Figure 11
Tributary 5A
R1CO-1 Groundwater Elevation Monitoring

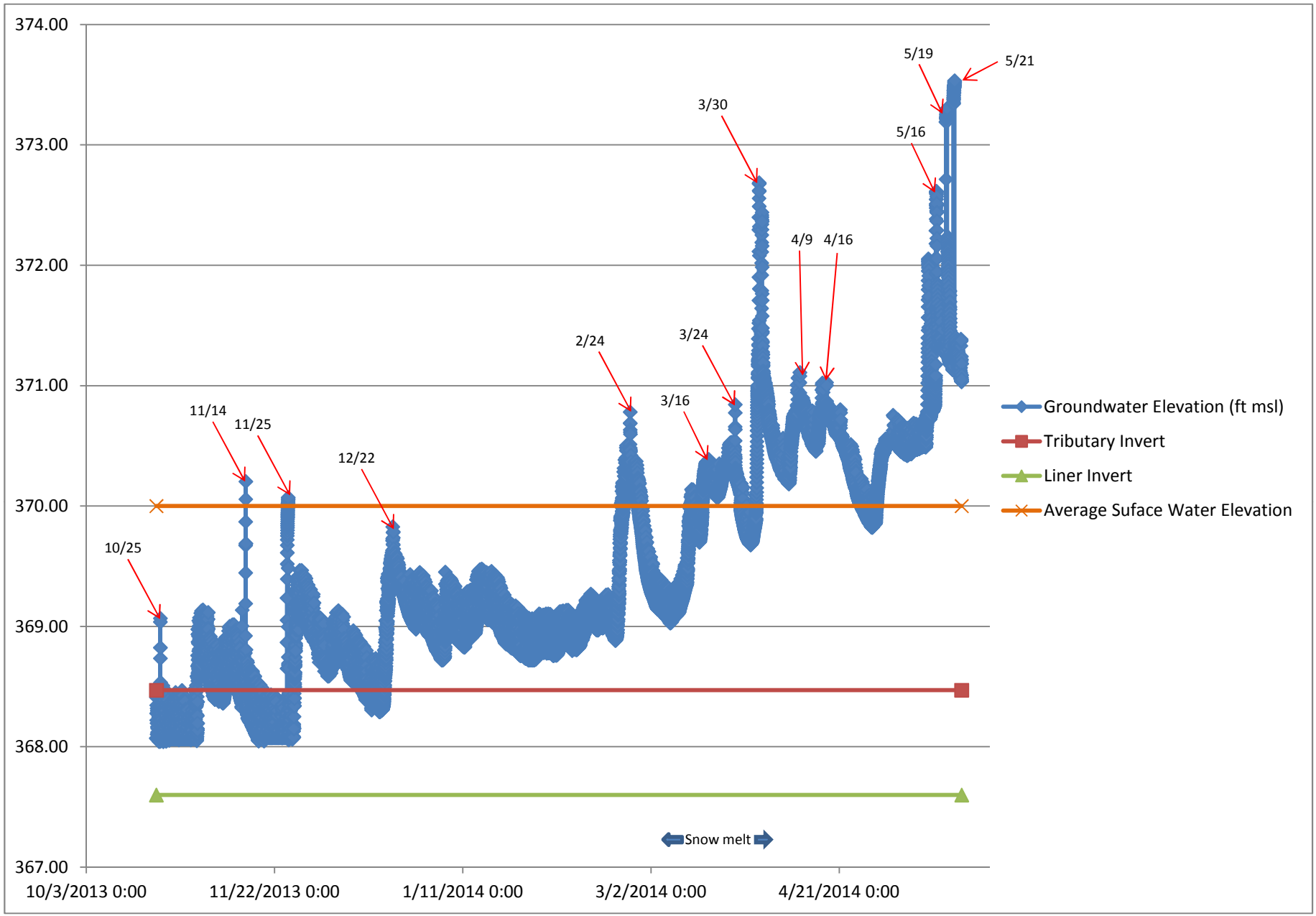


Figure 12
Tributary 5A
R1OM-5 Groundwater Elevation Monitoring

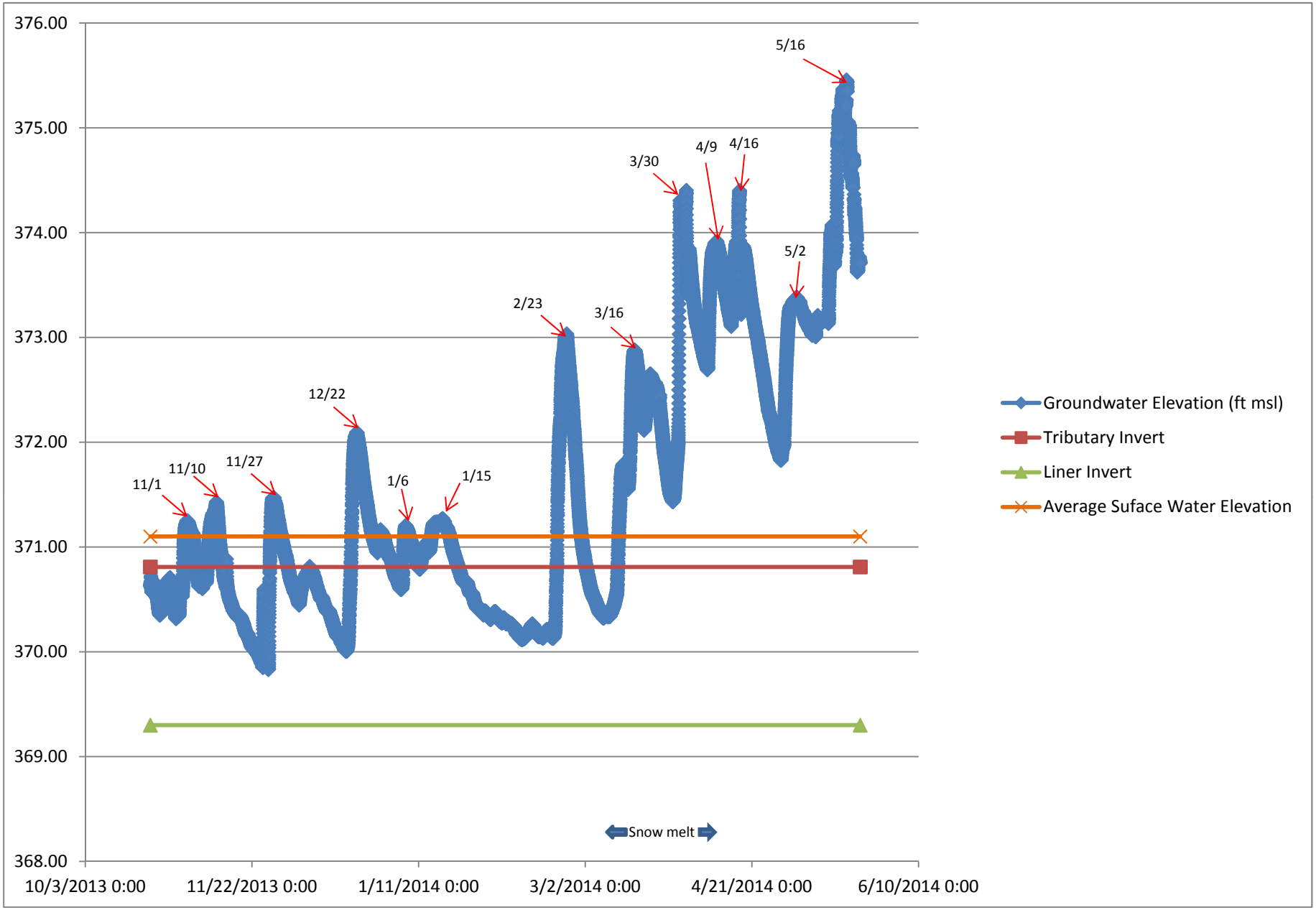


Figure 13
Tributary 5A
R1CO-12 Groundwater Elevation Monitoring

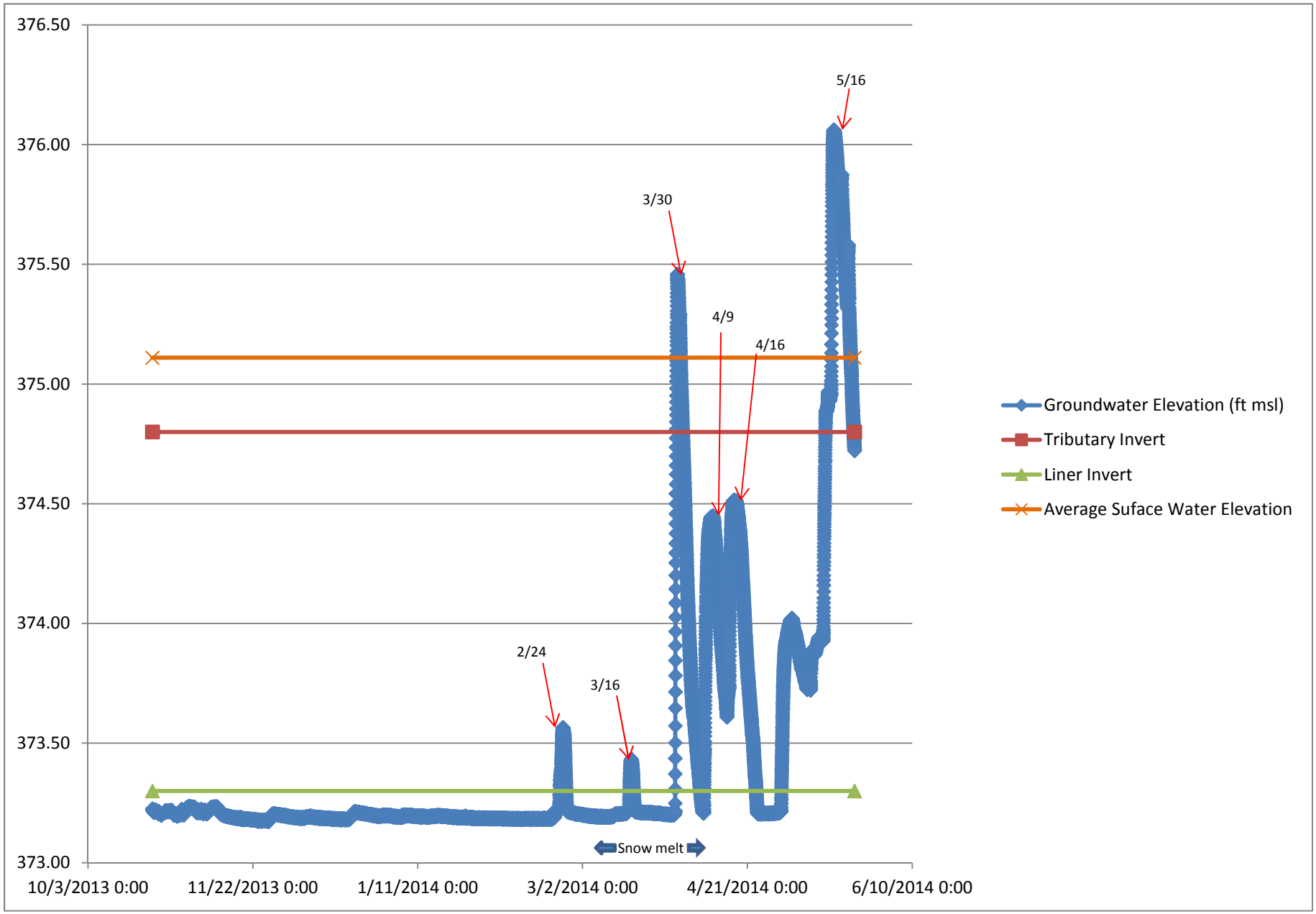


Figure 14
Tributary 5A
R2CO-1 Groundwater Elevation Monitoring

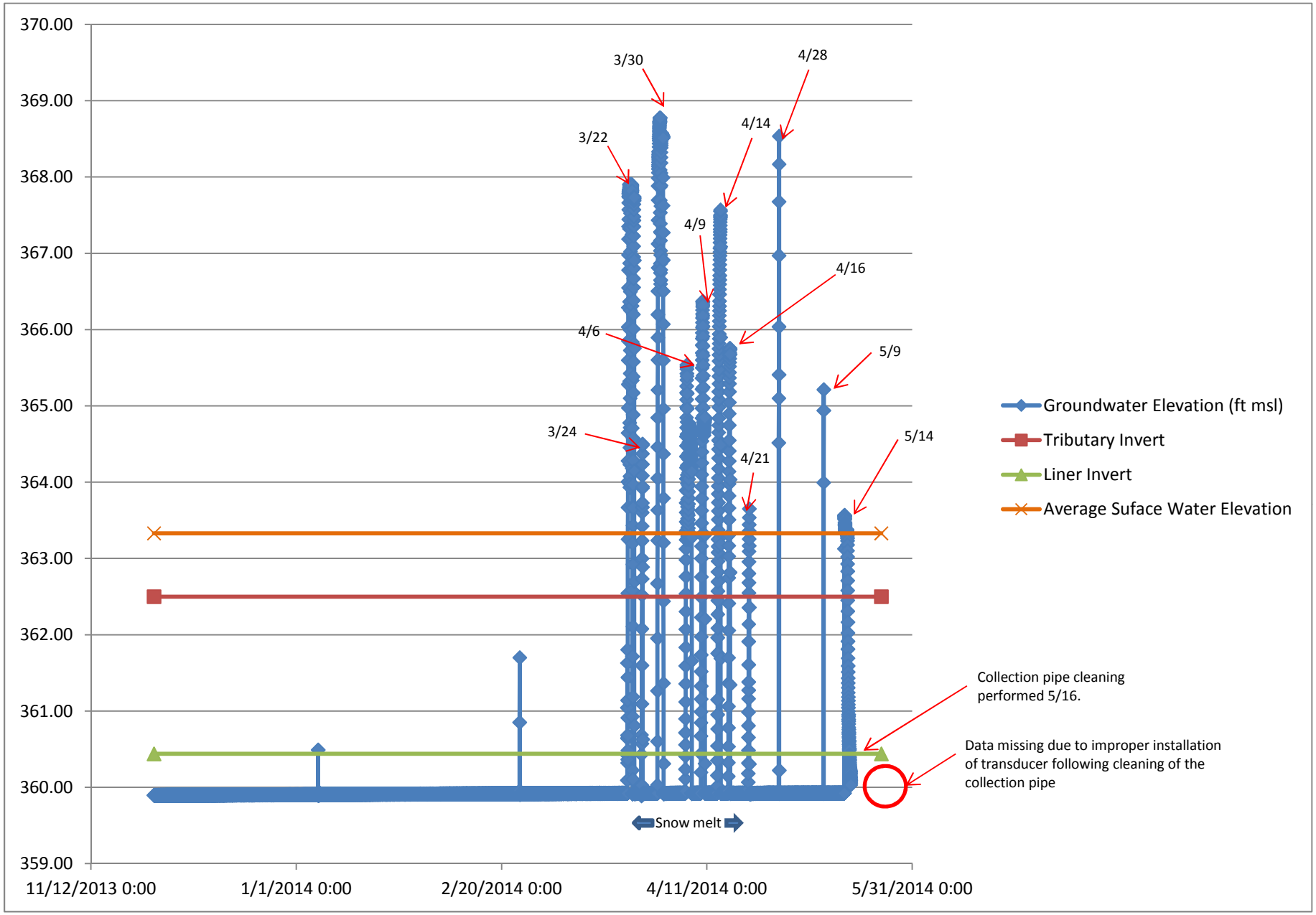


Figure 15
Tributary 5A
R2OM-1 Groundwater Elevation Monitoring

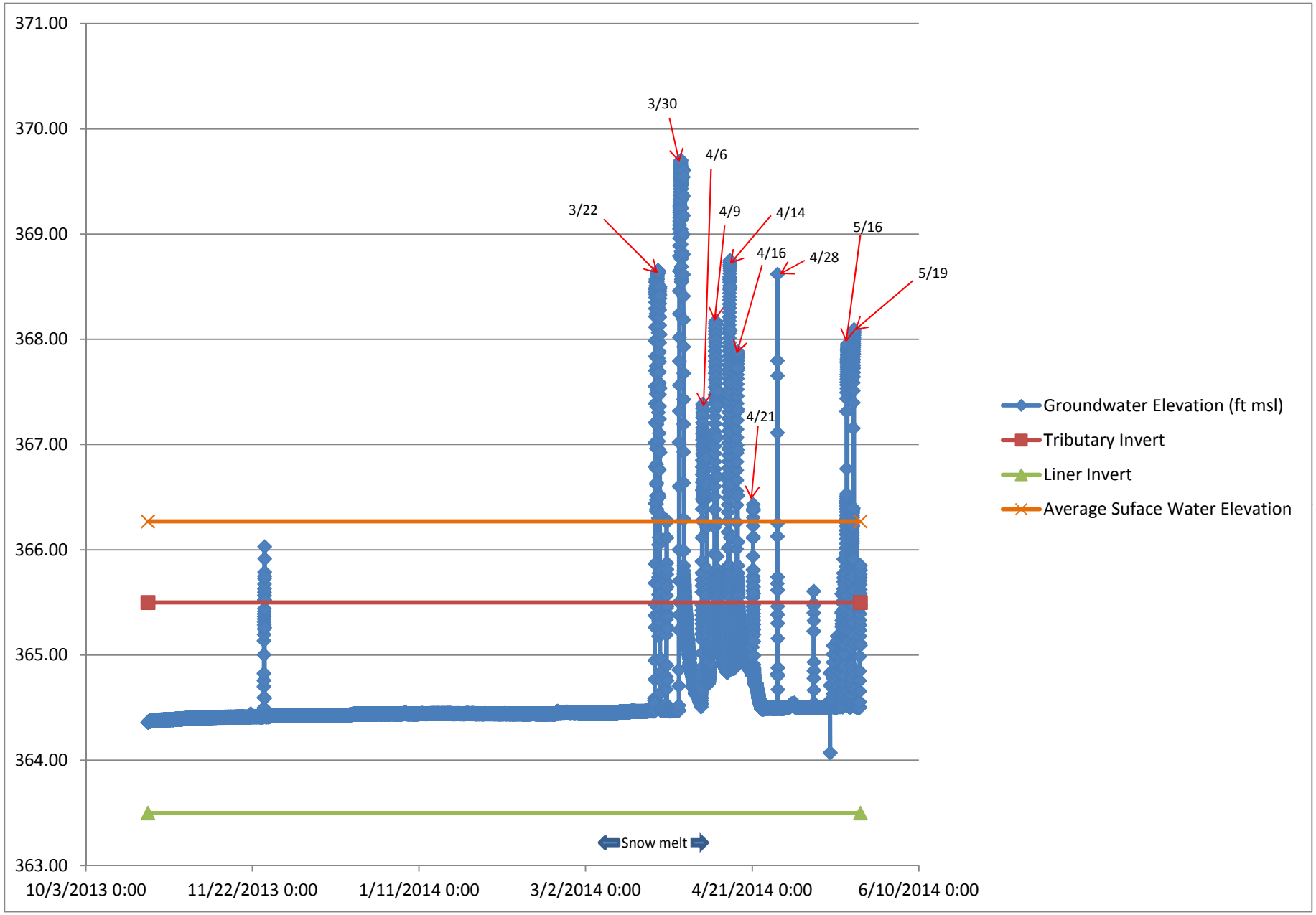


Figure 16
Tributary 5A
R2CO-8 Groundwater Elevation Monitoring

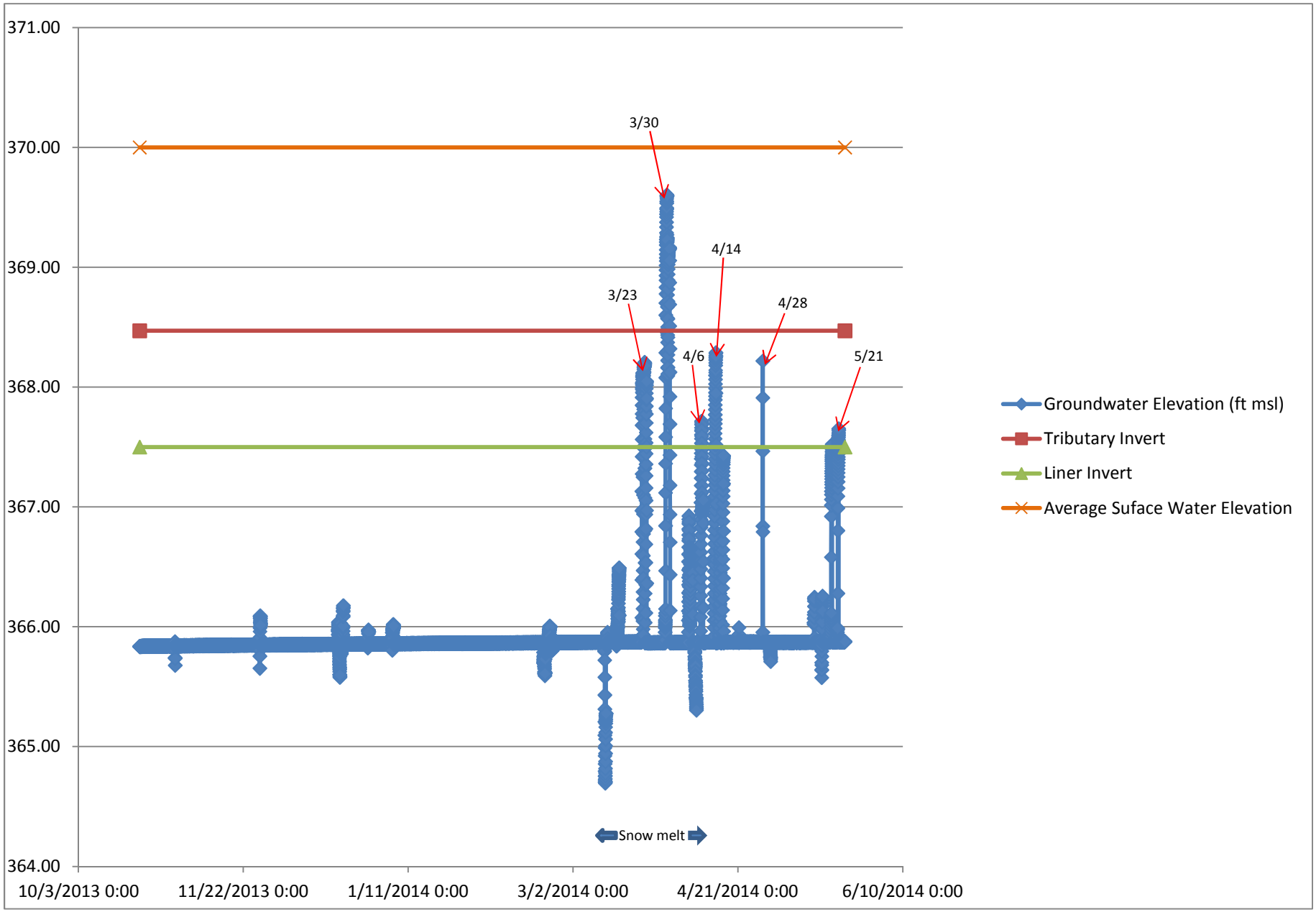


Figure 17
Tributary 5A
Surface Water Elevations

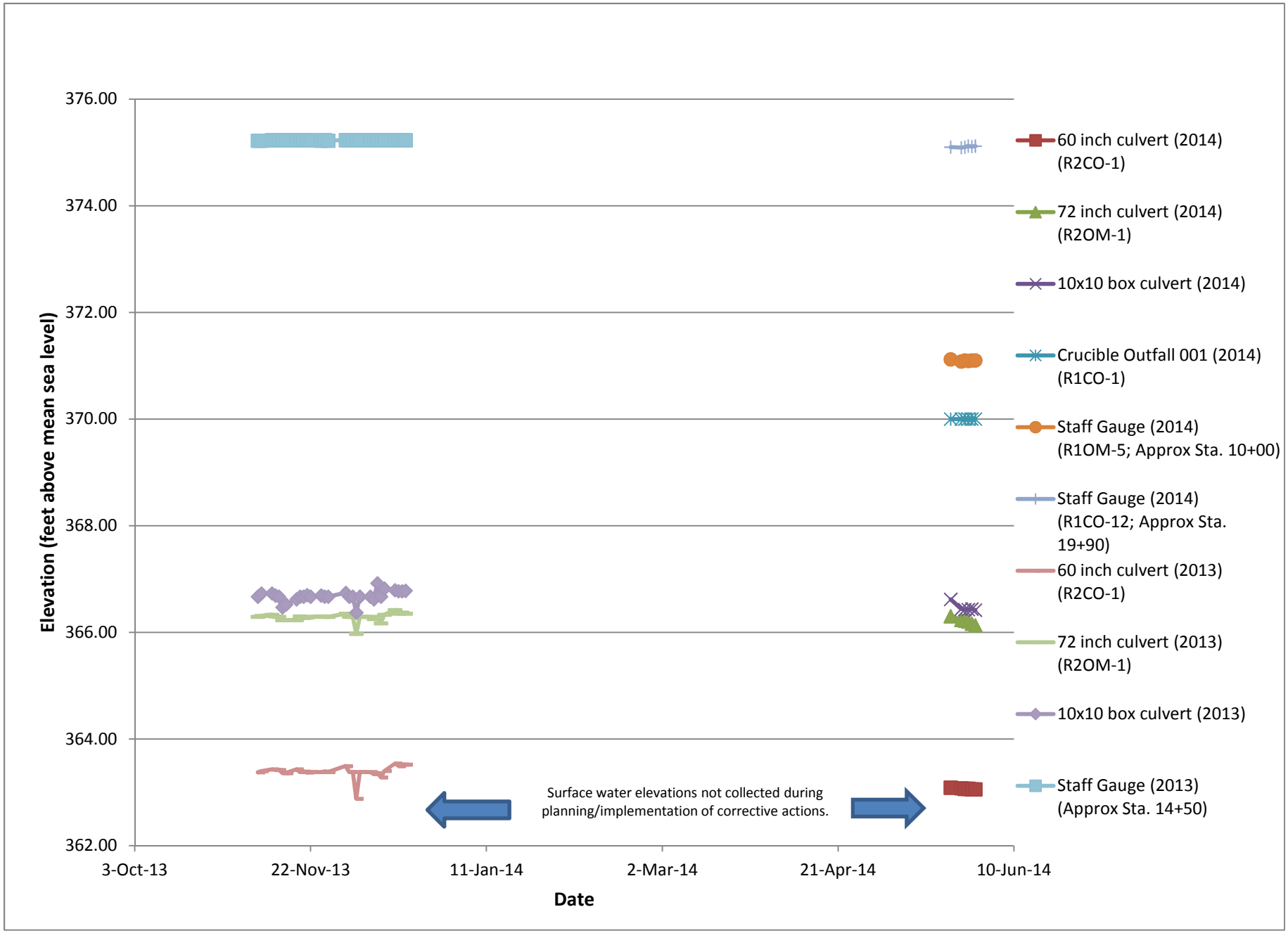
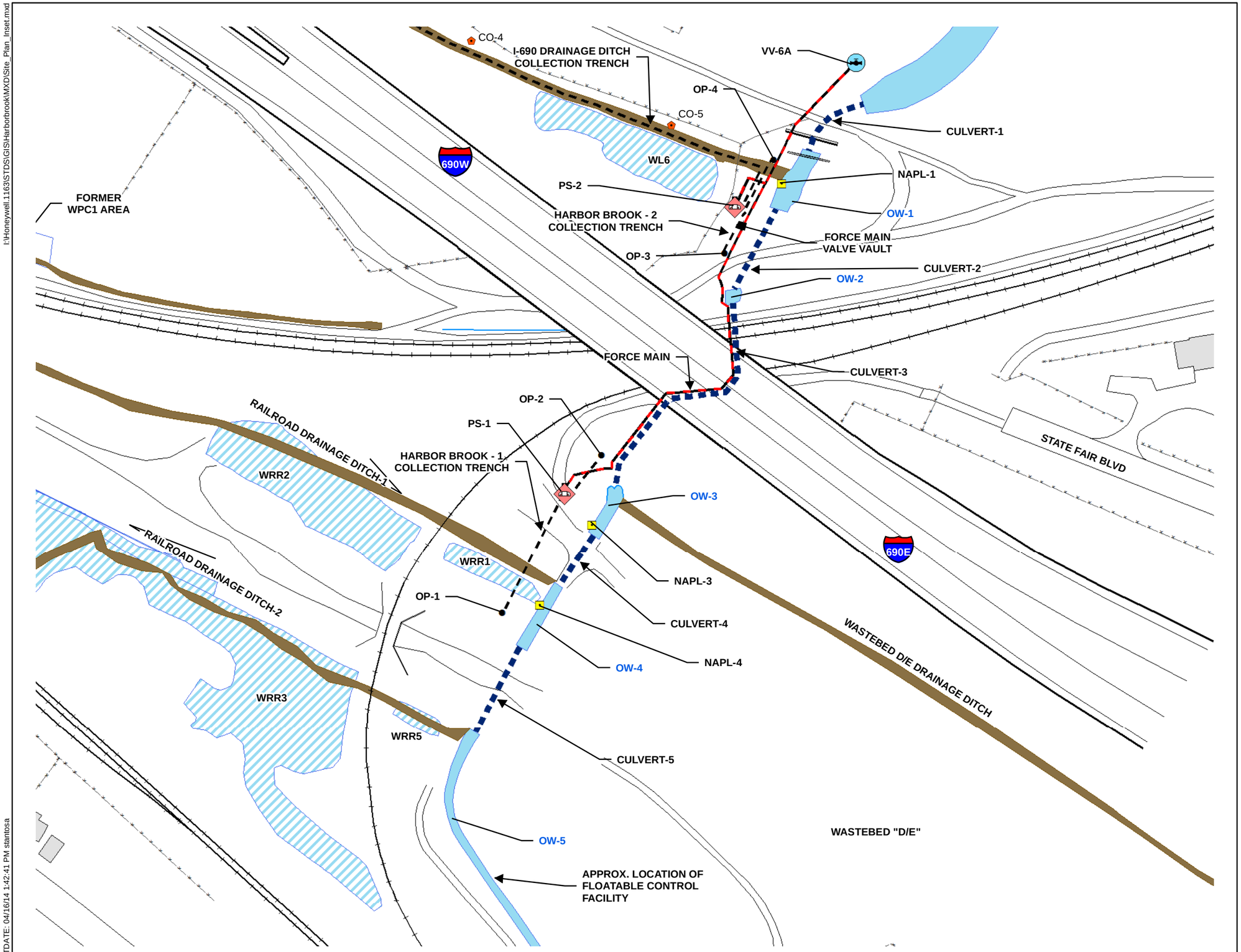


FIGURE 18



This document was developed in color. Reproduction in B/W may not represent the data as intended.

N

LEGEND

- PUMPSTATION
- VALVE VAULT
- GROUNDWATER OBSERVATION PORT
- NAPL OBSERVATION PORT
- CLEAN OUT
- GROUNDWATER COLLECTION PIPE
- CULVERT
- FORCE MAIN
- FENCELINE
- RAILROAD
- HIGHWAY
- ROAD
- WETLAND
- OPEN WATER
- DITCH
- BUILDINGS

HONEYWELL INTERNATIONAL INC.
UPPER HARBOR BROOK IRM
SYRACUSE, NEW YORK

GROUNDWATER COLLECTION SYSTEMS AND PUMP STATIONS

0 60 120 240
Feet

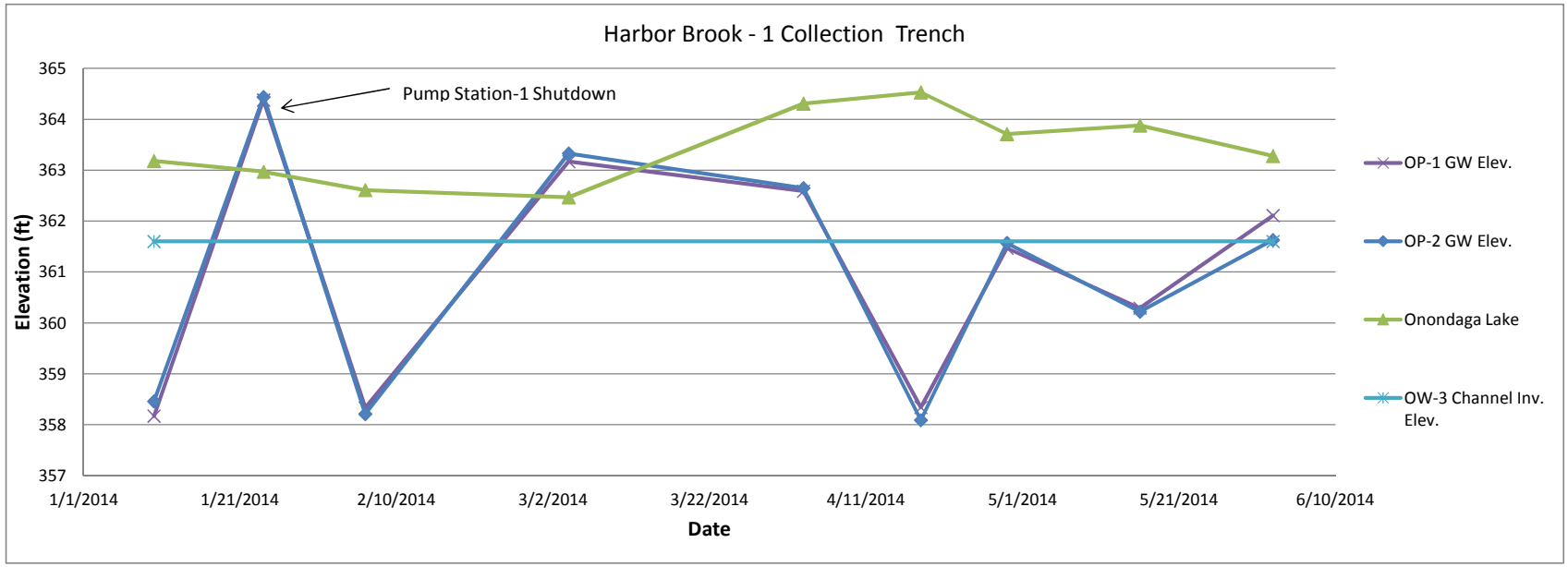
APRIL 2014
1163.49142

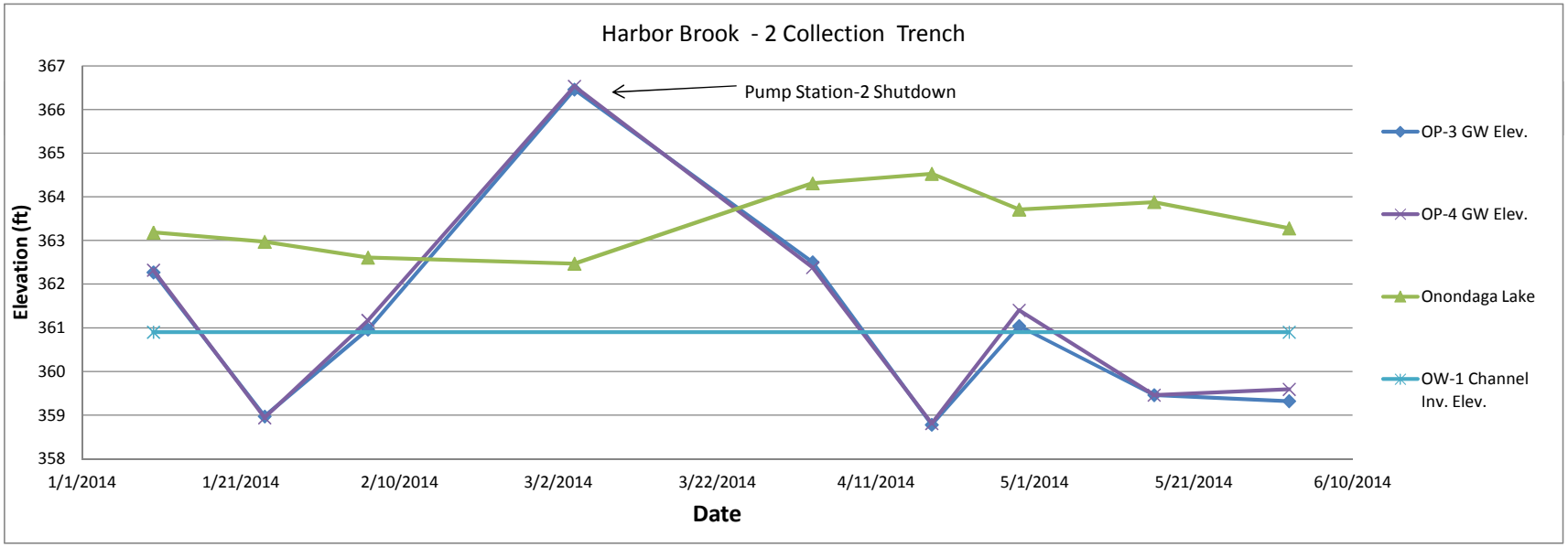
O'BRIEN & GERE

I:\Honeywell.1163\STDS\GIS\HarborbrookMXD\Site_Plan_Inset.mxd

PLOTDATE: 04/16/14 1:42:41 PM stantosa

Figure 19
Honeywell International Inc.
Upper Harbor Brook Groundwater Collection Systems





TABLES

Table 1
ESTIMATED REACH AB RESIDUAL MERCURY CONCENTRATIONS
NINEMILE CREEK

Sample Location ID	Thickness of Dredged Sediment (ft)	Conc. (mg/kg) at Depth (ft)												Depth-Weighted Hg Conc. of Sediment (mg/kg)
		(0-0.5)	(0.5-1.0)	(1.0-2.0)	(2.0-3.0)	(3.0-4.0)	(4.0-5.0)	(5.0-6.0)	(6.0-7.0)	(7.0-8.0)	(8.0-9.0)	(9.0-10.0)	(10.0-20.0)	
TN-3-1	2.5	0.21	0.31	0.595	0.72	0.56								0.49
TN-3-2	2.4	4.4	13.2	6.715	0.13	0.03								6.49
TN-3-3	3.5	0.14	0.084	0.047	0.01	0.01	0.01	0.01	ND	ND	0.01	0.01		0.05
NMC-SED-085	3.6	0.05	0.05	0.01	0.021	0.01	ND	0.015	ND	ND	ND	ND		0.02
NMC-SED-084	2	0.85	0.85	0.04	ND	ND	0.025	0.031	0.02	ND	ND	0.018		0.45
Upstream Subsection														**1.50**
TN-2-1	3.3	0.755	0.037	0.044	0.043	0.02125								0.15
TN-2-2	0.5	0.925	ND	ND	0.021	0.0325	0.0219	0.0219	0.0219		0.03		0.032	0.93
TN-2-3	4	0.575	0.053	0.0315	0.01	0.01								0.09
NMC-SED-086	3.3	0.01	0.01	0.01	0.01	0.01								0.01
Middle Subsection														**0.29**
NM10	4.4	0.012	0.0101	0.012	0.123	0.123	0.123							0.07
TN-1-1	2.5	0.615	1.9	0.989	0.042									0.91
TN-1-2	1.3	0.84	0.335	0.19	0.041	0.035	0.035	0.035	0.035	0.03	0.03	0.03	0.03	0.50
TN-1-3	3.6	12.35	0.855	0.461	0.057	0.047								1.99
NMC-SED-065	2.7	0.0064	0.0064	0.019	0.019	0.021	0.02	0.016	0.015	0.017	0.016	0.013		0.01
NMC-SED-066	5.7	1.1	1.1	0.045	0.024	0.013	0.0072	0.0072	0.0058	0.01	0.026	0.022		0.21
NMC-SED-067	5.8	0.26	0.26	0.05	0.01	0.012	0.0052	0.005	0.0067	0.012	0.011			0.06
NMC-SED-068	2.2	0.011	0.011	0.0054	0.004	0.004	0.018	0.022	0.021	0.019	0.021	0.016		0.01
NMC-SED-075	2.2	3.9	3.9	0.0052	0.12	0.022	0.019	0.026	0.017	0.027	0.015	0.013		1.79
NMC-SED-069	1.5	0.01	0.01	0.01	ND	0.0048	0.017	0.021	0.022	0.018	0.02	0.011		0.01
Downstream Subsection														**0.55**

General Notes:

- Samples shaded in light purple are non-detects, for the purposes of this analysis not-detects are assumed to have a mercury concentrations of 0.01 mg/kg, based on approximately half the detection limit.
- Samples shaded in gray are estimated because no analytical results are available at that interval. The estimate is based on an average of the corresponding sample intervals with analytical data within that transect. If no other analytical data is available in a given transect at a specific sample interval The sample interval above in elevation is applied down.

Reference : Palermo, M.R., Schroeder, P.R., Estes, T.J. and Francingues, N.R. (2008). Technical Guidelines for Environmental Dredging of Contaminated Sediments.
Technical Report ERDC/EL TR-08-29. United States Army Corps of Engineers (USACE), Environmental Laboratory, Vicksburg, MS. September 2008.

Table 2
Tributary 5A
Surveyed Staff Gauges

2013 Staff Gauge Locations

Location	Northing	Easting	Elevation	Notes
Top of 60" Culvert Headwall	1119226.83	921135.218	368.636	North end of Reach 2, near State Fair Boulevard
Top of 72" Culvert Pipe	1118831.764	920498.148	371.033	South end of Reach 2, near R2-OM1
Top of 10x10 Box Culvert Headwall	1118600.692	920103.607	376.717	Western end of Reach 1, across from Crucible Outfall 005
Staff Gauge (Approx Sta. 14+50)	1117365.139	921476.917	375.98	Eastern end of Reach 1, down stream of R1-CO11
				Survey by Lu Engineers and Thew Associates dated November 7, 2013

2014 Staff Gauge Locations

Location	Northing	Easting	Elevation	Notes
Top of 60" Culvert Headwall	1119226.83	921135.218	368.636	North end of Reach 2, near State Fair Boulevard
Top of 72" Culvert Pipe	1118831.764	920498.148	371.033	South end of Reach 2, near R2-OM1
Top of 10x10 Box Culvert Headwall	1118600.692	920103.607	376.717	Western end of Reach 1, across from Crucible Outfall 005
Top of Crucible Outfall 001	1118265.63	920427.868	370.6	Mid-Reach 1, near R1CO-1
Staff Gauge (Approx Sta. 10+00)	1117954.3	920780.5	376.2	Mid-Reach 1, near R1OM-5
Staff Gauge (Approx Sta. 19+90)	1117365.139	921476.917	378.9	Eastern end of Reach 1, down stream of R1-CO11
				Survey by Lu Engineers and Thew Associates dated May 30, 2014
				Top of Crucible Outfall 001 measured from the surveyed invert elevation (368.47)

Table 3
Tributary 5A
2013 Surface Water Elevation Data

Date	7-Nov-13		8-Nov-13		11-Nov-13		12-Nov-13		13-Nov-13	
Time	10:00		7:30		12:00		9:30		8:00	
Temperature	45		38		40		45		45	
Weather	Light Rain		Light Rain		Overcast/No rain		Overcast		Partly Cloudy	
Previous Days Weather	Light Rain		Light Rain		Light Rain		No Rain		No Rain	
Measurement	Feet	Elevation	Feet	Elevation	Feet	Elevation	Feet	Elevation	Feet	Elevation
Top of 60" Culvert Headwall	5.26	363.38	5.24	363.40	5.21	363.43	5.22	363.42	5.22	363.42
Top of 72" Culvert Pipe	4.74	366.29	4.72	366.31	4.70	366.33	4.73	366.30	4.74	366.29
Top of 10x10 Box Culvert Headwall	10.05	366.67	9.99	366.73	9.99	366.73	10.03	366.69	10.05	366.67
Staff Gauge (Approx Sta. 14+50)	0.76	375.22	0.76	375.22	0.75	375.23	0.75	375.23	0.76	375.23

Date	14-Nov-13		15-Nov-13		18-Nov-13		19-Nov-13		20-Nov-13	
Time	8:00		11:00		7:30		9:30		7:30	
Temperature	45		45		52		34		34	
Weather	Partly Cloudy		Cloudy		Overcast/No rain		Overcast/Windy		Partly Cloudy	
Previous Days Precipitation	No Rain		No Rain		Light Rain		No Rain		No Rain	
Measurement	Feet	Elevation	Feet	Elevation	Feet	Elevation	Feet	Elevation	Feet	Elevation
Top of 60" Culvert Headwall	5.28	363.36	5.28	363.36	5.21	363.43	5.26	363.38	5.25	363.39
Top of 72" Culvert Pipe	4.80	366.23	4.80	366.23	4.80	366.23	4.73	366.30	4.76	366.27
Top of 10x10 Box Culvert Headwall	10.25	366.47	10.20	366.52	10.10	366.62	10.05	366.67	10.05	366.67
Staff Gauge (Approx Sta. 14+50)	0.75	375.23	0.76	375.23	0.76	375.23	0.76	375.23	0.75	375.23

Date	21-Nov-13		22-Nov-13		25-Nov-13		26-Nov-13		27-Nov-13	
Time	7:30		10:00		7:30		9:30		7:30	
Temperature	32		42		28		34		30	
Weather	Cloudy		Light Rain		Cloudy		Snowy		Flurries	
Previous Days Weather	No Rain		No Rain		Flurries		Flurries		Snowy	
	Feet	Elevation	Feet	Elevation	Feet	Elevation	Feet	Elevation	Feet	Elevation
Top of 60" Culvert Headwall	5.27	363.37	5.26	363.38	5.26	363.38	5.25	363.39	5.26	363.38
Top of 72" Culvert Pipe	4.75	366.28	4.74	366.29	4.73	366.30	4.74	366.29	4.74	366.29
Top of 10x10 Box Culvert Headwall	10.02	366.70	10.05	366.67	10.03	366.69	10.05	366.67	10.05	366.67
Staff Gauge (Approx Sta. 14+50)	0.75	375.23	0.76	375.23	0.76	375.22	0.75	375.23	0.76	375.22

Date	2-Dec-13		3-Dec-13		4-Dec-13		5-Dec-13		6-Dec-13	
Time	7:30		9:30		7:30		7:30		7:30	
Temperature	36		34		36		40		38	
Weather	Overcast		Partly Cloudy		Flurries		Light Rain		Overcast	
Previous Days Weather	Flurries		Overcast		Partly Cloudy		Flurries		Light Rain	
Measurement	Feet	Elevation	Feet	Elevation	Feet	Elevation	Feet	Elevation	Feet	Elevation
Top of 60" Culvert Headwall	5.15	363.49	5.26	363.38	5.26	363.38	5.76	362.88	5.26	363.38
Top of 72" Culvert Pipe	4.68	366.35	4.74	366.29	4.74	366.29	5.06	365.97	4.74	366.29
Top of 10x10 Box Culvert Headwall	9.98	366.74	10.05	366.67	10.05	366.67	10.35	366.37	10.05	366.67
Staff Gauge (Approx Sta. 14+50)	0.76	375.23	0.76	375.23	0.76	375.23	0.75	375.23	0.76	375.23

Date	9-Dec-13		10-Dec-13		11-Dec-13		12-Dec-13		13-Dec-13	
Time	7:30		9:30		7:30		7:30		7:30	
Temperature	40		34		24		18		20	
Weather	Light Rain		Overcast		Overcast		Overcast		Overcast	
Previous Days Weather	Flurries		Light Rain		Overcast		Overcast		Overcast	
Measurement	Feet	Elevation	Feet	Elevation	Feet	Elevation	Feet	Elevation	Feet	Elevation
Top of 60" Culvert Headwall	5.26	363.38	5.30	363.34	5.28	363.36	5.36	363.28	5.24	363.40
Top of 72" Culvert Pipe	4.74	366.29	4.78	366.25	4.76	366.27	4.86	366.17	4.70	366.33
Top of 10x10 Box Culvert Headwall	10.05	366.67	10.10	366.62	10.80	365.92	10.05	366.67	9.90	366.82
Staff Gauge (Approx Sta. 14+50)	0.76	375.23	0.76	375.23	0.76	375.23	0.75	375.23	0.76	375.23

Table 3
Tributary 5A
2013 Surface Water Elevation Data

Tributary 5A
2013 Surface Water Elevation Data

Date	16-Dec-13		17-Dec-13		18-Dec-13		19-Dec-13	
Time	9:30		9:30		9:30		9:30	
Temperature	40		34		24		18	
Weather	Light Rain		Overcast		Overcast		Overcast	
Previous Days Weather	Flurries		Light Rain		Overcast		Overcast	
Measurement	Feet	Elevation	Feet	Elevation	Feet	Elevation	Feet	Elevation
Top of 60" Culvert Headwall	5.10	363.54	5.15	363.49	5.12	363.52	5.12	363.52
Top of 72" Culvert Pipe	4.61	366.42	4.68	366.35	4.66	366.37	4.68	366.35
Top of 10x10 Box Culvert Headwall	9.93	366.79	9.95	366.77	9.95	366.77	9.94	366.78
Staff Gauge (Approx Sta. 14+50)	0.76	375.23	0.76	375.23	0.76	375.23	0.75	375.23

Table 4
Tributary 5A
2014 Surface Water Elevation Data

	Monday		Tuesday		Wednesday		Thursday		Friday	
Date									23-Mar-14	
Time									10:00:00 AM	
Temperature									55	
Weather									Overcast	
Previous Days Weather									Rainy	
Measurement	Feet	Elevation	Feet	Elevation	Feet	Elevation	Feet	Elevation	Feet	Elevation
Top of 60" Culvert Headwall									5.55	363.09
Top of 72" Culvert Pipe									4.73	366.30
Top of 10x10 Box Culvert Headwall									10.10	366.62
Top of Crucible Outfall 001									0.60	370.00
Staff Gauge (Approx Sta. 10+00)									3.58	372.62
Staff Gauge (Approx Sta. 19+90)									3.80	375.10

	Monday		Tuesday		Wednesday		Thursday		Friday	
Date	26-May-14		27-May-14		28-May-14		29-May-14		30-May-14	
Time	8:00:00 AM		8:00:00 AM		8:00:00 AM		8:00:00 AM		8:00:00 AM	
Temperature	72		74		68		64		68	
Weather	Overcast/No rain		Overcast/No rain		Overcast/No rain		Partly Cloudy		Mostly Sunny	
Previous Days Precipitation	No Rain		No Rain		No Rain		No Rain		No Rain	
Measurement	Feet	Elevation	Feet	Elevation	Feet	Elevation	Feet	Elevation	Feet	Elevation
Top of 60" Culvert Headwall	5.56	363.08	5.57	363.07	5.57	363.07	5.58	363.06	5.58	363.06
Top of 72" Culvert Pipe	4.80	366.23	4.81	366.22	4.83	366.20	4.87	366.16	4.90	366.13
Top of 10x10 Box Culvert Headwall	10.28	366.44	10.29	366.43	10.29	366.43	10.28	366.44	10.30	366.42
Top of Crucible Outfall 001	0.60	370.00	0.60	370.00	0.60	370.00	0.60	370.00	0.60	370.00
Staff Gauge (Approx Sta. 10+00)	3.60	372.60	3.60	372.60	3.60	372.60	3.60	372.60	3.60	372.60
Staff Gauge (Approx Sta. 19+90)	3.81	375.09	3.80	375.10	3.78	375.12	3.79	375.11	3.78	375.12