



PALMDALE WATER DISTRICT

2029 East Avenue Q • Palmdale, California 93550 • Telephone (661) 947-4111
Fax (661) 947-8604
www.palmdalewater.org

Board of Directors

JEFF A. STORM
Division 1
GORDON G. DEXTER
Division 2
LINDA J. GODIN
Division 3
RAUL FIGUEROA
Division 4
STEVE R. CORDOVA
Division 5

LAGERLOF, SENECAI, GOSNEY & KRUSE LLP
Attorneys



November 3, 2011

*Agenda for a Meeting
of the Water Supply & Reliability Committee of the Palmdale Water District
Committee Members: Gordon Dexter-Chair, Jeff Storm
to be held at the District's office at 2029 East Avenue Q, Palmdale
Tuesday, November 8, 2011
5:15 p.m.*

NOTE: To comply with the Americans with Disabilities Act, to participate in any Board meeting please contact Dawn Deans at 661-947-4111 x103 at least 48 hours prior to a Board meeting to inform us of your needs and to determine if accommodation is feasible.


Agenda item materials, as well as materials related to agenda items submitted after distribution of the agenda packets, are available for public review at the District's office located at 2029 East Avenue Q, Palmdale. Please call Dawn Deans at 661-947-4111 x103 for public review of materials.

PUBLIC COMMENT GUIDELINES: The prescribed time limit per speaker is three-minutes. Please refrain from public displays or outbursts such as unsolicited applause, comments, or cheering. Any disruptive activities that substantially interfere with the ability of the District to carry out its meeting will not be permitted and offenders will be requested to leave the meeting.

Each item on the agenda shall be deemed to include any appropriate motion, resolution, or ordinance to take action on any item.

- 1) Roll call.
- 2) Adoption of agenda.
- 3) Public comments.
- 4) Action Items: (The public shall have an opportunity to comment on any action item as each item is considered by the Committee prior to action being taken.)

- 4.1) Consideration and possible action on approval of minutes of meeting held October 11, 2011.
- 4.2) Presentation of monthly water demand and supply status. (Water & Energy Resources Manager Pernula)
- 4.3) Presentation of the District's well levels. (Water & Energy Resources Manager Pernula/Facilities Manager Moore)
- 4.4) Presentation of the maintenance and reliability status of the District's wells. (Water & Energy Resources Manager Pernula/Facilities Manager Moore)
- 4.5) Consideration and possible action on District participation in Garden Bar Water Supply and Power Project. (Water & Energy Resources Manager Pernula)
- 5) Project updates.
 - 5.1) Recycled Water Master Plan. (Water & Energy Resources Manager Pernula)
 - 5.2) Strategic Water Resources Plan. (Water & Energy Resources Manager Pernula)
 - 5.3) Water purchase opportunities. (Water & Energy Resources Manager Pernula)
 - 5.4) Water Treatment and Transportation Agreement between Palmdale Water District and Antelope Valley East Kern Water Agency – Acton Water Treatment Plant. (Engineering Manager Knudson)
- 6) Information items.
- 7) Board members' requests for future agenda items.
- 8) Adjournment.



DENNIS D. LaMOREAUX,
General Manager

DDL/dd

AGENDA ITEM NO. 4.2

Month	Five-Year Aver. Consumption (ac.-ft.)	Projected 2011 Consumption (ac.-ft.)	Actual 2011 Consumption (ac.-ft.)	Difference (Act. - Pred.) (ac.-ft.)
Jan.	1232.2	1,100.0	839.8	-260.2
Feb.	1180.0	1,000.0	876.3	-123.7
March	1130.9	1,050.0	896.9	-153.1
April	1569.5	1,350.0	1,015.0	-335.0
May	1862.1	1,550.0	1,456.0	-94.0
June	2602.4	1,900.0	1,688.0	-212.0
July	3094.9	2,200.0	2,036.2	-163.8
Aug.	2842.5	2,250.0	2,253.0	3.0
Sept.	2871.7	2,450.0	2,116.1	-333.9
Oct.	2496.7	2,300.0	1,832.9	-467.1
Nov.	1780.3	1,750.0	0.0	0.0
Dec.	1371.2	1,600.0	0.0	0.0
	24,034.3	20,500.0	15,010.2	-2,139.8

2005 thru 2009

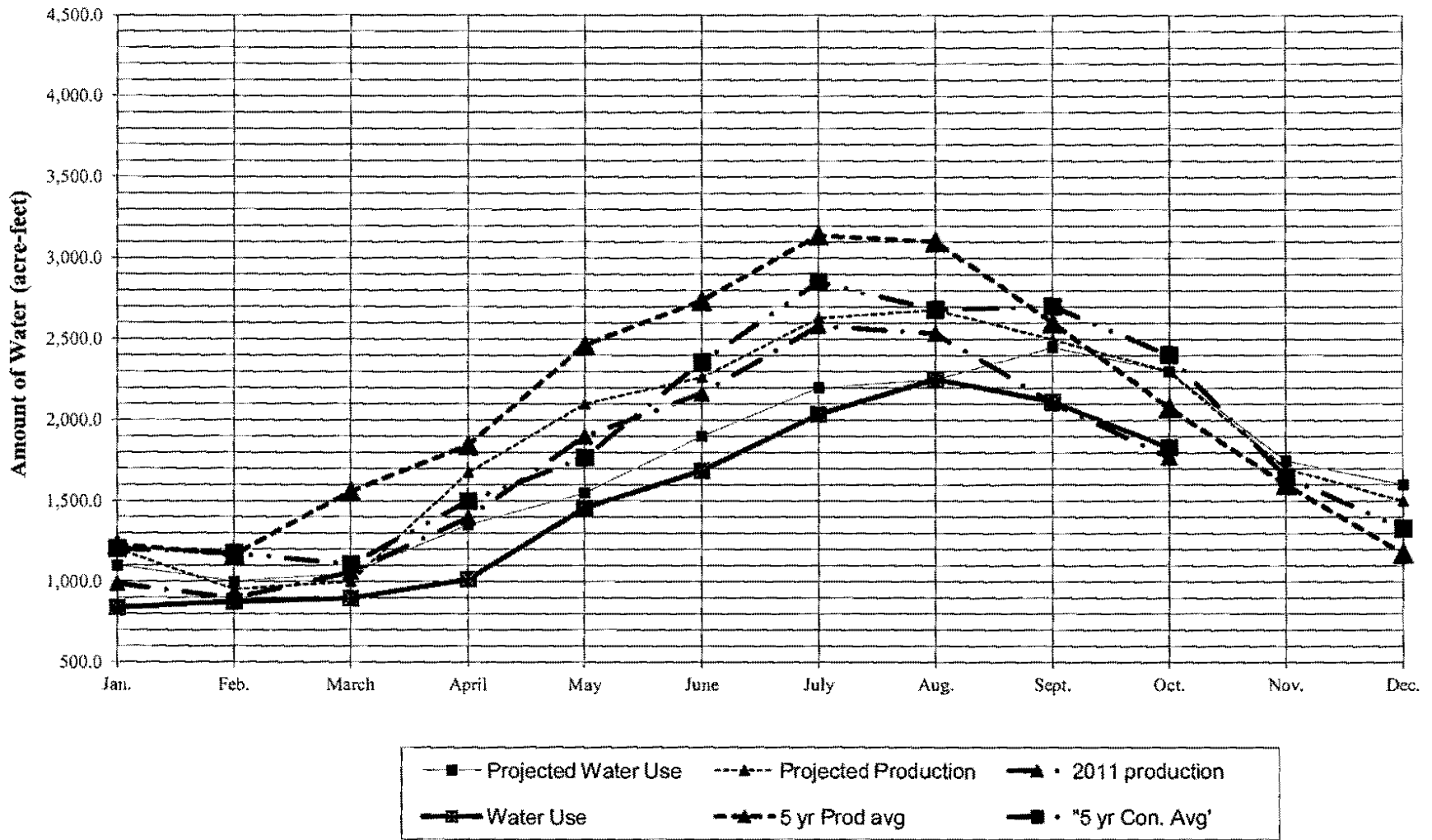
21,500.0

Month	Five-Year Aver. Production (ac.-ft.)	Projected 2011 Production (ac.-ft.)	Actual 2011 Production (ac.-ft.)	Difference (Act. - Pred.) (ac.-ft.)
Jan.	1249.1	1,200.0	987.2	-212.8
Feb.	1228.6	950.0	896.8	-53.2
March	1610.9	1,000.0	1,058.4	58.4
April	1959.0	1,675.0	1,395.9	-279.1
May	2585.3	2,100.0	1,899.5	-200.5
June	2868.6	2,265.0	2163.9	-101.1
July	3318.8	2,630.0	2,581.5	-48.5
Aug.	3257.3	2,680.0	2,536.6	-143.4
Sept.	2697.0	2,500.0	2,107.4	-392.6
Oct.	2191.4	2,300.0	1,772.7	-527.3
Nov.	1727.2	1,700.0	0.0	0.0
Dec.	1269.7	1,500.0	0.0	0.0
	25,962.9	22,500.0	17,399.9	-1,900.1

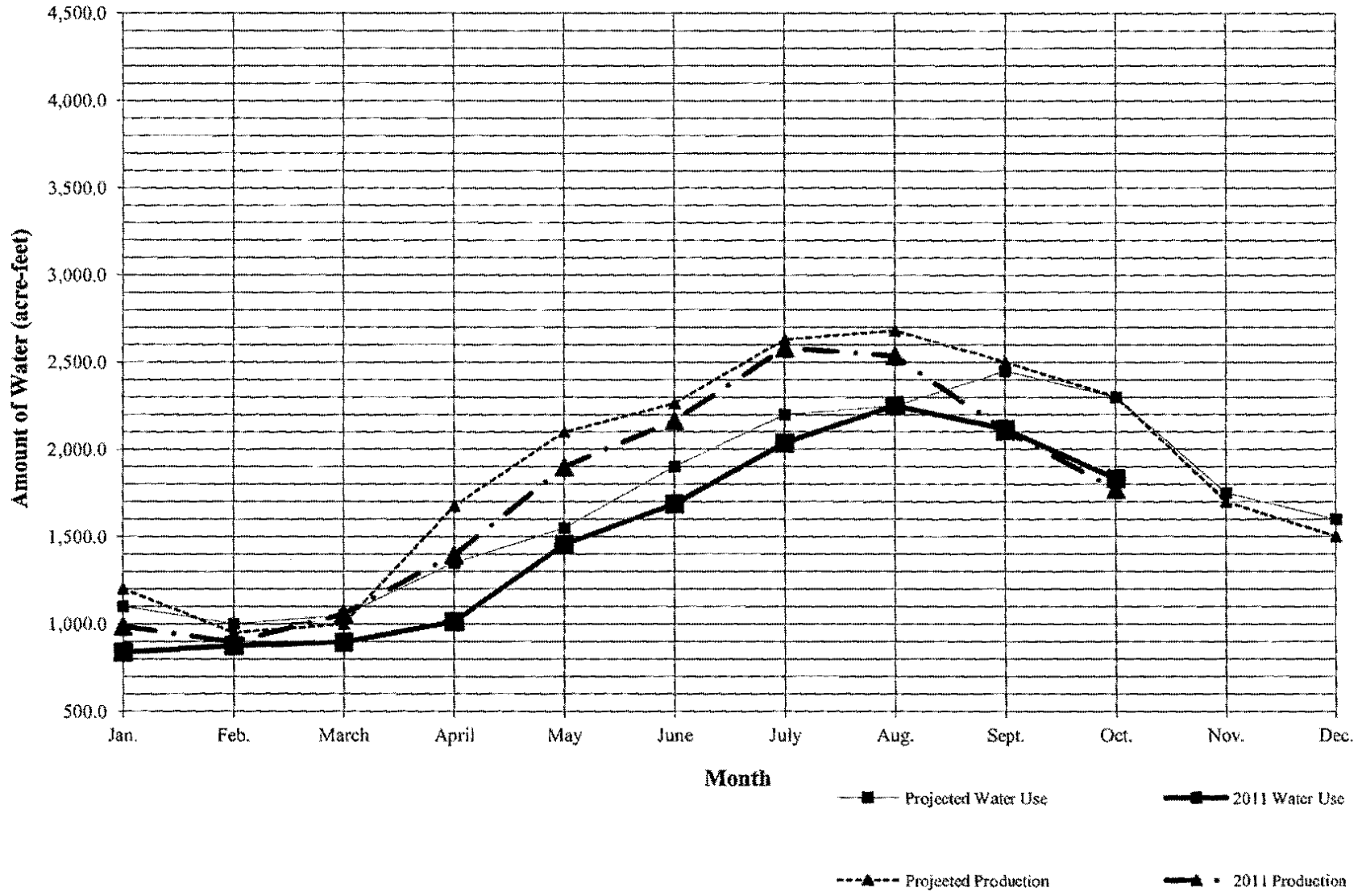
2005 thru 2009

23,500.0

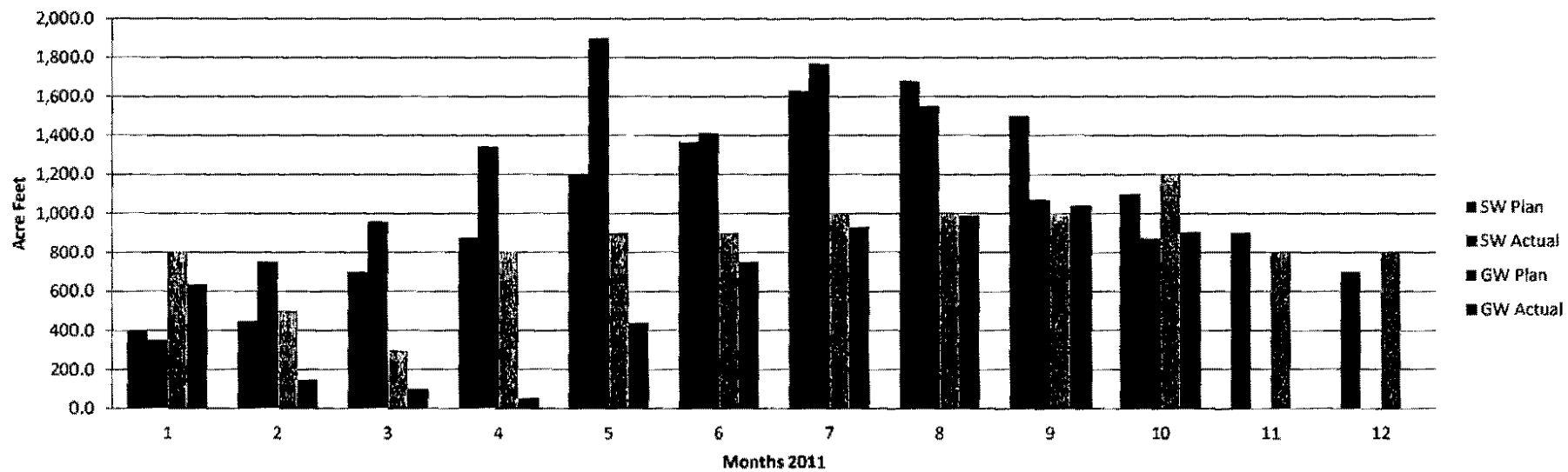
2011 PWD PRODUCTION & CUSTOMER WATER USE



2011 PWD PRODUCTION & CUSTOMER WATER USE



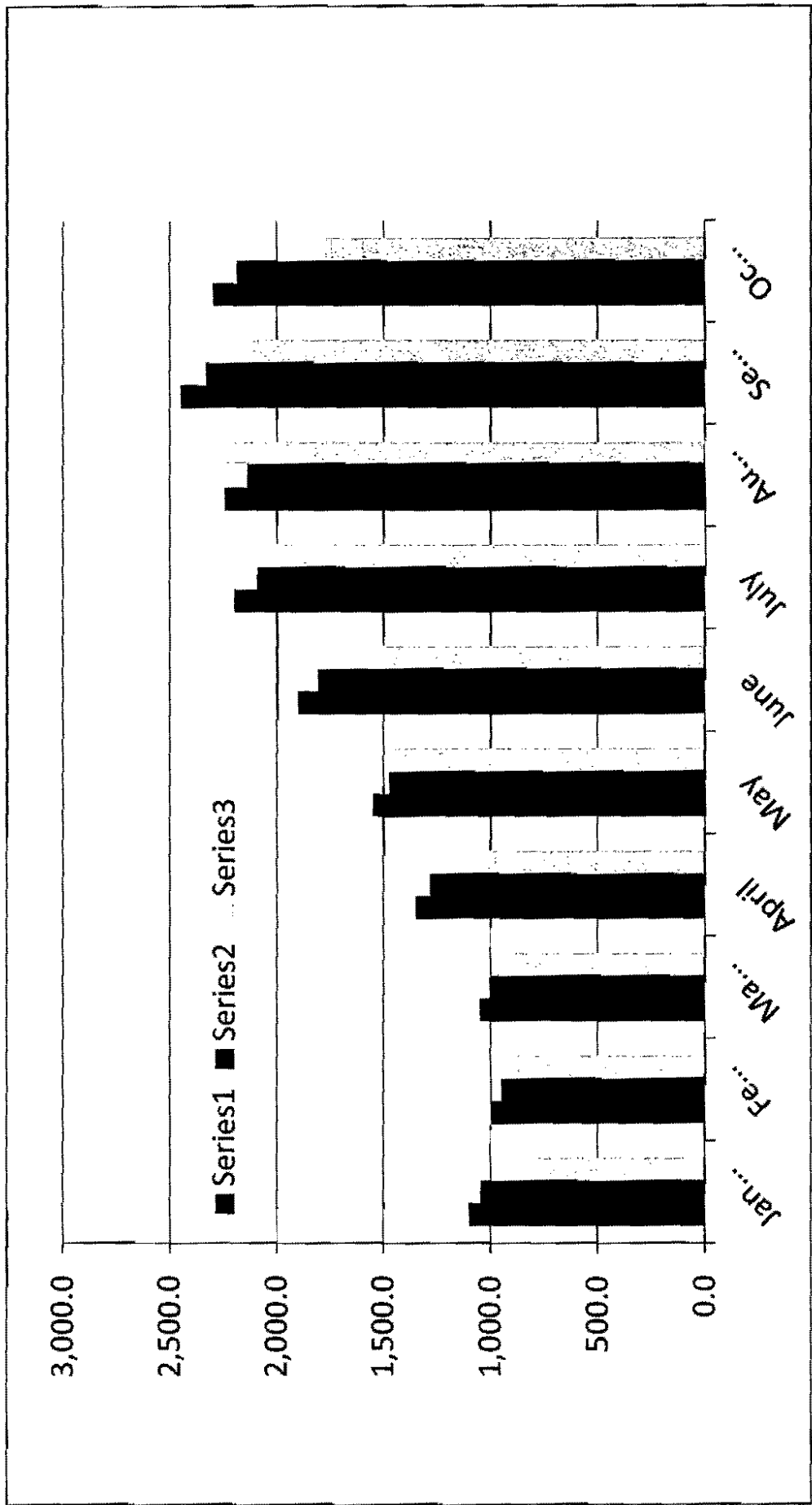
Water Production Plan vs. Actual



2011

MONTHLY TOTALS					
MONTH	TOTAL af	SW af	GW af	SW %	GW%
January	987.8	351.70	636.10	35.60%	64.40%
February	896.8	750.70	146.10	83.71%	16.29%
March	1,058.4	958.40	100.00	90.55%	9.45%
April	1,395.9	1341.98	53.90	96.14%	3.86%
May	2,340.7	1899.54	441.16	81.15%	18.85%
June	2,164.0	1412.0	752.0	65.25%	34.75%
July	2,481.50	1549.60	931.90	62.45%	37.55%
August	2,536.60	1546.00	990.60	60.95%	39.05%
September	2,113.4	1070.5	1042.9	50.65%	49.35%
October	1,772.7	869.9	902.8	49.07%	50.93%
November	0.00	0.00	0.00	0.00%	0.00%
December	0.00	0.00	0.00	0.00%	0.00%

Running Averages	SW	GW
January	37.97%	62.03%
Jan. thru February	59.66%	40.34%
Jan. thru March	69.95%	30.05%
Jan. thru April	76.50%	23.50%
Jan. thru May	77.43%	22.57%
Jan. thru June	75.40%	24.60%
Jan. thru July	73.55%	26.45%
Jan. thru August	67.55%	28.02%
Jan. thru September	63.99%	26.14%
Jan. thru October	67.55%	32.45%
Jan. thru November	0.00%	0.00%
Jan. thru December	0.00%	0.00%



Month	Projected	Budgeted	Actual
January	1,100.0	1046.3	839.83
February	1,000.0	951.2	876.30
March	1,050.0	998.8	896.87
April	1,350.0	1284.1	1,014.60
May	1,550.0	1474.4	1,456.00
June	1,900.0	1807.3	1,688.48
July	2,200.0	2092.7	2,036.21
August	2,250.0	2140.2	2,253.00
September	2,450.0	2330.5	2,116.14
October	2,300.0	2187.8	1,772.70
November	1,750.0	1664.6	
December	1,600.0	1522.0	
	20,500.0	19,500.01	14,950.13

**PALMDALE WATER DISTRICT
BOARD MEMORANDUM**

DATE: November 3, 2011 November 8, 2011
TO: WATER SUPPLY & RELIABILITY COMMITTEE Committee Meeting
FROM: Mr. Tim Moore, Facilities Manager
VIA: Mr. Dennis D. LaMoreaux, General Manager
RE: *AGENDA ITEM NO. 4.3 – PRESENTATION OF THE DISTRICT'S WELL LEVELS*
AGENDA ITEM NO. 4.4 – PRESENTATION OF THE MAINTENANCE AND RELIABILITY STATUS OF THE DISTRICT'S WELLS

The goal for production from the wells is to achieve a 60/40 surface/groundwater split pumping 40% of the water demand from the well field.

PWD is currently operating 24 wells ranging in age from 18 to 50 years old. Most of these wells are constructed of louvered steel casing with a few being stainless steel wire wrap casing. Recent breakdowns have included casing failures to louvered steel casings in the 40-plus age bracket.

The pumping equipment installed in the District's wells is a near 50-50 mixture of vertical turbine and submersible pumps with most of the high production, deep-set pumps being of the vertical turbine design.

Wells are scheduled for preventive rehab efforts on an eight to ten year cycle resulting in two to three rehabs per year.

The most recent failure was of the District's Well #11, an approximately 1,100 GPM well drilled in 1963 to a depth of 870 feet. The pump for this well was rebuilt in March, 2008. A patch was installed in the casing, and the well was placed back into service in May, 2008. The well failed again on September 25, 2008 due to sand and gravel damage to the louvers and the pump. Well #11 is currently being work on and is scheduled for rehabilitation through the 2012 Budget.

Average Annual Well Production:

- 2008 – 31,890,642 gallons
- 2009 – 25,301,612 gallons
- As of August 2010 – 18,239,121 gallons

Maximum Daily Well Production by Year:

- 2008 - 15.6 MGD (August)
- 2009 - 13.7 MGD (July)
- 2010 - 12.1 MGD (January)

Supporting Documents:

- Well Level Reports
- Well Rehab Schedule

0329	WELL NO. 3A	12/30/1960	2163 EAST AVANUE P-8	40' patch installed 1993 at 540' Last brush & bail 2004, 10' patch installed 2004 at 712'
	Vertical Turbine Pump	2014		
	US Motor Model G61777, 500HP, 300EHT			
	Peerless Discharge Head S/N 161289			
	American Turbine 15M180 10 Stage Installed 04			New 04
	Natural Gas Genset			
0332	WELL NO. 6A	12/30/1982	39455 10TH STREET EAST	Rehab 06, pump repair 2010
	Submersible Pump 10	2016		Pump set 760 ft, Installed 06
0333	WELL NO. 10	Unknown	3701 EAST AVENUE P-8	Rehab 05, 12" liner installed 1987, perfed 500'
	Submersible Pump	2019		Installed 2009
0334	WELL NO. 11A	O/S	39501 15TH STREET EAST	Out of service-failed casing.
	Vertical Turbine Pump	NOW		
	Randolph 600HP Right Angle Drive			
	Goulds 12CHC 9 Stage Pump			
	Natural Gas Prime Mover			
0336	WELL NO. 14A	3/31/1965	39401 20TH STREET EAST	Unknown last re-hab, Sanding
	Vertical Turbine Pump	2014		
	Newman 250HP			Last rebuild 04
	Discharge Head			
	American Turbine 12-M-100 11 Stage Pump			Installed 04, 700'

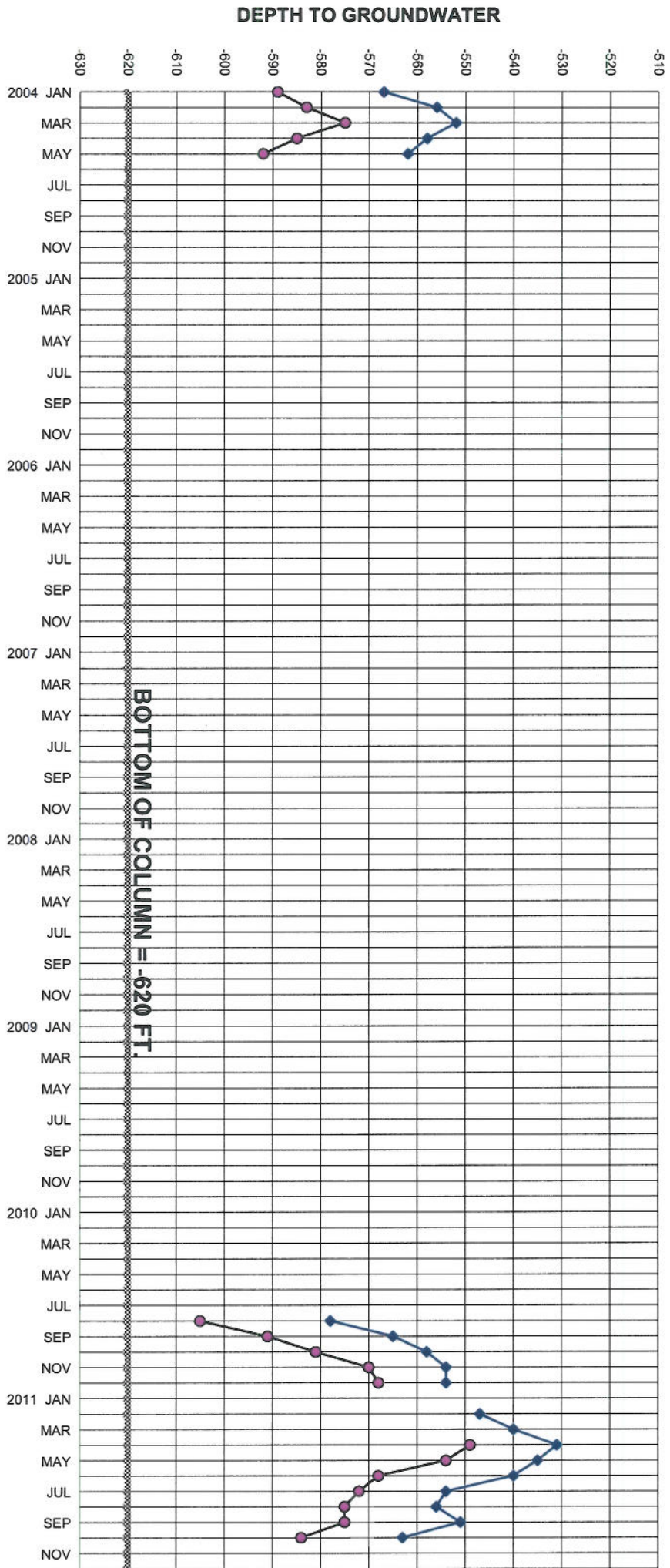
0337	WELL NO. 15	1/27/1960	1003 EAST AVENUE P	Brush/bail 05
	Vertical Turbine Pump	2015		
	Amarillo 600HP Right Angle Drive			
	American Turbine 12M80 12 Stage			Installed 05
	Natural Gas Prime Mover			
0338	WELL NO. 16	2020	4125 EAST AVENUE S-4	Pump installed 7/10
	Submersible Pump			
	Hitachi Sub Motor			
	American Turbine RL 14, 8 Stage Pump			
0339	WELL NO. 17	OIS	718 DENISE AVENUE	Out of service-water quality
	Vertical Turbine Pump & Motor			
	US Motor 20HP			
	Discharge Head			
	Peerless 8LA, 8 Stage Pump			
0343	WELL NO. 2A	3/30/1968	39400 20TH STREET EAST	Last re-hab 10-Brush & Bail
	VERTICAL TURBINE	2020		
	US MOTORS 400 HP			Rebuilt 10
	Discharge Head			
				New 10
	Natural Gas Prime Mover			Installed 01

0344	WELL NO.	188:19		4640 BARREL SPRINGS ROAD	
		18 Submersible Pump			Installed 2010
		Franklin 5HP Sub Mod	2020		
		Peerless 4-4LO-5-2-3 Pump			
		19 Vertical Turbine Pump & Motor			
		Westinghouse 5HP Motor			
		Discharge Head			
		Peerless 6LB 9 Stage Pump			
0346	WELL NO.	4A	7/7/1970	2475 EAST AVENUE P-8	Rehab 01
		Vertical Turbine Pump	2011		
		US Motor Model AA68A, 200 HP, 100EHT			New in 01
		Johnston SN GE1291 Discharge Head			New in 01
		Ingersoll Dresser 14KKL 11 Stage Pump			
0347	WELL NO.	22		5401 EAST AVENUE S	Rehab 05
		Submersible Pump	2015		
		Hitachi 75HP Sub Motor			
		Simmons SP9M, 7 Stage Pump			
0348	WELL NO.	7A	2019	39395 25TH STREET EAST	Rehab, new motor 2009
		Vertical Turbine Pump & Motor			
		US Motor 500 HP			
		Discharge Head			
		Ingersoll Rand 14KKH 10 Stage Pump			

0349	WELL NO.	35	6/17/1992	36549 60TH STREET EAST	Wire wrap SS
	Submersible Pump		2016		
	Hitachi 75HP Sub Motor				
	American Turbine 8L30, 5 Stage Pump				
0351	WELL NO.	20	Unknown	5680 PEARBLOSSOM HIGHWAY	Out of Service-Casing Failure
	Vertical Turbine Pump		2011		472'
	US Motor 60HP				2002
	Discharge Head				
	Ingersoll Rand 10L30 8 Stage Pump				Unknown
0352	WELL NO.	21	Unknown	36525 52ND STREET EAST	332' 14" with 10" milslot liner installed '79
	Submersible Pump		2013		Brush/Bail '05
	40 HP Franklin				New in 05
	Christensen 7WALC 5 stage				New in 05 273'
0356	WELL NO.	23A	11/19/1991	2202 EAST AVENUE P-8	Patch installed 01, Rehab-acidize, swab, brush, bail, redevelop, test pump '06
	Vertical Turbine Pump		2016		Rebuilt 06
	250 HP 300EHT US Motor				
	Discharge Head				
	Christensen 12 CLC 15 stage				New 06
0365	WELL NO.	8A	10/21/1987	2200 EAST AVENUE P	660', Acid, swab, brush, bail, redevelop, test pump 08
	Vertical Turbine Pump		2018		New 300 EHT 600HP US Motor 08
	US Motor M4160 volt				New fab discharge head 08, new column, tube & shaft, 14RJHC 9 stage rebuilt 08
	Discharge Head				
	Peerless 14MC 10 Stage Pump				

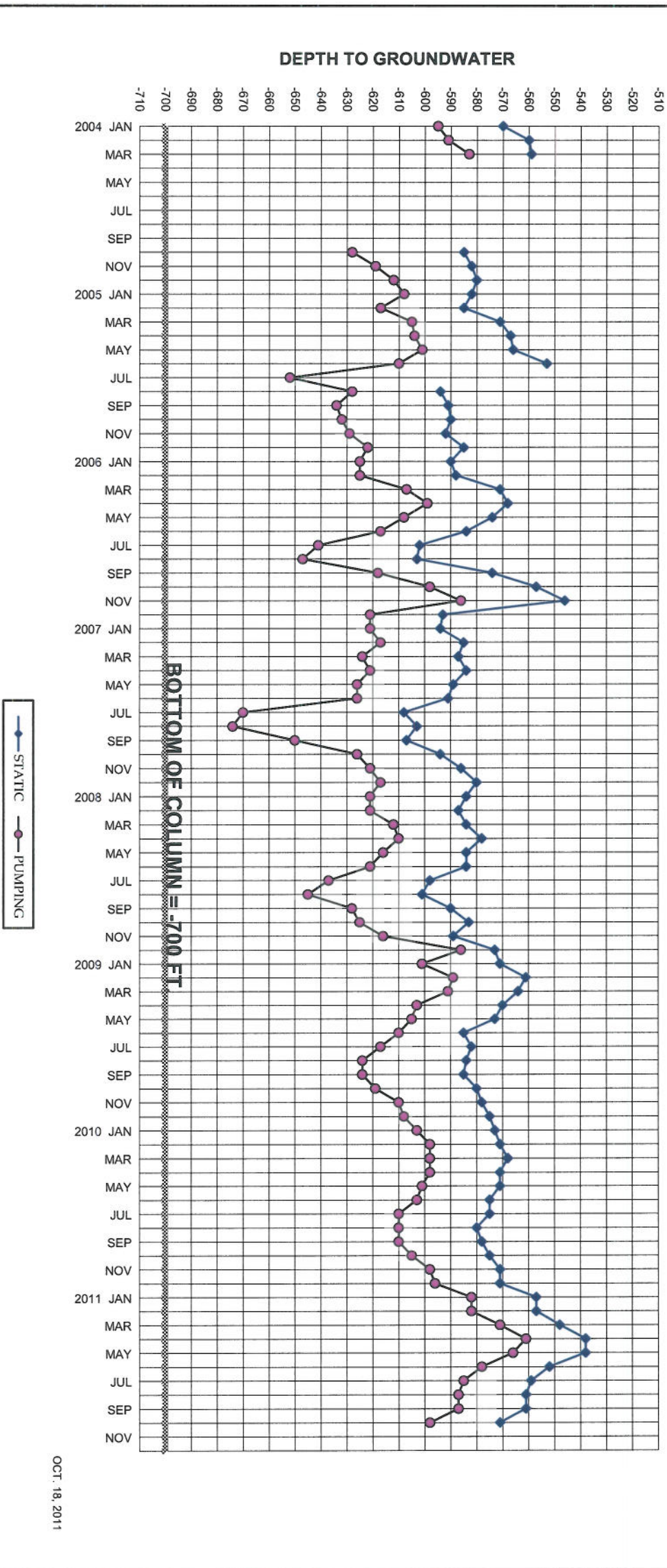
0369	WELL NO. 25	1/30/1989		578' 14.25"
	Submersible Pump	2014		379'
	Hitachi 100HP Sub Motor			New 04
	Goulds 11RAHC			New 04
0370	WELL NO. 26	3/17/1989		468' 16"
	Submersible Pump	2015		400'
	Centri-pro 50HP Sub Motor			New 05
	Christensen 7WALC 6 stage			New 05
0373	WELL NO. 29	8/31/1989		394' 16" Rehab 05
	Submersible Pump	2016		340'
	Hitachi 40 HP			New in 06
	Peerless 9LA 12 stage			New in 06
0374	WELL NO. 30	Unknown		Brush/bail 04
	Submersible Pump	2014		360'
	Franklin 150HP Sub Motor			New in 04
	Goulds 7CHC, 5 Stage Pump			Rebuild in 04
0376	WELL NO. 32	11/27/1989	37301 35TH STREET EAST	570' Brush/bail 04
	Submersible Pump	2014		462'
	60 HP			New 04
	Simmons SS8H 5 stage			Rebuild 04
0379	WELL NO. 33	5/1/1991		465' 16" SS Wire Wrap
	Submersible Pump	2018		New 08
	Franklin 75 HP Sub Motor			Rebuild 08
	American Turbine 8L30, 5 Stage Pump			

**WELL No. 2A (SURFACE ELEVATION = 2575')
 STATIC & PUMPING LEVELS
 FOR OCT 2011**



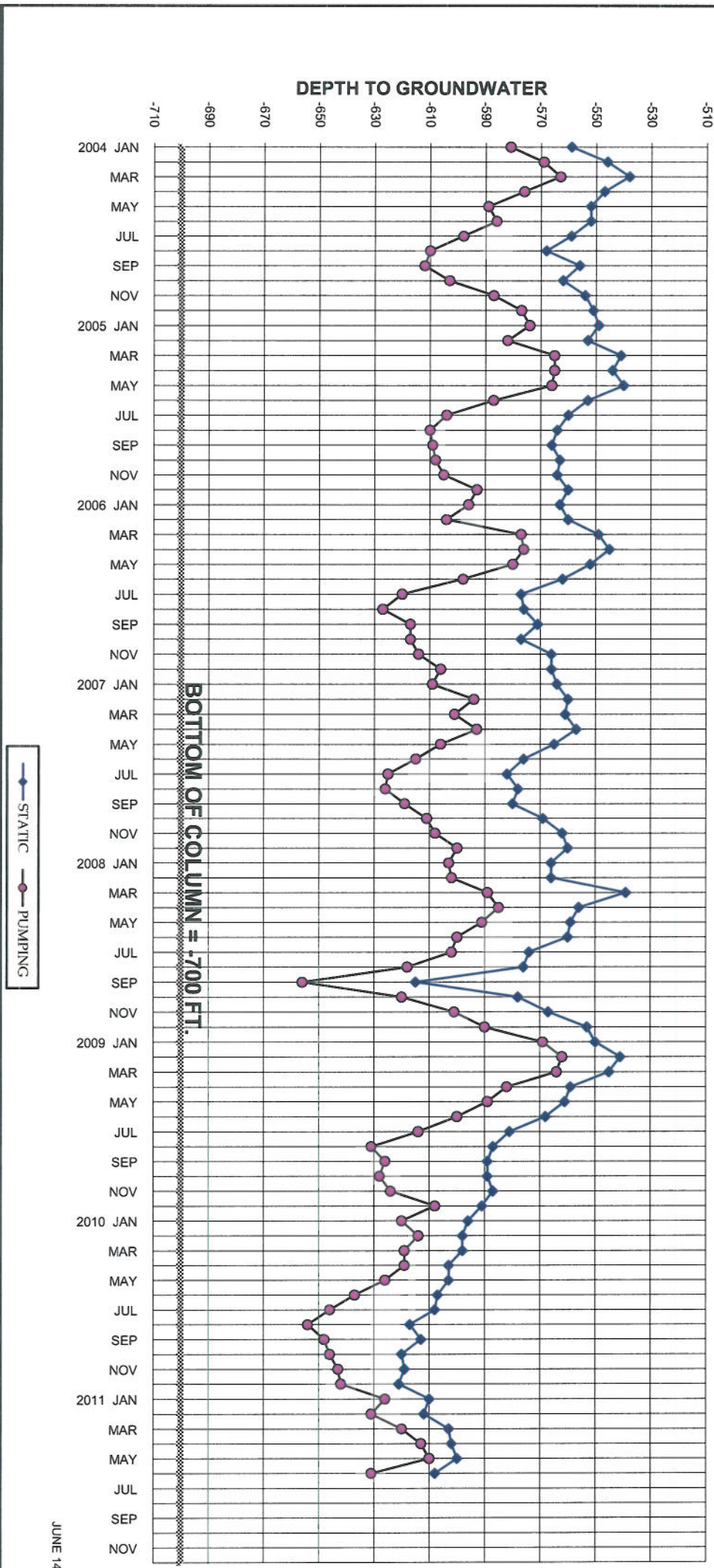
OCT. 18, 2011

**WELL No. 3A (SURFACE ELEVATION = 2586')
 STATIC & PUMPING LEVELS
 FOR OCT 2011**

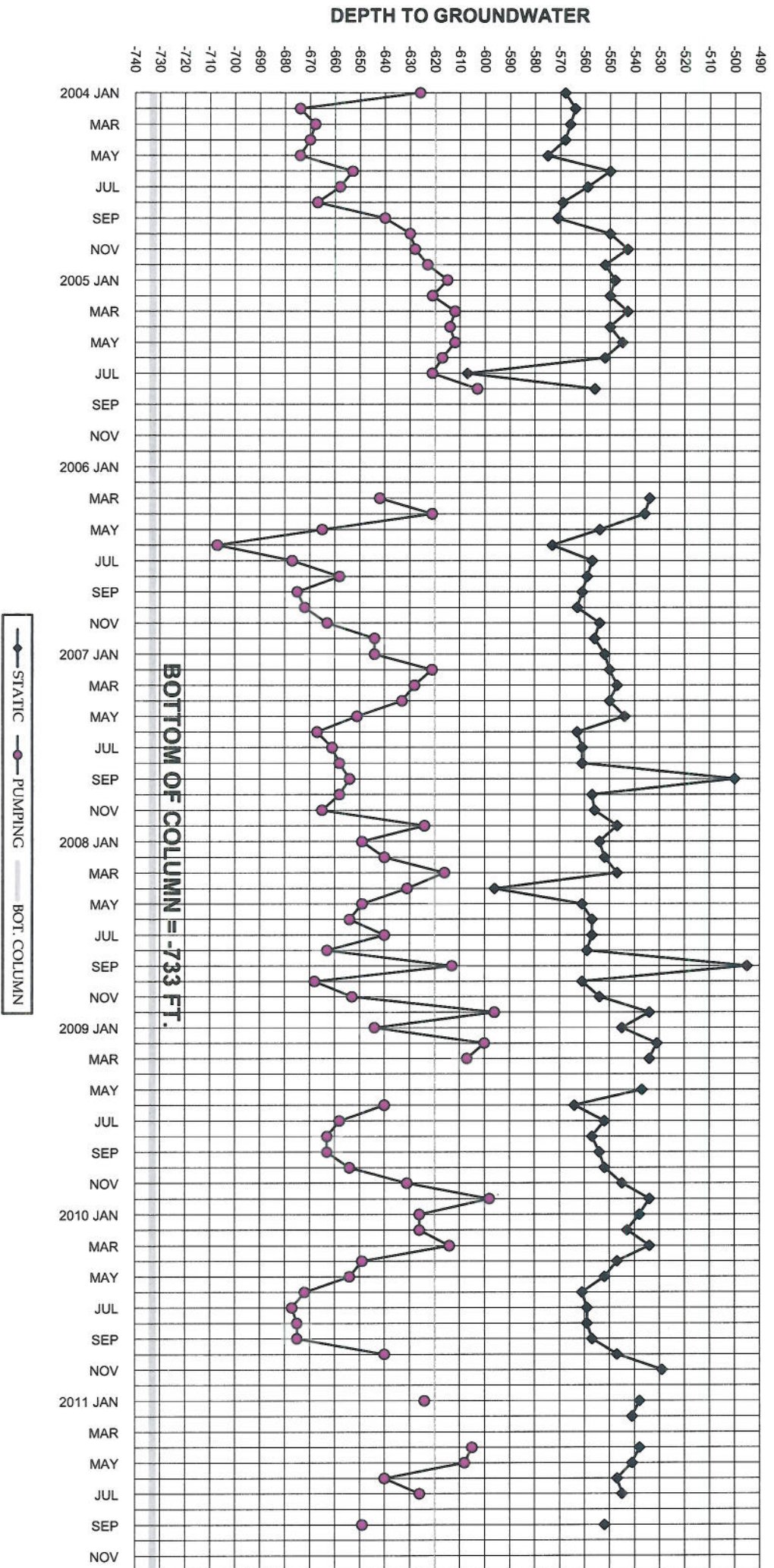


OCT. 18, 2011

**WELL No. 4A (SURFACE ELEVATION = 2571')
 STATIC & PUMPING LEVELS
 FOR JUNE 2011**

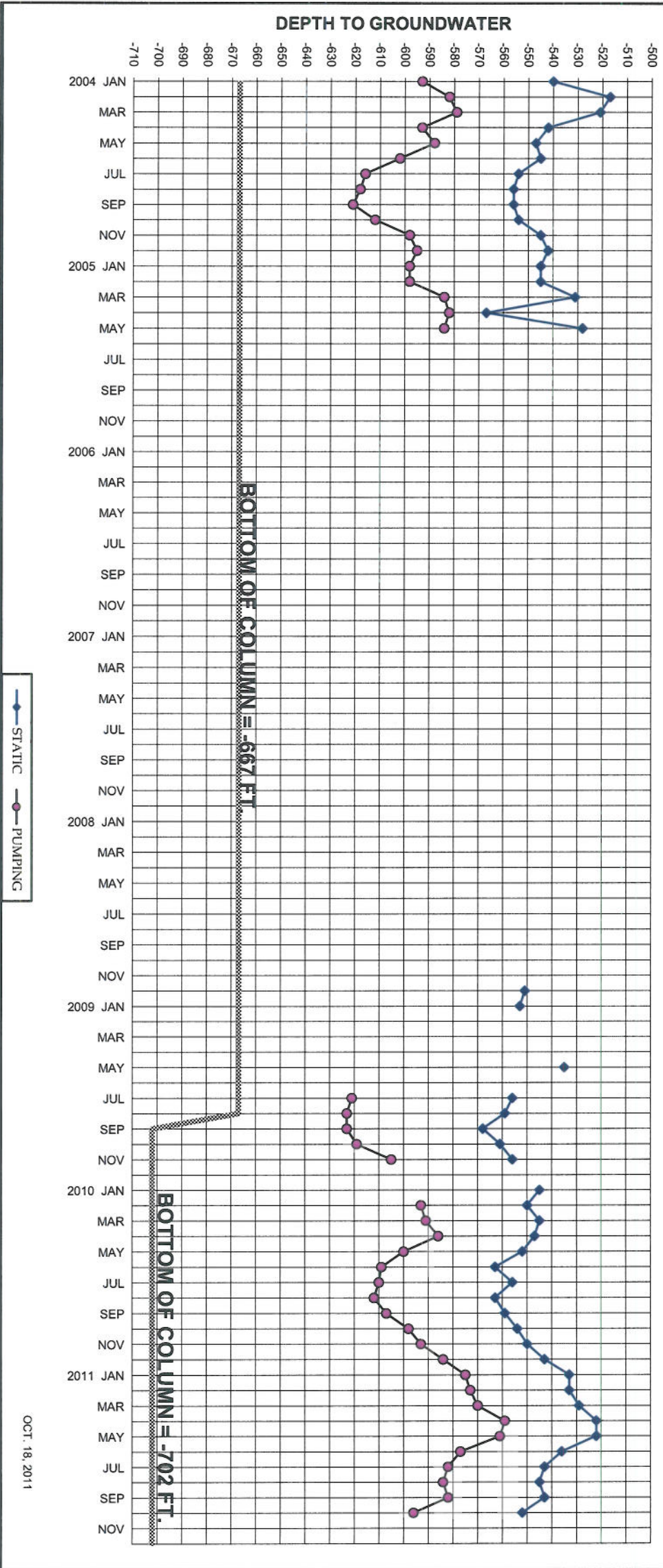


**WELL No. 6A (SURFACE ELEVATION = 2598')
 STATIC & PUMPING LEVELS
 FOR SEPT 2011**

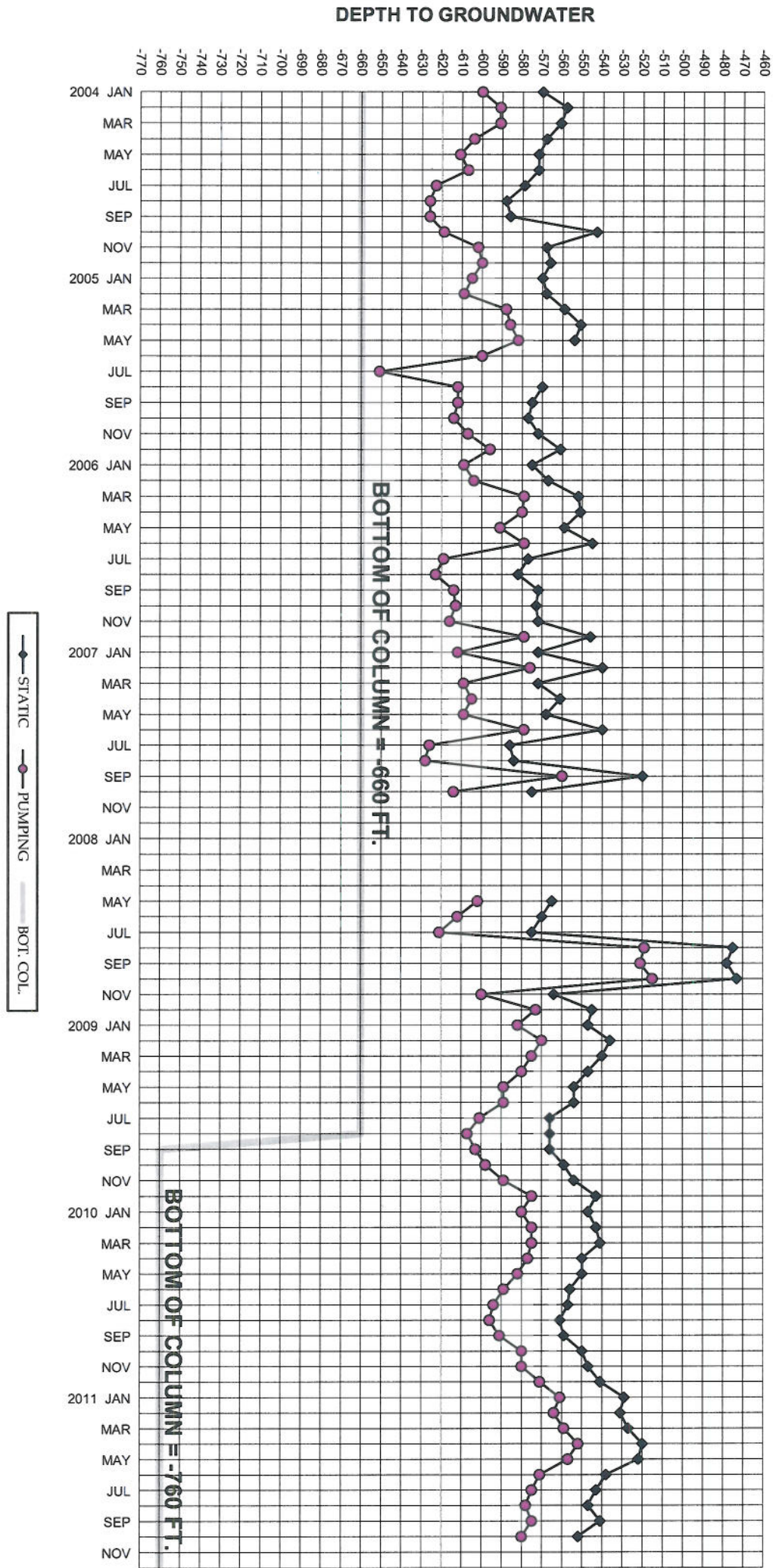


SEPT. 15, 2011

**WELL No. 7A (SURFACE ELEVATION = 2563')
 STATIC & PUMPING LEVELS
 FOR OCT 2011**

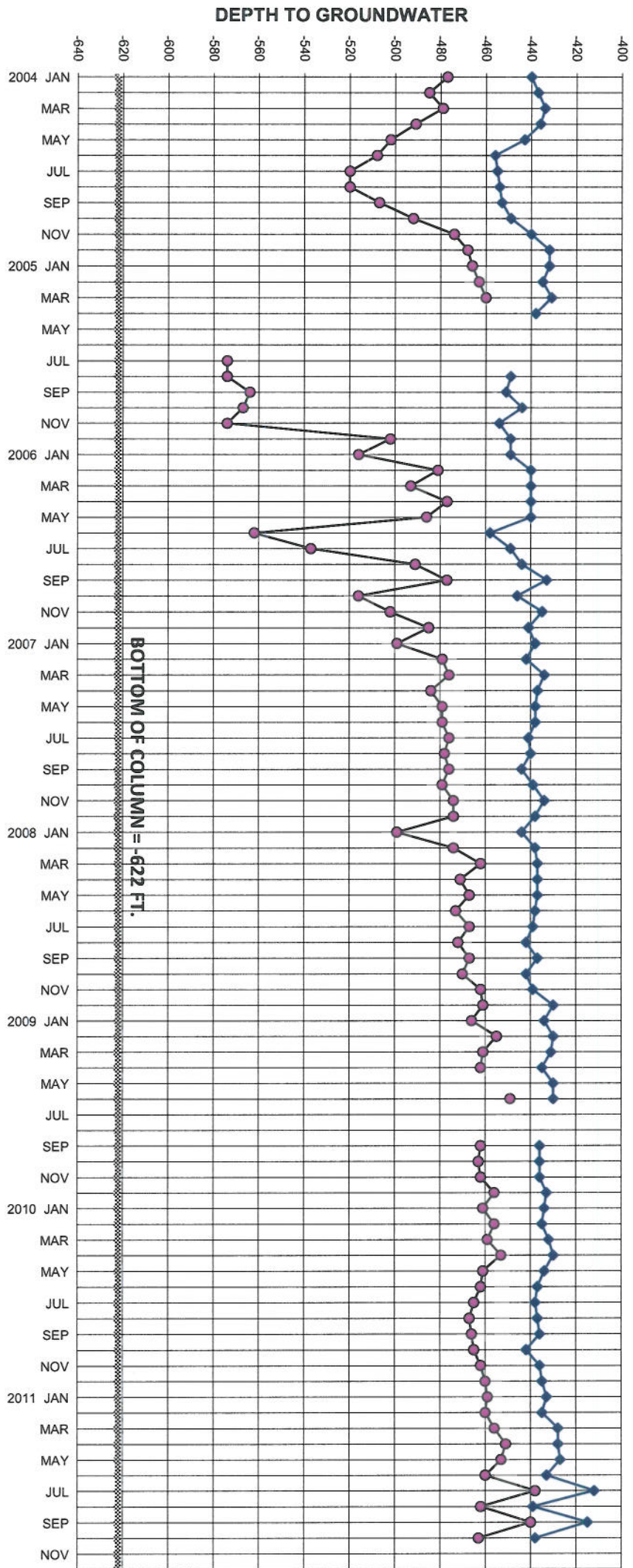


**WELL No. 8A (SURFACE ELEVATION = 2562')
 STATIC & PUMPING LEVELS
 FOR OCT 2011**



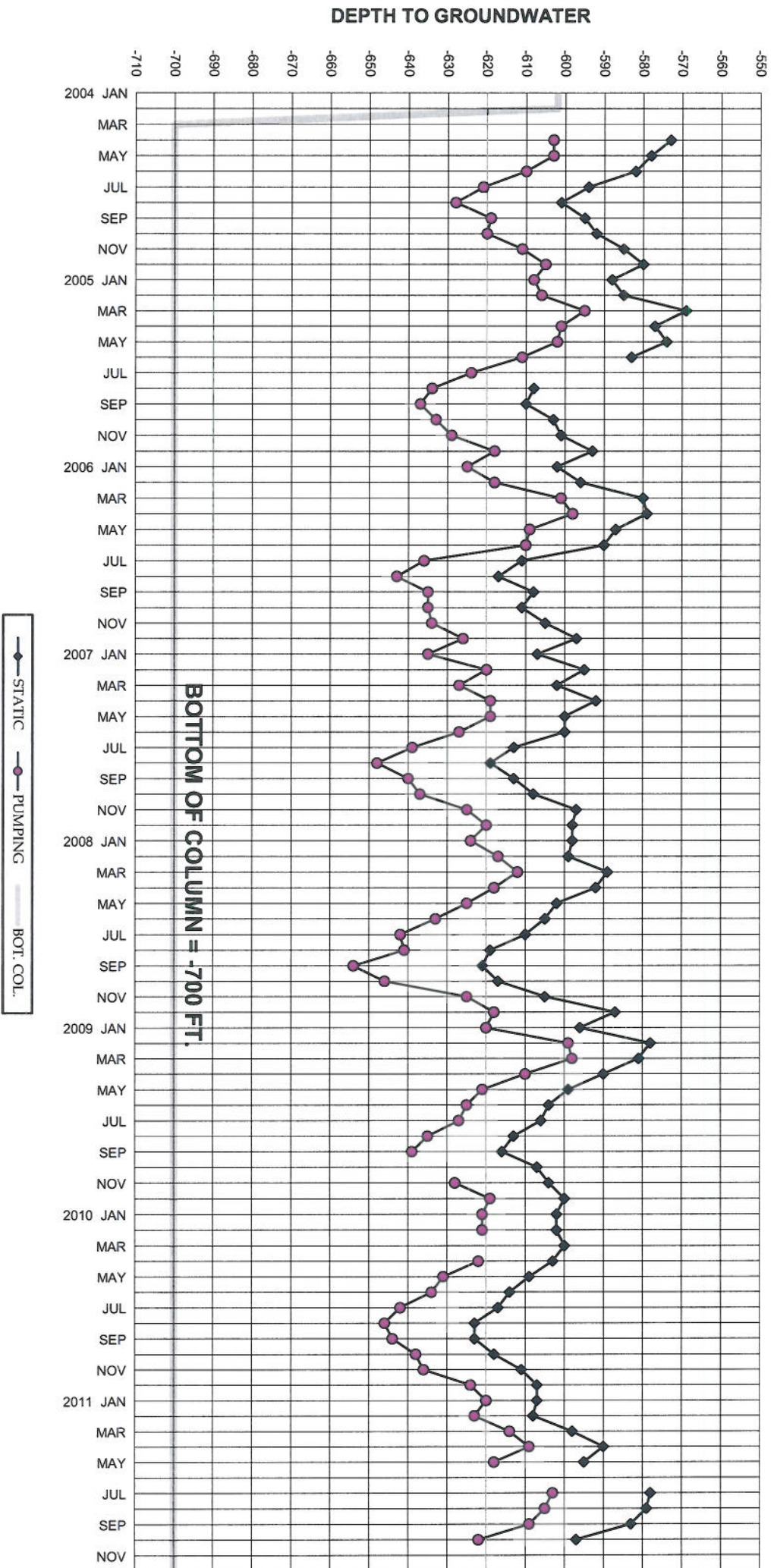
OCT. 18, 2011

**WELL No. 10 (SURFACE ELEVATION = 2568')
 STATIC & PUMPING LEVELS
 FOR OCT 2011**

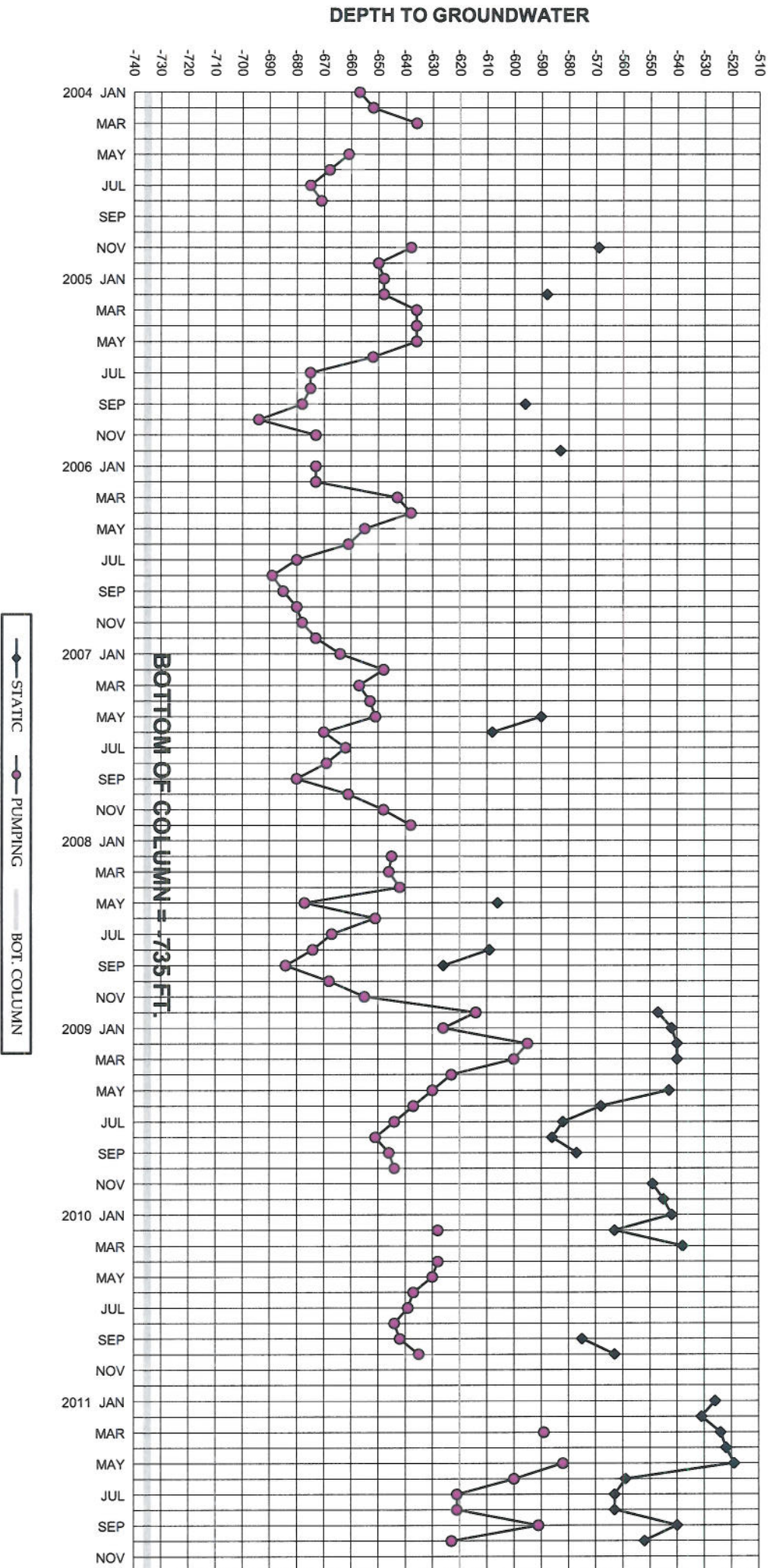


OCT. 18, 2011

**WELL No. 14A (SURFACE ELEVATION = 2580')
 STATIC & PUMPING LEVELS
 FOR OCT 2011**

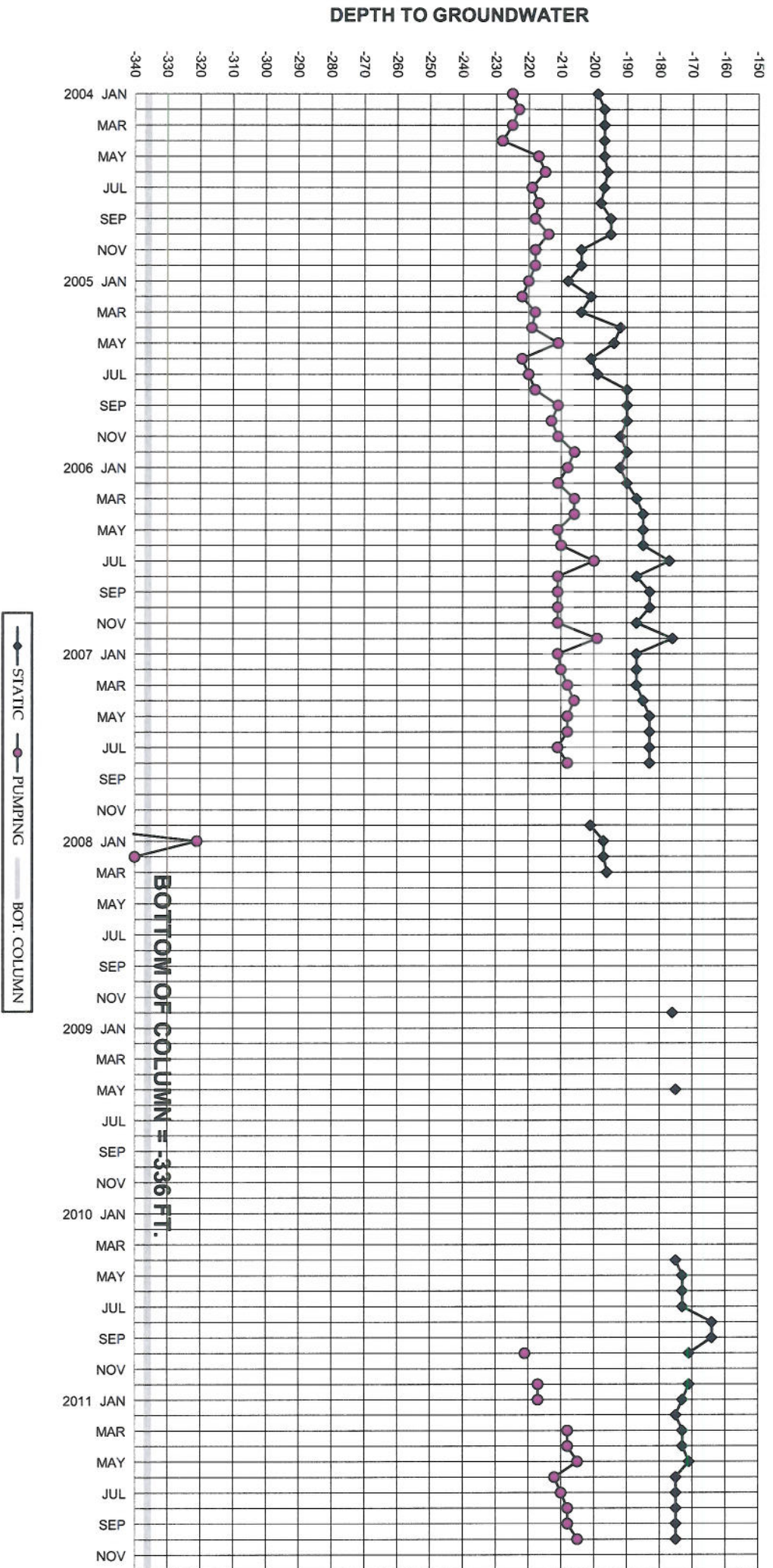


**WELL No. 15 (SURFACE ELEVATION = 2592')
 STATIC & PUMPING LEVELS
 FOR OCT 2011**



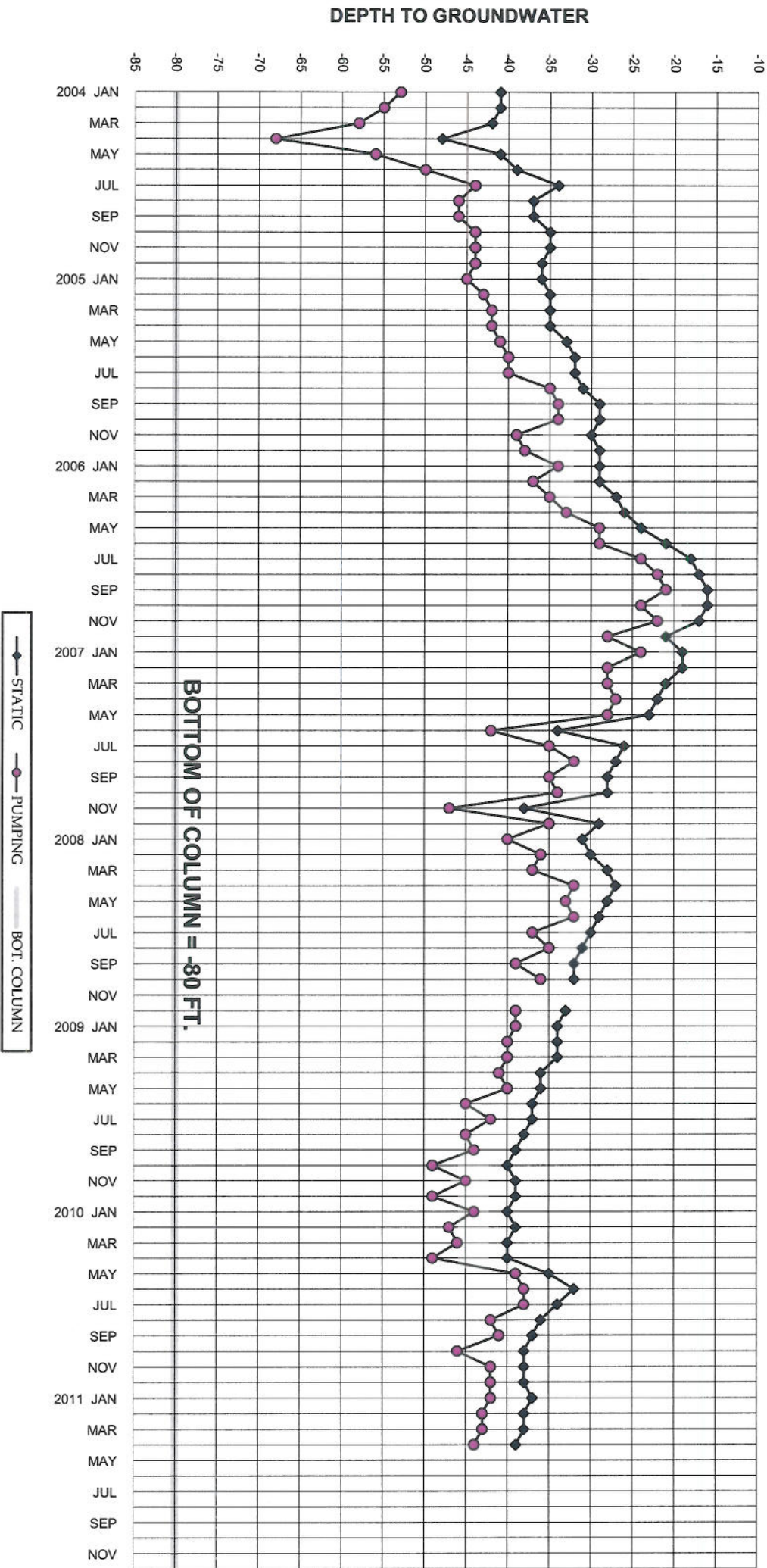
OCT. 18, 2011

**WELL No. 16 (SURFACE ELEVATION = 2690')
 STATIC & PUMPING LEVELS
 FOR OCT 2011**

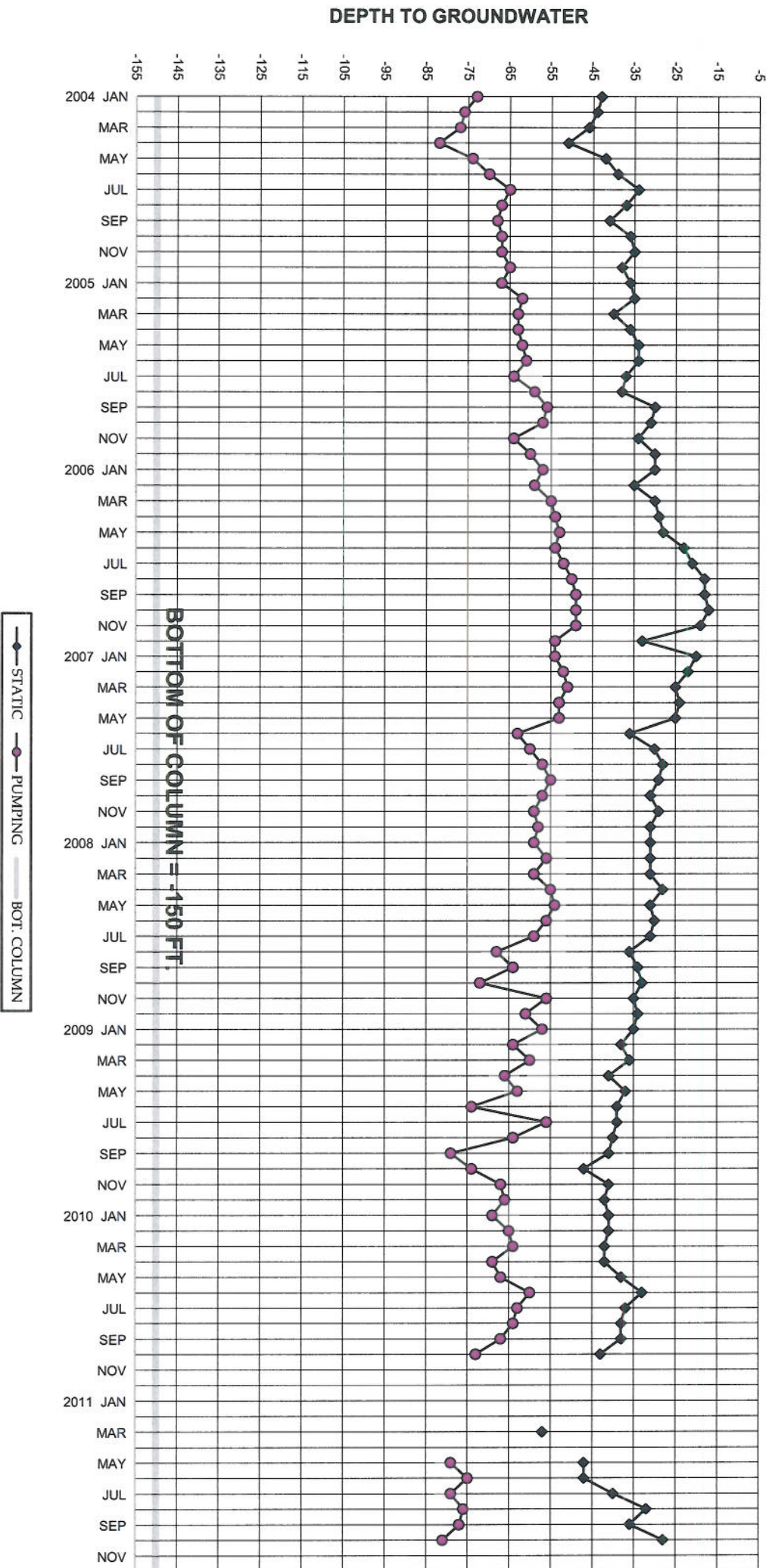


OCT. 18, 2011

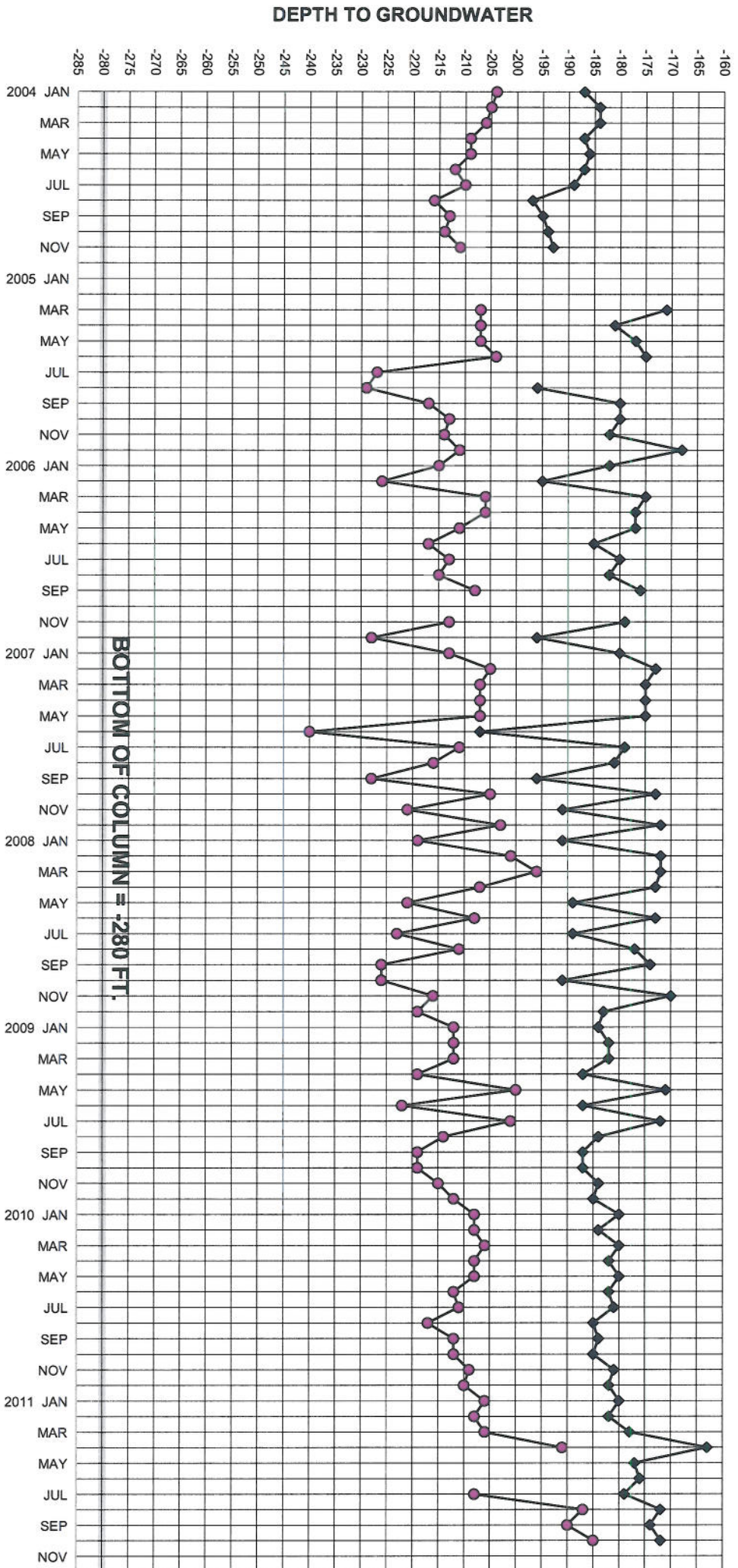
**WELL No. 18 (SURFACE ELEVATION = 3060')
 STATIC & PUMPING LEVELS
 FOR APR. 2011**



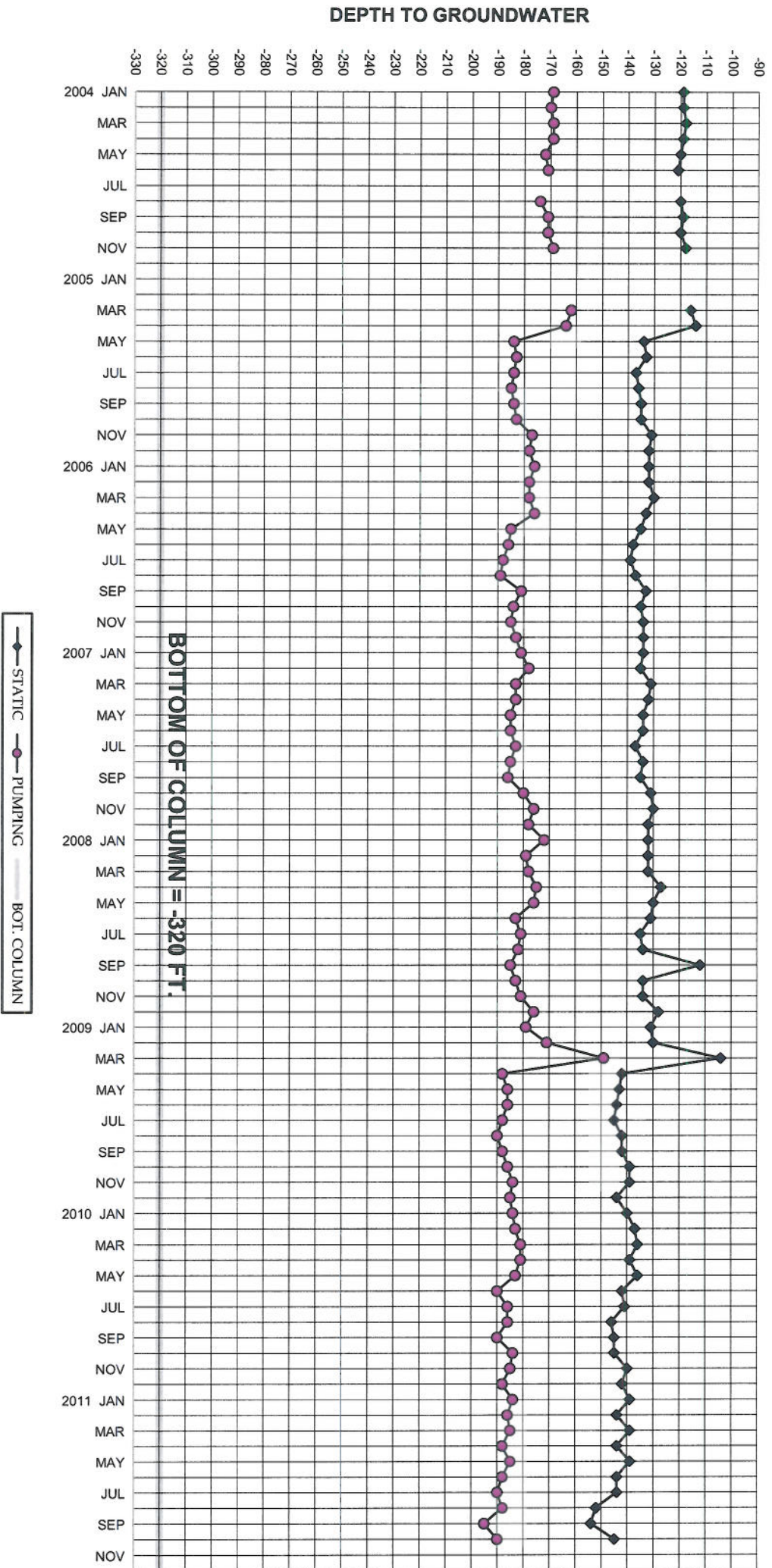
**WELL No. 19 (SURFACE ELEVATION = 3060')
 STATIC & PUMPING LEVELS
 FOR OCT 2011**



**WELL No. 21 (SURFACE ELEVATION = 2738')
 STATIC & PUMPING LEVELS
 FOR OCT 2011**

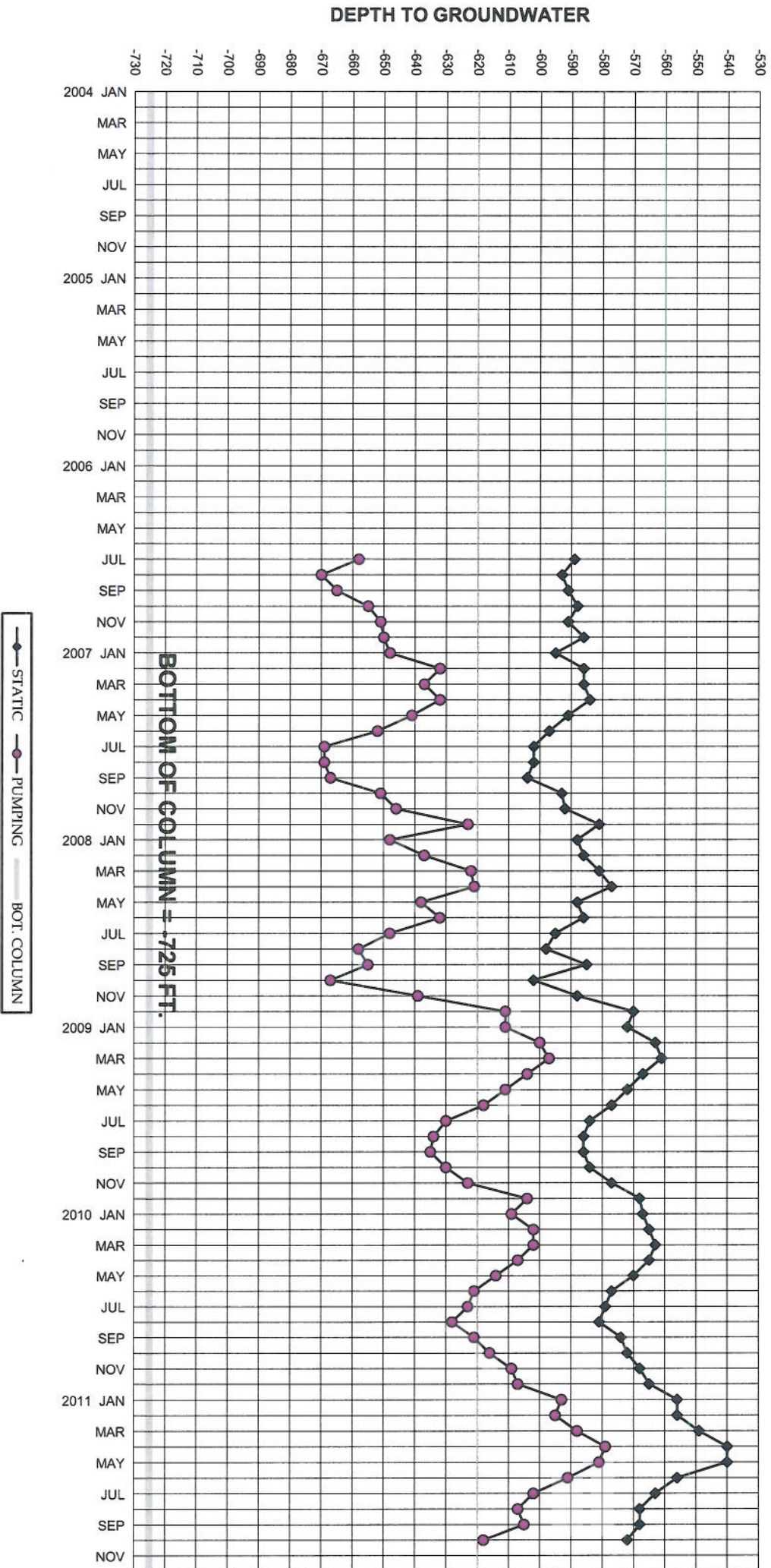


**WELL No. 22 (SURFACE ELEVATION = 2700')
 STATIC & PUMPING LEVELS
 FOR OCT 2011**



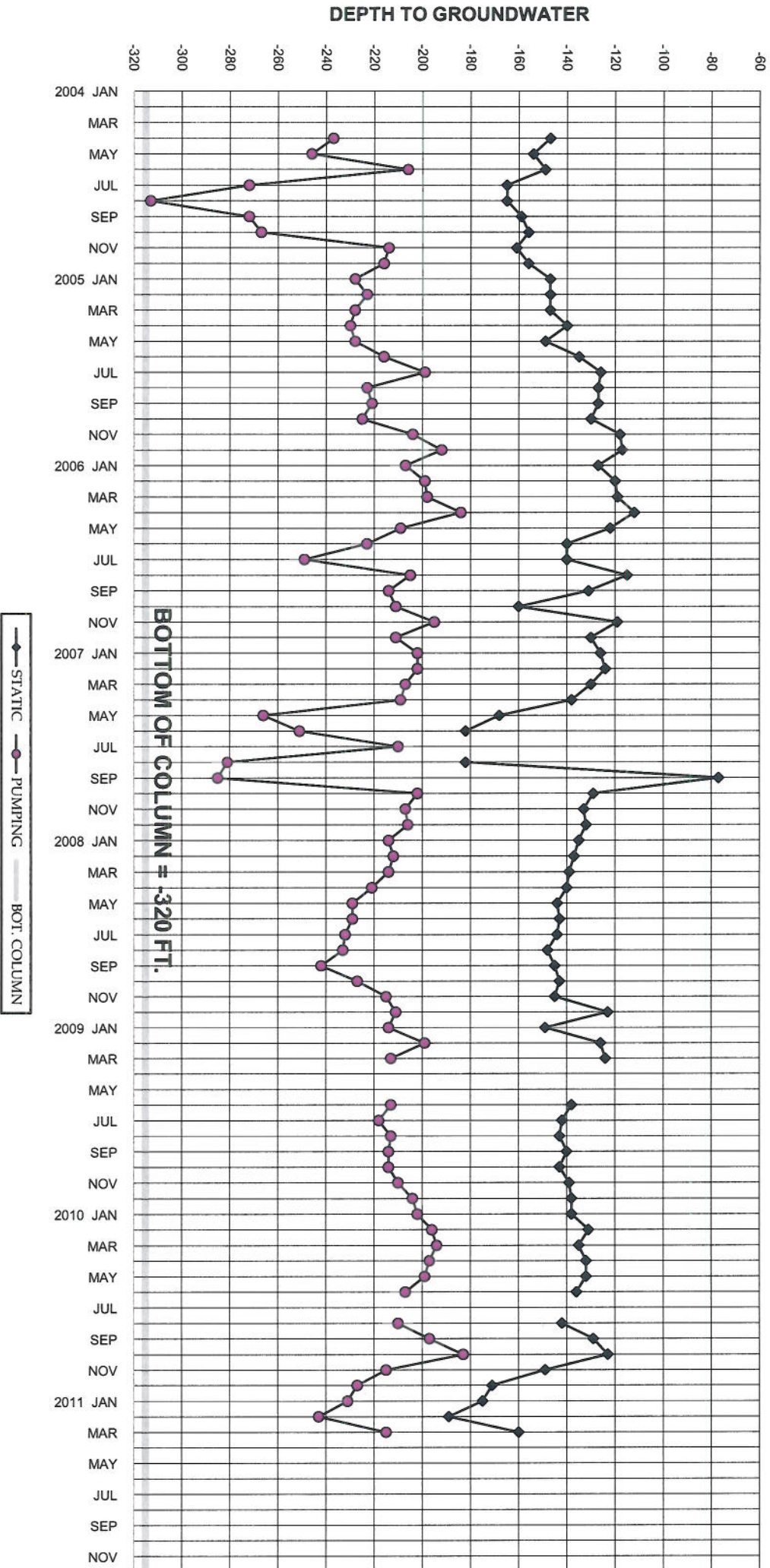
OCT. 18, 2011

**WELL No. 23A (SURFACE ELEVATION = 2580')
 STATIC & PUMPING LEVELS
 FOR OCT 2011**



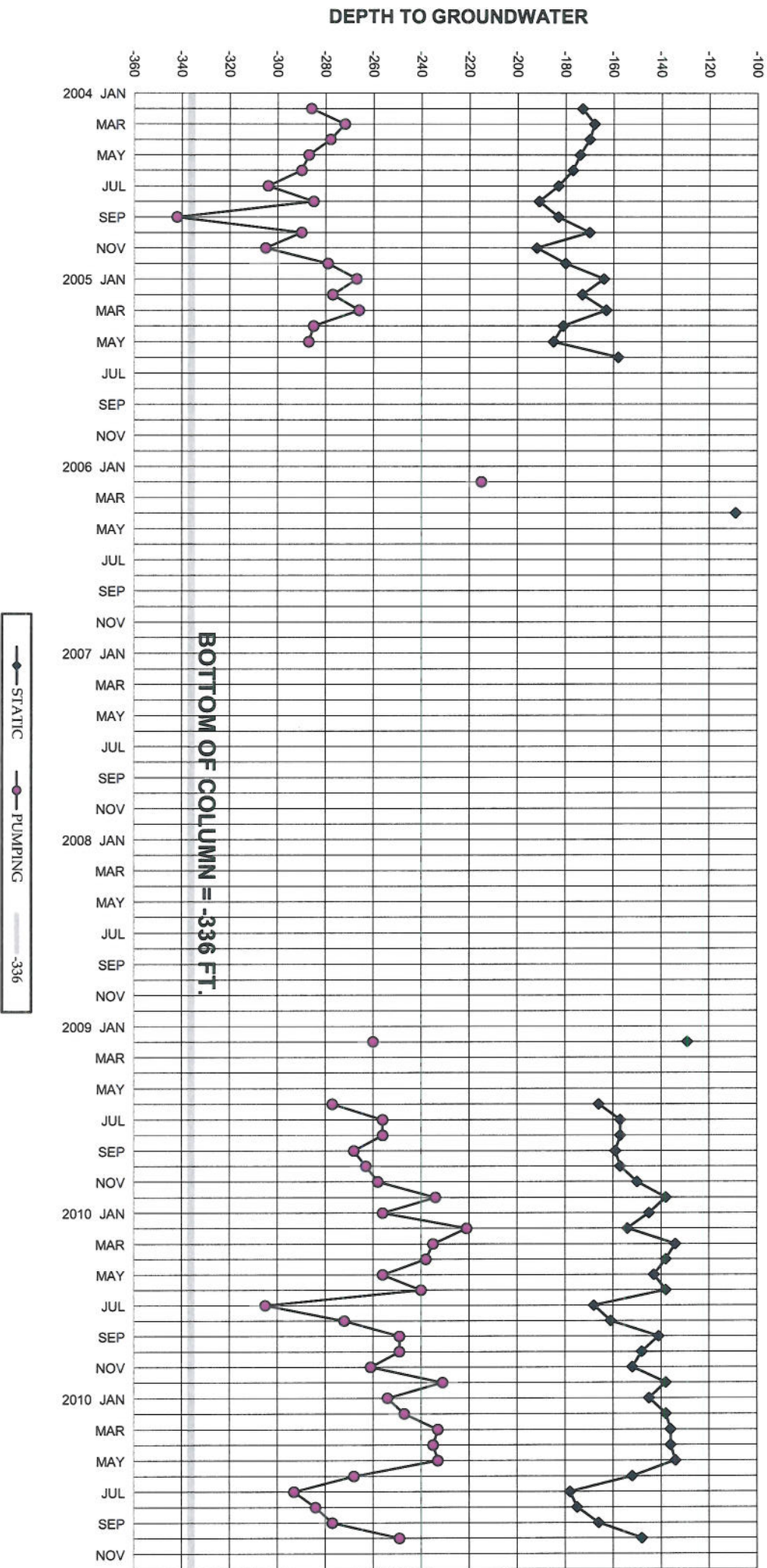
OCT. 18, 2011

**WELL No. 25 (SURFACE ELEVATION = 2709')
 STATIC & PUMPING LEVELS
 FOR MAR. 2011**



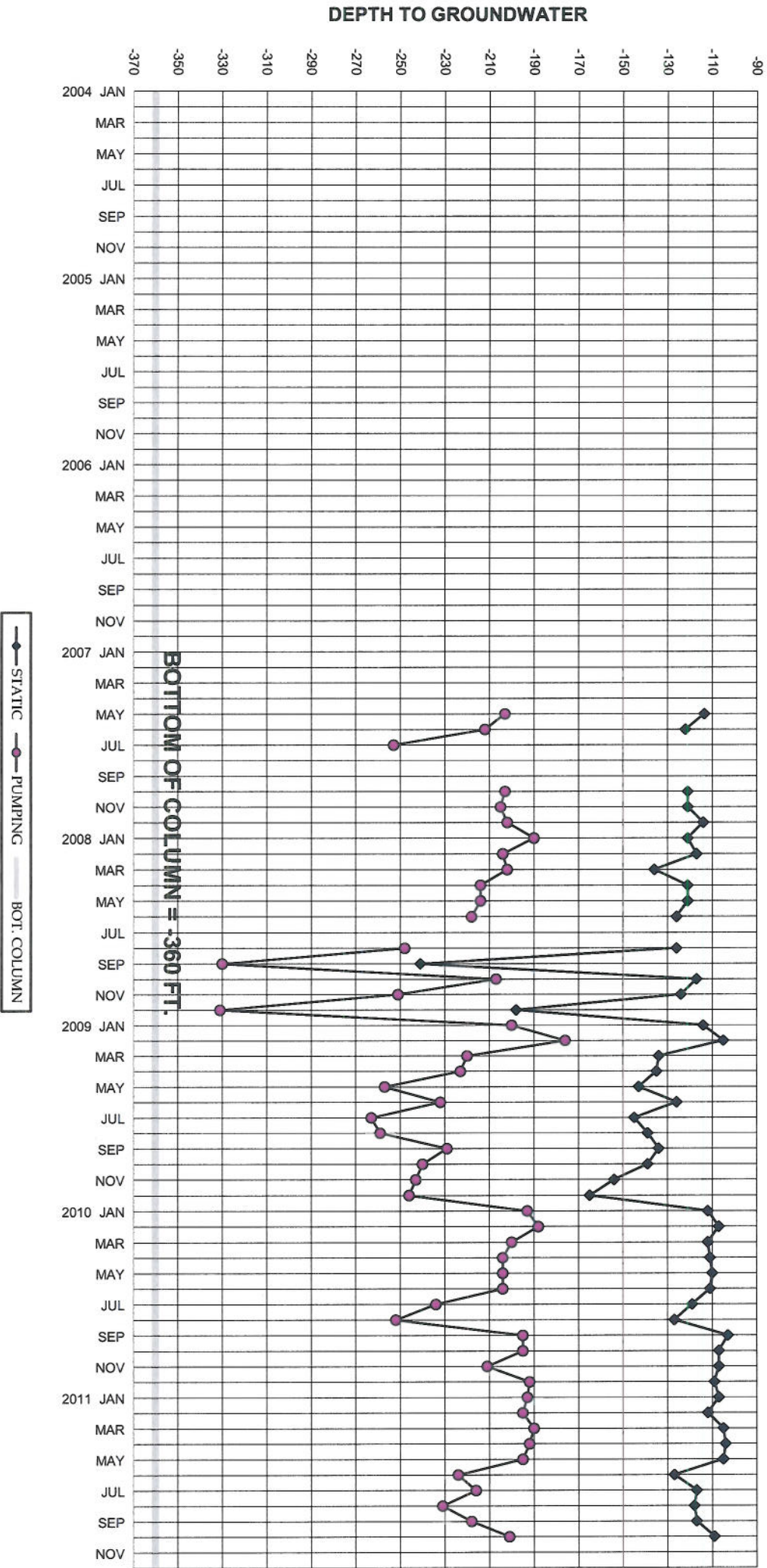
MAR 11, 2011

**WELL No. 26 (SURFACE ELEVATION = 2661')
 STATIC & PUMPING LEVELS
 FOR OCT 2011**



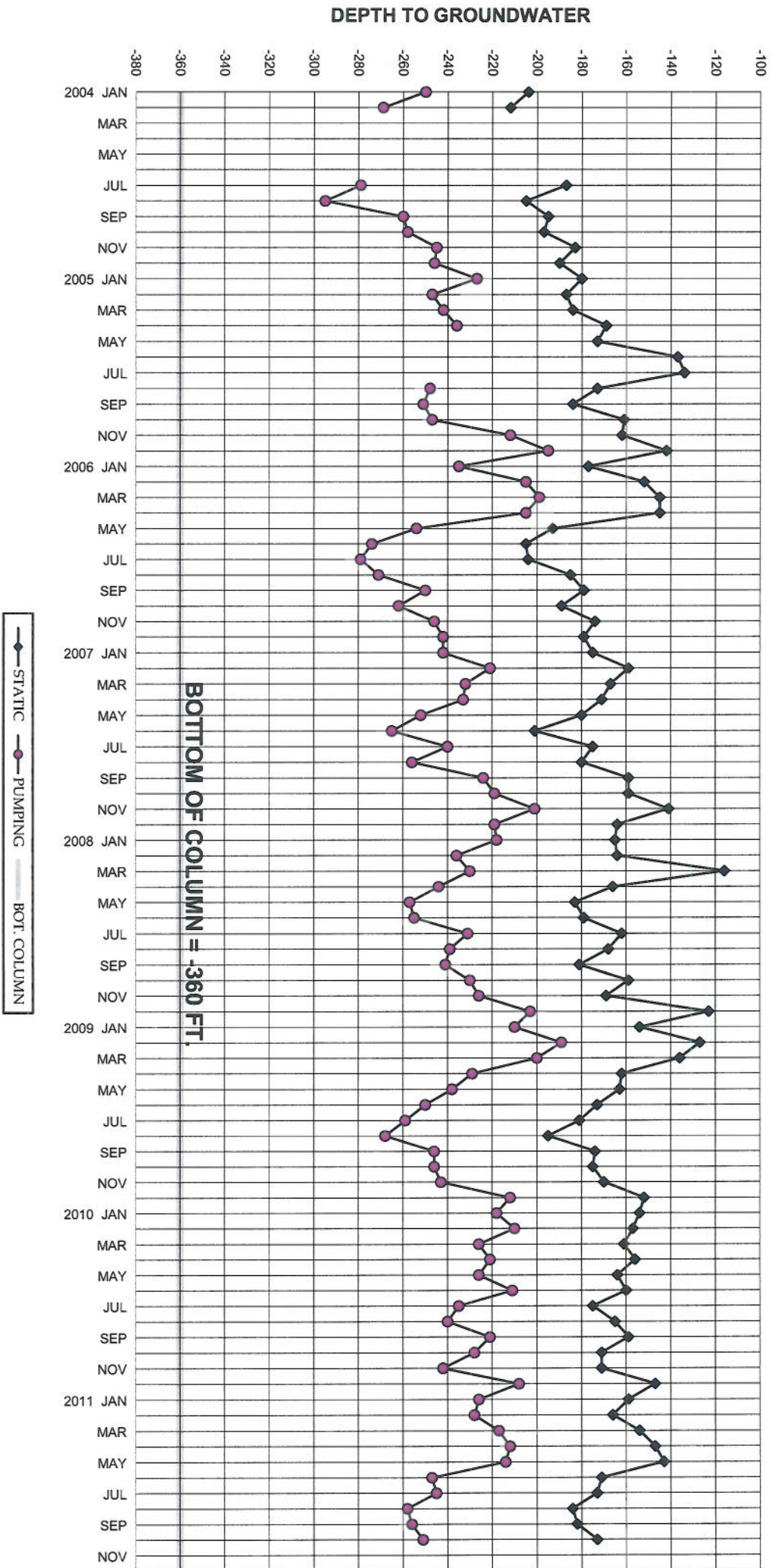
OCT. 18, 2011

**WELL No. 29 (SURFACE ELEVATION = 2689')
 STATIC & PUMPING LEVELS
 FOR OCT 2011**



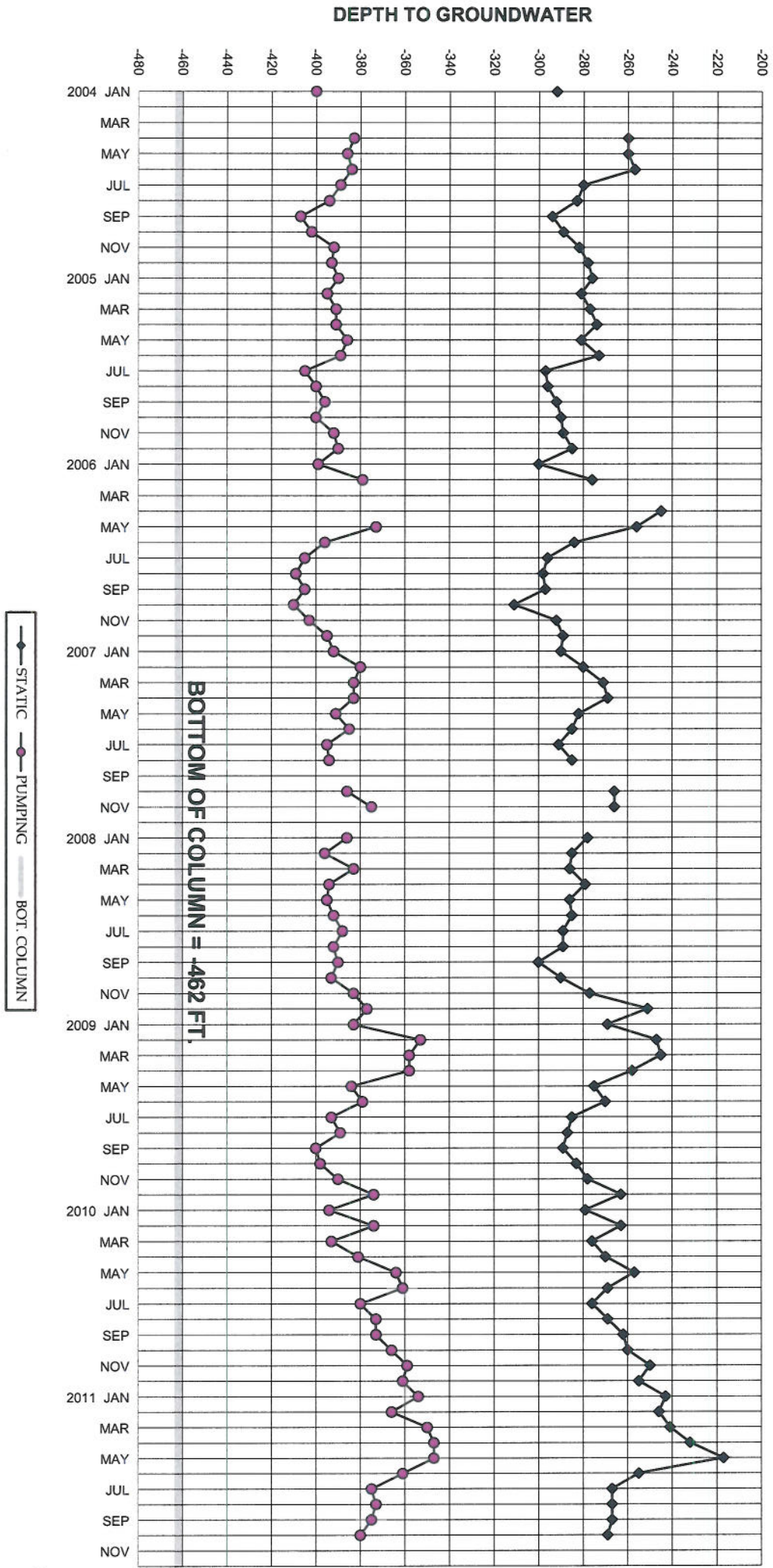
OCT. 18, 2011

**WELL No. 30 (SURFACE ELEVATION = 2668')
 STATIC & PUMPING LEVELS
 FOR OCT 2011**



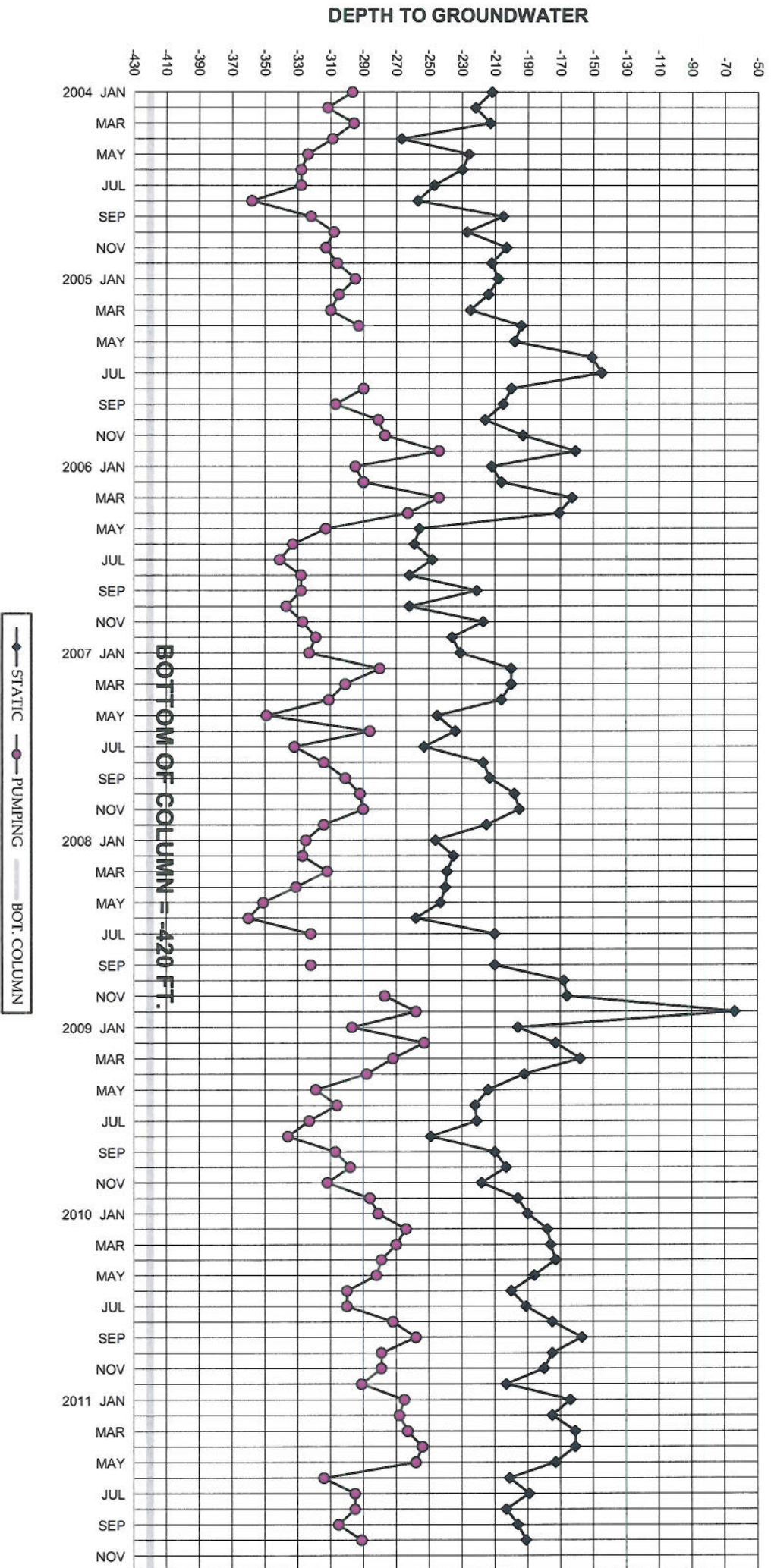
OCT. 18, 2011

**WELL No. 32 (SURFACE ELEVATION = 2675')
 STATIC & PUMPING LEVELS
 FOR OCT 2011**

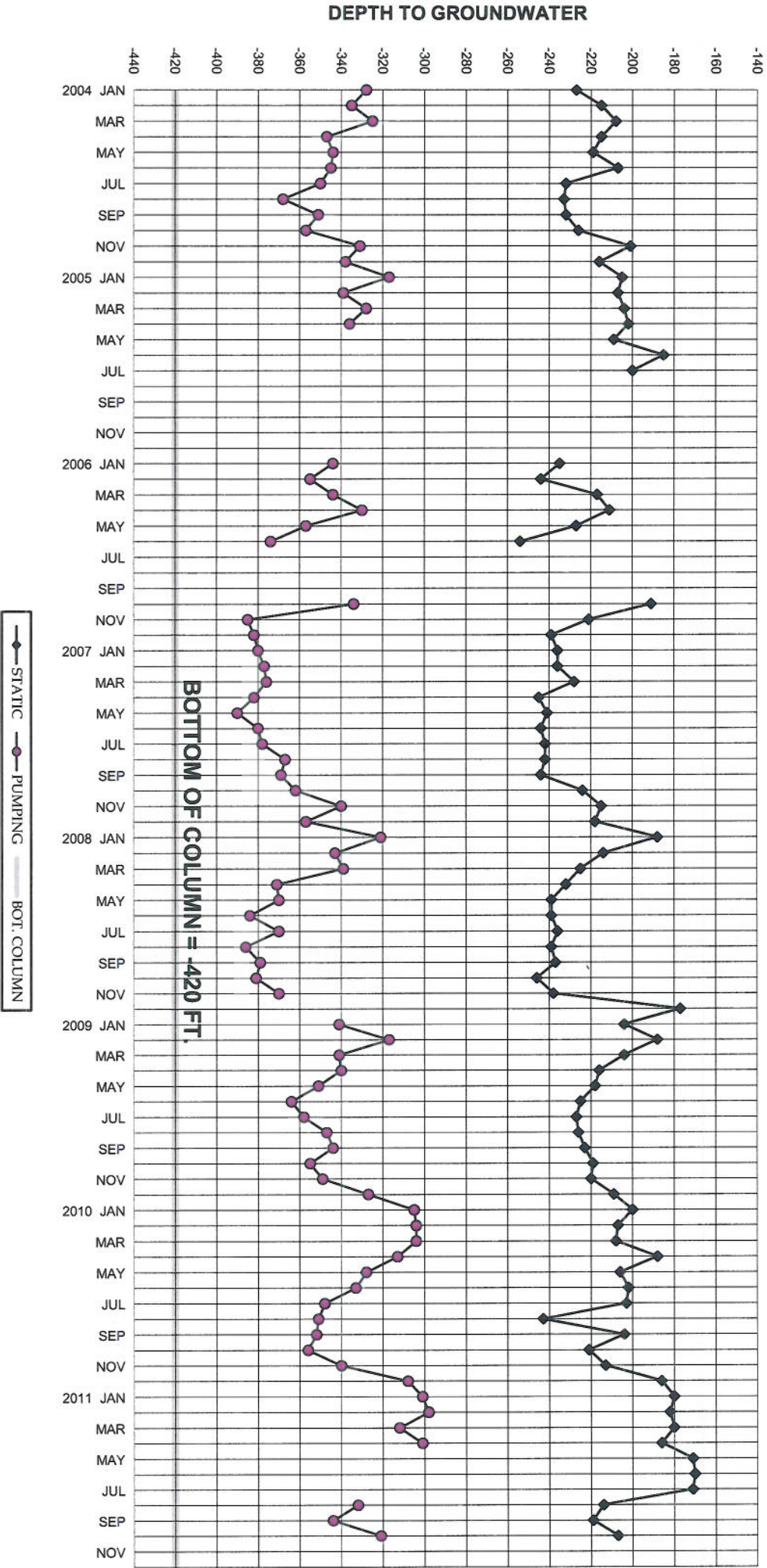


OCT. 18, 2011

**WELL No. 33 (SURFACE ELEVATION = 2667')
 STATIC & PUMPING LEVELS
 FOR OCT 2011**



**WELL No. 35 (SURFACE ELEVATION = 2753')
 STATIC & PUMPING LEVELS
 FOR OCT 2011**



OCT. 18, 2011