UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL ENVIRONMENTAL SATELLITE DATA
AND INFORMATION SERVICE
NATIONAL CLIMATIC DATE CENTER
151 PATTON AVE ROOM 120
ASHEVILLE NC 28801-5001

24 November 2009

MEMORANDUM

From: Karsten Shein, Climate Monitoring Branch, CSMD, NCDC
To: Thomas Karl, Director, NCDC
Subject: SCEC: New all-time 24-hr snow fall record for Kansas

On 24 November, 2009, the ad-hoc State Climate Extremes Committee (SCEC) voted unanimously to approve a new all-time 24-hr snow fall record for the state of Kansas. The same storm system that resulted in new all-time 24-hour snowfall records for Texas and Oklahoma also impacted Kansas. A deep upper level low pressure system moved into northern New Mexico early on 27 March and subsequently propagated across the southern Texas Panhandle to east central Oklahoma by early morning on 28 March. At the surface, a low pressure system developed in central Texas on 27 March and deepened as it moved across southeast Oklahoma into southern Missouri on 28 March. Rich moisture from the Gulf of Mexico spread northward over the cold air entrenched across the central plains, and heavy snow developed in far southwest Kansas shortly before midnight on 26 March. The heavy snowfall spread eastward slowly during the night and covered most of southwest and south central Kansas by mid morning on 27 March. The heavy snow continued throughout the day on 27 March and gradually ended by mid morning on 28 March. Sufficient instability was present to support thunderstorms with the snow. The snowfall was accompanied by north winds at 30 to 40 mph with gusts to near 60 mph, resulting in blizzard conditions. More than a foot of snow accumulated across a large part of southwest and south central Kansas with heaviest snowfall in south central Kansas. Nearly all roads were closed for an extended period due to zero visibilities and widespread 10 to 20 foot snow drifts.

Snowfall from the event was heaviest from southeast Clark to Pratt Counties (KS) where 28 to 30 inches fell in a 24 hour period ending in the morning of the 28th. The cooperative observer in Pratt reported 30.0 inches of snow in 24 hours and surrounding unofficial observations included 28 inches 1.3 miles northwest of Pratt and 30 inches west-northwest of Preston. The cooperative observer in Coldwater reported 27 inches of snowfall in the 24-hour period from 7 AM on 27 March to 7 AM on 28 March and a storm total of 30.5 inches of snow.

The ad-hoc SCEC was convened to evaluate this snow fall value, and followed the protocol set forth in NWS Instruction 10-1004 Appendix E. The committee corresponded by E-mail and conducted a teleconference on 24 November, 2009. Based upon the evidence presented and a discussion amongst the SCEC members, the voting members unanimously supported recognizing the validity of the 30.0-inch snow fall value at Pratt, KS on 28 March, 2009, and after a search of the historical snow fall data for the state, recognizing that the value constitutes the greatest all-time 24-hr snow fall total for Kansas. The previous record was 24 inches at Norcatur on 26 October, 1996.

A NATIONAL RESOURCE FOR CLIMATE INFORMATION

State Climate Extremes Members:

Martha Shulski, High Plains Regional Climate Center
Jeff Hutton, NWS WFO Dodge City, Kansas
Jesse Lee, NWS WFO Dodge City, Kansas
Mary Knapp, Kansas State Climatologist
Doug Kluck, NWS Central Region Headquarters
Karsten Shein, National Climatic Data Center

File with NCDC/State Climate Extremes Committee

Person is standing at the location where the rain gauge was installed at the Pratt COOP site.

COMMUNITY COLLABORATIVE RAIN, HAIL & SNOW NETWORK
"Because every drop counts"

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Search Daily Precipitation Reports

Station Fields: ☐ Station Number ☐ Station Name

Location: Kansas PR - Pratt

Date Range:

Start Date: 3/26/2009 **End Date:** 3/28/2009

Precip Value: New Snow SWE Operator

Search

Searched: Stations in Pratt, Kansas. Report date between 3/26/2009 and 3/28/2009.

Showing 10 Records.

Dates	Time	Station Number	Station Name	Total Precip .in	New Snow .in	Total Snow .in	State	County	View
3/28/2009	7:00 AM	KS-PR-3	Pratt 2.6 S	NA	21.0	NA	KS	Pratt	
3/28/2009	7:00 AM	KS-PR-4	Preston 1.2 SE	NA	20.0	NA	KS	Pratt	
3/28/2009	8:00 AM	KS-PR-1	Pratt 1.3 WNW	NA	28.0	28.0	KS	Pratt	
3/28/2009	9:00 AM	KS-PR-2	Preston 3.2 WNW	1.40	30.0	30.0	KS	Pratt	
3/27/2009	7:00 AM	KS-PR-4	Preston 1.2 SE	0.00	0.0	NA	KS	Pratt	
3/27/2009	8:00 AM	KS-PR-1	Pratt 1.3 WNW	T	NA	NA	KS	Pratt	
3/27/2009	8:00 AM	KS-PR-2	Preston 3.2 WNW	0.05	NA	NA	KS	Pratt	
3/26/2009	7:00 AM	KS-PR-1	Pratt 1.3 WNW	0.00	0.0	NA	KS	Pratt	
3/26/2009	7:00 AM	KS-PR-4	Preston 1.2 SE	0.00	0.0	NA	KS	Pratt	
3/26/2009	8:00 AM	KS-PR-2	Preston 3.2 WNW	0.00	0.0	NA	KS	Pratt	

COCORAHS observations from 27-28 May in Pratt County

STATION (Climatological)	(River Station, if different)	MONTH	
Pratt		Mar	2009

STATE	COUNTY	RIVER
KS	PRATT	

TIME (local) OF OBSERVATION RIVER	TEMPERATURE	PRECIPITATION	STANDARD TIME IN USE
	08:00	08:00	C

TYPE OF RIVER GAGE	ELEVATION OF RIVER GAGE ZERO	FLOOD STAGE	NORMAL POOL STAGE

WS FORM B-91
(03-09)

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

RECORD OF RIVER AND CLIMATOLOGICAL OBSERVATIONS

DATE	TEMPERATURE 24 HRS ENDING AT OBSERVATION MAX	MIN	AT OBSN	PRECIPITATION 24 HR AMOUNTS Rain, melted snow, etc. (in and hundredths)	Snow, ice pellets, hail (ins and tenths)	AT OB Snow, ice pellets, hail, ice on ground (in)	Draw a straight line (------) through hours precipitation was observed, and a wavy line (~~~~~) through hours precipitation probably occurred unobserved (A.M. 1 2 3 4 5 6 7 8 9 10 11 / NOON / P.M. 1 2 3 4 5 6 7 8 9 10 11)	WEATHER (Observation Day) Mark 'X' for all types occurring each day: Fog	Ice pellets	Glaze	Thunder	Hail	Damaging winds	Time of occurrence if different from above	RIVER STAGE Condition	Gage reading at ___ AM	Tendency	REMARKS (SPECIAL OBSERVATIONS, ETC.)
1	34	9	14	0.00	0.0	0												
2	39	12	20	0.00	0.0	0												
3	43	19	32	0.00	0.0	0												
4	52	32	36	0.00	0.0	0												
5	68	36	52	0.00	0.0	0												
6	84	42	42	0.00	0.0	0												
7	71	39	60	T	0.0	0	7 8 9 10 11											
8	77	31	31	0.00	0.0	0												
9	67	30	46	0.00	0.0	0												
10	70	25	25	0.00	0.0	0												
11	40	15	15	0.00	0.0	0												
12	33	14	20	0.00	0.0	0	1 2 3 4 5 6 7 8 9 10 11											
13	38	20	31	0.00	0.0	0												
14	38	31	35	0.00	0.0	0												
15	55	32	33	0.00	0.0	0												
16	67	33	43	0.00	0.0	0												
17	74	39	45	0.00	0.0	0												
18	79	42	42	0.00	0.0	0												
19	64	40	41	0.00	0.0	0												
20	64	41	48	0.00	0.0	0												
21	65	47	53	0.11	0.0	0	1 2 3 4 5 6 7											
22	74	52	52	0.01	0.0	0	1 2 3 4 5 6 7 8 9 10 11											
23	77	51	59	0.00	0.0	0												
24	78	34	35	0.00	0.0	0												
25	52	29	32	0.00	0.0	0												
26	53	31	34	0.00	0.0	0												
27	56	26	26	0.00	0.0	0	10 11											
28	37	21	25	M	30.0	30												
29	43	20	25	0.00	0.0	0												
30	47	21	40	0.00	0.0	0												
31	53	30	30	0.00	0.0	0												
	57.8	30.5	SUM	0.12	30.0			Fog	Ice pel	Glaze	Thund	Hail	Dam winds					

CHECK BAR (for wire weight) NORMAL CHECK BAR

READING	DATE

CONDITION OF RIVER AT GAGE

A. Obstructed by rough ice
B. Frozen, but open at gage
C. Upper surface smooth ice
D. Ice gorge above gage
E. Ice gorge below gage
F. Shore ice
G. Floating ice
H. Pool stage

OBSERVER

SUPERVISING OFFICE
DDC Dodge City

STATION INDEX NO.
14-6549-08

STATION (Climatological)	(River Station, if different)	MONTH	20
Coldwater		March	09

STATE	COUNTY	RIVER
Kansas	Comanche	

TIME (local) OF OBSERVATION RIVER	TEMP.	PRECIPITATION	STANDARD TIME IN USE
	6PM.	7am	CDT

TYPE OF RIVER GAGE	ELEVATION OF RIVER GAGE ZERO Ft.	FLOOD STAGE Ft.	NORMAL POOL STAGE Ft.

WS FORM B-91
(12/00)

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

RECORD OF RIVER AND CLIMATOLOGICAL OBSERVATIONS

DATE	TEMPERATURE F. 24 HRS. ENDING AT OBSERVATION MAX.	MIN.	AT OBSN.	PRECIPITATION 24-HR AMOUNTS Rain, melted snow, etc. (Ins and hundredths)	Snow, ice pellets, hail, (Ins. and tenths)	At Ob. Snow, ice pellets, hail, ice on ground (Ins.)	Draw a straight line (——) through hours precipitation was observed, and a waved line (~~~) through hours precipitation probably occurred unobserved. A.M. NOON P.M.	WEATHER (Calendar Day) Mark 'X' for all types occurring each day. Fog	Ice Pellets	Glaze	Thunder	Hail	Damaging Winds	Time of observation if different from above	RIVER STAGE CONDITION	GAGE READING AT ___ A.M.	TENDENCY	REMARKS (Special observations, etc.,)
1	43	12	39	0	0	0												
2	47	20	44	0	0	0												
3	59	32	55	0	0	0												
4	76	34	64	0	0	0												
5	84	50	78	0	0	0												
6	78	39	71	0	0	0												
7	77	61	63	0	0	0												
8	66	29	63	0	0	0												
9	73	44	72	0	0	0												
10	72	24	39	T	0	0												
11	39	14	31	0	0	0												
12	35	17	34	0	0	0												
13	38	30	37	T	0	0												
14	57	31	55	0	0	0												
15	70	33	68	0	0	0												
16	78	39	75	0	0	0												
17	83	44	80	0	0	0												
18	80	41	61	0	0	0												
19	63	40	62	0	0	0												
20	67	47	65	0	0	0												
21	77	52	75	0	0	0												
22	75	50	72	0	0	0												
23	77	59	75	0	0	0												
24	75	35	53	0	0	0												
25	57	31	52	0	0	0												
26	55	34	52	T	T	0												
27	55	21	24	.36	0.5	0												
28	31	23	31	1.92	27.0	27												
29	45	24	44	.21	3.0	25												
30	59	39	44	0	0	20												
31	54	29	53	0	0	10												
SUM			SUM	2.49	30.5			Fog	Ice Pel.	Glaze	Thund.	Hail	Dam. Winds					

CHECK BAR (For wire-weight) NORMAL CK. BAR

READING	DATE

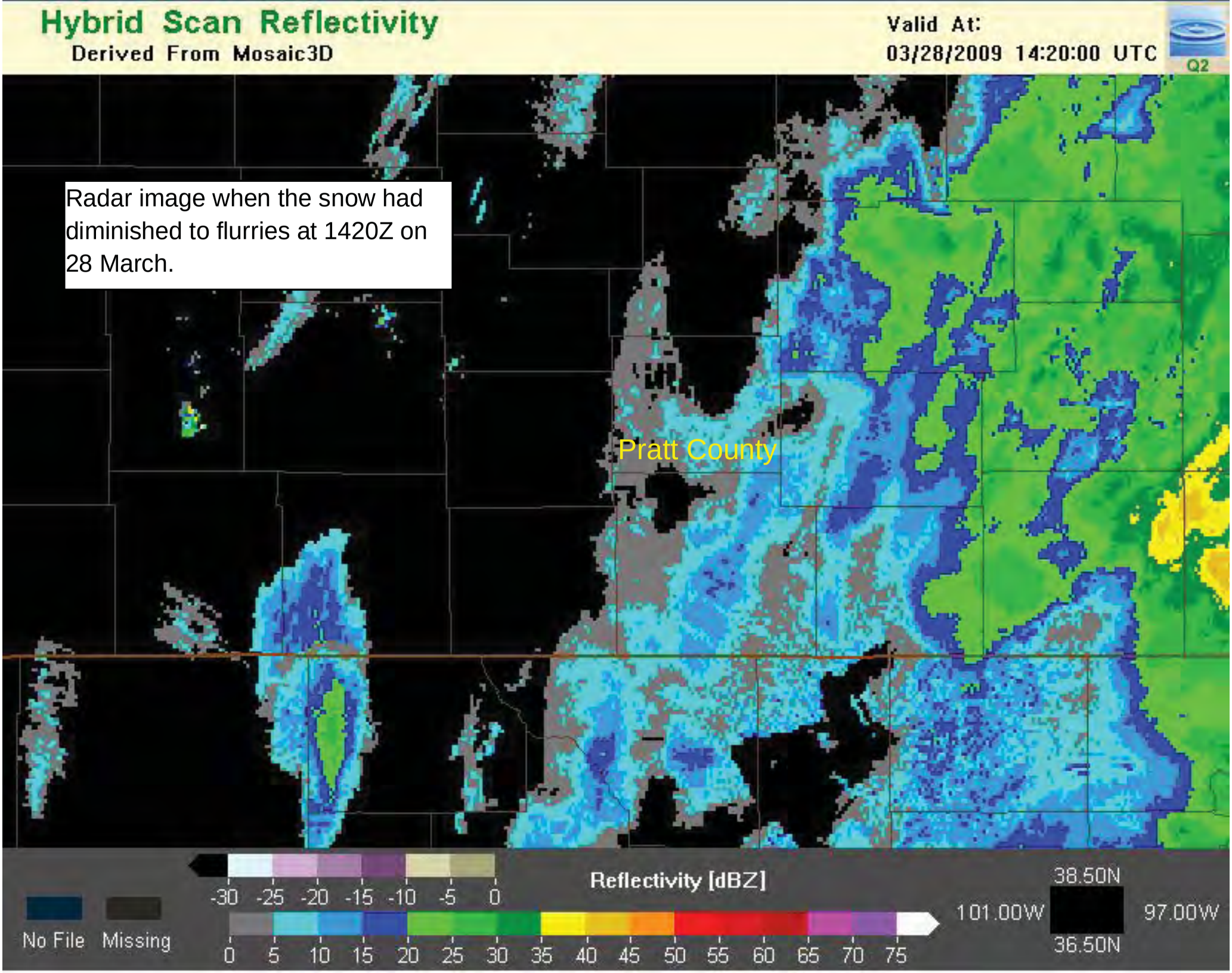
CONDITION OF RIVER AT GAGE

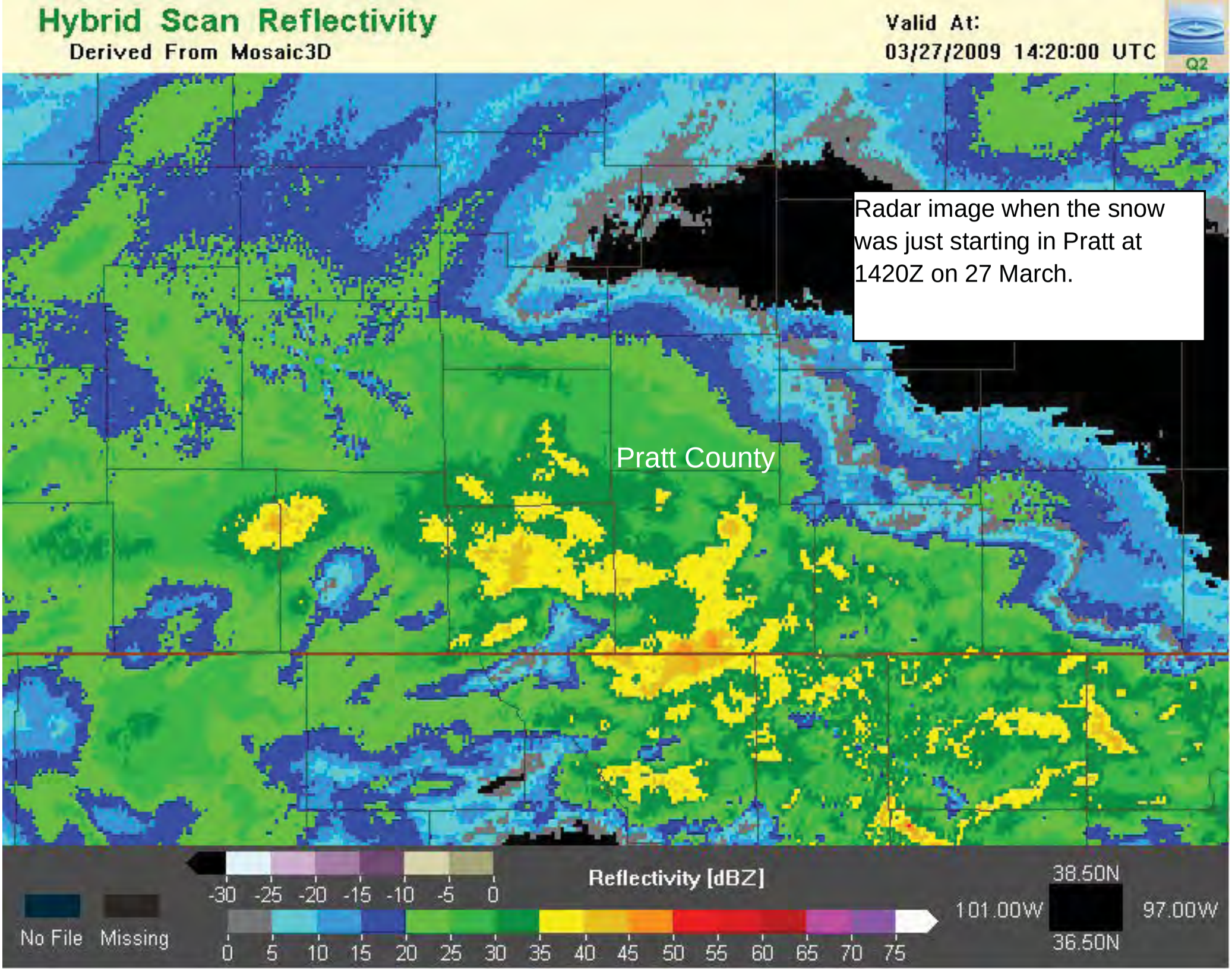
A. Obstructed by rough ice.
B. Frozen, but open at gage.
C. Upper surface of smooth ice.
D. Ice gorge above gage.
E. Ice gorge below gage
F. Shore ice.
G. Floating ice.
H. Pool stage.

OBSERVER

SUPERVISING OFFICE
DODGE CITY, KS.

STATION INDEX NO.
14-1704-8


Hybrid Scan Reflectivity
Derived From Mosaic3D
Valid At:
03/28/2009 14:20:00 UTC
Q2
Radar image when the snow had diminished to flurries at 1420Z on 28 March.
Pratt County
Reflectivity [dBZ]
-30 -25 -20 -15 -10 -5 0
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75
No File
Missing
38.50N
101.00W
97.00W
36.50N


Hybrid Scan Reflectivity
Derived From Mosaic3D
Valid At:
03/27/2009 14:20:00 UTC
Q2
Radar image when the snow was just starting in Pratt at 1420Z on 27 March.
Pratt County
Reflectivity [dBZ]
-30 -25 -20 -15 -10 -5 0
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75
No File
Missing
38.50N
101.00W
97.00W
36.50N