

**National Climatic Data Center**

**DATA DOCUMENTATION**

**FOR**

**DATA SET 6450 (DSI-6450)**

**June 16, 2003**

**CODIAC Data Sets**

National Climatic Data Center  
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1. **Abstract:** The Cooperative Distributed Interactive Atmospheric Catalog System (CODIAC) was developed jointly by the Office of Field Project Support of the [University Corporation for Atmospheric Research](#) (UCAR), the [US Weather Research Program Office](#) (USWRP), the [Forecast Systems Laboratory](#) (FSL), and the National Climatic Data Center (NCDC). Its goal is to provide researchers with easy access to a distributed meteorological database held at different data centers.

Within the DSI-6450 dataset is The Global Energy and Water Cycle Experiment (GEWEX) Continental-Scale International Project (GCIP), fully implemented in 1995 and phased out in 2001, was launched in the Mississippi River basin to take advantage of the extensive existing meteorological and hydrological networks. These networks provide the best opportunity for obtaining data sets essential to achieving the overall GCIP goal:

To demonstrate skill in predicting changes in water resources on time scales up to seasonal and annual as an integral part of the climate system. GEWEX is an integrated program of research, observation, and science activities ultimately leading to the prediction of global and regional climate change.

Other datasets included represent various other studies that took place within the United States and the World. Listed below are the 221 various datasets contained within DSI-6450, each explaining the contents of the file, period of record and location. They are listed in alphabetical order beginning with all caps. More information about this dataset can be found here at the [GEWEX/GAPP](#) home page. Each dataset has its own unique element structure and will be more clearly defined within the data.

## 2. **Element Names and Definitions:**

### **10-sec-CLASS**

This is one of the upper air sounding data sets developed for the Verification of the Origins of Rotation in Tornadoes Experiment (VORTEX) conducted from 01 April to 15 June 1995. Included in this data set are four fixed sites (Altus, Ardmore and Woodward OK and Lubbock TX), as well as 5 mobile sounding systems (4 NSSL; 1 NCAR). The soundings from all sites were released on an as requested basis. The final data set consists of 10-sec resolution files. The area covered by the experiment extends from approximately 91W to 107W longitude and 31N to 40N latitude.

### **10MB-SNDING-COMP**

This data set is the second release (version 2) of the STORM-FEST composite dataset for rawinsonde observations. The composite consists of 10mb vertical resolution soundings appended into daily files. Each file contains all soundings for one day and are sorted by time, station latitude and station longitude. Data begins in 02 February 1992 through 15 March 1992. The sounding composite dataset contains data from:

NCAR CLASS Soundings  
Canadian Soundings (AES)  
NCAR L2D2 Dropsondes  
NWS Rawinsonde Data  
Pacific Military Dropwinondes  
Naval post Graduate School (NPGS) Picket Fence Soundings  
Ft. Sill Soundings  
Flatlands Soundings

### **15-MIN-PRECIP-COMP**

The Fifteen Minute Precipitation Composite is one of several precipitation

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datasets provided in the GEWEX Continental-Scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1997 and 1998. This precipitation composite was formed from two data sources (i.e., National Climatic Data Center (NCDC) Fifteen Minute Precipitation data (TD3260) and fifteen minute precipitation extracted from the Department of Energy (DOE) Atmospheric Radiation Measurement Surface (ARMSFC) five minute surface data. Data from these sources were quality controlled and merged to form this precipitation composite. This composite contains data for the ESOP 1997 and 1998 domain and time period (01 October 1996 through 31 May 1998) The ESOP 1997 and 1998 domain is approximately 85W to 99W longitude and 37N to 50N latitude.

#### **15-min-precip**

Fifteen Minute Precipitation Composite is one of several precipitation datasets provided in the GEWEX Continental-Scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1996. This precipitation composite was formed from two data sources (i.e., Arkansas-Red River Forecast Center (ABRFC), National Climatic Data Center (NCDC) Fifteen Minute Precipitation data (TD3260) and fifteen minute precipitation extracted from the Department of Energy (DOE) Atmospheric Radiation Measurement Surface (ARMSFC) five minute surface data. Data from these sources (approximately 850 stations) were quality controlled and merged to form this precipitation composite. This composite contains data for the ESOP 1996 domain and time period (01 April 1996 through 30 September 1996). The ESOP 1996 domain is approximately 91W to 107W longitude and 31N to 40N latitude.

#### **15MIN-PRECIP-COMP**

The Fifteen Minute Precipitation Composite is one of several precipitation datasets provided in the GEWEX Continental-Scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1997-2001. This precipitation composite was formed from two data sources (i.e., National Climatic Data Center (NCDC) Fifteen Minute Precipitation data (TD3260). Data from this source was quality controlled. This composite contains data for the ESOP 1998-2001 domain and time period (01 October 1997 through 30 September 2001). The ESOP 1998-2001 domain is approximately 76W to 89W longitude and 33N to 43N latitude.

#### **20min-sfc**

The GEWRX Continental-Scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1995 20-Minute Surface Composite is composed of data from several sources (i.e., Artais Automated Weather Observation System (AWOS), Handar AWOS, and Qualimetrics AWOS) for the ESOP 1995 domain. Data from these sources (32 stations) were merged and quality controlled to form this Surface Composite. This Surface Composite contains data for the ESOP time period (01 April 1995 through 30 September 1995) and for the ESOP 1995 domain only. The ESOP 1995 domain is approximately 31N to 40N latitude and 91W to 107W longitude.

#### **5-min-sfc**

The GEWEX Continental-Scale International Project (GCIP) Enhanced Seasonal Observatory Period (ESOP) 1995 5-Minute Surface Composite is composed of data from several sources (i.e., Artais Automation Weather Observatory System (AWOS), Automated Surface Observation System (ASOS), Department of Energy (DOE) Atmospheric Radiation Measurement Surface (ARMSFC), and Oklahoma Mesonet (OKMESO) for the ESOP 1995 domain. Data from these sources (204 stations) were

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merged and quality controlled to form this Surface Composite. This Surface Composite contains data for the ESOP 1995 time period (01 April 1995 through 30 September 1995) and for the ESOP 1995 domain only. The ESOP 1995 domain is approximately 31N to 40N latitude and 91W to 107W longitude.

#### **ABRFC-WSR-88D-hrly**

The Arkansas-Red Basin River Forecast Center (ABRFC) Stage III Hourly Precipitation composite product is one of several image datasets provided in the GEWEX Continental-Scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1996. The ABRFC imagery covers a sector (approx. 31 to 40 degrees N latitude by 91 to 107 degrees W longitude box) over the Central United States. The ABRFC imagery contains hourly composite of radar derived precipitation for the ESOP 1996 time period (01 April 1996 through 30 September 1996).

#### **ABRFC-misc-precip**

The Arkansas-Red Basin River Forecast Center (ABRFC) Miscellaneous Precipitation Dataset is one of several precipitation datasets provided in the GEWEX Continental-Scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1996. This dataset contains all precipitation data from the Arkansas-Red Basin River Forecast Center (ABRFC) stations. Stations that reported at standard or incremental times are also included in the various ESOP 1996 precipitation composite datasets. The miscellaneous precipitation dataset contains data from approximately 1500 stations in the ESOP 1996 domain (91W to 107W longitude and 31N to 40N latitude) and time period (01 April 1996 through 30 September 1996). These data were not quality controlled by the University Corporation for Atmospheric Research/Joint Office for Science Support (UCAR/JOSS).

#### **AGRIMET-15MIN-SFC**

The Great Plains Region AgriMet Data System dataset is one of several surface datasets provided in the GEWEX Continental-Scale International Project (GCIP) Large Scale Area-North West (LSA-NW) Enhanced Annual Observing Period (EAOP) 1999. This dataset contains data for the GCIP LSA-NW EAOP-99 domain and time period (01 April 1999 through 31 March 2000). The GCIP LSA-NW EAOP-99 domain is approximately 90W to 115W longitude and 36N to 51N latitude. These data were not quality controlled by the University Corporation for Atmospheric Research/Joint Office for Science Support (UCAR/JOSS) and are available "as is".

#### **AGRIMET-HRLY-SFC-QC**

The Great Plains Region AgriMet Data System Hourly Surface Data in QC format is one of the several surface datasets provided in the GEWEX Continental-Scale International Project (GCIP) Large Scale Area-North West (LSA-NW) Enhanced Annual Observing Period (EAOP) 1999. This dataset contains data for the GCIP LSA-NW EAOP-99 domain and time period (01 April 1999 through 31 March 2000). The GCIP LSA-NW EAOP-99 domain is approximately 90W to 115W longitude and 36N to 51N latitude. These data were not quality controlled by the University Corporation for Atmospheric Research/Joint Office for Science Support (UCAR/JOSS).

#### **AGRIMET-SFC-SPEC-QC**

The Great Plains Region AgriMet Data System "Special" observation Surface Data in QC format is one of several surface datasets provided in the GEWEX Continental-Scale International Project (GCIP) Large Scale Area-North West (LSA-NW) Enhanced Annual Observing Period (EAOP) 1999. This dataset contains

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data for the GCIP LSA-NW EAOP-99 domain and time period (01 April 1999 through 31 March 2000). The GCIP LSA-NW EAOP-99 domain is approximately 90W to 115W longitude and 36N to 51N latitude. These data were not quality controlled by the University Corporation for Atmospheric Research/Joint Office for Science Support (UCAR/JOSS).

#### **ANC-STATION-LIST**

The GEWEX Continental-Scale International Project (GCIP) Large Scale Area-East (LSA-E) Enhanced Annual Observing Period (EAOP) 1999 East datasets contain data collected from over 8000 stations in the GCIP LSA-E EAOP 1999 East domain (i.e., 33N to 43N latitude and 76W to 90W longitude) for the period 01 October 1998 through 30 September 1999. The station information provided defines each station in the GCIP LSA-E EAOP 1999 East datasets with station location, name, beginning and ending period, frequency of observation, etc.

#### **ANC-STATION-LST**

The GEWEX Continental-Scale International Project (GCIP) Large Scale Area-East (LSA-E) Enhanced Annual Observing Period (EAOP) 1998 East datasets contain data collected from over 7000 stations in the GCIP LSA-E EAOP 1999 East domain (i.e., 33N to 43N latitude and 76W to 90W longitude) for the period 01 October 1997 through 30 September 1998. The station information provided defines each station in the GCIP LSA-E EAOP 1998 East datasets with station location, name, beginning and ending period, frequency of observation, etc.

#### **ANC-STN-LIST**

The GEWEX Continental-Scale International Project (GCIP) Enhanced Seasonal Observatory Period (ESOP) 1998 datasets contain data collected from over 6000 stations in the ESOP 1998 domain (i.e., approximately 85W to 99W longitude and 37N to 50N latitude) for the period 01 October 1997 through 31 May 1998. The station information provided defines each station in the ESOP 1998 dataset with station location, name, beginning and ending period, frequency of observation, etc.

#### **ARM-CARBON-SOILS**

The Department of Energy (DOE) Atmospheric Radiation Measurement (ARM) Southern Great Plains (SGP) Organic Carbon Matter Soils Data Set is one of the various sub-surface data sets developed for the GCIP (Global Energy and Water Cycle Experiment (GEWEX) Continental-scale International Project) Enhanced Observation Period (EOP) Data Set. This data set contains a summary table of the measured organic carbon percentage and the estimated organic matter percentage in the near surface soil at each of the ARM SWATS (Soil Water and Temperature System) sites at the SGP site. The soil characteristics were performed by Oklahoma State University. Coverage area included in this data set ranges from 34.8N to 38.3N latitude and 95.5W through 99.3W longitude. Period of record includes the entire GEWEX 5 year study. No additional quality control was performed by the University Corporation for Atmospheric Research/Joint Office for Science Support (UCAR/JOSS).

#### **ARM-CART-HIRES-SNDINGS**

This is one of the upper air soundings datasets developed for the GEWEX Continental-scale International Project (GCIP) 1996 Enhanced Seasonal Observing Period (ESOP-96) conducted from 01 April to 30 September 1996. Included in this dataset are five Department of Energy (DOE) Atmospheric Radiation Measurement - Clouds and Radiation Testbed (ARM-CART) sounding stations; Lamont (Central Facility), Morris (B5), Purcell (B6), and Vici (B4), OK and Hillsboro (B1), KS. The area covered by the ESOP 1996 experiment

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extends from approximately 91W to 107W longitude and 31N to 40N latitude.

### Introduction

In 1995, the University of Oklahoma's Cooperative Institute for Mesoscale Meteorological Studies was awarded a research grant by the Climate and Global Change Program of the NOAA Office of Global Programs. The project was entitled "Meeting GEWEX/GCIP Measurement Needs by Adding Automated Measurement of Soil Moisture and Temperature Profiles to the DOE ARM/CART Southern Great Plains Site" (Schneider and Fisher, 1997). The co-principal investigators, Dr. Jeanne M. Shneider and Dr. Peter J. Lamb, subcontracted a portion of the work to Oklahoma State University. Specifically, the subcontractor was responsible for characterizing the soils and performing independent soil-moisture measurements at each of the 21 facilities (field research sites) in the ARM/CART study area in Oklahoma and Kansas.

### ARM-PARM-SOIL-WATER-RET

The Department of Energy (DOE) Atmospheric Radiation Measurement (ARM) Southern Great Plains (SGP) Parameters for Soil Water Retention Models Data Set is one of the various sub-surface data sets developed for the GCIP (Global Energy and Water Cycle Experiment (GEWEX) Continental-scale International Project) Enhanced Observation Period (EOP) Data Set. This data set contains one table for each of the ARM SWATS (Soil Water Temperature System) sites at the SGP site containing the fitted values of the parameters in the van Genuchten and Brooks-Corey equations for relating soil water pressure to volumetric water content. The soil characterizations were performed by Oklahoma State University. No additional quality control was performed by the University Corporation for Atmospheric research/Joint Office for Science Support (UCAR/JOSS).

### Sites

Site	Facility	Elevation (M)	Latitude	Longitude	Surface Type
Ashton, KS	EF-9	386	37.133 N	97.266 W	Pasture
Byron, OK	EF-11	360	36.881 N	98.282 W	Alfalfa
Colwater, KS	EF-8	664	37.333 N	99.309 W	Rangeland
Cordell, OK	EF-22	465	35.354 N	98.977 W	Rangeland
Cyril, OK	EF-24	409	34.883 N	98.205 W	Wheat
Elk Falls, KS	EF-7	283	37.383 N	96.180 W	Pasture
El Reno, OK	EF-19	Unknown	35.557 N	98.017 W	Pasture
Halstead, KS	EF-5	440	38.114 N	97.513 W	Wheat
Hillsboro, KS	EF-2	450	38.306 N	37.301 W	Pasture
Lamont, OK	EF-13&14	318	36.605 N	97.485 W	Pasture
Larned, KS	EF-1	632	38.202 N	99.316 W	Wheat
LeRoy, KS	EF-3	338	38.201 N	95.597 W	Wheat
Meeke, OK	EF-20	309	35.564 N	96.988 W	Pasture
Morris, OK	EF-18	217	35.687 N	97.856 W	Pasture
Pawhuska, OK	EF-12	331	36.841 N	96.427 W	Native
Plevna, KS	EF-4	513	37.953 N	98.329 W	Rangeland
Ringwood, OK	EF-15	418	36.431 N	98.284 W	Pasture
Seminole, OK	EF- 25	277	35.245 N	96.736 W	Pasture
Towanda, KS	EF-6	409	37.842 N	97.020 W	Alfalfa
Tyro, KS	EF-10	248	37.068 N	95.788 W	Wheat
Vici, OK	EF-16	602	36.061 N	99.134 W	Wheat

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Lamont is also the CF (Central Facility). EF is Extended Facility.

**ARM-SOIL-BULK-DENSITY**

The Department of Energy (DOE) Atmospheric Radiation Measurement (ARM) Southern Great Plains (SGP) Soil Bulk Density Data Set is one of the various sub-surface data sets developed for the GCIP (Global Energy and Water Cycle Experiment (GEWEX) Continental-scale International Project) Enhanced Observation Period (EOP) Data Set. This data set contains a summary table of the bulk densities representing the average of the values obtained from the soil water retention samples at each of the ARM SWATS (Soil Water and Temperature System) sites at the SGP site. The soil characterizations were performed by Oklahoma State University. No additional quality control was performed by the University Corporation for Atmospheric research/Joint Office for Science Support (UCAR/JOSS).

**ARM-SOIL-PART-SIZE**

The Department of Energy (DOE) Atmospheric Radiation Measurement (ARM) Southern Great Plains (SGP) Soil Particle Size Data Set is one of the various sub-surface data sets developed for the GCIP (Global Energy and Water Cycle Experiment (GEWEX) Continental-scale International Project) Enhanced Observation Period (EOP) Data Set. This data set contains tables of the laboratory data for each soil layer at each of the ARM SWATS (Soil Water and Temperature System) sites at the SGP site. The soil characterizations were performed by Oklahoma State University. No additional quality control was performed by the University Corporation for Atmospheric research/Joint Office for Science Support (UCAR/JOSS).

**ARM-SOIL-TEXTURE**

The Department of Energy (DOE) Atmospheric Radiation Measurement (ARM) Southern Great Plains (SGP) Soil Texture Data Set is one of the various sub-surface data sets developed for the GCIP (Global Energy and Water Cycle Experiment (GEWEX) Continental-scale International Project) Enhanced Observation Period (EOP) Data Set. This data set contains a summary table of the percentages of sand, silt, and clay fractions in each soil layer at each of the ARM SWATS (Soil Water and Temperature System) sites at the SGP site. Also included is the corresponding USDA texture class as determined from the "soil triangle". The soil characterizations were performed by Oklahoma State University. No additional quality control was performed by the University Corporation for Atmospheric research/Joint Office for Science Support (UCAR/JOSS).

**ARM-SOIL-WATER-RET**

The Department of Energy (DOE) Atmospheric Radiation Measurement (ARM) Southern Great Plains (SGP) Soil Water Retention Data Set is one of the various sub-surface data sets developed for the GCIP (Global Energy and Water Cycle Experiment (GEWEX) Continental-scale International Project) Enhanced Observation Period (EOP) Data Set. This data set contains a table for each of the ARM SWATS (Soil Water and Temperature System) sites at the SGP site containing the observed soil water retention data as obtained from laboratory tests using pressure plates and hanging columns. The soil characterizations were performed by Oklahoma State University. No additional quality control was performed by the University Corporation for Atmospheric research/Joint Office for Science Support (UCAR/JOSS).

**ARM-SWATS**

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The Global energy and Water Cycle experiment (GEWEX) Continental-scale International Project (GCIP) Enhanced Observing Period (EOP) Department of Energy (DOE) Atmospheric Radiation Measurement (ARM) Southern Great Plains (SGP) Soil Water and Temperature System (SWATS) data set is provided "as is" and was not quality controlled by UCAR/JOSS. The Soil Water and Temperature System is designed to provide information about the temperature of the soil and the status of water in the soil profile. Sensors installed at various depths below the soil surface provide hourly measurements of soil temperature and estimates of soil-water potential and volumetric water content. SWAT systems are installed at 21 of the ARM/SGP/CART Extended Facilities (EFs). The SWATS instrument system is comprised of 16 sensors: eight sensors located at different depths in the soil profile, replicated in two profiles.

#### **ASOS-HRLY-SFC-QC**

The Automated Surface Observing System (ASOS) Hourly Surface data in QC format is one of several surface datasets provided in the GEWEX Continental-scale International Project (GCIP) Large Scale Area-North West contains data for the GCIP LSA-NW EAOP-00 domain and time period (01 April 2000 through 31 March 2001). The GCIP LSA-NW EAOP-00 domain is approximately 90W to 115W longitude and 36N to 51N latitude. These data were not quality controlled by the University Corporation for Atmospheric research/Joint Office for Science Support (UCAR/JOSS).

#### **ASOS-SFC-SPEC-QC**

This data set comes from the Automated Surface Observing System (ASOS) "Special" observation surface data in quality control (QC) format. Data for the GEWEX Continental-scale International Project (GCIP) Large Scale Area-North West contains data for the GCIP (LSA-NW) Enhancement Annual Observing Period (EAOP) 1999-2001 domain (36N to 51N latitude and 90W to 115W longitude) and time period (01 April 1999 through 31 March 2001) are contained within this dataset. The ASOS "Nominal" hourly surface data in QC format for the GCIP LSA-NW EAOP 1999-2001 domain and time period are provided as a separate dataset. These data were not quality controlled by the University Corporation for Atmospheric research/Joint Office for Science Support (UCAR/JOSS).

#### **ATDD-WALKER-FLUX-TOWER**

This data set consists of data collected by the NOAA/ATDD at their Walker Branch watershed flux tower site. UCAR/JOSS has not done any quality control nor changed the data in any fashion. The remainder of this documentation file is from NOAA/ATDD.

The objective of this research is to measure and model air-surface exchange rates of water vapor, sensible heat and CO<sub>2</sub> over a temperate broad-leaved forest and to study the abiotic and biotic factors that control the fluxes of scalars in this landscape. Scalar flux densities were measured with tower-mounted measurement systems. Tower-mounted flux measurement systems were installed above and below a temperate forest canopy. This configuration allowed us to investigate the relative roles of vegetation and the forest floor on the net canopy exchange of mass and energy. We also used the tower-mounted flux measurement system to study temporal patterns (diurnal/seasonal) of mass and energy exchange at a point in the landscape.

#### **AVHRR-ATOVS**

This dataset contains AVHRR multi spectral and TOVS/ATOVS data from the NOAA Polar Orbiting satellites. Images are available in several different resolutions.

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See <http://www.saa.noaa.gov> for more information.

#### **BONDVILLE-LT-FLUX**

The NOAA/ATDD (Tilden Myers) started operation of a long term flux monitoring site near Bondville, Illinois in 1996 and continued through the end of 1999. Half-hourly observations of wind speed and direction, air temperature, relative humidity, pressure, incoming global radiation, incoming (and outgoing) visible radiation, net radiation, ground heat flux, precipitation, wetness, skin temperature, soil temperature (at 2, 4, 8, 16, 32 and 64 cm) average wind vector speed, kinematic shear stress, streamwise velocity variance, crosswind velocity variance, vertical velocity variance, sensible heat flux, latent energy flux, CO2 flux, downwelling longwave from the sky and soil moisture (at depths of 5, 20 and 60 cm; started 19 November 1997).

#### **CAC-500MB-ANAL-GIF**

The National Meteorological Center (NMC) and Climate Analysis Center (CAC) Upper Air Daily Weather Map Series imagery is one of several image datasets provided as part of the GEWEX Continental-scale International Project (GCIP) Initial Dataset One (GIDS-1). The upper air map imagery covers most of the northern hemisphere at the 500 mb level. The NMC/CAC upper air map imagery contains daily maps valid 1200 UTC for the entire GIDS-1 time period (01 February 1992 through 30 April 1992).

#### **CAC-SFC-ANAL-GIF**

The National Meteorological Center (NMC) and Climate Analysis Center (CAC) Upper Air Daily Weather Map Series imagery is one of several image datasets provided as part of the GEWEX Continental-scale International Project (GCIP) Initial Dataset One (GIDS-1). The surface map imagery covers the conterminous United States and parts of Canada and Mexico. The NMC/CAC surface map imagery contains daily maps valid 1200 UTC for the entire GIDS-1 time period (01 February 1992 through 30 April 1992).

#### **COAGMET-HRLY-SFC**

The Colorado Agricultural Meteorological Network (COAGMET) Hourly Surface Data is one of several surface datasets provided in the GEWEX Continental-scale International Project (GCIP) Large Scale Area-North West (LSA-NW) Enhanced Annual Observing Period (EAOP) 1999-2001. This dataset contains data for the GCIP LSA-NW EAOP-99 domain and time period (01 April 1999 through 31 March 2001). The GCIP LSA-NW domain is approximately 90W to 115W longitude and 36N to 51N latitude. These data are provided as is. These data were not quality controlled by the University Corporation for Atmospheric Research joint Office for Science Support (UCAR/JOSS).

#### **COAGMET-HRLY-SFC-QC**

The Colorado Agricultural Meteorological Network (COAGMET) Hourly Surface Data is one of several surface datasets provided in the GEWEX Continental-scale International Project (GCIP) Large Scale Area-North West (LSA-NW) Enhanced Annual Observing Period (EAOP) 1999-2001. This dataset contains data for the GCIP LSA-NW EAOP-99 domain and time period (01 April 1999 through 31 March 2001cdcd). The GCIP LSA-NW domain is approximately 90W to 115W longitude and 36N to 51N latitude. These data were not quality controlled by the University Corporation for Atmospheric Research joint Office for Science Support (UCAR/JOSS).

#### **COMP-RADAR**

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This dataset contains images generated from the WSI NIDS 2 km national radar mosaic for the GCIP/EAOP period (01 October 1995 through 31 March 2001). One image per day is loaded with a 48 hour delay.

#### **COMP-RADAR-GIF**

This dataset contains images generated from the WSI NIDS 2 KM national radar mosaic for the GCIP/EOP-98 period. There is one image per day.

#### **COMP-STN-LST**

The GEWEX Continental-scale International Project (GCIP) Initial Dataset One (GIDS-1) contains data collected from over six thousand stations in the GIDS-1 area (i.e., approximately 85W to 106W longitude and 30N to 45N latitude) for the period 01 February 1992 through 30 April 1992. The station information dataset provided as part of GIDS-1 defines each station in the GIDS-1 data with station location, name, frequency of observation, etc.

#### **COMPOSITE-RADAR**

This dataset contains images generated from the WSI NIDS 2 km national radar mosaic for the GCIP/ESOP-96 period. One image per day is loaded with a 48 hour delay.

#### **COOP-RESERVOIR**

The Co-operative Agency Reservoir dataset is one of various hydrological datasets provided for the GEWEX Continental-scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1997 project. This dataset contains reservoir data from 56 Co-operative Agency stations in the ESOP 1997 domain. This dataset covers the ESOP 1997 domain. The ESOP 1997 domain is approximately 85W to 99W longitude and 37N to 50N latitude. No additional quality control was performed by the University Corporation for Atmospheric Research/Joint Office for Science Support (UCAR/JOSS).

#### **COOP-RESV**

The Co-operative Agency Reservoir dataset is one of various hydrological datasets provided for the GEWEX Continental-scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1996-2001 project. This dataset contains reservoir data from 44 Co-operative Agency stations in the ESOP 1996-2001 domain. This dataset covers the ESOP 1996-2001 time period (01 October 1996 through 30 September 2001) and for the ESOP 1998 domain. The ESOP 1998 domain is approximately 85W to 99W longitude and 37N to 50N latitude. No additional quality control was performed by the University Corporation for Atmospheric Research/Joint Office for Science Support (UCAR/JOSS).

#### **COOP-RSVR**

The Co-operative Agency dataset is one of various hydrological datasets provided for the GEWEX Continental-scale International Project (GCIP) Enhanced Seasonal Observing Period (EAOP) 1997-2001 project. This dataset contains reservoir data from 50 Co-operative Agency stations in the EAOP 1997-2001 domain. This dataset covers the EAOP 1997-2001 time period (01 October 1997 through 30 September 2001) and for the EAOP 1998 domain. The EAOP 1998 domain is approximately 76W to 89W longitude and 33N to 43N latitude. No additional quality control was performed by the University Corporation for Atmospheric Research/Joint Office for Science Support (UCAR/JOSS).

#### **DAILY-PRECIP-COMP**

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The ESOP 1997 Daily Precipitation Composite is one of several precipitation datasets provided is the GEWEX Continental-Scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1997. This precipitation composite is composed of data from stations from several sources (i.e., National Center for Environmental Prediction/Climate Prediction Center (NCEP/CPC) daily precipitation data, National Weather Service (NWS) Cooperative Observers (COOP) daily precipitation data, and the daily precipitation extracted from the ESOP 1997 Hourly Precipitation Composite). Data from these sources were quality controlled and merged to form this precipitation composite. This composite contains data for the ESOP 1997 domain and time period (01 October 1996 through 31 May 1997). The ESOP 1997 domain is approximately 85W to 99W longitude and 37N to 50N longitude.

#### **DLY-PRECIP-COMP**

The daily precipitation composite is one of two precipitation datasets provided as part of the GEWEX Continental-scale International Project (GCIP) Initial Dataset One (GIDS-1). This precipitation composite is composed of data from thousands of stations from several sources (i.e., Daily totals computed from GIDS-1 Hourly Precipitation Composite, United States Geological Survey (USGS) daily precipitation, Tennessee valley Authority (TVA) daily precipitation, and the Daily precipitation extracted form the NCDC Cooperative data). Data from these sources were merged and quality controlled to form this precipitation composite. This composite contains data for the GIDS-1 time period (01 February 1992 through 30 April 1992 and 01 October 1997 through 31 March 2001) and for the GIDS-1 area of interest, only. The GIDS-1 area is approximately 85W to 106W longitude and 30N to 45N latitude.

#### **DLY-RESV-DATA**

The United States Geological Survey (USGS) Reservoir dataset is one of various hydrological datasets provided for the GEWEX Continental-scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1998 project. This dataset contains reservoir data from 5 USGS stations in the ESOP 1998 domain. This dataset covers the complete ESOP 1998 time period (01 October 1997 through 31 May 1998). The ESOP 1998 domain is approximately 85W to 99W longitude and 37N to 50N latitude. No additional quality control was performed by the University Corporation for Atmospheric Research/Joint Office for Science Support (UCAR/JOSS).

#### **EDC-AVHRR-LAND-COVER-GIF**

The United States Geological Survey (USGS) Earth Resources Observation System (EROS) Data Center Land Cover (vegetation) imagery is one of several image datasets provided as part of the GEWEX Continental-scale International Project (GCIP) Initial Dataset One (GIDS-1) The Land Cover imagery covers the conterminous United States. The Land Cover imagery contains monthly composites for a five month period encompassing the entire GIDS-1 time period (01 February 1992 through 30 June 1992).

#### **ETA-MOLTS**

The GCIP/EAOP-98 Eta MOLTS Derived Soundings data set contains NCEP ETA Model Location Time Series (MOLTS) derived soundings for locations within the EAOP-98 domain. These outputs are only for the initial analysis time (i.e., not forecast derived soundings) and only the state parameters (pressure, temperature, dew point, relative humidity, wind speed, and wind direction). The complete output (including hourly forecast derived soundings with all surface and upper level parameters) in the original BUFR format is available

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from NCAR/SCD. The data set consists of output from 01 October 1995 to 28 February 2001.

#### **ETA-MOLTS-SNDINGS**

The GCIP/EAOP-97 Eta MOLTS Derived Soundings data set contains NCEP ETA Model Location Time Series (MOLTS) derived soundings for locations within the EAOP-98 domain. These outputs are only for the initial analysis time (i.e., not forecast derived soundings) and only the state parameters (pressure, temperature, dew point, relative humidity, wind speed, and wind direction). The complete output (including hourly forecast derived soundings with all surface and upper level parameters) in the original BUFR format is available from NCAR/SCD. The data set consists of output from 01 October 1997 to 30 September 1997.

#### **Eta-MOLTS**

The GCIP/EAOP-96 Eta MOLTS Derived Soundings data set contains NCEP ETA Model Location Time Series (MOLTS) derived soundings for locations within the EAOP-98 domain. These outputs are only for the initial analysis time (i.e., not forecast derived soundings) and only the state parameters (pressure, temperature, dew point, relative humidity, wind speed, and wind direction). The complete output (including hourly forecast derived soundings with all surface and upper level parameters) in the original BUFR format is available from NCAR/SCD. The data set consists of output from 01 April 1996 to 30 September 1996 and 01 October 1997 to 31 May 1998.

#### **FEST-NOWRAD-GIF**

The WSI Corporation NOWrad product radar reflectivity composite imagery is one of several image datasets provided as part of the GEWEX Continental-scale International Project (GCIP) Initial Dataset One (GIDS-1). The NOWrad imagery covers a sector (approximately 6 degrees latitude by 12 degrees longitude box) over the Central United States. The NOWrad imagery sector was generally fixed over the STORM-FEST domain but moved slightly depending upon areas of active weather. The NOWrad imagery contains daily composites valid 1200 UTC (whenever available) for the first half of the GIDS-1 time period (01 February 1992 through 15 March 1992).

#### **FT-PECK-LT-FLUX**

This long-term flux monitoring site was installed in November of 1999, adjacent to the NOAA SURFRAD facility, which is within the LSA-NW region and continued through 01 January 2000. Half-hourly observations of wind speed and direction, air temperature, relative humidity, pressure, incoming global radiation, incoming and outgoing visible radiation, net radiation, ground heat flux, precipitation, wetness, skin temperature, soil temperature (at 2, 4, 8, 16, 32 and 64 cm), average wind vector speed, kinematic shear stress, streamwise velocity variance, crosswind velocity variance, vertical velocity variance, sensible heat flux, latent heat flux, CO2 flux, and soil moisture at 15, 30 and 60 cm.

#### **GEM-MOLTS**

The GEM Model Locations Time Series is one of the model output data sets provided in the GEWEX Continental-scale International Project (GCIP) for the Enhanced Observation Period (EOP). The full GEM MOLTS data set covers most of North America (up to 252 locations). MOLTS are hourly time series output at selected locations that contain values for various surface parameters and 'sounding' profiles at GEM model levels and are derived from the GEM model output. The MOLTS output files were converted into JOSS Quality Control Format

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(QCF) the same format used for atmospheric rawinsonde soundings processed by JOSS. The MOLTS output provided by JOSS on-line includes only the initial analysis output (i.e. no forecast MOLTS) and only state parameters (pressure, altitude, temperature, humidity and wind). The full output, including the forecast MOLTS and all output parameters, is its original format (BUFR) is available from the NCAR/Scientific Computing Division. This data set will eventually cover the entire GCIP/EOP and presently (06 June 2001) includes April 1997 through December 2000.

#### **GEM-MOLTS-SNDINGS**

This dataset covers GEM Model Locations Time Series from 01 April 1997 through 31 May 1997.

#### **GOES-8-IR**

GOES-8 Infrared (11 micron) imagery collected for the 5-year (01 October 1995 to 31 March 2001) GCIP Enhanced Observing Period (EOP) via McIDAS-X and then converted to GIF image format. These images are at 4 km resolution.

#### **GOES-8-VIS**

GOES-8 Visible imagery collected for the 5-year (01 October 1995 to 31 March 2001) GCIP Enhanced Observing Period (EOP) via McIDAS-X and then converted to GIF image format. These images are at 4 km resolution.

#### **GOES-8-VIS-LSA-NC**

GOES-8 Visible satellite imagery collected for the GCIP Enhanced Seasonal Observing Period 1997-1998 via McIDAS-X and then converted to GIF image format. These images are at 1 km resolution and are sectors over the LSA-NC region. These data are for browsing purposes and should not be used for detailed scientific analysis.

#### **GOES-8-W-VAPOR**

GOES-8 Water Vapor (6.7 micron) imagery collected for the 5-year (01 October 1995 to 31 March 2001) GCIP Enhanced Observing Period (EOP) via McIDAS-X and then converted to GIF image format. These images are at 4 km resolution. These data are available for browsing purposes.

#### **GOES7-IR GIF**

The Geostationary Operational Environmental Satellite (GOES-7) Infrared (IR) imagery is one of several image datasets provided as part of the GEWEX Continental-scale International Project (GCIP) Initial Dataset One (GIDS-1). The GOES-7 IR imagery covers the central and western United States at 8 km resolution. The GOES-7 IR imagery contains daily imagery for the GIDS-1 time period (01 February 1992 through 30 April 1992). The GOES-7 IR imagery was collected every half hour during the STORM-FEST period (01 February through 15 March 1992) and supplemented with one daily image for the period 16 March through 30 April 1992. From this dataset a representative daily image was selected at 1200 UTC whenever possible, to coincide with the National Meteorological and Climate Analysis Center's Daily Weather Map Series imagery (1200 UTC).

#### **GRIFTON-TOWER-MET-CO2**

This dataset contains hourly Meteorological, daily average CO2 mixing ratios, monthly average CO2 diurnal cycles, and 30 minute average radon data at several levels on a 396 m tall tower near Grifton, WI. This dataset covers the period of 01 January 1997 to 31 December 1998. UCAR/JOSS performed no quality control on this dataset. This dataset was made available by NOAA/CMDL.

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#### **GTOPO30-GDEM**

GTOPO30 is a global digital elevation model (DEM) with a horizontal grid spacing of 30 arc seconds (approximately 1 km). GTOPO30 was derived from several raster and vector sources of topographic information. For easier distribution, GTOPO30 has been divided into tiles. GTOPO30, completed in late 1996, was developed over a three year period through a collaborative effort led by staff at the [U.S. Geological Survey](#)'s EROS Data Center ([EDC](#)). GTOPO30's data set covers the full extent of latitude from 90 degrees south to 90 degrees north, and the full extent of longitude from 180 degrees west to 180 degrees east.

#### **GVI-weekly-composite**

The third generation Global Vegetation Index (GVI) weekly composite data are produced operationally by NOAA/NESDIS and includes conversion of counts to reflectances and brightness temperatures using the post-launch calibration and non-linearity correction coefficients. Cloud flags are generated and appended to each map cell. The GVI dataset represents a sample of Global Area Coverage (GAC) observations mapped into 0.144 degree resolution maps in equal-angle projection (Plate Carree). A 7-day composite is a mosaic of observations produced by retaining data for each map cell corresponding to the maximum difference between AVHRR channels 2 and 1. Normalized Difference Vegetation Index (NDVI) is calculated from AVHRR channel 2 and 1 reflectances using the following formula:  $NDVI = (CH2 - CH1) / CH2 + CH1$ . Period of record is 01 April 1996 to 30 September 2001.

#### **HI-PLAINS-CNET-QC**

The High Plains Climate Network (HPCN) Hourly Surface Data in QC format is one of several surface datasets provided in the GEWEX Continental-scale International Project (GCIP) Large Scale Area-North West (LSA-NW) Enhanced Annual Observing Period (EAOP) 1999-2000. This dataset contains data for 136 stations in the GCIP LSA-NW 99-00 domain and time period (01 April 1999 through 31 March 2001). The GCIP LSA-NW EAOP-99-00 domain is approximately 90W to 115W longitude and 36N to 51N latitude. These data were not quality controlled by the University Corporation for Atmospheric Research/Joint Office for Science Support (UCSR/JOSS).

#### **HRLY-PRECIP-COMP**

The Hourly Precipitation Composite is one of two precipitation datasets provided as part of the GEWEX Continental-scale International Project (GCIP) Initial Dataset One (GIDS-1) and Large Scale Area-North West (LSA-NW) Enhanced Annual Observing Period (EAOP). This precipitation composite was formed from three data sources (i.e., GIDS-1 area subset of the STORM-FEST Hourly Precipitation Composite data, NCDC Hourly Precipitation data (DSI-3240), National Centers for Environmental Prediction/Climate Prediction Center (NCEP/CPC) hourly precipitation data, and the precipitation extracted from the GIDS-1 Hourly Surface Composite and the GCIP LSA-NW EAOP-00 Hourly Surface Composite). Data from the three sources (over a thousand stations) were merged and quality controlled to form this precipitation composite. This composite contains data for the GIDS-1 and LSA-NW time period (01 February 1992 through 30 April 1992 and 01 October 1996 to 31 March 2001) and for the GIDS-1 and LSA-NW area of interest, only. The area is approximately 85W to 115W longitude and 30N to 51N latitude.

#### **HRLY-RADAR-PRECIP-MISS**

This dataset contains hourly 4km resolution radar-based precipitation for the

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Mississippi River Basin for the GCIP EOP (January 1996 to December 2000). This dataset was developed by the University of Iowa Hydrosociences and Engineering in conjunction with the Princeton University Department of Civil and Environmental Engineering. The data are derived from input composite reflectivity maps from the Global Hydrology Resource Center. Included with the data are tools for database manipulation and documentation. UCAR/JOSS has performed no quality control on this dataset.

#### **HRLY-SFC**

The GEWEX Continental-Scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1996 Hourly Surface Composite is composed of data from several sources (i.e., Automated Surface Observing System (ASOS), Department of Energy (DOE), Atmospheric Radiation Measurement Surface (ARMSFC), Wind Profiler Network (WPN), High Plains Climate Network (HPCN), Colorado Agricultural Meteorological (COAGMET), Missouri Department of Conservation Fire Network (MODOC), New Mexico State University (NMSU), and National Climatic Data Center (NCDC) Surface Airways Observations (SAO)) for the ESOP 1996 domain. Data from these sources (approximately 500 stations) were merged and quality controlled to form this surface data composite. This surface composite contains data for the ESOP 1996 time period (01 April through 30 September 1996) and for the ESOP 1996 domain only. The ESOP 1996 domain is approximately 31N to 40N latitude and 91W to 107W longitude.

#### **HRLY-SFC-COMP**

The Hourly Surface Composite is one of several surface datasets provided as part of the GEWEX Continental-scale International Project (GCIP) Initial Dataset One (GIDS-1). The Hourly Surface Composite is composed of data from several sources (i.e., National Climatic Data Center Surface Aviation Observations (NCDC SAO), High Plains Climate Network, Illinois Climate Network, NOAA/Environmental Research Laboratory (ERL) PROFS Mesonet, Wind Profiler Demonstration Network surface data, and GIDS-1 area extract from STORM-FEST Hourly Surface Composite). Data from these sources (over a thousand stations) were merged and quality controlled to form this surface composite. The Hourly Surface Composite contains data for the GIDS-1 time period (01 February 1992 through 30 April 1992) and for the GIDS-1 area of interest, only. The GIDS-1 area is approximately 85W to 106W longitude and 30N to 45N latitude.

#### **HRLY-SFC-MET-COMP**

The GEWEX Continental-scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1997-2000 Hourly Surface Composite is composed of data from several sources (i.e., Automated Surface Observing System (ASOS), Department of Energy (DOE) Atmospheric radiation Measurement Surface (ARMSFC), Wind Profiler Network (WPN), High Plains climate network (HPCN), Missouri Automated Agricultural Network (MOCAWS), National Climatic Data Center (NCDC) DATSAV2, National Data Buoy Center (NDBC), National Soil Tilth Laboratory (NSTL), University of Wisconsin Agricultural Weather Observation Network (AWON), Illinois Climate Network (ICN), Chicago Mesonet, National Oceanic and Atmospheric Administration (NOAA), Atmospheric Turbulence and Diffusion Division (ATDD) meteorological data, Natural resource Conservation Service Soil Moisture Soil Temperature (NRCS, SMST), and the Environmental Protection Agency (EPA) Meteorological data from several states including Michigan and Wisconsin) for the ESOP 1997 domain. Data from these sources (approximately 1147 stations) were merged and quality controlled to form this Surface Composite. This Surface Composite contains data for the ESOP 1997-2000 time period (01 October 1996 through 31 March 2001) and for the ESOP 1997-2000 domain (approximately 37N to 50N latitude and 85W to 99W longitude).

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#### **HYDRO-1km elev**

HYDRO1K is a geographic database developed to provide comprehensive and consistent global coverage of topographically derived datasets, including stream, drainage basins and ancillary layers derived from the USGS' 30 arc-second digital elevation model of the world (GTOPO30). HYDRO1K provides a suite of geo-referenced datasets, both raster and vector, which will be of value for all users who need to organize, evaluate, or process hydrologic information on a continental scale. The HYDRO1K dataset contains data for April of 1996 through September of 2001.

#### **IL-GD-FROST-DEPTH**

The GEWEX Continental-scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1997 Grave Diggers Dataset is composed of data collected by grave diggers from cemeteries within the ESOP 1997 domain. Data from these sources (approximately 22 cemeteries) merged to form this dataset. This dataset contains data for the ESOP 1997 time period (01 October 1996 through 18 March 1998) and for the ESOP domain. The ESOP 1997 domain is approximately 37N to 50N latitude and 85W to 99W longitude.

#### **IL-SOIL-MOIST**

This dataset consists of total soil moisture measured at 19 stations in the state of Illinois from 1981 to November 2001, measured with the neutron probe technique, calibrated with gravimetric observations. The data are measured for the top 10 cm of soil, and then for 20cm layers (e.g., 10-30 cm, 30-50 cm, ..) down to a depth of 2 m. The vegetation at all stations is grass, except for one station with bare soil measurements, at the same location as a grass-covered station. The measurements are at approximately monthly intervals.

#### **IL-SOIL-MOISTURE**

The Illinois Climate Network (ICN) Soil Moisture dataset is provided as part of the GEWEX Continental-scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1997. This dataset contains only soil moisture data within the ESOP 1997 area of interest (approximately 37 to 50 latitude and 85 to 99 longitude), which are collected from sites in the state of Illinois. This dataset covers the ESOP 97 time period (01 October 1996 through 31 May 1998) and is provided in the same format as which it was obtained. No additional quality control (QC) was performed on this dataset by the UCAR/JOINT Office for Science Support (UCAR/JOSS).

#### **KELLOGG-HRLY-SOIL-TEMP**

The W.K. Kellogg Biological Station (KELLOGG) hourly dataset provided in the GEWEX Continental-scale International Project (GCIP) Large-Scale Area East (LSA-E) Enhanced Annual Observing Period (EAOP) 1998 contains hourly surface meteorological and sub-surface soil temperature data from one site within the GCIP LSA-E EAOP 1998-1999 domain (76W to 89W longitude and 33N to 43N latitude) and time period (01 October 1997 through 30 September 1999). Hourly precipitation, wind speed, wind direction, and temperature are also included in the GCIP LSA-E EAOP 1998 hourly surface composite. This dataset is provided as-is. No quality control was performed by the University Corporation for Atmospheric Research/Joint Office for Science Support (UCAR/JOSS).

#### **LDM-HRLY-SFC-QC**

The Unidata Local Data Manager (LDM) World Meteorological Organization (WMO) Hourly Surface data in QC format is one of several surface datasets provided

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in the GEWEX Continental-scale International Project (GCIP) Large Scale Area-North West (LSA-NW) Enhanced Annual Observing Period (EAOP) 2000. This dataset contains data for the GCIP LSA-NW EAOP-00 domain and time period (01 April 2000 through 31 March 2001). The GCIP LSA-NW EAOP-00 domain is approximately 90W to 115W longitude and 36N to 51N latitude. These data were not quality controlled by the University Corporation for Atmospheric Research/Joint Office for Science Support (UCAR/JOSS).

#### **LDM-SFC-SPEC-QC**

The Unidata Local Data Manager (LDM) World Meteorological organization (WMO) Surface "Special" observation surface data in Quality Control (QC) format is one of several surface datasets provided in the GEWEX Continental-scale International Project (GCIP) Large Scale Area-North West (LSA-NW) Enhanced Annual Observing Period (EAOP) 2000. This dataset contains data for the GCIP LSA-NW EAOP-00 domain and time period (01 April 2000 through 31 March 2001). The GCIP LSA-NW EAOP-00 domain is approximately 90W to 115W longitude and 36N to 51N latitude. These data were not quality controlled by the University Corporation for Atmospheric Research/Joint Office for Science Support (UCAR/JOSS).

#### **LMRFC-STG3-HRLY-PRECIP-GIF**

This dataset contains data from NOAA Lower Mississippi River Forecast Center (LMRFC) routinely ingests WSR-88D precipitation derived products (Level III) from each of the radar sites with coverage in the Lower Mississippi River Basin. In addition the LMRFC ingests real-time precipitation data from several hundred gages. The LMRFC produces a number of derived or "Stage" products using radar and precipitation gauge data. A Stage II product is produced by merging radar precipitation estimates (Stage I) with ground truth data provided by the gauges. The Stage II estimates are then compiled into a Stage III precipitation 4 x4 km resolution area averaged mosaic for the Lower Mississippi River Basin.

#### **LTL-WASHITA-LT-FLUX**

The NOAA/ATDD (Tilden Myers) started operation of a long term flux monitoring site near the Little Washita watershed in Oklahoma in 1996. Half-hourly observations of wind speed and direction, air temperature, relative humidity, pressure, incoming global radiation, incoming and outgoing visible radiation, net radiation, ground heat flux, precipitation, wetness, skin temperature, soil temperature (at 2, 4, 8, 16, 32 and 64 cm), average wind vector speed, kinematic shear stress, streamwise velocity variance, crosswind velocity variance, vertical velocity variance, sensible heat flux, latent energy flux, CO2 flux and soil moisture at 20 cm (started 5 June 1997). This site completed observations on 21 April 1999.

#### **MAPS-MOLTS**

The MAPS Model Location Time Series is one of the model output datasets provided in the GEWEX Continental-scale International Project (GCIP) for the Enhanced Observation Period (EOP). The full MAPS MOLTS dataset covers most of North America east of the Rocky Mountains (283 locations). MOLTS are hourly time series output at selected location that contain values for various surface parameters and 'sounding' profiles at MAPS model levels and are derived from the MAPS model output. The MOLTS output files were converted into JOSS Quality Control Format (QCF) the same format used for atmospheric rawinsonde processed by JOSS. The MOLTS output provided by JOSS on-line include only the initial analysis output (i.e. no forecast MOLTS) and only

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state parameters (pressure, altitude, temperature, humidity, and wind). The full output, including the forecast MOLTS and all output parameters, in its original format (BUFR) is available from the NCAR/Scientific Computing Division. This dataset will eventually cover the entire GCIP/EOP and currently (06 June 2001) includes June 1997 through 23 March 2001.

#### **MBRFC-STG3-HRLY-PRECIP-GIF**

The Missouri Basin river Forecast Center (MBRFC) Stage III Daily Precipitation composite product is one of several imagery data sets provided in the GEWEX Continental-scale International Project (GCIP) Large Scale Area - North West (LSA-NW) Enhanced Annual Observing Period 1999 (EAOP-99). The MBRFC imagery covers a sector (approximately 36 to 51 degrees N latitude by 90 to 115 degrees W longitude box) over the Missouri River Basin. The MBRFC imagery contains daily composite of radar derived precipitation for the LSA-NW EAOP-99 time period (1 April 1999 through 31 March 2000).

#### **MISS-ECMWF-REANALYSIS**

This dataset contains daily data from 1985 to 1993 for the energy and water budgets for the sub-basins of the Mississippi (the Arkansas-Red, the upper Missouri, the upper Mississippi, the Ohio, and the lower Mississippi and Tennessee Rivers) from the European Centre for Medium Range Weather Forecast (ECMWF) reanalysis (ERA15), and from observations of precipitation and streamflow. The original ECMWF model were computed on-line with an hourly time scale, but have been summed to averaged up to the daily timescale, because the model has significant precipitation errors in the diurnal timescale which largely disappear on the daily timescale. This also reduces the data volume by a factor of 24.

#### **MNBBS-ASOS-AWOS**

The Minnesota Bulletin Board Service (MNBBS) 1998 Surface Dataset is one of several surface datasets provided in the GEWEX Continental-scale International Project (GCIP) for the Enhanced Observation Period (ESOP) 1998. This dataset contains all the surface data from the Minnesota Bulletin board Service stations. This surface dataset contains data from 111 stations in the ESOP 1998 time period (01 October 1997 through 31 May 1998) and for the ESOP 1998 domain. The ESOP 1998 domain is approximately 37N to 50N latitude and 85W to 99W longitude. This data is provided "as is". It has been translated into the JOSS QC format. No other changes have been made to the data. These data were not quality controlled by the University Corporation for Atmospheric Research/Joint Office for Science Support (UCAR/JOSS).

#### **MNBBS-AWOS-ASOS**

The Minnesota Bulletin Board Service (MNBBS) 1997 Surface Dataset is one of several surface datasets provided in the GEWEX Continental-scale International Project (GCIP) for the Enhanced Observation Period (ESOP) 1997. This dataset contains all the surface data from the Minnesota Bulletin board Service stations. This surface dataset contains data from 101 stations in the ESOP 1997 time period (01 October 1996 through 31 May 1997) and for the ESOP 1997 domain. The ESOP 1997 domain is approximately 37N to 50N latitude and 85W to 99W longitude. It has been translated into the JOSS QC format. No other changes have been made to the data. These data were not quality controlled by the University Corporation for Atmospheric Research/Joint Office for Science Support (UCAR/JOSS).

#### **MOCAWS-HRLY-SFC-QC**

The Missouri Automated Agricultural Network (MOCAWS) Hourly Surface data in QC

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format is one of several surface datasets provided in the GEWEX Continental-scale International Project (GCIP) Large Scale Area-North West (LSA-NW) Enhanced Annual Observing (EAOP) 1999. This dataset contains data for the GCIP LSA-NW EAOP-99 domain and time period (01 April 1999 through 31 March 2000). The GCIP LSA-NW EAOP-99 domain is approximately 90W to 115W longitude and 36N to 51N latitude. These data were not quality controlled by the University Corporation for Atmospheric Research/Joint Office for Science Support (UCAR/JOSS).

#### **MSL-SNDING**

This data set contains mandatory and significant level upper-air sounding data obtained from the national Oceanic and Atmospheric Administration-Forecast Systems Laboratory (NOAA/FSL) Rawindsonde Database. Soundings are from 9 sounding sites within the ESOP-98 region during the period from 1 October 1997 to 31 May 1998.

#### **MT-RWIS**

The Montana's Remote Weather Informational System (RWIS) surface dataset is one of several datasets provided in the GEWEX Continental-scale International Project (GCIP) Large Scale Area-North West (LSA-NW) Enhanced Annual Observing Period (EAOP) 1999. Data from this source are provided as is in their original format and were not quality controlled by UCAR/JOSS. This dataset contains the available data for the GCIP LSA-NW EAOP-00 domain and time period (01 April 1999 through 31 March 2001). The GCIP LSA-NW domain is approximately 90W to 115W longitude and 36N to 51N latitude.

#### **MT-RWIS-HRLY-SFC-QC**

Montana's Remote Weather Informational System (MT-RWIS) consists of 56 sites across the state from 01 April 1999 to 31 March 2001. Remote weather informational systems provide real time information via standard communication tools (phone lines and computer networks) statewide. These sites are located in strategic locations to provide accurate real time weather information. This information allows Montana Department of Transportation (MT-DOT) employees to schedule personnel and equipment based on current weather and pavement surface conditions. Real time weather information improves response time, increases winter maintenance efficiency and minimizes the traveling public's exposure to hazardous weather related roadway conditions.

#### **MT-RWIS-MISC-PRECIP**

The Montana's Remote Weather Informational System (RWIS) Miscellaneous Precipitation dataset is one of several datasets provided in the GEWEX Continental-scale International Project (GCIP) Large Scale Area-North West (LSA-NW) Enhanced Annual Observing Period (EAOP) 1999. Data from this source are provided as is in their original format and were not quality controlled by UCAR/JOSS. This dataset contains the available data for the GCIP LSA-NW EAOP-99 domain and time period (01 April 1999 through 31 March 2001). The GCIP LSA-NW domain is approximately 90W to 115W longitude and 36N to 51N latitude.

#### **MT-RWIS-SPEC-SFC-QC**

Montana's Remote Weather Informational System (RWIS) "Specials" Surface Data in QC format is one several surface datasets provided in the GEWEX Continental-scale International Project (GCIP) Large Scale Area-North West (LSA-NW) Enhanced Annual Observing Period (EAOP) 1999-2000. This dataset contains data for the GCIP LSA-NW EAOP-99-00 domain and time period. These data were not quality controlled by the University Corporation for Atmospheric Research/Joint Office for Science Support (UCAR/JOSS).

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#### **NCDC-15MIN-PRECIP-QC**

This Fifteen Minute Precipitation data set is one of the several precipitation datasets provided in the GEWEX Continental-scale International Project (GCIP) Large Scale Area-North West (LSA-NW) Enhanced Annual Observing Period (EAOP) 1999. This precipitation dataset was formed from one data source (i.e. National Climatic Data Center (NCDC) Fifteen Minute Precipitation data (TD 3260)). Data from this source was quality controlled. This dataset contains data for the GCIP LSA-NW EAOP-99-00 domain and time period (01 April 1999 through 31 March 2001). The GCIP LSA-NW EAOP-99-00 domain is approximately 90W to 115W longitude and 36N to 51N latitude.

#### **NCDC-DATSAV-HRLY-QC**

The National Climatic Data Center (NCDC) DATSAV3 Hourly Surface data in QC format is one of several surface datasets provided in the GEWEX Continental-scale International Project (GCIP) Large Scale Area-North West (LSA-NW) Enhanced Annual Observing Period (EAOP) 1999. This dataset contains data for the GCIP LSA-NW EAOP-99 domain and time period. These data were not quality controlled by the University Corporation for Atmospheric Research/Joint Office for Science Support (UCAR/JOSS).

#### **NCDC-HRLY-PRECIP-QC**

This Hourly Precipitation dataset is one of several precipitation datasets provided in the GEWEX Continental-scale International Project (GCIP) Large Scale Area-North West (LSA-NW) Enhanced Annual Observing Period (EAOP) 1999. This precipitation dataset was formed from one data source (i.e. National Climatic Data Center (NCDC) hourly precipitation dataset (3240)). Data from this source was quality controlled. This dataset contains data for the GCIP LSA-NW EAOP-99 domain and time period (01 April 1999 through 31 March 2000). The GCIP LSA-NW EAOP-99 domain is approximately 90W to 115W longitude and 36N to 51N latitude.

#### **NCDC-SOD-COOP**

The National Climatic Data Center (NCDC) Summary of the Day Co-operative Dataset is one of several surface datasets provided for the GEWEX Continental-scale International Project (GCIP) Enhanced Annual Observing Period (ESOP) 1998 project. This NCDC Co-operative Observer (COOP) dataset contains data from over a thousand stations for the EAOP 2000 time period (01 April 1997 through March 2001) and for the corresponding EAOP domain (approximately 90W to 115W longitude and 36N to 51N latitude).

#### **NCDC-SOD-COOP-PRECIP**

This dataset contains daily precipitation data extracted from the GCIP/EAOP-98 National Climatic Data Center (NCDC) Summary of the Day Co-operative (COOP) data for the EAOP-98-01 domain. The observations in this dataset are primarily those from the cooperative network, augmented by observations from principal observing stations operated by the NWS and other sites having highly trained observers. Quality Control for this data was provided by NCDC, with additional QC performed by JOSS.

#### **NCDC-SUM-DAY-COOP**

The National Climatic Data Center (NCDC) Summary of the Day Co-operative Dataset is one of several surface datasets provided for the GEWEX Continental-scale International Project (GCIP) Enhanced Annual Observing Period (ESOP) 1998-01 Project. This NCDC Co-operative Observer (COOP) dataset contains data from over a 1000 stations for the ESOP 1998-01 time period (approximately 85W

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to 99W longitude and 37N to 50N latitude.

#### **NCDC-SUMMARY-DAY-COOP**

The National Climatic Data Center (NCDC) Summary of the Day Co-operative Dataset is one of several surface datasets provided for the GEWEX Continental-scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1997 project. This NCDC Co-operative Observer (COOP) dataset contains data from over a thousand stations for the ESOP 1997 time period (01 October 1996 through 31 May 1997) and in the ESOP 1997 domain (approximately 85W to 99W longitude and 37N to 50N latitude).

#### **NCDC-WSR-88D-Level-II**

Level II data are digital base data output from the Radar Data Acquisition processors in polar form. These data are processed by meteorological and hydrological analysis algorithms to produce Level III data (products). Data begins in 05 June 1991 and is ongoing.

#### **NCEP-1000mb**

NCEP eta Model 1000mb Analysis map images for the GCIP/ESOP-96 domain.

#### **NCEP-500mb**

NCEP eta Model 500mb Analysis map images for the GCIP/ESOP-96 domain.

#### **NCEP-CPC-DLY-PRECIP**

The National Centers for Environmental Prediction/Climate Prediction Center (NCEP/CPC) daily precipitation data in QC format is one of several precipitation datasets provided in the GEWEX Continental-scale International Project (GCIP) Large Scale Area-North West (LSA-NW) Enhanced Annual Observing Period (EAOP) 1999-2001. Data from this source was quality controlled. This dataset contains data for the GCIP LSA-NW EAOP-99 domain and time period (01 April 1999 through 31 March 2001). The GCIP LSA-NW EAOP-99 domain is approximately 90W to 115W longitude and 36N to 51N latitude.

#### **NCEP-CPC-HRLY-PRECIP**

The National Centers for Environmental Prediction/Climate Prediction Center (NCEP/CPC) Hourly Precipitation data in QC format is one of several precipitation datasets provided in the GEWEX Continental-scale International Project (GCIP) Large Scale-North West (LSA-NW) Enhanced Annual Observing Period (EAOP) 1999. Gross Limit quality control checks were applied to this data. This dataset contains data for the GCIP LSA-NW EAOP-99 domain and time period (01 April 1999 through 31 March 2001). The GCIP LSA-NW EAOP-99 domain is approximately 90W to 115W longitude and 36N to 51N latitude.

#### **NCEP-misc-precip**

This dataset contains all the precipitation data from the National Centers for Environmental Prediction (NCEP). Stations that reported at standard or incremental times are also included in the various ESOP 1996 precipitation composite datasets. These data were not quality controlled by the University Corporation for Atmospheric Research/Joint Office for Science Support (UCAR/JOSS).

#### **NCRFC-SNOW-DEPTH**

This dataset contains (at least) weekly snow depth observations collected by the North Central River Forecast Center (NCRFC). The data are over the Upper Mississippi River Basin area and covers the winter seasons of 1996 through 1998.

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**NCRFC-SNOW-DEPTH-MAPS**

This dataset contains (at least) weekly maps of snow depth observations collected by the North Central River Forecast Center (NCRFC). The data are over the Upper Mississippi River basin area and covers the winter seasons of 1996 through 1998.

**NCRFC-SNOW-WATER-EQUIV-MAPS**

This dataset contains (at least) weekly maps of snow water equivalent observations collected by the North Central River Forecast Center (NCRFC). This data are over the Upper Mississippi River basin area for the period of 10 February 1997 to 06 April 1997.

**NCRFC-WSR-88D-HRLY-PRECIP**

The North Central River Forecast Center (NCRFC) Stage III Hourly Precipitation composite is one of several imagery data sets provided in the GEWEX Continental-scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1997-1998. The NCRFC imagery covers a sector (approximately 37 to 50 degrees N latitude by 85 to 99 degrees W longitude box) over the North Central United States. The NCRFC imagery contains hourly composites of radar derived precipitation for the portion of the ESOP-97-98 time period that they made them available (05 February 1997 through 30 May 1998).

**NDARB-DLY-PRECIP**

The North Dakota Atmospheric Resource Board (NDARB) daily precipitation data in QC format is one of several precipitation datasets provided in the GEWEX Continental-scale International Project (GCIP) Large Scale Area-North West (LSA-NW) Enhanced Annual Observing Period (EAOP) 1999-2000. Data from this source was quality controlled. This dataset contains the available data for the GCIP LSA-NW EAOP-99-00 domain and time period (01 April 1999 through 31 March 2000). The GCIP LSA-NW EAOP-99-00 domain is approximately 90W to 115W longitude and 36N to 51N latitude.

**NIDS-VAD**

No information is available for this dataset.

**NMC-ETA-1000MB-MAPS**

NMC eta Model 1000mb Analysis map images for the complete GCIP/EOP period.

**NMC-ETA-500MB-MAPS**

NMC eta Model 500mb Analysis map images for the complete GCIP/EOP period.

**NOAA-ATDD-BONDVILLE-FLUX**

The NOAA/ATDD (Tilden Myers) started operation of a long term monitoring site near Bondville, Illinois in 1996. Half-hourly observations of wind speed and direction, air temperature, relative humidity, pressure, incoming global radiation, incoming (and outgoing) visible radiation, pressure, net radiation, ground heat flux, precipitation, wetness, skin temperature, soil temperature (at 2, 4, 8, 16, 32, 64 cm.), average wind vector speed, kinematic shear stress, streamwise velocity variance, crosswind velocity variance, vertical velocity variance, sensible heat flux, latent energy flux, CO2 flux, downwelling longwave from the sky and soil moisture (at depths of 5, 20, and 60 cm.; started 19 November 1997).

**NOAA-WPN-HRLY-WINDS**

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This dataset contains the National Oceanic and Atmospheric Administration (NOAA) 405 MHZ WIND Profiler Network (WPN) hourly data from various sites within the EAOP/LSA-NW area of interest. This data consist of a series of hourly observations, each containing vertical profiles of U and V wind components, wind speed and direction for a 4 year period (01 October 1997 to 31 March 2001). These data were not quality controlled by the University Corporation for Atmospheric/Joint Office for Science Support (UCAR/JOSS).

#### **NOWRAD-GIF**

Daily radar reflectivity GIF images of a sector of the WSI NOWRAD composite for the GCIP/GIDS-1 period. The sector was generally centered over the GIDS-1 domain, but was occasionally moved. These data are provided for browsing purposes.

#### **NPN-HRLY-SFC-QC**

The National Oceanic and Atmospheric Administration (NOAA) Profiler Network (NPN) Hourly Surface data in QC format is one of several surface datasets provided in the GEWEX Continental-scale International Project (GCIP) Large Scale Area-North West (LSA-NW) Enhanced Annual Observing Period (EAOP) 1999. This data set contains data for the GCIP LSA-NW EAOP-99 domain and time period.

#### **NRCS-SMST**

This dataset contains the USDA/NRCS Soil Moisture/Soil Temperature Network data. Data are available only from those states within the GCIP/EOP region. These data are provided as is and were not quality controlled by UCAR/JOSS. These data are provisional and are subject to revision by the USDA/NRCS.

#### **NRCS-SMST-PROV**

This dataset contains the USDA/NRCS Soil Moisture/Soil Temperature Network data. Data are available only from those states within the GCIP/EOP region. Data is provided as is and was not quality controlled by UCAR/JOSS. These data are provisional and are subject to revision by the USDA/NRCS.

#### **NWS-HI-RES-6SEC-SNDINGS**

The GCIP/ESOP-98 6 second NWS soundings dataset systems at nine sites over the GCIP LSA-North Central region. The dataset contains one sounding level every 6 seconds. These data have been extensively quality controlled, with every sounding subject to automated consistency checks. No visual examination was conducted on these soundings.

#### **NWS-HI-RES-SNDINGS**

This is one of the upper air sounding datasets developed for the GEWEX Continental-Scale International Project (GCIP) Large Scale - North West (LSA-NW) Enhanced Annual Observing Period 1999 (EAOP-99-01) conducted from 01 April 1999 to 31 March 2001. The LSA-NW domain extends from 90W to 115W longitude and 36N to 51N latitude. Included in this dataset are 17 National Weather Service (NWS) rawindsonde stations in the LSA-NW domain. The soundings wer typically released at 00 and 12 UTC, however, several stations had additional releases. The final dataset includes pressure, dry bulb temperature, dew point temperatures, relative humidity, wind speed and direction, at 6-sec vertical resolution.

#### **NWS-HIRES-6SEC-SNDINGS**

The GCIP/EAOP-98-99 6sec NWS soundings dataset contains high resolution sounding data extracted from NWS MicroART sounding systems at fourteen sites

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over the GCIP LSA-EAST region. The data set contains one sounding level every 6 seconds. These data have been extensively quality controlled, with every sounding subject to automated consistency checks. No visual examination was conducted on these soundings.

#### **NWS-HIRES-SNDINGS**

The GCIP/EAOP-96 6sec NWS soundings dataset contains high resolution sounding data extracted from NWS MicroART sounding systems at 12 sites in the ESOP-96 domain. The dataset contains one sounding level every 6 seconds. These data have been extensively quality-controlled, with every sounding subjected to both computerized consistency checks and human visual review. This dataset includes pressure, temperature, dew point, relative humidity, wind speed, wind direction, and altitude.

#### **NWS-MSL-SNDINGS**

The GCIP/EAOP-98-00 Mandatory and Significant Level Sounding dataset contains sounding data extracted from the NOAA/FSL radiosonde database for various sites over the GCIP/LSA-East and North West region. These data have not been changed or quality controlled by UCAR/JOSS.

#### **NWS-OH-GRID-PRECIP**

This dataset contains hourly gridded precipitation values derived from WSR-88D reflectivity (STAGE-III) by the Arkansas-Red Basin River Forecast Center (ABRFC). The data are on a 4km regular grid in WMO FM-92 GRIB format. These data were received from the National Weather Service Office of Hydrology (NWS/OH). NWS/OH provided the processing of the ABRFC Stage-III products into the GRIB format.

#### **OKMESO-15MIN-PRECIP-DRV**

The Global Energy and Water Cycle Experiment (GEWEX) Continental-Scale International Project (GCIP) Enhanced Observing Period (EOP) takes place in the Mississippi River Basin during the 1995-2000. Stations within the Oklahoma Mesonet are included in the GCIP/EOP Area of Interest. This 15 minute precipitation dataset was derived by the University Corporation for Atmospheric Research/Joint Office for Science Support (UCAR/JOSS) from the Oklahoma Mesonet Original OCS Format Five Minute Surface Meteorological data. The Oklahoma Mesonet is a permanent mesoscale observing network. The Mesonet consists of 115 stations, including at least one station in each of Oklahoma's 77 counties.

#### **OKMESO-5MIN-MET-DRV**

The Global Energy and Water Cycle Experiment (GEWEX) Continental-Scale International Project (GCIP) Enhanced Observing Period (EOP) takes place in the Mississippi River Basin during the 1995-2000. Stations within the Oklahoma Mesonet are included in the GCIP/EOP Area of Interest. This 5 minute surface dataset was derived by the University Corporation for Atmospheric Research/Joint Office for Science Support (UCAR/JOSS) from the Oklahoma Mesonet Original OCS Format Five Minute Surface Meteorological data. The Mesonet consists of 115 stations, including at least one station in each of Oklahoma's 77 counties.

#### **OKMESO-INT-SOIL-MOIST**

The Oklahoma Mesonet (Mesonet) began in 1991 as a state-wide mesoscale meteorologic monitoring network. In 1996, with NSF EPSCOR support, soil moisture sensors were added to 60 of the approximately 115 Mesonet sites.

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#### **OKMESO-MET-OCS**

This dataset is the Oklahoma Mesonet Five Minute Surface Meteorological data in the Oklahoma Climate survey (OCS) Format. Fifteen minute surface data which had been previously been available as a separate data set is included in this dataset, as well as OKMESO Quality Assurance flags. Period of record starts in 01 January 1997 and is ongoing.

#### **OKMESO-SOIL-MOIST-DELTA-T**

The soil moisture dataset is the original Oklahoma Mesonet 30-Minute DeltaT data, and is in the original OCS Format.

#### **OKMESO-SOIL-MOIST-VER-1**

This dataset contains the GCIP/EOP Oklahoma Mesonet 30-Minute Soil Moisture Data for 2000, 2001, and 2002. The Oklahoma Climatological Survey (OCS) supplied the raw data, which contained calibrated and quality-assured values of DelaT reference, and estimates of soil water potential.

This dataset contains the Oklahoma Mesonet 30-Minute Soil Moisture Data for 1998 and 1999. It contains estimates of volumetric water content, which is a derived quantity. A full explanation of the algorithms used and the processing applied is in a document in PDF format which will be delivered along with the data. A detailed station list will be delivered along with the data, too. This dataset is provided "as is" and was not quality controlled by UCAR/JOSS.

#### **PARK-FALLS-MET-CO2**

This dataset contains hourly Meteorological, daily average CO2 mixing ratios, and monthly average CO2 diurnal cycles at several levels on a 396m tall tower near Park Falls, WI from January of 1996 through December of 1997. UCAR/JOSS performed no quality control on this dataset.

#### **PRECIP-ANC-STATIONS**

This data file contains the station information for the National Centers for Environmental Prediction (NCEP) Climate Prediction Center (CPC) Gauge Datasets for 01 March 1997 and continues through the current period.

#### **PRECIP-GAGE-ONLY-24HR-ACCUM**

This dataset contains the National Centers for Environmental Prediction (NCEP) Climate Prediction Center (CPC) 4 KM GRIB gauge-only analysis using 24hr accumulated ("RFC") dataset. A prototype, real-time, hourly, multi-sensor National Precipitation Analysis (NPA) has been developed at the NCEP in cooperation with the Office of Hydrology (OH). This analysis merges two data sources that are currently being collected in real-time by OH and NCEP. Approximately 3000 automated, hourly rain gauge observations are available over the contiguous 48 states via the GOES Data Collection Platform (DCP), and ASOS for 01 April 1998 to 31 March 2003. In addition, hourly digital precipitation (HDP) radar estimates are obtained as compressed digital files via the AFOS network. The HDP estimates are created by the WSR-88D Radar Product Generator on a 131 x 131 4-km grid centered over each radar site. The data analysis routines, including a bias correction of the radar estimates using the gauge data, have been adapted by NCEP on a national 4-km grid from algorithms derived by OH and executed regionally at NWS River Forecast Centers (RFC).

#### **PRECIP-GAGE-ONLY-ANALYSIS**

This file contains National Precipitation analysis archive file naming convention, changes implemented on January 01 2002 and Grid Information. There

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are two tar files for each day, one for the 4km analysis, the other for the snapshots of hourly/24hr multi-sensor analysis and the analysis for the 24<sup>th</sup> gauge reports.

#### **PRECIP-GAGE-ONLY-ANALYSIS-1996**

This dataset only contains the NCEP 4 KM GRIB Data gauge only hourly, 6-hourly, and daily analysis. 6-hourly data are generally available at 00Z, 06Z, 12Z, and 18Z. Daily data are generally available at 12Z.

#### **PRECIP-GAGE-ONLY-DAILY**

The Climate Prediction Center (CPC), a component of the National Centers for Environmental Prediction (NCEP) acquires gauge-based precipitation reports in near real-time from several thousand sites across the contiguous 48 states of the USA. There are approximately 5,800 daily rain gauge reports per day out of a total available set of 9,000. These daily precipitation reports are collected by the 12 River Forecast Centers (RFC) and sent to NCEP. This dataset contains the NCEP Daily Precipitation Gauge Data. This dataset is provided as is and was not quality controlled by UCAR/JOSS.

#### **PRECIP-MUL-SENSOR-ANALYSIS**

This dataset only contains the NCEP 4 KM GRIB Data multi-sensor hourly, 6-hourly, and daily analysis (gauge and unbiased radar). 6-hourly data are generally available at 00Z, 06Z, 12Z, and 18Z.

#### **PRECIP-PREVIEW-IMAGES**

This dataset contains the National Centers for Environmental Prediction (NCEP) Climate Prediction Center (CPC) GIF Imagery including Hourly Stage II GIF, Daily Stage II GIF, Daily RFC GIF, 6-Hourly Stage IV GIF, and Daily Stage IV GIF. Depending on time period selected, all GIF types may or may not be available. This dataset is provided as is and was not quality controlled by UCAR/JOSS. These data are available for browsing purposes.

#### **PRECIP-PREVIEW-IMAGES-1998**

This dataset contains the National Centers for Environmental Prediction (NCEP) Climate Prediction Center (CPC) GIF Imagery including Hourly Stage IV GIF, Daily Stage IV GIF, and Daily RFC GIF. Depending on time period selected, all GIF types may or may not be available. This dataset is provided as is and was not quality controlled by UCAR/JOSS. These data are available for browsing purposes.

#### **PRECIP-RAD**

This dataset contains the National Centers for Environmental Prediction (NCEP) Climate Prediction Center (CPC) 4 KM GRIB radar estimate (no bias removal) "RAD" data from 01 May 1996 to 31 March 2003. A prototype, real-time, hourly, multi-sensor National Precipitation Analysis (NPA) has been developed at the NCEP in cooperation with the Office of Hydrology (OH). This analysis merges two data sources that are currently being collected in real-time by OH and NCEP. Hourly digital precipitation (HDP) radar estimates are created by the WSR-88D Radar Product Generator on a 131 x 131 4-km grid centered over each radar site. This dataset only contains the NCEP 4 KM GRIB Data Hourly, 6-hourly, and daily radar estimate (no bias removal). 6-hourly data are generally available at 00Z, 06Z, 12Z, and 18Z. Daily data are generally available at 12Z. This dataset is provided as is and was not quality controlled by UCAR/JOSS.

#### **PRECIP-RAD-UBR**

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This dataset contains the National Centers for Environmental Prediction (NCEP) Climate Prediction Center (CPC) 4 KM GRIB radar estimate after bias removal ("UBR") data. A prototype, real-time, hourly, multi-sensor National Precipitation Analysis (NPA) has been developed at the NCEP in cooperation with the Office of Hydrology (OH). This analysis merges two data sources that are currently being collected in real-time by OH and NCEP. Hourly digital precipitation (HDP) radar estimates are created by the WSR-88D Radar Product Generator on a 131 x 131 4-km grid centered over each radar site. This dataset only contains the NCEP 4 KM GRIB Data Hourly, 6-hourly, and daily radar estimate after bias removal. 6-hourly data are generally available at 00Z, 06Z, 12Z, and 18Z. Daily data are generally available at 12Z. This dataset is provided as is and was not quality controlled by UCAR/JOSS.

#### **PRECIP-RAD-UN**

This dataset contains the National Centers for Environmental Prediction (NCEP) Climate Prediction Center (CPC) 4 KM GRIB radar estimate after bias removal ("UBR") data. A prototype, real-time, hourly, multi-sensor National Precipitation Analysis (NPA) has been developed at the NCEP in cooperation with the Office of Hydrology (OH). This analysis merges two data sources that are currently being collected in real-time by OH and NCEP. Hourly digital precipitation (HDP) radar estimates are created by the WSR-88D Radar Product Generator on a 131 x 131 4-km grid centered over each radar site. This dataset only contains the NCEP 4 KM GRIB Data Hourly, 6-hourly, and daily radar estimate after bias removal. 6-hourly data are generally available at 00Z, 06Z, 12Z, and 18Z. Daily data are generally available at 12Z. This dataset is provided as is and was not quality controlled by UCAR/JOSS. This dataset contains data from 01 January 2002 onward.

#### **PRECIP-STAGE4**

The Stage IV analysis is based on the multi-sensor hourly/6-hourly Stage III analysis (on local 4km polar stereographic grids) produced by the 12 hour River product (the Stage IV). Hourly, 6-hourly and 24-hourly (accumulated from the 6-hourly) analysis are available. The Stage IV differs from the NCEP Stage II chiefly in that the NCEP Stage II contains no manual quality control (QC), while the Stage IV benefits from manual QC performed on the Stage III data at the RFC's. Period of record begins 01 January 2002.

#### **PRECIP-UNIF-RAINGAUGE**

The National Centers for Environmental Prediction/Climate Prediction Center (NCEP/CPC) Unified Raingauge Dataset (URD) is one of several datasets provided for the GEWEX Continental-scale International Project (GCIP) Enhanced Observing Period (EOP). This dataset has been developed by NCEP/CPC from multiple sources of U.S. raingauge data. This data is provided as is. No additional quality control was performed by UCAR/JOSS. Dates range from January 1948 through December 1997.

#### **PRINCETON-MET-RAD**

This dataset consists of surface meteorological and radiation data collected at the Princeton, MN site operated by Dr. John Baker of the USDA/ARS. Parameters available include temperature, relative humidity, wind speed, incoming and outgoing shortwave radiation, incoming and outgoing longwave radiation, snow depth, and precipitation from two sensors. Data collection began in January 1997 and continued through May of 1998.

#### **PROF-HRLY-WINDS**

This dataset contains the National Oceanic and Atmospheric Administration

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(NOAA) 405 MHz Wind Profiler Network (WPN) hourly data from 16 sites within the ESOP 1996 area of interest (approximately 91W to 107W longitude and 31N to 40N latitude). This data consists of a series of hourly observations, each containing approximately 64 levels of wind speed and direction data, ranging from 0.50 to 16.25 km above the station. These data were not quality controlled by UCAR/JOSS.

#### **PSU-1KM Soil**

Pennsylvania State University (PSU)/Earth System Science Center (ESSC) have developed a 1-km multi-layer soil characteristics dataset based on the USDA STATSGO data. The data includes STATSGO Mapunits, soil texture class, depth-to-bedrock, sand/silt, clay fractions, rock fragment class, rock fragment volume, bulk density, porosity, hydrologic soil groups, and available water capacity.

#### **PSU-STATSGO**

This dataset is a direct link to the PSU Soil Information web site. The state-by-state data from the USDA/NRCS CDROM is available for downloading as Arc/Info EXPORT format files.

#### **ROSEMOUNT-FLUX**

This dataset consists of latent and sensible heat flux and shear stress observation collected at the Rosemount, MN site operated by Dr. John Baker of the USDA/ARS. Period of record is 2 October 1997 to 31 May 1998.

#### **ROSEMOUNT-MET-RAD**

This dataset consists of surface meteorological and radiation data collected at the Rosemount, MN site operated by Dr. John Baker. Parameters available include temperature, vapor pressure, wind speed, incoming and outgoing shortwave radiation, and incoming and outgoing longwave radiation. Period of record is 01 January 1996 to 31 May 1998.

#### **ROSEMOUNT-PRECIP**

This dataset consists of precipitation data collected at the Rosemount, MN site operated by Dr. John Baker. Both tipping bucket and weighing gauge observations are included. Period of record is 01 January 1996 to 31 May 1998.

#### **ROSEMOUNT-SNOW-COVER**

This dataset consists of snow cover observations collected at the Rosemount, MN site. Period of record is 11 October 1996 to 01 April 1997 and 30 December 1997 to 02 March 1998.

#### **ROSEMOUNT-SOIL-MOISTURE**

This dataset consists of soil moisture observations collected at the Rosemount, MN site. Period of record is 08 October 1996 to 13 June 1997.

#### **ROSEMOUNT-SOIL-TEMP**

This dataset consists of soil temperature observations collected at the Rosemount, MN site. Period of record is 08 October 1996 to 13 June 1997.

#### **ROSEMOUNT-SOIL-TEMP-MOIST**

This dataset consists of soil moisture and temperature observations collected at the Rosemount, MN site. Period of record is 04 October 1997 to 31 May 1998.

#### **SAO-SPEC-OBS**

This dataset contains only the National Climatic Data Center (NCDC) Surface  
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Aviation Observation (SAO) "Special" observation surface data. Data for the GEWEX Continental-scale International Project (GCIP) Initial Dataset One (GIDS-1) area of interest and for a portion of the GIDS-1 time period (16 March 1992 through 30 April 1992) are contained in this dataset. The NCDC SAO "Nominal" hourly data for the GIDS-1 area and time period are included in the Hourly Surface Composite. The GIDS-1 area is approximately 85W to 106W longitude and 30N to 45N latitude. This NCDC SAO "specials" dataset contains data from hundreds of stations and is identical in quality control processing, and similar in format, etc. to the data in the Hourly Surface Composite. (Note: the "specials" for the STORM-FEST period, 01 February 1992 through 15 March 1992 are available as a separate dataset.

#### **SAO-Specials**

This dataset contains only the GCIP/ESOP-96 National Climatic Data Center (NCDC) Surface Aviation Observation (SAO) "special" observation surface data for the ESOP-96 domain. These are observations that are reported at off-hour times and report only significant changes in conditions from the previous hourly reports. These reports can include all of the information shown in hourly SAO's, but more typically, report only portions of the data. A complete listing of the requirements to issue a "special SAO" are included in the [Federal Meteorological Handbook No. 1](#).

#### **SMST-HRLY-SFC-QC**

The USDA Natural Resource Conservation Service National Water and Climate Center Soil Climate Analysis Network (SCAN) Soil Moisture/Soil Climate Temperature (NRCS/SMST) Hourly Surface data in QC format is one of several surface datasets provided in the GEWEX Continental-scale International Project (GCIP) Large Scale Area-North West (LSA-NW) Enhanced Annual Observing Period (EAOP) 1999-2000. This dataset contains data for the GCIP LSA-NW EAOP-99-00 domain and time period (01 April 1999 through 31 March 2001). The GCIP LSA-NW EAOP-99 domain is approximately 90W to 115W longitude and 31N to 51N latitude. These data were not quality controlled by the University Corporation for Atmospheric Research/Joint Office for Science Support (UCAR/JOSS).

#### **SNOTEL-DLY-PRECIP-QC**

The Natural Resources Conservation Service (NRCS) Snowpack Telemetry (SNOTEL) dataset is one of several precipitation datasets provided in the GEWEX Continental-scale International Project (GCIP) Large Scale Area-North West (LSA-NW) Enhanced Annual Observing Period (EAOP) 1999-2000. This dataset contains data for the GCIP LSA-NW EAOP-99-00 domain and time period (01 April 1999 through 31 March 2001). The GCIP LSA-NW EAOP-99-00 domain is approximately 90W to 115W longitude and 36N to 51N latitude. These data were converted into JOSS QC format. These data were not quality controlled by UCAR/JOSS.

#### **SNOTEL-DLY-SFC**

The Natural Resources Conservation Service (NRCS) Snowpack Telemetry (SNOTEL) dataset is one of several surface datasets provided in the GEWEX Continental-scale International Project (GCIP) Large Scale Area-North West (LSA-NW) Enhanced Annual Observing Period (EAOP) 1999. This dataset contains data for the GCIP LSA-NW EAOP-99 domain and time period (01 April 1999 through 31 March 2001). The GCIP LSA-NW EAOP-99 domain is approximately 90W to 115W longitude and 36N to 51N latitude. These data were converted into JOSS QC format. These data were not quality controlled by UCAR/JOSS.

#### **SNOTEL-HRLY-SFC**

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The Natural Resources Conservation Service (NRCS) Snowpack Telemetry (SNOTEL) dataset is one of several surface datasets provided is the GEWEX Continental-scale International Project (GCIP) Large Scale Area-North West (LSA-NW) Enhanced Annual Observing Period (EAOP) 1999. This dataset contains data for the GCIP LSA-NW EAOP-99 domain and time period (01 April 1999 through 31 March 2001). The GCIP LSA-NW EAOP-99 domain is approximately 90W to 115W longitude and 36N to 51N latitude. These data were converted into JOSS QC format. These data were not quality controlled by UCAR/JOSS.

#### **SPEC-SFC-COMP**

This dataset contains only the GCIP/ESOP-98-01 Automated Surface Observing System (ASOS) and National Climatic Data center (NCDC) DATSAV2 "Special" observation surface data for the GCIP/ESOP-98-01 domain and time period. These are observations that are reported at off-hour times. The ASOS and DATSAV2 "Nominal" hourly surface data for the GCIP/ESOP-98 domain and time period are included in the GCIP/ESOP-98-01 Hourly Surface Composite.

#### **SPEC-SFC-OBS-COMP**

This dataset contains only the GCIP/ESOP-97-99 Automated Surface Observing System (ASOS) and National Climatic Data center (NCDC) DATSAV2 "Special" observation surface data for the GCIP/ESOP-97-99 domain and time period. These are observations that are reported at off-hour times. The ASOS and DATSAV2 "Nominal" hourly surface data for the GCIP/ESOP-97 domain and time period are included in the GCIP/ESOP-97-99 Hourly Surface Composite.

#### **SSURGO**

This dataset is a remote link to the USDA/NRCS SSURGO web site. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) data base. Mapping scales generally range from 1:12,000 to 1:63,360; SSURGO is the most detailed level of soil mapping done by the National Resources Conservation Service (NRCS). SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships, and country natural resources planning and management.

#### **STN-LIST**

The GEWEX Continental-Scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1997 datasets contain data collected from thousands of stations in the ESOP 1997-2001 domain (i.e., approximately 85W to 99W longitude and 37N to 50N latitude) for the period 01 October 1996 through 31 May 2001. The station information provided defines each station in the ESOP 1997-2001 dataset with station location, name, frequency of observations, etc.

#### **TVA-DAM-DISCHARGE**

This is one of three hydrological datasets provided as part of the GEWEX Continental-scale International Project (GCIP) Initial Dataset One (GIDS-1). The GIDS-1 Tennessee Valley Authority Dam Discharge dataset contains data from approximately 45 sites in Tennessee, Kentucky, North Carolina and surrounding states. This dataset covers a subset of the complete GIDS-1 area which is approximately 85W to 106W longitude and 30 N to 45N latitude. The TVA Dam Discharge dataset contains data values of hourly turbine discharge and total discharge reported for the complete GIDS-1 time period from 01 February 1992 through 30 April 1992. No additional Quality control (QC) was performed on this dataset by the UCAR/Office of Field Project Support (UCAR/OFPS).

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#### **TVA-STRM-FLOW**

The Tennessee Valley Authority (TVA) stream flow dataset is one of three hydrological datasets provided as part of the GEWEX Continental-scale International Project (GCIP) Initial Dataset One (GIDS-1). This dataset contains stream flow data from 14 TVA stations in the GIDS-1 area of interest. The GIDS-1 area is approximately 85W to 106W longitude and 30N to 45N latitude. The dataset covers the complete GIDS-1 time period from 01 February 1992 through 30 April 1992.

#### **UPPER-AIR-MAND-SIG-SNDINGS**

This dataset contains mandatory and significant level upper-air sounding data obtained from the National Oceanic and Atmospheric Administration/Forecast Systems Laboratory (NOAA/FSL) Rawindsonde Database. Soundings are from nine sounding sites within the ESOP-97 region during the period from 1 January 1997 to 31 May 1997.

#### **UPPER-AIR-NOAA-HRLY-WINDS**

This dataset contains the National Oceanic and Atmospheric Administration (NOAA) 405 MHz Wind Profiler Network (WPN) hourly data from 10 sites within the ESOP 1997 area of interest. These data consist of a series of hourly observations, each containing approximately 64 levels of wind speed and direction data. These data were not quality controlled by the University Corporation for Atmospheric Research/Joint Office for Science Support (UCAR/JOSS).

#### **UPPER-AIR-NWS-HI-RES-6SEC-SNDINGS**

The GCIP/ESOP-97 6 second NWS soundings dataset contains high resolution sounding data extracted from NWS MicroART sounding systems at nine sites over the GCIP LSA-North Central region. The dataset contains one sounding level every 6 seconds. These data have been extensively quality controlled, with every sounding subject to automated consistency checks. No visual examination was conducted on these soundings.

#### **USDA-ARS-WASHITA**

This dataset contains data from six of the stations within the United States department of Agriculture/Agricultural Research Service (USDA/ARS) Little Washita Micronet located in south-central Oklahoma. This dataset consists of 5-minute observations of relative humidity, air temperature, solar radiation, soil temperature (at depths of 5, 10, 15, and 30 cm), and quality control flags provided by USDA/ARS. These data were not quality controlled by (UCAR/JOSS).

#### **USDA-NRCS-SOIL-MOIST-TEMP-PROV**

This dataset contains the USDA/NRCS Soil Moisture/Soil Temperature Network data. Data are available only from those states within the GCIP/EOP region. These data are provided as is and were not quality controlled by UCAR/JOSS.

#### **USDA-NRCS-STATSGO**

This dataset is a remote link to the USDA/NRCS STATSGO web site. State general soil maps are made by generalizing the detailed soil survey data. The level of mapping is designed to be used for broad planning and management uses covering state, regional and multi state areas. STATSGO data are designed for use in a Geographic Information System (GIS). STATSGO data are available in the USGS Digital Line Graph (DLG-3) optional distribution format. NRCS soil map symbols are not normally carried within the DLG-3 file; however, these map symbols are made available as a unique ASCII file when NRCS soils data are distributed in

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the DLG-3 format. STATSGO data are also available in ArcInfo 7.0 coverage and GRASS 4.13 vector formats. Period of record is from 01 April 1996 through 31 March 2003.

#### **USGS-DAILY-RESV**

The United States Geological Survey (USGS) Reservoir dataset is one of various hydrological datasets provided for the GEWEX Continental-scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP). This dataset contains reservoir data from approximately 100 USGS stations in the EOP domain. The actual number of stations appearing in the data is dependent upon the time period being examined. No additional quality control was performed by UCAR/JOSS. Period of record is from 01 October 1996 through 30 September 2001.

#### **USGS-DLY-RSVR**

The United States Geological Survey (USGS) Reservoir dataset is one of various hydrological datasets provided for the GEWEX Continental-scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1998 Project. This dataset contains reservoir data from 1 USGS station in the ESOP 1998 domain. This dataset covers the complete ESOP 1998-2001 time period (01 October 1997 through 30 September 1998-2001). The ESOP 1998-2001 domain is approximately 76W to 89W longitude and 33N to 43N latitude. No additional quality control was performed by UCAR/JOSS.

This dataset also covers The Large Scale Area-North West 2000 (LSA-NW 2000). This dataset contains Stage Only data from USGS stations in the GCIP/LSA-NW 2000 domain. The LSA-NW 2000 domain is approximately 90W to 115W longitude and 36N to 51N latitude.

#### **USGS-RESERVOIR**

The United States Geological Survey (USGS) Reservoir dataset is one of various hydrological datasets provided for the GEWEX Continental-scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1997 Project. This dataset contains reservoir data from 19 USGS stations in the ESOP 1997 domain. This dataset covers the complete ESOP 1997 time period (01 October 1996 through 31 May 1997). The ESOP 1997 domain is approximately 85W to 99W longitude and 37N to 50N latitude. No additional quality control was performed by UCAR/JOSS.

#### **USGS-STAGE**

The United States Geological Survey (USGS) Reservoir dataset is one of various hydrological datasets provided for the GEWEX Continental-scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1998 Project. This dataset contains Stage only data from 2 USGS stations in the EAOP 1998 domain. This dataset covers the complete EAOP 1998 time period (01 October 1997 through 30 September 1998). The EAOP 1998 domain is approximately 76W to 89W longitude and 33N to 43N latitude. No additional quality control was performed by UCAR/JOSS.

This dataset also contains Stage Only Data form USGS stations in the LSA-NW 1999 domain. This dataset contains stage only data from USGS stations in the EAOP-99 domain. This dataset covers the complete EAOP-99 time period and domain. The EAOP-99 domain is approximately 76W to 89W longitude and 33N to 43N latitude.

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This dataset also contains Stage Only Data form USGS stations in the LSA-NW 1999-2000 domain. This dataset covers the complete LSA-NW 1999-2000 time period and domain. The LSA-NW domain is approximately 90W to 115W longitude and 36N to 51N latitude.

#### **USGS-STAGE-ONLY**

The United States Geological Survey (USGS) Reservoir dataset is one of various hydrological datasets provided for the GEWEX Continental-scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1998 Project. This dataset contains Stage only data from 30 USGS stations in the EAOP 1998 domain. This dataset covers the complete EAOP 1998 time period (01 October 1997 through 31 May 1998). The EAOP 1998 domain is approximately 85W to 99W longitude and 37N to 50N latitude. No additional quality control was performed by UCAR/JOSS.

This dataset also contains Stage Only data from several USGS stations in the EOP domain. The actual number of stations appearing in the data is dependent upon the time period being examined.

#### **USGS-STREAM-FLOW**

The United States Geological Survey (USGS) streamflow dataset is one of various hydrological datasets provided for the GEWEX Continental-scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1997-1998 Project. This dataset contains stream flow data from 1157 USGS stations in the ESOP 1997 domain and 881 stations in the 1998 in the ESOP 1998 domain. This dataset covers the complete ESOP 1997-1998 domain. The ESOP 1997-1998 domain is approximately 85W to 99W longitude and 37N to 50N latitude. No additional quality control was performed by UCAR/JOSS.

#### **USGS-STRM-FLOW**

The United States Geological Survey (USGS) streamflow dataset is one of various hydrological datasets provided for the GEWEX Continental-scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1998-1999 Project. This dataset contains stream flow data from 730 USGS stations in the ESOP 1998 domain and 792 stations in the 1999 domain. This dataset covers the complete ESOP 1998-1999 domain. The ESOP 1998-1999 domain is approximately 76W to 89W longitude and 33N to 43N latitude. No additional quality control was performed by UCAR/JOSS.

This dataset also contains stream flow data from USGS station in the GCIP LSA-NW EAOP-1999-2000 domain and time period (01 April 1999 through 31 September 2000) for approximately 1700 stations. The GCIP LSA-NW EAOP-99-00 domain is approximately 90W to 115W longitude and 36N to 51N latitude.

#### **USGS-land-use**

The Land Use and Land Cover (LULC) data files describe the vegetation, water, natural surface, and cultural features on the land surface. The United States Geological Survey (USGS) provides these data sets and associated maps as a part of its National Mapping Program. This LULC mapping program is designed so that standard topographic maps of scale of 1:250,000 can be used for compilation and organization for the land use and land cover data. In some cases, such as Hawaii, 1:100,000 scale maps are also used.

#### **USGS-reservoir**

This dataset contains reservoir data from 95 United States Geological Survey

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(USGS) stations within the ESOP-96 domain (01 April 1994 through 30 September 1996). The ESOP-96 domain is approximately 91W to 107W longitude and 31N to 40N latitude. No additional quality control was performed by UCAR/JOSS).

#### **USGS-stream-flow**

The United States Geological Survey (USGS) streamflow dataset is one of various hydrological datasets provided for the GEWEX Continental-scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1996 Project. This dataset contains stream flow data from 821 USGS stations in the ESOP 1996 domain. This dataset covers the complete ESOP 1996 time period (01 April 1996 through 30 September 1996). The ESOP 1996 domain is approximately 91 W to 107W longitude and 31N to 40N latitude. No additional quality control was performed by UCAR/JOSS.

#### **WASECA-SFC-MET-RAD**

This dataset consists of surface meteorological and radiation data collected at the Waseca, MN site operated by Dr. John Baker of the USDA/ARS. Parameters available included temperature, relative humidity, wind speed, incoming and outgoing shortwave radiation, incoming and outgoing longwave radiation, snow depth and precipitation.

#### **WI-TOWER-MET-CO2**

This dataset contains hourly Meteorological, daily average CO2 mixing ratios, and monthly average CO2 diurnal cycles at a several levels on a 396 m tall tower near Park falls, WI. UCAR/JOSS performed no quality control on this dataset.

#### **WPN-HRLY-WINDS**

This dataset contains the National Oceanic and Atmospheric Administration (NOAA) 405 MHZ Wind Profiler Network (WPN) hourly data from 10 sites within the ESOP 1998 area of interest. This data consists of a series of hourly observations, each containing approximately 64 levels of wind speed and direction data. These data were not quality controlled by UCAR/JOSS.

#### **WSR-88D-24hr**

The Arkansas-Red Basin River Forecast Center (ABRFC) Stage III Precipitation composite product is one of several image datasets provided in the GEWEX Continental-scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1996. The ABRFC imagery covers a sector (approx. 31 to 40 degrees N latitude by 91 to 107 degrees W longitude box) over the Central United States. The ABRFC imagery contains daily composites of radar derived precipitation for a 24-hour period for the ESOP 1996 time period (01 April 1996 through 30 September 1996).

#### **WVSS**

The use of commercial aircraft for obtaining weather observations is not new. We are, however, in the very beginning of a revolution in the use of this convenient platform for a variety of environmental parameters. This dataset represents one aspect of this evolution-the use of a Water Vapor Sensing System (WVSS) for commercial aircraft. Over 200,000 quality-controlled reports of winds, temperature, and water vapor information (mixing ratios, relative humidity, and dewpoints) have been received. The WVSS-I data is available over the continental United States and the Gulf of Mexico. Winds, temperature, and water vapor fields of information are available on ascent, descent, and enroute portions of flights over these regions. Data is available starting in July 1999.

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#### **WY-RWIS**

The Wyoming's Remote Weather Informational System (RWIS) dataset is one of several datasets provided in the GEWEX Continental-scale International Project (GCIP) Large Scale Area-North West (LSA-NW) Enhanced Annual Observing Period (EAOP) 1999, 2000. Data from this source are provided as is in their original format and were not quality controlled by UCAR/JOSS. This dataset contains the available data for the GCIP LSA-NW EAOP-99-00 domain and time period (01 April 1999 through 31 March 2001). The GCIP LSA-NW EAOP-99 domain is approximately 90W to 115W longitude and 36N to 51N latitude.

#### **WY-RWIS-HRLY-QC**

The Wyoming's Remote Weather Informational System (RWIS) dataset is one of several datasets provided in the GEWEX Continental-scale International Project (GCIP) Large Scale Area-North West (LSA-NW) Enhanced Annual Observing Period (EAOP) 1999. Data from this source has been converted to Quality Control format, but no quality control has been performed by UCAR/JOSS. This dataset contains the available data for the GCIP LSA-NW EAOP-99-01 domain and time period (01 April 1999 through 31 March 2001). The GCIP LSA-NW EAOP-99-00 domain is approximately 90W to 115W longitude and 36N to 51N latitude.

#### **WY-RWIS-SPEC-QC**

The Wyoming Department of Transportation (WYDOT) Roadway Weather Information Systems (RWIS) "Specials" observations surface data in QC format is one of several datasets provided in the GEWEX Continental-scale International Project (GCIP) Large Scale Area-North West (LSA-NW) Enhanced Annual Observing Period (EAOP) 1999. Data from this source has been converted to Quality Control format, but no quality control has been performed by UCAR/JOSS. This dataset contains the "specials" data for the GCIP LSA-NW EAOP-99-01 domain and time period (01 April 1999 through 31 March 2001). The GCIP LSA-NW EAOP-99 domain is approximately 90W to 115W longitude and 36N to 51N latitude.

#### **anc-station-list**

The GEWEX Continental-scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1996 datasets contains data collected from thousands of stations in the ESOP 1996 domain (i.e., approximately 91W to 107W longitude and 31N to 40N latitude) for the period 01 April 1996 through 30 September 1996. The station information provided defines each station in the ESOP 1996 dataset with station location, name, frequency of observation, etc.

#### **arm-sondes**

This dataset contains upper air soundings taken at the DOE Atmospheric Radiation Measurement - Clouds and Radiation Testbed (ARM-CART) site in Oklahoma. Data from five ARM-CART sites have been included. This dataset includes pressure, temperature, dew point, relative humidity, wind speed, wind direction and altitude.

#### **coopresv**

The United States Geological Survey (USGS) and Co-operative Agency reservoir dataset is one of various hydrological datasets provided for the GEWEX Continental-scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1995 project. This dataset contains reservoir data from 97 USGS stations and 18 Co-operative Agency stations in the ESOP-1995 domain. This dataset covers the complete ESOP 1995 time period (01 April 1994 through 30 September 1995) and for the ESOP 1995 domain. The ESOP 1995 domain is approximately 91W to 107W longitude and 31N to 40N latitude. No additional

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quality control was performed by UCAR/JOSS.

#### **daily-precip**

The daily precipitation composite was formed from over a thousand stations from several data sources (i.e., Arkansas-Red Basin River Forecast Center, National Weather Service Cooperative Observers Precipitation data, and the precipitation data extracted from the ESOP-96 Hourly precipitation Composite). Data from these sources were quality controlled and merged to form this precipitation composite. This composite contains data for the ESOP 1996 domain and time period (01 April through 30 September 1996). The ESOP domain is approximately 91W to 107W longitude through 31N to 40N latitude.

#### **dly-coop**

This dataset contains the GCIP/ESOP-95 National Climatic Data Center 9NCDC) Summary of the Day Co-operative (COOP) data for the ESOP-95 domain. The observation in this dataset are primarily those from the cooperative network, augmented by observations from principal observing stations operated by the NWS and other sites having highly trained observers. Quality Control for this data was provided by NCDC. No additional QC was performed by JOSS on this dataset.

#### **edc-1km-AVHRR**

The dataset is composed of 5-channel, 10-bit, raw AVHRR data, at 1.1km resolution (at nadir) for every daily afternoon pass over all land and coastal zones using data from NOAA's polar-orbiting TIROS. Initially the data were to be collected continuously for 18 consecutive months beginning April 1, 1992, and continuing through September 30, 1993, subsequently the period has been extended to September 30, 1996.

#### **eta-MOLTS-sndings**

The GCIP/ESOP-95 Eta MOLTS Derived Soundings dataset contains NCEP Eta Model Location Time Series (MOLTS) derived soundings from up to 497 locations over North America. These output are only for the initial analysis time and only the state parameters (pressure, temperature, dew point, relative humidity, wind speed and wind direction). The complete output in the original BUFR format are available from NCAR/SCD.

#### **hrly-precip**

The Hourly Precipitation Composite was formed from several data sources (i.e., Arkansas-Red Basin River Forecast Center, National Climatic Data Center Hourly Precipitation data, National Centers for Environmental Prediction, and the precipitation data extracted from the ESOP-96 Hourly Surface Composite). Data from these sources were quality controlled and merged to form this precipitation composite.

#### **hrly-sfc**

The GEWEX Continental-scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1995 Hourly Surface Composite is composed of data from several sources (i.e., Artais Automated Weather Observation System (AWOS), Handar AWOS, Qualimetrics AWOS, Oklahoma Mesonet (OKMESO), Department of Energy (DOE) Atmospheric Radiation Measurement Surface (ARMSFC), High Plains Climate Network (WPN), National Climatic Data Center (NCDC) Surface Airways Observations (SAO), and Colorado Agricultural Meteorological data) for the ESOP 1995 domain. Data from these sources (371 stations) were merged and quality controlled to form this Surface Composite. This Surface Composite contains data for the ESOP 1995 time period (01 April 1995 through 30

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September 1995) and for the ESOP 1995 domain only. The ESOP 1995 domain is approximately 31N to 40N latitude and 91W to 107W longitude.

**images-500mb-wx**

NMC Eta Model 500mb Analysis map images for the GCIP/ESOP-95 period.

**images-850mb-wx**

NMC Eta Model 850mb Analysis map images for the GCIP/ESOP-95 period.

**images-nowrad**

This dataset contains images of a sector of the WSI Nowrad composite for the GCIP/ESOP-95 period. The sector was generally centered over the ESOP-95 domain, but was occasionally moved. These data are provided for browsing purposes and should not be used for scientific analysis.

**images-nowrad-composite**

This dataset contains images generated from the WSI NIDS 4 km national radar mosaic for the duration of the STORM-WAVE and GCIP/ESOP-95 Experiments. One image per day, generally at 2300 UTC, is available. These images are provided to allow the user to see a visual representation of the radar reflectivity recorded over the United States on a given day of the project. They are not meant to be used for scientific analysis, but rather as a browsing product.

**images-sat-ir**

Goes-8 Infrared (11 micron) satellite imagery collected for the GCIP Enhanced Seasonal Observing Period 1995 (ESOP-95) via McIDAS-X and then converted to GIF image format. These images are at 4 km resolution. These data are available for browsing purposes and should not be used for detailed scientific analyses.

**images-sat-vis**

Goes-8 Visible imagery collected for the GCIP Enhanced Seasonal Observing Period 1995 (ESOP-95) via McIDAS-X and then converted to GIF imagery format. These images are at 4 km resolution. These data are available for browsing purposes, and should not be used for detailed scientific analyses.

**images-sat-water-vapor**

Goes-8 Infrared (6.7 micron) satellite imagery collected for the GCIP Enhanced Seasonal Observing Period 1995 (ESOP-95) via McIDAS-X and then converted to GIF format. These images are at 8 km resolution. These data are available for browsing purposes and should not be used for detailed scientific analyses.

**images-sfc-wx**

NMC Eta Model 1000mb Analysis map images for the GCIP/ESOP-95 period.

**nws-sondes**

The GCIP/ESOP-95 6-second NWS Soundings dataset contains high resolution sounding data that have been extracted from NWS MicroART Sounding systems at 14 sites in the ESOP-95 domain. The dataset contains one sounding level every 6 seconds. These data have been extensively quality controlled, with every sounding subjected to both computerized consistency checks and human visual review. This dataset includes pressure, temperature, dew point, relative humidity, wind speed, wind direction and altitude

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#### **oh-gridded-precip**

This dataset contains hourly gridded precipitation values derived from WSR-88D reflectivity (Stage-III) by the Arkansas-Red Basin River Forecast Center (ABRFC). The data are on a 4km regular grid in WMO FM-92 GRIB format. These data were received from the National Weather Service Office of Hydrology (NWS/OH). NWS/OH provided the processing of the ABRFC Stage-III product into GRIB format.

#### **precip-15min**

The Fifteen Minute Precipitation Composite was formed from several data sources (i.e., Arkansas-Red-Basin River Forecast Center, National Climatic Data Center Fifteen Minute Precipitation data, Oklahoma Mesonet Precipitation data, and the precipitation data extracted from the ESOP-95 Five Minute Surface composite). Data from these sources (over a 1000 stations) were quality controlled and merged to form this precipitation composite. This composite contains data for the ESOP1995 domain and time period (01 April 1995 through 30 September 1995). The ESOP 1995 domain is approximately 91W to 107W longitude and 31N to 40N latitude.

#### **precip-abrfc-misc**

This dataset contains all the precipitation data from the Arkansas-Red Basin River Forecast Center station. Stations that reported at standard or incremental times are also included in the various ESOP 1995 precipitation composite datasets. The miscellaneous precipitation dataset contains data from more than 1300 stations in the ESOP 1995 domain, (91W to 107W longitude and 31N to 40N latitude) and time period (01 April 1995 through 30 September 1995). These data were not quality controlled by UCAR/JOSS.

#### **precip-daily**

The daily precipitation composite was formed from thousands of stations from several sources (i.e., Arkansas Red-Basin-River Forecast Center, National Weather Service Cooperative Observers Precipitation data, Oklahoma Mesonet Precipitation data, and the precipitation data extracted from the ESOP-95 Hourly Precipitation Composite. Data from these sources were quality controlled and merges to form this precipitation composite.

#### **precip-hrly**

The Hourly Precipitation composite was formed from thousands of stations from several sources (i.e., Arkansas Red-Basin-River Forecast Center, National Climatic Data Center Hourly Precipitation dataset (DSI 3240), Oklahoma Mesonet, and the precipitation data extracted from the ESOP-95 Hourly Surface Composite. Data from these sources were quality controlled and merges to form this precipitation composite.

#### **precip-ncep-gage-hrly**

The Climate Prediction Center (CPC), a component of the National Center for Environmental Prediction (NCEP) acquires precipitation reports in near real-time from several thousand sites across the contiguous 48 states of the USA. Approximately 3000 automated, hourly rain gauge observations are available in the US via the GOES Data Collection Platform (DCP) administered by the NWS Office of Hydrology (OH). These hourly reports are transmitted continuously throughout the day to NCEP in a SHEF-encoded message. This dataset contains the NCEP Hourly Precipitation Gauge Data starting in 01 January 1995 and continuing through 31 December 1996. This dataset is provided as is and is not quality controlled by UCAR/JOSS.

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#### **prof-405**

This dataset contains the National Oceanic and Atmospheric Administration (NOAA) 405 MHz Wind Profiler Network (WPN) hourly data from 16 sites within the ESOP area of interest. This dataset consists of a series of hourly observations, each containing approximately 64 levels of wind speed and direction data. These data were not quality controlled by UCAR/JOSS.

#### **sao-specials**

This dataset contains only the (GCIP/ESOP-95 National Climatic Data Center (NCDC) Surface Aviation Observation (SAO) "Special" observation surface data for the ESOP-95 domain. These are observations that are reported at off-hour times and report significant changes in conditions from the previous hourly reports. These reports can include all the information shown in hourly SAO's, but more typically, report only portions of the data. A complete listing of the requirements to issue a "special SAO" are included in the [Federal Meteorological Handbook No.1](#)

#### **stageIII-1hr**

This dataset contains data from the NOAA Arkansas-Red Basin River Forecast Center. The ABRFC routinely ingest WSR-88D precipitation derived products (Level III) from each of the radar sited with coverage in the Arkansas-Red River Basin (15 radars). In addition, the ABRFC ingests real-time precipitation data from a total of approximately 500 gauges. The ABRFC produces a number of derived or "Stage" products using the radar and precipitation gauge data. A Stage II product is produced by merging radar and precipitation estimates (Stage I) with ground truth data provided by the gauges. The Stage II estimates are then composited into a Stage III precipitation 4 x 4 km resolution are averaged mosaic for the Arkansas-Red River Basin.

#### **stageIII-daily**

The Arkansas-Red Basin River Forecast Center (ABRFC) Stage III Precipitation composite product in one of several image datasets provided in the GEWEX Continental-scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1995. The ABRFC imagery covers a sector (approximately 31 to 40 degrees N latitude by 91 to 107 degrees W longitude box) over the Central United States. The ABRFC imagery contains daily composites of radar derived precipitation for a 24-hr period for the ESOP 1995 time period (01 April 1995 through 30 September 1995).

#### **stn-list**

The GEWEX Continental-scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1995 datasets contain data collected from thousands of stations in the ESOP 1995 domain (i.e., approximately 91W to 107W longitude and 31N to 40N latitude) for the period 01 April 1995 through 30 September 1995. The station information provided defines each station in the ESOP 1995 dataset with station location, name, frequency of observation, etc.

#### **usgsflow**

The United States Geological Survey (USGS) stream flow dataset is one of various hydrological datasets provided for the GEWEX Continental-scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1995 project. This dataset contains stream flow data from 983 USGS stations in the ESOP 1995 domain. This dataset covers the complete ESOP 1995 time period (01 April 1995 through 30 September 1995) and for the ESOP 1995 domain. The ESOP 1995 domain is approximately 91W to 107W longitude and 31N to 40N latitude. No

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additional quality control was performed by UCAR/JOSS.

**usgsresv**

The United States Geological Survey (USGS) and Co-operative Agency Reservoir dataset is one of various hydrological datasets provided for the GEWEX Continental-scale International Project (GCIP) Enhanced Seasonal Observing Period (ESOP) 1995 project. This dataset contains reservoir data from 97 USGS stations and 18 Co-operative Agency stations in the ESOP 1995 domain. This dataset contains the complete ESOP 1995 time period (01 April 1994 through 30 September 1995). This dataset covers the complete ESOP 1995 domain. The ESOP 1995 domain is approximately 91W to 107W longitude and 31N to 40N latitude. No additional quality control was performed by UCAR/JOSS.

**vegindex**

The United States Geological Survey (USGS) Earth Observation System (EROS) Data Center Land Cover (vegetation) imagery is one of the several image datasets provided in the GCIP/ESOP 1995 project. The Land Cover imagery covers the conterminous United States and contains by-weekly composites for a six month period encompassing the entire GCIP/ESOP 1995 time period.

3. **Start Date:** Varies

4. **Stop Date:** Ongoing

5. **Coverage:**

- a. Southernmost Latitude: 90N Latitude
- b. Northernmost Latitude: 90S Latitude
- c. Westernmost Longitude: 180W Longitude
- d. Easternmost Longitude: 180E Longitude

6. **How to Order Data:**

Ask NCDC's Climate Services about the costs of obtaining this data set.  
Phone: 828-271-4800  
FAX: 828-271-4876  
e-mail: [NCDC.Orders@noaa.gov](mailto:NCDC.Orders@noaa.gov)

7. **Archiving Data Center:**

National Climatic Data Center  
Federal Building  
151 Patton Ave.  
Asheville, NC 28801-5001

8. **Technical Contact:**

National Climatic Data Center  
Federal Building  
151 Patton Ave.  
Asheville, NC 28801-5001

9. **Known Uncorrected Problems:** No information provided with original documentation.

10. **Quality Statement:** Each dataset contains its own various types of quality

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control.

11. **Essential Companion Datasets:** None.

12. **References:** None provided with original documentation.

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