



**Countywide Recycling & Disposal Facility**

**Remediation Unit**

**Monthly Progress Report  
Of  
Operations, Monitoring & Maintenance Activities**

**October 2011**

*Prepared By:*

Countywide Recycling & Disposal Facility

Remediation Unit

3619 Gracemont Street S.W.,

East Sparta, Ohio

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## **Introduction**

This document provides a monthly report of activities conducted in October 2011, as required by the Operations, Monitoring, and Maintenance (OM&M) Plan. The OM&M plan was developed for the Countywide Recycling and Disposal Facility, Remediation Unit, 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.

The OM&M Plan also requires inspections, routine maintenance, and other activities that are not required 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**

During the month of October, all daily, weekly, and monthly tasks were completed as required. These tasks included regular monitoring, inspections, and maintenance. Quarterly collection of leachate riser and cleanout temperatures were completed in October, as was quarterly lift station maintenance. Additionally, equipment and other components were winterized as necessary during the month of October.

### **2. New Construction**

No new construction was conducted during the month of October.

### **3. Major Non-Routine Maintenance, Repairs or Events**

No major non-routine maintenance, repairs, or events were conducted during the month of October.

### **4. New Trigger Events**

#### **Settlement**

Areas of 2% or greater annualized settlement are depicted on the monthly settlement survey maps. Per the OM&M Plan, an exceedance of this settlement rate should only be considered a trigger if it occurs in a location where it had not been exceeded in the previous event. The majority, if not all, of the areas exceeding the settlement rate in October have exceeded the trigger in prior months. Some changes in settlement observed can be contributed to contraction of liner in cooler temperatures.

Areas along the toe of the waste mass have consistently shown false triggers due to the accuracy limits of the survey equipment and thickness of waste mass. These instances have been discussed

on an ongoing basis during Team Countywide meetings. Upon extensive review and discussion, it has been mutually agreed upon that these values do not represent cause for immediate concern. Pin and plate monitoring along the toe of slope and near the waste limits supports that there is limited settlement/movement in these areas.

The settlement data across the facility was evaluated and is within the ranges and trends observed in prior months. There does not appear to be any anomalies or significant excursions outside the trends within the settlement data set. The settlement data and pin and plate data do not suggest that the settlement observed should cause concern from a slope stability or engineering control integrity standpoint.

### **Pin/Plate Monitoring**

No pin or plate triggers were observed during the month of October.

## **5. Investigation Results from Previous Trigger Events**

It was agreed upon between Republic and the Agencies that the values resulting in triggers during the September 2011 monitoring period were consistent with ranges and trends previously reflected, and represent no significant anomalies when compared to prior ongoing trends. The analysis of these triggers did not prompt any additional measures beyond the requirements of the OM&M Plan and ongoing activities.

## **6. Trend Graphs and Drawings**

The graphs, tables, and figures required by the OM&M Plan 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. The October monitoring data is generally within the ranges and trending of that observed in prior months.

## **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**

No revisions to the OM&M Plan are proposed at this time.

**10. Odor Summary/Complaints**

During the month of October, one odor complaint was received by Republic Services. Odor was not detected during a real-time investigation, and as such the complaint could not be confirmed.



11/16/11

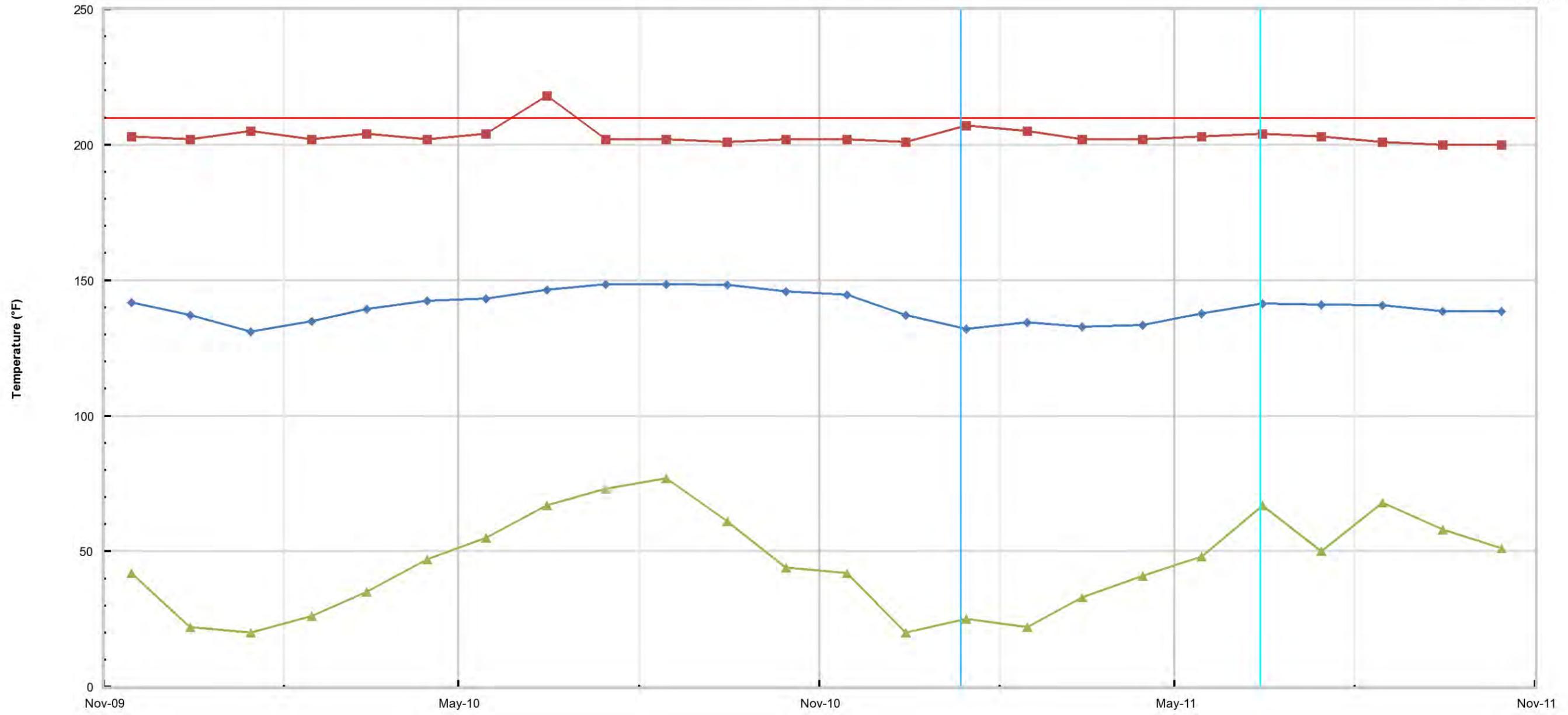
Michael Darnell  
OM&M Manager

Date

# **Attachment 1**

## **Graphs**

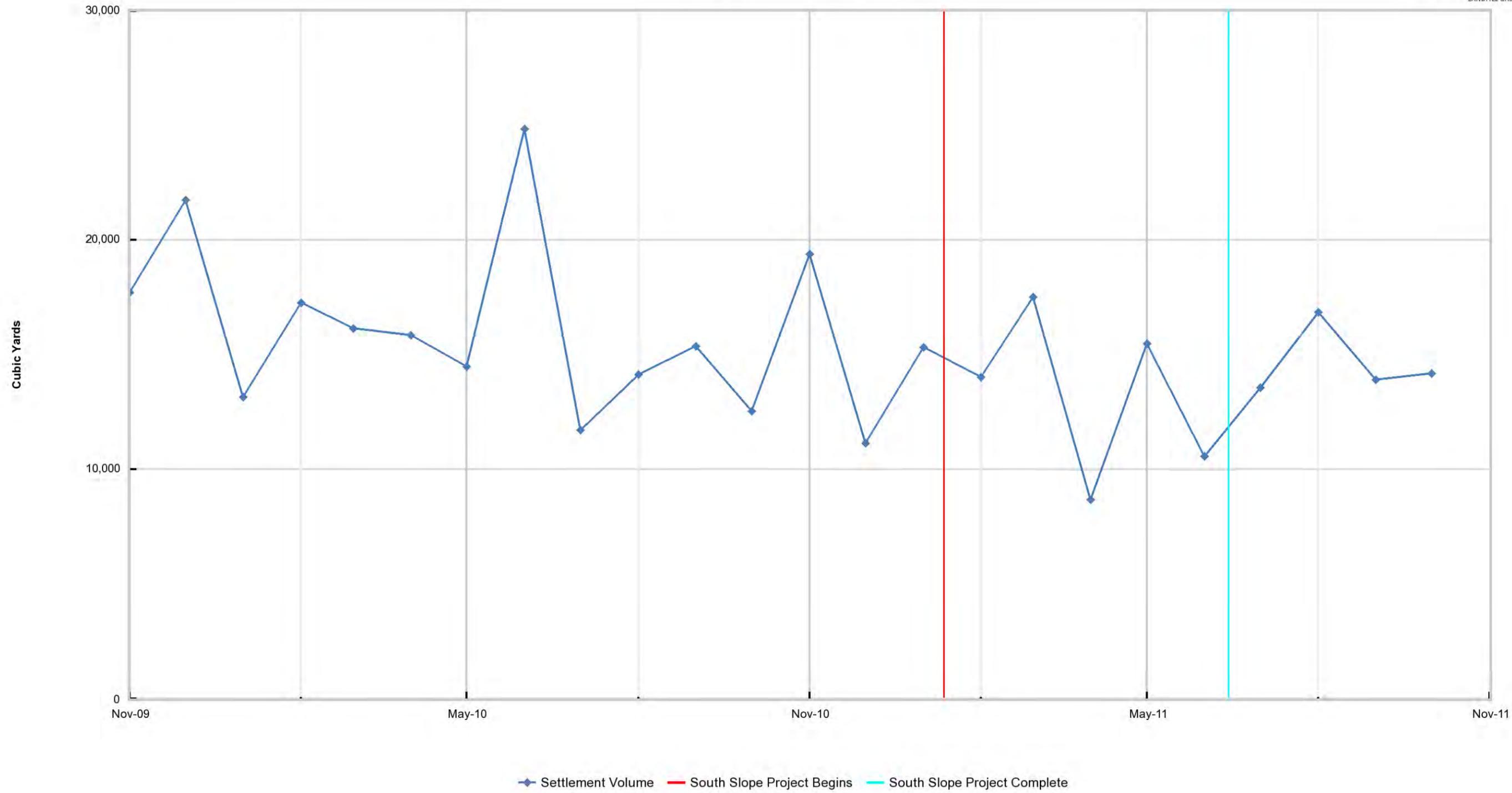
# Graph 1 Wellhead Temperature



■ Maximum Temperature    ◆ Average Temperature    ▲ Minimum Temperature    — Temperature Trigger  
— South Slope Project Begins    — South Slope Project Complete

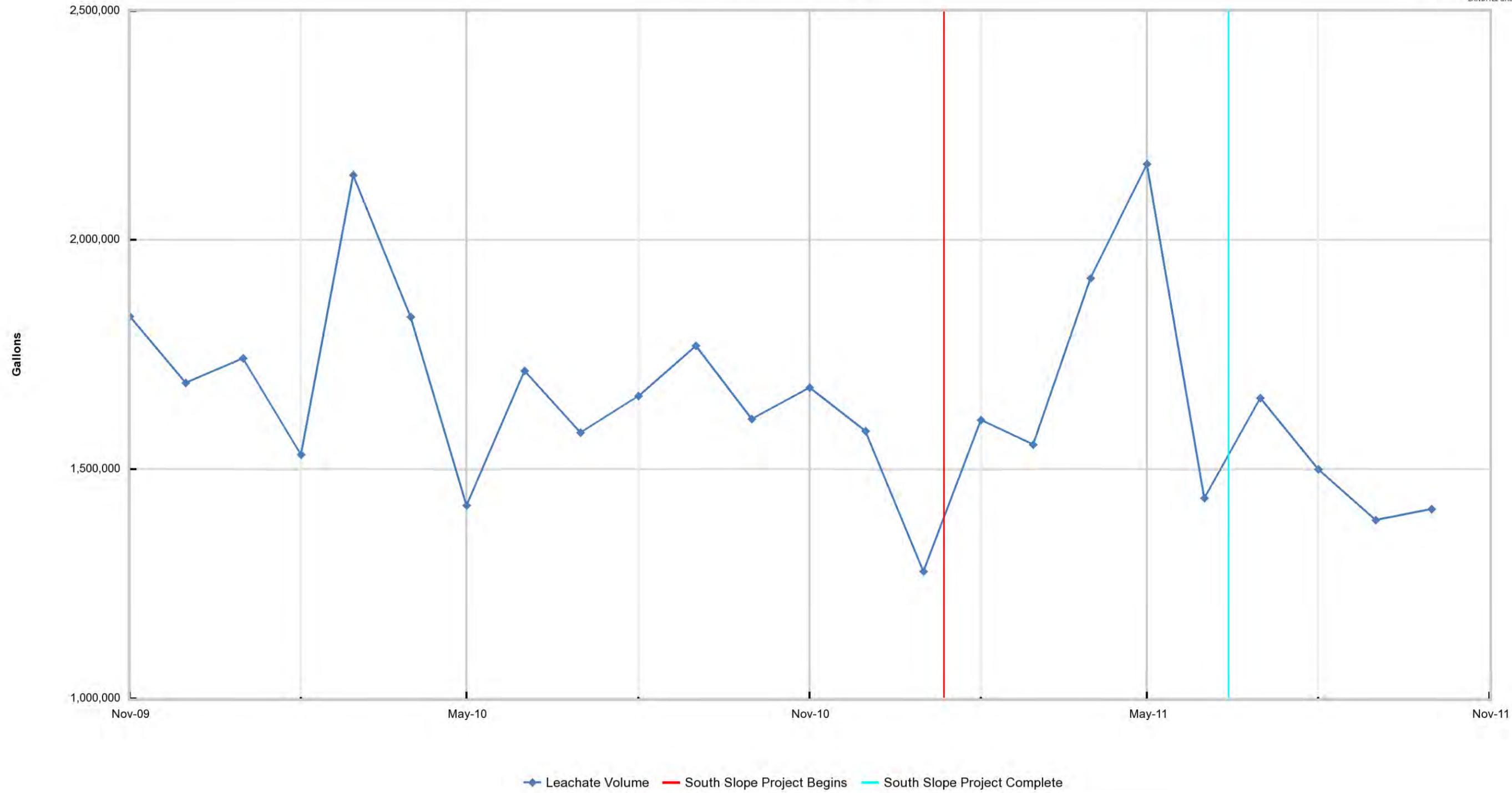
1. Maximum temperature depicted for June 2010 represents a single occurrence of a wellhead temperature over 210 degrees at a single well, caused by wellhead pressure. It does not represent a sustained temperature. Upon vacuum adjustment at the well, temperature returned to normal trend, below 210 degrees .

# Graph 2 Settlement Volume



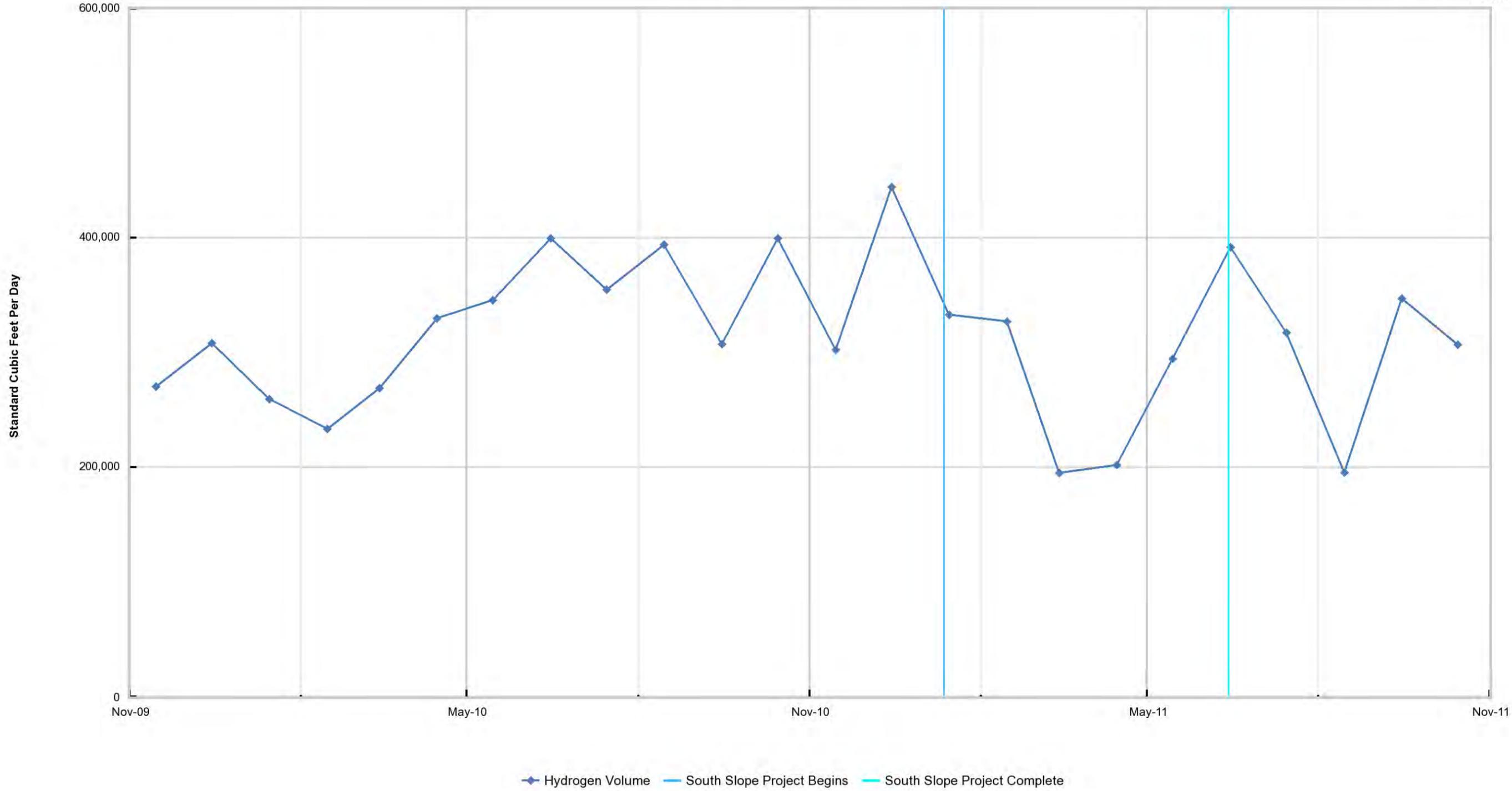
1. Information presented prior to October 2009 was compiled from data prepared and presented by SCS Engineers for Countywide Recycling and Disposal Facility.
2. Data presented on monthly basis.
3. Settlement volume reported prior to the 4th quarter of 2009 is for a limited area of the 88-acre reaction area.
4. The south slope project excavation and relocation areas were excluded from settlement monitoring during the months of January through April 2011. Areas which had been capped were monitored in May and June 2011. Full data comparisons were available in July 2011.

### Graph 3 Leachate Volume



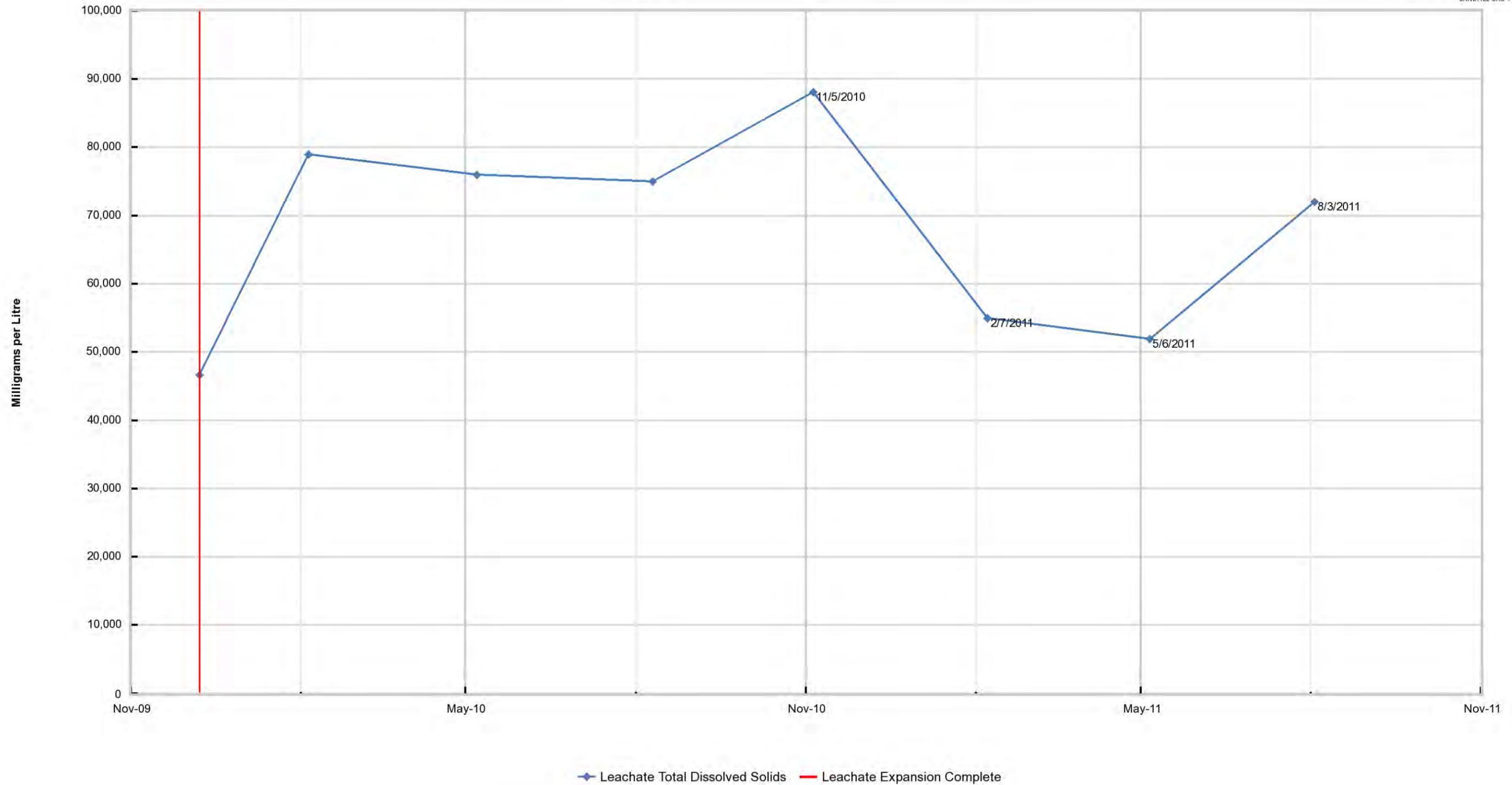
1. A freeboard of approximately 6 feet, approximately 90,000-gallons, is typically maintained at the 500,000-gallon tank. This freeboard volume was removed in July for tank cleaning and inspection. As such, the July 2010 leachate volume is elevated due to removal of this liquid.
2. Leachate generated from the Remediation Unit was stored in the same storage tank as that generated from the Operational Unit during the period July 19, 2010 through August 9, 2010 due to cleaning and maintenance to the Remediation storage tank. As such, the volume of leachate generated from the Remediation Unit was estimated for that period based upon typical daily averages.
3. The “Valley” represented in January 2011 was due to leachate volume generated in January but hauled out in February. Accordingly, this resulted in a “peak” in February 2011.
4. The increase in volume observed in April and May 2011 is related to significant precipitation through the month. This resulted in an influx of surface water directly into the leachate collection system due to exposed areas as part of the South Slope Project.
5. It should be noted that Notes 1 and 2 also apply to the July, August, and September 2011 reporting periods due to tank cleaning and inspection.

# Graph 4 Hydrogen Volume



1. Decrease in March and April related to elimination of extraction points related to south slope project.
2. Increase in May and June related to installation of temporary cap and extraction points on south slope. Indicates increase in collection versus increase in production.

### Graph 5 Leachate Total Dissolved Solids



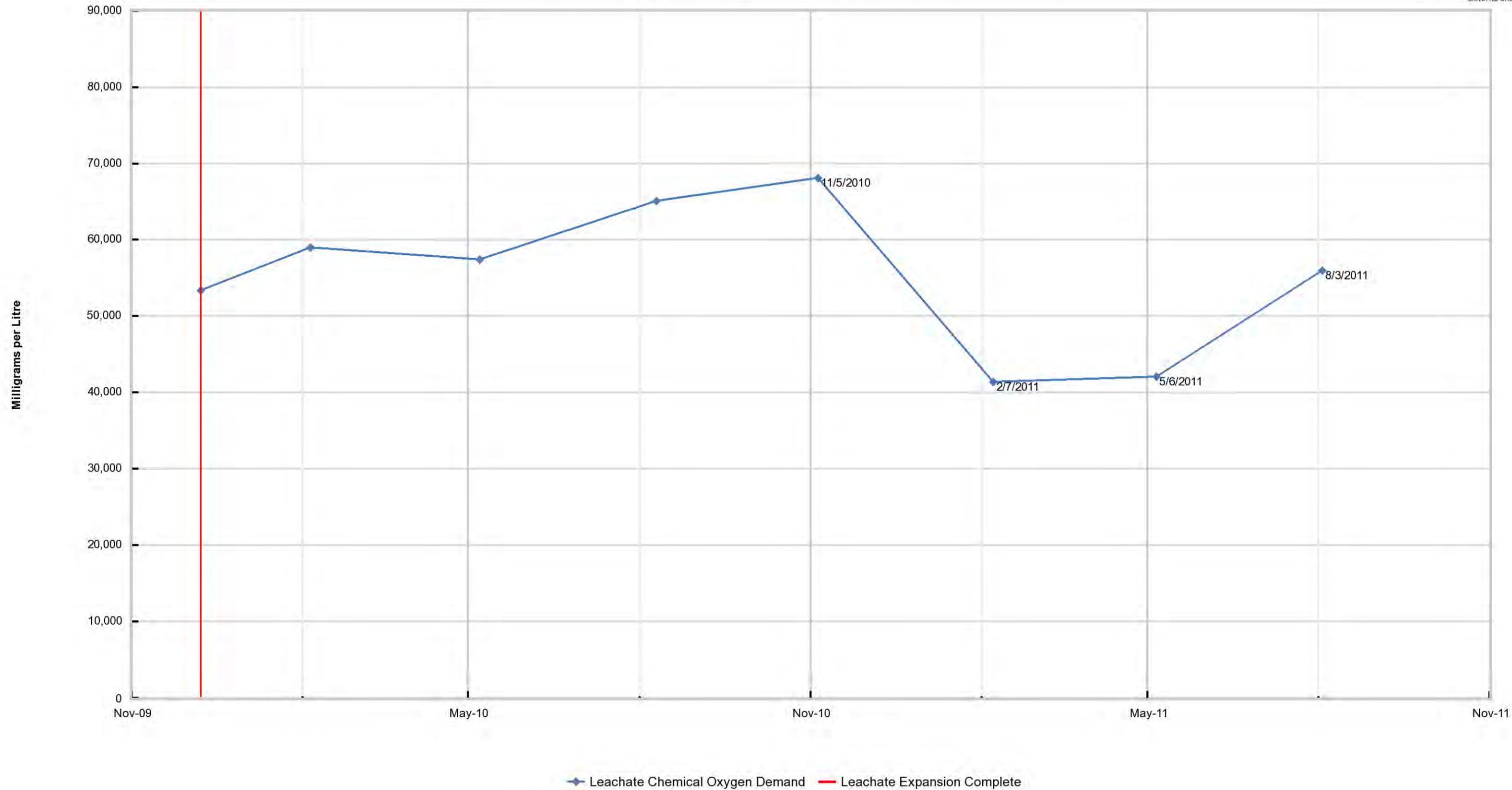
Information presented prior to October 2009 was compiled from data prepared and presented by AECOM for Countywide Recycling and Disposal Facility.

2. Data shown prior to October 2009 are flow-weighted averages of data from the East, North and South leachate collection tanks. Data from December 2009 is from combined Tank East 500.

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.

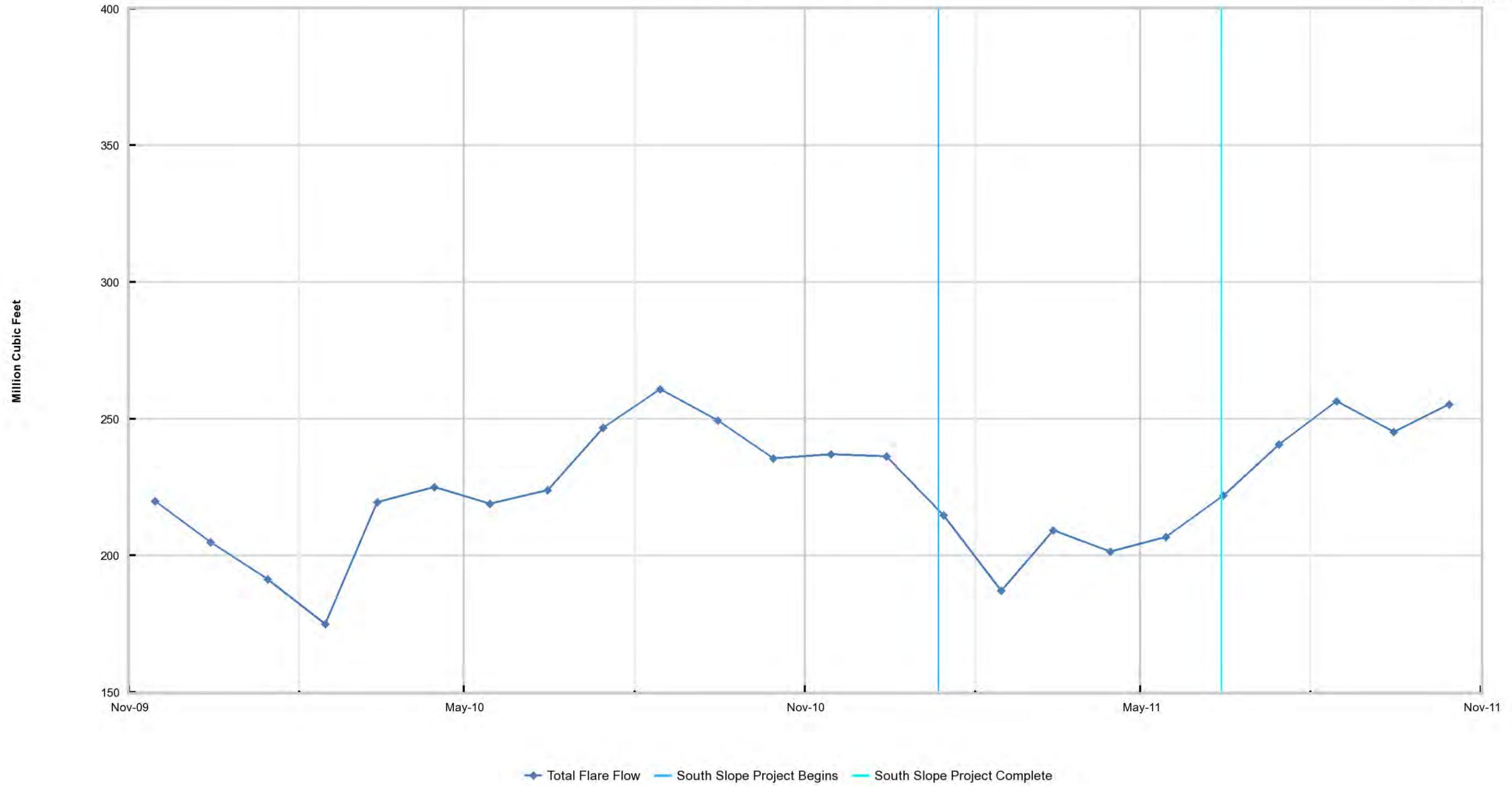
4. Data labels beginning in October 2009 indicate date of quarterly analytical sampling.

### Graph 6 Leachate Chemical Oxygen Demand



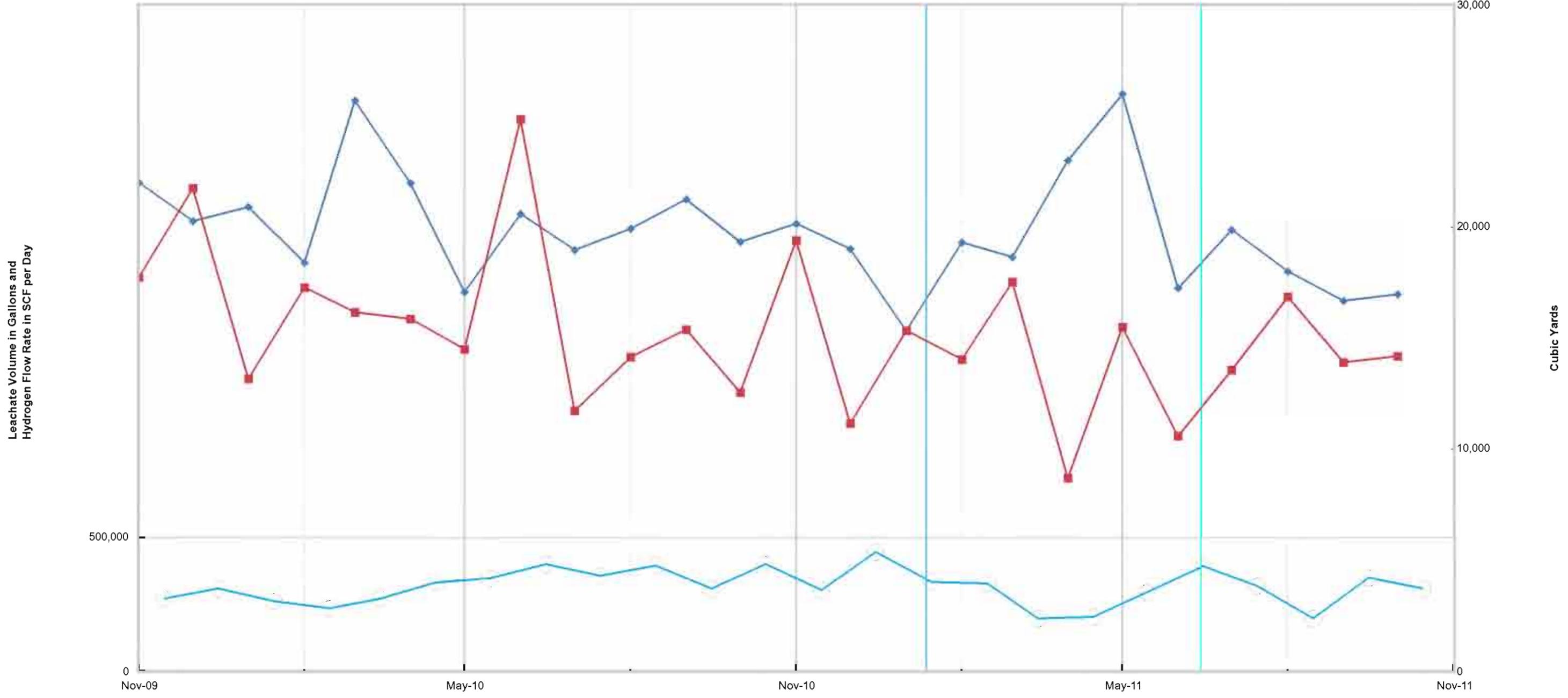
1. Information presented prior to October 2009 was compiled from data prepared and presented by AECOM for Countywide Recycling and Disposal Facility.
2. Data shown prior to October 2009 are flow-weighted averages of data from the East, North and South leachate collection tanks. Data from December 2009 is from combined Tank East 500.
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.

### Graph 7 Total Flare Flow



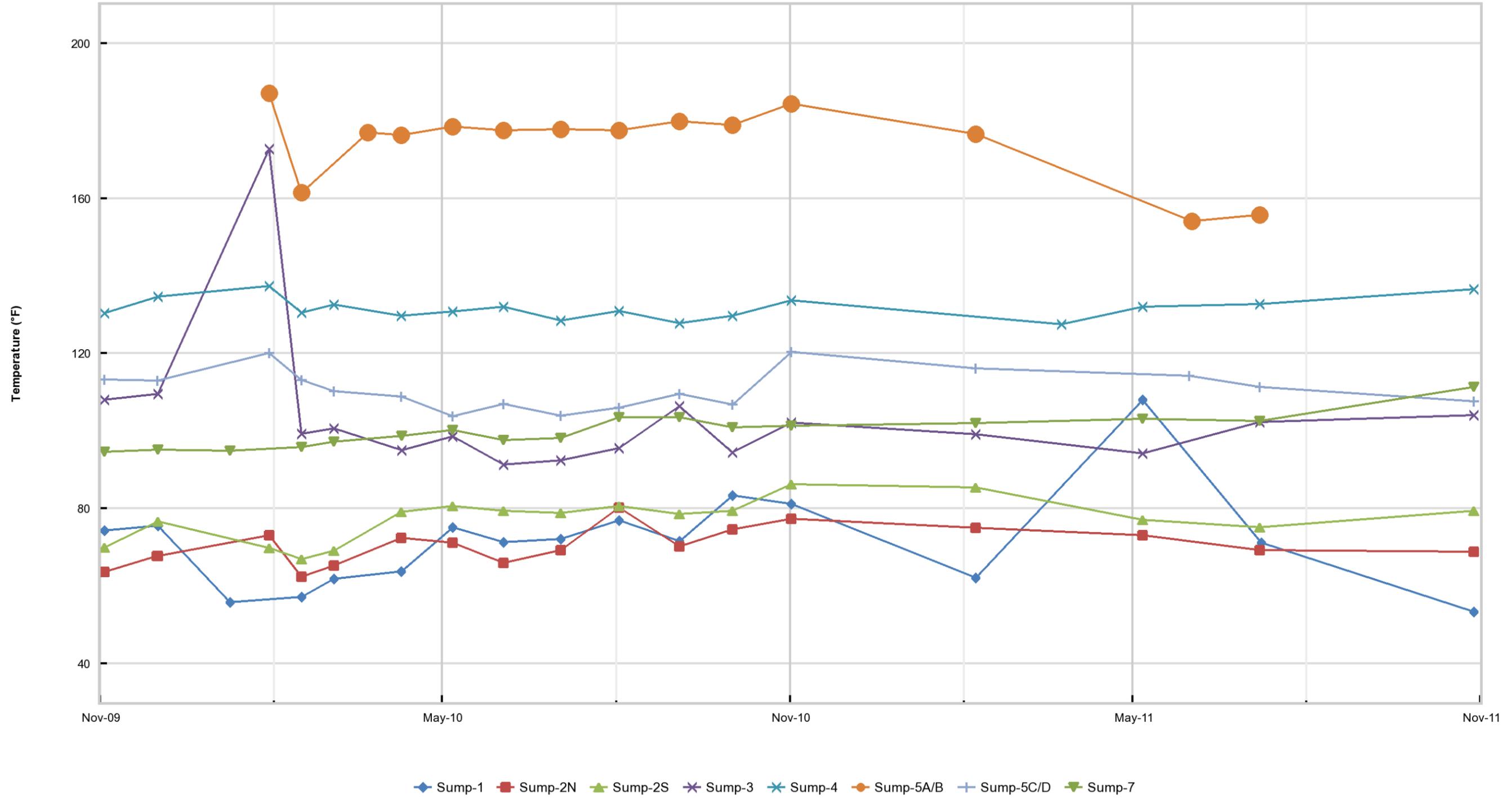
1. Increased flare flow in August 2010 is at least partially due to recalibration of flow meters during the reporting period.

# Graph 8 Combined Leachate, Hydrogen and Settlement Volume



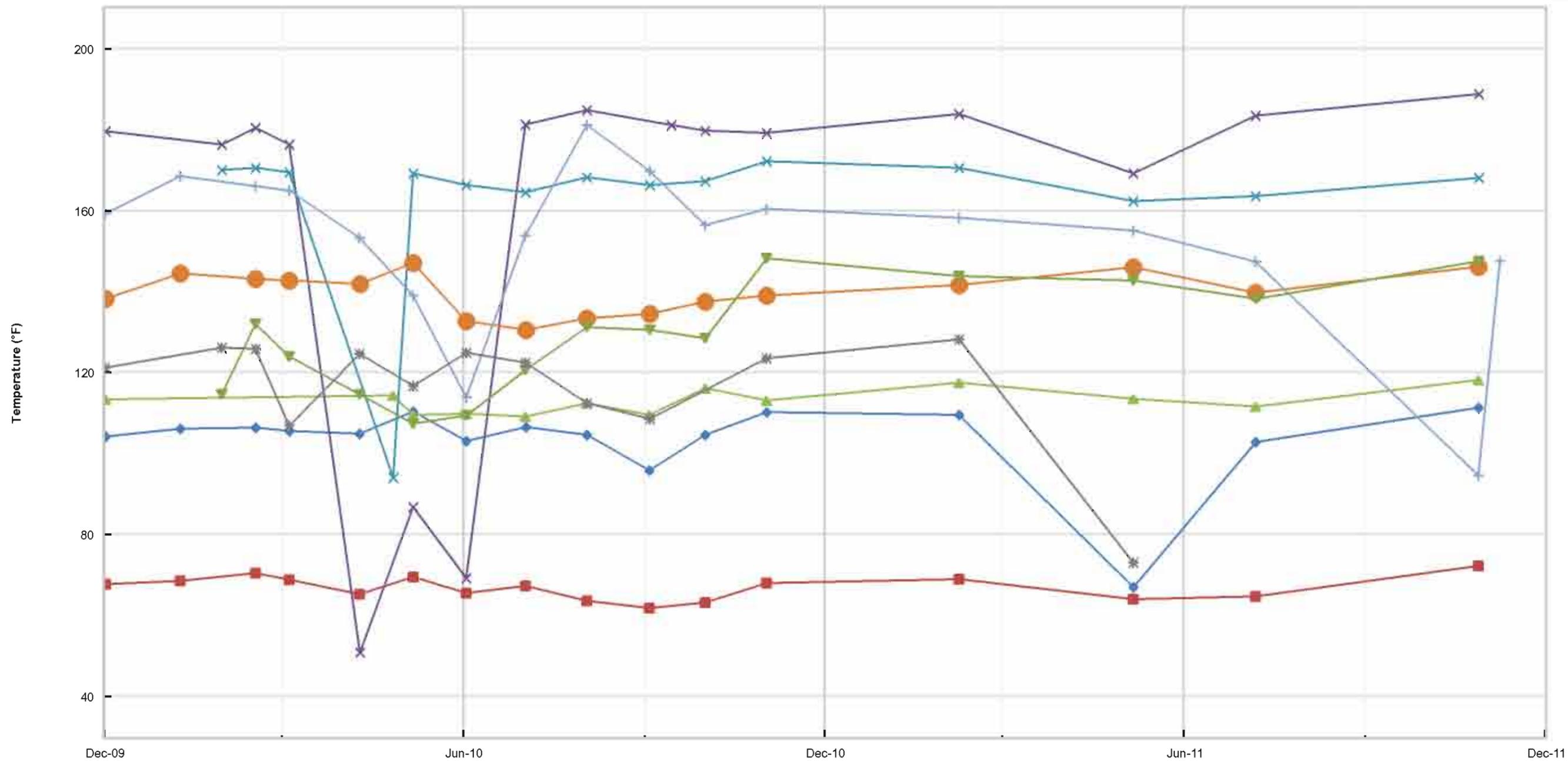
◆ Leachate Volume    — Hydrogen Volume    — South Slope Project Begins    — South Slope Project Complete    ■ Settlement Volume

# Graph 9 Leachate Sump Temperature



The thermocouple at Riser 5AB was not read during the month of October due to maintenance issues. This thermocouple will be read prior to end of quarter.

# Graph 10 Leachate Cleanout Temperature



◆ Line-1C   ■ Line-1D   ▲ Line-2C   ✖ Line-3B   ✖ Line-3C   ● Line-4C   + Line-4E   ▼ Line-5A/B   \* Line-6B

## **Attachment 2**

### **Tables**

Parameter Name	Value	Qualifi	Units	Detection Lin	Units
<b>Volatile Organic Compounds</b>					
1,1,1,2-Tetrachloroethane	<	50	U	ug/L	50 ug/L
1,1,1-Trichloroethane	<	50	U	ug/L	50 ug/L
1,1,2,2-Tetrachloroethane	<	50	U	ug/L	50 ug/L
1,1,2-Trichloroethane	<	50	U	ug/L	50 ug/L
1,1-Dichloroethane	<	50	U	ug/L	50 ug/L
1,1-Dichloroethene	<	50	U	ug/L	50 ug/L
1,2,3-Trichloropropane	<	50	U	ug/L	50 ug/L
1,2-Dibromo-3-chloropropane (DBCP)	<	100	U	ug/L	100 ug/L
1,2-Dibromoethane (EDB)	<	50	U	ug/L	50 ug/L
1,2-Dichlorobenzene	<	50	U	ug/L	50 ug/L
1,2-Dichloroethane	<	50	U	ug/L	50 ug/L
1,2-Dichloropropane	<	50	U	ug/L	50 ug/L
1,4-Dichlorobenzene		17	J	ug/L	50 ug/L
2-Butanone (MEK)		14000		ug/L	5000 ug/L
2-Hexanone	<	500	U	ug/L	500 ug/L
4-Methyl-2-pentanone (MIBK)		580		ug/L	500 ug/L
Acetone		22000		ug/L	5000 ug/L
Acrylonitrile	<	1000	U	ug/L	1000 ug/L
Benzene		110		ug/L	50 ug/L
Bromochloromethane	<	50	U	ug/L	50 ug/L
Bromodichloromethane	<	50	U	ug/L	50 ug/L
Bromoform	<	50	U	ug/L	50 ug/L
Carbon disulfide	<	50	U	ug/L	50 ug/L
Carbon tetrachloride	<	50	U	ug/L	50 ug/L
Chlorobenzene	<	50	U	ug/L	50 ug/L
Chloroethane	<	50	U	ug/L	50 ug/L
Chloroform	<	50	U	ug/L	50 ug/L
Chloromethane	<	50	U	ug/L	50 ug/L
cis-1,2-Dichloroethene	<	50	U	ug/L	50 ug/L
cis-1,3-Dichloropropene	<	50	U	ug/L	50 ug/L
Dibromochloromethane	<	50	U	ug/L	50 ug/L
Ethylbenzene		15	J	ug/L	50 ug/L
Methylene bromide	<	50	U	ug/L	50 ug/L
Methylene chloride	<	50	U	ug/L	50 ug/L
Methyl iodide	<	50	U	ug/L	50 ug/L
Styrene	<	50	U	ug/L	50 ug/L
Tetrachloroethene	<	50	U	ug/L	50 ug/L
Toluene		42	J	ug/L	50 ug/L
trans-1,2-Dichloroethene	<	50	U	ug/L	50 ug/L
trans-1,3-Dichloropropene	<	50	U	ug/L	50 ug/L
trans-1,4-Dichloro-2-butene	<	50	U	ug/L	50 ug/L
Trichloroethene		9.3	J,B	ug/L	50 ug/L
Trichlorofluoromethane	<	50	U	ug/L	50 ug/L
Vinyl acetate	<	100	U	ug/L	100 ug/L
Vinyl chloride	<	50	U	ug/L	50 ug/L
Xylenes (total)		56	J	ug/L	100 ug/L

Table 1. Leachate Constituent Summary

**Dioxins/Furans**

1,2,3,4,6,7,8-HpCDD		230 J	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		1800 B	pg/L	1000 pg/L
OCDF		65 J	pg/L	1000 pg/L
Total HpCDD		460 J	pg/L	500 pg/L
Total HpCDF		30 QJ	pg/L	500 pg/L
Total HxCDD		140 J	pg/L	500 pg/L
Total HxCDF	<	500 U	pg/L	500 pg/L
Total PeCDD	<	500 U	pg/L	500 pg/L
Total PeCDF	<	500 U	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 U	ug/L	20000 ug/L
Antimony	<	1000 U	ug/L	1000 ug/L
Arsenic	<	500 U	ug/L	500 ug/L
Barium		1400	ug/L	1000 ug/L
Beryllium	<	300 U	ug/L	300 ug/L
Cadmium	<	200 U	ug/L	200 ug/L
Calcium		3200000	ug/L	100000 ug/L
Chromium		540	ug/L	500 ug/L
Cobalt	<	500 U	ug/L	500 ug/L
Copper	<	500 U	ug/L	500 ug/L
Iron		960000	ug/L	10000 ug/L
Lead		540	ug/L	300 ug/L
Magnesium		990000	ug/L	100000 ug/L
Manganese		74000	ug/L	500 ug/L
Nickel	<	1000 U	ug/L	1000 ug/L
Selenium	<	500 U	ug/L	500 ug/L
Silver	<	300 U	ug/L	300 ug/L
Sodium		9400000	ug/L	100000 ug/L
Thallium	<	1000 U	ug/L	1000 ug/L
Vanadium	<	700 U	ug/L	700 ug/L
Zinc		29000	ug/L	5000 ug/L

Table 1. Leachate Constituent Summary

**Field Parameters****General Chemistry**

Ammonia	2800	mg/L	50 mg/L
Chemical Oxygen Demand (COD)	56000	mg/L	2000 mg/L
Chloride	25000	mg/L	500 mg/L
Fluoride	< 100 U	mg/L	100 mg/L
Nitrate-Nitrite	< 2.5 U	mg/L	2.5 mg/L
Sulfate	940	mg/L	100 mg/L
Total Alkalinity	9400	mg/L	500 mg/L
Total Dissolved Solids	72000	mg/L	200 mg/L
Turbidity	240	ntu	13 ntu

## Notes:

1. Results shown are reported for sample collected from the East 500 Leachate Tank on August 3, 2011 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	B1R	B2R	C1R(2)	C2R	D1	D2R	E1	E2R	F1-M	F2	I1R	J1R	K1R	N1R	PW-0041R(2)	PW-101	PW-102	PW-103R
<b>Total Constructed Casing Length (ft)</b>	36	79	48	124	58	124	71	124	61	69	121	122	56	122	81	78	78	106
<b>Total Constructed Perforated Pipe Length (ft)</b>	16	54	23	99	36	99	45	99	39	44	96	97	31	97	55	60	60	81
<b>August, 2011</b>																		
<b>Date</b>	N/A	N/A	8/5	8/9	N/A	8/9	N/A	8/9	8/9	8/9	8/9	8/9	8/9	N/A	N/A	8/9	N/A	8/9
<b>Depth To Fluid (ft)</b>	N/A	N/A	25.9	N/A	N/A	52.7	N/A		15.1	31.2	17.5	95.9	19.1	N/A	N/A	33.4	N/A	55.7
<b>Measured Depth To Bottom (ft)</b>	N/A	N/A	43.6	N/A	N/A	52.7	N/A	42.3	47.3	59.8	87.7	117.6	50.8	N/A	N/A	74.2	N/A	100.3
<b>Potential Exposed Perforations</b>	N/A	N/A	18.6	N/A	N/A	27.7	N/A	17.3	25.3	34.8	62.7	92.6	25.8	N/A	N/A	56.2	N/A	75.3
<b>Actual Exposed Perforations</b>	N/A	N/A	0.9	N/A	N/A	27.7	N/A	0	0	6.2	0	70.9	0	N/A	N/A	15.4	N/A	30.7
<b>September, 2011</b>																		
<b>Date</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9/19	N/A	N/A	N/A	N/A	N/A	N/A
<b>Depth To Fluid (ft)</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	95.4	N/A	N/A	N/A	N/A	N/A	N/A
<b>Measured Depth To Bottom (ft)</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	117.2	N/A	N/A	N/A	N/A	N/A	N/A
<b>Potential Exposed Perforations</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	92.2	N/A	N/A	N/A	N/A	N/A	N/A
<b>Actual Exposed Perforations</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	70.4	N/A	N/A	N/A	N/A	N/A	N/A
<b>October, 2011</b>																		
<b>Date</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	10/18	N/A	N/A	N/A	N/A	N/A	N/A
<b>Depth To Fluid (ft)</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	96	N/A	N/A	N/A	N/A	N/A	N/A
<b>Measured Depth To Bottom (ft)</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	117	N/A	N/A	N/A	N/A	N/A	N/A
<b>Potential Exposed Perforations</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	92	N/A	N/A	N/A	N/A	N/A	N/A
<b>Actual Exposed Perforations</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	71	N/A	N/A	N/A	N/A	N/A	N/A
Well ID	PW-104	PW-105	PW-106R	PW-107	PW-108R	PW-109	PW-110	PW-111	PW-112	PW-113	PW-114	PW-115R	PW-117R	PW-118R	PW-119R	PW-120	PW-121R(2)	PW-122R
<b>Total Constructed Casing Length (ft)</b>	78	63	69	64	60	35	29	60	75	75	75	83	105	89	72	78	36	43
<b>Total Constructed Perforated Pipe Length (ft)</b>	60	60	45	45	26	19	13	44	59	60	60	60	80	64	50	60	19	25
<b>August, 2011</b>																		
<b>Date</b>	N/A	8/9	8/5	8/5	8/9	8/5	8/5	8/5	8/5	8/5	N/A	8/5	N/A	N/A	8/5	N/A	N/A	N/A
<b>Depth To Fluid (ft)</b>	N/A	34.7	56	59.1	47.7	28.5	20.8	63.8	72.8	72	N/A	76.4	N/A	N/A	61.5	N/A	N/A	N/A
<b>Measured Depth To Bottom (ft)</b>	N/A	34.7	62.5	61.2	47.7	36.4	31.5	64.4	79.8	77	N/A	77.1	N/A	N/A	63.9	N/A	N/A	N/A
<b>Potential Exposed Perforations</b>	N/A	31.7	38.5	42.2	13.7	20.4	15.5	48.4	63.8	62	N/A	54.1	N/A	N/A	41.9	N/A	N/A	N/A
<b>Actual Exposed Perforations</b>	N/A	31.7	32	40.1	13.7	12.5	4.8	48.4	56.8	57	N/A	53.4	N/A	N/A	39.5	N/A	N/A	N/A
<b>September, 2011</b>																		
<b>Date</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Depth To Fluid (ft)</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Measured Depth To Bottom (ft)</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Potential Exposed Perforations</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Actual Exposed Perforations</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>October, 2011</b>																		
<b>Date</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Depth To Fluid (ft)</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Measured Depth To Bottom (ft)</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Potential Exposed Perforations</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Actual Exposed Perforations</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 2. Liquid Levels and Percent Perforations Exposed

Well ID	PW-123	PW-124	PW-125	PW-127	PW-128	PW-129	PW-130	PW-131R	PW-132R	PW-141R	PW-142R	PW-144	PW-145	PW-146	PW-147R	PW-148	PW-149	PW-14R(3)
<b>Total Constructed Casing Length (ft)</b>	78	63	75	75	119.7	121	121	81	62	104	81	102	120	120	81	53	51	44
<b>Total Constructed Perforated Pipe Length (ft)</b>	60	45	60	60	103	103	103	58	40	80	58	82	100	100	58	33	31	21
<b>August, 2011</b>																		
<b>Date</b>	N/A	N/A	8/9	8/9	8/9	8/9	8/9	N/A	8/9	8/9	8/5	N/A	8/9	8/9	N/A	8/5	N/A	N/A
<b>Depth To Fluid (ft)</b>	N/A	N/A	39.8	54.3	56.1	59.2	60.1	N/A	35	43.2	56.8	N/A	49.4	42.1	N/A	41.2	N/A	N/A
<b>Measured Depth To Bottom (ft)</b>	N/A	N/A	67	66.2	89.4	107.6	109	N/A	42.3	91.7	74.2	N/A	112.9	111.1	N/A	45.3	N/A	N/A
<b>Potential Exposed Perforations</b>	N/A	N/A	52	51.2	72.7	89.6	91	N/A	20.3	67.7	51.2	N/A	92.9	91.1	N/A	25.3	N/A	N/A
<b>Actual Exposed Perforations</b>	N/A	N/A	24.8	39.3	39.4	41.2	42.1	N/A	13	19.2	33.8	N/A	29.4	22.1	N/A	21.2	N/A	N/A
<b>September, 2011</b>																		
<b>Date</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9/19	N/A	N/A							
<b>Depth To Fluid (ft)</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	39.4	N/A	N/A							
<b>Measured Depth To Bottom (ft)</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	44.9	N/A	N/A							
<b>Potential Exposed Perforations</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	24.9	N/A	N/A							
<b>Actual Exposed Perforations</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	19.4	N/A	N/A							
<b>October, 2011</b>																		
<b>Date</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	10/18	N/A	N/A							
<b>Depth To Fluid (ft)</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	40.7	N/A	N/A							
<b>Measured Depth To Bottom (ft)</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	44.8	N/A	N/A							
<b>Potential Exposed Perforations</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	24.8	N/A	N/A							
<b>Actual Exposed Perforations</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20.7	N/A	N/A							
Well ID	PW-150	PW-151	PW-152	PW-153	PW-154	PW-155	PW-156	PW-157	PW-158R	PW-159	PW-160	PW-161	PW-162	PW-163R	PW-164	PW-165	PW-166	PW-167R
<b>Total Constructed Casing Length (ft)</b>	50	43	42	52	42	40	112	112	104	119	119	117	102	100	119	119	119	81
<b>Total Constructed Perforated Pipe Length (ft)</b>	30	23	22	32	22	22	89	89	80	97	97	95	80	75	97	97	95	58
<b>August, 2011</b>																		
<b>Date</b>	8/5	N/A	N/A	8/5	N/A	N/A	8/9	8/9	8/9	8/9	8/9	8/9	8/9	8/9	8/9	8/9	8/9	N/A
<b>Depth To Fluid (ft)</b>	33.2	N/A	N/A	44.5	N/A	N/A	71.7	46.6	48.2	48.6	96.9	40.9	46.1	41.8	42.1	99.4	45.7	N/A
<b>Measured Depth To Bottom (ft)</b>	45.2	N/A	N/A	44.5	N/A	N/A	104.1	104.8	97.6	113.5	110.9	113.8	92.2	91	104.2	115.6	92.8	N/A
<b>Potential Exposed Perforations</b>	25.2	N/A	N/A	24.5	N/A	N/A	81.1	81.8	73.6	91.5	88.9	91.8	70.2	66	82.2	93.6	68.8	N/A
<b>Actual Exposed Perforations</b>	13.2	N/A	N/A	24.5	N/A	N/A	48.7	23.6	24.2	26.6	74.9	18.9	24.1	16.8	20.1	77.4	21.7	N/A
<b>September, 2011</b>																		
<b>Date</b>	N/A	N/A	N/A	9/19	N/A	N/A	N/A	N/A	9/19	N/A	N/A							
<b>Depth To Fluid (ft)</b>	N/A	N/A	N/A	94.7	N/A	N/A	N/A	N/A	98.7	N/A	N/A							
<b>Measured Depth To Bottom (ft)</b>	N/A	N/A	N/A	111.2	N/A	N/A	N/A	N/A	115.5	N/A	N/A							
<b>Potential Exposed Perforations</b>	N/A	N/A	N/A	89.2	N/A	N/A	N/A	N/A	93.5	N/A	N/A							
<b>Actual Exposed Perforations</b>	N/A	N/A	N/A	72.7	N/A	N/A	N/A	N/A	76.7	N/A	N/A							
<b>October, 2011</b>																		
<b>Date</b>	N/A	N/A	N/A	10/18	N/A	N/A	N/A	N/A	10/18	N/A	N/A							
<b>Depth To Fluid (ft)</b>	N/A	N/A	N/A	96.5	N/A	N/A	N/A	N/A	94.8	N/A	N/A							
<b>Measured Depth To Bottom (ft)</b>	N/A	N/A	N/A	111.1	N/A	N/A	N/A	N/A	115.2	N/A	N/A							
<b>Potential Exposed Perforations</b>	N/A	N/A	N/A	89.1	N/A	N/A	N/A	N/A	93.2	N/A	N/A							
<b>Actual Exposed Perforations</b>	N/A	N/A	N/A	74.5	N/A	N/A	N/A	N/A	72.8	N/A	N/A							

Table 2. Liquid Levels and Percent Perforations Exposed

Well ID	PW-168(M)	PW-169	PW-170	PW-171	PW-172	PW-173	PW-174	PW-175	PW-176	PW-177	PW-178	PW-179	PW-180	PW-181	PW-182	PW-307	PW-358	PW-361
Total Constructed Casing Length (ft)	94	85	41	47	117	114	105	81	77	44	34	61	93	85	42	62	62	104
Total Constructed Perforated Pipe Length (ft)	68	15	18	22	92	90	80	58	55	24	14	36	68	60	17	42	38	80
<b>August, 2011</b>																		
Date	8/5	8/5	8/5	8/9	8/9	8/9	8/9	N/A	8/9	8/9	8/9	8/5	N/A	8/9	8/5	8/9	8/9	8/9
Depth To Fluid (ft)	83.5	53.9	28.7	39.7	38.7	38.7	26	N/A	24.3	32.3	32.1	38	N/A	64.9	32.2	32.2	33.7	91.2
Measured Depth To Bottom (ft)	106.3	55.9	42.7	45.2	113.8	106.4	98.7	N/A	24.3	42.4	32.1	60.2	N/A	98.1	39.8	56.6	63.5	106.1
Potential Exposed Perforations	80.3	0	19.7	20.2	88.8	82.4	73.7	N/A	2.3	22.4	12.1	35.2	N/A	73.1	14.8	36.6	39.5	82.1
Actual Exposed Perforations	57.5	0	5.7	14.7	13.7	14.7	1	N/A	2.3	12.3	12.1	13	N/A	39.9	7.2	12.2	9.7	67.2
<b>September, 2011</b>																		
Date	N/A	N/A	N/A	9/19	N/A	9/19	9/19	N/A	N/A	N/A	N/A	N/A	N/A	9/19	9/19	9/19	9/19	9/19
Depth To Fluid (ft)	N/A	N/A	N/A	38.2	N/A	45.9	19.8	N/A	N/A	N/A	N/A	N/A	N/A	38.7	31.7	28.7	36.3	60.5
Measured Depth To Bottom (ft)	N/A	N/A	N/A	45.1	N/A	106	98.1	N/A	N/A	N/A	N/A	N/A	N/A	74.2	41.5	56.6	64.1	101.5
Potential Exposed Perforations	N/A	N/A	N/A	20.1	N/A	82	73.1	N/A	N/A	N/A	N/A	N/A	N/A	49.2	16.5	36.6	40.1	77.5
Actual Exposed Perforations	N/A	N/A	N/A	13.2	N/A	21.9	0	N/A	N/A	N/A	N/A	N/A	N/A	13.7	6.7	8.7	12.3	36.5
<b>October, 2011</b>																		
Date	N/A	N/A	N/A	N/A	N/A	10/18	10/18	N/A	N/A	N/A	N/A	N/A	N/A	10/18	10/18	10/18	10/18	10/18
Depth To Fluid (ft)	N/A	N/A	N/A	N/A	N/A	36.5	32.2	N/A	N/A	N/A	N/A	N/A	N/A	61.7	23.7	50	54.8	90.4
Measured Depth To Bottom (ft)	N/A	N/A	N/A	N/A	N/A	106	97.8	N/A	N/A	N/A	N/A	N/A	N/A	74	41.4	56.6	64	101.5
Potential Exposed Perforations	N/A	N/A	N/A	N/A	N/A	82	72.8	N/A	N/A	N/A	N/A	N/A	N/A	49	16.4	36.6	40	77.5
Actual Exposed Perforations	N/A	N/A	N/A	N/A	N/A	12.5	7.2	N/A	N/A	N/A	N/A	N/A	N/A	36.7	0	30	30.8	66.4

Well ID	PW-362B	PW-363	PW-364	PW-366	PW-367	PW-368	PW-369	PW-43R(2)	PW-56R(2)	PW-57R	PW-61R(2)	PW-62R(2)	PW-A1R(2)	Q1R	S1R	T1R	U1R	W-10
Total Constructed Casing Length (ft)	79	82	82	39	53	47	38	103	103	85	67	91	61.5	64	125	123	113	100
Total Constructed Perforated Pipe Length (ft)	53	58	58	25	39	33	24	84	84	67	42	73	38	30	100	100	88	85
<b>August, 2011</b>																		
Date	8/9	8/9	8/9	8/9	8/9	8/9	8/9	8/5	8/9	8/9	N/A	8/9	N/A	8/5	8/9	8/9	8/9	8/5
Depth To Fluid (ft)	54.6	40.7	38.2	19.3	36.8	21.4	27	57.9	55.6	21.5	N/A	40.1	N/A	45.7	79.8	54.3	56.2	22.7
Measured Depth To Bottom (ft)	77	79.8	79	38.8	51.5	48.8	38.8	81	87.5	76.1	N/A	78.5	N/A	49.5	110.7	118.5	108	38.7
Potential Exposed Perforations	51	55.8	55	24.8	37.5	34.8	24.8	62	68.5	58.1	N/A	60.5	N/A	15.5	85.7	95.5	83	23.7
Actual Exposed Perforations	28.6	16.7	14.2	5.3	22.8	7.4	13	38.9	36.6	3.5	N/A	22.1	N/A	11.7	54.8	31.3	31.2	7.7
<b>September, 2011</b>																		
Date	9/19	9/19	9/19	N/A	9/19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9/19
Depth To Fluid (ft)	40.4	42.6	45.2	N/A	31.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	74.1
Measured Depth To Bottom (ft)	76.1	79.6	76.3	N/A	51.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	107.5
Potential Exposed Perforations	50.1	55.6	52.3	N/A	37.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	82.5
Actual Exposed Perforations	14.4	18.6	21.2	N/A	17.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	49.1
<b>October, 2011</b>																		
Date	10/18	10/18	10/18	N/A	10/18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	10/18
Depth To Fluid (ft)	44.2	41.6	38.8	N/A	23.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	91.1
Measured Depth To Bottom (ft)	75.9	79.3	76.1	N/A	51.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	107.4
Potential Exposed Perforations	49.9	55.3	52.1	N/A	37.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	82.4
Actual Exposed Perforations	18.2	17.6	14.8	N/A	9.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	66.1

Table 2. Liquid Levels and Percent Perforations Exposed

Well ID	W-11	W-12R	W-13R	W1R	W-1R	W1R(2)	W-2R(M)	W-3	W-31R	W-32R	W-33	W-34	W-35	W-36	W-37	W-38	W-39	W-4
Total Constructed Casing Length (ft)	51	44	44	89	47	82	85	33	92	54	56	81	68	70	83	83	85	37
Total Constructed Perforated Pipe Length (ft)	94	21	21	64	20	48	65	12	72	29	34	43	46	35	62	57	62	16
<b>August, 2011</b>																		
Date	8/5	8/5	8/5	N/A	8/5	8/9	8/5	8/5	8/5	8/5	8/5	8/5	8/5	8/5	8/5	8/5	8/5	8/5
Depth To Fluid (ft)	28.5	38.4	32.2	N/A	21.5	46.6	35.3	31	44.5	43.8	29.1	50	46.1	45.2	41.4	40.5	57.2	29.2
Measured Depth To Bottom (ft)	38.8	41.1	36.9	N/A	41.5	57.8	80.5	32.5	91.5	52.6	53.7	73.5	46.1	68.2	67.9	56.7	71.3	36.8
Potential Exposed Perforations	81.8	18.1	13.9	N/A	14.5	23.8	60.5	11.5	71.5	27.6	31.7	35.5	24.1	33.2	46.9	30.7	48.3	15.8
Actual Exposed Perforations	71.5	15.4	9.2	N/A	0	12.6	15.3	10	24.5	18.8	7.1	12	24.1	10.2	20.4	14.5	34.2	8.2
<b>September, 2011</b>																		
Date	N/A	N/A	N/A	9/19	N/A	9/19	N/A	N/A	9/19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Depth To Fluid (ft)	N/A	N/A	N/A	20.5	N/A	40.3	N/A	N/A	39.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Measured Depth To Bottom (ft)	N/A	N/A	N/A	41.4	N/A	58	N/A	N/A	91	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Potential Exposed Perforations	N/A	N/A	N/A	16.4	N/A	24	N/A	N/A	71	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Actual Exposed Perforations	N/A	N/A	N/A	0	N/A	6.3	N/A	N/A	19.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>October, 2011</b>																		
Date	N/A	N/A	N/A	10/18	N/A	10/18	N/A	N/A	10/18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Depth To Fluid (ft)	N/A	N/A	N/A	20.5	N/A	39.8	N/A	N/A	38.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Measured Depth To Bottom (ft)	N/A	N/A	N/A	41.4	N/A	57.8	N/A	N/A	90.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Potential Exposed Perforations	N/A	N/A	N/A	16.4	N/A	23.8	N/A	N/A	70.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Actual Exposed Perforations	N/A	N/A	N/A	0	N/A	5.8	N/A	N/A	18.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Well ID	W-42R(2)	W-5	W-56R(3)	W-58R	W-59	W-60	W-68	W-69R	W-7	W-8	W-9	D1R	PW-104R	PW-102R	E1R	PW-175R	PW-167R2	PW-131R2
Total Constructed Casing Length (ft)	100	35	89	83	108	109	79	58	38	34	40	40	44	44	35	54	42	70
Total Constructed Perforated Pipe Length (ft)	75	13	64	58	71	79	44	33	14	15	18	23	42	27	18	37	25	48
<b>August, 2011</b>																		
Date	8/5	8/5	8/9	8/5	8/5	8/5	8/5	8/5	8/5	8/5	8/5	8/9	8/9	8/5	8/9	8/9	8/5	8/9
Depth To Fluid (ft)	78	31.8	43.3	63.5	70.8	82	48.3	39.3	30.8	24	33.9	31.9	17.7	23.6	29.9	33.4	36.7	32.2
Measured Depth To Bottom (ft)	78	34.6	76.7	81.4	101	97.6	59.4	46	31	32.6	37.6	34.2	44.7	48.7	35.1	55.6	39.1	61.1
Potential Exposed Perforations	53	12.6	51.7	56.4	64	67.6	24.4	21	7	13.6	15.6	17.2	42.7	31.7	18.1	38.6	22.1	39.1
Actual Exposed Perforations	53	9.8	18.3	38.5	33.8	52	13.3	14.3	6.8	5	11.9	14.9	15.7	6.6	12.9	16.4	19.7	10.2
<b>September, 2011</b>																		
Date	N/A	N/A	9/19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9/19	N/A	N/A	9/19	N/A	9/19	9/19
Depth To Fluid (ft)	N/A	N/A	33.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	31.9	N/A	N/A	18.1	N/A	32.1	45.9
Measured Depth To Bottom (ft)	N/A	N/A	82.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	34.4	N/A	N/A	35	N/A	39.1	62.2
Potential Exposed Perforations	N/A	N/A	57.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	17.4	N/A	N/A	18	N/A	22.1	40.2
Actual Exposed Perforations	N/A	N/A	8.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14.9	N/A	N/A	1.1	N/A	15.1	23.9
<b>October, 2011</b>																		
Date	N/A	N/A	10/18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	10/18	N/A	N/A	10/18	N/A	10/18	10/18
Depth To Fluid (ft)	N/A	N/A	39.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	31.9	N/A	N/A	29.6	N/A	27.6	31.1
Measured Depth To Bottom (ft)	N/A	N/A	82.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	34.4	N/A	N/A	34.9	N/A	39	62.1
Potential Exposed Perforations	N/A	N/A	57.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	17.4	N/A	N/A	17.9	N/A	22	40.1
Actual Exposed Perforations	N/A	N/A	14.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14.9	N/A	N/A	12.6	N/A	10.6	9.1

Table 2. Liquid Levels and Percent Perforations Exposed

Well ID	PW-123R	B2R2	PW418	PW419	PW420	PW417	PW-114R	PW-118R2	PW421
Total Constructed Casing Length (ft)	48	74	39	43	62	60	99	99	89
Total Constructed Perforated Pipe Length (ft)	31	52	24	23	42	40	84	0	74
<b>August, 2011</b>									
Date	8/9	8/9	8/5	8/5	8/5	8/5	8/5	8/5	8/5
Depth To Fluid (ft)	34.3	36.2	28.9	38.7	41.5	37.5	87.8	96.1	93
Measured Depth To Bottom (ft)	44.6	67.1	44.6	48.4	69	64.2	102.8	103.2	93.3
Potential Exposed Perforations	27.6	45.1	29.6	28.4	49	44.2	87.8	4.2	78.3
Actual Exposed Perforations	17.3	14.2	13.9	18.7	21.5	17.5	72.8	0	78.3
<b>September, 2011</b>									
Date	N/A	9/19	N/A	N/A	N/A	9/19	N/A	N/A	N/A
Depth To Fluid (ft)	N/A	39.4	N/A	N/A	N/A	44.8	N/A	N/A	N/A
Measured Depth To Bottom (ft)	N/A	67	N/A	N/A	N/A	58.7	N/A	N/A	N/A
Potential Exposed Perforations	N/A	45	N/A	N/A	N/A	38.7	N/A	N/A	N/A
Actual Exposed Perforations	N/A	17.4	N/A	N/A	N/A	24.8	N/A	N/A	N/A
<b>October, 2011</b>									
Date	N/A	10/18	N/A	N/A	N/A	10/18	N/A	N/A	N/A
Depth To Fluid (ft)	N/A	24.5	N/A	N/A	N/A	36.6	N/A	N/A	N/A
Measured Depth To Bottom (ft)	N/A	67	N/A	N/A	N/A	58.5	N/A	N/A	N/A
Potential Exposed Perforations	N/A	45	N/A	N/A	N/A	38.5	N/A	N/A	N/A
Actual Exposed Perforations	N/A	2.5	N/A	N/A	N/A	16.6	N/A	N/A	N/A

Based upon discussions during the Team Countywide meeting on April 28, 2010, the table was revised to reflect potential exposed perforations (feet of constructed perforations above measured depth to bottom) and actual exposed perforations (potential exposed perforations minus measured thickness of liquid).

Table 3: West Slope Piezometer Readings

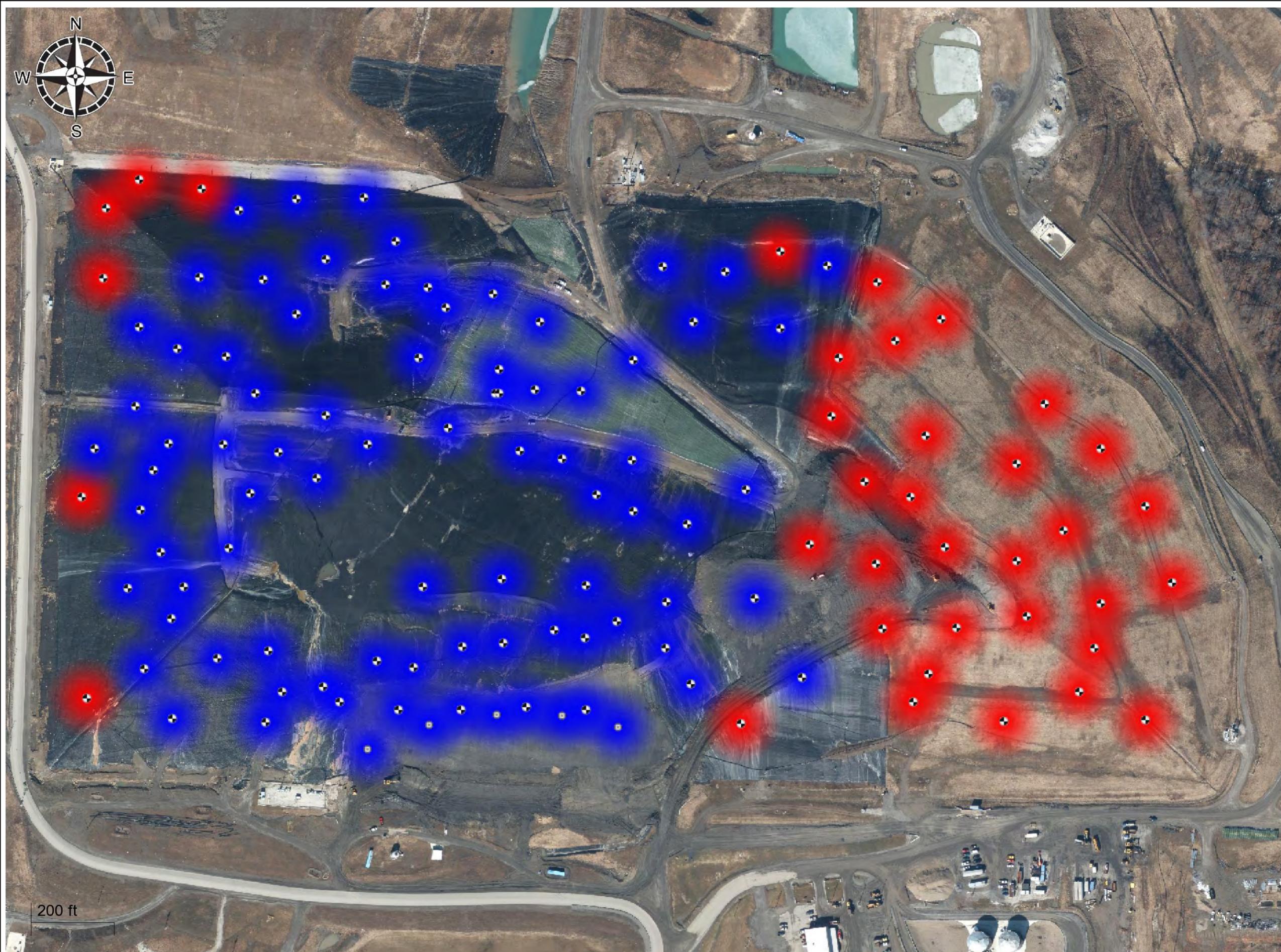
Installation Information	Piezometer I.D.	WBPZ-1 upper		WBPZ-1 lower		WBPZ-2 upper		WBPZ-3 upper		WBPZ-3 lower	
	Ground Elevation	1124.3		1124.3		1135.8		1145.7		1145.7	
	Depth to Transducer	74.5		102.0		85.5		59.5		84.5	
	Elevation of Transducer	1049.8		1022.3		1050.3		1086.2		1061.2	
		Total Head (ft)	Pore Pressure (ft H <sub>2</sub> O)	Total Head (ft)	Pore Pressure (ft H <sub>2</sub> O)	Total Head (ft)	Pore Pressure (ft H <sub>2</sub> O)	Total Head (ft)	Pore Pressure (ft H <sub>2</sub> O)	Total Head (ft)	Pore Pressure (ft H <sub>2</sub> O)
"Apparent" Piezometric Surface (see Note 1)	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
	4/8/2010	1050.1	0.33	< 1022.3	-0.35	< 1050.3	-0.14	< 1086.2	-0.35	< 1061.2	-0.39
	5/6/2010	< 1049.8	-0.15	< 1022.3	-0.80	< 1050.3	-0.62	< 1086.2	-0.81	< 1061.2	-0.75
	6/2/2010	1049.9	0.07	< 1022.3	-0.54	< 1050.3	-0.35	< 1086.2	-0.63	< 1061.2	-0.60
	7/2/2010	< 1049.8	-0.05	< 1022.3	-0.77	< 1050.3	-0.57	< 1086.2	-0.73	< 1061.2	-0.67
	8/2/2010	< 1049.8	-0.04	< 1022.3	-0.75	< 1050.3	-0.57	< 1086.2	-0.71	< 1061.2	-0.65
	9/2/2010	< 1049.8	-0.04	< 1022.3	-0.75	< 1050.3	-0.57	< 1086.2	-0.72	< 1061.2	-0.67
	10/1/2010	< 1049.8	-0.13	< 1022.3	-0.82	< 1050.3	-0.67	< 1086.2	-0.78	< 1061.2	-0.67
	11/1/2010	< 1049.8	-0.16	< 1022.3	-0.9	< 1050.3	-0.69	< 1086.2	-0.82	< 1061.2	-0.7
	12/2/2010	< 1049.8	-0.24	< 1022.3	-0.90	< 1050.3	-0.82	< 1086.2	-0.94	< 1061.2	-0.74
	1/1/2011	1049.9	0.08	< 1022.3	-0.65	< 1050.3	-0.49	< 1086.2	-0.61	< 1061.2	-0.60
	2/3/2011	< 1049.8	-0.38	< 1022.3	-1.02	< 1050.3	-0.96	< 1086.2	-1.09	< 1061.2	-0.08
3/1/2011	< 1049.8	-0.45	< 1022.3	-1.04	< 1050.3	-1.01	< 1086.2	-1.13	< 1061.2	-0.81	
4/4/2011	1049.9	0.14	< 1022.3	-0.056	< 1050.3	-0.42	< 1086.2	-0.54	< 1061.2	-0.54	
5/2/2011	< 1049.8	-0.07	< 1022.3	-0.72	< 1050.3	-0.65	< 1086.2	-0.75	< 1061.2	-0.59	
6/1/2011	1049.8	0.03	< 1022.3	-0.52	1051.14	0.84	< 1086.2	-0.66	< 1061.2	-0.52	
7/1/2011	< 1049.8	-0.49	< 1022.3	-1.14	< 1050.3	-1.09	< 1086.2	-1.16	< 1061.2	-1.01	
8/2/2011	< 1049.8	-0.22	< 1022.3	-0.55	< 1050.3	-0.51	< 1086.2	-0.70	< 1061.2	-0.57	
9/2/2011	< 1049.8	-0.12	< 1022.3	-0.76	< 1050.3	-0.72	< 1086.2	-0.78	< 1061.2	-0.62	
10/3/2011	< 1049.8	-0.15	< 1022.3	-0.79	< 1050.3	-0.76	< 1086.2	-0.81	< 1061.2	-0.64	
11/1/2011	< 1049.8	-0.26	< 1022.3	-0.88	< 1050.3	-0.9	< 1086.2	-0.94	< 1061.2	-0.70	
	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.

## **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 Available

**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.)*

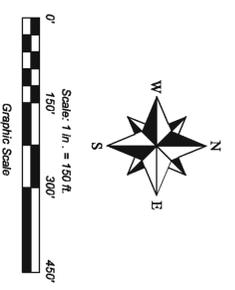
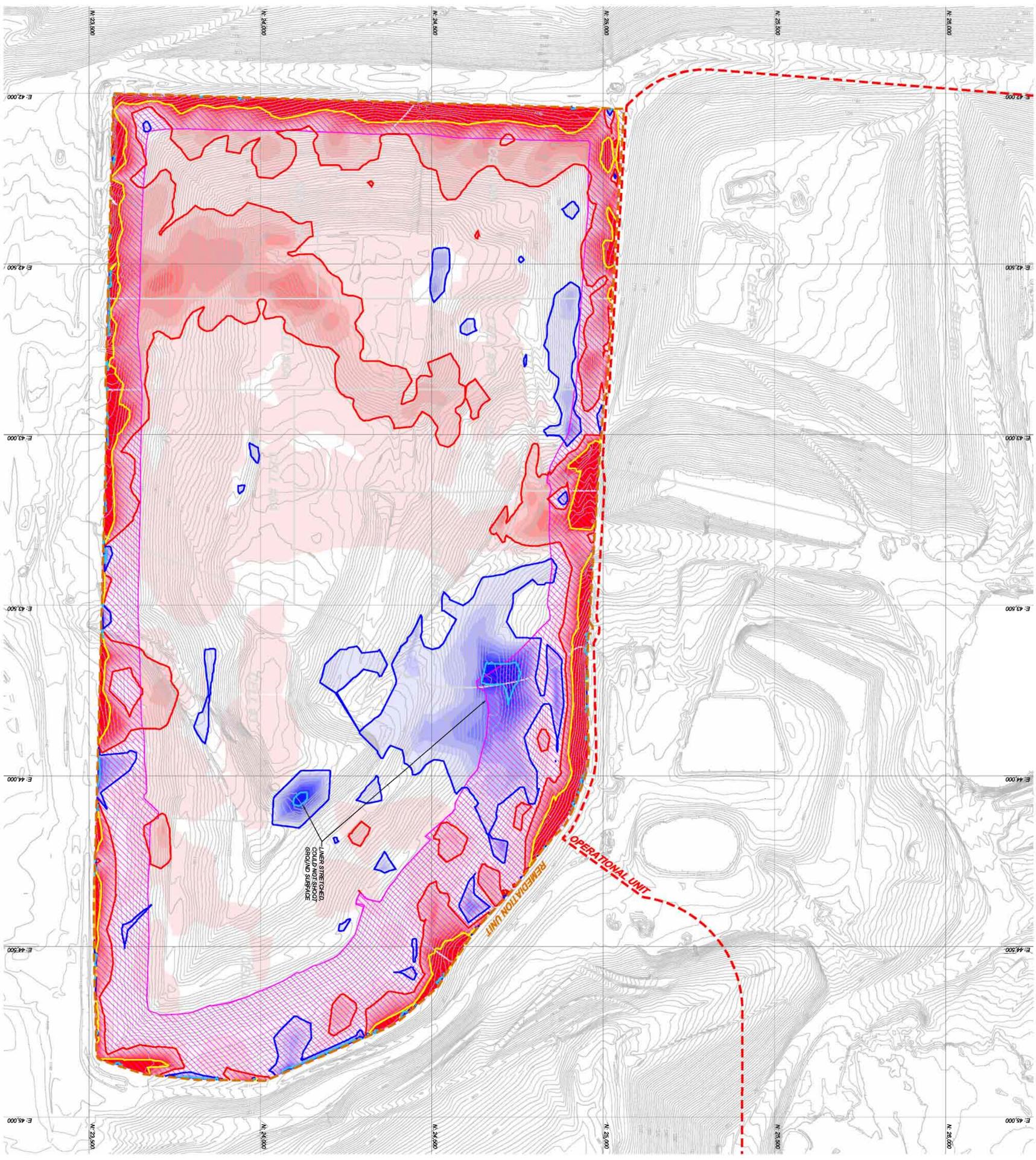
A radius influence of 100 feet is assumed at each device.

Reporting Period: October, 2011

Map Generated On: 11/07/2011



200 ft



- LEGEND:**
- 1:50 — EXISTING CONTOUR (AERIAL MAPPING 3001/11), CTR INT. = 2'  
(SHOWN FOR REFERENCE ONLY)
  - 10% RATE OF SETTLEMENT LIMIT
  - 2% RATE OF SETTLEMENT LIMIT
  - 2% RATE OF RISE IN ELEVATION
  - 10% RATE OF RISE IN ELEVATION
  - 50% OF WASTE DEPTH

- ANNUALIZED RATE (%) OF SETTLEMENT**
- COLOR LEGEND**
- Greater than 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%
  - 1.0% TO -0.0%
  - 2.0% TO -3.0%
  - 3.0% TO -4.0%
  - 4.0% TO -5.0%
  - 5.0% TO -6.0%
  - 6.0% TO -7.0%
  - 7.0% TO -8.0%
  - 8.0% TO -9.0%
  - 9.0% TO -10.0%
  - Greater than -10.0%

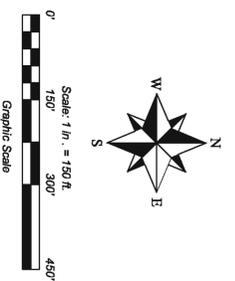
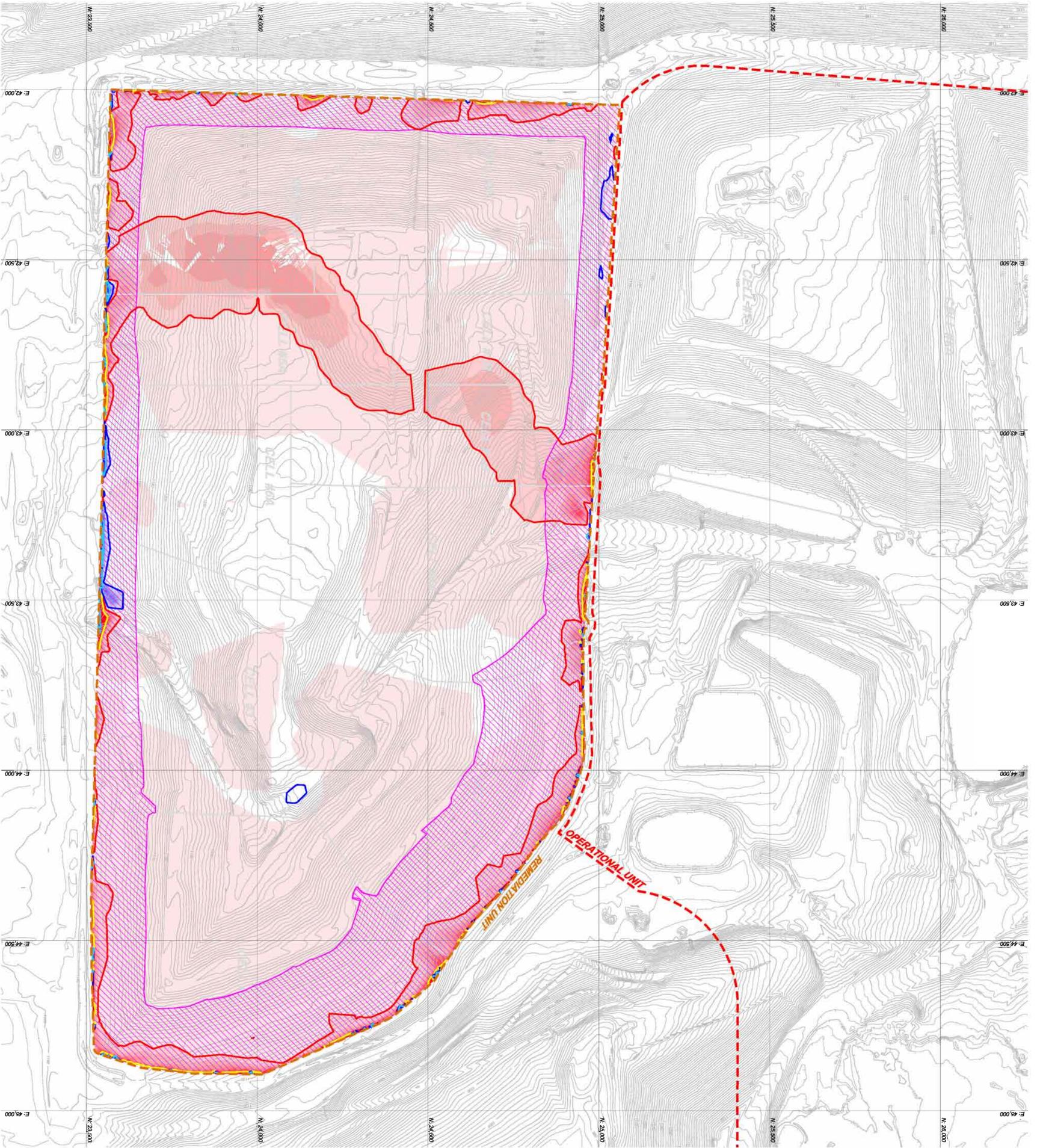
ISSUE DATE	11/02/11	SCALE	1" = 150'	CTR INT.	2'	
SURVEYED BY	MD/AB	CHECKED BY	CCV			
DRAWN BY	BWS	APPROVED BY	CRB			
REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY

**Diversified Engineering Inc.**  
CONSULTING ENGINEERS & SURVEYORS  
225 FAIR AVENUE, N.E.  
NEW PHILADELPHIA, OH 44663  
Phone: (330) 364-1831  
Fax: (330) 364-4321  
e-mail: info@div-eng.com

**COUNTYWIDE RDF**

PROJECT: **88 Ac. REMEDIATION UNIT**

SHEET TITLE: **INCREMENTAL SETTLEMENT MAP (OCTOBER 2011)**



- LEGEND:**
- 1:50' — EXISTING CONTOUR (AERIAL MAPPING 30/1/11), CTR INT. = 2' (SHOWN FOR REFERENCE ONLY)
  - 2% RATE OF SETTLEMENT LIMIT
  - >10% RATE OF SETTLEMENT LIMIT
  - >10% RATE OF RISE IN ELEVATION
  - >10% RATE OF RISE IN ELEVATION
  - ≤ 80ft OF WASTE DEPTH

- AVERAGE ANNUALIZED MONTHLY RATE (%) OF SETTLEMENT COLOR LEGEND**
- Greater than 10.0%
  - 8.0% TO 10.0%
  - 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%
  - 1.0% TO 0.0%
  - 2.0% TO -1.0%
  - 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 MONTHLY SETTLEMENT FOR THE TIME PERIOD FROM JUNE 2011 THRU OCTOBER 2011.

**2A**

**COUNTYWIDE RDF**

PROJECT: **88 Ac. REMEDIATION UNIT**

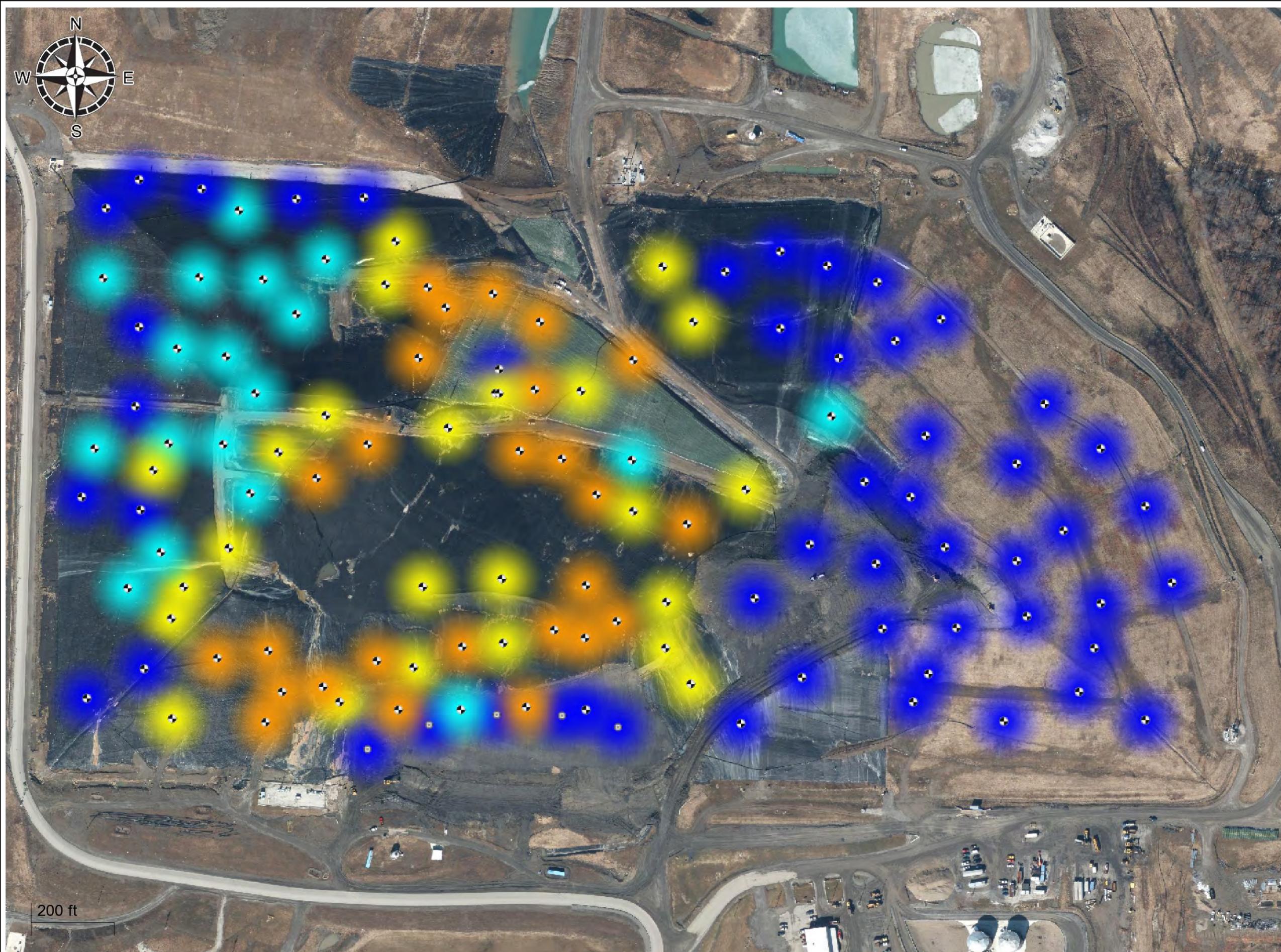
SHEET TITLE: **AVERAGE ANNUALIZED MONTHLY SETTLEMENT (JUNE 2011 - OCTOBER 2011)**

**Diversified Engineering Inc.**  
CONSULTING ENGINEERS & SURVEYORS

225 FAIR AVENUE, N.E.  
NEW PHILADELPHIA, OH 44663

Phone: (930) 364-5831  
Fax: (330) 384-4521  
e-mail: info@div-eng.com

ISSUE DATE	11/02/11	SCALE	1" = 150'	CTR INT.	2'	
SURVEYED BY	MD/AB	CHECKED BY	CCV			
DRAWN BY	BWS	APPROVED BY	CRB			
REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY



**Figure 3**  
**Average Wellhead**  
**Temperature**  
 Countywide Recycling  
 and Disposal Facility  
 3619 Gracemont St. S.W.  
 East Sparta, Ohio

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

**Color Legend (deg F)**

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

**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.

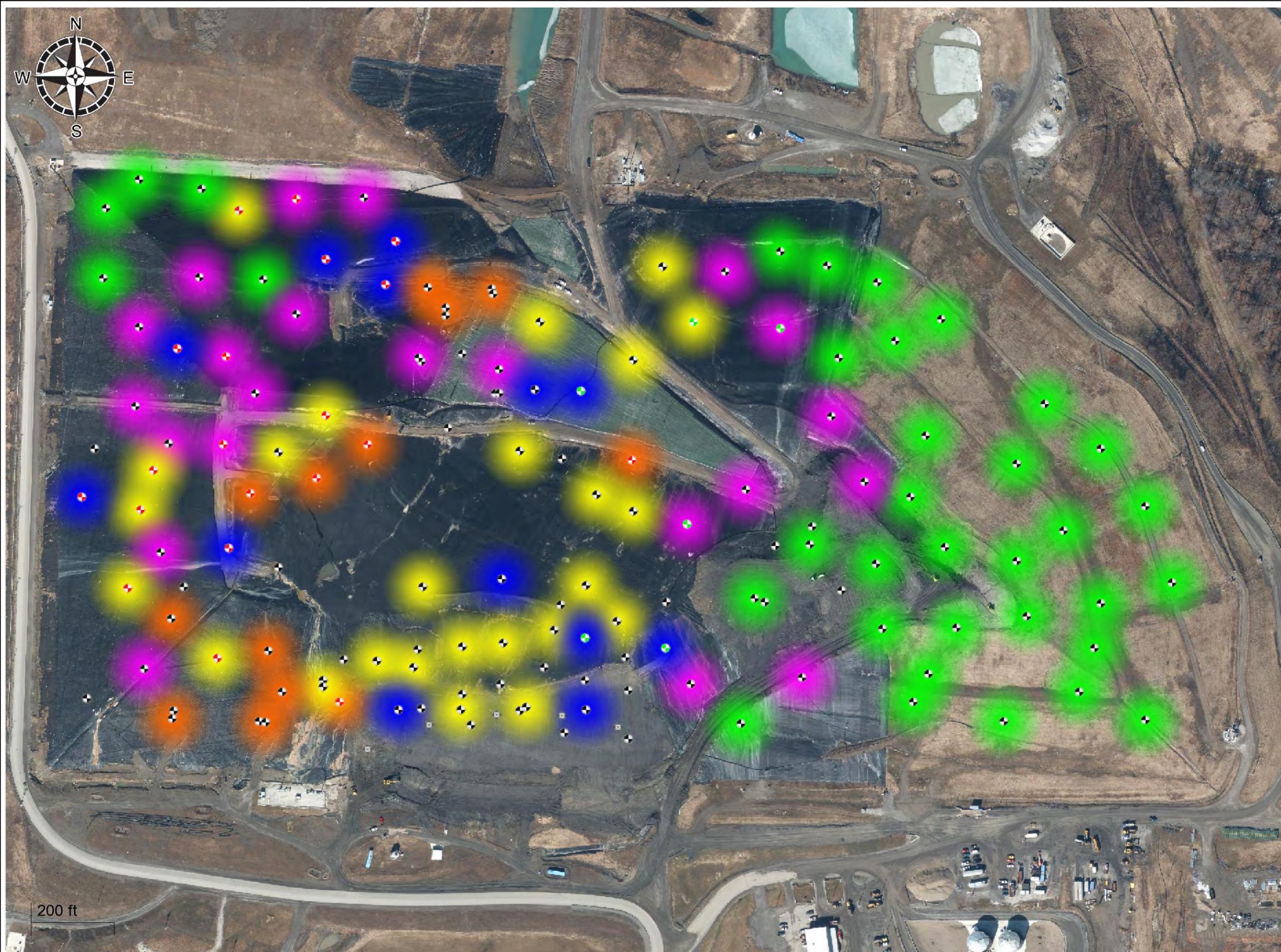
Reporting Period: October, 2011

Map Generated On: 11/07/2011



SANBORN HEAD  
 LANDFILL GAS MANAGEMENT SUITE™

200 ft



**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 (deg F)**

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

**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: August, 2011  
 Map Generated On: 11/07/2011

**REPUBLIC SERVICES**  
**SANBORN HEAD**  
 LANDFILL GAS MANAGEMENT SUITE™

200 ft

Figure 5. Aerial Photograph



Composite Image by  
Predictive Service LLC. 216.378.3500  
Data Collected 5/11/2011

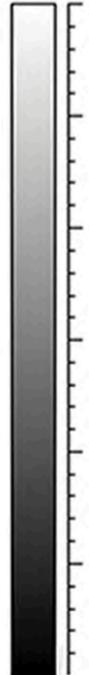
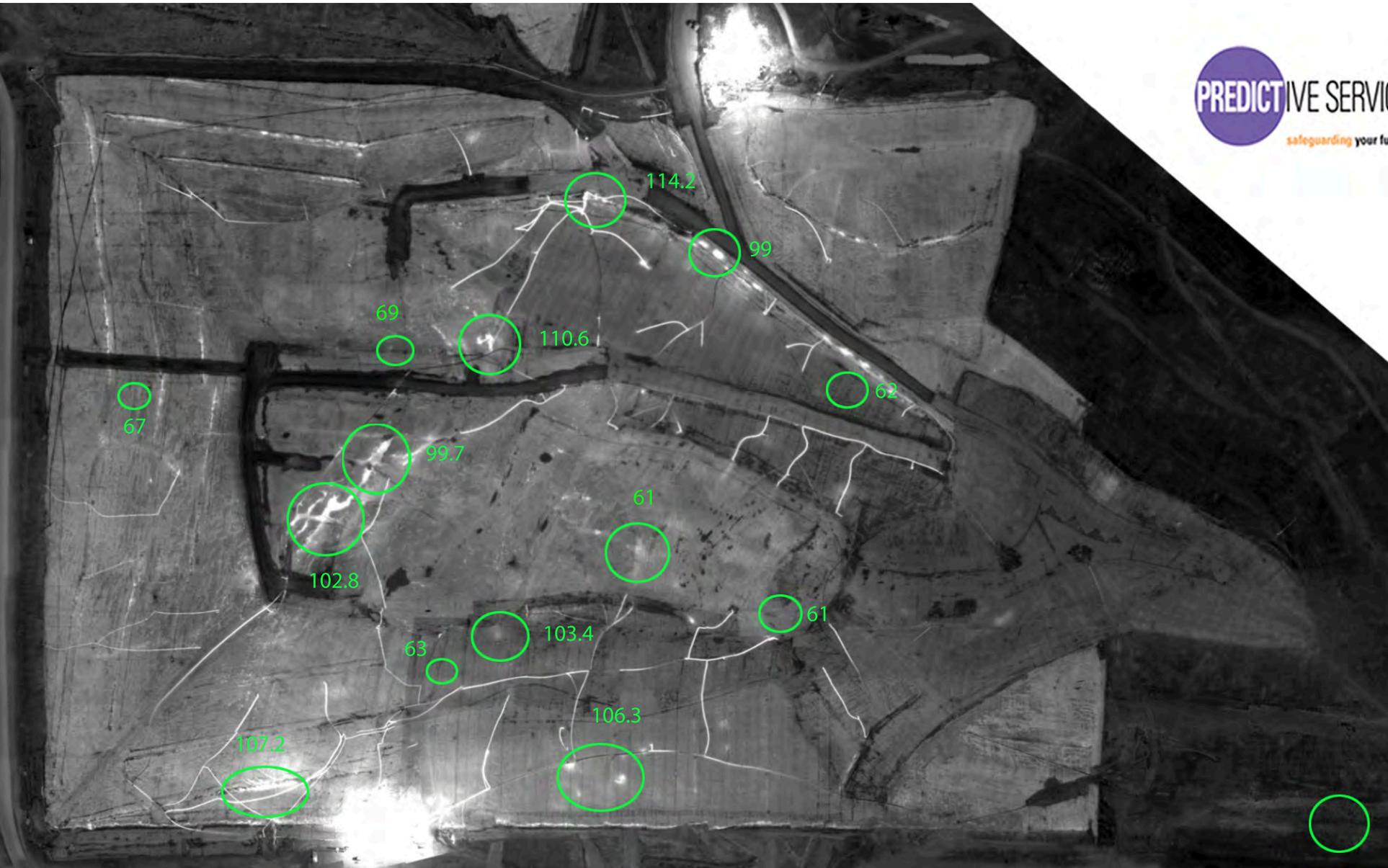
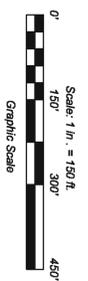
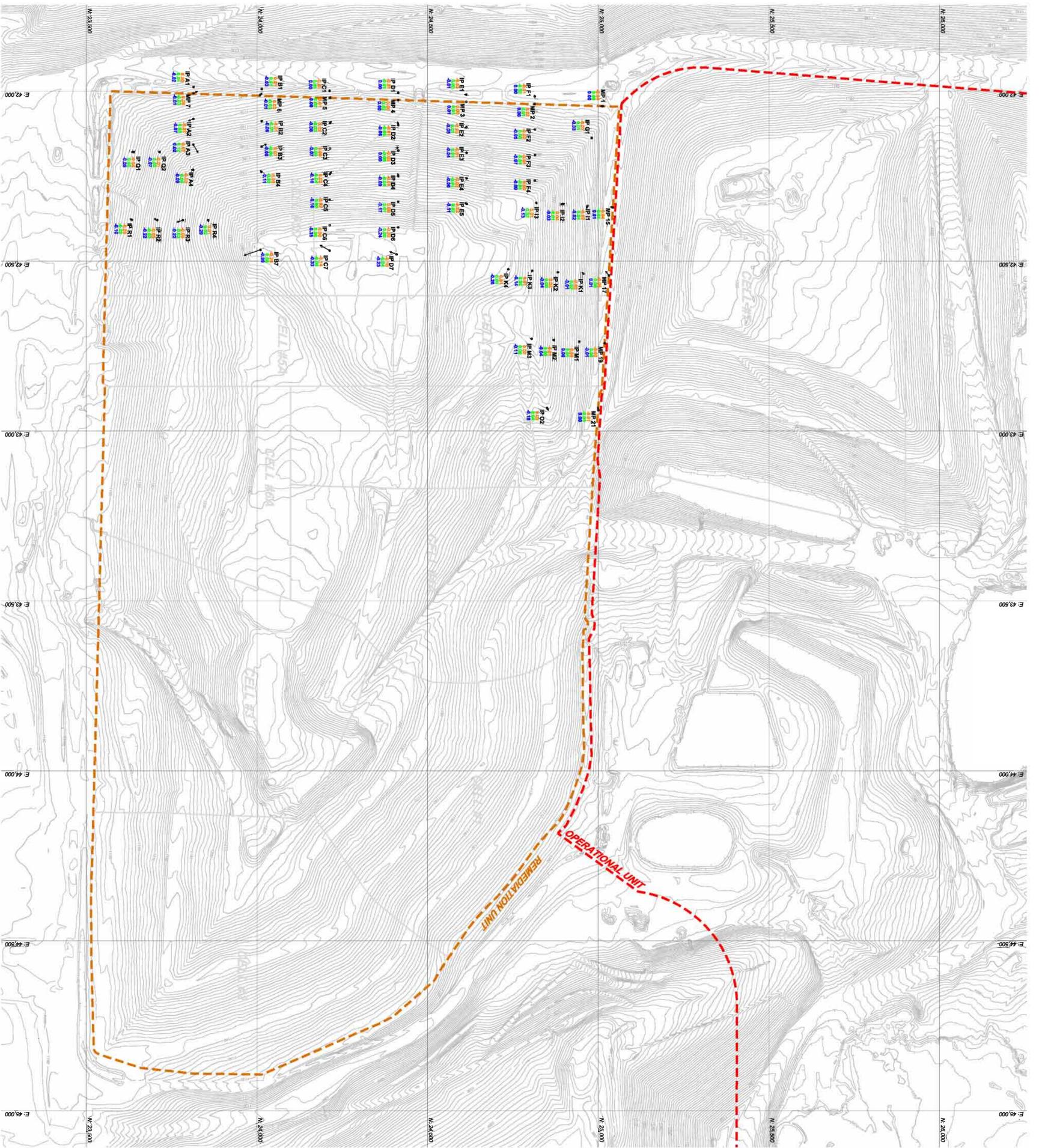


Figure 5a. Detailed Aerial Photograph



**PREDICTIVE SERVICE**  
safeguarding your future®





**LEGEND:**  
 - - - - - 1:20  
 EXISTING CONTOUR (AERIAL MAPPING 3/01/11), CTR INT. = 2'  
 (SHOWN FOR REFERENCE ONLY)

**VECTOR LABELING CONVENTION:**

IP S2  
 CHANGE IN NORTHING (N)  
 CHANGE IN EASTING (E)  
 CHANGE IN ELEVATION (M)

- 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 9/20/11 & 11/01/11.

ISSUE DATE	11/07/11	SCALE	1" = 150'	CTR INT.	2'	
SURVEYED BY	MS/AB	CHECKED BY	CCV			
DRAWN BY	BWS	APPROVED BY	CRB			
REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY



**Attachment 4**  
**Pin and Plate Evaluation**

November 7, 2011

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

RE: Evaluation of Pin Movements  
Countywide Slopes  
October Period (9/20/11 – 11/01/11)

Dear Mike,

We have reviewed the pin survey data from the West and North Slopes at Countywide. The surveys during the October monitoring period (9/20/11 – 11/01/11) by Diversified Engineering, Inc. (DEI) were performed using optical survey methods for all pins (as of 10/5/2010).

The survey data has been presented 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, two vector plot maps that depict the horizontal pin movements for the monitoring period and since the onset of monitoring (October 6, 2009) are attached. Two tables which show the horizontal rate of movement for the monitoring period and elevation motion since the original monitoring survey (October 6, 2009) are attached after the aforementioned figures. Please note the at the reference elevation for pin IP-E1, IP-F1, MP-4 and MP-5 have been adjusted, as per the agreement with OH EPA. The baseline elevation of IP-F1 was re-established at the beginning of May 2010, MP-4 and MP-5 were re-established on November 30, 2010, IP-E1 was re-established on February 22, 2011 and IP-C1 was re-established on May 2, 2011. This is noted on the vector plot depicting movements since the beginning of the monitoring and in the Change of Elevation table. MP-9 through MP-13 were physically re-established on June 14, 2011 following damage during the winter and or removal during the South Slope Excavation. These points (MP-9 through MP-13) will be monitored in the future using the 6/14/2011 survey datum.

A review of the data for this monitoring period shows:

- No pins exceeded the trigger rate of 0.05 ft per day of horizontal movement during the monitoring period.
- No pins exceeded the vertical trigger of more than 0.05 ft of upward motion since inception of monitoring for the readings.

In accordance with the agreement with OH EPA no additional profile or pin plots are included when no triggers are exceeded during the monitoring period.

Based on the review of the data, no signs of instability are indicated. I hope this information is helpful to you. Please call if there are any questions.

Sincerely,

A handwritten signature in blue ink that reads "Peter J. Carey". The signature is written in a cursive style with a large initial "P" and a long, sweeping underline.

Peter J. Carey, PE  
President

## HORIZONTAL RATE OF MOVEMENT (FT/DAY)

CALCULATED BASED ON PREVIOUS READING AT EACH POINT

ID	10/4/11	10/18/11	11/1/11
IP G1	0.0010	0.00071	0.00071
IP I1	0.0014	0.0000	0.0020
IP I2	0.0023	0.0010	0.00071
IP I3	0.0020	0.00071	0.0010
IP K1	0.0010	0.0016	0.00071
IP K2	0.0016	0.0029	0.0000
IP K3	0.00071	0.0010	0.0010
IP K4	0.00071	0.0020	0.0026
IP M1	0.0000	0.00071	0.0014
IP M2	0.0010	0.0014	0.00071
IP M3	0.0016	0.0010	0.0021
IP O1			
IP O2	0.0000	0.0014	0.0020
MP 13			
MP 15	0.0014	0.0000	0.0016
MP 17	0.0040	0.0000	0.0016
MP 19	0.0020	0.00071	0.00071
MP 21	0.0026	0.0023	0.00071
IP R1	0.00071	0.00071	0.0016
IP R2	0.0023	0.00071	0.0010
IP R3	0.0014	0.00071	0.0061
IP R4	0.0014	0.00071	0.0020
IP S1			
IP S2			
IP S3			
IP S4			
IP S5			
IP T1			
IP T2			
IP T3			
IP T4			
IP T5			
IP T6			
IP U1			
IP U2			
IP U3			
IP U4			
IP U5			
IP U6			
IP V1			
IP V2			
IP V3			
IP V4			
IP V5			
IP V6			
IP W1			
IP W2			
IP W3			
IP W4			
IP W5			
IP W6			

## HORIZONTAL RATE OF MOVEMENT (FT/DAY)

CALCULATED BASED ON PREVIOUS READING AT EACH POINT

ID	10/4/11	10/18/11	11/1/11
MP 10			
MP 11			
MP 12			
IP A1	0.00071	0.00071	0.00071
IP A2	0.0054	0.0014	0.0014
IP A3	0.011	0.0029	0.0032
IP A4	0.0000	0.0026	0.0014
IP B1	0.0000	0.0010	0.0014
IP B2	0.0010	0.0016	0.00071
IP B3	0.00071	0.0016	0.0036
IP B4	0.0010	0.00071	0.0016
IP B5	0.0000		
IP B6	0.0045	0.0086	0.0067
IP B7*	0.002	0.01	0.006
IP C1	0.0000	0.0000	0.0010
IP C2	0.0010	0.0016	0.0030
IP C3	0.0010	0.0000	0.0010
IP C4	0.0014	0.00071	0.0016
IP C5	0.0014	0.0045	0.0029
IP C6	0.0010	0.0020	0.0010
IP C7*	0.0000	0.002	0.01
IP D1	0.00071	0.0000	0.00071
IP D2	0.00071	0.0014	0.0016
IP D3	0.00071	0.0023	0.0016
IP D4	0.0000	0.0000	0.0029
IP D5	0.00071	0.00071	0.00071
IP D6	0.0010	0.0014	0.0010
IP D7*	0.002	0.0007	0.007
IP E1	0.0014	0.00071	0.0014
IP E2	0.00071	0.0010	0.0021
IP E3	0.0016	0.00071	0.0020
IP E4	0.0020	0.0010	0.0016
IP E5	0.0000	0.0020	0.00071
IP F1	0.0014	0.0000	0.00071
IP F2	0.00071	0.00071	0.0010
IP F3	0.0014	0.0016	0.00071
IP F4	0.00071	0.00071	0.00071
IP Q1	0.0000	0.0023	0.0010
IP Q2	0.00071	0.0010	0.0010
MP 1	0.0023	0.0016	0.0026
MP 2	0.0014	0.0010	0.00071
MP 3	0.0000	0.0000	0.0000
MP 4	0.0021	0.00071	0.0000
MP 5	0.0026	0.0016	0.00071
MP 6	0.0026	0.0010	0.00071
MP 7	0.0042	0.0000	0.00071
MP 8			
MP 9			
MP' 10	0.0026	0.00071	0.0016
MP' 11	0.0052	0.0016	0.0016
MP' 12	0.0021	0.0016	0.0026
MP' 13	0.0036	0.0016	0.00071
MP' 9	0.0051	0.0014	0.0016

Notes:

1. Data compiled by PJ Carey & Associates, PC.
2. Survey provided by DEI beginning on October 6, 2009.
3. Highlighted regions indicate pins which the horizontal rate of movement exceed the trigger value of 0.05 ft/day.
4. All pins are surveyed using optical methods except pins B7, C7, & D7, which were surveyed using GPS up until October 5, 2010. Since October 5, 2010 all pins are surveyed using optical methods.
5. Values reported are limited to their respective significant digit.
6. MP 9 through 13 were re-established June 14, 2011. The re-established points are denoted with a "'".

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

ID	10/4/11	10/18/11	11/1/11
IP G1	-1.37	-1.40	-1.41
IP I1	-0.35	-0.37	-0.36
IP I2	-0.50	-0.54	-0.54
IP I3	-2.01	-2.06	-2.13
IP K1	-0.09	-0.11	-0.10
IP K2	-0.65	-0.67	-0.68
IP K3	-2.48	-2.56	-2.61
IP K4	-4.89	-4.99	-5.10
IP M1	-0.14	-0.14	-0.15
IP M2	-0.98	-1.00	-1.03
IP M3	-2.51	-2.56	-2.63
IP O1			
IP O2	-2.66	-2.73	-2.80
MP 13			
MP 15	-0.02	-0.02	-0.01
MP 17	0.01	0.01	0.02
MP 19	-0.02	-0.01	-0.01
MP 21	-0.04	-0.03	-0.02
IP R1	-0.85	-0.92	-0.96
IP R2	-1.32	-1.44	-1.50
IP R3	-2.16	-2.28	-2.35
IP R4	-3.88	-4.06	-4.16
IP S1			
IP S2			
IP S3			
IP S4			
IP S5			
IP T1			
IP T2			
IP T3			
IP T4			
IP T5			
IP T6			
IP U1			
IP U2			
IP U3			
IP U4			
IP U5			
IP U6			
IP V1			
IP V2			
IP V3			
IP V4			
IP V5			
IP V6			
IP W1			
IP W2			
IP W3			
IP W4			
IP W5			
IP W6			

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 greater than 0.05 ft in elevation since October 6, 2009.

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

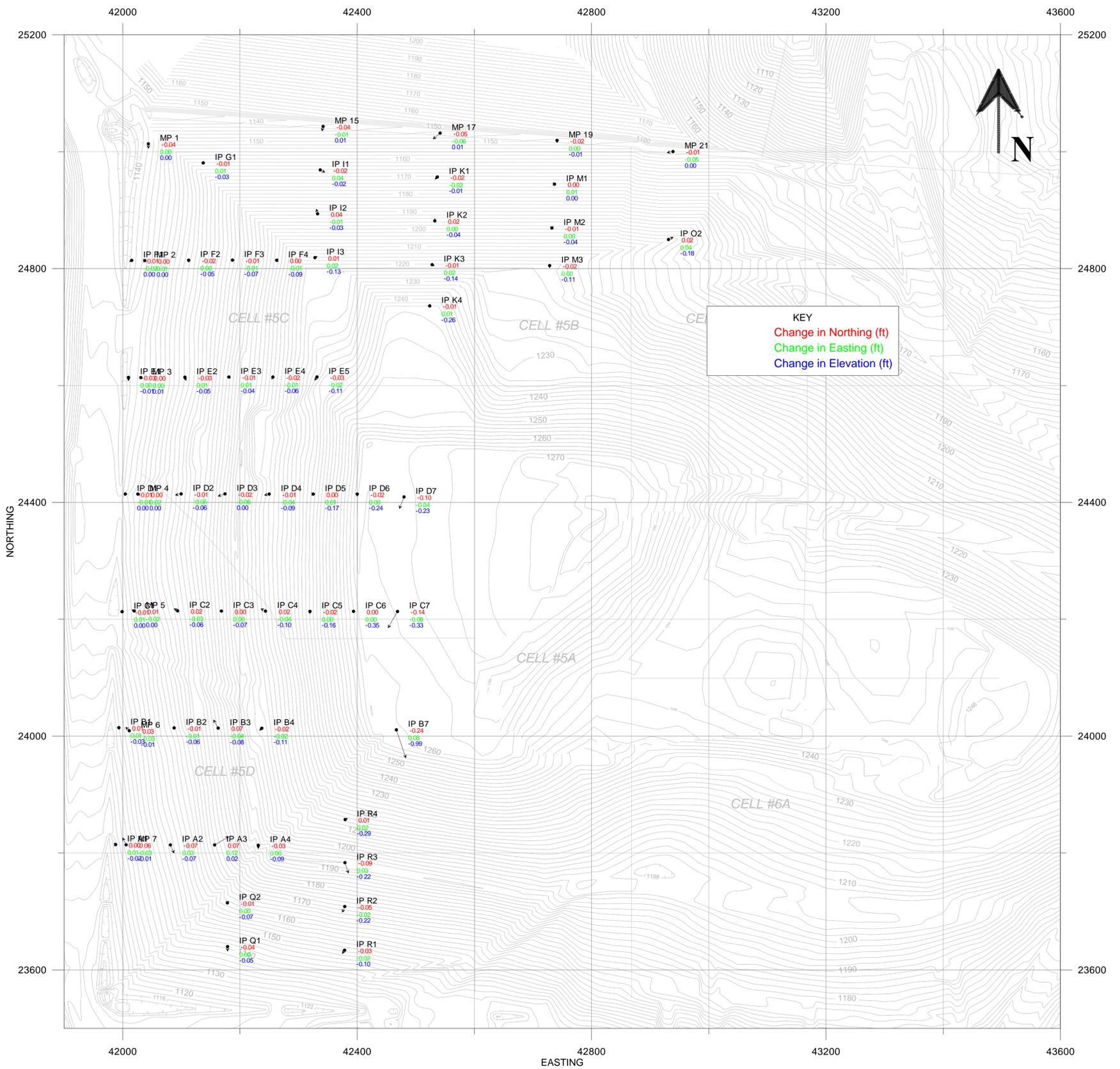
ID	10/4/11	10/18/11	11/1/11
MP 10			
MP 11			
MP 12			
IP A1	-0.01	0.00	-0.01
IP A2	-0.60	-0.63	-0.66
IP A3	-1.19	-1.23	-1.21
IP A4	-1.36	-1.41	-1.43
IP B1	0.03	0.02	0.01
IP B2	-0.94	-0.96	-0.98
IP B3	-0.52	-0.56	-0.57
IP B4	-1.72	-1.76	-1.81
IP B5	-2.86		
IP B6	-5.47	-5.69	-5.90
IP B7	-13.12	-13.47	-13.91
IP C1	0.00	-0.01	0.00
IP C2	-0.85	-0.88	-0.90
IP C3	-0.74	-0.81	-0.83
IP C4	-1.63	-1.68	-1.73
IP C5	-3.02	-3.08	-3.15
IP C6	-4.42	-4.58	-4.69
IP C7	-4.29	-4.47	-4.58
IP D1	0.00	-0.02	-0.01
IP D2	-0.91	-0.94	-0.96
IP D3	-0.61	-0.63	-0.61
IP D4	-1.73	-1.76	-1.80
IP D5	-2.34	-2.40	-2.48
IP D6	-3.73	-3.82	-3.93
IP D7	-3.79	-3.89	-3.97
IP E1***	0.01	0.01	0.01
IP E2	-1.27	-1.28	-1.30
IP E3	-0.88	-0.89	-0.92
IP E4	-1.44	-1.46	-1.48
IP E5	-2.23	-2.29	-2.30
IP F1 *	0.02	0.01	0.02
IP F2	-1.29	-1.32	-1.33
IP F3	-1.36	-1.40	-1.41
IP F4	-1.83	-1.87	-1.89
IP Q1	-0.83	-0.84	-0.88
IP Q2	-1.28	-1.30	-1.35
MP 1	-0.04	-0.03	-0.04
MP 2	0.01	0.01	0.01
MP 3	0.01	0.00	0.01
MP 4**	0.03	0.02	0.02
MP 5**	0.02	0.02	0.02
MP 6	-0.05	-0.06	-0.06
MP 7	-0.09	-0.10	-0.10
MP 8	0.00	0.00	0.00
MP 9			
MP' 10	0.01	0.00	0.02
MP' 11	0.03	0.03	0.03
MP' 12	0.04	0.04	0.04
MP' 13	0.00	0.00	0.01
MP' 9	0.02	0.01	0.02

\* On May 10, 2010, Ohio EPA approved an increase the baseline elevation of Iron Pin F1 from the original elevation of 1141.06', established on October 6, 2009, to 1141.15' due to the effects of frost heave.

\*\* On November 22, 2010, Ohio EPA approved an increase the baseline elevation of monitoring points MP-4 and MP-5 from the original elevation of 1154.82' and 1152.34', established on October 6, 2009, to 1154.88' and 1152.39', surveyed on November 30, 2010, respectively.

\*\*\*The Ohio EPA approved an increase of the baseline elevation of monitoring point IP E1 from the original elevation of 1143.41', established on October 6, 2009 to 1143.52', surveyed on February 22, 2011. On May 2, the Ohio EPA approved an increase in the baseline elevation of IP C1 from the original elevation of 1145.00' to 1145.04 established on May 2, 2011

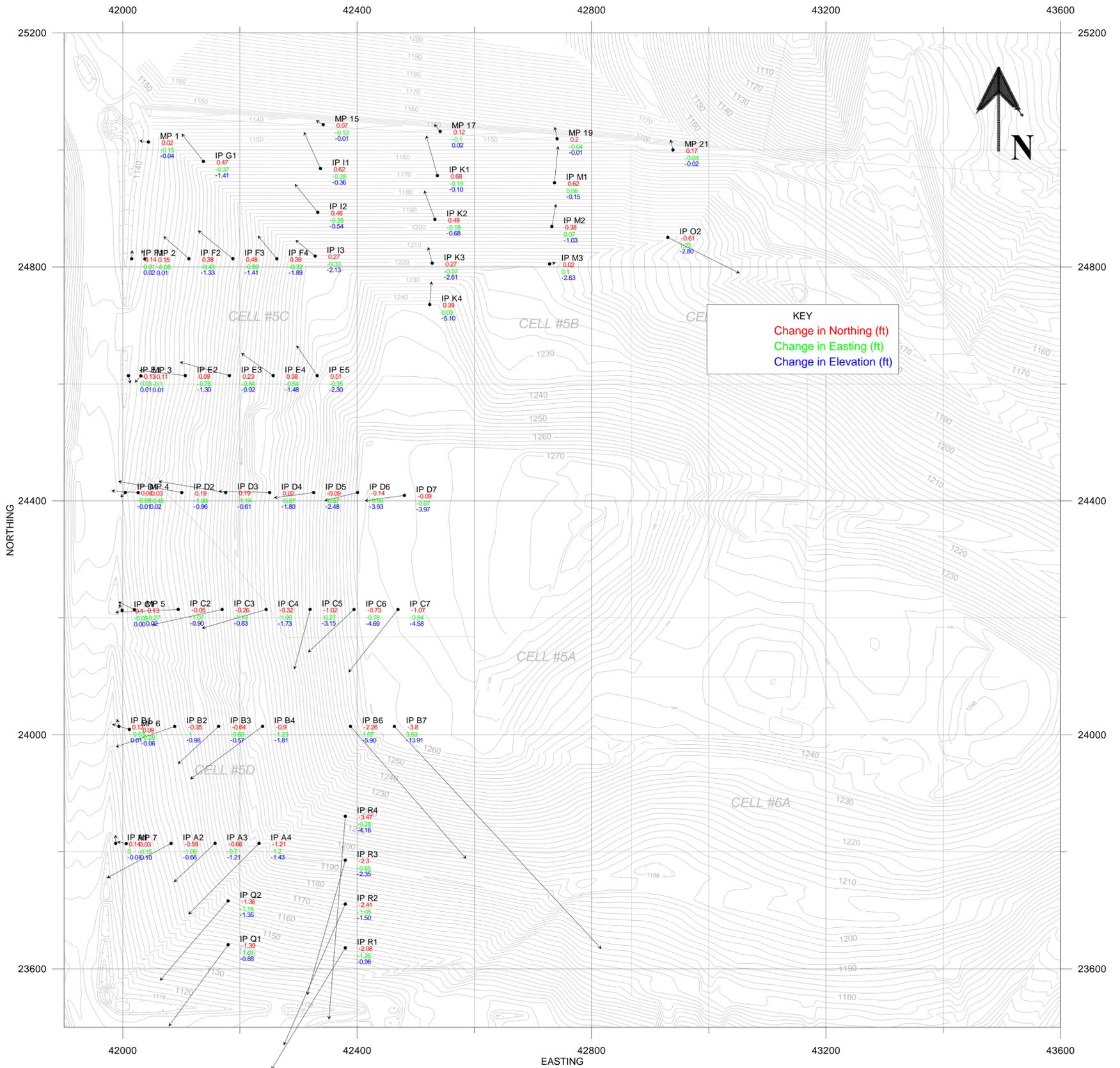
1. Data compiled by PJ Carey Associates, PC.
2. Survey provided by DEI beginning on October 6, 2009.
3. Highlighted regions indicate points which there was a positive change greater than 0.05 ft in elevation since October 6, 2009.



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 TRIGGER WAS NOT EXCEEDED DURING REPORTING PERIOD.
4. VERTICAL MOVEMENT TRIGGER WAS NOT EXCEEDED DURING REPORTING PERIOD.
5. MP 9 THROUGH 13 WERE RE-ESTABLISHED JUNE 14, 2011 AND ARE NOT SHOWN UNTIL AFTER THE JUNE 2011 PERIOD.

HORIZONTAL MOVEMENTS  
BETWEEN 9/20/2011 & 11/01/2011



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. 
3. ON MAY 10, 2010, OHIO EPA APPROVED AN INCREASE OF THE BASELINE ELEVATION OF IRON PIN F1 FROM THE ORIGINAL ELEVATION OF 1141.06', ESTABLISHED ON OCTOBER 6, 2009, TO 1141.15' DUE TO THE EFFECTS OF FROST HEAVE.
4. ON NOVEMBER 22, 2010, OHIO EPA APPROVED AN INCREASE OF THE BASELINE ELEVATION OF MONITORING POINTS MP-4 AND MP-5 FROM THE ORIGINAL ELEVATION OF 1154.82' AND 1152.34', ESTABLISHED ON OCTOBER 6, 2009, TO 1154.88' AND 1152.39', SURVEYED ON NOVEMBER 30, 2010, RESPECTIVELY.
5. THE OHIO EPA APPROVED AN INCREASE OF THE BASELINE ELEVATION OF MONITORING POINT IP E1 FROM THE ORIGINAL ELEVATION OF 1143.41', ESTABLISHED ON OCTOBER 6, 2009 TO 1143.52', SURVEYED ON FEBRUARY 22, 2011.
6. THE OHIO EPA APPROVED AN INCREASE OF THE BASELINE ELEVATION OF MONITORING POINT IP C1 FROM THE ORIGINAL ELEVATION OF 1145.00', ESTABLISHED ON OCTOBER 6, 2009 TO 1145.04', SURVEYED ON MAY 2, 2011.
7. VERTICAL MOVEMENT TRIGGER WAS NOT EXCEEDED DURING MONITORING PERIOD.
8. MP 9 THROUGH 13 WERE RE-ESTABLISHED JUNE 14, 2011 AND ARE NOT SHOWN ON THIS UNTIL AFTER THE JUNE 2011 PERIOD

HORIZONTAL MOVEMENTS  
BETWEEN 10/06/2009 & 11/01/2011