Countywide Recycling & Disposal Facility, Remediation Unit

Monthly Progress Report
Of
Operations, Monitoring & Maintenance Activities

OCTOBER 2009

Prepared By:

Countywide Recycling & Disposal Facility, Remediation Unit
3619 Gracemont Street S.W.,
East Sparta, Ohio

Introduction

1.	Monthly Summary Narrative	4
2.	New Construction	4
3.	Major Non-Routine Maintenance, Repairs or Events	4
4.	New Trigger Events	4
5.	Investigation Results from Previous Trigger Events	5
6.	Trend Graphs & Drawings	5
7.	Review of Potential Need to Extend Temporary FML Cap	5
8.	Petitions to Perform Work	5
9.	Proposed OM&M Plan Revisions	5
10.	Odor Summary/Complaints	5

Attachment 1 – Graphs

Graph 1.	Wellhead Temperature vs. Time
Graph 2.	Settlement Volume vs. Time
Graph 3.	Leachate Volume vs. Time
Graph 4.	Hydrogen Gas Volume vs. Time
Graph 5.	Leachate TDS vs. Time
Graph 6.	Leachate COD vs. Time
Graph 7.	Gas Total VOC vs. Time
Graph 8.	Gas Total Dioxin/Furan vs. Time
Graph 9.	Total Landfill Gas Flow vs. Time
Graph 10.	Leachate Vol/Hydrogen Vol/Cumulative Settlement vs. Time
Graph 11-13.	South Slope Pin Movement
Graph 14-16.	West Slope Pin Movement
Graph 17-19.	North Slope Pin Movement
Graph 20.	Leachate Sump Temperature vs. Time
Graph 21.	LCS Temperature vs. Time

Attachment 2 – Tables

Table 1. LCS Temperature vs. Time

Table 2. Liquid Levels and % Perforations Exposed

Table 3. Piezometer Readings from West Structural Fill Berm

Attachment 3 – Figures

Figure 1. Methane to Carbon Dioxide Map

Figure 2. Incremental Settlement Map

Figure 3. Wellhead Temperature Zone Map

Figure 4. Carbon Monoxide Distribution Map

Figure 5. “Deadhead” Gas Well Distribution Map

Figure 6. Aerial Infrared Map (Quarterly)

Introduction

The purpose of this document is to provide a monthly report of monitoring and other activities as 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.

This monthly report has been formatted and presented based upon the requirements of the OM&M Plan, Volume 1, Section 12.0. The plan is intended to be a vehicle to document the required monitoring and data analysis, as well as continue the evaluation of the progress of the facility towards the ultimate goal of normal closure. It should be noted that the OM&M Plan requires a significant level of effort as it relates to inspections, routine maintenance, etc., which are activities that do not result in data to be presented in this submission. These activities are documented as required, and records are retained in the OM&M Managers office.

1. Monthly Summary Narrative

On September 30, 2009, the OM&M Plan, the Consent Order, and the Director's final Findings and Orders were filed, implementing the bifurcation and the OM&M Plan. These documents also initiated the timeline for submittals and actions, including; the Permit to Install Modification reflecting the bifurcation, issuance of financial assurance (completed in October), installation of an additional groundwater well, submission of the Leachate Migration Assessment Plan (completed in October), evaluation of the south slope for relocation, and settlement payments (completed in October). Those events not completed in October will be submitted within the required timeframes.

The month of October was the first full month of operations on the remedial unit under the OM&M Plan. The requirements of the plan were successfully implemented using primarily Republic employees supplemented by third party contractors using a variety of tools to implement the plan.

Major annual, semi-annual, and quarterly events conducted in October included air sampling and analysis for all accessible gas wells and the south slope gas probes for carbon monoxide using method D-1946 (per Volume 1, Section 6.3.5). Due to the extended time required for the analysis and reporting of such a large sample group, the results of this monitoring will be reported in the November Monthly Report.

A new access database, the Sanborn Head management System, will be utilized to manage and maintain the required data. This system provides a greater level of data management and evaluation, and will better suit the needs of the facility and the OM&M Plan. It offers the same access and records retention as prior databases utilized at the facility.

2. New Construction

No new construction is currently planned. The landfill gas system expansion project was completed in October, and has resulted in superior control of the landfill gas, specifically as it relates to the ability to balance gas quality between flares and control the gasses generated by the reaction. The leachate expansion project is ongoing and all new components are expected to be active in November.

3. Major Non-Routine Maintenance, Repairs or Events

During the second week of October, an access road constructed on the temporary cap on the south slope was removed. The road material was removed and approximately 1/2–acre of temporary cap beneath the area beneath was replaced. This activity was conducted in response to the discovery of leachate expressing above liner from the road base. The weight of the road was also preventing subcap flow of leachate to the subcap collection points, resulting in pillowing of leachate beneath the liner. Upon removal of the road base, multiple punctures from the substandard road base were discovered on the cap, initiating the full replacement of the cap in that area.

4. New Trigger Events

Based upon the data and monitoring conducted during the operating period, there were no exceedances of triggers to initiate follow-up events. Additionally, much of the data collection required by the OM&M Plan is either new to the facility, or has not been consistently required in the past. As such, the first data collection event should be considered the baseline for each data collection parameter.

5. Investigation Results from Previous Trigger Events

Given that October is the first month under the OM&M Plan, there were no previous trigger events to report.

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 Team Countywide Meeting will be the vehicle utilized to discuss this data in depth.

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, atypical or uncontrollable leachate outbreaks, and specific gas quality and temperature criteria. 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

There have been several discrepancies identified in the OM&M Plan, either frequencies that conflict between different parts of the plan or clarifications that were necessary. In each of these cases, the OM&M manager clarified the discrepancies with representatives of the OEPA, and these clarifications have been documented. At this time, there are no discrepancies that are deemed significant enough to warrant an update of the plan.

10. Odor Summary/Complaints

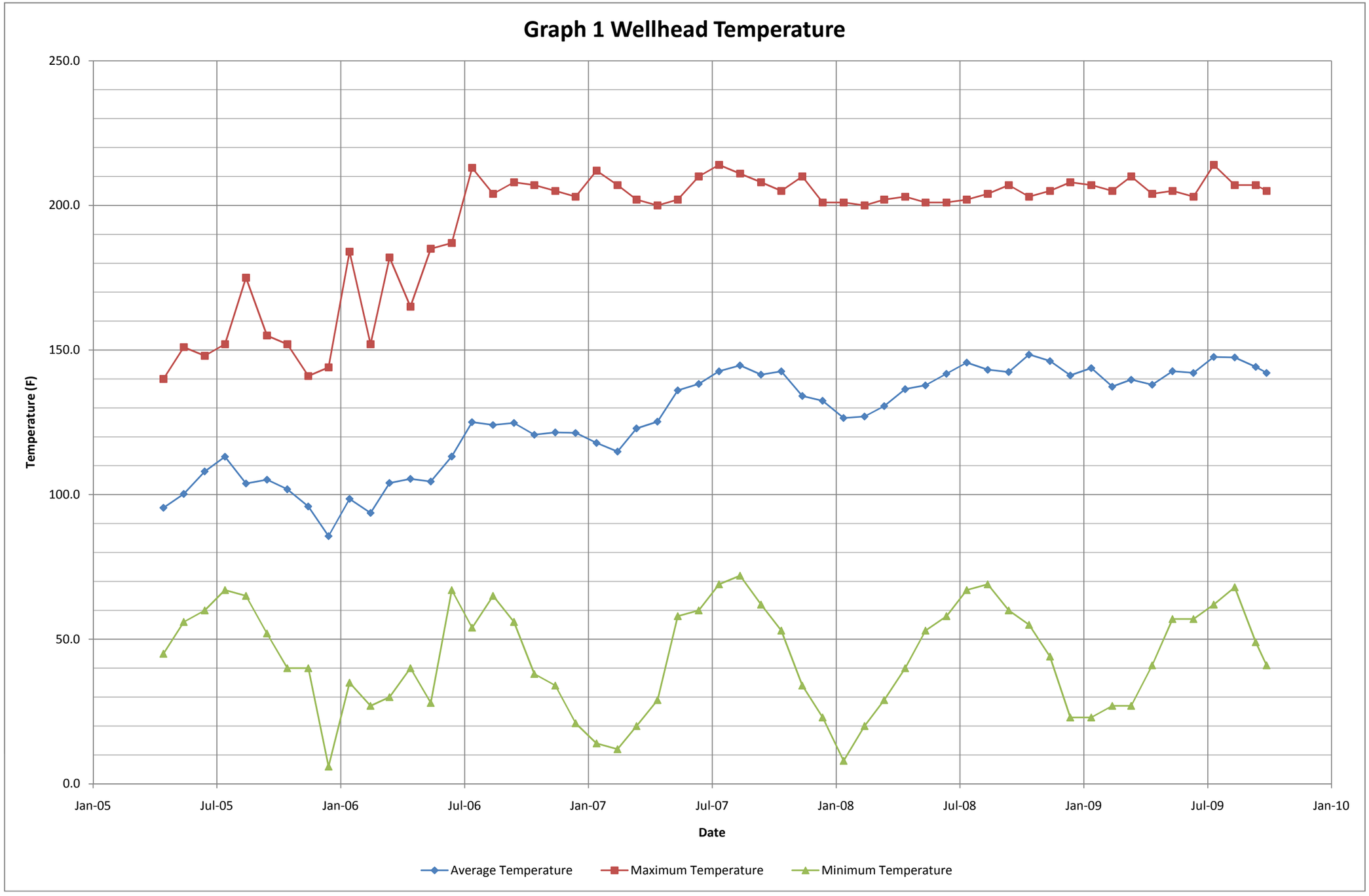
During the month of October, there were three odor complaints reported to Countywide. Each of these complaints were investigated immediately (within 15 minutes), and could not be confirmed. During each of these cases, there was no odor detected with either the nose or the nasal ranger.

November 18, 2009

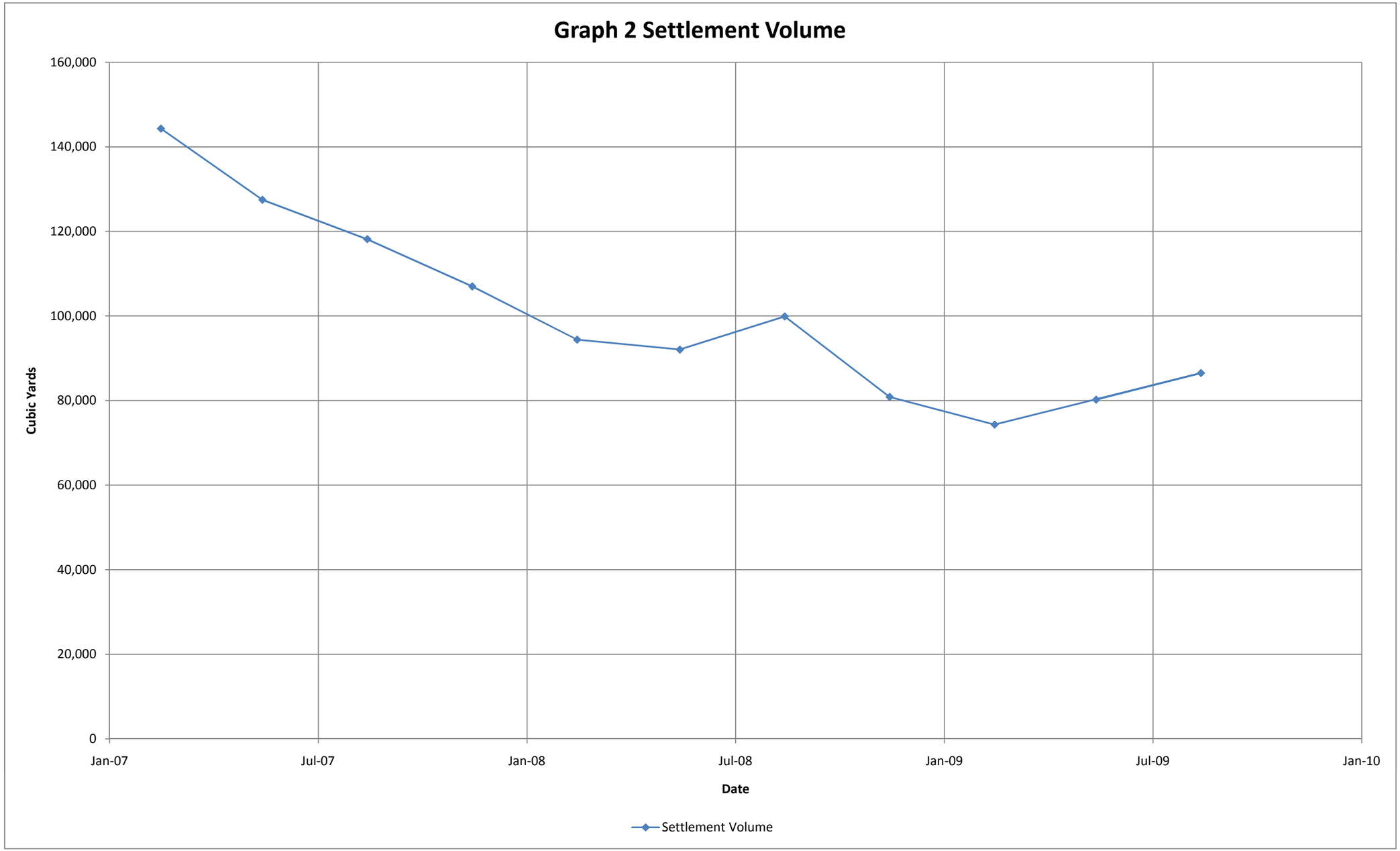
Michael Darnell Date
OM&M Manager

Attachment 1

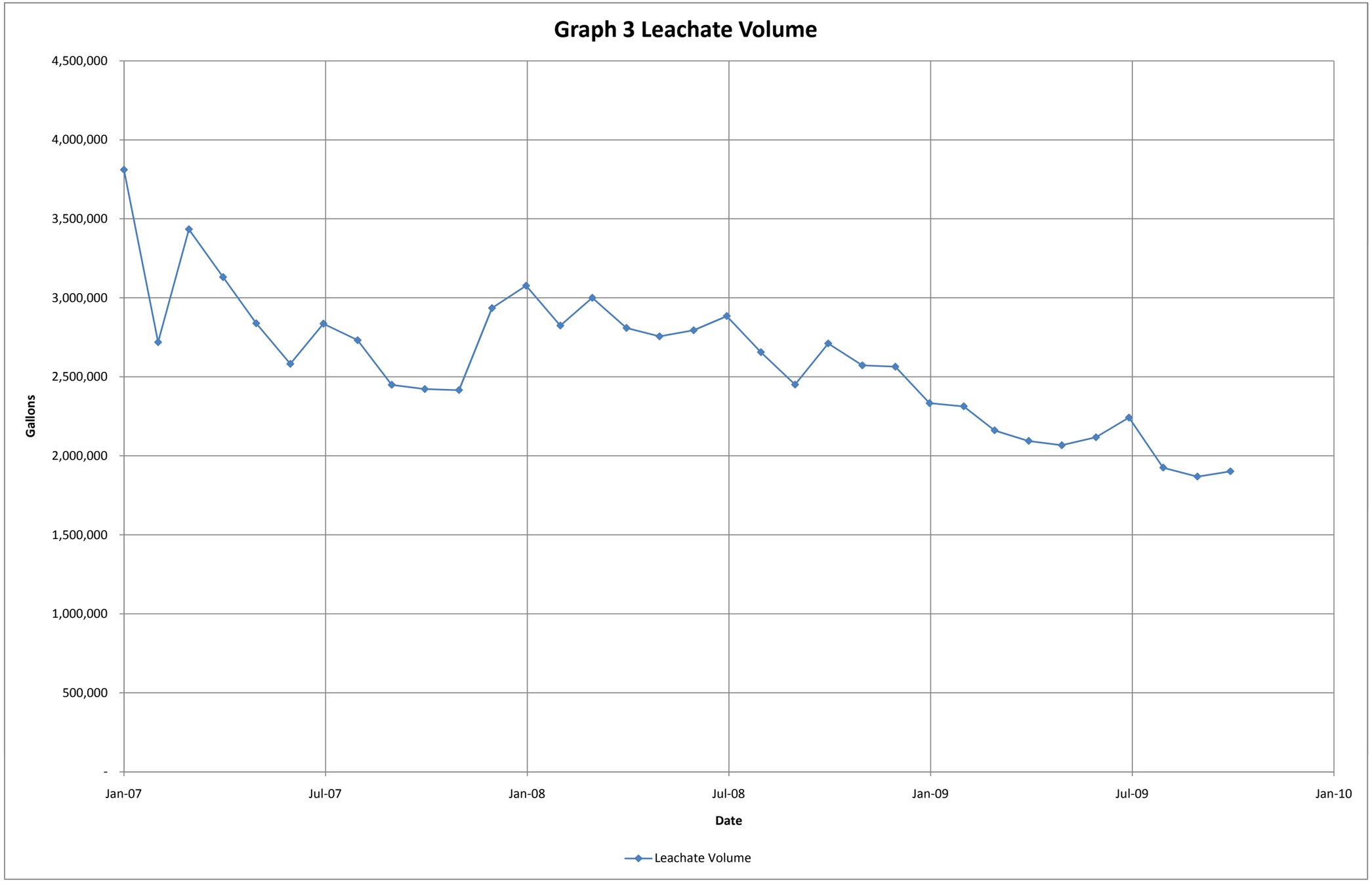
Graphs



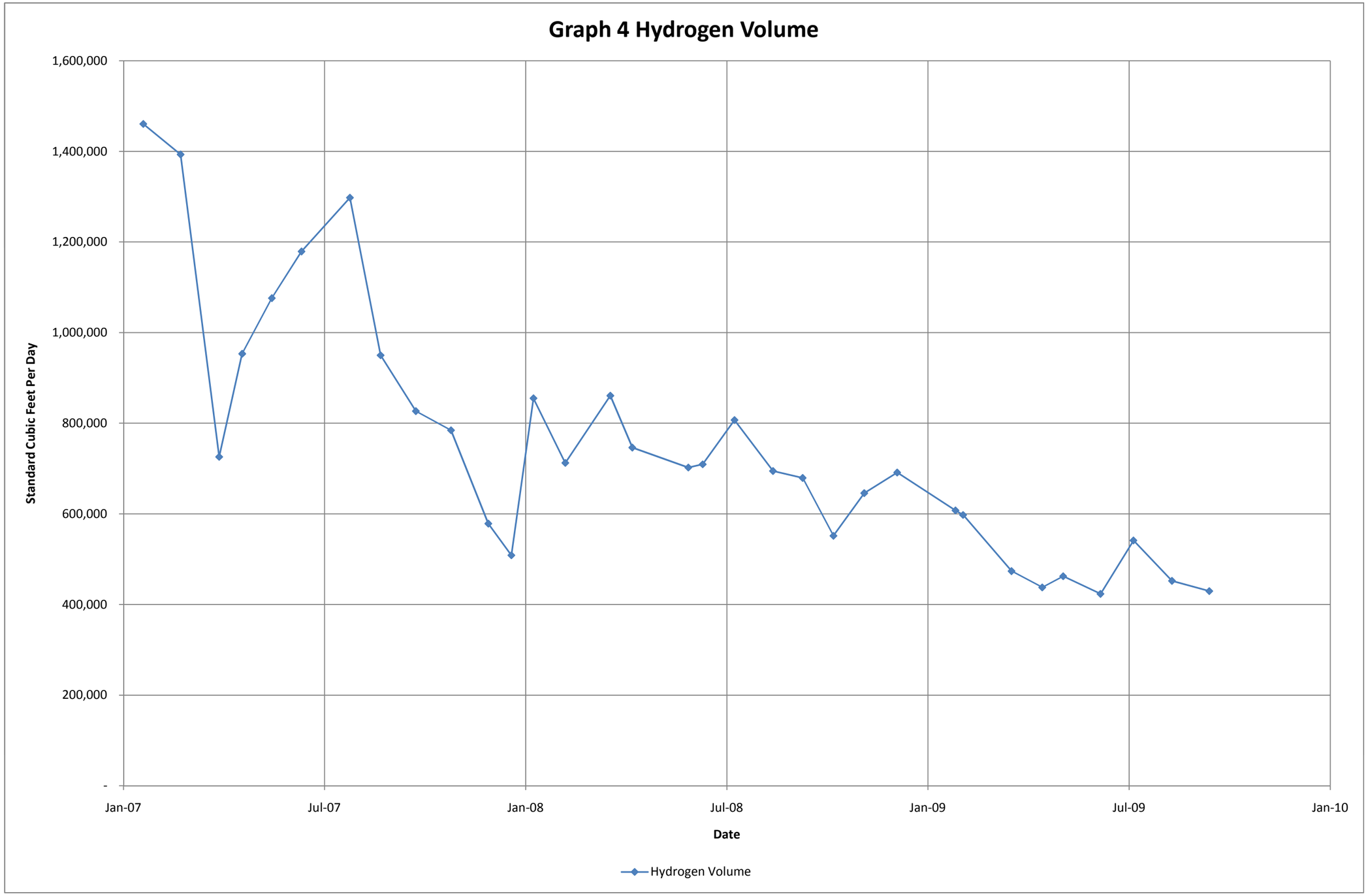
1. Information presented prior to October 2009 was compiled from data prepared and presented by SCS Engineers for Counytwide Recycling and Disposal Facilty.



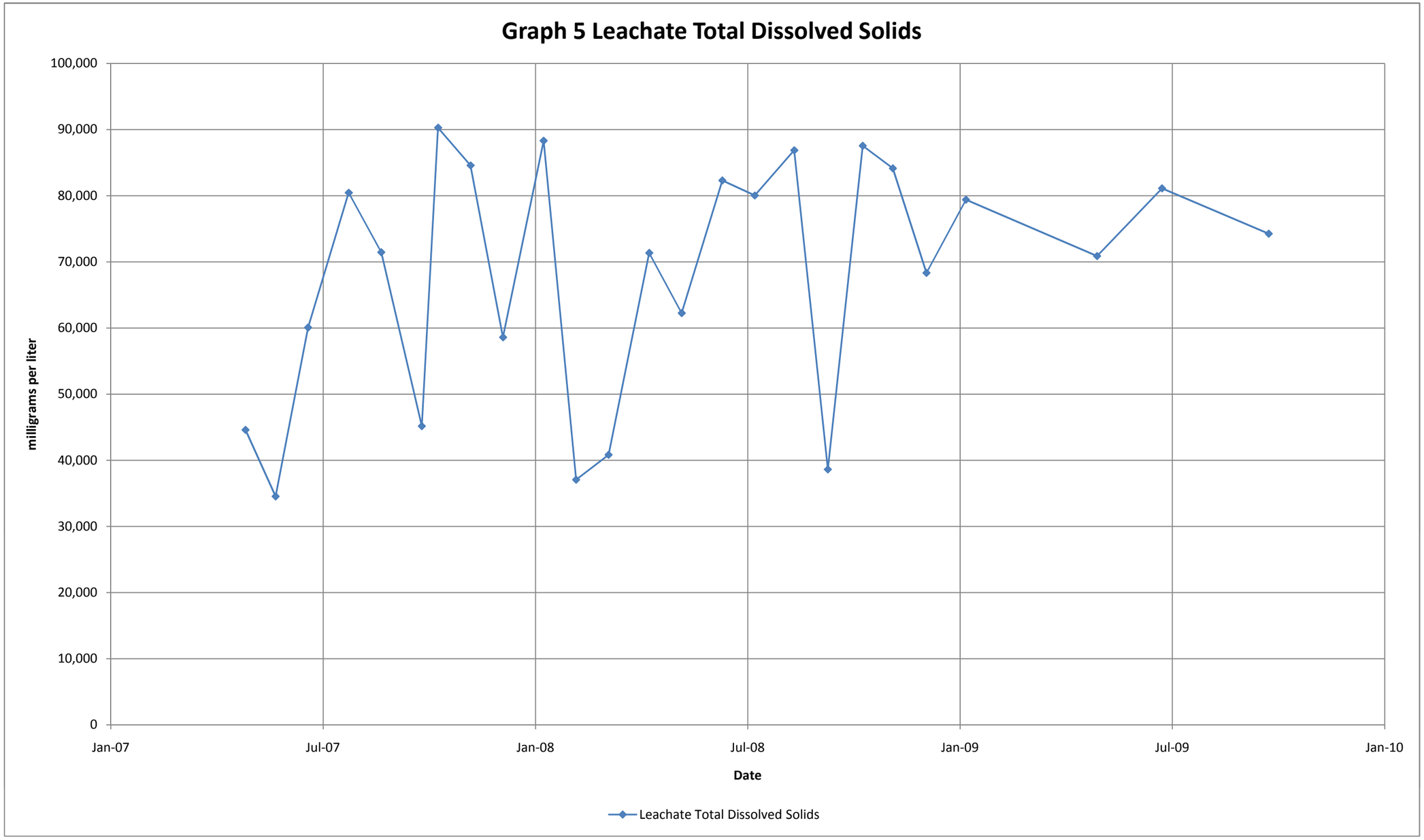
1. Information presented prior to October 2009 was compiled from data prepared and presented by SCS Engineers for Counytwide Recycling and Disposal Facilty.
2. Data presented on quarterly basis.
3. Settlement volume reported prior to the 4th quarter of 2009 is for a limited area of the 88-acre reaction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



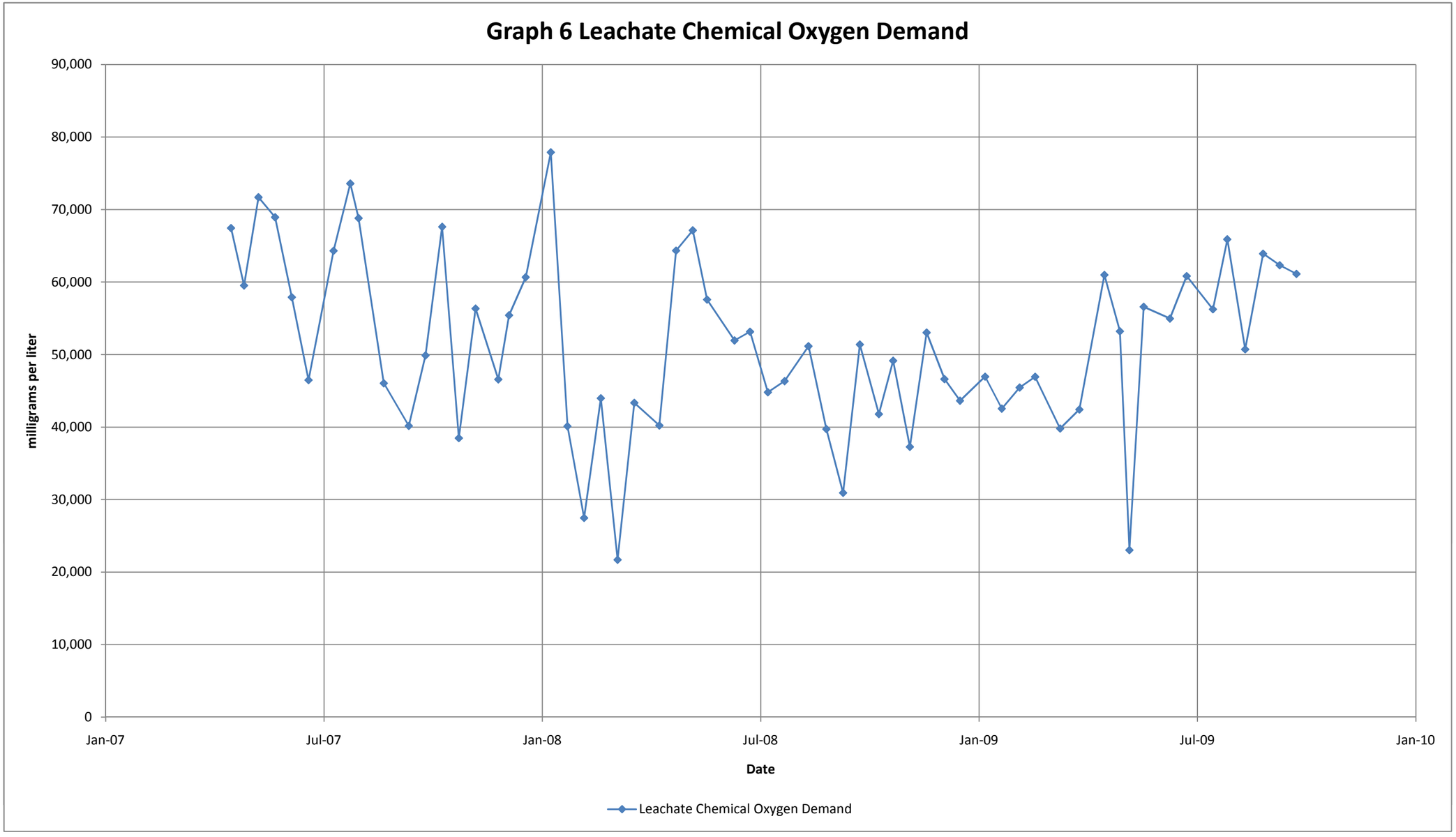
1. Information presented prior to October 2009 was compiled from data prepared and presented by SCS Engineers for Counytwide Recycling and Disposal Facilty.
2. Data presented is monthly total leachate volume for the 88-acre area reaction area only.



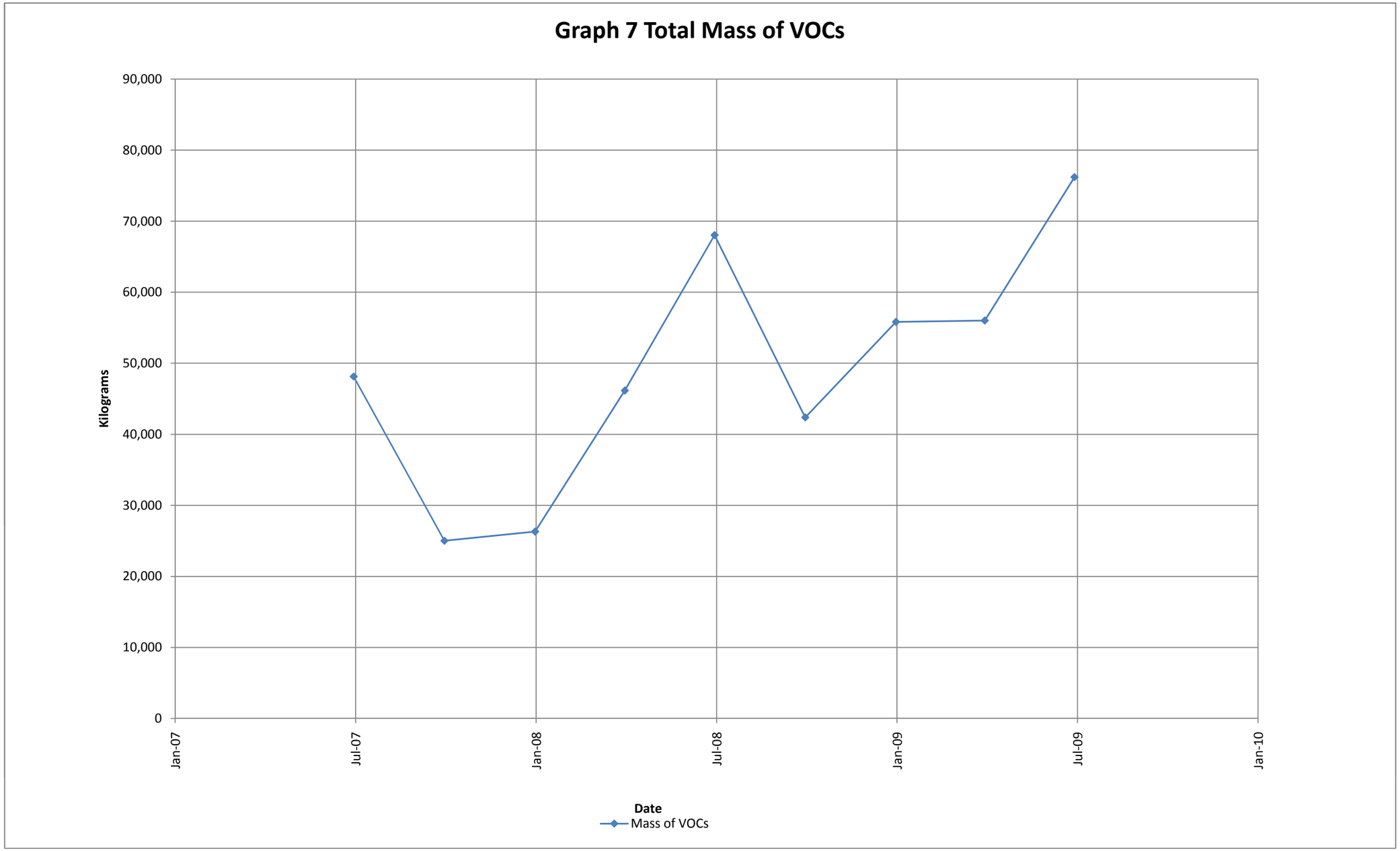
1. Information presented prior to October 2009 was compiled from data prepared and presented by SCS Engineers and AECOM for Counytwide Recycling and Disposal Facilty.



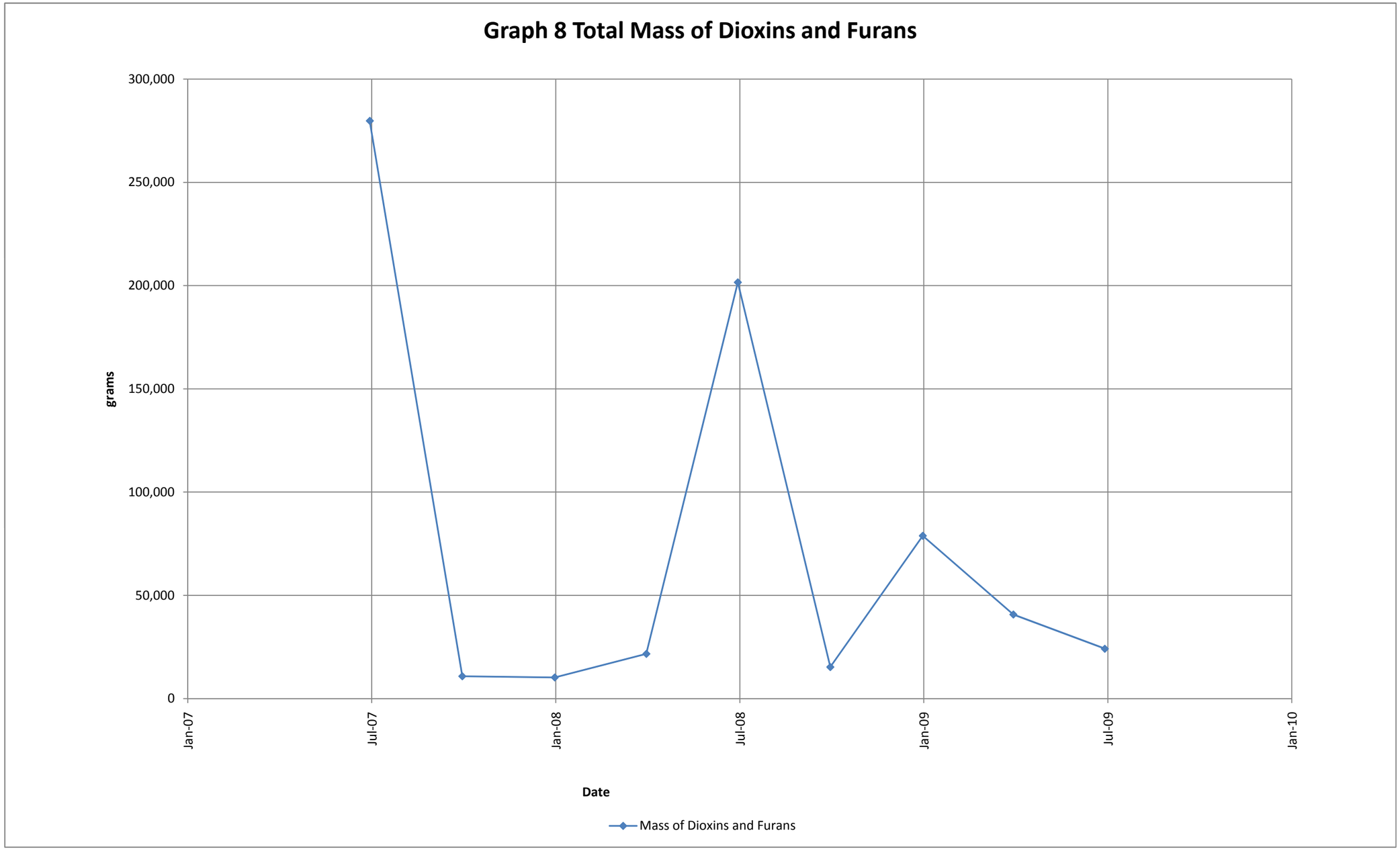
1. Information presented prior to October 2009 was compiled from data prepared and presented by AECOM for Counytwide Recycling and Disposal Facilty.
2. Data shown prior to October 2009 are flow-weighted averages of datea from the East, North and South leachate collection tanks.
3. Data shown prior to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



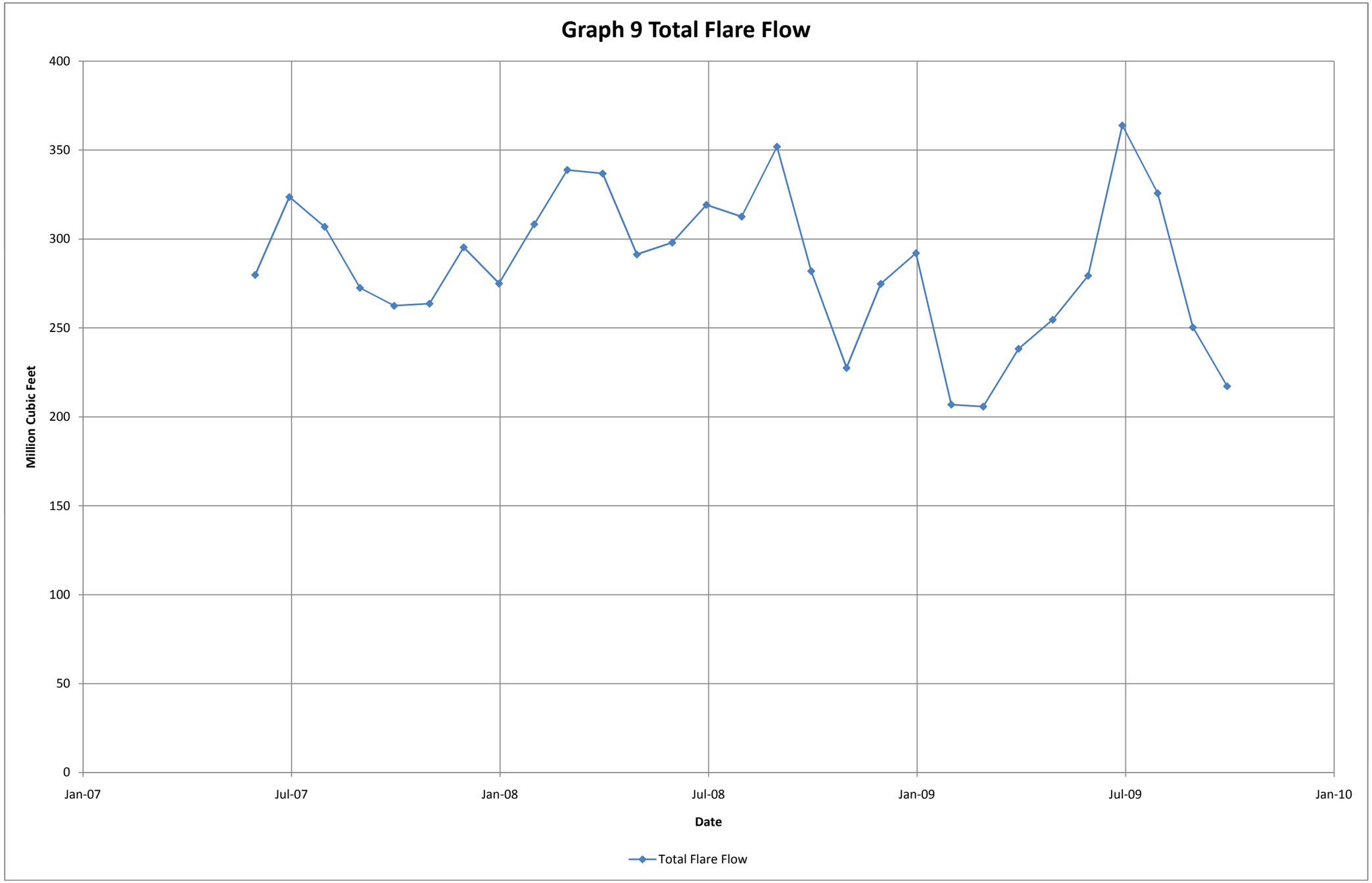
1. Information presented prior to October 2009 was compiled from data prepared and presented by AECOM for Counytwide Recycling and Disposal Facilty.
2. Data shown prior to October 2009 are flow-weighted averages of datea from the East, North and South leachate collection tanks.
3. Data shown prior to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



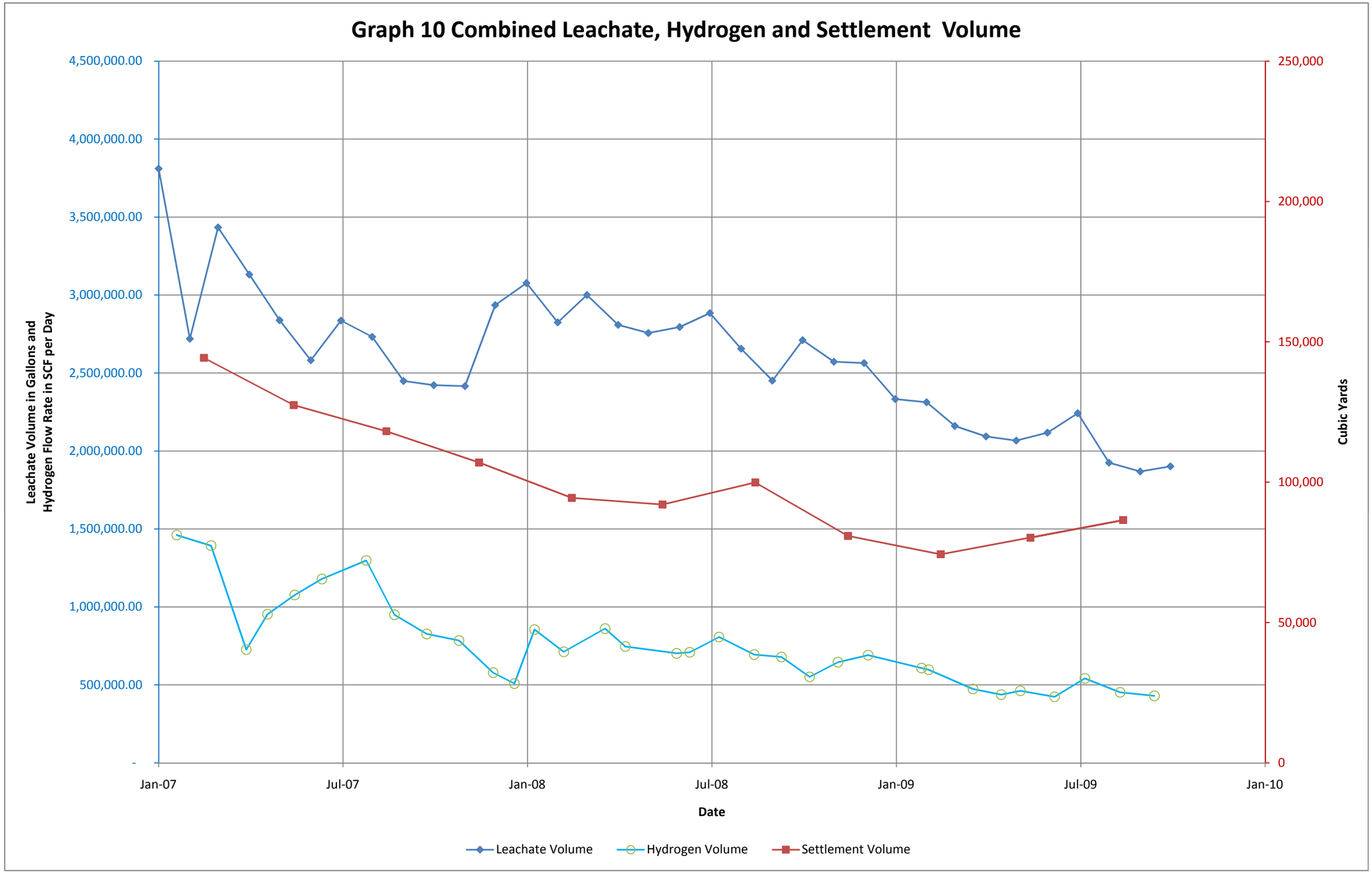
1. Information presented prior to October 2009 was compiled from data prepared and presented by SCS Engineers for Counytwide Recycling and Disposal Facilty.
2. Data presentation frequency is quarterly.
3. The quarter spanning July to September 2009 lacks data from Flare 4 for September 2009, which was not sampled for air quality.



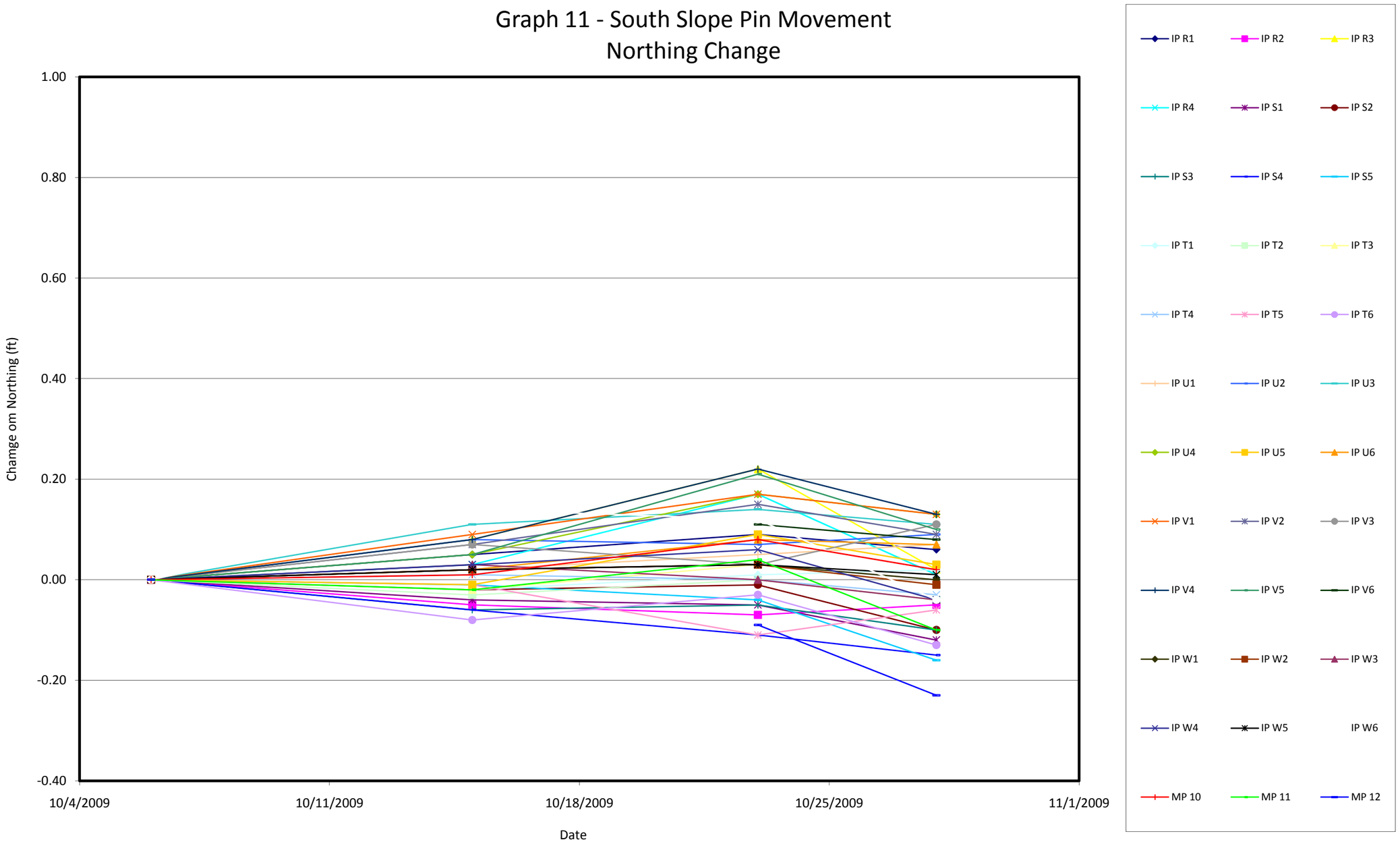
1. Information presented prior to October 2009 was compiled from data prepared and presented by SCS Engineers for Counytwide Recycling and Disposal Facilty.
2. Data presentation frequency is quarterly.
3. The quarter spanning July to September 2009 lacks data from Flare 4 for September 2009, which was not sampled for air quality.



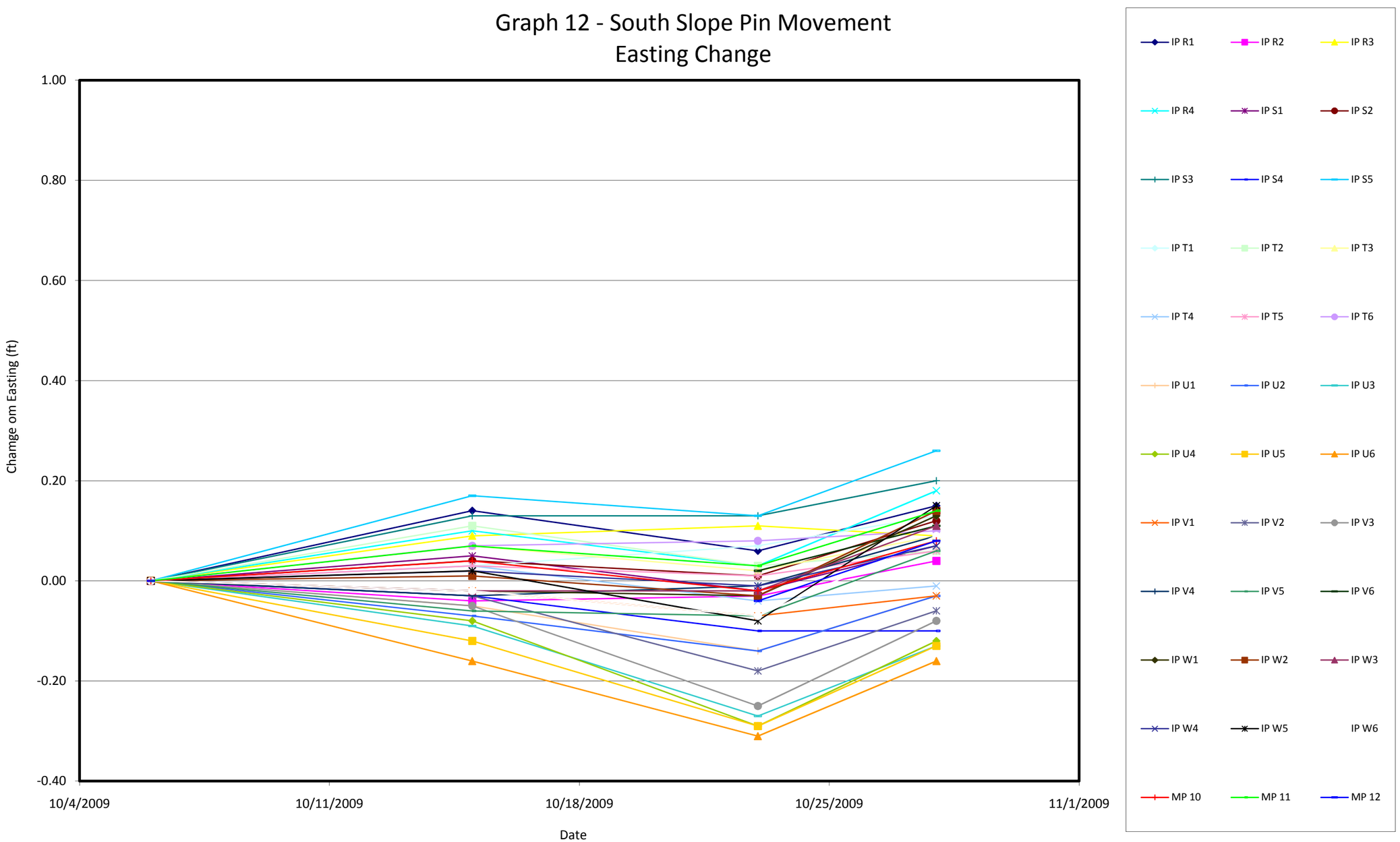
1. Information presented prior to October 2009 was compiled from data prepared and presented by SCS Engineers for Counytwide Recycling and Disposal Facilty.
2. Data presented is monthly total flow for all active flares.



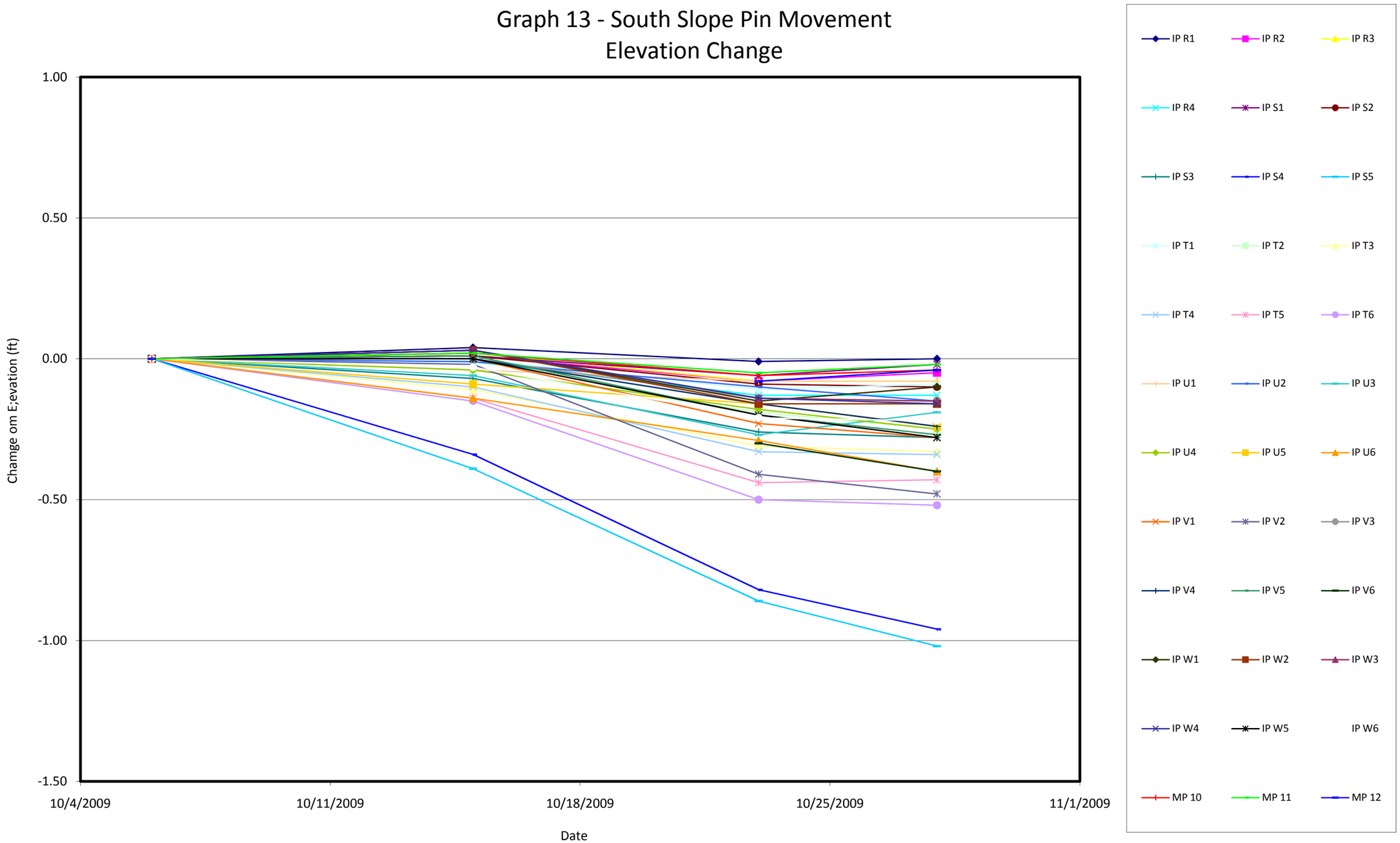
1. Information presented prior to October 2009 was compiled from data prepared and presented by SCS Engineers and AECOM for Counytwide Recycling and Disposal Facilty.
2. Data collection frequency is monthly beginning October 2009.



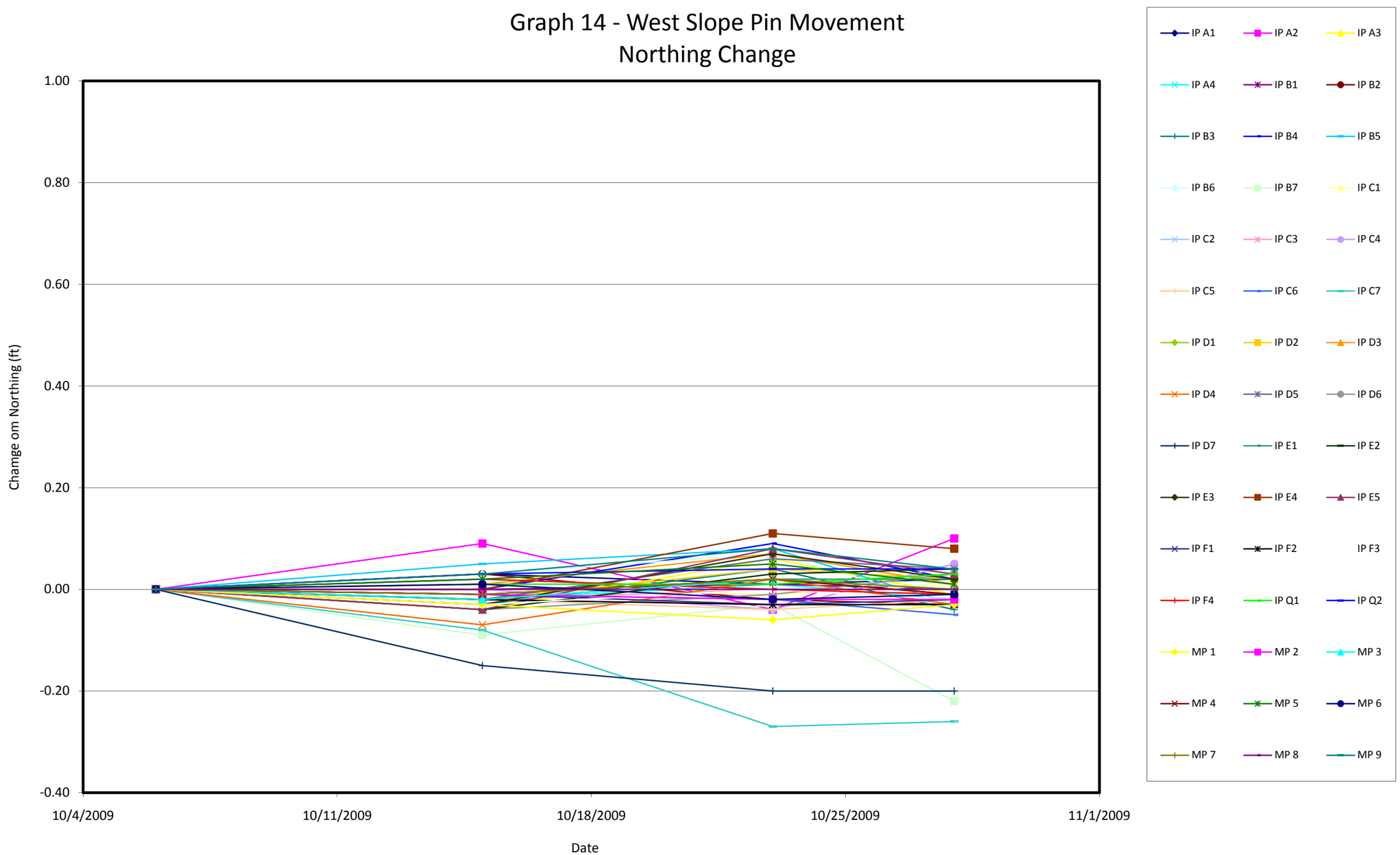
1. Data compiled by PJ Carey Associates, PC.
2. Survey provided by DEI beginning on October 5, 2009.



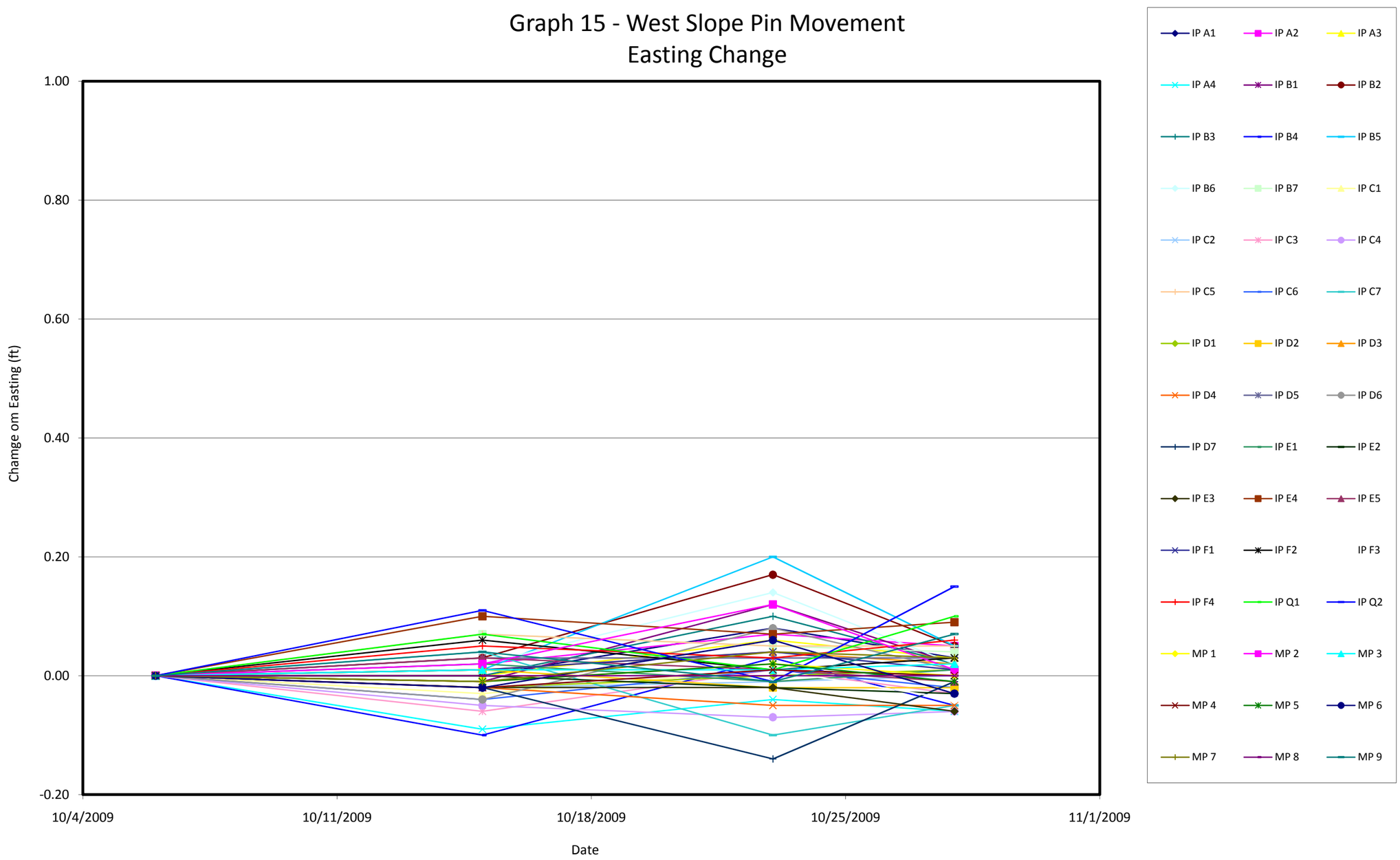
1. Data compiled by PJ Carey Associates, PC.
2. Survey provided by DEI beginning on October 5, 2009.



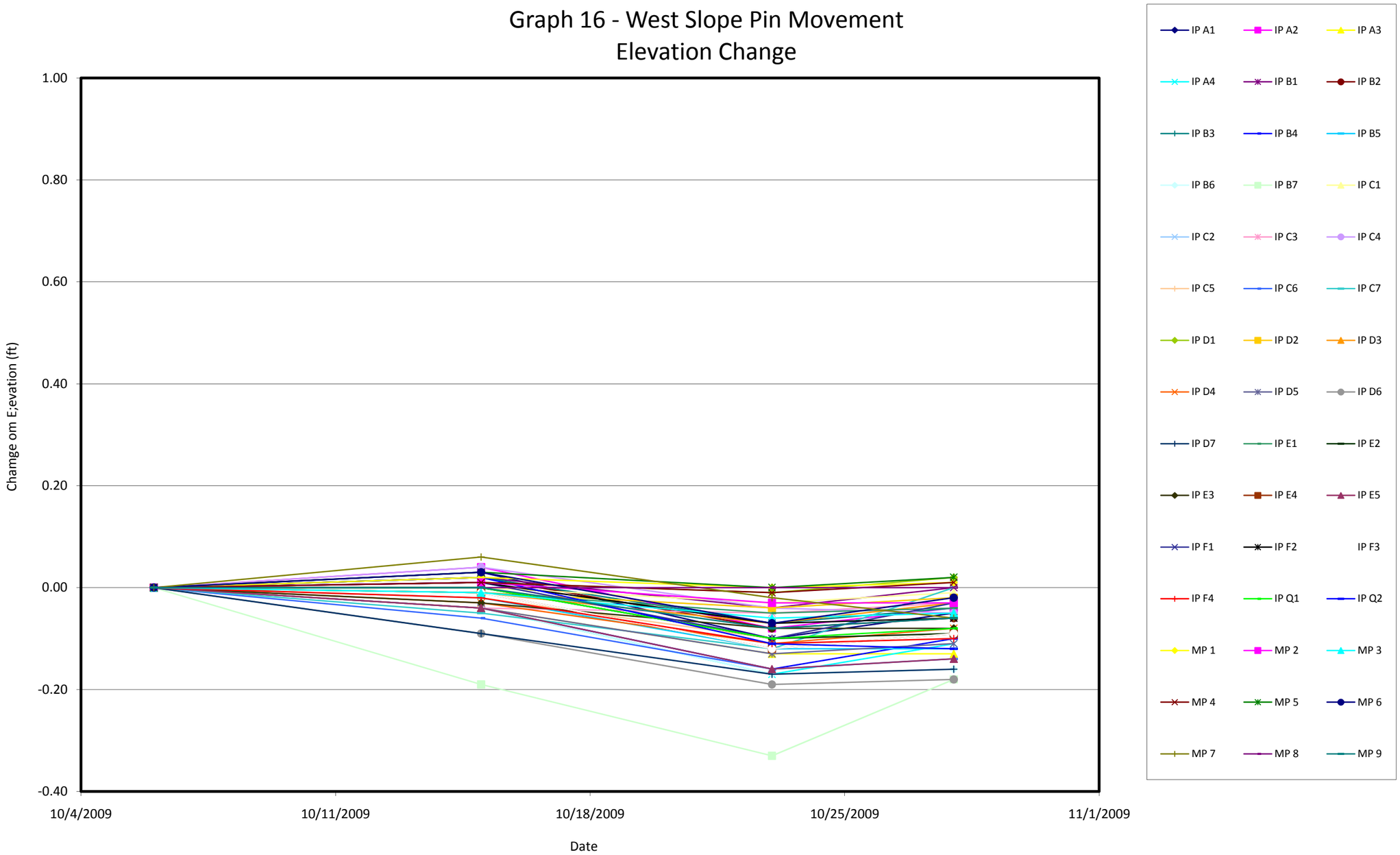
1. Data compiled by PJ Carey Associates, PC.
2. Survey provided by DEI beginning on October 5, 2009.



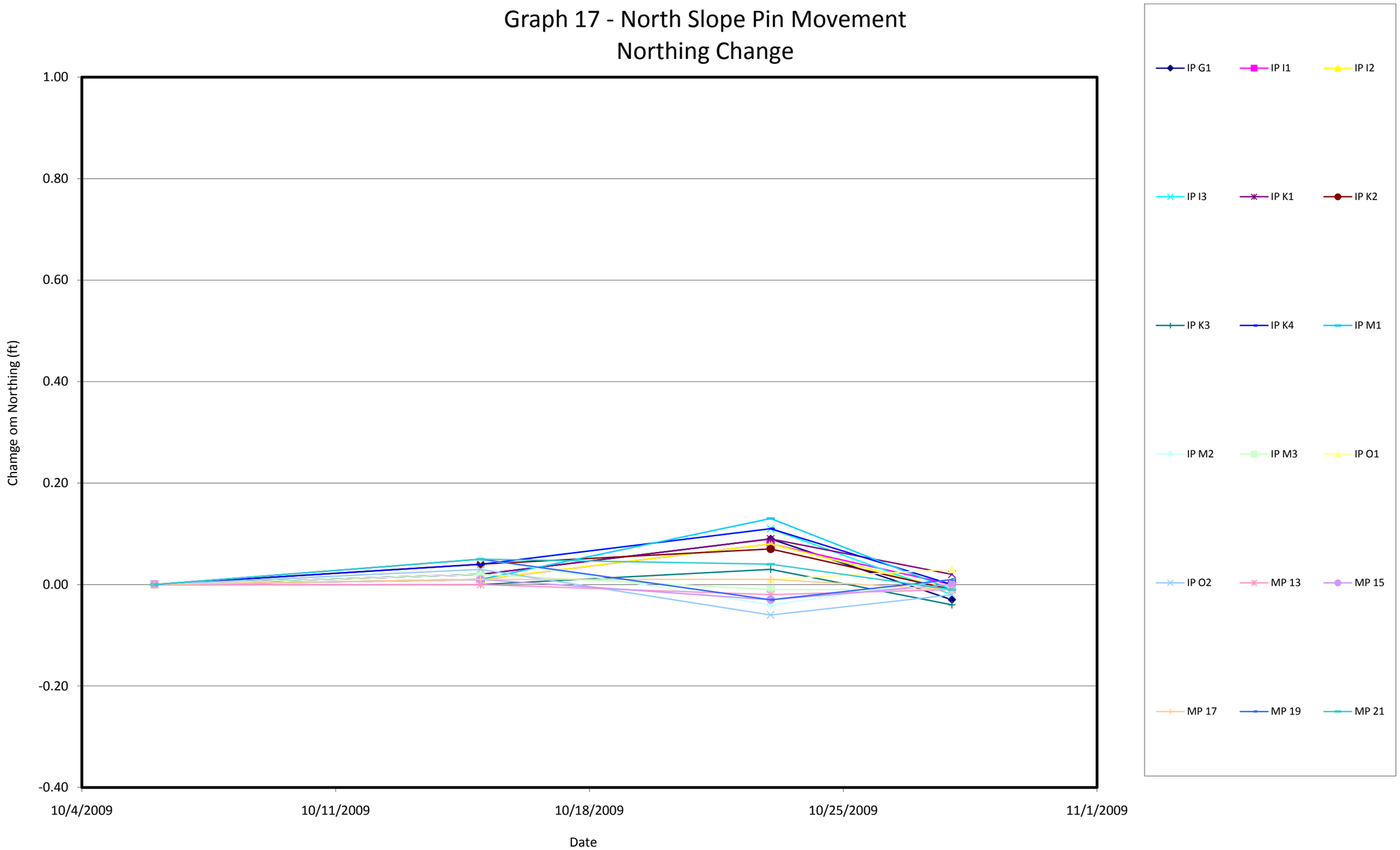
1. Data compiled by PJ Carey Associates, PC.
2. Survey provided by DEI beginning on October 5, 2009.



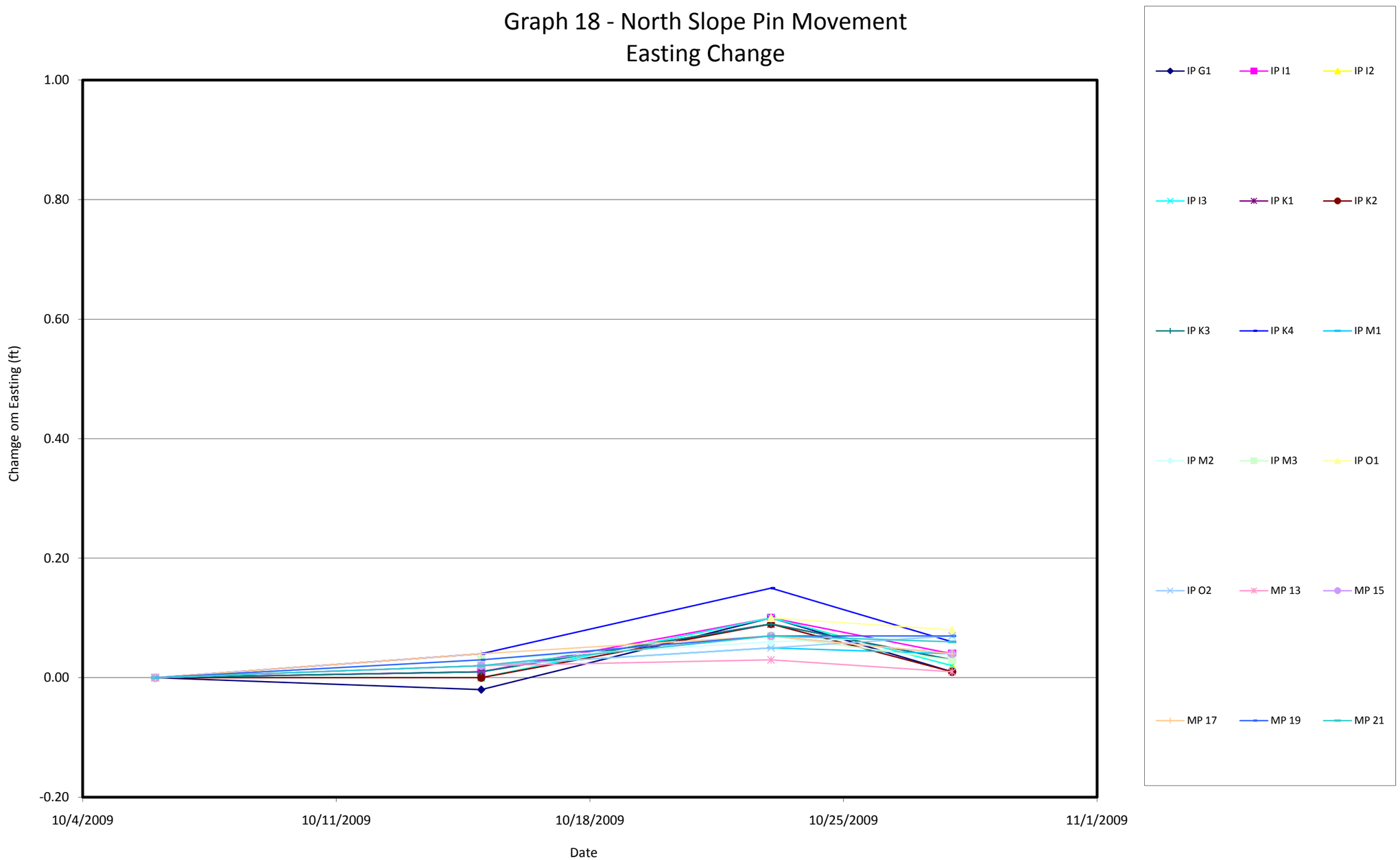
1. Data compiled by PJ Carey Associates, PC.
2. Survey provided by DEI beginning on October 5, 2009.



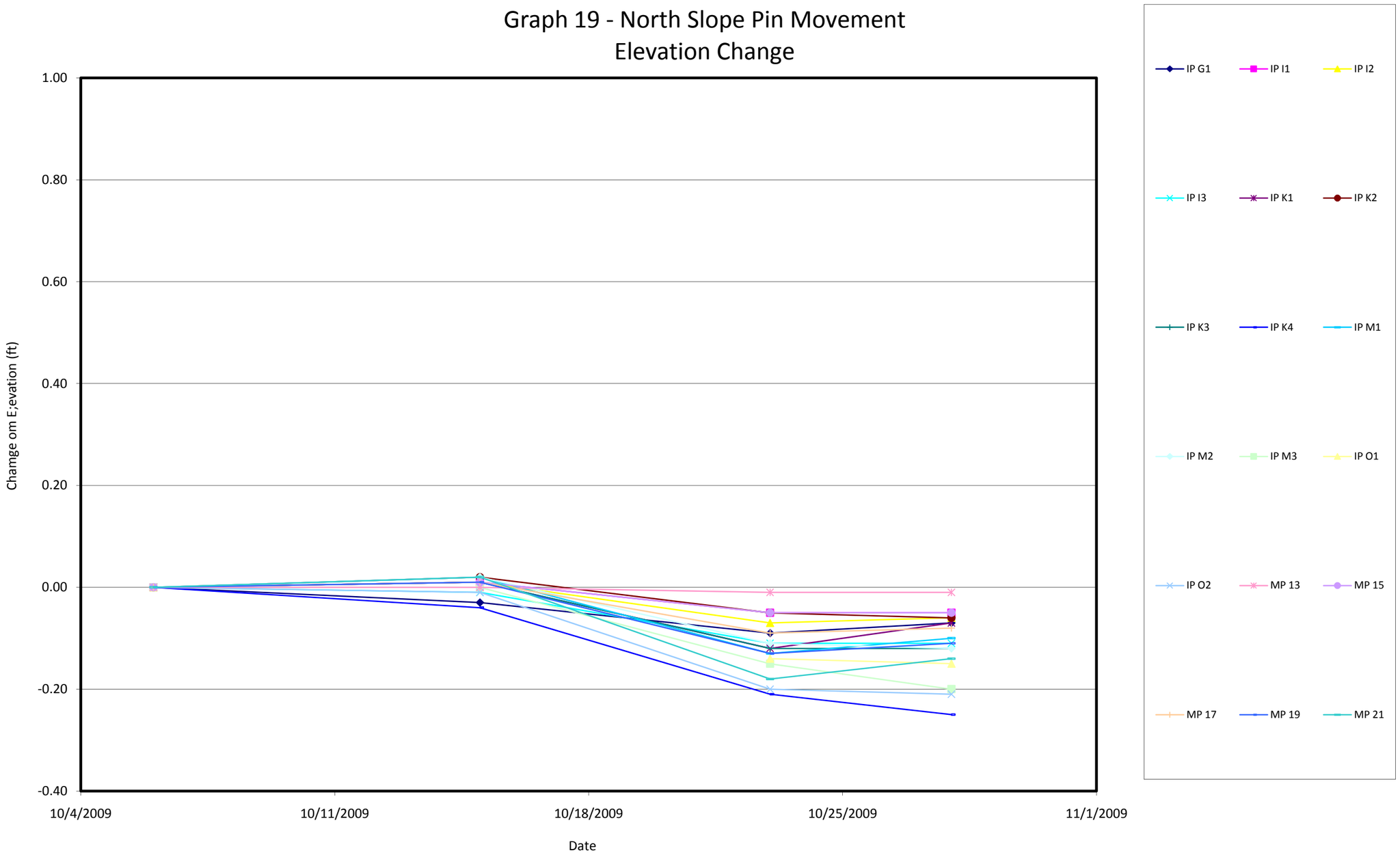
1. Data compiled by PJ Carey Associates, PC.
2. Survey provided by DEI beginning on October 5, 2009.



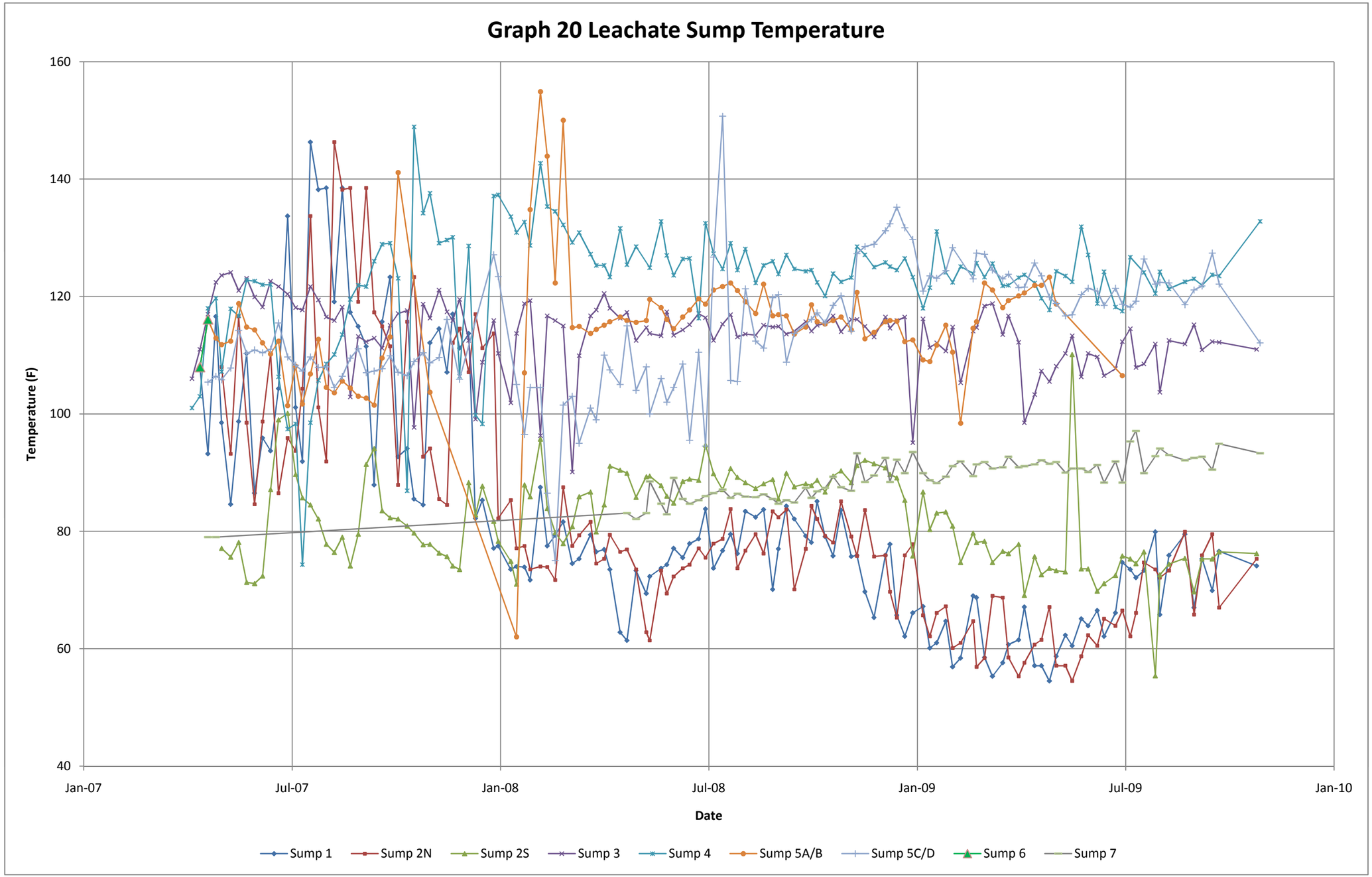
1. Data compiled by PJ Carey Associates, PC.
2. Survey provided by DEI beginning on October 5, 2009.



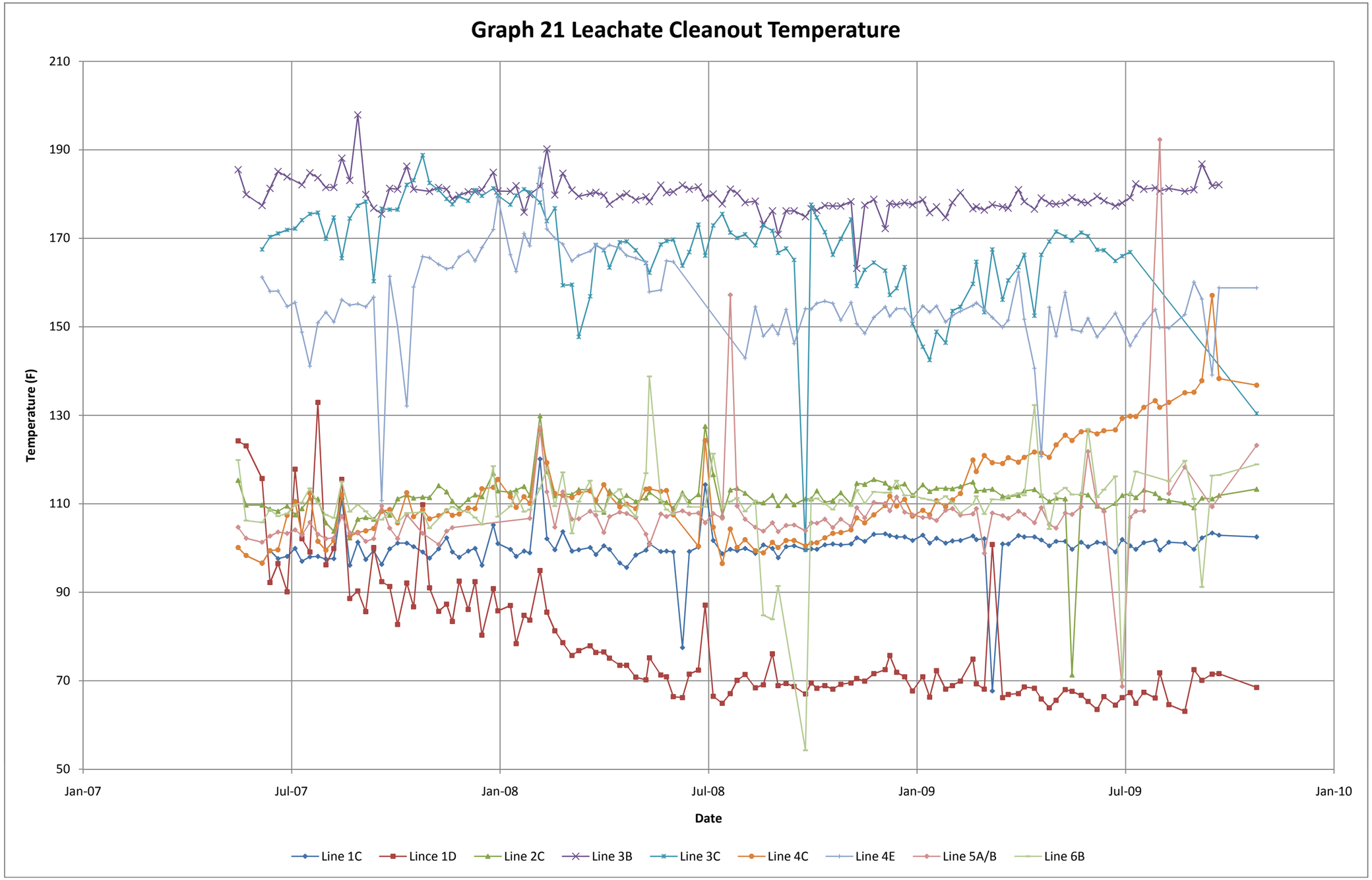
1. Data compiled by PJ Carey Associates, PC.
2. Survey provided by DEI beginning on October 5, 2009.



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



1. Information presented prior to October 2009 was compiled from data prepared and presented by SCS Engineers for Counytwide Recycling and Disposal Facilty.



1. Information presented prior to October 2009 was compiled from data prepared and presented by SCS Engineers for Counytwide Recycling and Disposal Facilty.

Attachment 2

Tables

Table 1. Leachate Constituent Summary

(to be included in November 2009 Report)

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%

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	10/9	10/29	10/29	10/9	10/29	10/27	10/9	10/29	10/29	10/29	10/9	10/30	10/29	10/26	10/26	10/30	10/30	10/30
Depth To Fluid (ft)	50.2	45.3	57.1	66.8	56.5	39.8	16.3	64.4	30.1	33.6	48.4	51.4	41.9	31	23.3	63.7	73.5	41.5
% Perforations Exposed	38%	33%	58%	85%	53%	36%	0%	50%	20%	26%	54%	68%	69%	68%	41%	104%	94%	39%

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%

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%

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%

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%

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%

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%

Table 3. South Slope and West Berm Piezometer Readings

South Slope

Well ID	**SS-1**	**SS-1**	**SS-1**	**SS-3**	**SS-3**	**SS-3**	**SS-5**	**SS-5**	**SS-5**	**SS-7**	**SS-7**	**SS-7**
Depth Setting (ft)	18	23	28	17	22	25	14	19	24	12	17	22
October, 2009												
Date	N/A	N/A	26-Oct	26-Oct	26-Oct	26-Oct	26-Oct	N/A	N/A	26-Oct	26-Oct	26-Oct
Elevation	N/A	N/A	1149.82	1161.41	1152.50	1149.81	1165.57	N/A	N/A	1165.53	1160.49	1155.63

West Berm

Well ID	**WBPZ-1**	**WBPZ-1**	**WBPZ-2**	**WBPZ-2**	**WBPZ-3**	**WBPZ-3**
Depth Setting (ft)	150	175	150	190	135	160
October, 2009						
Date	14-Oct	14-Oct	14-Oct	14-Oct	14-Oct	14-Oct
Elevation	975.01	949.58	986.17	N/A	1010.86	987.60
Elevation for F.S. = 1.2	1102	1102	1120	1120	1116	1116
Elevation for F.S, = 1.5	1048	1048	1081	1081	1095	1095

Attachment 3

Figures

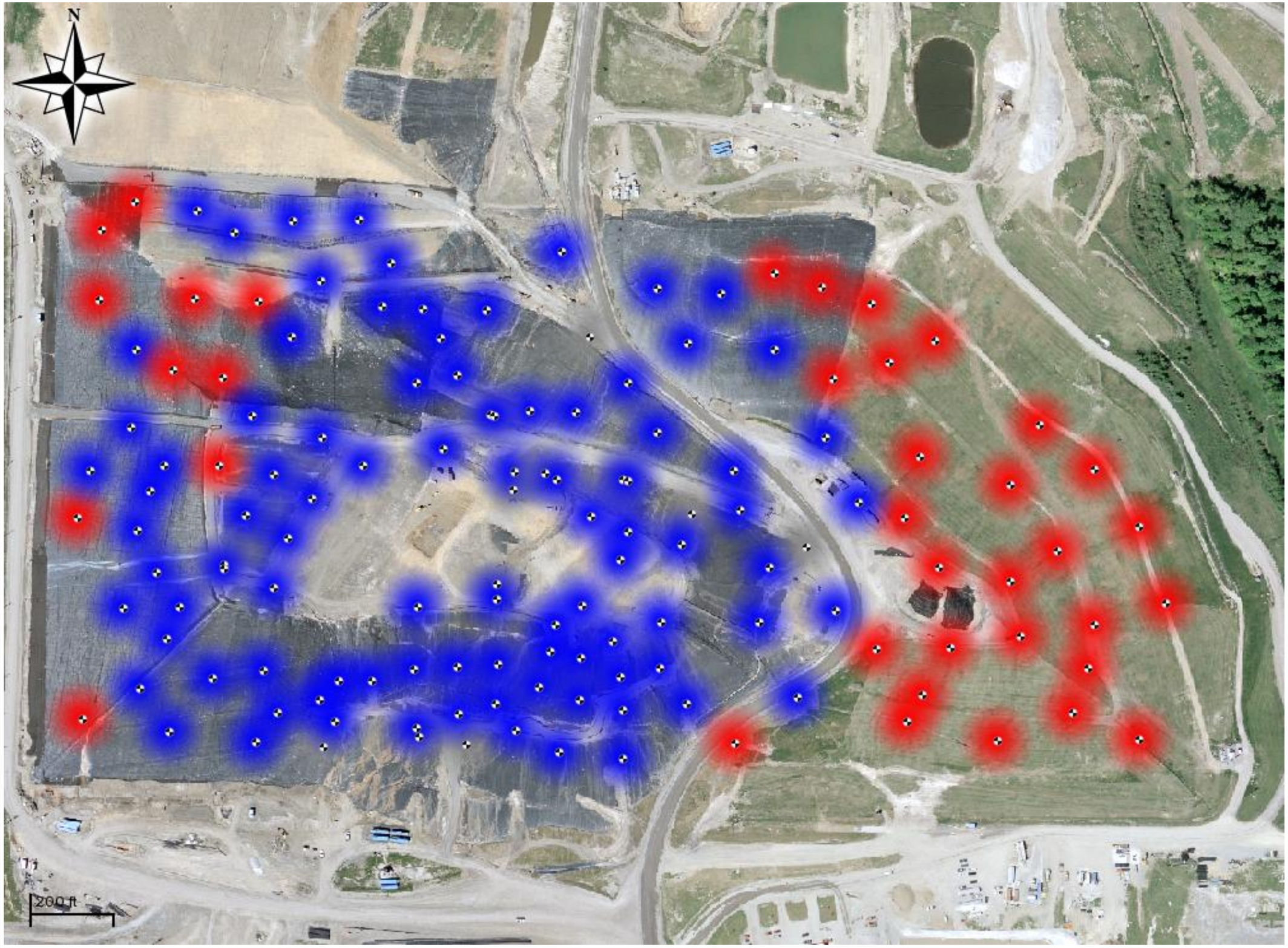


Figure 1
Average Methane to Carbon Dioxide Ratio

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
No Data

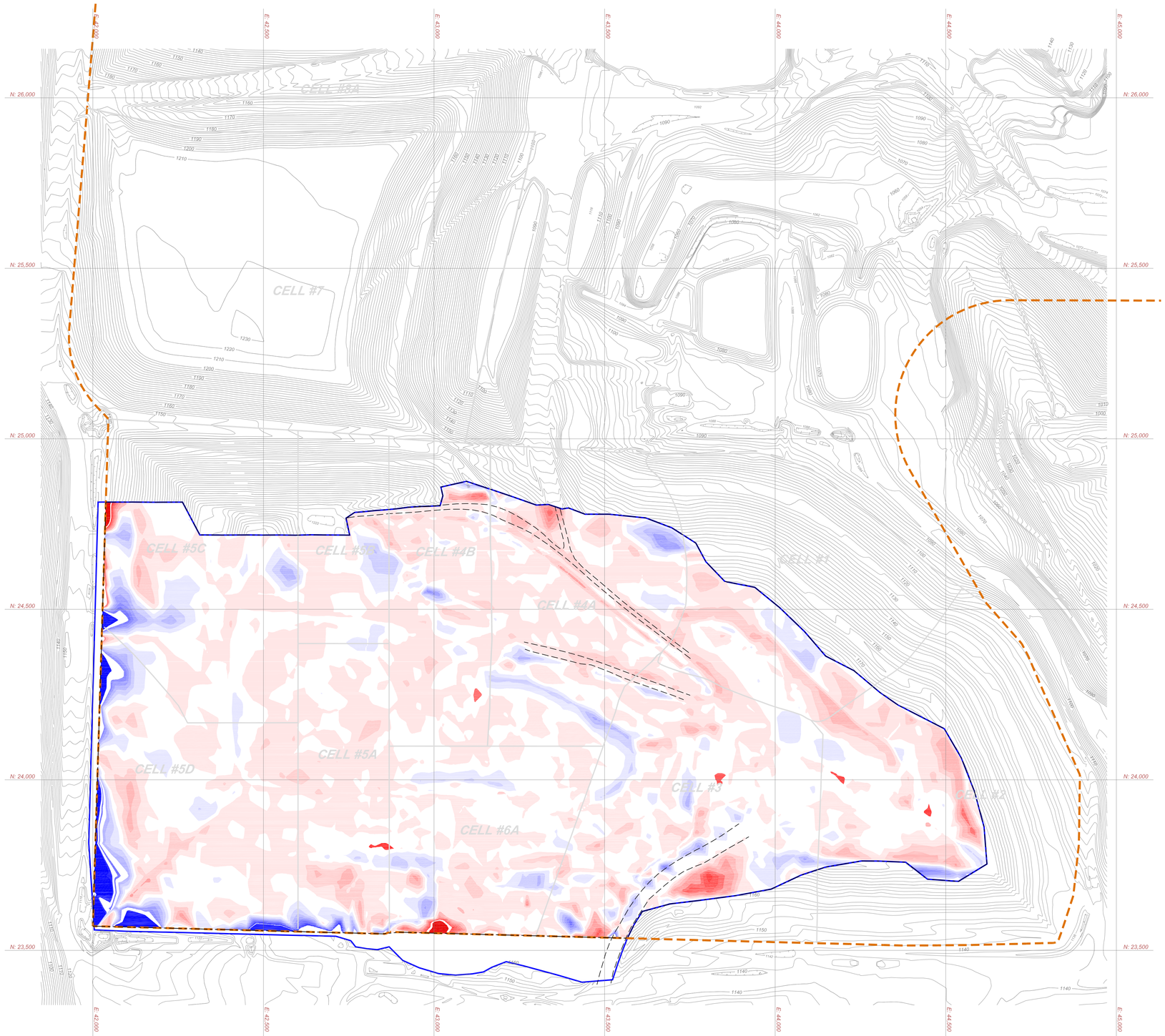
Symbol Legend

Gas Well

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

Reporting Period: Oct, 2009
Map Generated On: 11/17/2009

REPUBLIC SERVICES



LEGEND

- 1120 — EXISTING CONTOUR (AERIAL MAPPING 5/21/09), CTR INT. = 2'
- EXISTING ROADS
- LIMIT OF TOPO/COMPARISON LIMIT (ORIGINAL WEEKLY 88Ac. SETTLEMENT)
- LIMIT OF OVERLAPPING TOPO/COMPARISON LIMIT (ORIGINAL WEEKLY vs. MONTHLY SETTLEMENT)

PERCENT OF SETTLEMENT LEGEND
COLOR LEGEND

- Greater than 10%
- 9% TO 10%
- 8% TO 9%
- 7% TO 8%
- 6% TO 7%
- 5% TO 6%
- 4% TO 5%
- 3% TO 4%
- 2% TO 3%
- 1% TO 2%
- 0% TO 1%
- 0% TO 0%
- -1% TO 0%
- -2% TO -1%
- -3% TO -2%
- -4% TO -3%
- -5% TO -4%
- -6% TO -5%
- -7% TO -6%
- -8% TO -7%
- -9% TO -8%
- -10% TO -9%
- Less than -10%

N W E S

0' 150' 300' 450'

COUNTYWIDE RDF

SCALE: 1" = 150', CTR=2'		REVISIONS
SURVEYED:		
DRAWN: BWS	11/17/09	
CHECKED: CCV	11/17/09	
REVISED DATE:		

DIVERSIFIED ENGINEERING INC.
225 Fair Avenue, NE
New Philadelphia, Ohio 44663
Phone: (330) 364-1631
Fax: (330) 364-4831
e-mail: dei@dei-eng.com

PROJECT:
88 Ac. REMEDIATION UNIT

SHEET TITLE:
INCREMENTAL SETTLEMENT MAP
(09/28/09 TO 10/12/09)

FILE ID:
88Ac Topo 10-12-09.dwg

FIGURE 2

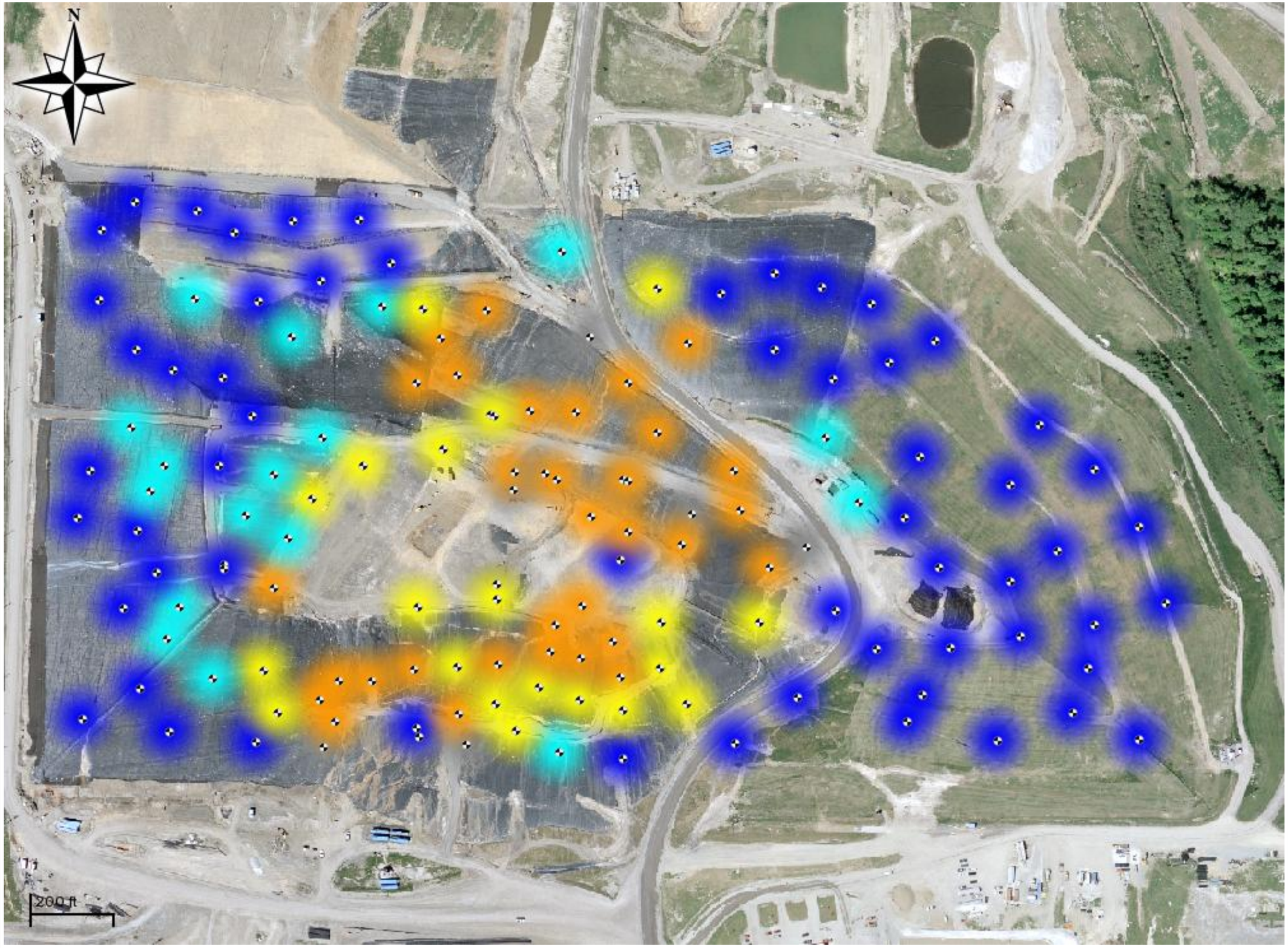


Figure 3
Average Wellhead Temperature

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

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

Color Legend

- < 131
- 131 to 150
- 150 to 180
- 180 to 210
- > 210
- No Data

Symbol Legend

Gas Well

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

Reporting Period: Oct, 2009

Map Generated On: 11/17/2009

REPUBLIC SERVICES

Figure 4. Carbon Monoxide Distribution

(to be included in November 2009 Report)

Figure 5. "Deadhead" Gas Pressure Distribution

(to be included in November 2009 Report)

Figure 6. Aerial Infrared Survey

(to be included in November 2009 Report)