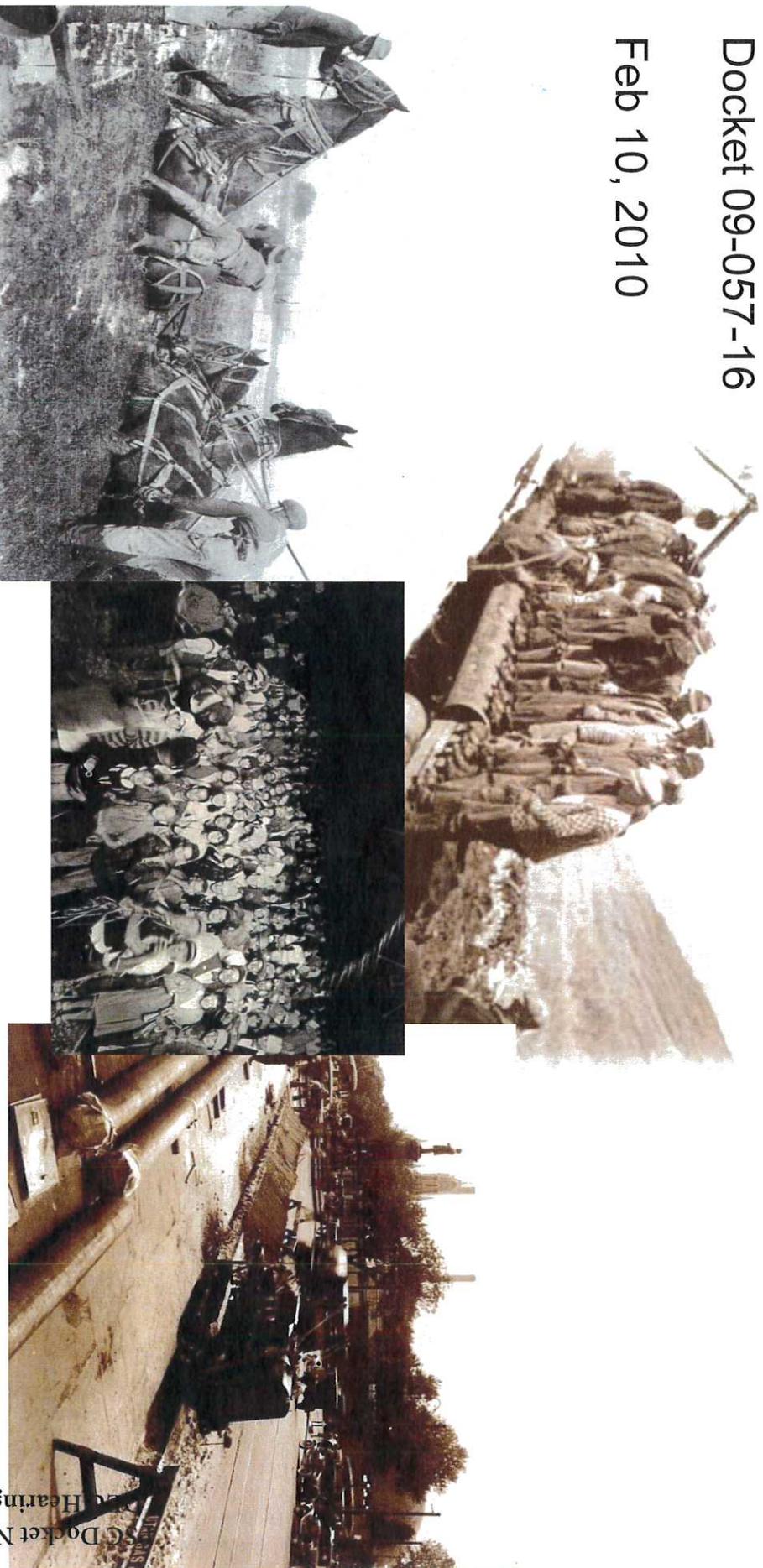


# Feeder Line Technical Conference

Docket 09-057-16

Feb 10, 2010



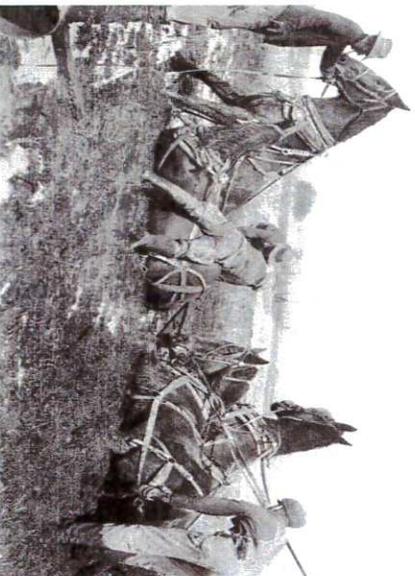
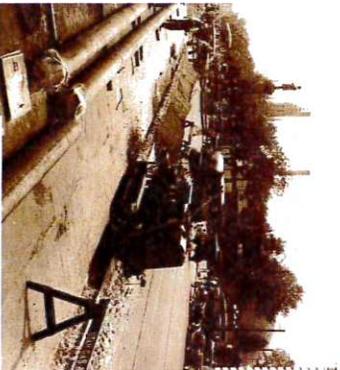
**QUESTAR**  
Gas

EXHIBIT 9  
WIT: DEJ  
DATE: 10-18-19  
ADVANCED REPORTING SOLUTIONS

SSC Docket No. 19-057-02  
and Hearing Exhibit 7

# Infrastructure Changes

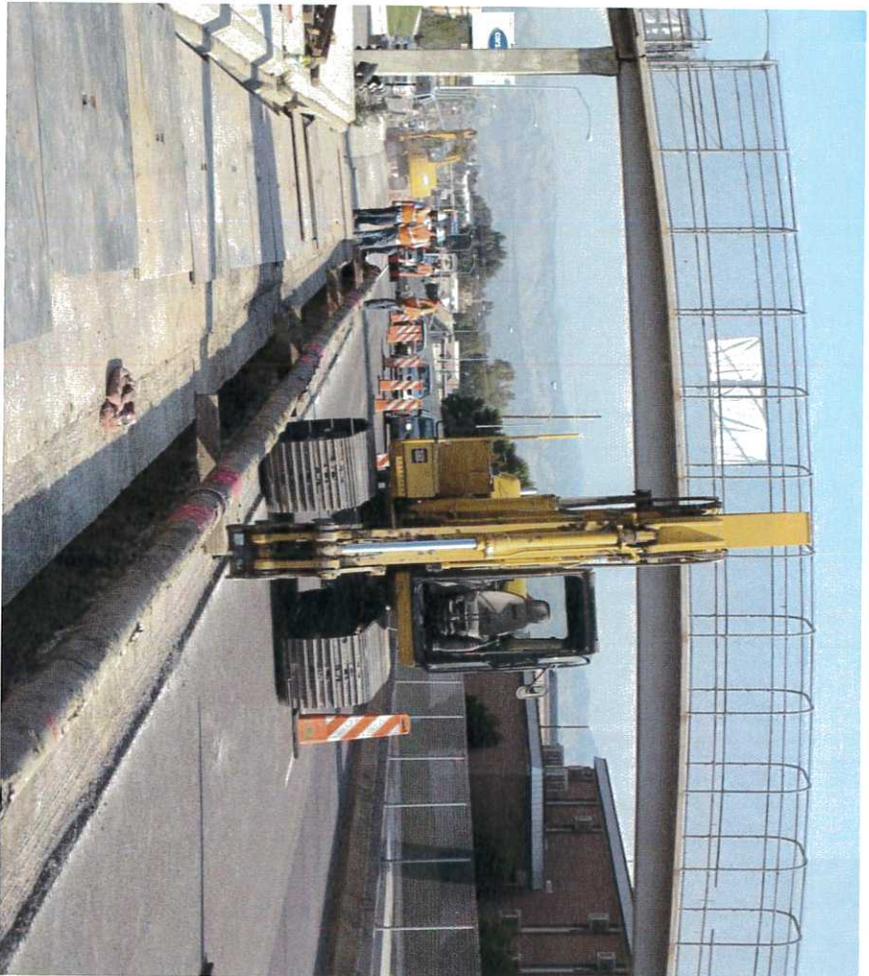
- 1929



- Today

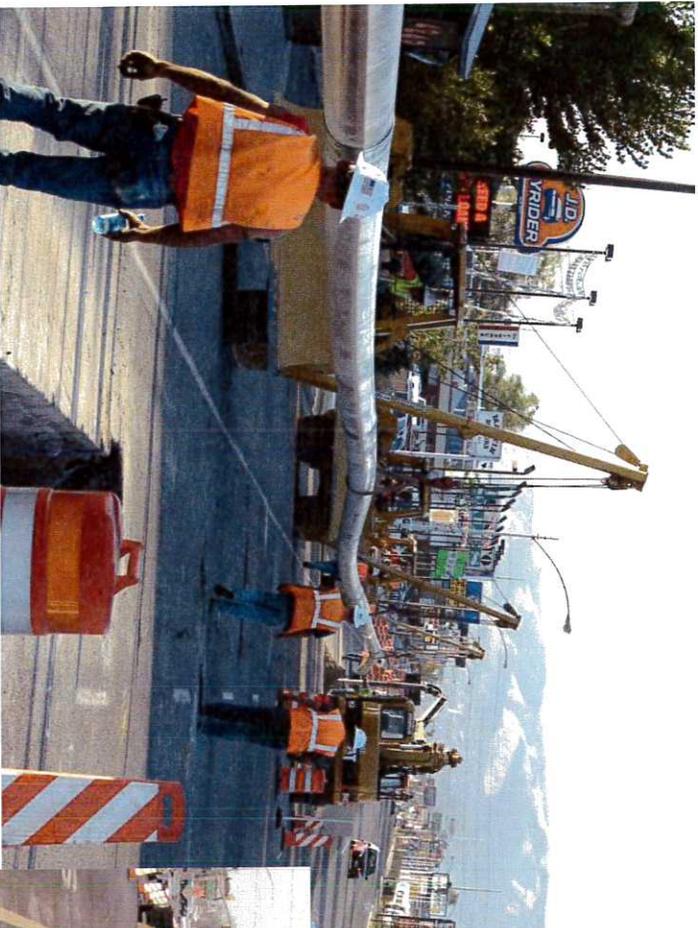


# FL 7 Replacement

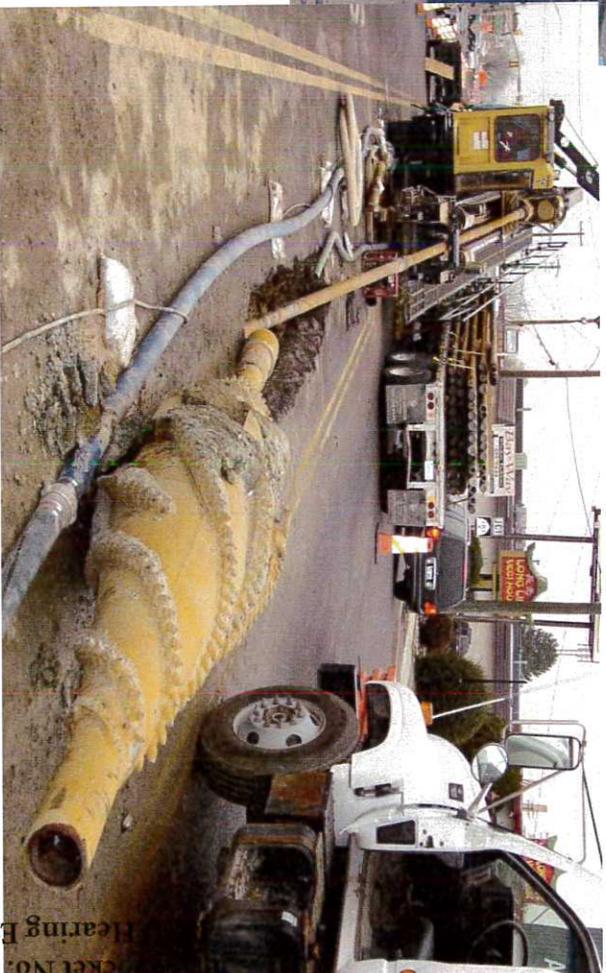


**QUESTAR**  
Gas

# Photos - Replacement Projects

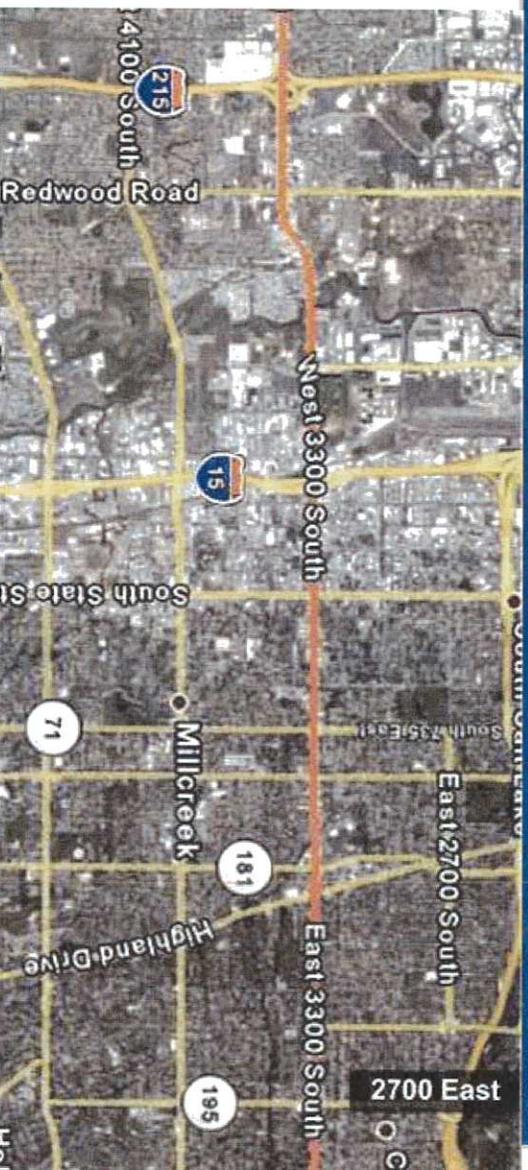


State Street

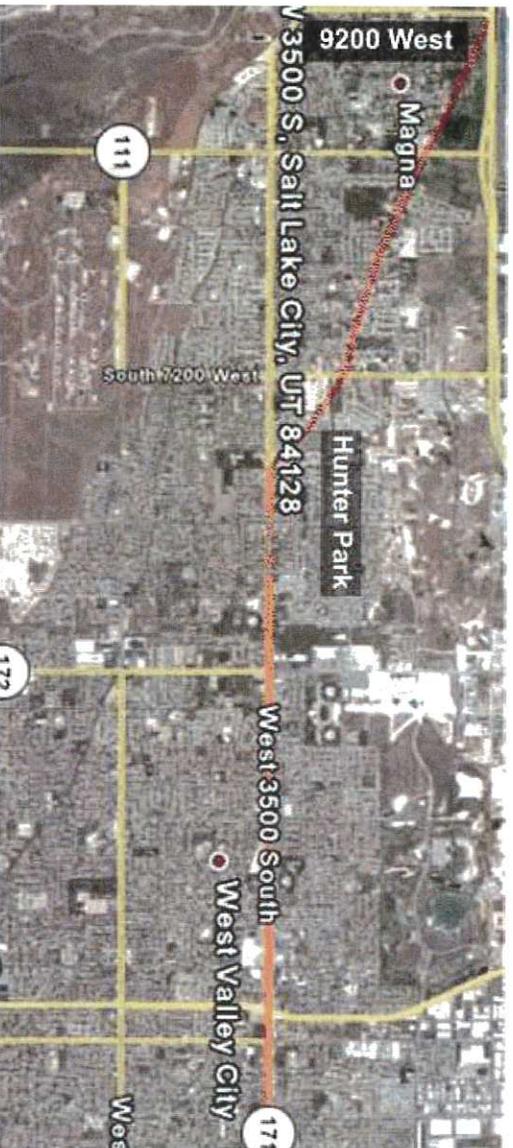


# FL 4, 5, 11 Replacement - 2008

## EAST SIDE



## WEST SIDE



# Overview

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- Review
- Cost Monitoring
- Accounting
- Tracking

# Capital Expenditures are Required

---

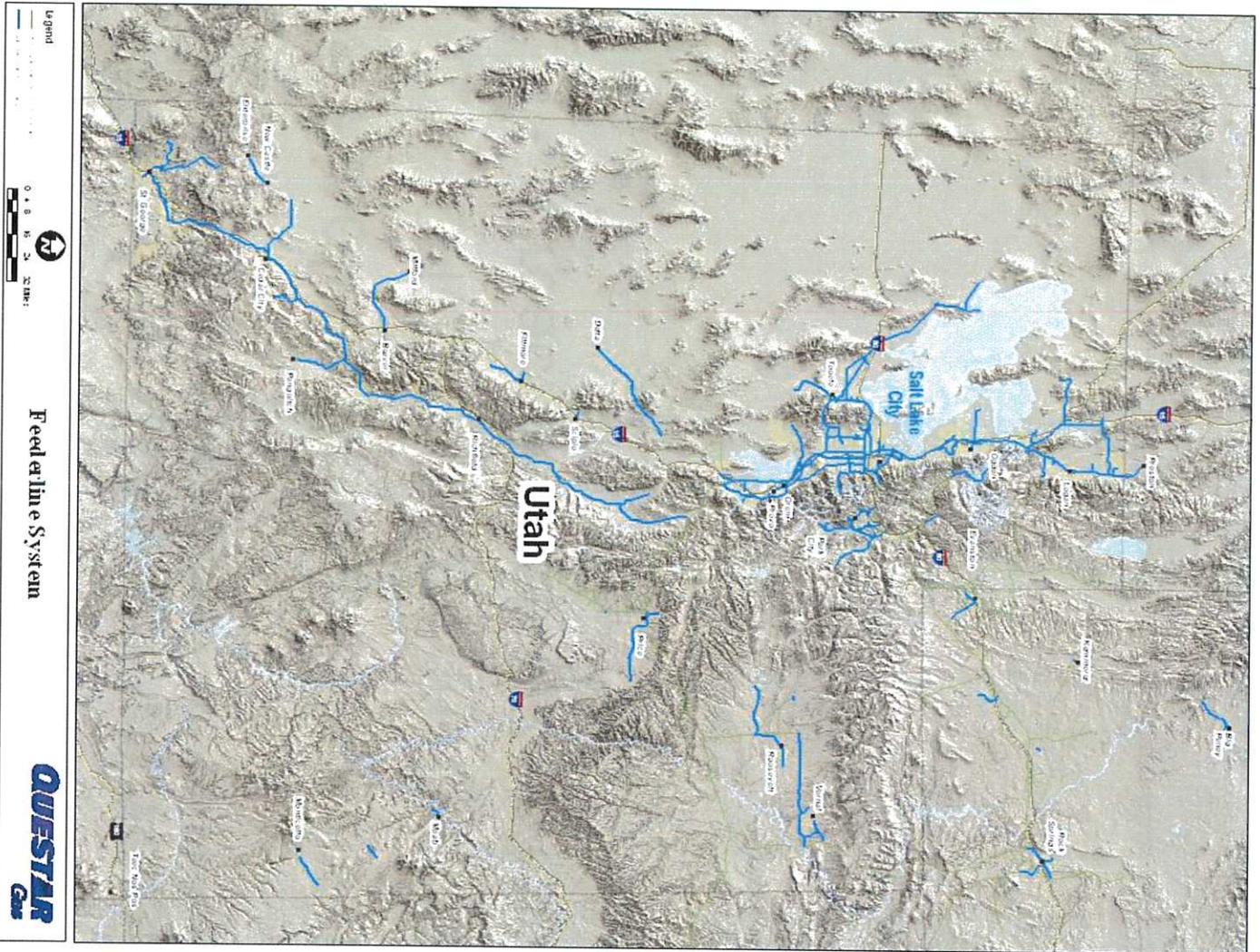
- Capital expenditures are required to maintain feeder line systems
  - Historically:
    - Eliminated cast-iron / low-pressure
    - Eliminated bare steel
  - Currently:
    - Eliminating rocket tubing
    - Eliminating risers with anodes
    - Replacing aging feeder lines

## Feeder Line System

---

- High-pressure “backbone” pipelines
  - Transport gas from gate stations to IHP system
  - Most are classified as “transmission” lines
  - Coated, cathodically-protected steel pipe
  - Sizes from 2” to 24” in diameter
  - MAOP up to 1000 psig
- Located in public streets, private rights-of-ways etc.
- Most older lines are “non-piggable”
  - New lines designed for instrumented internal inspection

# Feeder Line Map



# **Feeder Line Replacement Program**

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- Pipeline Safety Requirements
  - Driven by continuing surveillance
  - Proactive (safety can't be entirely reactive)

# **§192.613 - Continuing**

## **Surveillance**

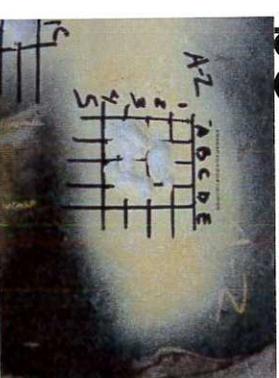
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- (a) Each operator shall have a procedure for continuing surveillance of its facilities to determine and take appropriate action concerning changes in class location, failures, leakage history, corrosion, substantial changes in cathodic protection requirements, and other unusual operating and maintenance conditions.
- (b) If a segment of pipeline is determined to be in unsatisfactory condition but no immediate hazard exists, the operator shall initiate a program to recondition or phase out the segment involved, or, if the segment cannot be reconditioned or phased out, reduce the maximum allowable operating pressure in accordance with §192.619 (a) and (b).

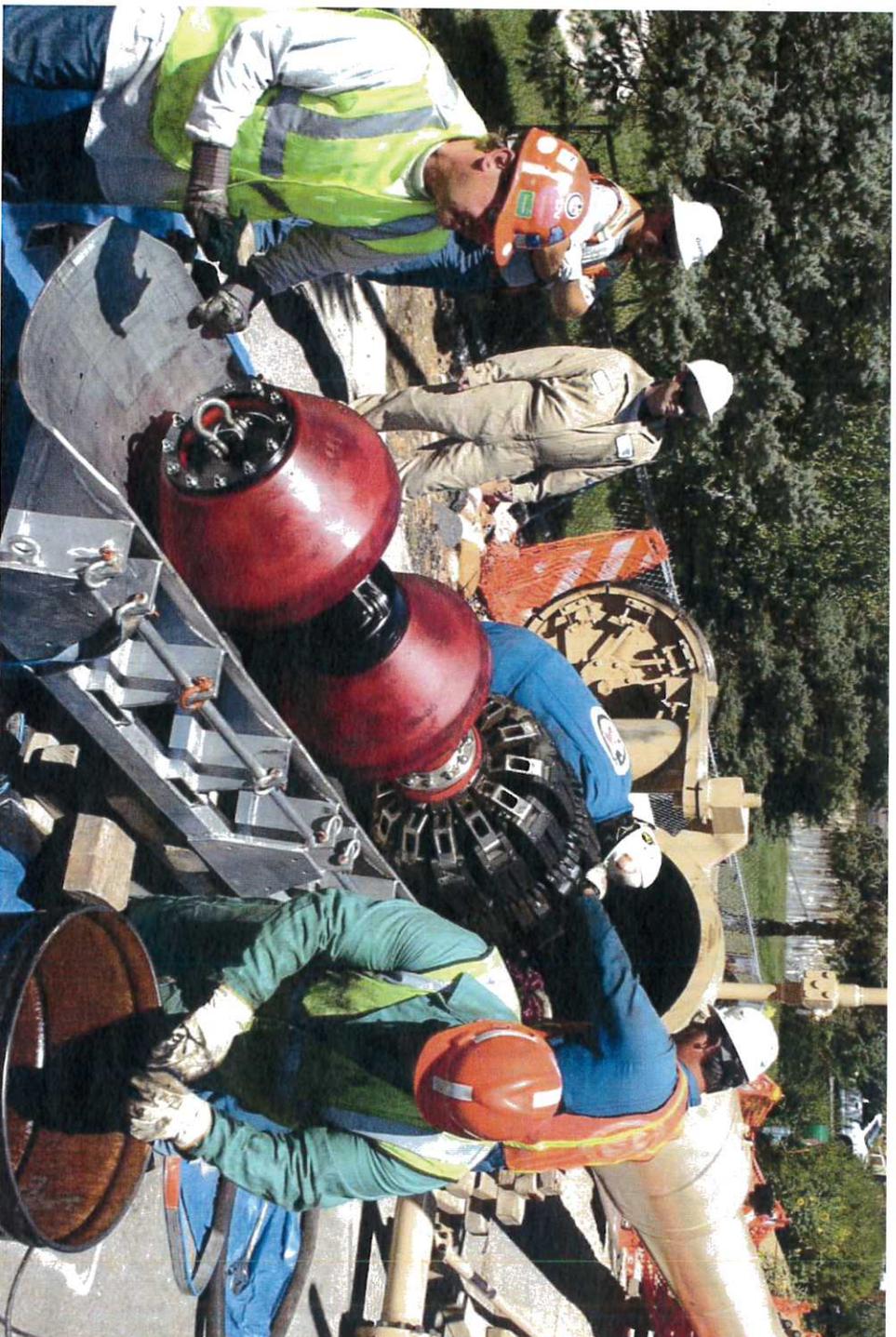
# Transmission Integrity Mgmt.

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- Complex, multi-faceted DOT regulation
  - Periodic assessments
  - Additional preventive & mitigative measures
- Applicable to “High Consequence Areas”
  - Based on “Potential Impact Radius” using sliding circles, looking at population factors
- Currently, 167.3 miles of HCA
  - 33.95% of HCA miles remaining to be assessed through 2009
- Purpose = Ensuring safety



# Instrumented Inspection Tool “Smart Pig”



## Reconditioned Pipe

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- Vintage pipelines that were reconditioned in-place, or removed from other portions of the system, refurbished and reinstalled at new locations
- Earliest lines not initially cathodically-protected
- Refurbishment by welded repairs to areas impacted by external corrosion pitting
- Pipelines have now provided 50+ years on “second tour of duty”

# Questar Gas' Feeder Line System

(OGC Annual Transmission Report - UT Mileage)

	PRE 1940	1940 - 1949	1950 - 1959	1960 - 1969	1970 - 1979	1980 - 1989	1990 - 1999	2000 - 2006
Year	10	5	110*	178*	94*	399	251	102
Cum	10	15	125	303	397	796	1,047	1,149

- Based on pipeline installation date
- \*Includes “second tour of duty” pipelines (e.g. reconditioned 1929 vintage pipe)



# Example - Reconditioned Pipe



# Example - Reconditioned Pipe



# **Factors in Replacing Pipelines**

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- Growth and system-capacity concerns
- Maintaining adequate system pressures
- Continuing surveillance
- Integrity management aspects (e.g. pigability)
- Public works and development projects
- Condition of ROWs
- Age / performance of materials – modern vs. vintage steels, seams, welds, coatings

# Safety & Reliability

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- Safety and reliability are foundation elements for customer service
  - System reliability doesn't occur on its own
- System reliability mandates:
  - Pipeline safety compliance
  - Forecasting to meet peak-day demands
  - Localized reinforcement (new and heavy-growth areas)
  - Prudent operation & maintenance
  - Continued investment in existing system
  - Continuation of capital replacements / upgrades

# Feeder Line Replacement Schedule

Year	Line	Location	Est Cost
2009	FL19 - B	Ogden Area	12,000,000
2010	FL19 - C	Ogden Area	40,000,000
2011	FL12 – Phase II FL 17 - A	West Salt Lake Salt Lake & Davis Counties	24,825,000 14,036,000
2012	FL 17 - B FL21-50 FL22 FL23 FL29 FL11-1 FL7 – Phase II FL-25 - A	Salt Lake & Davis Counties Layton Davis –Weber County Line to Hot Springs Hot Springs to Logan Brigham City to Plymouth West Salt Lake County South Salt Lake County	1,446,000 1,975,000 2,553,000 5,105,000 1,275,000 21,748,000 1,719,000 9,179,000
2013	FL – 25 - B FL35 - A	Utah County Southwest Salt Lake County	39,297,000 5,348,000
2014	FL 35 - B FL28 FL14	Southwest Salt Lake County Logan to Lewiston Tooele County	39,297,000 562,000 5,142,000



# Feeder Line Replacement Schedule

Year	Line	Location	Est Cost
2015	FL14 – Phase II	Tooele County	45,000,000
2016	FL14 – Phase III	Tooele County	34,525,000
	FL20	Ogden Area	6,629,000
	FL 41 - A	Tooele County	3,845,000
2017	FL41 - B	Tooele County	18,033,000
	FL50	Croydon to Devils Slide	26,967,000
2018	FL50 - B	Croydon to Devils Slide	2,816,000
	FL18 – Phase II	South Weber Area	5,701,000
	FL37	Kent Ranch to Rock Springs	32,176,000



# Adaptive Planning Process

---

- Pipeline Replacement Considerations
  - Population density adjacent to a segment
  - Diameter
  - Operating history
  - Overall pipe and coating condition
  - Required future capacity reinforcements
  - Optimization of construction operations
- Where possible, projects in a given year are grouped in proximate geographic areas to minimize travel and mobilization costs.

# Cost Monitoring

# Feeder Line Replacement

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- Feeder Line Replacement jobs are divided into spreads.
- Criteria for determining Spreads:
  - Reasonable work sections
  - Equipment needs
  - Design of system
  - Minimizing risk of service interruption
  - Permitting requirements
- Coordinate activities to minimize costs

# FL 4 & 11 Spreads – 33<sup>rd</sup> South

Spread	Location	Length		%
		feet	miles	
1	2700 East - Edison	19,825	3.8	FL 4 24%
2	Edison - 900 West	8,375	1.6	10%
3	900 West - 3600 West	17,250	3.3	FL 11 21%
4	3600 West - 4800 West	7,950	1.5	9%
5	4800 West - 6707 West	12,525	2.4	15%
6	6707 West - 8000 West	9,875	1.9	12%
7	8000 West - 9180 West	8,250	1.6	10%
<b>Total:</b>		<b>84,050</b>	<b>15.9</b>	<b>100%</b>



**Daily Progress Report**

46320



**Location/Spread**

**DAILY MEN & EQUIPMENT REPORT**

QUESTAR

Date: 12-8-08 <sup>5 pieces</sup> Questar WO #: 6824 NPL Job #: 353-16  
 Location: 7423 W - 3400 S Foreman: Jesse Stroman

LABOR	S.T. QTY	O.T. QTY	EQUIPMENT	QTY
DESCRIPTION:			DESCRIPTION:	
FOREMAN	1		CREW TRUCK	
WELDER			160 TRACKHOE W/ HOE RAM	
OPERATOR	1		BACKHOE 446 W/ HOE RAM	
LABORER			315/314 EXCAVATOR	
TRUCK DRIVER			SAW TRUCK W/ SAW	
SUPERINTENDENT			BOOM TRUCK W/ FLOAT	
GENERAL FOREMAN			TRACTOR W/ LOWBOY	
BENDING ENGINEER			D-5 SIDEBOOM	
SAFETY DIRECTOR			2000 GALLON WATER TRUCK	
COORDINATOR			4000 GALLON WATER TRUCK	
VAC TRUCK OPERATED			924 LOADER	
PERDIEM	2		SKID 248 W/ MILLER COMPRESSOR 185	
			LIGHT TOWER	
			430 BACKHOE	
			PICK UP	2
			WELD RIG	
			BENDING MACHINE	1
			561 SIDEBOOM	
			330 EXCAVATOR	
			5-YARD DUMP TRUCK	
			2 STAGE HYDRO TEST PUMP	
			750 CFM COMPRESSOR	
			PIPE FLOAT	
			SMOOTH DRUM ROLLER	
			TRENCH COMPACTOR	
			SAND BLAST POT	
			SANDBLASTING TRUCK	
			MILLING MACHINE	

Removed Reg Station  
 At 7423w.

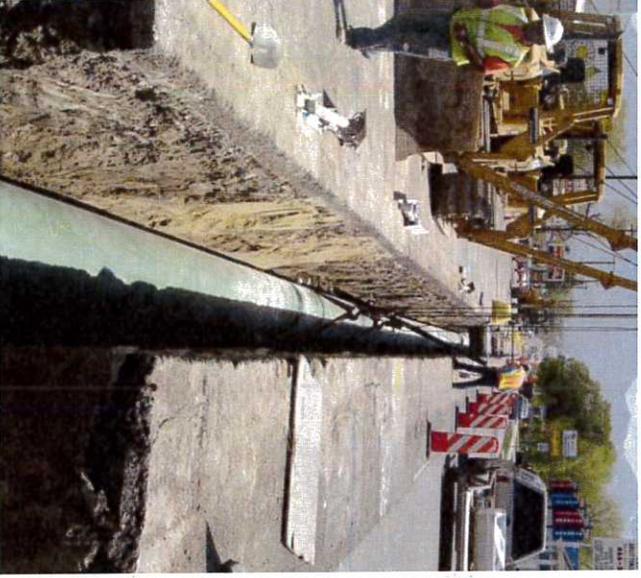
FOREMAN SIGNATURE:

*Jesse Stroman*

APPROVAL SIGNATURE:

*[Signature]*

1849,50  
 1018007D



# Invoice



**NPL Construction Company**  
 2355 West Utopia Road  
 Phoenix, AZ 85027-4167

**Invoice**  
 90078379

Date: 12/14/2008  
 To: QUESTAR GAS COMPANY  
 P.O. BOX 45360  
 SALT LAKE CITY, UT 84145-0360  
 Attn: RJ JONES QB600

Contract No: QUESTAR 08  
 Description : FEEDERLINE 4-5-11  
 Terms : Due in 30 days

**Project Number and Labor/Equipment Codes**

WO#	Work Code	Description	Units	\$ Unit Price	\$ Total
1006824	LDFORST	DAILY ST FOREMAN	1	445.00	445.00
1006824	LDWELDST	DAILY ST WELDER	1	542.50	542.50
1006824	LDOPST	DAILY ST OPERATOR	1	355.00	355.00
1006824	LHPERDIEM	HOURLY PERDIEM	2	60.00	120.00
1006824	EDPICKUP	DAILY PICKUP	2	80.00	160.00
1006824	EDWELDRIG	DAILY WELDING RIG	1	220.00	220.00
<b>Total for: 1006824</b>					<b>1,842.50</b>

Total	1,842.50
Taxes	0.00
Invoice Total	\$ 1,842.50
Less 5.000 % Retainage	\$ 92.12
Amount Payable	\$ 1,750.38



# Invoice Detail

Project & Spread

FL 11 Spread 6 ✓ 1006824  
90078379 353-16 ✓

NPL Construction Co.  
Invoice Detail  
December 14, 2008 ✓

Project Number and Labor/Equipment Codes

DPR Number	Job Number	Service Date	RevRecDate	Invoice Date	Invoice Number	WorkCode	Units	Amount	Work Order Number	Rate	Billing Type
4632D	626200353	12/8/2008	12/14/2008	12/14/2008	90078379	LDFORST	1	445.00	1006824 ✓	445.00	Labor
4632D	626200353	12/8/2008	12/14/2008	12/14/2008	90078379	LDWELDST	1	542.50	1006824	542.50	Labor
4632D	626200353	12/8/2008	12/14/2008	12/14/2008	90078379	LDORST	1	355.00	1006824	355.00	Labor
4632D	626200353	12/8/2008	12/14/2008	12/14/2008	90078379	LHPERDIEM	2	120.00	1006824	60.00	Labor
4632D	626200353	12/8/2008	12/14/2008	12/14/2008	90078379	EDPICKUP	2	160.00	1006824	80.00	Equipment
4632D	626200353	12/8/2008	12/14/2008	12/14/2008	90078379	EDWELDRIG	1	220.00	1006824	220.00	Equipment

Prior Year To Date 69,366.96  
 Week Total 1,842.50 ✓  
 Current Year to Date 71,209.46



# QGC Feeder Line Replacement Project Summary

As of: 12/31/2009

Project	Ending Balance 2008	YTD 2009	Committed (accrued)	Anticipated	Project Total 2009	Project to Date	AFE Amount
				for (expected completion)			
01006322 FL7 State Street	26,788,728	-42,205	0	0	-42,205	26,746,523	27,500,000
01006822 FL 4 Install 28,000' of 24"	19,710,823	101,528	28,869	0	130,397	19,841,220	15,345,000
01006824 FL 11 Install 55,780' of 24"	30,719,068	205,233	13,054	0	218,286	30,937,354	30,070,000
01007067 FL 19 Install 8", 12" and 20"	3,289,641	5,823,586	5,827,348	0	11,650,934	14,940,575	44,953,000
01008213 FL12 Test Holes - Conceptual	0	33,827	0	0	33,827	33,827	20,000
<b>Total Feederline Replacement Budget</b>	<b>80,508,260</b>	<b>6,121,970</b>	<b>5,869,270</b>	<b>0</b>	<b>11,991,240</b>	<b>92,499,500</b>	<b>117,888,000</b>



# 33<sup>rd</sup> South Spread Completion

(Example of Spread 1 Closing)

Spread	Feet	Footage Complete	Direct Cost to Close
1	19,825.00	19,825.00 \$	11,977,218.91
2	8,375.00	2,115.00 \$	-
3	17,250.00	1,100.00 \$	-
4	7,950.00	1,590.00 \$	-
5	12,525.00	4,400.00 \$	-
6	9,875.00	4,650.00 \$	-
7	8,250.00	350.00 \$	-
<b>Total</b>	<b>84,050.00</b>	<b>34,030.00 \$</b>	<b>11,977,218.91</b>



# 33<sup>rd</sup> South Spread Completion

(Example of Spread 2 Closing)

Spread	Feet	Footage Complete	Direct Cost to Close
1	complete	complete	\$ 11,977,218.91
2	8,375.00	8,375.00 \$	2,450,115.00
3	17,250.00	1,100.00 \$	-
4	7,950.00	1,590.00 \$	-
5	12,525.00	4,400.00 \$	-
6	9,875.00	4,650.00 \$	-
7	8,250.00	350.00 \$	-
<b>Total</b>	<b>64,225.00</b>	<b>20,465.00 \$</b>	<b>14,427,333.91</b>



## **Spread in Service**

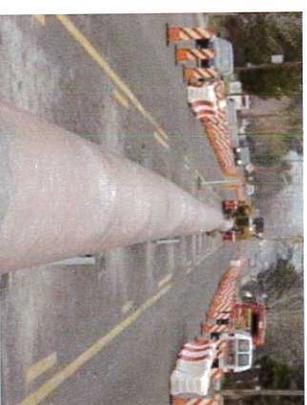
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- A Spread is considered closed or ‘used and useful’ when pipe is flowing gas.

# Accounting

# How will Feeder Line Replacements be closed to investment?

- Current
  - Account 376000
  - Depreciation Profile 550376001
  - Asset Group G5500701
  - Unique Asset ID
- New – Tracker Assets
  - Account 376004
  - Depreciation Profile 550376004
  - Asset Group G5500101
  - Unique Asset ID
- Reserve will be tracked separately in the fixed asset system.
- The use of these new codes would allow us to separately track assets and depreciation from initial closing to retirement.



# Tracking

# Tracker

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- Net Plant
- Depreciation Expense
- Accumulated Deferred Income Taxes
- Property Taxes
- Operating & Maintenance Expense

# Net Plant

	New Feederline	Old Feederline
Investment	\$40 million	\$2 million
Reserve	<u>\$.84 million</u>	<u>\$2 million</u>
	\$39.16 million	\$0

Net Plant  
\$39.16 million

# Depreciation Expense – 2.1%

New Feederline	Old Feederline
\$40,000,000	\$2,000,000
x 2.1%	x 2.1%
\$840,000	(\$42,000)

Net Expense  
\$798,000

# Accumulated Deferred Income Taxes (year one)

	New Feederline	Old Feederline
Net Tax Basis (40 MM – 5%)	\$38,000,000	\$0
Net Book Basis (40 MM - 2.1%)	\$39,160,000	\$0
Timing Difference	\$1,160,000	\$0
Tax Rate	38%	38%
<b>Total</b>	<b>\$440,800</b>	<b>\$0</b>

Net Reduction in Rate Base  
\$440,800

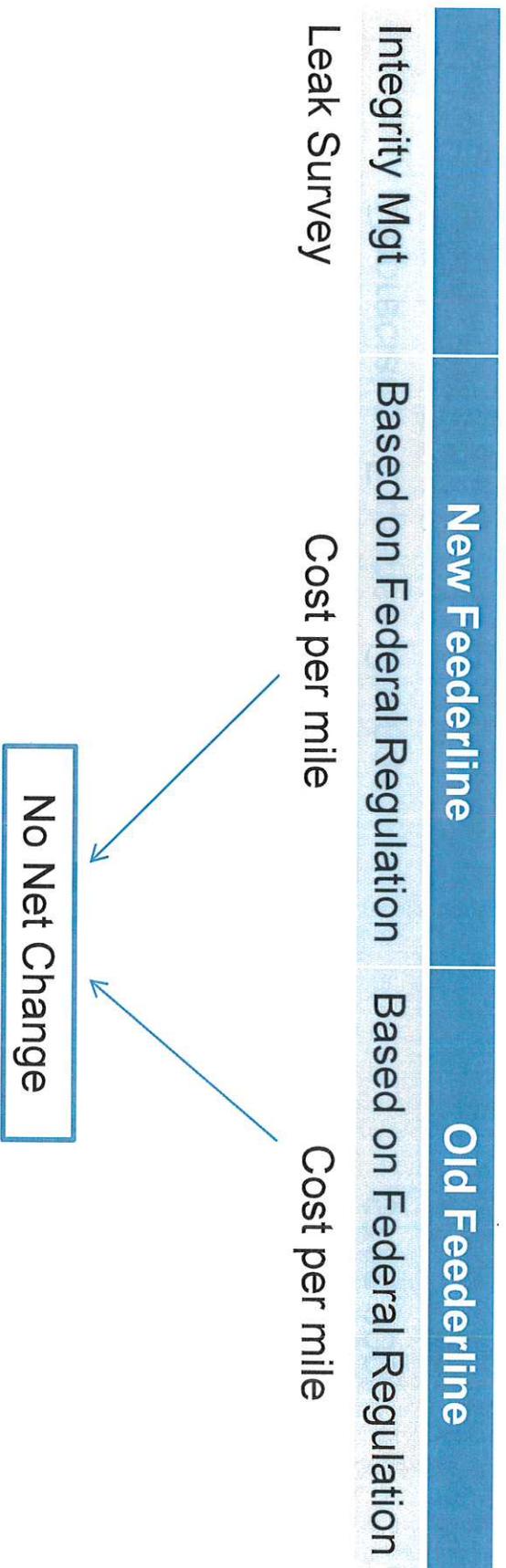
# Property Taxes

	New Feederline	Old Feederline
Assessed Value	\$38,719,200	\$0*
Tax Rate	1.2%	1.2%
<b>Total</b>	<b>\$464,630</b>	<b>\$0</b>

\* Any remaining assessed value would be netted.

Net Expense  
\$464,630

# Operating & Maintenance Expenses



# Revenue Requirement

	Year 1
Net Investment	\$39,160,000
Accumulated Def. Income Taxes	<u>\$(440,800)</u>
Change in Rate Base	\$38,719,200
Commission Allowed Pre-Tax	<u>11.49%</u>
Return & Taxes	\$4,448,836
Depreciation Expense Change	\$798,000
O&M Change	\$0
Property Tax Change	<u>\$464,630</u>
Total Revenue Requirement	<u>\$5,711,466</u>

# Questions

- 1929



- Today

