October 20, 2014

Advanced Disposal
Zion Landfill
Jim Lewis
701 Green Bay Road
Zion, IL 60099

RE: Advanced Disposal Zion Landfill – 3rd Quarter 2014 NSPS Surface Scan

Dear Mr. Lewis,

American Environmental Group (AEG) prepared the enclosed report documenting the results of the 3rd Quarter 2014 NSPS surface scan at Advanced Disposal Zion Landfill. The initial monitoring event was performed on September 17, 2014. We noted no (0) exceedances of the 500 parts per million methane by volume (ppm) standard at the facility during the initial scan event.

In summary, the site met the NSPS standards for surface emissions for the 3rd Quarter 2014 Surface Scan event, and no further action is required. Field monitoring forms are attached for your files.

Weather Conditions

Weather conditions recorded during the monitoring events were as follows:

September 17, 2014:

- Temperature approximately 55° Fahrenheit
- Relative humidity of 73 percent
- Barometric pressure of 30.03"Hg
- Wind South southeast at about 3 mph
- Clear skies

In accordance with NSPS regulations, these monitoring events were performed during typical meteorological conditions.

The survey was conducted in accordance with the regulations set forth in the New Source Performance Standard (NSPS), 40 CFR 60.755 (c) and (d); (2) 40 CFR 60, 40 CFR 60.753(d) - Surface Scan Requirements, Appendix A – Method 21. A Photovac (MicroFID) was used to perform the emissions monitoring. During the event, attention was given to monitoring unusual cover conditions (stressed vegetation, cracks, seeps, etc.) and areas with unusual odors. The MicroFID was calibrated at the beginning of each day, prior to performing the monitoring, in accordance with Method 21 compliance requirements. Calibration logs were completed by the field technician performing the work, and are included in Attachment A. During the monitoring event, AEG observed that the ground surface appeared to be in good condition overall and there were no unusual odors noted. Results are presented in the attached forms.

Please call Dave Ovanek at (815) 671-0203 if you have any questions.

Sincerely,

Pam Nyiri

Pam Nyiri
Environmental Data Coordinator III
American Environmental Group, Ltd.

On Behalf of
Dave Ovanek
Project Manager
American Environmental Group, Ltd.

Attachments: Attachment A: Daily Calibration Logs
Attachment B: Daily Surface Monitoring Log
Attachment C: Site Drawing

Cc: Jim Hitzeroth, Republic Services, Inc – Electronic

American Environmental Group Ltd.

DAILY CALIBRATION LOGS
ATTACHMENT A

CALIBRATION PRECISION TEST RECORD

Initial Event: 3rd Quarter 2014

LANDFILL NAME: ADS - Zion **EVENT:** 3rd Quarter 2014 SEM

INSTRUMENT MAKE: Photovac **MODEL:** MicroFID **SERIAL #:** CZWR309

PERFORMED BY: Steven Chillson **TIME:** 10:50 **DATE:** September 17, 2014

Calibration Gas Standard: 500ppm CH4

MEASUREMENT # 1:

Meter Reading for Zero Air: 0.0 **ppm (1)**

Meter Reading for Calibration Gas: 500.1 **ppm (2)**

MEASUREMENT # 2:

Meter Reading for Zero Air: 0.0 **ppm (3)**

Meter Reading for Calibration Gas: 499.7 **ppm (4)**

MEASUREMENT # 3:

Meter Reading for Zero Air: 0.0 **ppm (5)**

Meter Reading for Calibration Gas: 498.8 **ppm (6)**

CALCULATE PRECISION:

Must be less than 10%

$$\frac{|500 - (2)| + |500 - (4)| + |500 - (6)|}{3} \times \frac{1}{500} \times \frac{100}{1}$$

$$= 0.107\%$$

INSTRUMENT RESPONSE TIME TEST RECORD

Initial Event: 3rd Quarter 2014

LANDFILL NAME: ADS - Zion **EVENT:** 3rd Quarter 2014 SEM

INSTRUMENT MAKE: Photovac **MODEL:** MicroFID **SERIAL #:** CZWR309

PERFORMED BY: Steven Chillson **TIME:** 11:00 **DATE:** September 17, 2014

MEASUREMENT # 1:

Stabilized Reading Using Calibration Gas: 498.1 **ppm**

90% of the Stabilized Reading: 448.3 **ppm**

Time to Reach 90% of Stabilized reading after switching from Zero Air to Calibration Gas: **3.0** **seconds (1)**

MEASUREMENT # 2:

Stabilized Reading Using Calibration Gas: 494.6 **ppm**

90% of the Stabilized Reading: 445.1 **ppm**

Time to Reach 90% of Stabilized reading after switching from Zero Air to Calibration Gas: **4.0** **seconds (2)**

MEASUREMENT # 3:

Stabilized Reading Using Calibration Gas: 494.3 **ppm**

90% of the Stabilized Reading: 444.9 **ppm**

Time to Reach 90% of Stabilized reading after switching from Zero Air to Calibration Gas: **3.0** **seconds (3)**

CALCULATE RESPONSE TIME:

Must be less than 30 seconds

$$\frac{(1) + (2) + (3)}{3} = 3.333 \text{ seconds}$$

CALIBRATION PROCEDURE & BACKGROUND DETERMINATION REPORT

Initial Event: 3rd Quarter 2014

LANDFILL NAME: ADS - Zion **EVENT:** 3rd Quarter 2014 SEM

INSTRUMENT MAKE: Photovac **MODEL:** MicroFID **SERIAL #:** CZWR309

PERFORMED BY: Steven Chillson **TIME:** 11:15 **DATE:** September 17, 2014

CALIBRATION PROCEDURE

1. **Allow instrument to internally zero itself while introducing zero air.**

2. **Introduce the calibration gas into the probe.**

   Stable Reading = **499.8**

3. **Adjust meter to read 500 ppm.**

BACKGROUND DETERMINATION PROCEDURE

1. **Upwind Reading (highest in 30 seconds):**

Location: Near Groundwater Well C129 0.0 **ppm (1)**

2. **Downwind Reading (highest in 30 seconds):**

Location: Near Groundwater Well G176 0.0 **ppm (2)**

CALCULATE BACKGROUND VALUE

$$\frac{(1) + (2)}{2} = \mathbf{0.0} \text{ ppm}$$

American Environmental Group Ltd.

DAILY SURFACE MONITORING LOGS
ATTACHMENT B

Individual Monitoring Exceedance
Surface Monitoring Design Plan

Use this form to record an individual monitoring exceedance and follow-up monitoring activities.
This form is only used when a reading of 500 ppm above background is encountered during the surface monitoring.
Use a separate form for each initial exceedance.

Initial Monitoring Exceedance: #1 No Exceedances

Date: _____ Time: _____ am/pm Monitoring Technician Initials: _____
Instrument reading - Background reading: _____ ppm - _____ ppm = **0** ppm

Location of monitored exceedance (include description of field marker used): _____

Describe cover maintenance or adjustments to the vacuum of adjacent wells to increase gas collection in vicinity of measured exceedance before remonitoring in 10 days: _____

Remonitor location within 10 calendar days of initial exceedance:

Date: _____ Time: _____ am/pm Monitoring Technician Initials: _____
Instrument reading - Background reading: _____ ppm - _____ ppm = _____ ppm

If 10 day remonitoring shows an exceedance, describe additional corrective action taken before remonitoring again within 10 days: _____

If the 10 day remonitoring is <500 ppm, remonitor ***1 month*** from initial exceedance:
Date: _____ Time: _____ am/pm Monitoring Technician Initials: _____
Instrument reading - Background reading: _____ ppm - _____ ppm = _____ ppm

If the 1 month remonitoring is <500 ppm, resume normal quarterly monitoring.
If the 1 month remonitoring shows an exceedance, describe additional corrective action taken before remonitoring again within 10 days: _____

Remonitor location within 10 calendar days of 2nd exceedance:

Date: _____ Time: _____ am/pm Monitoring Technician Initials: _____
Instrument reading - Background reading: _____ ppm - _____ ppm = _____ ppm

If the 10 day remonitoring is <500 ppm, remonitor 1 month from initial exceedance:
Date: _____ Time: _____ am/pm Monitoring Technician Initials: _____
Instrument reading - Background reading: _____ ppm - _____ ppm = _____ ppm

If the 1 month remonitoring is <500 ppm, resume normal quarterly monitoring.
If the 1 month remonitoring shows an exceedance, describe additional corrective action taken before remonitoring again within 10 days: _____

(use additional forms if necessary)*

*If monitoring shows 3 exceedances within a quarterly period a new well or other collection device must be installed within 120 days of initial exceedance or alternative remedies/timelines may be submitted to the Administrator for approval. Further monitoring is not necessary until the remedy is completed. The 3 exceedances do **not** have to be consecutive.

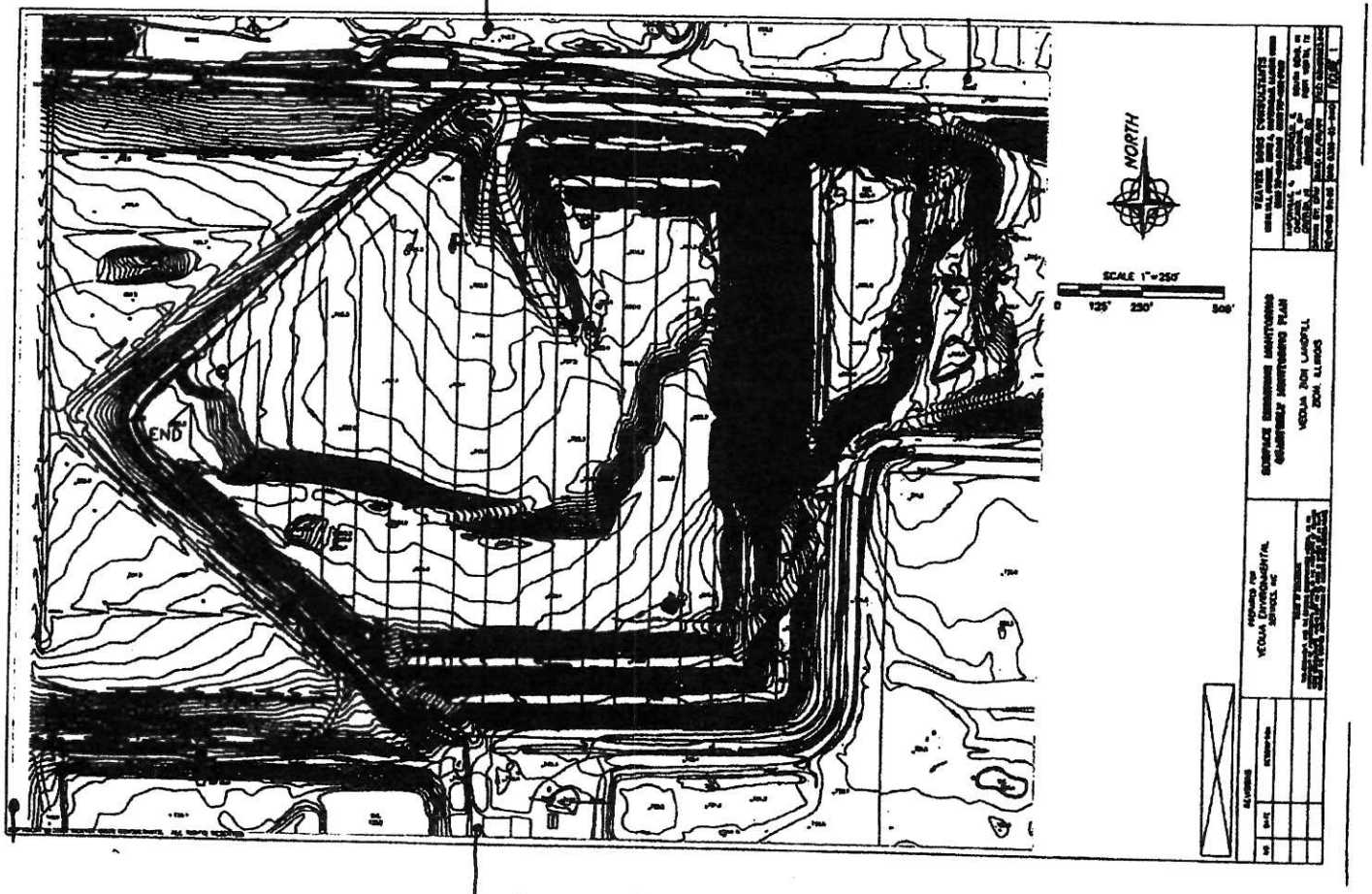
American Environmental Group Ltd.

SITE DRAWING

ATTACHMENT C

Zion - Advanced Disposal - 3rd qtr 2014 SEM
Date: 9/17/2014
Technician: Steve Chillson
No exceedances found

Upwind - Next to GMP-05



Downwind - Next to GMP-16

AS-BUILT GAS EXTRACTION WELL SCHEDULE

Well Number	Northing (feet)	Easting (feet)	Top of Wellhead Elev. "A"	Top of Wellhead 12/2/2010	Difference (+/−)	Top of Screen Elev. "B"	Bottom of Screen Elev. "C"	Depth to Bottom of Screen (feet)	Depth to Silt (feet)
EW-1	12416	9311	793.52			774.3	750.4	43.12	
EW-2	12031	9350	805.66			781.2	748.4	57.26	
EW-3	12137	9119	809.87			780.3	747.6	62.27	
EW-4	12426	9097	792.24			773.7	750.9	41.34	
EW-6	12245	8894	800.86			781.2	749.3	51.56	
EW-7	12078	8892	803.43			780.5	747.5	55.93	
EW-8	11913	8884	802.16			784.8	747.8	54.36	
EW-9	11720	8871	798.53			780.8	746.8	51.73	
EW-10	11726	9245	815.40			788.2	747.2	68.20	
EW-11	11577	8869	802.77			780.5	746.3	56.47	
EW-12	11430	8851	800.09			783.6	746.5	53.59	
EW-12A	11334	8781	789.72			777.5	752.2	37.52	
EW-13	11427	9169	815.02			788.7	744.7	70.32	
EW-14	11225	8837	798.48			780.0	744.8	53.68	
EW-15	11054	8814	795.35			777.1	743.1	52.25	
EW-16	11171	9075	812.26			787.5	745.0	67.26	
EW-17	10865	8801	786.11			767.2	742.7	43.41	
EW-18	10825	9077	805.47			779.8	741.8	63.67	
EW-19	10662	8813	780.49			760.4	740.6	39.89	
EW-20	10466	8823	775.56			753.9	739.9	35.66	
EW-21	10293	8794	767.04			749.3	740.0	27.04	
EW-22	10281	8992	771.37			750.4	739.3	32.07	
EW-23	10253	9175	769.85			750.5	740.5	29.35	
EW-24	10446	9176	782.11			762.0	740.0	42.11	
EW-25	10551	9011	789.17			770.0	741.2	47.97	
EW-26	10580	9312	788.07			768.2	739.4	48.67	
EW-27	10933	9293	807.51			783.8	741.8	65.71	
EW-28	11226	9357	813.31			789.0	744.5	68.81	
EW-29	11027	8473	765.68			746.9	697.9	67.78	
EW-30	10996	8272	753.44			737.1	711.1	42.34	
EW-31	10806	8302	748.39			732.5	704.5	43.89	
EW-32	10813	8517	748.55			736.8	705.8	42.75	
EW-33	10505	8312	745.33			728.4	701.4	43.93	
EW-34	10477	8539	749.78			732.0	710.0	39.78	
EW-35	10295	8330	746.39			730.7	697.7	48.69	
EW-36	10278	8516	748.78			729.8	696.6	52.18	
EW-37RR	11516	9500	810.77			786.3	736.3	74.47	
EW-38R	11817	9511	802.90			782.9	741.9	61.00	
EW-39R	12138	9512	798.20			778.2	737.6	60.60	
EW-40	12423	9570	785.99			768.6	736.6	49.39	
EW-41	12392	9747	785.53			770.3	736.0	49.53	
EW-42	12399	9925	780.53			765.6	734.6	45.93	
EW-43	12121	9817	800.72			781.3	734.8	65.92	
EW-44	11827	9827	806.10			781.1	736.4	69.70	
EW-45R	11261	9720	809.87			787.4	734.6	75.27	
EW-46	12398	10082	779.57			763.3	733.6	45.97	
EW-47R	12115	10175	795.10			775.1	735.1	60.00	
EW-49R	11679	9680	808.16			785.4	734.7	73.46	
EW-50	12396	10262	782.39			764.0	732.3	50.09	
EW-51	12403	10433	782.25			763.5	731.8	50.45	
EW-61	10693	10354	783.18			768.5	732.0	51.18	
EW-62	10612	10224	782.60			767.6	733.0	49.60	
EW-63R	10878	10166	800.25			777.0	731.0	69.25	
EW-64R	11009	10003	805.03			782.0	735.5	69.53	
EW-65	10617	10052	787.01			770.9	733.6	53.41	
EW-66	10605	9904	786.37			769.2	733.9	52.47	
EW-67	10937	9886	802.61			780.9	734.3	68.31	
EW-68RR	11144	9871	804.20			784.2	736.2	68.00	
EW-69	10606	9725	788.24			767.1	734.3	53.94	
EW-70	10606	9593	790.49			768.9	733.9	56.59	
EW-71RR	10942	9585	800.10			779.8	736.6	63.50	
EW-72R	11226	9548	804.80			784.8	730.3	74.50	
EW-101	10731	11025	790.56	798.61	8.05	766.2	704.2	86.36	
EW-102	10704	11327	777.90	786.25	8.36	755.2	700.2	77.69	
EW-103	10800	11628	770.78	778.11	7.33	746.6	698.6	72.18	
EW-104	11102	11640	771.08	777.82	6.74	746.2	702.2	68.88	
EW-105	10975	11328	833.74	823.61	−10.13	796.8	701.8	131.94	
EW-106**									
EW-107	11300	10082	849.04			822.7	805.2	43.83	
EW-108	11498	10094	858.32			829.0	804.5	53.78	
EW-109	11700	10084	846.54			821.2	805.2	41.39	
EW-110	11801	10231	843.49			817.2	799.2	44.29	
EW-111A	11599	10232	854.40			825.3	799.3	55.12	
EW-112	12200	11024	825.41	818.53	−6.88	782.3	703.3	122.11	
EW-113	12328	11330	791.97	787.12	−4.85	758.0	710.0	81.97	
EW-114	11400	10233	856.97			826.7	799.2	57.78	
EW-115	11200	10234	845.77			818.63	799.13	46.64	
EW-116**									
EW-117	11150	10418	845.96			816.80	791.80	54.16	
EW-118	11373	10457	858.46			825.77	790.27	68.19	
EW-119	11611	10459	857.64			824.67	790.07	67.57	
EW-120	11852	10418	843.77			815.02	791.52	52.25	
EW-121**									
EW-122	12276	10610	809.90	807.54	−2.36	795.04	770.54	39.36	
EW-123	12338	10848	791.17	789.00	−2.17	766.40	715.20	75.97	
EW-124	12043	10731	831.44	824.87	−6.57	811.44	738.94	92.50	
EW-125	11772	10691	842.1	838.84	−3.26	822.10	755.10	87.00	
EW-126	11482	10703	853.69	843.93	−9.76	833.69	756.17	97.52	
EW-127	11220	10684	841.51	838.01	−3.50	823.58	757.18	84.33	
EW-128	10948	10662	833.12	826.82	−6.30	808.60	756.50	76.62	
EW-129	10746	10537	808.18	806.02	−2.16	783.40	775.80	32.38	
EW-130	10673	10722	783.96	783.01	−0.95	750.70	729.70	54.26	
EW-131	10846	10873	829.21	823.15	−6.06	799.50	703.30	125.91	
EW-132	11060	10921	837.31	829.78	−7.53	808.20	707.40	129.91	
EW-133	11332	10951	848.02	840.30	−7.72	828.02	710.02	138.00	
EW-134	11613	10940	848.86	841.73	−7.13	828.86	710.46	138.40	
EW-135	11894	10960	837.15	831.45	−5.70	817.15	707.15	130.00	
EW-136	12308	11091	797.44	793.67	−3.77	772.30	705.80	91.64	
EW-137R	12042	11209	830.05			806.10	702.10	127.95	
EW-138	11749	11218	843.35	837.04	−6.31	823.35	704.35	139.00	
EW-139	11471	11210	845.61	838.46	−7.15	825.61	707.41	138.20	
EW-140	11170	11194	833.47	828.58	−4.89	820.94	704.24	129.23	
EW-141	10896	11134	831.27	823.01	−8.26	801.60	705.80	125.47	
EW-142	11264	11427	836.52	826.06	−10.46	807.80	701.90	134.62	
EW-142A	11287	11426	823.46			803.78	702.78	120.68	
EW-143R*	11561	11379	826.95			807.20	705.20	121.75	
EW-144R*	11855	11438	837.62			813.10	701.10	136.52	
EW-145*	12139	11391	820.80	830.35	9.55	796.02	699.42	121.38	
EW-146	12338	11546	784.87			764.85	715.35	69.52	
EW-147	12337	11775	784.55			764.54	714.54	70.01	
EW-148	12085	11592	826.23			806.25	701.25	124.98	
EW-149	11801	11733	784.08			764.10	709.10	74.98	
EW-150	11552	11720	778.74			752.70	704.70	74.04	
EW-151	11326	11635	779.64			756.60	702.60	77.04	
EW-164	10959	11525	806.23	800.38	−5.85	789.49	740.39	65.84	
EW-165	10701	11500	776.85	772.37	−4.48	763.48	698.78	78.07	
EW-166	11010	11124	835.17	829.46	−5.71	815.17	707.07	128.10	
EW-167	10990	11456	813.58	810.71	−2.87	794.58	701.51	112.07	
A5**									
A6**									
A8**									
A9**									
C2R	12159	11055	820.16			795.1	754.1	66.06	

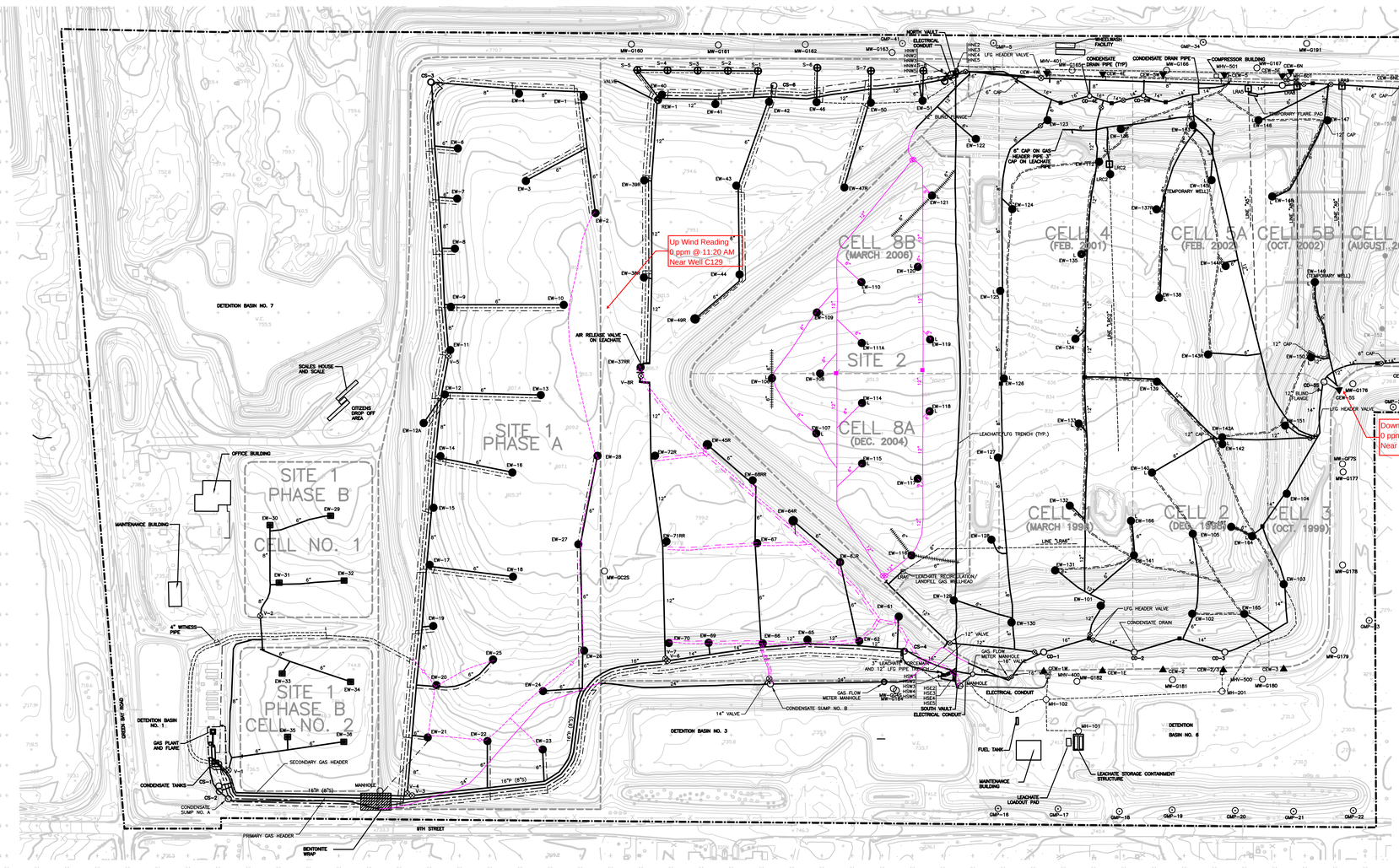
* TEMPORARY EXTRACTION WELL
** HORIZONTAL WELL

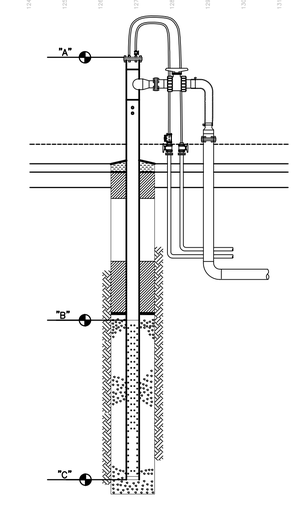
LEGEND

- CELL PHASING LIMIT
- PERMITTED WASTE LIMITS
- PROPERTY BOUNDARIES
- GAS HEADER PIPE
- LEACHATE FORCEMAIN PIPE
- CONDENSATE DISCHARGE PIPE
- PIPING ABOVE COVER GEOMEMBRANE
- HORIZONTAL LFG WELL PIPE
- AIR SUPPLY PIPE
- LFG VALVE
- CD-3 CONDENSATE SUMP
- EW-46 GAS/LEACHATE EXTRACTION WELL
- REW-1 REMOTE EXTRACTION WELLHEAD
- S-1 NORTH TRENCH SUMP
- GMP-22 GAS MONITORING PROBE
- MW-G179 GROUNDWATER MONITORING WELL
- C1R LEACHATE RECIRCULATION/LFG WELLHEAD
- CEW-5E LEACHATE CLEANOUT RISER
- (JUNE 2007) START WASTE FILLING DATE

NOTES:

1. TOPOGRAPHICAL MAP PREPARED FROM AERIAL SURVEY PERFORMED BY MARTINEZ CORPORATION ON MARCH 18, 2010 AND UPDATED WITH A CQM, INC. SURVEY DATED JUNE 29, 2010. CONTOUR INTERVAL IS 2 FEET AND ELEVATIONS ARE U.S.G.S MEAN SEA LEVEL DATUM.
2. FACILITIES HORIZONTAL CONTROL IS BASED ON ASSUMED SITE GRID SYSTEM.
3. TOP OF GAS WELLHEADS WERE SURVEYED BY CQM, INC. ON APRIL 20, 2004. SEE DETAIL ⊕ FOR SURVEY REFERENCE TO ELEVATIONS. TOP OF WELLHEAD ELEVATION WAS SHOT ON TOP OF BLIND FLANGE.





1/1 EXTRACTION WELL DETAIL
NOT TO SCALE

RELEASE	DATE:	BY:
Project Review		
5		
4		
3		
2		
1		

NO.	DATE:	BY:
DESCRIPTION		

REVISIONS

VEOLIA ENVIRONMENTAL SERVICES

CQM, INC.
Engineering–Surveying–Material Testing
2879 Continental Drive
Green Bay, WI 54311

Landfill Gas & Leachate System Plan

Current "As-Built" LFG System
Veolia ES Zion Landfill
Zion, Illinois

DRAWN BY: WBE

DATE: Feb. 2011

SCALE: 1" = 200'

DRAWING NO.

1

G:\Project Data\VEOLIA\ZION\Site-Gas\Master Gas Plan\Master Gas Plan And OCCS.dwg 5/26/2011 7:37 AM BJ Black