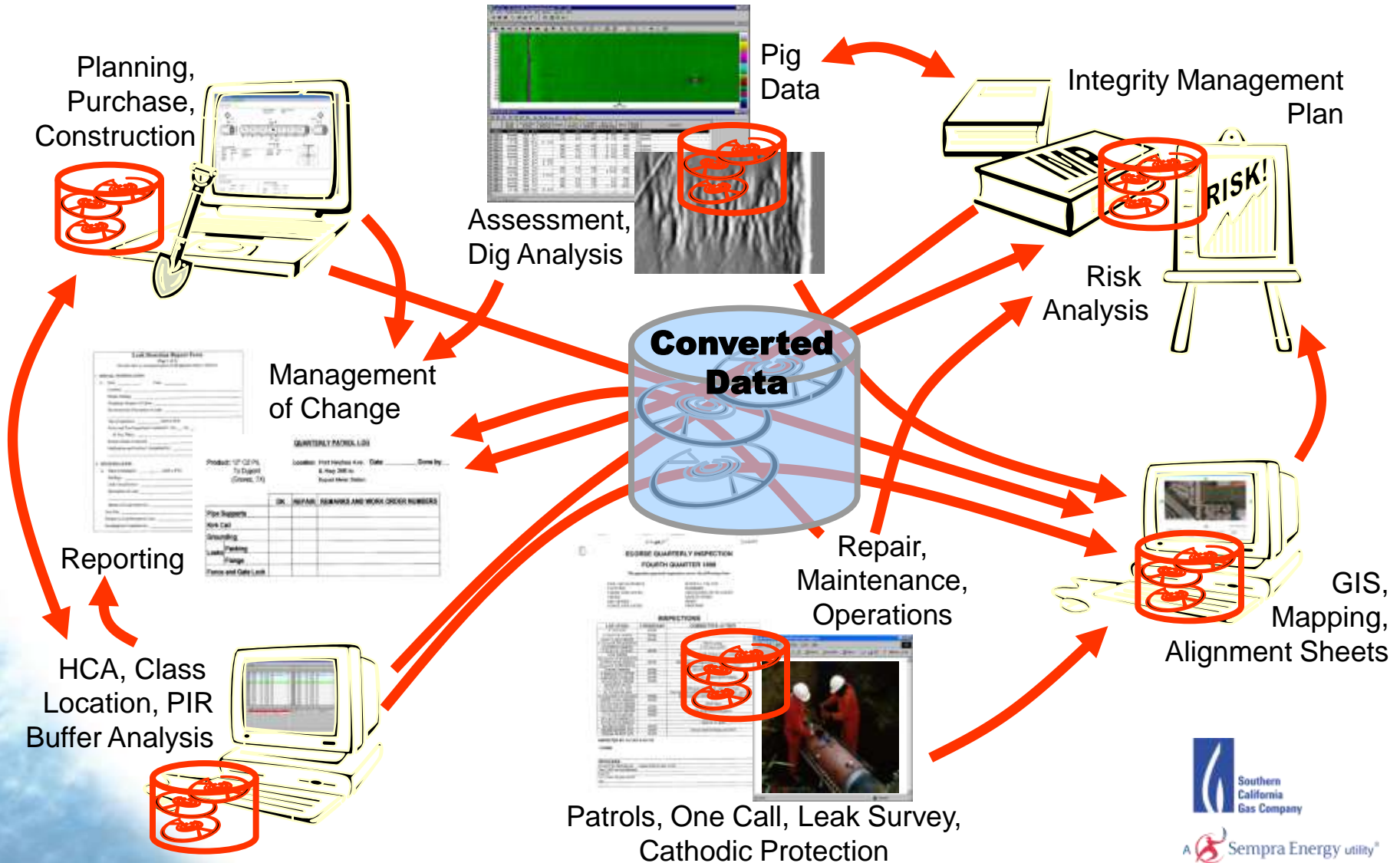
  

PIPE SIZE	OVER 2" THRU 4"	OVER 4" THRU 6"	OVER 6" THRU 12"	OVER 12"	TOTAL
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
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96					
97					
98					
99					
100					

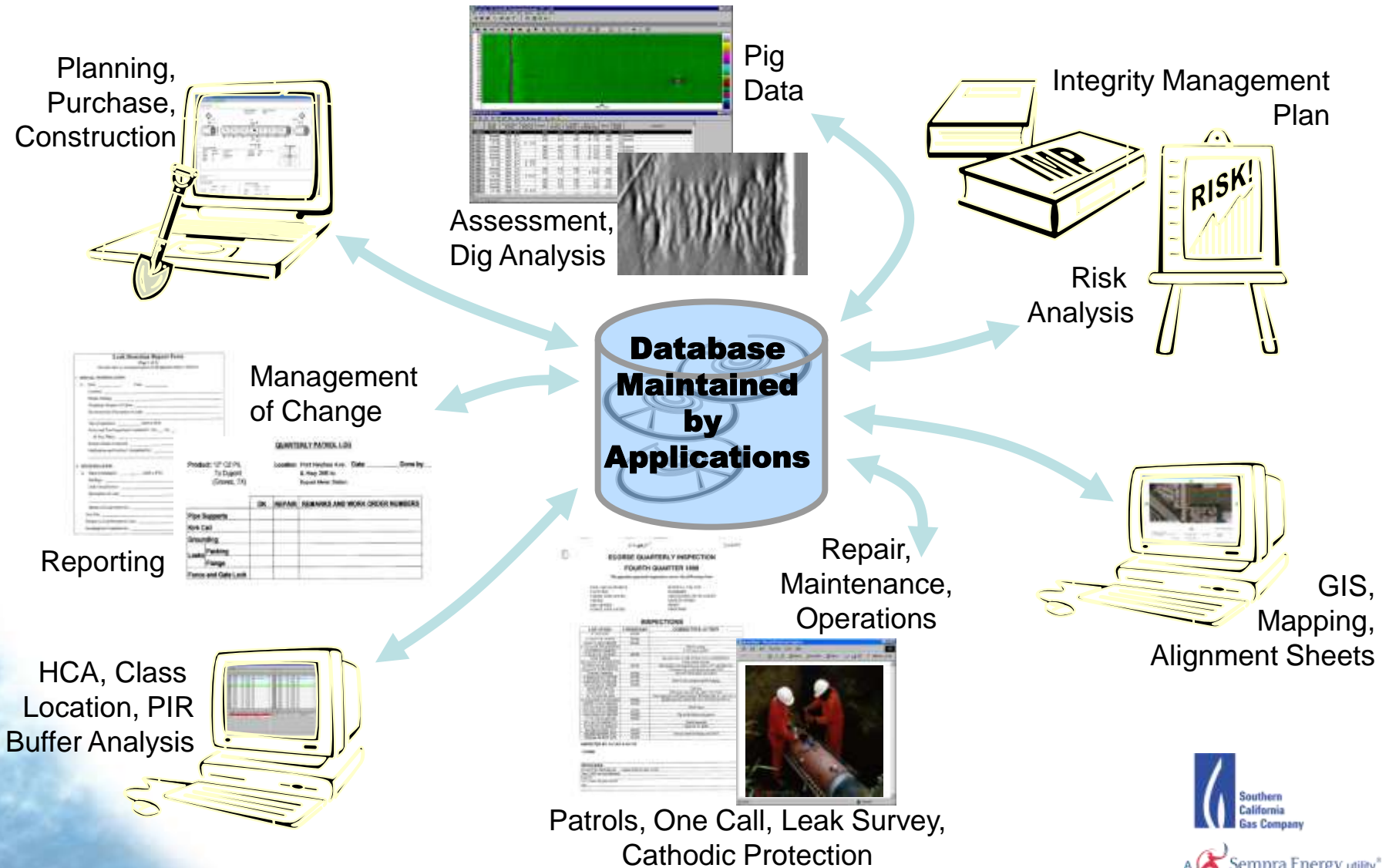




# Data Model and Data in Hand; No Applications



# Re-defining Data Management to be Application Centric



# SoCalGas Application Goals

- Use of in-house resources for specific needs and integration work
- Integration with other existing applications
- Applications supporting core business processes required by Integrity Management Program (IMP)
- Applications that can be run by end users not having extensive GIS, data integration or Information Technology (IT) experience



# Important Data Model Characteristics

- Well documented
- Accessible to outside applications
- Understood application interaction
- GIS oriented
- Flexibility to handle changes and SoCalGas specific needs
- Comprehensive base model
- Support for a comprehensive set of commercially available applications to directly support the company's business processes and technology environment





# Application Focus for Required Business Process Support

- Spatial editing environment supporting linear reference model, equation points, stationing calibration, automated event handling, event modification, etc.
- Field inspection automation
- Class location and HCA analysis
- Survey data loading and analysis
- Continual data improvement
- Automated sheet generation
- Risk modeling and scoring
- Regulatory reporting
- General access



# Spatial Editing Environment

The screenshot displays the Facility Explorer 4.0 web application running in Microsoft Internet Explorer. The browser's address bar shows the URL: `http://geofields.com/dm/default.asp?geo=djfs;d&userid=C+Du`. The application interface includes a navigation menu on the left with sections for Search, Map, User, FE Module, and Corporate. The main map area shows a road network with a yellow line and a red dashed line. A 'Point Property' dialog box is open, displaying the following information:

Property	Value
Planmetric length:	69149
Back Eng Station:	69149
Forward Eng Station:	69149

The dialog box also features radio buttons for 'Calibration Point', 'Vertex', and 'Equation Point', with 'Equation Point' selected. The 'OK' and 'Cancel' buttons are visible at the bottom of the dialog. The status bar at the bottom of the application shows 'Loading complete!', 'Zoom to Scale: 6219', 'Total process time: 2 seconds', 'Projection: Cylindrical', and 'Server: -web'.



# Structure Editing to Support HCA Analysis

The screenshot shows the ArcGIS Desktop interface with the Data Editor window open over an aerial map. The Data Editor window displays a table of attributes for a selected polygon feature. The attributes are as follows:

Property	Value
OBJECTID	77639
DATECRE	
STATUS	V
SOURCE	
NUMOFU	1
COMMENTS	
DME	FALSE
BOS	TRUE
CM	FALSE
B4S	FALSE
UseRate	BLD-HOL
SHAPE	+POLYGON+
SHAPE_A	0.00
SHAPE_LEN	0.00

The map shows several buildings outlined in purple, with one building in the center-left highlighted in cyan. A green line is drawn across the map, likely representing a pipeline or boundary. The interface includes a Data Manager on the left, a Data Editor toolbar at the top, and a Project Manager at the bottom.

# Class Location and HCA Analysis

GeoFields RiskFrame HCA

File View Tools Help

Current Working Project: Amy\_1550

RiskFrame HCA

Data Manager

Project Manager

Results Manager

Results

Identified Sites Results

Dwellings Results

### View Results

**Layers**

- Point Structures
- HCA Segments
- Pipeline
- Polygon Structures
- HCA Segment PEZ
- Pipeline Footprint
- Geospatial**
  - Major Highways
  - Major Roads
  - Major Street
  - Minor Street
  - Railroad (GDT)
  - County Boundary
  - Water Feature
  - Water Feature
  - Landmark Boundary (GDT)
  - Airport Boundary (GDT)
  - Park (GDT)
  - CBES
  - Aerial Imagery
  - California
  - Bavation California
  - Land

**Summary Results**

EVENT_ID	PIPELINE_ID	BEGEN	ENDENGSTA	BEGCUMSTA	ENDCUMSTA	LENGTH_FEET	TYPE	PROCESS_ID
1106604	970	0	12009	0	12009	12009	Identified Site/Dwellings Greater Than 20	10497
1106605	970	12767	102655	12767	132017	119250	Identified Site/Dwellings Greater Than 20	10497
1106606	970	114650	120035	143812	149197	5366	Identified Site/Dwellings Greater Than 20	10497

START | GeoFields RiskFrame ... | 98% | 12:11 PM

# In-Line Inspection Alignment and Loading

C:\Program Files\GeoFields\Data Alignment Application\Report.html - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address C:\Program Files\GeoFields\Data Alignment Application\Report.html

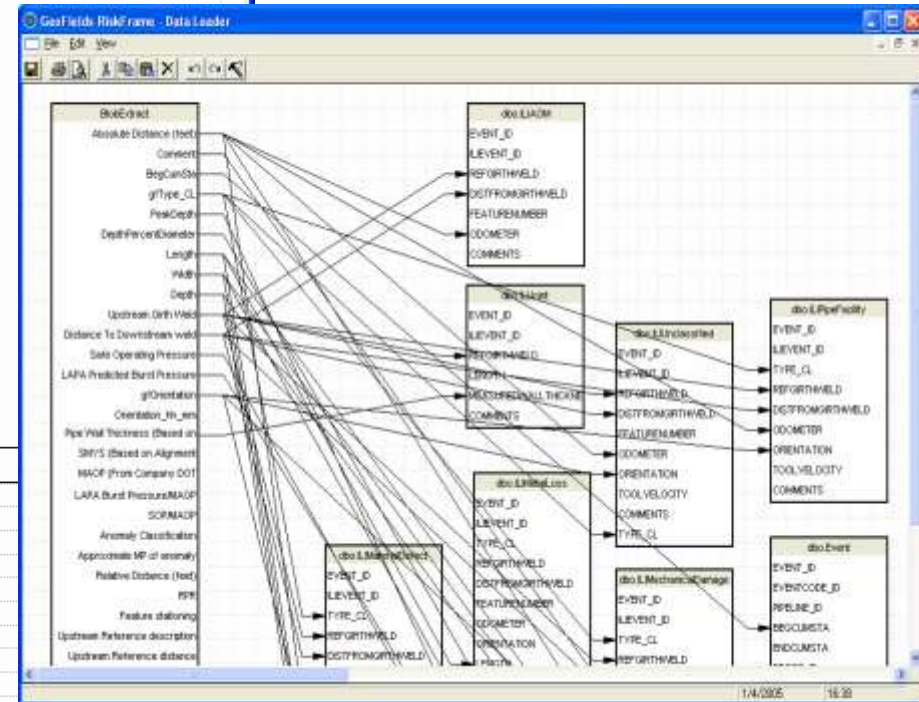
▼ **Alignment**

Number of Survey Points	47
Number of Survey Points Used	36
Number of Control Points	121
Number of Control Points Used	36
Is it a Reversal	False
Largest Interpolated Distance:	38883
Smallest Interpolated Distance	715
Mean Interpolated Distance	10392.771
Length of Pig Run	364794.2
Number of Control Points per 1000 feet	0.1
Number of Control Points per mile	0.528
Calculated Variance	83556566.519
Calculated Standard Deviation	9140.928

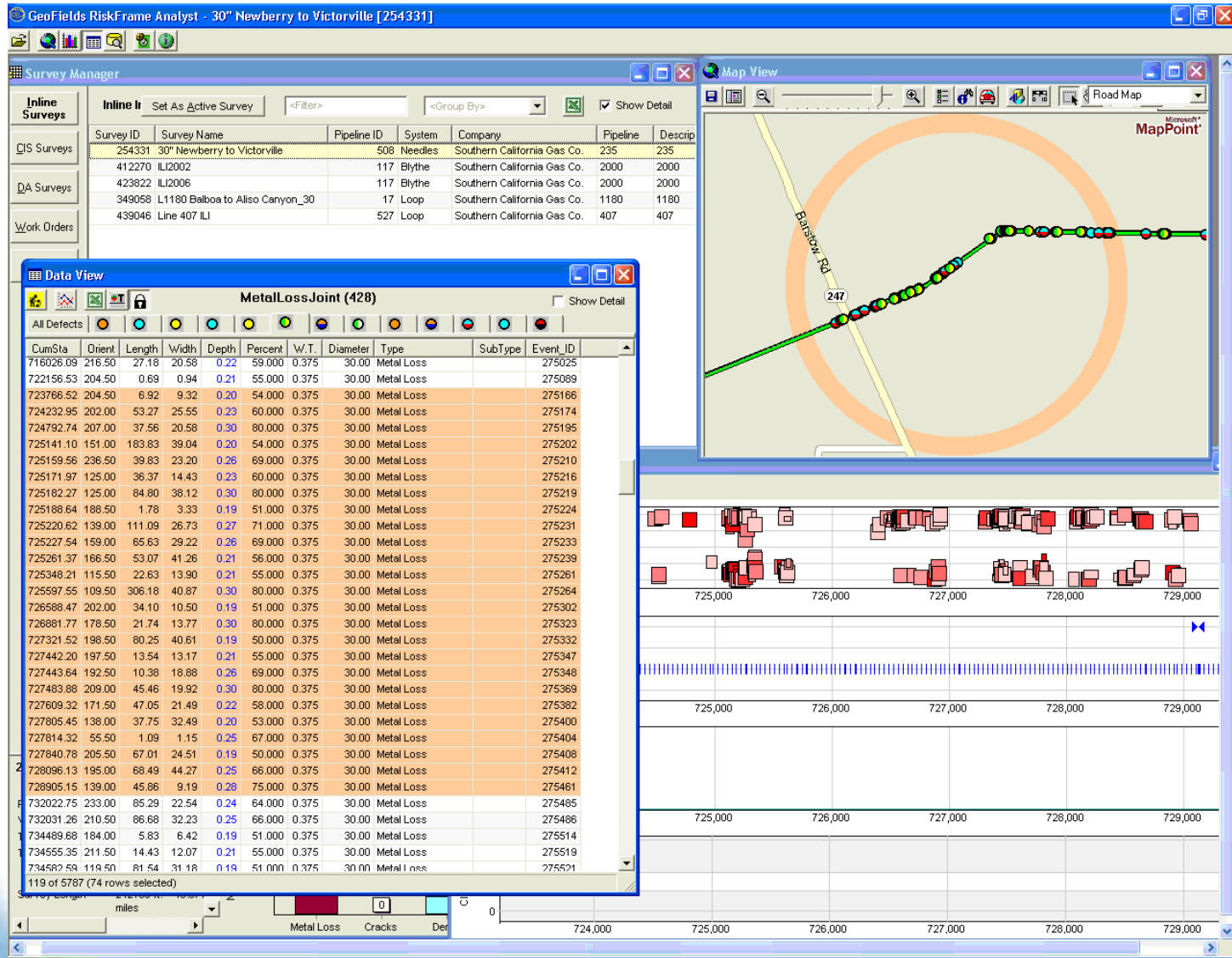
▼ **Data View**

▼ **Aligned View**

Done My Computer



# In-Line Inspection (ILI) Survey Analysis



# Continual Data Improvement (In-house Feature Studies)

Microsoft Excel - L-307 - MASTER.xls

File Edit View Insert Format Tools Data Window Help

Type a question for help

Aral 12 B I

Reply with Changes... Egd Review...

REF	STATION FROM	STATION TO	ADJUSTED STATION	LOCATION	FEATURE	FEATURE SIZE (in.)	COMMENTS	O.D. (in.)	WALL THICKNESS (in.)	PIPE GRADE (ft)
1				MONTEBELLO COMPRESSOR STATION			START			
2	0+00.00		0+00.00	MONTEBELLO COMPRESSOR STATION	MLV - Ball full opening	24"	STARTING POINT FOR LINE 307			
3	2+72.00		2+72.00		FCF	2"	FIRE CONTROL FITTING 3000 POUNDS			
4	2+74.00		2+74.00	BETWEEN MONTEBELLO STATION & HOWARD AV MONTEBELLO	Tie-in			24	0.375	52.000
5	2+74.00		2+74.00		Sleeve (seeding band)	24 X 12	24" X 12" 500 WELD BAND	24	0.500	50.000
6	2+76.00		2+76.00		FCF	2"	FIRE CONTROL FITTING 3000 POUNDS			
7	2+87.67		2+87.67	BETWEEN MONTEBELLO STATION & HOWARD AV MONTEBELLO	Bend - Field	15.5"	SAG (61')	24	0.375	52.000
8	2+88.48		2+88.48	BETWEEN MONTEBELLO STATION & HOWARD AV MONTEBELLO			PIPE	24	0.375	52.000
9	3+14.15		3+14.15				PIPE	24	0.375	52.000
10	3+51.65		3+51.65				PIPE	24	0.375	52.000
11	3+94.60		3+94.60	BETWEEN MONTEBELLO STATION & HOWARD AV MONTEBELLO	Bend - Field	7.5"	O B (39')	24	0.375	52.000
12	3+94.79		3+94.79				PIPE	24	0.375	52.000
13	3+96.79		3+96.79				PIPE	24	0.375	52.000
14	4+06.79		4+06.79	10' FROM CL OF HOWARD AV MONTEBELLO			PIPE	24	0.375	52.000
15	4+50.90		4+50.90	10' FROM CL OF HOWARD AV MONTEBELLO	Bend - Field	61"	S.B. / L.T. (3.18')	24	0.375	52.000
16				CL OF HOWARD & JEFFERSON BL MONTEBELLO			DEPTH LOCATION NOTE ONLY	24	0.375	52.000
17	4+52.48		4+52.48	10' FROM CL OF HOWARD AV MONTEBELLO			PIPE	24	0.375	52.000
18	4+63.98		4+63.98				PIPE	24	0.375	52.000
19	4+03.81		4+03.81				PIPE	24	0.375	52.000
20	5+07.40		5+07.40	15' FROM CL OF JEFFERSON BL MONTEBELLO	Bend - Field	59.5"	S.B. / R.T. (3.12')	24	0.375	52.000

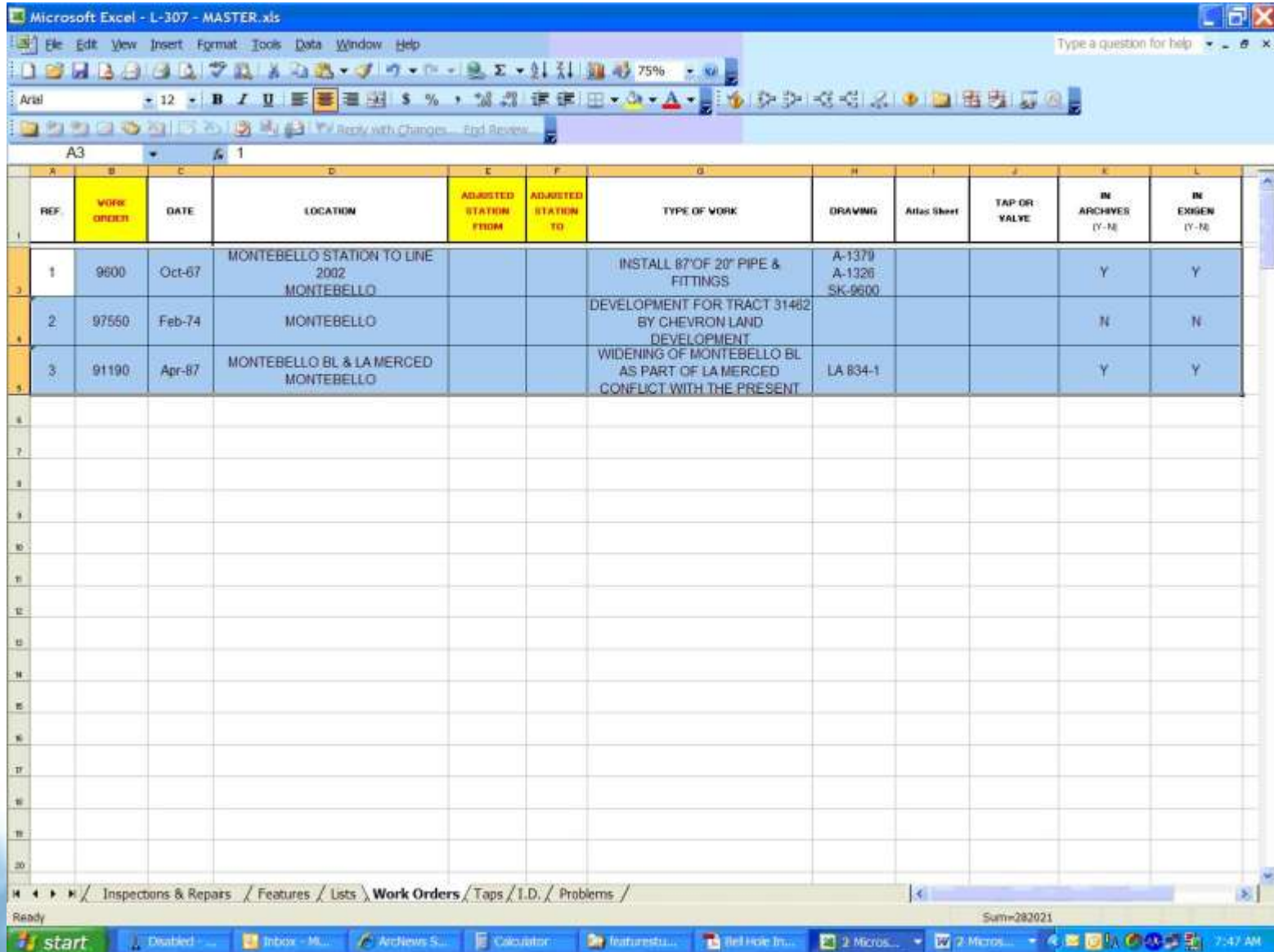
Inspections & Repairs / Features / Lists / Work Orders / Taps / I.D. / Problems /

Ready Sum=843019.105

start Disabled - ... Inbox - ML... ArcNews S... Calculator Featurestu... Bell Hole In... 2 Micros... 2 Micros... 7:41 AM



# Continual Data Improvement (In-house Feature Studies)

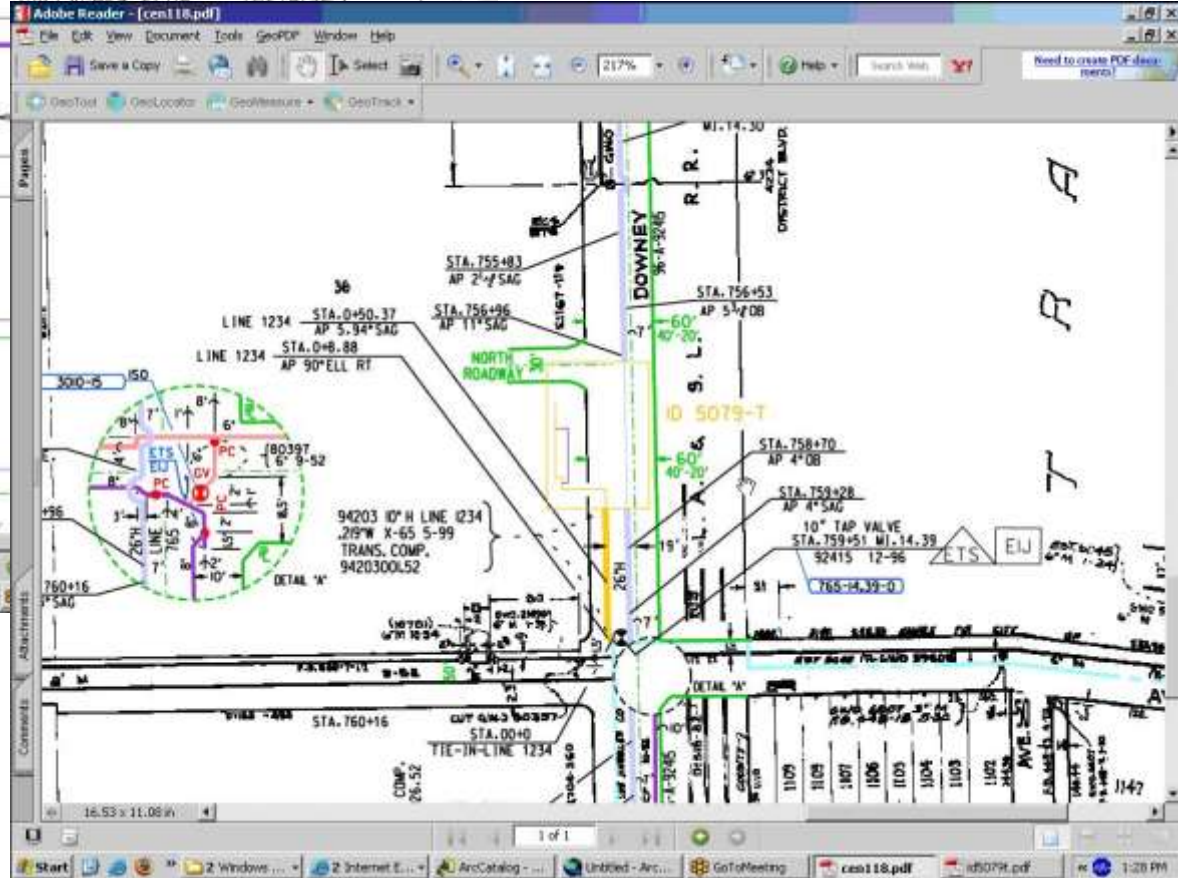
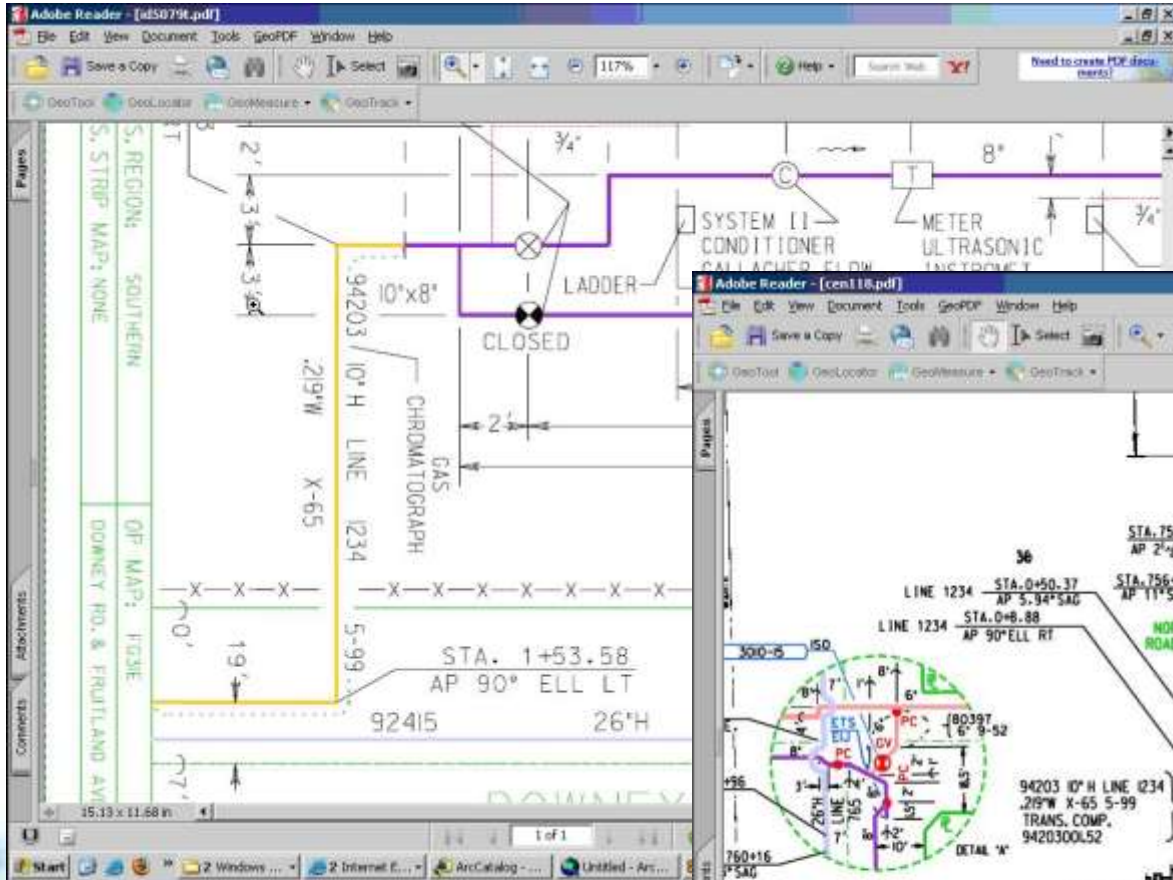


The screenshot shows a Microsoft Excel spreadsheet titled "L-307 - MASTER.xls". The spreadsheet contains a table with the following columns: REF, WORK ORDER, DATE, LOCATION, ADJUSTED STATION FROM, ADJUSTED STATION TO, TYPE OF WORK, DRAWING, Atlas Sheet, TAP OR VALVE, IN ARCHIVES (Y-N), and IN EXIST (Y-N). The table lists three work orders related to Montebello station and line.

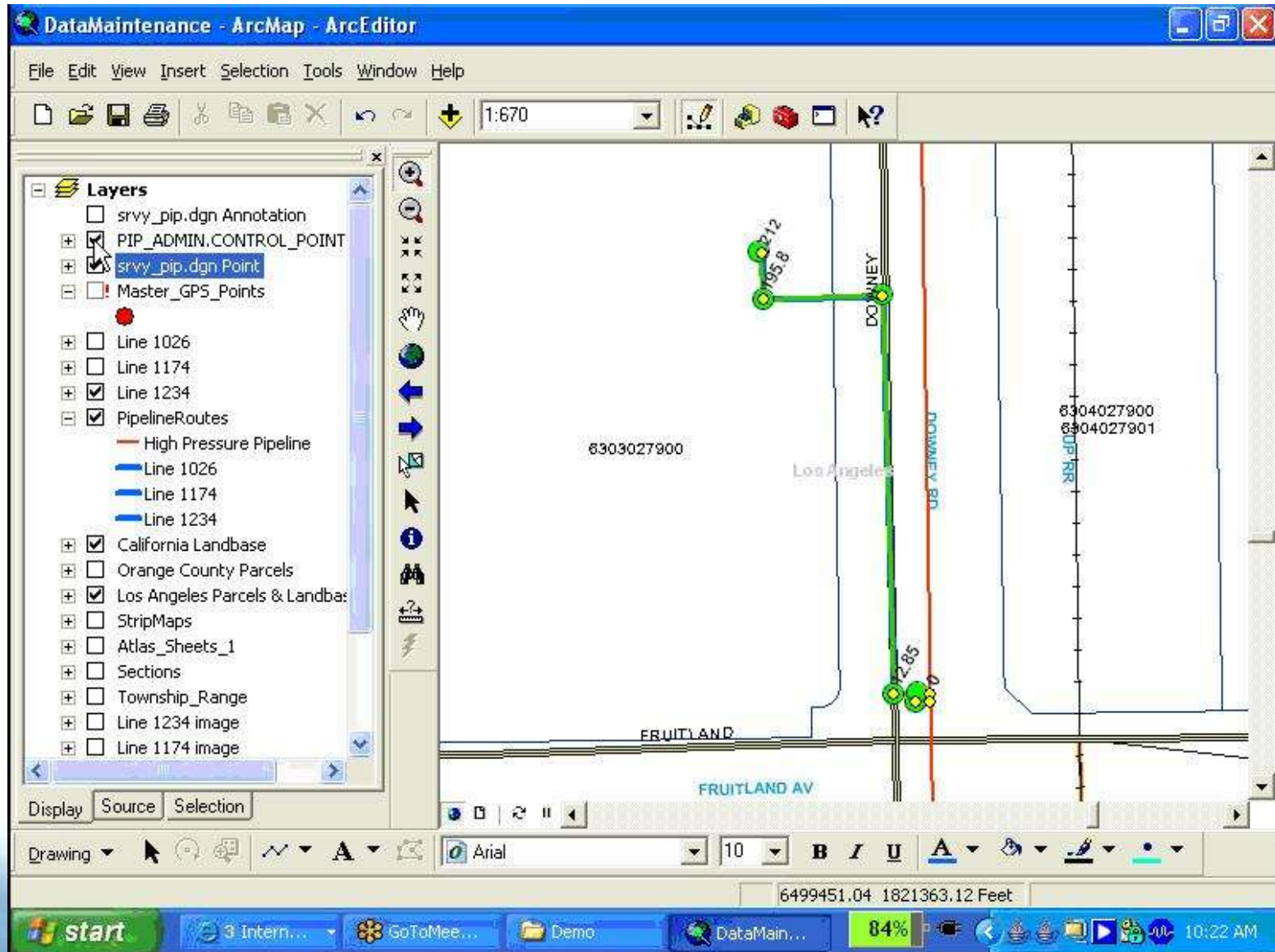
REF	WORK ORDER	DATE	LOCATION	ADJUSTED STATION FROM	ADJUSTED STATION TO	TYPE OF WORK	DRAWING	Atlas Sheet	TAP OR VALVE	IN ARCHIVES (Y-N)	IN EXIST (Y-N)
1	9600	Oct-67	MONTEBELLO STATION TO LINE 2002 MONTEBELLO			INSTALL 87' OF 20" PIPE & FITTINGS	A-1379 A-1326 SK-9600			Y	Y
2	97550	Feb-74	MONTEBELLO			DEVELOPMENT FOR TRACT 31482 BY CHEVRON LAND DEVELOPMENT				N	N
3	91190	Apr-67	MONTEBELLO BL & LA MERCED MONTEBELLO			WIDENING OF MONTEBELLO BL AS PART OF LA MERCED CONFLICT WITH THE PRESENT	LA 834-1			Y	Y

The spreadsheet interface includes a menu bar (File, Edit, View, Insert, Format, Tools, Data, Window, Help), a toolbar with various icons, and a status bar at the bottom showing the current path: "Inspectors & Repars / Features / Lists / Work Orders / Taps / I.D. / Problems /". The system tray at the bottom shows the time as 7:47 AM.

# Continual Data Improvement (Atlas Sheets & CAD Files)



# Continual Data Improvement (Spatial Accuracy Increase from In-house Sources)



# Automated Sheet Generation (HCA Maps)

The screenshot shows a software application window titled "DataFrame ASG: D:\WillsTemp\RFASG TESTS\05012007V101estV0.mxd". The interface is divided into several sections:

- Page Elements:** A sidebar on the left containing icons for various map elements: Map Band, Line Chart, Linear Band, Schematic Band, Bar Band, Column Band, XY Chart, Custom Band, and Band Group.
- Main View:** A large central area displaying a map with a grid overlay. The map shows a street layout with several buildings highlighted in red. Above and below the map are horizontal bars with data points, likely representing stationing or elevation data.
- Data Table:** A table at the bottom of the window showing data for different sheets. The table has columns for Data Conflict, Sheet ID, Band Name, Source Table, Route ID, and Stationing Range.

Data Conflict	Sheet ID	Band Name	Source Table	Route ID	Stationing Range
Overlap	8-325-001	Schematic Band	Schematic_Band_KEGEVT_KEG_EXTERNALCOATING	8	6455.65 to 6456.17
Overlap	8-325-001	Schematic Band	Schematic_Band_KEGEVT_KEG_EXTERNALCOATING	8	6689.37 to 6733.63

# Risk Modeling and Scoring

GenFields RiskFrame Modeler

File Tools View Help

Current Working Model: SME Mtg.

**RiskFrame Modeler**

Manage

Build

Model Builder

Filter Builder

Date

Reports

**Build - Home**

New Delete Add Group Add Factor Data Creation Data Classification Properties Expand All

- SME MTG.
  - CONSEQUENCE
    - IMPACT RADIUS (10)
      - RADIUS --- 3
    - IMPACT CLASS (10)
      - IMP CL --- 3
    - IMPACT STRESS (10)
      - SMYS --- 4
  - CAUSE
    - External Corrosion (1)
      - EC CP --- 6
      - EC COAT --- 6
      - EC AGE --- 8
    - Internal Corrosion (1)
      - IC PRES --- 7
      - IC AGE --- 3
    - Stress Corrosion Cracking (1)
      - SCC COMPS --- 1
      - SCC AGE --- 1
      - SCC CP --- 1
      - SCC COAT --- 1
    - Manufacturing Defects (1)
      - MD PH --- 1
      - MD ST --- 2
      - MD AGE --- 2
      - MD CP --- 1
      - MD COAT --- 1
      - MD DIAM --- 2
    - Construction Welding Fabrication (1)
      - CF GW --- 4
      - CF AGE --- 3
      - CF WB --- 3
    - Equipment (1)
      - EQ AGE --- 1
      - EQ PRES --- 1
    - Third Party Damage (3)
      - 3PD CL --- 6
      - 3PD AGE --- 5
    - Incorrect Operations (1)
      - IO AGE --- 1
      - IO PRES --- 1
    - Weather & Outside Force (1)
      - WOF AGE --- 3
      - WOF PRES --- 7

**Data Library**

New Delete Properties Preview Data

ID	Alias	Data Type	TableName
29	PIPENOMOD18	Relational Linear Event Data	GFDMSOGL_PIPENOMOD18
28	PIPE CONDITION	Relational Linear Event Data	GFDMSGVU_PIPECONDIT
27	GFDMSOGL_GEOTECH	Relational Linear Event Data	GFDMSOGL_GEOTECH
26	CATHPROTEQUV	Relational Linear Event Data	GFDMSOGL_CPEQUV
25	ERW Pre-1970	Relational Linear Event Data	GFDMSOGL_ERWPRES1970
24	SCC PIPE SUSC	Relational Linear Event Data	GFDMSGVU_SCCPIPEUSC
23	WRINKLE BEND	Relational Linear Event Data	GFDMSOGL_WRINKLEBEND
22	IC PRESENCE GRAN	Relational Linear Event Data	IC_PRES_GRAN
21	PIR DISS ENHANCE	Relational Linear Event Data	GFDMSDE_TMP_RFMPIR
20	PIR ENHANCED	Relational Linear Event Data	GFDMSOGL_RFMPIR
19	TMP_SMYS	Relational Linear Event Data	GFDMSDE_TMP_SMYS
16	GEOTECH	Relational Linear Event Data	GEOTECH
15	COMPRESSORDS20	Relational Linear Event Data	COMPSTADS
14	STRESS SDE LAYER	Relational Linear Event Data	GFDMSDE_TMP_SMYS
13	CF CRITERIA	Relational Linear Event Data	CFCRITERIA
10	GRTHWELD	Relational Linear Event Data	GFDMSGVU_PIPEJOIN
8	PIR	Relational Linear Event Data	GFDMSOGL_GASHCARAW
4	DOT CLASS AREA	Relational Linear Event Data	GFDMSGVU_DOTCLASS
3	COATING	Relational Linear Event Data	GFDMSGVU_EXTERNALCOA
1	PIPESEGMENT	Relational Linear Event Data	GFDMSGVU_PIPESEGMENT

# Reporting Environment

The screenshot displays a web-based GIS application interface. The main window shows a map with a highlighted pipeline route. A report window is open, displaying a table of pipeline data. An identify window is also open, showing details for a selected pipeline feature.

**Report for pipeline: 36-1008**

Order	ENDCINSTA	DESCRIPTION	LOC_ERROR	FOOTAGE	OPERATINGSTATUS	PRODUCT	INSTALLDATE	DIAMETER	MILEAGE	BEGCINSTA	PIPELINENAME
1	69785		NO ERROR	69785	Active	Unknown	10	12.2169	0	36-1008	

**Identify Feature: L\_PIPELINE**

Other Features at this location: Route Geometry

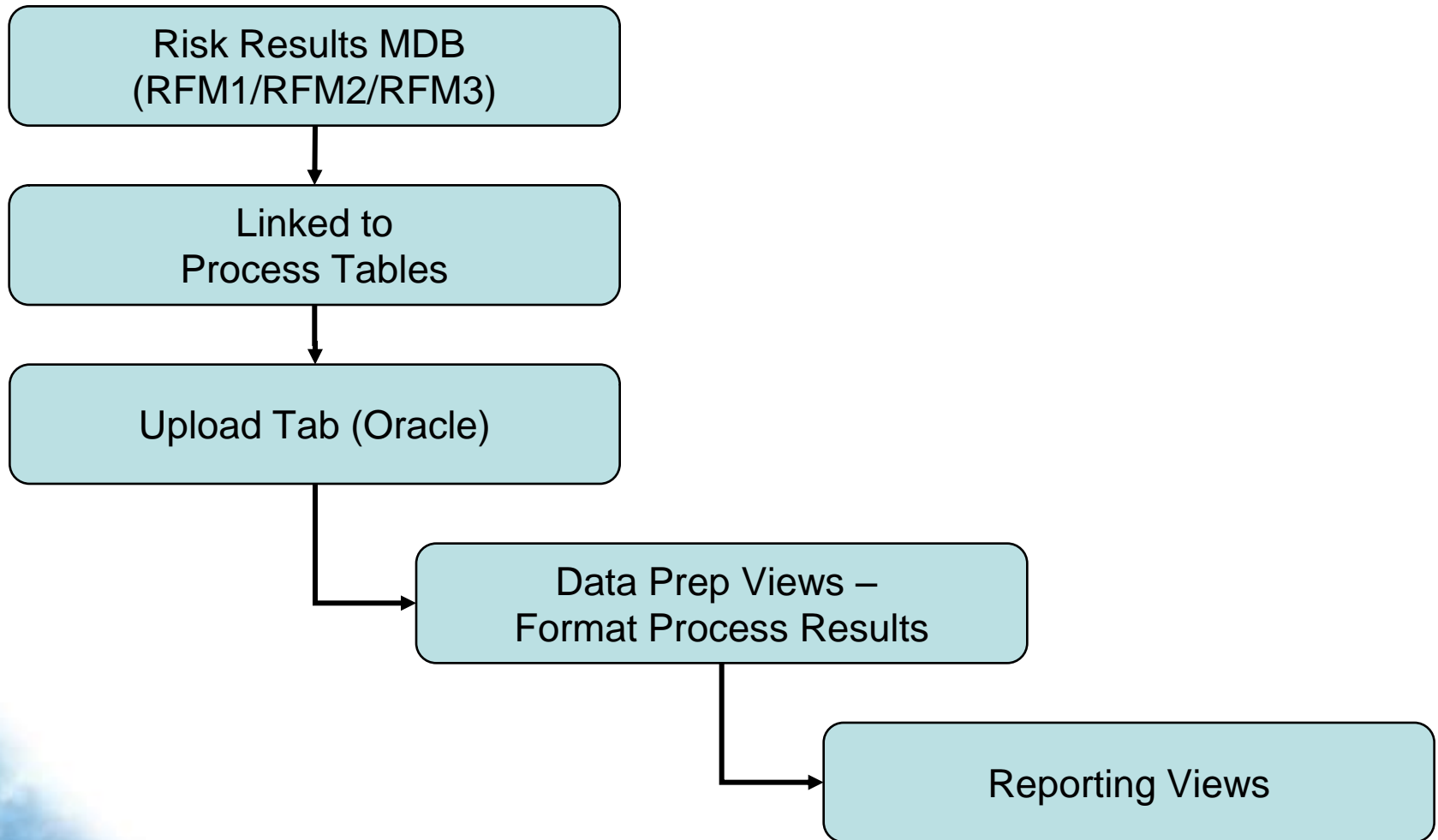
Order	ZoomTo	COMPANYNAME	OPS_ID	SYSTEMNAME	PIPELINE_ID	PIPEIDENTIFIER	PIPELINENAME	BEGCINSTA	ENDCINSTA	DIAMETER	JURISDICTION
1		SoCal	18484	COASTAL SUPPLY SYSTEM	223		36-1008	0	195911	8/10	Unknown

Map Created with ESRI ArcGIS

Loading completed. Locate done.

Applet FE started.

# Reporting Environment (In-house Reporting Needs)



# Reporting Environment (In-house Reporting Needs)

The screenshot displays a multi-windowed reporting environment. On the left, Microsoft Access is open with a 'Linked Table Manager' dialog box. The main window is TOAD for Oracle, showing a schema browser for 'GFDMM@GFDMM-PROD.CORP.SE.SEMPRA.COM'. The 'BAP' schema is selected, and the 'BAP\_MAXTOCBOOL' table is highlighted. The right pane shows the SQL Editor with a query for 'BAP\_MAXTOCBOOL'.

**Microsoft Access - [Attachment - Database (Access 2000 file format)]**

**Linked Table Manager**

Select the linked tables to be updated:

- 1\_Table\_314\_O\_PIR (Not-gsgg22CFDocuments and Settings\gsgg22\Local Settings\Temp\...
- 1\_Table\_319\_O\_CLASS (Not-gsgg22CFDocuments)
- 1\_Table\_340\_O\_STRESS (Not-gsgg22CFDocuments)
- 2\_Table\_315\_O\_EC CP (Not-gsgg22CFDocuments)
- 2\_Table\_315\_O\_EC COAT (Not-gsgg22CFDocuments)
- 2\_Table\_317\_O\_EC AGE (Not-gsgg22CFDocuments)
- 2\_Table\_318\_O\_EC AGE (Not-gsgg22CFDocuments)
- 2\_Table\_319\_O\_EC AGE (Not-gsgg22CFDocuments)
- 2\_Table\_320\_O\_EC AGE (Not-gsgg22CFDocuments)
- 2\_Table\_321\_O\_EC AGE (Not-gsgg22CFDocuments)
- 2\_Table\_322\_O\_EC AGE (Not-gsgg22CFDocuments)
- 2\_Table\_320\_O\_SCC COMPOS (Not-gsgg22CFDocuments)
- 2\_Table\_321\_O\_SCC AGE (Not-gsgg22CFDocuments)
- 2\_Table\_322\_O\_SCC CP (Not-gsgg22CFDocuments)
- 2\_Table\_323\_O\_SCC COAT (Not-gsgg22CFDocuments)
- 2\_Table\_326\_O\_EC GW
- 2\_Table\_330\_O\_EC GW
- 2\_Table\_331\_O\_EC AGE
- 2\_Table\_332\_O\_EC WB
- 2\_Table\_333\_O\_EC AGE
- 2\_Table\_334\_O\_EC AGE
- 2\_Table\_335\_O\_EC AGE
- 2\_Table\_336\_O\_EC AGE
- 2\_Table\_337\_O\_EC AGE
- 2\_Table\_338\_O\_EC AGE
- 2\_Table\_343\_O\_EC AGE

**TOAD for Oracle - [GFDMM@GFDMM-PROD.CORP.SE.SEMPRA.COM - Schema Browser (GFDMM.BAP\_MAXTOCBOOL)]**

GFDMM

BAP

- Tables
- Views
- Procs
- Triggers

View

- BAP\_INDTOC
- BAP\_INDTOCBOOL
- BAP\_L\_GFDMM
- BAP\_L\_GFDMSDE
- BAP\_L\_THREATID
- BAP\_MAXTOCBOOL**
- BAP\_MAXTOCSCRN
- BAP\_PIPERANK
- BAP\_R3FD
- BAP\_RCF
- BAP\_REC
- BAP\_REQ
- BAP\_RIC
- BAP\_RIO
- BAP\_RMD
- BAP\_RSOC
- BAP\_RWOF

**BAP\_MAXTOCBOOL** Created 5/24/2007 11:53:22 AM Last DDL: 6/2/2007 4:07:34 PM

Columns Script Data Grants Synonyms Deps (Used) Deps (Used by) Triggers Errors Auditing

```
31 )
32 AS
33 SELECT
34   et.hcsevent_id AS event_id, MAX (rt.risk) AS "RISK_SCORE",
35   MAX (rec.ec_threat) AS ec_score,
36   (MAX (rec.ec_threat) / 200) * 100 AS ec_pct,
37   CASE
38     WHEN MAX (rec.ec_threat) >= 1
39     THEN 'EC'
40     ELSE 'NO'
41   END "EC", MAX (ric.ic_threat) AS ic_score,
42   (MAX (ric.ic_threat) / 100) * 100 AS ic_pct,
43   CASE
44     WHEN MAX (ric.ic_threat) > 30
45     THEN 'IC'
46     ELSE 'NO'
47   END "IC", MAX (rscc.scc_threat) AS scc_score,
48   (MAX (rscc.scc_threat) / 40) * 100 AS scc_pct,
49   CASE
50     WHEN MAX (rscc.scc_threat) > 30
51     THEN 'SCC'
52     ELSE 'NO'
53   END "SCC", MAX (rmd.md_threat) AS md_score,
54   ROUND ((MAX (rmd.md_threat) / 80) * 100), 2) AS md_pct,
55   CASE
56     WHEN MAX (rmd.md_threat) > 73
57     THEN 'MD'
58     ELSE 'NO'
59   END "MD", MAX (rnf.cf_threat) AS cf_score,
60   (MAX (rnf.cf_threat) / 100) * 100 AS cf_pct
```



# General User Access

The screenshot displays the Facility Explorer 5.1 web application running in Microsoft Internet Explorer. The browser's address bar shows the URL <http://feprod.sempra.com/fe/default.asp>. The application interface features a top navigation bar with 'Main Menu', 'Layer', and 'Report' tabs. On the left side, there is a 'Users' section with a 'Logout' link and a search menu with options: 'by Layer/Feature', 'by Zip code', 'by Area code', 'by Pipeline/Station', 'by Address', 'by Lat/Long', and 'Driving Dir.'. Below the search menu are links for 'Print Map', 'Index Map', 'Map Size', and 'Background'. An 'Index Map' section includes a 'Click to Pan/Recenter' button and a small map of California. The main map area shows a detailed view of California with a network of red and blue lines representing facilities, overlaid on a road network. The map includes a scale of 1:2647000, latitude 33.8492, and longitude -115.5945. A status bar at the bottom provides technical details: 'Loading completed', 'Zoom to Scale: 2647000', 'Total process time: 3 seconds', 'Projection: Cylindrical', and 'Sensor: CDS-IMS01'. A footer note states 'Contains commands for working with the selected items.'

# Conclusions

- Application and business process focus has proven far more successful to support the IMP than data model emphasis
- Focus on **end user oriented applications** has increased user base of GIS and GIS tools
- Proof that applications and not data models lead to success of a data management strategy is emphasized as we will have moved from ISAT to PODS to APDM in less than 2 years with increased success at each junction
- Our application and business process centric data management approach proved very successful with the outstanding results from our recent PHMSA audit

