



DuPage Water Commission

600 E. Butterfield Road, Elmhurst, IL 60126-4642
(630)834-0100 Fax: (630)834-0120

AGENDA

ENGINEERING & CONSTRUCTION COMMITTEE
THURSDAY, JULY 10, 2008
7:00 P.M.

COMMITTEE MEMBERS

F. Saverino
W. Maio
W. Mueller

600 EAST BUTTERFIELD ROAD
ELMHURST, IL 60126

- I. Roll Call
- II. Approval of Committee Meeting Minutes of June 12, 2008
- RECOMMENDED MOTION: To approve the Minutes of the June 12, 2008 Committee Meeting of the DuPage Water Commission.**
- III. Report of Status of Construction/Operations
- IV. Resolution No. R-33-08: A Resolution Approving and Ratifying Certain Work Authorization Orders Under Quick Response Contract QR-8/08 at the July 10, 2008, DuPage Water Commission Meeting

RECOMMENDED MOTION: The Engineering Committee recommends to the Commission approval of Resolution No. R-33-08: A Resolution Approving and Ratifying Certain Work Authorization Orders Under Quick Response Contract QR-8/08 at the July 10, 2008, DuPage Water Commission Meeting.

- V. Resolution No. R-37-08: A Resolution Awarding a Contract for the Construction of Electrical Generation Facilities, Photovoltaic System, and Other Improvements at the Lexington Pumping Station (Contract PSC-4/08)

RECOMMENDED MOTION: The Engineering Committee recommends to the Commission approval of Resolution No. R-37-08: A Resolution Awarding a Contract for the Construction of Electrical Generation Facilities, Photovoltaic Systems, and Other Improvements at the Lexington Pumping Station (Contract PSC-4/08) at the July 10, 2008, DuPage Water Commission Meeting.

- VI. Resolution No. R-38-08: A Resolution Awarding a Contract for the Construction of Photovoltaic System at the Lexington Pumping Station (Contract PSC-5/08)

All visitors must present a valid drivers license or other government-issued photo identification, sign in at the reception area and wear a visitor badge while at the DuPage Pumping Station.

RECOMMENDED MOTION: The Engineering Committee recommends to the Commission approval of Resolution No. R-38-08: A Resolution Awarding a Contract for the Construction of Photovoltaic System at the Lexington Pumping Station (Contract PSC-5/08) at the July 10, 2008, DuPage Water Commission Meeting.

VII. Adjournment

Board/Agendas/Engineering/Eng0807.doc

**MINUTES OF A MEETING OF THE
ENGINEERING & CONSTRUCTION COMMITTEE
OF THE DuPAGE WATER COMMISSION
HELD ON THURSDAY, JUNE 12, 2008
600 EAST BUTTERFIELD ROAD
ELMHURST, ILLINOIS**

The meeting was called to order at 7:03 P.M.

Committee members in attendance: G. Wilcox, F. Saverino, W. Maio and S. Louis Rathje *ex officio*.

Committee members absent: W. Mueller

Also in attendance: J. Schori, E. Kazmierczak, R.C. Bostick, F. Frelka, J. Nesbitt, Steve Palac and Dan Dragan.

Commissioner Saverino moved to approve the Minutes of the September 13, 2007 Engineering Committee. Motion seconded by Commissioner Maio and passed unanimously as follows:

Aye: F. Saverino, W. Maio and G. Wilcox
Nay: None
Absent: W. Mueller

The Committee reviewed the memorandum regarding the Status of Operations dated June 6, 2008.

Commissioner Wilcox moved to recommend to the Commission approval of payments in the amount of \$18,310.87 as part of the accounts payable, subject to submission of all contractually required documentation. Motion seconded by Commissioner Maio and passed unanimously as follows:

Quick Response Contracts

1. Install J-Box & Fiber Cabinet (QRE3-003A) in the amount of \$5,294.56
2. Replace Manhole Frame & Lid – Bloomingdale Rd & Dale Rd – Glendale Heights, 55th St. & Park Ave. – Downers Grove (QR7-018A) in the amount of \$13,316.31

Aye: F. Saverino, W. Maio and G. Wilcox
Nay: None
Absent: W. Mueller

Commissioner Maio moved to recommend to the Commission approval of Resolution No. R-28-08: A Resolution Awarding Quick Response Contract (Contract QR-8/08). Motion seconded by Commissioner Saverino. The motion passed unanimously as follows:

Aye: F. Saverino, W. Maio and G. Wilcox
Nay: None
Absent: W. Mueller

Commissioner Maio moved to recommend to the Commission approval of Resolution No. R-29-08: A Resolution Approving and Ratifying Certain Contract Change Orders at the June 12, 2008, DuPage Water Commission Meeting. Motion seconded by Commissioner Saverino and passed unanimously as follows:

Aye: F. Saverino, W. Maio and G. Wilcox
Nay: None
Absent: W. Mueller

Commissioner Maio moved to recommend to the Commission approval of Resolution No. R-30-08: A Resolution Approving and Ratifying Certain Work Authorization Orders Under Quick Response Contract QR-7/05 at the June 12, 2008, DuPage Water Commission Meeting. Motion seconded by Commissioner Saverino. Staff clarified the use of quick response contracts. The motion passed unanimously as follows:

Aye: F. Saverino, W. Maio and G. Wilcox
Nay: None
Absent: W. Mueller

Commissioner Maio moved to recommend to the Commission approval of Resolution No. R-31-08: A Resolution Approving the Execution of a Consent Agreement between the DuPage Water Commission, the Village of Roselle, and RTG-Roselle Main Street Station, LLC Regarding the Main Street Station Development. Motion seconded by Commissioner Saverino. The motion passed unanimously as follows:

Aye: F. Saverino, W. Maio and G. Wilcox
Nay: None
Absent: W. Mueller

Commissioner Maio moved to recommend to the Commission approval of Resolution No. R-32-08: A Resolution Approving the Execution of a Fifth Amendment to the Contract for Design of Concrete Reservoirs and Other Improvements at the DuPage Pump Station. Motion seconded by Commissioner Saverino. Commissioner Wilcox asked if this was going to be the last amendment to the Concrete Reservoir project. Staff advised that the amendments were necessary because of the delays in constructing the concrete reservoir proper while moving forward with other essential parts of the original concrete reservoir project. The motion passed unanimously as follows:

Engineering Meeting Minutes June 12, 2008

Aye: F. Saverino, W. Maio and G. Wilcox
Nay: None
Absent: W. Mueller

The Engineering Committee directed staff to issue a Task Order under the Quick Response Electrical (QRE) Contract to complete modifications recommended by EN Engineering at the remote valve locations. Commissioner Wilcox asked staff if the Commission had the QRE contract in place and why we did not want to go out for bid. Staff replied that the QRE contract was in place with two contractors, Divane Brothers and Ridgewood Engineering and that by issuing a task order would move the process through quicker. Staff passed out a copy of the budgetary cost estimate and Commissioner Wilcox stated that most of the cost was in materials \$94,700 and labor was only \$37,120. Staff replied that the majority of the materials could be pre-purchased by the Commission saving any contractor mark-up. Commissioner Maio asked how the purchasing would be done. Staff replied with two sealed quotations. Commissioners Wilcox, Saverino and Maio all agreed that this made sense and directed staff to proceed.

Commissioner Wilcox stated that the bids for Contract PSC-4 (Lexington Pumping Station Backup Generator Project) were much higher than the engineer's cost estimate. Commissioner Maio concurred. Staff replied that after discussions with the bidder's representatives the higher costs were due to escalating material and energy costs as well as construction constraints and unknown economic factors spread out over a 2-year construction period. Commissioner Wilcox stated that because all the bids were very similar that meant the bid documents were very good and praised the engineers for their work preparing the bid documents. Commissioner Saverino asked how many bids were received and what the difference was between them. Staff replied that 4 bids were received with a range of \$28,644,000 - \$33,685,947. Staff also informed the Commissioners about the IGA with Chicago and the aggregate project cap of \$15 million each for the Commission and the City of Chicago. It was also stated that both the Commission and the City of Chicago would need to approve additional funding or find alternative means of cost reductions. Staff stated the Commission and the Chicago Department of Water Management were looking into alternative solutions which include re-bidding the Photovoltaic System with a reduced project scope. Staff stated that by re-bidding the Photovoltaic System to an electrical contractor may reduce the project cost.

Commissioner Maio asked if any action was needed at this time. Staff stated that no action was needed.

Commissioner Wilcox moved to adjourn the meeting at 7:27 P.M. Motion seconded by Commissioner Maio and unanimously approved by a Voice Vote.

All voted aye. Motion carried.



DuPage Water Commission

MEMORANDUM

TO: Robert Martin General Manager

FROM: Terry McGhee *TM* Manager of Water Operations
Ed Kazmierczak Pipeline Supervisor
Chris Bostick Facilities Construction Supervisor
John Schori Instrumentation Supervisor
Frank Frelka GIS Coordinator

DATE: July 3, 2008

SUBJECT: Status of Operations

Operations Overview

The Commission's sales for the month of June were a total of 2.606 billion gallons. This represents an average day demand of 86.9 million gallons per day (MGD), which is lower than the June 2007 average day demand of 109.9 MGD. The maximum day demand was 94.7 MGD on June 19, 2008, which is lower than the June 2007 maximum day demand of 141.4 MGD. The minimum day flow was 79.0 MGD. The Commission's recorded total precipitation for the month of June was 4.18 inches compared to 2.03 inches for June 2007. The level of Lake Michigan for June 2008 is 577.96 (Feet IGLD 1985) compared to 577.69 (Feet IGLD 1985) for June of 2007.

Water Conservation

A Request for Proposal to help the Commission develop and implement a Water Conservation Program was sent to eight local consulting firms. On June 2, 2008, the Commission received proposals from four of the eight firms. The proposals are under review and a recommendation will be made to the Board at the July meeting.

Montgomery Watson Harza	\$252,915.00
Camp Dresser Mckee	\$283,447.00
Baxter & Woodman	\$428,950.00
Geosyntec	\$891,789.07

Computer Room Cooling System

Hill Mechanical has started their work at the Pump Station facilities and they are scheduled to complete the project in August.

Facilities Construction Overview**Contract PSD-6 Reservoir Addition - Division A – Equipment Storage Building and Material Storage**

Design of the buildings and related structures is ongoing. The perimeter fencing is being removed from the project to be bid separately. The perimeter fencing RFP is being developed.

Contract PSD-7 DPPS Electrical Generation

The generator facility design is ongoing, with 100% design submittal being scheduled for delivery later this month.

Generator Supply Contract

Contractor submittals are being reviewed.

Contract PSC-4 Lexington Pump Station Electrical Generation / Photovoltaic Cells / Variable Frequency Drives

Bid opening was held Thursday, May, 22, 2008. The bids are being evaluated by Staff, the City of Chicago, and Greeley and Hansen.

Contract PSC-5 Lexington Photovoltaic Cells

Bid opening was held Friday, June 27, 2008. The bids are being evaluated by Staff, the City of Chicago, and Greeley and Hansen.

Fall Protection for the DuPage Pumping Station

The Contractor has completed 90% of the railing work and 50% of the skylight work. The Contractor is scheduled to finish the remaining work in the coming weeks. Contract completion date is July 22, 2008.

Winfield Additional Connection

Final design has been transmitted to Winfield for their review. Based on their comments and receipt of title insurance, we could be out for bid by mid July.

DuPage County Service Areas

No activity to report.

GISSystem Mapbook

The System Mapbook is a bound edition of the Commission's GIS pipeline map with indexes of facilities and streets. Previous versions have been used by staff to navigate around the system and for general reference purposes. Version 3.0 is complete and is in the process of being reviewed by staff for comments before being sent out for printing.

GIS/Datastream Integration

Before this project could begin it was necessary to upgrade to SQL Server 2005 and version 8.2 of the Datastream 7i Maintenance Management Program (now known as Infor Enterprise Asset Management (EAM)). These tasks are complete and the GIS/Infor integration is scheduled to begin in the upcoming weeks.

GIS Web Site

The GIS web site is being updated to accommodate the SQL Server 2005 upgrade project. Staff will take this opportunity to improve the web site with a new street centerline file, newer DuPage County aerial photo and more concise organization of layers.

Pipeline Construction OverviewCONTRACT QR-7:

Two outstanding Work Authorizations still remain under Contract QR-7 which have been Board approved at the June Meeting under R-30-08.

Work Authorization No.19 is for the removal and disposal of a damaged manhole frame and lid, replacement with a new frame and lid, and associated pavement repair located at Diehl Road West of River Road in the City of Naperville.

Work Authorization No. 20 is for the adjustment of 3 separate manhole frame and lids; ditch grading and embankment restoration located at Illinois Rt. 83 and 58th Street in the Village of Clarendon Hills.

CONTRACT QR-8:

A contract was signed with Rossi Contractors on June 30, 2008. Martan Construction failed to supply the required insurance documents.

CONTRACT VSR-1 (VALVE STEM REPLACEMENT):

Design is approximately 70% complete.

SOUTH TRANSMISSION MAIN CORROSION MITIGATION DESIGN:

EN Engineering is continuing with conceptual design on the South Transmission Main Corrosion Mitigation project. Work is anticipated to begin at the end of the year.

JULY 2008 COMMISSION AGENDA ITEMS:

R-33-08-----A Resolution Approving and Ratifying Certain Work Authorization Orders under Quick Response Contract QR-8/08 at the July 10, 2008, DuPage Water Commission Meeting

R-34-08-----A Resolution Approving and Accepting a Private Grant of Easement for Storm Water Facilities (RTG-Roselle Main Street Station, LLC)

R-35-08-----A Resolution Approving and Ratifying Certain Work Authorization Orders under Quick Response Contract QRE-3/07 at the July 10, 2008, DuPage Water Commission Meeting

R-36-08-----A Resolution Awarding a Contract for Consulting Services for Design and Implementation of a Water Conservation Program for the DuPage Water Commission at the July 10, 2008, DuPage Water Commission Meeting


1. DuPage Laboratory Bench Sheets for June, 2008
2. Water Sales Analysis 01-June-03 to 29-June-08
3. Chart showing Commission sales versus allocations
4. Chart showing Commission sales versus historical averages

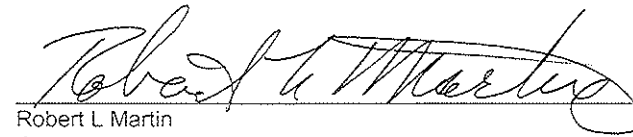
DUPAGE WATER COMMISSION LABORATORY BENCH SHEET
MONTHLY REPORT FOR JUNE 2008

LEXINGTON SUPPLY

DUPAGE DISCHARGE

DAY	FREE CL ₂ mg/l	TURBIDITY NTU	PO ₄ mg/l	FREE CL ₂ mg/l	TURBIDITY NTU	TEMP °F	pH	Fluoride	PO ₄ mg/l	P.A.C. LBS/MG	ANALYST INT
1	0.70	0.10	0.46	0.69	0.09	57	7.5	1.1	0.45	0	MR
2	0.71	0.11	0.42	0.67	0.09	58	7.5	1.0	0.42	0	JV
3	0.68	0.11	0.46	0.66	0.08	58	7.4	1.1	0.40	0	MR
4	0.67	0.10	0.43	0.69	0.10	58	7.4	1.1	0.46	0	JV
5	0.67	0.09	0.44	0.69	0.09	59	7.5	1.1	0.44	0	JV
6	0.68	0.10	0.43	0.67	0.10	59	7.5	1.1	0.46	0	MR
7	0.69	0.11	0.49	0.67	0.10	57	7.6	1.0	0.43	0	MR
8	0.71	0.12	0.49	0.69	0.08	58	7.4	1.1	0.40	0	MR
9	0.68	0.12	0.41	0.68	0.10	58	7.4	1.0	0.43	0	MR
10	0.71	0.09	0.42	0.67	0.10	58	7.5	1.1	0.42	0	JV
11	0.67	0.10	0.43	0.67	0.09	59	7.4	1.0	0.41	0	JV
12	0.68	0.10	0.41	0.68	0.10	59	7.5	1.1	0.41	0	JV
13	0.67	0.10	0.42	0.66	0.10	59	7.6	1.1	0.45	0	JV
14	0.66	0.10	0.45	0.67	0.10	59	7.5	1.1	0.42	0	MR
15	0.68	0.12	0.41	0.66	0.08	59	7.4	1.1	0.41	0	AM
16	0.67	0.11	0.45	0.69	0.10	59	7.4	1.1	0.45	0	MR
17	0.68	0.11	0.43	0.66	0.10	60	7.4	1.1	0.47	0	MR
18	0.67	0.12	0.47	0.66	0.08	59	7.5	1.1	0.44	0	JV
19	0.68	0.12	0.44	0.57	0.10	58	7.5	1.1	0.43	0	JV
20	0.67	0.09	0.42	0.67	0.08	60	7.6	1.1	0.44	0	JV
21	0.68	0.11	0.44	0.69	0.09	61	7.6	1.1	0.42	0	JV
22	0.67	0.11	0.48	0.68	0.90	61	7.4	1.1	0.43	0	MR
23	0.69	0.10	0.41	0.67	0.08	62	7.4	1.1	0.44	0	MR
24	0.67	0.10	0.49	0.67	0.08	62	7.5	1.1	0.44	0	MR
25	0.70	0.12	0.43	0.68	0.09	64	7.5	1.1	0.41	0	MR
26	0.69	0.12	0.45	0.66	0.09	63	7.5	1.1	0.42	0	JV
27	0.70	0.12	0.45	0.69	0.10	62	7.6	1.1	0.43	0	KD
28	0.68	0.11	0.40	0.66	0.09	64	7.5	1.1	0.43	0	JV
29	0.67	0.11	0.41	0.67	0.09	64	7.5	1.1	0.41	0	JV
30	0.68	0.11	0.42	0.68	0.10	64	7.5	1.1	0.42	0	MR
31											
AVG	0.68	0.11	0.42	0.67	0.12	60	7.5	1.1	0.43	0	
MAX	0.71	0.12	0.49	0.69	0.90	64	7.6	1.1	0.47	0	
MIN	0.66	0.09	0.40	0.66	0.08	57	7.4	1.0	0.40	0	


Terrance McGhee
Manager of Water Operations


Robert L. Martin
General Manager

DU PAGE WATER COMMISSION
WATER SALES ANALYSIS

01-May-92 TO 30-Jun-08

PER DAY AVERAGE 81,877,727

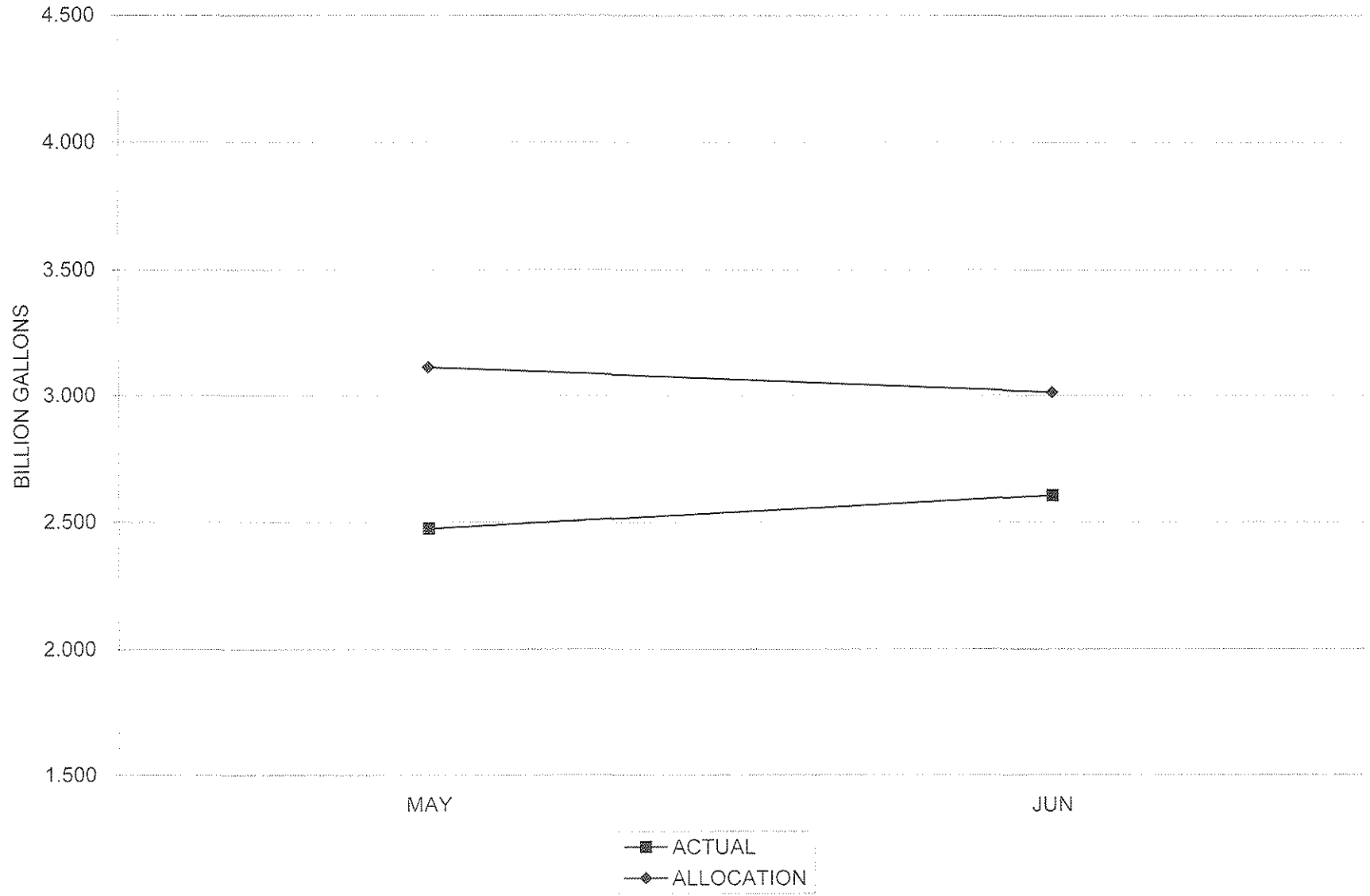
MONTH	SALES TO CUSTOMERS (GALLONS)	PURCHASES FROM CHICAGO (GALLONS)	GALLONS BILLED %	BILLINGS TO CUSTOMERS	BILLINGS FROM CHICAGO	DOCUMENTED COMMISSION WATER USE (2)	DOCUMENTED COMMISSION WATER USE %	TOTAL ACCOUNTED FOR %
May-05	2,751,156,000	2,826,791,957	97.32%	\$3,383,921.88	\$3,669,175.96	7,991,723	0.28%	97.61%
Jun-05	3,775,195,000	3,884,927,612	97.18%	\$4,645,553.10	\$5,042,636.04	6,563,800	0.17%	97.34%
Jul-05	4,078,909,000	4,145,332,157	98.40%	\$5,017,058.07	\$5,380,641.14	6,773,400	0.16%	98.56%
Aug-05	3,498,090,000	3,609,900,000	96.90%	\$4,302,650.70	\$4,685,677.02	8,573,152	0.24%	97.14%
Sep-05	3,202,484,000	3,289,206,394	97.36%	\$3,939,055.32	\$4,269,389.90	6,689,590	0.20%	97.57%
Oct-05	2,545,686,000	2,647,388,860	96.16%	\$3,131,193.78	\$3,436,310.74	6,998,672	0.26%	96.42%
Nov-05	2,238,636,000	2,261,375,216	98.99%	\$2,753,522.28	\$2,935,265.03	5,496,962	0.24%	99.24%
Dec-05	2,362,455,000	2,422,577,673	97.52%	\$2,905,819.65	\$3,144,505.82	5,810,930	0.24%	97.76%
Jan-06	2,241,162,000	2,303,320,263	97.30%	\$2,756,629.26	\$3,063,415.95	4,323,441	0.19%	97.49%
Feb-06	2,033,220,000	2,083,799,323	97.57%	\$2,500,915.68	\$2,771,453.10	3,709,927	0.18%	97.75%
Mar-06	2,189,124,000	2,245,513,008	97.49%	\$2,693,251.86	\$2,986,532.30	5,523,343	0.25%	97.73%
Apr-06	2,288,760,000	2,342,619,023	97.70%	\$2,815,174.80	\$3,115,683.30	3,928,470	0.17%	97.87%
May-06	2,610,813,000	2,692,357,782	96.97%	\$3,237,408.12	\$3,580,835.85	5,227,307	0.19%	97.17%
Jun-06	2,992,447,000	3,070,487,707	97.46%	\$3,710,960.98	\$4,083,748.65	4,407,260	0.14%	97.60%
Jul-06	3,271,454,000	3,360,915,489	97.34%	\$4,056,602.96	\$4,470,017.60	4,330,000	0.13%	97.47%
Aug-06	3,182,143,000	3,278,914,023	97.05%	\$3,945,857.32	\$4,360,955.65	4,157,170	0.13%	97.18%
Sep-06	2,472,175,000	2,539,240,000	97.36%	\$3,065,988.70	\$3,377,189.20	4,242,692	0.17%	97.53%
Oct-06	2,290,903,000	2,358,823,308	97.12%	\$2,840,719.72	\$3,137,235.00	4,540,716	0.19%	97.31%
Nov-06	2,180,207,000	2,227,311,241	97.89%	\$2,703,456.68	\$2,962,323.95	28,850,568	1.30%	99.18%
Dec-06	2,226,395,000	2,288,619,699	97.28%	\$2,760,729.80	\$3,043,864.20	3,979,814	0.17%	97.46%
Jan-07	2,220,804,000	2,280,218,308	97.39%	\$2,753,796.96	\$3,032,690.35	3,980,439	0.17%	97.57%
Feb-07	2,140,510,000	2,201,007,331	97.25%	\$2,654,454.82	\$2,927,339.75	3,710,444	0.17%	97.42%
Mar-07	2,210,108,000	2,255,212,245	98.18%	\$2,741,312.06	\$4,095,039.52	3,891,151	0.17%	98.35%
Apr-07	2,181,740,000	2,251,116,429	96.92%	\$2,705,357.60	\$2,993,984.85	4,352,433	0.19%	97.11%
May-07	2,863,644,000	2,951,900,000	97.01%	\$2,978,988.48	\$3,926,001.00	4,012,875	0.14%	97.15%
Jun-07	3,292,831,000	3,396,024,774	96.96%	\$3,424,545.52	\$4,516,712.95	4,468,064	0.13%	97.09%
Jul-07	3,314,840,000	3,412,423,571	97.14%	\$3,447,433.60	\$4,538,523.35	4,456,650	0.13%	97.27%
Aug-07	2,883,008,000	2,966,379,286	97.19%	\$2,998,328.32	\$3,945,284.45	4,172,900	0.14%	97.33%
Sep-07	2,951,692,000	3,051,590,188	96.73%	\$3,070,294.72	\$4,058,614.95	3,977,217	0.13%	96.86%
Oct-07	2,512,609,400	2,578,045,000	97.46%	\$2,614,883.38	\$3,428,799.85	9,585,389	0.37%	97.83%
Nov-07	2,143,753,000	2,205,810,263	97.19%	\$2,230,952.72	\$2,933,727.65	10,390,297	0.47%	97.66%
Dec-07	2,228,281,000	2,292,016,165	97.22%	\$2,317,412.24	\$3,048,381.50	2,174,944	0.09%	97.31%
Jan-08	2,262,968,000	2,324,208,591	97.37%	\$2,353,486.72	\$3,554,877.04	2,134,597	0.09%	97.46%
Feb-08	2,145,137,000	2,197,527,140	97.62%	\$2,232,195.60	\$3,361,117.76	2,074,217	0.09%	97.71%
Mar-08	2,239,073,000	2,295,015,835	97.56%	\$2,328,635.92	\$3,510,226.72	2,041,001	0.09%	97.65%
Apr-08	2,177,771,000	2,244,319,320	97.03%	\$2,266,101.68	\$3,432,686.40	8,144,629	0.36%	97.40%
May-08	2,474,831,000	2,566,584,008	96.43%	\$2,573,824.24	\$3,925,590.24	4,884,294	0.19%	96.62%
Jun-08	2,604,318,000	2,677,371,376	97.27%	\$2,709,084.64	\$4,095,039.52	1,964,000	0.07%	97.34%
TOTALS (1)	483,406,102,400	497,628,957,098	97.14%	\$632,080,849.99	\$567,266,178.85	503,965,885	0.10%	97.24%

(1) - SINCE MAY 1, 1992

(2) - REPRESENTS DU PAGE PUMP STATION, METER TESTING AND CONSTRUCTION PROJECT USAGE

Operations\Spreadsheets\H2O\SALES.xls

DU PAGE WATER COMMISSION SALES FY 2008-09 VS. ALLOCATION



DU PAGE WATER COMMISSION SALES FY 2008-09 & FY 2007-08 VS. HISTORICAL AVERAGE

