

NWS FORM E-19 (COVER)

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL WEATHER SERVICE

REPORT ON RIVER GAGE STATION

REVISED, PRINTED DATES: 08/22/2010, 08/22/2010

LOCATION: SWEETWATER  
STREAM: MUD CREEK  
BASIN: LOUP 5

HSA: GID

REFERENCES:

KEARNEY HUB - DAILY NEWSPAPER  
NDNR STATION DESCRIPTION - 10/17/2002  
NDNR STATION DESCRIPTION - 5/11/2005  
WATER RESOURCES DATA FOR NE - USGS AND NDNR  
WS FORM E-19 - 01/24/1994  
WS FORM E-19 - 05/20/1991

ABBREVIATIONS:

BM - bench mark	EPA - Environmental Protection Agency
DS - downstream	IBWC - International Boundary and Water Comm.
US - upstream	MSRC - Mississippi River Commission
HW - high water	MORC - Missouri River Commission
LW - low water	NOAA - National Oceanic and Atmospheric Admin.
RB - right bank	NOS - National Ocean Survey
LB - left bank	NWS - National Weather Service
MGL - mean gulf level	TVA - Tennessee Valley Authority
MLW - mean low water	USACE - U.S. Army Corps of Engineers
MSL - mean sea level	USBR - U.S. Bureau of Reclamation
MLT - mean low tide	USGS - U.S. Geological Survey
MT - mean tide	USWB - U.S. Weather Bureau
WQ - water quality	NGVD - National Geodetic Vertical Datum
RM - reference mark	NAD - North American Datum
RP - reference point	

LOCATION IDENTIFICATION: SWTN1  
NWS INDEX NUMBER: 25-8385-5  
USGS NUMBER: 06783500

MAP OF GAGE LOCATION

LATITUDE: 41 02 15  
LONGITUDE: 98 59 35

SOURCE: USGS

LOCATION: MUD CREEK AT SWEETWATER, NE  
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HSA: GID

Revised, Printed Dates: 08/22/2010, 08/22/2010  
NWS FORM E-19 PAGE 1: GAGE MAP

BENCHMARKS

ELEVATION OF GAGE ZERO: 2013.690  
 LEVELING AGENCY AND DATE: 10-17-2002  
 RATING AGENCY: USGS

VERTICAL DATUM: NGVD 1929  
 CHECKBAR: 25.430

BENCHMARK	DESCRIPTION	GAGE ZERO	DATUM
BMR291	DESTROYED OR LOST.		
RM-1	DESTROYED OR LOST.		
RM-2	A CHISLED X ON A BOLT HEAD BETWEEN THE TWO SETS OF RAILROAD TRACKS ON THE LEFT PIER OF THE RAILROAD BRIDGE. FOUND IN 2002.	20.330	2034.020
RM-3	A STANDARD BRASS TABLET IN CONCRETE 250 FT. SOUTH OF GAGE 3 FT. WEST OF FENCE LINE, OR 45 FT. NORTH OF WELL HAND PUMP HEAD THAT IS 11 FT. WEST OF FENCE LINE.	21.260	2034.950
RM-4	A CHISLED X ON A BOLT HEAD ON THE UPSTREAM SIDE OF THE RIGHT RAILROAD BRIDGE PIER. FOUND IN 2002.	20.060	2033.750
RM-5	A STANDARD BRASS TABLET SET IN THE RIGHT DOWNSTREAM WINGWALL OF THE HIGHWAY 2 BRIDGE. FOUND IN 2002.	24.090	2037.780
RM-6	A BRASS NEBRASKA DEPT. OF ROADS PIN SET IN THE LEFT UPSTREAM WINGWALL OF THE HIGHWAY 2 BRIDGE. FOUND IN 2002.	24.110	2037.800
RP	AN ELECTRIC STEEL TAPE AND REFERENCE POINT MOUNTED ON INSTRUMENT SHELF.	28.220	2041.910
RP-2	DESTROYED OR LOST.		
RP-3	A CHISLED ARROW IN THE UPSTREAM GUARDRAIL OF THE RAILROAD BRIDGE. FOUND IN 2002.	26.740	2040.430
RP-4	DESTROYED OR LOST.		

LOCATION: MUD CREEK AT SWEETWATER, NE  
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HSA: GID

Revised, Printed Dates: 08/22/2010, 08/22/2010  
 NWS FORM E-19 PAGE 2: BENCHMARKS

GAGES

DCP

TELEM

NESS ID: 40209738  
 OWNER: STATENE  
 REPORT TIME: 0053  
 INTERVAL: 60

TYPE OF TELEMETRY: dedicated  
 OWNER: State DWR  
 PHONE NUMBER:  
 INTERVAL:  
 PAYOR/COST OF LINE: Unk / \$

GAGE TYPE	OWNER	MAINTENANCE	BEGAN	ENDED	GAGE LOCATION/REMARKS
float	State DNR	State DNR	07/23/1946	03/30/1988	USGS ESTABLISHED THE STATION WITH AN ADR GAGE ON THE LEFT BANK, 12 FT. DOWNSTREAM OF BRIDGE ON STATE HIGHWAY 2. GAGE HOUSE WAS MOVED (8/6/48) TO THE RIGHT BANK, PRESENT SITE, DIRECTLY ACROSS THE RIVER. GAGES ARE CONNECTED TO A FLOAT IN A STILLING WELL.
wireweight crest	State DNR State DNR	State DNR State DNR	07/23/1946 01/01/1990		WIRE WEIGHT ATTACHED TO THE DOWNSTREAM RAILING OF BRIDGE. CREST STAGE INDICATOR ON THE DOWNSTREAM SIDE OF BRIDGE PIER. BOTTOM OF GAGE IS 10.21 FEET AND THE TOP IS 26.04 FEET. EXACT INSTALLATION DATE NOT KNOWN BUT IS WAS SOMETIME BETWEEN 04/1982 AND 04/1994.
Other bubble	State DNR State DNR	State DNR State DNR	05/11/2005 09/27/2007	12/31/2050	A DESIGN ANALYSIS WATER LOG SERIES MODEL H-522XL INSTALLED. MODEL H350 LITE DESIGN ANALYSIS GAS PURGE SYSTEM WAS INSTALLED.

LOCATION: MUD CREEK AT SWEETWATER, NE  
 ID: SWTN1

HSA: GID

Revised, Printed Dates: 08/22/2010, 08/22/2010  
 NWS FORM E-19 PAGE 3: GAGES

HISTORY

PUBLICATION/LOCATION OF RECORDS -----	STARTING DATE -----	ENDING DATE -----
WRD NE	07/23/1946	

TYPE OF GAGE -----	OWNER -----	STARTING DATE -----	ENDING DATE -----
float	State DNR	07/23/1946	03/30/1988
wireweight	State DNR	07/23/1946	
crest	State DNR	01/01/1990	
Other	State DNR	05/11/2005	12/31/2050
bubble	State DNR	09/27/2007	

ZERO ELEVATION -----	STARTING DATE -----
2013.690	07/23/1946

LOCATION: MUD CREEK AT SWEETWATER, NE  
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Revised, Printed Dates: 08/22/2010, 08/22/2010  
NWS FORM E-19 PAGE 4: HISTORY

CRESTS

FLOOD STAGE: 15.00 ACTION STAGE: 13.00 BANKFULL STAGE: 15.00  
 FLOOD FLOW: 1050 ACTION FLOW: 694

DATE OF CREST	TIME LST	CREST (ft)	FLOW (CFS)	FROM HIGH WATERMARKS	BASED ON OLD DATUM	CAUSED BY ICE JAM	REMARKS
06/22/1947	UNDEF	23.20	27000	X			RECORD FLOOD.
03/16/1948	UNDEF	17.70	2940				
06/09/1949	UNDEF	15.25	1040				
08/14/1950	UNDEF	15.81	1330				
08/14/1951	UNDEF	13.42	920				
03/18/1952	UNDEF	7.63	245			X	
05/27/1953	UNDEF	15.18	1200				
06/17/1954	UNDEF	16.66	1660				
05/19/1955	UNDEF	10.90	555				
06/29/1956	UNDEF	14.70	1060				
06/18/1957	UNDEF	17.27	1740				
07/19/1958	UNDEF	16.58	1350				
06/30/1959	UNDEF	12.60	742				
06/30/1960	UNDEF	16.62	1760				
05/22/1961	UNDEF	9.75	405				
06/18/1962	UNDEF	17.93	2520				
02/08/1963	UNDEF	8.48	200				
07/01/1964	UNDEF	16.99	1700				
05/26/1965	UNDEF	15.28	1220				
02/10/1966	UNDEF	15.20	800			X	
06/14/1967	UNDEF	16.85	1810				
06/24/1968	UNDEF	20.07	5600				
03/20/1969	UNDEF	15.52	1410				
06/17/1970	UNDEF	7.88	219				
06/06/1971	UNDEF	10.38	471				
07/27/1972	UNDEF	10.21	396				
06/02/1973	UNDEF	17.79	2270				
04/29/1974	UNDEF	12.05	568				
06/22/1975	UNDEF	11.53	512				
06/24/1976	UNDEF	13.79	824				
05/08/1977	UNDEF	13.10	728				
03/16/1978	UNDEF	17.88	2230				
04/19/1979	UNDEF	10.17	339			X	
02/20/1980	UNDEF	9.90	120			X	
06/15/1981	UNDEF	15.29	1020	X			
06/15/1982	UNDEF	15.29	1020				
07/01/1983	UNDEF	1.09	831				
06/12/1984	UNDEF	18.90	2420				
05/14/1985	UNDEF	11.03	386				
09/21/1986	UNDEF	10.47	349				
06/10/1987	UNDEF	10.48	339				
02/18/1988	UNDEF	9.83	278			X	
07/14/1989	UNDEF	11.57	436				
06/18/1990	UNDEF	15.80	1080				
05/24/1991	UNDEF	10.29	400				

LOCATION: MUD CREEK AT SWEETWATER, NE  
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Revised, Printed Dates: 08/22/2010, 08/22/2010  
 NWS FORM E-19 PAGE 5: CRESTS

DATE OF CREST	TIME LST	CREST (ft)	FLOW (CFS)	FROM HIGH WATERMARKS	BASED ON OLD DATUM	CAUSED BY ICE JAM	REMARKS
05/16/1992	UNDEF	16.10	1310				
03/07/1993	UNDEF	19.50				X	
03/09/1993	UNDEF	18.95	2070			X	
03/05/1994	UNDEF	12.59	657			X	
05/27/1995	UNDEF	12.02	577				
07/31/1996	UNDEF	7.74	143				
07/04/1997	UNDEF	8.72	209				
07/05/1998	UNDEF	16.65	1530				
06/10/1999	UNDEF	14.83	1020				
07/04/2000	UNDEF	10.25	362				
04/23/2001	UNDEF	12.40	629				
05/11/2002	UNDEF	7.77	136				
06/18/2003	UNDEF	10.62	378				
05/31/2004	UNDEF	13.80	826				
05/13/2005	UNDEF	12.54	541				Peak discharge and gage height for the year.
07/10/2006	UNDEF	12.26	562				Peak discharge and gage height for the year.
02/25/2007	UNDEF	19.10	2020				Peak discharge and gage height for the year.
05/26/2008	05:00	15.27	1115				

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Revised, Printed Dates: 08/22/2010, 08/22/2010  
NWS FORM E-19 PAGE 5-2: CRESTS

LOW WATER RECORDS

DATE OF LOW WATER	STAGE (ft)	FLOW (CFS)	REMARKS
06/01/1955	0.00	0	NO FLOW AT TIMES IN 1955-56, BUT VARIABLE.
09/16/1994		16	9/16 TO 9/20 1994 HAD 16 CFS FLOW
09/01/1995		9	ACTUAL FLOW WAS 8.9 CFS
07/14/1996		12	12 CFS ON 7/14/1996 AND 7/19/1996
08/09/1997		3	ACTUAL FLOW WAS 2.9 CFS
10/01/1997		16	16 CFS ALSO 10/4 THROUGH 10/6 1997
08/28/1999		14	
08/12/2000		4	ACTUAL FLOW WAS 3.8 CFS
08/10/2001		6	ACTUAL FLOW WAS 6.3 CFS
08/04/2002		0	0 FLOW ALSO ON 8/7 8/8 8/16 AND 8/20 2002
08/21/2003		0	0 FLOW ALSO ON 8/30/2003
08/06/2004		6	Minimum daily discharge for the year.
07/23/2005		3	Min. daily discharge was actually 3.2 cfs.
07/24/2005		3	Min. daily discharge was actually 3.2 cfs.
08/27/2006		0	Minimum daily discharge was actually 0.05 cfs
10/08/2006		6	Minimum daily discharge was actually 6.4 cfs.

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Revised, Printed Dates: 08/22/2010, 08/22/2010  
NWS FORM E-19 PAGE 6: LOW WATER

CONDITIONS AFFECTING FLOW

MILES ABOVE MOUTH: 11.6      DRAINAGE AREA: 655.0      POOL STAGE: 0.0

STREAM BED: COMPOSED MAINLY OF FINE SILT AND SOME SAND.

REACH: A FEW MILES UPSTREAM AND DOWNSTREAM OF GAGE.

REGULATION: NONE.

DIVERSION: WATER IS DIVERTED BY SOME PUMP IRRIGATION.

WINTER: MODERATE TO HEAVY ICE COVER IS TO BE EXPECTED IN WINTER. LOW WATER STAGES AFFECTED BY ICE. ICE BREAKUPS IN THE SPRING CAN CAUSE CHANNEL OVERFLOW.

TOPOGRAPHY: CHANNEL IN VICINITY OF GAGE IS WINDING WITH FAIRLY STEEP BANKS. CHANNEL IS STRAIGHT FOR A DISTANCE OF 200 FT. ABOVE AND BELOW THE GAGE. BOTH BANKS HAVE A HEAVY FRINGE OF WILLOWS AND COTTONWOOD TREES.

REMARKS: DOWNSTREAM LAND IS FLAT AND TREE LINED NEAR STREAM. ADJACENT LAND IS PRIMARILY CROP LAND. UPSTREAM LAND IS ROLLING HILLS WITH PASTURE AND SOME CROP LAND. OVERFLOW ON BOTH BANKS IS ABOUT 15 FEET.

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Revised, Printed Dates: 08/22/2010, 08/22/2010  
NWS FORM E-19 PAGE 7: CONDITIONS

DAMAGE

STAGE    AREAS AFFECTED

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15.00    ADJACENT PASTURE AND FARMLAND BEGIN TO FLOOD.

LOCATION: MUD CREEK AT SWEETWATER, NE  
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NWS FORM E-19 PAGE 8: DAMAGE

RIVER STAGE DATA

15.00 - ADJACENT PASTURE AND FARMLAND BEGIN TO FLOOD.

37-		
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32-		
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27-		
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22-	23.20	06/22/1947
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-----	20.07	06/24/1968
-----	19.50	03/07/1993
-----	18.95	03/09/1993
-----	17.93	06/18/1962
17-	16.99	07/01/1964
-----	15.81	08/14/1950
-----	14.83	06/10/1999
-----	13.80	05/31/2004
12-	12.60	06/30/1959
-----	11.57	07/14/1989
-----	10.90	05/19/1955
-----	9.90	02/20/1980
-----	8.72	07/04/1997
7-	7.88	06/17/1970
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2-	1.09	07/01/1983
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-3-		
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-8-		
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-13-		

REACH: A FEW MILES UPSTREAM AND DOWNSTREAM OF GAGE.

ELEVATION ZERO: 2013.69

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NWS FORM E-19 PAGE 9: STAFF

CONTACTS

SQ	CONTACT/REMARKS	PHONE
1	NDNR ORD OFFICE MAINTENANCE.	308-728-3325

LOCATION: MUD CREEK AT SWEETWATER, NE  
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NWS FORM E-19 PAGE 10: CONTACTS