Countywide Recycling & Disposal Facility, Remediation Unit

Monthly Progress Report
Of
Operations, Monitoring & Maintenance Activities

FEBRUARY 2010

Prepared By:

Countywide Recycling & Disposal Facility, Remediation Unit

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Introduction

This document provides a monthly report of monitoring and other activities conducted in February 2010. These activities are required by the Operations, Monitoring, and Maintenance (OM&M) Plan, developed for the facility and adopted by the Ohio Environmental Protection Agency (OEPA) on September 30, 2009. The primary objectives of the monitoring portion of this plan are as follows:

1. Monitor status/progression of the reaction.
2. Monitor characteristics of leachate and gas.
3. Track settlement and slope movement/stability of waste mass and perimeter berms.
4. Monitor exposure conditions for engineered components.
5. Determine when conditions are suitable for composite capping.
6. Assess conditions requiring notification, repair, further evaluation or corrective action.
7. Provide a summary of monitoring and data collection, relevant activities conducted since the prior report, trigger events, and conditions which may require additional non-routine activities or investigation.

It should be noted that the OM&M Plan requires inspections, routine maintenance, etc., which are activities that are not presented in this submission. These activities are documented as required, and records are retained in the OM&M Managers office.

1. Monthly Summary Narrative

During the month of February, all daily, weekly, and monthly tasks were completed. The following quarterly events were conducted in February; leachate sampling, gas system sampling for dioxins and furans, deadhead pressure collection at all accessible wells, and the aerial infrared scan. Many of the quarterly maintenance and inspection items were also completed in February.

2. New Construction

No new construction is currently planned. Republic intends to redrill up to six vertical gas extraction wells on the 88-acres in late March. These redrills are necessary to maintain optimum gas collection in critical areas on the 88-acres.

3. Major Non-Routine Maintenance, Repairs or Events

Routine maintenance and repairs of the temporary cap, leachate, and gas systems were completed as weather would allow during the month of February. Due to record snowfall during the month of February, inspections were often limited and many non-critical repairs were postponed. No major non-routine maintenance or repairs were necessary.

4. New Trigger Events

Pins at IP-S1, -S2, -S4, -S5, MP-11, and MP-5 exceeded the trigger rate of 0.05 feet per day of horizontal movement once during February if the daily readings are considered. This was noted during the period when daily monitoring of these pins was occurring. When only weekly readings are considered, as intended by the OM&M Plan, none of the pins exceeded the trigger rate. None

of these pins have exceeded the trigger since February 5, 2010. No trend of upward displacement has been established, and it is Republics opinion that the upward movements are slight (less than 1 inch) at the end of the period and are related to frost heave, survey equipment changes and difficulty setting up over the exact pin locations. Thus Republic believes that the data does not indicate slope stability concerns, and that no additional investigation is required. For a full discussion of this data, please see Attachment 4.

Several areas exceeded the 2% annualized settlement trigger based upon the monthly settlement survey. The majority, if not all, of these areas have exceeded the trigger in prior months. Other than the primary settlement front across the 88, most of the triggers were noted in areas where the waste is 60 feet thick or less, a depth of which the GPS error of the equipment (0.1 feet) will result in a trigger. It should be noted that far fewer isolated areas exceeded triggers in February. In fact, many of the areas that exhibited rise in prior months showed a settlement in February, and vice versa, especially on the east slope of Cell 2, south slope of cell 3, and north slope of cell 1. Republic believes that this is directly related to the impact of weather on the temporary cap causing expansion and contraction, frost heave, and equipment errors, rather than actual settlement or rise. This phenomenon was discussed in prior reports and Team Countywide discussions, and Republic believes that the February settlement data supports this observation. Figure 2A shows the average settlement since October annualized. This eliminates much of the “noise” in individual events, reflecting a clearer view of the settlement trends.

During February, the south and east slopes of Cells 1-3 were surveyed using total stationing, in addition to GPS. This total stationing data is not presented in this report, given the error that might occur with comparing total stationing data to GPS data from January. Rather, this data will be used to compare total stationing data which will be collected in those same areas in March to compare settlement between the two months. Republic believes that the greater level of accuracy gained with total stationing will assist in determining if actual settlement or rise is occurring in these areas.

The February 2010 data reflects a greater than 25% increase of carbon monoxide (CO) levels at header sampling branches designated as HBN01 and HBS01 between the January and February sampling events. There was a decrease reflected in CO observed at the south header branch sample designated as HBN02 and HBS02. The total system CO in February was within 5% of that measured in January. This data is presented below, and was also presented at the Team Countywide meeting February 24, 2010:

ID	October (ppm)	Oct Total	November (ppm)	Nov Total	December (ppm)	Dec Total	January (ppm)	Jan Total	February (ppm)	Feb Total	% Change Jan to Feb
*HBN01	250.1	311.11	587.2	834.5	431.4	621.3	583.8	1070.8	811.1	1251.4	38%
HBN02	61.01		247.3		189.9		487		440.3		-10%
HBS01	179.2	591.5	123.3	477	180.6	615.3	150.4	744.8	225.3	674	49%
HBS02	412.3		353.7		434.7		594.4		448.7		-25%
Total		902.61		1311.5		1236.6		1823.6		1925.4	5%

*-The location of HBN01 was moved between the January and February events, as was discussed during the February 24, 2010 Team Countywide Meeting. This sampling location was relocated to avoid influence from the 170-acre gas stream.

In accordance with Volume 1, Appendix F of the OM&M Plan, wellhead temperatures were reviewed to evaluate a potential SSO event. No significant temperature increase or gas quality change indicative of an SSO event was observed. Therefore, per the plan, the evaluation has been satisfied, and Republic does not believe that additional investigation is necessary. As has been discussed, day to day changes in vacuum distribution and adjustments in the wellfield can affect gas quality and flow at individual header branches. Republic believes that the total CO level measured in the system is a better indicator of production versus collection.

5. Investigation Results from Previous Trigger Events

Based upon discussions between Republic and federal, state, and local regulatory authorities, there was no additional investigation of previous trigger events required.

6. Trend Graphs and Drawings

The graphs, tables, and figures are included in the attachments to this report. Due to the vast number of these and the detail that they provide, a full written summary is not provided in this document. The data will be discussed in depth at the Team Countywide Meeting.

7. Review of Potential Need to Extend Temporary FML Cap

Currently, the Remediation Unit consists of approximately 18 acres which do not have a temporary cap. Volume 1, Section 7.1 of the OM&M Plan details conditions which would initiate an assessment which could require installation of temporary cap in this area. Such conditions include;

- Uncontrollable odor or fugitive emissions,
- Unusual settlement (Incremental settlement greater than 2% per year),
- Atypical or uncontrollable leachate outbreaks,
- Methane/carbon dioxide ratio less than 1.0,
- Maximum wellhead temperatures greater than 150°F,
- Maximum carbon monoxide greater than 100 ppmv.

At this time, the conditions observed in this area supplemented by the data collected during monitoring and inspections do not indicate the need for expansion of the temporary cap.

8. Petitions to Perform Work

The monitoring and inspections conducted during the operating period do not indicate the need for additional work which would require approval. As such, there are no petitions to perform such work at this time.

9. Proposed OM&M Plan Revisions

Revisions to the OM&M Plan were completed in February and distributed. There are no other proposed revisions at this time.

10. Odor Summary/Complaints

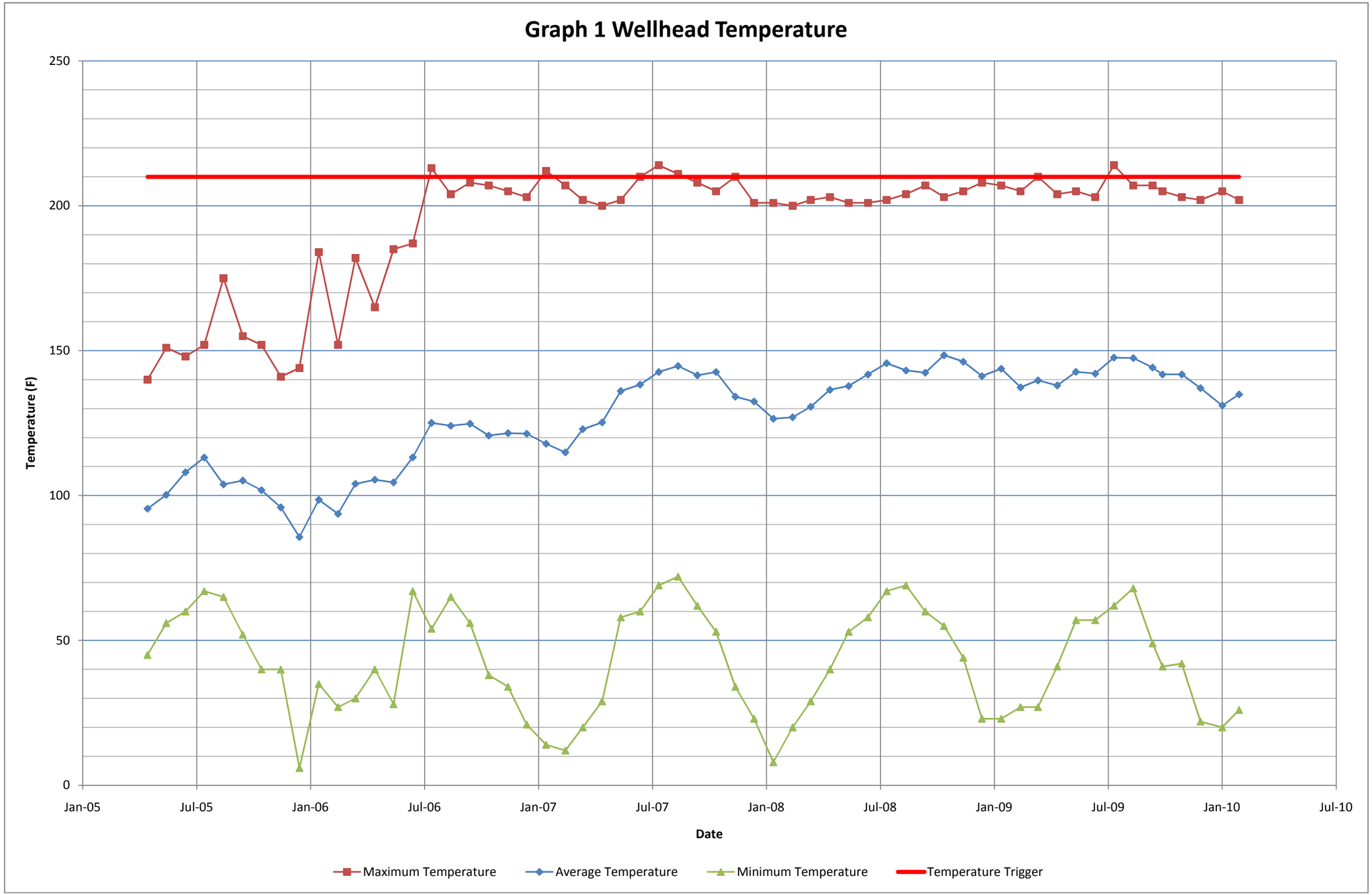
During the month of December, there were six complaints reported to Countywide. Countywide responded to each of these complaints. Many could not be confirmed due to the time of day reported or a delay in reporting.

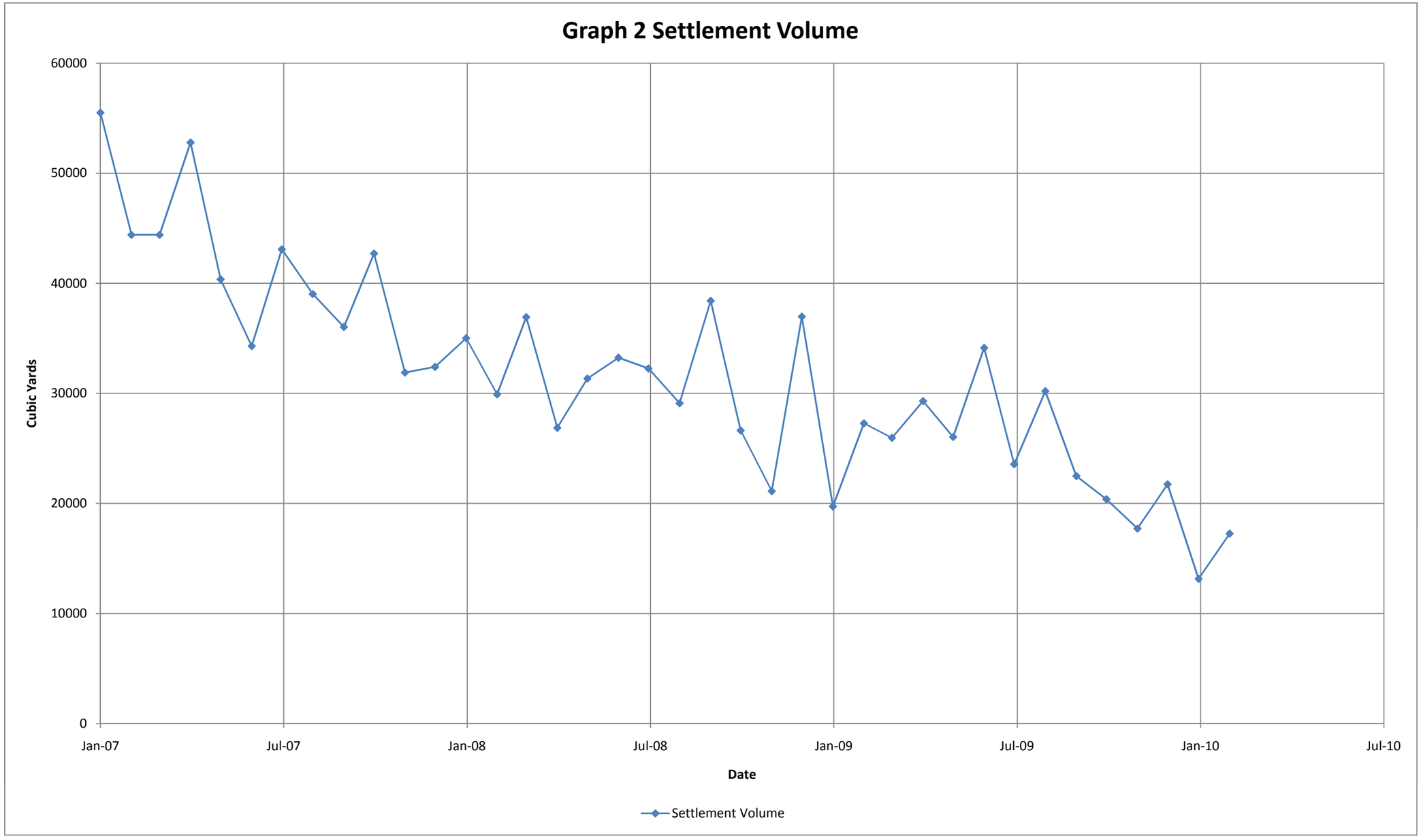
3/17/09

Michael Darnell Date
OM&M Manager

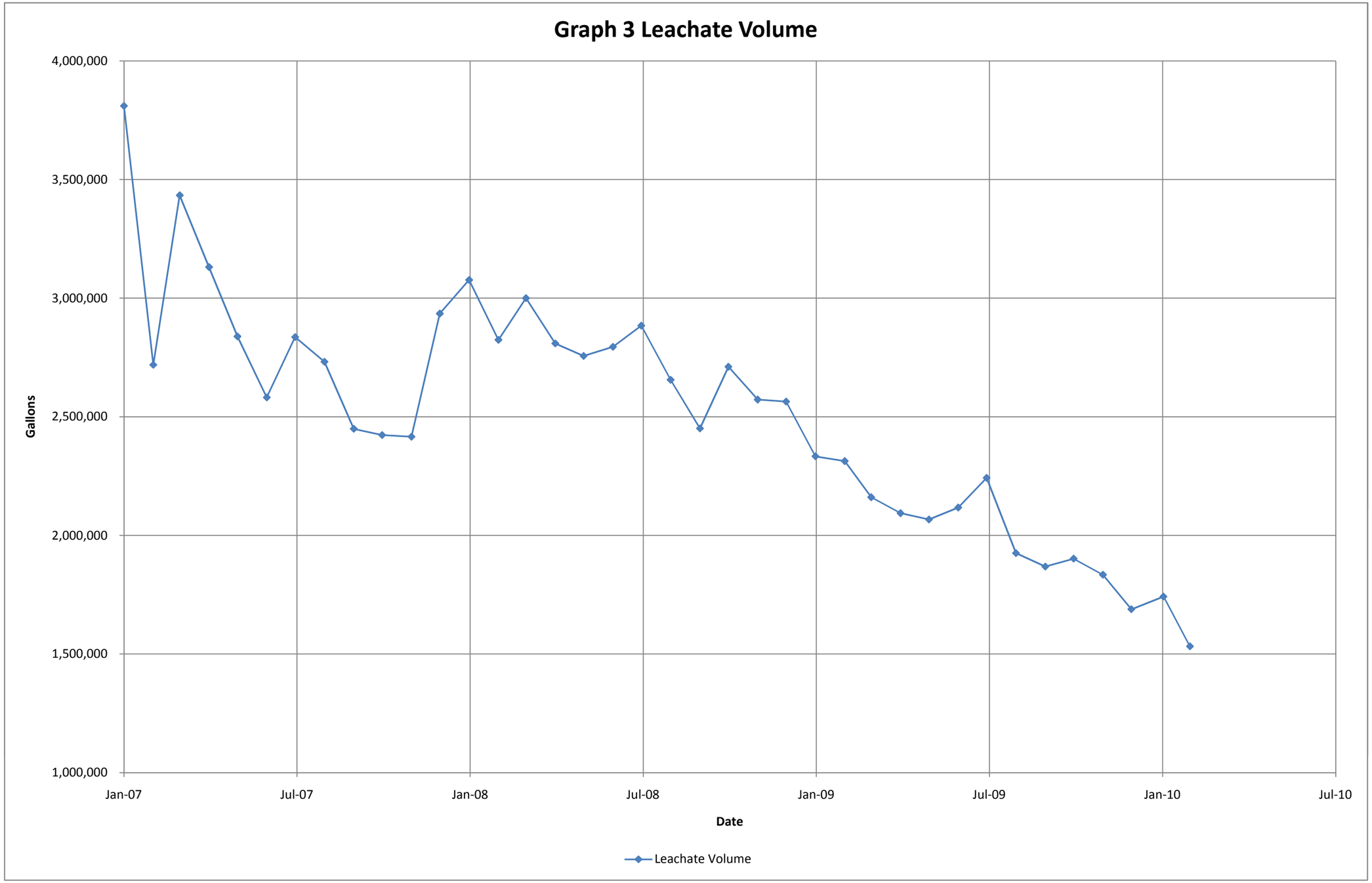
Attachment 1

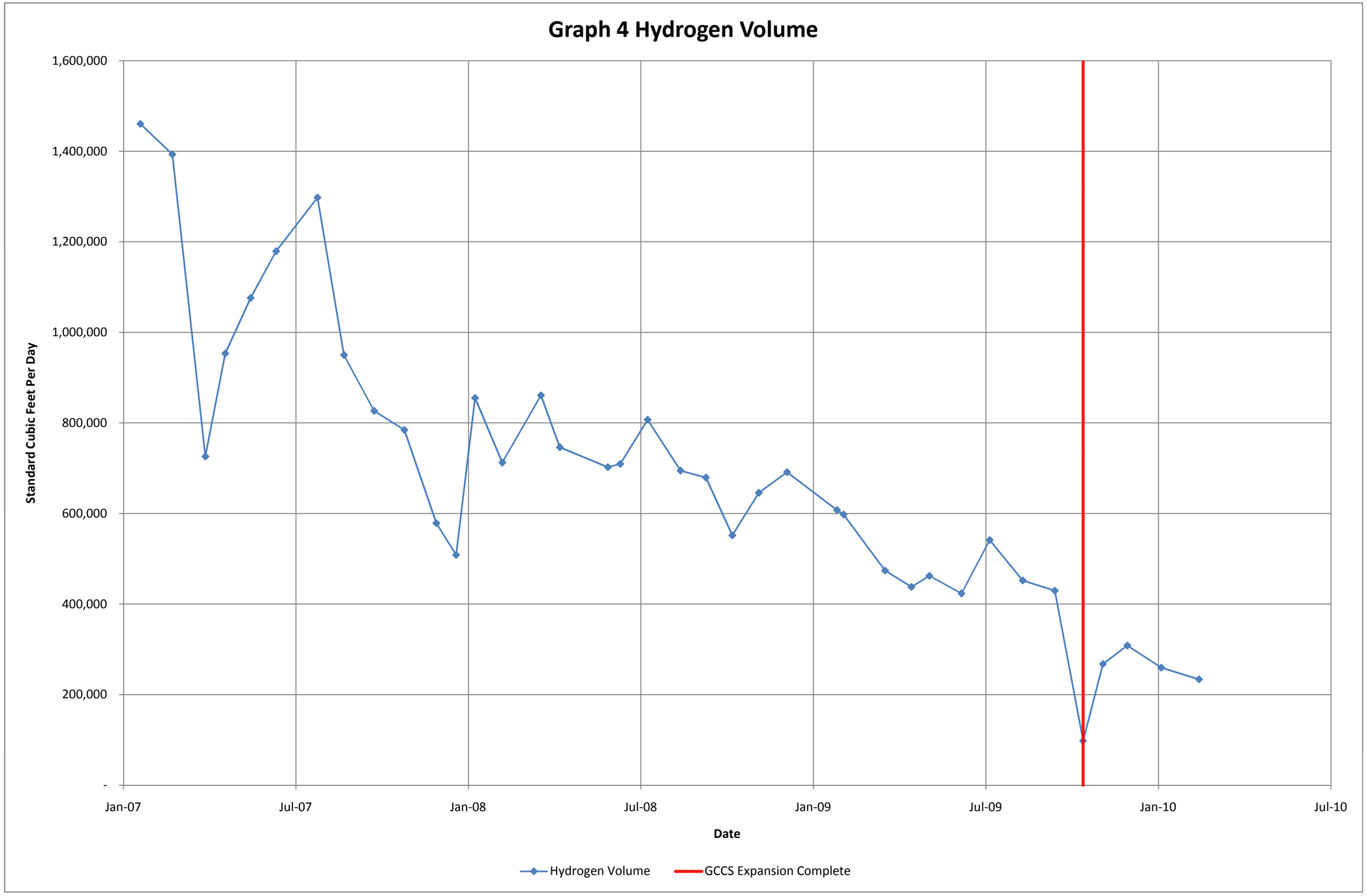
Graphs

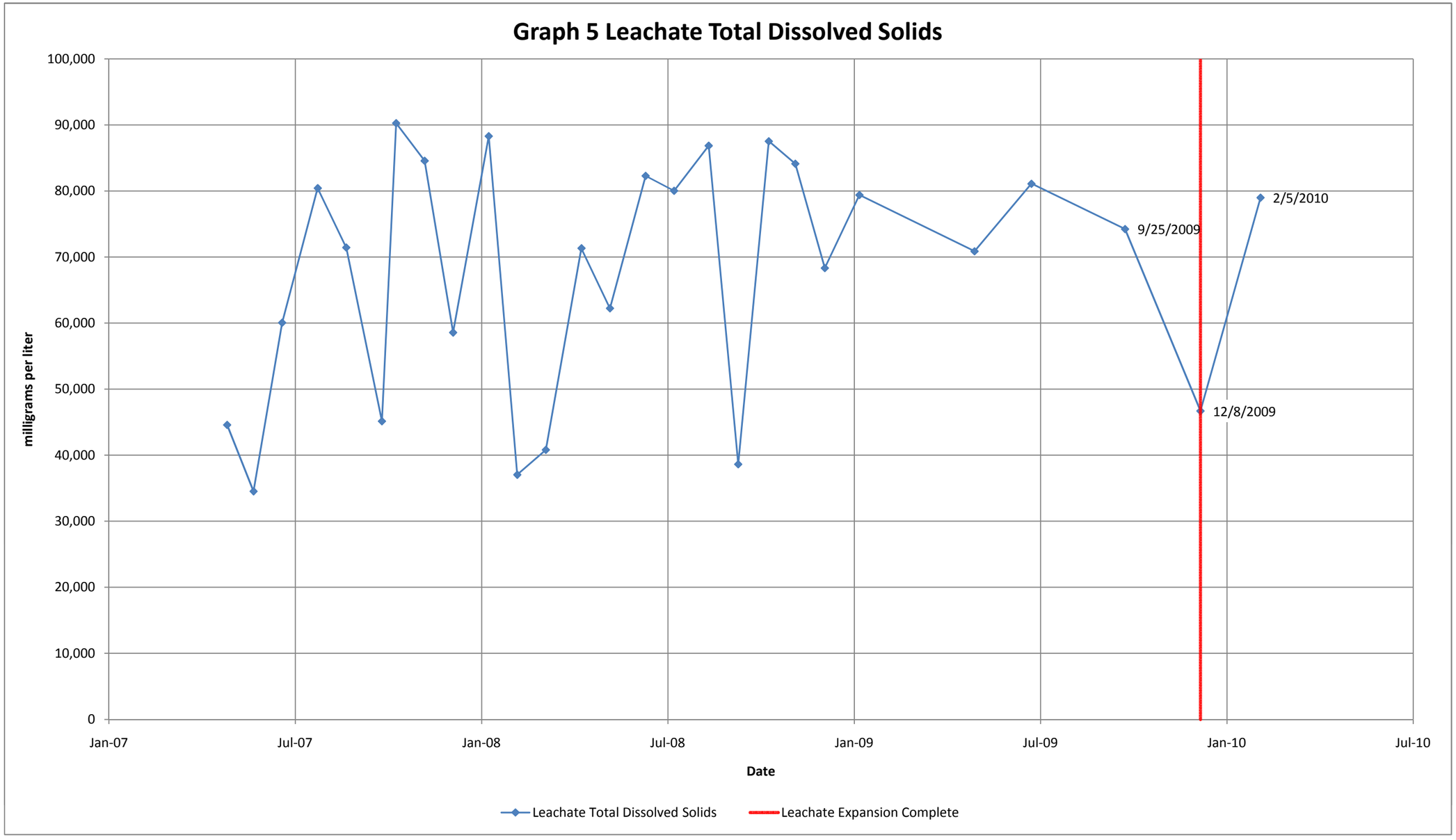

Graph 1 Wellhead Temperature
250
200
150
100
50
0
Temperature (F)
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Date
Maximum Temperature
Average Temperature
Minimum Temperature
Temperature Trigger



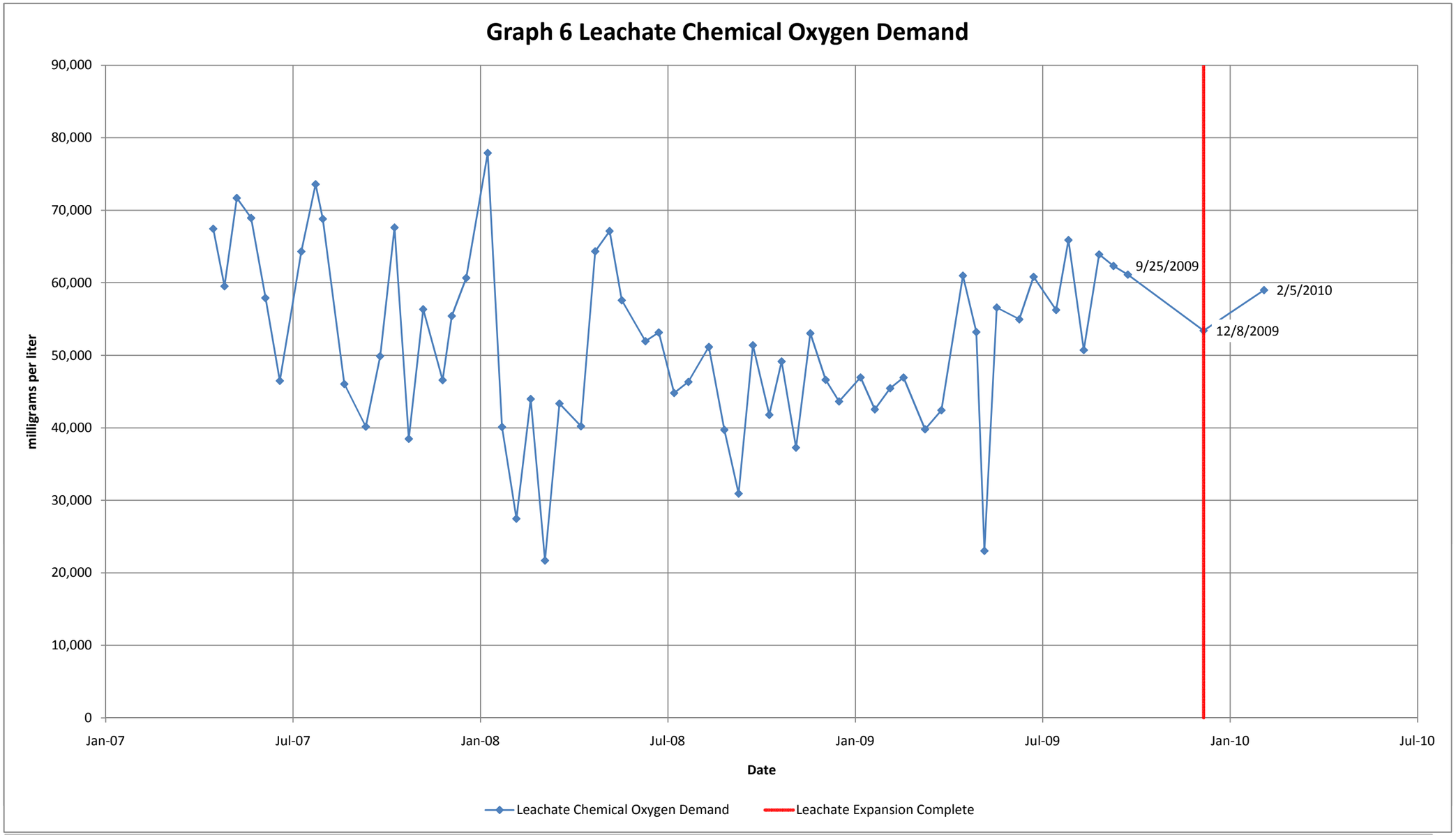
1. Information presented prior to October 2009 was compiled from data prepared and presented by SCS Engineers for Counytwide Recycling and Disposal Facilty.
2. Data presented on monthly basis.
3. Settlement volume reported prior to the 4th quarter of 2009 is for a limited area of the 88-acre reaction area.


Graph 3 Leachate Volume
4,000,000
3,500,000
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
Gallons
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Date
Leachate Volume


Graph 4 Hydrogen Volume
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
Standard Cubic Feet Per Day
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Date
Hydrogen Volume
GCCS Expansion Complete



1. Information presented prior to October 2009 was compiled from data prepared and presented by AECOM for Counytwide Recycling and Disposal Facilty.
2. Data shown prior to October 2009 are flow-weighted averages of datea from the East, North and South leachate collection tanks. Data from December 2009 is from combined Tank East 500.
3. Data shown prior to October2009 comprises data from the leachate collection system only, and excludes certain leachate toe drains, sumps and gas collection wells.



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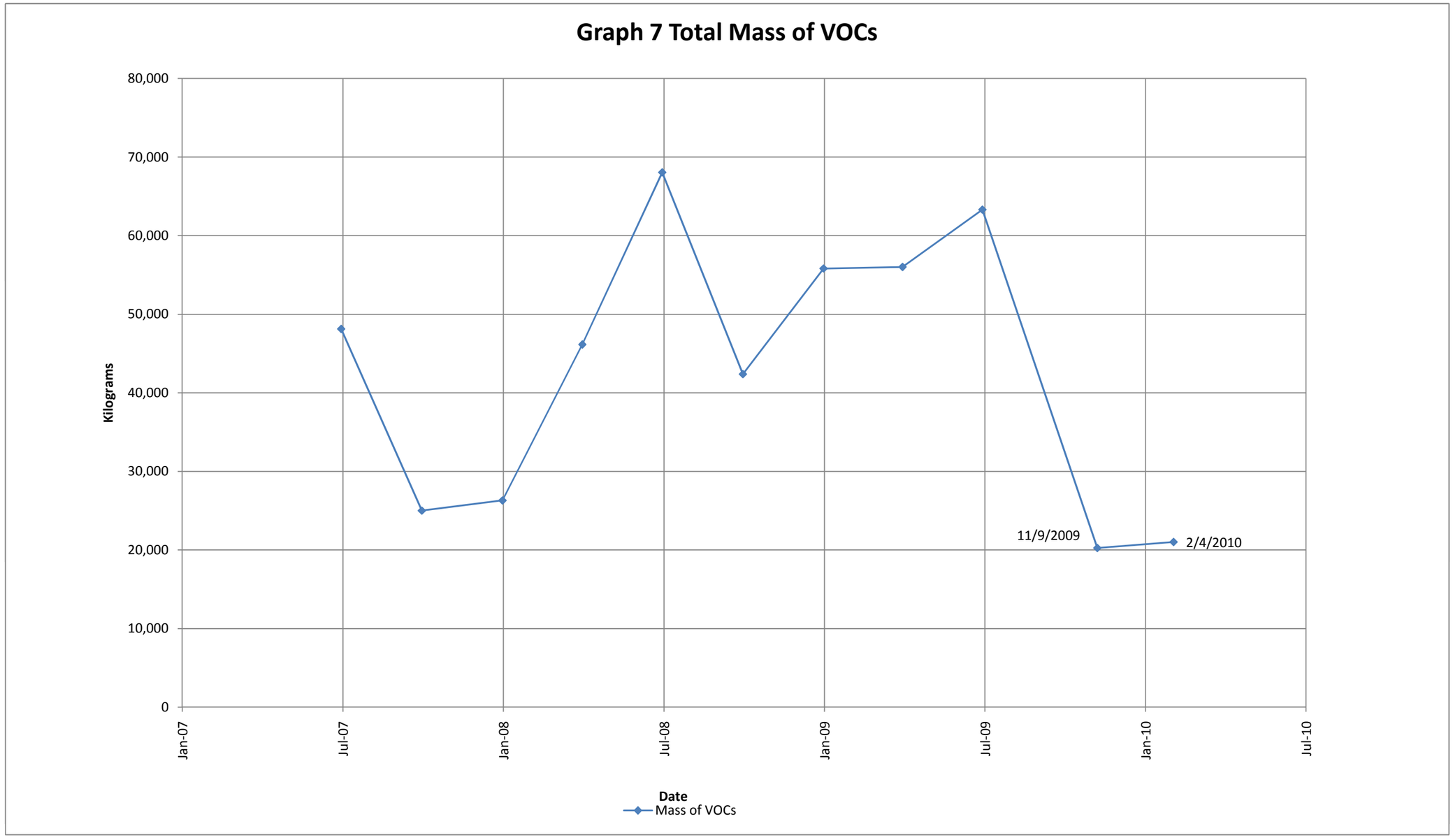
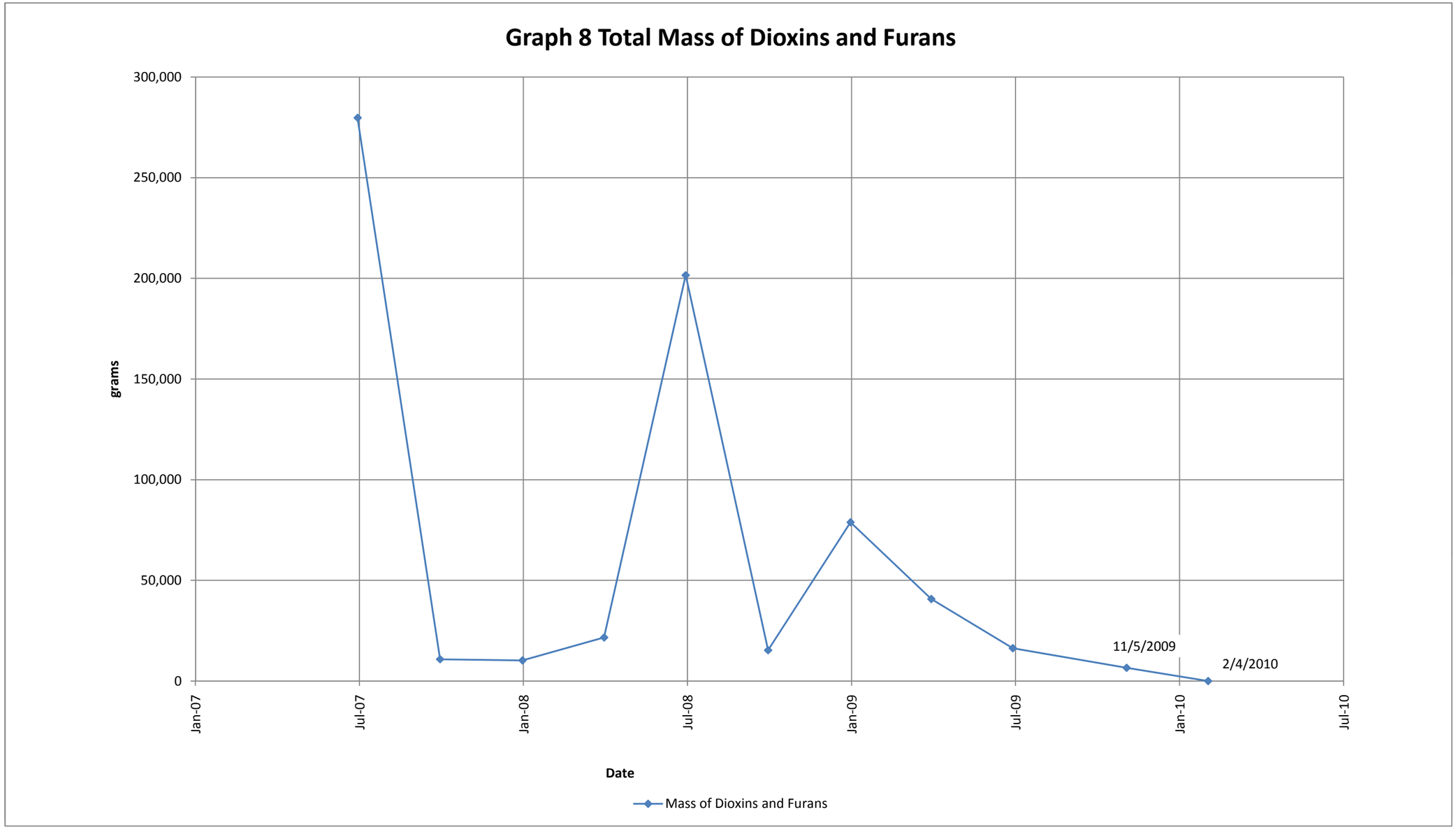
3. Data shown prior to October 2009 comprises data from the leachate collection system only, and excludes certain leachate toe drains, sumps and gas collection wells.
4. Data labels beginning in October 2009 indicate date of quarterly analytical sampling.



1. Information presented prior to October 2009 was compiled from data prepared and presented by SCS Engineers for Counytwide Recycling and Disposal Facility.
2. Data presentation frequency is quarterly.
3. Flare 4 was not sampled for air quality beginning in September 2009.
4. Beginning in fourth quarter 2009, mass based on data collected only from Flares 7 and 10.
5. Data labels beginning in October 2009 indicate date of quarterly analytical sampling.
6. First Quarter 2010 data through February.



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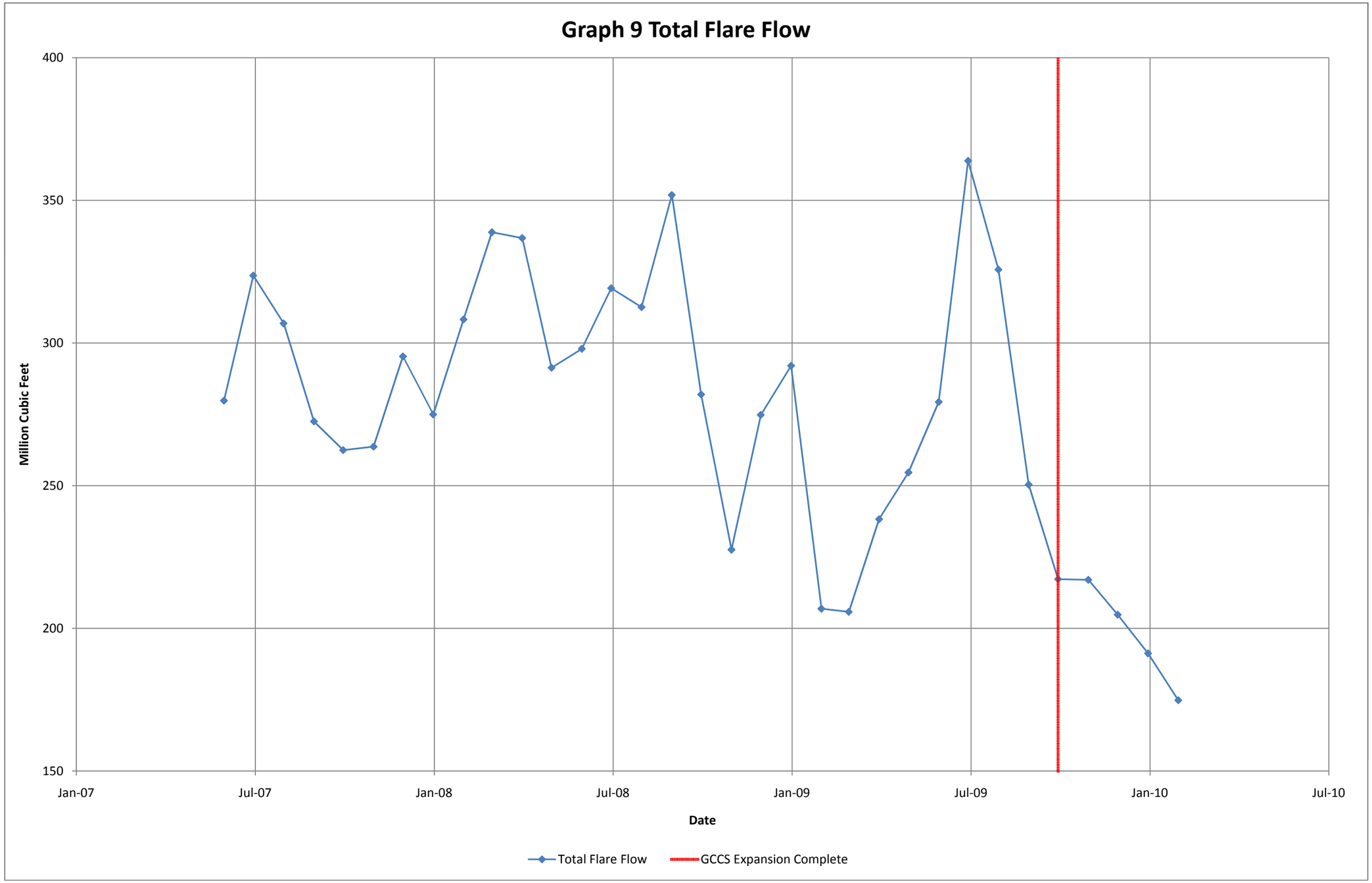
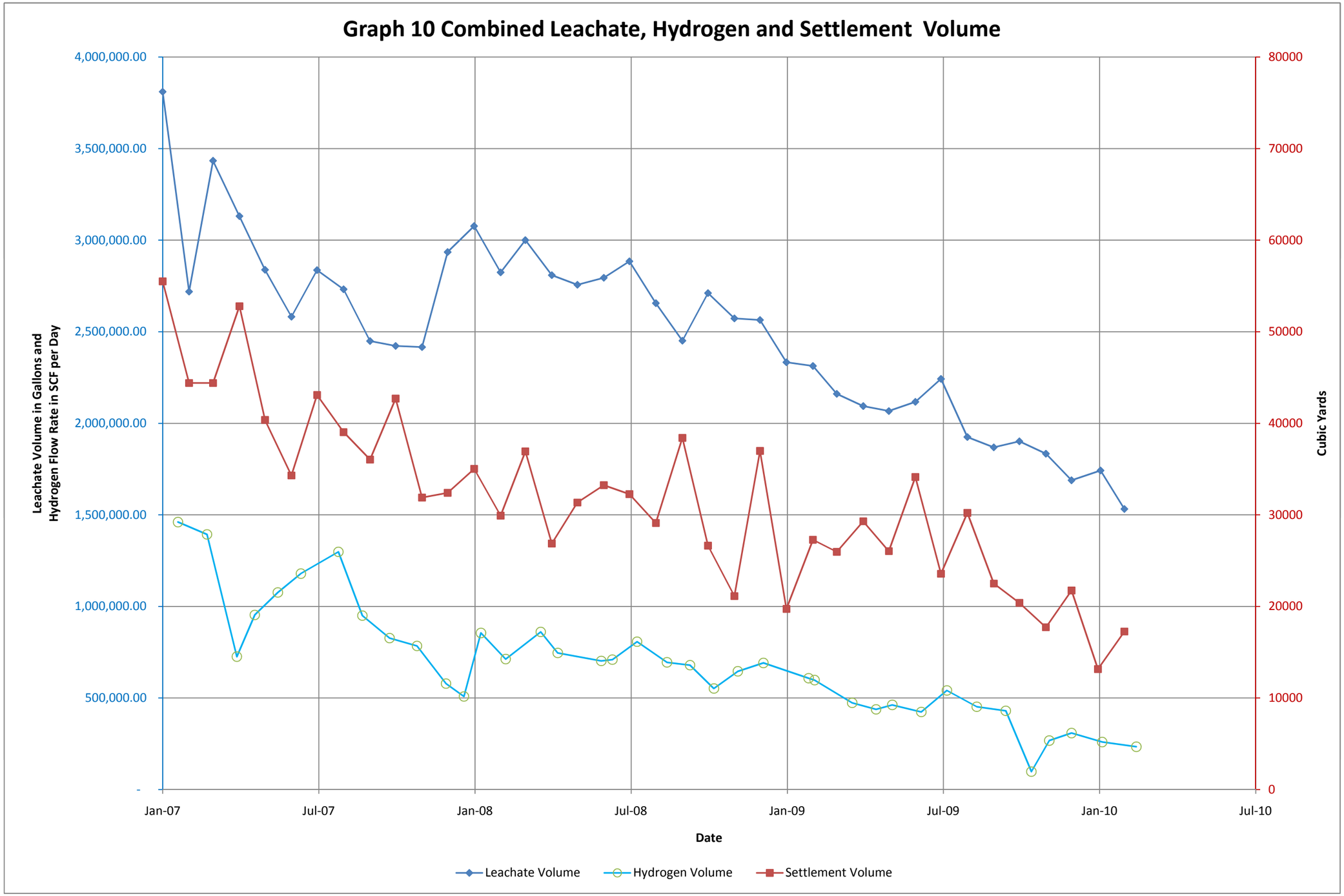
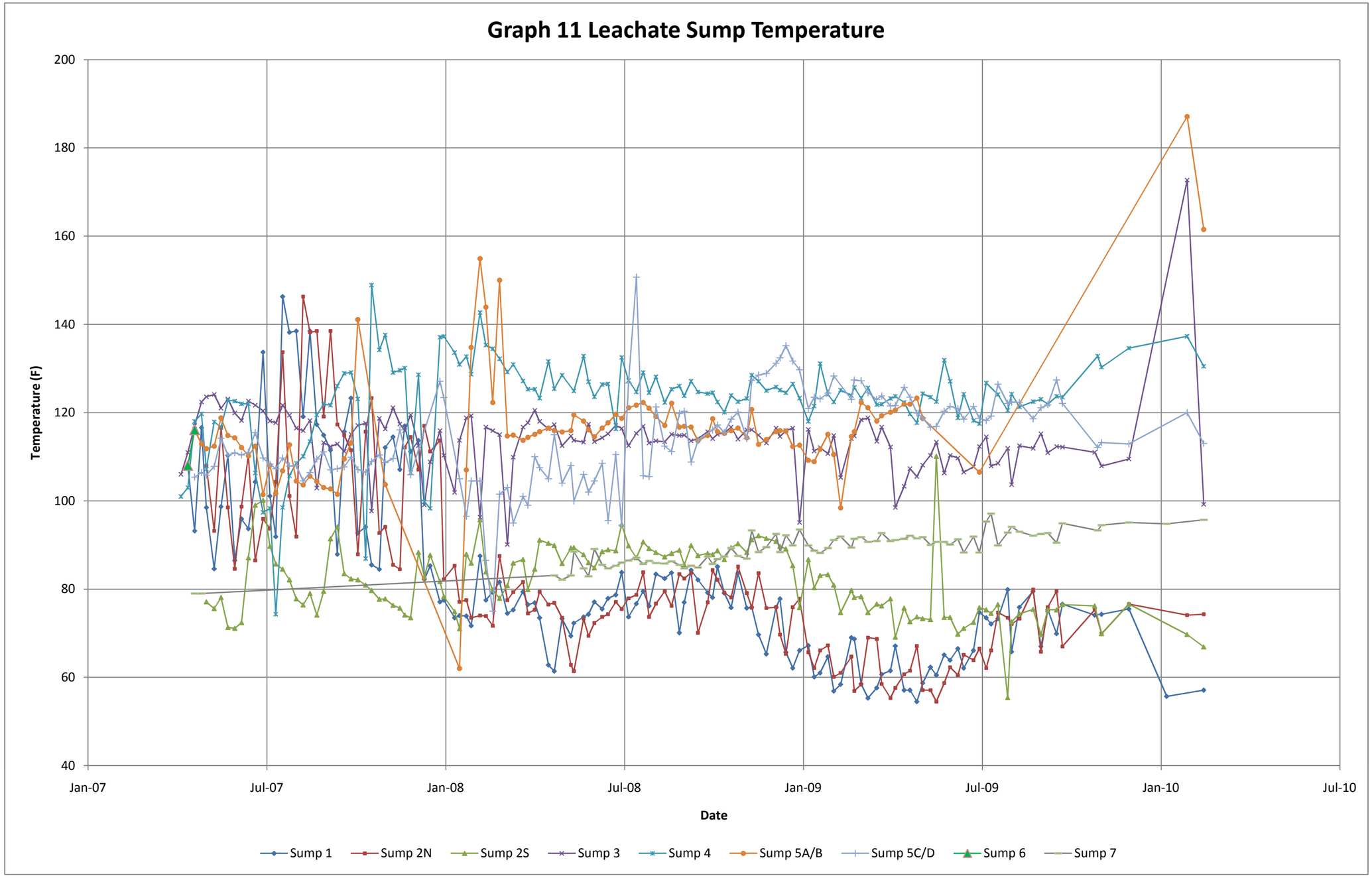
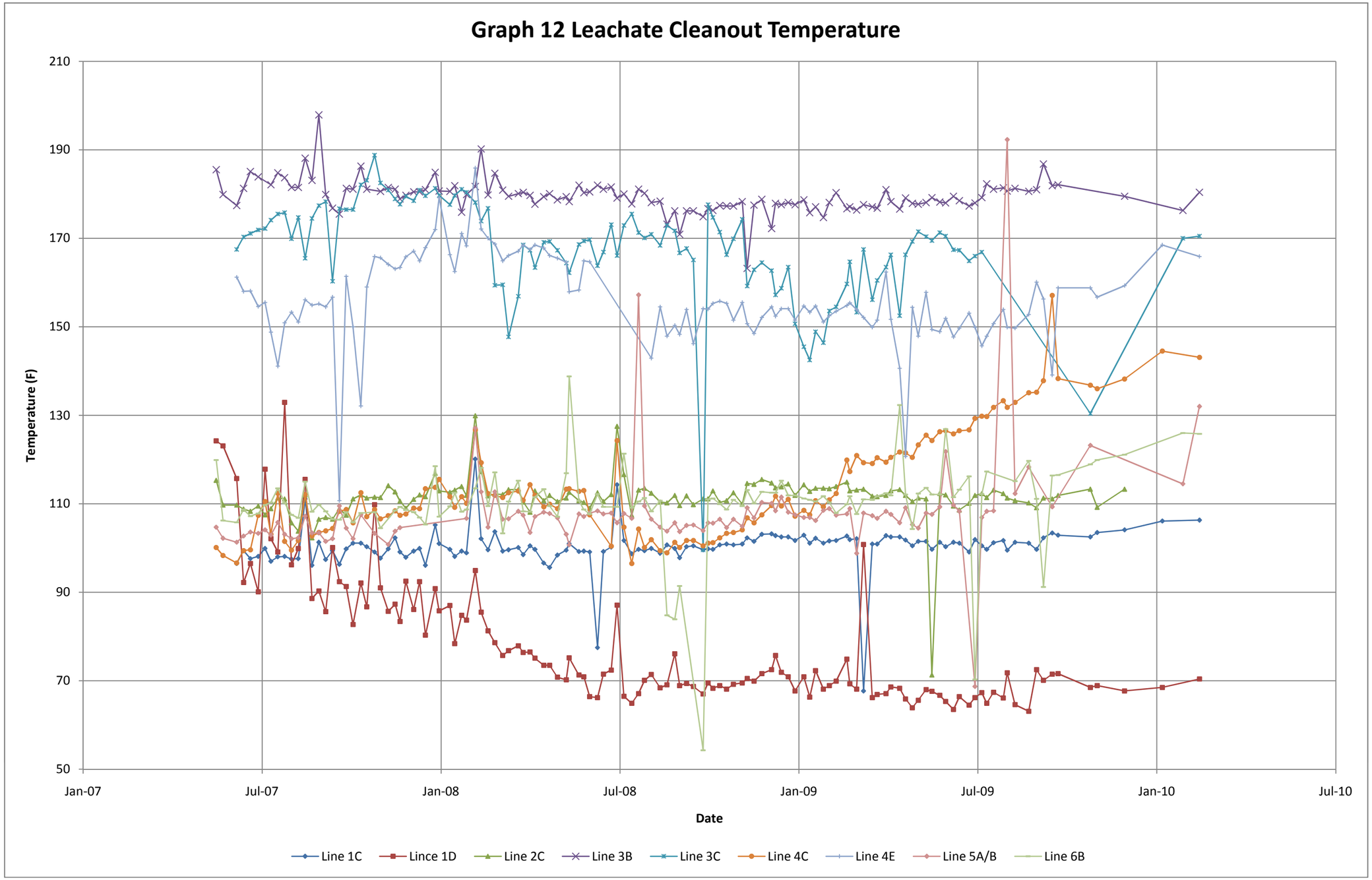

Graph 9 Total Flare Flow
400
350
300
250
200
150
Million Cubic Feet
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Date
Total Flare Flow
GCCS Expansion Complete


Graph 10 Combined Leachate, Hydrogen and Settlement Volume
Leachate Volume in Gallons and Hydrogen Flow Rate in SCF per Day
Cubic Yards
4,000,000.00
3,500,000.00
3,000,000.00
2,500,000.00
2,000,000.00
1,500,000.00
1,000,000.00
500,000.00
-
80000
70000
60000
50000
40000
30000
20000
10000
0
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Date
Leachate Volume
Hydrogen Volume
Settlement Volume


Graph 11 Leachate Sump Temperature
Temperature (F)
200
180
160
140
120
100
80
60
40
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Date
Sump 1
Sump 2N
Sump 2S
Sump 3
Sump 4
Sump 5A/B
Sump 5C/D
Sump 6
Sump 7


Graph 12 Leachate Cleanout Temperature
Temperature (F)
210
190
170
150
130
110
90
70
50
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Date
Line 1C
Lince 1D
Line 2C
Line 3B
Line 3C
Line 4C
Line 4E
Line 5A/B
Line 6B

Attachment 2

Tables

Table 1. Leachate Constituent Summary

Parameter Name		Value	Qualifier	Units	Detection Limit	Units
Volatile Organic Compounds						
1,1,1,2-Tetrachloroethane	<	710	U	ug/L	710	ug/L
1,1,1-Trichloroethane	<	710	U	ug/L	710	ug/L
1,1,2,2-Tetrachloroethane	<	710	U	ug/L	710	ug/L
1,1,2-Trichloroethane	<	710	U	ug/L	710	ug/L
1,1-Dichloroethane	<	710	U	ug/L	710	ug/L
1,1-Dichloroethylene	<	710	U	ug/L	710	ug/L
1,2,3-Trichloropropane	<	710	U	ug/L	710	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	<	1400	U	ug/L	1400	ug/L
1,2-Dibromoethane (EDB)	<	710	U	ug/L	710	ug/L
1,2-Dichloroethane	<	710	U	ug/L	710	ug/L
1,2-Dichloropropane	<	710	U	ug/L	710	ug/L
2-Hexanone	<	7100	U	ug/L	7100	ug/L
4-Methyl-2-pentanone		1600	J	ug/L	7100	ug/L
Acetone		89000	E	ug/L	7100	ug/L
Acrylonitrile	<	14000	U	ug/L	14000	ug/L
Benzene		320	J	ug/L	710	ug/L
Bromochloromethane	<	710	U	ug/L	710	ug/L
Bromodichloromethane	<	710	U	ug/L	710	ug/L
Bromoform	<	710	U	ug/L	710	ug/L
Carbon disulfide	<	710	U	ug/L	710	ug/L
Carbon tetrachloride	<	710	U	ug/L	710	ug/L
Chlorobenzene	<	710	U	ug/L	710	ug/L
Chloroethane	<	710	U	ug/L	710	ug/L
Chloroform	<	710	U	ug/L	710	ug/L
cis-1,2-Dichloroethylene	<	710	U	ug/L	710	ug/L
cis-1,3-Dichloropropene	<	710	U	ug/L	710	ug/L
Dibromochloromethane	<	710	U	ug/L	710	ug/L
Ethylbenzene		300	J	ug/L	710	ug/L
Methyl bromide	<	710	U	ug/L	710	ug/L
Methyl chloride	<	710	U	ug/L	710	ug/L
Methyl ethyl ketone		46000		ug/L	7100	ug/L
Methyl iodide	<	710	U	ug/L	710	ug/L
Methylene bromide	<	710	U	ug/L	710	ug/L
Methylene chloride		250	J	ug/L	710	ug/L
o-Dichlorobenzene	<	710	U	ug/L	710	ug/L
p-Dichlorobenzene		500	J	ug/L	710	ug/L
Styrene	<	710	U	ug/L	710	ug/L
Tetrachloroethylene	<	710	U	ug/L	710	ug/L
Toluene		260	J	ug/L	710	ug/L
trans-1,2-Dichloroethylene	<	710	U	ug/L	710	ug/L
trans-1,3-Dichloropropene	<	710	U	ug/L	710	ug/L
trans-1,4-Dichloro-2-butene	<	710	U	ug/L	710	ug/L
Trichloroethylene	<	710	U	ug/L	710	ug/L
Trichlorofluoromethane	<	710	U	ug/L	710	ug/L
Vinyl acetate	<	1400	U	ug/L	1400	ug/L
Vinyl chloride	<	710	U	ug/L	710	ug/L
Xylenes (total)		1200	J	ug/L	1400	ug/L

Table 1. Leachate Constituent Summary

Dioxins/Furans						
1,2,3,4,6,7,8-HpCDD		260	QJ	pg/L	500	pg/L
1,2,3,4,6,7,8-HpCDF	<	500	U	pg/L	500	pg/L
1,2,3,4,7,8,9-HpCDF	<	500	U	pg/L	500	pg/L
1,2,3,4,7,8-HxCDD	<	500	U	pg/L	500	pg/L
1,2,3,4,7,8-HxCDF	<	500	U	pg/L	500	pg/L
1,2,3,6,7,8-HxCDD	<	500	U	pg/L	500	pg/L
1,2,3,6,7,8-HxCDF	<	500	U	pg/L	500	pg/L
1,2,3,7,8,9-HxCDD	<	500	U	pg/L	500	pg/L
1,2,3,7,8,9-HxCDF	<	500	U	pg/L	500	pg/L
1,2,3,7,8-PeCDD	<	500	U	pg/L	500	pg/L
1,2,3,7,8-PeCDF	<	500	U	pg/L	500	pg/L
2,3,4,6,7,8-HxCDF	<	500	U	pg/L	500	pg/L
2,3,4,7,8-PeCDF	<	500	U	pg/L	500	pg/L
2,3,7,8-TCDD	<	100	U	pg/L	100	pg/L
2,3,7,8-TCDF	<	100	U	pg/L	100	pg/L
OCDD		2100	B	pg/L	1000	pg/L
OCDF	<	1000	U	pg/L	1000	pg/L
Total HpCDD		460	QJ	pg/L	500	pg/L
Total HpCDF	<	500	U	pg/L	500	pg/L
Total HxCDD	<	500	U	pg/L	500	pg/L
Total HxCDF	<	500	U	pg/L	500	pg/L
Total PeCDD		110	QJ	pg/L	500	pg/L
Total PeCDF		43	QJ	pg/L	500	pg/L
Total TCDD	<	100	U	pg/L	100	pg/L
Total TCDF	<	100	U	pg/L	100	pg/L
Metals						
Aluminum	<	20000	UG	ug/L	20000	ug/L
Antimony	<	1000	UG	ug/L	1000	ug/L
Arsenic	<	500	UG	ug/L	500	ug/L
Barium		1620		ug/L	1000	ug/L
Beryllium	<	300	UG	ug/L	300	ug/L
Cadmium	<	200	UG	ug/L	200	ug/L
Calcium		2940000		ug/L	100000	ug/L
Chromium	<	500	UG	ug/L	500	ug/L
Cobalt	<	500	UG	ug/L	500	ug/L
Copper	<	500	UG	ug/L	500	ug/L
Iron		838000		ug/L	10000	ug/L
Lead	<	300	UG	ug/L	300	ug/L
Magnesium		848000		ug/L	100000	ug/L
Manganese		64200		ug/L	500	ug/L
Nickel	<	1000	UG	ug/L	1000	ug/L
Potassium		6240000		ug/L	100000	ug/L
Selenium	<	500	UG	ug/L	500	ug/L
Silver	<	300	UG	ug/L	300	ug/L
Sodium		13400000		ug/L	100000	ug/L
Thallium	<	1000	UG	ug/L	1000	ug/L
Vanadium	<	700	UG	ug/L	700	ug/L
Zinc		19800		ug/L	2000	ug/L

Table 1. Leachate Constituent Summary

Field Parameters						
Specific Conductance		120000		umhos/cm	100	umhos/cm
Field pH		6.4		s.u.		s.u.
Field Temperature		55.9		F		F
General Chemistry						
Ammonia		2020	mg/l	D	25	mg/l
Turbidity		230		NTU	50	NTU
Chloride		27500		mg/L	500	mg/L
Fluoride	<	500	UG	mg/L	500	mg/L
Sulfate		675		mg/L	500	mg/L
Nitrate-Nitrite	<	10	UG	mg/L	10	mg/L
Total Alkalinity		7870		mg/L	500	mg/L
Total Dissolved Solids		79000		mg/L	1000	mg/L
Chemical Oxygen Demand (COD)		59000		mg/L	2000	mg/L

Notes:

1. Results shown are reported for sample collected from the East 500 Leachate Tank on February 5, 2010 and were submitted to Test America Laboratories for analysis.

2. Laboratory Qualifiers:

G The reporting limit is elevated due to matrix interference.
J Amount reported is less than reportable limit
a Spike analyte recovery is outside control limits
D Dilution and reporting limit raised.
U Non detect
Q Estimated maximum concentration
B Method Blank Contamination
NC The recovery and/or RPD (relevant percent distance) were not calculated
MSB The recovery and RPD may be outside control limits because the sample amount was greater than 4X the spike amount.

Table 2. Liquid Levels and Percent Perforations Exposed

Well ID	A2	B1R	B2R	C1R(2)	C2R	D1	D2R	E1	E2R	F1-M	F2	I1R	J1R	K1R	N1R	PW-A1R(2)	PW-14R(3)	PW-0041R(2)
Total Casing Lngth (ft)	68	36	78	48	123	57	123	70	123	60	68	121	122	56	122	61.5	43	73
Total Perforated Pipe Length (ft)	45	16	54	23	99	36	99	45	99	39	44	96	97	31	97	38	21	55
October, 2009																		
Date	10/27	10/9	10/29	10/9	10/29	10/27	10/29	10/27	10/27	10/27	10/27	10/27	10/27	10/27	10/29	10/9	10/9	10/9
Depth To Fluid (ft)	36.1	17.9	10.1	18.8	44.1	5.8	59.4	15.9	61.4	18.6	38.2	32.9	55	25.3	22.5	36.6	22.9	51.8
% Perforations Exposed	29%	0%	0%	0%	20%	0%	36%	0%	38%	0%	32%	8%	31%	1%	0%	34%	4%	61%
November, 2009																		
Date	11/22	11/22	N/A	11/22	11/16	11/22	11/15	11/22	11/22	11/22	11/22	11/22	11/22	11/22	11/16	11/22	11/22	11/18
Depth To Fluid (ft)	35.7	20.0	N/A	19.7	24.1	9.0	59.2	22.0	61.0	30.4	38.6	30.0	54.8	25.0	21.3	36.0	26.9	51.9
% Perforations Exposed	28%	0%	N/A	0%	0%	0%	36%	0%	37%	24%	33%	5%	31%	0%	0%	33%	23%	62%
December, 2009																		
Date	12/23	12/23	N/A	12/23	12/24	12/23	12/24	12/23	12/24	12/23	12/23	12/23	12/23	12/23	12/18	12/24	12/24	12/23
Depth To Fluid (ft)	35.2	20.2	N/A	19.0	23.9	10.5	59.2	22.0	61.2	30.2	38.7	30.2	54.1	24.8	32.4	35.8	26.9	51.4
% Perforations Exposed	27%	1%	N/A	0%	0%	0%	36%	0%	38%	24%	33%	5%	30%	0%	8%	32%	23%	61%
January, 2010																		
Date	1/26	1/22	N/A	1/22	1/26	1/22	1/26	1/22	1/26	1/22	1/26	1/22	1/26	1/26	1/26	1/22	1/22	1/26
Depth To Fluid (ft)	23.2	19.9	N/A	7.4	40.8	6.2	61.0	22.9	59.0	15.7	35.6	27.9	50.3	22.6	18.2	36.4	27.7	51.9
% Perforations Exposed	0%	0%	N/A	0%	17%	0%	37%	0%	35%	0%	26%	3%	26%	0%	0%	34%	27%	62%
February, 2010																		
Date	2/24	2/23	N/A	2/23	2/18	2/23	2/24	2/23	2/24	2/23	2/24	2/23	2/23	2/23	2/18	2/23	2/23	2/23
Depth To Fluid (ft)	23.2	35.3	N/A	44.0	117.0	48.6	60.9	64.2	112.3	47.1	64.7	106.3	120.0	50.7	105.7	52.7	42.1	58.3
% Perforations Exposed	0%	96%	N/A	83%	94%	77%	37%	87%	89%	67%	93%	85%	98%	83%	83%	77%	96%	73%

Well ID	PW-43R(2)	PW-56R(2)	PW-57R	PW-61R(2)	PW-62R(2)	PW-101	PW-102	PW-103R	PW-104	PW-105	PW-106R	PW-107	PW-108R	PW-109	PW-110	PW-111	PW-112	PW-113
Total Casing Lngth (ft)	102	102	85	74	91	78	78	105	78	78	69	66	50	37	31	62	77	78
Total Perforated Pipe Length (ft)	84	84	67	48	73	60	60	81	60	60	45	45	26	19	13	44	59	60
October, 2009																		
Date	11/22	11/22	N/A	11/22	11/16	11/22	11/15	11/22	11/22	11/22	11/22	11/22	11/22	11/22	11/16	11/22	11/22	11/18
Depth To Fluid (ft)	35.7	20.0	N/A	19.7	24.1	9.0	59.2	22.0	61.0	30.4	38.6	30.0	54.8	25.0	21.3	36.0	26.9	51.9
% Perforations Exposed	28%	0%	N/A	0%	0%	0%	36%	0%	37%	24%	33%	5%	31%	0%	0%	33%	23%	62%
November, 2009																		
Date	11/22	11/16	11/16	11/16	11/16	11/22	11/22	11/15	11/16	11/16	11/22	11/22	11/16	11/18	11/18	11/18	11/17	11/18
Depth To Fluid (ft)	50.5	45.4	57.0	67.3	62.0	40.4	22.1	63.6	29.8	32.4	50.4	43.4	41.9	31.1	23.3	63.7	73.7	72.3
% Perforations Exposed	39%	33%	58%	86%	60%	37%	7%	49%	20%	24%	59%	50%	69%	69%	41%	100%	94%	91%
December, 2009																		
Date	12/24	12/11	12/11	12/23	12/11	12/23	12/24	12/24	12/24	12/11	12/24	12/23	12/11	12/23	12/23	12/23	12/23	12/23
Depth To Fluid (ft)	64.5	46.6	58.4	67.4	62.0	40.0	19.2	63.6	29.8	34.2	50.6	43.3	43.0	31.1	23.3	63.7	73.7	72.1
% Perforations Exposed	55%	34%	60%	86%	60%	37%	2%	49%	20%	27%	59%	50%	73%	69%	41%	100%	94%	90%
January, 2010																		
Date	1/22	1/26	1/26	1/26	1/26	1/22	1/22	1/22	1/26	1/26	1/26	1/21	1/26	1/21	1/21	1/21	1/21	1/21
Depth To Fluid (ft)	55.5	42.2	59.3	60.1	61.1	39.6	16.2	61.3	27.5	33.6	50.4	43.2	38.5	31.3	25.6	63.2	73.5	65.1
% Perforations Exposed	45%	29%	62%	71%	59%	36%	0%	46%	16%	26%	59%	49%	56%	70%	58%	100%	94%	79%
February, 2010																		
Date	2/23	2/18	2/18	2/23	2/23	2/23	2/23	2/24	2/25	2/25	2/23	2/25	2/25	2/18	2/18	2/18	2/18	2/25
Depth To Fluid (ft)	82.9	91.5	76.9	74.9	63.6	78.0	35.3	102.3	52.0	35.1	63.1	57.0	48.0	37.0	31.6	64.5	73.3	77.1
% Perforations Exposed	77%	88%	88%	100%	62%	100%	29%	97%	57%	29%	87%	80%	92%	100%	100%	100%	94%	99%

Table 2. Liquid Levels and Percent Perforations Exposed

Well ID	PW-114	PW-115R	PW-117R	PW-118R	PW-119R	PW-120	PW-121R(2)	PW-122R	PW-123	PW-124	PW-125	PW-127	PW-128	PW-129	PW-130	PW-131R	PW-132R	PW-138R
Total Casing Lngth (ft)	78	84	105	89	72	78	46	43.5	78	63	75	75	119.7	121	121	81	62	70
Total Perforated Pipe Length (ft)	60	60	80	64	50	60	31	25	60	45	60	60	103	103	103	58	40	46
October, 2009																		
Date	10/9	10/29	10/9	10/9	10/9	10/9	10/9	10/9	10/29	10/9	10/29	10/29	10/29	10/29	10/29	10/29	10/29	10/29
Depth To Fluid (ft)	65.7	70.6	35.4	66.6	54.8	34.4	31.9	37.2	21.8	49.6	45	22.6	62.8	64.5	70.1	30.5	30.9	33.4
% Perforations Exposed	80%	78%	13%	65%	66%	27%	55%	75%	6%	70%	50%	13%	45%	45%	51%	13%	22%	20%
November, 2009																		
Date	11/18	11/16	11/22	11/16	11/22	11/22	11/22	11/22	N/A	11/22	11/16	11/16	11/16	11/16	11/16	N/A	11/16	11/16
Depth To Fluid (ft)	66.0	70.7	32.7	66.7	55.2	34.1	32.6	37.3	N/A	28.4	44.1	24.3	51.7	64.4	85.5	N/A	30.7	33.5
% Perforations Exposed	80%	78%	10%	65%	66%	27%	57%	75%	N/A	23%	49%	16%	34%	45%	66%	N/A	22%	21%
December, 2009																		
Date	12/23	12/23	12/23	12/23	12/23	12/24	12/24	12/24	N/A	12/23	12/24	12/23	12/23	12/23	12/23	N/A	12/23	12/23
Depth To Fluid (ft)	65.6	70.5	32.5	65.9	55.0	34.2	32.7	37.1	N/A	28.1	44.0	22.1	53.1	64.1	84.2	N/A	31.2	32.4
% Perforations Exposed	79%	78%	9%	64%	66%	27%	57%	74%	N/A	22%	48%	12%	35%	45%	64%	N/A	23%	18%
January, 2010																		
Date	1/26	1/26	1/26	1/26	1/22	1/20	1/22	1/22	N/A	1/26	1/26	1/26	1/26	1/26	1/26	N/A	1/26	1/26
Depth To Fluid (ft)	66.0	70.3	32.3	66.5	55.6	32.7	32.1	37.2	N/A	27.7	43.5	25.3	53.0	63.7	83.9	N/A	30.5	32.0
% Perforations Exposed	80%	77%	9%	65%	67%	25%	55%	75%	N/A	22%	48%	17%	35%	44%	64%	N/A	21%	17%
February, 2010																		
Date	2/23	2/23	2/23	2/23	2/23	2/23	2/23	2/23	N/A	2/23	2/24	2/25	2/25	2/25	2/25	N/A	2/23	2/23
Depth To Fluid (ft)	79.8	78.0	32.3	84.1	64.2	32.6	37.0	37.1	N/A	55.0	70.3	69.2	110.5	108.0	112.4	N/A	45.6	61.3
% Perforations Exposed	100%	90%	9%	92%	84%	24%	71%	74%	N/A	82%	92%	90%	91%	87%	92%	N/A	59%	81%

Well ID	PW-141R	PW-142R	PW-144	PW-145	PW-146	PW-147R	PW-148	PW-149	PW-150	PW-151	PW-152	PW-153	PW-154	PW-155	PW-156	PW-157	PW-158R	PW-159
Total Casing Lngth (ft)	104	80	102	120	120	80	53	51	50	43	42	52	42	42	112	112	104	117
Total Perforated Pipe Length (ft)	80	58	82	100	100	58	33	31	30	23	22	32	22	22	89	89	80	97
October, 2009																		
Date	10/29	10/9	10/29	10/26	10/29	10/9	10/9	10/9	10/9	10/30	10/9	10/9	10/9	10/9	10/29	10/29	10/29	10/27
Depth To Fluid (ft)	49.3	69	37.9	57.1	46.1	18	23.8	50.1	28.5	28.5	32.9	44.9	41.3	34.9	64.3	57	53.9	55.7
% Perforations Exposed	32%	81%	22%	37%	26%	0%	12%	97%	28%	37%	59%	78%	97%	68%	46%	38%	37%	37%
November, 2009																		
Date	11/16	11/22	11/16	11/16	11/16	11/22	11/22	11/22	11/22	11/22	11/22	11/22	11/22	11/22	11/16	11/16	11/16	11/22
Depth To Fluid (ft)	49.0	36.5	36.0	56.7	49.5	22.3	23.1	49.8	29.3	27.9	33.1	44.9	41.3	34.6	88.7	56.6	51.1	55.5
% Perforations Exposed	31%	25%	20%	37%	30%	1%	9%	96%	31%	34%	60%	78%	97%	66%	74%	38%	34%	37%
December, 2009																		
Date	12/23	12/23	12/18	12/18	12/18	12/24	12/24	12/24	12/24	12/24	12/24	12/24	12/24	12/24	12/23	12/18	12/18	12/23
Depth To Fluid (ft)	52.1	36.4	64.5	59.9	58.1	41.7	25.3	35.9	28.6	27.5	33.2	44.8	41.3	34.5	89.5	56.9	54.0	55.9
% Perforations Exposed	35%	25%	54%	40%	38%	34%	16%	51%	29%	33%	60%	78%	97%	66%	75%	38%	38%	37%
January, 2010																		
Date	1/26	1/22	1/26	1/26	1/26	1/22	1/22	1/22	1/22	1/22	1/22	1/22	1/22	1/22	1/26	1/26	1/26	1/26
Depth To Fluid (ft)	51.1	70.0	53.0	54.9	56.2	46.6	22.2	29.7	29.7	30.4	33.5	44.8	41.3	34.3	82.1	56.4	49.2	53.8
% Perforations Exposed	34%	83%	40%	35%	36%	42%	7%	31%	32%	45%	61%	78%	97%	65%	66%	38%	32%	35%
February, 2010																		
Date	2/18	2/23	2/18	2/18	2/18	2/18	2/23	2/18	2/23	2/23	2/23	2/23	2/23	2/26	2/18	2/25	2/25	2/24
Depth To Fluid (ft)	101.5	76.1	91.8	115.0	112.0	69.7	45.3	50.9	45.0	38.9	42.0	44.6	41.6	36.5	105.1	99.2	102.0	118.1
% Perforations Exposed	97%	93%	88%	95%	92%	82%	77%	100%	83%	82%	100%	77%	98%	75%	92%	86%	98%	100%

Table 2. Liquid Levels and Percent Perforations Exposed

Well ID	PW-160	PW-161	PW-162	PW-163R	PW-164	PW-165	PW-166	PW-167R	PW-168(M)	PW-169	PW-170	PW-171	PW-172	PW-173	PW-174	PW-175	PW-176	PW-177
Total Casing Lngth (ft)	119	117	102	100	117	117	122	80	93	61	40	47	117	114	105	80	77	44
Total Perforated Pipe Length (ft)	97	95	80	75	97	97	95	58	68	15	18	22	92	90	80	58	55	24
October, 2009																		
Date	10/27	10/27	10/27	10/27	10/27	10/27	10/27	10/9	10/30	10/27	10/29	10/27	10/27	10/29	10/29	10/29	10/29	10/30
Depth To Fluid (ft)	46.9	51.6	54.2	47.2	49.2	55.8	44.9	15.8	73	55	26.7	25.5	43.2	70.8	23.6	24.8	39.6	38.8
% Perforations Exposed	26%	31%	40%	30%	30%	37%	19%	0%	71%	60%	26%	2%	20%	52%	0%	5%	32%	78%
November, 2009																		
Date	11/22	11/22	11/22	11/22	11/22	11/22	11/22	11/22	11/17	11/18	11/15	11/22	11/22	11/15	11/16	11/16	11/16	11/17
Depth To Fluid (ft)	68.7	51.3	53.7	47.0	49.0	56.0	52.0	17.3	73.5	55.3	25.5	25.5	43.4	58.1	25.7	43.3	48.5	38.6
% Perforations Exposed	48%	31%	40%	29%	30%	37%	26%	0%	71%	62%	19%	2%	20%	38%	1%	37%	48%	78%
December, 2009																		
Date	12/23	12/23	12/23	12/23	12/23	12/23	12/23	12/23	12/23	12/23	12/23	12/23	12/23	12/23	12/23	12/11	12/11	12/11
Depth To Fluid (ft)	69.1	51.1	54.0	47.1	47.5	55.4	55.2	22.9	73.7	55.2	25.9	25.5	43.9	58.1	25.7	43.8	44.2	38.4
% Perforations Exposed	49%	31%	40%	29%	28%	36%	30%	2%	72%	61%	22%	2%	21%	38%	1%	38%	40%	77%
January, 2010																		
Date	1/26	1/26	1/26	1/26	1/26	1/26	1/22	1/22	1/21	1/21	1/26	1/26	1/26	1/26	1/26	1/26	1/26	1/21
Depth To Fluid (ft)	66.8	51.3	54.3	44.2	45.2	49.9	25.9	24.3	74.1	54.0	25.5	25.8	43.8	48.5	21.5	24.9	41.9	38.2
% Perforations Exposed	46%	31%	40%	26%	26%	31%	0%	4%	72%	53%	19%	4%	20%	27%	0%	5%	36%	76%
February, 2010																		
Date	2/24	2/23	2/23	2/23	2/23	2/23	2/23	2/23	2/18	2/18	2/24	2/23	2/26	2/24	2/18	2/18	2/18	2/25
Depth To Fluid (ft)	112.6	114.2	93.2	91.6	104.2	110.1	99.2	76.5	92.9	56.1	44.4	45.3	102.5	107.6	92.1	63.0	63.0	43.0
% Perforations Exposed	93%	97%	89%	89%	87%	93%	76%	94%	100%	67%	100%	92%	84%	93%	84%	71%	75%	96%

Well ID	PW-178	PW-179	PW-180	PW-181	PW-182	PW-307	PW-358	PW-361	PW-362B	PW-363	PW-364	PW-366	PW-367	PW-368	PW-369	Q1R	S1R	T1R
Total Casing Lngth (ft)	34	61	93	85	42	64	62	104	78	82	82	39	53	47	38	54	125	125
Total Perforated Pipe Length (ft)	14	36	68	60	17	42	38	80	53	58	58	25	39	33	24	30	100	100
October, 2009																		
Date	10/30	10/26	10/9	10/27	10/9	10/27	10/29	10/27	10/26	10/29	10/29	10/26	10/26	10/26	10/26	10/29	10/26	10/29
Depth To Fluid (ft)	32.4	38.7	77.4	26.6	7.2	35.2	29.9	65.8	34.7	47.5	36	22.4	22.6	26.4	30.6	40	47.5	63.1
% Perforations Exposed	89%	38%	77%	3%	0%	31%	16%	52%	18%	41%	21%	34%	22%	38%	69%	53%	23%	38%
November, 2009																		
Date	11/17	11/17	11/18	11/22	11/22	11/22	11/15	11/22	11/22	11/15	11/15	11/22	11/22	11/22	11/22	11/16	11/16	11/16
Depth To Fluid (ft)	32.0	38.6	77.9	32.0	6.8	34.9	29.0	65.4	34.3	46.6	35.5	22.2	22.4	25.6	30.3	40.0	47.0	98.0
% Perforations Exposed	86%	38%	78%	12%	0%	31%	13%	52%	18%	39%	20%	33%	22%	35%	68%	53%	22%	73%
December, 2009																		
Date	12/11	12/11	12/23	12/23	12/24	12/23	12/23	12/23	12/23	12/23	12/23	12/23	12/23	12/23	12/23	12/23	12/23	12/18
Depth To Fluid (ft)	32.4	38.8	78.0	33.1	7.0	34.7	28.6	65.1	34.0	46.0	35.6	22.3	22.3	25.5	30.2	39.8	50.3	61.3
% Perforations Exposed	89%	38%	78%	14%	0%	30%	12%	51%	17%	38%	20%	33%	21%	35%	68%	53%	25%	36%
January, 2010																		
Date	1/21	1/21	1/26	1/22	1/22	1/26	1/26	1/26	1/26	1/26	1/26	1/26	1/26	1/26	1/26	1/26	1/26	1/26
Depth To Fluid (ft)	32.0	38.5	77.7	23.6	11.2	33.4	28.0	64.2	32.8	43.1	33.7	21.9	21.1	24.0	28.8	37.7	49.8	59.9
% Perforations Exposed	86%	38%	78%	0%	0%	27%	11%	50%	15%	33%	17%	32%	18%	30%	62%	46%	25%	35%
February, 2010																		
Date	2/25	2/18	2/23	2/23	2/23	2/24	2/24	2/24	2/24	2/24	2/24	2/24	2/24	2/24	2/24	2/23	2/18	2/18
Depth To Fluid (ft)	32.2	59.9	92.5	80.0	40.0	57.7	65.5	103.0	78.2	84.7	80.0	40.5	55.3	49.0	39.0	53.5	113.9	120.2
% Perforations Exposed	87%	97%	99%	92%	88%	85%	100%	99%	100%	100%	97%	100%	100%	100%	100%	98%	89%	95%

Table 2. Liquid Levels and Percent Perforations Exposed

Well ID	U1R	W-1R	W1R(2)	W-2R(M)	W-3	W-4	W-5	W-7	W-8	W-9	W-10	W-11	W-12R	W-13R	W-31R	W-32R	W-33	W-34
Total Casing Lngth (ft)	113	46	72	85	33	37	35	38	34	36	103	119	43	43	92	54	52	81
Total Perforated Pipe Length (ft)	88	20	48	65	12	16	13	14	15	18	85	94	21	21	72	29	34	43
October, 2009																		
Date	10/27	10/29	10/29	10/30	10/30	10/26	10/26	10/26	10/26	10/26	10/26	10/26	10/30	10/30	10/30	10/30	10/26	10/26
Depth To Fluid (ft)	49.1	20	33.2	52.2	31	30.3	32.3	30.8	24.6	34.6	31.3	35.6	37.2	31.3	45	43.8	46.8	51.6
% Perforations Exposed	27%	0%	19%	50%	83%	58%	79%	49%	37%	92%	16%	11%	72%	44%	35%	65%	85%	32%
November, 2009																		
Date	11/22	11/16	11/16	11/17	11/17	11/17	11/17	11/18	11/18	11/18	11/18	11/18	11/22	11/22	11/17	11/17	11/17	11/17
Depth To Fluid (ft)	49.0	17.5	34.4	56.3	31.0	29.8	32.8	31.0	24.6	37.5	31.0	39.4	36.9	31.5	45.0	44.0	45.0	51.7
% Perforations Exposed	27%	0%	22%	56%	83%	55%	83%	50%	37%	100%	15%	15%	71%	45%	35%	66%	79%	32%
December, 2009																		
Date	12/23	12/23	12/24	12/11	12/11	12/11	12/23	12/23	12/23	12/23	12/23	12/23	12/23	12/23	12/11	12/11	12/11	12/23
Depth To Fluid (ft)	48.9	18.2	39.2	42.8	30.8	29.7	32.7	30.9	24.7	37.5	30.9	39.4	36.9	31.4	45.6	44.1	42.4	51.8
% Perforations Exposed	27%	0%	32%	35%	82%	54%	82%	49%	38%	100%	15%	15%	71%	45%	36%	66%	72%	32%
January, 2010																		
Date	1/26	1/26	1/26	1/21	1/21	1/21	1/21	1/21	1/21	1/21	1/21	1/21	1/21	1/21	1/21	1/21	1/21	1/21
Depth To Fluid (ft)	46.1	19.0	34.2	42.5	31.0	29.5	32.7	30.9	24.6	37.4	31.1	39.5	37.0	31.5	45.1	40.4	42.7	52.0
% Perforations Exposed	24%	0%	21%	35%	83%	53%	82%	49%	37%	100%	15%	15%	71%	45%	35%	53%	73%	33%
February, 2010																		
Date	2/23	2/24	2/18	2/25	2/25	2/25	2/18	2/18	2/18	2/18	2/18	2/18	2/25	2/25	2/25	2/25	2/18	2/18
Depth To Fluid (ft)	106.9	42.4	69.0	82.0	32.6	36.8	34.5	30.9	33.3	37.5	38.8	39.5	41.2	42.9	88.6	52.5	53.6	73.5
% Perforations Exposed	93%	82%	94%	95%	97%	99%	96%	49%	95%	100%	24%	15%	91%	100%	95%	95%	100%	83%

Well ID	W-35	W-36	W-37	W-38	W-39	W-42R(2)	W-56R(3)	W-58R	W-59	W-60	W-68	W-69R
Total Casing Lngth (ft)	64	70	79	79	81	100	88	82	108	110	79	47
Total Perforated Pipe Length (ft)	46	35	62	57	62	75	64	58	71	79	44	21
October, 2009												
Date	10/26	10/26	10/26	10/26	10/30	10/9	10/29	10/30	10/26	10/30	10/26	10/30
Depth To Fluid (ft)	63.1	47.3	44.2	42.4	54.8	77.8	39.4	64	74.4	75.6	50.7	40.3
% Perforations Exposed	98%	35%	44%	36%	58%	70%	24%	69%	53%	56%	36%	68%
November, 2009												
Date	11/18	11/18	11/18	11/18	11/18	11/22	11/16	11/17	11/18	11/18	11/18	11/18
Depth To Fluid (ft)	63.3	47.7	39.2	42.3	55.4	77.8	29.5	64.0	74.6	75.8	50.9	40.3
% Perforations Exposed	98%	36%	36%	36%	59%	70%	9%	69%	53%	57%	36%	68%
December, 2009												
Date	12/23	12/23	12/23	12/23	12/23	12/23	12/11	12/23	12/23	12/23	12/23	12/23
Depth To Fluid (ft)	63.3	47.7	39.1	42.3	55.3	77.8	30.3	64.1	74.5	76.3	50.5	40.5
% Perforations Exposed	98%	36%	36%	36%	59%	70%	10%	69%	53%	57%	35%	69%
December, 2009												
Date	1/21	1/21	1/21	1/21	1/21	1/22	1/26	1/21	1/21	1/21	1/21	1/21
Depth To Fluid (ft)	63.2	47.7	39.1	42.1	55.1	55.4	30.3	63.0	75.6	75.9	51.2	40.2
% Perforations Exposed	98%	36%	36%	35%	58%	41%	10%	67%	54%	57%	37%	68%
February, 2010												
Date	2/18	2/18	2/18	2/18	2/18	2/23	2/18	2/18	2/18	2/18	2/18	2/18
Depth To Fluid (ft)	63.4	68.4	68.5	67.7	77.5	58.3	84.1	80.4	102.9	90.9	59.7	45.8
% Perforations Exposed	99%	95%	83%	80%	94%	44%	94%	97%	93%	76%	56%	94%

Note: Wells with boxes around data indicate the placement of a pump in that well.

Table 3. West Berm Piezometer Readings

Installation Information											
	Piezometer I.D.	WBPZ-1 upper		WBPZ-1 lower		WBPZ-2 upper		WBPZ-3 upper		WBPZ-3 lower	
	Ground Elevation	1124.3		1124.3		1135.8		1145.7		1145.7	
	Depth to Tranducer	74.5		102.0		85.5		59.5		84.5	
	Elevation of Tranducer	1049.8		1022.3		1050.3		1086.2		1061.2	
"Apparent" Piezometric Surface (see Note 1)		Total Head (ft)	Pore Pressure (ft H_2O)	Total Head (ft)	Pore Pressure (ft H_2O)	Total Head (ft)	Pore Pressure (ft H_2O)	Total Head (ft)	Pore Pressure (ft H_2O)	Total Head (ft)	Pore Pressure (ft H_2O)
	10/16/2009	1050.1	0.34	< 1022.3	-0.01	< 1050.3	-0.05	< 1086.2	-0.24	1062.7	1.50
	11/2/2009	1050.0	0.17	< 1022.3	-0.45	< 1050.3	-0.21	< 1086.2	-0.42	1061.4	0.17
	12/1/2009	1050.2	0.39	< 1022.3	-0.49	< 1050.3	-0.27	< 1086.2	-0.52	1061.3	0.08
	1/6/2010	1049.8	0.00	< 1022.3	-0.65	< 1050.3	-0.42	< 1086.2	-0.65	< 1061.2	-0.36
	2/1/2010	< 1049.8	-0.04	< 1022.3	-0.70	< 1050.3	-0.48	< 1086.2	-0.70	< 1061.2	-0.67
	3/4/2010	1049.9	0.14	< 1022.3	-0.51	< 1050.3	-0.31	< 1086.2	-0.54	< 1061.2	-0.49
Trigger Elevations (see Note 2)	For F.S. < 1.5	Note 3		1048.0		1081.0		Note 3		1095.0	
	For F.S. < 1.2	Note 3		1102.0		1120.0		Note 3		1116.0	

Notes:

1. The piezometric surface is present at, or below, the elevation provided in ft.-MSL. The number in parentheses represents the water column pressure exerted on the transducer--a zero or negative pressure indicates non-saturated conditions causing soil suction.
2. If the apparent piezometric surface rises above this elevation, the trigger has occurred.
3. This is a redundant installation that can be used in event of failure of the corresponding lower transducer.

Table 4. South Slope Piezometer Readings

Installation Information	Boring I.D.	SS-7	SS-1	SS-7	SS-3	SS-3	SS-7	SS-1	SS-3
	Ground Elevation (at install)	1178.3	1177.8	1178.3	1174.5	1174.5	1178.3	1177.8	1174.5
	Depth to Tranducer (ft. at install)	12	18	17	25	22	22	28	17
	Elevation of Tranducer(at install)	1166.3	1159.8	1161.3	1149.5	1152.5	1156.3	1149.8	1157.5
"Apparent" Piezometric Surface (see Note 1)		Pore Pressure (ft H_2O)	Pore Pressure (ft H_2O)	Pore Pressure (ft H_2O)	Pore Pressure (ft H_2O)	Pore Pressure (ft H_2O)	Pore Pressure (ft H_2O)	Pore Pressure (ft H_2O)	Pore Pressure (ft H_2O)
	10/26/2009	-0.86		-0.87			-0.74	-3.24	
	10/29/2009	-0.86	-9.53	-0.87	-0.17	0.49	-0.74		3.73
	11/9/2009	-0.79	-9.46	-0.80	-0.14	0.40	-0.65		3.54
	12/1/2009	-1.16	-9.95	-1.16	-0.52	0.12	-1.01		3.28
	1/6/2010	-1.21	-9.65	-1.24	-0.13	-0.61	-1.61		3.01
	2/1/2010	-1.00	-9.41	-1.00	-0.56	-0.29	-1.82		2.71
	3/4/2010	-1.36	-9.71	-1.37	-0.94	-0.81	-2.04		2.08

Notes:

1. The piezometric surface is present at, or below, the elevation provided in ft.-MSL. The number in parentheses represents the water column pressure exerted on the transducer--a zero or negative pressure indicates non-saturated conditions causing soil suction.

Attachment 3

Figures

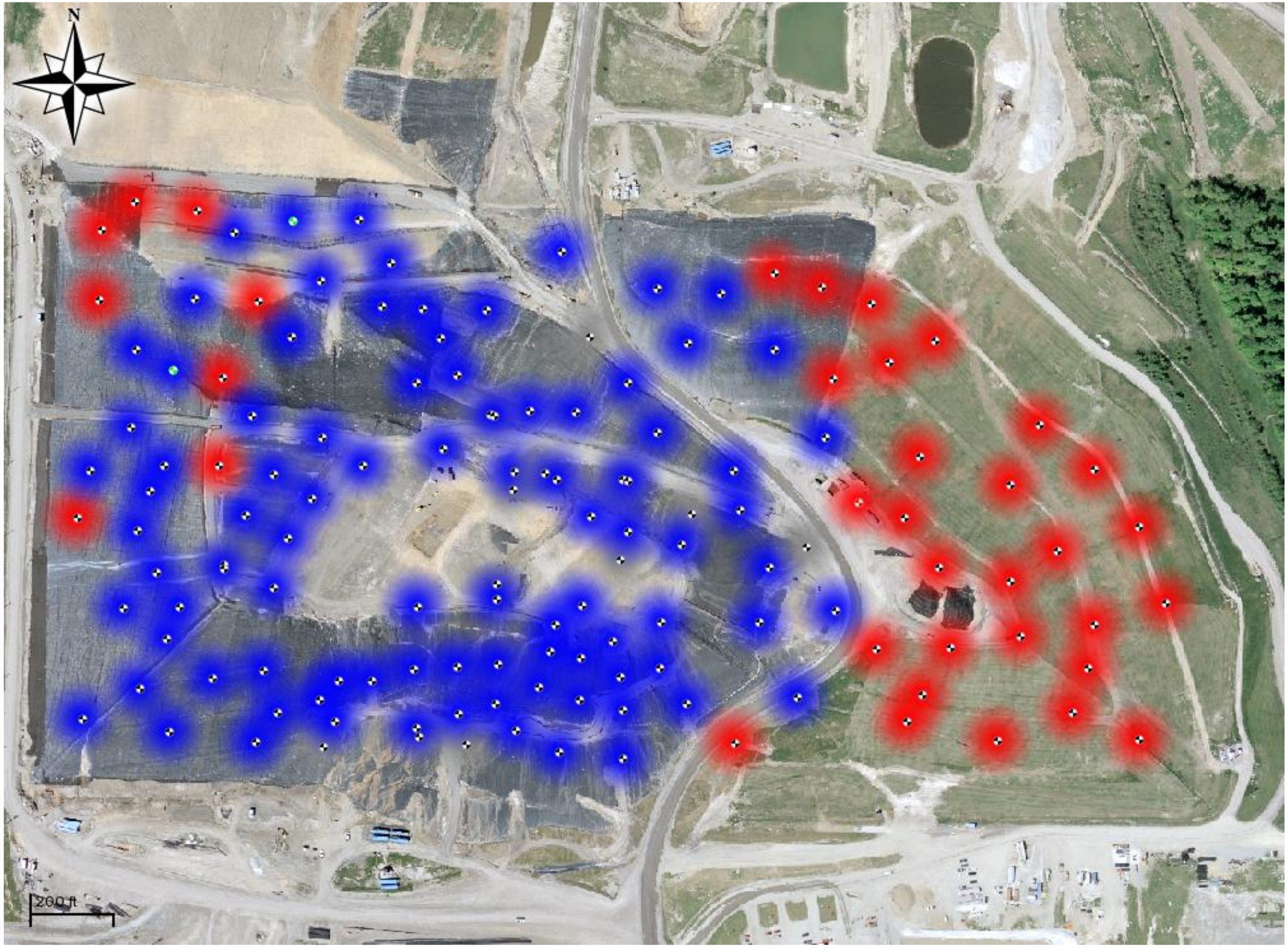


Figure 1
Average Methane to Carbon Dioxide Ratio

Countywide Recycling and Disposal Facility
3619 Gracemont St. S.W.
East Sparta, Ohio

Operation, Monitoring and Maintenance (OM&M) Plan
Monthly Report

Color Legend

< 1
> 1

Symbol Legend

Gas Well

(Red symbol denotes rise in value category from previous reporting period.)
(Green symbol denotes decrease in value category from previous reporting period.)

A radius influence of 100 feet is assumed at each device.

Reporting Period: Feb, 2010
Map Generated On: 03/12/2010

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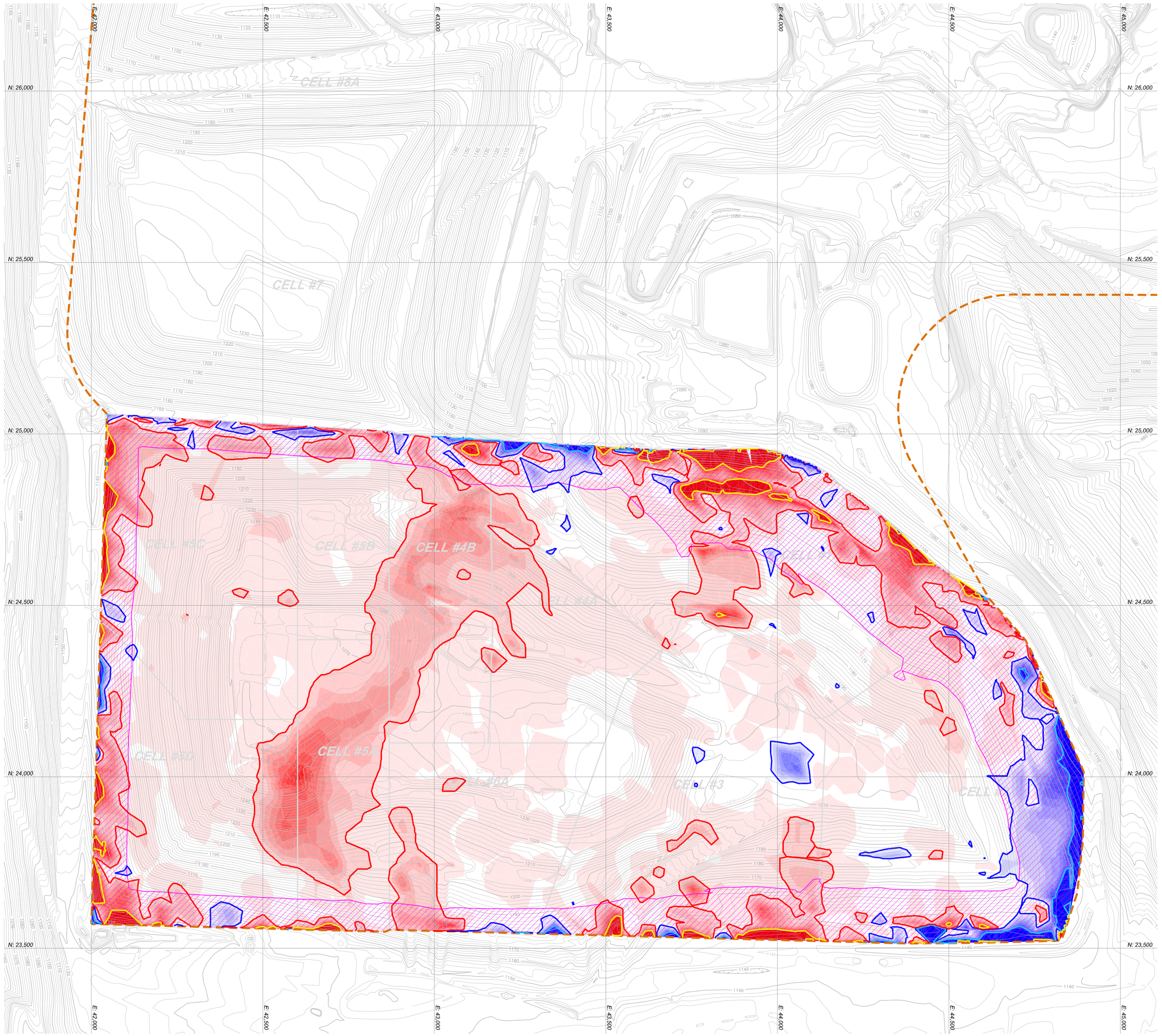


N
W E
S

Scale: 1 in . = 150 ft.

0' 150' 300' 450'

Graphic Scale

LEGEND:

- 1120 — EXISTING CONTOUR (AERIAL MAPPING 5/21/09), CTR INT. = 2' (SHOWN FOR REFERENCE ONLY)
- 2% RATE OF SETTLEMENT LIMIT
- >10% RATE OF SETTLEMENT LIMIT
- 2% RATE OF RISE IN ELEVATION
- >10% RATE OF RISE IN ELEVATION
- ≤ 60ft OF WASTE DEPTH

ANNUALIZED RATE (%) OF SETTLEMENT COLOR LEGEND

- Greater than 10.0%
- 9.0% TO 10.0%
- 8.0% TO 9.0%
- 7.0% TO 8.0%
- 6.0% TO 7.0%
- 5.0% TO 6.0%
- 4.0% TO 5.0%
- 3.0% TO 4.0%
- 2.0% TO 3.0%
- 0.0% TO 2.0%
- 0.0% TO 0.0%
- -2.0% TO 0.0%
- -3.0% TO -2.0%
- -4.0% TO -3.0%
- -5.0% TO -4.0%
- -6.0% TO -5.0%
- -7.0% TO -6.0%
- -8.0% TO -7.0%
- -9.0% TO -8.0%
- -10.0% TO -9.0%
- Greater than -10.0%

ISSUE DATE	03/05/10	SCALE	1" = 150'	CTR INT.	2'
SURVEYED BY	MO/AG	CHECKED BY	CCV		
DRAWN BY	BWS	APPROVED BY	CRB		

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY

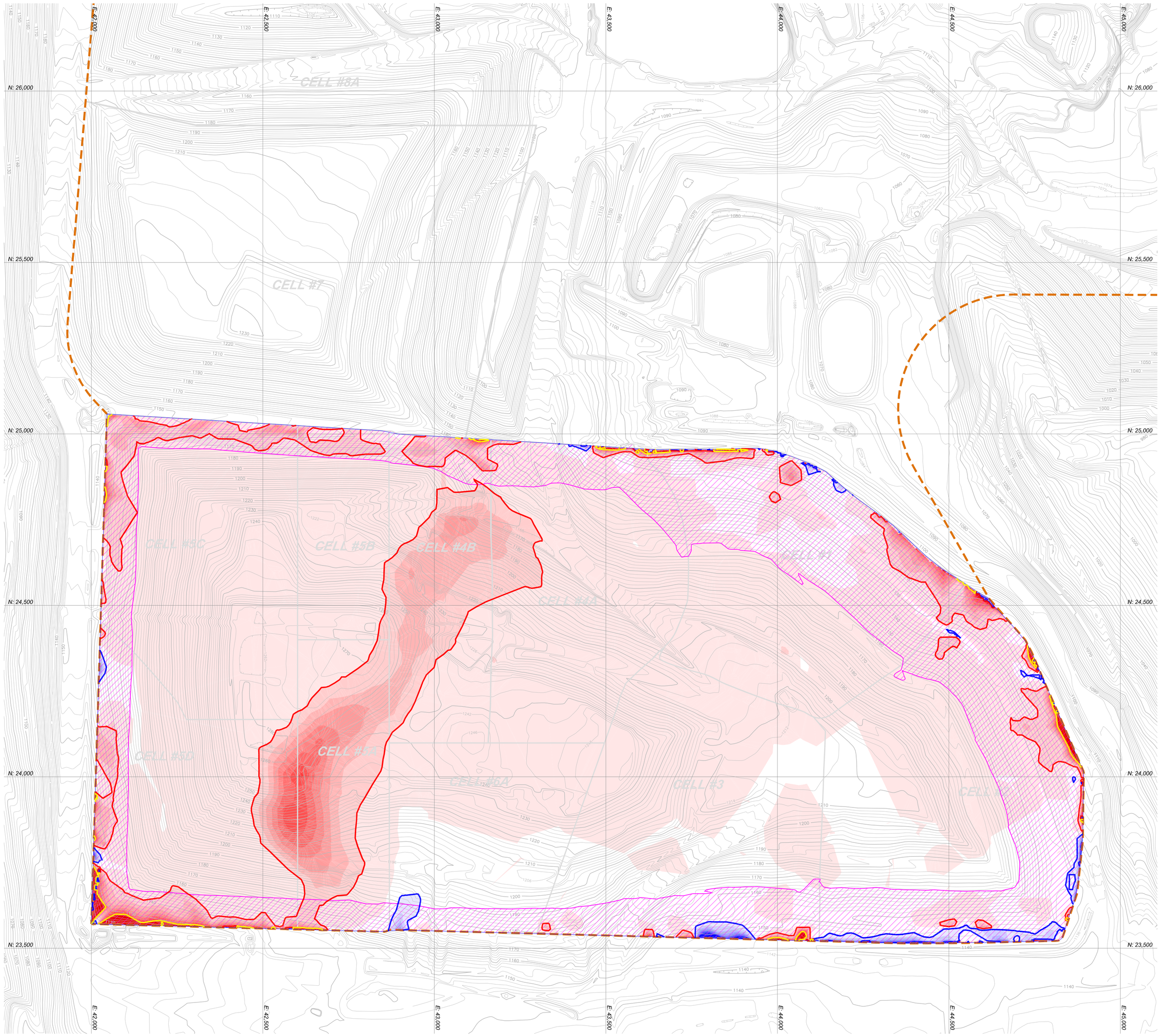
Diversified Engineering Inc.
CONSULTING ENGINEERS & SURVEYORS
2295 FAIR AVENUE, N.E.
NEW PHILADELPHIA, OH 44663
Phone: (330) 364-0531
Fax: (330) 364-4022
www.diversifiedengineering.com

COUNTYWIDE RDF

PROJECT: 88 Ac. REMEDIATION UNIT

SHEET TITLE: INCREMENTAL SETTLEMENT MAP (FEBRUARY 2010)

FIGURE: 2



N
W E
S

Scale: 1 in . = 150 ft.

0' 150' 300' 450'

Graphic Scale

LEGEND:

- 1120 — EXISTING CONTOUR (AERIAL MAPPING 5/21/09), CTR INT. = 2' (SHOWN FOR REFERENCE ONLY)
- 2% RATE OF SETTLEMENT LIMIT
- >10% RATE OF SETTLEMENT LIMIT
- 2% RATE OF RISE IN ELEVATION
- >10% RATE OF RISE IN ELEVATION
- ≤ 60ft OF WASTE DEPTH AS OF FEBRUARY 2010

AVERAGE ANNUALIZED MONTHY RATE (%) OF SETTLEMENT COLOR LEGEND

- Greater than 10.0%
- 9.0% TO 10.0%
- 8.0% TO 9.0%
- 7.0% TO 8.0%
- 6.0% TO 7.0%
- 5.0% TO 6.0%
- 4.0% TO 5.0%
- 3.0% TO 4.0%
- 2.0% TO 3.0%
- 0.0% TO 2.0%
- 0.0% TO 0.0%
- -2.0% TO 0.0%
- -3.0% TO -2.0%
- -4.0% TO -3.0%
- -5.0% TO -4.0%
- -6.0% TO -5.0%
- -7.0% TO -6.0%
- -8.0% TO -7.0%
- -9.0% TO -8.0%
- -10.0% TO -9.0%
- Greater than -10.0%

GENERAL NOTE:
THIS MAP REPRESENTS THE AVERAGE ANNUALIZED MONTHY SETTLEMENT FOR THE TIME PERIOD FROM OCTOBER 2009 THRU FEBRUARY 2010.

ISSUE DATE	03/05/10	SCALE	1" = 150'	CTR INT.	2'
SURVEYED BY		MO/AG	CHECKED BY	CCV	
DRAWN BY		BWS	APPROVED BY	CHB	

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY

Diversified Engineering Inc.
CONSULTING ENGINEERS & SURVEYORS
2295 FAIR AVENUE, N.E.
NEW PHILADELPHIA, OH 44663
Phone: (330) 364-5531
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Email: de@deinc.com

PROJECT: COUNTYWIDE RDF

88 Ac. REMEDIATION UNIT

SHEET TITLE: AVERAGE ANNUALIZED MONTHLY SETTLEMENT (OCTOBER 2009 - FEBRUARY 2010)

FIGURE: 2A

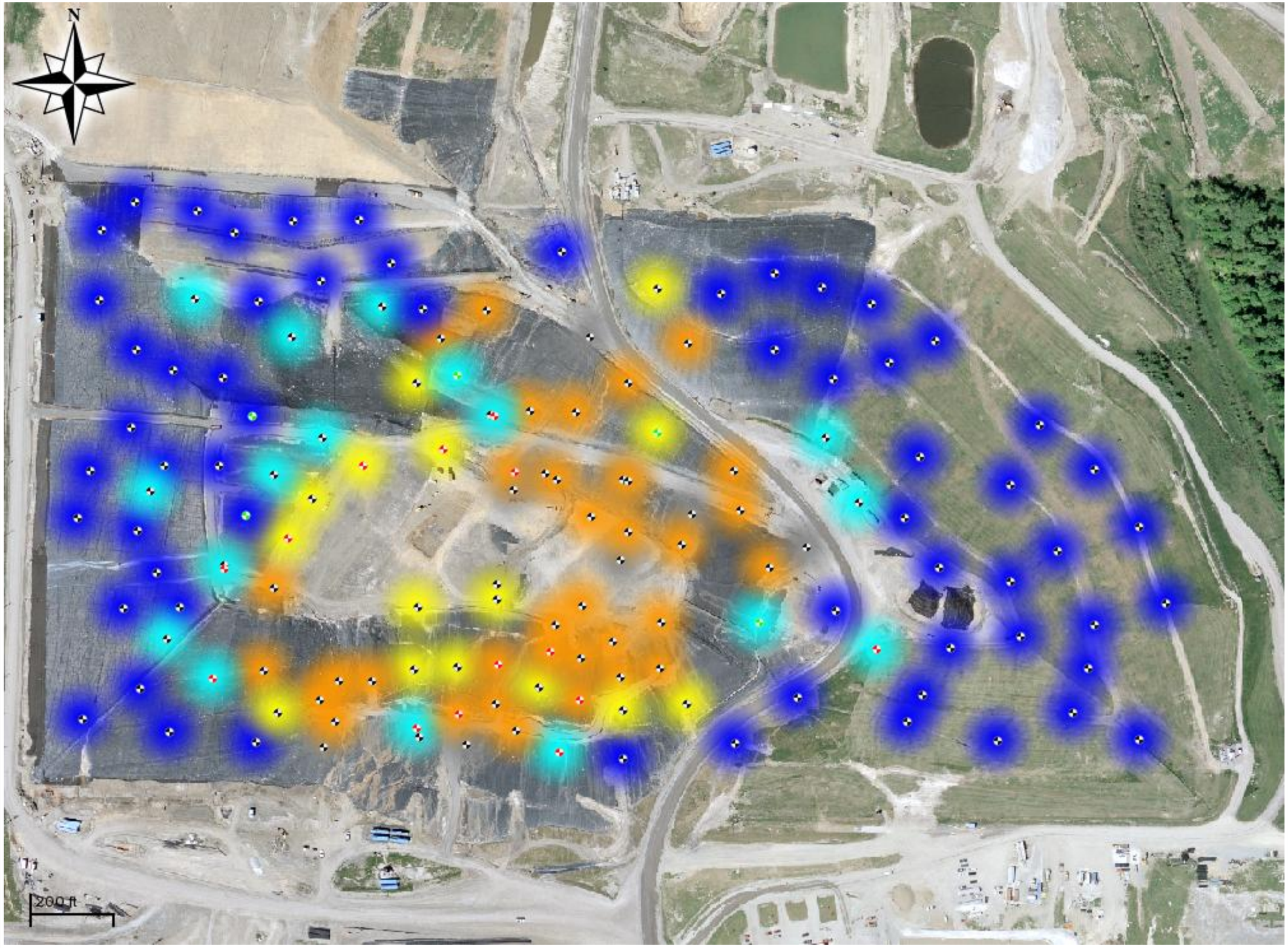

Figure 3
Average Wellhead Temperature

Countywide Recycling and Disposal Facility
3619 Gracemont St. S.W.
East Sparta, Ohio

Operation, Monitoring and Maintenance (OM&M) Plan
Monthly Report

Color Legend (deg F)

- < 131
- 131 < 150
- 150 < 180
- 180 < 210
- > 210

Symbol Legend

Gas Well

(Red symbol denotes rise in value category from previous reporting period.) (Green symbol denotes decrease in value category from previous reporting period.)

A radius influence of 100 feet is assumed at each device.

Reporting Period: Feb, 2010

Map Generated On: 03/12/2010

REPUBLIC SERVICES

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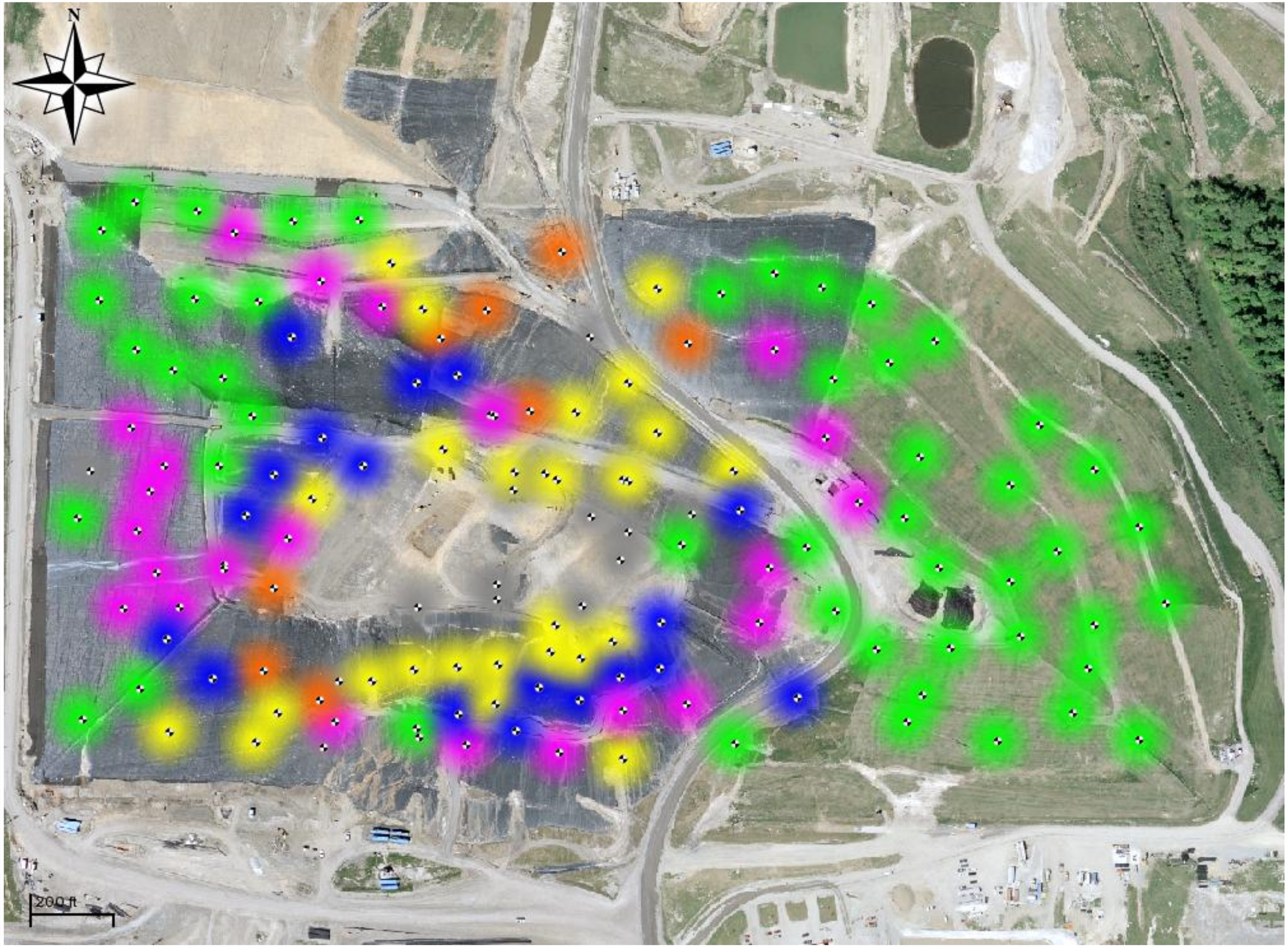


Figure 4
Carbon Monoxide Distribution

Countywide Recycling and Disposal Facility
3619 Gracemont St. S.W.
East Sparta, Ohio

Operation, Monitoring and Maintenance (OM&M) Plan
Monthly Report

Color Legend (ppm)

- < 100
- 100 to 500
- 500 to 1000
- 1000 to 2000
- > 2000
- No Data

Symbol Legend

Gas Well

A radius influence of 100 feet is assumed at each device.

Reporting Period: Oct, 2009

Map Generated On: 01/14/2010

REPUBLIC SERVICES

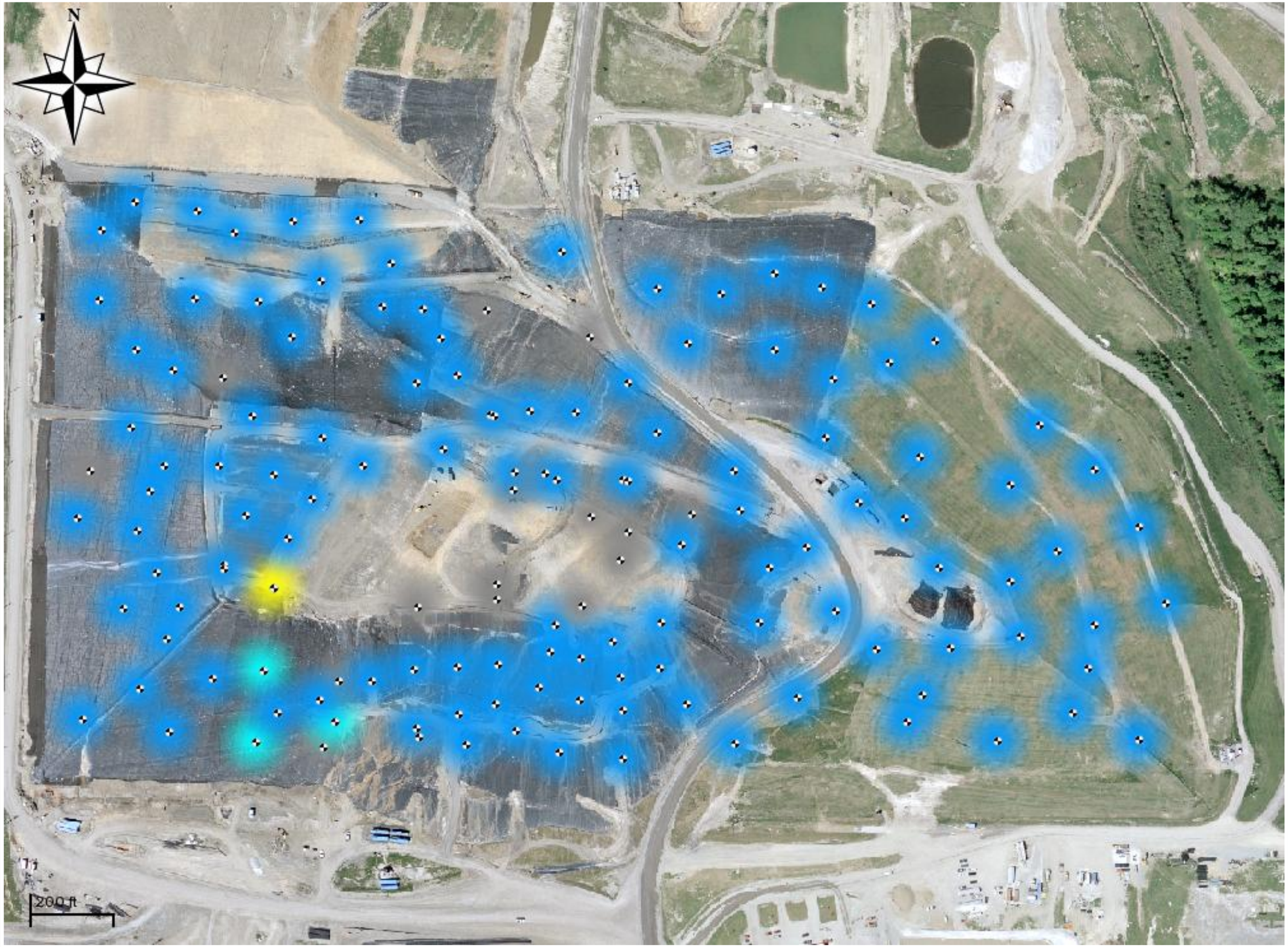


Figure 5
"Deadhead" Gas Well Pressure Distribution

Countywide Recycling and Disposal Facility
3619 Gracemont St. S.W.
East Sparta, Ohio

Operation, Monitoring and Maintenance (OM&M) Plan
Monthly Report

Color Legend (inches H2O)

- < 0
- 0 < 50
- 50 < 100
- 100 < 150
- 150 < 200
- > 200

Symbol Legend

Gas Well

(Red symbol denotes rise in value category from previous reporting period.) (Green symbol denotes decrease in value category from previous reporting period.)

A radius influence of 100 feet is assumed at each device.

Reporting Period: Feb, 2010

Map Generated On: 03/12/2010

REPUBLIC SERVICES

SHA IMPROVING EARTH

PREDICTIVE SERVICE®

safeguarding your future®

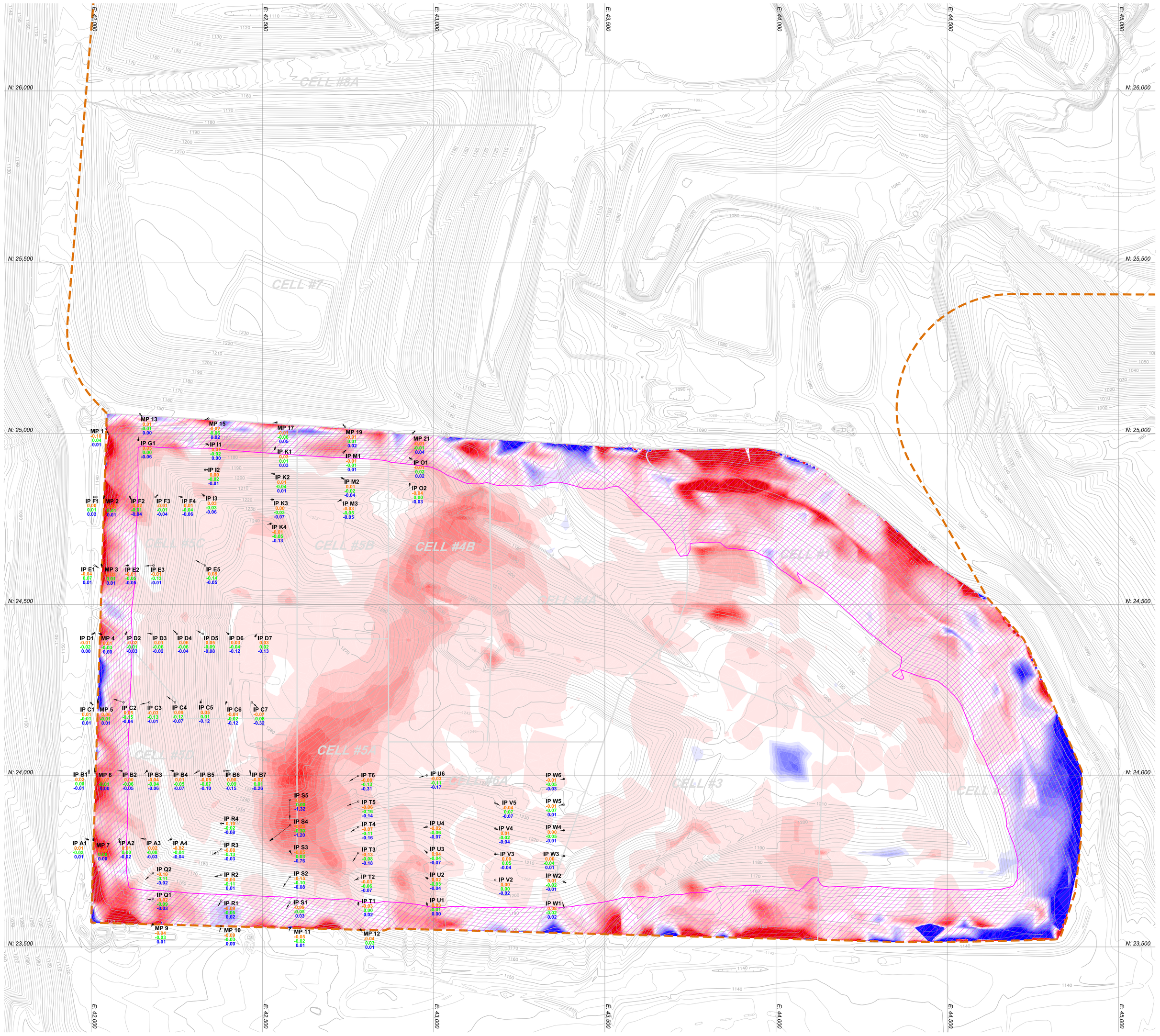
Figure 6. Aerial Infrared Photograph

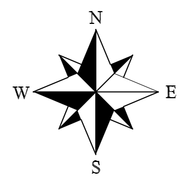
Composite Image by
Predictive Service LLC. 216.378.3500
Data Collected 2/4/2010

PREDICTIVE SERVICE®
safeguarding your future®

Figure 7. Detailed Aerial Infrared Photograph

Composite Image by
Predictive Service LLC. 216.378.3500
Data Collected 2/4/2010





Scale: 1 in . = 150 ft.

0' 150' 300' 450'

Graphic Scale

LEGEND:

1120 — EXISTING CONTOUR (AERIAL MAPPING 5/21/09), CTR INT. = 2' (SHOWN FOR REFERENCE ONLY)

≤ 60ft OF WASTE DEPTH

ANNUALIZED RATE (%) OF SETTLEMENT COLOR LEGEND

- Greater than 10.0%
- 9.0% TO 10.0%
- 8.0% TO 9.0%
- 7.0% TO 8.0%
- 6.0% TO 7.0%
- 5.0% TO 6.0%
- 4.0% TO 5.0%
- 3.0% TO 4.0%
- 2.0% TO 3.0%
- 0.0% TO 2.0%
- 0.0% TO 0.0%
- -2.0% TO 0.0%
- -3.0% TO -2.0%
- -4.0% TO -3.0%
- -5.0% TO -4.0%
- -6.0% TO -5.0%
- -7.0% TO -6.0%
- -8.0% TO -7.0%
- -9.0% TO -8.0%
- -10.0% TO -9.0%
- Greater than -10.0%

VECTOR LABELING CONVENTION:

IP S2
CHANGE IN NORTHING (ft)
CHANGE IN EASTING (ft)
CHANGE IN ELEVATION (ft)

GENERAL NOTES:

1.) SLOPE PIN MOVEMENT VECTORS WERE PROVIDED BY P.J. CAREY & ASSOCIATES, P.C.

2.) VECTORS DEMONSTRATE THE HORIZONTAL MOVEMENT BETWEEN THE DATES OF 12/1/09 & 12/29/09.

ISSUE DATE	03/25/10	SCALE	1" = 150'	CTR INT.	2'
SURVEYED BY				CHECKED BY	CCV
DRAWN BY	MOAG			APPROVED BY	CHB
	BWS				

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY

Diversified Engineering Inc.
CONSULTING ENGINEERS & SURVEYORS
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E-mail: diversified@sbcglobal.net

PROJECT: **COUNTYWIDE RDF**

88 Ac. REMEDIATION UNIT

SHEET TITLE: INCREMENTAL SETTLEMENT MAP w/ SLOPE PIN MOVEMENT VECTORS (FEBRUARY 2010)

FIGURE: **8**

Attachment 4

Pin Movement Evaluation

P. J. Carey & Associates, P.C.

5878 Valine Way, Sugar Hill, Georgia 30518
Telephone (678) 482-5193
Fax (866) 845-3898
Email pjcarey@pjcarey.com

March 10, 2010

Mr. Michael Darnell
Division Manager
Republic Services
Countywide RDF
3619 Gracemont Street, SW
East Sparta, Ohio 44626

RE: Evaluation of Pin Movements
Countywide Slopes
February Period (1/27/09 – 2/23/09)

Dear Mike,

I have reviewed the pin survey data from the South, West and North Slopes at Countywide. The surveys were performed during the month of February by Diversified Engineering, Inc. (DEI) using optical survey methods. The survey data has been plotted in accordance with Section 6.5.4 of the Operation, Maintenance and Monitoring Plan creating Figures 11 through 16 only for those points exceeding the trigger levels, as requested by Jerry Parker of the OH EPA. In addition, we are providing two vector plot maps that depict the pin movements for the monitoring period and since the onset of monitoring (October 6, 2009). Also included are tables showing the horizontal rate of movement for the February monitoring period and elevation motion since the original monitoring survey (October 6, 2009). This additional information has been attached after the aforementioned figures. A review of the data shows:

- Pins at IP S1, S2, S4, S5, MP11, and MP5 exceeded the trigger rates of 0.05ft per day of horizontal movement once during February if the daily readings are considered. When only the weekly readings are considered none of the pins exceeded the horizontal movement trigger rate during February. Based on the survey, none of these point locations exceeded the trigger since 2/5/2009. Tables showing the movement rate based on daily and weekly readings are attached. Graphs of pin movement for the above points are included.

- Minor upward movements have occurred, relative to the original survey pin elevation at 2 locations (IP F1 and MP5) during the period. This is a decrease from the approximately 32 locations that had minor upward movement during the January period. No trend of upward displacement has been established and it remains my opinion that the upward movements are slight (less than 0.1 inch) as of the end of the period. The upward movement surveyed can be related to frost heave, survey equipment changes and/or difficulty setting up

over the exact pin locations. These points have also been included in the graphs.

No signs of instability are indicated.

I hope this information is helpful to you. Please call if there are any questions

Sincerely,

Peter J. Carey, PE
President

HORIZONTAL RATE OF MOVEMENT (FT/DAY)

CALCULATED BASED ON PREVIOUS READING AT EACH POINT

ID	1/26/10	1/27/10	1/28/10	1/29/10	2/1/10	2/2/10	2/3/10	2/4/10	2/5/10	2/11/10	2/15/10	2/23/10
IP G1	0.00					0.00				0.00	0.01	0.00
IP I1	0.00					0.00				0.00	0.01	0.00
IP I2	0.00					0.00				0.00	0.01	0.00
IP I3	0.01					0.01				0.00	0.01	0.00
IP K1	0.00					0.01				0.01	0.01	0.00
IP K2	0.01					0.01				0.01	0.01	0.00
IP K3	0.01					0.01				0.01	0.01	0.00
IP K4	0.01					0.01				0.00	0.01	0.00
IP M1	0.01					0.02				0.02	0.01	0.00
IP M2	0.01					0.01				0.00	0.01	0.00
IP M3	0.01					0.01				0.00	0.01	0.00
IP O1	0.01					0.01				0.00	0.01	0.01
IP O2	0.01					0.00					0.00	0.01
MP 13	0.00					0.01				0.01	0.00	0.00
MP 15	0.01					0.00				0.00	0.00	0.00
MP 17	0.01					0.01				0.00	0.00	0.01
MP 19	0.00					0.00				0.00	0.01	0.00
MP 21	0.01					0.01				0.01	0.01	0.01
IP R1	0.01					0.01				0.01	0.02	0.01
IP R2	0.00					0.02				0.01	0.01	0.00
IP R3	0.02									0.01	0.00	0.01
IP R4	0.02					0.01				0.04	0.01	0.04
IP S1	0.08	0.05	0.01	0.11	0.02	0.04	0.02	0.04	0.07	0.01	0.02	0.01
IP S2	0.04	0.01	0.07	0.05	0.01	0.01	0.03	0.01	0.04	0.02	0.00	0.01
IP S3	0.05	0.03	0.04	0.04	0.01	0.03	0.03	0.04	0.02	0.02	0.03	0.01
IP S4	0.09	0.11	0.05	0.06	0.03	0.03	0.03	0.05	0.04	0.01	0.00	0.01
IP S5	0.58	0.07	0.11	0.16	0.03	0.06	0.01	0.02	0.04	0.01	0.01	0.02
IP T1	0.01					0.00				0.01	0.01	0.00
IP T2	0.01					0.00				0.00	0.02	0.00
IP T3	0.01					0.00				0.01	0.00	0.01
IP T4	0.02					0.01				0.00	0.02	0.01
IP T5	0.02					0.01				0.01	0.02	0.02
IP T6	0.02					0.01				0.01	0.01	0.01
IP U1	0.01					0.01				0.00	0.00	0.00
IP U2	0.01					0.01				0.00	0.01	0.01
IP U3	0.02					0.01				0.01	0.02	0.01
IP U4	0.01					0.01				0.01	0.00	0.01
IP U5						0.00						0.01
IP U6	0.01					0.01				0.01	0.01	0.01
IP V1												
IP V2	0.01					0.00				0.00	0.01	0.00
IP V3	0.01					0.01				0.01	0.01	0.00
IP V4	0.01					0.00				0.01	0.01	0.00
IP V5	0.02					0.01				0.00	0.01	0.01
IP V6						0.01						
IP W1	0.01					0.01				0.01	0.01	0.00
IP W2	0.01					0.00				0.01	0.01	0.00
IP W3	0.01					0.00				0.01	0.01	0.00
IP W4	0.01					0.01				0.01	0.02	0.00

1. Data compiled by PJ Carey Associates, PC.
2. Survey provided by DEI beginning on October 6, 2009.
3. Highlighted regions indicate points which the horizontal rate of movement exceed the trigger value of 0.05 ft/day.

HORIZONTAL RATE OF MOVEMENT (FT/DAY)

CALCULATED BASED ON PREVIOUS READING AT EACH POINT

IP W5	0.02					0.00				0.01	0.01	0.02
IP W6	0.02					0.01				0.00	0.02	0.01
MP 10	0.01					0.01				0.00	0.01	0.00
MP 11	0.02	0.01	0.01	0.04	0.00	0.05	0.03	0.04	0.02		0.00	0.00
MP 12	0.01					0.00				0.00	0.01	0.00
IP A1	0.00					0.01				0.00	0.00	0.00
IP A2	0.00					0.01				0.01	0.01	0.02
IP A3	0.00					0.01				0.01	0.01	0.01
IP A4	0.01					0.00				0.01	0.01	0.00
IP B1	0.00					0.00				0.00	0.00	0.01
IP B2	0.01					0.01				0.00	0.00	0.00
IP B3	0.01					0.00				0.01	0.01	0.00
IP B4	0.01					0.01				0.01	0.00	0.01
IP B5	0.01					0.01				0.01	0.01	0.00
IP B6	0.01					0.01				0.01	0.00	0.01
IP B7	0.02					0.03				0.01		0.01
IP C1	0.00					0.00				0.00	0.00	0.00
IP C2	0.00					0.00				0.01	0.02	0.01
IP C3	0.01					0.02				0.00	0.01	0.01
IP C4	0.01					0.02				0.00	0.02	0.02
IP C5	0.01					0.00				0.01	0.00	0.00
IP C6	0.00					0.01				0.01	0.01	0.00
IP C7	0.00					0.02				0.03		0.01
IP D1	0.01					0.00				0.00	0.01	0.00
IP D2	0.01					0.01				0.00	0.01	0.00
IP D3	0.01					0.01				0.00	0.00	0.00
IP D4	0.01					0.00				0.00	0.00	0.01
IP D5	0.01					0.00				0.00	0.01	0.01
IP D6	0.01					0.01				0.01	0.01	0.00
IP D7	0.01					0.03				0.02		0.01
IP E1	0.00					0.01				0.00	0.01	0.00
IP E2	0.01					0.01				0.00	0.00	0.00
IP E3	0.01					0.01				0.00	0.01	0.01
IP E4						0.00						
IP E5	0.02					0.02				0.01	0.01	0.01
IP F1	0.00					0.00				0.00	0.00	0.00
IP F2	0.00					0.00				0.00	0.02	0.01
IP F3	0.00					0.00				0.00	0.00	0.00
IP F4	0.00					0.00				0.00	0.00	0.00
IP Q1	0.01					0.02				0.02	0.01	0.01
IP Q2	0.01					0.01				0.01	0.00	0.01
MP 1	0.02					0.02				0.01	0.02	0.00
MP 2	0.00					0.00				0.01	0.02	0.00
MP 3	0.01					0.01				0.00	0.01	0.00
MP 4	0.00					0.00				0.00	0.01	0.00
MP 5	0.01					0.01				0.00	0.01	0.00
MP 6	0.01					0.01				0.01	0.01	0.00
MP 7	0.01					0.02				0.02	0.01	0.00
MP 8												
MP 9	0.01					0.00				0.00	0.01	0.00

1. Data compiled by PJ Carey Associates, PC.
2. Survey provided by DEI beginning on October 6, 2009.
3. Highlighted regions indicate points which the horizontal rate of movement exceed the trigger value of 0.05 ft/day.

HORIZONTAL RATE OF MOVEMENT (FT/DAY)

CALCULATED BASED ON PREVIOUS READING AT EACH POINT (by week)

ID	1/26/10	2/2/10	2/11/10	2/15/10	2/23/10
IP G1	0.00	0.00	0.00	0.01	0.00
IP I1	0.00	0.00	0.00	0.01	0.00
IP I2	0.00	0.00	0.00	0.01	0.00
IP I3	0.01	0.01	0.00	0.01	0.00
IP K1	0.00	0.01	0.01	0.01	0.00
IP K2	0.01	0.01	0.01	0.01	0.00
IP K3	0.01	0.01	0.01	0.01	0.00
IP K4	0.01	0.01	0.00	0.01	0.00
IP M1	0.01	0.02	0.02	0.01	0.00
IP M2	0.01	0.01	0.00	0.01	0.00
IP M3	0.01	0.01	0.00	0.01	0.00
IP O1	0.01	0.01	0.00	0.01	0.01
IP O2	0.01	0.00		0.00	0.01
MP 13	0.00	0.01	0.01	0.00	0.00
MP 15	0.01	0.00	0.00	0.00	0.00
MP 17	0.01	0.01	0.00	0.00	0.01
MP 19	0.00	0.00	0.00	0.01	0.00
MP 21	0.01	0.01	0.01	0.01	0.01
IP R1	0.01	0.01	0.01	0.02	0.01
IP R2	0.00	0.02	0.01	0.01	0.00
IP R3	0.02		0.01	0.00	0.01
IP R4	0.02	0.01	0.04	0.01	0.04
IP S1	0.02	0.01	0.01	0.02	0.01
IP S2	0.01	0.01	0.02	0.00	0.01
IP S3	0.01	0.00	0.02	0.03	0.01
IP S4	0.01	0.02	0.01	0.00	0.01
IP S5	0.06	0.01	0.01	0.01	0.02
IP T1	0.01	0.00	0.01	0.01	0.00
IP T2	0.01	0.00	0.00	0.02	0.00
IP T3	0.01	0.00	0.01	0.00	0.01
IP T4	0.02	0.01	0.00	0.02	0.01
IP T5	0.02	0.01	0.01	0.02	0.02
IP T6	0.02	0.01	0.01	0.01	0.01
IP U1	0.01	0.01	0.00	0.00	0.00
IP U2	0.01	0.01	0.00	0.01	0.01
IP U3	0.02	0.01	0.01	0.02	0.01
IP U4	0.01	0.01	0.01	0.00	0.01
IP U5		0.00			0.01
IP U6	0.01	0.01	0.01	0.01	0.01
IP V1					
IP V2	0.01	0.00	0.00	0.01	0.00
IP V3	0.01	0.01	0.01	0.01	0.00
IP V4	0.01	0.00	0.01	0.01	0.00
IP V5	0.02	0.01	0.00	0.01	0.01
IP V6		0.01			
IP W1	0.01	0.01	0.01	0.01	0.00
IP W2	0.01	0.00	0.01	0.01	0.00
IP W3	0.01	0.00	0.01	0.01	0.00
IP W4	0.01	0.01	0.01	0.02	0.00

1. Data compiled by PJ Carey Associates, PC.
2. Survey provided by DEI beginning on October 6, 2009.
3. Highlighted regions indicate points which the horizontal rate of movement exceed the trigger value of 0.05 ft/day.

HORIZONTAL RATE OF MOVEMENT (FT/DAY)

CALCULATED BASED ON PREVIOUS READING AT EACH POINT (by week)

IP W5	0.02	0.00	0.01	0.01	0.02
IP W6	0.02	0.01	0.00	0.02	0.01
MP 10	0.01	0.01	0.00	0.01	0.00
MP 11	0.02	0.00		0.00	0.00
MP 12	0.01	0.00	0.00	0.01	0.00
IP A1	0.00	0.01	0.00	0.00	0.00
IP A2	0.00	0.01	0.01	0.01	0.02
IP A3	0.00	0.01	0.01	0.01	0.01
IP A4	0.01	0.00	0.01	0.01	0.00
IP B1	0.00	0.00	0.00	0.00	0.01
IP B2	0.01	0.01	0.00	0.00	0.00
IP B3	0.01	0.00	0.01	0.01	0.00
IP B4	0.01	0.01	0.01	0.00	0.01
IP B5	0.01	0.01	0.01	0.01	0.00
IP B6	0.01	0.01	0.01	0.00	0.01
IP B7	0.02	0.03	0.01		0.01
IP C1	0.00	0.00	0.00	0.00	0.00
IP C2	0.00	0.00	0.01	0.02	0.01
IP C3	0.01	0.02	0.00	0.01	0.01
IP C4	0.01	0.02	0.00	0.02	0.02
IP C5	0.01	0.00	0.01	0.00	0.00
IP C6	0.00	0.01	0.01	0.01	0.00
IP C7	0.00	0.02	0.03		0.01
IP D1	0.01	0.00	0.00	0.01	0.00
IP D2	0.01	0.01	0.00	0.01	0.00
IP D3	0.01	0.01	0.00	0.00	0.00
IP D4	0.01	0.00	0.00	0.00	0.01
IP D5	0.01	0.00	0.00	0.01	0.01
IP D6	0.01	0.01	0.01	0.01	0.00
IP D7	0.01	0.03	0.02		0.01
IP E1	0.00	0.01	0.00	0.01	0.00
IP E2	0.01	0.01	0.00	0.00	0.00
IP E3	0.01	0.01	0.00	0.01	0.01
IP E4		0.00			
IP E5	0.02	0.02	0.01	0.01	0.01
IP F1	0.00	0.00	0.00	0.00	0.00
IP F2	0.00	0.00	0.00	0.02	0.01
IP F3	0.00	0.00	0.00	0.00	0.00
IP F4	0.00	0.00	0.00	0.00	0.00
IP Q1	0.01	0.02	0.02	0.01	0.01
IP Q2	0.01	0.01	0.01	0.00	0.01
MP 1	0.02	0.02	0.01	0.02	0.00
MP 2	0.00	0.00	0.01	0.02	0.00
MP 3	0.01	0.01	0.00	0.01	0.00
MP 4	0.00	0.00	0.00	0.01	0.00
MP 5	0.01	0.01	0.00	0.01	0.00
MP 6	0.01	0.01	0.01	0.01	0.00
MP 7	0.01	0.02	0.02	0.01	0.00
MP 8					
MP 9	0.01	0.00	0.00	0.01	0.00

1. Data compiled by PJ Carey Associates, PC.
2. Survey provided by DEI beginning on October 6, 2009.
3. Highlighted regions indicate points which the horizontal rate of movement exceed the trigger value of 0.05 ft/day.

CHANGE IN ELEVATION (FT)
CALCULATED BASED ON ORIGINAL SURVEY DATE OF 10-06-09

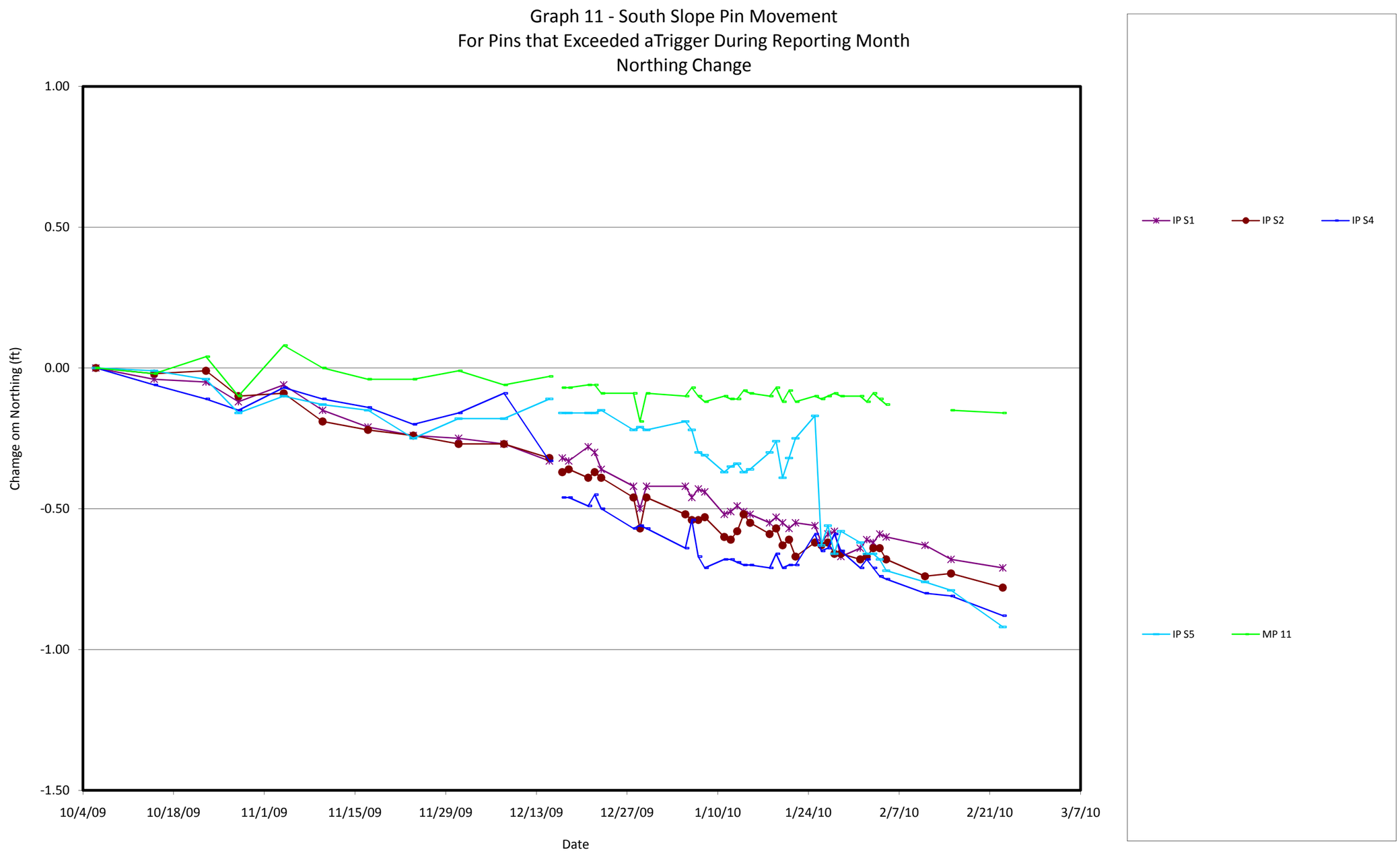
ID	1/27/10	1/28/10	1/29/10	2/1/10	2/2/10	2/3/10	2/4/10	2/5/10	2/11/10	2/15/10	2/23/10
IP G1					-0.27				-0.27	-0.28	-0.30
IP I1					-0.06				-0.04	-0.03	-0.04
IP I2					-0.08				-0.07	-0.05	-0.07
IP I3					-0.35				-0.35	-0.35	-0.37
IP K1					0.02				0.03	0.03	0.04
IP K2					-0.08				-0.04	-0.04	-0.04
IP K3					-0.40				-0.38	-0.38	-0.40
IP K4					-0.85				-0.86	-0.87	-0.91
IP M1					0.00				0.00	-0.01	0.01
IP M2					-0.12				-0.13	-0.13	-0.15
IP M3					-0.44				-0.44	-0.44	-0.44
IP O1					-0.08				-0.07	-0.07	-0.08
IP O2					-0.38					-0.37	-0.37
MP 13					-0.01				0.00	-0.01	0.00
MP 15					-0.01				0.01	0.00	0.00
MP 17					-0.04				0.01	0.02	0.02
MP 19					-0.08				0.01	-0.02	-0.03
MP 21					-0.09				-0.01	-0.03	-0.02
IP R1					0.04				0.01	0.02	0.01
IP R2					-0.05				-0.04	-0.03	-0.05
IP R3									-0.21	-0.19	-0.24
IP R4					-0.38				-0.38	-0.39	-0.42
IP S1	-0.20	-0.19	-0.21	-0.18	-0.18	-0.19	-0.20	-0.20	-0.17	-0.16	-0.16
IP S2	-0.42	-0.45	-0.43	-0.44	-0.44	-0.45	-0.45	-0.44	-0.45	-0.46	-0.49
IP S3	-1.94	-1.97	-1.98	-2.09	-2.08	-2.11	-2.17	-2.18	-2.32	-2.42	-2.66
IP S4	-4.80	-4.82	-4.88	-5.03	-5.03	-5.09	-5.14	-5.18	-5.44	-5.57	-5.92
IP S5	-5.11	-5.20	-5.22	-5.40	-5.40	-5.48	-5.52	-5.59	-5.83	-5.96	-6.37
IP T1					-0.31				-0.32	-0.31	-0.31
IP T2					-0.85				-0.91	-0.94	-0.95
IP T3					-1.32				-1.40	-1.40	-1.50
IP T4					-1.49				-1.56	-1.59	-1.64
IP T5					-1.46				-1.60	-1.57	-1.65
IP T6					-1.94				-2.01	-2.06	-2.19
IP U1					-0.10				-0.08	-0.08	-0.09
IP U2					-0.23				-0.23	-0.24	-0.26
IP U3					-0.46				-0.48	-0.47	-0.51
IP U4					-0.43				-0.44	-0.44	-0.49
IP U5					-0.59						-0.64
IP U6					-0.96				-0.97	-0.99	-1.10
IP V1											
IP V2					-0.50				-0.47	-0.46	-0.50
IP V3					-0.32				-0.28	-0.26	-0.30
IP V4					-0.35				-0.34	-0.34	-0.37
IP V5					-0.39				-0.39	-0.37	-0.41
IP V6					-0.61						
IP W1					-0.10				-0.09	-0.06	-0.07
IP W2					-0.24				-0.19	-0.17	-0.19
IP W3					-0.21				-0.18	-0.18	-0.17
IP W4					-0.19				-0.19	-0.19	-0.19
IP W5					-0.34				-0.35	-0.31	-0.33
IP W6					-0.32				-0.30	-0.29	-0.33

1. Data compiled by PJ Carey Associates, PC.
2. Survey provided by DEI beginning on October 6, 2009.
3. Highlighted regions indicate points which there was a positive change of 0.05 ft or greater in elevation since October 6, 2009.

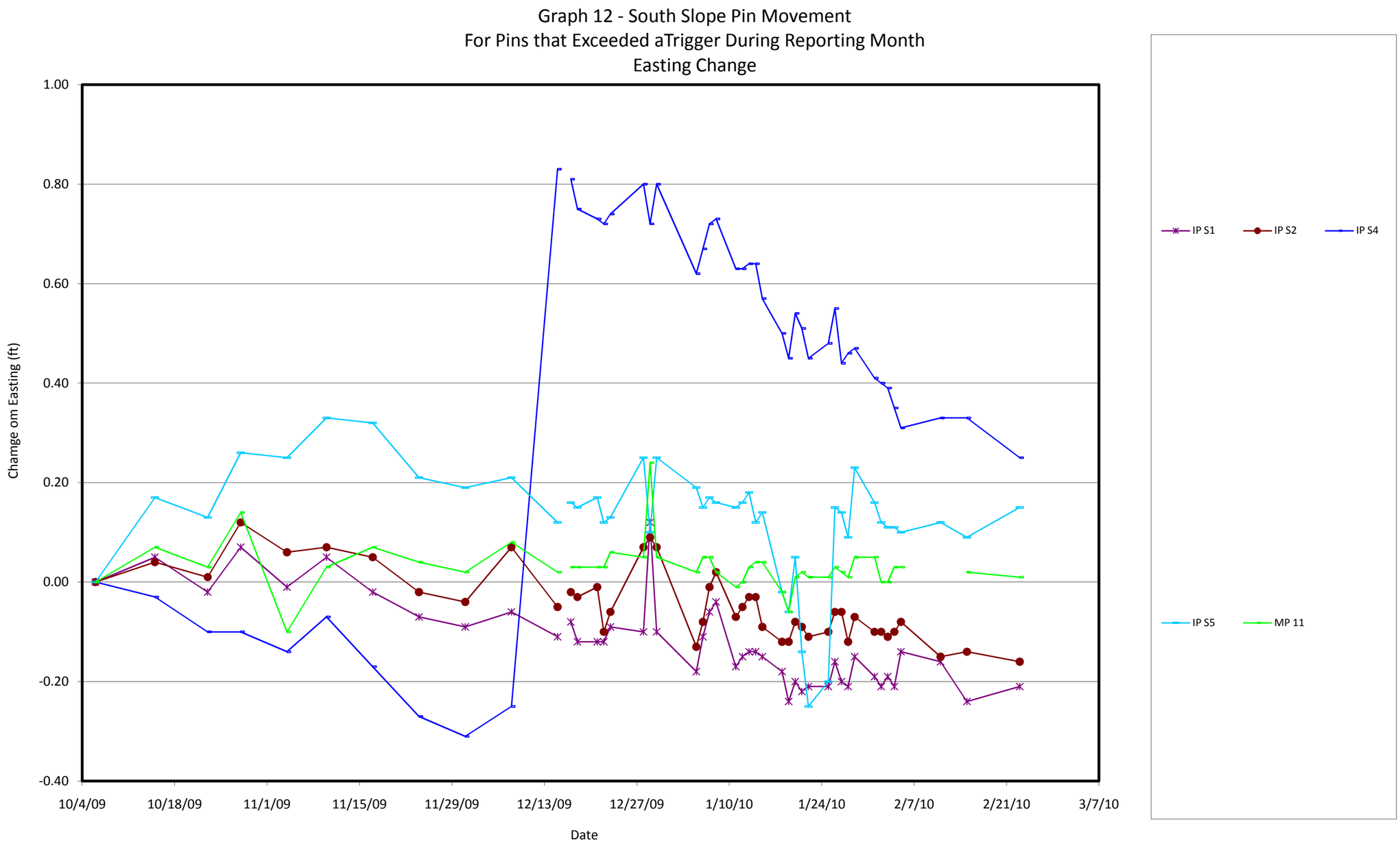
CHANGE IN ELEVATION (FT)
CALCULATED BASED ON ORIGINAL SURVEY DATE OF 10-06-09

ID	1/27/10	1/28/10	1/29/10	2/1/10	2/2/10	2/3/10	2/4/10	2/5/10	2/11/10	2/15/10	2/23/10
MP 10					-0.03				-0.02	-0.01	-0.01
MP 11	-0.01	-0.01	-0.01	0.00	-0.01	0.00	0.00	0.00		0.01	0.01
MP 12					-0.05				-0.07	-0.05	-0.05
IP A1					-0.06				-0.03	0.00	-0.02
IP A2					-0.10				-0.07	-0.05	-0.11
IP A3					-0.29				-0.27	-0.25	-0.26
IP A4					-0.28				-0.25	-0.25	-0.27
IP B1					-0.01				0.03	0.02	0.01
IP B2					-0.16				-0.15	-0.17	-0.19
IP B3					-0.09				-0.12	-0.14	-0.14
IP B4					-0.31				-0.32	-0.33	-0.35
IP B5					-0.43				-0.43	-0.43	-0.45
IP B6					-0.62				-0.68	-0.68	-0.73
IP B7					-1.09				-1.12		-1.27
IP C1					0.01				0.02	0.02	0.02
IP C2					-0.09				-0.08	-0.09	-0.11
IP C3					-0.12				-0.08	-0.08	-0.09
IP C4					-0.18				-0.21	-0.20	-0.22
IP C5					-0.41				-0.41	-0.41	-0.47
IP C6					-0.57				-0.60	-0.62	-0.66
IP C7					-0.61				-0.69		-0.80
IP D1					0.03				0.03	0.03	0.03
IP D2					-0.13				-0.14	-0.13	-0.14
IP D3					-0.13				-0.12	-0.11	-0.12
IP D4					-0.31				-0.32	-0.31	-0.31
IP D5					-0.40				-0.39	-0.42	-0.44
IP D6					-0.59				-0.61	-0.63	-0.67
IP D7					-0.71				-0.71		-0.81
IP E1					0.01				0.02	0.04	0.01
IP E2					-0.30				-0.29	-0.30	-0.31
IP E3					-0.13				-0.13	-0.11	-0.12
IP E4					-0.27						
IP E5					-0.42				-0.46	-0.46	-0.44
IP F1					0.10				0.11	0.11	0.09
IP F2					-0.25				-0.27	-0.26	-0.28
IP F3					-0.26				-0.27	-0.27	-0.29
IP F4					-0.33				-0.34	-0.34	-0.37
IP Q1					-0.12				-0.13	-0.13	-0.15
IP Q2					-0.29				-0.32	-0.29	-0.29
MP 1					0.01				0.02	0.02	0.01
MP 2					-0.01				0.02	0.02	0.01
MP 3					-0.02				-0.01	0.00	0.00
MP 4					0.03				0.03	0.03	0.03
MP 5					0.03				0.04	0.05	0.05
MP 6					-0.01				0.01	0.02	0.00
MP 7					-0.08				-0.05	-0.05	-0.05
MP 8											
MP 9					-0.08				-0.09	-0.06	-0.05

1. Data compiled by PJ Carey Associates, PC.
2. Survey provided by DEI beginning on October 6, 2009.
3. Highlighted regions indicate points which there was a positive change of 0.05 ft or greater in elevation since October 6, 2009.

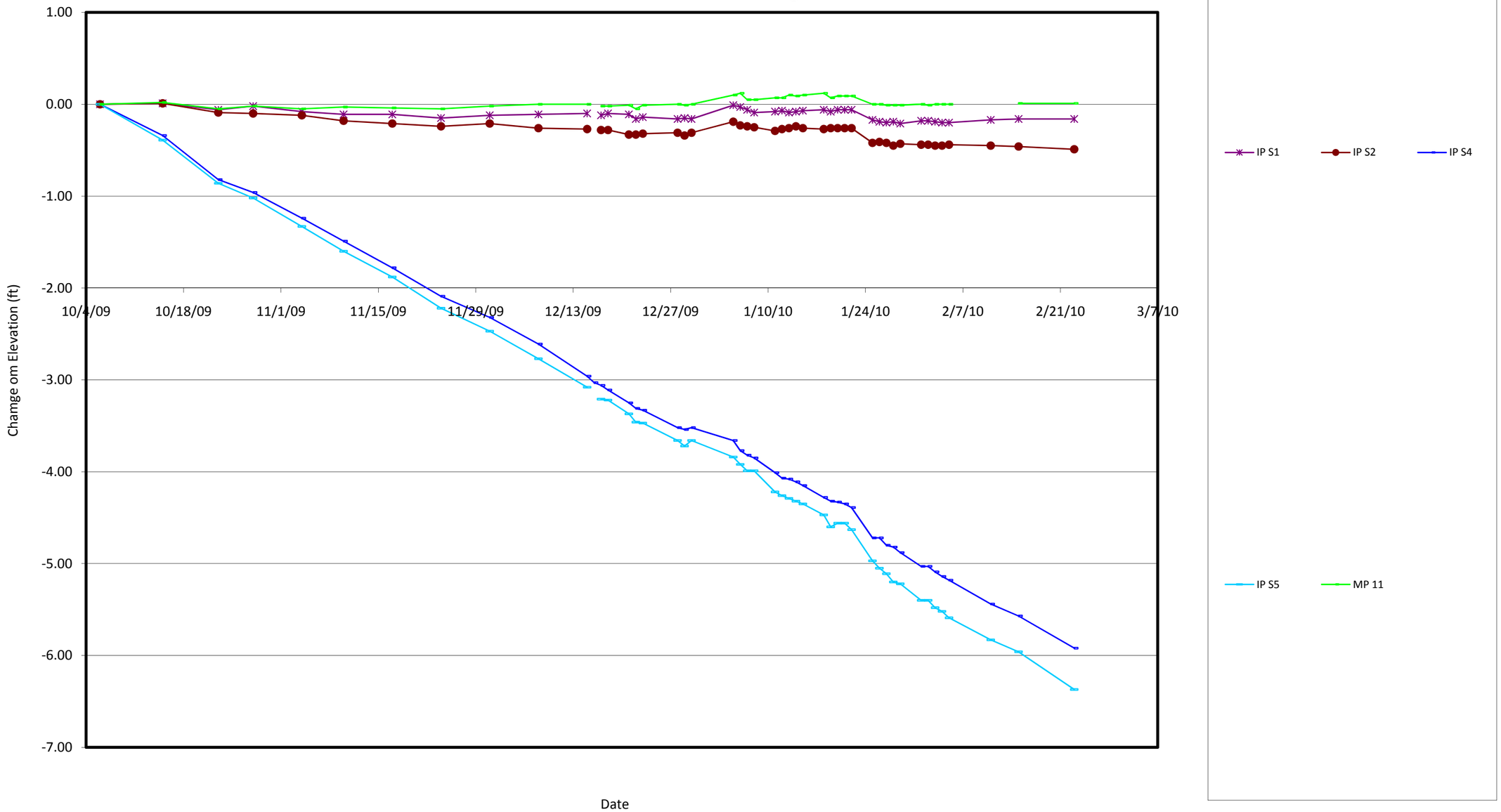


1. Data compiled by PJ Carey Associates, PC.
2. Survey provided by DEI beginning on October 5, 2009.



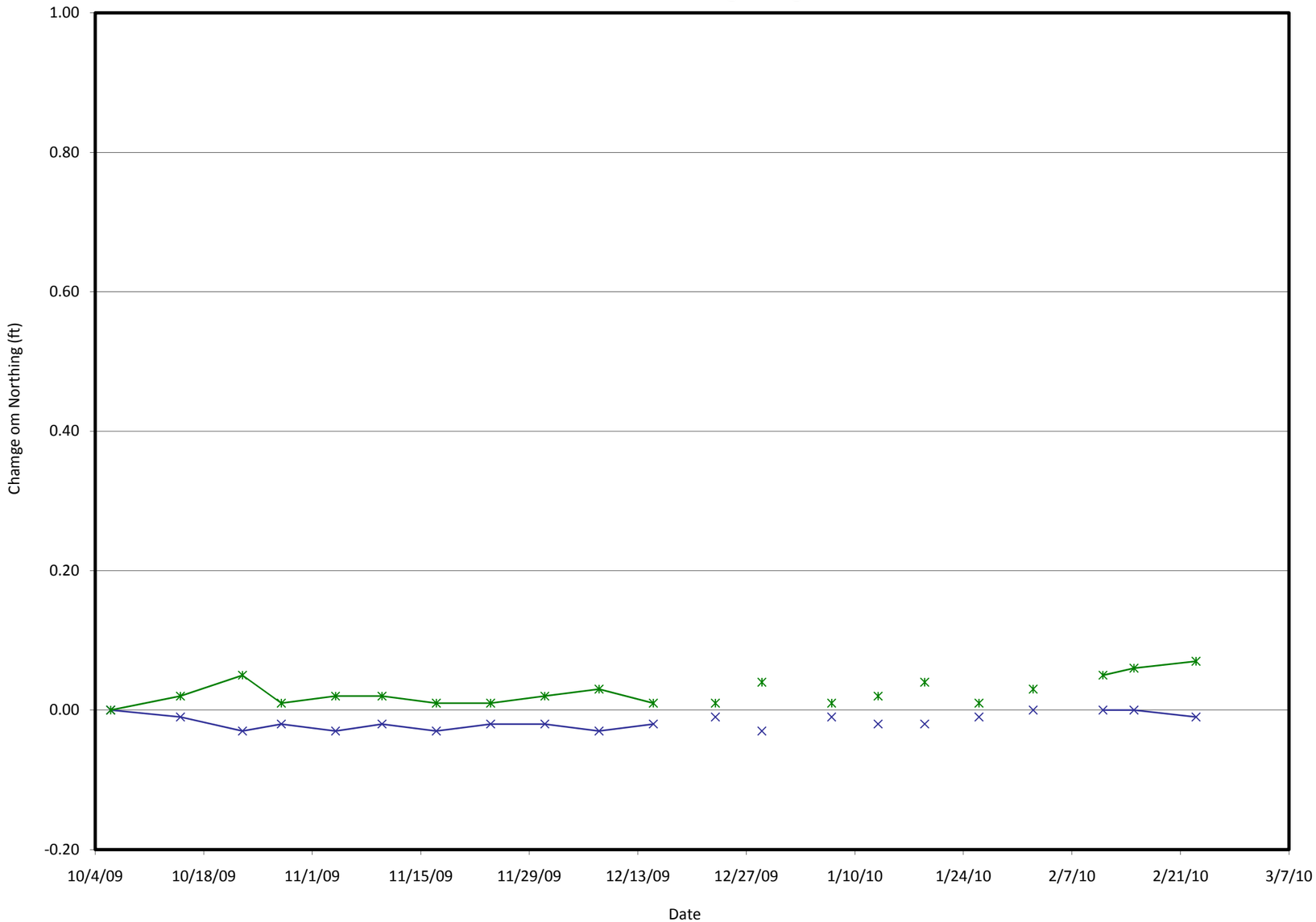
1. Data compiled by PJ Carey Associates, PC.
2. Survey provided by DEI beginning on October 5, 2009.

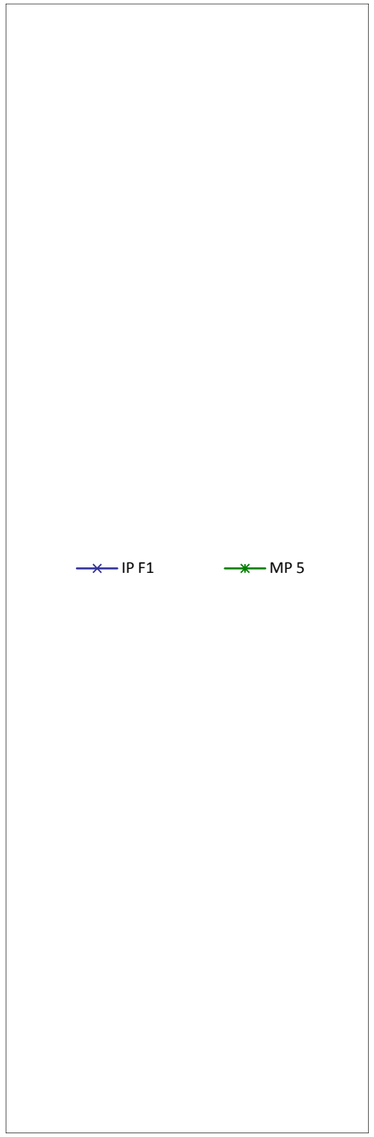
Graph 13 - South Slope Pin Movement
For Pins that Exceeded aTrigger During Reporting Month
Elevation Change



1. Data compiled by PJ Carey Associates, PC.
2. Survey provided by DEI beginning on October 5, 2009.

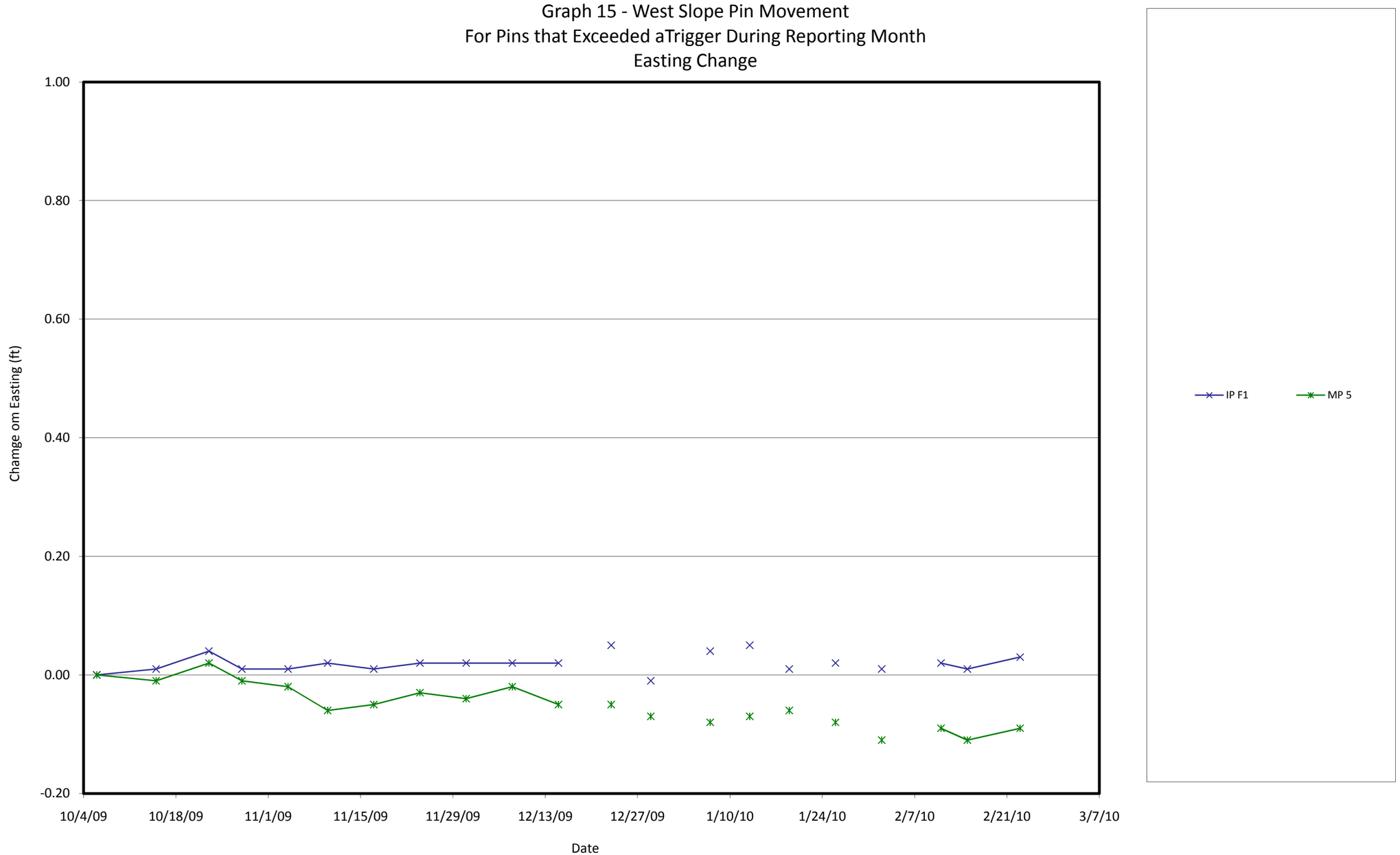
Graph 14 - West Slope Pin Movement
For Pins that Exceeded aTrigger During Reporting Month
Northing Change



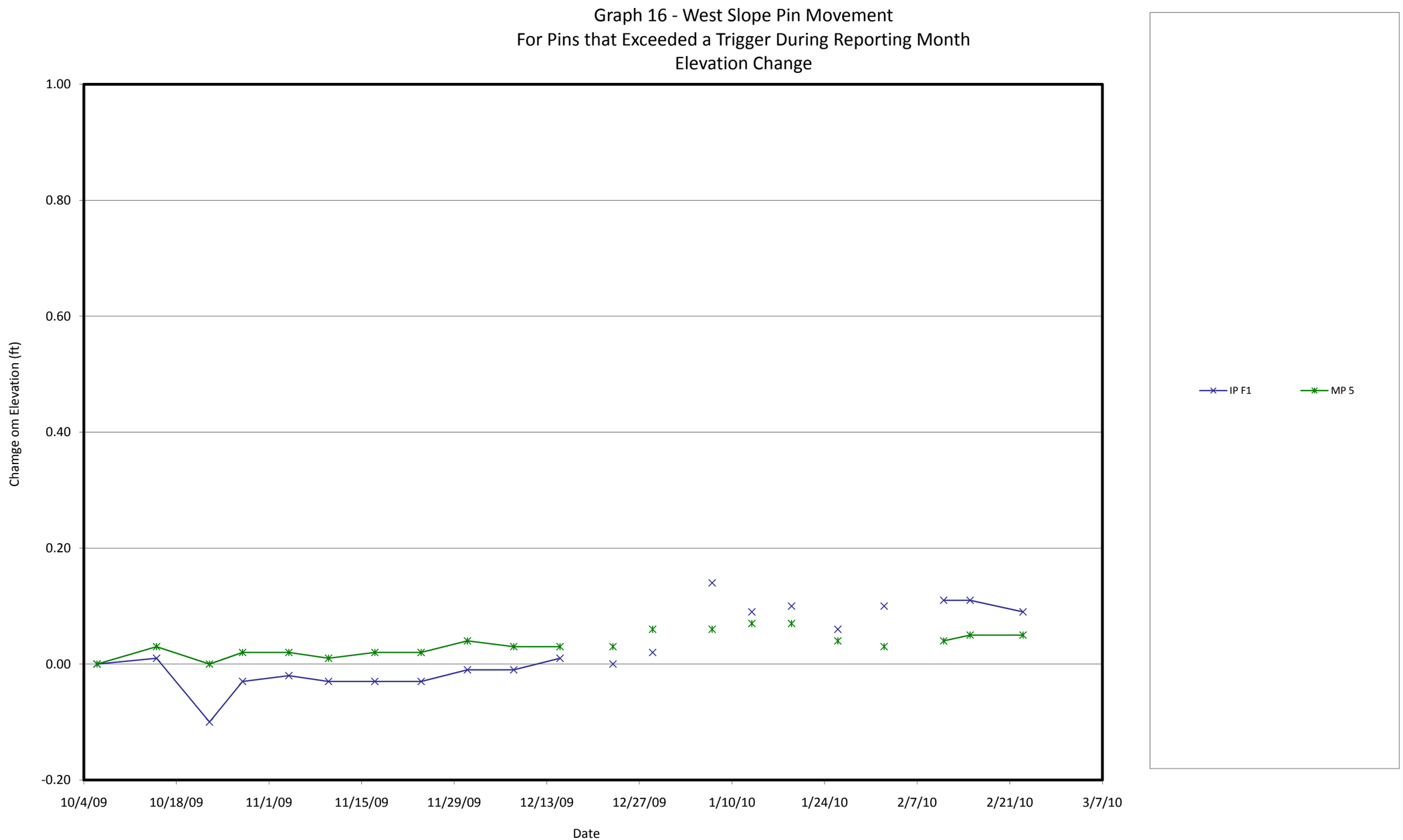


1. Data compiled by PJ Carey Associates, PC.
2. Survey provided by DEI beginning on October 5, 2009.

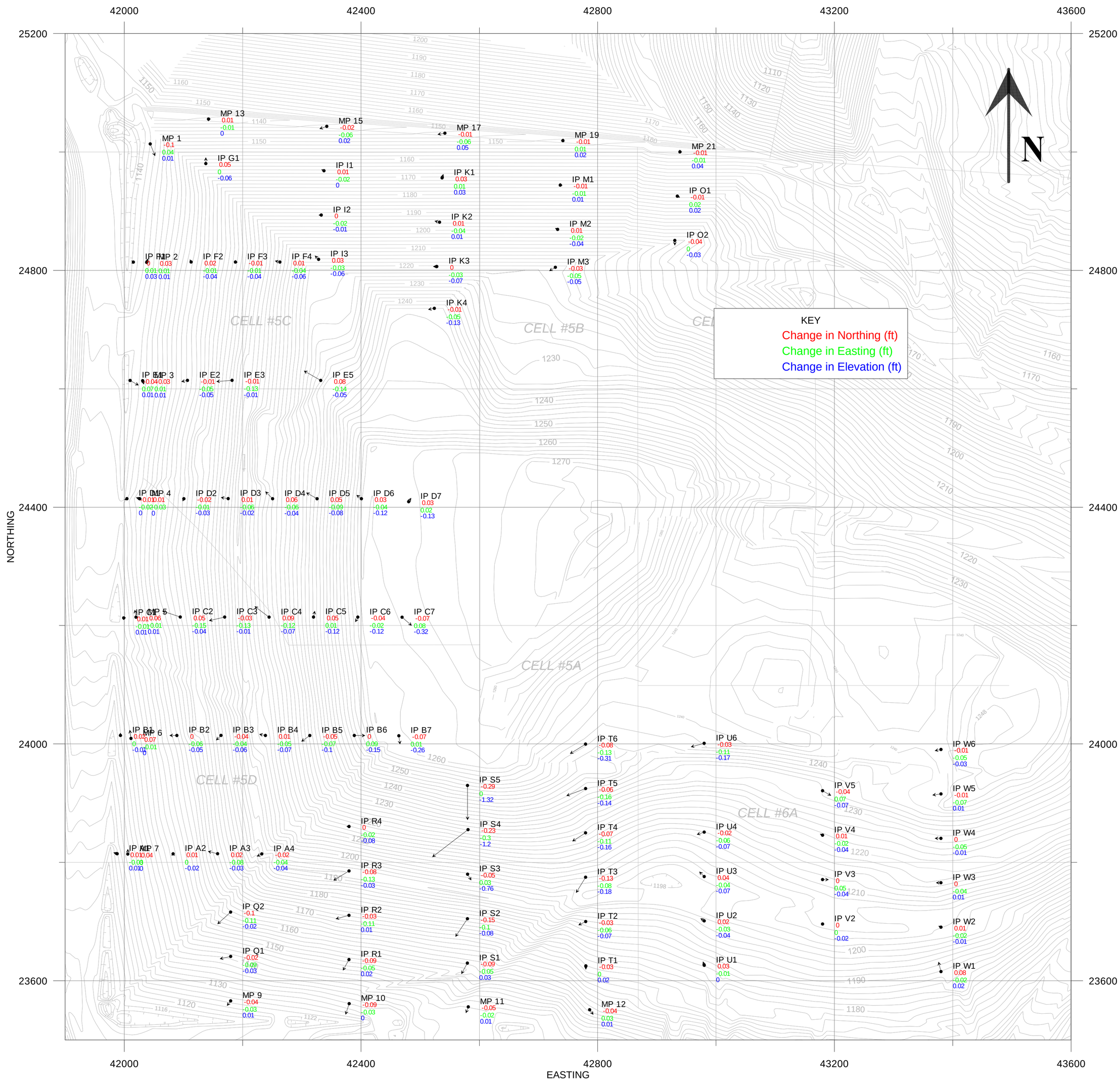
Graph 15 - West Slope Pin Movement
For Pins that Exceeded aTrigger During Reporting Month
Easting Change



1. Data compiled by PJ Carey Associates, PC.
2. Survey provided by DEI beginning on October 5, 2009.



1. Data compiled by PJ Carey Associates, PC.
2. Survey provided by DEI beginning on October 5, 2009.



NOTE:

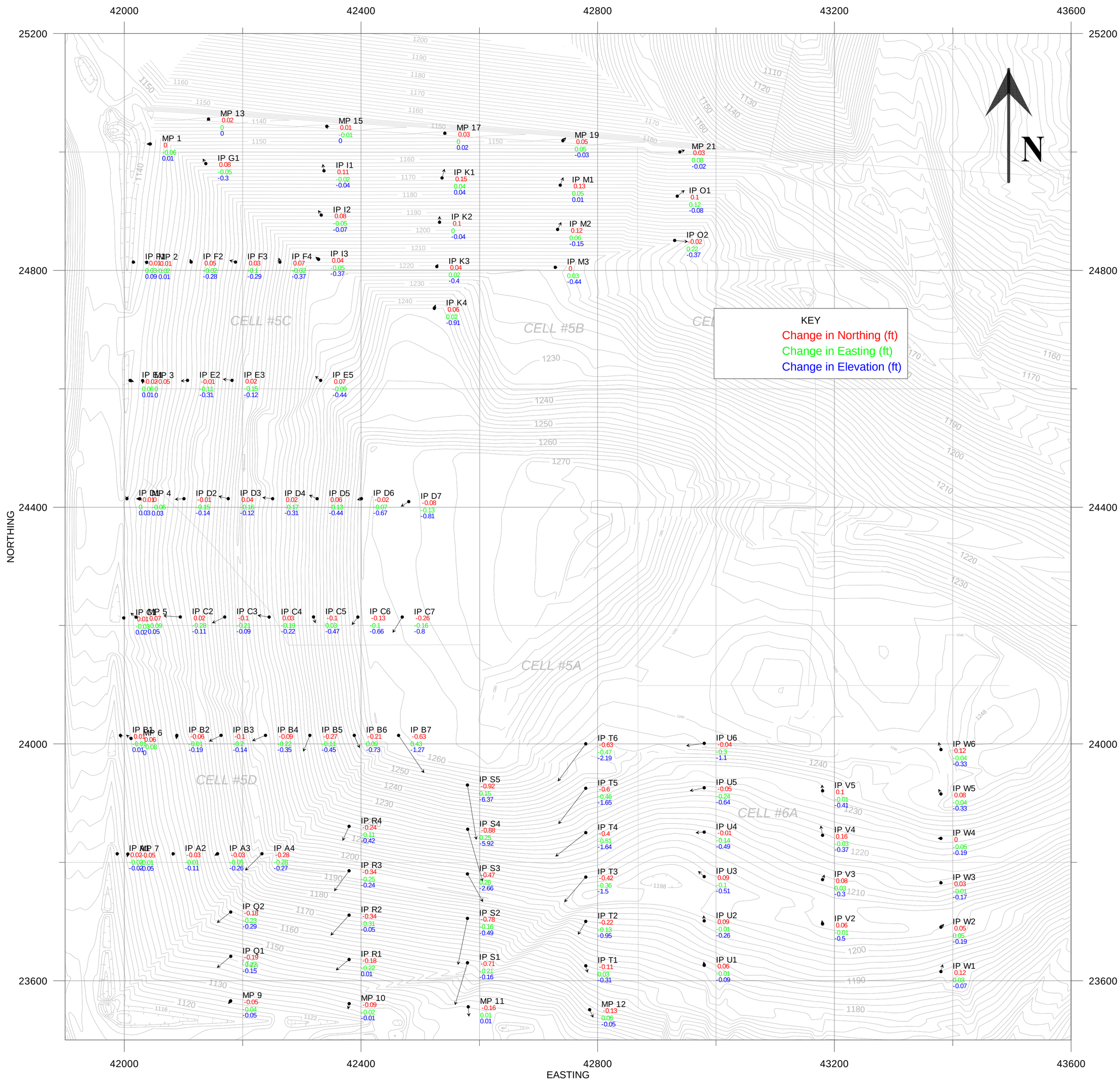
1. TOPOGRAPHY PROVIDED BY DIVERSIFIED ENGINEERING INC AS PART OF THE "88 REMEDIATION UNIT SLOPE PINS AND MONITORING PLATES LOCATION" PROJECT, DRAWING DATED 7/21/2009.

2. HORIZONTAL MOVEMENT VECTORS ARE PLOTTED TO A 1 INCH = 0.5 FEET SCALE. → 0.5 FEET

3. HORIZONTAL MOVEMENT TRIGGERS WERE EXCEEDED AT SOME TIME BETWEEN 01/26/2010 AND 02/23/2010 AT POINTS S1, S2, S4, S5, AND MP11.

4. VERTICAL MOVEMENT TRIGGERS WERE EXCEEDED AT SOME TIME BETWEEN 01/26/2010 AND 02/23/2010 AT POINTS IP F1 AND MP5.

HORIZONTAL MOVEMENTS
BETWEEN 01/26/2010 & 02/23/2010



NOTE:

1. TOPOGRAPHY PROVIDED BY DIVERSIFIED ENGINEERING INC AS PART OF THE "88 REMEDIATION UNIT SLOPE PINS AND MONITORING PLATES LOCATION" PROJECT, DRAWING DATED 7/21/2009.

2. HORIZONTAL MOVEMENT VECTORS ARE PLOTTED TO A 1 INCH = 1 FOOT SCALE. → 1 FOOT

3. VERTICAL MOVEMENT TRIGGERS WERE EXCEEDED ON 02/23/2010 AT POINTS IP F1 AND MP5.

HORIZONTAL MOVEMENTS
BETWEEN 10/06/2009 & 02/23/2010