

REGIONAL WATER LEVELS

CROW BUTTE PROJECT AREA

Well Name	Easting ¹	Northing ¹	Elevation (Ft AMSL)	Casing Height	Screen Intervals
CM5-5	1097002.80	496027.80	3920.80	3.2	817'-827', 837'-847'
CM5-6	1100005.70	498510.93	3883.45	2.4	584'-589', 594'-599'
CM5-17	1094903.20	499460.20	3811.60	1.8	475'-479', 485'-499', 500'-510'
CM7-7	1094476.67	503589.11	3792.75	0.8	440'-450', 455'-460', 470'-480'
CM5-19	1091671.34	503561.85	3755.53	1.2	363'-374', 388'-393', 403'-408'
CM5-8	1100803.60	490632.60	4034.43	1.6	765'-769', 779'-784', 744'-748'
CM10-10	1090024.56	507185.74	3768.08	1.5	340'-350', 363'-370'
CM10-17	1087838.52	507421.68	3736.93	1.1	296'-310', 321'-336', 336'-341'
CM11-1	1102488.11	494883.11	3981.70	1.2	456'-460', 461'-501'
CM11-13	1102518.78	490187.60	4195.64	1.0	872'-892', 897'-915'

¹ Survey Coordinates are 1927 North American Datum, 2601 Nebraska North

Crow Butte Permit Hydrographs

CM5-5	CM5-5	CM5-5	CM5-6	CM5-6	CM5-6
Date	Water Level	Water Level Elevation	Date	Water Level	Water Level Elevation
1/4/11	236.3	3684.5	01/12/2011	191.7	3671.75
1/7/11	232.8	3688	01/26/2011	193.9	3669.55
1/31/11	238.3	3682.5	02/09/2011	195.1	3668.35
2/14/11	241	3679.8	02/23/2011	199.1	3664.35
2/29/11	245.4	3675.4	03/09/2011	195.2	3668.25
3/14/11	242	3678.8	03/23/2011	192.5	3670.95
3/28/11	243.4	3677.4	04/06/2011	191.2	3672.25
4/11/11	241	3679.8	04/20/2011	195.8	3667.65
4/25/11	238.4	3682.4	05/04/2011	196.9	3666.95
5/9/11	260.1	3666.7	05/19/2011	192.2	3671.25
5/23/11	255.8	3665	06/02/2011	197.5	3675.55
6/6/11	249.3	3671.5	06/15/2011	193.3	3670.15
6/20/11	250.4	3670.4	06/29/2011	197.6	3663.25
7/5/11	252.74	3668.06	07/13/2011	196.2	3667.25
7/18/11	255.5	3665.3	07/27/2011	194.1	3669.35
8/1/11	250.7	3680	08/10/2011	192.2	3668.15
8/15/11	255.3	3665.5	08/24/2011	195.3	3668.15
8/29/11	251.8	3669	09/07/2011	197.7	3665.75
9/12/11	257	3668.8	09/21/2011	201.4	3664.75
9/26/11	260.3	3660.5	10/05/2011	201.4	3662.05
10/11/11	263.5	3657.3	10/19/2011	199.31	3664.14
10/24/11	260.2	3649.78	11/02/2011	200.21	3663.24
11/7/11	262.8	3658	11/16/2011	205.1	3658.35
11/20/11	265.8	3655	11/30/2011	207	3656.45
12/5/11	262.5	3658.3	12/14/2011	203.5	3657.95
12/19/11	264.4	3656.4	12/29/2011	203.3	3660.15
1/3/12	261.4	3659.4	01/11/2012	209.3	3654.15
1/16/12	264.65	3657.75	01/25/2012	211.99	3652.02
1/30/12	265.1	3655.7	02/08/2012	211.43	3652.02
2/13/12	267	3653.8	02/23/2012	218.2	3649.25
2/27/12	267	3653.8	03/21/2012	210.4	3654.75
3/12/12	263.61	3657.19	04/04/2012	209.5	3653.95
3/26/12	262	3658.8	04/18/2012	206	3657.45
4/9/12	259.2	3661.3	05/02/2012	209.13	3654.35
4/23/12	260.45	3660.35	05/16/2012	209.03	3654.42
5/7/12	262.5	3658.3	05/30/2012	207	3656.45
5/21/12	260.92	3660.98	06/13/2012	209.88	3654.13
6/4/12	259.81	3660.98	06/27/2012	211.4	3652.05
6/18/12	260.92	3659.88	07/11/2012	209.53	3653.92
7/2/12	261.81	3658.99	07/25/2012	212.2	3654.15
7/16/12	260.5	3660.3	08/08/2012	209.3	3654.15
7/30/12	258.64	3662.16	08/22/2012	207.16	3656.29
8/13/12	261.21	3659.89	09/05/2012	216.42	3653.95
8/27/12	257.62	3663.18	09/19/2012	203.47	3659.98
9/10/12	255	3665.8	10/03/2012	207	3657.75
9/24/12	257.8	3664.8	10/17/2012	203.5	3659.88
10/8/12	260.4	3660.4	10/31/2012	204.67	3658.78
10/22/12	257.63	3663.17	11/14/2012	206.48	3658.97
11/5/12	260.4	3664.4	11/28/2012	210	3653.45
11/18/12	263.13	3657.67	12/12/2012	213.4	3650.05
12/3/12	266.1	3654.7	12/27/2012	214.5	3648.95
12/17/12	260.9	3659.9	01/08/2013	210.8	3644.75
1/2/13	272.1	3648.3	01/23/2013	220.5	3642.95
1/14/13	274.3	3646.5	02/06/2013	218.74	3646.15
1/28/13	276.3	3643.1	02/21/2013	216.74	3644.74
2/11/13	273.54	3647.26	03/06/2013	222.4	3641.05
2/25/13	276.2	3644.6	03/20/2013	219.3	3642.95
3/11/13	277	3643.8	04/03/2013	220.4	3643.05
3/25/13	280.2	3640.6	04/17/2013	221.3	3642.15
4/8/13	277.5	3643.13	05/01/2013	224.4	3640.15
4/22/13	279.9	3640.5	05/15/2013	222.5	3642.25
5/6/13	278.4	3642.4	05/30/2013	221.4	3642.35
5/20/13	276.1	3644.7	06/12/2013	216.43	3644.45
6/3/13	277.6	3643.2	06/26/2013	218.27	3646.25
6/17/13	286.4	3634.4	07/10/2013	217.3	3646.25
6/30/13	283.4	3637.4	07/24/2013	218.5	3646.25
7/13/13	281.4	3634.7	08/07/2013	213.7	3646.25
7/27/13	284.2	3636.6	08/21/2013	220.3	3646.25
8/10/13	287.9	3634.9	09/04/2013	223.11	3646.25
8/26/13	293.3	3631.5	09/18/2013	226.93	3646.25
9/9/13	290.3	3633.3	10/02/2013	223.44	3646.25
9/23/13	287.47	3633.33	10/16/2013	220.58	3646.25
10/7/13	284.8	3634.8	10/30/2013	230.41	3646.25
10/21/13	289.1	3631.7	11/13/2013	230.96	3646.25
11/4/13	292.8	3628.8	11/26/2013	230.74	3646.25
11/18/13	294.1	3628.8	12/10/2013	230.1	3646.25
12/2/13	295.8	3625	12/26/2013	231.3	3646.25
12/16/13	296.6	3623.2	01/08/2014	226.45	3646.25
12/30/13	294.3	3626.2	01/22/2014	228.58	3646.25
1/13/14	291.34	3629.5	02/05/2014	231.7	3646.25
1/27/14	288.27	3635.53	02/19/2014	231.7	3646.25
2/10/14	285.2	3636.9	02/20/2014	231.7	3646.25
2/24/14	286.4	3632.6	03/05/2014	230.7	3646.25
3/10/14	283.84	3636.96	03/19/2014	228.58	3646.25
3/24/14	283.6	3637.2	04/02/2014	230.76	3646.25
4/7/14	287.74	3632.48	04/16/2014	232.2	3646.25
4/21/14	289.16	3631.64	04/30/2014	227.03	3646.25
5/5/14	288.4	3634.36	05/14/2014	228.15	3646.25
5/19/14	288.06	3632.74	05/29/2014	228.02	3646.25
6/2/14	285.24	3635.56	06/11/2014	228.56	3646.25
6/16/14	286.06	3633.74	06/25/2014	232.33	3646.25
6/30/14	289.3	3631	07/09/2014	233.21	3646.25
7/14/14	293.3	3625.5	07/23/2014	231.8	3646.25
7/28/14	295.31	3631.49	08/06/2014	232.8	3646.25
8/11/14	298.5	3622.3	08/20/2014	229.7	3646.25
8/25/14	298.3	3631	09/04/2014	229.1	3646.25
9/8/14	292.8	3628.5	09/17/2014	230	3646.25
9/22/14	289.9	3630.9	10/01/2014	224.5	3646.25
10/6/14	293.92	3626.88	10/16/2014	236.88	3646.25
10/20/14	295.6	3625.2	10/29/2014	243.41	3646.25
11/3/14	296.3	3620.5	11/12/2014	242.91	3646.25
11/17/14	298.2	3622.6	11/25/2014	243.07	3646.25
12/1/14	296.4	3642.4	12/05/2014	238.41	3646.25
12/15/14	285.05	3637.75	12/23/2014	242.02	3646.25
12/29/14	295.13	3625.67	01/07/2015	238.72	3646.25
1/12/15	293.8	3630.5	01/21/2015	232.77	3646.25
1/26/15	294.28	3634.52	02/04/2015	232.77	3646.25
2/9/15	292.9	3637.6	02/19/2015	222.5	3646.25
2/23/15	283.9	3656.9	03/04/2015	229.9	3646.25
3/9/15	286.7	3658.1	03/18/2015	221	3646.25
3/23/15	295.3	3651.5	04/01/2015	225.8	3646.25
4/6/15	267.3	3653.5	04/15/2015	225.5	3646.25
4/20/15	268.1	3652.7	04/29/2015	227.6	3646.25
5/4/15	268.9	3651.3	05/13/2015	224.4	3646.25
5/18/15	268.9	3651.9	05/27/2015	229.7	3646.25
6/1/15	266.9	3638.19	06/10/2015	212.12	3646.25
6/15/15	271	3648.9	06/24/2015	229.9	3646.25
6/29/15	268.9	3649.8	07/08/2015	229.9	3646.25
7/13/15	268.9	3649.8	07/22/2015	231.2	3646.25
7/27/15	271.5	3649.3	08/05/2015	225.8	3646.25
8/10/15	267.3	3651.1	08/19/2015	233.7	3646.25
8/24/15	260.7	3648.1	09/02/2015	230.96	3646.25
9/8/15	281	3640.4	09/16/2015	233.2	3646.25
9/21/15	280.4	3639.8	09/30/2015	234.4	3646.25
10/5/15	281.6	3639.2	10/14/2015	234.4	3646.25
10/19/15	283.1	3637.7	10/28/2015	232	3646.25
11/2/15	283.7	3637.4	11/11/2015	232	3646.25
11/16/15	286.4	3644.4	11/24/2015	230.3	3646.25
11/30/15	279.51	3641.29	12/09/2015	229.05	3646.25
12/14/15	283.7	3637.3	12/22/2015	233.4	3646.25
12/28/15	283.8	3637.5	01/06/2016	227.5	3646.25
1/11/16	283.3	3637.5	01/20/2016	229.7	3646.25
1/25/16	284.7	3636.1	02/03/2016	230.5	3646.25
2/8/16	283.6	3637.34	02/17/2016	231.4	3646.25
2/22/16	282.8	3638	03/02/2016	234.92	3646.25
3/7/16	287.9	3633.31	03/16/2016	236.26	3646.25
3/21/16	285.46	3633.34	03/30/2016	236.26	3646.25

Crow Butte Permit Hydrographs

CM10-19 CM10-19

Date	Water Level	Water Level Elevation
01/12/2011	79.78	3675.75
01/26/2011	83.94	3671.59
02/09/2011	94.56	3660.97
02/23/2011	86.73	3668.78
03/12/2011	86.75	3668.78
03/09/2011	84.93	3670.6
04/06/2011	84.63	3670.9
04/20/2011	82.31	3673.22
05/04/2011	91.36	3664.17
05/18/2011	98.09	3657.44
06/01/2011	101.14	3654.39
06/15/2011	99.58	3655.95
07/13/2011	95.35	3660.18
06/29/2011	98.52	3657.01
08/10/2011	94.11	3661.42
07/27/2011	96.93	3658.6
08/24/2011	95.8	3669.73
09/08/2011	97.54	3657.99
10/01/2011	96.45	3654.45
10/05/2011	97.37	3658.16
10/19/2011	98.94	3656.59
11/02/2011	96.24	3659.29
11/30/2011	94.91	3660.62
11/16/2011	95.35	3660.18
12/14/2011	91.7	3661.83
12/28/2011	94.89	3660.64
01/11/2012	95.13	3660.4
01/25/2012	98.7	3656.63
02/08/2012	96.78	3658.75
02/22/2012	94.91	3660.62
03/12/2012	101.44	3654.09
03/07/2012	98.46	3657.07
04/04/2012	101.66	3653.87
04/18/2012	99.97	3655.56
05/02/2012	96.48	3659.05
05/16/2012	98.42	3657.11
05/30/2012	96.9	3658.63
06/13/2012	96.72	3658.81
07/11/2012	104.53	3651
06/27/2012	98.94	3656.99
07/25/2012	101.97	3653.56
08/08/2012	100.29	3655.24
08/22/2012	104.96	3650.57
09/05/2012	99.85	3655.65
10/03/2012	99.93	3655.6
09/19/2012	101.16	3654.17
10/17/2012	100.97	3654.56
10/31/2012	100.48	3655.85
11/14/2012	97.94	3657.99
11/28/2012	99.96	3655.57
12/12/2012	103.53	3652
12/27/2012	104.38	3651.15
01/23/2013	106.03	3649.5
01/09/2013	106.25	3649.28
02/06/2013	101.7	3651.83
02/20/2013	106.79	3648.74
03/06/2013	110.63	3644.9
03/20/2013	106.79	3648.74
04/03/2013	108.7	3646.83
04/17/2013	108.12	3647.41
05/01/2013	107.98	3647.55
05/20/2013	106.91	3648.82
06/03/2013	108.91	3646.62
06/12/2013	109.96	3645.57
08/07/2013	107.97	3647.56
07/24/2013	113.18	3642.55
07/10/2013	111.24	3644.29
09/04/2013	107.48	3648.05
08/21/2013	108.91	3646.62
09/18/2013	108.34	3647.19
10/02/2013	108.14	3647.39
10/16/2013	107.34	3648.19
10/30/2013	110.38	3645.15
12/11/2013	115.22	3640.31
12/27/2013	114.82	3640.71
11/13/2013	113.92	3641.61
01/08/2014	113.25	3642.28
1/25/2014	113.6	3641.93
01/22/2014	113.12	3642.41
02/05/2014	114.9	3640.63
02/20/2014	113.13	3642.4
03/19/2014	118.14	3637.39
03/06/2014	117.78	3637.75
04/02/2014	117.61	3637.92
04/16/2014	116.97	3638.56
04/30/2014	117.65	3637.88
05/14/2014	121.5	3634.83
06/11/2014	117.98	3637.55
05/29/2014	118.17	3637.36
07/31/2014	116.4	3639.13
07/09/2014	118.21	3637.32
06/25/2014	117.15	3638.88
08/20/2014	112.56	3642.97
08/06/2014	115.19	3640.34
09/03/2014	114.13	3641.4
09/17/2014	113.95	3641.58
10/15/2014	112.31	3643.22
10/01/2014	112.18	3643.35
11/25/2014	120.71	3643.82
11/12/2014	115.54	3639.99
10/29/2014	119.5	3636.03
12/31/2014	119.92	3635.61
12/10/2014	115.3	3640.23
10/27/2015	119.98	3635.55
01/21/2015	112.97	3642.56
02/04/2015	111.96	3643.37
03/04/2015	115.37	3640.16
02/18/2015	111.69	3643.84
03/18/2015	113.65	3641.88
04/01/2015	115.39	3640.14
04/15/2015	116.98	3638.55
04/29/2015	115.47	3640.06
05/20/2015	112.41	3643.12
05/13/2015	113.49	3642.04
07/08/2015	113.37	3642.16
06/24/2015	113.71	3641.82
06/10/2015	112.32	3643.21
08/05/2015	117.58	3637.95
07/22/2015	112.21	3643.12
08/19/2015	111.11	3644.42
09/02/2015	112.92	3642.61
09/26/2015	110.9	3644.63
09/16/2015	112.39	3643.14
11/11/2015	116.58	3638.95
10/28/2015	117.52	3638.01
10/14/2015	113.59	3641.94
12/09/2015	120.74	3634.79
11/24/2015	112.79	3642.74
12/22/2015	122.96	3632.57
01/06/2016	119.99	3635.54
01/20/2016	120.6	3634.93
02/17/2016	120.71	3634.82
02/03/2016	120.74	3634.79
03/02/2016	122.17	3633.36
03/16/2016	120.79	3634.74

Crow Butte Permit Hydrographs

CM10-19 CM10-19

Date	Water Level	Water Level Elevation
01/05/2011	358.7	3675.73
01/18/2011	358.3	3675.13
02/01/2011	357.2	3677.23
02/15/2011	358.7	3675.73
03/01/2011	357.3	3677.13
03/15/2011	358.8	3675.63
03/29/2011	357.5	3676.93
04/12/2011	358.4	3676.03
04/26/2011	359.4	3675.03
05/10/2011	352.4	3682.23
05/24/2011	359	3684.43
06/07/2011	331.3	3701.13
06/21/2011	326.5	3697.33
07/06/2011	331.8	3702.63
07/19/2011	337.1	3697.33
08/04/2011	337.4	3697.63
08/30/2011	334.7	3699.03
09/13/2011	340.9	3693.53
09/27/2011	338.41	3696.02
10/12/2011	338.8	3695.63
10/25/2011	341.22	3691.21
11/08/2011	343.72	3696.71
11/21/2011	337.4	3697.03
12/06/2011	344.4	3696.03
12/20/2011	346.4	3688.03
01/04/2012	348.8	3685.63
01/17/2012	349.7	3684.73
01/31/2012	348.23	3685.23
02/14/2012	352.7	3681.73
02/28/2012	356.4	3678.03
03/13/2012	345.49	3676.59
03/27/2012	356.52	3677.91
04/10/2012	350.77	3683.66
04/24/2012	345.55	3681.44
05/08/2012	360.33	3674.10
05/22/2012	360.42	3674.01
06/05/2012	360.9	3675.77
06/19/2012	363.5	3678.93
07/03/2012	363.72	3678.71
07/17/2012	361.43	3671.43
07/31/2012	361.03	3671.43
08/14/2012	363.63	3671.13
08/28/2012	364.77	3671.66
09/11/2012	359.44	3674.99
09/25/2012	361.31	3673.12
10/09/2012	361.78	3675.96
10/23/2012	360.45	3673.98
11/06/2012	357.78	3676.65
11/19/2012	361.7	3673.02
12/04/2012	361.7	3673.73
12/18/2012	361.3	3673.13
01/02/2013	361.8	3673.63
01/15/2013	364.8	3669.63
01/29/2013	366	3668.43
02/12/2013	361.79	3670.65
02/26/2013	361.3	3671.13
03/13/2013	364.9	3673.63
03/26/2013	361.8	3673.63
04/12/2013	361.42	3670.23
04/23/2013	367.23	3672.23
05/07/2013	368.4	3666.03
05/21/2013	366.9	3667.53
06/04/2013	369.8	3664.63
06/18/2013	369.8	3664.63
07/02/2013	369.7	3664.73
07/16/2013	362.55	3670.63
07/30/2013	372.3	3662.13
08/13/2013	373.9	3660.53
08/27/2013	368.2	3661.63
09/10/2013	370.1	3664.33
09/24/2013	369	3666.43
10/08/2013	368.19	3668.19
10/22/2013	372.4	3662.03
11/05/2013	375.3	3659.13
11/19/2013	361.79	3670.63
12/03/2013	374.9	3659.53
12/17/2013	370.7	3663.73
12/31/2013	373.2	3661.93
01/14/2014	377.7	3658.73
01/28/2014	379	3655.43
02/11/2014	362.4	3652.63
02/25/2014	388.22	3646.21
03/11/2014	381.57	3652.86
03/25/2014	382.9	3655.86
04/08/2014	379	3655.43
04/22/2014	383.1	3651.33
05/06/2014	384.92	3643.92
05/20/2014	381.51	3652.92
06/03/2014	378.01	3658.42
06/17/2014	380.37	3654.06
07/01/2014	378.8	3655.63
07/15/2014	381.2	3652.23
07/29/2014	380.6	3653.83
08/12/2014	378.7	3655.73
08/26/2014	383.06	3651.37
09/09/2014	381.5	3652.93
09/23/2014	382.3	3652.13
10/07/2014	384.48	3649.99
10/21/2014	378.8	3655.63
11/04/2014	377	3657.43
11/18/2014	377.1	3657.33
12/02/2014	378.9	3655.53
12/16/2014	378.27	3656.16
12/30/2014	382.4	3652.03
01/13/2015	380.5	3653.93
01/27/2015	372.45	3661.98
02/10/2015	369.1	3663.33
02/24/2015	370.1	3664.33
03/10/2015	373.8	3660.63
03/24/2015	374.4	3660.03
04/07/2015	378.2	3656.23
04/21/2015	379.8	3654.63
05/05/2015	382.9	3651.53
05/19/2015	384.4	3650.03
06/02/2015	380.2	3654.23
06/16/2015	381.6	3652.83
07/14/2015	382.8	3651.63
07/28/2015	383.33	3652.13
08/11/2015	382.2	3652.23
08/25/2015	380.8	3653.63
09/08/2015	384.63	3651.03
09/22/2015	381.4	3652.63
10/06/2015	380.6	3653.83
10/20/2015	379.2	3655.13
11/03/2015	379.3	3655.13
11/17/2015	382.2	3652.23
12/01/2015	380.4	3644.03
12/15/2015	393.3	3641.13
12/29/2015	391.1	3643.33
01/12/2016	388.9	3641.73
01/26/2016	389.4	3645.03
02/09/2016	387	3647.43
02/23/2016	386.9	3647.53
03/08/2016	385.83	3646.63
03/22/2016	397.68	3636.75

Crow Butte Permit Hydrographs

CM10-10 CM10-10

Date	Water Level	Water Level Elevation
01/11/2011	91.01	3677.07
01/25/2011	89.06	3534.38
02/08/2011	89.02	3537.38
02/23/2011	86.73	3534.88
03/08/2011	87.21	3534.88
03/22/2011	85.36	3531.68
04/05/2011	80.54	3536.08
04/19/2011	91.66	3536.08
05/03/2011	87.34	3537.38
05/17/2011	85.3	3534.38
06/01/2011	99.56	3538.68
06/14/2011	95.02	354

Cow Butte Permit Hydrographs			Cow Butte Permit Hydrographs		
CM11-1	CM11-1		CM11-15	CM11-15	
Date	Water Level	Water Level Elevation	Date	Water Level	Water Level Elevation
01/06/2011	229.4	3675.3	01/05/2011	512.1	3683.54
01/17/2011	229.1	3675.6	01/16/2011	509.6	3688.04
02/02/2011	230.1	3674.6	02/01/2011	509.9	3685.74
02/16/2011	230.3	3674.4	02/15/2011	510.6	3685.04
03/02/2011	229.7	3675	03/01/2011	508.2	3687.44
03/16/2011	230.4	3674.3	03/15/2011	510.8	3684.84
03/30/2011	230	3674.7	03/29/2011	509.6	3686.04
04/13/2011	230.9	3673.8	04/12/2011	510.8	3684.84
04/27/2011	229.7	3675	04/26/2011	508.6	3687.04
05/11/2011	229.3	3675.4	05/10/2011	497.3	3698.54
05/25/2011	223.2	3681.5	05/24/2011	473.3	3722.34
06/08/2011	224.2	3680.5	06/07/2011	474.1	3721.54
06/22/2011	221.5	3681.2	06/21/2011	465.2	3729.44
07/07/2011	228.8	3675.9	07/06/2011	462.9	3732.74
07/20/2011	231.54	3673.16	07/19/2011	469.9	3725.74
08/03/2011	230.95	3673.75	08/16/2011	468.8	3726.84
08/17/2011	228.61	3676.09	08/30/2011	466.2	3729.44
08/31/2011	225.07	3679.63	09/13/2011	470.3	3725.34
09/14/2011	228.13	3676.57	09/27/2011	465.3	3730.34
09/28/2011	229.13	3675.57	10/12/2011	491.41	3704.23
10/13/2011	230.54	3674.16	10/25/2011	493.6	3702.04
10/26/2011	228.39	3676.39	11/08/2011	494.3	3701.34
11/09/2011	229.5	3675.2	11/21/2011	500.5	3695.14
11/22/2011	228.2	3676.5	12/06/2011	487.7	3707.94
12/07/2011	228	3676.7	12/20/2011	489.2	3706.44
12/21/2011	227.31	3677.39	01/04/2012	492.2	3703.44
01/05/2012	227.22	3677.48	01/17/2012	496.1	3699.54
01/18/2012	230.96	3673.74	01/13/2012	499.2	3696.44
02/01/2012	230.8	3673.9	02/14/2012	501.7	3693.94
02/15/2012	233.6	3671.1	02/28/2012	503.3	3692.34
02/29/2012	236.3	3669.4	03/13/2012	501.9	3693.74
03/14/2012	235.79	3668.91	03/27/2012	500.1	3695.54
03/28/2012	238.99	3665.71	04/10/2012	499.4	3696.24
04/11/2012	236.3	3669.4	04/04/2012	502.6	3693.04
04/25/2012	236.93	3667.77	05/08/2012	508.8	3686.84
05/09/2012	239.32	3665.38	05/22/2012	513.2	3682.44
05/23/2012	238.09	3669.09	06/05/2012	515.7	3679.84
06/06/2012	239.9	3664.8	06/19/2012	515.8	3679.84
06/20/2012	242.5	3662.2	07/03/2012	516.04	3679.6
07/05/2012	241.9	3662.8	07/17/2012	511.6	3684.04
07/18/2012	245.97	3658.73	07/31/2012	515.7	3679.94
08/01/2012	245.21	3659.49	08/14/2012	517.6	3678.04
08/15/2012	246.52	3658.18	08/28/2012	522.3	3673.34
08/29/2012	239.99	3664.71	09/11/2012	519.8	3675.84
09/12/2012	242.11	3662.59	09/25/2012	522.6	3673.04
09/26/2012	241.88	3662.82	10/09/2012	519.9	3675.74
10/10/2012	241.68	3663.02	10/23/2012	522.6	3673.04
10/24/2012	242.63	3662.07	11/06/2012	520.6	3675.04
11/07/2012	241.61	3661.09	11/19/2012	523.6	3672.04
11/20/2012	239	3665.7	12/04/2012	527.1	3668.54
12/05/2012	246.6	3658.1	12/18/2012	526.8	3668.84
12/19/2012	249.6	3651.1	01/02/2013	530.8	3664.84
01/03/2013	250.2	3654.5	01/15/2013	529.6	3666.04
01/16/2013	250	3649.7	01/29/2013	526.5	3669.14
01/30/2013	248.15	3655.15	02/12/2013	530.2	3665.44
02/13/2013	246.86	3657.84	02/26/2013	526.9	3668.74
02/27/2013	247.22	3657.48	03/12/2013	530.2	3665.44
03/13/2013	250.4	3654.3	03/26/2013	528.3	3667.34
03/27/2013	255.2	3649.5	04/12/2013	530.6	3665.04
04/12/2013	257	3647.7	04/23/2013	527.4	3668.44
04/24/2013	254	3650.7	05/07/2013	522.1	3673.54
05/08/2013	253.3	3651.4	05/21/2013	522.8	3672.84
05/22/2013	254	3650.7	06/04/2013	525.5	3670.14
06/05/2013	255.7	3649	06/18/2013	525	3670.64
06/19/2013	259.6	3645.1	07/02/2013	523.5	3672.14
07/03/2013	257.2	3647.7	07/16/2013	524.1	3671.54
07/17/2013	257.5	3647.2	07/30/2013	525.1	3670.54
07/31/2013	260	3644.7	08/13/2013	526.2	3669.44
08/14/2013	259	3645.7	08/27/2013	522.6	3673.04
08/28/2013	257	3647.7	09/10/2013	523.3	3672.34
09/11/2013	257.3	3647.4	09/24/2013	522.1	3673.34
09/25/2013	257.9	3648.8	10/08/2013	522.9	3672.74
10/09/2013	258.86	3645.84	10/22/2013	524.1	3671.54
10/23/2013	257.8	3646.9	11/05/2013	527.4	3668.24
11/06/2013	261.4	3641.3	11/19/2013	526.8	3668.84
11/20/2013	264.72	3639.98	12/03/2013	522.1	3673.54
12/04/2013	262.5	3642.2	12/17/2013	520.9	3674.74
12/18/2013	264.9	3639.8	01/31/2014	522.6	3673.04
01/02/2014	264.3	3640.4	01/14/2014	519.1	3676.54
01/15/2014	263.7	3641	01/28/2014	517.7	3677.94
01/29/2014	264.5	3640.2	02/11/2014	520.8	3674.84
02/12/2014	264.6	3640.1	02/25/2014	516.8	3679.04
02/26/2014	263.7	3641	03/11/2014	519.1	3676.54
03/12/2014	266.1	3636.6	03/25/2014	510.6	3685.04
03/28/2014	269.5	3635.2	04/08/2014	511.8	3684.04
04/09/2014	271.9	3632.8	04/22/2014	514.2	3681.44
04/23/2014	270.96	3633.74	05/06/2014	510.83	3685.01
05/07/2014	266.95	3637.75	05/20/2014	513.07	3682.57
05/21/2014	266.03	3638.67	06/03/2014	512.8	3682.84
06/04/2014	266.53	3638.17	06/17/2014	515.33	3680.31
06/18/2014	268.26	3636.44	07/01/2014	513.6	3682.04
07/02/2014	272.3	3632.4	07/15/2014	515.2	3680.44
07/16/2014	273.3	3631.4	07/29/2014	519.3	3676.34
07/30/2014	269.3	3635.4	08/12/2014	515.8	3679.84
08/13/2014	274.2	3630.5	08/26/2014	520.8	3674.84
08/27/2014	269.7	3635	09/09/2014	521.2	3674.44
09/10/2014	269.5	3635.2	09/23/2014	519.8	3675.84
09/24/2014	273.44	3631.26	10/07/2014	523.81	3671.83
10/08/2014	272.3	3632.4	10/21/2014	518.8	3676.84
10/22/2014	266.7	3638	11/04/2014	513.3	3682.34
11/05/2014	266.2	3638.5	11/18/2014	516.3	3679.34
11/19/2014	265.2	3639.5	12/02/2014	517.6	3678.04
12/03/2014	263.61	3641.09	12/16/2014	521.6	3674.04
12/17/2014	261.14	3643.56	12/30/2014	528.8	3666.84
12/31/2014	263.89	3640.81	01/13/2015	526.9	3668.74
01/14/2015	259.7	3645	01/27/2015	534.2	3661.44
01/28/2015	248.1	3655.6	02/10/2015	521.1	3674.54
02/11/2015	244.9	3659.8	02/24/2015	529.5	3666.14
02/25/2015	258.9	3645.8	03/10/2015	534.2	3661.44
03/11/2015	263.5	3641.2	03/24/2015	528.8	3666.84
03/25/2015	262.2	3642.5	04/07/2015	533.9	3661.84
04/08/2015	265.4	3639.3	04/21/2015	528.7	3666.94
04/22/2015	265.5	3639.5	05/06/2015	534.1	3661.54
05/06/2015	267.9	3636.8	05/19/2015	538.2	3657.44
05/20/2015	263.2	3641.5	06/02/2015	544.6	3651.04
06/03/2015	270.95	3637.75	06/16/2015	546.2	3649.44
06/17/2015	270.8	3633.9	06/30/2015	544.9	3650.74
07/01/2015	271.9	3632.8	07/14/2015	546.1	3649.54
07/15/2015	272.3	3632.4	07/28/2015	547.3	3648.34
07/29/2015	272.1	3632.6	08/11/2015	544.6	3651.04
08/12/2015	270.8	3633.9	08/25/2015	550.6	3645.04
08/26/2015	272.2	3632.2	09/09/2015	544.6	3651.04
09/09/2015	274.5	3630.2	09/22/2015	543.9	3651.74
09/10/2015	274.5	3630.2	10/06/2015	538.6	3657.04
09/23/2015	273.1	3631.6	10/20/2015	540.6	3655.04
10/07/2015	271.9	3632.8	11/03/2015	539.2	3656.44
10/21/2015	271.5	3633.2	11/17/2015	543.1	3652.54
11/04/2015	270.7	3634	12/01/2015	549.4	3646.24
11/18/2015	271.1	3633.6	12/15/2015	549.6	3646.04
12/02/2015	269.5	3635.2	12/29/2015	550.3	3645.34
12/16/2015	272.6	3632.1	01/11/2016	552.2	3643.44
12/30/2015	269.1	3635.6	01/26/2016	549.1	3646.54
01/13/2016	268.5	3636.2	02/09/2016	551	3644.64
01/27/2016	270.7	3634	02/23/2016	550.7	3644.84
02/10/2016	268.6	3636.1	03/08/2016	551.04	3644.6
02/24/2016	271.9	3632.8	03/22/2016	549.12	3646.52
03/09/2016	274.01	3630.49	04/05/2016	563.94	3631.7
03/23/2016	276.32	3628.38			
04/06/2016	278.56	3626.14			

REGIONAL WATER LEVELS

Marsland Expansion Area

Area ID	General Well ID	Surveyed Top East Coordinate ¹	Surveyed Top North Coordinate ¹	Ground Level Elevation (Ft AMSL)	Distance from Ground To Measurement Point	Screened Formation	Screened Interval Depths	WATER LEVELS FOR ALL SAMPLING DATES BELOW								
								October 17, 2013	January 21, 2014	April 22, 2014	July 14, 2014	October 29, 2014	January 21, 2015	April 7, 2015	July 17, 2015	April 7, 2016
Marsland	Monitor 1	1131520.75	429027.93	4101.48	1.8	Chadron Formation	905'-935'	3703.9	3701.0	3699.2	3697.7	3696.1	3695.0	3694.8	3694.5	3691.38
Marsland	Monitor 2	1126362.36	439439.08	4197.20	2.3	Chadron Formation	980'-1015'	3699.2	3697.4	3695.6	3694.0	3692.2	3691.4	3691.4	3691.1	3687.8
Marsland	Monitor 3	1121518.68	446287.71	4260.20	1.2	Chadron Formation	1015'-1045'	3695.9	3694.8	3692.8	3691.4	3689.4	3688.9	3689.1	3688.8	3685.3
Marsland	Monitor 4A	1121344.14	450083.52	4326.32	3.4	Chadron Formation	1080'-1110'	3695.4	3693.1	3691.0	3689.6	3687.9	3687.2	3687.6	3687.3	3683.52
Marsland	Monitor 5	1119235.50	447734.36	4337.40	3.4	Chadron Formation	1070'-1120'	3695.4	3693.4	3691.5	3690.1	3688.2	3687.5	3687.9	3687.6	3684
Marsland	Monitor 6	1124385.19	442856.47	4213.80	2.6	Chadron Formation	992'-1025'	3698.2	3696.2	3694.3	3693.1	3691.1	3690.2	3690.6	3690.4	3686.7
Marsland	Monitor 7	1120757.21	440358.40	4243.18	3.1	Chadron Formation	1003'-1016', 1026'-1046'	3698.3	3696.4	3694.5	3693.0	3691.3	3690.5	3690.5	3690.0	3686.38
Marsland	Monitor 8	1117004.89	450973.82	4352.40	3.5	Chadron Formation	1087'-1127'	3695.4	3692.3	3690.2	3688.8	3687.1	3686.4	3686.9	3686.5	3684.8
Marsland	Monitor 9	1120642.67	456122.81	4364.60	2.42	Chadron Formation	1110'-1140'	3697.3	3693.0	3688.2	3686.9	3685.0	3684.5	3685.3	3684.8	3680.92
Marsland	Monitor 10	1124017.93	435031.37	4160.49	3.5	Chadron Formation	935'-970'	3699.0	3697.2	3696.2	3694.7	3692.7	3691.8	3692.0	3691.8	3688.49
Marsland	Monitor 11	1129466.62	432062.91	4124.17	3.9	Chadron Formation	902'-947'	3700.2	3698.4	3696.6	3695.0	3693.5	3692.3	3692.4	3691.9	3688.77
Marsland	CPW-2010-1	1121527.67	446224.84	4259.75	1.6	Chadron Formation	1015'-1048'	3696.1	3694.1	3692.1	3690.6	3688.8	3688.3	3688.3	3688.0	3684.45
Marsland	CPW-2010-1A	1121450.20	446202.00	4261.08	2.2	Chadron Formation	1025'-1055'	3696.3	3694.3	3692.3	3690.9	3689.1	3688.6	3688.9	3688.6	3685.18

¹ Survey Coordinates are 1927 North American Datum, 2601 Nebraska North

REGIONAL WATER LEVELS

THREE CROW EXPANSION AREA

Area ID	General Well ID	Surveyed Top	Surveyed Top	Ground Level	Distance from Ground To	Screened Formation	Screened Interval Depth:	WATER LEVELS FOR ALL SAMPLING DATES BELOW					
		East Coordinate ¹	North Coordinate ¹	Elevation (Ft AMSL)	Measurement Point			April 21, 2008	January 9, 2009	January 30, 2009	January 22, 2010	May 15, 2014	April 7, 2016
Three Crow	CPW 2006-2	1068178.21	492983.11	3913.63	1.10	Chadron Formation	791'-816', 841'-871'	3722.26	3721.22	3721.01	3717.26	3693.53	3685.73
Three Crow	COW 2006-1	1063782.51	494341.24	3905.80	1.15	Chadron Formation	764'-799', 809'-829'	3724.93	3723.94	3723.64	3720.36	3697.70	3690.55
Three Crow	COW 2006-2	1066684.93	494512.66	3932.71	1.00	Chadron Formation	781'-786', 806'-816', 826'-851'	3721.50	3721.11	3720.85	3717.13	3693.81	3686.61
Three Crow	COW 2006-3	1068713.99	494006.65	3902.78	0.90	Chadron Formation	731'-756', 796'-811'	3718.77	3720.43	3720.22	3716.73	3692.88	3685.38
Three Crow	COW 2006-4	1068924.73	490369.75	3954.67	1.15	Chadron Formation	783'-813', 823'-848', 858'-878'	3722.61	3720.81	3720.46	3717.02	3692.97	3685.62
Three Crow	COW 2006-5	1070868.10	490191.11	3982.26	0.45	Chadron Formation	851'-881', 891'-901'	3721.64	3720.26	3720.03	3716.46	3691.16	3684.21
Three Crow	COW 2006-6	1076490.66	489608.94	3978.68	1.00	Chadron Formation	836'-881'	N/A ²	3713.43	3712.89	3708.23	Not Measured	Not Measured
Three Crow	COW 2006-7	1076915.32	493451.66	3921.97	1.80	Chadron Formation	645'-665', 675'-695'	N/A ²	3711.76	3712.20	3707.55	Not Measured	Not Measured
Three Crow	UBCOW 2006-1	1068222.59	492976.82	3913.96	1.10	Chadron Formation	654'-674', 684'-704', 714'-744'	3721.88	3720.51	3720.36	3716.73	Not Measured	3685.86
Three Crow	UBCOW 2006-2	1068906.48	490371.92	3954.03	1.52	Chadron Formation	666'-676', 696'-716', 736'-766'	3721.75	3720.84	3720.61	3716.96	Not Measured	3685.65

¹ Survey Coordinates are 1927 North American Datum, 2601 Nebraska North

² Well was not drilled at this sample date

REGIONAL WATER LEVELS

North Trend Expansion Area

Area ID	General Well ID	Surveyed Top East Coordinate ¹	Surveyed Top North Coordinate ¹	Ground Level Elevation (Ft AMSL)	Distance from Ground To Measurement Point	Screened Formation	Screen Interval Depths	WATER LEVELS FOR ALL SAMPLING DATES BELOW		
								June 28, 2006	February 16, 2007	April 16, 2008
North Trend	COW 2004-1	1085606.42	525988.48	3631.88	1.1	Chadron Formation	537'-557'	3699.81	3707.40	3707.22
North Trend	COW 2004-2	1083807.09	519628.76	3652.06	1.9	Chadron Formation	569'-594'	3704.41	3708.60	3709.53
North Trend	COW 2004-3	1080497.45	521312.27	3682.83	1.7	Chadron Formation	596'-616', 621'-631', 641'-646'	3710.59	3714.90	3717.57
North Trend	COW 2004-4	1080512.23	526200.97	3685.95	0.8	Chadron Formation	585'-600', 610'-630', 635'-645'	3705.30	3712.70	3714.19
North Trend	COW 2004-5	1082950.49	523539.30	3669.24	1.8	Chadron Formation	658'-688', 698'-713'	3704.85	3707.30	3712.22
North Trend	COW 2004-6	1082056.90	528907.80	3667.81	1.9	Chadron Formation	426'-476'	N/A ²	N/A ²	3720.88
North Trend	CPW 2004-2	1081697.12	521622.58	3678.60	1.5	Chadron Formation	615'-660', 670'-685'	3705.99	3710.60	3713.38
North Trend	RC-1 ³	1083422.10	515489.20	3646.70	1.0	Chadron Formation	330'-350'	Not Measured	Not Measured	3696.40
North Trend	RC-2	1082715.40	516909.30	3656.90	1.0	Chadron Formation	572'-592'	3703.93	3706.30	3700.26
North Trend	Well 97 ³	1085579.77	517549.98	3657.00	1.0	Chadron Formation	N/A	Not Measured	Not Measured	3690.72
North Trend	Well 123 ³	1086278.27	516504.11	3658.43	1.2	Chadron Formation	N/A	Not Measured	Not Measured	3672.11

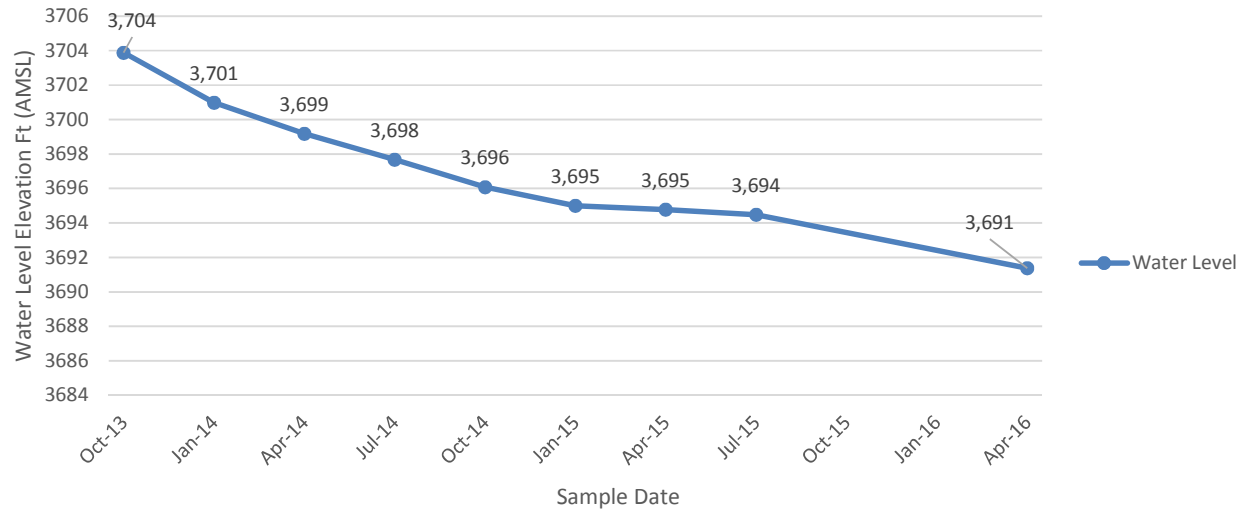
¹ Survey Coordinates are 1927 North American Datum, 2601 Nebraska North

² Well was not drilled at this sample date

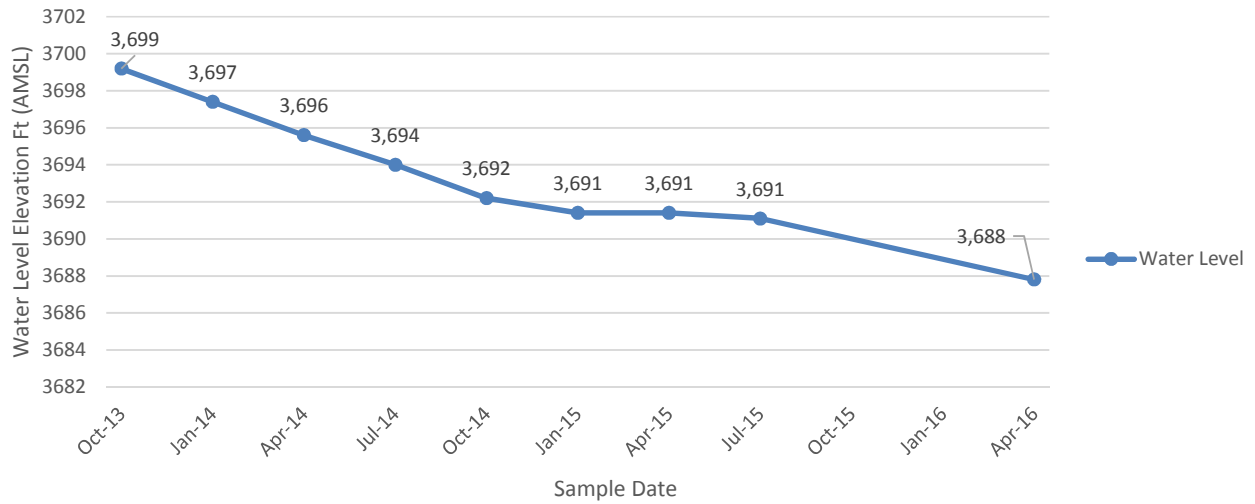
³ No Hydrographs plotted for wells with one data point

All of the above wells have been abandoned except RC-1, Well 97 and Well 123 which are privately owned

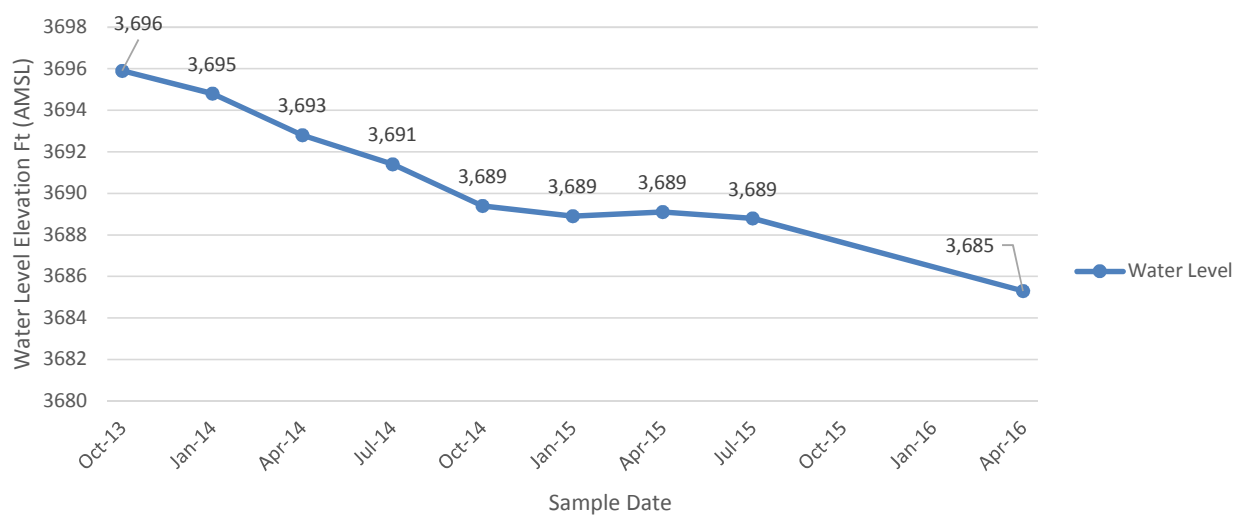
Marsland Well - Monitor 1



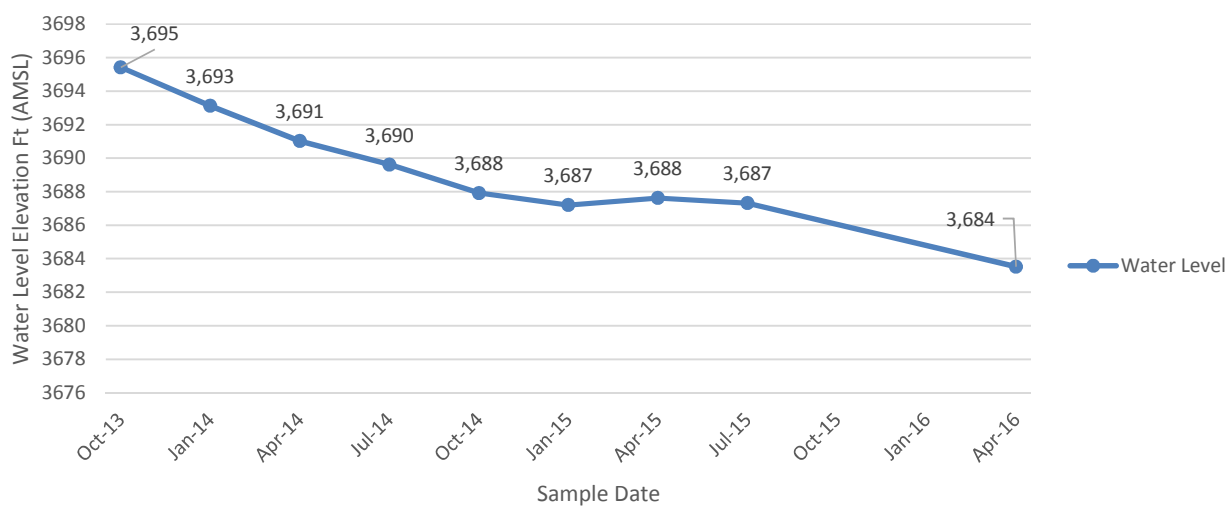
Marsland Well - Monitor 2



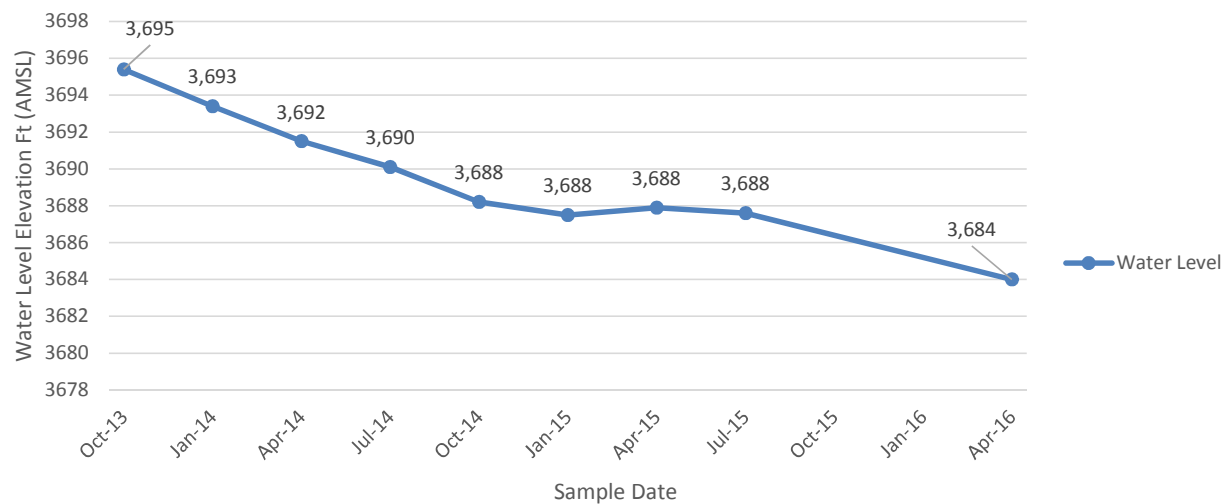
Marsland Well - Monitor 3



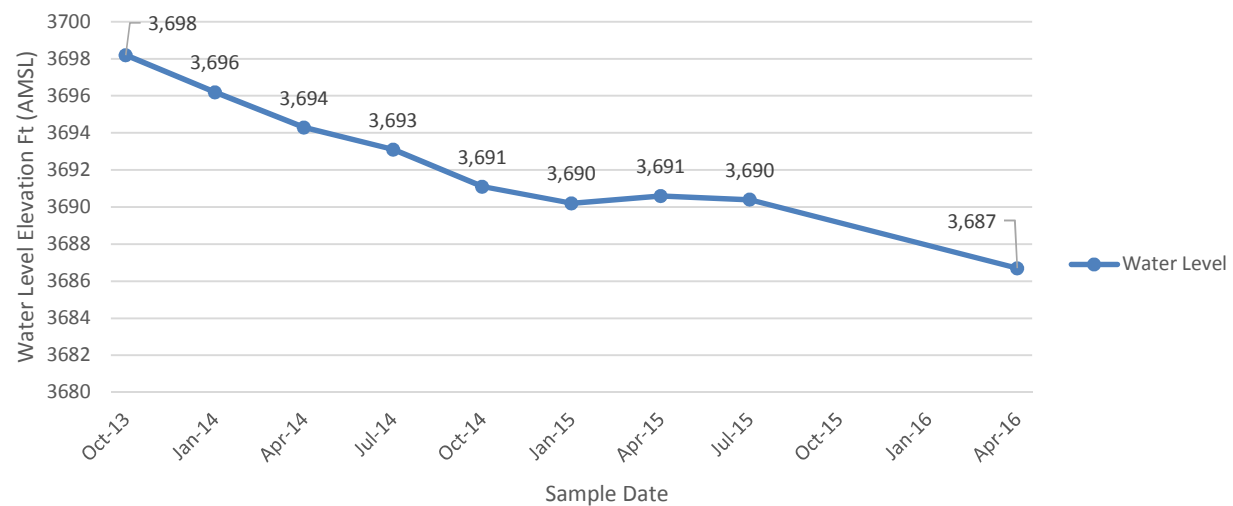
Marsland Well - Monitor 4A



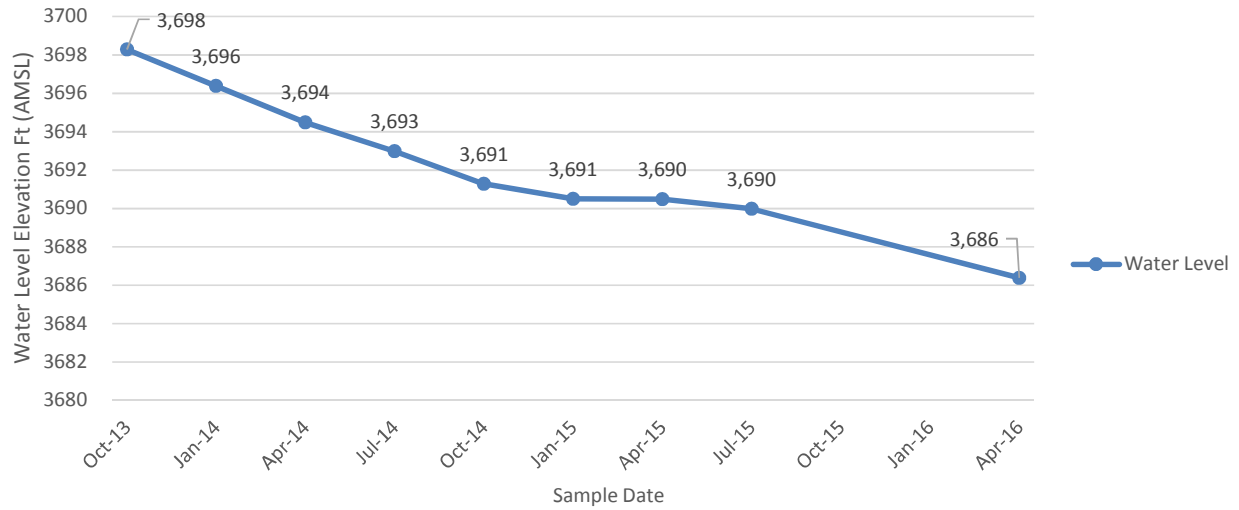
Marsland Well - Monitor 5



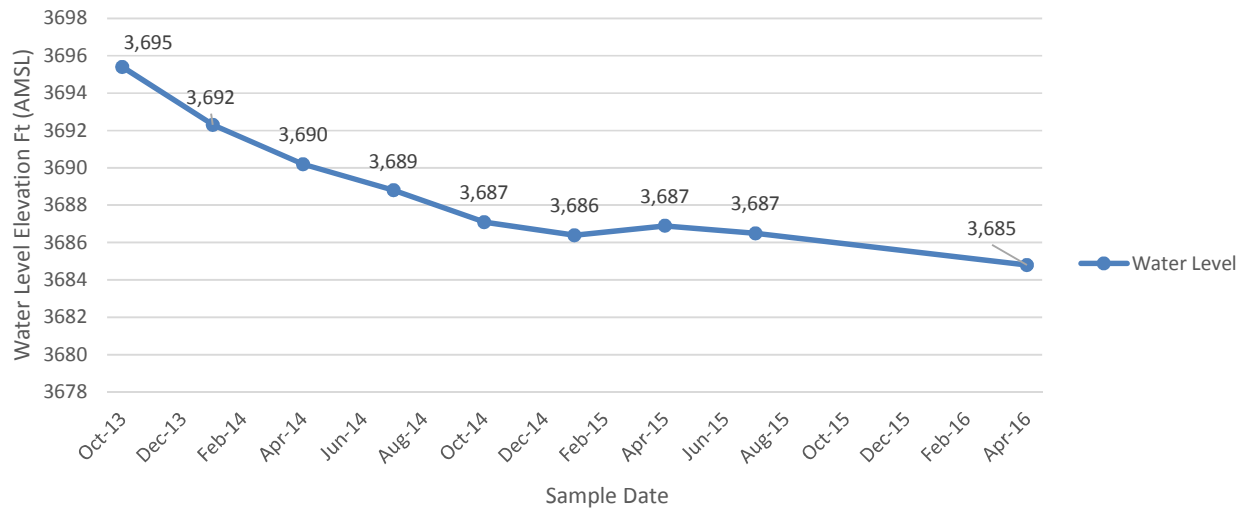
Marsland Well - Monitor 6



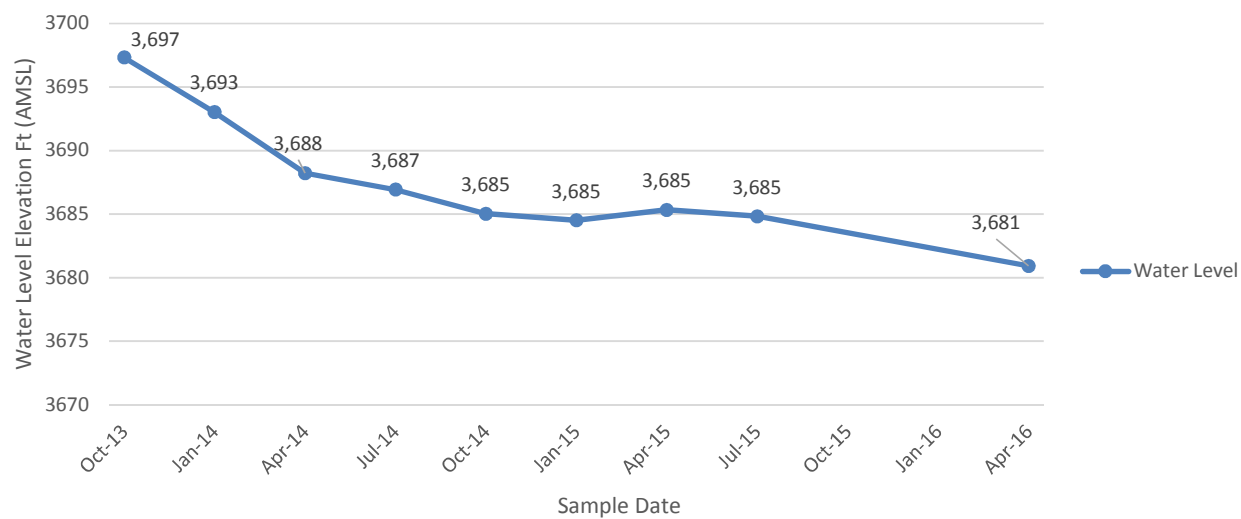
Marsland Well - Monitor 7



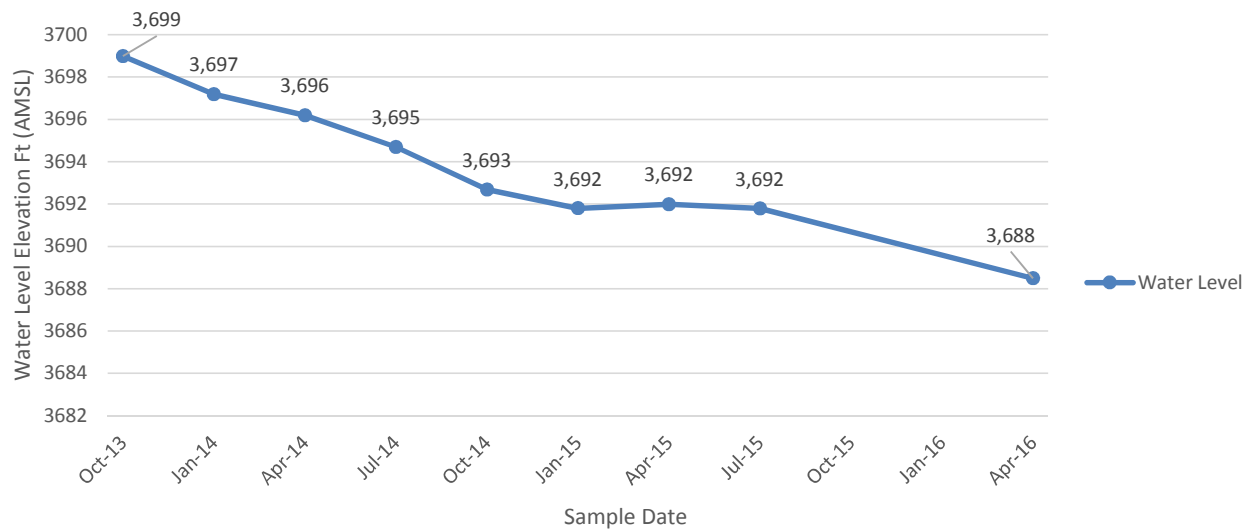
Marsland Well - Monitor 8



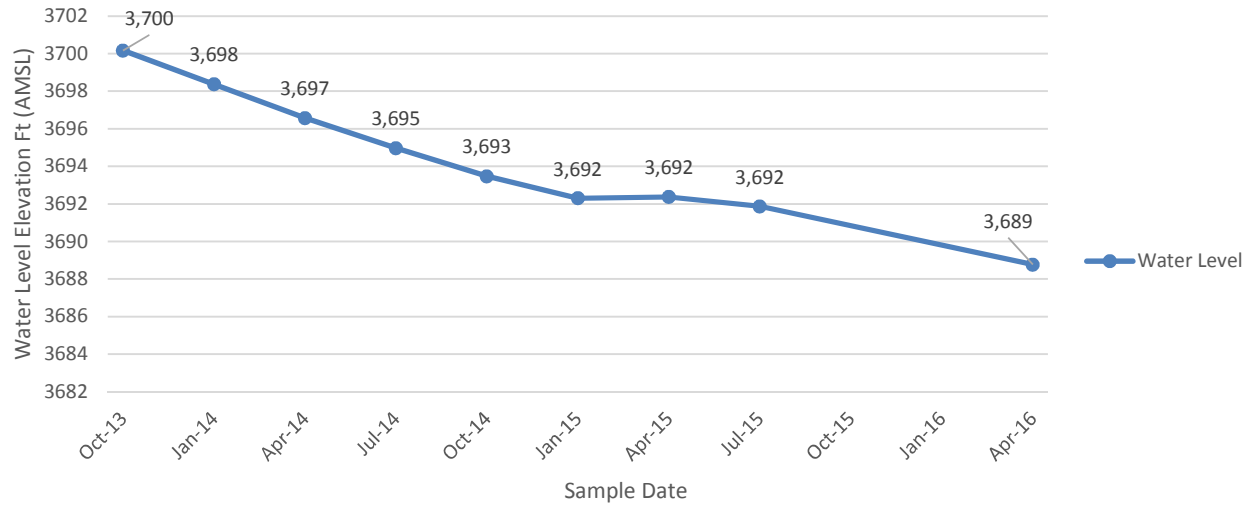
Marsland Well - Monitor 9



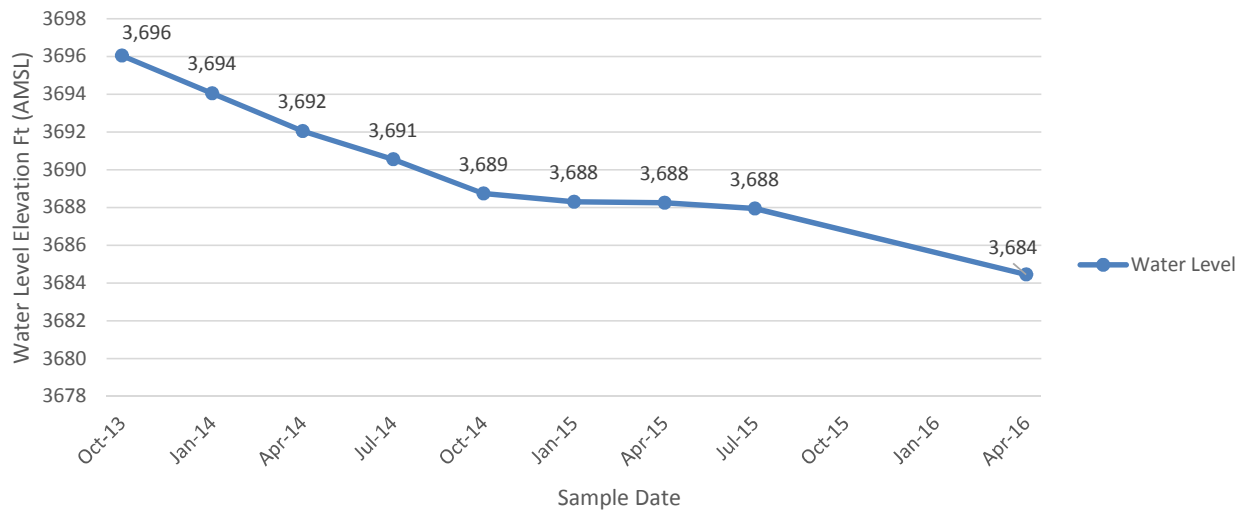
Marsland Well - Monitor 10

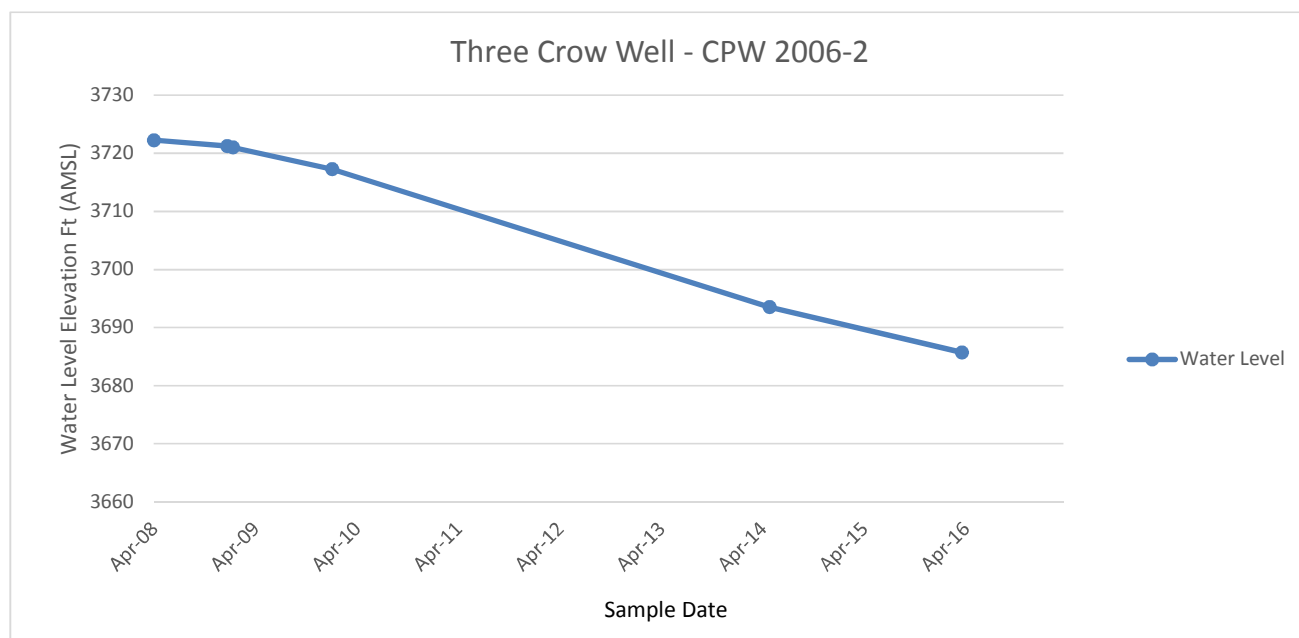
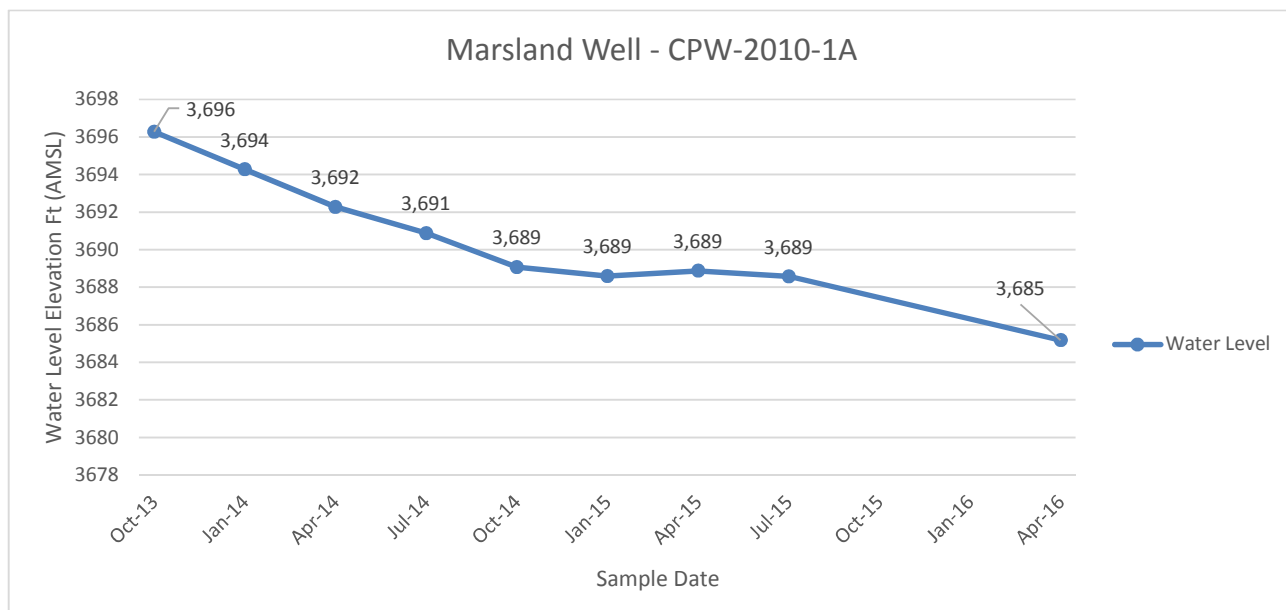


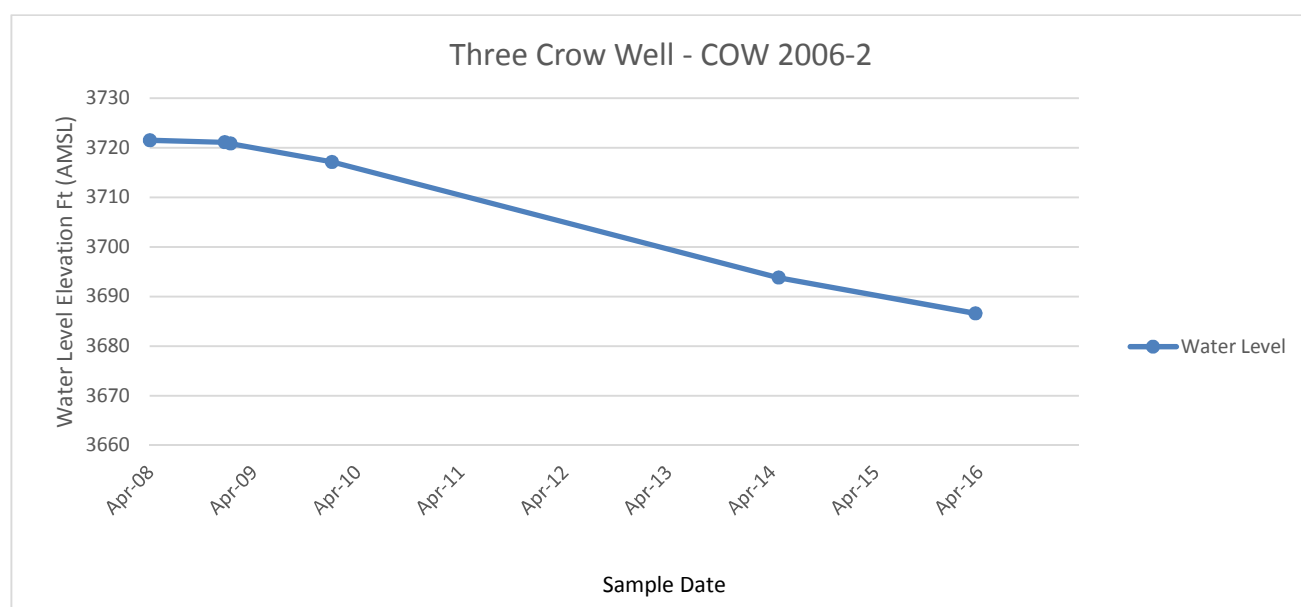
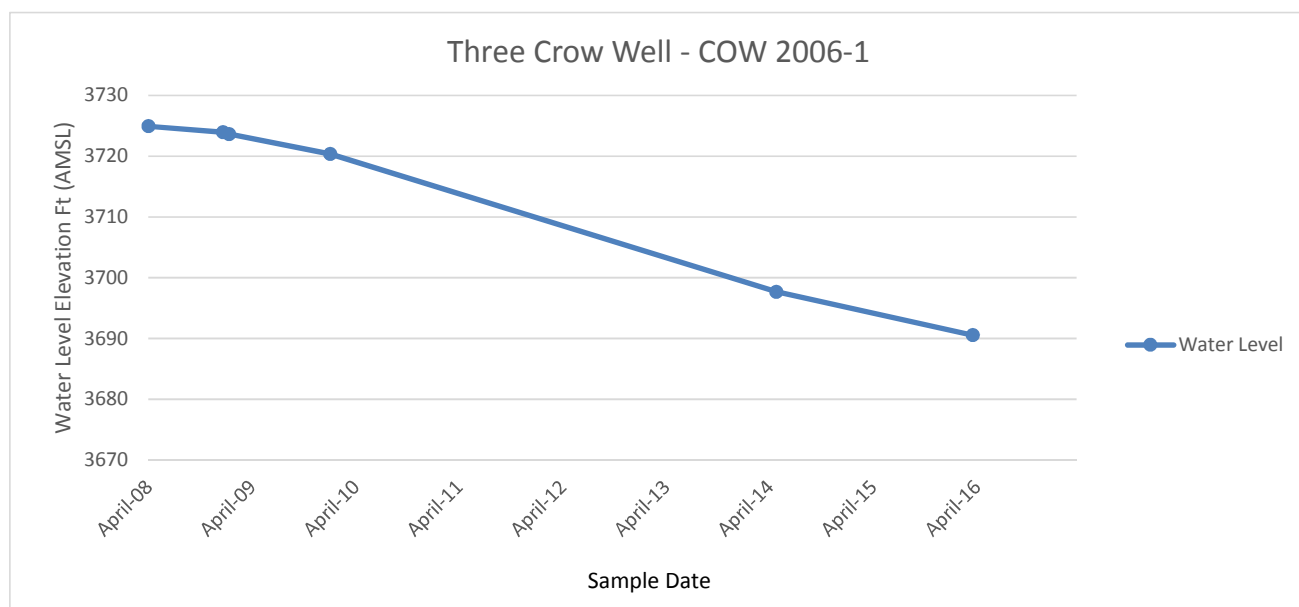
Marsland Well - Monitor 11

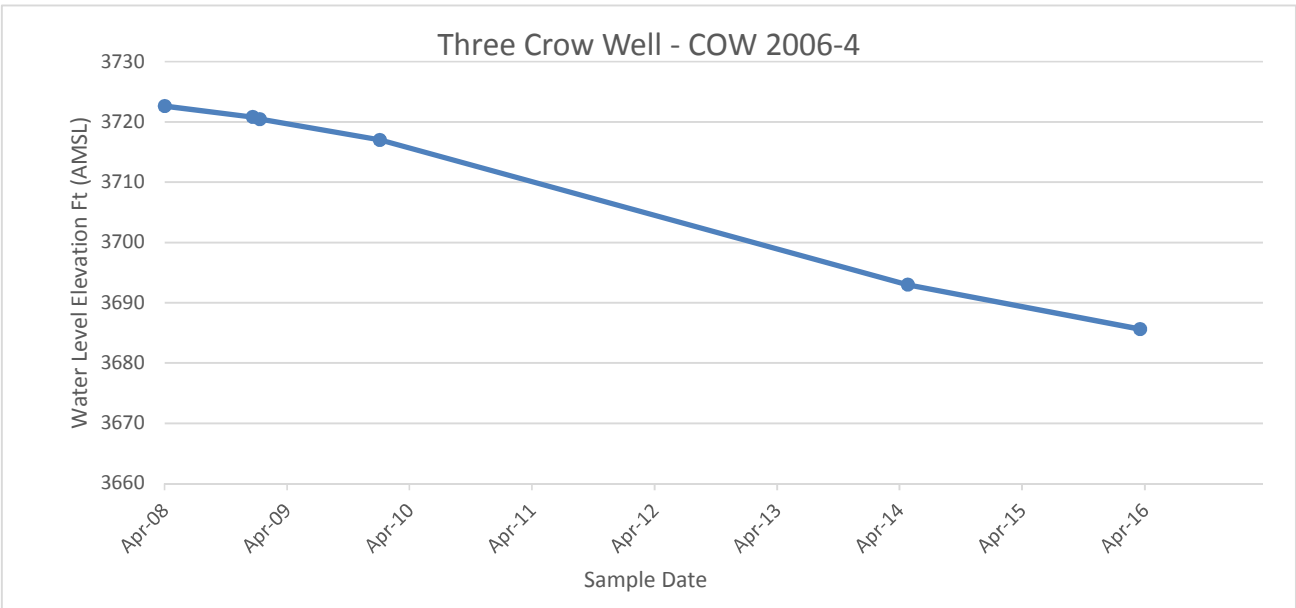
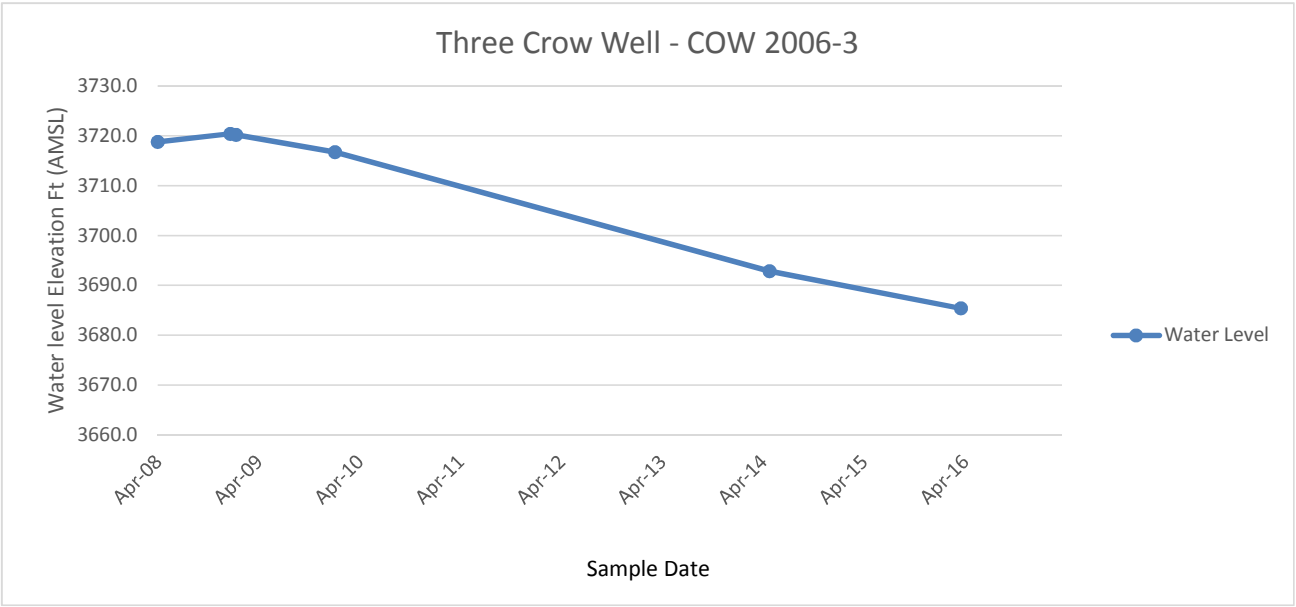


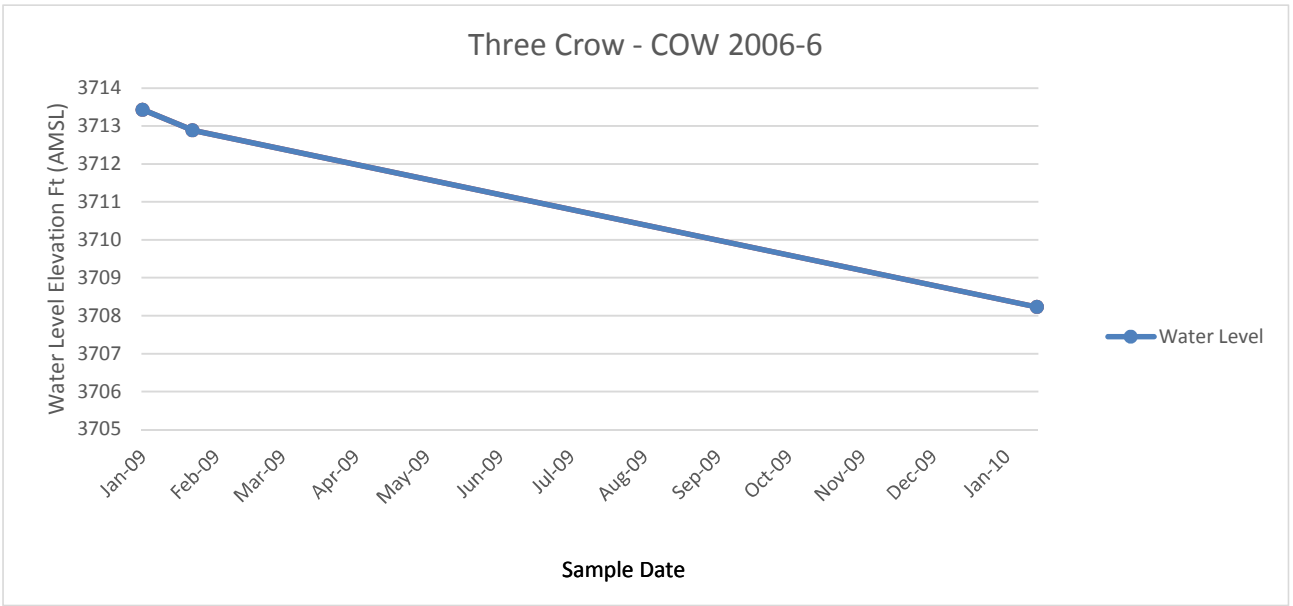
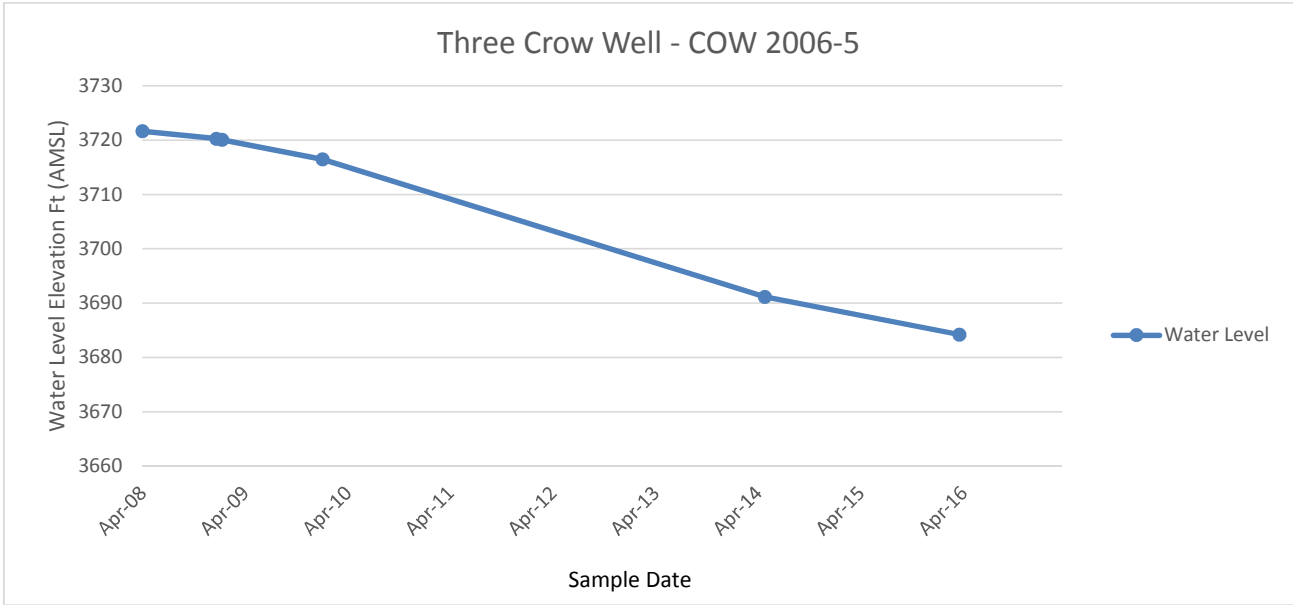
Marsland Well - CPW-2010-1



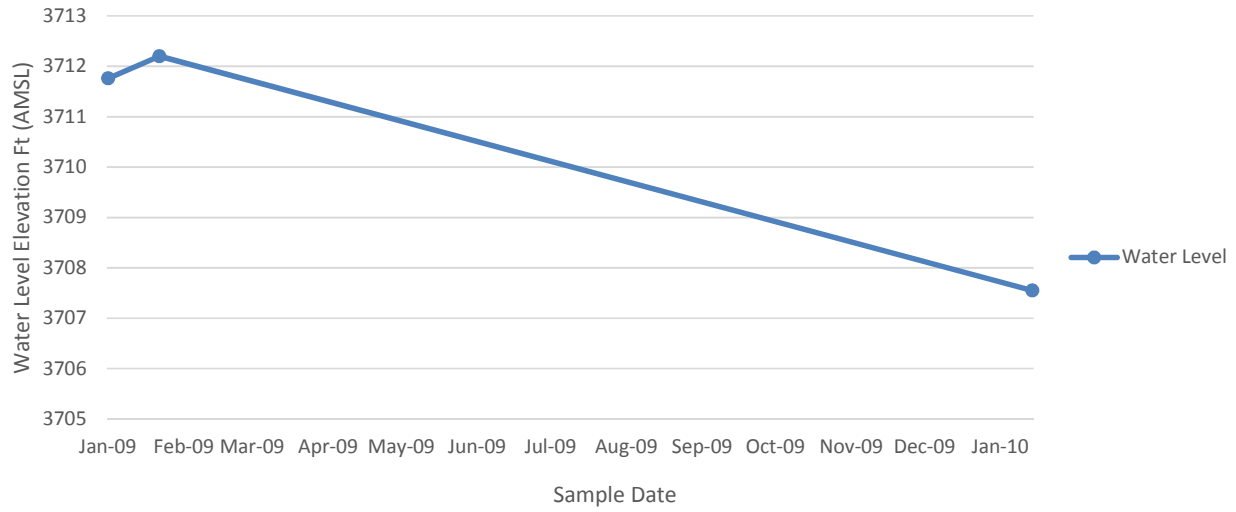




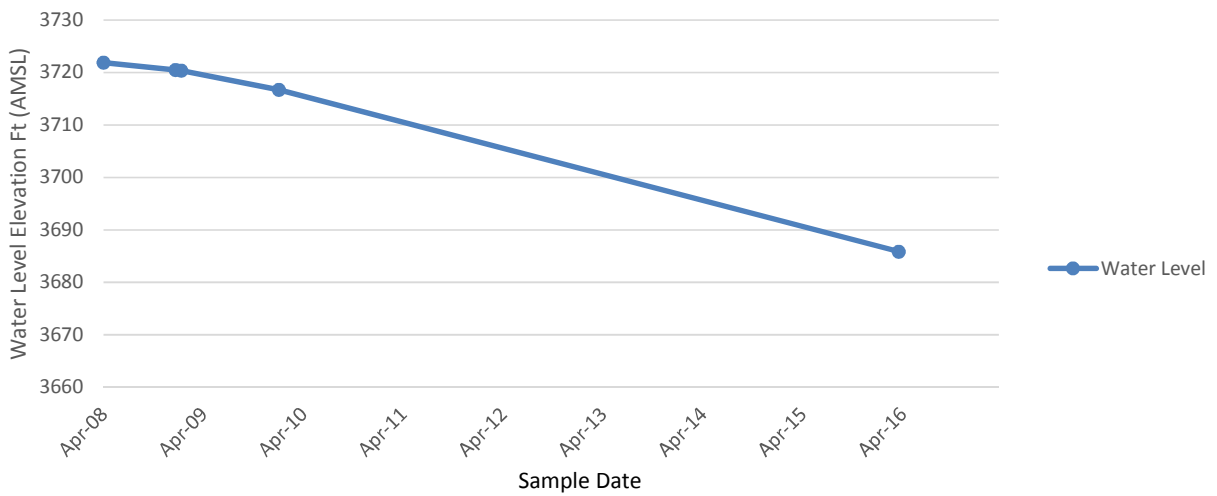


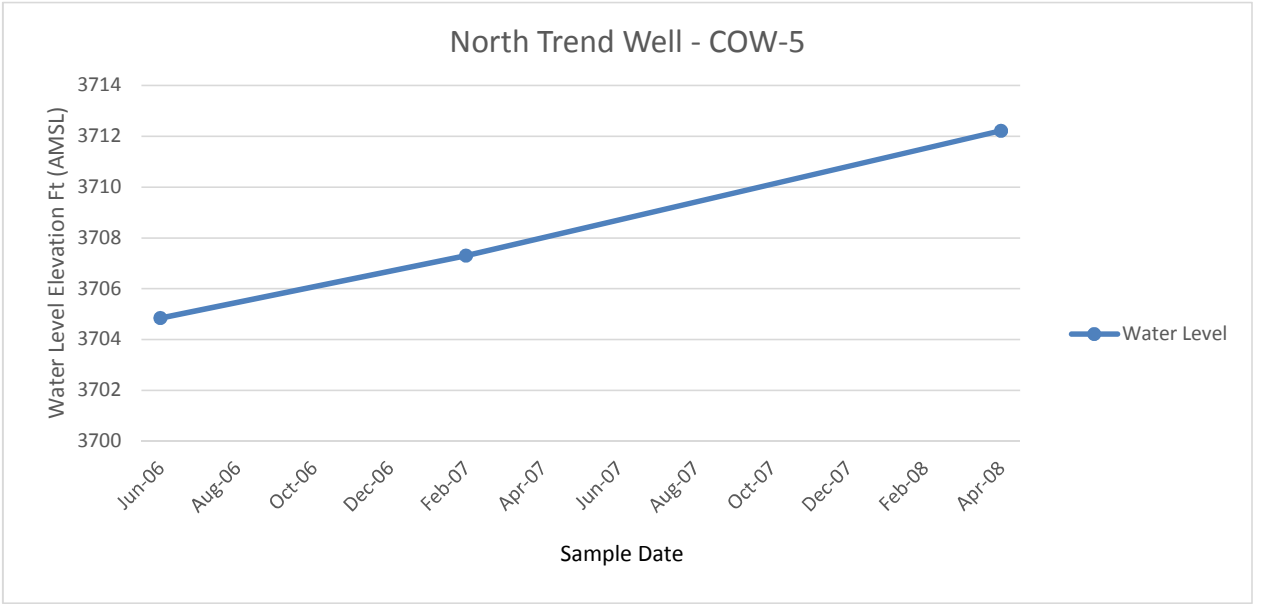
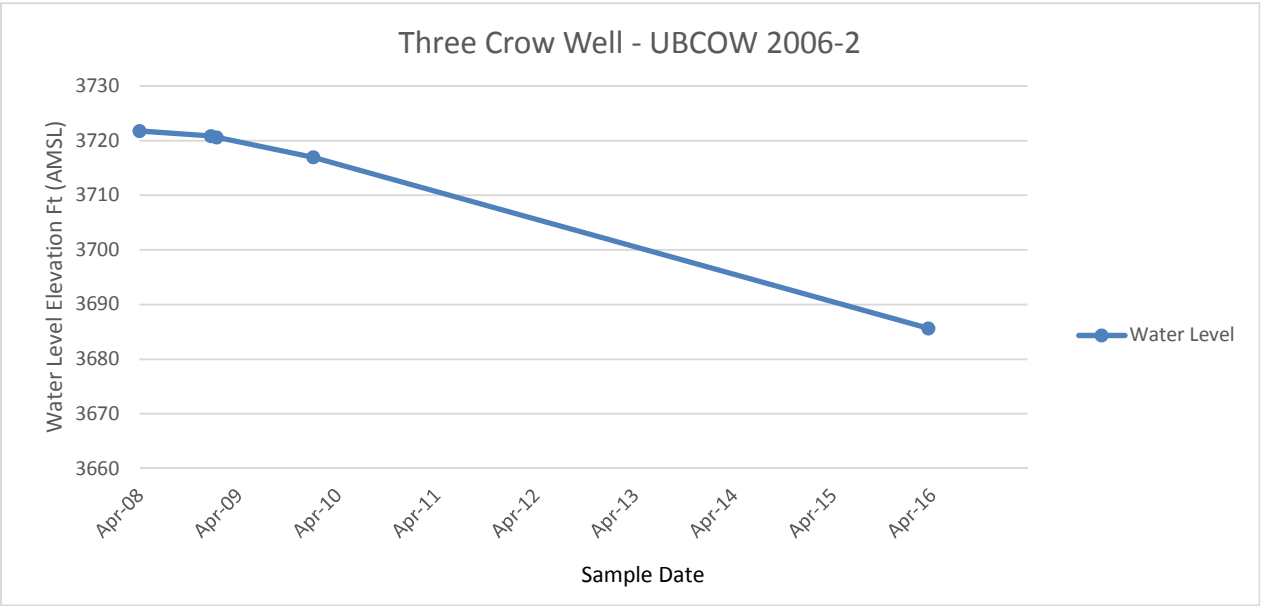


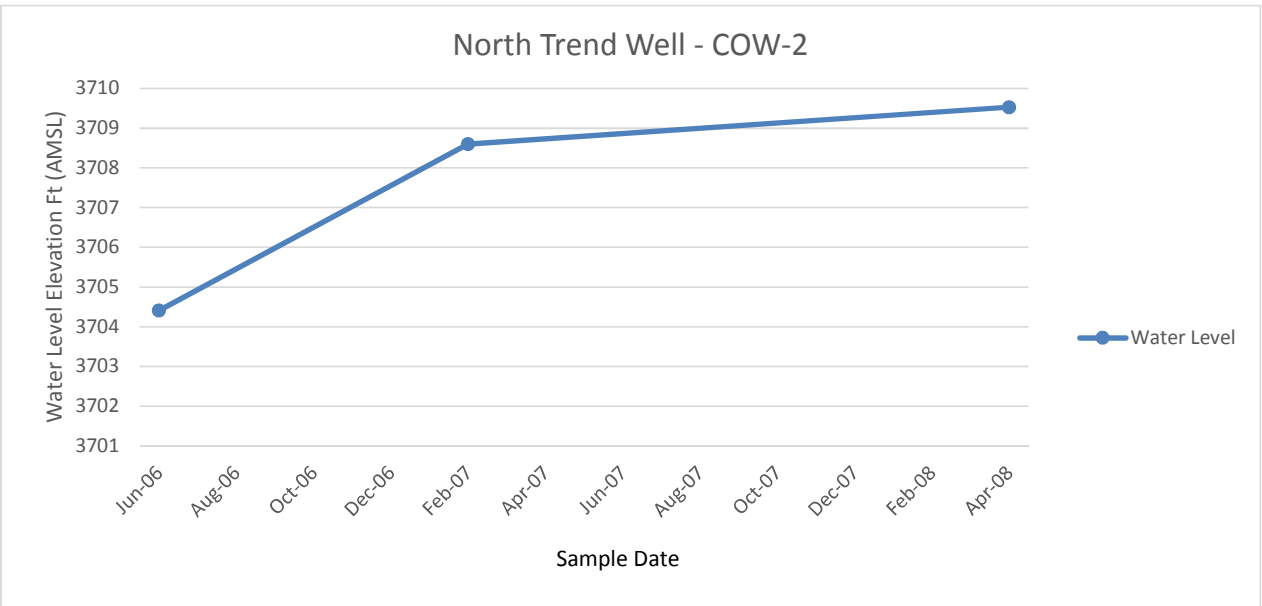
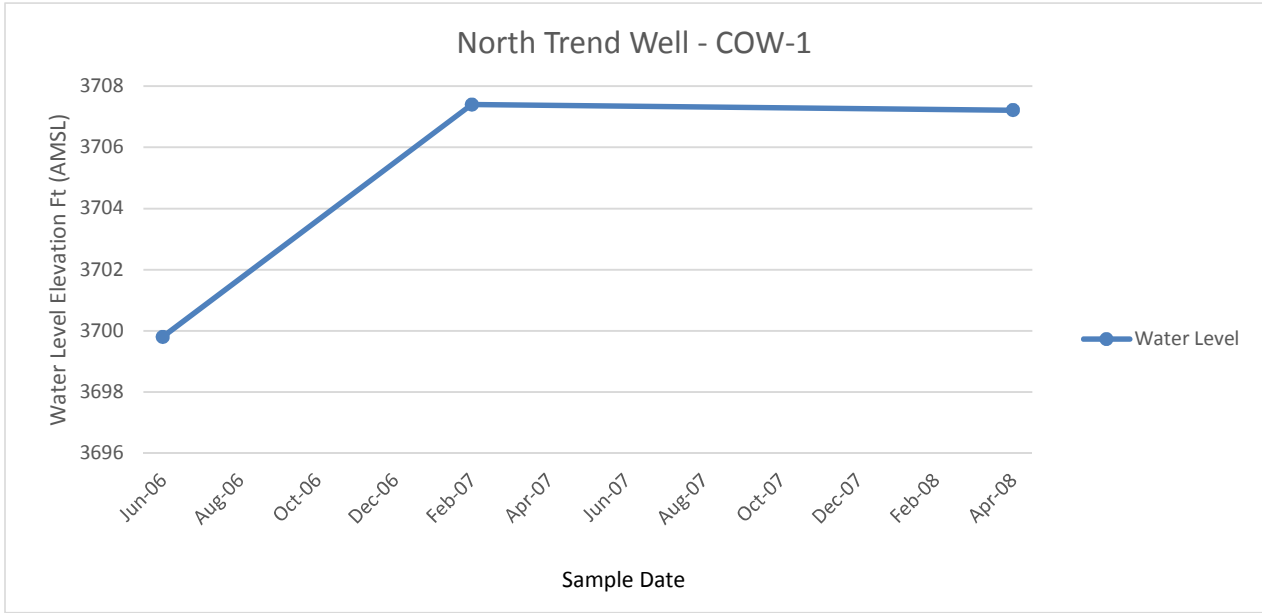
Three Crow - COW 2006-7

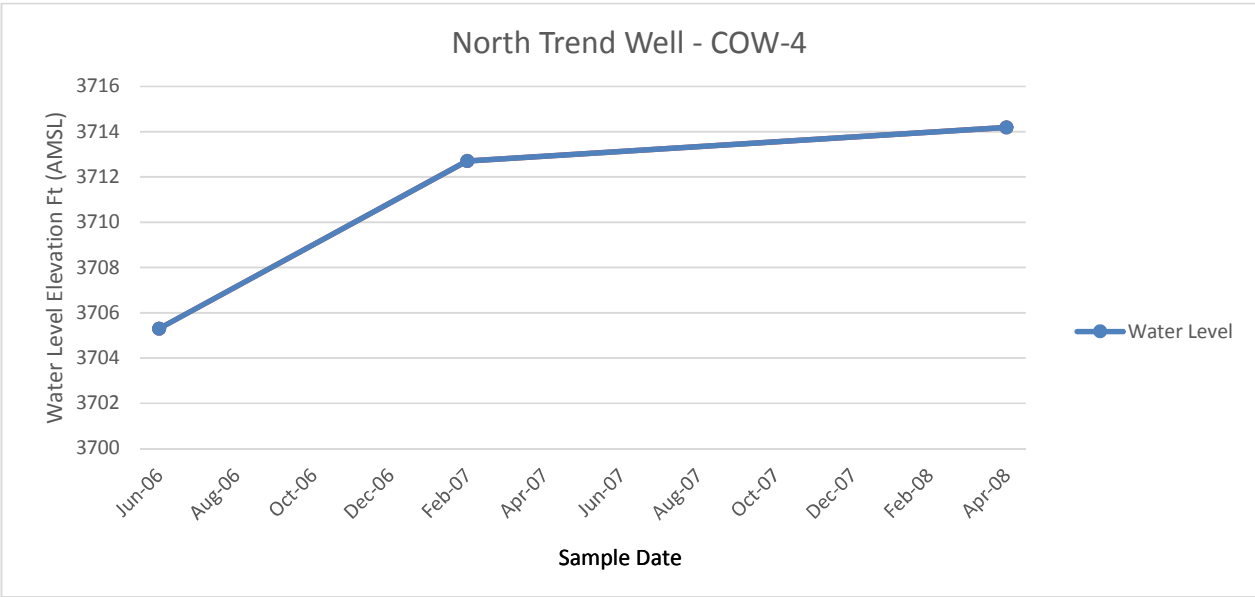
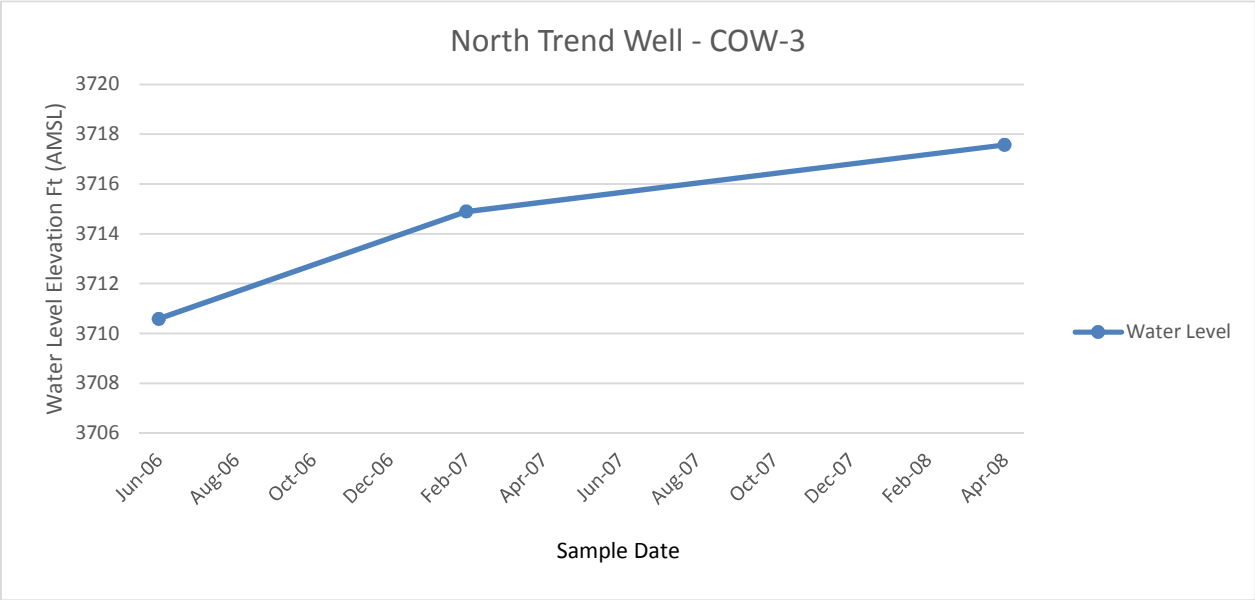


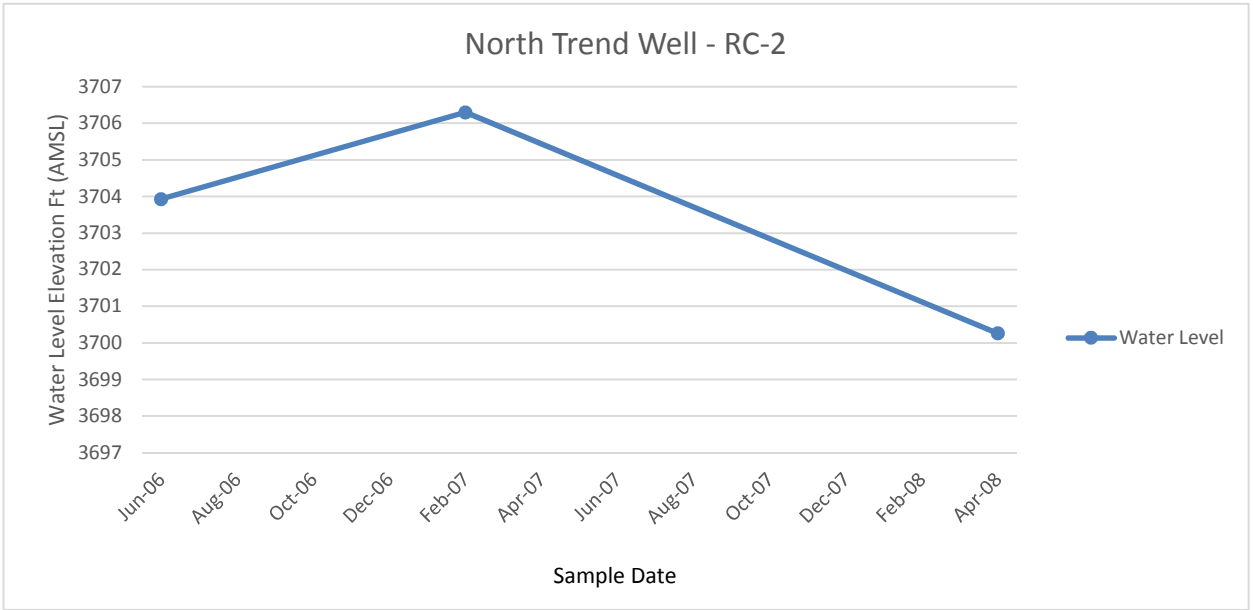
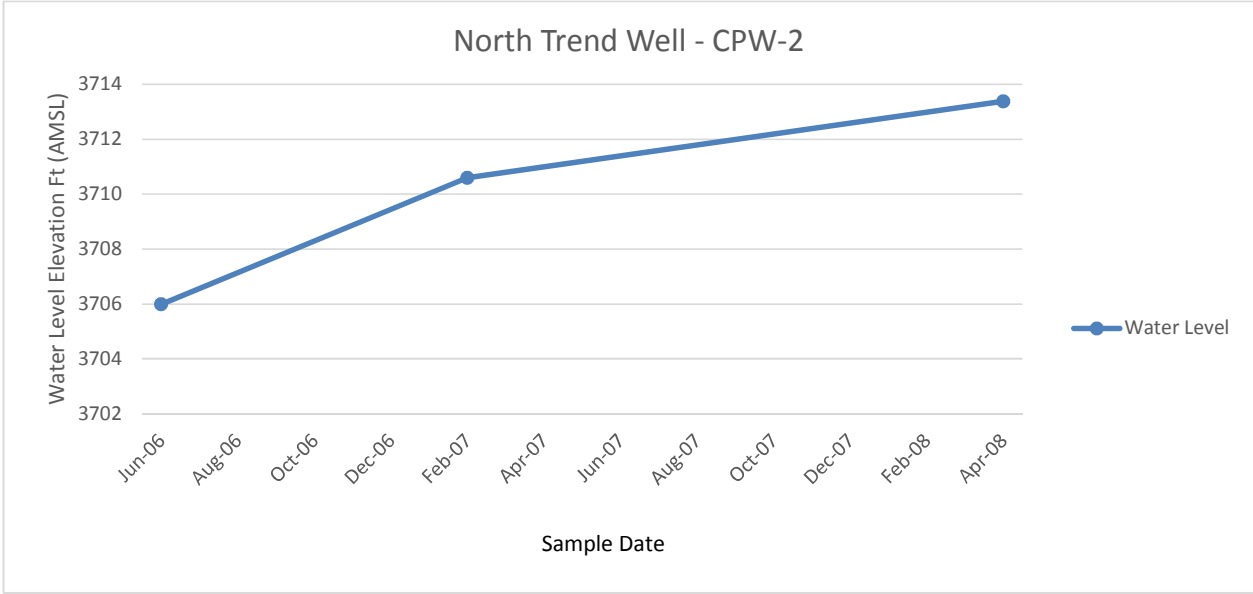
Three Crow Well - UBCOW 2006-1



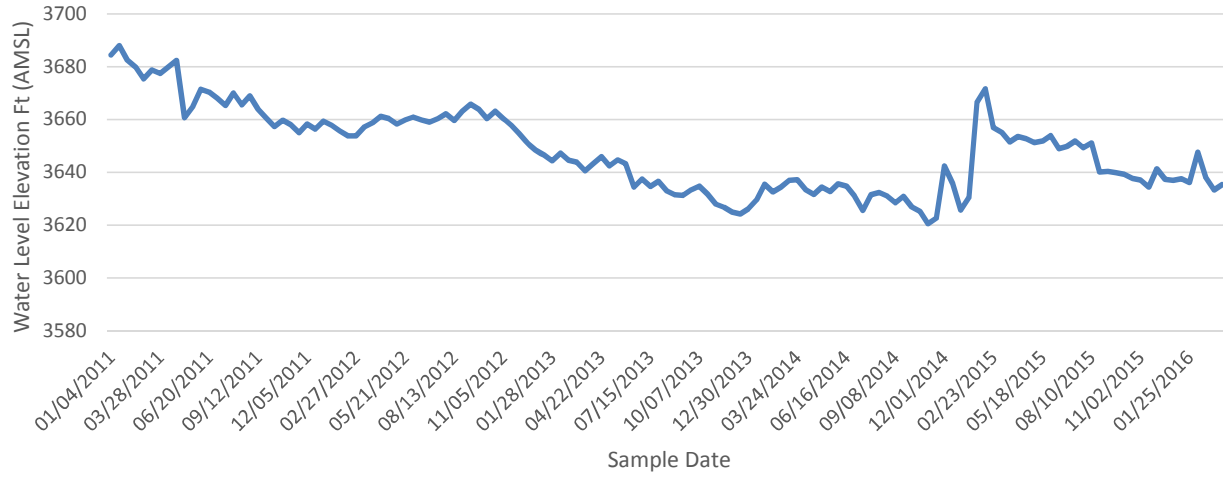




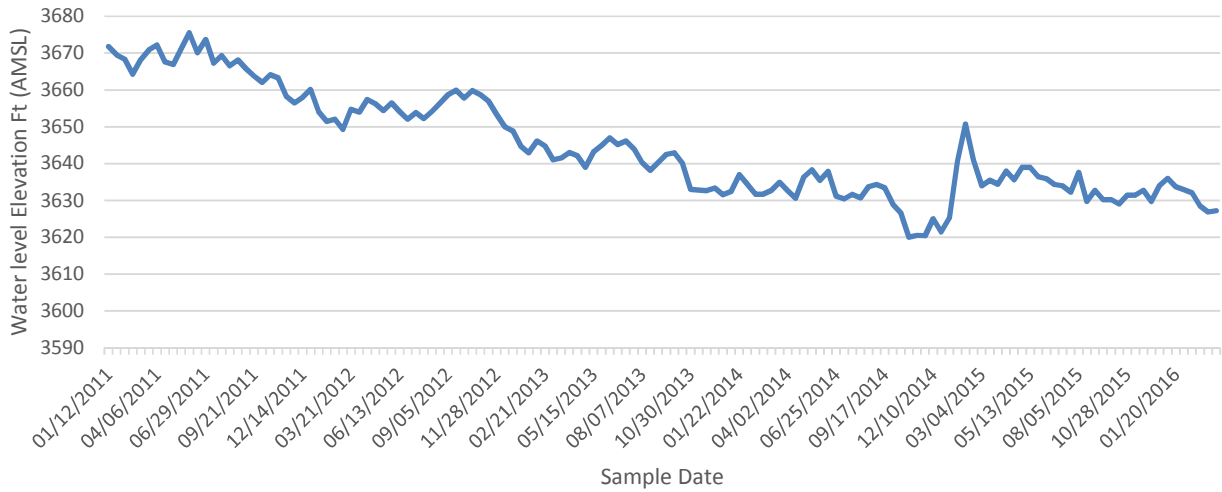




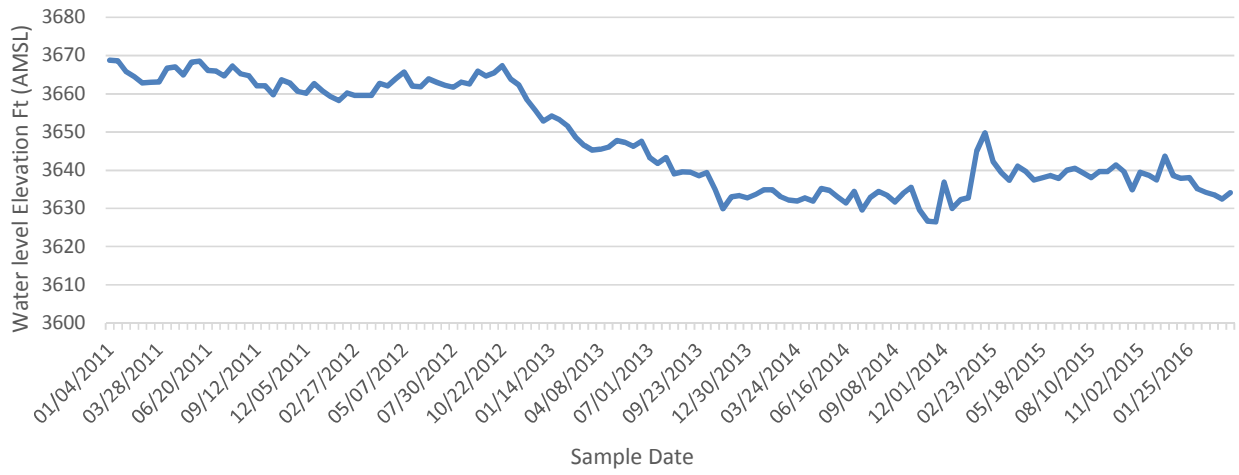
CM3-5 Water Level Elevation



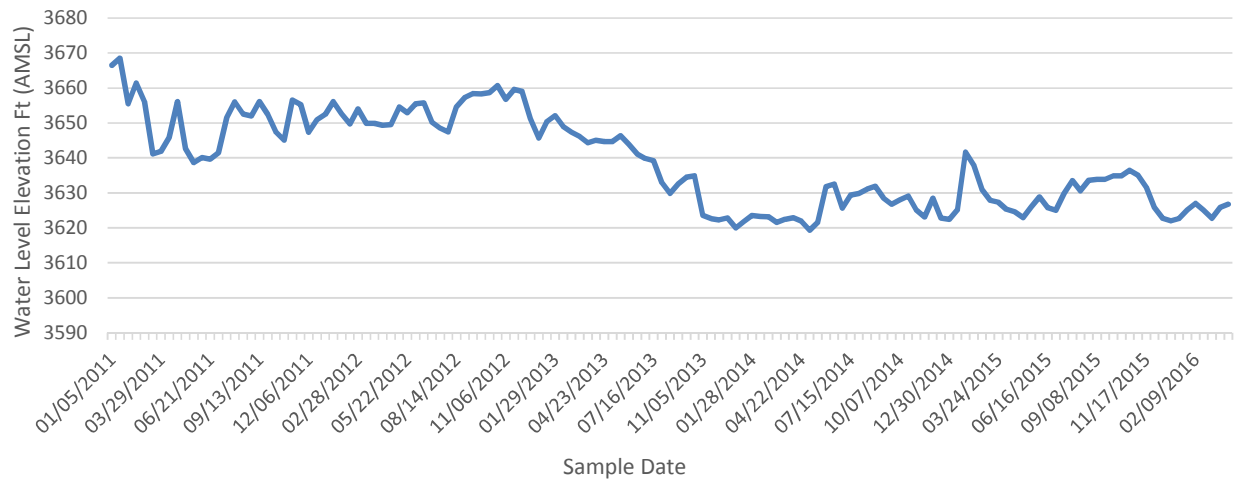
CM5-6 Water Level Elevation



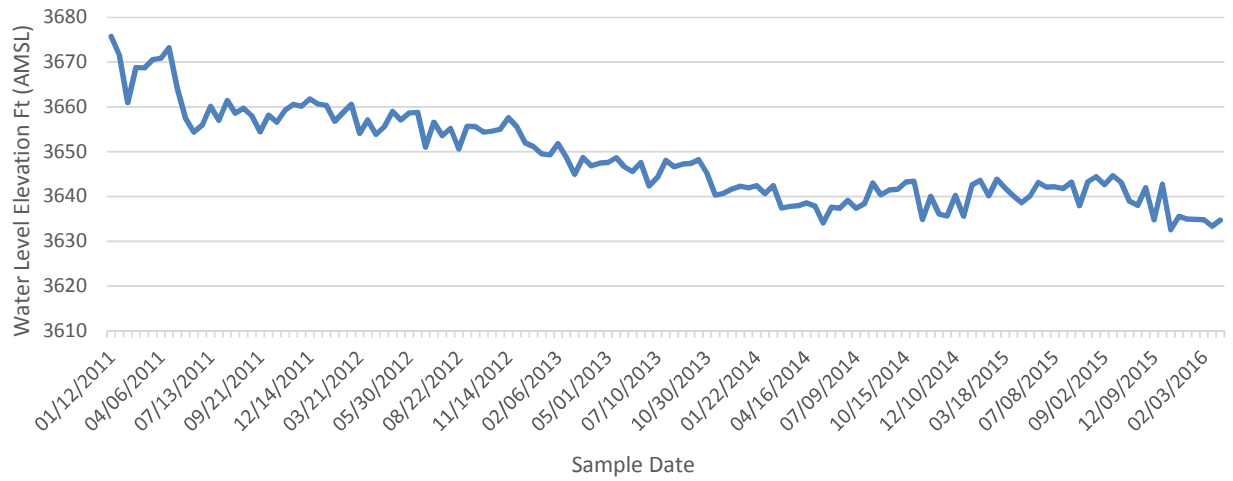
CM6-17 Water Level Elevation



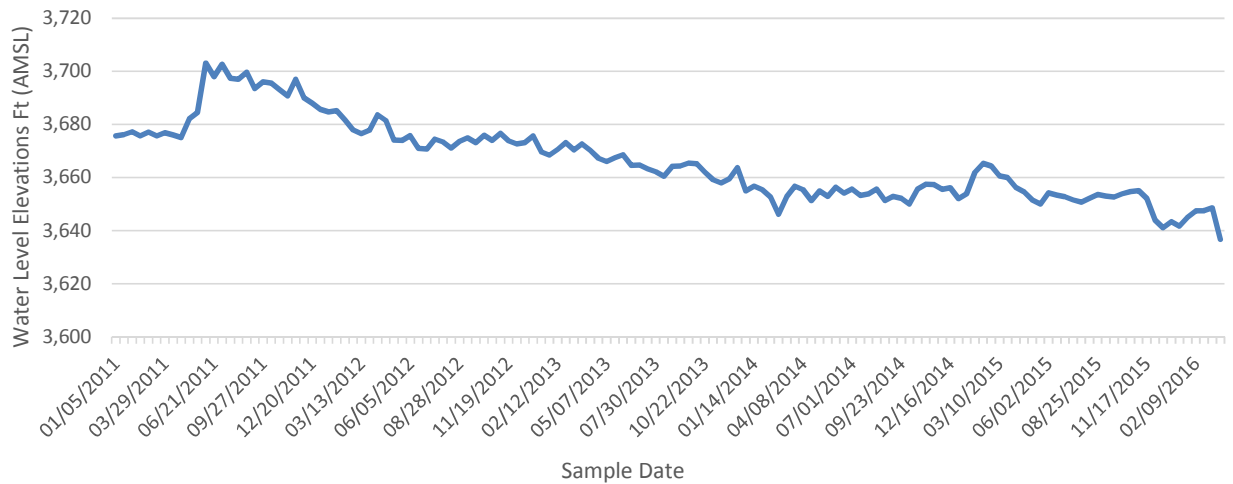
CM8-7 Water Level Elevation

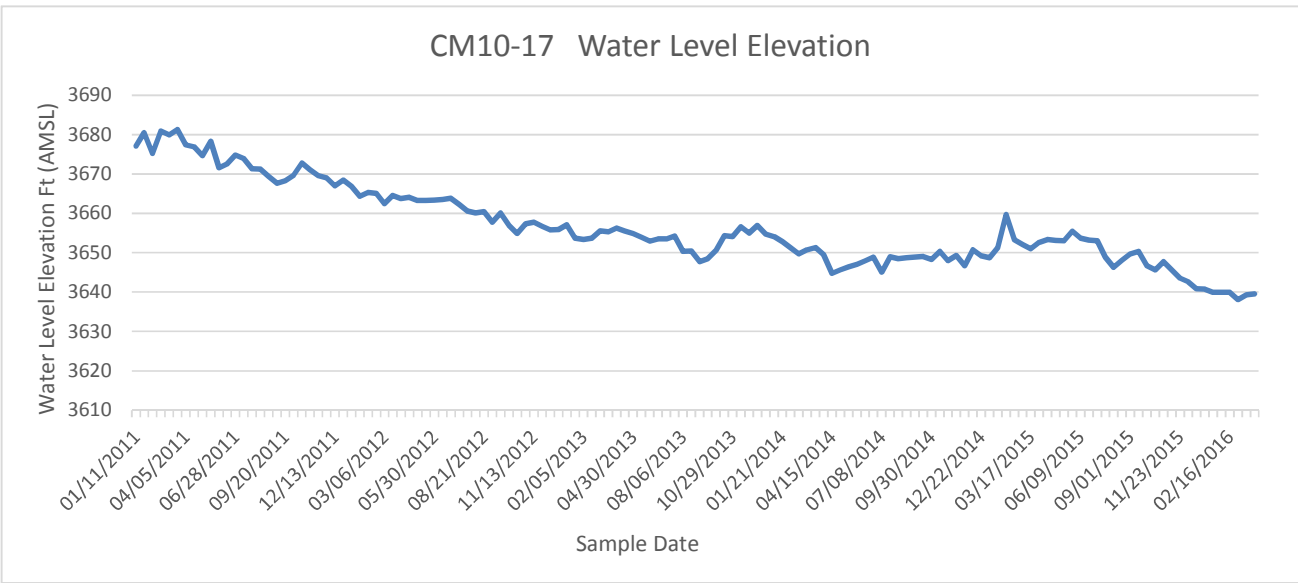
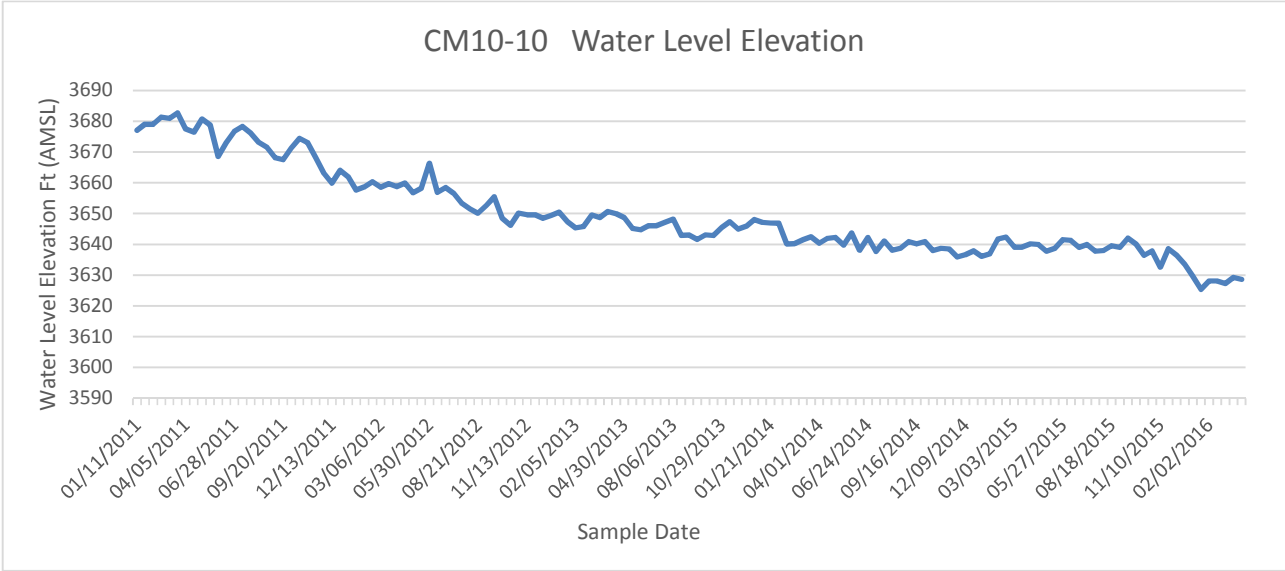


CM8-19 Water Level Elevation

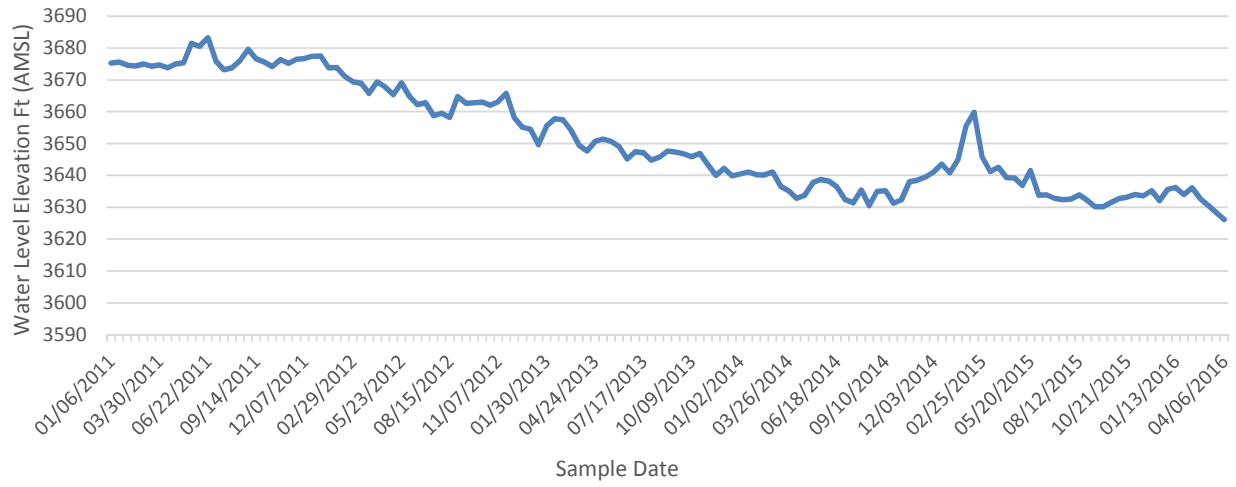


CM9-8 Water Level Elevation





CM11-1 Water Level Elevation



CM11-15 Water Level Elevation

