

The Alaska Natural Gas Pipeline

The Federal Perspective to Coordinating the Approach

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November 19, 2009

Federal Support





THE OFC



Office of the Federal Coordinator

- WHAT'S HAPPENING AT THE FEDERAL U.S. LEVEL AS WE PREPARE FOR THE OPEN SEASON APPLICATIONS FROM TRANSCANADA/EXXON MOBIL AND DENALI;
- HOW THE OFC COLLABORATES WITH CANADA'S REGULATORY AGENCIES AND ORGANIZATIONS TO EXPEDITE THE PROCESS;
- OFC WORK WITH THE STATE OF ALASKA TO MOVE THIS PROJECT ALONG.

OFC Projects

- GAP ANALYSIS OF PERMITTING PROCESS
- IMPLEMENTATION PLAN FOR EACH APPLICANT
- PERMITTING MATRIX
- TECHNICAL REVIEW TEAM



GIS PROTOTYPE



ALASKA NATURAL GAS
TRANSPORTATION PROJECTS
OFFICE OF THE FEDERAL COORDINATOR

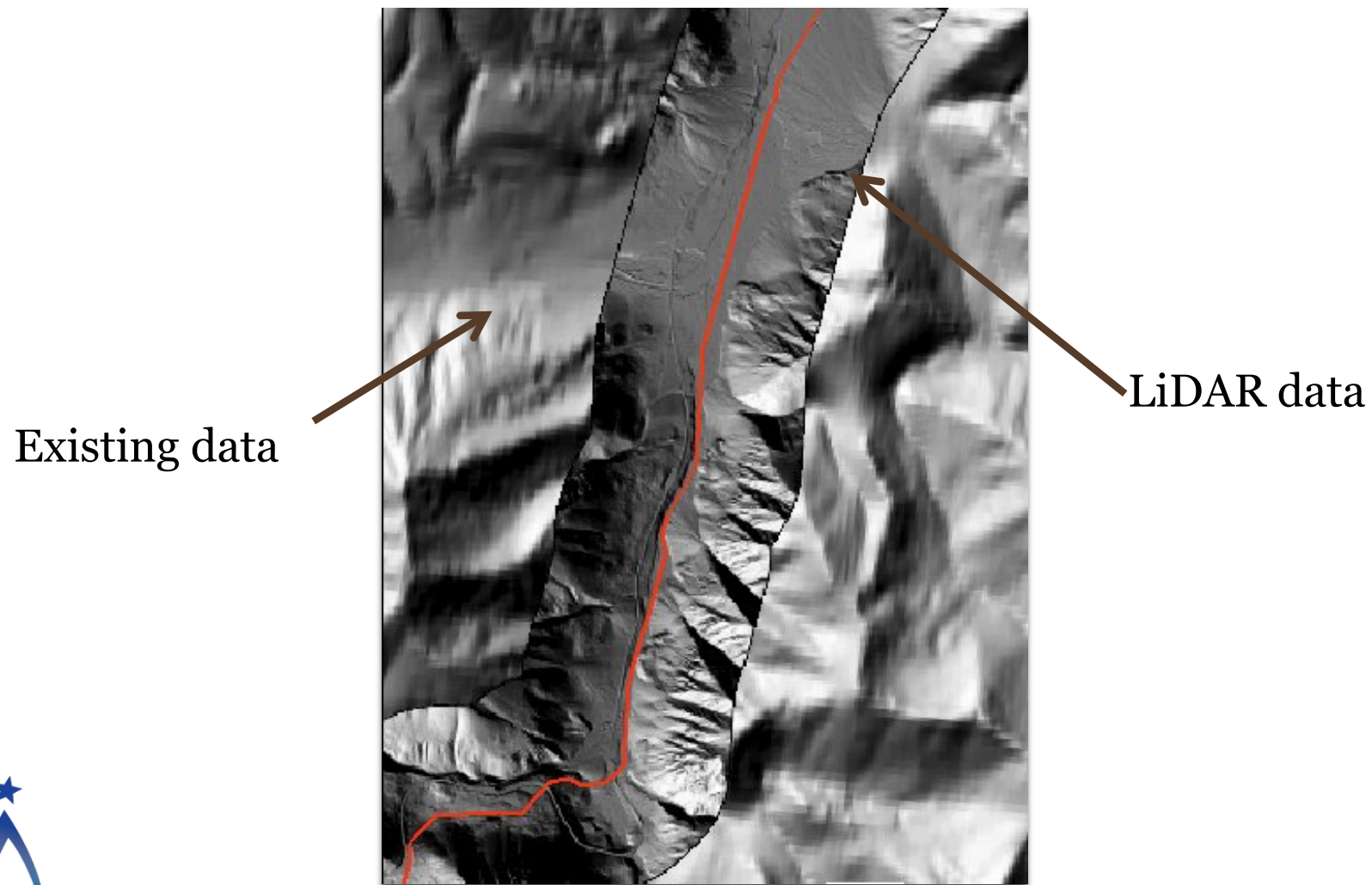


OFC GIS Prototype

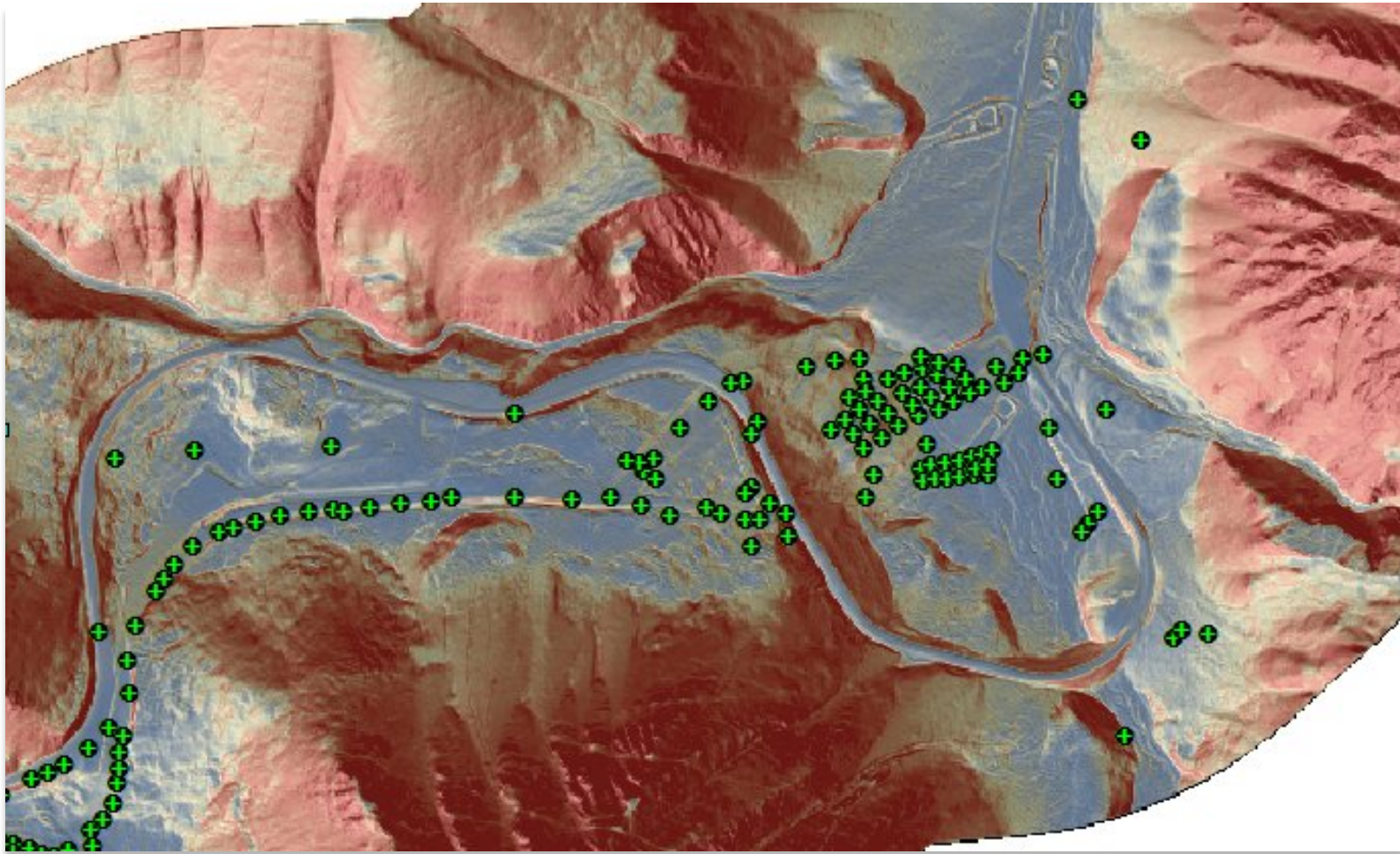
- Key Points
 - Authoritative base map and data integration
 - Improvement in data quality and accuracy
 - Transparent and enhanced access to old and new quality data



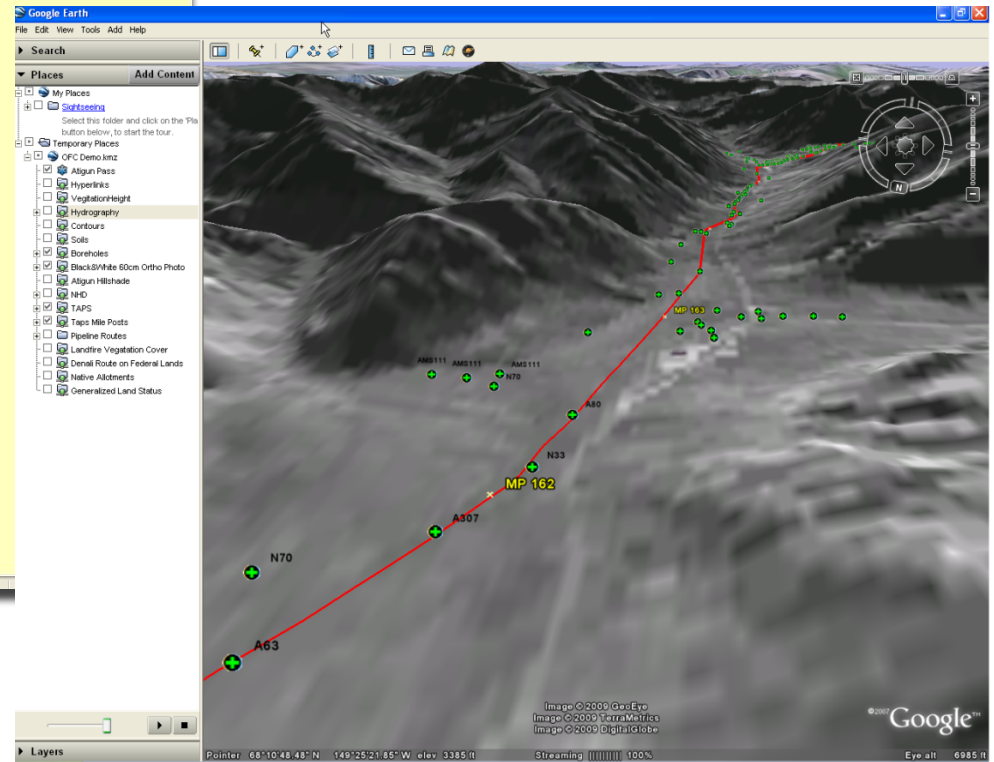
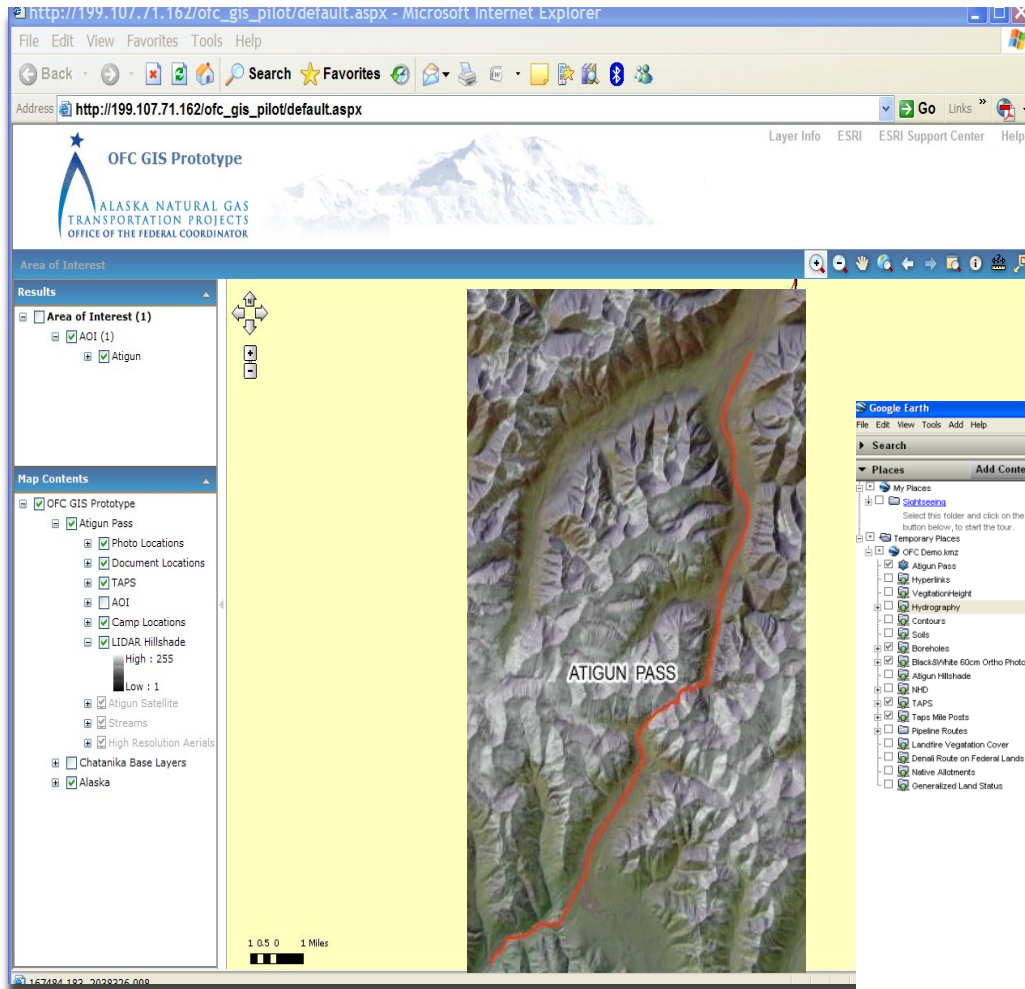
Improvement in Data Quality - Resolution



LiDAR Derivative Analysis with GIS - Slope



Web Access to Data - Transparent Access



Incorporating Legacy Geotechnical Data

NORTHWEST ALASKAN PIPELINE COMPANY

LOG OF TEST BORING
FLUOR PROJECT NO. 478064

Hole No. N70-26
Sheet 1 of 3
Total Depth 50.0'

Date Begun 8/25/80 D/N Date Completed 12/3/80 D/N Active Layer Thickness UNDETERMINED (B. Burns)

Station/M.P. 27-41.4 Offset on pup L/R Alignment Sheet No. 27 Rev. No. 5

Rig No. 030 Mobile B-61 Carrier Terraflex Drilling Methods 1 1/4" Hollow stem freeze down and blow

Contractor Bearfoot Driller Snyders Helper Thompson Geologist Wick/Bauer

Weather Partly Cloudy Wind 0-5 MPH Temperature 46 °F Precipitation Rain

GROUND WATER TABLE
Depth in Ft. 0
Time 1:00
Date 9/25/80
W.D./A.B. WD
T. Vegetation Mass grass tundra
OF Instrumentation None

Location Diagram: on pup new Road Atigun

SP 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Sh 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Sample 1 0-0.4 UNFROZEN Organic Mat. Mass wet
Sample 2 0.4-1.5 FROZEN silt with trace sand trace organics
15% Ice in random clear lenses
N55 Fair Recovery. Rich yellowish silt

Sample 3 2.5-4 FROZEN silt with trace sand trace organics
15% Ice in random lenses
LPWC Dark brown color
0-0.4 UNFROZEN Organic mat. Mass wet

Sample 4 Silt with trace sand some gravel indicated by sluff FROZEN
N55 No penetration No pore spaces
Numerous Cables Angular dark brown color
Ice 2.5" to 3" large

@ 7.5' Boulder unable to sample
indicates boulders in frozen silt some gravel trace sand
angular

0.4-4 FROZEN silt with trace sand trace organics
15% Ice in random clear lenses

@ 10' Boulder unable to sample
indicates an absence

4-11.5 FROZEN silt with trace sand some gravel
Cables small angular inclusions

Sample 5 FROZEN Sand trace silt
12.5-13 Soils No Penetration 3%
LMT Mostly med sand trace org

Sample 6 FROZEN Sand some silt indicated by sluff
15% No Penetration No pore spaces
N55 numerous inclusions

11.5-13.5 FROZEN Sand with trace silt 30% ice particles
Med coarse sand angular stem sections
13.5-28

1980 NW data

Baker

LOG OF BORING: N70-93

PROJECT: OFC Atigun Pass SHEET: 1 OF 2

LATITUDE: 68.19236 LONGITUDE: -149.401 GEO. DATUM: NIA START: 11/28/1980 END: 11/28/1980

GROUND ELEV.: 3301.4 ft ELEV. DATUM: NIA LOGGER: Steven Clark

WATER LEVEL: _____ TIME: _____ DATE: _____ DESCRIPTION: _____ DRILLER: Feldman; Nichols

EQUIPMENT: 030 Mobile B-61 w/ Flextrack DRILL CO.: Bearfoot

METHOD DETAILS: 10 in. OD HSA, 3.0 in. OD spoon, 2.0 in. OD spoon, Hammer size unknown.

SAMPLE DEPTH (FT)	SAMPLE TYPE - NUMBER	RECOVERY %	SPT BLOW(S) 0.5 FT or (R.O.D)	TEST RESULTS	STRATA	DEPTH (FT)	DESCRIPTION	REMARKS
0.0	S3-1	100%	6			0	PEAT: Frozen; individual ice inclusions (Vx); 30% visible excess ice.	
0.5	S3-2	100%	11			1	0.5' - EL. 3300.9	
1.0	S3-3	100%	14			2	SILT, with sand and gravel; gray and brown. Frozen; well bonded; random ice formations along with ice crystals in pore spaces (Vr.X); 15% visible excess ice; trace organic inclusions.	
1.5	A					3	1.0' - EL. 3300.4	
2.5	S3-4	100%	6			4	SILT, with sand and gravel; gray and brown. Frozen; well bonded; random ice formations along with ice crystals in pore spaces (Vr.X); 10% visible excess ice; trace organic inclusions.	
4.0	A					5	4.0' - EL. 3297.4	
5.0	S3-5	100%	14			6	SILT, with sand and gravel; gray and brown. Frozen; well bonded; random ice formations along with ice crystals in pore spaces (Vr.X); 30% visible excess ice; trace organic inclusions.	
6.5	A					7	4.5' - EL. 3296.9	
7.5	S3-6	100%	36			8	SILT, with sand and gravel; gray, subrounded to angular. Local iron staining. Frozen; well bonded; massive ice (ICE); 60% visible excess ice; hard; clear; white; trace silt inclusions.	
9.0	A					9	10.5' - EL. 3290.9	
10.0	S3-7	100%	14/0.5			10	GRAVEL, SANDY, with silt/clay; gray, subrounded to angular. Local iron staining. Frozen; well bonded; individual ice inclusions (Vx); 10% visible excess ice.	
10.5	S3-8	100%	100/0.1			11		
11.5	A					12	20.0' - EL. 3281.4	
12.5	S3-9	100%	36			13	GRAVEL, SANDY. Frozen; well bonded; individual ice inclusions (Vx); 20% visible excess ice.	
14.0	A					14		
15.0	S3-10	100%	27			15		
15.5	A					16		
20.0	S3-11	100%	61			20	25.0' - EL. 3276.4	
21.5	A					21	SHALE, and siltstone; gray; moderately weathered. Frozen; random ice formations along with ice crystals in pore spaces (Vr.X); 40% visible excess ice.	
25.0	S3-12	100%	36			25	27.0' - EL. 3274.4	
26.5	A					26	SHALE, and siltstone; gray; moderately weathered. Frozen; no visible ice segregation (Nbn); 0% visible excess ice.	
						27		
						28		
						29		
						30		

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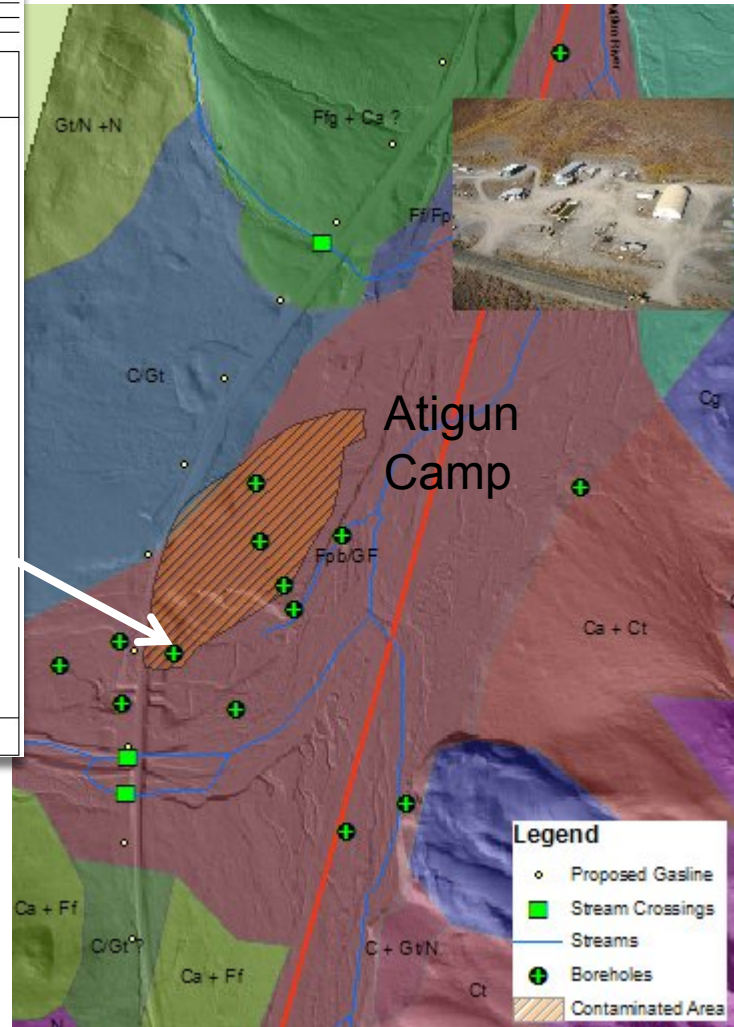
Data Integration - Putting the Pieces Together

Baker **LOG OF BORING: N70-93**

PROJECT: OFC Atigun Pass SHEET: 1 OF 2
 LATITUDE: 68.19236 LONGITUDE: -145.401 GEO. DATUM: NIA START: 11/28/1980 END: 11/28/1980
 GROUND ELEV.: 3301.4 ft ELEV. DATUM: NIA LOGGER: Steven Clark
 WATER LEVEL: TIME: DATE: DESCRIPTION: DRILLER: Feldman; Nichols
 EQUIPMENT: 030 Mobile B-61 w/ Flaxtrack DRILL CO.: Bearfoot
 METHOD DETAILS: 10 in. OD HSA, 3.0 in. OD spoon, 2.0 in. OD spoon, Hammer size unknown

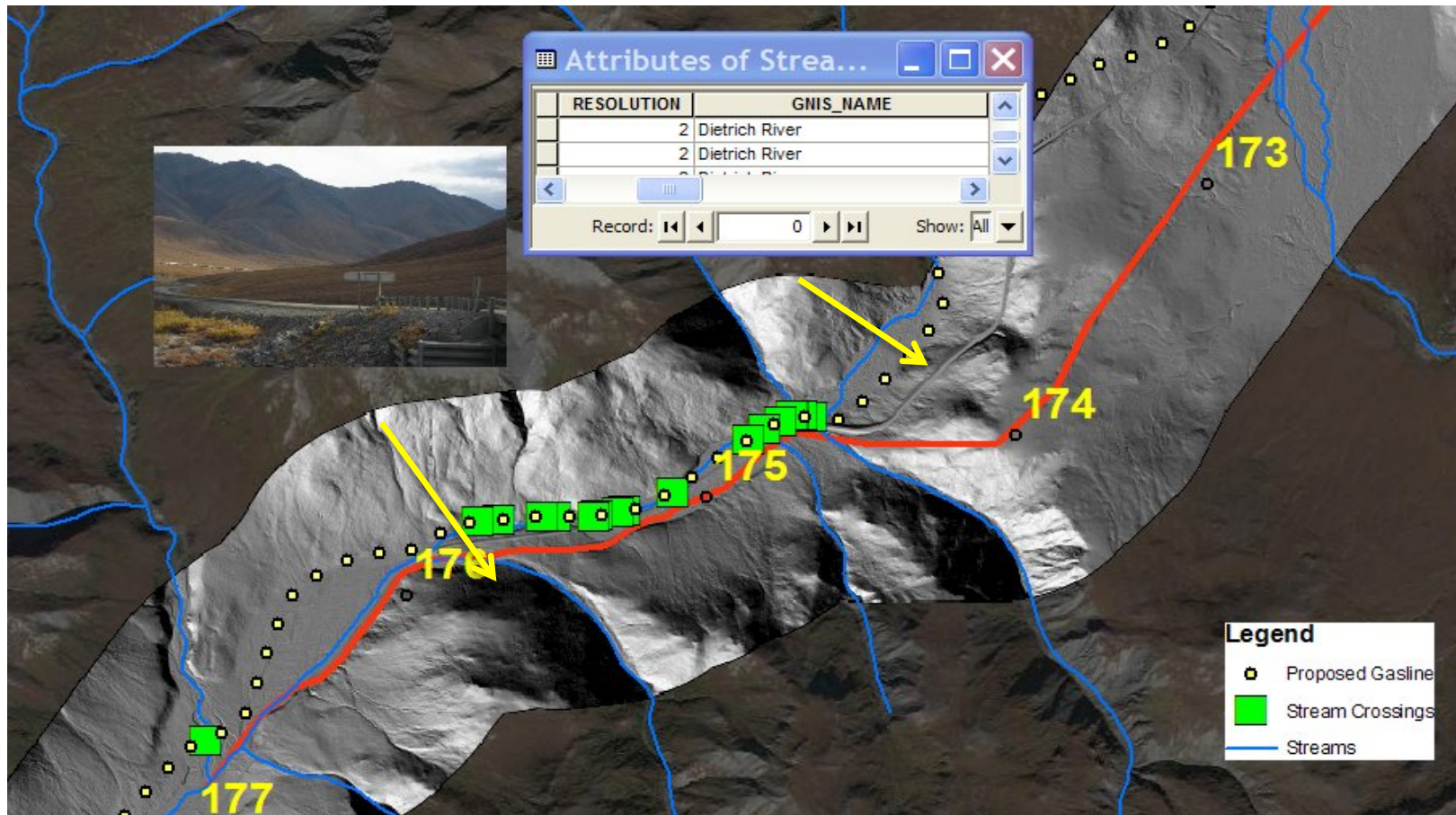
SAMPLE DEPTH (FT)	SOIL NUMBER	RECOVERY (%)	TEST RESULTS	STRATA	DEPTH (FT)	DESCRIPTION	REMARKS
0.0	33-1	100%	6		0	PEAT? Frozen; individual ice inclusions (Vx); 30% visible excess ice.	
0.5	33-2	100%	11		0.5' - EL. 3300.9	SILT, with sand and gravel; gray and brown. Frozen; well bonded; random ice formations along with ice crystals in pore spaces (Vr,X); 15% visible excess ice; trace organic inclusions.	
1.0	33-3	100%	14		1.0' - EL. 3300.4	SILT, with sand and gravel; gray and brown. Frozen; well bonded; random ice formations along with ice crystals in pore spaces (Vr,X); 30% visible excess ice; trace organic inclusions.	
1.5	A						
2.5	33-4	100%	7		2.5' - EL. 3299.4	SILT, with sand and gravel; gray and brown. Frozen; well bonded; random ice formations along with ice crystals in pore spaces (Vr,X); 10% visible excess ice; trace organic inclusions.	
3.0	A						
4.0	33-5	100%	14		4.0' - EL. 3297.4	SILT, with sand and gravel; gray and brown. Frozen; well bonded; random ice formations along with ice crystals in pore spaces (Vr,X); 30% visible excess ice; trace organic inclusions.	
5.0	A						
6.5	33-6	100%	36		6.5' - EL. 3295.9	SILT, with sand and gravel; gray, subrounded to angular. Local iron staining. Frozen; well bonded; massive ice (ICE); 60% visible excess ice; hard; clear, white; trace silt inclusions; angular. Local iron staining. Frozen; well bonded; individual ice inclusions (Vx); 10% visible excess ice.	
7.5	A						
8.5	33-7	100%	140.5		8.5' - EL. 3290.9	GRAVEL SANDY, with silt-clay; gray, subrounded to angular. Local iron staining. Frozen; well bonded; massive ice (ICE); 60% visible excess ice; hard; clear, white; trace silt inclusions; angular. Local iron staining. Frozen; well bonded; individual ice inclusions (Vx); 10% visible excess ice.	
10.0	33-8	100%	36		10.0' - EL. 3290.9	GRAVEL SANDY, with silt-clay; gray, subrounded to angular. Local iron staining. Frozen; well bonded; massive ice (ICE); 60% visible excess ice; hard; clear, white; trace silt inclusions; angular. Local iron staining. Frozen; well bonded; individual ice inclusions (Vx); 10% visible excess ice.	
11.5	A						
12.5	33-9	100%	56		12.5' - EL. 3281.4	GRAVEL SANDY, with silt-clay; gray, subrounded to angular. Local iron staining. Frozen; well bonded; massive ice (ICE); 60% visible excess ice; hard; clear, white; trace silt inclusions; angular. Local iron staining. Frozen; well bonded; individual ice inclusions (Vx); 10% visible excess ice.	
14.0	A						
15.0	33-10	100%	27		15.0' - EL. 3274.4	SHALE, and siltstone; gray, moderately weathered. Frozen; random ice formations along with ice crystals in pore spaces (Vr,X); 40% visible excess ice.	
15.5	A						
20.0	33-11	100%	61		20.0' - EL. 3261.4	GRAVEL SANDY, Frozen; well bonded; individual ice inclusions (Vx); 20% visible excess ice.	
21.5	A						
25.0	33-12	100%	36		25.0' - EL. 3276.4	SHALE, and siltstone; gray, moderately weathered. Frozen; random ice formations along with ice crystals in pore spaces (Vr,X); 40% visible excess ice.	
26.5			50.0.2		27.0' - EL. 3274.4	SHALE, and siltstone; gray, moderately weathered. Frozen; no visible ice segregation (Nbn); 0% visible excess ice.	

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- Incorporate photos and data
 - Soils information from Northwest data
 - Incorporate photos and data
- Soils information from Northwest data
- Borehole logs and data from Northwest data
- Stream crossing data

Data Integration: Accessing Multiple Information





GOOGLE EARTH STYLE VIDEO

Summary

- Authoritative basemap allows data to be integrated for multiple agencies and users

wetlands mitigation
habitat analysis
cultural resource mapping
geotechnical data integration
infrastructure planning and analysis

- Web interface provides transparent access to data at different levels

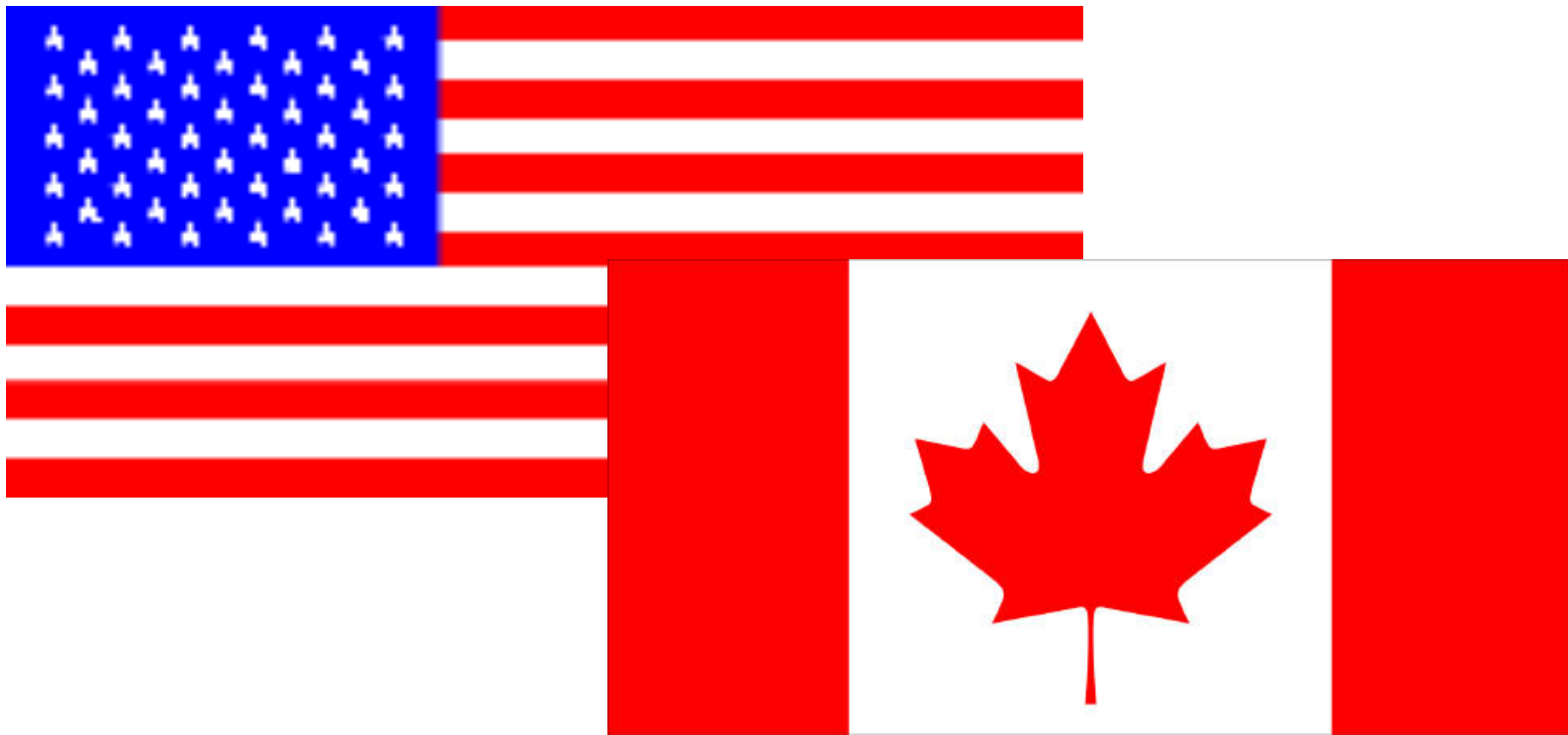
browser read only type for a wide audience
web service to a more selective audience and integration of ArcGIS layers

- LIDAR coupled with good imagery provides a value-added database

information such as slope and elevation enhances agency decision-making, permitting and engineering

- Next step - agency inputs

COORDINATING WITH CANADA



WHAT IS NEXT?

- FINALIZING SURVEILLANCE AND MONITORING AGREEMENT WITH ALASKA
- INFRASTRUCTURE NEEDS
- GENERATING MORE NATIONAL SUPPORT
- 2014 FINANCING AND SANCTIONING

Pipeline Applicants



ExxonMobil

Taking on the world's toughest energy challenges.™



TransCanada

In business to deliver



THANK YOU, ALASKA !



