



# Copper River Area Oil Spill Risk and Preparedness

May 5, 2010, Kluti-Kaah Memorial Hall,  
Copper Center

# TAPS Pipeline Oil Discharge Prevention and Contingency Plan – prevention programs

- Prevention training
- Substance abuse programs
- Medical monitoring
- Security programs
- Transfer procedures
- Oil tank requirements
- Secondary containment areas
- Piping Corrosion Control and Leak Detection Program
- Regulatory Requirements for Prevention Measures

# Risk Assessments

- Technica Inc. Risk Assessment - 1990
  - Probability of potential crude oil spills along TAPS
- Taylor and Associates Risk Assessment - 1995
  - Quantitative risk assessment using historical oil industry data to predict frequencies
- Capstone Screening Risk Analysis – 2001
  - Mile by mile risk, used TAPS data, 25 factors to assess.
- Det Norske Veritas Screening Risk Assessment
  - ADEC and BLM requirements for SR approval
  - Segment by segment basis – where risk input parameter assumed to be constant -1307 segments

# DNV Leak Frequency By Cause – Leak greater than 50 bbl every 4 years, actual every 3.5 years

■ Sabotage	37.9%	9.7x10 <sup>-2</sup>
■ Maintenance	14.3%	3.7x10 <sup>-2</sup>
■ Hydraulic events	12.5%	3.2x10 <sup>-2</sup>
■ Flanges	11.0%	2.8x10 <sup>-2</sup>
■ Mechanical Defect	5.9%	1.5x10 <sup>-2</sup>
■ Settlement	5.7%	1.5x10 <sup>-2</sup>
■ Seismic	4.7%	1.2x10 <sup>-2</sup>
■ Excavation	2.7%	6.9x10 <sup>-3</sup>
■ Corrosion	2.7%	6.9x10 <sup>-3</sup>
■ Washout	2.6%	6.7x10 <sup>-3</sup>
■ Aircraft Impact	0.0%	5.6x10 <sup>-5</sup>
■ Vehicle impact	0%	1.6x10 <sup>-5</sup>

## Examples of Pipeline Dynamic Spill Volumes (highest volumes)

- Gulkana River, Segment 3, mp 654.5, 46,773
- Tazlina River, Segment 2, mp-684.6, 44,127
- Klutina River, Segment 1, mp – 696.9, 48,820
- Copper River, Segment 1, mp -698.8, 46,507
- Little Tonsina, Segment 1, mp 724.7, 46,239
- Tiekel River, Segment 1, mp 737.4, 52,306 l

# Scenarios – Required by State

## Regulations 18 AAC 75.425(e)(1)(F)

- 14 scenarios to illustrate hypothetical responses to spills
- Describe timeframes for equipment, personnel, strategies and tactics for planning purposes
- Uses statistically average environmental conditions
- Response Planning Standard scenario for 51.6K bbl on land to water at Minton Creek
- Maximum Discharge scenario, selected PLMP 682, Tazlina River Segment 1, guillotine cut, multiple valves fail to close for 120 minutes. 120,000 bbls of oil to land released.

# Realistic Maximum Response Operating Limitations

- Four zones – Arctic, Continental, Transitional, Maritime
- Conditions and % impact per annum
  - Winds
  - Precipitation
  - Temperature
  - Visibility
  - Tidal effects
  - Ice and debris
  - Daylight
  - Other – River Velocities

# BLM Oversight for Copper River Watershed

- Monitoring by JPO Multi-Agency Oil Spill Prevention, Preparedness and Response Team
- Renewal of the Federal Grant for TAPS Right-of-Way – FEIS 2003
- AO Annual Approval of TAPS Pipeline Oil Discharge Prevention and Contingency Plan - approval requirements
- Surveillances and assessments of training, equipment, Initial Response Teams, etc.

# Construct Riverbank Berms on the Gulkana, Tazlina, and Klutina Rivers

- Containment berms on both banks of the Gulkana River



# Construct Riverbank Berms on the Gulkana, Tazlina, and Klutina Rivers

- Berms on both banks of the Tazlina River



# Construct Riverbank Berms on the Gulkana, Tazlina, and Klutina Rivers

- Riverbank berm on South Bank of Klutina River



New response trailers to PS 11, 45'  
OSCP Van, 32' trailer, 24' boom  
trailer



# Equipment Upgrades and New Technology

- Purchase 7200' smaller fast water boom



- Purchase and test fast water boom vanes



# Relocated Equipment Conex at CS-10-17



# Additional Gulkana River Access Sites

- By 2006, three access locations were available to launch equipment into Gulkana River – Sourdough Campground, Saylor's Pit and CS 10-16 – Richardson Highway crossing
- Poplar Grove location not considered practical
- In response to local stakeholders, APSC identified 4 areas of opportunity on the Gulkana River

# Areas of Opportunity on Gulkana River

- Field evaluation
- Base maps
- Tactical instruction
- Pre-staged equipment at RGV 100 and 102
  - Boom
  - Boom vanes
  - Anchors
  - Recovery systems
  - Accessories



# SR Changes and other requirements; Construction of GRB

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# Buildings to Provide Warm Storage



# OSCP Equipment Required to be in Warm Storage



# Helicopter Moved to Glennallen, Upgraded Capacity



# Enhanced Containment Sites: Improve Klutina River Access at CS 11-2



# Confluence of Klutina and Copper Rivers, boom in “slip zone”



# Development of Alternative Anchoring System

- New anchor plates were developed as an improvement to duck billed anchors; stocked line wide.



# Boat Launch on Copper River near CS 11-2, Completed Fall 2007



# Improve access to Tonsina River through to Squirrel Creek campground



# Line Wide On-Water Response

- Fleet – 14 airboats, 14 jet boats, 2 landing craft
- 2007 restructured vessel training program
  - Rescue training
  - Airboat
  - Conventional Hull
- Learn to Return
- Boating Safety Program



# Additional Exercises in Area - Tiekel River CRE – July 7, 2006



# Gulkana River Combined resourced Exercise, September 27, 2007



## Contracts with Tour Boat operators/ local guides for

- 108990 Copper River Excursions \*\*\*
- 108743 Scott Cuchna
- 106962 Patrick Nigro
- 106963 Stan Grove
- 106964 S. W. Madden
- 106985 Rex Henderson \*\*\*
- 106986 Kirk Wilson

# Check Valve 109 PLMP 697.9 Replacement, July 2006,



# Identification of Nine Areas of Opportunity on Copper River - 2007



# Confluence of Tazlina at Copper R.



# Tonsina from Liberty Creek



# Gulkana/Copper Side Channel, From South



# BLM monitoring; surveillances and assessments

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- Equipment inspections (surveillances)
- Unannounced drills
- Training records reviews
- Reconnaissance and ROW Equipment exercises
- Combined Resources Exercises
- Containment Site Inspections
- Review after flooding of areas of opportunity in Cu River
- Review of IRT forms
- Quarterly Reviews of Exercise Lessons Learned

# Quarterly Training Records Reviews of All Contractors

**Alma Construction**  
Alma Construction Q4 2023

Contractor	Training Hours	Safety Courses	First Aid	OSHA 10	OSHA 30	Other
ABC Construction	120	15	10	5	2	1
DEF Construction	90	10	8	3	1	1
GHI Construction	110	12	9	4	2	1
JKL Construction	80	8	6	2	1	1
MNO Construction	100	11	7	3	1	1
PQR Construction	70	7	5	2	1	1
STU Construction	130	16	11	6	3	2
VWX Construction	60	5	4	1	1	1
YZA Construction	140	18	13	7	4	2
BCD Construction	50	4	3	1	1	1
EFG Construction	150	20	14	8	5	3
HJK Construction	40	3	2	1	1	1
LMN Construction	160	22	16	9	6	4
OPQ Construction	30	2	1	1	1	1
RST Construction	170	24	18	10	7	5
UVW Construction	20	1	1	1	1	1
XYZ Construction	180	26	20	11	8	6
ABC Construction	120	15	10	5	2	1
DEF Construction	90	10	8	3	1	1
GHI Construction	110	12	9	4	2	1
JKL Construction	80	8	6	2	1	1
MNO Construction	100	11	7	3	1	1
PQR Construction	70	7	5	2	1	1
STU Construction	130	16	11	6	3	2
VWX Construction	60	5	4	1	1	1
YZA Construction	140	18	13	7	4	2
BCD Construction	50	4	3	1	1	1
EFG Construction	150	20	14	8	5	3
HJK Construction	40	3	2	1	1	1
LMN Construction	160	22	16	9	6	4
OPQ Construction	30	2	1	1	1	1
RST Construction	170	24	18	10	7	5
UVW Construction	20	1	1	1	1	1
XYZ Construction	180	26	20	11	8	6

**Legend:**  
Green: Safety  
Yellow: First Aid  
Blue: OSHA 10  
Orange: OSHA 30  
Purple: Other

# Monitor Responder Availability

- Required new format to demonstrate and track presence of Initial Response Teams
- Unannounced call for IRT forms
- Required improved availability of crews in GRB
- Unannounced after hours call out of responders

A photograph of a document, likely a form or report, with a grid structure and text, possibly related to responder availability tracking. The document is placed on a dark wooden surface. The form has several sections with yellow highlights and contains various fields and tables. A paperclip is visible on the left side of the document.

# Present:

- 2010 Approval Requirements
  - Information for BLM GIS
  - Additional incident commander training
- Exercise evaluations
- Containment Site Surveillances
- Monitor Initial Response Teams availability
- Equipment Inspections