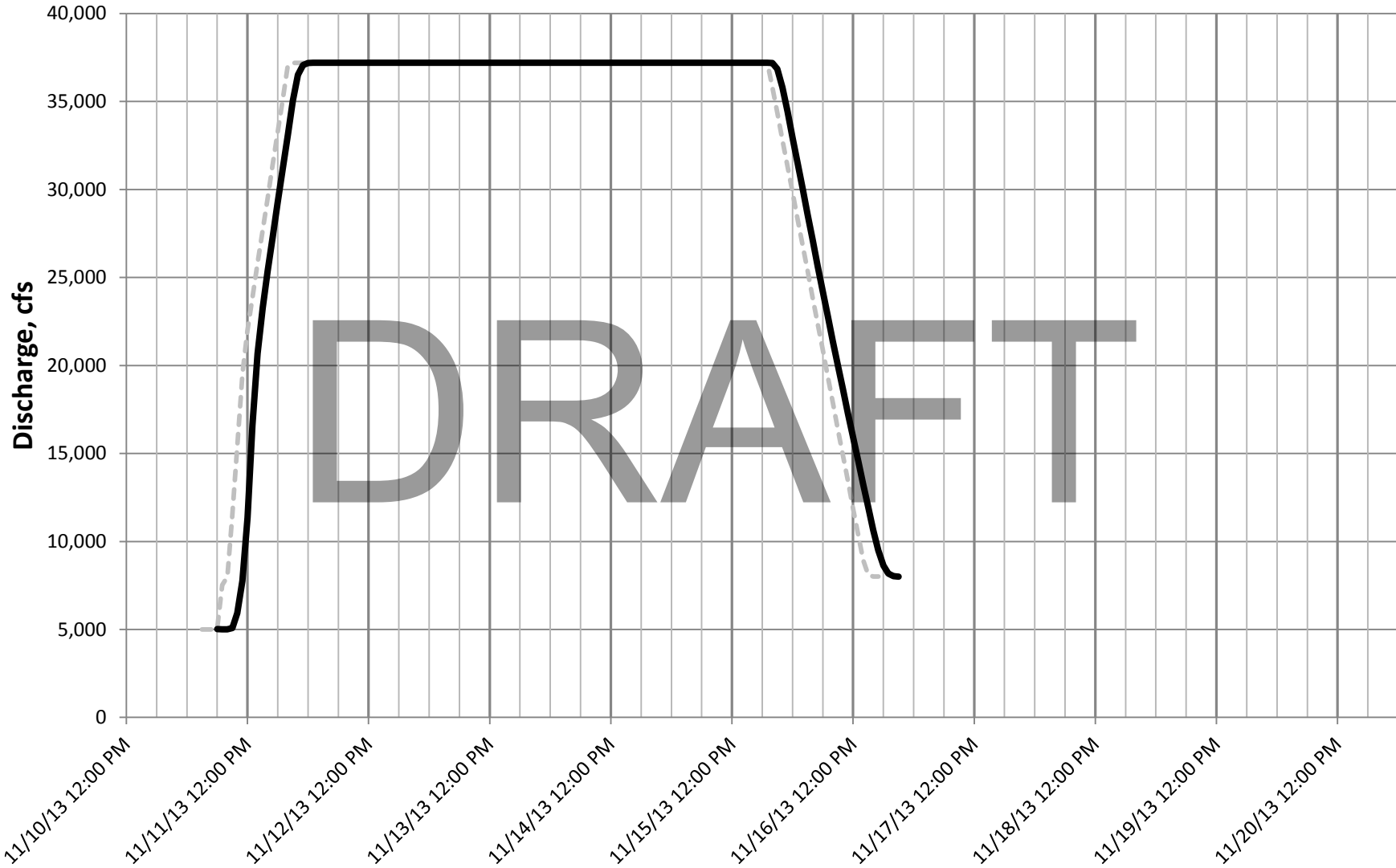


2013 November High Flow Experiment

Locations and dates of hydrograph routing

HFE Hydrograph Events	River Locations						
	Glen Canyon Dam	Lees Ferry RM0	Little Colorado River RM061	Phantom Ranch RM087	National Canyon RM166	Diamond Creek RM225	Pearce Ferry RM279
HFE - Start	11/11/13 9:00 AM	11/11/13 12:00 PM	11/12/13 12:00 AM	11/12/13 5:00 AM	11/12/13 7:00 PM	11/13/13 5:00 AM	11/13/13 3:00 PM
Peak magnitude - Begin (37,000 cfs)	11/11/13 8:00 PM	11/11/13 11:00 PM	11/12/13 9:00 AM	11/12/13 1:00 PM	11/13/13 1:00 AM	11/13/13 10:00 AM	11/13/13 6:00 PM
Peak magnitude - End (37,000 cfs)	11/15/13 8:00 PM	11/15/13 9:00 PM	11/16/13 4:00 AM	11/16/13 7:00 AM	11/16/13 5:00 PM	11/17/13 1:00 AM	11/17/13 8:00 AM
HFE - End	11/16/13 3:00 PM	11/16/13 7:00 PM	11/17/13 11:00 AM	11/17/13 5:00 PM	11/18/13 12:00 PM	11/19/13 2:00 AM	11/19/13 3:00 PM

November 2013 HFE Hydrograph Lees Ferry, RM0

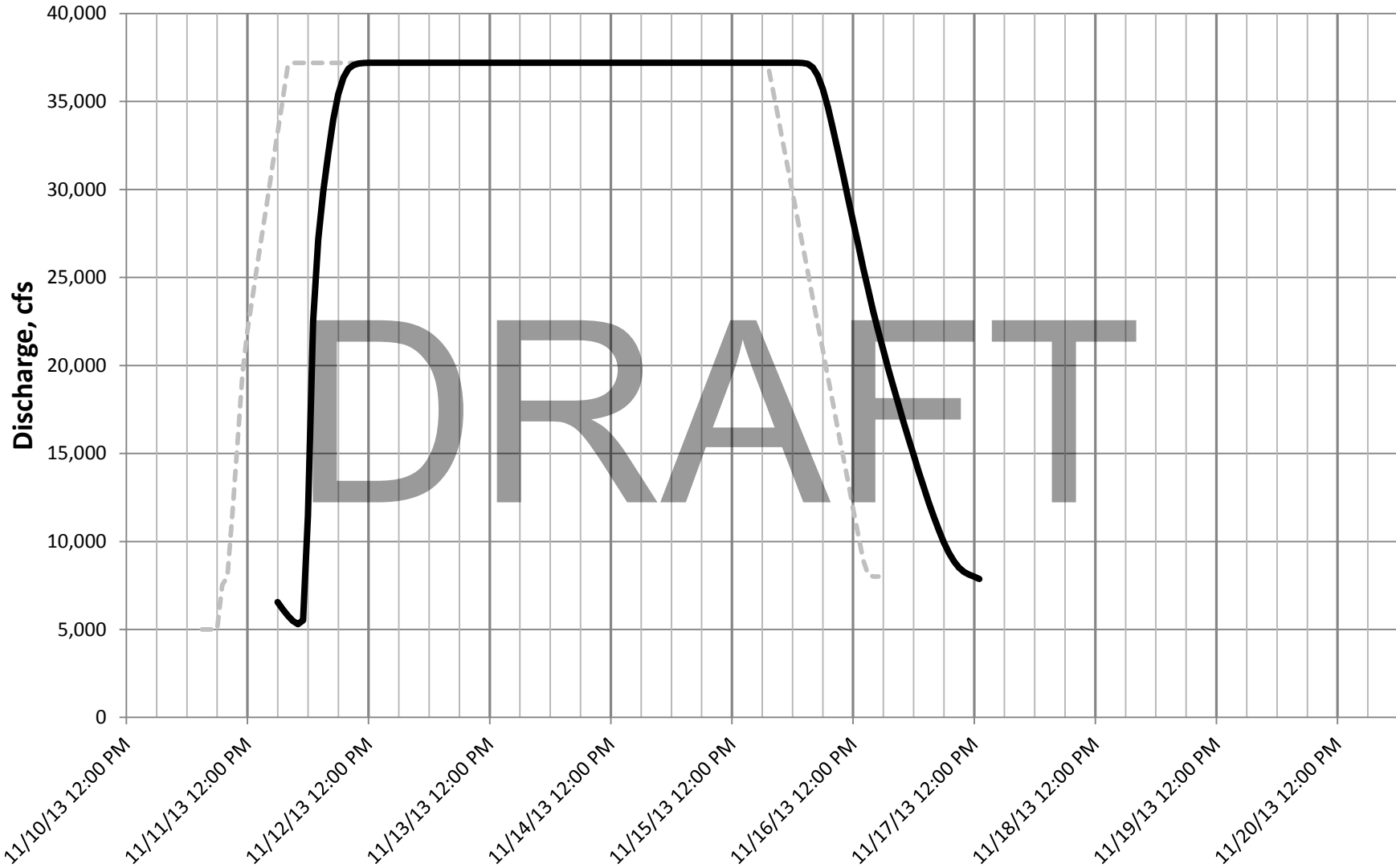


DRAFT

--- GCD — RM0 - Lees Ferry

*Vertical gridline intervals are 6 hours

November 2013 HFE Hydrograph Little Colorado River, RM061

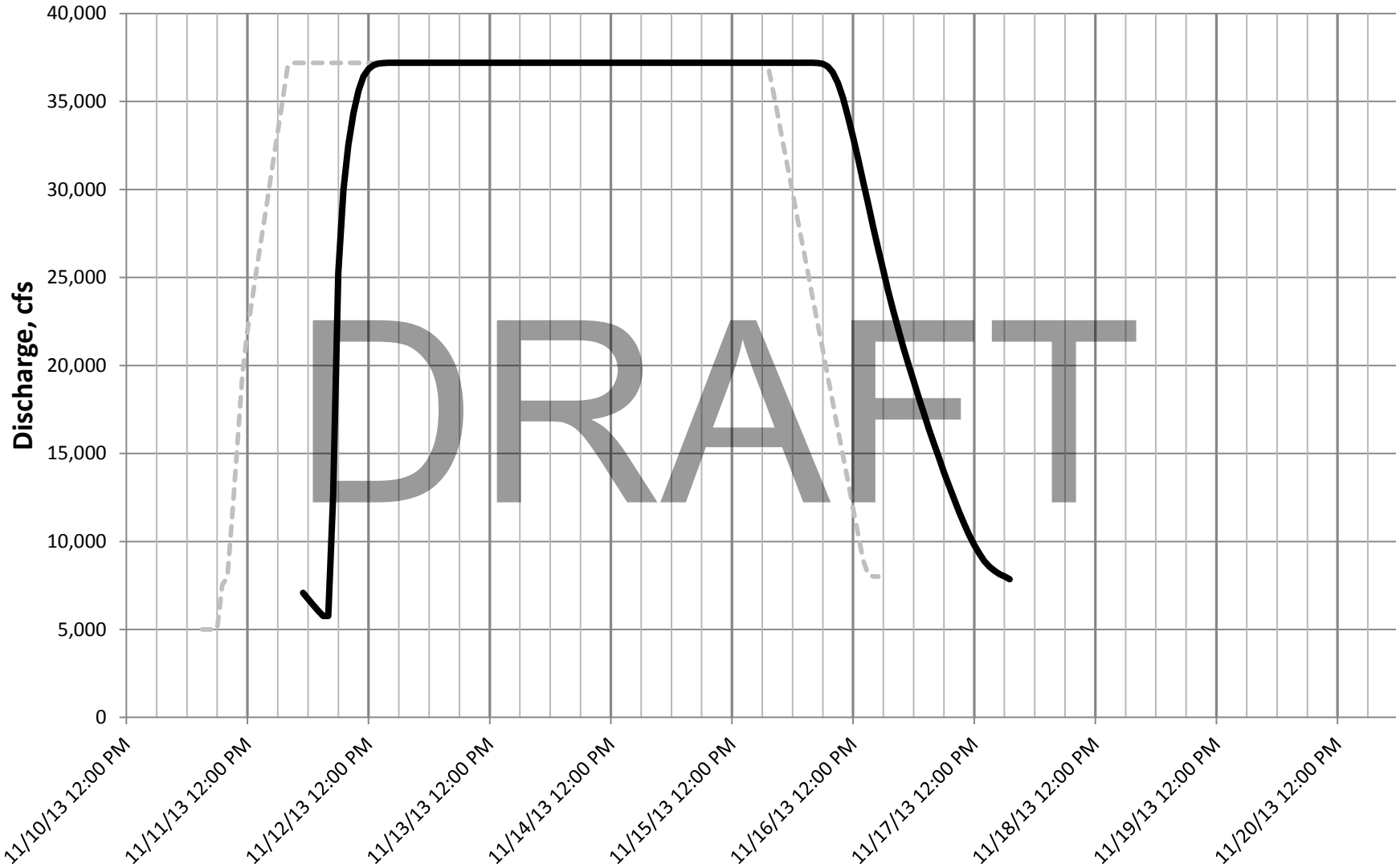


--- GCD

— RM061 - Little Colorado

*Vertical gridline intervals are 6 hours

November 2013 HFE Hydrograph Phantom Ranch, RM087

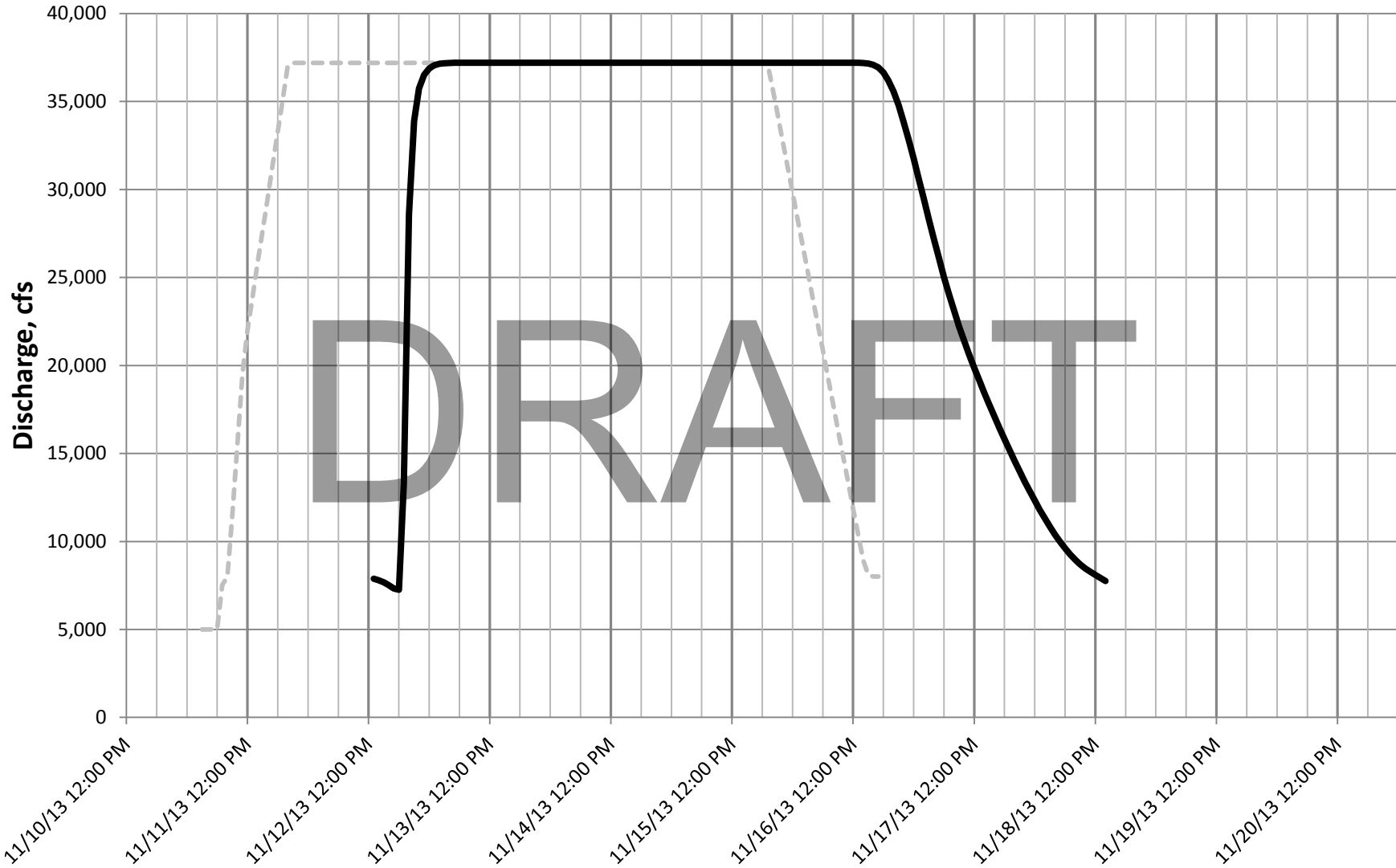


--- GCD

— RM087 - Phantom Ranch

*Vertical gridline intervals are 6 hours

November 2013 HFE Hydrograph National Canyon, RM166

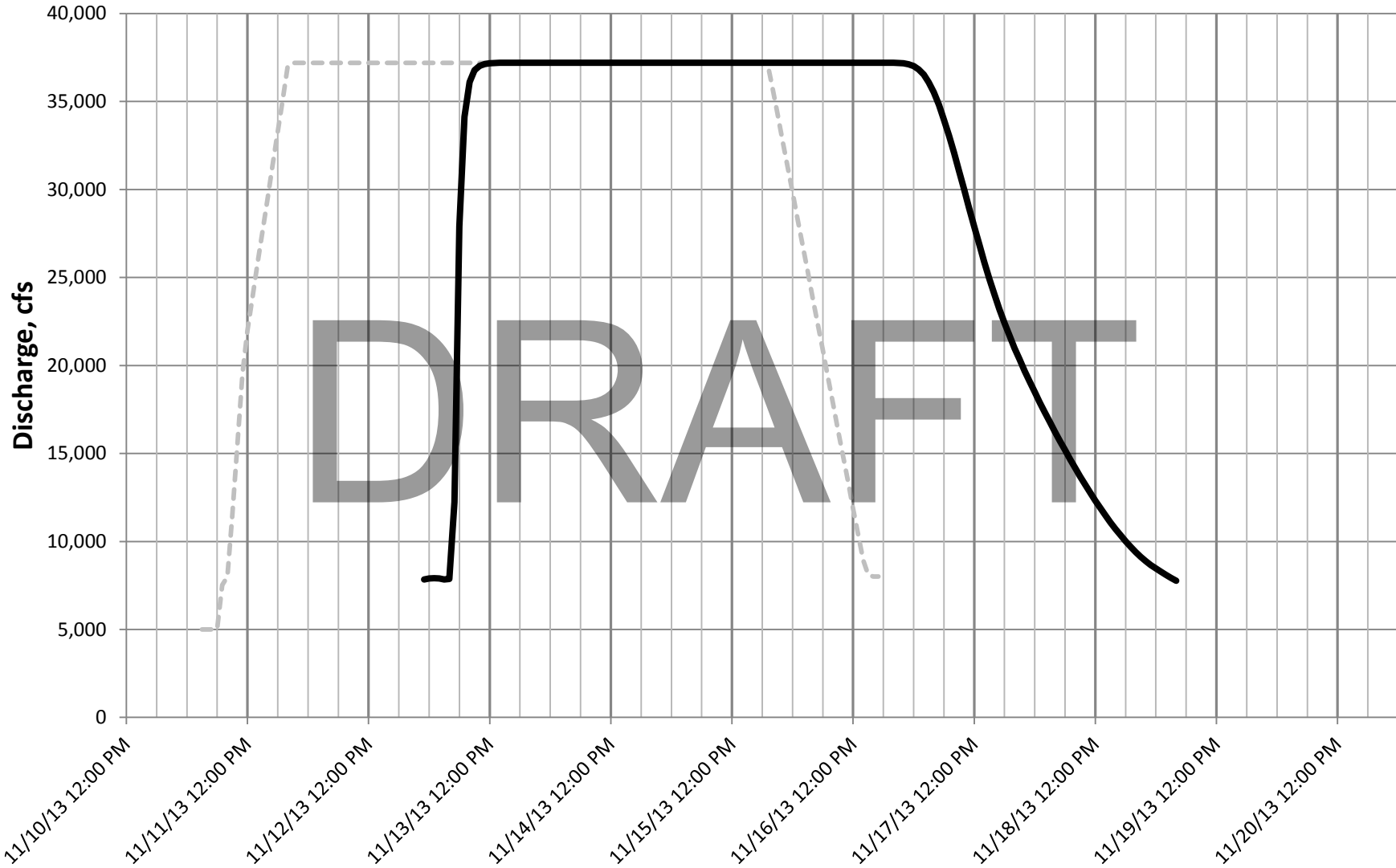


--- GCD

— RM166 - National Canyon

*Vertical gridline intervals are 6 hours

November 2013 HFE Hydrograph Diamond Creek, RM225



--- GCD — RM225 - Diamond Ck

*Vertical gridline intervals are 6 hours

November 2013 HFE Routing through Grand Canyon - DRAFT

*All times are MST

● Critical HFE monitoring sites

HFE Start - Increase above baseflow (~8,000 ft³/s)
 Peak Begin - Flow reaches 37,000 ft³/s
 Peak End - Flow decreases below 37,000 ft³/s
 HFE End - Return to baseflow (~8,000 ft³/s)

Glen Canyon Dam
 HFE Hydrograph
 HFE Start - 11/11 9AM
 Peak Begin - 11/11 8PM
 Peak End - 11/15 8PM
 HFE End - 11/16 3PM

Lees Ferry, RM0
 HFE Hydrograph
 HFE Start - 11/11 12PM
 Peak Begin - 11/11 11PM
 Peak End - 11/15 9PM
 HFE End - 11/16 7PM

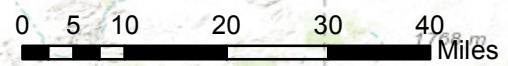
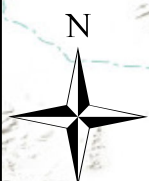
National Canyon, RM166
 HFE Hydrograph
 HFE Start - 11/12 7PM
 Peak Begin - 11/13 1AM
 Peak End - 11/16 5PM
 HFE End - 11/18 12PM

Little Colorado, RM061
 HFE Hydrograph
 HFE Start - 11/12 12AM
 Peak Begin - 11/12 9AM
 Peak End - 11/16 4AM
 HFE End - 11/17 11AM

Pearce Ferry, RM279
 HFE Hydrograph
 HFE Start - 11/13 3PM
 Peak Begin - 11/13 6PM
 Peak End - 11/17 8AM
 HFE End - 11/19 3PM

Phantom Ranch, RM087
 HFE Hydrograph
 HFE Start - 11/12 5AM
 Peak Begin - 11/12 1PM
 Peak End - 11/16 7AM
 HFE End - 11/17 5PM

Diamond Creek, RM225
 HFE Hydrograph
 HFE Start - 11/13 5AM
 Peak Begin - 11/13 10AM
 Peak End - 11/17 1AM
 HFE End - 11/19 2AM



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