



Pebble Project EBD Cultural Resources

Stephen R. Braund & Associates

2012 Agency Meeting

January 2012

Purpose of PLP Cultural Resources Studies

- ◆ Characterize the cultural resources of the area (archaeological, ethnographic, historic)



Alaska Historic Preservation Act (AHPA)



- ◆ Applies to all State lands

- Before construction or improvements of any nature are undertaken by the state, governmental agency of state, or a private person licensed by the state or governmental agency of the state, the affected area may require a survey to determine if the area contains historic, prehistoric, or archeological values

- ◆ All 2004-2011 PLP cultural resource surveys conducted under AHPA

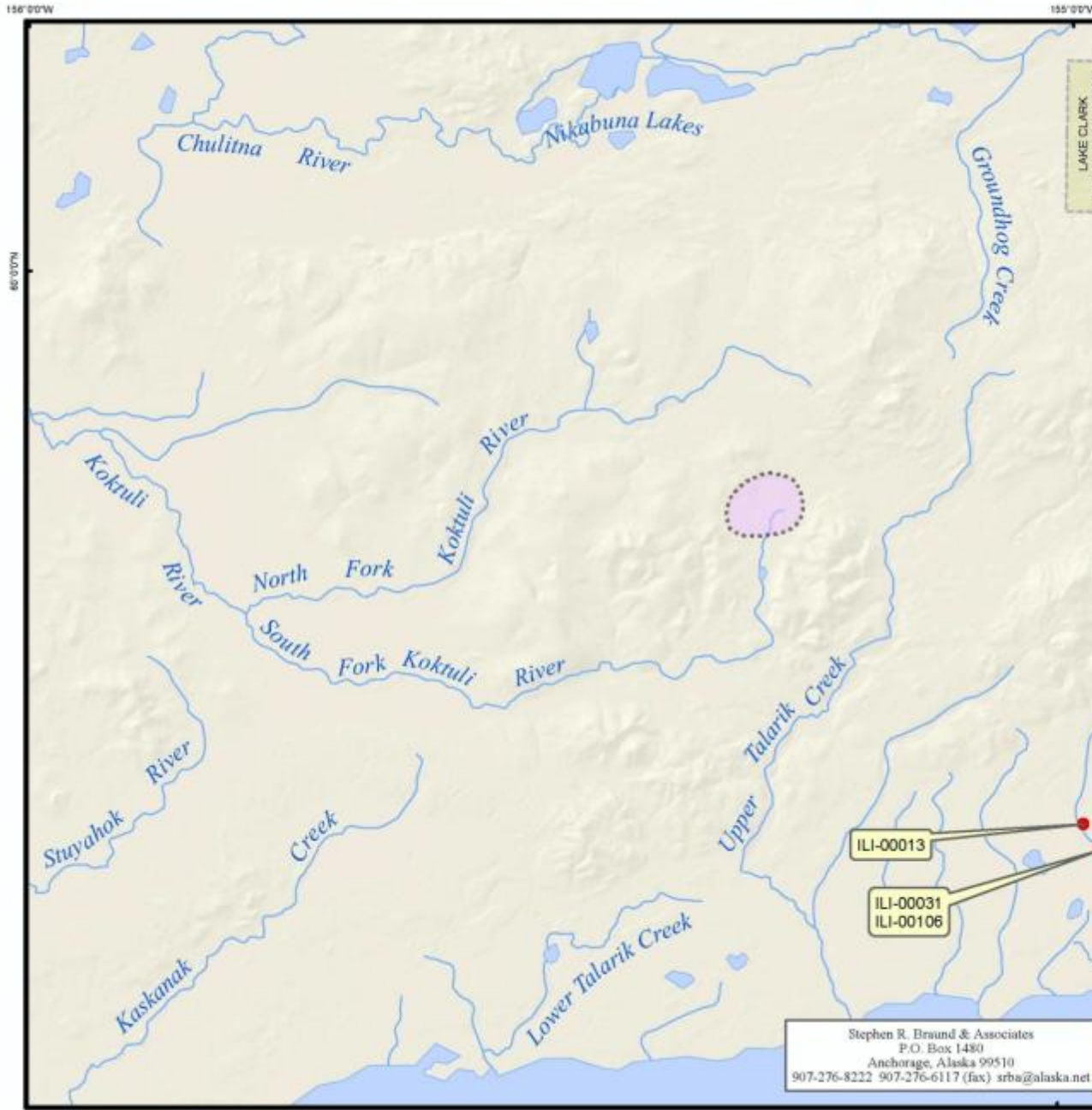
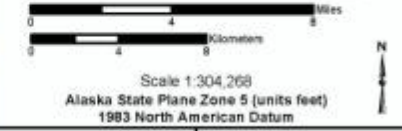


Figure 7
AHRs Sites Identified by
Other Cultural Resources
Surveys, Mine Study Area

● AHRs Site
 These data are confidential and not for public distribution.

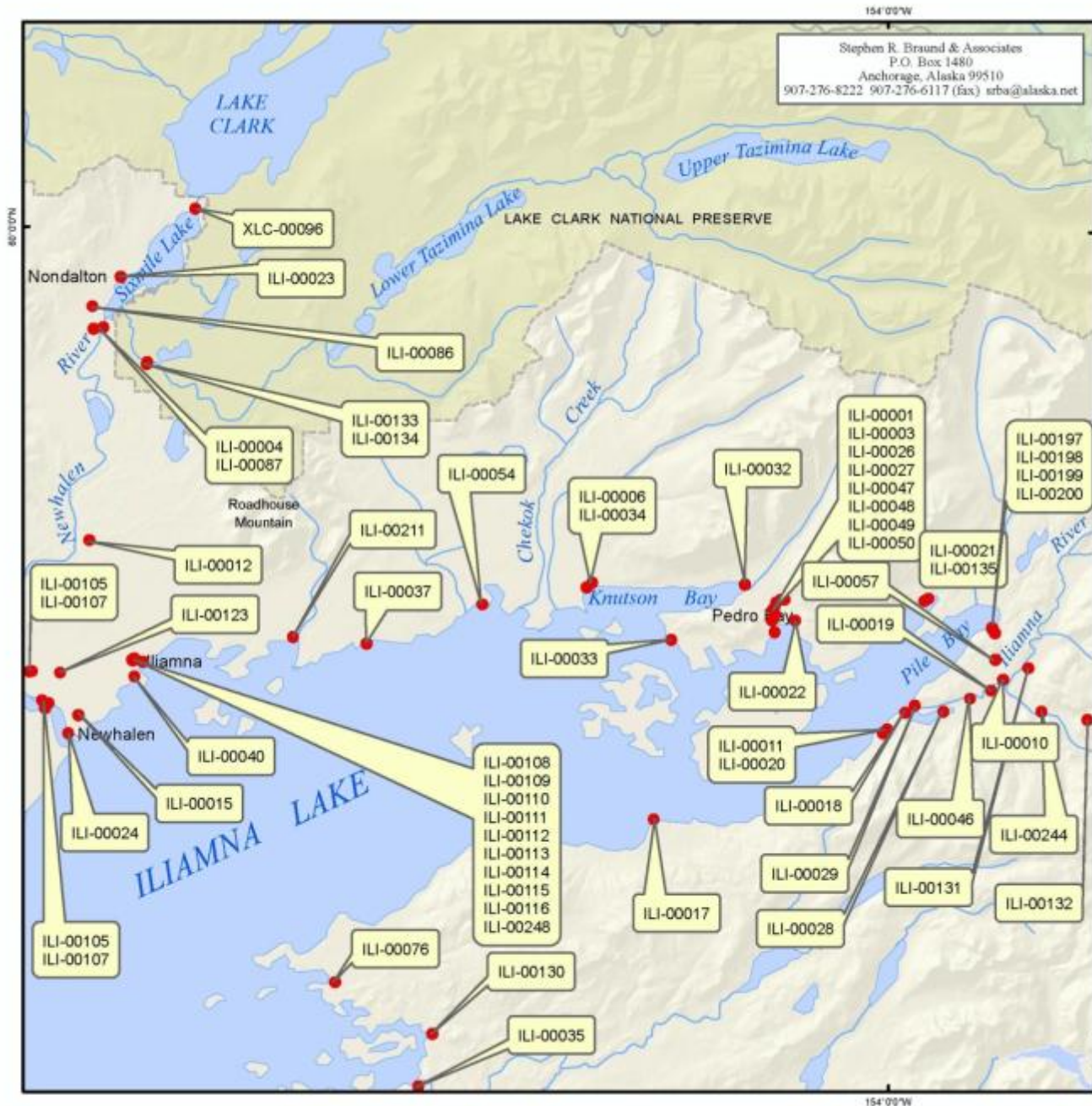
○ General Deposit Location
 □ National Preserve

Source: AHRs information from ADNR, OHA, 2011.



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File: Fig7-Previous_AHRs_mine	Date: July 2011
Author: SRB&A	



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Figure 8
AHRs Sites Identified by
Other Cultural Resources
Field Surveys,
Transportation Corridor
Study Area

● AHRs Site

These data are confidential and not for public distribution.

■ National Preserve

Source: AHRs information from ADNR, OHA, 2011.



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

File: Fig8-Previous_AHRs_TC	Date: July 2011
	Author: SRB&A

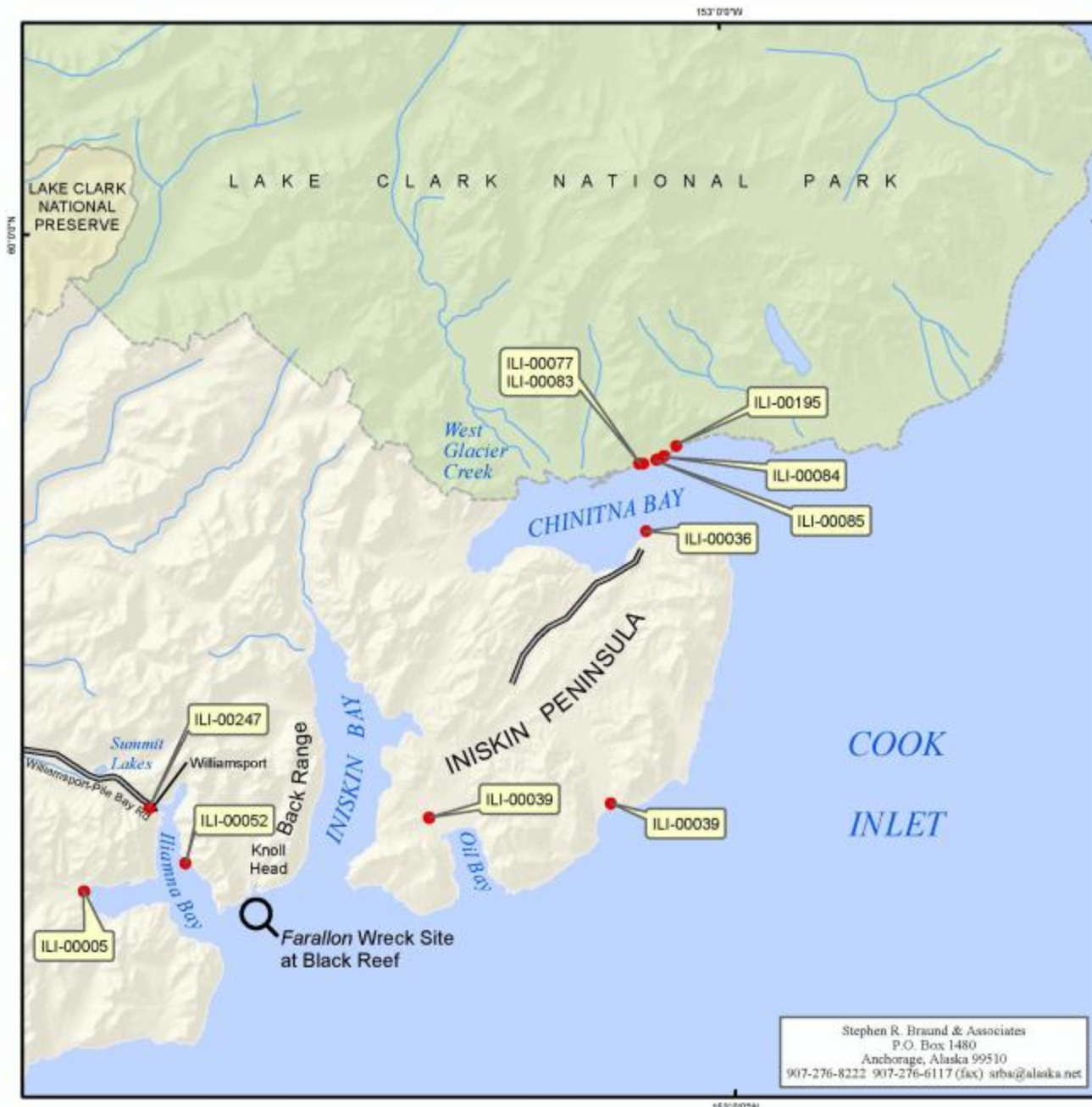


Figure 9
AHRs Sites Identified by
Other Cultural Resources
Surveys, Cook Inlet
Drainages Study Area

- AHRs Site
- These data are confidential and not for public distribution
- National Park
- National Preserve
- Road

Source: AHRs information from ADNR, OHA, 2011.



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File: Fig9-Previous_AHRs_CI	Date: July 2011
	Author: SRB&A

Examples of Alaska Heritage Resource Sites in the Study Areas

AHRS #	Site Name	Description	Period	NRHP Status ¹
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 (Chekok, 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-00022	St. Nicholas Chapel, Pedro Bay	Russian Orthodox church of hewn-log construction.	Historic (1890)	NHR (Listed)
ILI-00132	Williamsport to Pile Bay Road	Seasonal road that follows a traditional Dena'ina trail over the Chigmit. Mountains. Originally built in the 1930s by the ARC.	Historic (1920s to present)	NRE (Eligible)
ILI-00251	NA	Site consists of two green silicified mudstone flakes on an eroding surface. Location is an excellent hunting area as game trails run in the bottom of the canyon. The canyon below the site is a choke point for entry to a valley that creates a pass between the North and South Fork Kuktuli	Prehistoric	NDE

Field Surveys 2004 - 2010

**Areas chosen in
coordination with PLP –
where ground disturbing
activities may occur**

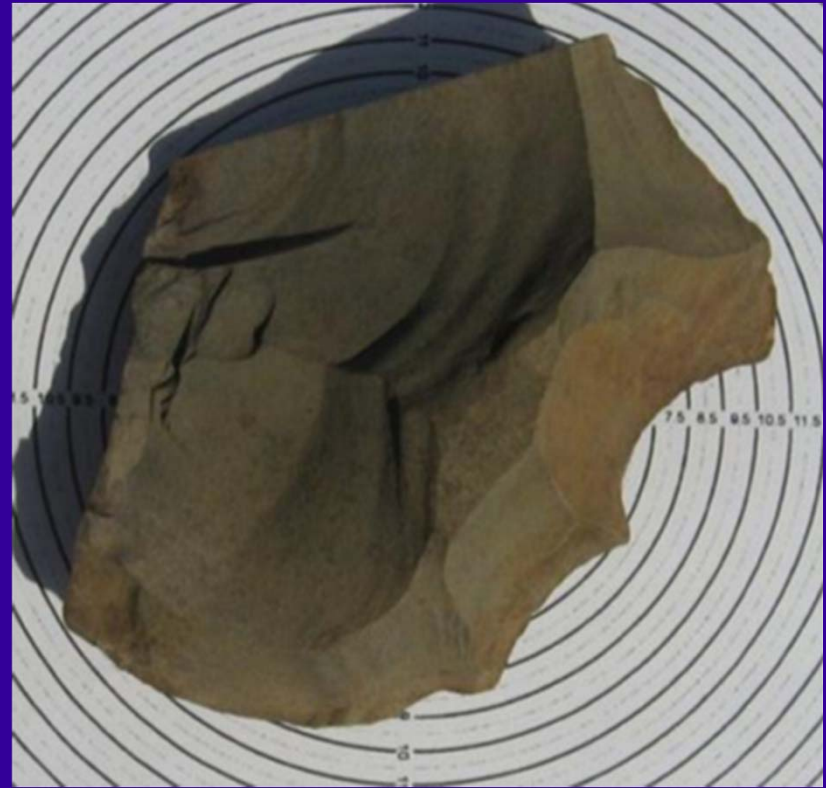


Examples of Features & Artifacts identified during 2004 – 2010 Cultural Resource Surveys

**Circular
arrangement of
rocks around a
central larger
rock**



Stone Cores

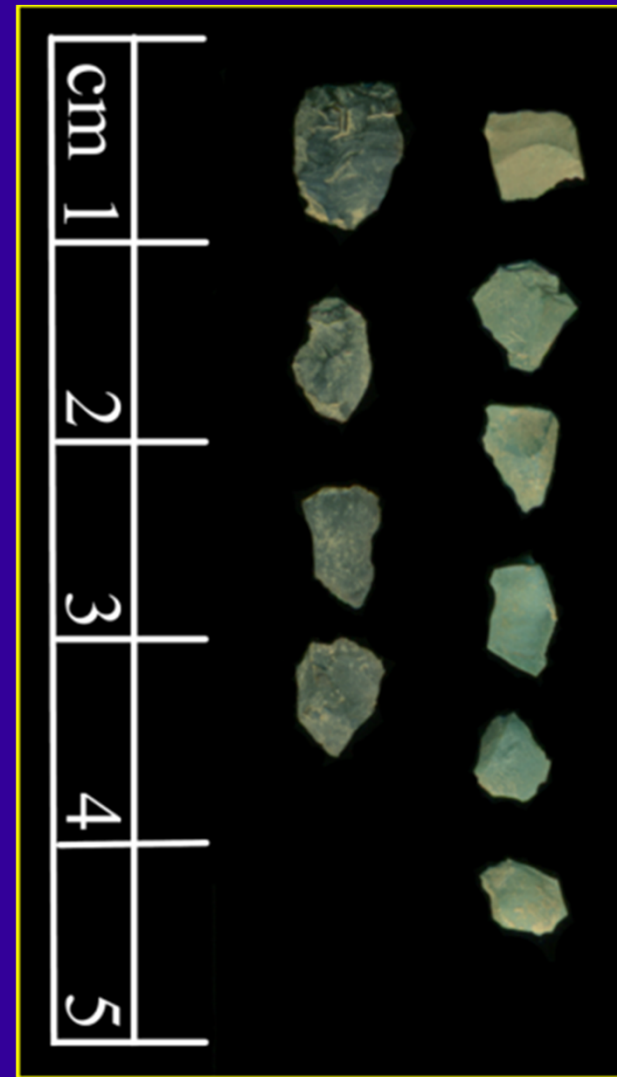


Stone Debitage

Initial Reduction



Tool Maintenance



Stone Tools

Spear Point



Hammer Stone



Stone Tent Ring near Wiggly Lake



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**

**SRB&A staff
excavating a
test at
archaeological
site ILI-00193**



ILI-00193 Artifacts

◆ From left to right on 1/8 inch grid:

- Flake
- Worked Flake
- Biface
- Biface
- Heat treated biface with pot lid scar (top) and refit fragment

MJR19



Slide 16

MJR19 need to compare names to what is written on artifact bags

there will be no artifact bags for the frost shatter

Monty, 9/7/2011

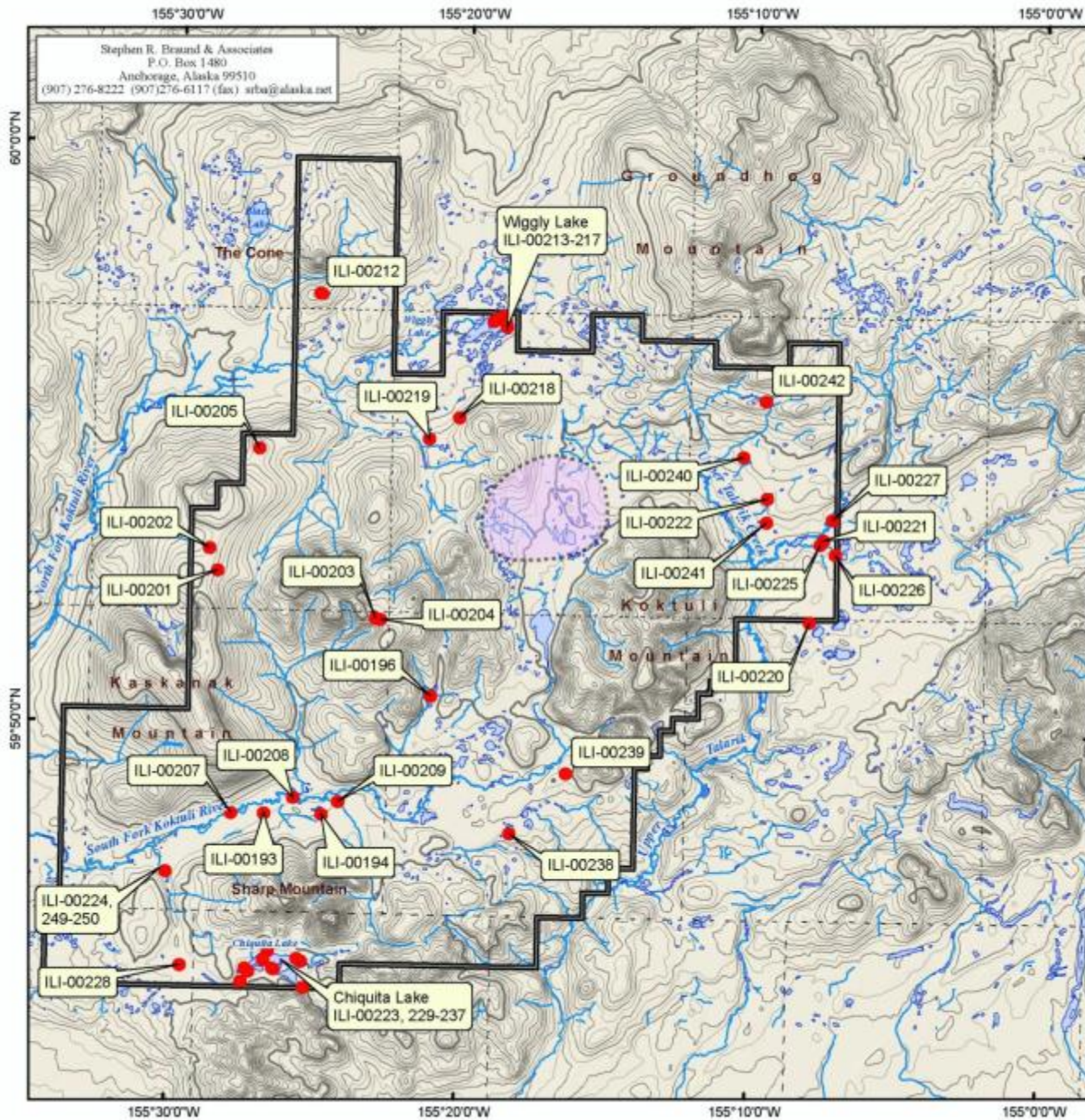


Figure 5
AHRs Sites Identified by
SRB&A During 2004-2010
Cultural Resources
Field Surveys in the
Claim Boundary

● AHRs Site Identified during 2004-2010

These data are confidential and not for public distribution.

○ General Deposit Location

□ Claim Boundary



0 1 2 3 4 Miles
0 1 2 3 4 Kilometers

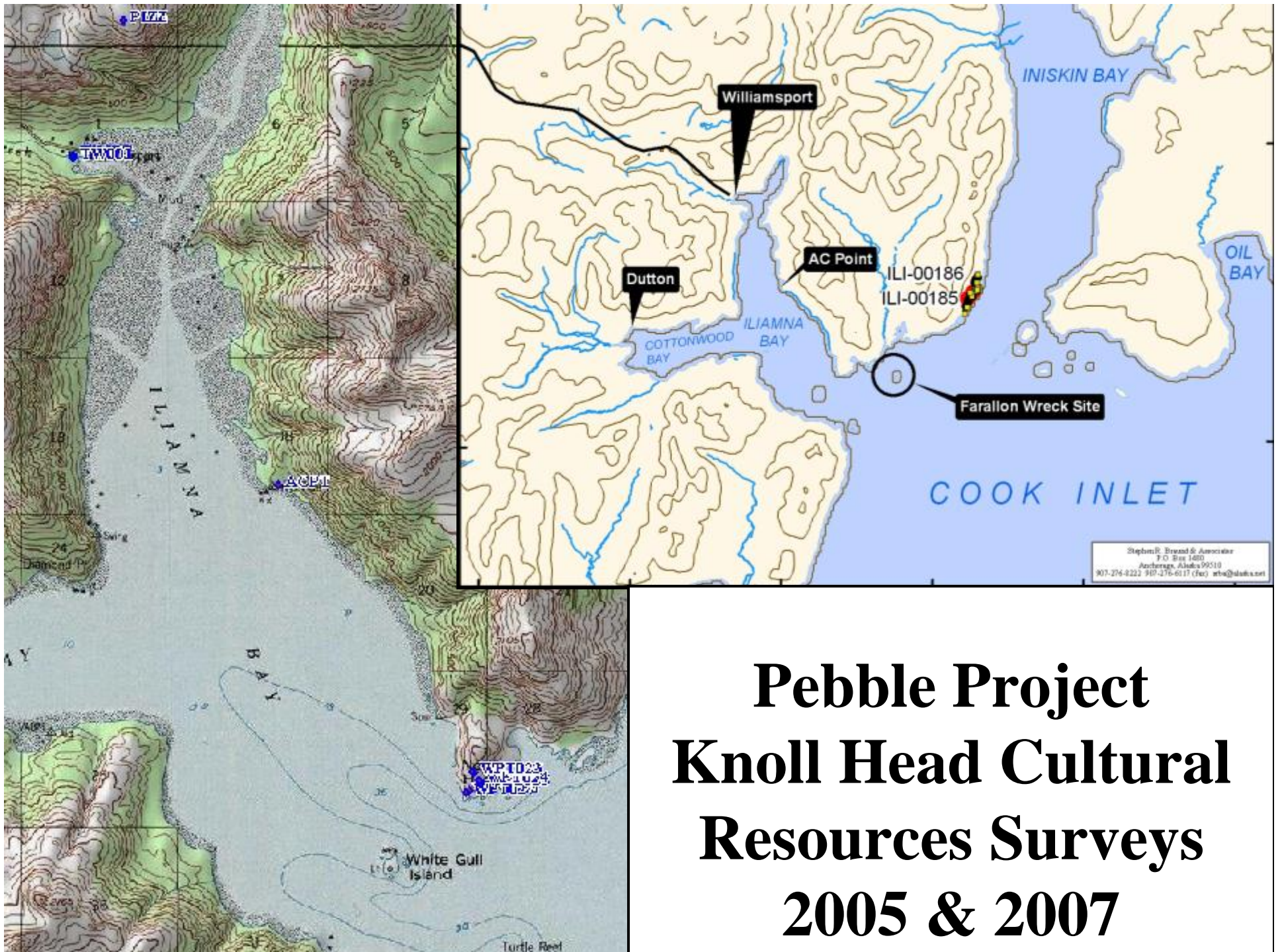
Scale 1:180,000
Alaska State Plane Zone 5 (units feet)
1983 North American Datum

File: Fig5_AHRs_04-10

Date: July 2011

Version: 1

Author: SRB&A



Pebble Project Knoll Head Cultural Resources Surveys 2005 & 2007




Knoll Head Area (west side Cook Inlet)

- ◆ Surveyed Knoll Head area in 2005 and 2007
- ◆ Two one week trips by boat
- ◆ Historic sites in the area include townsites of Dutton, AC Point, and Williamsport, and Farallon shipwreck
- ◆ 2005 survey identified two archaeological sites near the outlet of Iniskin Bay

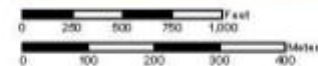
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Figure A-3
2005 Cultural Resources
Field Survey Tracks,
Subsurface Tests, and
AHRs Sites at Knoll Head

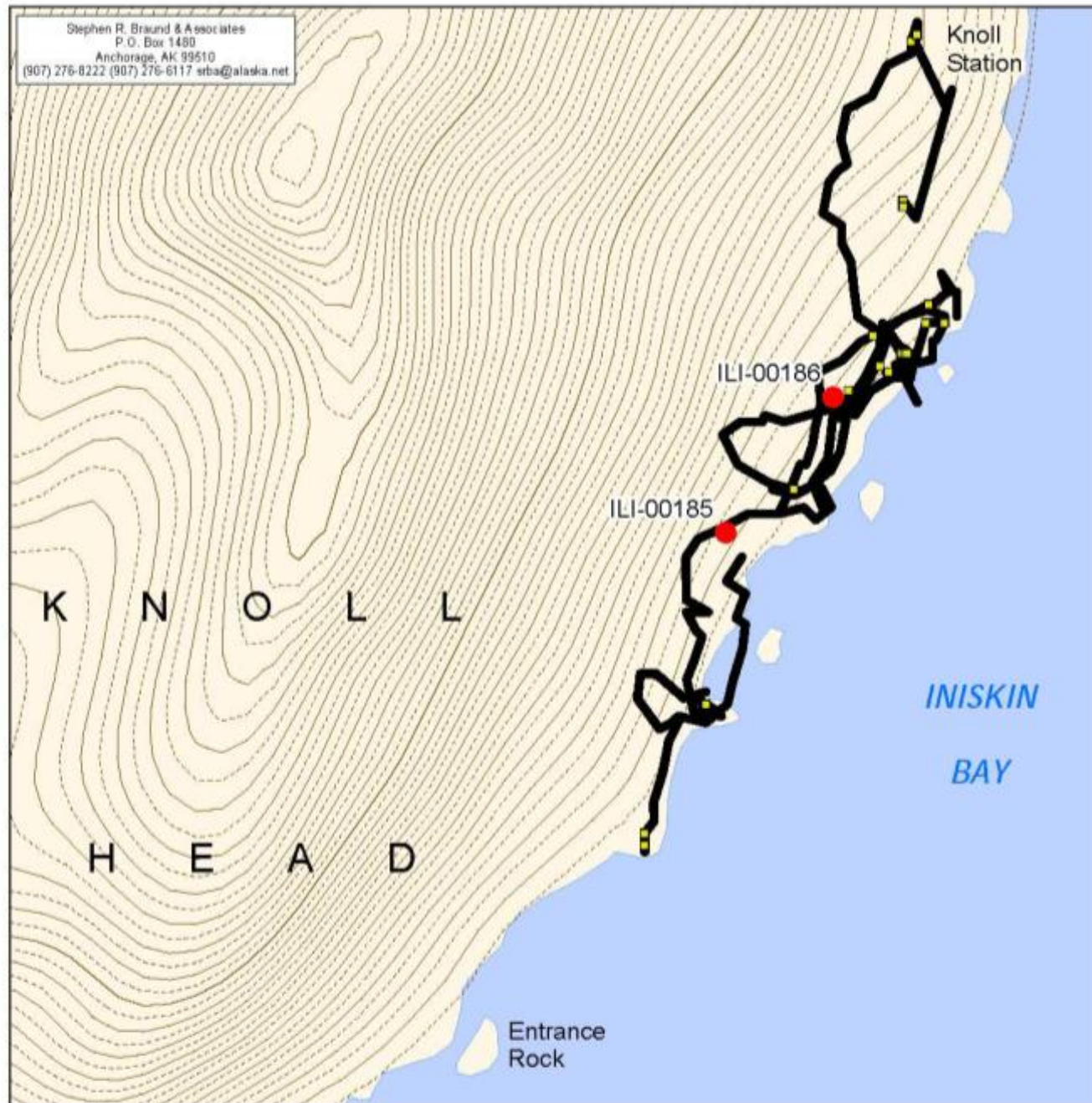
-  Subsurface Test
-  Survey Track
-  AHRs Site Identified during 2005

Source: AHRs information from
ADNR, OHA, 2009.



Scale 1:10,500
Alaska State Plane Zone 5 (units feet)
1983 North American Datum

File: FigA3-CR_survey_sum05_CI	Date: July 2011
	Author: SRB&A



Dena'ina & Yup'ik ^{MJR10} Place Names

2004-2008 EBD

- ◆ 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

Slide 21

MJR10 check spelling

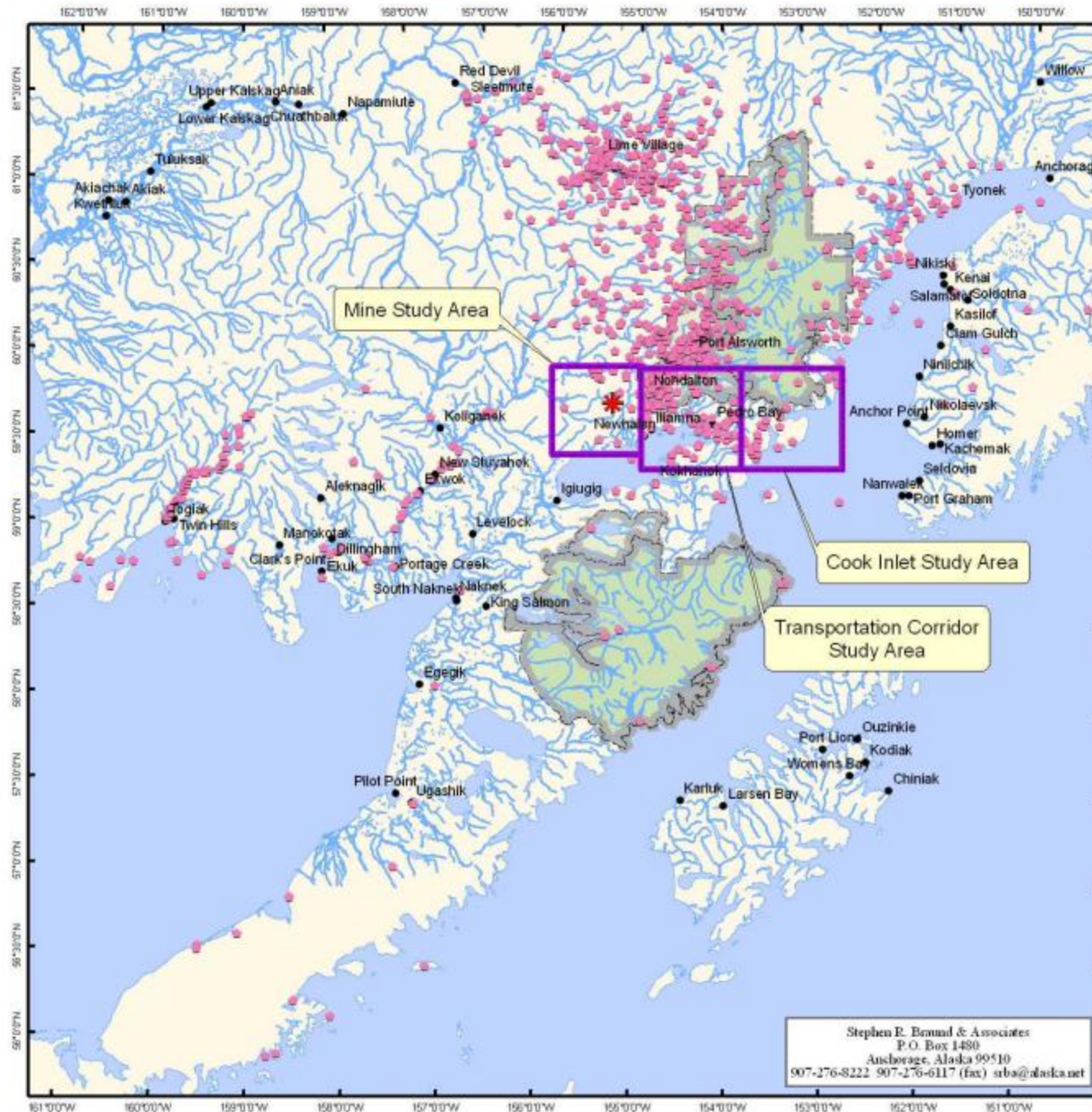
add 2010 work

Monty, 9/7/2011

Dena'ina & Yup'ik Place Names

2004-2008 EBD

- ◆ 16 place names in mine study area (Dena'ina & Yup'ik)
- ◆ 103 place names in transpiration corridor study area, primarily Dena'ina
- ◆ 24 Dena'ina place names in Cook Inlet study area
- ◆ Only those place names in mine, transportation corridor, and Cook Inlet study areas are numbered on maps and in report table
- ◆ All 950 place names are in table in EBD appendix



Pebble Project
NORTHERN DYNASTY MINES INC.

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

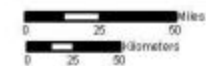
● Place Name

Map shows 808 place names.

See Appendix 22-A for additional information.

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

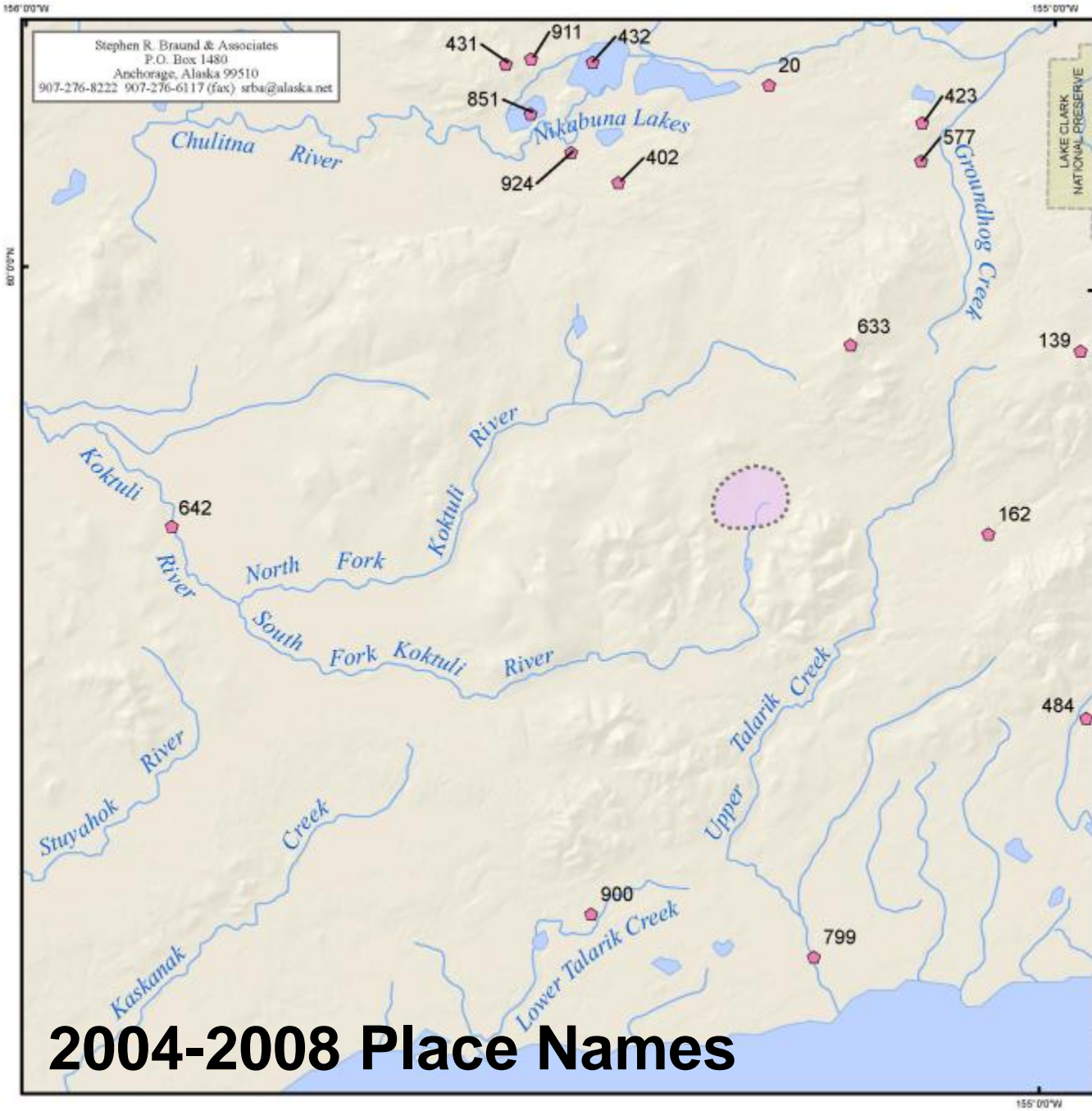
Source: Crowell, Steffian, and Pullar 2001; Ellanna and Balluta 1992; Gross 1991; Jacobsen 1984; Karl 1977; Karl and Fall 2003; Karl and Karl 1982; Karl, Karl, and Balluta in Ellanna 1986; Martin and Katz in US DOI, USGS 1910; and Wright and Chythlock 1985.



Scale 1:3,096,739
Alaska State Plane Zone 5 (units feet)
1983 North American Datum

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File: Fig22-15-PN_overst_1	Date: August 30, 2007
Version: 5	Author: SRB&A



2004-2008 Place Names

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Figure 22-21
Locations of Place Names
in the Mine Study Area

- Place Name Location
- General Deposit Location
- National Preserve

See Table 22-3 and Appendix 22A for additional information.

Sources: Kari and Kari, 1982;
 Kari, Kari, and Balluta, 1986.

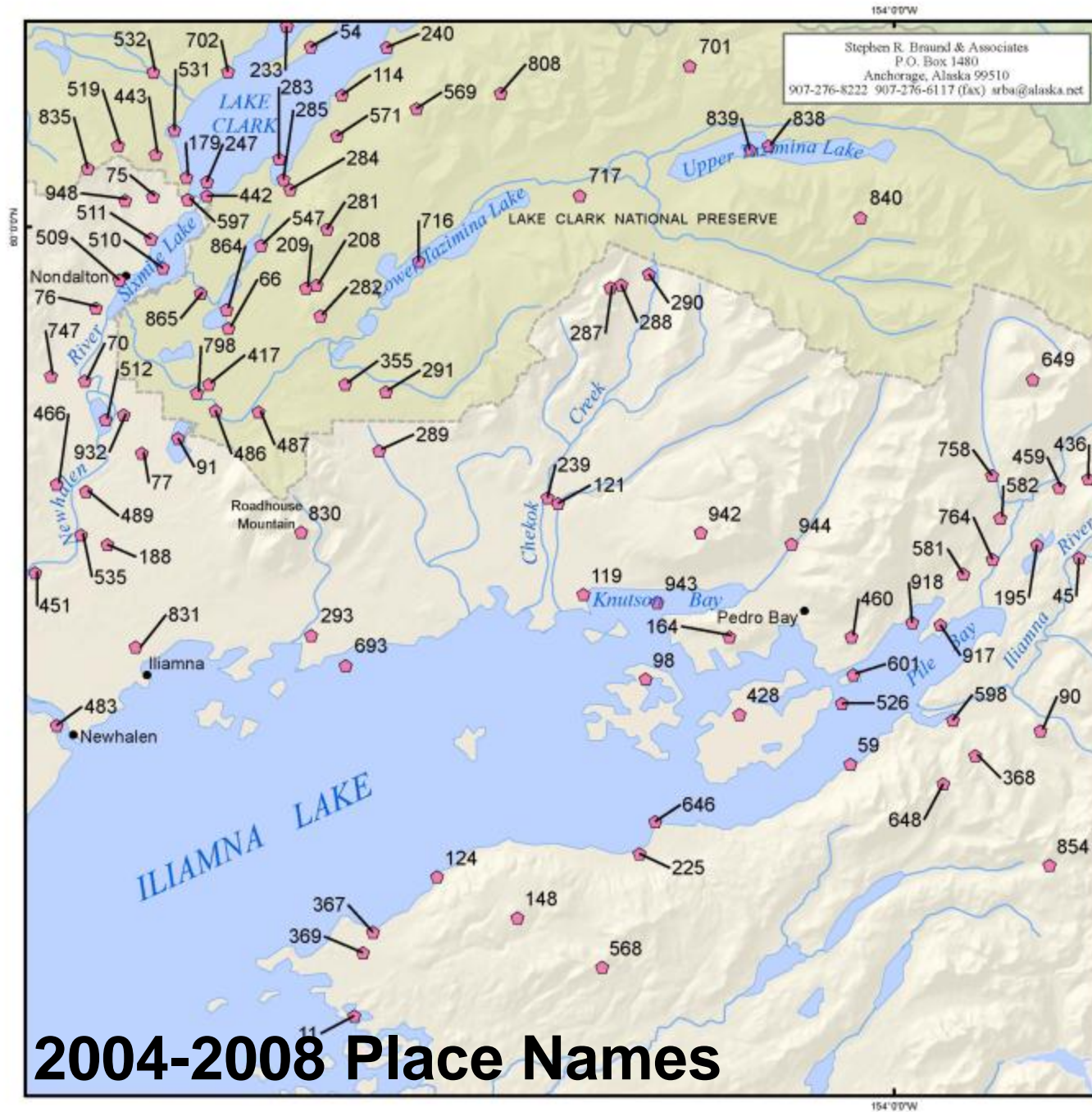


Scale 1:304,268
 Alaska State Plane Zone 5 (units feet)
 1983 North American Datum

File: Fig22-21-PN_mine_1	Date: December 2010
	Author: SRB&A

Examples of Place Names in the Mine Study Area documented in the EBD

Place Name #	Numbered on Figure #	Place Name	Language	Description/ Translation
20	22-21	Antone K'etnu'a	Dena'ina	creek from stream before Nikabuna Lake
45	22-22	Ch'ak'dalitnu	Dena'ina	Old Iliamna village, Iliamna River
162	22-21	Duntsih	Dena'ina	Iliamna Lake lowlands (II); lowlands south of Lake Clark (I)
633	22-21	Qiyhi Dghil'u; Qiyhi Qelahi	Dena'ina	Groundhog Mountain
642	22-21	Qukdeli	Yup'ik	Koktuli River, or Koktalee, or Kaktul (Katz 1910:201)



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Figure 22-22
Locations of Place Names
in the Transportation
Corridor Study Area

- ◆ Place Name Location
- Community
- National Park
- National Preserve

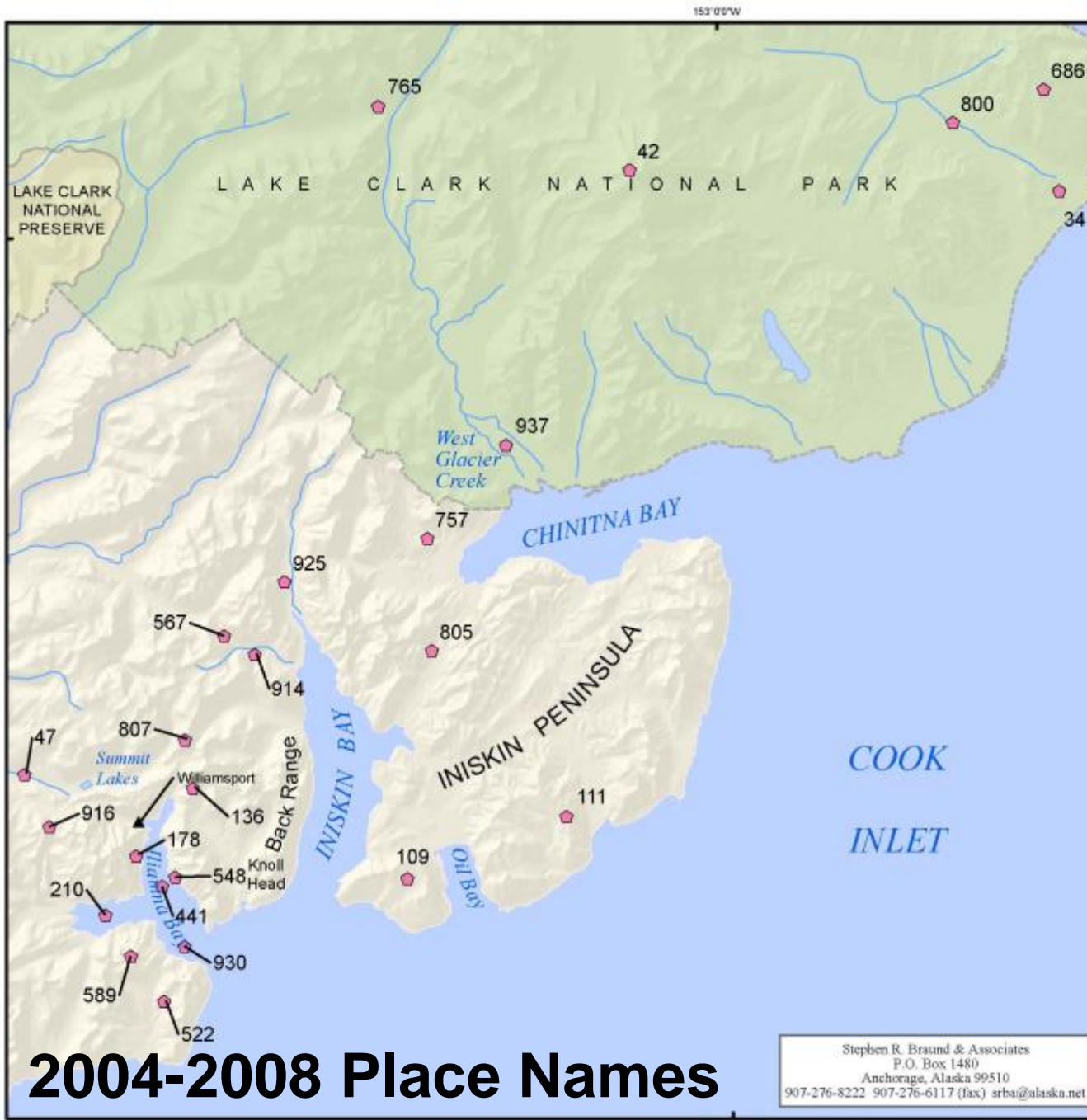
See Table 22-3 and Appendix 22A for additional information.

Sources: Ellanna and Balluta, 1992; Kari and Kari, 1982; Kari, Kari, and Balluta, 1986; Wright and Chythlook 1985.



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

File: Fig22-22-PN_road_1	Date: December 2010
Author: SR&A	



2004-2008 Place Names

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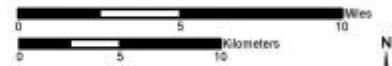


Figure 50-4
Locations of Place Names
in the Cook Inlet Drainages
Study Area

- Place Name Location
- Other Location
- National Park
- National Preserve

See Table 50-2 and Appendix 22A for additional information.

Sources: Kari, Kari, and Balluta, 1986;
 Kari and Kari, 1982.



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

File: Fig50-4-PN_port_1	Date: December 2010
Author: SRB&A	

Examples of Place Names in the Transportation and Cook Inlet Study Area documented in the EBD

Place Name #	Numbered on Figure #	Place Name	Language	Description/ Translation
178	50-4	Esdghuk'a T'el'ieht	Dena'ina	Diamond Point in Iliamna Bay
210	50-4	Hkaytaghi'u	Dena'ina	Cottonwood Bay
441	50-4	Nilavena Hkaytghi'u	Dena'ina	Iliamna Bay
522	50-4	Nuquk'denghilyasht	Dena'ina	South Head
548	50-4	Q'anlcha Nul	Dena'ina	beach on Iliamna Bay
930	50-4	Yaha Nlin	Dena'ina	Whitegill Island

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

Dena'ina & Yup'ik Place Names 2010

- ◆ Compared previously documented Dena'ina and Yup'ik place names in the mine study area to place names from Evanoff's (2010) research
- ◆ Previously documented place names combined with Evanoff's place name work indicate 32 documented Dena'ina and Yup'ik place names in the Mine Study Area

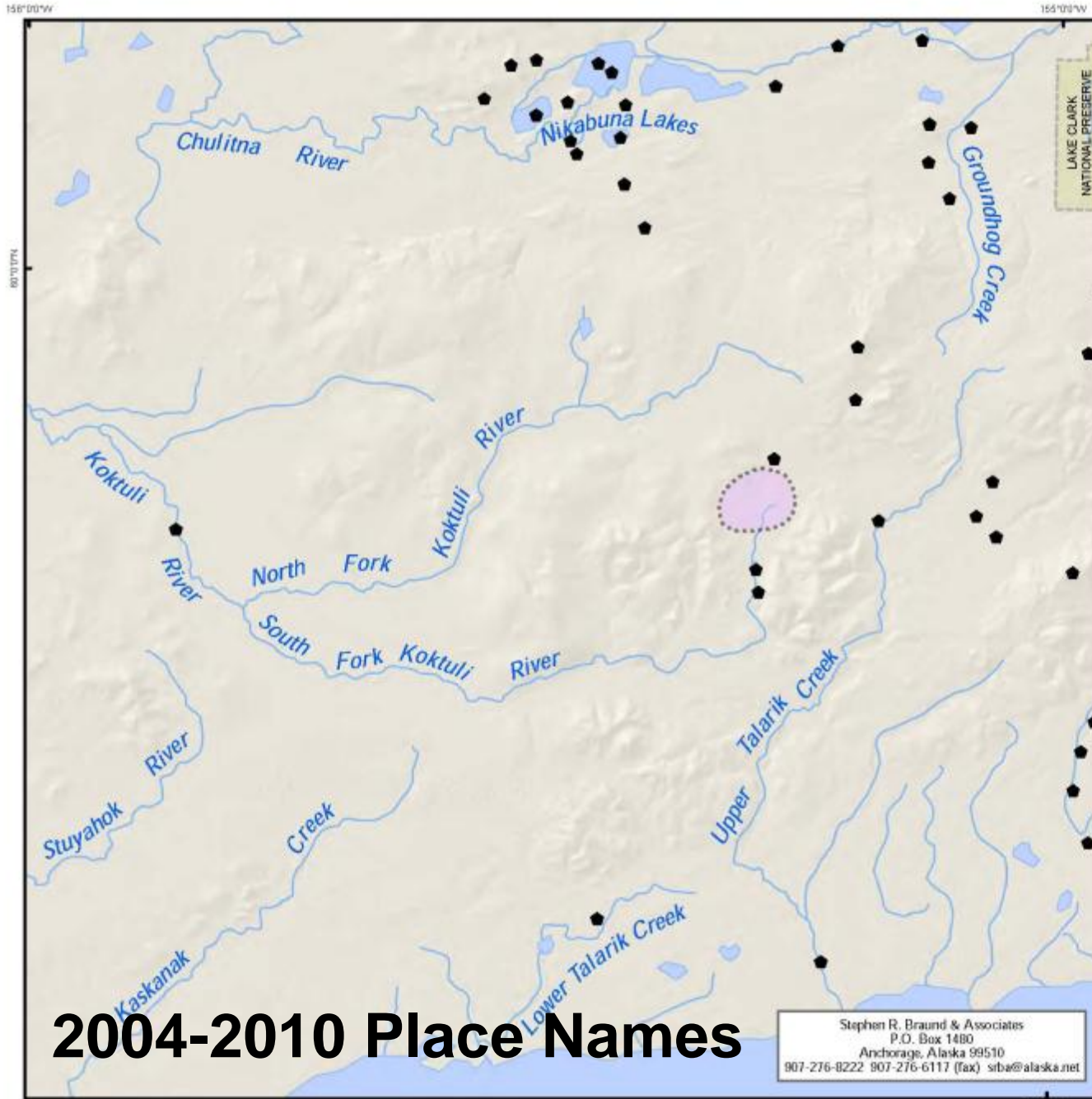


Figure 11
Locations of Place Names,
Mine Study Area

- Place Names
- General Deposit Location
- National Preserve

Sources: Evanoff, 2010; PLP Forthcoming (includes Kari and Karl, 1982; Kari, Karl, and Balluta, 1986).



Scale 1:304,268
Alaska State Plane Zone 5 (units feet)
1983 North American Datum

2004-2010 Place Names

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File: Fig11-Placenames_mine	Date: July 2011
Author: SRB&A	

155°01'W

Cultural Resources Interviews

2004-2008 EBD

- ◆ 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 – scheduling difficulties

Cultural Resources Interviews

2004-2008 EBD

- ◆ 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

2004-2008 EBD

- ◆ 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 Cook Inlet study area)
- ◆ Remaining 406 cultural resource features are in appendix, and Figure 22-23 shows all 783 features

Slide 33

MJR15

check

Monty, 9/7/2011



Figure 22-23
Cultural Resources
Identified in the Bristol Bay
and Cook Inlet Drainages
from Interviews

- ▲ Points (783)
 - Lines (303)
 - Polygons (68)
- Map shows 1,154 cultural resource features. Additional cultural resources may exist.
- See Appendix 22B for additional information.
- Community
 - ⊛ General Deposit Location
 - ▭ National Park
 - ▭ National Preserve

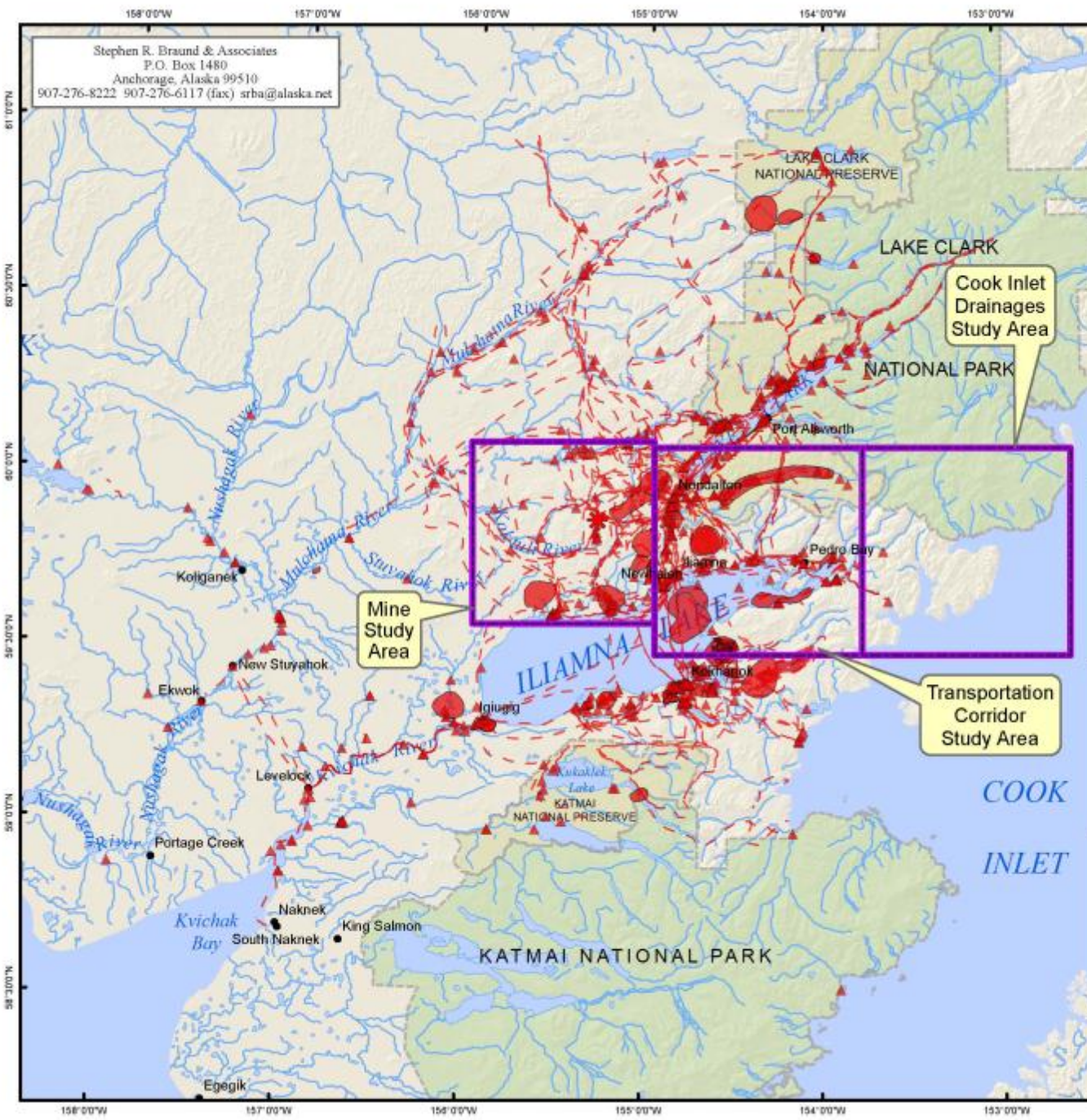
Communities have not reviewed or verified mapped information.

Source: Under contract to Northern Dynasty Mines Inc., Stephen R. Braund & Associates (SRB&A) conducted interviews with 13 Kokhanok residents and 5 Newhalen residents in February 2007 as well as 13 Nondalton residents and 1 Port Alsworth resident in March 2007. SRB&A coordinated with local tribal governments to select knowledgeable residents to interview. Additional contributions from subsistence and traditional knowledge interviews in Ekwok, Igluigig, Iliamna, Koliganek, Kokhanok, Levelock, Newhalen, New Stuyahok, Nondalton, Pedro Bay, Portage Creek, and Port Alsworth.



Scale 1:1,800,000
 Alaska State Plane Zone 5 (units feet)
 1983 North American Datum

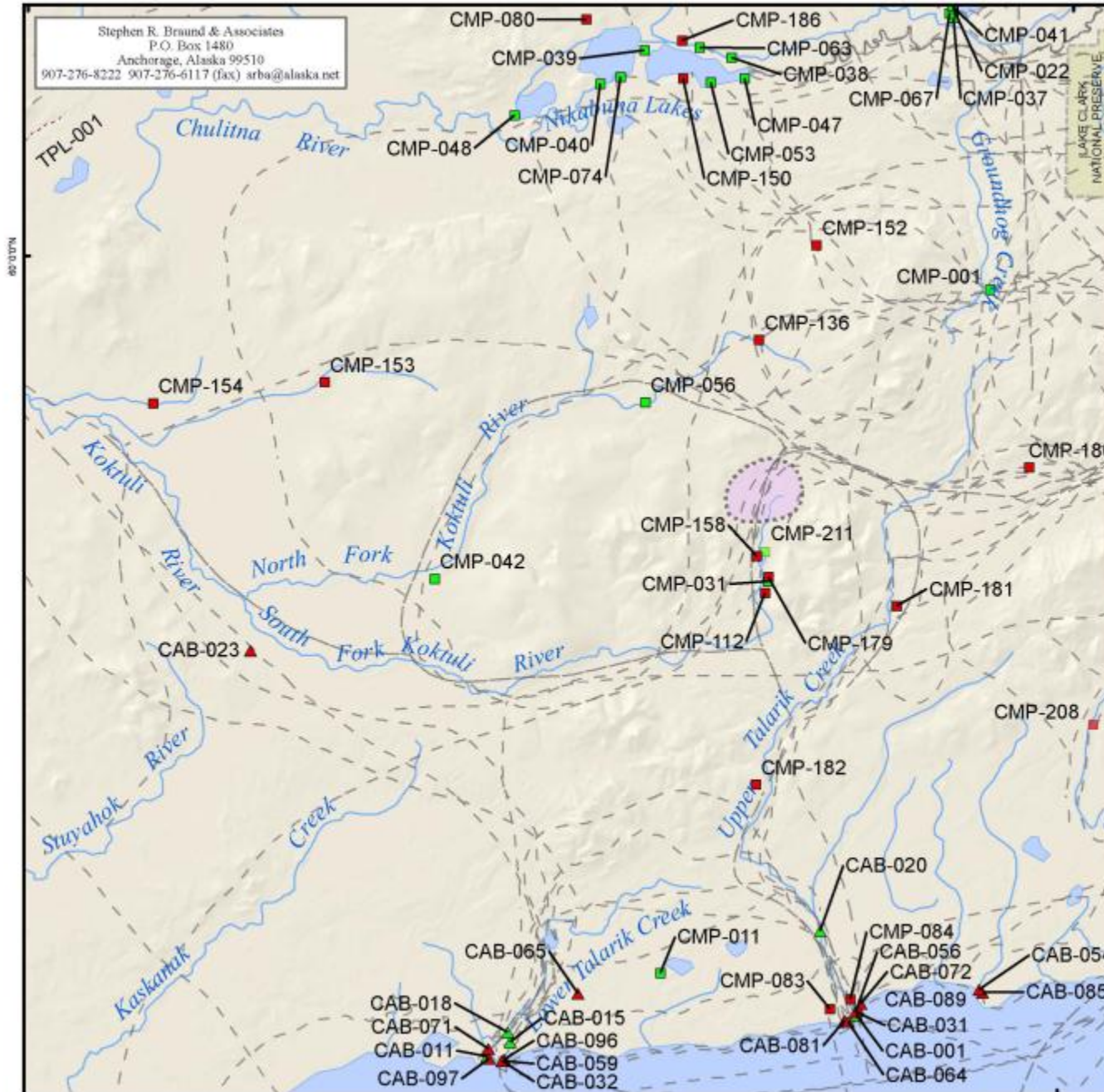
File: Fig22-20-CR_overall_1	Date: December 2010
	Author: SRB&A



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156° 09' W

155° 00' W



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**Figure 22-24a
 Cultural Resources
 Identified in the Mine Study
 Area from Interviews**

- | | |
|---|--------------------|
| Known Multi-generational or Older than Fifty Years | Unknown Age |
| ▲ Cabin | ▲ Cabin |
| ■ Camp | ■ Camp |
| - - - Trail/Route | ----- Trapline |

See Table 22-9 and Appendix 22B for additional information.

- | | |
|--------------------------|-------------------|
| General Deposit Location | National Preserve |
|--------------------------|-------------------|

Communities have not reviewed or verified mapped information.

Source: Under contract to Northern Dynasty Mines Inc., Stephen R. Braund & Associates (SRB&A) conducted interviews with 13 Kokhanok residents and 5 Newhalen residents in February 2007 as well as 13 Nondalton residents and 1 Port Alsworth resident in March 2007. SRB&A coordinated with local tribal governments to select knowledgeable residents to interview. Additional contributions from subsistence and traditional knowledge interviews in Ekwok, Igiugig, Iliamna, Koliganek, Kokhanok, Levelock, Newhalen, New Stuyahok, Nondalton, Pedro Bay, Portage Creek, and Port Alsworth.



Scale 1:304,268
 Alaska State Plane Zone 5 (units feet)
 1983 North American Datum

File: Fig22-24a-CR_mine_1

Date: December 2010

Author: SRB&A

155° 00' W

156° 00' W

155° 00' W

60° 00' N

155° 00' W

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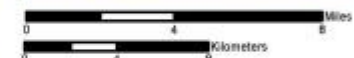
**Figure 22-24b
 Cultural Resources
 Identified in the Mine Study
 Area from Interviews**

- Battlesite**
- Reindeer Station**
- Site**
- Village**

See Table 22-9 and Appendix 22B for additional information.

- Community
 - General Deposit Location
 - National Preserve
- Communities have not reviewed or verified mapped information.

Source: Under contract to Northern Dynasty Mines Inc., Stephen R. Braund & Associates (SRB&A) conducted interviews with 13 Kokhanok residents and 5 Newhalen residents in February 2007 as well as 13 Nondalton residents and 1 Port Alsworth resident in March 2007. SRB&A coordinated with local tribal governments to select knowledgeable residents to interview. Additional contributions from subsistence and traditional knowledge interviews in Ekwok, Igiugig, Iliamna, Koliganek, Kokhanok, Levelock, Newhalen, New Stuyahok, Nondalton, Pedro Bay, Portage Creek, and Port Alsworth.

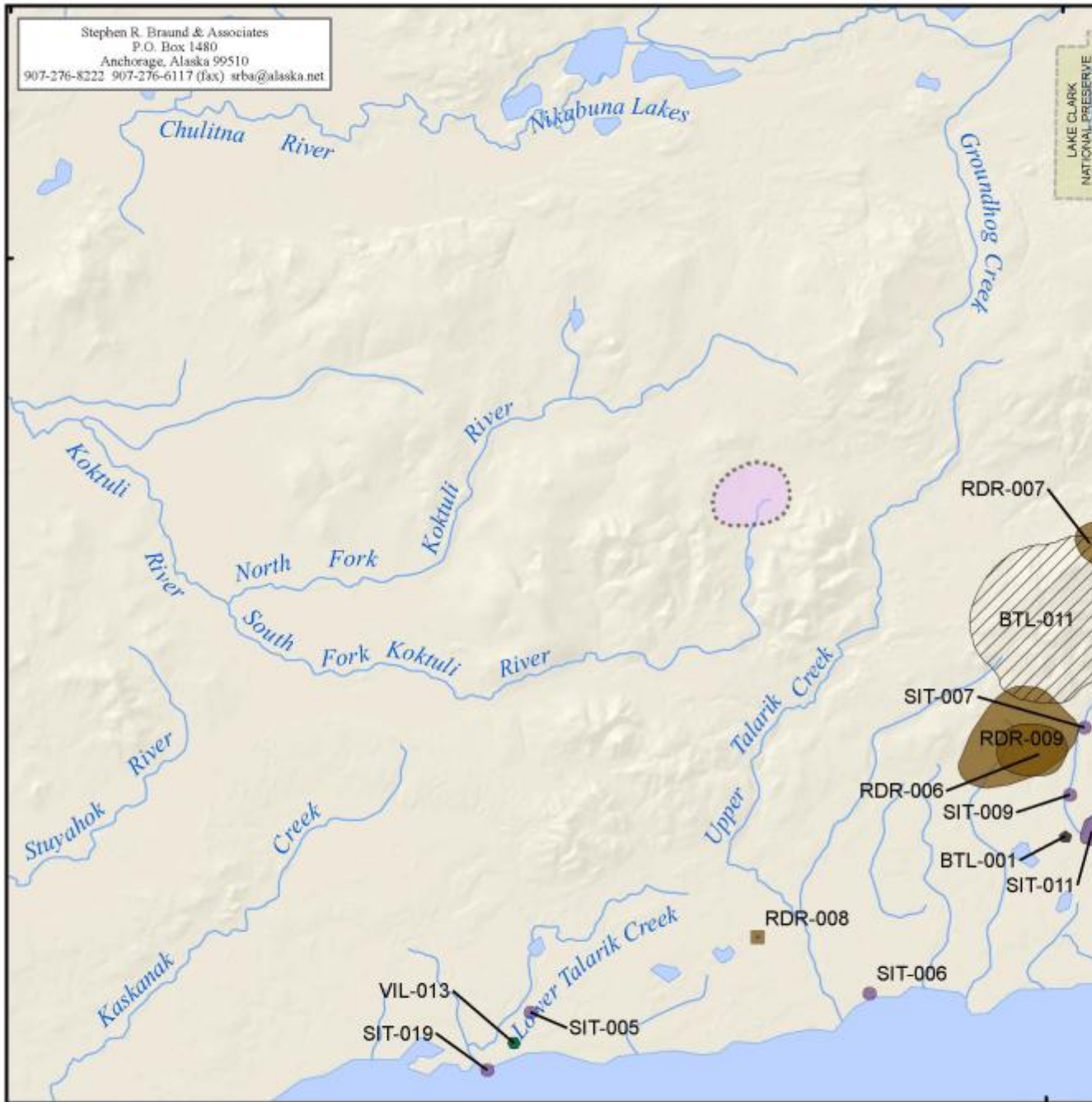


Scale 1:304,268
 Alaska State Plane Zone 5 (units feet)
 1983 North American Datum

File: Fig22-24b-CR_mine_2

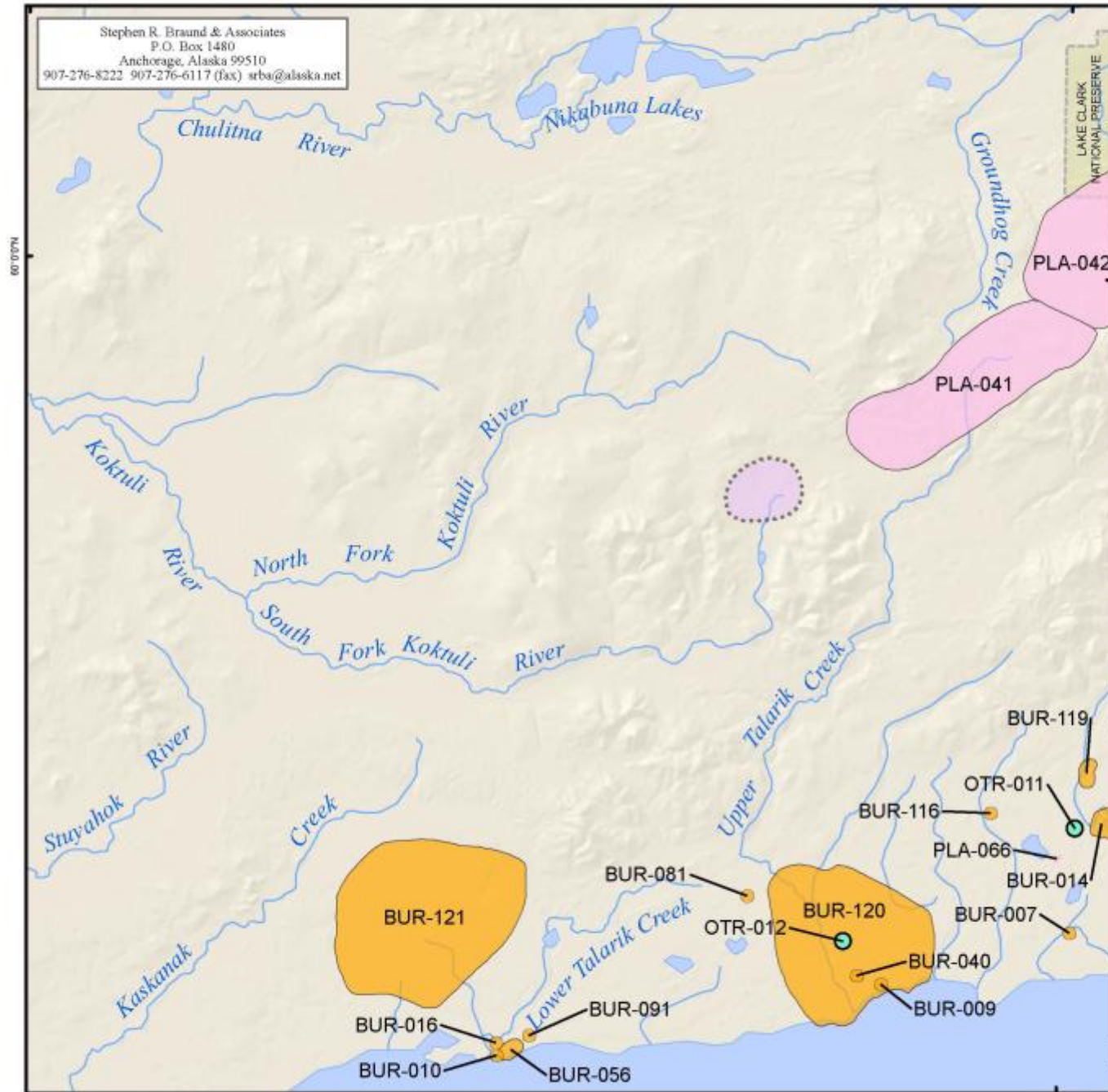
Date: December 2010

Author: SRB&A



156° 00' W

155° 00' W



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**Figure 22-24c
 Cultural Resources
 Identified in the Mine Study
 Area from Interviews**

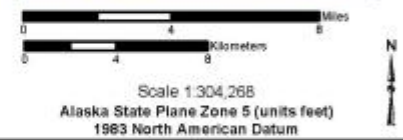
- Other
- Place Name
- Burial
-

See Table 22-9 and Appendix 22B for additional information.

- Community
- General Deposit Location
- National Preserve

Communities have not reviewed or verified mapped information.

Source: Under contract to Northern Dynasty Mines Inc., Stephen R. Braund & Associates (SRB&A) conducted interviews with 13 Kokhanok residents and 5 Newhalen residents in February 2007 as well as 13 Nondalton residents and 1 Port Alsworth resident in March 2007. SRB&A coordinated with local tribal governments to select knowledgeable residents to interview. Additional contributions from subsistence and traditional knowledge interviews in Ekwok, Igiugig, Iliamna, Koliganek, Kokhanok, Levelock, Newhalen, New Stuyahok, Nondalton, Pedro Bay, Portage Creek, and Port Alsworth.



File: Fig22-24c-CR_mine_3	Date: December 2010
Author: SRB&A	

155° 00' W

Examples of Interview Identified Cultural Resources

Feature #	Numbered on Figure #	Feature Type	Feature Type Subcategory	Feature Name/Description	Time Period
BTL-001	22-24b	Cultural Resource	Battle Site	"The Rapids"	50 plus years
BTL-011	22-24b	Cultural Resource	Battle Site	Battle site above Petrov Falls	50 plus years
BUR-010	22-24c	Cultural Resource	Burial	Graves near Lower Talarik Village site	50 plus years
CAB-064	22-24a	Cultural Resource	Cabin	Ira Wassilie's allotment and cabin	Multi-generational
CAB-065	22-24a	Cultural Resource	Cabin	Lower Talarik cabin	Multi-generational
CMP-031	22-24a	Camp	Camp	Frying Pan Lake tent camp	Unknown
CMP-112	22-24a	Cultural Resource	Camp	Frying Pan Lake camps	50 plus years
RDR-008	22-24b	Cultural Resource	Reindeer Station	Upper Talarik Creek reindeer station	50 plus years
SIT-011	22-24b	Cultural Resource	Site	Newhalen Rapids site	50 plus years

Cultural Resources Project Summary 2004-2010

Mine Study Area

- ◆ 583 shovel tests
- ◆ 48 AHRS sites in claim boundary including campsites, lookouts, and lithic raw material sites
 - Oldest site carbon date: 3,470 ± 30 BP (UGAMS-7886)
 - 2nd oldest site carbon date: 2860 ± 25 BP (UGAMS-5707)
- ◆ 22 trips from 2004-2010 (+ 2011)
- ◆ Literature Review, AHRS, Place Names, Consultation Interviews
- ◆ Annual Reports to SHPO 2004-2010
- ◆ Submitted 2004-2008 EBD
- ◆ Conducted additional fieldwork in 2011

Cultural Resources Project Summary 2004-2010

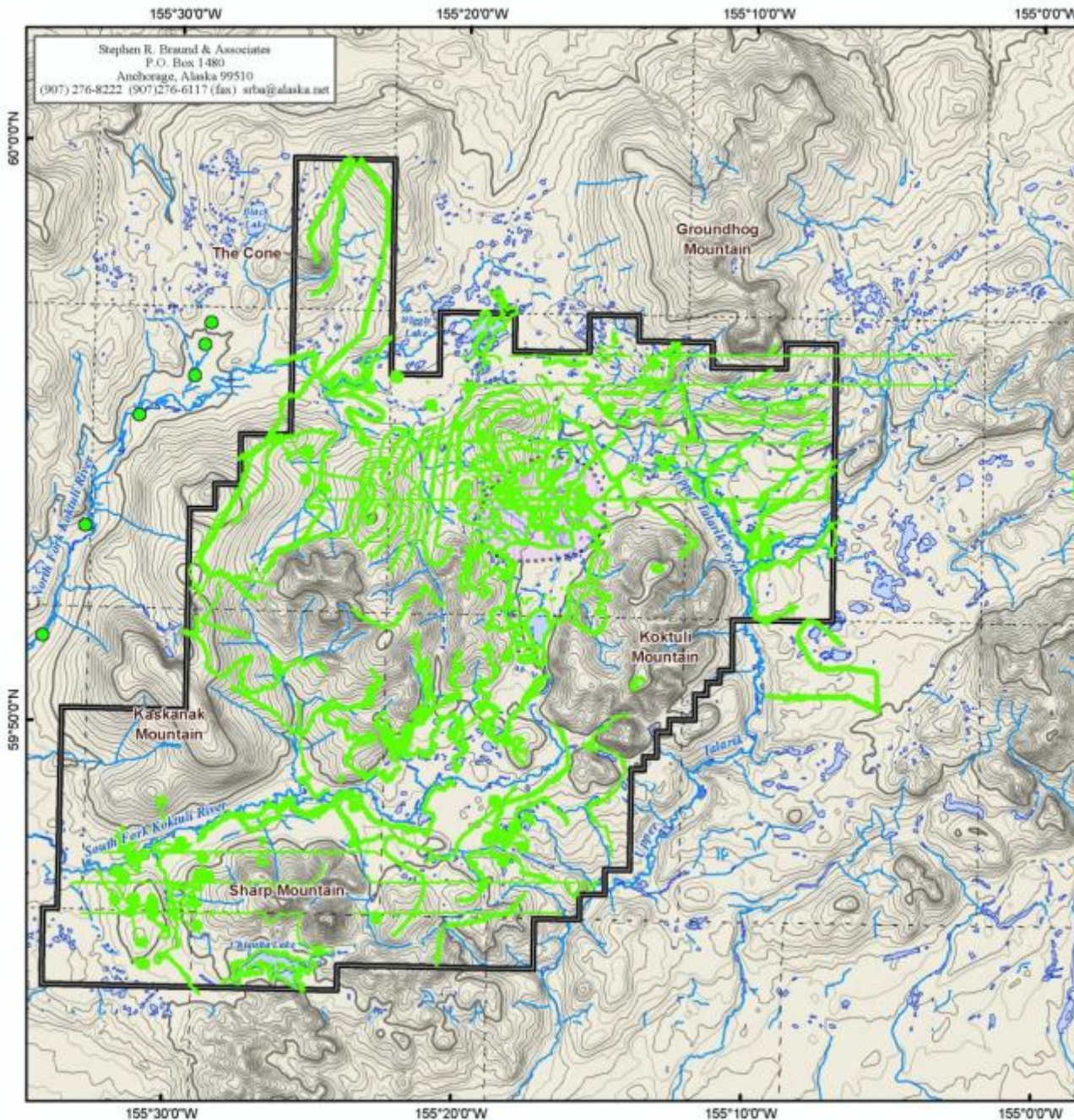
Transportation Corridor Study Area

- ◆ Visited one possible bridge crossing
- ◆ Core yard in Iliamna
 - 3 shovel tests
 - No new sites
- ◆ 1 trip in 2006 for both locations

Cultural Resources Project Summary 2004-2010

Cook Inlet Study Area

- ◆ 18 shovel tests
- ◆ 3 trowel tests
- ◆ 2 new sites near Iniskin Bay
 - Rock shelter carbon date: $1,560 \pm 80$ BP (Beta-208530)
 - Beach Site: $1,430 \pm 40$ BP (Beta-20853)
- ◆ 4 trips in 2005 and 2007



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Figure 14
2004-2010 Areas
Considered Surveyed
in and Adjacent to
the Claim Boundary

These data are confidential and not for public distribution.

2004-2010 Area Considered Surveyed for Cultural Resources

General Deposit Location
 Claim Boundary



0 1 2 3 4 Miles
 0 1 2 3 4 Kilometers
 Scale 1:180,000
 Alaska State Plane Zone 5 (units feet)
 1983 North American Datum

File: Fig14_2004-10_Srvys_Mine	Date: July 2011
Version: 1	Author: SRBSA

2011 Cultural Resources Summary

- ◆ **7 Field Trips to the Mine Study Area**
 - **OHA personnel participated on one trip**
- ◆ **127 Shovel Tests**
- ◆ **2 new AHRS sites**
 - **One site at the outlet of Frying Pan Lake, which dates to 1,760±30 radiocarbon years BP**

PLP Employee Cultural Resource Training 2011

◆ Training educated PLP employees on

- Archaeology
- Cultural resource laws
- Typical prehistoric and historic artifacts and cultural features of the region
- How to proceed in the case of an inadvertent discovery of a cultural resource site

◆ Training consisted of:

- Powerpoint presentation

◆ **Thank you**

◆ **Questions/Comments?**