

**Pebble Limited Partnership  
Pebble Project**

**Agency Meeting  
11/30/07**

---

**Cultural Resources**

Stephen R. Braund & Associates

## Summary of 2004-2007:

- ◆ Cultural Resources Surveys and Interviews
  - Port Site and Ore Body Area
- ◆ Questions

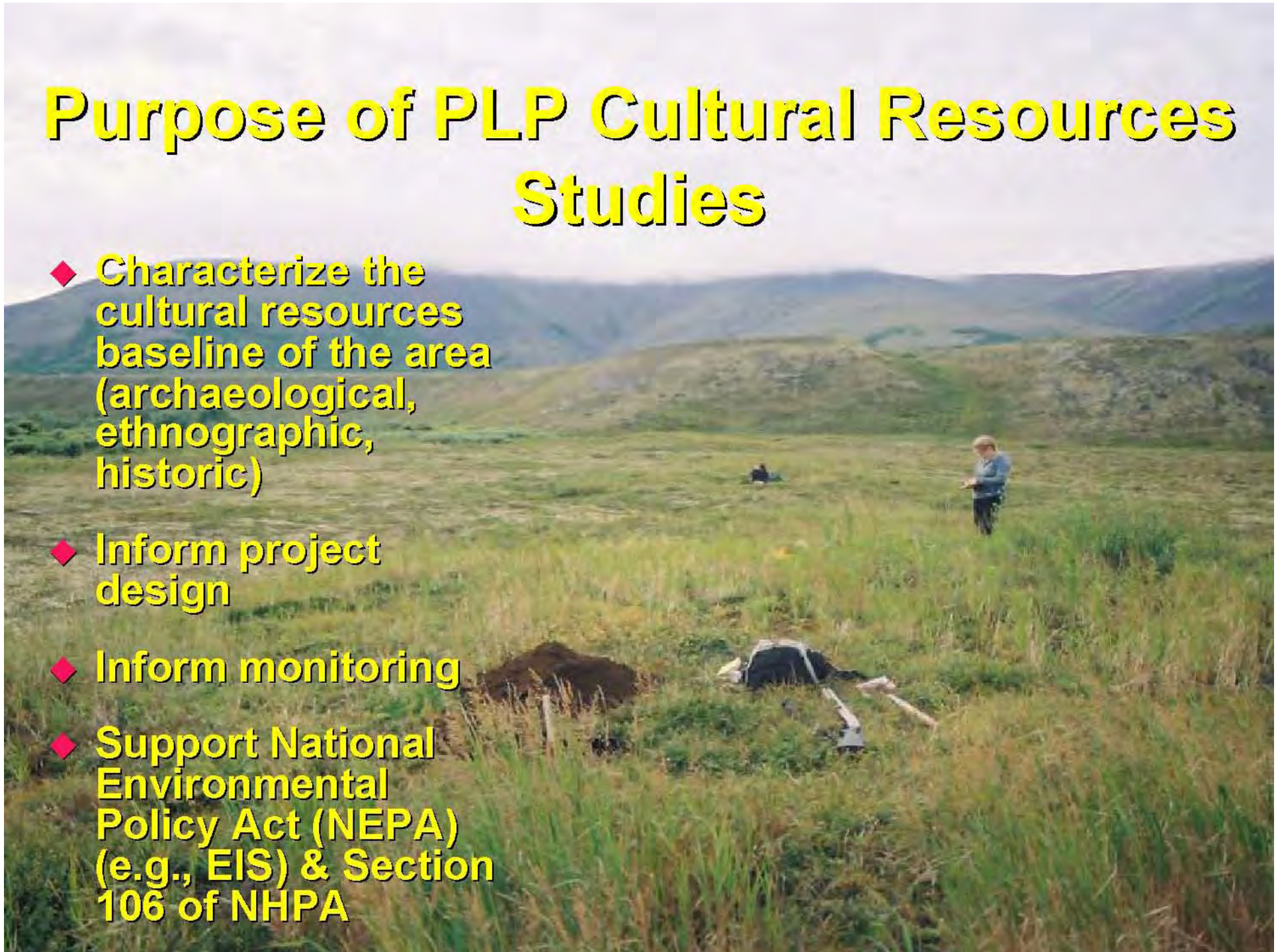


# Pebble Project Cultural Resources Surveys 2004-2007

Stephen R. Braund & Associates

# Purpose of PLP Cultural Resources Studies

- ◆ Characterize the cultural resources baseline of the area (archaeological, ethnographic, historic)
- ◆ Inform project design
- ◆ Inform monitoring
- ◆ Support National Environmental Policy Act (NEPA) (e.g., EIS) & Section 106 of NHPA



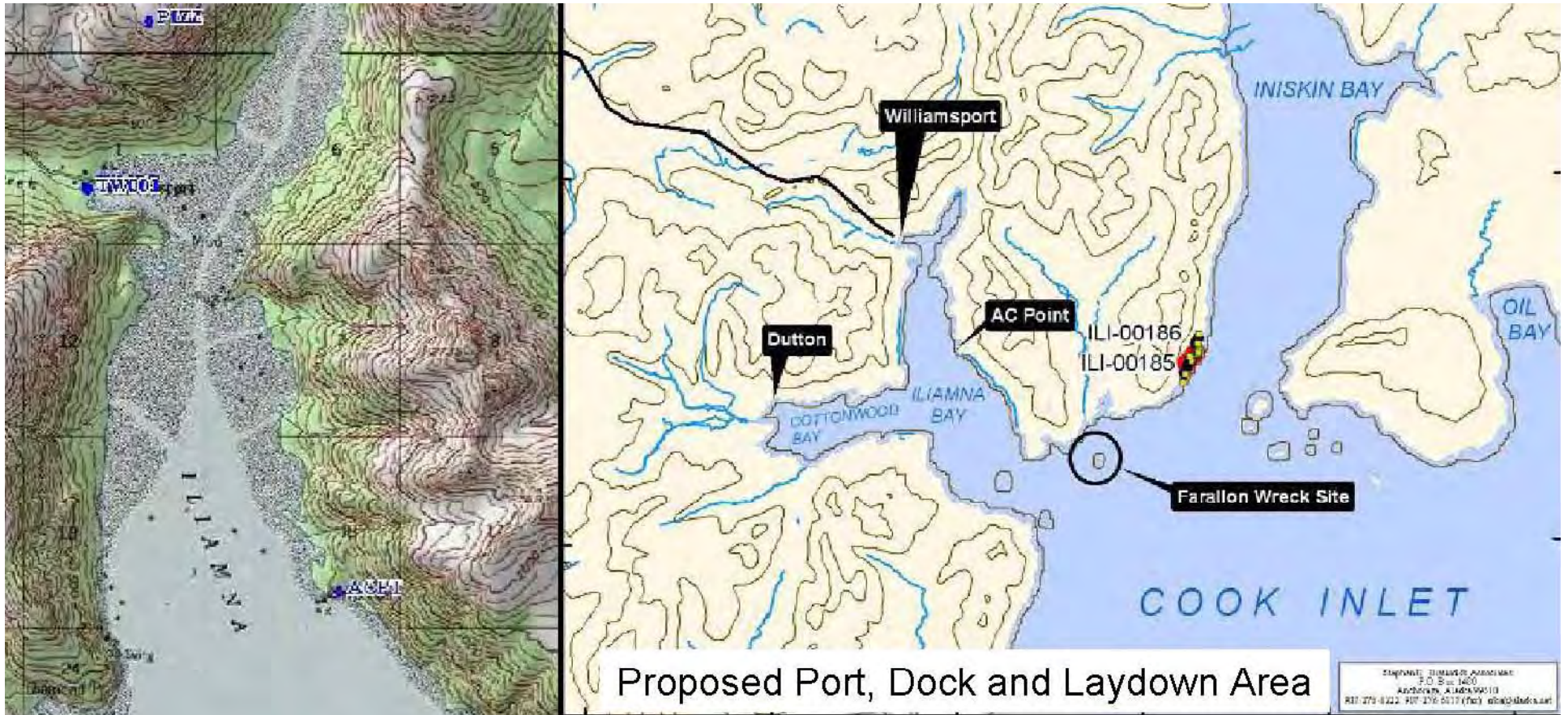
# **Cultural Resources: Federal & State Preservation Laws**

A scenic landscape of a mountain range with snow patches and a rocky foreground. The mountains are covered in patches of snow, and the foreground is a rocky, grassy slope. The sky is clear and blue.

- ◆ **Any “Ground Disturbing Activity”**
  - that may disturb prehistoric, historic, or Traditional Cultural Properties
  - that may interrupt traditional uses by indigenous people (TCPs, AIRFA)
- ◆ **Requires a cultural resources clearance**
  - Approved by the Alaska Office of History & Archaeology (SHPO)

# Port Site

- ◆ Surveyed the port, pier and laydown area in 2005
- ◆ Two one week trips by boat
- ◆ Historic sites in the area include townsites of Dutton, AC Point, and Williamsport, and Farallon shipwreck
- ◆ Meteorology and VHF Repeater sites surveyed 2007 Hoefler by helicopter



# Pebble Project Port Site Cultural Resources Surveys 2004-2007

# Removed Slide: “Overview of the Port Site Pedestrian Survey, Test Pits, and AHRS Site Locations”

- ◆ Removed due to sensitivity and confidentiality with AHRS location information



# Ore Body Area

A landscape photograph showing a range of low hills or mountains. The central peak is the most prominent, with a slightly rounded top. The foreground is a grassy slope leading up to the hills. The sky is a clear, pale blue. The text 'Ore Body Area' is overlaid in yellow at the top center.

- ◆ 11 survey trips to date
- ◆ Survey Routes were meanders following landforms with highest relative probability of having cultural materials

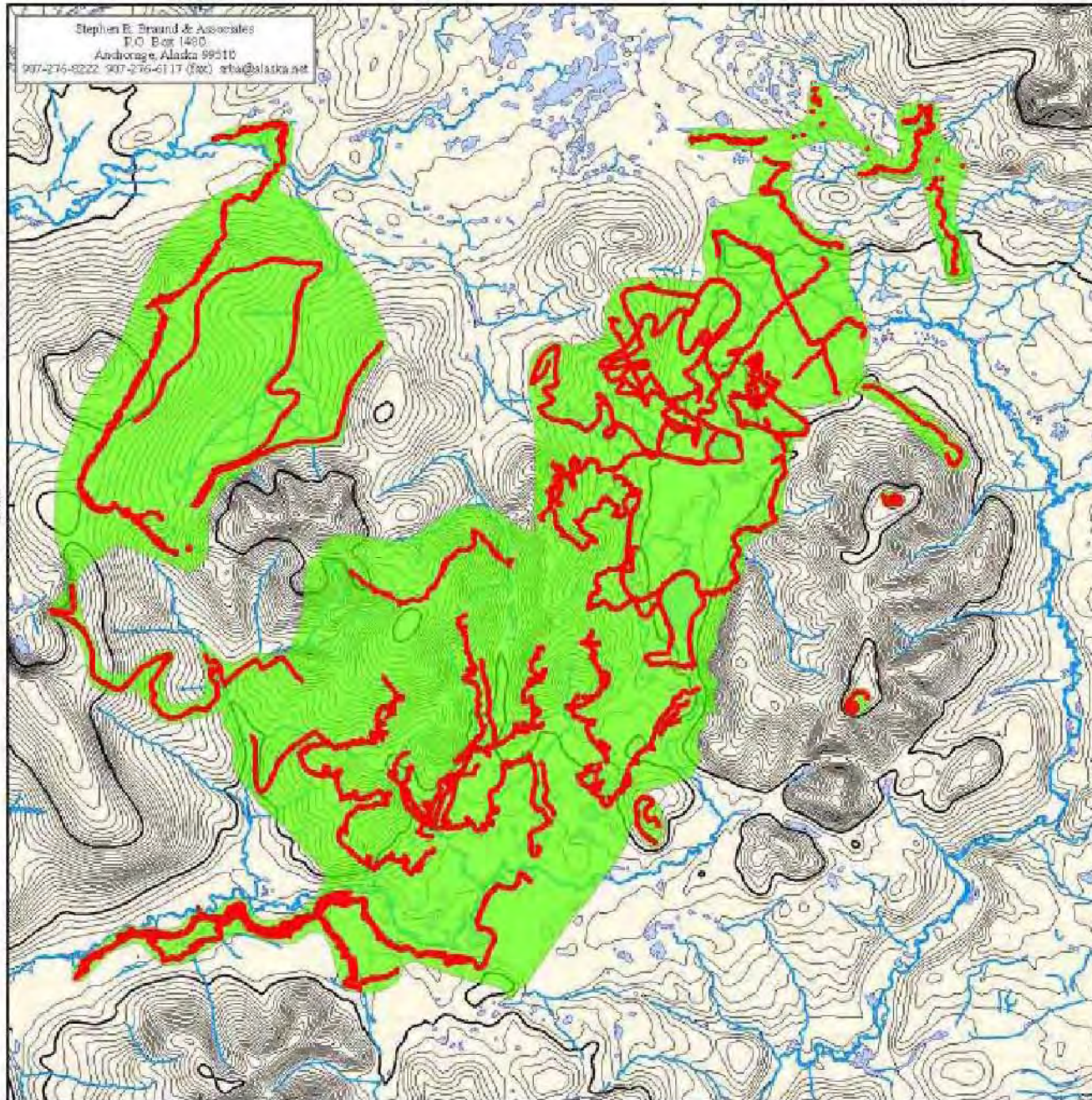
1:25,000

Stephen E. Braund & Associates  
P.O. Box 1480  
Anchorage, Alaska 99510  
907-276-8222 907-276-6117 (fax) sba@alaska.net

**Pebble Project**  
NORTHERN DYNASTY MINES INC.

**2004-2007 Field Surveys  
Mine Area  
DRAFT**

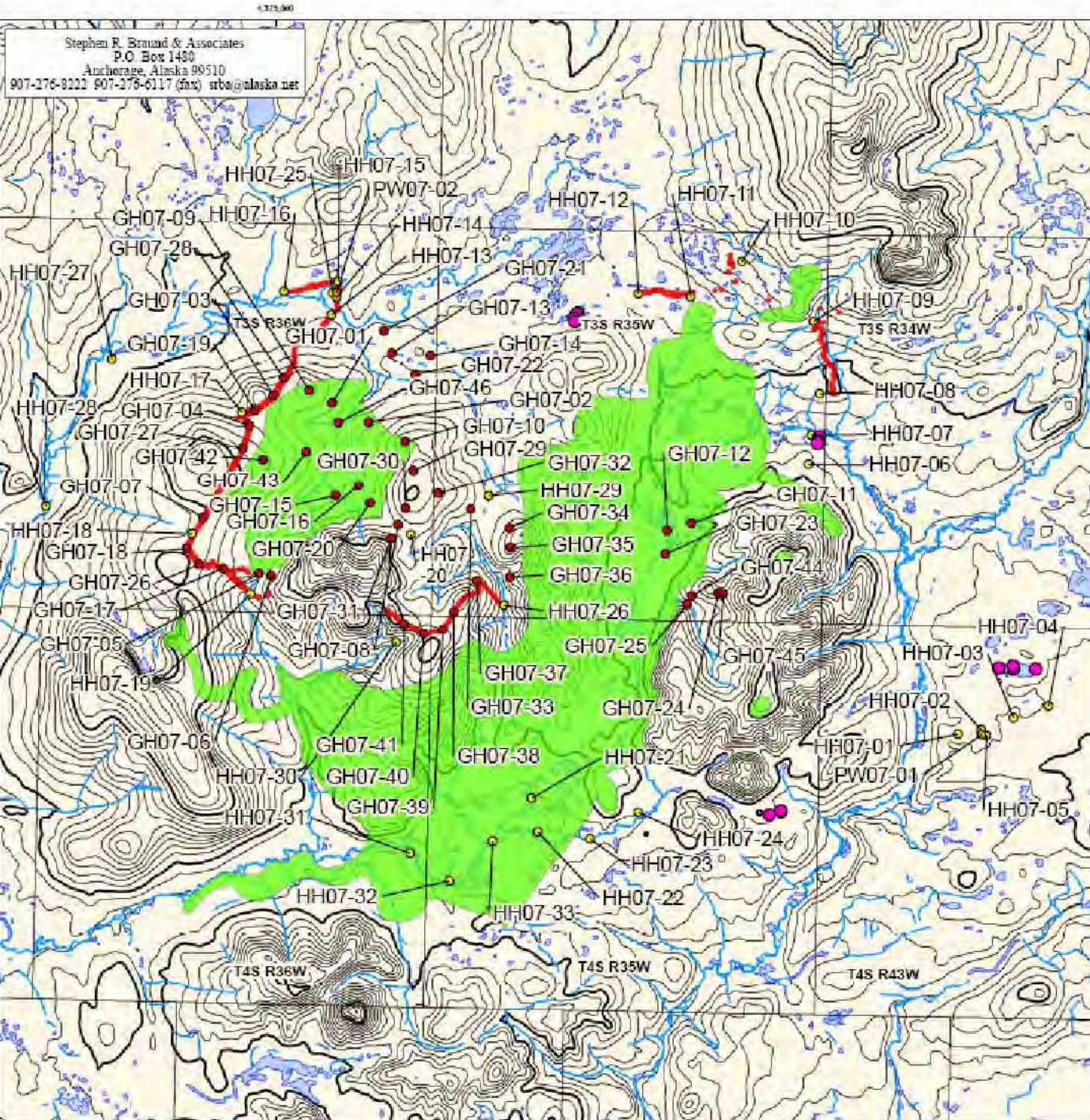
- █ Survey Track
- █ Area Surveyed Based on Probability Methodology



Scale 1:104,772  
Alaska State Plane Zone 6 (units feet)  
1983 North American Datum

File: 2004-2006_SurveysArea	Date: November 14, 2007
Version 1	Author: SPUSA

1:25,000



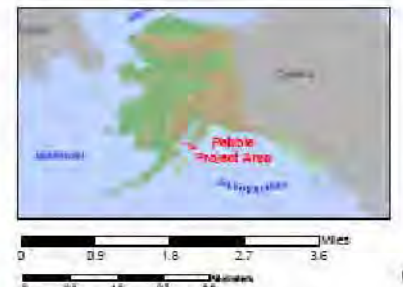
Stephen R. Braund & Associates  
 P.O. Box 1450  
 Anchorage, Alaska 99510  
 907-276-8222 907-276-6117 (fax) srba@alaska.net

**Pebble Project**  
 NORTHERN DYNASTY MINES INC.

**August 2007 Cultural Resources Field Survey, Mine Area**

**DRAFT**

- Geotechnical Drillhole (14/46 in surveyed area)
  - Piezometer (5/33 in surveyed area)
  - Pumping Well (0/2 in surveyed area)
  - Small Pool Study Piezometer
- August 2007 Survey
- Area Surveyed Based on Probability Methodology



Scale 1:142,014  
 Alaska State Plane Zone 5 (units feet)  
 1983 North American Datum

File: AUG07_survey	Date: August 30 2007
Version: 1	Author: SR&A

# Example of Cultural Resources Identified in Mine Area 2006

- ◆ **Two modern subsistence sites**
  - Kaskanak Mountain
  - South Fork Koktuli River
- ◆ **Two prehistoric sites**
  - South Fork Koktuli River
- ◆ **Three isolated surface finds**
  - South Fork Koktuli River
  - Upper Talarik Divide



# **Removed Slide: “August 2006 Field Survey, South Fork Koktuli”**

- ◆ **Removed due to sensitivity and confidentiality with AHRS location information**



**ILI-00193**

- ◆ **Lithic scatter on deflated surface of 12 foot high riverbank**
- ◆ **A test unit excavated revealed *in situ* deposits of green flakes in the thin soil**

# ILI-00193 Artifacts

◆ Counterclockwise from top left on 1/8 inch grid:

- Shattered heat treated cobble fragment
- Flake
- End scraper-like flake
- Small blade
- Side scraper or blade
- Heat treated biface with pot lid scar (top) and refit fragment
- Green chert flake from buried context



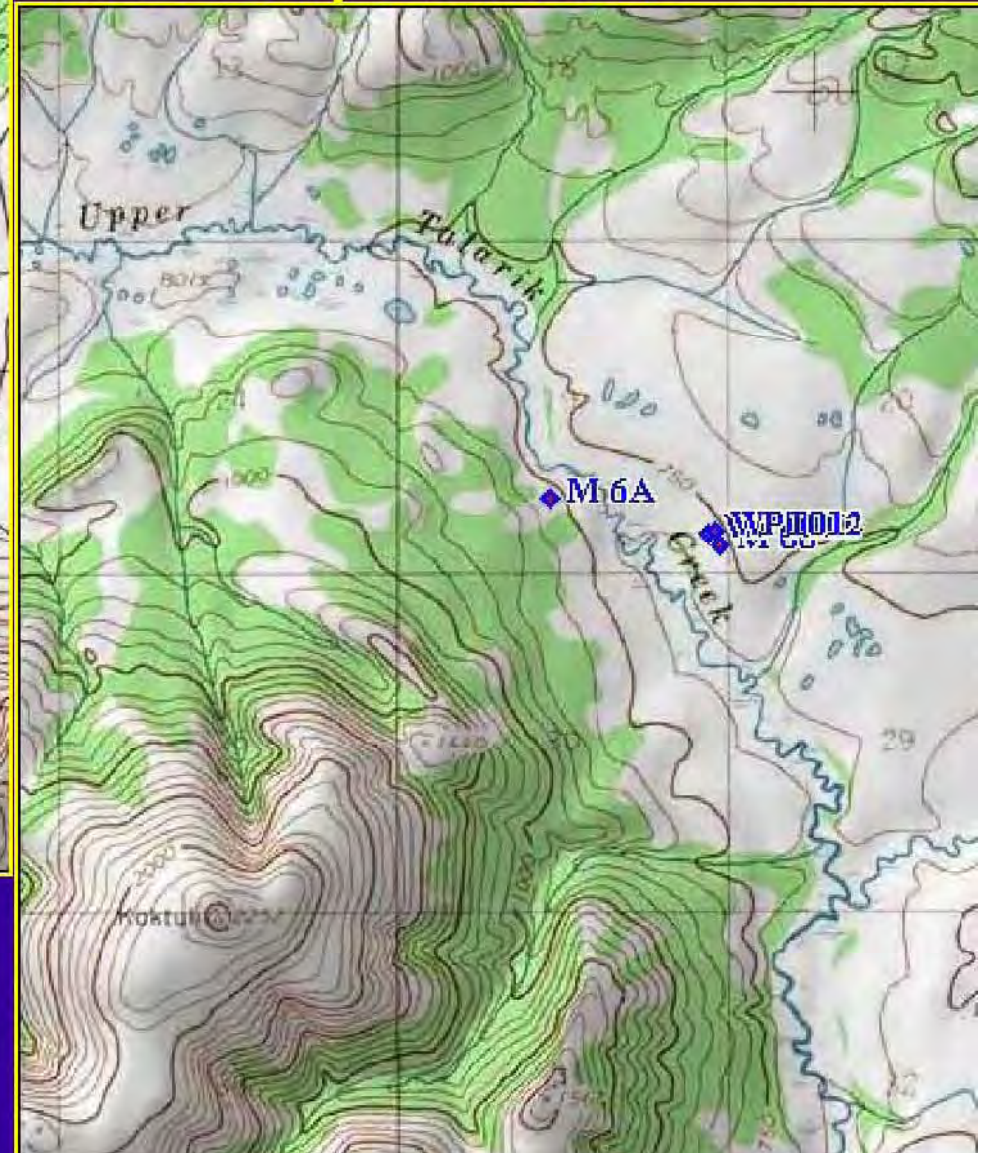
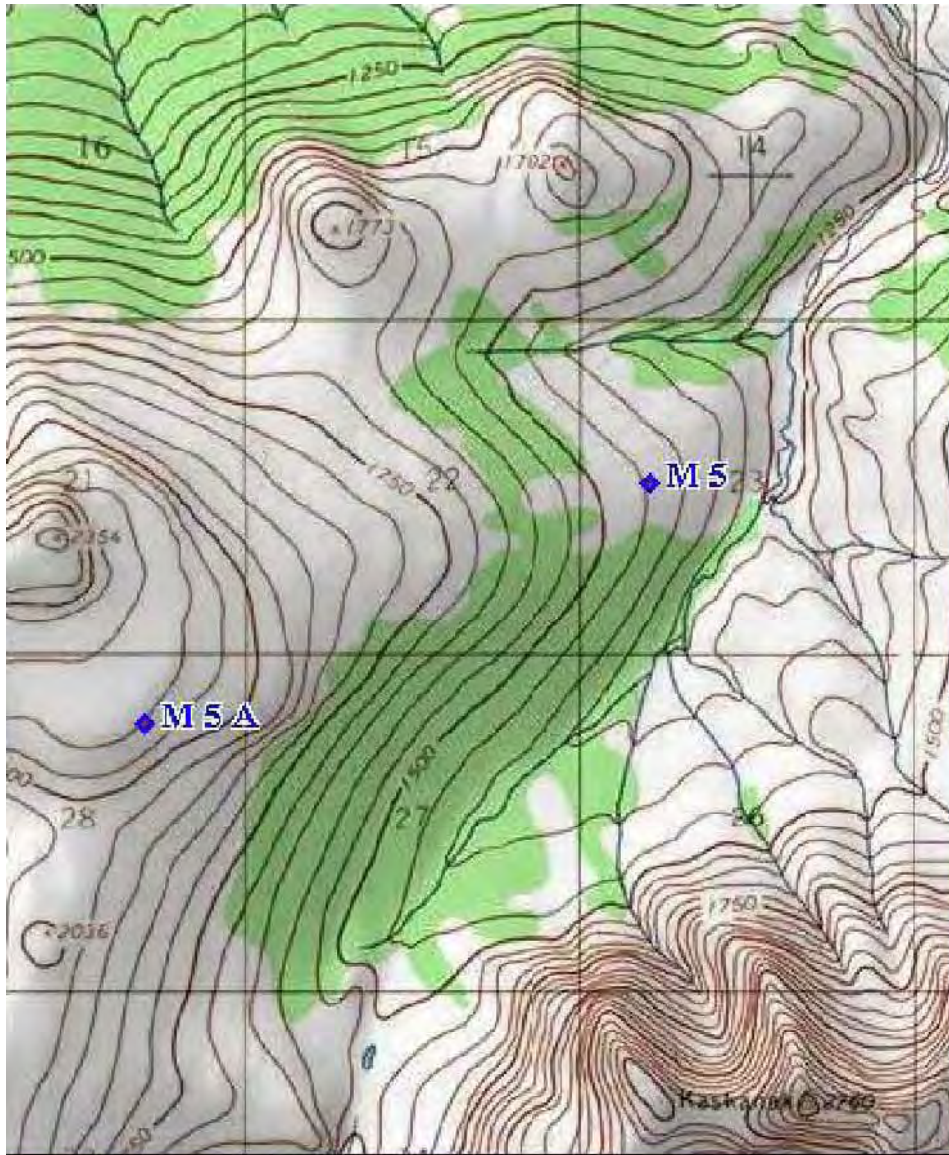


Subsistence Site 2 (Draw)

**ILI-00193 TT-001**



## Meteorological Station Sites Mine Component Area



Stephen R. Braund & Associates examined meteorology station sites and VHF repeater sites with Hoefler Consulting Group personnel prior to construction activity.

# Removed Slide: “AHRS Sites in the Mine and Transportation Corridor Study Areas, Bristol Bay Region”

- ◆ Removed due to sensitivity and confidentiality with AHRS location information

AHRS #	Site Name	Description	Period	NRHP Status <sup>1</sup>
ILI-00003	Russian Point [A062413 (BIA)]	A site with 9 house pits, 5 that were double room construction with Dena'ina material. Tests found fire-cracked rock and mixed and sterile soils.	Historic (AD 1800-1851)	NRJ (Rejected) 2/5/1991)
ILI-00004	Fish Village	Local name reported by P.S. Smith (1917), USGS.	Historic	NDE (No Determin.)
ILI-00006	Chekok (Checkok, Chikak)	Eskimo village, now abandoned, listed in the 1880 census as "Chikak," with a population of 51. Remains include 3 house pits.	Historic	NDE
ILI-00193	Lithic site	Site	Prehistoric	NDE
ILI-00194	Lithic surface scatter	Site	Prehistoric	NDE
ILI-00196	ILI-00196	Site consists of an isolated artifact located on an alluvial fan next to a stream bed. It appears to be a biface reduction flake made of gray chert. Intensive testing of the surrounding area failed to locate further cultural material. No gray chert source	Prehistoric	NDE

# Cultural Resources Project Summary 2004-2007

## Ore Body Area

- ◆ 84 test units excavated in mine area
- ◆ 7 trowel tests
- ◆ 10 monitored geotechnical test units
- ◆ 3 monitored sump excavations
- ◆ 2 archaeological sites in mine study area
- ◆ 6 surface finds
- ◆ 3 trips in 2004
- ◆ 3 trips in 2005
- ◆ 3 trips in 2006
- ◆ 2 trips in 2007
- ◆ Literature Review, AHRS, Place Names, Consultation Interviews
- ◆ Submitted draft EBD in Aug 07

# Cultural Resources Project Summary 2004-2007

## Port Site Area

- ◆ Highest probability area with longest history of use
- ◆ 18 test units at the proposed port site
- ◆ 3 trowel tests
- ◆ 2 archaeological sites at port
- ◆ Rock shelter carbon date: Beta-208530  $1,560 \pm 80$  BP
- ◆ Beach Site: Beta-208531  $430 \pm 40$  ybp
- ◆ Meteorology and VHF repeater sites surveyed
- ◆ 2 trips in 2005
- ◆ 2 trips in 2007
- ◆ Literature Review, AHRS, Place Names, Consultation Interviews
- ◆ Submitted draft EBD in Aug 07

# Future Cultural Resources Tasks

- ◆ Any ground disturbing activities should be pre-surveyed or monitored (drilling sites, seismic shot lines, sump pits) – Coordinate Advance Notice with PLP
- ◆ Ongoing update of literature, AHRS
- ◆ Road, utility & pipeline ROW to be surveyed
- ◆ Integrate results of new surveys into EBD
- ◆ Final port site location
- ◆ Consultation ongoing with agencies, Natives organizations, other interested parties (two communities outstanding)
- ◆ NPS place name data
- ◆ 2007 Annual Report to SHPO

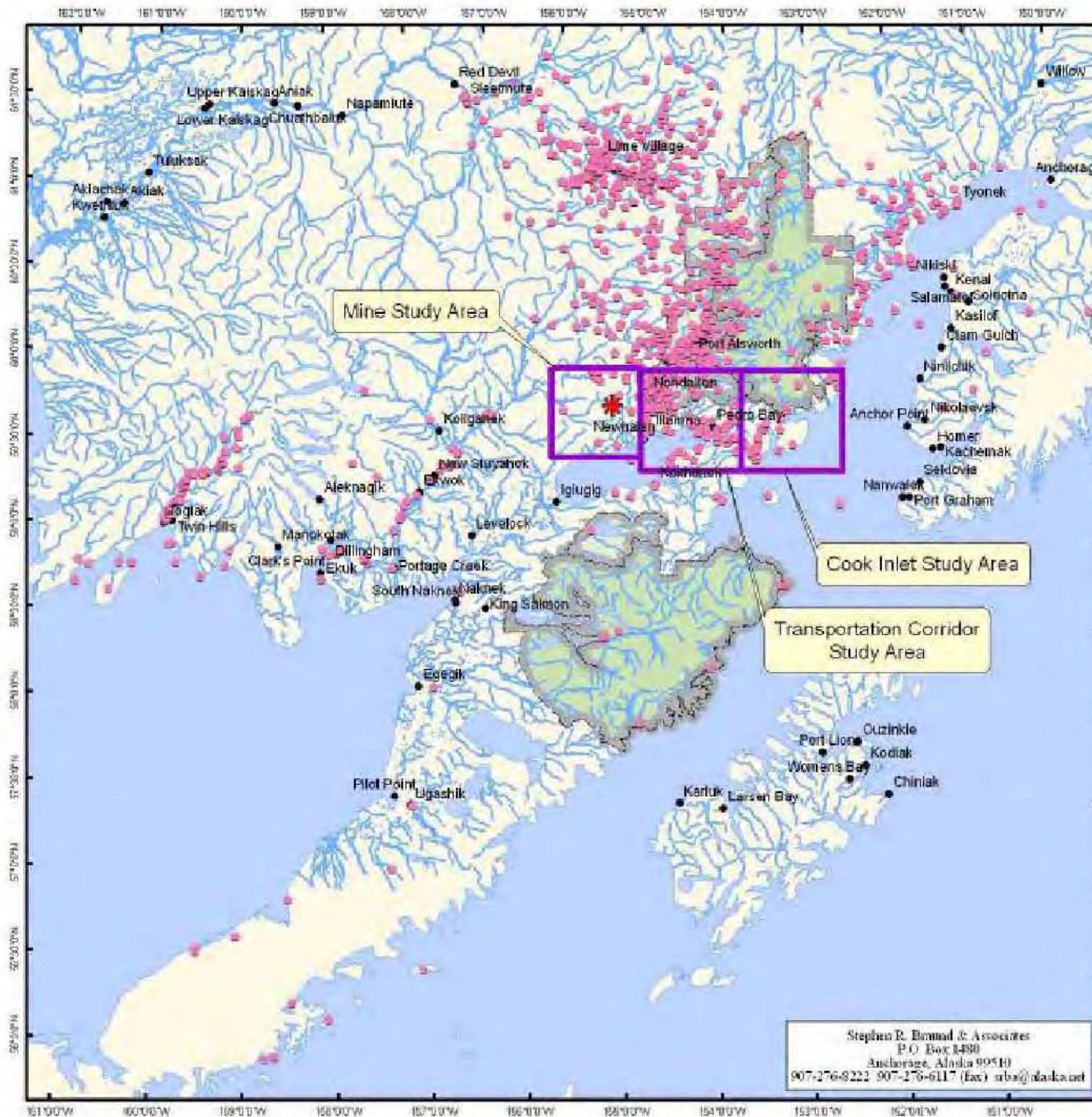
# Indigenous Place Names

- ◆ In the October 2004 meeting in Ekwok, the communities asked for indigenous place names to be included in the baseline document
- ◆ We tried to use BBNA & NPS ongoing projects
- ◆ To respond to community requests, SRB&A compiled 950 place names in Bristol Bay and Cook Inlet drainages from published sources
- ◆ 808 had location data; we mapped those

# Indigenous Place Names

- ◆ 16 place names in mine study area (Dena'ina & Yup'ik)
- ◆ 103 place names in possible transpiration corridor study area, primarily Dena'ina
- ◆ 24 Dena'ina place names in port study area
- ◆ Only those place names in mine, possible corridor, and port are numbered on maps and in report table
- ◆ All 950 place names are in table in EBD appendix
- ◆ Collection of place names is ongoing
- ◆ Hope to incorporate NPS data when completed





**Pebble Project**  
 NORTHERN DYNASTY MINES INC.

**Figure 22-15**  
**Place Names in the**  
**Bristol Bay and**  
**Cook Inlet Drainages**  
**DRAFT**

● Place Name  
 Map shows 808 place names.

See Appendix 22-A for additional information.

- Community
- ★ Pebble Mine Site
- National Park
- National Preserve

Source: Crowell, Steffan, and Puller 2001; Ellanna and Balluta 1992; Gross 1991; Jacobsen 1984; Kari 1977; Kari and Fall 2003; Kari and Kari 1982; Kari, Kari, and Balluta in Ellanna 1986; Martin and Katz in US DOI, USGS 1910; and Wright and Chythlock 1985.

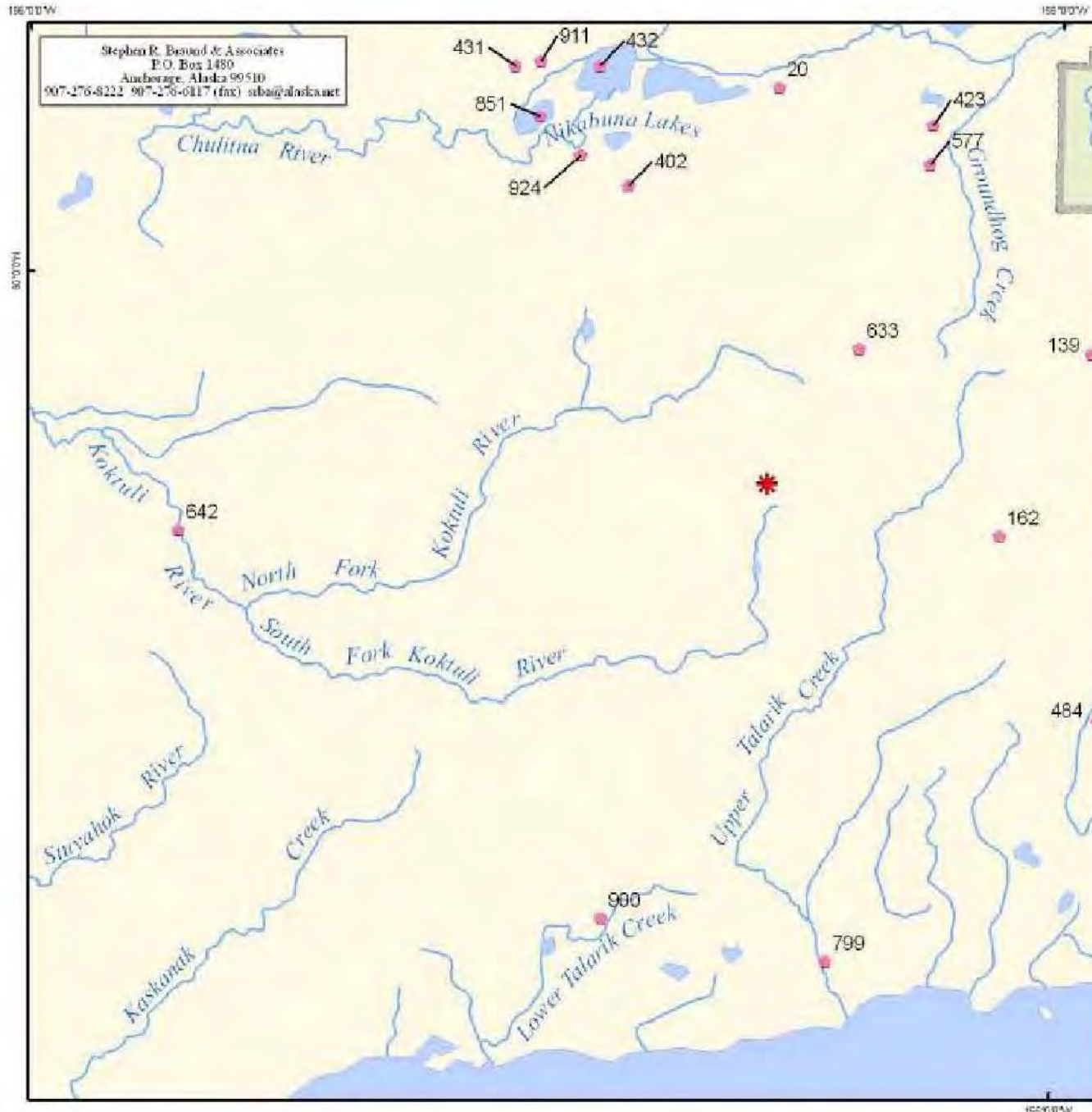


0 25 50 Miles  
 0 25 50 Kilometers

Scale 1:3,696,739  
 Alaska State Plane Zone 5 (units feet)  
 1983 North American Datum

Stephen R. Erstad & Associates  
 P.O. Box 1480  
 Anchorage, Alaska 99510  
 907-276-8222 907-276-6117 (fax) sra@alaska.net

File: Fig22-15-FN_overall_1	Date: August 30, 2007
Version: 5	Author: SRS/BA



Stephen R. Burdum & Associates  
 P.O. Box 1480  
 Anchorage, Alaska 99510  
 907-276-8222 907-276-0117 (fax) srbas@alaska.net

**Pebble Project**  
 NORTHERN DYNASTY MINES INC.

**Figure 22-16**  
**Place Names in the**  
**Mine Study Area**

**DRAFT**

● Place Name

See Table 22-2 for additional information.

- Community
- Pebble Mine Site
- National Park
- National Preserve

Source: Karl and Karl 1982; Karl, Karl, and Balluta  
 in Ellanna 1986.



Scale 1:304,288  
 Alaska State Plane Zone 5 (units feet)  
 1983 North American Datum

File: Fig22-16-PN_mine_1	Date: August 30, 2007
Version: 5	Author: SRB&A

152°00'W

Place Name #	Numbered on Figure #	Place Name	Language	Description/ Translation
20	22-16	Antone K'etnu'a	Dena'ina	creek from stream before Nikabuna Lake
45	22-17	Ch'ak'dalitnu	Dena'ina	Old Iliamna village, Iliamna River
162	22-16	Duntsih	Dena'ina	Iliamna Lake lowlands (II); lowlands south of Lake Clark (I)
633	22-16	Qiyhi Dghil'u; Qiyhi Qelahi	Dena'ina	Groundhog Mountain
642	22-16	Qukdeli	Yup'ik	Koktuli River, or Koktalee, or Kaktul (Katz 1910:201)





**Figure 50-3**  
**Place Names in the**  
**Vicinity of the Port Site,**  
**Cook Inlet Drainages**  
**DRAFT**

● Place Name

See Table 50-2 for additional information.

- Community
- Pebble Mine Site
- National Park
- National Preserve

Source: Kari, Kari, and Balluffa in Elianna 1986;  
 Kari and Kari 1982.



Scale: 1:347,477  
 Alaska State Plane Zone 5 (units feet)  
 1983 North American Datum

Stephen R. Ermaud & Associates  
 P.O. Box 1480  
 Anchorage, Alaska 99510  
 907-276-8222 907-276-6117 (Fax) srb@a@alaska.net

File: Fig50-3-PN\_port\_1  
 Version: 5

Date: August 20, 2007  
 Author: SFR/BA

<b>Place Name #</b>	<b>Numbered on Figure #</b>	<b>Place Name</b>	<b>Language</b>	<b>Description/ Translation</b>
178	50-3	Esdghuk'a T'el'ih	Dena'ina	Diamond Point in Iliamna Bay
210	50-3	Hkaytaghi'u	Dena'ina	Cottonwood Bay
441	50-3	Nilavena Hkaytghi'u	Dena'ina	Iliamna Bay
522	50-3	Nuquk'denghilyash t	Dena'ina	South Head
548	50-3	Q'anlcha Nul	Dena'ina	beach on Iliamna Bay
930	50-3	Yaha Nlin	Dena'ina	Whitegill Island

Sources: Kari and Kari, 1982; Kari, Kari, and Balluta in Ellanna 1986

# Cultural Resources Interviews

- ◆ Contacted 7 communities: Iguigig, Iliamna, Kokhanok, Newhalen, Nondalton, Pedro Bay & Port Alsworth
- ◆ Completed 32 interviews in four communities: Nondalton, Newhalen, Kokhanok, & Port Alsworth
- ◆ Iliamna declined to participate
- ◆ Pedro Bay & Igiugig – pending scheduling

# Cultural Resources Interviews

- ◆ Used 1:250,000 USGS maps
- ◆ Focused on elders knowledgeable about locations of cultural resources in BB & CI
- ◆ Asked about, for example, village sites, cabins, caches, camps, corrals, grave sites, burial grounds, travel routes, trap lines, trails, portages, battle sites, areas of religious, traditional or cultural significance, landscape features



# Cultural Resources Interviews

- ◆ 783 cultural resource features reported in the 32 interviews
- ◆ Maps and corresponding tables in EBD show the 377 cultural resource features that appear in the mine or transportation corridor study areas (none were identified in the port study area)
- ◆ Remaining 406 cultural resource features are in appendix, and Figure 22-18 shows all 783 features

## **Removed Slide: “Cultural Resources Identified in the Bristol Bay and Cook Inlet Drainages”**

- ◆ **Removed due to sensitivity and confidentiality with cultural resources location information from interviews**

# Removed Slide: “Cultural Resources Identified in the Mine Study Area - 1”

- ◆ Removed due to sensitivity and confidentiality with cultural resources location information from interviews

# Removed Slide: “Cultural Resources Identified in the Mine Study Area - 2”

- ◆ Removed due to sensitivity and confidentiality with cultural resources location information from interviews

Feature #	Numbered on Figure #	Feature Type	Feature Type Subcategory	Feature Name/ Description	Time Period
BTL-001	22-20	Cultural Resource	Battle Site	"The Rapids"	50 plus years
BTL-011	22-23	Cultural Resource	Battle Site	Battle site above Petrov Falls	50 plus years
BUR-010	22-21	Cultural Resource	Burial	Graves near Lower Talarik Village site	50 plus years
CAB-064	22-19	Cultural Resource	Cabin	Ira Wassilie's allotment and cabin	Multi-generational
CAB-065	22-19	Cultural Resource	Cabin	Lower Talarik cabin	Multi-generational
CMP-031	22-19	Camp		Frying Pan Lake tent camp	Unknown
CMP-112	22-19	Cultural Resource	Camp	Frying Pan Lake camps	50 plus years
RDR-007	22-23	Cultural Resource	Reindeer Station	Reindeer Corral	50 plus years
RDR-008	22-20	Cultural Resource	Reindeer Station	Upper Talarik Creek reindeer station	50 plus years
SIT-007	22-20	Cultural Resource	Site	Portage Landing	50 plus years
SIT-011	22-23	Cultural Resource	Site	Newhalen Rapids site	50 plus years