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San Juan 23*

MEMORANDUM

March 31, 2005

TO: File
FROM: Pat Turney, ISC Staff
SUBJECT: San Juan River Basin Metering Project - Status

Attached is a table that shows the present status of Animas, San Juan and La Plata River ditch diversion metering sites. All ditches have signed a metering agreement with the Office of the State Engineer except the Turley Ditch, which has stated that it will not. All but three ditches have activated satellite transmitters that can relay measured stage, voltage and battery load associated with their measuring devices and transmitting facilities. At such time as rating tables become available, flow information will also be among the data gleaned from the transmitted data. The Independent Ditch is administered internally to the Halford Ditch and as an extension thereto, and thus its diversion from the Animas River is included in that of the Independent Ditch. The Enterprise and Pioneer Ditches divert from the La Plata River in Colorado to serve lands in both Colorado and New Mexico. Gaging for these two ditches is provided by the State of Colorado pursuant to the La Plata River Compact.

All equipment purchased by NMISC for the subject project that is not currently in service, is stored at the Aztec Office of the State Engineer. It is anticipated that any remaining flumes will be installed at wasteways as needed and as specified by the Aztec Office.

Computer software purchased for the subject project consists of Sutron Corporation's XConnect, which is licensed for use on 2 computers, one of which is located in the Aztec Office and the other in NMISC staffs' office in Santa Fe. One license for Sutron Corporation's XConnect Web Posting module is licensed for use by the Agency and is in the charge of IMSB personnel in Santa Fe. The Web Posting module directly accesses the XConnect database that resides on staffs' computers. Support for the aforementioned XConnect software must be purchased annually. The current cost for all licenses is \$2500, which amount should be timely budgeted and the

support should be purchased to ensure that the agency receives all software upgrades and continued technical support for the product.

Required FCC and NOAA authorizations were obtained for satellite transmissions associated with the subject project. A System Use Agreement (SUA) (copy attached) requesting access to the GOES Data Collection System (DCS) for 38 self-timed data collection platforms was approved and effective on November 8, 2002. Per the SUA, the Agency contact responsible for installation, maintenance and operation of the platforms is Robert Genualdi. Policies governing the use of the GOES DCS are included on pages 8 to 13 of the SUA. At the present time, the use of the NOAA GOES satellite system is at no cost to the State. Also, FCC license, 0079-EX-PL-2003 (copy attached) covers operation by the Office of the State Engineer of San Juan Basin ditch gaging sites, identified by latitude/longitude coordinates that may transmit to satellite. The FCC authorization was effective on June 25, 2003 and will expire on July 1, 2005, and thus will need to be renewed by the Office of the State Engineer, the licensee. A copy of the Code of Federal Regulations: 47 Parts 0 to 19, Revised as of October 1, 2002, pertaining to satellite use was provided to the Aztec Office for their reference.

Siting for most metering facilities was, of necessity, performed during the non-irrigation season when ditches were dry. The Aztec Office of the State Engineer accompanied measurement facility contractors and approved flume siting and design. Since construction of flume installations and the resumption of diversions thereto, backwater conditions have occurred at some metering sites. Said conditions may be due to culvert and/or siphon restrictions located at great distance and/or in series from the affected site, little elevation drop along the length of the ditch, over diversion by the ditch, algae growth and/or flume design flaws. In particular, problematic backwater conditions occur at the Farmer's Mutual Ditch and Farmers Irrigation Ditch metering facilities. Jewett Valley Ditch also is submerged at its measurement site but such submergence was expected and thus the facility was designed to accommodate a Doppler velocity measurement device. Doppler devices may be installed at other sites at which backwater conditions prove to be non-responsive to reductions in diversion, cleaning or minor structural alterations. A total of 6 Doppler devices have been purchased and are among the equipment currently stored at the Aztec Office.

Apart from the subject project but in a parallel effort, the Bureau of Indian Affairs (BIA) has installed measurement facilities including satellite-transmitting devices on the Fruitland and Hogback Canals. Diversion data from these canals is accessible from a web site maintained by a BIA contractor.

San Juan River Basin Metering Status									
River	Ditch	Signed Agreement	Functional Existing Flume	New Flume Status	Shelter Status	Instrumentation Purchased	Instrumentation Status	Transmitter Activated 'X'	
Animas	Aztec	X	X		Installed	X	Installed	X	
	Eledge	X		Installed-R&M	Installed	X	Installed	X	
	Farmers Irrig District	X		Installed-R&M	Installed	X	Installed	X	
	Farmington-Echo	X		Installed-R&M	Installed	X	Installed	X	
	Graves-Atteberry	X		Installed-R&M	Installed	X	Installed	X	
	Halford	X		Installed-R&M	Installed	X	Installed	X	
	Independent	X		NA	NA	NA	NA	NA	
	Kello-Blancett	X		Installed-BT	Installed	X	Installed	X	
	Lower Animas	X		Installed-R&M	Installed	X	Installed	X	
	N. Farmington/Wright-Leggett (combined)	X		Installed-R&M	Installed	X	Installed	X	
	Ranchmans	X		Installed-BT	Installed	X	Installed	X	
	Ralston	X	X		Installed	X	Installed	X	
	Stacey	X		Received	Received	X	Received		
	Sargent (36x24 Precast)	X		Installed-BT	Installed	X	Installed	X	
	Twin Rock	X		Installed-BT	Installed	X	Installed	X	
	Willett	X		Installed-R&M	Installed	X	Installed	X	
	Cedar	X		Installed-R&M	Installed	X	Installed	X	
	San Juan	Citizens (La Pampa/Jacques/BID combined)	X		Installed-R&M	Installed	X	Installed	X
		Farmers Mutual (combined SJ/Animas div.)	X		Installed-R&M	Installed	X	Installed	X
Hammond		X	X	NA	NA	X	Installed	X	
Jewett Valley		X		Installed-R&M	Installed	X	Installed	X	
Manzanares-Turley									
La Plata	Cunningham	X		Installed-BT	Installed	X	Installed	X	
	Greenhorn	X		Installed-BT	Installed	X	Installed	X	
	Highland Park	X	X		Installed	X	Installed	X	
	Hillside	X	X		Installed	X	Installed	X	
	Jackson	X		Received	Received	X	Received		
	La Plata Indian	X	X		Installed	X	Installed	X	
	Larken-Reynolds	X	X		Installed	X	Installed	X	
	McDermott	X	X		Installed	X	Installed	X	
	Helton	X	X		Installed	X	Installed	X	
	Left Hand	X	X			X			
	Enterprise	NA		NA	NA	NA	NA	NA	
	Pioneer	NA		NA	NA	NA	NA	NA	