CEPOA-EN-CW-HH

MEMORANDUM THRU CEPOA-EN-CW-HH (Eisses)

FOR RECORD

SUBJECT: Ekwok, Alaska Flood Survey Field Trip Report

1. On 16 October 2002 Mr. Jim Fuhrer and I traveled to Ekwok, Alaska to document the peak water surface elevation of the May 2002 ice jam flood at that community. The work was performed under Federal Emergency Management Agency Project Number SN00157N2002T of DR-1423-AK.

2. Ekwok is an Alaskan Native community of 130 located on the right bank of the Nushagak River, 43 miles northeast of Dillingham, and 285 miles southwest of Anchorage. The general vicinity of Ekwok is shown in figure 1. Figure 2 is a map of the community.

3. The May 2002 ice jam flood is the Flood of Record. An ice jam flood, most likely in 1957, was said by local residents to be higher than the 2002 flood but there was no recollection of how much higher. These two floods are the only notable floods at Ekwok, which became a permanent settlement in the early 1920s.. A high water mark of the 2002 flood was obtained from Luki Akelkok, who stated that the water rose to within one tenth of a foot below the bottom of the second step of the entrance to his home. This mark was about a foot above the general ground elevation at the front of the house.

4. The top of a brass capped iron post monument was used as the datum for this survey. The monument is located 90 feet southeast of the north corner of lot 6, block 11, of U.S.S. No. 4878. The 3-inch brass cap was marked U.S. Cadastral Survey, Bureau of Land Management, U.S.L.M. No. 3864. It is located at the intersection of a high ridge running through the center of the village generally perpendicular to the Nushagak River and the top of the right bank of the river. The monument is on the top of the ridge about 25 feet above the river. The location is N59° 20.904 and W157° 28.529 by a hand-held Geographic Positioning System (GPS). Corwin & Associates Inc. arbitrarily set the elevation of the monument at 500.00 feet in 1985 for a sewage improvement project in the village. The monument is shown in figures 3 and 4.

5. The elevation of the 2002 flood was recorded at 480.70 feet. A 1-foot by 4-foot flood gauge was placed on a power pole located at N59° 20.855 and W157° 28.664. Its location is also shown on the village map of figure 2. The general ground elevation at the pole was 476.56 feet. The bottom of the flood gauge is about a half a foot above the ground. The mounted gauge is shown in figure 5. The Recommended Building Elevation was set at 481.70 feet, one foot above the Flood of Record

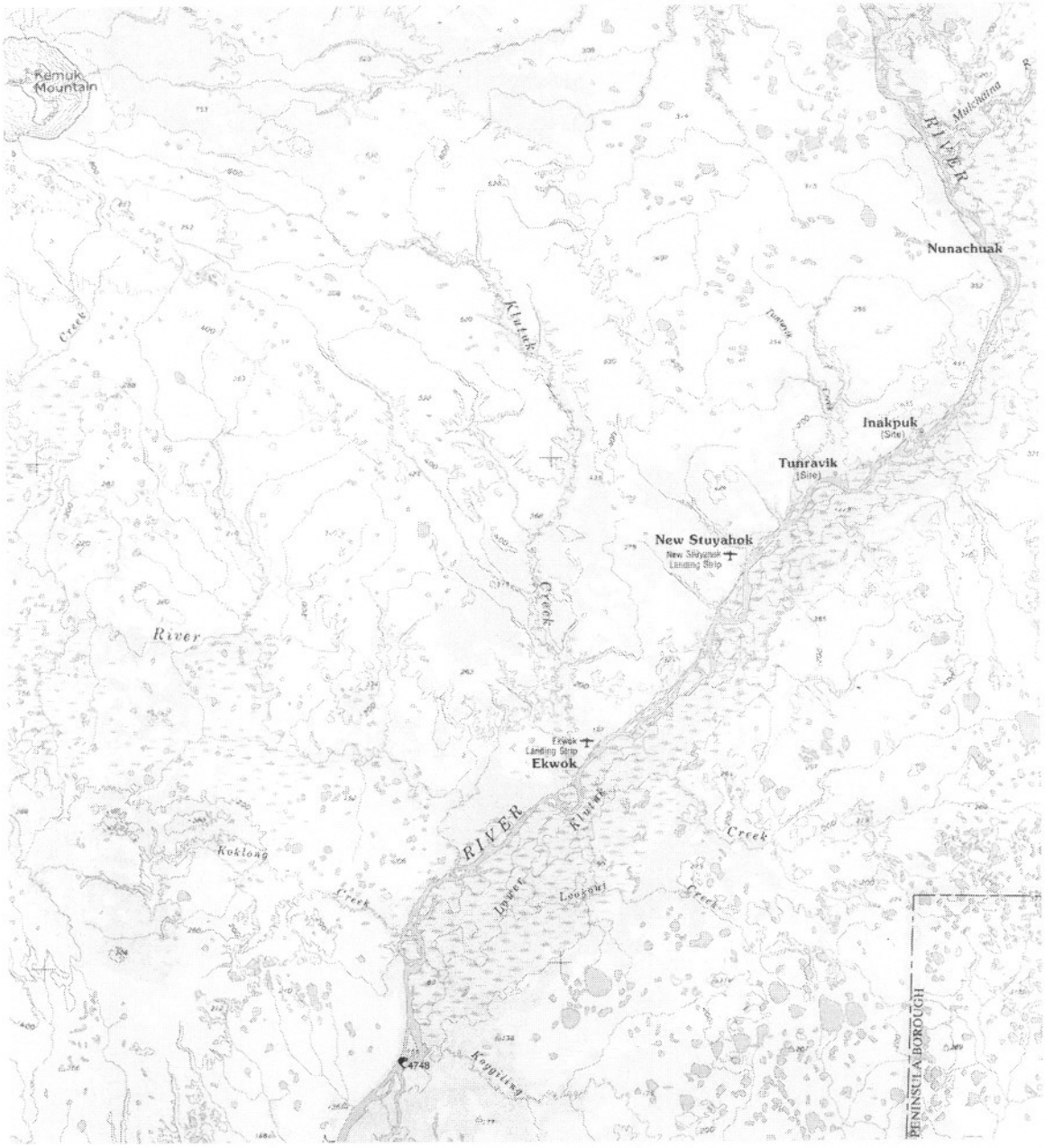

Figure 1. A local vicinity map of Ekwok, Alaska.

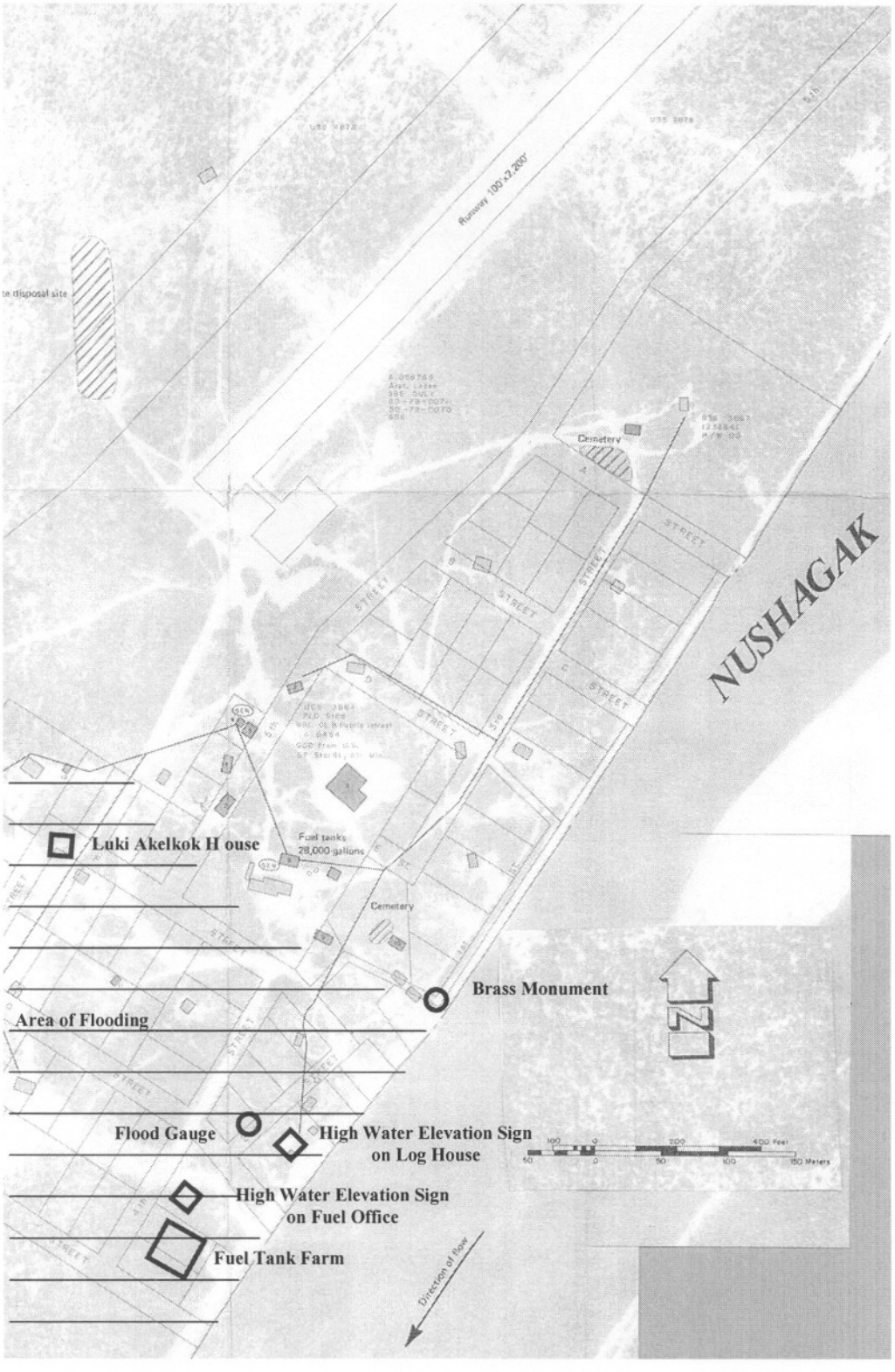

Figure 2. Map of Ekwok, Alaska showing the approximate area of the flood plain.

Figure 3. A view of the monument used for the survey datum.

Figure 4. A view of the monument with the edge of the ridgeline in the background.

Figure 5. A view of the mounted flood gauge.

6. Three 4-inch by 8-inch High Water Elevation (HWE) signs were placed in the village. They are placed so that the height of the 2002 flood is at the water symbol on the lower edge of the HWE sign. One was mounted on the flood gauge as shown in figure 5. The second was mounted on the riverward, downstream footing of a log home located on the riverbank. The building and its HWE sign is shown in figure 6. The water symbol on the sign is one foot above the ground. Its location is N59° 20.847 and W157° 28.632, which is also shown on the village map. The third HWE sign was placed on the front downstream corner of the office at the Tesoro fuel tank farm. The first floor elevation of the office was 478.61 feet. The building and its HWE sign are shown in figure 6. Its location is N59° 20.798 and W157° 28.739. Its location is also shown on the village map.

Figure 6. A High Water Elevation sign mounted at the flood level on a house on the riverbank.

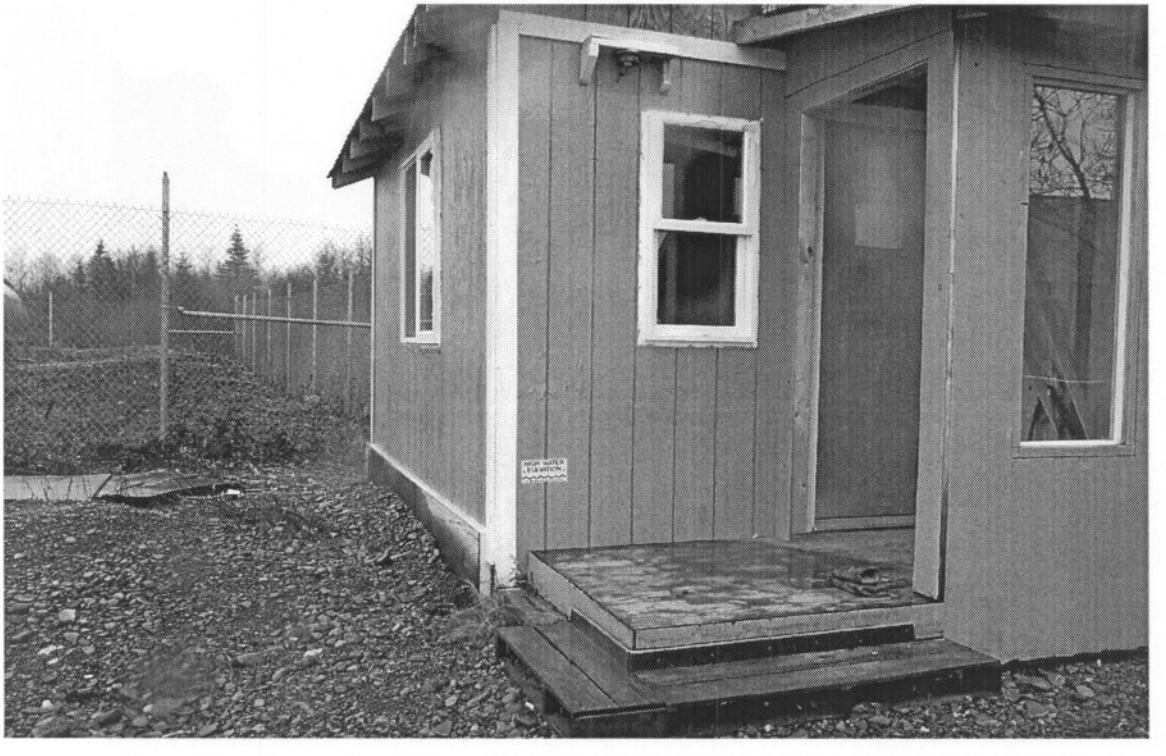

Figure 7. A High Water Elevation sign mounted at the flood level on the Tesoro fuel office.

7. The river surface elevation was 466.00 feet, measured near the log house, at 11:30 AM on October 17, 2002.

8. To my knowledge there were no inhabited buildings where floodwaters rose above the first floor. The area of the village flooded appeared to be mainly the old section of the village. There are a number of buildings in the flood plain, but the vast majority were small utility sheds and old houses now used for storage.

9. The Tesoro fuel tank farm and generator building is on the bank of the river and is in the flood plain. The typical elevation of the bottom of the fuel tanks is 478.51 feet. The first floor elevation of the generator building is 477.86 feet.

10. There was no critical infrastructure in the flood plain, such as a runway, communications building, school, clinic, or city office, other than the noted Tesoro fuel farm.

11. Noted elevations and locations:

	Elevation	Location
Monument, U.S. Cadastral Survey Bureau of Land Management U.S.L.M. No. 3864	500.00 feet (assumed)	N59° 20.904, W157° 28.529
Flood of Record	480.70	
Recommended Building Elevation	481.70	
Flood Gauge	476.56 (ground elev. at the pole)	N59° 20.855, W157° 28.664
HWE on log house	479.70 (ground elev. at the sign)	N59° 20.847, W157° 28.632.
HWE on the fuel office	478.61 (ground elev. at the sign)	N59° 20.798, W157° 28.739
Nushagak River surface elevation on 10/17/2002	466.00	

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