SCS ENGINEERS

Gas Extraction and Monitoring Work Plan (Revised)

USEPA Settlement Agreement and Order on Consent Docket No. V-W-08-C-897 Subparagraphs 15a, b, d, & g

Countywide Recycling and Disposal Facility

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1 INTRODUCTION

This Work Plan provides details regarding the performance of certain actions in accordance with the Administrative Settlement Agreement and Order on Consent ("Agreement") entered into voluntarily by the United States Environmental Protection Agency (US EPA) and Republic Services of Ohio II, LLC (Republic).

Specifically, this Work Plan details proposes actions to address subparagraphs 15. a, b, d, and g of the Agreement as follows:

VIII. <u>WORK TO BE PERFORMED</u>

15. Respondent shall perform, at a minimum, the following removal activities:

a. Installation and operation of an enhanced active gas extraction system. This system will have the capacity to effectively redirect gases from projecting toward cell 7;

b. Installation of an enhanced temperature monitoring system to accurately track the progression of temperatures toward Cell 7 and the western slope of Cells 1 through 6 of the landfill;

d. On-site disposal of any excavated MSW that may be specified in the Removal Work Plan into existing cells at the landfill as determined by the Ohio EPA;

g. Conduct monthly thermal imagery flights for the purpose of providing visual images of thermal activity in Cells 1 through 6, and provide a monthly report that includes an interpretation of the observation.

This Work Plan proposes the design and installation of enhancements to the gas collection system (Figure 1) to prevent/control the projection of reaction byproducts, including gases and heat, from the original 88 acres into Cell 7. Preventing the reaction byproducts from migrating to/projecting into Cell 7 will enhance Republic's ability to evaluate the progression of the reaction toward Cell 7. Enhanced temperature monitoring and examination of thermal imagery will comprise portions of a multi-faceted program for evaluation and tracking of the progression of the reaction. If deemed necessary, based on the monitoring, an excavated isolation break or other barrier can be constructed between the 88-acres and Cell 7 prior to the reaction advancing into Cell 7.

2 EXISTING ACTIVE GAS EXTRACTION SYSTEM

The existing active gas extraction system installed in the 88 acres of the landfill consists of 144 wells that are connected to a network of blower/flare facilities (3 active and 3 back up stations) gas headers, laterals, leachate/condensate pumps, air supply lines, and leachate/condensate discharge lines. At a typical MSW landfill, gas wells are usually placed at a frequency of about one well per acre. At Countywide, the density is about twice that.

Most of the gas extraction wells are equipped with wellhead assemblies that permit the collection of flow data and monitoring data with a gas meter. Wells that are equipped with these wellheads are monitored once weekly in accordance with Order 4.A.6 of the DFF&O dated March 28, 2007 for temperature, pressure/vacuum, flow, methane, oxygen, and carbon dioxide at the individual wellheads.

Measurements are taken at all LFG wells in the 88 acres with a GEM 2000 device distributed by CES Landtec, or equivalent. Calibration of the device is made in accordance with the manufacturer's recommendations. The GEM 2000 has the following accuracies:

- Temperature at 14 to 167 degrees F range with + or – 0.4% accuracy,
- CH_4 at 0 to 70% range by dual wavelength infrared cell with + or – 3% accuracy,
- CO_2 at 0 to 40% range by dual wavelength infrared cell with + or- 3% accuracy,
- O_2 at 0 to 40% range by electrochemical cell at + or – 1% accuracy,
- Pressure at maximum -70 inches of water column vacuum and + or – 250 mbar from calibration pressure, and
- Ambient air temperature operating range is 32 to 104 degrees F.

Where gas temperatures exceeded the GEM 2000 range (approx. 167º F) an analog temperature gauge was inserted into the sample port and the temperature is manually input into the GEM 2000 data screen. At the end of each day of monitoring the GEM 2000 data is downloaded to a computer for data storage.

Table 1 lists the monitoring data for the existing wells in the Cell 5/7 area that are to be included in the enhanced gas extraction system detailed in this Work Plan.

An evaluation of the Existing Landfill Gas Extraction System (LFG Evaluation) was submitted to the Ohio EPA on December 7, 2007 (attached to revised Work Plan as Appendix A). The LFG Evaluation provided recommendations for improving the efficiency of the gas extraction system, and Republic has implemented the recommendations (see following paragraphs). In addition, since December 2007, about 40 additional gas wells and about 30 additional gas well liquid pumps have been installed *above and beyond* the recommendations of the LFG Evaluation. Republic continues to work closely with Ohio EPA on dewatering and other related system improvements. Republic feels that the existing LFG Evaluation and subsequent improvements provide an adequate basis for on-going assessment and enhancements.

The LFG Evaluation include an analysis of the distribution of vacuum in the existing header system to determine if pipe sizes were adequate to accommodate flow and deliver the necessary

vacuum to the gas extraction wells. The assessment was performed utilizing KYGAS, a CAD-based piping analysis program that predicts losses of vacuum through the LFG piping systems. Results of the KYGAS confirmed that header pipe sizes in the Cell 5/7 area are adequate to accommodate the anticipated flow from the wells. Laterals serving the extraction wells in the area were not included in the KYGAS analysis. However, all laterals to extraction wells in the area are a minimum size of 6-inches, with flow characteristics capable of accommodating gas flows of 500 scfm at the velocity exerted by the gas collection system. None of the extraction wells in the Cell 5/7 area approach a gas flow of 500 scfm. Figure 2 shows the header and lateral layout of the gas collection system in the Cell 5/7 area.

Cornerstone concluded that the Countywide GCCS is well operated and designed. Countywide has made numerous enhancements to the GCCS over the past 2 years and plans to continue this trend. Cornerstone concludes that additional improvements to the GCCS can continue to increase LFG collection, reliability, and functionality. Based upon the data review, field evaluation, and data analysis, the Countywide GCCS is capable of collecting more LFG, so they do not recommend changes to the blower or flare stations except for those already performed or underway.

Cornerstone recommended that Countywide implement the following modifications to the GCCS:

- Continue to utilize bubble suckers to control shallow odors from emerging from under the temporary geomembrane cover. Where possible, install a valve to limit vacuum to these devices as needed. This will reduce shallow air from entering the system, thereby reducing the likelihood of diluting the fuel, which made the flares difficult to keep lit. Install 4 new bubble suckers as shown on Figure 2.

- Continue to install temperature resistant thermoplastics and metals at the appropriate locations so that they better withstand the heat of reaction.

- Install ten (10) new landfill gas (LFG) wells as shown in Figure 2.

- Repair laterals / header sags leading to the LFG wells listed in Table 1 in Appendix A and Table 3 in Appendix A so vacuum can be provided to these 22 LFG collectors.

- Abandon and replace LFG wells C1R, K1, PW-131, W-32, and W-1.

- Install liquid pumps in 27 LFG wells, if accessible, with greater than 50% of perforations blocked by liquid (section 2.2.3 of this report).

- Plan and implement contingencies necessary to make sure that the LFG routed to flare #6 (and others if deemed necessary) have adequate BTU value. Cornerstone recommends that supplementing with propane be given consideration for this contingency.

- Obtain one spare blower for each blower/flare stations 1, 4, 6, and 7.

- Continue to seal and repair rips and tears in the temporary geomembrane cover.

Again, the complete LFG Evaluation of the landfill gas extraction system is included in this Work Plan as Appendix A.

The LFG Evaluation identified the need for two new landfill gas extraction wells in the Cell 5/7 area, designated PW-173 and PW-174. Both of the recommended new wells were installed prior to April 21, 2008. Both of these wells are included in the enhanced gas extraction network detailed in this Work Plan and incorporated into the Southern Reaction Gases Projection Barrier described in Section 4 of this Work Plan.

Table 1 in the LFG Evaluation identifies one existing gas extraction well (E2R) with insufficient vacuum to yield acceptable gas flow. Tables 1 and 2 attached to this Work Plan show that vacuum has been restored to E2R, flows are acceptable, methane content is good, oxygen is below the maximum required by the DFF&O, temperatures are low, liquid levels are low, and balance gases are as expected.

Two wells (C2R and B2R) are identified in the LFG Evaluation as having 50% or more of the screened interval blocked by water in the well. B2R is not producing gas flows as would be expected from this well and will need attention during the implementation of the Work Plan. C2R is producing good gas and the water level in the well is under control (over 50 feet of perforations above the water level).

Four additional gas extraction wells were installed in the Cell 5/7 area prior to April 21, 2008 as part of the continuing improvement program for gas collection and odor control in the 88-acres. PW-333, PW-335, PW-336, and PW-337 have been installed but are not totally functional at this time. Monitoring of the newly installed wells has not begun. The newly wells are, however, included in the network of gas extraction wells that comprise the projection barriers to gas flow from Cell 5 toward Cell 7. In total, 6 new wells were installed prior to April 21, 2008 and these wells have been incorporated into the enhanced gas collection system in response to the Agreement. Figure 3 shows the location of these 6 newly installed wells and how they will enhance the projection barriers being proposed.

Implementation of the enhanced active gas extraction system will have a positive impact on the existing active gas extraction system efficiency in Cells 1 through 6 and in Cell 7. The temporary FML cap to be installed over the Cell 5/7 area (see Figure 3 for the proposed limits) will improve collection efficiency by allowing more vacuum to be applied to the wells, where necessary, without the risk of air intrusion. The fine tuning and repairs recommended by the December 7, 2007 LFG Evaluation will boost gas collection, reduce fugitive emissions, and better control odors. Optimization of the existing extraction system in the Cell 5/7 area will provide additional needed methane to the blower/flares from the area not yet impacted by the reaction that will result in an increase in combustion efficiency of the blower/flare units, increase their gas destruction capability, and reduce operations and maintenance requirements.

The deactivated extraction wells along the separation berm will be used to monitor the flow of gases in Cell 5 away from Cell 7. These wells will also be used to manage the operation of the

odor control extraction wells in Cell 7 to ensure that no gas from Cell 5 is drawn across the separation berm. Temporarily tuning off selected wells in Cell 5 or Cell 7 will allow the operator to determine how the monitoring wells are being affected by gas flow. If gas flow toward Cell 7 is detected in the monitoring wells, the vacuum can be reduced in those wells and increased in the Cell 5 wells to ensure gas flow is toward the south. All existing gas extraction wells in Cells 1 through 6 of the landfill will continue to be operated and maintained to provide gas collection to minimize fugitive emissions and odors. The maintenance and operation of the gas collection system will comply with the OEPA DFF&Os that remain in force.

3 DESIGN INTENT AND APPROACH

The byproducts of the reaction primarily consist of gases (primarily hydrogen and carbon monoxide) and heat. The primary reaction that is hypothesized to be occurring between the metallic aluminum in the aluminum waste and water produces aluminum oxides, hydrogen, and heat. Other reactions involving primarily aluminum nitrides and aluminum carbides can produce small amounts of acetylene, methane, carbon monoxide, etc. The heat from the aluminum reaction has a number of effects on the solid waste. At a certain temperature, the heat stops the bacterial methanogenesis by killing the bacteria, resulting in a significant decrease in methane production in the impacted areas. The heat from the aluminum reaction also causes significant amounts of carbon monoxide to be produced in the impacted areas by pyrolizing organic material in the solid waste and breaking down formic acids present in the leachate. Colorized contour maps of hydrogen concentration (Figure 4) and carbon monoxide concentrations (Figure 5) show that the highest concentrations of these two compounds are associated with the reaction area as defined by wellhead temperatures (Figure 6), downhole temperatures (Figure 7), and settlement (Figure 1).

Gases flow or otherwise move through the waste mass based on pressure gradients and/or concentration gradients. If the gases generated in the reaction area are produced faster than they can be withdrawn by the gas extraction system, positive pressure will build and drive the movement of the reaction byproducts beyond the area where the actual reaction is occurring. The reaction heat also adds to the driving force for migration away from the reaction area. The flow driven by the pressure gradient is assumed to be the dominant process, with movement by diffusion due to the concentration gradient being insignificant by comparison. It should be noted that in the industry, the landfill gas capture rate for gas extraction system with an optimal design is assumed to be 85 percent. It is not possible to capture 100 percent of gas generated in a landfill, primarily due to the anisotropic nature of the waste.

The heat generated by the reaction can move away from the reaction area in a number of ways. Heat can move in the solid waste and/or leachate by conduction. In general, solid waste is not considered a good heat conductor. Heated fluids, both gases and liquids, can move heat by convection. At Countywide, hot gases (including reaction by-product gases and water vapor) are moving away from the reaction area. The horizontal movement of leachate is not considered likely over any significant distance and is therefore not significant in moving heat.

The gas collection system enhancements will be most effective in controlling the pressure gradient driven convective flow of gases. The system will provide some control of the movement of gas due to diffusion due to concentration gradients. Heat moves through the waste mass by convection, primarily via gases, or by conduction through the waste itself. The gas collection system enhancements will control the movement of heat by gas convection from the reaction area into the unreacted areas. It will have limited to no impact on the conduction of heat through the solid waste.

Figure 1 is a graphic representation of the current location/status of the reaction. Figure 1 depicts contours representing 0.5 feet of settlement during a four-week time period. The two contours presented are separated by approximately one year. The red arrows identified as "Advancing Settlement Front Vector" indicate where the area of settlement is expanding and the

direction of that expansion. The green arrows identified as "Retracting Settlement Front Vector" indicate where the area of settlement is decreasing over time and the direction of the retraction. Settlement at rates greater than 0.5 feet per four-week period is no longer occurring in the eastern portions of the area where the reaction was originally occurring, indicating that the reaction has subsided in this area. Settlement at rates greater than 0.5 feet per four-week period is occurring in areas to the west of the original reaction area, indicating that the reaction is advancing to the west. However, conditions at the west slope are markedly different than the conditions at the south slope (where movement occurred in 2006) therefore stability problems are not anticipated at the west slope.

The Agreement requires the design and implementation of a plan to control the projection of reaction gases toward Cell 7 (subparagraph 15.a.), temperature monitoring to accurately track the progression of temperatures toward Cell 7 and the western slope (subparagraph 15.b.), management of waste disposal associated with work done in compliance with this Work Plan (subparagraph 15.d.), and thermal imagery to provide visual images of near-surface thermal activity in Cells 1 through 6 (subparagraph 15.g.).

In particular, Republic's approach to addressing subparagraphs 15.a and 15.b is to devise systems that allow for unambiguous monitoring of the progression of the reaction toward Cell 7. By eliminating projection gases, the gas quality measured in gas wells in Cell 7 (per requirements and protocol used to satisfy existing Ohio EPA F&Os) should be more indicative of the presence or absence of reaction symptoms in that area. Therefore, if temperature and gas quality monitoring suggest that the reaction may enter Cell 7, an excavated firebreak or some other isolation barrier could be installed in plenty of time to prevent it.

Three zones of control are proposed in this Work Plan near the Cell 5/7 separation berm to satisfy the requirement to control reaction gases from projecting toward Cell 7. The two zones south of the separation berm (Reaction Gases Barriers) will provide a barrier against reaction gases moving toward Cell 7. The temperature monitoring will provide an early warning system that will provide adequate time to implement contingencies that will prevent the movement of the reaction into Cell 7. One such contingency would be the installation of the Isolation Break between Cells 5 and 7.

The control zone north of the separation berm will provide odor control and removal of landfill gas from beneath the temporary FML cap to minimize fugitive emissions from the landfill. The northern odor control zone will be operated to prevent the movement of landfill gas from Cell 5 to Cell 7 to avoid pulling reaction gases into Cell 7.

The two reaction gases projection barriers and the odor control zone consists of 22 wells that include 14 existing gas extraction wells, 6 newly installed gas extraction wells, and 2 proposed gas extraction wells. Boring logs for the existing and newly installed wells are presented in Appendix B. Monitoring of the buffer zone at the separation berm will be accomplished with 4 deactivated gas extraction wells converted to monitoring wells and one new gas monitoring well. Boring logs for the wells to be deactivated are also presented in Appendix B. Additional detail regarding the proposed system to control reaction gases can be found in Section 4 of this Work Plan.

The proposed installation of 13 additional thermocouple monitoring probes located south of the Cell 5/7 interface and east of the western slope and the replacement of the 5 existing thermistors north of the reaction area will provide the most reliable in situ temperature monitoring because the measurements are least affected by outside or specious factors. Since in situ temperature measurements are affected by the projection of warmer gases ahead of the reaction, and can, in fact, be raised by heat conduction and convection in front of a reacting mass, in-situ temperature would be expected to be the most reliable and sensitive early warning system with respect to temperature trends. Additional detail regarding the proposed temperature monitoring system can be found in Section 5 of this Work Plan.

The waste removed from the boreholes that are associated with implementation of the Work Plan items will be managed in a manner that ensures the final deposition of the waste material in the current working face without subjecting the new cells to future reaction of aluminum containing waste. Republic does not expect to encounter aluminum containing waste during the installation of the new wells, but they are confident that it can be identified and managed in accordance with the procedures outlined in Section 6 of this Work Plan that will provide the safe handling and disposal of the waste.

Order 4.A.10 of the March 28, 2007 Director's Final Findings and Orders (DFF&Os) already requires Countywide to take a monthly aerial infrared (IR) image of the facility to provide visual images of thermal activity in Cells 1 through 6. Monthly reports will be submitted to the US EPA and will include that month's image and an interpretation of any observations.

4 ENHANCED ACTIVE GAS EXTRACTION SYSTEM (15a)

GAS EXTRACTION WELLS

The enhanced active gas extraction system will consist of a combination of existing and additional landfill gas extraction wells oriented generally in an east/west direction on either side of the boundary between Cells 5/7. Above-grade headers and laterals will connect the new gas wells to the existing blower/flares on site. The extraction wells will be positioned so as to control the gases from projecting toward Cell 7. The extraction wells will be fitted with Accu-Flow, or equal wellhead assemblies (see Figure 8) that allow adjustments to be made to the flow and vacuum applied to the subsurface well pipe. Monitoring ports on the wellheads permit the accurate collection of data for temperature, pressure/vacuum, flow, methane, oxygen, balance gas, and carbon dioxide. The wells will also be configured to accept pneumatic submersible pumps to manage leachate and condensate that could interfere with the performance of gas extraction.

The surface of the landfill, within the radius of influence of the extraction wells, will be covered with a temporary cap consisting of an exposed flexible membrane liner (FML). The temporary cap will prevent air intrusion into the landfill as a result of the vacuum applied to the wells, will assist in effecting a southward gas gradient inhibiting northern movement of gases into Cell 7, and will maximize odor prevention. Details of the temporary cap components are included in the Landfill Cover and Long Term Capping Plan submitted by Cornerstone Environmental Group in response to subparagraph c. and f. of the Agreement.

A schematic of a typical gas extraction well is presented on Figure 8. Boreholes 36 inches in diameter will be advanced through the waste to within nominally 20 feet of the bottom of waste. Perforated and solid chlorinated polyvinyl chloride (CPVC) pipe 8 inches in diameter will be installed in the center of the borehole to within 1 foot of the bottom of the borehole. The well construction is consistent with the Gas Collection and Control System Design Plan (GCCS Plan) prepared by Cornerstone. The wells have 20 feet of solid pipe below the ground surface, with perforated pipe to the target depth. This is less than the typical length of solid pipe that would normally be used for waste of this depth so that the shallower solid pipe length may provide additional cushion against the well becoming watered out and also may improve odor prevention with a shallower radius of influence. Backfill around the pipe consisting of 1 to 3-inch poorly graded, non-carbonate stone will be placed to1 foot above the top of the perforated pipe. A 1-foot bentonite seal will be installed above the granular backfill around the pipe. On-site soil will be used to backfill the remainder of the borehole to within approximately 3 ½ feet from the surface of the landfill. A 2-foot bentonite seal will be installed atop the soil backfill in the borehole and intermediate landfill cover replaced to existing surface grade. The well pipe will be temporarily capped until such time as the header lines, lateral lines, and leachate pump lines are installed as needed.

The 8-inch diameter wells can accept a 1-inch or 3-inch Blackhawk pneumatic submersible pump. It has been Countywide's experience that this brand of pump is more resistant to the heat and other conditions encountered in the landfill. When either size pump operates with the manufacturer's anticipated up-time, they are capable of removing water from a well to a

satisfactory operating level. Countywide has not identified any other type or brand of pneumatic pump that would offer better performance than the 3-inch Blackhawk, even with a larger diameter.

An O-ring expansion fitting will be installed around the extraction well pipe at the surface and will be welded to the temporary cap FML. Placement of the temporary cap FML will be completed prior to the installation of any of the connections to the extraction well pipe.

Upon completion of the installation of the temporary cap FML over the designated area as shown on Figure 7, the temporary cap on the well pipe will then be removed, the wellhead assembly installed, the leachate pump installed (if deemed necessary), and all connections made.

A well schedule for the existing, newly installed, and proposed gas extraction wells that make up the proposed system is presented as Table 3.

The newly installed gas extraction wells will be subject to the existing applicable Ohio EPA DFF&Os. The wells will be monitored weekly for vacuum, flow, methane, oxygen, carbon dioxide, balance gas and temperature using a GEM meter. The weekly monitoring provides the opportunity to make adjustments to any or all of the active wells to accommodate the effects of both new and deactivated wells. Baseline sampling for carbon monoxide will be performed on the new wells to determine if additional sampling requirements are triggered under Ohio EPA findings and orders. Liquid levels are monitored in all the gas extraction wells on a regular basis. This will allow Countywide to identify those new well for which the dewatering contingency must be implemented. Both the routine and the DFF&O-driven sampling and testing will identify any well that has been compromised by differential settlement. Compromised wells will be replaced.

LOCATION OF GAS EXTRACTION WELLS

Locations of the gas extraction wells are shown on Figure 7. The locations of the wells placed in the Cell 5/7 area were selected to prevent the flow of reaction gases into Cell 7. The radius of influence of the wells was calculated based on the depth of the extraction well and the ratio of slotted to solid pipe lengths. The radius of influence calculation is consistent with the calculation as presented in the site GCCS Plan. The calculation assumes temporary soil cap compared to the membrane cap or composite cap required under Order 15. c. The calculation also assumes that the waste has a horizontal to vertical permeability ratio of 4. These assumptions result in a conservative estimate of the theoretical radius of influence. The radius of influence of the existing and proposed wells has been modified to account for the less permeable FML temporary cap included in the design. It is noted that the heterogeneous nature of waste can result in the reduction or extension of the radius of influence compared to this estimate. The spacing of the extraction wells on the southern boundary between Cells 5/7 was determined to provide an overlap of the radius of influence of the wells to provide a curtain wall against the migration of reaction gases into Cell 7.

Consideration was given to locating wells over the separation berm between Cells 5/ 7. However, the locations and spacings of the proposed extraction wells and the wells to be deactivated were selected to prevent gas extraction wells in Cell 7 from drawing reaction gases

from the Cell 5/7 area. Therefore, the current design does not contemplate gas wells located above the separation berm.

Existing gas extraction wells that are located in Cell 5/7 separation berm area and have a demonstrated radius of influence into Cells 4, 5B, or 5C will be deactivated. These deactivated wells will be used to monitor the performance of the proposed enhanced gas extraction system. Monitoring of the deactivated wells will allow establishment of a buffer zone at the Cell 5/7 separation berm of no gas flow or flow towards the south. Those wells will be considered "monitoring wells" and are labeled as PW-306, PW-325, and PW-314 and PW-335 and shown with an identifying symbol on Figure 7. The monitoring will consist of weekly standard field measurements, using a GEM meter for pressure, temperature of gas, methane content, and oxygen content. In addition, gas samples will be taken from these wells for laboratory analyses of methane, hydrogen, and carbon monoxide per the Ohio EPA DFF&Os.

Extraction wells in Cell 7 provide for the positive collection of landfill gas and prevention of odors without projection influence from Cells 4, 5B, or 5C.

Figure 9 shows the design parameters of the gas wells which are considered part of this enhanced gas management system. Many of these wells were just recently installed (March and April 2008) as part of recent initiatives to improve odor prevention and gas quality at the site.

DESIGN ELEMENTS OF ENHANCED GAS SYSTEM COMPONENTS

Design of the enhanced gas system components is based on industry standards and specific experience at Countywide over the past several years. Considerable data has been collected at the site and experience with various alternative components has provided an in-depth insight into the selection of system components. The radius of influence of the wells is based on design criteria established in the GCCS Plan, with adjustments made for the FML cap to be installed over the area shown on Figure 5. Calculations for the radius of influence of the wells and design parameters for the well layout are contained on Table 4.

The header lines and the lateral lines are existing to all but the newly installed and proposed wells. The December 7, 2007 FLG Evaluation, utilizing KYGAS software, confirmed that the existing gas collection system piping is sized to accommodate gas flows and deliver vacuum to the extraction wells. Calculations have been performed to determine flow volumes and friction loss in the piping network. Pump capacities, and the size of air and leachate lines to the extraction wells will be based on past experience at the site with other gas extraction systems. Laterals to the newly installed and proposed wells will be a minimum of 6-inch diameter when one or two wells are on a lateral run. The lateral size will be increased to 8 inches when more than two wells are on the same lateral line. It has been determined that a 6-inch lateral line at this landfill can accommodate up to 500 scfm from an extraction well at the velocity of flow in the system.

Vacuum available in the LFG system should be a minimum of 25-inches water column vacuum. The Cornerstone FLG Evaluation cites blower/flare capacity beyond that which is needed to operate the current system under current site conditions. The blower capacities (based on the 4

operating blower/flares) are nearly double that which is required, even considering the de-rating for higher than design LFG temperatures.

Desirable vacuum available at each the extraction wells in the Cell 5/7 area is a minimum of 5 inches water column. Table 1 shows that the vacuum at the wells included in the enhanced gas system varies depending on how the tuning of the system changes over time. However, Table 1 shows that more than 5 inches water column vacuum is available at each of the wells. Final vacuum applied to the wells in the projection barriers and the odor control zone will be determined during startup and operation of the systems.

OPERATION OF GAS EXTRACTION WELLS

The gas extraction wells which comprise the system described in this Work Plan are not intended to pull landfill gas from remote areas of the landfill for collection and flaring. The intent of the extraction wells on the south side of the Cell 5/7 area separation berm is to block the flow of reaction gases into Cell 7.

Three east/west-oriented rows of gas extraction wells have been identified on Figure 5 as the "Southern Reaction Gases Projection Barrier" and the "Northern Reaction Gases Projection Barrier" and "Cell 7 Odor Prevention Zone". Two rows of barrier extraction wells are located south of the Cell 5/7 separation berm. Both of these rows provide a barrier to the projection of the reaction gases into Cell 7. The radius of influence of the extraction wells in both of these rows overlaps the radius of influence of the adjoining wells creating the barrier. The outlined area on Figure 5 designated as the southern and northern barrier is continuous in an east/west direction, preventing the flow of reaction gases toward Cell 7.

The row of extraction wells north of the Cell 5/7 separation berm is primarily for odor prevention. It is not the intention of this Work Plan to exert high vacuums on any of the wells in Cell 7. The intent is to apply only sufficient vacuum to control gases and odors.

Four existing gas extraction wells (PW-306, PW-325, PW-335, and PW-314) will be deactivated. These deactivated wells will be used to monitor the performance of the proposed enhanced gas extraction system. Monitoring of the deactivated wells will allow establishment of a buffer zone at the Cell 5/7 separation berm of no gas flow or flow towards the south. The monitoring will consist of weekly standard field measurements, using a GEM meter for pressure, temperature of gas, methane content, and oxygen content. In addition, monthly gas samples will be taken from these wells for laboratory analyses of methane, hydrogen, and carbon monoxide. Gas build up and/or fugitive emissions from the buffer zone will be controlled through fine tuning of the gas extraction wells north and south of the Cell 5/7 separation berm and the addition of a temporary FML cap over the area shown on Figure 5. An additional monitoring well will be installed between PW-325 and PW-335 to allow monitoring of the buffer zones between those two existing deactivated wells.

The incorporation of the FML temporary cap will provide flexibility in the system to increase or decrease the vacuum in any of the extraction wells without significantly impacting odor prevention or risking air intrusion into the landfill around the extraction wells. Only the vacuum

necessary to provide the barrier to gas projection from the reaction area and control odor emissions will be applied to the wells in the area of the Cell 5/7 separation berm.

Following installation of the new extraction wells, deactivation of the selected existing wells, and installation of the temporary FML cap, the barrier and odor control systems described above will be activated. Start up procedures in this area will include the following:

- Apply vacuum to the wellheads
- Collect field measurements for temperature, pressure, flow rate, methane concentration, carbon dioxide concentration, and oxygen concentration.
- Make adjustments to the individual wellheads to maximize performance within the limitations established by the March 28, 2007 Ohio EPA DFF&Os.
- Monitor the deactivated wells to determine the effectiveness of the enhanced system.
- Monitor the extraction wells and deactivated wells daily (5 days per week) for the first 1 to 2 weeks or until such time as system stability has been achieved.
- Monitor the extraction wells and deactivated wells weekly in accordance with the March 28, 2007 Findings and Orders until completion of the remedial action.

TEMPORARY LANDFILL CAP

Several areas of the 88-acre area of the landfill have previously been temporarily capped using flexible membrane liner (FML). The FML in those areas has been installed over the intermediate soil cover, seams welded, and left exposed without cover material. The area receiving the enhanced gas extraction system will be temporarily capped using methods as described in the capping plan. However, additional measures will be taken to prepare the subgrade and provide geotextile protection where necessary. The extent of the area to be capped has been determined by the radius of influence of the gas extraction wells. The temporary cap will serve several purposes: 1) to allow higher vacuums to be applied to the extraction wells if it becomes necessary at any time, 2) to prevent air and water intrusion into the landfill, 3) prevent odor emissions in the area, 4) to enhance the capture of gases in the Cell 5/7 area, and 5) to effect a southward gas gradient inhibiting northern movement of gases into Cell 7. The anticipated limits of the temporary capping associated with the enhanced gas extraction system are shown on Figure 5. It should be noted that the design and extent of the temporary capping will be finalized in the Capping Work Plan which was prepared by Cornerstone Environmental Group.

CONTINGENCY PLANS

Contingent plans have been developed for an organized response to operational problems that could occur in the future with the enhanced system components. This includes:

- Replacement of an extraction well that is part of the enhanced system

- Replacement of a header line
- Replacement of a lateral line
- Installation of a pump in the extraction well

Replacement of an extraction well will be required if more than 50% of the perforated interval becomes watered in and attempts to dewater are unsuccessful or the well pipe collapses or is damaged so that vacuum cannot reach the bottom of the well. Replacement of the well will occur in the same general area as the original avoid affecting the coverage of the barrier systems.

Two inch air lines and two inch leachate discharge lines will be installed adjacent to the existing and new wells in the enhanced system, if they do not currently exist. The air lines and leachate discharge lines will allow for immediate installation of a submersible pump for the removal of leachate or condensate from the well, should it become necessary. Past experience with well pumps at the landfill has shown that 2 inch supply lines and discharge lines are of adequate size to accommodate the removal of liquid from the wells.

5 INSTALLATION OF ENHANCED TEMPERATURE MONITORING SYSTEM (15b)

PROPOSED TEMPERATURE MONITORING SYSTEM

In Situ Temperature Monitoring

Several types of temperature monitoring were discussed in the February 20, 2008 letter from Countywide to US EPA. Of these, in situ temperature measurements were determined to have the best value for assessing the reaction. In situ temperature monitoring refers specifically to temperatures obtained from thermocouples buried directly in the waste mass, and not installed in part of a flowing gas well. These thermocouples obtain point measurements and are not subject to the effects of gas mixing that may be experienced to some degree in gas well downhole temperature measurements or wellhead temperature measurements. In situ temperature monitoring is the most reliable method because it is least affected by outside or specious factors, and is therefore able to be the most reliable early warning approach with respect to temperature. Since in situ temperature measurements are affected by the projection of warmer gases ahead of the reaction, and can, in fact, be raised by heat conduction and gas convection and diffusion well in front of a reacting mass, in-situ temperature would be expected to be the most reliable and sensitive early warning system with respect to temperature trends.

This Work Plan proposes installation of 13 additional thermocouple monitoring probes. Of the 13 proposed thermocouple monitoring probes, 7 will be located south of the Cell 5/7 interface and 6 will be located west of the reaction area in Cells 5A and 5D. The 5 existing temperature monitoring probes north of the reaction area will be replaced with more resistant thermocouples to prevent failure resulting from extreme conditions. The locations of the new and replacement thermocouple monitoring probes are shown on Figure 5. Thermocouples would be installed every 10 feet vertically in these new monitoring probes. A proposed schedule for the thermocouple installations in the proposed new monitoring probes and the borings to replace the existing FBMP locations is presented in Table 5.

The thermocouples will be Omega Type T Teflon® coated thermocouples, or equal. Cut sheets are presented in Appendix C. The thermocouples and associated wire leads will be placed in a Kevlar® sock which provides protection against abrasion. The borehole around each thermocouple will be backfilled with sand. A bentonite seal will be placed between thermocouples to prevent preferential vertical migration of fluids and the potential resulting temperature interferences. The leads will be placed into a flexible conduit at the ground surface. The conduit will be attached to a weather proof box. A typical installation detail is presented as Figure 11. Temperature readings are performed by connecting the terminal leads to a meter. The technician will compare the reading to the most recent valid reading. If the current reading is significantly different from the most recent valid reading, the technician will repeat the reading for that thermocouple. If the significant change is validated, a note will be added to the data report to highlight the potential change for further evaluation.

Republic does not anticipate that the thermocouples will experience a similar failure rate as exhibited by the thermistors used in the existing FBMP borings. The thermocouples to be

installed per this Work Plan will be, by design, less susceptible to damage due to settlement (believed to be the primary cause of thermistor failure) than the current installations. It is best for the thermocouples to be directly buried in the boreholes so they are in as close contact with the waste as possible. Thermocouples placed in an open casing are subject to the averaging effect of the gas in the casing. The proposed 10-foot spacing, compared with 20 foot intervals in the existing FBMP borings, provides a measure of redundancy that ensures that the failure of an individual thermocouple will not measurably impact the evaluation of the vertical temperature profile at any one boring location. Any unexpected failures in a few thermocouples will be offset by the additional number of thermocouples, i.e. failures can occur without significantly impacting the density of readings. If sufficient thermocouples fail at any one boring location to impact the evaluation of the vertical temperature profile, the contingency is that the failed thermocouples will be replaced by drilling a new borehole adjacent to the existing borehole and installing thermocouples at the appropriate depths.

6 ON-SITE DISPOSAL OF EXCAVATED MUNICIPAL SOLID WASTE (15d)

DISPOSAL OF MSW

Drilling the new wells associated with the implementation of the enhanced active gas extraction system and the installation of the enhanced temperature monitoring system will generate approximately 30 cubic yards of cuttings of waste from each borehole. The waste material encountered during the drilling operation will be predominantly municipal solid waste (MSW). The waste material brought to the surface as drilling cuttings by bucket auger drilling undergoes significant cooling when it is ejected from the bucket and while it is staged adjacent to the borehole. The MSW will be loaded onto off-road dump trucks and transported to the current active working face. The temperature of the drill cutting waste will be monitored prior to removal from the borehole area to ensure that waste with a temperature above 160 degrees F is not transported to the working face. The waste material will be placed at the working face and managed the same as is the incoming waste to the landfill.

Solid waste that is encountered that exhibits charring or elevated temperature will be transported to a separate area where it can be spread out, covered with soil, and allowed to cool, or spread out where it can be cooled water and allowed to dry before final disposition at the current working face. Tarps or ADC will be available to cover the waste to prevent saturation from a subsequent precipitation event after the initial cooling and drying.

DISPOSAL OF ALUMINUM WASTE MATERIALS

Based on the site's disposal records, it is anticipated that the only types of aluminum waste that may be encountered during the drilling would be bag house dust and shredder/delaq fines. Operational information from the site indicates that the acceptance of the baghouse dust and shredder/delaq fines stopped prior to the placement of the uppermost 55 ft of waste in Cell 7 (elevation 1170 +/-).

These materials might be encountered in only the deeper portions of the boreholes. Therefore, it is likely that little or no baghouse dust type aluminum waste may be encountered. To the extent that aluminum waste is present in a quantity that is not sufficient to be recognized, it does not present a significant heating hazard. If the baghouse dust type aluminum waste is encountered in sufficient quantity to be identified, then special handling and treatment may be required.

Bag house dust or shredder/delaq fines identified during drilling of the boreholes will be separated from the other solid waste during the excavation and loaded on separate roll off containers to be hauled to a soil pad designated on the site and treated, if necessary, prior to redisposal. The specific treatment methodology has not been finalized. It is anticipated that, if necessary, the waste will be mixed with a sufficient quantity of water to cover the waste in a sealed, open top rolloff type container and allowed to passivate. The pH of the water may be lowered to attempt to accelerate the reaction. Prior to disposal in the current active area, the mixture would be solidified. The material would be then be disposed of at the current working face without concern of any further heat generating reactions.

7 THERMAL IMAGERY (15g)

MONTHLY FLIGHTS

Order 4.A.10 of the March 28, 2007 Director's Final Findings and Orders requires Countywide to take a monthly aerial infrared (IR) image of the facility. Procedures to collect this image are as follows: The aerial IR survey company will use the latest lab quality FLIR Systems Series SC4000 Infrared Imaging Camera System, or equivalent. This particular equipment has a thermal sensitivity of 18mK and pictorial resolution of 76,800 at 200 frames per second. It depicts warmer areas as shades of white and colder areas as shades of black. It utilizes an Indium Antimonide (InSb) detector array, with the advanced ISCO309 ROIC IR system in a spectral bandwidth of 3-5 microns. The images are recorded digitally to high speed data drives.

The images will be analyzed by Level III Master Thermographers, or equivalent, to create one grayscale digital image. The grayscale of the image will show a temperature scale appropriate to show the range of temperatures detected on the surface of the landfill.

Several ground reference temperatures will be collected by a technician on the ground at the time of the flight. The reference temperatures will be collected at pre-determined points with a hand held IR/thermal sensor, or equivalent. The reference temperatures will be used to cross check the accuracy of the aerial thermal image.

Hard copies of the images will be maintained at Countywide and posted to the FTP Site for inspection. The equipment needed for aerial infrared imaging are:

- fixed wing aircraft with a belly-mounted Infrared Imaging camera,
- post processing computer system and software,
- ground reference points, hand held IR/thermal sensor, pen, and clipboard.

In the monthly Progress Report, Republic will attempt to identify and explain new features and/or changes from previous monthly reports, including anomalous features such as seeps and fissures that may be forming under the FML. The report will included a copy of the thermal image with key features of the landfill and potential anomalies identified.

8 HEALTH AND SAFETY PROVISIONS

Prior to commencing work, the selected drilling contractor will be required to submit a Health and Safety Plan that addresses the normal hazards of drilling with the selected equipment, as well as the normal hazards that exist when drilling through waste and the special hazards that exist in the reacting areas within the 88-acre area at Countywide. The Health and Safety Plan will be prepared in accordance with the Health and Safety Plan prepared by SAIC for the Agreement work. The Plan will then be submitted to SAIC for preparation of a Job Safety Analysis, and will be evaluated and revised in accordance with the following general criteria:

1. Drilling personnel must have 40-hour OSHA Hazwoper training.

2. Drilling personnel must be fit-tested and certified capable of working in supplied air should it become necessary.

3. Drilling personnel must be equipped with 4-gas meters (carbon monoxide, methane,
    a. hydrogen sulfide, and oxygen) with audible alarms.

4. Drilling personnel must be protected, by a fabricated physical diversion, from potential hot liquid, gas, or steam which may express from the borehole.

5. Drilling personnel will wear Level D PPE at all times including:
    a. ANSI approved hard hat with removable full-face shield
    b. High-visibility reflective vest
    c. Full-length pants
    d. Steel-toed boots
    e. Safety glasses
    f. Hearing protection
    g. Leather gloves unless conditions saturate the gloves, in which case nitrile or other impermeable non-slip gloves shall be used.

6. A readily-accessible 2A and 5BC fire extinguisher shall be available.

7. Welding will not be permitted if explosive gas is present at the welding site above 25% LEL.

The primary combustible gases encountered at Countywide include methane, hydrogen, carbon monoxide, acetylene, and hydrogen sulfide. The relative concentrations vary with location at the site, with methane being predominant in the non-reaction areas and hydrogen being predominant in the reaction areas. Acetylene concentrations have been insignificant. Hydrogen sulfide and carbon monoxide present other health and safety risks that are more significant than their explosion risk. Over 150 wells have been installed at Countywide without incident. The wells proposed to be installed for the enhanced active gas collection system are located outside the reaction area where methane is the predominant combustible gas. The 25% LEL is adequate for this project. A Certified Industrial Hygienist oversaw the preparation of the overall Health and Safety Plan for the Agreement activities and will review the Job Task Safety Analysis prepared

for the specific tasks, including the drilling activities. The preliminary Job Task Safety Analysis prepared for the drilling activities is provided in Appendix D.

In addition, the Plan must define an "exclusion zone" within which observers may not enter unless specifically allowed by the drilling crew chief, and must establish a procedure for keeping observers outside the drop zone when casing or drill rod is being put in or pulled from the boring. The Plan must also comply with the provisions of the Health and Safety Plan prepared for compliance with Paragraph 17 of the Agreement.

9 IMPLEMENTATION SCHEDULE

GAS EXTRACTION SYSTEM ENHANCEMENTS

The proposed schedule for this work is as follows. It is anticipated that the drilling program will commence approximately 30 days following approval of this Work Plan. Using industry standard commercial techniques and level of effort, it is anticipated that the enhancements to the gas extraction system will be completed approximately 30 days after the commencement of the drilling activities. It is anticipated that the operation of the enhanced gas extraction system will start about a week after the completion of the cap construction in that area. A tentative schedule is presented as Figure 10. The schedule is subject to change due to unforeseen events or conditions beyond the control of Countywide. These may include, but are not limited to, weather, mechanical failures, material availability, and contractor availability. No field work will commence prior to the completion of the background air quality evaluation.

TEMPERATURE MONITORING SYSTEM ENHANCEMENTS

The proposed schedule for this work is as follows. It is anticipated that the drilling program will commence approximately 30 days following approval of this Work Plan. Using industry standard commercial techniques and level of effort, it is anticipated that the enhancements to the temperature monitoring system will be completed approximately 30 days after the commencement of the drilling activities.

The above schedules are subject to change due to unforeseen events or conditions beyond the control of Countywide. These may include, but are not limited to, weather, mechanical failures, material availability, and contractor availability. However, the schedule could be accelerated if Countywide can get conditional and/or interim approvals on portions of the work. A tentative schedule is presented as Figure 11. The schedule is subject to change due to unforeseen events or conditions beyond the control of Countywide. These may include, but are not limited to, weather, mechanical failures, material availability, and contractor availability.

ON-SITE DISPOSAL OF EXCAVATED MSW

The disposal of waste at the active working face will be on-going during the installation of new gas extraction wells in the Cell 5/7 area and, depending on drilling methodology used, during the drilling of the temperature probes.

THERMAL IMAGERY

Thermal imagery is presently being conducted monthly at the site in accordance with the Director's Final Findings and Orders of March 28, 2007. Reports, including copies of the images, will continue to be provided to US EPA on a monthly basis.

10 ODOR AND FUGITIVE EMISSIONS CONTROL MEASURES

PROPOSED ODOR AND FUGITIVE EMISSIONS CONTROL MEASURES

The measures described in the Odor Control Plan, revised June 2007 will be continued during the installation of the gas extraction wells and temperature monitors. Additional odor prevention measures will be implemented as described in the following paragraphs.

Drilling Odors and Fugitive Emissions

Where practical, the sonic drill string will be equipped with blow out prevention devices that preclude the possibility of steam or pressurized liquid from coming back up the drill rods when the rods are broken to add or subtract segments. The temporary casing must have a diverter to send re-circulated or regurgitated fluid and or steam to a contained drilling fluid tank. The driller will supply the tank.

An activated carbon filtration system has been developed for managing the odors emanating from gas well bucket auger drilling operations in the landfill (Figure 13). Gases emanating from the boreholes during gas well drilling are passed through the carbon pack to reduce odors. The vacuum box consists of a section of steel pipe approximately 5-feet in diameter. The open bottom is seated into the cover soil around the borehole location. The top surface is covered with a flexible rubber membrane with a hole in the center approximately the same diameter as the drill rod. The membrane is flexible enough to allow the bucket auger bucket to pass through as it is inserted or withdrawn from the borehole. A fan is used to apply a vacuum to a vacuum box. The vapors collected are drawn through a conduit into roll off container modified to contain the activated carbon, which collects volatile compounds and odor related compounds.

Odor Neutralization System

There are four fixed distribution systems at CWRDF that total to approximately 6,000 linear feet of high pressure fogging line. Each system is approximately 1,500 feet in length with 100 nozzles at 15 ft centers. The nozzles are sized to deliver approximately 3.5 gph at 600 to 800 psi of a solution of water and odor neutralizing product. The manufactures specifications for the nozzles are that the nozzles will deliver a fine fog with a particle size of 5 to 25 microns.

The systems are identified as:

- System 1 – West Perimeter
- System 2 – South Perimeter
- System 3 – Bowl
- System 4 – North East Perimeter

The system hoses and nozzles have been strategically placed, based on results from two independent testing methods, at the most odorous areas of the landfill to be as close to the source

of odor as possible. In addition, the facility has purchased automated controls to activate the systems in response to wind speeds or wind direction.

The odor control agent now in use is a product called CWI Lotus. It is an odor neutralizer and not a masking perfume or agent. The MSDS sheets for this product are presented in Appendix E. The location of the stationary system components is shown on Figure 12.

Localized Treatment With Portable System

A review of the odor complaints revealed that many of the odor issues present themselves whenever there is drilling, trenching, flare maintenance, cover repair, gas well repairs etc. These activities tend to allow very high levels of odor release in small-localized areas. These high odor releases have been problematic. Treatment for these specific odor issues is applied at the specific work area.

One way to accomplish the localized treatment is by using a high volume, high velocity, portable backpack-style fan equipped with a small liquid reservoir and nozzles at the outlet. The fan can be precisely placed to allow the introduction of neutralizing product into the odor stream.

To address larger scale localized sources of odor, a trailer mounted system is employed. The trailer has worked extremely well when used in high odor release areas to eliminate the odor prior to escape into the larger atmosphere. The trailer system consist of an approximately 200 gallon reservoir tank, a high pressure pump powered by a gasoline engine, and two hinged spray arms approximately 20 feet in length each.. Nozzles are located at approximately 5-foot intervals along the spray arms.

This mix of systems/processes allows significantly better contact between the potential odor stream and the odor neutralizing products.

11 CONSTRUCTION QUALITY ASSURANCE/QUALITY CONTROL

Quality Assurance/Quality Control (QA/QC) principles and practices for the construction of the Enhanced Gas Extraction and Monitoring System described in this Work Plan will be implemented for the construction of the engineered components associated with this work. Quality management involves the performance of both quality assurance and quality control activities to verify that the construction meets design criteria, plans, and specifications.

QA/QC activities that involve monitoring and documentation for construction of the engineered components will be performed full time by a third party with the experience and qualifications necessary to ensure compliance with the design criteria, plans, and specifications detailed in this Work Plan.

Construction activities that involve the installation of the engineered components detailed in this Work Plan and will be governed by QA/QC measures include:

- Gas Extraction Well Drilling Logs
- Gas Extraction Well Installation Diagrams
- Gas Extraction Wellhead Assembly Installation Details
- Leachate/Condensate Pump Installation, if necessary
- Header and/or Lateral Line Assembly, Testing, and Installation
- Air and Leachate Discharge Line Assembly, Testing, and Installation, if appropriate
- Gas Extraction Well Start Up and Fine Tuning
- Thermocouple Drilling Logs
- Thermocouple Installation

QA/QC activities associated with the installation of the temporary FML in the Cell 5/7 area will be controlled by the QA/QC plan for the Capping Work Plan which was prepared by Cornerstone Environmental Group in accordance with the requirements of subparagraph 15.c. of the Agreement.

CUT/FILL LEGEND

- Greater than 39.00
- 36.00 TO 39.00
- 33.00 TO 36.00
- 30.00 TO 33.00
- 27.00 TO 30.00
- 24.00 TO 27.00
- 21.00 TO 24.00
- 18.00 TO 21.00
- 15.00 TO 18.00
- 12.00 TO 15.00
- 9.00 TO 12.00
- 6.00 TO 9.00
- 3.00 TO 6.00
- 0.00 TO 3.00
- 0.00 TO 0.00
- -3.00 TO 0.00
- -6.00 TO -3.00
- -9.00 TO -6.00
- -12.00 TO -9.00
- -15.00 TO -12.00
- -18.00 TO -15.00
- -21.00 TO -18.00
- -24.00 TO -21.00
- -27.00 TO -24.00
- -30.00 TO -27.00
- -33.00 TO -30.00
- -36.00 TO -33.00
- -39.00 TO -36.00
- Less than -39.00

LEGEND

- 1120 — TOP OF WASTE CONTOUR (3/12/07), CTR INT. = 2'
- EXISTING ROADS
- EXTENT OF 0.5' SETTLEMENT BOUNDARY FOR 4-WEEK PERIOD (4/16/07 TO 5/14/07)
- EXTENT OF 0.5' SETTLEMENT BOUNDARY FOR 4-WEEK PERIOD (04/07/08 TO 05/05/08)
- APPROXIMATE LIMIT OF WELLHEAD TEMPERATURE GREATER THAN 150° F (APRIL 2008)
- LIMIT OF WASTE DEPTH GREATER THAN 120'
- ADVANCING SETTLEMENT FRONT VECTOR (APPROXIMATELY ONE YR. OF MOVEMENT)
- RETRACTING SETTLEMENT FRONT VECTOR (APPROXIMATELY ONE YR. OF MOVEMENT)

N / W / E / S

0' 100' 200' 300'

COUNTYWIDE RDF

SCALE: 1" = 100', CTR=2'		REVISIONS
SURVEYED:		
DRAWN: BWS	5/23/08	
CHECKED: BWS	5/23/08	
REVISED DATE:		

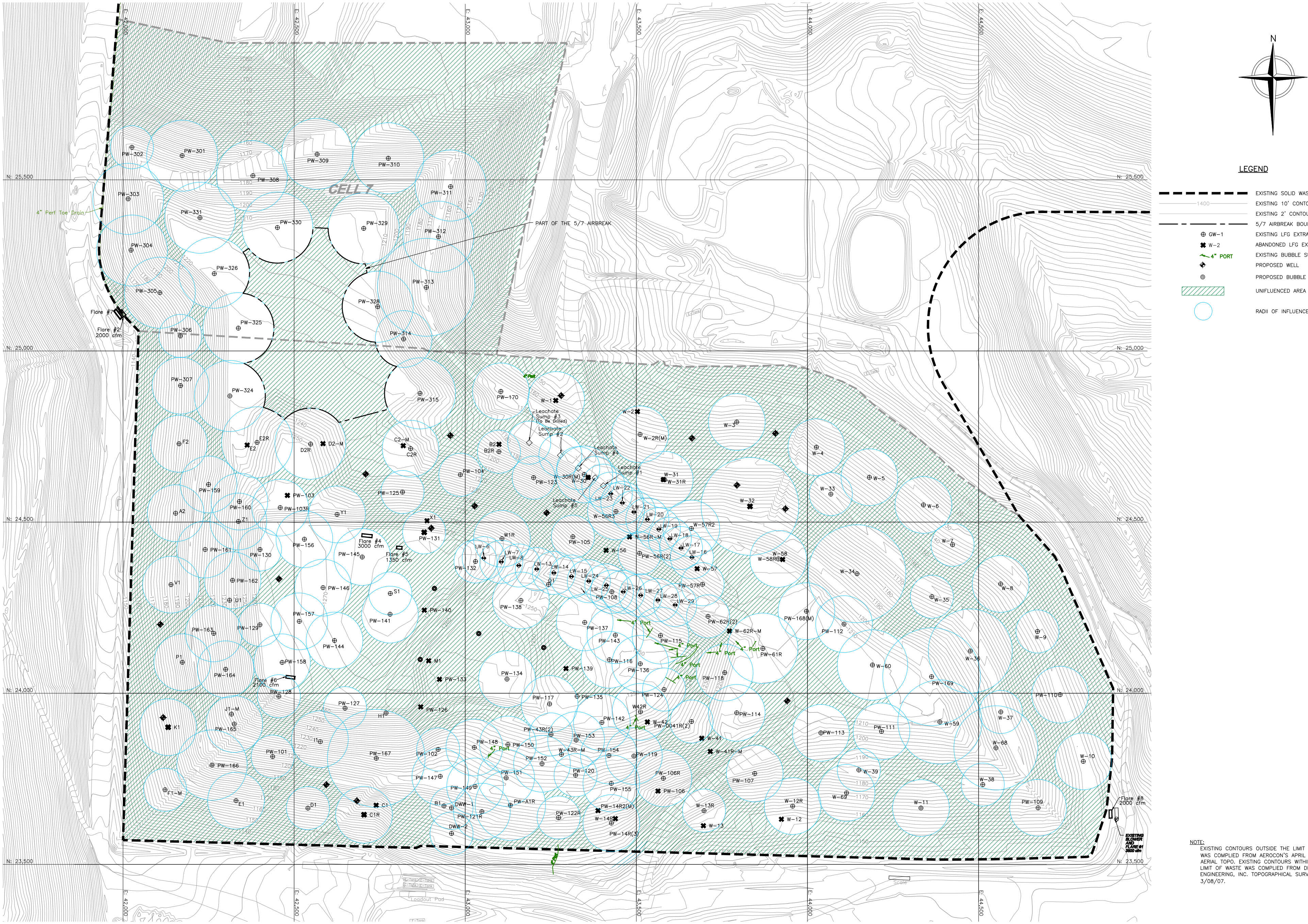
DIVERSIFIED ENGINEERING INC.
225 Fair Avenue, NE
New Philadelphia, Ohio 44663
Phone: (330) 364-1631
Fax: (330) 364-4031
e-mail: dei@dei-eng.com

PROJECT: 88 Ac. SETTLEMENT COMPARISON

SHEET TITLE: CURRENT STATUS OF REACTION

FILE ID: Current Status of Reaction 05-05-08

FIGURE 1



LEGEND

	EXISTING SOLID WASTE BOUNDARY
1400	EXISTING 10' CONTOUR
	EXISTING 2' CONTOUR
	5/7 AIRBREAK BOUNDARY
GW-1	EXISTING LFG EXTRACTION WELL
W-2	ABANDONED LFG EXTRACTION WELL
4" PORT	EXISTING BUBBLE SUCKER
	PROPOSED WELL
	PROPOSED BUBBLE SUCKER
	UNIFLUENCED AREA
	RADII OF INFLUENCE

NOTE:
EXISTING CONTOURS OUTSIDE THE LIMIT OF WASTE WAS COMPLIED FROM AEROCON'S APRIL 18, 2006 AERIAL TOPO. EXISTING CONTOURS WITHIN THE LIMIT OF WASTE WAS COMPLIED FROM DIVERSIFIED ENGINEERING, INC. TOPOGRAPHICAL SURVEY DATED 3/08/07.

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY

DATE OF ISSUE 12/06/07 DRAWN BY TSS DESIGNED BY KTK CHECKED BY MSM APPROVED BY MSM

CORNERSTONE Environmental Group, LLC

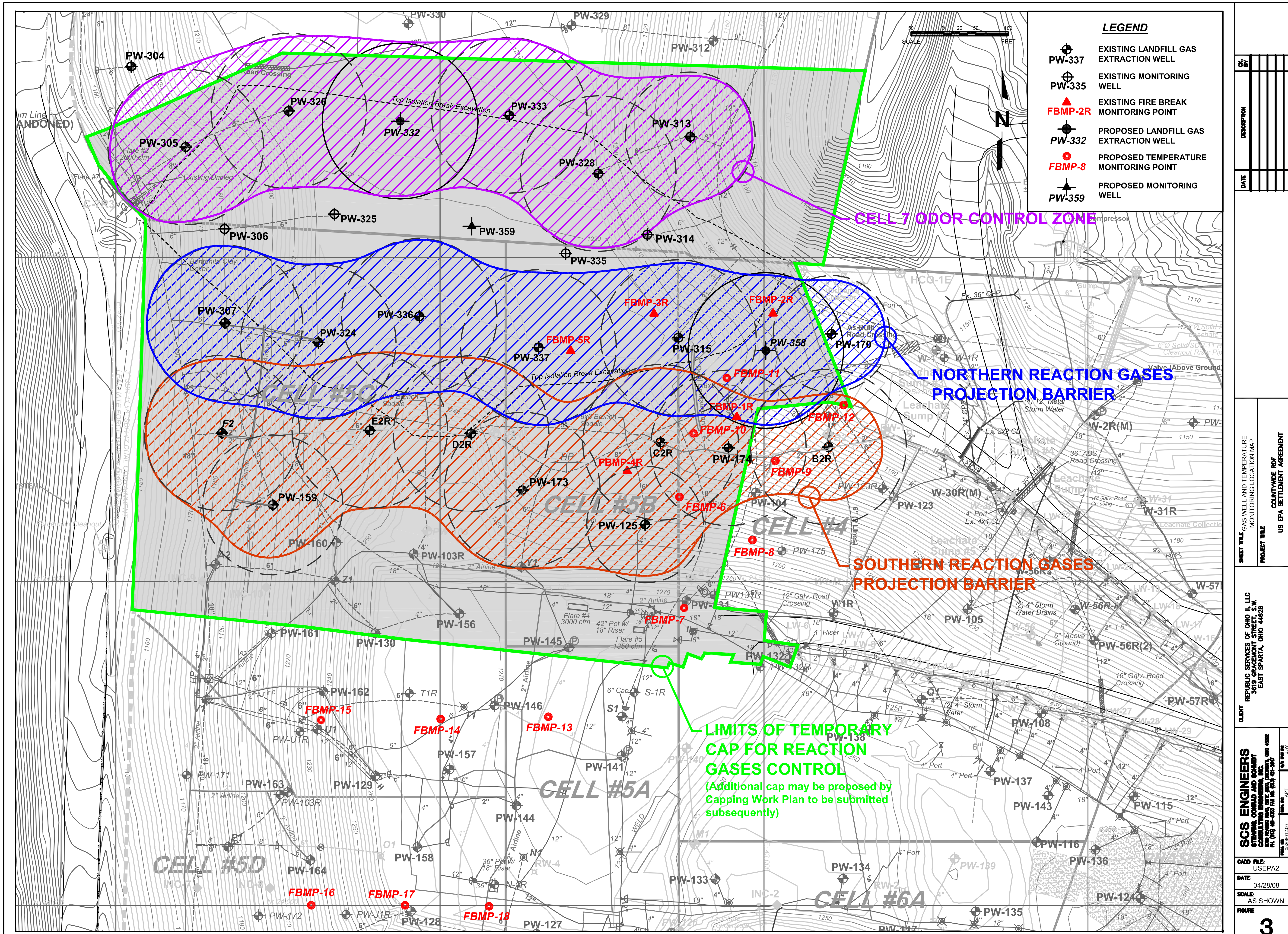
COUNTYWIDE RDF
EAST SPARTA, OHIO

PROPOSED GAS COLLECTORS

FIGURE NO. 2

PROJECT NO. 070187

FIGURE 2



LEGEND
EXISTING LANDFILL GAS EXTRACTION WELL
EXISTING MONITORING WELL
EXISTING FIRE BREAK MONITORING POINT
PROPOSED LANDFILL GAS EXTRACTION WELL
PROPOSED TEMPERATURE MONITORING POINT
PROPOSED MONITORING WELL
CELL 7 ODOR CONTROL ZONE
NORTHERN REACTION GASES PROJECTION BARRIER
SOUTHERN REACTION GASES PROJECTION BARRIER
LIMITS OF TEMPORARY CAP FOR REACTION GASES CONTROL
(Additional cap may be proposed by Capping Work Plan to be submitted subsequently)
CELL #5C
CELL #5B
CELL #5A
CELL #5D
CELL #4
CELL #6A
SCS ENGINEERS
REPUBLIC SERVICES OF OHIO II, LLC
3619 GRACEMONT STREET, S.W.
EAST SPARTA, OHIO 44626
GAS WELL AND TEMPERATURE MONITORING LOCATION MAP
COUNTYWIDE RDF
US EPA SETTLEMENT AGREEMENT
CADD FILE: USEPA2
DATE: 04/28/08
SCALE: AS SHOWN
FIGURE 3

\\Alpha\alpha-data\Data\LANDFILLS\Countywide Landfill\Gas Control System\2007 Well Temp. Data\Drawings\Well Hydrogen (H2)\Well Initial Hydrogen Map December 2007.dwg, 1/30/2008 4:38:11 PM

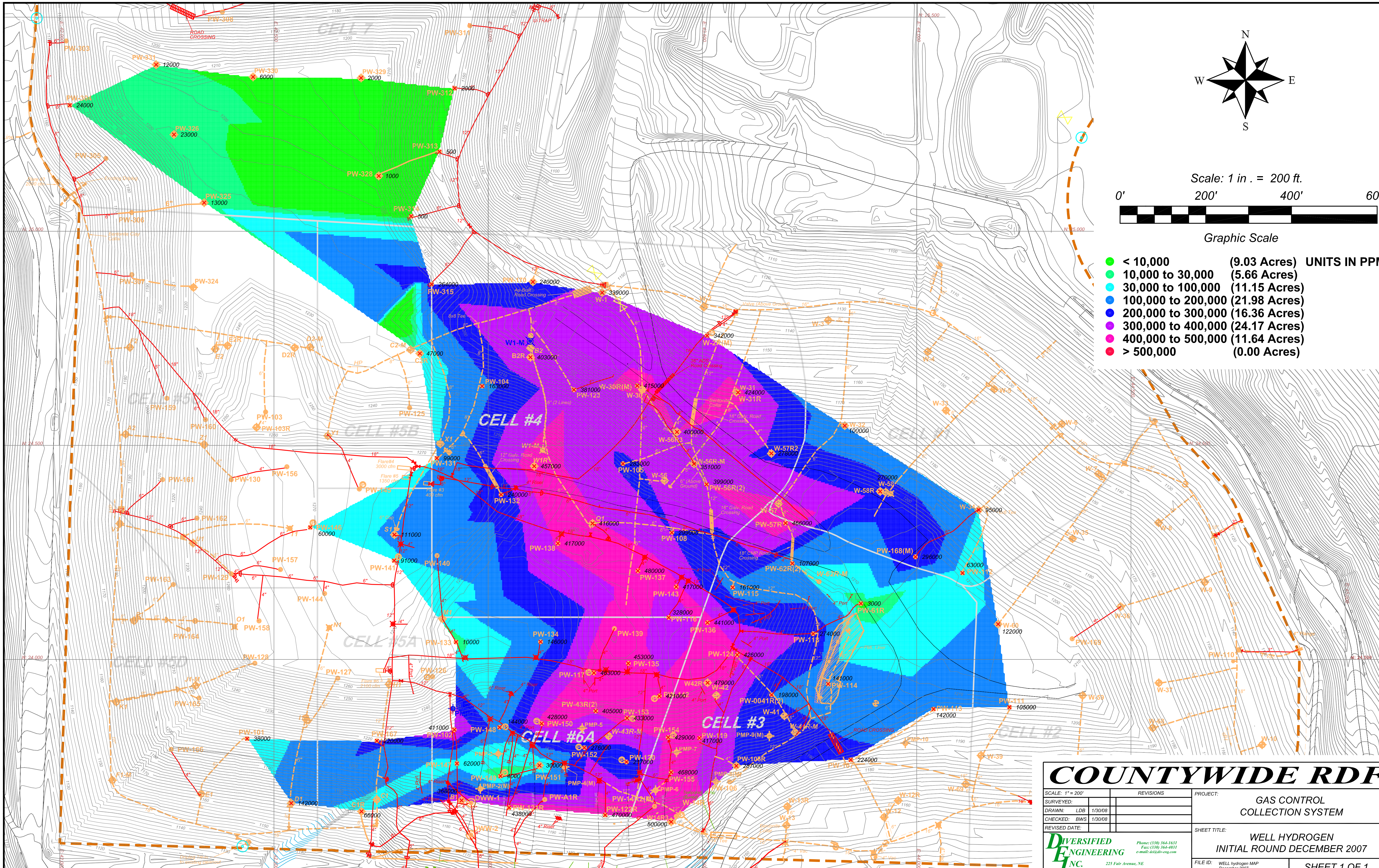


FIGURE 4

N

W E

S

< 100	(14.19 Acres)	UNITS IN PPM
100 to 300	(2.00 Acres)	
300 to 1000	(26.77 Acres)	
1000 to 2000	(35.01 Acres)	
2000 to 3000	(14.41 Acres)	
3000 to 4000	(7.45 Acres)	
4000 to 5000	(0.18 Acres)	
> 5000	(0.0 Acres)	

Scale: 1 in . = 200 ft.

0' 200' 400' 600'

Graphic Scale

COUNTYWIDE RDF

SCALE: 1" = 200'		REVISIONS	
SURVEYED:			
DRAWN: LDB	4/24/08		
CHECKED: BWS	4/24/08		
REVISED DATE:			

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e-mail: dei@dei-eng.com

PROJECT: GAS CONTROL COLLECTION SYSTEM

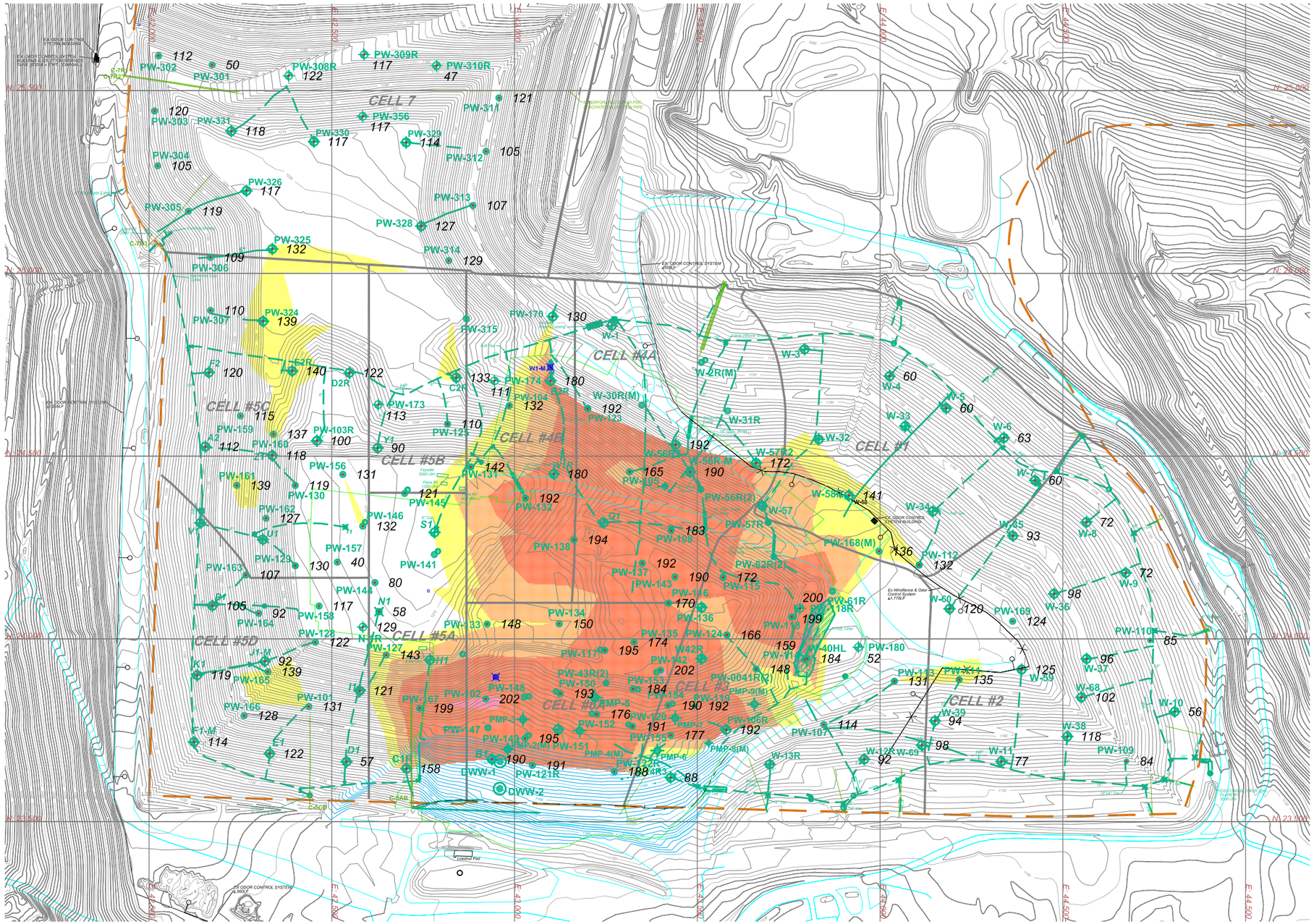
SHEET TITLE: WELL CARBON MONOXIDE MARCH 2008

FILE ID: WELL CO MAP March 2008

APPENDIX C

FIGURE 5

\\Alpha\alpha-data\Data\LANDFILLS\Countywide Landfill\Gas Control System\2008 Well Temp. Data\Drawings\Well Carbon Monoxide (CO)\Well CO Map March 2008.dwg, 4/24/2008 11:44:13 AM



WELL TEMPERATURE COLOR LEGEND

Temp Zone(°F)

- Greater Than 131 (9.00 Acres)
- Greater Than 150 (8.33 Acres)
- Greater Than 170 (19.99 Acres)
- Greater Than 200 (0.12 Acre)

N
W E
S

Scale: 1 in . = 300 ft.

0' 300' 600' 900'

Graphic Scale

COUNTYWIDE RDF

SCALE: 1" = 300', CTR = 2'		REVISIONS	
SURVEYED:			
DRAWN: LDB	5/7/08		
CHECKED: BWS	5/7/08		
REVISED DATE:	5/7/08		

PROJECT: GAS CONTROL COLLECTION SYSTEM

SHEET TITLE: INITIAL WELL TEMPERATURES APRIL 2008

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e-mail: ktt@dei-eng.com

FILE ID: WELL TEMPERATURE MAP April 2008

SHEET 1 OF 1

\\alpha\alpha\data\data\DMP\FILES\countywide landfill\Gas control System\2008 Well temp data\drawings\Well temperature\Well temperature Map April 2008 (revised 5-7-08).dwg, 5/7/2008 9:58:13 AM

FIGURE 6

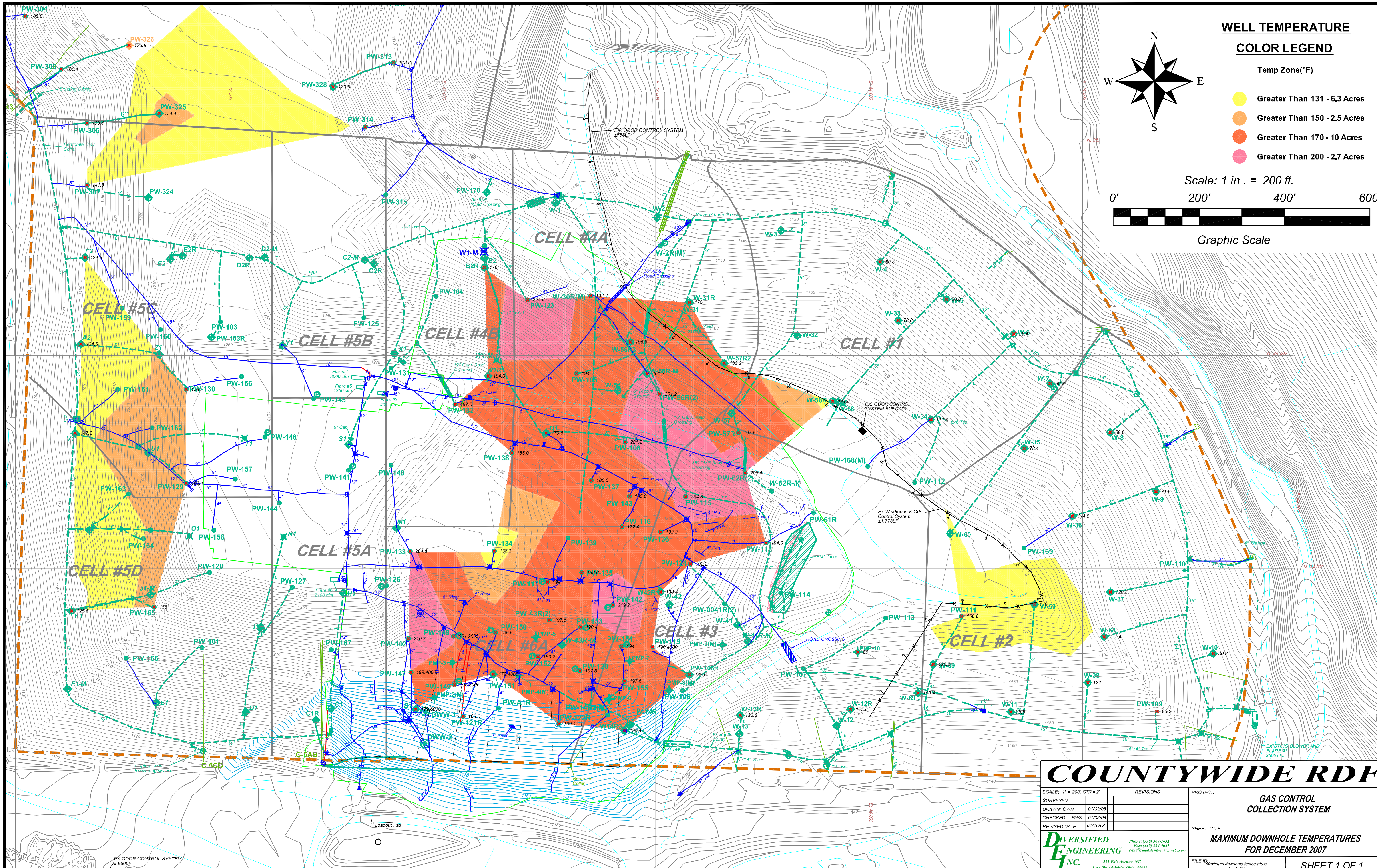
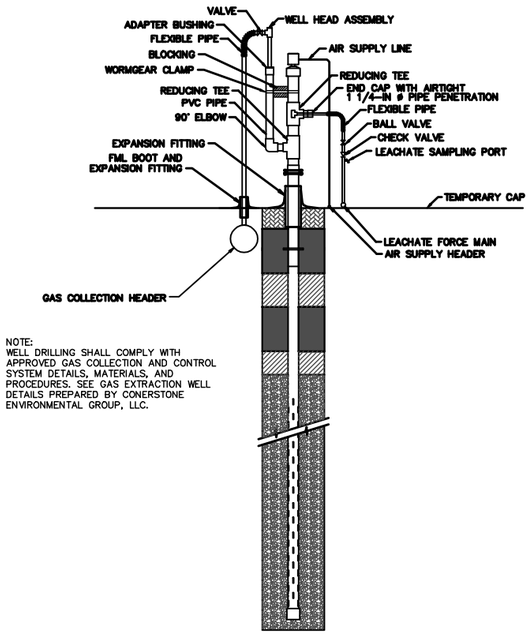
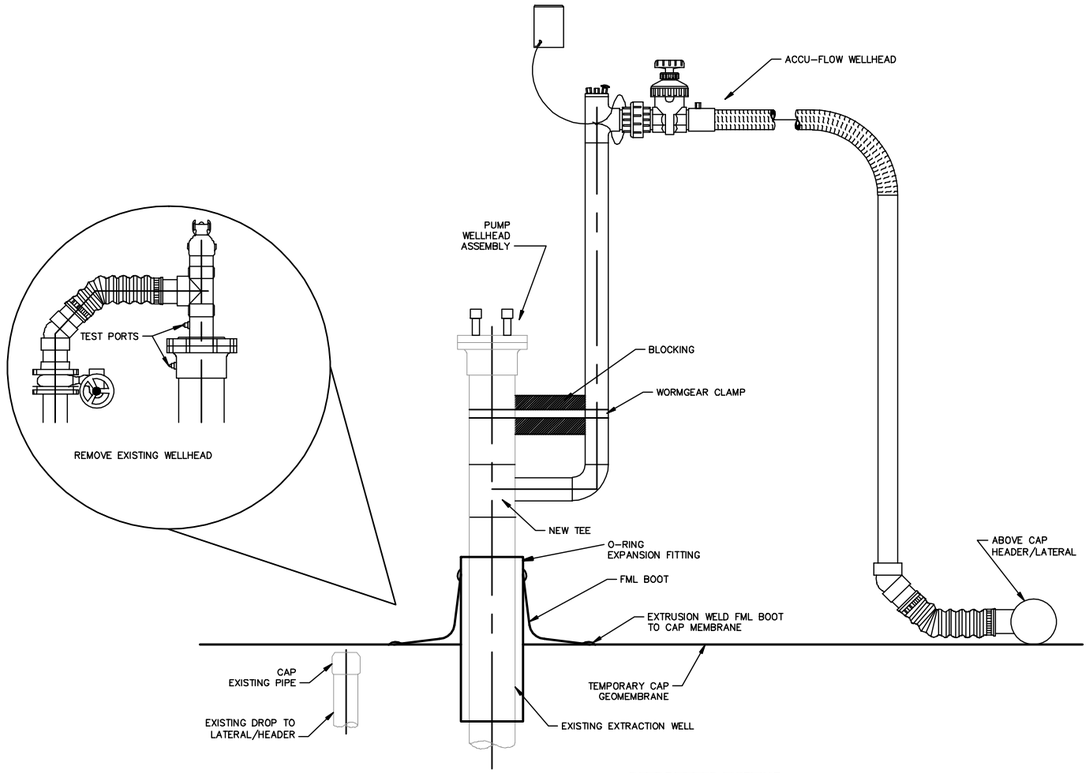

WELL TEMPERATURE
COLOR LEGEND
Temp Zone(°F)
Greater Than 131 - 6.3 Acres
Greater Than 150 - 2.5 Acres
Greater Than 170 - 10 Acres
Greater Than 200 - 2.7 Acres
N
S
W
E
Scale: 1 in . = 200 ft.
0'
200'
400'
600'
Graphic Scale
CELL #1
CELL #2
CELL #3
CELL #4A
CELL #4B
CELL #5A
CELL #5B
CELL #5C
CELL #5D
CELL #6A
EX. ODOR CONTROL SYSTEM BUILDING
EXISTING BLOWER AND FLARE #1 3500 cfm
ROAD CROSSING
COUNTYWIDE RDF
SCALE: 1" = 200', CTR = 2'
REVISIONS
SURVEYED:
DRAWN: CWH 01/03/08
CHECKED: BWS 01/03/08
REVISED DATE: 01/10/08
DIVERSIFIED ENGINEERING INC.
Phone: (330) 364-1631
Fax: (330) 364-4031
e-mail: mail.dei@neohio.twcbc.com
225 Fair Avenue, NE
New Philadelphia, Ohio 44663
PROJECT:
GAS CONTROL COLLECTION SYSTEM
SHEET TITLE:
MAXIMUM DOWNHOLE TEMPERATURES FOR DECEMBER 2007
FILE ID: Maximum downhole temperature map December 2007
SHEET 1 OF 1

FIGURE 7

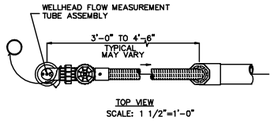


NOTE:
WELL DRILLING SHALL COMPLY WITH APPROVED GAS COLLECTION AND CONTROL SYSTEM DETAILS, MATERIALS, AND PROCEDURES. SEE GAS EXTRACTION WELL DETAILS PREPARED BY CONERSTONE ENVIRONMENTAL GROUP, LLC.

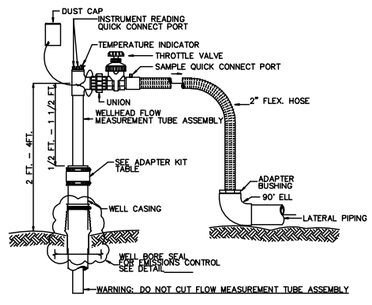
DEWATERING/GAS WELL HEAD ASSEMBLY 1/2/9
NOT TO SCALE



RETROFITTED EXISTING GAS WELL 3/2/9
NOT TO SCALE



TOP VIEW
SCALE: 1 1/2"=1'-0"



ELEVATION
SCALE: 1 1/2"=1'-0"

ACCU-FLOW WELLHEAD 4/2/9
NOT TO SCALE

REV.	DATE	DESCRIPTION	CK. BY:

SHEET TITLE: GAS EXTRACTION WELL DETAILS

PROJECT TITLE: COUNTYWIDE RDF
US EPA SETTLEMENT AGREEMENT

CLIENT:
REPUBLIC SERVICES OF OHIO II, LLC
3619 GRACEMONT STREET, S.W.
EAST SPARTA, OHIO 44626

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT
CONSULTING ENGINEERS, INC.
3575 KOLBE ROAD, SUITE 310, LORAIN, OHIO 44053
PH. (440) 422-3333 FAX NO. (440) 422-2947

PROJ. NO. 05206012.00 | DWN. BY: FDB | Q/A RVW BY: JJW
DSN. BY: FDB | CHK. BY: CES

CADD FILE: ODOR CONTROL
DATE: MAY 23, 2008
SCALE: NOT TO SCALE
DRAWING NO.
FIGURE 8
of

FIGURE 9

RADIUS OF INFLUENCE CALCULATION

GAS EXTRACTION WELLS

COUNTYWIDE RDF

From the Countywide GCCS Plan Calculation, as modified for the DFF&O in 2007 (see attached):

Given:

1. Radius of Influence (ROI) not applicable for geomembrane cap
1. Refuse permeability factor (F_s) for wet waste = 4.0
2. Cover depth (Cd) = 1 foot
2. Cover permeability factor (M_s) for daily cover = 0.77
3. [ROI = F_s(solid pipe)(S_p) + (M_s * Cd))]

The GCCS Plan does not address a temporary or permanent geomembrane cap. The enhanced gas extraction well system area is to receive a temporary geomembrane cap as shown on Figure 2.

The geomembrane cap will increase the ratio of horizontal to vertical influence of the gas extraction wells due to the decrease in permeability of the geomembrane. As vacuum is increased at the gas extraction wells, the horizontal to vertical radius of the capture ability exerted by the well will increase by a factor of 10 due to the cover (geomembrane) permeability factor.

Therefore, the ROI of wells where the temporary geomembrane is to be installed can be calculated as follows:

[ROI = F_s(Sp) + (M_s)(Cd))], where
(F_s) = 4.0
(M_s) = 10
(Cd) does not affect the calculation

A typical calculation for most of the extraction wells that are installed with 20 feet of solid pipe (S_p) would be calculated as follows:

[ROI = (4) (20 + 10)] = 120 feet

Shallow wells or wells with less than 20 feet of solid pipe would not realize the same affect in the ROI as the example shown above. The ROI of those wells has been reduced as shown on the wells schedule to account for the shorter length of solid pipe.

FIGURE 9 (CONT.)

Cornerstone

Radius of Influence Calculation

for Soil Cap (not applicable for geomembrane cap

Project Name: County Wide
Project Number: 60196

Prepared By: Kyle Kneser Date: 11/15/2007
Checked By: Mike Michels Date: 11/15/2007

No. of Layers = 1

Refuse Permeability Factor (Fs) (Ranges 3.5 to 6.5): see table below
(i.e.: wet waste = 3.5, dry waste = 6.5)

Layer No.	Thickness (ft)	Soil Permeability (cm/sec)	Soil Description	Cover Permeability Factor (Ms)
1	1	1.00E-06	Daily Cover	0.77
3				
4				
5				
6				
7				

Total Depth of Cover (Cd) = 1

Weighted Ms Factor:

Cover Perm Factor Ms (total) = 0.77

ROI Calculations : [ROI = Fs (Solid Pipe (Sp) + (Ms * Cd))]

Radius of Influence Table

Refuse Perm. Factor (Fs)	Length of Solid Pipe					
	15	20	25	30	35	40
3.5	55.20	72.70	90.20	107.70	125.20	142.70
4.0	63.08	83.08	103.08	123.08	143.08	163.08
4.5	70.97	93.47	115.97	138.47	160.97	183.47
5.0	78.85	103.85	128.85	153.85	178.85	203.85
5.5	86.74	114.24	141.74	169.24	196.74	224.24
6.0	94.62	124.62	154.62	184.62	214.62	244.62
6.5	102.51	135.01	167.51	200.01	232.51	265.01

Dryer Refuse --->>

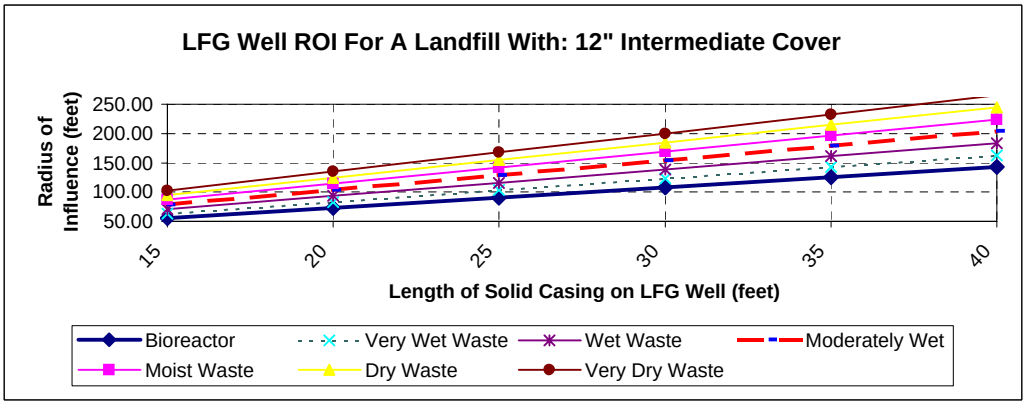
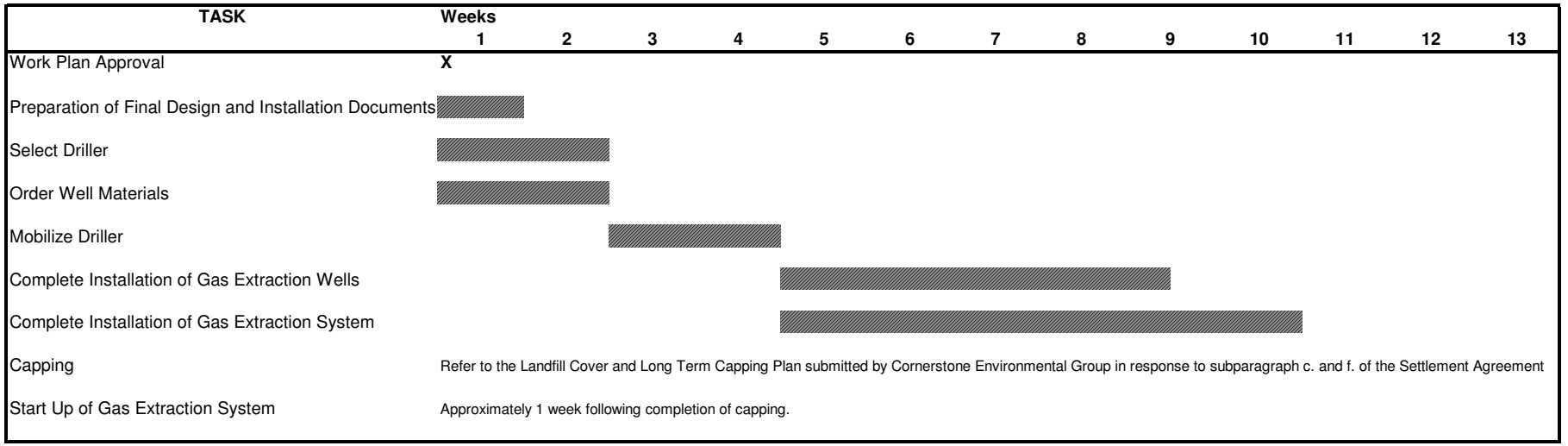
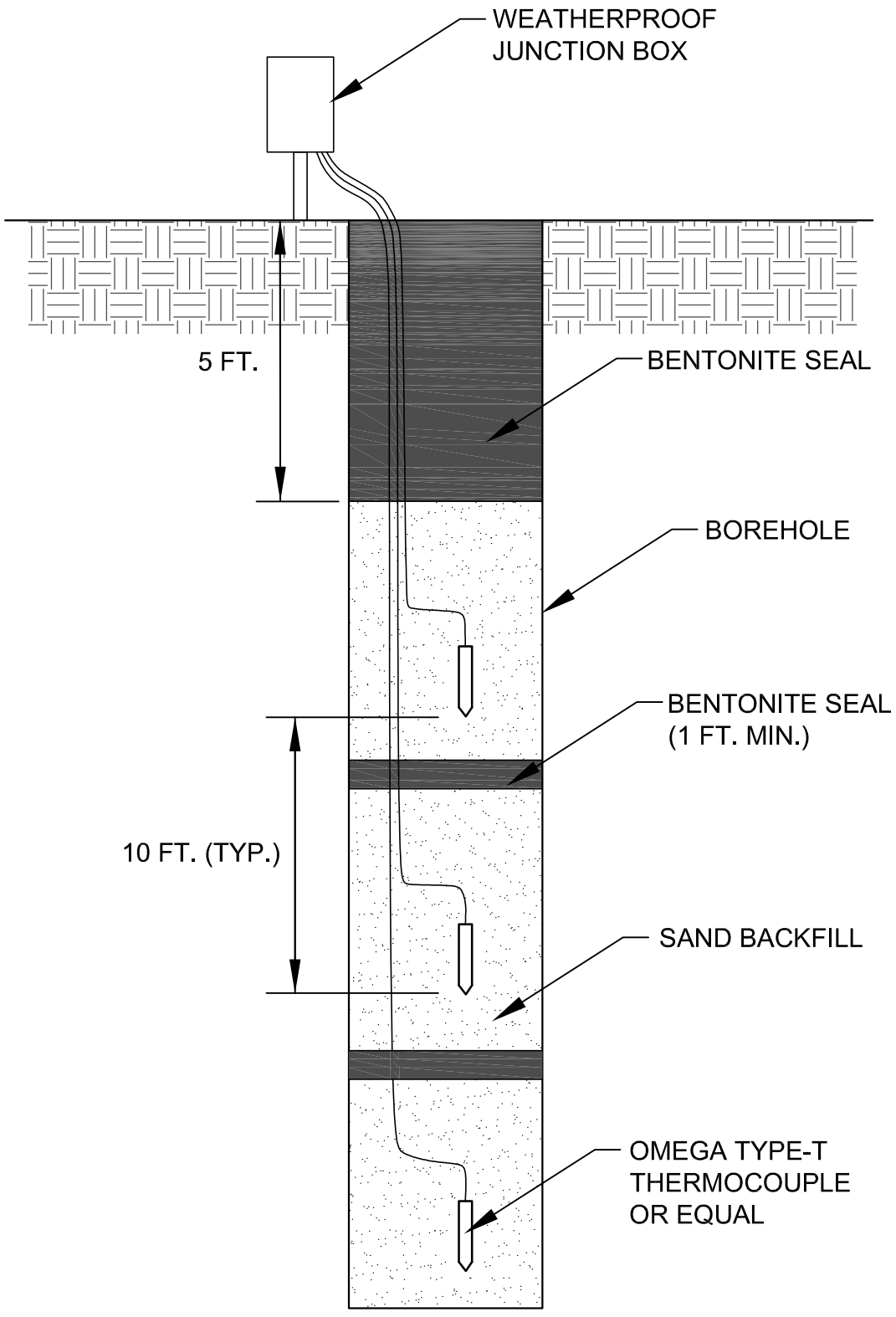


FIGURE 10. TENTATIVE SCHEDULE FOR GAS EXTRACTION WELL INSTALLATION AND ENHANCED SYSTEM STARTUP COUNTYWIDE RDF



Note: This schedule is provided for informational purposes only. Republic cannot guarantee strict adherance to this schedule due to those portions which are not controlled by Republic.



SCS ENGINEERS
CONSULTING ENGINEERS, INC.
2060 READING ROAD SUITE 200 CINCINNATI, OHIO 45202
PH. (513) 421-5353 FAX NO. (513) 421-2847

PROJ. NO.	CADD FILE:	DATE:	SCALE:
05206012.00	FIGURE 11	5/29/08	N.T.S.

FIGURE 11
TYPICAL THERMOCOUPLE INSTALLATION

REPUBLIC SERVICES OF OHIO II, LLC
3619 GRACEMONT STREET S.W.
EAST SPARTA, OHIO

FIGURE 12. TENTATIVE SCHEDULE FOR THERMOCOUPLE INSTALLATION
COUNTYWIDE RDF

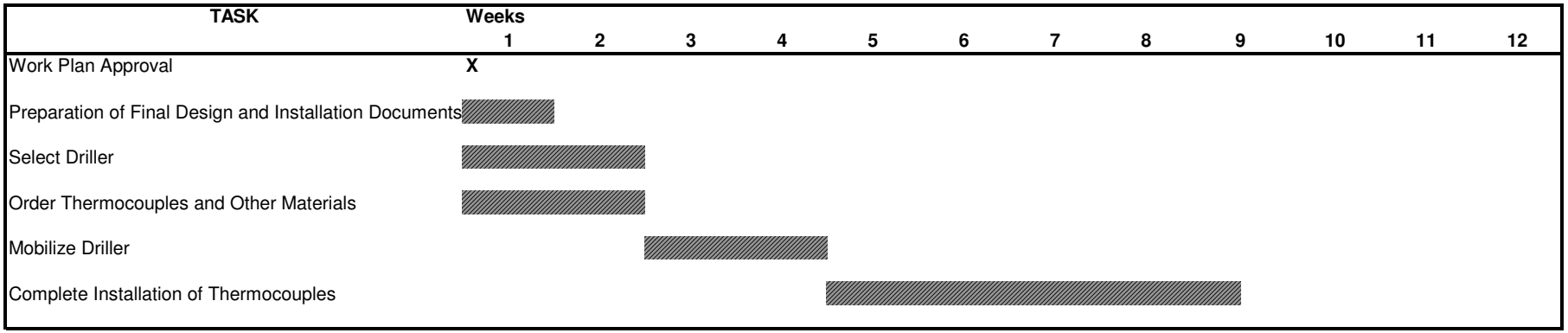


FIGURE 13. VACCUM BOX AND ACTIVATED CARBON SYSTEM COUNTYWIDE RDF

Activated carbon unit.

Vacuum box (vacuum not applied at time of photo)

LEGEND

EXISTING SOLID WASTE BOUNDARY
EXISTING CELL BOUNDARY
5' CONTOUR - EXISTING GROUND
EXISTING ODOR CONTROL SYSTEM

NOTE:
Existing contours outside the limit of waste were compiled from the Aerocom's March 29, 2007 aerial topo. Existing contours within the 88Ac. footprint were compiled from a Diversified Engineering, Inc. topographical survey dated 3/08/07. Existing contours in Cells 5A & 5D were updated on 2/20/08.

Base map provided by Diversified Engineering, Inc.

UPDATED 2/20/08

N W E S

0' 300' 600' 900'

REV.	DATE	DESCRIPTION	CK. BY:
1			
2			
3			
4			
5			

SHEET TITLE: ODOR NEUTRALIZATION SYSTEM

PROJECT TITLE: COUNTYWIDE RDF
US EPA SETTLEMENT AGREEMENT

CLIENT:
REPUBLIC SERVICES OF OHIO II, LLC
3619 GRACEMONT STREET, S.W.
EAST SPARTA, OHIO 44626

SCS ENGINEERS
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CONSULTING ENGINEERS, INC.
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PROJ. NO. 05206012.00
DSN. BY: FDB
CHK. BY: FDB
DWN. BY: FDB
CHK. BY: CES
Q/A REVIEW BY: JJW

CADD FILE: ODOR CONTROL
DATE: MAY 23, 2008
SCALE: AS SHOWN
DRAWING NO.
FIGURE 14
of

I: \Land Projects \05206012 Countywide RDF \dwg \USEPA \Odor Control System.dwg May 23, 2008 - 3:03pm Layout Name: Odor Control 11x17 By: 0649fdb

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
B2R	Adjusted Flow	4/4/08	9:04	0	SCFM
B2R	Adjusted Flow	4/4/08	9:08	0	SCFM
B2R	Adjusted Static Pressure	4/4/08	9:04	-9.6	Inches H20
B2R	Adjusted Static Pressure	4/4/08	9:08	-5.9	Inches H20
B2R	Adjusted Temperature	4/4/08	9:04	180	F
B2R	Adjusted Temperature	4/4/08	9:08	180	F
B2R	Balance Gas	4/4/08	9:04	36.9	%
B2R	Balance Gas	4/4/08	9:08	34.7	%
B2R	Carbon Dioxide	4/4/08	9:04	62.4	%
B2R	Carbon Dioxide	4/4/08	9:08	64.7	%
B2R	Initial Flow	4/4/08	9:04	0	SCFM
B2R	Initial Flow	4/4/08	9:08	0	SCFM
B2R	Initial Static Pressure	4/4/08	9:04	-9.7	Inches H20
B2R	Initial Static Pressure	4/4/08	9:08	-5.9	Inches H20
B2R	Initial Temperature	4/4/08	9:04	180	F
B2R	Initial Temperature	4/4/08	9:08	180	F
B2R	Methane	4/4/08	9:04	0.7	%
B2R	Methane	4/4/08	9:08	0.6	%
B2R	Oxygen	4/4/08	9:04	0	%
B2R	Oxygen	4/4/08	9:08	0	%
B2R	Adjusted Flow	4/8/08	9:21	0	SCFM
B2R	Adjusted Flow	4/8/08	9:25	0	SCFM
B2R	Adjusted Static Pressure	4/8/08	9:21	-6.7	Inches H20
B2R	Adjusted Static Pressure	4/8/08	9:25	-7	Inches H20
B2R	Adjusted Temperature	4/8/08	9:21	182	F
B2R	Adjusted Temperature	4/8/08	9:25	182	F
B2R	Balance Gas	4/8/08	9:21	38.5	%
B2R	Balance Gas	4/8/08	9:25	37.4	%
B2R	Carbon Dioxide	4/8/08	9:21	60.7	%
B2R	Carbon Dioxide	4/8/08	9:25	61.9	%
B2R	Initial Flow	4/8/08	9:21	0	SCFM
B2R	Initial Flow	4/8/08	9:25	0	SCFM
B2R	Initial Static Pressure	4/8/08	9:21	-6.7	Inches H20
B2R	Initial Static Pressure	4/8/08	9:25	-7.1	Inches H20
B2R	Initial Temperature	4/8/08	9:21	182	F
B2R	Initial Temperature	4/8/08	9:25	182	F
B2R	Methane	4/8/08	9:21	0.5	%
B2R	Methane	4/8/08	9:25	0.5	%
B2R	Oxygen	4/8/08	9:21	0.3	%
B2R	Oxygen	4/8/08	9:25	0.2	%
B2R	Depth to Bottom (BGL)	4/9/08	0:00	62	Ft
B2R	Depth to Fluid (BGL)	4/9/08	0:00	30.1	Ft

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
B2R	Adjusted Flow	4/14/08	9:59	0	SCFM
B2R	Adjusted Flow	4/14/08	10:02	0	SCFM
B2R	Adjusted Static Pressure	4/14/08	9:59	-11.1	Inches H20
B2R	Adjusted Static Pressure	4/14/08	10:02	-11.4	Inches H20
B2R	Adjusted Temperature	4/14/08	9:59	180	F
B2R	Adjusted Temperature	4/14/08	10:02	180	F
B2R	Balance Gas	4/14/08	9:59	37.3	%
B2R	Balance Gas	4/14/08	10:02	37.2	%
B2R	Carbon Dioxide	4/14/08	9:59	61.1	%
B2R	Carbon Dioxide	4/14/08	10:02	61.6	%
B2R	Initial Flow	4/14/08	9:59	0	SCFM
B2R	Initial Flow	4/14/08	10:02	0	SCFM
B2R	Initial Static Pressure	4/14/08	9:59	-10.9	Inches H20
B2R	Initial Static Pressure	4/14/08	10:02	-11.8	Inches H20
B2R	Initial Temperature	4/14/08	9:59	180	F
B2R	Initial Temperature	4/14/08	10:02	180	F
B2R	Methane	4/14/08	9:59	0.9	%
B2R	Methane	4/14/08	10:02	0.8	%
B2R	Oxygen	4/14/08	9:59	0.7	%
B2R	Oxygen	4/14/08	10:02	0.4	%
B2R	Adjusted Flow	4/25/08	9:13	0	SCFM
B2R	Adjusted Flow	4/25/08	9:16	0	SCFM
B2R	Adjusted Static Pressure	4/25/08	9:13	-4.7	Inches H20
B2R	Adjusted Static Pressure	4/25/08	9:16	-4	Inches H20
B2R	Adjusted Temperature	4/25/08	9:13	180	F
B2R	Adjusted Temperature	4/25/08	9:16	180	F
B2R	Balance Gas	4/25/08	9:13	37.8	%
B2R	Balance Gas	4/25/08	9:16	37.5	%
B2R	Carbon Dioxide	4/25/08	9:13	61.4	%
B2R	Carbon Dioxide	4/25/08	9:16	61.9	%
B2R	Initial Flow	4/25/08	9:13	0	SCFM
B2R	Initial Flow	4/25/08	9:16	0	SCFM
B2R	Initial Static Pressure	4/25/08	9:13	-4.7	Inches H20
B2R	Initial Static Pressure	4/25/08	9:16	-4	Inches H20
B2R	Initial Temperature	4/25/08	9:13	180	F
B2R	Initial Temperature	4/25/08	9:16	180	F
B2R	Methane	4/25/08	9:13	0.6	%
B2R	Methane	4/25/08	9:16	0.6	%
B2R	Oxygen	4/25/08	9:13	0.2	%
B2R	Oxygen	4/25/08	9:16	0	%
B2R	Adjusted Flow	5/1/08	4:25	0	SCFM
B2R	Adjusted Flow	5/1/08	4:28	0	SCFM

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
B2R	Adjusted Static Pressure	5/1/08	4:25	-9.1	Inches H20
B2R	Adjusted Static Pressure	5/1/08	4:28	-9.2	Inches H20
B2R	Adjusted Temperature	5/1/08	4:25	180	F
B2R	Adjusted Temperature	5/1/08	4:28	180	F
B2R	Balance Gas	5/1/08	4:25	37.6	%
B2R	Balance Gas	5/1/08	4:28	36.4	%
B2R	Carbon Dioxide	5/1/08	4:25	61.2	%
B2R	Carbon Dioxide	5/1/08	4:28	62.6	%
B2R	Initial Flow	5/1/08	4:25	0	SCFM
B2R	Initial Flow	5/1/08	4:28	0	SCFM
B2R	Initial Static Pressure	5/1/08	4:25	-9.1	Inches H20
B2R	Initial Static Pressure	5/1/08	4:28	-9.2	Inches H20
B2R	Initial Temperature	5/1/08	4:25	180	F
B2R	Initial Temperature	5/1/08	4:28	180	F
B2R	Methane	5/1/08	4:25	0.6	%
B2R	Methane	5/1/08	4:28	0.5	%
B2R	Oxygen	5/1/08	4:25	0.6	%
B2R	Oxygen	5/1/08	4:28	0.5	%
C2R	Adjusted Static Pressure	4/2/08	11:18	-1.4	Inches H20
C2R	Adjusted Static Pressure	4/2/08	11:21	-1.5	Inches H20
C2R	Adjusted Temperature	4/2/08	11:18	133	F
C2R	Adjusted Temperature	4/2/08	11:21	132	F
C2R	Balance Gas	4/2/08	11:18	9.1	%
C2R	Balance Gas	4/2/08	11:21	8.4	%
C2R	Carbon Dioxide	4/2/08	11:18	45.7	%
C2R	Carbon Dioxide	4/2/08	11:21	46.7	%
C2R	Initial Static Pressure	4/2/08	11:18	-1.4	Inches H20
C2R	Initial Static Pressure	4/2/08	11:21	-1.5	Inches H20
C2R	Initial Temperature	4/2/08	11:18	133	F
C2R	Initial Temperature	4/2/08	11:21	132	F
C2R	Methane	4/2/08	11:18	45.2	%
C2R	Methane	4/2/08	11:21	44.9	%
C2R	Oxygen	4/2/08	11:18	0	%
C2R	Oxygen	4/2/08	11:21	0	%
C2R	Adjusted Flow	4/7/08	2:41	140	SCFM
C2R	Adjusted Flow	4/7/08	2:45	140	SCFM
C2R	Adjusted Static Pressure	4/7/08	2:41	-4.7	Inches H20
C2R	Adjusted Static Pressure	4/7/08	2:45	-4.9	Inches H20
C2R	Adjusted Temperature	4/7/08	2:41	126	F
C2R	Adjusted Temperature	4/7/08	2:45	126	F
C2R	Balance Gas	4/7/08	2:41	6.6	%
C2R	Balance Gas	4/7/08	2:45	5.8	%

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
C2R	Carbon Dioxide	4/7/08	2:41	46	%
C2R	Carbon Dioxide	4/7/08	2:45	46.4	%
C2R	Initial Flow	4/7/08	2:41	189	SCFM
C2R	Initial Flow	4/7/08	2:45	143	SCFM
C2R	Initial Static Pressure	4/7/08	2:41	-4.5	Inches H20
C2R	Initial Static Pressure	4/7/08	2:45	-4.6	Inches H20
C2R	Initial Temperature	4/7/08	2:41	126	F
C2R	Initial Temperature	4/7/08	2:45	126	F
C2R	Methane	4/7/08	2:41	47	%
C2R	Methane	4/7/08	2:45	47.5	%
C2R	Oxygen	4/7/08	2:41	0.4	%
C2R	Oxygen	4/7/08	2:45	0.3	%
C2R	Depth to Bottom (BGL)	4/9/08	0:00	120.2	Ft
C2R	Depth to Fluid (BGL)	4/9/08	0:00	70	Ft
C2R	Adjusted Static Pressure	4/16/08	10:57	-4	Inches H20
C2R	Adjusted Static Pressure	4/16/08	11:02	-0.2	Inches H20
C2R	Adjusted Temperature	4/16/08	10:57	124	F
C2R	Adjusted Temperature	4/16/08	11:02	127	F
C2R	Balance Gas	4/16/08	10:57	30.6	%
C2R	Balance Gas	4/16/08	11:02	23.2	%
C2R	Carbon Dioxide	4/16/08	10:57	34.3	%
C2R	Carbon Dioxide	4/16/08	11:02	46	%
C2R	Initial Flow	4/16/08	10:57	16	SCFM
C2R	Initial Flow	4/16/08	11:02	10	SCFM
C2R	Initial Static Pressure	4/16/08	10:57	-4	Inches H20
C2R	Initial Static Pressure	4/16/08	11:02	-0.2	Inches H20
C2R	Initial Temperature	4/16/08	10:57	124	F
C2R	Initial Temperature	4/16/08	11:02	125	F
C2R	Methane	4/16/08	10:57	31.6	%
C2R	Methane	4/16/08	11:02	29.6	%
C2R	Oxygen	4/16/08	10:57	3.5	%
C2R	Oxygen	4/16/08	11:02	1.2	%
C2R	Adjusted Static Pressure	4/25/08	9:24	-2.7	Inches H20
C2R	Adjusted Static Pressure	4/25/08	9:27	-2.8	Inches H20
C2R	Adjusted Temperature	4/25/08	9:24	131	F
C2R	Adjusted Temperature	4/25/08	9:27	131	F
C2R	Balance Gas	4/25/08	9:24	13	%
C2R	Balance Gas	4/25/08	9:27	13	%
C2R	Carbon Dioxide	4/25/08	9:24	41.2	%
C2R	Carbon Dioxide	4/25/08	9:27	41.8	%
C2R	Initial Static Pressure	4/25/08	9:24	-2.8	Inches H20
C2R	Initial Static Pressure	4/25/08	9:27	-2.7	Inches H20

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
C2R	Initial Temperature	4/25/08	9:24	131	F
C2R	Initial Temperature	4/25/08	9:27	131	F
C2R	Methane	4/25/08	9:24	44.1	%
C2R	Methane	4/25/08	9:27	43.9	%
C2R	Oxygen	4/25/08	9:24	1.7	%
C2R	Oxygen	4/25/08	9:27	1.3	%
C2R	Adjusted Flow	5/2/08	8:47	16	SCFM
C2R	Adjusted Flow	5/2/08	8:50	16	SCFM
C2R	Adjusted Static Pressure	5/2/08	8:47	0.3	Inches H20
C2R	Adjusted Static Pressure	5/2/08	8:50	0.2	Inches H20
C2R	Adjusted Temperature	5/2/08	8:47	141	F
C2R	Adjusted Temperature	5/2/08	8:50	142	F
C2R	Balance Gas	5/2/08	8:47	12.5	%
C2R	Balance Gas	5/2/08	8:50	11.7	%
C2R	Carbon Dioxide	5/2/08	8:47	51.7	%
C2R	Carbon Dioxide	5/2/08	8:50	51.6	%
C2R	Initial Flow	5/2/08	8:47	17	SCFM
C2R	Initial Flow	5/2/08	8:50	14	SCFM
C2R	Initial Static Pressure	5/2/08	8:47	0.2	Inches H20
C2R	Initial Static Pressure	5/2/08	8:50	0.2	Inches H20
C2R	Initial Temperature	5/2/08	8:47	141	F
C2R	Initial Temperature	5/2/08	8:50	142	F
C2R	Methane	5/2/08	8:47	35.8	%
C2R	Methane	5/2/08	8:50	36.7	%
C2R	Oxygen	5/2/08	8:47	0	%
C2R	Oxygen	5/2/08	8:50	0	%
D2R	Adjusted Flow	4/2/08	11:05	21	SCFM
D2R	Adjusted Flow	4/2/08	11:08	18	SCFM
D2R	Adjusted Flow	4/2/08	12:15	18	SCFM
D2R	Adjusted Flow	4/2/08	12:19	22	SCFM
D2R	Adjusted Static Pressure	4/2/08	11:05	-1.8	Inches H20
D2R	Adjusted Static Pressure	4/2/08	11:08	-1.8	Inches H20
D2R	Adjusted Static Pressure	4/2/08	12:15	-1.2	Inches H20
D2R	Adjusted Static Pressure	4/2/08	12:19	-1.2	Inches H20
D2R	Adjusted Temperature	4/2/08	11:05	122	F
D2R	Adjusted Temperature	4/2/08	11:08	122	F
D2R	Adjusted Temperature	4/2/08	12:15	125	F
D2R	Adjusted Temperature	4/2/08	12:19	125	F
D2R	Balance Gas	4/2/08	11:05	7.4	%
D2R	Balance Gas	4/2/08	11:08	8.7	%
D2R	Balance Gas	4/2/08	12:15	6.1	%
D2R	Balance Gas	4/2/08	12:19	5.4	%

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
D2R	Carbon Dioxide	4/2/08	11:05	38.3	%
D2R	Carbon Dioxide	4/2/08	11:08	39.4	%
D2R	Carbon Dioxide	4/2/08	12:15	40.5	%
D2R	Carbon Dioxide	4/2/08	12:19	40.5	%
D2R	Initial Flow	4/2/08	11:05	63	SCFM
D2R	Initial Flow	4/2/08	11:08	22	SCFM
D2R	Initial Flow	4/2/08	12:15	19	SCFM
D2R	Initial Flow	4/2/08	12:19	22	SCFM
D2R	Initial Static Pressure	4/2/08	11:05	-1.8	Inches H20
D2R	Initial Static Pressure	4/2/08	11:08	-1.9	Inches H20
D2R	Initial Static Pressure	4/2/08	12:15	-1.2	Inches H20
D2R	Initial Static Pressure	4/2/08	12:19	-1.1	Inches H20
D2R	Initial Temperature	4/2/08	11:05	122	F
D2R	Initial Temperature	4/2/08	11:08	122	F
D2R	Initial Temperature	4/2/08	12:15	125	F
D2R	Initial Temperature	4/2/08	12:19	125	F
D2R	Methane	4/2/08	11:05	54.3	%
D2R	Methane	4/2/08	11:08	51.9	%
D2R	Methane	4/2/08	12:15	53.3	%
D2R	Methane	4/2/08	12:19	54.1	%
D2R	Oxygen	4/2/08	11:05	0	%
D2R	Oxygen	4/2/08	11:08	0	%
D2R	Oxygen	4/2/08	12:15	0.1	%
D2R	Oxygen	4/2/08	12:19	0	%
D2R	Adjusted Flow	4/7/08	3:03	10	SCFM
D2R	Adjusted Flow	4/7/08	3:07	13	SCFM
D2R	Adjusted Static Pressure	4/7/08	3:03	0.2	Inches H20
D2R	Adjusted Static Pressure	4/7/08	3:07	-1.4	Inches H20
D2R	Adjusted Temperature	4/7/08	3:03	132	F
D2R	Adjusted Temperature	4/7/08	3:07	133	F
D2R	Balance Gas	4/7/08	3:03	4.4	%
D2R	Balance Gas	4/7/08	3:07	2	%
D2R	Carbon Dioxide	4/7/08	3:03	41.8	%
D2R	Carbon Dioxide	4/7/08	3:07	42.3	%
D2R	Initial Flow	4/7/08	3:03	15	SCFM
D2R	Initial Flow	4/7/08	3:07	12	SCFM
D2R	Initial Static Pressure	4/7/08	3:03	0.1	Inches H20
D2R	Initial Static Pressure	4/7/08	3:07	-1.4	Inches H20
D2R	Initial Temperature	4/7/08	3:03	132	F
D2R	Initial Temperature	4/7/08	3:07	133	F
D2R	Methane	4/7/08	3:03	53.7	%
D2R	Methane	4/7/08	3:07	55.7	%

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
D2R	Oxygen	4/7/08	3:03	0.1	%
D2R	Oxygen	4/7/08	3:07	0	%
D2R	Depth to Bottom (BGL)	4/8/08	0:00	117.9	Ft
D2R	Depth to Fluid (BGL)	4/8/08	0:00	80.6	Ft
D2R	Adjusted Flow	4/16/08	11:17	34	SCFM
D2R	Adjusted Flow	4/16/08	11:19	36	SCFM
D2R	Adjusted Static Pressure	4/16/08	11:17	-1.9	Inches H20
D2R	Adjusted Static Pressure	4/16/08	11:19	-1.8	Inches H20
D2R	Adjusted Temperature	4/16/08	11:17	124	F
D2R	Adjusted Temperature	4/16/08	11:19	124	F
D2R	Balance Gas	4/16/08	11:17	8.6	%
D2R	Balance Gas	4/16/08	11:19	8.5	%
D2R	Carbon Dioxide	4/16/08	11:17	39.4	%
D2R	Carbon Dioxide	4/16/08	11:19	40	%
D2R	Initial Flow	4/16/08	11:17	33	SCFM
D2R	Initial Flow	4/16/08	11:19	30	SCFM
D2R	Initial Static Pressure	4/16/08	11:17	-2.2	Inches H20
D2R	Initial Static Pressure	4/16/08	11:19	-1.7	Inches H20
D2R	Initial Temperature	4/16/08	11:17	124	F
D2R	Initial Temperature	4/16/08	11:19	124	F
D2R	Methane	4/16/08	11:17	51.9	%
D2R	Methane	4/16/08	11:19	51.5	%
D2R	Oxygen	4/16/08	11:17	0.1	%
D2R	Oxygen	4/16/08	11:19	0	%
D2R	Adjusted Static Pressure	4/24/08	1:34	0.9	Inches H20
D2R	Adjusted Static Pressure	4/24/08	1:36	0.9	Inches H20
D2R	Adjusted Temperature	4/24/08	1:34	81	F
D2R	Adjusted Temperature	4/24/08	1:36	81	F
D2R	Balance Gas	4/24/08	1:34	9.7	%
D2R	Balance Gas	4/24/08	1:36	10.6	%
D2R	Carbon Dioxide	4/24/08	1:34	38	%
D2R	Carbon Dioxide	4/24/08	1:36	38.5	%
D2R	Initial Static Pressure	4/24/08	1:34	0.9	Inches H20
D2R	Initial Static Pressure	4/24/08	1:36	0.9	Inches H20
D2R	Initial Temperature	4/24/08	1:34	81	F
D2R	Initial Temperature	4/24/08	1:36	81	F
D2R	Methane	4/24/08	1:34	50.7	%
D2R	Methane	4/24/08	1:36	49.4	%
D2R	Oxygen	4/24/08	1:34	1.6	%
D2R	Oxygen	4/24/08	1:36	1.5	%
D2R	Adjusted Flow	5/2/08	8:28	38	SCFM
D2R	Adjusted Flow	5/2/08	8:31	20	SCFM

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
D2R	Adjusted Static Pressure	5/2/08	8:28	-3.9	Inches H20
D2R	Adjusted Static Pressure	5/2/08	8:31	-1.8	Inches H20
D2R	Adjusted Temperature	5/2/08	8:28	128	F
D2R	Adjusted Temperature	5/2/08	8:31	127	F
D2R	Balance Gas	5/2/08	8:28	27.1	%
D2R	Balance Gas	5/2/08	8:31	25.2	%
D2R	Carbon Dioxide	5/2/08	8:28	32.4	%
D2R	Carbon Dioxide	5/2/08	8:31	34.4	%
D2R	Initial Flow	5/2/08	8:28	39	SCFM
D2R	Initial Flow	5/2/08	8:31	23	SCFM
D2R	Initial Static Pressure	5/2/08	8:28	-3.9	Inches H20
D2R	Initial Static Pressure	5/2/08	8:31	-1.9	Inches H20
D2R	Initial Temperature	5/2/08	8:28	128	F
D2R	Initial Temperature	5/2/08	8:31	127	F
D2R	Methane	5/2/08	8:28	38.8	%
D2R	Methane	5/2/08	8:31	39.1	%
D2R	Oxygen	5/2/08	8:28	1.7	%
D2R	Oxygen	5/2/08	8:31	1.3	%
E2R	Adjusted Flow	4/2/08	10:57	12	SCFM
E2R	Adjusted Flow	4/2/08	11:01	32	SCFM
E2R	Adjusted Flow	4/2/08	12:21	38	SCFM
E2R	Adjusted Flow	4/2/08	12:29	19	SCFM
E2R	Adjusted Static Pressure	4/2/08	10:57	0.2	Inches H20
E2R	Adjusted Static Pressure	4/2/08	11:01	-0.6	Inches H20
E2R	Adjusted Static Pressure	4/2/08	12:21	-1.3	Inches H20
E2R	Adjusted Static Pressure	4/2/08	12:29	-0.3	Inches H20
E2R	Adjusted Temperature	4/2/08	10:57	140	F
E2R	Adjusted Temperature	4/2/08	11:01	141	F
E2R	Adjusted Temperature	4/2/08	12:21	140	F
E2R	Adjusted Temperature	4/2/08	12:29	139	F
E2R	Balance Gas	4/2/08	10:57	24.6	%
E2R	Balance Gas	4/2/08	11:01	18.4	%
E2R	Balance Gas	4/2/08	12:21	12.5	%
E2R	Balance Gas	4/2/08	12:29	12.2	%
E2R	Carbon Dioxide	4/2/08	10:57	37.9	%
E2R	Carbon Dioxide	4/2/08	11:01	41.5	%
E2R	Carbon Dioxide	4/2/08	12:21	40	%
E2R	Carbon Dioxide	4/2/08	12:29	42.3	%
E2R	Initial Flow	4/2/08	10:57	12	SCFM
E2R	Initial Flow	4/2/08	11:01	38	SCFM
E2R	Initial Flow	4/2/08	12:21	37	SCFM
E2R	Initial Flow	4/2/08	12:29	19	SCFM

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
E2R	Initial Static Pressure	4/2/08	10:57	0.1	Inches H20
E2R	Initial Static Pressure	4/2/08	11:01	-0.8	Inches H20
E2R	Initial Static Pressure	4/2/08	12:21	-1.3	Inches H20
E2R	Initial Static Pressure	4/2/08	12:29	-0.3	Inches H20
E2R	Initial Temperature	4/2/08	10:57	140	F
E2R	Initial Temperature	4/2/08	11:01	141	F
E2R	Initial Temperature	4/2/08	12:21	139	F
E2R	Initial Temperature	4/2/08	12:29	140	F
E2R	Methane	4/2/08	10:57	35.3	%
E2R	Methane	4/2/08	11:01	39.6	%
E2R	Methane	4/2/08	12:21	46.2	%
E2R	Methane	4/2/08	12:29	45.2	%
E2R	Oxygen	4/2/08	10:57	2.2	%
E2R	Oxygen	4/2/08	11:01	0.5	%
E2R	Oxygen	4/2/08	12:21	1.3	%
E2R	Oxygen	4/2/08	12:29	0.3	%
E2R	Adjusted Flow	4/7/08	3:10	7	SCFM
E2R	Adjusted Flow	4/7/08	3:13	17	SCFM
E2R	Adjusted Static Pressure	4/7/08	3:10	-0.1	Inches H20
E2R	Adjusted Static Pressure	4/7/08	3:13	-0.4	Inches H20
E2R	Adjusted Temperature	4/7/08	3:10	131	F
E2R	Adjusted Temperature	4/7/08	3:13	130	F
E2R	Balance Gas	4/7/08	3:10	8.1	%
E2R	Balance Gas	4/7/08	3:13	6.5	%
E2R	Carbon Dioxide	4/7/08	3:10	41.4	%
E2R	Carbon Dioxide	4/7/08	3:13	42.8	%
E2R	Initial Flow	4/7/08	3:10	5	SCFM
E2R	Initial Flow	4/7/08	3:13	21	SCFM
E2R	Initial Static Pressure	4/7/08	3:10	-0.1	Inches H20
E2R	Initial Static Pressure	4/7/08	3:13	-0.4	Inches H20
E2R	Initial Temperature	4/7/08	3:10	131	F
E2R	Initial Temperature	4/7/08	3:13	130	F
E2R	Methane	4/7/08	3:10	50.4	%
E2R	Methane	4/7/08	3:13	50.6	%
E2R	Oxygen	4/7/08	3:10	0.1	%
E2R	Oxygen	4/7/08	3:13	0.1	%
E2R	Depth to Bottom (BGL)	4/8/08	0:00	117	Ft
E2R	Depth to Fluid (BGL)	4/8/08	0:00	78.2	Ft
E2R	Adjusted Flow	4/16/08	11:23	27	SCFM
E2R	Adjusted Flow	4/16/08	11:25	22	SCFM
E2R	Adjusted Static Pressure	4/16/08	11:23	-0.8	Inches H20
E2R	Adjusted Static Pressure	4/16/08	11:25	-0.8	Inches H20

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
E2R	Adjusted Temperature	4/16/08	11:23	124	F
E2R	Adjusted Temperature	4/16/08	11:25	124	F
E2R	Balance Gas	4/16/08	11:23	6.5	%
E2R	Balance Gas	4/16/08	11:25	6.6	%
E2R	Carbon Dioxide	4/16/08	11:23	39.9	%
E2R	Carbon Dioxide	4/16/08	11:25	40.4	%
E2R	Initial Flow	4/16/08	11:23	26	SCFM
E2R	Initial Flow	4/16/08	11:25	24	SCFM
E2R	Initial Static Pressure	4/16/08	11:23	-0.9	Inches H20
E2R	Initial Static Pressure	4/16/08	11:25	-0.7	Inches H20
E2R	Initial Temperature	4/16/08	11:23	124	F
E2R	Initial Temperature	4/16/08	11:25	124	F
E2R	Methane	4/16/08	11:23	53.3	%
E2R	Methane	4/16/08	11:25	52.9	%
E2R	Oxygen	4/16/08	11:23	0.3	%
E2R	Oxygen	4/16/08	11:25	0.1	%
E2R	Adjusted Static Pressure	4/24/08	1:27	1.5	Inches H20
E2R	Adjusted Static Pressure	4/24/08	1:30	1.5	Inches H20
E2R	Adjusted Temperature	4/24/08	1:27	86	F
E2R	Adjusted Temperature	4/24/08	1:30	88	F
E2R	Balance Gas	4/24/08	1:27	5	%
E2R	Balance Gas	4/24/08	1:30	7	%
E2R	Carbon Dioxide	4/24/08	1:27	43.3	%
E2R	Carbon Dioxide	4/24/08	1:30	42.5	%
E2R	Initial Static Pressure	4/24/08	1:27	1.5	Inches H20
E2R	Initial Static Pressure	4/24/08	1:30	1.5	Inches H20
E2R	Initial Temperature	4/24/08	1:27	85	F
E2R	Initial Temperature	4/24/08	1:30	87	F
E2R	Methane	4/24/08	1:27	51.7	%
E2R	Methane	4/24/08	1:30	50.5	%
E2R	Oxygen	4/24/08	1:27	0	%
E2R	Oxygen	4/24/08	1:30	0	%
E2R	Adjusted Flow	5/2/08	8:09	79	SCFM
E2R	Adjusted Flow	5/2/08	8:13	40	SCFM
E2R	Adjusted Static Pressure	5/2/08	8:09	-9.2	Inches H20
E2R	Adjusted Static Pressure	5/2/08	8:13	-4.7	Inches H20
E2R	Adjusted Temperature	5/2/08	8:09	117	F
E2R	Adjusted Temperature	5/2/08	8:13	116	F
E2R	Balance Gas	5/2/08	8:09	21.6	%
E2R	Balance Gas	5/2/08	8:13	24	%
E2R	Carbon Dioxide	5/2/08	8:09	35	%
E2R	Carbon Dioxide	5/2/08	8:13	34.4	%

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
E2R	Initial Flow	5/2/08	8:09	81	SCFM
E2R	Initial Flow	5/2/08	8:13	40	SCFM
E2R	Initial Static Pressure	5/2/08	8:09	-9.5	Inches H20
E2R	Initial Static Pressure	5/2/08	8:13	-4.8	Inches H20
E2R	Initial Temperature	5/2/08	8:09	117	F
E2R	Initial Temperature	5/2/08	8:13	116	F
E2R	Methane	5/2/08	8:09	43.4	%
E2R	Methane	5/2/08	8:13	41.5	%
E2R	Oxygen	5/2/08	8:09	0	%
E2R	Oxygen	5/2/08	8:13	0.1	%
F2	Adjusted Flow	4/2/08	10:03	0	SCFM
F2	Adjusted Flow	4/2/08	10:08	0	SCFM
F2	Adjusted Static Pressure	4/2/08	10:03	-10.4	Inches H20
F2	Adjusted Static Pressure	4/2/08	10:08	-7.9	Inches H20
F2	Adjusted Temperature	4/2/08	10:03	120	F
F2	Adjusted Temperature	4/2/08	10:08	120	F
F2	Balance Gas	4/2/08	10:03	6.7	%
F2	Balance Gas	4/2/08	10:08	6.8	%
F2	Carbon Dioxide	4/2/08	10:03	39.1	%
F2	Carbon Dioxide	4/2/08	10:08	39.4	%
F2	Initial Flow	4/2/08	10:03	0	SCFM
F2	Initial Flow	4/2/08	10:08	0	SCFM
F2	Initial Static Pressure	4/2/08	10:03	-10.3	Inches H20
F2	Initial Static Pressure	4/2/08	10:08	-7.9	Inches H20
F2	Initial Temperature	4/2/08	10:03	120	F
F2	Initial Temperature	4/2/08	10:08	121	F
F2	Methane	4/2/08	10:03	52.7	%
F2	Methane	4/2/08	10:08	52.6	%
F2	Oxygen	4/2/08	10:03	1.5	%
F2	Oxygen	4/2/08	10:08	1.2	%
F2	Depth to Bottom (BGL)	4/8/08	0:00	64.9	Ft
F2	Depth to Fluid (BGL)	4/8/08	0:00	59.9	Ft
F2	Adjusted Flow	4/11/08	12:23	0	SCFM
F2	Adjusted Flow	4/11/08	12:28	0	SCFM
F2	Adjusted Static Pressure	4/11/08	12:23	-7.6	Inches H20
F2	Adjusted Static Pressure	4/11/08	12:28	-7.1	Inches H20
F2	Adjusted Temperature	4/11/08	12:23	121	F
F2	Adjusted Temperature	4/11/08	12:28	122	F
F2	Balance Gas	4/11/08	12:23	4.7	%
F2	Balance Gas	4/11/08	12:28	4.6	%
F2	Carbon Dioxide	4/11/08	12:23	41.1	%
F2	Carbon Dioxide	4/11/08	12:28	41.4	%

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
F2	Initial Flow	4/11/08	12:23	0	SCFM
F2	Initial Flow	4/11/08	12:28	0	SCFM
F2	Initial Static Pressure	4/11/08	12:23	-7.6	Inches H20
F2	Initial Static Pressure	4/11/08	12:28	-7.1	Inches H20
F2	Initial Temperature	4/11/08	12:23	121	F
F2	Initial Temperature	4/11/08	12:28	122	F
F2	Methane	4/11/08	12:23	53.6	%
F2	Methane	4/11/08	12:28	53.5	%
F2	Oxygen	4/11/08	12:23	0.6	%
F2	Oxygen	4/11/08	12:28	0.5	%
F2	Adjusted Flow	4/16/08	9:22	0	SCFM
F2	Adjusted Flow	4/16/08	9:25	0	SCFM
F2	Adjusted Static Pressure	4/16/08	9:22	-7.6	Inches H20
F2	Adjusted Static Pressure	4/16/08	9:25	-4.6	Inches H20
F2	Adjusted Temperature	4/16/08	9:22	122	F
F2	Adjusted Temperature	4/16/08	9:25	120	F
F2	Balance Gas	4/16/08	9:22	7.6	%
F2	Balance Gas	4/16/08	9:25	8.3	%
F2	Carbon Dioxide	4/16/08	9:22	37.1	%
F2	Carbon Dioxide	4/16/08	9:25	37.6	%
F2	Initial Flow	4/16/08	9:22	0	SCFM
F2	Initial Flow	4/16/08	9:25	0	SCFM
F2	Initial Static Pressure	4/16/08	9:22	-7.7	Inches H20
F2	Initial Static Pressure	4/16/08	9:25	-4.7	Inches H20
F2	Initial Temperature	4/16/08	9:22	121	F
F2	Initial Temperature	4/16/08	9:25	121	F
F2	Methane	4/16/08	9:22	54	%
F2	Methane	4/16/08	9:25	52.8	%
F2	Oxygen	4/16/08	9:22	1.3	%
F2	Oxygen	4/16/08	9:25	1.3	%
F2	Adjusted Flow	4/21/08	11:58	0	SCFM
F2	Adjusted Flow	4/21/08	12:01	0	SCFM
F2	Adjusted Static Pressure	4/21/08	11:58	-1.2	Inches H20
F2	Adjusted Static Pressure	4/21/08	12:01	-1.2	Inches H20
F2	Adjusted Temperature	4/21/08	11:58	123	F
F2	Adjusted Temperature	4/21/08	12:01	123	F
F2	Balance Gas	4/21/08	11:58	1.5	%
F2	Balance Gas	4/21/08	12:01	0.7	%
F2	Carbon Dioxide	4/21/08	11:58	40	%
F2	Carbon Dioxide	4/21/08	12:01	41.2	%
F2	Initial Flow	4/21/08	11:58	0	SCFM
F2	Initial Flow	4/21/08	12:01	0	SCFM

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
F2	Initial Static Pressure	4/21/08	11:58	-1.2	Inches H20
F2	Initial Static Pressure	4/21/08	12:01	-1.2	Inches H20
F2	Initial Temperature	4/21/08	11:58	123	F
F2	Initial Temperature	4/21/08	12:01	123	F
F2	Methane	4/21/08	11:58	57.8	%
F2	Methane	4/21/08	12:01	57.6	%
F2	Oxygen	4/21/08	11:58	0.7	%
F2	Oxygen	4/21/08	12:01	0.5	%
F2	Adjusted Flow	5/1/08	11:04	0	SCFM
F2	Adjusted Flow	5/1/08	11:07	0	SCFM
F2	Adjusted Static Pressure	5/1/08	11:04	-0.8	Inches H20
F2	Adjusted Static Pressure	5/1/08	11:07	-0.8	Inches H20
F2	Adjusted Temperature	5/1/08	11:04	124	F
F2	Adjusted Temperature	5/1/08	11:07	124	F
F2	Balance Gas	5/1/08	11:04	5.7	%
F2	Balance Gas	5/1/08	11:07	5.8	%
F2	Carbon Dioxide	5/1/08	11:04	39.6	%
F2	Carbon Dioxide	5/1/08	11:07	39.8	%
F2	Initial Flow	5/1/08	11:04	0	SCFM
F2	Initial Flow	5/1/08	11:07	0	SCFM
F2	Initial Static Pressure	5/1/08	11:04	-0.8	Inches H20
F2	Initial Static Pressure	5/1/08	11:07	-0.8	Inches H20
F2	Initial Temperature	5/1/08	11:04	123	F
F2	Initial Temperature	5/1/08	11:07	124	F
F2	Methane	5/1/08	11:04	54.3	%
F2	Methane	5/1/08	11:07	54.2	%
F2	Oxygen	5/1/08	11:04	0.4	%
F2	Oxygen	5/1/08	11:07	0.2	%
F2	Depth to Bottom (BGL)	5/2/08	0:00	64.9	Ft
F2	Depth to Fluid (BGL)	5/2/08	0:00	59.8	Ft
PW-125	Adjusted Flow	4/2/08	11:34	56	SCFM
PW-125	Adjusted Flow	4/2/08	11:37	53	SCFM
PW-125	Adjusted Static Pressure	4/2/08	11:34	-2.1	Inches H20
PW-125	Adjusted Static Pressure	4/2/08	11:37	-2.2	Inches H20
PW-125	Adjusted Temperature	4/2/08	11:34	110	F
PW-125	Adjusted Temperature	4/2/08	11:37	110	F
PW-125	Balance Gas	4/2/08	11:34	3.8	%
PW-125	Balance Gas	4/2/08	11:37	4.4	%
PW-125	Carbon Dioxide	4/2/08	11:34	50	%
PW-125	Carbon Dioxide	4/2/08	11:37	49.7	%
PW-125	Initial Flow	4/2/08	11:34	57	SCFM
PW-125	Initial Flow	4/2/08	11:37	53	SCFM

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-125	Initial Static Pressure	4/2/08	11:34	-2.2	Inches H20
PW-125	Initial Static Pressure	4/2/08	11:37	-2.2	Inches H20
PW-125	Initial Temperature	4/2/08	11:34	110	F
PW-125	Initial Temperature	4/2/08	11:37	110	F
PW-125	Methane	4/2/08	11:34	46.2	%
PW-125	Methane	4/2/08	11:37	45.9	%
PW-125	Oxygen	4/2/08	11:34	0	%
PW-125	Oxygen	4/2/08	11:37	0	%
PW-125	Adjusted Flow	4/7/08	2:48	43	SCFM
PW-125	Adjusted Flow	4/7/08	2:52	58	SCFM
PW-125	Adjusted Static Pressure	4/7/08	2:48	-1	Inches H20
PW-125	Adjusted Static Pressure	4/7/08	2:52	-2.3	Inches H20
PW-125	Adjusted Temperature	4/7/08	2:48	110	F
PW-125	Adjusted Temperature	4/7/08	2:52	111	F
PW-125	Balance Gas	4/7/08	2:48	4.4	%
PW-125	Balance Gas	4/7/08	2:52	2.7	%
PW-125	Carbon Dioxide	4/7/08	2:48	52.5	%
PW-125	Carbon Dioxide	4/7/08	2:52	53.8	%
PW-125	Initial Flow	4/7/08	2:48	22	SCFM
PW-125	Initial Flow	4/7/08	2:52	57	SCFM
PW-125	Initial Static Pressure	4/7/08	2:48	-1	Inches H20
PW-125	Initial Static Pressure	4/7/08	2:52	-2.3	Inches H20
PW-125	Initial Temperature	4/7/08	2:48	110	F
PW-125	Initial Temperature	4/7/08	2:52	111	F
PW-125	Methane	4/7/08	2:48	42.8	%
PW-125	Methane	4/7/08	2:52	43.4	%
PW-125	Oxygen	4/7/08	2:48	0.3	%
PW-125	Oxygen	4/7/08	2:52	0.1	%
PW-125	Depth to Bottom (BGL)	4/9/08	0:00	72.8	Ft
PW-125	Depth to Fluid (BGL)	4/9/08	0:00	67.1	Ft
PW-125	Adjusted Flow	4/16/08	10:44	82	SCFM
PW-125	Adjusted Flow	4/16/08	10:47	77	SCFM
PW-125	Adjusted Static Pressure	4/16/08	10:44	-6.6	Inches H20
PW-125	Adjusted Static Pressure	4/16/08	10:47	-6	Inches H20
PW-125	Adjusted Temperature	4/16/08	10:44	110	F
PW-125	Adjusted Temperature	4/16/08	10:47	111	F
PW-125	Balance Gas	4/16/08	10:44	7.7	%
PW-125	Balance Gas	4/16/08	10:47	7.8	%
PW-125	Carbon Dioxide	4/16/08	10:44	48	%
PW-125	Carbon Dioxide	4/16/08	10:47	48	%
PW-125	Initial Flow	4/16/08	10:44	83	SCFM
PW-125	Initial Flow	4/16/08	10:47	76	SCFM

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-125	Initial Static Pressure	4/16/08	10:44	-6.6	Inches H20
PW-125	Initial Static Pressure	4/16/08	10:47	-6	Inches H20
PW-125	Initial Temperature	4/16/08	10:44	111	F
PW-125	Initial Temperature	4/16/08	10:47	111	F
PW-125	Methane	4/16/08	10:44	44	%
PW-125	Methane	4/16/08	10:47	44.1	%
PW-125	Oxygen	4/16/08	10:44	0.3	%
PW-125	Oxygen	4/16/08	10:47	0.1	%
PW-125	Adjusted Static Pressure	4/24/08	1:02	1.5	Inches H20
PW-125	Adjusted Static Pressure	4/24/08	1:05	1.4	Inches H20
PW-125	Adjusted Temperature	4/24/08	1:02	99	F
PW-125	Adjusted Temperature	4/24/08	1:05	99	F
PW-125	Balance Gas	4/24/08	1:02	4	%
PW-125	Balance Gas	4/24/08	1:05	4.1	%
PW-125	Carbon Dioxide	4/24/08	1:02	56.4	%
PW-125	Carbon Dioxide	4/24/08	1:05	58.6	%
PW-125	Initial Static Pressure	4/24/08	1:02	1.4	Inches H20
PW-125	Initial Static Pressure	4/24/08	1:05	1.5	Inches H20
PW-125	Initial Temperature	4/24/08	1:02	99	F
PW-125	Initial Temperature	4/24/08	1:05	100	F
PW-125	Methane	4/24/08	1:02	39.5	%
PW-125	Methane	4/24/08	1:05	37.3	%
PW-125	Oxygen	4/24/08	1:02	0.1	%
PW-125	Oxygen	4/24/08	1:05	0	%
PW-125	Adjusted Flow	5/2/08	8:44	39	SCFM
PW-125	Adjusted Static Pressure	5/2/08	8:40	0.8	Inches H20
PW-125	Adjusted Static Pressure	5/2/08	8:44	-0.7	Inches H20
PW-125	Adjusted Temperature	5/2/08	8:40	111	F
PW-125	Adjusted Temperature	5/2/08	8:44	122	F
PW-125	Balance Gas	5/2/08	8:40	22.3	%
PW-125	Balance Gas	5/2/08	8:44	14	%
PW-125	Carbon Dioxide	5/2/08	8:40	49.5	%
PW-125	Carbon Dioxide	5/2/08	8:44	57.2	%
PW-125	Initial Flow	5/2/08	8:44	40	SCFM
PW-125	Initial Static Pressure	5/2/08	8:40	0.9	Inches H20
PW-125	Initial Static Pressure	5/2/08	8:44	-0.6	Inches H20
PW-125	Initial Temperature	5/2/08	8:40	111	F
PW-125	Initial Temperature	5/2/08	8:44	122	F
PW-125	Methane	5/2/08	8:40	25.3	%
PW-125	Methane	5/2/08	8:44	28.3	%
PW-125	Oxygen	5/2/08	8:40	2.9	%
PW-125	Oxygen	5/2/08	8:44	0.5	%

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-159	Adjusted Flow	4/2/08	10:10	55	SCFM
PW-159	Adjusted Flow	4/2/08	10:14	49	SCFM
PW-159	Adjusted Static Pressure	4/2/08	10:10	-7.3	Inches H20
PW-159	Adjusted Static Pressure	4/2/08	10:14	-6.5	Inches H20
PW-159	Adjusted Temperature	4/2/08	10:10	115	F
PW-159	Adjusted Temperature	4/2/08	10:14	115	F
PW-159	Balance Gas	4/2/08	10:10	13.2	%
PW-159	Balance Gas	4/2/08	10:14	13.2	%
PW-159	Carbon Dioxide	4/2/08	10:10	38.7	%
PW-159	Carbon Dioxide	4/2/08	10:14	39.1	%
PW-159	Initial Flow	4/2/08	10:10	55	SCFM
PW-159	Initial Flow	4/2/08	10:14	49	SCFM
PW-159	Initial Static Pressure	4/2/08	10:10	-7.3	Inches H20
PW-159	Initial Static Pressure	4/2/08	10:14	-6.5	Inches H20
PW-159	Initial Temperature	4/2/08	10:10	115	F
PW-159	Initial Temperature	4/2/08	10:14	115	F
PW-159	Methane	4/2/08	10:10	47.6	%
PW-159	Methane	4/2/08	10:14	47.5	%
PW-159	Oxygen	4/2/08	10:10	0.5	%
PW-159	Oxygen	4/2/08	10:14	0.2	%
PW-159	Depth to Bottom (BGL)	4/9/08	0:00	116.5	Ft
PW-159	Depth to Fluid (BGL)	4/9/08	0:00	71.6	Ft
PW-159	Adjusted Flow	4/11/08	10:26	61	SCFM
PW-159	Adjusted Flow	4/11/08	10:29	54	SCFM
PW-159	Adjusted Static Pressure	4/11/08	10:26	-7.1	Inches H20
PW-159	Adjusted Static Pressure	4/11/08	10:29	-6.1	Inches H20
PW-159	Adjusted Temperature	4/11/08	10:26	114	F
PW-159	Adjusted Temperature	4/11/08	10:29	114	F
PW-159	Balance Gas	4/11/08	10:26	7	%
PW-159	Balance Gas	4/11/08	10:29	7.2	%
PW-159	Carbon Dioxide	4/11/08	10:26	41.6	%
PW-159	Carbon Dioxide	4/11/08	10:29	42.6	%
PW-159	Initial Flow	4/11/08	10:26	61	SCFM
PW-159	Initial Flow	4/11/08	10:29	54	SCFM
PW-159	Initial Static Pressure	4/11/08	10:26	-7.1	Inches H20
PW-159	Initial Static Pressure	4/11/08	10:29	-6.1	Inches H20
PW-159	Initial Temperature	4/11/08	10:26	114	F
PW-159	Initial Temperature	4/11/08	10:29	114	F
PW-159	Methane	4/11/08	10:26	51.4	%
PW-159	Methane	4/11/08	10:29	50.2	%
PW-159	Oxygen	4/11/08	10:26	0	%
PW-159	Oxygen	4/11/08	10:29	0	%

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-159	Adjusted Flow	4/16/08	8:28	53	SCFM
PW-159	Adjusted Flow	4/16/08	8:31	44	SCFM
PW-159	Adjusted Static Pressure	4/16/08	8:28	-6.2	Inches H20
PW-159	Adjusted Static Pressure	4/16/08	8:31	-5.1	Inches H20
PW-159	Adjusted Temperature	4/16/08	8:28	115	F
PW-159	Adjusted Temperature	4/16/08	8:31	114	F
PW-159	Balance Gas	4/16/08	8:28	10.6	%
PW-159	Balance Gas	4/16/08	8:31	9.7	%
PW-159	Carbon Dioxide	4/16/08	8:28	37.7	%
PW-159	Carbon Dioxide	4/16/08	8:31	39.9	%
PW-159	Initial Flow	4/16/08	8:28	53	SCFM
PW-159	Initial Flow	4/16/08	8:31	46	SCFM
PW-159	Initial Static Pressure	4/16/08	8:28	-6.1	Inches H20
PW-159	Initial Static Pressure	4/16/08	8:31	-5	Inches H20
PW-159	Initial Temperature	4/16/08	8:28	115	F
PW-159	Initial Temperature	4/16/08	8:31	114	F
PW-159	Methane	4/16/08	8:28	51.7	%
PW-159	Methane	4/16/08	8:31	50.4	%
PW-159	Oxygen	4/16/08	8:28	0	%
PW-159	Oxygen	4/16/08	8:31	0	%
PW-159	Adjusted Flow	4/21/08	12:07	48	SCFM
PW-159	Adjusted Flow	4/21/08	12:09	47	SCFM
PW-159	Adjusted Static Pressure	4/21/08	12:07	-4.9	Inches H20
PW-159	Adjusted Static Pressure	4/21/08	12:09	-4.8	Inches H20
PW-159	Adjusted Temperature	4/21/08	12:07	115	F
PW-159	Adjusted Temperature	4/21/08	12:09	116	F
PW-159	Balance Gas	4/21/08	12:07	3.3	%
PW-159	Balance Gas	4/21/08	12:09	3	%
PW-159	Carbon Dioxide	4/21/08	12:07	40.7	%
PW-159	Carbon Dioxide	4/21/08	12:09	42	%
PW-159	Initial Flow	4/21/08	12:07	47	SCFM
PW-159	Initial Flow	4/21/08	12:09	47	SCFM
PW-159	Initial Static Pressure	4/21/08	12:07	-4.8	Inches H20
PW-159	Initial Static Pressure	4/21/08	12:09	-4.8	Inches H20
PW-159	Initial Temperature	4/21/08	12:07	116	F
PW-159	Initial Temperature	4/21/08	12:09	116	F
PW-159	Methane	4/21/08	12:07	55.8	%
PW-159	Methane	4/21/08	12:09	55	%
PW-159	Oxygen	4/21/08	12:07	0.2	%
PW-159	Oxygen	4/21/08	12:09	0	%
PW-159	Adjusted Flow	5/1/08	8:31	45	SCFM
PW-159	Adjusted Flow	5/1/08	8:34	34	SCFM

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-159	Adjusted Static Pressure	5/1/08	8:31	-4.9	Inches H20
PW-159	Adjusted Static Pressure	5/1/08	8:34	-3.5	Inches H20
PW-159	Adjusted Temperature	5/1/08	8:31	115	F
PW-159	Adjusted Temperature	5/1/08	8:34	115	F
PW-159	Balance Gas	5/1/08	8:31	15.2	%
PW-159	Balance Gas	5/1/08	8:34	13.4	%
PW-159	Carbon Dioxide	5/1/08	8:31	37.9	%
PW-159	Carbon Dioxide	5/1/08	8:34	40	%
PW-159	Initial Flow	5/1/08	8:31	44	SCFM
PW-159	Initial Flow	5/1/08	8:34	33	SCFM
PW-159	Initial Static Pressure	5/1/08	8:31	-4.8	Inches H20
PW-159	Initial Static Pressure	5/1/08	8:34	-3.5	Inches H20
PW-159	Initial Temperature	5/1/08	8:31	115	F
PW-159	Initial Temperature	5/1/08	8:34	115	F
PW-159	Methane	5/1/08	8:31	46.4	%
PW-159	Methane	5/1/08	8:34	46.5	%
PW-159	Oxygen	5/1/08	8:31	0.5	%
PW-159	Oxygen	5/1/08	8:34	0.1	%
PW-159	Depth to Bottom (BGL)	5/2/08	0:00	116.7	Ft
PW-159	Depth to Fluid (BGL)	5/2/08	0:00	71.1	Ft
PW-170	Adjusted Flow	4/1/08	11:11	24	SCFM
PW-170	Adjusted Flow	4/1/08	11:14	19	SCFM
PW-170	Adjusted Static Pressure	4/1/08	11:11	-4.8	Inches H20
PW-170	Adjusted Static Pressure	4/1/08	11:14	-3.6	Inches H20
PW-170	Adjusted Temperature	4/1/08	11:11	130	F
PW-170	Adjusted Temperature	4/1/08	11:14	130	F
PW-170	Balance Gas	4/1/08	11:11	25.5	%
PW-170	Balance Gas	4/1/08	11:14	23	%
PW-170	Carbon Dioxide	4/1/08	11:11	60.2	%
PW-170	Carbon Dioxide	4/1/08	11:14	63.3	%
PW-170	Initial Flow	4/1/08	11:11	25	SCFM
PW-170	Initial Flow	4/1/08	11:14	18	SCFM
PW-170	Initial Static Pressure	4/1/08	11:11	-4.8	Inches H20
PW-170	Initial Static Pressure	4/1/08	11:14	-3.5	Inches H20
PW-170	Initial Temperature	4/1/08	11:11	130	F
PW-170	Initial Temperature	4/1/08	11:14	130	F
PW-170	Methane	4/1/08	11:11	13.9	%
PW-170	Methane	4/1/08	11:14	13.7	%
PW-170	Oxygen	4/1/08	11:11	0.4	%
PW-170	Oxygen	4/1/08	11:14	0	%
PW-170	Depth to Bottom (BGL)	4/9/08	0:00	43.5	Ft
PW-170	Depth to Fluid (BGL)	4/9/08	0:00	37.9	Ft

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-170	Adjusted Flow	4/11/08	8:23	36	SCFM
PW-170	Adjusted Flow	4/11/08	8:26	16	SCFM
PW-170	Adjusted Static Pressure	4/11/08	8:23	-5.7	Inches H20
PW-170	Adjusted Static Pressure	4/11/08	8:26	-1.2	Inches H20
PW-170	Adjusted Temperature	4/11/08	8:23	136	F
PW-170	Adjusted Temperature	4/11/08	8:26	135	F
PW-170	Balance Gas	4/11/08	8:23	22	%
PW-170	Balance Gas	4/11/08	8:26	22.9	%
PW-170	Carbon Dioxide	4/11/08	8:23	63.8	%
PW-170	Carbon Dioxide	4/11/08	8:26	63.5	%
PW-170	Initial Flow	4/11/08	8:23	36	SCFM
PW-170	Initial Flow	4/11/08	8:26	14	SCFM
PW-170	Initial Static Pressure	4/11/08	8:23	-5.3	Inches H20
PW-170	Initial Static Pressure	4/11/08	8:26	-1.3	Inches H20
PW-170	Initial Temperature	4/11/08	8:23	136	F
PW-170	Initial Temperature	4/11/08	8:26	135	F
PW-170	Methane	4/11/08	8:23	14.2	%
PW-170	Methane	4/11/08	8:26	13.6	%
PW-170	Oxygen	4/11/08	8:23	0	%
PW-170	Oxygen	4/11/08	8:26	0	%
PW-170	Adjusted Flow	4/16/08	11:45	178	SCFM
PW-170	Adjusted Flow	4/16/08	11:47	28	SCFM
PW-170	Adjusted Static Pressure	4/16/08	11:45	-0.2	Inches H20
PW-170	Adjusted Static Pressure	4/16/08	11:47	-1.7	Inches H20
PW-170	Adjusted Temperature	4/16/08	11:45	135	F
PW-170	Adjusted Temperature	4/16/08	11:47	136	F
PW-170	Balance Gas	4/16/08	11:45	23.3	%
PW-170	Balance Gas	4/16/08	11:47	22.8	%
PW-170	Carbon Dioxide	4/16/08	11:45	63.9	%
PW-170	Carbon Dioxide	4/16/08	11:47	64.5	%
PW-170	Initial Flow	4/16/08	11:45	32	SCFM
PW-170	Initial Flow	4/16/08	11:47	28	SCFM
PW-170	Initial Static Pressure	4/16/08	11:45	-0.3	Inches H20
PW-170	Initial Static Pressure	4/16/08	11:47	-1.6	Inches H20
PW-170	Initial Temperature	4/16/08	11:45	136	F
PW-170	Initial Temperature	4/16/08	11:47	136	F
PW-170	Methane	4/16/08	11:45	12.6	%
PW-170	Methane	4/16/08	11:47	12.7	%
PW-170	Oxygen	4/16/08	11:45	0.2	%
PW-170	Oxygen	4/16/08	11:47	0	%
PW-170	Adjusted Flow	4/23/08	12:42	21	SCFM
PW-170	Adjusted Flow	4/23/08	12:46	22	SCFM

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-170	Adjusted Static Pressure	4/23/08	12:42	-4	Inches H20
PW-170	Adjusted Static Pressure	4/23/08	12:46	-1.7	Inches H20
PW-170	Adjusted Temperature	4/23/08	12:42	137	F
PW-170	Adjusted Temperature	4/23/08	12:46	136	F
PW-170	Balance Gas	4/23/08	12:42	20.3	%
PW-170	Balance Gas	4/23/08	12:46	18.9	%
PW-170	Carbon Dioxide	4/23/08	12:42	65.7	%
PW-170	Carbon Dioxide	4/23/08	12:46	67.8	%
PW-170	Initial Flow	4/23/08	12:42	20	SCFM
PW-170	Initial Flow	4/23/08	12:46	16	SCFM
PW-170	Initial Static Pressure	4/23/08	12:42	-4	Inches H20
PW-170	Initial Static Pressure	4/23/08	12:46	-1.7	Inches H20
PW-170	Initial Temperature	4/23/08	12:42	137	F
PW-170	Initial Temperature	4/23/08	12:46	136	F
PW-170	Methane	4/23/08	12:42	14	%
PW-170	Methane	4/23/08	12:46	13.3	%
PW-170	Oxygen	4/23/08	12:42	0	%
PW-170	Oxygen	4/23/08	12:46	0	%
PW-170	Adjusted Flow	4/30/08	10:23	55	SCFM
PW-170	Adjusted Static Pressure	4/30/08	10:23	-14.6	Inches H20
PW-170	Adjusted Static Pressure	4/30/08	10:26	-2.5	Inches H20
PW-170	Adjusted Temperature	4/30/08	10:23	131	F
PW-170	Adjusted Temperature	4/30/08	10:26	131	F
PW-170	Balance Gas	4/30/08	10:23	19.3	%
PW-170	Balance Gas	4/30/08	10:26	21.5	%
PW-170	Carbon Dioxide	4/30/08	10:23	58.5	%
PW-170	Carbon Dioxide	4/30/08	10:26	61.2	%
PW-170	Initial Flow	4/30/08	10:23	140	SCFM
PW-170	Initial Static Pressure	4/30/08	10:23	-14.5	Inches H20
PW-170	Initial Static Pressure	4/30/08	10:26	-2.7	Inches H20
PW-170	Initial Temperature	4/30/08	10:23	131	F
PW-170	Initial Temperature	4/30/08	10:26	131	F
PW-170	Methane	4/30/08	10:23	21.5	%
PW-170	Methane	4/30/08	10:26	17.1	%
PW-170	Oxygen	4/30/08	10:23	0.7	%
PW-170	Oxygen	4/30/08	10:26	0.2	%
PW-305	Adjusted Flow	4/2/08	10:24	28	SCFM
PW-305	Adjusted Static Pressure	4/2/08	10:24	-1.4	Inches H20
PW-305	Adjusted Static Pressure	4/2/08	10:27	-1.4	Inches H20
PW-305	Adjusted Temperature	4/2/08	10:24	118	F
PW-305	Adjusted Temperature	4/2/08	10:27	118	F
PW-305	Balance Gas	4/2/08	10:24	8.9	%

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-305	Balance Gas	4/2/08	10:27	9.6	%
PW-305	Carbon Dioxide	4/2/08	10:24	34.7	%
PW-305	Carbon Dioxide	4/2/08	10:27	35.6	%
PW-305	Initial Flow	4/2/08	10:24	29	SCFM
PW-305	Initial Static Pressure	4/2/08	10:24	-1.4	Inches H20
PW-305	Initial Static Pressure	4/2/08	10:27	-1.4	Inches H20
PW-305	Initial Temperature	4/2/08	10:24	119	F
PW-305	Initial Temperature	4/2/08	10:27	119	F
PW-305	Methane	4/2/08	10:24	56.3	%
PW-305	Methane	4/2/08	10:27	54.8	%
PW-305	Oxygen	4/2/08	10:24	0.1	%
PW-305	Oxygen	4/2/08	10:27	0	%
PW-305	Depth to Bottom (BGL)	4/8/08	0:00	63.5	Ft
PW-305	Depth to Fluid (BGL)	4/8/08	0:00	63.5	Ft
PW-305	Adjusted Flow	4/11/08	11:08	24	SCFM
PW-305	Adjusted Flow	4/11/08	11:10	36	SCFM
PW-305	Adjusted Static Pressure	4/11/08	11:08	-0.9	Inches H20
PW-305	Adjusted Static Pressure	4/11/08	11:10	-0.7	Inches H20
PW-305	Adjusted Temperature	4/11/08	11:08	122	F
PW-305	Adjusted Temperature	4/11/08	11:10	122	F
PW-305	Balance Gas	4/11/08	11:08	7.5	%
PW-305	Balance Gas	4/11/08	11:10	7.9	%
PW-305	Carbon Dioxide	4/11/08	11:08	36.1	%
PW-305	Carbon Dioxide	4/11/08	11:10	36.5	%
PW-305	Initial Flow	4/11/08	11:08	26	SCFM
PW-305	Initial Flow	4/11/08	11:10	36	SCFM
PW-305	Initial Static Pressure	4/11/08	11:08	-1	Inches H20
PW-305	Initial Static Pressure	4/11/08	11:10	-0.7	Inches H20
PW-305	Initial Temperature	4/11/08	11:08	122	F
PW-305	Initial Temperature	4/11/08	11:10	122	F
PW-305	Methane	4/11/08	11:08	56.3	%
PW-305	Methane	4/11/08	11:10	55.6	%
PW-305	Oxygen	4/11/08	11:08	0.1	%
PW-305	Oxygen	4/11/08	11:10	0	%
PW-305	Adjusted Flow	4/16/08	9:04	22	SCFM
PW-305	Adjusted Flow	4/16/08	9:07	25	SCFM
PW-305	Adjusted Static Pressure	4/16/08	9:04	-1.3	Inches H20
PW-305	Adjusted Static Pressure	4/16/08	9:07	-1	Inches H20
PW-305	Adjusted Temperature	4/16/08	9:04	120	F
PW-305	Adjusted Temperature	4/16/08	9:07	119	F
PW-305	Balance Gas	4/16/08	9:04	18.9	%
PW-305	Balance Gas	4/16/08	9:07	17.7	%

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-305	Carbon Dioxide	4/16/08	9:04	32.5	%
PW-305	Carbon Dioxide	4/16/08	9:07	33.8	%
PW-305	Initial Flow	4/16/08	9:04	24	SCFM
PW-305	Initial Flow	4/16/08	9:07	24	SCFM
PW-305	Initial Static Pressure	4/16/08	9:04	-1.3	Inches H20
PW-305	Initial Static Pressure	4/16/08	9:07	-0.9	Inches H20
PW-305	Initial Temperature	4/16/08	9:04	120	F
PW-305	Initial Temperature	4/16/08	9:07	118	F
PW-305	Methane	4/16/08	9:04	48.6	%
PW-305	Methane	4/16/08	9:07	48.5	%
PW-305	Oxygen	4/16/08	9:04	0	%
PW-305	Oxygen	4/16/08	9:07	0	%
PW-305	Adjusted Flow	4/21/08	11:43	23	SCFM
PW-305	Adjusted Flow	4/21/08	11:45	37	SCFM
PW-305	Adjusted Static Pressure	4/21/08	11:43	-0.9	Inches H20
PW-305	Adjusted Static Pressure	4/21/08	11:45	-0.7	Inches H20
PW-305	Adjusted Temperature	4/21/08	11:43	120	F
PW-305	Adjusted Temperature	4/21/08	11:45	118	F
PW-305	Balance Gas	4/21/08	11:43	12.6	%
PW-305	Balance Gas	4/21/08	11:45	12.2	%
PW-305	Carbon Dioxide	4/21/08	11:43	35	%
PW-305	Carbon Dioxide	4/21/08	11:45	36.2	%
PW-305	Initial Flow	4/21/08	11:43	23	SCFM
PW-305	Initial Flow	4/21/08	11:45	37	SCFM
PW-305	Initial Static Pressure	4/21/08	11:43	-0.9	Inches H20
PW-305	Initial Static Pressure	4/21/08	11:45	-0.7	Inches H20
PW-305	Initial Temperature	4/21/08	11:43	120	F
PW-305	Initial Temperature	4/21/08	11:45	118	F
PW-305	Methane	4/21/08	11:43	52.3	%
PW-305	Methane	4/21/08	11:45	51.6	%
PW-305	Oxygen	4/21/08	11:43	0.1	%
PW-305	Oxygen	4/21/08	11:45	0	%
PW-305	Adjusted Flow	5/1/08	11:18	29	SCFM
PW-305	Adjusted Flow	5/1/08	11:21	10	SCFM
PW-305	Adjusted Static Pressure	5/1/08	11:18	-0.3	Inches H20
PW-305	Adjusted Static Pressure	5/1/08	11:21	-0.3	Inches H20
PW-305	Adjusted Temperature	5/1/08	11:18	16	F
PW-305	Adjusted Temperature	5/1/08	11:21	119	F
PW-305	Balance Gas	5/1/08	11:18	10.4	%
PW-305	Balance Gas	5/1/08	11:21	11.1	%
PW-305	Carbon Dioxide	5/1/08	11:18	35.3	%
PW-305	Carbon Dioxide	5/1/08	11:21	34.7	%

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-305	Initial Flow	5/1/08	11:18	27	SCFM
PW-305	Initial Flow	5/1/08	11:21	10	SCFM
PW-305	Initial Static Pressure	5/1/08	11:18	-0.3	Inches H20
PW-305	Initial Static Pressure	5/1/08	11:21	-0.3	Inches H20
PW-305	Initial Temperature	5/1/08	11:18	118	F
PW-305	Initial Temperature	5/1/08	11:21	120	F
PW-305	Methane	5/1/08	11:18	54.3	%
PW-305	Methane	5/1/08	11:21	54.2	%
PW-305	Oxygen	5/1/08	11:18	0	%
PW-305	Oxygen	5/1/08	11:21	0	%
PW-306	Adjusted Flow	4/2/08	10:06	39	SCFM
PW-306	Adjusted Flow	4/2/08	10:21	16	SCFM
PW-306	Adjusted Static Pressure	4/2/08	10:06	-0.9	Inches H20
PW-306	Adjusted Static Pressure	4/2/08	10:21	-0.3	Inches H20
PW-306	Adjusted Temperature	4/2/08	10:06	109	F
PW-306	Adjusted Temperature	4/2/08	10:21	101	F
PW-306	Balance Gas	4/2/08	10:06	19.6	%
PW-306	Balance Gas	4/2/08	10:21	20.5	%
PW-306	Carbon Dioxide	4/2/08	10:06	31	%
PW-306	Carbon Dioxide	4/2/08	10:21	31.4	%
PW-306	Initial Flow	4/2/08	10:06	39	SCFM
PW-306	Initial Flow	4/2/08	10:21	16	SCFM
PW-306	Initial Static Pressure	4/2/08	10:06	-0.9	Inches H20
PW-306	Initial Static Pressure	4/2/08	10:21	-0.4	Inches H20
PW-306	Initial Temperature	4/2/08	10:06	109	F
PW-306	Initial Temperature	4/2/08	10:21	103	F
PW-306	Methane	4/2/08	10:06	46.8	%
PW-306	Methane	4/2/08	10:21	45.3	%
PW-306	Oxygen	4/2/08	10:06	2.6	%
PW-306	Oxygen	4/2/08	10:21	2.8	%
PW-306	Depth to Bottom (BGL)	4/8/08	0:00	40.1	Ft
PW-306	Depth to Fluid (BGL)	4/8/08	0:00	37.3	Ft
PW-306	Adjusted Flow	4/11/08	11:05	26	SCFM
PW-306	Adjusted Static Pressure	4/11/08	11:01	0.5	Inches H20
PW-306	Adjusted Static Pressure	4/11/08	11:05	-0.6	Inches H20
PW-306	Adjusted Temperature	4/11/08	11:01	76	F
PW-306	Adjusted Temperature	4/11/08	11:05	109	F
PW-306	Balance Gas	4/11/08	11:01	0.2	%
PW-306	Balance Gas	4/11/08	11:05	0.1	%
PW-306	Carbon Dioxide	4/11/08	11:01	38.4	%
PW-306	Carbon Dioxide	4/11/08	11:05	39.2	%
PW-306	Initial Flow	4/11/08	11:05	26	SCFM

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-306	Initial Static Pressure	4/11/08	11:01	0.5	Inches H20
PW-306	Initial Static Pressure	4/11/08	11:05	-0.6	Inches H20
PW-306	Initial Temperature	4/11/08	11:01	75	F
PW-306	Initial Temperature	4/11/08	11:05	107	F
PW-306	Methane	4/11/08	11:01	61.1	%
PW-306	Methane	4/11/08	11:05	60.6	%
PW-306	Oxygen	4/11/08	11:01	0.3	%
PW-306	Oxygen	4/11/08	11:05	0.1	%
PW-306	Adjusted Flow	4/16/08	9:10	23	SCFM
PW-306	Adjusted Flow	4/16/08	9:12	18	SCFM
PW-306	Adjusted Static Pressure	4/16/08	9:10	-1.1	Inches H20
PW-306	Adjusted Static Pressure	4/16/08	9:12	-1	Inches H20
PW-306	Adjusted Temperature	4/16/08	9:10	115	F
PW-306	Adjusted Temperature	4/16/08	9:12	115	F
PW-306	Balance Gas	4/16/08	9:10	8.9	%
PW-306	Balance Gas	4/16/08	9:12	6.8	%
PW-306	Carbon Dioxide	4/16/08	9:10	34.3	%
PW-306	Carbon Dioxide	4/16/08	9:12	36.6	%
PW-306	Initial Flow	4/16/08	9:10	24	SCFM
PW-306	Initial Flow	4/16/08	9:12	20	SCFM
PW-306	Initial Static Pressure	4/16/08	9:10	-1	Inches H20
PW-306	Initial Static Pressure	4/16/08	9:12	-1	Inches H20
PW-306	Initial Temperature	4/16/08	9:10	115	F
PW-306	Initial Temperature	4/16/08	9:12	115	F
PW-306	Methane	4/16/08	9:10	55.5	%
PW-306	Methane	4/16/08	9:12	55.4	%
PW-306	Oxygen	4/16/08	9:10	1.3	%
PW-306	Oxygen	4/16/08	9:12	1.2	%
PW-306	Adjusted Flow	4/21/08	11:49	38	SCFM
PW-306	Adjusted Flow	4/21/08	11:52	19	SCFM
PW-306	Adjusted Static Pressure	4/21/08	11:49	-1.1	Inches H20
PW-306	Adjusted Static Pressure	4/21/08	11:52	-1.1	Inches H20
PW-306	Adjusted Temperature	4/21/08	11:49	115	F
PW-306	Adjusted Temperature	4/21/08	11:52	115	F
PW-306	Balance Gas	4/21/08	11:49	1.3	%
PW-306	Balance Gas	4/21/08	11:52	2.1	%
PW-306	Carbon Dioxide	4/21/08	11:49	38.2	%
PW-306	Carbon Dioxide	4/21/08	11:52	37.7	%
PW-306	Initial Flow	4/21/08	11:49	37	SCFM
PW-306	Initial Flow	4/21/08	11:52	20	SCFM
PW-306	Initial Static Pressure	4/21/08	11:49	-1.1	Inches H20
PW-306	Initial Static Pressure	4/21/08	11:52	-1.1	Inches H20

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-306	Initial Temperature	4/21/08	11:49	115	F
PW-306	Initial Temperature	4/21/08	11:52	115	F
PW-306	Methane	4/21/08	11:49	59.8	%
PW-306	Methane	4/21/08	11:52	59.4	%
PW-306	Oxygen	4/21/08	11:49	0.7	%
PW-306	Oxygen	4/21/08	11:52	0.8	%
PW-306	Adjusted Flow	5/1/08	11:14	18	SCFM
PW-306	Adjusted Flow	5/1/08	11:17	19	SCFM
PW-306	Adjusted Static Pressure	5/1/08	11:14	-0.6	Inches H20
PW-306	Adjusted Static Pressure	5/1/08	11:17	-0.5	Inches H20
PW-306	Adjusted Temperature	5/1/08	11:14	111	F
PW-306	Adjusted Temperature	5/1/08	11:17	111	F
PW-306	Balance Gas	5/1/08	11:14	2.3	%
PW-306	Balance Gas	5/1/08	11:17	2.4	%
PW-306	Carbon Dioxide	5/1/08	11:14	39.2	%
PW-306	Carbon Dioxide	5/1/08	11:17	38.1	%
PW-306	Initial Flow	5/1/08	11:14	18	SCFM
PW-306	Initial Flow	5/1/08	11:17	19	SCFM
PW-306	Initial Static Pressure	5/1/08	11:14	-0.6	Inches H20
PW-306	Initial Static Pressure	5/1/08	11:17	-0.6	Inches H20
PW-306	Initial Temperature	5/1/08	11:14	111	F
PW-306	Initial Temperature	5/1/08	11:17	112	F
PW-306	Methane	5/1/08	11:14	58.5	%
PW-306	Methane	5/1/08	11:17	59.5	%
PW-306	Oxygen	5/1/08	11:14	0	%
PW-306	Oxygen	5/1/08	11:17	0	%
PW-307	Adjusted Flow	4/2/08	9:58	38	SCFM
PW-307	Adjusted Flow	4/2/08	10:00	32	SCFM
PW-307	Adjusted Static Pressure	4/2/08	9:58	-12.8	Inches H20
PW-307	Adjusted Static Pressure	4/2/08	10:00	-12.1	Inches H20
PW-307	Adjusted Temperature	4/2/08	9:58	110	F
PW-307	Adjusted Temperature	4/2/08	10:00	110	F
PW-307	Balance Gas	4/2/08	9:58	4.3	%
PW-307	Balance Gas	4/2/08	10:00	4.9	%
PW-307	Carbon Dioxide	4/2/08	9:58	40.3	%
PW-307	Carbon Dioxide	4/2/08	10:00	40.4	%
PW-307	Initial Flow	4/2/08	9:58	39	SCFM
PW-307	Initial Flow	4/2/08	10:00	31	SCFM
PW-307	Initial Static Pressure	4/2/08	9:58	-12.8	Inches H20
PW-307	Initial Static Pressure	4/2/08	10:00	-12.1	Inches H20
PW-307	Initial Temperature	4/2/08	9:58	110	F
PW-307	Initial Temperature	4/2/08	10:00	110	F

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-307	Methane	4/2/08	9:58	54.7	%
PW-307	Methane	4/2/08	10:00	54.1	%
PW-307	Oxygen	4/2/08	9:58	0.7	%
PW-307	Oxygen	4/2/08	10:00	0.6	%
PW-307	Depth to Bottom (BGL)	4/8/08	0:00	58.6	Ft
PW-307	Depth to Fluid (BGL)	4/8/08	0:00	45.2	Ft
PW-307	Adjusted Flow	4/11/08	10:55	51	SCFM
PW-307	Adjusted Flow	4/11/08	10:57	35	SCFM
PW-307	Adjusted Static Pressure	4/11/08	10:55	-7.4	Inches H20
PW-307	Adjusted Static Pressure	4/11/08	10:57	-6	Inches H20
PW-307	Adjusted Temperature	4/11/08	10:55	114	F
PW-307	Adjusted Temperature	4/11/08	10:57	114	F
PW-307	Balance Gas	4/11/08	10:55	1.3	%
PW-307	Balance Gas	4/11/08	10:57	1.3	%
PW-307	Carbon Dioxide	4/11/08	10:55	41.8	%
PW-307	Carbon Dioxide	4/11/08	10:57	42.4	%
PW-307	Initial Flow	4/11/08	10:55	54	SCFM
PW-307	Initial Flow	4/11/08	10:57	32	SCFM
PW-307	Initial Static Pressure	4/11/08	10:55	-7.6	Inches H20
PW-307	Initial Static Pressure	4/11/08	10:57	-5.9	Inches H20
PW-307	Initial Temperature	4/11/08	10:55	114	F
PW-307	Initial Temperature	4/11/08	10:57	114	F
PW-307	Methane	4/11/08	10:55	56.7	%
PW-307	Methane	4/11/08	10:57	56.2	%
PW-307	Oxygen	4/11/08	10:55	0.2	%
PW-307	Oxygen	4/11/08	10:57	0.1	%
PW-307	Adjusted Flow	4/16/08	9:15	28	SCFM
PW-307	Adjusted Flow	4/16/08	9:18	32	SCFM
PW-307	Adjusted Static Pressure	4/16/08	9:15	-6.2	Inches H20
PW-307	Adjusted Static Pressure	4/16/08	9:18	-5.9	Inches H20
PW-307	Adjusted Temperature	4/16/08	9:15	114	F
PW-307	Adjusted Temperature	4/16/08	9:18	114	F
PW-307	Balance Gas	4/16/08	9:15	3.7	%
PW-307	Balance Gas	4/16/08	9:18	3.4	%
PW-307	Carbon Dioxide	4/16/08	9:15	39.7	%
PW-307	Carbon Dioxide	4/16/08	9:18	41.3	%
PW-307	Initial Flow	4/16/08	9:15	28	SCFM
PW-307	Initial Flow	4/16/08	9:18	27	SCFM
PW-307	Initial Static Pressure	4/16/08	9:15	-6.3	Inches H20
PW-307	Initial Static Pressure	4/16/08	9:18	-5.9	Inches H20
PW-307	Initial Temperature	4/16/08	9:15	114	F
PW-307	Initial Temperature	4/16/08	9:18	114	F

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-307	Methane	4/16/08	9:15	56.6	%
PW-307	Methane	4/16/08	9:18	55.3	%
PW-307	Oxygen	4/16/08	9:15	0	%
PW-307	Oxygen	4/16/08	9:18	0	%
PW-307	Adjusted Flow	4/21/08	11:53	27	SCFM
PW-307	Adjusted Flow	4/21/08	11:56	23	SCFM
PW-307	Adjusted Static Pressure	4/21/08	11:53	-6.1	Inches H20
PW-307	Adjusted Static Pressure	4/21/08	11:56	-5.3	Inches H20
PW-307	Adjusted Temperature	4/21/08	11:53	115	F
PW-307	Adjusted Temperature	4/21/08	11:56	115	F
PW-307	Balance Gas	4/21/08	11:53	0.1	%
PW-307	Balance Gas	4/21/08	11:56	0.1	%
PW-307	Carbon Dioxide	4/21/08	11:53	42.8	%
PW-307	Carbon Dioxide	4/21/08	11:56	43.3	%
PW-307	Initial Flow	4/21/08	11:53	27	SCFM
PW-307	Initial Flow	4/21/08	11:56	24	SCFM
PW-307	Initial Static Pressure	4/21/08	11:53	-6.1	Inches H20
PW-307	Initial Static Pressure	4/21/08	11:56	-5.2	Inches H20
PW-307	Initial Temperature	4/21/08	11:53	115	F
PW-307	Initial Temperature	4/21/08	11:56	115	F
PW-307	Methane	4/21/08	11:53	57.1	%
PW-307	Methane	4/21/08	11:56	56.6	%
PW-307	Oxygen	4/21/08	11:53	0	%
PW-307	Oxygen	4/21/08	11:56	0	%
PW-307	Adjusted Flow	5/1/08	11:10	36	SCFM
PW-307	Adjusted Flow	5/1/08	11:13	21	SCFM
PW-307	Adjusted Static Pressure	5/1/08	11:08	1.2	Inches H20
PW-307	Adjusted Static Pressure	5/1/08	11:10	-0.7	Inches H20
PW-307	Adjusted Static Pressure	5/1/08	11:13	-0.3	Inches H20
PW-307	Adjusted Temperature	5/1/08	11:08	128	F
PW-307	Adjusted Temperature	5/1/08	11:10	131	F
PW-307	Adjusted Temperature	5/1/08	11:13	131	F
PW-307	Balance Gas	5/1/08	11:08	4.5	%
PW-307	Balance Gas	5/1/08	11:10	4.4	%
PW-307	Balance Gas	5/1/08	11:13	2.5	%
PW-307	Carbon Dioxide	5/1/08	11:08	40.1	%
PW-307	Carbon Dioxide	5/1/08	11:10	41.1	%
PW-307	Carbon Dioxide	5/1/08	11:13	41.3	%
PW-307	Initial Flow	5/1/08	11:10	36	SCFM
PW-307	Initial Flow	5/1/08	11:13	15	SCFM
PW-307	Initial Static Pressure	5/1/08	11:08	1.1	Inches H20
PW-307	Initial Static Pressure	5/1/08	11:10	-0.7	Inches H20

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-307	Initial Static Pressure	5/1/08	11:13	-0.2	Inches H20
PW-307	Initial Temperature	5/1/08	11:08	128	F
PW-307	Initial Temperature	5/1/08	11:10	131	F
PW-307	Initial Temperature	5/1/08	11:13	131	F
PW-307	Methane	5/1/08	11:08	55.4	%
PW-307	Methane	5/1/08	11:10	54.5	%
PW-307	Methane	5/1/08	11:13	56.2	%
PW-307	Oxygen	5/1/08	11:08	0	%
PW-307	Oxygen	5/1/08	11:10	0	%
PW-307	Oxygen	5/1/08	11:13	0	%
PW-307	Depth to Bottom (BGL)	5/2/08	0:00	58.7	Ft
PW-307	Depth to Fluid (BGL)	5/2/08	0:00	54.8	Ft
PW-313	Depth to Bottom (BGL)	4/1/08	0:00	59.4	Ft
PW-313	Depth to Fluid (BGL)	4/1/08	0:00	53.8	Ft
PW-313	Adjusted Flow	4/2/08	11:28	85	SCFM
PW-313	Adjusted Flow	4/2/08	11:32	88	SCFM
PW-313	Adjusted Static Pressure	4/2/08	11:28	-4.5	Inches H20
PW-313	Adjusted Static Pressure	4/2/08	11:32	-4.7	Inches H20
PW-313	Adjusted Temperature	4/2/08	11:28	107	F
PW-313	Adjusted Temperature	4/2/08	11:32	107	F
PW-313	Balance Gas	4/2/08	11:28	0.3	%
PW-313	Balance Gas	4/2/08	11:32	0.8	%
PW-313	Carbon Dioxide	4/2/08	11:28	38.7	%
PW-313	Carbon Dioxide	4/2/08	11:32	39.3	%
PW-313	Initial Flow	4/2/08	11:28	85	SCFM
PW-313	Initial Flow	4/2/08	11:32	87	SCFM
PW-313	Initial Static Pressure	4/2/08	11:28	-4.4	Inches H20
PW-313	Initial Static Pressure	4/2/08	11:32	-4.5	Inches H20
PW-313	Initial Temperature	4/2/08	11:28	107	F
PW-313	Initial Temperature	4/2/08	11:32	107	F
PW-313	Methane	4/2/08	11:28	60.8	%
PW-313	Methane	4/2/08	11:32	59.9	%
PW-313	Oxygen	4/2/08	11:28	0.2	%
PW-313	Oxygen	4/2/08	11:32	0	%
PW-313	Depth to Bottom (BGL)	4/8/08	0:00	59.4	Ft
PW-313	Depth to Fluid (BGL)	4/8/08	0:00	53.9	Ft
PW-313	Adjusted Flow	4/11/08	1:57	113	SCFM
PW-313	Adjusted Flow	4/11/08	2:02	104	SCFM
PW-313	Adjusted Static Pressure	4/11/08	1:57	-7.9	Inches H20
PW-313	Adjusted Static Pressure	4/11/08	2:02	-7.1	Inches H20
PW-313	Adjusted Temperature	4/11/08	1:57	107	F
PW-313	Adjusted Temperature	4/11/08	2:02	107	F

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-313	Balance Gas	4/11/08	1:57	4.9	%
PW-313	Balance Gas	4/11/08	2:02	4.7	%
PW-313	Carbon Dioxide	4/11/08	1:57	39	%
PW-313	Carbon Dioxide	4/11/08	2:02	39.8	%
PW-313	Initial Flow	4/11/08	1:57	113	SCFM
PW-313	Initial Flow	4/11/08	2:02	105	SCFM
PW-313	Initial Static Pressure	4/11/08	1:57	-8.1	Inches H20
PW-313	Initial Static Pressure	4/11/08	2:02	-7	Inches H20
PW-313	Initial Temperature	4/11/08	1:57	107	F
PW-313	Initial Temperature	4/11/08	2:02	107	F
PW-313	Methane	4/11/08	1:57	55.5	%
PW-313	Methane	4/11/08	2:02	55	%
PW-313	Oxygen	4/11/08	1:57	0.6	%
PW-313	Oxygen	4/11/08	2:02	0.5	%
PW-313	Adjusted Flow	4/14/08	1:47	98	SCFM
PW-313	Adjusted Flow	4/14/08	1:50	59	SCFM
PW-313	Adjusted Static Pressure	4/14/08	1:47	-5.7	Inches H20
PW-313	Adjusted Static Pressure	4/14/08	1:50	-2.1	Inches H20
PW-313	Adjusted Temperature	4/14/08	1:47	106	F
PW-313	Adjusted Temperature	4/14/08	1:50	105	F
PW-313	Balance Gas	4/14/08	1:47	6.5	%
PW-313	Balance Gas	4/14/08	1:50	6.6	%
PW-313	Carbon Dioxide	4/14/08	1:47	37.6	%
PW-313	Carbon Dioxide	4/14/08	1:50	38	%
PW-313	Initial Flow	4/14/08	1:47	98	SCFM
PW-313	Initial Flow	4/14/08	1:50	60	SCFM
PW-313	Initial Static Pressure	4/14/08	1:47	-5.6	Inches H20
PW-313	Initial Static Pressure	4/14/08	1:50	-2.1	Inches H20
PW-313	Initial Temperature	4/14/08	1:47	106	F
PW-313	Initial Temperature	4/14/08	1:50	105	F
PW-313	Methane	4/14/08	1:47	55.7	%
PW-313	Methane	4/14/08	1:50	55.2	%
PW-313	Oxygen	4/14/08	1:47	0.2	%
PW-313	Oxygen	4/14/08	1:50	0.2	%
PW-313	Depth to Bottom (BGL)	4/16/08	0:00	59.4	Ft
PW-313	Depth to Fluid (BGL)	4/16/08	0:00	54	Ft
PW-313	Adjusted Flow	4/21/08	1:01	62	SCFM
PW-313	Adjusted Flow	4/21/08	1:03	66	SCFM
PW-313	Adjusted Static Pressure	4/21/08	1:01	-1.2	Inches H20
PW-313	Adjusted Static Pressure	4/21/08	1:03	-1.6	Inches H20
PW-313	Adjusted Temperature	4/21/08	1:01	109	F
PW-313	Adjusted Temperature	4/21/08	1:03	109	F

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-313	Balance Gas	4/21/08	1:01	0.1	%
PW-313	Balance Gas	4/21/08	1:03	0.2	%
PW-313	Carbon Dioxide	4/21/08	1:01	41.8	%
PW-313	Carbon Dioxide	4/21/08	1:03	42.6	%
PW-313	Depth to Bottom (BGL)	4/21/08	0:00	59.6	Ft
PW-313	Depth to Fluid (BGL)	4/21/08	0:00	54.1	Ft
PW-313	Initial Flow	4/21/08	1:01	62	SCFM
PW-313	Initial Flow	4/21/08	1:03	66	SCFM
PW-313	Initial Static Pressure	4/21/08	1:01	-1.2	Inches H20
PW-313	Initial Static Pressure	4/21/08	1:03	-1.6	Inches H20
PW-313	Initial Temperature	4/21/08	1:01	109	F
PW-313	Initial Temperature	4/21/08	1:03	109	F
PW-313	Methane	4/21/08	1:01	58	%
PW-313	Methane	4/21/08	1:03	57.2	%
PW-313	Oxygen	4/21/08	1:01	0.1	%
PW-313	Oxygen	4/21/08	1:03	0	%
PW-313	Depth to Bottom (BGL)	4/29/08	0:00	59.4	Ft
PW-313	Depth to Fluid (BGL)	4/29/08	0:00	54.1	Ft
PW-313	Adjusted Flow	5/1/08	12:18	61	SCFM
PW-313	Adjusted Flow	5/1/08	12:21	57	SCFM
PW-313	Adjusted Static Pressure	5/1/08	12:18	-2.2	Inches H20
PW-313	Adjusted Static Pressure	5/1/08	12:21	-2	Inches H20
PW-313	Adjusted Temperature	5/1/08	12:18	109	F
PW-313	Adjusted Temperature	5/1/08	12:21	110	F
PW-313	Balance Gas	5/1/08	12:18	3.7	%
PW-313	Balance Gas	5/1/08	12:21	3.1	%
PW-313	Carbon Dioxide	5/1/08	12:18	38.8	%
PW-313	Carbon Dioxide	5/1/08	12:21	39.3	%
PW-313	Initial Flow	5/1/08	12:18	59	SCFM
PW-313	Initial Flow	5/1/08	12:21	57	SCFM
PW-313	Initial Static Pressure	5/1/08	12:18	-2.2	Inches H20
PW-313	Initial Static Pressure	5/1/08	12:21	-2	Inches H20
PW-313	Initial Temperature	5/1/08	12:18	109	F
PW-313	Initial Temperature	5/1/08	12:21	110	F
PW-313	Methane	5/1/08	12:18	57.5	%
PW-313	Methane	5/1/08	12:21	57.6	%
PW-313	Oxygen	5/1/08	12:18	0	%
PW-313	Oxygen	5/1/08	12:21	0	%
PW-313	Depth to Bottom (BGL)	5/8/08	0:00	59.4	Ft
PW-313	Depth to Fluid (BGL)	5/8/08	0:00	53.9	Ft
PW-313	Depth to Bottom (BGL)	5/12/08	0:00	59.4	Ft
PW-313	Depth to Fluid (BGL)	5/12/08	0:00	54	Ft

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-314	Depth to Bottom (BGL)	4/1/08	0:00	49.9	Ft
PW-314	Depth to Fluid (BGL)	4/1/08	0:00	37.4	Ft
PW-314	Adjusted Flow	4/2/08	11:35	16	SCFM
PW-314	Adjusted Flow	4/2/08	11:38	17	SCFM
PW-314	Adjusted Static Pressure	4/2/08	11:35	-2.5	Inches H20
PW-314	Adjusted Static Pressure	4/2/08	11:38	-2.3	Inches H20
PW-314	Adjusted Temperature	4/2/08	11:35	129	F
PW-314	Adjusted Temperature	4/2/08	11:38	130	F
PW-314	Balance Gas	4/2/08	11:35	0.2	%
PW-314	Balance Gas	4/2/08	11:38	0.1	%
PW-314	Carbon Dioxide	4/2/08	11:35	38.8	%
PW-314	Carbon Dioxide	4/2/08	11:38	39.2	%
PW-314	Initial Flow	4/2/08	11:35	16	SCFM
PW-314	Initial Flow	4/2/08	11:38	16	SCFM
PW-314	Initial Static Pressure	4/2/08	11:35	-2.6	Inches H20
PW-314	Initial Static Pressure	4/2/08	11:38	-2.3	Inches H20
PW-314	Initial Temperature	4/2/08	11:35	129	F
PW-314	Initial Temperature	4/2/08	11:38	130	F
PW-314	Methane	4/2/08	11:35	61	%
PW-314	Methane	4/2/08	11:38	60.7	%
PW-314	Oxygen	4/2/08	11:35	0	%
PW-314	Oxygen	4/2/08	11:38	0	%
PW-314	Depth to Bottom (BGL)	4/8/08	0:00	50	Ft
PW-314	Depth to Fluid (BGL)	4/8/08	0:00	38.1	Ft
PW-314	Adjusted Flow	4/11/08	1:52	164	SCFM
PW-314	Adjusted Flow	4/11/08	1:54	33	SCFM
PW-314	Adjusted Static Pressure	4/11/08	1:52	-6.1	Inches H20
PW-314	Adjusted Static Pressure	4/11/08	1:54	-4.6	Inches H20
PW-314	Adjusted Temperature	4/11/08	1:52	130	F
PW-314	Adjusted Temperature	4/11/08	1:54	130	F
PW-314	Balance Gas	4/11/08	1:52	0.1	%
PW-314	Balance Gas	4/11/08	1:54	0.1	%
PW-314	Carbon Dioxide	4/11/08	1:52	43.1	%
PW-314	Carbon Dioxide	4/11/08	1:54	41.7	%
PW-314	Initial Flow	4/11/08	1:52	163	SCFM
PW-314	Initial Flow	4/11/08	1:54	34	SCFM
PW-314	Initial Static Pressure	4/11/08	1:52	-6.2	Inches H20
PW-314	Initial Static Pressure	4/11/08	1:54	-4.6	Inches H20
PW-314	Initial Temperature	4/11/08	1:52	129	F
PW-314	Initial Temperature	4/11/08	1:54	130	F
PW-314	Methane	4/11/08	1:52	56.8	%
PW-314	Methane	4/11/08	1:54	58.2	%

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-314	Oxygen	4/11/08	1:52	0	%
PW-314	Oxygen	4/11/08	1:54	0	%
PW-314	Adjusted Flow	4/14/08	1:51	33	SCFM
PW-314	Adjusted Flow	4/14/08	1:55	22	SCFM
PW-314	Adjusted Static Pressure	4/14/08	1:51	-4.4	Inches H20
PW-314	Adjusted Static Pressure	4/14/08	1:55	-3.4	Inches H20
PW-314	Adjusted Temperature	4/14/08	1:51	128	F
PW-314	Adjusted Temperature	4/14/08	1:55	128	F
PW-314	Balance Gas	4/14/08	1:51	3.8	%
PW-314	Balance Gas	4/14/08	1:55	3.2	%
PW-314	Carbon Dioxide	4/14/08	1:51	37.3	%
PW-314	Carbon Dioxide	4/14/08	1:55	39.3	%
PW-314	Initial Flow	4/14/08	1:51	33	SCFM
PW-314	Initial Flow	4/14/08	1:55	24	SCFM
PW-314	Initial Static Pressure	4/14/08	1:51	-4.4	Inches H20
PW-314	Initial Static Pressure	4/14/08	1:55	-3.3	Inches H20
PW-314	Initial Temperature	4/14/08	1:51	127	F
PW-314	Initial Temperature	4/14/08	1:55	127	F
PW-314	Methane	4/14/08	1:51	58.8	%
PW-314	Methane	4/14/08	1:55	57.5	%
PW-314	Oxygen	4/14/08	1:51	0.1	%
PW-314	Oxygen	4/14/08	1:55	0	%
PW-314	Depth to Bottom (BGL)	4/16/08	0:00	50	Ft
PW-314	Depth to Fluid (BGL)	4/16/08	0:00	38.9	Ft
PW-314	Adjusted Flow	4/21/08	1:06	39	SCFM
PW-314	Adjusted Static Pressure	4/21/08	1:06	-3.2	Inches H20
PW-314	Adjusted Static Pressure	4/21/08	1:10	-0.5	Inches H20
PW-314	Adjusted Temperature	4/21/08	1:06	132	F
PW-314	Adjusted Temperature	4/21/08	1:10	129	F
PW-314	Balance Gas	4/21/08	1:06	0.2	%
PW-314	Balance Gas	4/21/08	1:10	0.1	%
PW-314	Carbon Dioxide	4/21/08	1:06	41.1	%
PW-314	Carbon Dioxide	4/21/08	1:10	42.3	%
PW-314	Depth to Bottom (BGL)	4/21/08	0:00	49.9	Ft
PW-314	Depth to Fluid (BGL)	4/21/08	0:00	39.3	Ft
PW-314	Initial Flow	4/21/08	1:06	38	SCFM
PW-314	Initial Static Pressure	4/21/08	1:06	-3.2	Inches H20
PW-314	Initial Static Pressure	4/21/08	1:10	-0.5	Inches H20
PW-314	Initial Temperature	4/21/08	1:06	132	F
PW-314	Initial Temperature	4/21/08	1:10	129	F
PW-314	Methane	4/21/08	1:06	58.7	%
PW-314	Methane	4/21/08	1:10	57.6	%

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-314	Oxygen	4/21/08	1:06	0	%
PW-314	Oxygen	4/21/08	1:10	0	%
PW-314	Depth to Bottom (BGL)	4/29/08	0:00	49.9	Ft
PW-314	Depth to Fluid (BGL)	4/29/08	0:00	40	Ft
PW-314	Adjusted Flow	5/1/08	12:22	9	SCFM
PW-314	Adjusted Flow	5/1/08	12:25	10	SCFM
PW-314	Adjusted Static Pressure	5/1/08	12:22	-0.6	Inches H20
PW-314	Adjusted Static Pressure	5/1/08	12:25	-0.2	Inches H20
PW-314	Adjusted Temperature	5/1/08	12:22	132	F
PW-314	Adjusted Temperature	5/1/08	12:25	131	F
PW-314	Balance Gas	5/1/08	12:22	1.8	%
PW-314	Balance Gas	5/1/08	12:25	2.4	%
PW-314	Carbon Dioxide	5/1/08	12:22	38.6	%
PW-314	Carbon Dioxide	5/1/08	12:25	38.2	%
PW-314	Initial Flow	5/1/08	12:22	5	SCFM
PW-314	Initial Flow	5/1/08	12:25	10	SCFM
PW-314	Initial Static Pressure	5/1/08	12:22	-0.6	Inches H20
PW-314	Initial Static Pressure	5/1/08	12:25	-0.2	Inches H20
PW-314	Initial Temperature	5/1/08	12:22	132	F
PW-314	Initial Temperature	5/1/08	12:25	132	F
PW-314	Methane	5/1/08	12:22	59.6	%
PW-314	Methane	5/1/08	12:25	59.3	%
PW-314	Oxygen	5/1/08	12:22	0	%
PW-314	Oxygen	5/1/08	12:25	0.1	%
PW-314	Depth to Bottom (BGL)	5/8/08	0:00	50	Ft
PW-314	Depth to Fluid (BGL)	5/8/08	0:00	40.2	Ft
PW-314	Depth to Bottom (BGL)	5/12/08	0:00	50	Ft
PW-314	Depth to Fluid (BGL)	5/12/08	0:00	40.3	Ft
PW-315	Adjusted Flow	4/2/08	11:42	13	SCFM
PW-315	Adjusted Flow	4/2/08	11:45	24	SCFM
PW-315	Adjusted Static Pressure	4/2/08	11:42	-3.3	Inches H20
PW-315	Adjusted Static Pressure	4/2/08	11:45	-2.1	Inches H20
PW-315	Adjusted Temperature	4/2/08	11:42	145	F
PW-315	Adjusted Temperature	4/2/08	11:45	145	F
PW-315	Balance Gas	4/2/08	11:42	22.8	%
PW-315	Balance Gas	4/2/08	11:45	22.8	%
PW-315	Carbon Dioxide	4/2/08	11:42	48.3	%
PW-315	Carbon Dioxide	4/2/08	11:45	48.3	%
PW-315	Initial Flow	4/2/08	11:42	17	SCFM
PW-315	Initial Flow	4/2/08	11:45	20	SCFM
PW-315	Initial Static Pressure	4/2/08	11:42	-3.3	Inches H20
PW-315	Initial Static Pressure	4/2/08	11:45	-2.2	Inches H20

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-315	Initial Temperature	4/2/08	11:42	145	F
PW-315	Initial Temperature	4/2/08	11:45	145	F
PW-315	Methane	4/2/08	11:42	28.9	%
PW-315	Methane	4/2/08	11:45	28.9	%
PW-315	Oxygen	4/2/08	11:42	0	%
PW-315	Oxygen	4/2/08	11:45	0	%
PW-315	Depth to Bottom (BGL)	4/8/08	0:00	59.9	Ft
PW-315	Depth to Fluid (BGL)	4/8/08	0:00	59.9	Ft
PW-315	Adjusted Flow	4/11/08	1:42	35	SCFM
PW-315	Adjusted Flow	4/11/08	1:44	18	SCFM
PW-315	Adjusted Static Pressure	4/11/08	1:42	-4.9	Inches H20
PW-315	Adjusted Static Pressure	4/11/08	1:44	-2.1	Inches H20
PW-315	Adjusted Temperature	4/11/08	1:42	147	F
PW-315	Adjusted Temperature	4/11/08	1:44	148	F
PW-315	Balance Gas	4/11/08	1:42	12.4	%
PW-315	Balance Gas	4/11/08	1:44	14.1	%
PW-315	Carbon Dioxide	4/11/08	1:42	50.1	%
PW-315	Carbon Dioxide	4/11/08	1:44	50.1	%
PW-315	Initial Flow	4/11/08	1:42	35	SCFM
PW-315	Initial Flow	4/11/08	1:44	17	SCFM
PW-315	Initial Static Pressure	4/11/08	1:42	-5	Inches H20
PW-315	Initial Static Pressure	4/11/08	1:44	-2.2	Inches H20
PW-315	Initial Temperature	4/11/08	1:42	149	F
PW-315	Initial Temperature	4/11/08	1:44	148	F
PW-315	Methane	4/11/08	1:42	37.2	%
PW-315	Methane	4/11/08	1:44	35.6	%
PW-315	Oxygen	4/11/08	1:42	0.3	%
PW-315	Oxygen	4/11/08	1:44	0.2	%
PW-315	Adjusted Flow	4/14/08	1:59	37	SCFM
PW-315	Adjusted Static Pressure	4/14/08	1:56	0.6	Inches H20
PW-315	Adjusted Static Pressure	4/14/08	1:59	-4.8	Inches H20
PW-315	Adjusted Temperature	4/14/08	1:56	144	F
PW-315	Adjusted Temperature	4/14/08	1:59	144	F
PW-315	Balance Gas	4/14/08	1:56	29.9	%
PW-315	Balance Gas	4/14/08	1:59	29	%
PW-315	Carbon Dioxide	4/14/08	1:56	45.9	%
PW-315	Carbon Dioxide	4/14/08	1:59	46.7	%
PW-315	Initial Flow	4/14/08	1:59	37	SCFM
PW-315	Initial Static Pressure	4/14/08	1:56	0.6	Inches H20
PW-315	Initial Static Pressure	4/14/08	1:59	-4.8	Inches H20
PW-315	Initial Temperature	4/14/08	1:56	144	F
PW-315	Initial Temperature	4/14/08	1:59	146	F

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-315	Methane	4/14/08	1:56	24.2	%
PW-315	Methane	4/14/08	1:59	24.3	%
PW-315	Oxygen	4/14/08	1:56	0	%
PW-315	Oxygen	4/14/08	1:59	0	%
PW-315	Adjusted Flow	4/21/08	1:13	34	SCFM
PW-315	Adjusted Flow	4/21/08	1:17	16	SCFM
PW-315	Adjusted Static Pressure	4/21/08	1:13	-13.1	Inches H20
PW-315	Adjusted Static Pressure	4/21/08	1:17	-0.1	Inches H20
PW-315	Adjusted Temperature	4/21/08	1:13	146	F
PW-315	Adjusted Temperature	4/21/08	1:17	138	F
PW-315	Balance Gas	4/21/08	1:13	16.7	%
PW-315	Balance Gas	4/21/08	1:17	16.8	%
PW-315	Carbon Dioxide	4/21/08	1:13	51.1	%
PW-315	Carbon Dioxide	4/21/08	1:17	51.5	%
PW-315	Initial Flow	4/21/08	1:13	34	SCFM
PW-315	Initial Static Pressure	4/21/08	1:13	-13.1	Inches H20
PW-315	Initial Static Pressure	4/21/08	1:17	-0.3	Inches H20
PW-315	Initial Temperature	4/21/08	1:13	147	F
PW-315	Initial Temperature	4/21/08	1:17	134	F
PW-315	Methane	4/21/08	1:13	32.1	%
PW-315	Methane	4/21/08	1:17	31.3	%
PW-315	Oxygen	4/21/08	1:13	0.1	%
PW-315	Oxygen	4/21/08	1:17	0.4	%
PW-315	Adjusted Flow	5/1/08	12:26	16	SCFM
PW-315	Adjusted Flow	5/1/08	12:30	14	SCFM
PW-315	Adjusted Static Pressure	5/1/08	12:26	-11.5	Inches H20
PW-315	Adjusted Static Pressure	5/1/08	12:30	-8.2	Inches H20
PW-315	Adjusted Temperature	5/1/08	12:26	148	F
PW-315	Adjusted Temperature	5/1/08	12:30	148	F
PW-315	Balance Gas	5/1/08	12:26	23.4	%
PW-315	Balance Gas	5/1/08	12:30	24.8	%
PW-315	Carbon Dioxide	5/1/08	12:26	43.5	%
PW-315	Carbon Dioxide	5/1/08	12:30	44.4	%
PW-315	Initial Flow	5/1/08	12:26	16	SCFM
PW-315	Initial Flow	5/1/08	12:30	18	SCFM
PW-315	Initial Static Pressure	5/1/08	12:26	-11.5	Inches H20
PW-315	Initial Static Pressure	5/1/08	12:30	-8.2	Inches H20
PW-315	Initial Temperature	5/1/08	12:26	149	F
PW-315	Initial Temperature	5/1/08	12:30	148	F
PW-315	Methane	5/1/08	12:26	32.9	%
PW-315	Methane	5/1/08	12:30	30.7	%
PW-315	Oxygen	5/1/08	12:26	0.2	%

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-315	Oxygen	5/1/08	12:30	0.1	%
PW-324	Depth to Bottom (BGL)	4/1/08	0:00	70.2	Ft
PW-324	Depth to Fluid (BGL)	4/1/08	0:00	62	Ft
PW-324	Adjusted Flow	4/2/08	9:53	27	SCFM
PW-324	Adjusted Flow	4/2/08	9:56	14	SCFM
PW-324	Adjusted Static Pressure	4/2/08	9:53	-1.6	Inches H20
PW-324	Adjusted Static Pressure	4/2/08	9:56	-0.8	Inches H20
PW-324	Adjusted Temperature	4/2/08	9:53	139	F
PW-324	Adjusted Temperature	4/2/08	9:56	138	F
PW-324	Balance Gas	4/2/08	9:53	11.6	%
PW-324	Balance Gas	4/2/08	9:56	12.7	%
PW-324	Carbon Dioxide	4/2/08	9:53	37.1	%
PW-324	Carbon Dioxide	4/2/08	9:56	38.4	%
PW-324	Initial Flow	4/2/08	9:53	27	SCFM
PW-324	Initial Flow	4/2/08	9:56	16	SCFM
PW-324	Initial Static Pressure	4/2/08	9:53	-1.6	Inches H20
PW-324	Initial Static Pressure	4/2/08	9:56	-0.8	Inches H20
PW-324	Initial Temperature	4/2/08	9:53	139	F
PW-324	Initial Temperature	4/2/08	9:56	138	F
PW-324	Methane	4/2/08	9:53	49.9	%
PW-324	Methane	4/2/08	9:56	48.1	%
PW-324	Oxygen	4/2/08	9:53	1.4	%
PW-324	Oxygen	4/2/08	9:56	0.8	%
PW-324	Depth to Bottom (BGL)	4/8/08	0:00	103.2	Ft
PW-324	Depth to Fluid (BGL)	4/8/08	0:00	85.2	Ft
PW-324	Adjusted Flow	4/11/08	10:24	29	SCFM
PW-324	Adjusted Static Pressure	4/11/08	10:21	0.1	Inches H20
PW-324	Adjusted Static Pressure	4/11/08	10:24	-1	Inches H20
PW-324	Adjusted Temperature	4/11/08	10:21	143	F
PW-324	Adjusted Temperature	4/11/08	10:24	143	F
PW-324	Balance Gas	4/11/08	10:21	20.9	%
PW-324	Balance Gas	4/11/08	10:24	10.1	%
PW-324	Carbon Dioxide	4/11/08	10:21	37.9	%
PW-324	Carbon Dioxide	4/11/08	10:24	39.9	%
PW-324	Initial Flow	4/11/08	10:24	29	SCFM
PW-324	Initial Static Pressure	4/11/08	10:21	0.1	Inches H20
PW-324	Initial Static Pressure	4/11/08	10:24	-1	Inches H20
PW-324	Initial Temperature	4/11/08	10:21	143	F
PW-324	Initial Temperature	4/11/08	10:24	143	F
PW-324	Methane	4/11/08	10:21	39.5	%
PW-324	Methane	4/11/08	10:24	50	%
PW-324	Oxygen	4/11/08	10:21	1.7	%

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-324	Oxygen	4/11/08	10:24	0	%
PW-324	Adjusted Flow	4/16/08	8:23	27	SCFM
PW-324	Adjusted Flow	4/16/08	8:26	28	SCFM
PW-324	Adjusted Static Pressure	4/16/08	8:23	-2.3	Inches H20
PW-324	Adjusted Static Pressure	4/16/08	8:26	-0.9	Inches H20
PW-324	Adjusted Temperature	4/16/08	8:23	139	F
PW-324	Adjusted Temperature	4/16/08	8:26	138	F
PW-324	Balance Gas	4/16/08	8:23	9.9	%
PW-324	Balance Gas	4/16/08	8:26	12.6	%
PW-324	Carbon Dioxide	4/16/08	8:23	35.8	%
PW-324	Carbon Dioxide	4/16/08	8:26	37	%
PW-324	Initial Flow	4/16/08	8:23	26	SCFM
PW-324	Initial Flow	4/16/08	8:26	28	SCFM
PW-324	Initial Static Pressure	4/16/08	8:23	-2.2	Inches H20
PW-324	Initial Static Pressure	4/16/08	8:26	-0.9	Inches H20
PW-324	Initial Temperature	4/16/08	8:23	139	F
PW-324	Initial Temperature	4/16/08	8:26	138	F
PW-324	Methane	4/16/08	8:23	53.8	%
PW-324	Methane	4/16/08	8:26	50	%
PW-324	Oxygen	4/16/08	8:23	0.5	%
PW-324	Oxygen	4/16/08	8:26	0.4	%
PW-324	Adjusted Flow	4/21/08	11:43	21	SCFM
PW-324	Adjusted Flow	4/21/08	11:47	15	SCFM
PW-324	Adjusted Static Pressure	4/21/08	11:43	-0.4	Inches H20
PW-324	Adjusted Static Pressure	4/21/08	11:47	-0.3	Inches H20
PW-324	Adjusted Temperature	4/21/08	11:43	142	F
PW-324	Adjusted Temperature	4/21/08	11:47	142	F
PW-324	Balance Gas	4/21/08	11:43	7.4	%
PW-324	Balance Gas	4/21/08	11:47	7.4	%
PW-324	Carbon Dioxide	4/21/08	11:43	37.5	%
PW-324	Carbon Dioxide	4/21/08	11:47	38	%
PW-324	Initial Flow	4/21/08	11:43	21	SCFM
PW-324	Initial Flow	4/21/08	11:47	16	SCFM
PW-324	Initial Static Pressure	4/21/08	11:43	-0.5	Inches H20
PW-324	Initial Static Pressure	4/21/08	11:47	-0.2	Inches H20
PW-324	Initial Temperature	4/21/08	11:43	142	F
PW-324	Initial Temperature	4/21/08	11:47	141	F
PW-324	Methane	4/21/08	11:43	54.9	%
PW-324	Methane	4/21/08	11:47	54.5	%
PW-324	Oxygen	4/21/08	11:43	0.2	%
PW-324	Oxygen	4/21/08	11:47	0.1	%
PW-324	Adjusted Flow	5/1/08	8:26	24	SCFM

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-324	Adjusted Flow	5/1/08	8:30	25	SCFM
PW-324	Adjusted Static Pressure	5/1/08	8:26	-0.5	Inches H20
PW-324	Adjusted Static Pressure	5/1/08	8:30	-0.2	Inches H20
PW-324	Adjusted Temperature	5/1/08	8:26	141	F
PW-324	Adjusted Temperature	5/1/08	8:30	141	F
PW-324	Balance Gas	5/1/08	8:26	11	%
PW-324	Balance Gas	5/1/08	8:30	14.1	%
PW-324	Carbon Dioxide	5/1/08	8:26	37.5	%
PW-324	Carbon Dioxide	5/1/08	8:30	38.7	%
PW-324	Initial Flow	5/1/08	8:26	24	SCFM
PW-324	Initial Flow	5/1/08	8:30	23	SCFM
PW-324	Initial Static Pressure	5/1/08	8:26	-0.5	Inches H20
PW-324	Initial Static Pressure	5/1/08	8:30	-0.2	Inches H20
PW-324	Initial Temperature	5/1/08	8:26	143	F
PW-324	Initial Temperature	5/1/08	8:30	140	F
PW-324	Methane	5/1/08	8:26	51.3	%
PW-324	Methane	5/1/08	8:30	47.2	%
PW-324	Oxygen	5/1/08	8:26	0.2	%
PW-324	Oxygen	5/1/08	8:30	0	%
PW-325	Adjusted Flow	4/2/08	9:52	31	SCFM
PW-325	Adjusted Flow	4/2/08	9:55	19	SCFM
PW-325	Adjusted Static Pressure	4/2/08	9:52	-1.9	Inches H20
PW-325	Adjusted Static Pressure	4/2/08	9:55	-0.9	Inches H20
PW-325	Adjusted Temperature	4/2/08	9:52	132	F
PW-325	Adjusted Temperature	4/2/08	9:55	124	F
PW-325	Balance Gas	4/2/08	9:52	0.2	%
PW-325	Balance Gas	4/2/08	9:55	0.1	%
PW-325	Carbon Dioxide	4/2/08	9:52	31.1	%
PW-325	Carbon Dioxide	4/2/08	9:55	32.4	%
PW-325	Initial Flow	4/2/08	9:52	30	SCFM
PW-325	Initial Flow	4/2/08	9:55	19	SCFM
PW-325	Initial Static Pressure	4/2/08	9:52	-2	Inches H20
PW-325	Initial Static Pressure	4/2/08	9:55	-0.7	Inches H20
PW-325	Initial Temperature	4/2/08	9:52	132	F
PW-325	Initial Temperature	4/2/08	9:55	125	F
PW-325	Methane	4/2/08	9:52	68.5	%
PW-325	Methane	4/2/08	9:55	67.5	%
PW-325	Oxygen	4/2/08	9:52	0.2	%
PW-325	Oxygen	4/2/08	9:55	0	%
PW-325	Depth to Bottom (BGL)	4/8/08	0:00	70.2	Ft
PW-325	Depth to Fluid (BGL)	4/8/08	0:00	62.2	Ft
PW-325	Adjusted Flow	4/11/08	10:16	16	SCFM

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-325	Adjusted Flow	4/11/08	10:19	13	SCFM
PW-325	Adjusted Static Pressure	4/11/08	10:16	-1	Inches H20
PW-325	Adjusted Static Pressure	4/11/08	10:19	-0.6	Inches H20
PW-325	Adjusted Temperature	4/11/08	10:16	133	F
PW-325	Adjusted Temperature	4/11/08	10:19	132	F
PW-325	Balance Gas	4/11/08	10:16	1.4	%
PW-325	Balance Gas	4/11/08	10:19	2	%
PW-325	Carbon Dioxide	4/11/08	10:16	31.9	%
PW-325	Carbon Dioxide	4/11/08	10:19	32.3	%
PW-325	Initial Flow	4/11/08	10:16	16	SCFM
PW-325	Initial Flow	4/11/08	10:19	14	SCFM
PW-325	Initial Static Pressure	4/11/08	10:16	-1	Inches H20
PW-325	Initial Static Pressure	4/11/08	10:19	-0.6	Inches H20
PW-325	Initial Temperature	4/11/08	10:16	133	F
PW-325	Initial Temperature	4/11/08	10:19	131	F
PW-325	Methane	4/11/08	10:16	66.7	%
PW-325	Methane	4/11/08	10:19	65.7	%
PW-325	Oxygen	4/11/08	10:16	0	%
PW-325	Oxygen	4/11/08	10:19	0	%
PW-325	Adjusted Flow	4/16/08	8:17	44	SCFM
PW-325	Adjusted Flow	4/16/08	8:20	48	SCFM
PW-325	Adjusted Static Pressure	4/16/08	8:17	-0.9	Inches H20
PW-325	Adjusted Static Pressure	4/16/08	8:20	-4.5	Inches H20
PW-325	Adjusted Temperature	4/16/08	8:17	135	F
PW-325	Adjusted Temperature	4/16/08	8:20	143	F
PW-325	Balance Gas	4/16/08	8:17	1.8	%
PW-325	Balance Gas	4/16/08	8:20	0.3	%
PW-325	Carbon Dioxide	4/16/08	8:17	29.3	%
PW-325	Carbon Dioxide	4/16/08	8:20	31.7	%
PW-325	Depth to Bottom (BGL)	4/16/08	0:00	70.2	Ft
PW-325	Depth to Fluid (BGL)	4/16/08	0:00	62.1	Ft
PW-325	Initial Flow	4/16/08	8:17	43	SCFM
PW-325	Initial Flow	4/16/08	8:20	49	SCFM
PW-325	Initial Static Pressure	4/16/08	8:17	-0.9	Inches H20
PW-325	Initial Static Pressure	4/16/08	8:20	-4.5	Inches H20
PW-325	Initial Temperature	4/16/08	8:17	136	F
PW-325	Initial Temperature	4/16/08	8:20	142	F
PW-325	Methane	4/16/08	8:17	68.9	%
PW-325	Methane	4/16/08	8:20	68	%
PW-325	Oxygen	4/16/08	8:17	0	%
PW-325	Oxygen	4/16/08	8:20	0	%
PW-325	Adjusted Flow	4/21/08	11:38	26	SCFM

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-325	Adjusted Flow	4/21/08	11:41	36	SCFM
PW-325	Adjusted Static Pressure	4/21/08	11:38	-6.3	Inches H20
PW-325	Adjusted Static Pressure	4/21/08	11:41	-4.7	Inches H20
PW-325	Adjusted Temperature	4/21/08	11:38	143	F
PW-325	Adjusted Temperature	4/21/08	11:41	141	F
PW-325	Balance Gas	4/21/08	11:38	0.2	%
PW-325	Balance Gas	4/21/08	11:41	0.1	%
PW-325	Carbon Dioxide	4/21/08	11:38	33.2	%
PW-325	Carbon Dioxide	4/21/08	11:41	34	%
PW-325	Depth to Bottom (BGL)	4/21/08	0:00	70.1	Ft
PW-325	Depth to Fluid (BGL)	4/21/08	0:00	61.7	Ft
PW-325	Initial Flow	4/21/08	11:38	27	SCFM
PW-325	Initial Flow	4/21/08	11:41	36	SCFM
PW-325	Initial Static Pressure	4/21/08	11:38	-6.3	Inches H20
PW-325	Initial Static Pressure	4/21/08	11:41	-4.6	Inches H20
PW-325	Initial Temperature	4/21/08	11:38	143	F
PW-325	Initial Temperature	4/21/08	11:41	141	F
PW-325	Methane	4/21/08	11:38	66.6	%
PW-325	Methane	4/21/08	11:41	65.9	%
PW-325	Oxygen	4/21/08	11:38	0	%
PW-325	Oxygen	4/21/08	11:41	0	%
PW-325	Depth to Bottom (BGL)	4/29/08	0:00	70.2	Ft
PW-325	Depth to Fluid (BGL)	4/29/08	0:00	61.8	Ft
PW-325	Adjusted Flow	5/1/08	8:21	43	SCFM
PW-325	Adjusted Flow	5/1/08	8:25	34	SCFM
PW-325	Adjusted Static Pressure	5/1/08	8:21	-4.2	Inches H20
PW-325	Adjusted Static Pressure	5/1/08	8:25	-5.5	Inches H20
PW-325	Adjusted Temperature	5/1/08	8:21	141	F
PW-325	Adjusted Temperature	5/1/08	8:25	142	F
PW-325	Balance Gas	5/1/08	8:21	0.7	%
PW-325	Balance Gas	5/1/08	8:25	1.8	%
PW-325	Carbon Dioxide	5/1/08	8:21	30.7	%
PW-325	Carbon Dioxide	5/1/08	8:25	32.3	%
PW-325	Initial Flow	5/1/08	8:21	43	SCFM
PW-325	Initial Flow	5/1/08	8:25	34	SCFM
PW-325	Initial Static Pressure	5/1/08	8:21	-4.2	Inches H20
PW-325	Initial Static Pressure	5/1/08	8:25	-5.5	Inches H20
PW-325	Initial Temperature	5/1/08	8:21	141	F
PW-325	Initial Temperature	5/1/08	8:25	143	F
PW-325	Methane	5/1/08	8:21	68.4	%
PW-325	Methane	5/1/08	8:25	65.8	%
PW-325	Oxygen	5/1/08	8:21	0.2	%

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-325	Oxygen	5/1/08	8:25	0.1	%
PW-325	Depth to Bottom (BGL)	5/8/08	0:00	70.2	Ft
PW-325	Depth to Fluid (BGL)	5/8/08	0:00	61.8	Ft
PW-325	Depth to Bottom (BGL)	5/12/08	0:00	70.2	Ft
PW-325	Depth to Fluid (BGL)	5/12/08	0:00	61.8	Ft
PW-326	Depth to Bottom (BGL)	4/1/08	0:00	118.1	Ft
PW-326	Depth to Fluid (BGL)	4/1/08	0:00	107.8	Ft
PW-326	Adjusted Flow	4/2/08	9:59	31	SCFM
PW-326	Adjusted Flow	4/2/08	10:01	36	SCFM
PW-326	Adjusted Static Pressure	4/2/08	9:59	-1.6	Inches H20
PW-326	Adjusted Static Pressure	4/2/08	10:01	-1.6	Inches H20
PW-326	Adjusted Temperature	4/2/08	9:59	117	F
PW-326	Adjusted Temperature	4/2/08	10:01	117	F
PW-326	Balance Gas	4/2/08	9:59	12.9	%
PW-326	Balance Gas	4/2/08	10:01	13.1	%
PW-326	Carbon Dioxide	4/2/08	9:59	32.6	%
PW-326	Carbon Dioxide	4/2/08	10:01	32.6	%
PW-326	Initial Flow	4/2/08	9:59	32	SCFM
PW-326	Initial Flow	4/2/08	10:01	35	SCFM
PW-326	Initial Static Pressure	4/2/08	9:59	-1.6	Inches H20
PW-326	Initial Static Pressure	4/2/08	10:01	-1.7	Inches H20
PW-326	Initial Temperature	4/2/08	9:59	117	F
PW-326	Initial Temperature	4/2/08	10:01	117	F
PW-326	Methane	4/2/08	9:59	54.1	%
PW-326	Methane	4/2/08	10:01	54.2	%
PW-326	Oxygen	4/2/08	9:59	0.4	%
PW-326	Oxygen	4/2/08	10:01	0.1	%
PW-326	Depth to Bottom (BGL)	4/8/08	0:00	118.1	Ft
PW-326	Depth to Fluid (BGL)	4/8/08	0:00	107.6	Ft
PW-326	Adjusted Flow	4/11/08	10:12	38	SCFM
PW-326	Adjusted Flow	4/11/08	10:15	28	SCFM
PW-326	Adjusted Static Pressure	4/11/08	10:12	-1.7	Inches H20
PW-326	Adjusted Static Pressure	4/11/08	10:15	-1.2	Inches H20
PW-326	Adjusted Temperature	4/11/08	10:12	117	F
PW-326	Adjusted Temperature	4/11/08	10:15	119	F
PW-326	Balance Gas	4/11/08	10:12	13.5	%
PW-326	Balance Gas	4/11/08	10:15	12.6	%
PW-326	Carbon Dioxide	4/11/08	10:12	32.8	%
PW-326	Carbon Dioxide	4/11/08	10:15	33.8	%
PW-326	Initial Flow	4/11/08	10:12	39	SCFM
PW-326	Initial Flow	4/11/08	10:15	29	SCFM
PW-326	Initial Static Pressure	4/11/08	10:12	-1.7	Inches H20

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-326	Initial Static Pressure	4/11/08	10:15	-1.1	Inches H20
PW-326	Initial Temperature	4/11/08	10:12	117	F
PW-326	Initial Temperature	4/11/08	10:15	118	F
PW-326	Methane	4/11/08	10:12	53.2	%
PW-326	Methane	4/11/08	10:15	53.4	%
PW-326	Oxygen	4/11/08	10:12	0.5	%
PW-326	Oxygen	4/11/08	10:15	0.2	%
PW-326	Adjusted Flow	4/16/08	8:17	29	SCFM
PW-326	Adjusted Flow	4/16/08	8:19	28	SCFM
PW-326	Adjusted Static Pressure	4/16/08	8:17	-0.8	Inches H20
PW-326	Adjusted Static Pressure	4/16/08	8:19	-0.8	Inches H20
PW-326	Adjusted Temperature	4/16/08	8:17	122	F
PW-326	Adjusted Temperature	4/16/08	8:19	121	F
PW-326	Balance Gas	4/16/08	8:17	10.3	%
PW-326	Balance Gas	4/16/08	8:19	9.7	%
PW-326	Carbon Dioxide	4/16/08	8:17	31.4	%
PW-326	Carbon Dioxide	4/16/08	8:19	32.7	%
PW-326	Depth to Bottom (BGL)	4/16/08	0:00	118	Ft
PW-326	Depth to Fluid (BGL)	4/16/08	0:00	107.5	Ft
PW-326	Initial Flow	4/16/08	8:17	34	SCFM
PW-326	Initial Flow	4/16/08	8:19	27	SCFM
PW-326	Initial Static Pressure	4/16/08	8:17	-0.8	Inches H20
PW-326	Initial Static Pressure	4/16/08	8:19	-0.8	Inches H20
PW-326	Initial Temperature	4/16/08	8:17	121	F
PW-326	Initial Temperature	4/16/08	8:19	121	F
PW-326	Methane	4/16/08	8:17	57.7	%
PW-326	Methane	4/16/08	8:19	57.2	%
PW-326	Oxygen	4/16/08	8:17	0.6	%
PW-326	Oxygen	4/16/08	8:19	0.4	%
PW-326	Adjusted Flow	4/21/08	11:37	34	SCFM
PW-326	Adjusted Flow	4/21/08	11:40	43	SCFM
PW-326	Adjusted Static Pressure	4/21/08	11:37	-0.9	Inches H20
PW-326	Adjusted Static Pressure	4/21/08	11:40	-1.6	Inches H20
PW-326	Adjusted Temperature	4/21/08	11:37	121	F
PW-326	Adjusted Temperature	4/21/08	11:40	120	F
PW-326	Balance Gas	4/21/08	11:37	1.7	%
PW-326	Balance Gas	4/21/08	11:40	1.2	%
PW-326	Carbon Dioxide	4/21/08	11:37	34	%
PW-326	Carbon Dioxide	4/21/08	11:40	35.2	%
PW-326	Depth to Bottom (BGL)	4/21/08	0:00	118.2	Ft
PW-326	Depth to Fluid (BGL)	4/21/08	0:00	107.2	Ft
PW-326	Initial Flow	4/21/08	11:37	34	SCFM

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-326	Initial Flow	4/21/08	11:40	43	SCFM
PW-326	Initial Static Pressure	4/21/08	11:37	-0.9	Inches H20
PW-326	Initial Static Pressure	4/21/08	11:40	-1.6	Inches H20
PW-326	Initial Temperature	4/21/08	11:37	121	F
PW-326	Initial Temperature	4/21/08	11:40	120	F
PW-326	Methane	4/21/08	11:37	63.7	%
PW-326	Methane	4/21/08	11:40	63.2	%
PW-326	Oxygen	4/21/08	11:37	0.6	%
PW-326	Oxygen	4/21/08	11:40	0.4	%
PW-326	Depth to Bottom (BGL)	4/29/08	0:00	118	Ft
PW-326	Depth to Fluid (BGL)	4/29/08	0:00	107	Ft
PW-326	Adjusted Flow	5/1/08	12:52	37	SCFM
PW-326	Adjusted Flow	5/1/08	12:58	17	SCFM
PW-326	Adjusted Static Pressure	5/1/08	12:52	-1.8	Inches H20
PW-326	Adjusted Static Pressure	5/1/08	12:58	-0.9	Inches H20
PW-326	Adjusted Temperature	5/1/08	12:52	121	F
PW-326	Adjusted Temperature	5/1/08	12:58	122	F
PW-326	Balance Gas	5/1/08	12:52	16.7	%
PW-326	Balance Gas	5/1/08	12:58	16.6	%
PW-326	Carbon Dioxide	5/1/08	12:52	31.6	%
PW-326	Carbon Dioxide	5/1/08	12:58	30.6	%
PW-326	Initial Flow	5/1/08	12:52	36	SCFM
PW-326	Initial Flow	5/1/08	12:58	18	SCFM
PW-326	Initial Static Pressure	5/1/08	12:52	-1.8	Inches H20
PW-326	Initial Static Pressure	5/1/08	12:58	-1	Inches H20
PW-326	Initial Temperature	5/1/08	12:52	121	F
PW-326	Initial Temperature	5/1/08	12:58	121	F
PW-326	Methane	5/1/08	12:52	50.5	%
PW-326	Methane	5/1/08	12:58	51.7	%
PW-326	Oxygen	5/1/08	12:52	1.2	%
PW-326	Oxygen	5/1/08	12:58	1.1	%
PW-326	Depth to Bottom (BGL)	5/8/08	0:00	117.8	Ft
PW-326	Depth to Fluid (BGL)	5/8/08	0:00	106.4	Ft
PW-326	Depth to Bottom (BGL)	5/12/08	0:00	117.9	Ft
PW-326	Depth to Fluid (BGL)	5/12/08	0:00	106.3	Ft
PW-328	Depth to Bottom (BGL)	4/1/08	0:00	80.4	Ft
PW-328	Depth to Fluid (BGL)	4/1/08	0:00	67.1	Ft
PW-328	Adjusted Flow	4/2/08	11:48	21	SCFM
PW-328	Adjusted Flow	4/2/08	11:51	29	SCFM
PW-328	Adjusted Static Pressure	4/2/08	11:48	-3.7	Inches H20
PW-328	Adjusted Static Pressure	4/2/08	11:51	-3.9	Inches H20
PW-328	Adjusted Temperature	4/2/08	11:48	127	F

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-328	Adjusted Temperature	4/2/08	11:51	127	F
PW-328	Balance Gas	4/2/08	11:48	0.2	%
PW-328	Balance Gas	4/2/08	11:51	0.1	%
PW-328	Carbon Dioxide	4/2/08	11:48	38.6	%
PW-328	Carbon Dioxide	4/2/08	11:51	39.3	%
PW-328	Initial Flow	4/2/08	11:48	22	SCFM
PW-328	Initial Flow	4/2/08	11:51	34	SCFM
PW-328	Initial Static Pressure	4/2/08	11:48	-3.7	Inches H20
PW-328	Initial Static Pressure	4/2/08	11:51	-3.9	Inches H20
PW-328	Initial Temperature	4/2/08	11:48	127	F
PW-328	Initial Temperature	4/2/08	11:51	127	F
PW-328	Methane	4/2/08	11:48	61.2	%
PW-328	Methane	4/2/08	11:51	60.6	%
PW-328	Oxygen	4/2/08	11:48	0	%
PW-328	Oxygen	4/2/08	11:51	0	%
PW-328	Depth to Bottom (BGL)	4/8/08	0:00	80.4	Ft
PW-328	Depth to Fluid (BGL)	4/8/08	0:00	67.3	Ft
PW-328	Adjusted Flow	4/11/08	2:18	44	SCFM
PW-328	Adjusted Flow	4/11/08	2:20	15	SCFM
PW-328	Adjusted Static Pressure	4/11/08	2:18	-7.4	Inches H20
PW-328	Adjusted Static Pressure	4/11/08	2:20	-4.8	Inches H20
PW-328	Adjusted Temperature	4/11/08	2:18	127	F
PW-328	Adjusted Temperature	4/11/08	2:20	126	F
PW-328	Balance Gas	4/11/08	2:18	2.9	%
PW-328	Balance Gas	4/11/08	2:20	2.2	%
PW-328	Carbon Dioxide	4/11/08	2:18	39.7	%
PW-328	Carbon Dioxide	4/11/08	2:20	40.4	%
PW-328	Initial Flow	4/11/08	2:18	46	SCFM
PW-328	Initial Flow	4/11/08	2:20	15	SCFM
PW-328	Initial Static Pressure	4/11/08	2:18	-7.4	Inches H20
PW-328	Initial Static Pressure	4/11/08	2:20	-4.9	Inches H20
PW-328	Initial Temperature	4/11/08	2:18	127	F
PW-328	Initial Temperature	4/11/08	2:20	126	F
PW-328	Methane	4/11/08	2:18	57.4	%
PW-328	Methane	4/11/08	2:20	57.4	%
PW-328	Oxygen	4/11/08	2:18	0	%
PW-328	Oxygen	4/11/08	2:20	0	%
PW-328	Adjusted Flow	4/14/08	2:01	42	SCFM
PW-328	Adjusted Flow	4/14/08	2:04	27	SCFM
PW-328	Adjusted Static Pressure	4/14/08	2:01	-4.9	Inches H20
PW-328	Adjusted Static Pressure	4/14/08	2:04	-2.9	Inches H20
PW-328	Adjusted Temperature	4/14/08	2:01	124	F

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-328	Adjusted Temperature	4/14/08	2:04	123	F
PW-328	Balance Gas	4/14/08	2:01	4.7	%
PW-328	Balance Gas	4/14/08	2:04	3.7	%
PW-328	Carbon Dioxide	4/14/08	2:01	37.6	%
PW-328	Carbon Dioxide	4/14/08	2:04	38.7	%
PW-328	Initial Flow	4/14/08	2:01	40	SCFM
PW-328	Initial Flow	4/14/08	2:04	24	SCFM
PW-328	Initial Static Pressure	4/14/08	2:01	-4.8	Inches H20
PW-328	Initial Static Pressure	4/14/08	2:04	-3	Inches H20
PW-328	Initial Temperature	4/14/08	2:01	124	F
PW-328	Initial Temperature	4/14/08	2:04	123	F
PW-328	Methane	4/14/08	2:01	57.7	%
PW-328	Methane	4/14/08	2:04	57.6	%
PW-328	Oxygen	4/14/08	2:01	0	%
PW-328	Oxygen	4/14/08	2:04	0	%
PW-328	Depth to Bottom (BGL)	4/16/08	0:00	80.3	Ft
PW-328	Depth to Fluid (BGL)	4/16/08	0:00	67.6	Ft
PW-328	Adjusted Flow	4/21/08	1:21	32	SCFM
PW-328	Adjusted Flow	4/21/08	1:23	32	SCFM
PW-328	Adjusted Static Pressure	4/21/08	1:21	-2	Inches H20
PW-328	Adjusted Static Pressure	4/21/08	1:23	-2.1	Inches H20
PW-328	Adjusted Temperature	4/21/08	1:21	128	F
PW-328	Adjusted Temperature	4/21/08	1:23	128	F
PW-328	Balance Gas	4/21/08	1:21	0.2	%
PW-328	Balance Gas	4/21/08	1:23	0.1	%
PW-328	Carbon Dioxide	4/21/08	1:21	41.2	%
PW-328	Carbon Dioxide	4/21/08	1:23	42.3	%
PW-328	Depth to Bottom (BGL)	4/21/08	0:00	80.3	Ft
PW-328	Depth to Fluid (BGL)	4/21/08	0:00	68	Ft
PW-328	Initial Flow	4/21/08	1:21	33	SCFM
PW-328	Initial Flow	4/21/08	1:23	32	SCFM
PW-328	Initial Static Pressure	4/21/08	1:21	-1.9	Inches H20
PW-328	Initial Static Pressure	4/21/08	1:23	-2	Inches H20
PW-328	Initial Temperature	4/21/08	1:21	128	F
PW-328	Initial Temperature	4/21/08	1:23	129	F
PW-328	Methane	4/21/08	1:21	58.5	%
PW-328	Methane	4/21/08	1:23	57.6	%
PW-328	Oxygen	4/21/08	1:21	0.1	%
PW-328	Oxygen	4/21/08	1:23	0	%
PW-328	Depth to Bottom (BGL)	4/29/08	0:00	80.3	Ft
PW-328	Depth to Fluid (BGL)	4/29/08	0:00	68	Ft
PW-328	Adjusted Flow	5/1/08	12:31	19	SCFM

TABLE 1. EXISTING CONDITIONS IN EXISTING GAS EXTRACTION WELLS COUNTYWIDE RDF

Location ID	Field Parameter	Date	Measurement Time	Field Measurement	Measurement Units
PW-328	Adjusted Static Pressure	5/1/08	12:31	-2.2	Inches H20
PW-328	Adjusted Static Pressure	5/1/08	12:34	-1.3	Inches H20
PW-328	Adjusted Temperature	5/1/08	12:31	129	F
PW-328	Adjusted Temperature	5/1/08	12:34	129	F
PW-328	Balance Gas	5/1/08	12:31	3.2	%
PW-328	Balance Gas	5/1/08	12:34	3	%
PW-328	Carbon Dioxide	5/1/08	12:31	39.9	%
PW-328	Carbon Dioxide	5/1/08	12:34	38.7	%
PW-328	Initial Flow	5/1/08	12:31	20	SCFM
PW-328	Initial Static Pressure	5/1/08	12:31	-2.2	Inches H20
PW-328	Initial Static Pressure	5/1/08	12:34	-1.3	Inches H20
PW-328	Initial Temperature	5/1/08	12:31	129	F
PW-328	Initial Temperature	5/1/08	12:34	130	F
PW-328	Methane	5/1/08	12:31	56.9	%
PW-328	Methane	5/1/08	12:34	58.2	%
PW-328	Oxygen	5/1/08	12:31	0	%
PW-328	Oxygen	5/1/08	12:34	0.1	%
PW-328	Depth to Bottom (BGL)	5/8/08	0:00	80.2	Ft
PW-328	Depth to Fluid (BGL)	5/8/08	0:00	67.7	Ft
PW-328	Depth to Bottom (BGL)	5/12/08	0:00	80.2	Ft
PW-328	Depth to Fluid (BGL)	5/12/08	0:00	67.6	Ft
PW-333	Depth to Bottom (BGL)	4/18/08	0:00	111.6	Ft
PW-333	Depth to Fluid (BGL)	4/18/08	0:00	105.6	Ft
PW-335	Depth to Bottom (BGL)	4/18/08	0:00	60.3	Ft
PW-335	Depth to Fluid (BGL)	4/18/08	0:00	50.5	Ft
PW-336	Depth to Bottom (BGL)	4/18/08	0:00	103.6	Ft
PW-336	Depth to Fluid (BGL)	4/18/08	0:00	70.1	Ft
PW-337	Depth to Bottom (BGL)	4/18/08	0:00	111.2	Ft
PW-337	Depth to Fluid (BGL)	4/18/08	0:00	74.4	Ft

TABLE 2. EXISTING CONDITION LIQUID LEVEL MEASUREMENTS
COUNTYWIDE RDF

Location ID	Field Parameter	Date	Field Measurement	Measurement Units
B2R	Depth to Bottom (BGL)	4/9/08	62	Ft
B2R	Depth to Fluid (BGL)	4/9/08	30.1	Ft
C2R	Depth to Bottom (BGL)	4/9/08	120.2	Ft
C2R	Depth to Fluid (BGL)	4/9/08	70	Ft
D2R	Depth to Bottom (BGL)	4/8/08	117.9	Ft
D2R	Depth to Fluid (BGL)	4/8/08	80.6	Ft
E2R	Depth to Bottom (BGL)	4/8/08	117	Ft
E2R	Depth to Fluid (BGL)	4/8/08	78.2	Ft
F2	Depth to Bottom (BGL)	4/8/08	64.9	Ft
F2	Depth to Fluid (BGL)	4/8/08	59.9	Ft
F2	Depth to Bottom (BGL)	5/2/08	64.9	Ft
F2	Depth to Fluid (BGL)	5/2/08	59.8	Ft
PW-125	Depth to Bottom (BGL)	4/9/08	72.8	Ft
PW-125	Depth to Fluid (BGL)	4/9/08	67.1	Ft
PW-159	Depth to Bottom (BGL)	4/9/08	116.5	Ft
PW-159	Depth to Fluid (BGL)	4/9/08	71.6	Ft
PW-159	Depth to Bottom (BGL)	5/2/08	116.7	Ft
PW-159	Depth to Fluid (BGL)	5/2/08	71.1	Ft
PW-170	Depth to Bottom (BGL)	4/9/08	43.5	Ft
PW-170	Depth to Fluid (BGL)	4/9/08	37.9	Ft
PW-173	Depth to Bottom (BGL)	4/11/08	111.5	Ft
PW-173	Depth to Fluid (BGL)	4/11/08	66.2	Ft
PW-174	Depth to Bottom (BGL)	4/11/08	103.1	Ft
PW-174	Depth to Fluid (BGL)	4/11/08	39.6	Ft
PW-305	Depth to Bottom (BGL)	4/8/08	63.5	Ft
PW-305	Depth to Fluid (BGL)	4/8/08	63.5	Ft
PW-306	Depth to Bottom (BGL)	4/8/08	40.1	Ft
PW-306	Depth to Fluid (BGL)	4/8/08	37.3	Ft
PW-307	Depth to Bottom (BGL)	4/8/08	58.6	Ft
PW-307	Depth to Fluid (BGL)	4/8/08	45.2	Ft
PW-307	Depth to Bottom (BGL)	5/2/08	58.7	Ft
PW-307	Depth to Fluid (BGL)	5/2/08	54.8	Ft
PW-313	Depth to Bottom (BGL)	4/1/08	59.4	Ft
PW-313	Depth to Fluid (BGL)	4/1/08	53.8	Ft
PW-313	Depth to Bottom (BGL)	4/8/08	59.4	Ft
PW-313	Depth to Fluid (BGL)	4/8/08	53.9	Ft
PW-313	Depth to Bottom (BGL)	4/16/08	59.4	Ft
PW-313	Depth to Fluid (BGL)	4/16/08	54	Ft
PW-313	Depth to Bottom (BGL)	4/21/08	59.6	Ft
PW-313	Depth to Fluid (BGL)	4/21/08	54.1	Ft
PW-313	Depth to Bottom (BGL)	4/29/08	59.4	Ft

TABLE 2. EXISTING CONDITION LIQUID LEVEL MEASUREMENTS
COUNTYWIDE RDF

Location ID	Field Parameter	Date	Field Measurement	Measurement Units
PW-313	Depth to Fluid (BGL)	4/29/08	54.1	Ft
PW-313	Depth to Bottom (BGL)	5/8/08	59.4	Ft
PW-313	Depth to Fluid (BGL)	5/8/08	53.9	Ft
PW-313	Depth to Bottom (BGL)	5/12/08	59.4	Ft
PW-313	Depth to Fluid (BGL)	5/12/08	54	Ft
PW-314	Depth to Bottom (BGL)	4/1/08	49.9	Ft
PW-314	Depth to Fluid (BGL)	4/1/08	37.4	Ft
PW-314	Depth to Bottom (BGL)	4/8/08	50	Ft
PW-314	Depth to Fluid (BGL)	4/8/08	38.1	Ft
PW-314	Depth to Bottom (BGL)	4/16/08	50	Ft
PW-314	Depth to Fluid (BGL)	4/16/08	38.9	Ft
PW-314	Depth to Bottom (BGL)	4/21/08	49.9	Ft
PW-314	Depth to Fluid (BGL)	4/21/08	39.3	Ft
PW-314	Depth to Bottom (BGL)	4/29/08	49.9	Ft
PW-314	Depth to Fluid (BGL)	4/29/08	40	Ft
PW-314	Depth to Bottom (BGL)	5/8/08	50	Ft
PW-314	Depth to Fluid (BGL)	5/8/08	40.2	Ft
PW-314	Depth to Bottom (BGL)	5/12/08	50	Ft
PW-314	Depth to Fluid (BGL)	5/12/08	40.3	Ft
PW-315	Depth to Bottom (BGL)	4/8/08	59.9	Ft
PW-315	Depth to Fluid (BGL)	4/8/08	59.9	Ft
PW-324	Depth to Bottom (BGL)	4/1/08	70.2	Ft
PW-324	Depth to Fluid (BGL)	4/1/08	62	Ft
PW-324	Depth to Bottom (BGL)	4/8/08	103.2	Ft
PW-324	Depth to Fluid (BGL)	4/8/08	85.2	Ft
PW-325	Depth to Bottom (BGL)	4/8/08	70.2	Ft
PW-325	Depth to Fluid (BGL)	4/8/08	62.2	Ft
PW-325	Depth to Bottom (BGL)	4/16/08	70.2	Ft
PW-325	Depth to Fluid (BGL)	4/16/08	62.1	Ft
PW-325	Depth to Bottom (BGL)	4/21/08	70.1	Ft
PW-325	Depth to Fluid (BGL)	4/21/08	61.7	Ft
PW-325	Depth to Bottom (BGL)	4/29/08	70.2	Ft
PW-325	Depth to Fluid (BGL)	4/29/08	61.8	Ft
PW-325	Depth to Bottom (BGL)	5/8/08	70.2	Ft
PW-325	Depth to Fluid (BGL)	5/8/08	61.8	Ft
PW-325	Depth to Bottom (BGL)	5/12/08	70.2	Ft
PW-325	Depth to Fluid (BGL)	5/12/08	61.8	Ft
PW-326	Depth to Bottom (BGL)	4/1/08	118.1	Ft
PW-326	Depth to Fluid (BGL)	4/1/08	107.8	Ft
PW-326	Depth to Bottom (BGL)	4/8/08	118.1	Ft
PW-326	Depth to Fluid (BGL)	4/8/08	107.6	Ft

TABLE 2. EXISTING CONDITION LIQUID LEVEL MEASUREMENTS
COUNTYWIDE RDF

Location ID	Field Parameter	Date	Field Measurement	Measurement Units
PW-326	Depth to Bottom (BGL)	4/16/08	118	Ft
PW-326	Depth to Fluid (BGL)	4/16/08	107.5	Ft
PW-326	Depth to Bottom (BGL)	4/21/08	118.2	Ft
PW-326	Depth to Fluid (BGL)	4/21/08	107.2	Ft
PW-326	Depth to Bottom (BGL)	4/29/08	118	Ft
PW-326	Depth to Fluid (BGL)	4/29/08	107	Ft
PW-326	Depth to Bottom (BGL)	5/8/08	117.8	Ft
PW-326	Depth to Fluid (BGL)	5/8/08	106.4	Ft
PW-326	Depth to Bottom (BGL)	5/12/08	117.9	Ft
PW-326	Depth to Fluid (BGL)	5/12/08	106.3	Ft
PW-328	Depth to Bottom (BGL)	4/1/08	80.4	Ft
PW-328	Depth to Fluid (BGL)	4/1/08	67.1	Ft
PW-328	Depth to Bottom (BGL)	4/8/08	80.4	Ft
PW-328	Depth to Fluid (BGL)	4/8/08	67.3	Ft
PW-328	Depth to Bottom (BGL)	4/16/08	80.3	Ft
PW-328	Depth to Fluid (BGL)	4/16/08	67.6	Ft
PW-328	Depth to Bottom (BGL)	4/21/08	80.3	Ft
PW-328	Depth to Fluid (BGL)	4/21/08	68	Ft
PW-328	Depth to Bottom (BGL)	4/29/08	80.3	Ft
PW-328	Depth to Fluid (BGL)	4/29/08	68	Ft
PW-328	Depth to Bottom (BGL)	5/8/08	80.2	Ft
PW-328	Depth to Fluid (BGL)	5/8/08	67.7	Ft
PW-328	Depth to Bottom (BGL)	5/12/08	80.2	Ft
PW-328	Depth to Fluid (BGL)	5/12/08	67.6	Ft
PW-333	Depth to Bottom (BGL)	4/18/08	111.6	Ft
PW-333	Depth to Fluid (BGL)	4/18/08	105.6	Ft
PW-335	Depth to Bottom (BGL)	4/18/08	60.3	Ft
PW-335	Depth to Fluid (BGL)	4/18/08	50.5	Ft
PW-336	Depth to Bottom (BGL)	4/18/08	103.6	Ft
PW-336	Depth to Fluid (BGL)	4/18/08	70.1	Ft
PW-337	Depth to Bottom (BGL)	4/18/08	111.2	Ft
PW-337	Depth to Fluid (BGL)	4/18/08	74.4	Ft

TABLE 3. ENHANCED COLLECTION SYSTEM WELL SCHEDULE
COUNTYWIDE RDF

Well	Status	Date of Installation	Location Coordinates Northing	Easting	Surface Elev.	Top of Liner Elev.	Refuse Depth (feet)	Boring Depth (feet)	Solid Pipe (feet)	Perforated Pipe (feet)	Radius of Influence (ROI)
Cell 4, 5B, 5C Projection Control Gas Extraction Wells											
B2R	Existing	2007	24,707.35	43,099.47	1,192.2	1,064.5	127.7	75	20	54	120
C2R	Existing	2007	24,714.53	42,840.33	1,219.5	1,059.5	160.0	120	20	99	120
D2R	Existing	2007	24,728.03	42,548.18	1,244.5	1,059.2	185.3	120	20	99	120
E2R	Existing	2007	24,732.97	42,391.59	1,233.4	1,058.1	175.3	120	20	99	120
F2	Existing	2005	24,623.50	42,163.80	1,185.0	1,103.0	82.0	65	20	44	120
PW-125	Existing	2006	24,587.81	42,816.55	1,241.6	1,058.2	183.4	75	15	60	90
PW-159	Existing	2006	24,515.00	42,747.00	1,207.9	1,073.9	134.0	117	18	97	90
PW-170	Existing	2007	24,881.89	43,104.19	1,169.0	1,120.6	48.4	37	18	18	90
PW-173	Newly Installed	2008	24,641.04	42,627.01	1,233.0	1,060.0	173.0	120	20	100	120
PW-174	Newly Installed	2008	24,706.03	42,945.00	1,205.1	1,059.0	146.1	120	20	100	120
PW-307	Existing	2006	24,898.69	42,168.14	1,179.1	1,096.0	83.1	62	20	42	120
PW-315	Existing	2006	24,876.13	42,867.93	1,218.8	1,109.2	109.6	70	20	50	120
PW-324	Existing	2007	24,763.50	42,311.80	1,221.9	1,082.9	139.0	120	20	99	120
PW-335	Newly Installed	2008	25,006.03	42,693.99	1,220.2	1,145.0	75.2	55	20	35	120
PW-336	Newly Installed	2008	24,909.01	42,467.99	1,221.4	1,103.0	118.4	98	20	78	120
PW-337	Newly Installed	2008	24,861.00	42,652.01	1,221.4	1,095.0	126.4	106	20	86	120
PW-358	Proposed	Proposed	24,856.22	43,002.75	1,193.6	1,109.2	84.4	65	20	45	120
	Cell 7 Odor Control Gas Extraction Wells										
PW-305	Existing	2006	25,170.16	42,107.57	1,179.1	1,101.2	77.9	59	20	39	120
PW-313	Existing	2006	25,185.91	42,886.21	1,172.0	1,095.5	76.5	56	20	36	120
PW-326	Existing	2007	25,225.87	42,266.55	1,218.1	1,082.7	135.4	117	20	96	120
PW-328	Existing	2007	25,129.24	42,744.37	1,210.3	1,114.7	95.6	79	20	58	120
PW-332	Proposed	Proposed	25,210.10	42,438.65	1,216.0	1,088.0	128.0	110	20	90	120
PW-333	Newly Installed	2008	25,219.01	42,607.01	1,211.6	1,085.0	126.6	106	20	86	120
	Cell 4, 5B, 5C/Cell 7 Monitoring Wells										
PW-306	Existing	2006	25,043.60	42,167.80	1181.0	1137.0	44.0	35	10	25	N/A
PW-314	Existing	2006	25,035.20	42,819.80	1201.0	1145.0	56.0	46	20	26	N/A
PW-325	Existing	2007	25,066.90	42,326.70	1220.6	1136.4	84.2	67	20	46	N/A
PW-335	Newly Installed	2008	25006.03	42693.99	1220.2	1145.0	75.0	55	20	35	N/A

TABLE 4. RADIUS OF INFLUENCE AND DESIGN CALCULATIONS
COUNTYWIDE RDF

Assumptions:

Borehole Bottom to Landfill Bottom =	75%		
Pipe Bottom to Borehole Bottom =	1	ft	
Horiz. to Vert. Gas Transmissivity =	6	: 1 ratio	(For wells <= 59 ft deep)
Horiz. to Vert. Gas Transmissivity =	6	: 1 ratio	(For wells > 60 ft deep)
Overlap Adjustment Factor =	20	% decrease	
LFG Generation Rate =	0.100	cu ft/lb/year	
LFG Generation Decay Factor =	0	% decrease	
Maximum Well Depth =	120	ft	
Maximum ROI =	200	ft	
Minimium Solid Pipe Length =	20	ft	
Maximum Flow per Well =	100	scfm	

Well No.	Location Coordinates N-S	Location Coordinates E-W	Surface Elevation (ft MSL)	Waste Bottom Elevation (ft MSL)	Landfill Depth (ft)	Separation off LF Bottom (ft)	Borehole Depth (ft)	Well Pipe Depth (ft)	Slotted Pipe Length (ft)	Solid Pipe Length (ft)	Ratio of H : V Gas Transmissivity	ROI (ft)	HOI (ft)	Unadjusted Volume (cu yds)	Adjusted Volume (cu yds)	Design Flow (cfm)	Actual Flow (cfm)
B2R	24,707.35	43,099.47	1,192.2	1,064.5	128	53	75	74	54	20	6	120	128	142,642	114,114	33	33
C2R	24,714.53	42,840.33	1,219.5	1,059.5	160	40	120	119	99	20	6	120	140	156,381	125,105	36	36
D2R	24,728.03	42,548.18	1,244.5	1,059.2	185	65	120	119	99	20	6	120	140	156,381	125,105	36	36
E2R	24,732.97	42,391.59	1,233.4	1,058.1	175	55	120	119	99	20	6	120	140	156,381	125,105	36	36
F2	24,623.50	42,163.80	1,185.0	1,103.0	82	17	65	64	44	20	6	120	82	91,595	73,276	21	21
PW-125	24,587.81	42,816.55	1,241.6	1,058.2	183	108	75	74	59	15	6	90	183	115,234	92,187	26	26
PW-159	24,618.02	42,242.08	1,207.3	1074.3	133	16	117	115	97	18	6	108	133	120,335	96,268	27	27
PW-170	24,881.89	43,104.19	1,169.0	1,120.6	48	11	37	36	18	18	6	108	48	43,791	35,033	10	10
PW-173	24,641.04	42,627.01	1,233.0	1,060.0	173	53	120	119	99	20	6	120	140	156,381	125,105	36	36
PW-174	24,706.03	42,945.00	1,205.1	1,059.0	146	26	120	119	99	20	6	120	140	156,381	125,105	36	36
PW-305	25,170.16	42,107.57	1,179.1	1,101.2	78	19	59	58	38	20	6	120	78	87,015	69,612	20	20
PW-307	24,898.69	42,168.14	1,179.1	1,096.0	83	21	62	61	41	20	6	120	83	92,824	74,259	21	21
PW-313	25,185.91	42,886.21	1,172.0	1,095.5	77	19	57	56	36	20	6	120	77	85,451	68,361	20	20
PW-315	24,876.13	42,867.93	1,218.8	1,109.2	110	40	70	69	49	20	6	120	110	122,424	97,939	28	28
PW-324	24,763.50	42,311.80	1,221.9	1,082.9	139	19	120	119	99	20	6	120	140	156,381	125,105	36	36
PW-326	25,225.87	42,266.55	1,218.1	1,082.7	135	18	117	116	96	20	6	120	135	151,243	120,994	35	35
PW-328	25,129.24	42,744.37	1,210.3	1,114.7	96	17	79	78	58	20	6	120	96	106,786	85,429	24	24
PW-332	25,210.10	42,438.65	1,216.0	1,088.0	128	18	110	109	89	20	6	120	128	142,977	114,382	33	33
PW-333	25,219.01	42,607.01	1,211.6	1,085.0	127	21	106	105	85	20	6	120	127	141,425	113,140	32	32
PW-335	25,006.03	42,693.99	1,220.2	1,145.0	75	20	55	54	34	20	6	120	75	83,943	67,155	19	19
PW-336	24,909.01	42,467.99	1,221.4	1,103.0	118	20	98	97	77	20	6	120	118	132,276	105,821	30	30
PW-337	24,861.00	42,652.01	1,221.4	1,095.0	126	20	106	105	85	20	6	120	126	141,224	112,979	32	32
PW-358	24,856.22	43,002.75	1,193.6	1,109.2	84	19	65	64	44	20	6	120	84	94,276	75,421	22	22
Total							2,074	2,050	1,598	451				2,833,749	2,266,999	647	647

TABLE 5. PROPOSED TEMPERATURE MONITOR SCHEDULE
COUNTYWIDE RDF

FBMP	Status	Location Coordinates Northing	Location Coordinates Easting	Surface Elev.	Top of Liner Elev.	Refuse Depth (feet)	Boring Depth (feet)	Thermocouple Depths (feet)																			
FBMP 1	Existing	24,753.7	42,957.9	1,199.8	1,074.0	126.0	106	35	55	75	95	106															
FBMP 1R	Proposed	24,753.7	42,957.9	1,199.8	1,074.0	126.0	105	35	45	55	65	75	85	95	105												
FBMP 2	Existing	24,913.2	43,013.9	1,180.5	1,129.0	52.2	32	32																			
FBMP 2R	Proposed	24,913.2	43,013.9	1,180.5	1,129.0	52.2	32	32																			
FBMP 3	Existing	24,913.2	42,830.3	1,219.0	1,119.0	99.8	85	22	42	62	82																
FBMP 3R	Proposed	24,913.2	42,830.3	1,219.0	1,119.0	99.9	85	22	32	42	52	62	72	82													
FBMP 4	Existing	24,670.6	42,788.7	1,227.0	1,058.0	169.4	145	40	60	80	100	120	145														
FBMP 4R	Proposed	24,670.6	42,788.7	1,227.0	1,058.0	169.4	145	40	50	60	70	80	90	100	110	120	120	140									
FBMP 5	Existing	24,855.8	42,701.8	1,221.8	1,095.0	126.8	110	40	60	80	100	110															
FBMP 5R	Proposed	24,855.8	42,701.8	1,221.8	1,095.0	126.8	110	40	50	60	70	80	90	100	110												
FBMP 6	Proposed	24,630.2	42,869.5	1,229.5	1,066.0	163.3	145	35	45	55	65	75	85	95	105	115	125	135	145								
FBMP 7	Proposed	24,459.0	42,876.7	1,272.9	1,066.0	207.4	185	35	45	55	65	75	85	95	105	115	125	135	145	155	165	175	185				
FBMP 8	Proposed	24,563.8	42,982.1	1,242.0	1,059.0	182.3	165	35	45	55	65	75	85	95	105	115	125	135	145								
FBMP 9	Proposed	24,686.1	43,017.6	1,206.6	1,059.0	148.3	125	35	45	55	65	75	85	95	105	115	125										
FBMP 10	Proposed	24,728.4	42,891.4	1,209.0	1,064.0	145.3	125	35	45	55	65	75	85	95	105	115	125										
FBMP 11	Proposed	24,814.0	42,942.7	1,201.0	1,093.0	108.2	85	35	45	55	65	75	85														
FBMP 12	Proposed	24,772.0	43,122.8	1,177.0	1,084.0	92.5	75	35	45	55	65	75															
FBMP 13	Proposed	24,291.2	42,667.2	1,272.5	1,057.0	215.7	195	35	45	55	65	75	85	95	105	115	125	135	145	155	165	175	185	195			
FBMP 14	Proposed	24,287.9	42,500.9	1,267.2	1,057.0	210.5	195	35	45	55	65	75	85	95	105	115	125	135	145	155	165	175	185	195			
FBMP 15	Proposed	24,286.2	42,316.4	1,236.0	1,058.0	178.2	155	35	45	55	65	75	85	95	105	115	125	135	145	155							
FBMP 16	Proposed	24,000.4	42,301.4	1,222.0	1,057.0	164.6	145	35	45	55	65	75	85	95	105	115	125	135	145								
FBMP 17	Proposed	24,000.4	42,446.0	1,262.3	1,055.0	204.2	185	35	45	55	65	75	85	95	105	115	125	135	145	155	165	175	185				
FBMP 18	Proposed	23,998.7	42,575.7	1,266.6	1,058.0	206.7	185	35	45	55	65	75	85	95	105	115	125	135	145	155	165	175	185				

To be replaced.

Appendix A
Evaluation of Existing Landfill Gas Extraction System

Countywide Recycling & Disposal Facility
Division of Republic Waste Services of Ohio
3619 Gracemont Street S.W.
East Sparta, Ohio 44626
Phone: 330-874-3855
Fax: 330-874-2426

December 7, 2007

Mr. Ed Gortner
Ohio Environmental Protection Agency
PO Box 1049
Columbus, OH 43216-1049

RE: SUBMITTAL OF THE LANDFILL GAS EXTRACTION SYSTEM EVALUATION, PER NOVEMBER 7, 2007 ORDERS 6 AND 7 COUNTYWIDE RECYCLING AND DISPOSAL FACILITY

Dear Mr. Gortner:

Countywide Recycling and Disposal Facility (Countywide) hereby submits this Landfill Gas Extraction System Evaluation in accordance with Order No. 6 and 7 of the Directors Final Findings and Orders (Orders) dated November 7, 2007.

Countywide considers this submittal as our compliance with Order No. 6 and 7. If you have questions or comments, please do not hesitate to contact me at (330) 874-3855.

Sincerely,

Countywide Recycling and Disposal Facility

Tim Vandersall, P.E.
General Manager

cc: Bill Skowronski, OEPA-NEDO
Kurt Princic, OEPA-NEDO
Jeff Martin, OEPA-CO
Kirk Norris, SCHD
Dan Aleman, CCHD
Todd Hamilton, CWRDF
Clarke Lundell, Republic Services
Michael Beaudoin, Earth Tech
Mike Michels, Bruce Schmucker, Cornerstone

Evaluation of the Existing Landfill Gas Extraction System

PREPARED FOR:

Countywide RDF
East Sparta, Ohio

December 7, 2007

CORNERSTONE
Environmental Group, LLC

607 Eastern Avenue, Plymouth, Wisconsin 53073

"Think Cornerstone for building and maintaining your solid waste business o a strong foundation."

EVALUATION OF THE EXISTING LANDFILL GAS EXTRACTION SYSTEM

COUNTYWIDE RECYCLING AND DISPOSAL FACILITY

EAST SPARTA, OH

Prepared for
Countywide Recycling and Disposal Facility

December 7, 2007

Prepared by

CORNERSTONE
Environmental Group, LLC

607 Eastern Avenue
Plymouth, WI 53073

Project 70187

Countywide Recycling and Disposal Facility
Republic Services of Ohio II, LLC
Report Certification

Please accept my signature and Professional Engineer Stamp below as evidence that the *Evaluation of the Existing Landfill Gas Extraction System* report, dated December 7, 2007 was prepared under my direct supervision, as required by Order #7 of the Director's Final Findings and Orders, dated November 7, 2007.

12/7/07

Bruce O. Schmucker, P.E., Client Manager
Cornerstone Environmental Group, LLC

Evaluation of the Existing Landfill Gas Extraction System
Countywide
East Sparta, OH

The material and data in this report were prepared under the supervision and direction of the undersigned.

Cornerstone Environmental Group, LLC

Bruce Schmucker, Ohio P.E.
Senior Project Manager

Michael S. Michels
Vice President

TABLE OF CONTENTS

1 INTRODUCTION

1.1 Purpose

The purpose of this document is to respond to Orders # six (6) and seven (7) of the November 7, 2007 orders which are listed below.

6-Upon the effective date of these orders, Respondent shall conduct an evaluation of the EGES, Including an evaluation of the EGEWs, Efficiency of the EGES, and evaluation of the need for additional EGEWs to be installed within or added to the EGES.

7-Not later than 30 days after the effective date of these Orders, Respondent shall submit a report to Ohio EPA detailing the findings in Order No. 6 above. If it is determined that there is a need for new EGEWs, Respondent shall, within 15 days after installation of new EGEWs, comply with the substantive requirements of Orders No. 3 and 5 above. Respondent's report required by this Order shall be written and signed by a Professional Engineer registered in the State of Ohio.

This report contains Cornerstone Environmental Group, LLC (Cornerstone) evaluation and concludes with recommendations for upgrading the Gas Collection and Control System (GCCS). Cornerstone and Countywide periodically evaluate the GCCS similar to the approach contained in this report. These periodic evaluations result in enhancements to the GCCS, similar to those identified in the recommendations section of this report (section 4).

2 GCCS EVALUATION

A GCCS evaluation was completed to evaluate the current conditions of the GCCS at Countywide. This report summarizes the findings from this evaluation. Cornerstone has been involved with the GCCS design, operation, and periodic operational reviews since February 2006. This Cornerstone GCCS evaluation consisted of a review of existing data, field activities and header pipe evaluation.

2.1 Review of Existing Data

Cornerstone reviewed historic information of LFG wellfield tuning, depth of LFG wells, depth of liquid in the LFG wells, as-built drawings, past GCCS reports, and blower curves. This historic information indicates the following major items:

- Four utility flares are currently operating on site with three utility flares as back up.
- Recent LFG flow at approximately 5100 standard cubic feet per minute (scfm) is adequate to minimize odors at the site.
- Recent operation of individual vertical wells in the GCCS at no more than 1.5% oxygen (as required by OEPA orders) has been implemented.
- LFG generation is expected to peak in year 2030 at approximately 13,500 scfm.
- A GCCS Design Plan was submitted to OEPA and CCHD in December 2006 but has not been approved yet.

Cornerstone's data review is summarized in the following sections consisting of: LFG wellfield tuning data, GCCS Design Plan and Blower Review.

2.1.1 LFG Wellfield Tuning Data

Cornerstone reviewed the most recent, month of LFG wellfield tuning data (October 15, 2007 to November 15, 2007) collected by American Environmental Group, Ltd. (AEG). Cornerstone reviewed methane, oxygen, pressure, temperature, nitrogen, and flow at individual LFG collectors. The results of this review are summarized below.

- Methane: During typical MSW decomposition, methane concentrations vary from 40% to 60% by volume. The Countywide LFG wellfield data indicates that methane

production is typical of most MSW landfills with exception of the central portion of the 88 acre original fill area that is experiencing LFG temperatures greater than 145 degrees F. In these areas some LFG wellhead temperatures are greater than 145 F resulting in suppressed methane production.

- Temperature: Normal methanogenic decomposition of the waste occurs at LFG temperatures between 70 F and 145 F (waste temperatures). The Countywide LFG wellfield data indicates that the temperatures are typical for MSW landfills with the exception of the central portion of the 88 acre original fill area that is experiencing LFG temperatures greater than 145 degrees F.

- Nitrogen and Oxygen: During normal LFG collection small amounts of air (ie: oxygen and nitrogen) is drawn into the waste; and thus found in the LFG wellhead. Typically individual wells in an LFG wellfield are operated with less than 5% oxygen and less than 20% nitrogen in order to reduce air intrusion into the waste mass. The Countywide LFG wellfield data indicates air intrusion into the waste mass is controlled (ie: the site is proactively operating and maintaining the system to meet the March 28, 2007 DFFO requirement of less than 1.5% oxygen at individual wells). Cornerstone believes that air intrusion deep into the landfill is NOT occurring.

  The LFG wellfield data does show evidence of some periodic air being collected by the shallow LFG collectors (such as the "bubble suckers" used to remove gas under the temporary geomembrane cap, liquid cleanouts, horizontal gas collectors, and liquid extraction wells). Cornerstone believes this shallow air is NOT impacting the waste decomposition but instead is helping to control gas from being released to the atmosphere. In addition, this shallow air is diluting the LFG prior to ignition in the flares.

- Flow: Flow indicates how much LFG is being extracted from the LFG wells. Flow measurements are taken at the flares to obtain the total extracted flow from the landfill. On October 26, 2007 Countywide collected a total flow, measured at the blower/flare stations, of 5,166 scfm with an average methane content of 17.3 percent.

- Pressure: Typical LFG collection is done under vacuum conditions. Positive pressure measurements at LFG wellheads can indicate: LFG is being generated faster than it can be extracted, the blowers are not large enough, or the header/laterals are too small or sagged and/or partially blocked with LFG condensate in the sag. Based on our data review, we have identified eight (8) LFG collectors at Countywide with insufficient vacuum (refer to Table 1).

Table 1
LFG Collectors with Insufficient Vacuum Identified During the Data Review
Countywide

Device ID	Device Common Name	Date Time	Adj Static Pressure ("H2O)	Header Pressure ("H2O)
CNTYE02R	E2R	11/13/2007 10:18	0	0.06
CNTYH001	H1	11/14/2007 9:19	112.7	112.81
* CNTYLW07	LW07	11/12/2007 13:47	0.2	0.23
* CNTYLW08	LW08	11/12/2007 13:51	3.9	3.96
* CNTYLW13	LW13	11/12/2007 13:56	3.9	3.88
CTYPW133	PW133	11/15/2007 9:50	0.8	2.73
CTYPW308	PW308	11/13/2007 11:41	12.2	12.31
CTYPW309	PW309	11/13/2007 10:56	1.3	1.33

* These LFG collectors are not required by permit to have vacuum as they are considered "other" collectors and not LFG wells. The results shown in Table 1 are from the LFG wellfield tuning results collected to comply with NSPS requirements and the air permit.

Countywide is currently required to maintain less than 1.5% oxygen in the LFG wells, as compared to the NSPS allowable of 5%. OEPA has required this lower threshold for Countywide in an effort not feed the reaction. Cornerstone believes that OEPA directive to limit oxygen to 1.5% may be having a slight impact on Countywide's ability to aggressive collect LFG. As such, our recommendations include the addition of some more LFG collectors to the system.

2.1.2 GCCS Design Plan

Cornerstone reviewed the December 13, 2006 *Landfill Gas Collection and Control System Design Plan*. This report shows how the GCCS system will be expanded and operated as the site continues to receive waste for disposal. Specific facts from this report are:

- LFG generation will peak in year 2030 at 13,500 scfm.

- LFG generation projections may no longer be accurate in light of OEPA negotiated reductions in waste disposal capacity at Countywide and also since some LFG wellhead temperatures are greater than 145^{o}F, thus are not capable of generating normal amounts of methane gas (however, the event causing temperatures to be greater than 145^{o}F are in a limited area and are expected to be limited in duration).

- A number of changes have been made to Countywide's installed LFG system since this plan was prepared including, but not limited to: the installation of more flares, more LFG wells, and the addition of a liquid dewatering system in many LFG wells. Countywide currently has more LFG collectors per acre than most landfills.

- LFG has increased in temperature which has prompted Countywide to install some GCCS components that are composed of more temperature resistant materials in the reaction area.

- Blower capacities were calculated using the manufactures literature which did not account for the elevated temperature and non-typical gas constituents.

2.1.3 Blowers/Flares

The LFG control system at Countywide consists of four blower/flare stations that operate continuously and three back up stations. The capacity of the blower in the stations were designed to process 100^{o}F LFG. Since the LFG at CWRDF is significantly warmer than 100 F and the methane quality is not the a-typical 50%; the air handling capabilities of the blowers should be de-rated. Table 2 summarizes the design and de-rated blower capacity at each of the 4 operational stations. Even though the current blower capacity is lower than the design, Countywide still has ample blower capacity for current site conditions (approx. 5100 scfm) and beyond.

Table 2
Blower Capacity at Countywide

Blower/Flare #	Blower Design Capacity (scfm)	Blower De-rated Capacity (scfm)
1	3,500	2,674
4	3,000	3,392
6	2,100	1,584
7	3,000	3,000
Total	11,600	10,650

The LFG operators have been working diligently to achieve a uniform blending of reaction gas with typical LFG produced in other areas of the landfill to allow adequate BTU value at the flares for proper ignition. Due to the importance of this issue, Cornerstone recommends that some contingencies be developed should the fuel's BTU content fall below optimum levels in the future. Contingencies that may exist to address this issue include:

1) spiking/blending the low BTU LFG with propane or another gas prior to ignition,

2) installing new headers from the normal LFG generating areas to the flares located near the reaction zone so normal LFG can be blended with the low BTU LFG prior to ignition,

3) consolidate the blower /flare stations into 2 locations versus the current 4 locations, and

4) others as may be technically feasible.

2.2 Field Activities

Based upon the review of existing data, Cornerstone determined that additional information was needed to verify LFG flow, header vacuum, well depth, and liquid level at eighty-eight (88) LFG collectors without Landtec wellheads. Field activities to collect this additional information occurred from November 19 thru 21, 2007. Results from these field activities are summarized in the following sections and contained in Appendix A.

2.2.1 Collectors Needing Repair

Results of these field activities indicate that several LFG collectors have insufficient capacity. This lack of capacity is due to a sagged or crushed lateral or the LFG well needing a liquid pump installed. These LFG collectors are summarized in Table 3.

Table 3
LFG Collectors Needing Repair Identified During the Field Work
Countywide

Device #	Device Common Name	Repair Needed
CNTY121R	PW121R	Fix lateral leading to Well, Well is under pressure
CNTY122R	PW122R	Fix lateral leading to Well, Well is under pressure
* CNTY40HL	40HL	Fix lateral leading to Well, Well is under pressure
CNTYA01R	A1R	Fix lateral leading to Well, Well is under pressure
* CNTYLW07	LW07	Fix lateral leading to Well, Well is under pressure
* CNTYLW08	LW08	Fix lateral leading to Well, Well is under pressure.
* CNTYLW13	LW13	Fix lateral leading to Well, Well is under pressure.

* CNTYLW14	LW14	Fix lateral leading to Well, Well is under pressure.
* CNTYLW28	LW28	Fix lateral leading to Well, Well is under pressure.
CTYPW108	PW108	Fix lateral leading to Well, Well is under pressure
CTYPW132	PW132	Fix lateral leading to Well, Well is under pressure
CTYPW148	PW148	Fix lateral leading to Well, Well is under pressure
CYPW106R	PW106R	Fix lateral leading to Well, Well is under pressure

* Devices noted with an asterisk are either horizontal gas collectors or vertical liquid extraction wells fitted with LFG collection. None of which are subject to NSPS requirements.

2.2.2 Depth of LFG Wells

In November 2007, American Environmental Group, LLC (AEG) completed a study of LFG well depth. Results of this study are shown in Appendix B and indicate that the bottom of twenty-six (26) LFG wells were more than 10 feet above the original drilled depth. This difference in depth may indicate that these LFG wells may have silt in them or their casing is pinched. Cornerstone recommends replacement of wells K1, PW-131, W-32 (with 2 new wells), and W-1.

2.2.3 Liquid in Remote LFG Wells

While measuring the depth of LFG wells, AEG also measured the liquid levels in the remote LFG wells. Twenty seven (27) LFG wells have been found with greater than 50 percent of their perforations covered with liquid (see Appendix C). LFG is still capable of being extracted through liquid at these LFG wells. Unfortunately pumps can not be installed at these locations because direct access to the top of the well is not possible. In addition, many of these LFG wells are inaccessible with a drill rig for replacement however Cornerstone recommends replacing LFG well C1R.

2.3 Header Pipe Evaluation

Upon completion of the data review and the field work, Cornerstone evaluated the distribution of vacuum in the existing header / lateral piping system. The assessment was performed utilizing KYGAS, a CAD-based piping analysis program that predicts losses of vacuum through LFG piping systems. To determine the adequacy of the header/laterals to move existing LFG flow, Cornerstone used the existing total LFG flow to the blower/flare stations of 5166 scfm and LFG wellfield tuning data from October 2007 to complete the analysis.

The KYGAS evaluation shows that the existing header and laterals are sized properly to process 5166 scfm (and much more) of LFG flow and they can distribute vacuum from the blower inlet throughout the entire wellfield. While the KYGAS analysis shows good results, the analysis assumes that all LFG headers and laterals are pitched properly to allow condensate to drain. As stated in Tables 1 & 2, some sagged laterals exist and

some wells are not under vacuum which may permit condensate to collect in some locations. The sagged laterals leading to the LFG wells listed in Tables 1 & 3 should be repaired to allow proper distribution of vacuum throughout the LFG wellfield.

3 LFG COLLECTION EFFICIENCY

Estimating the LFG collection efficiency can be beneficial to establish what changes to the GCCS , if any, are needed.

3.1 GCCS Efficiency

GCCS collection efficiency is defined as the amount of LFG being collected divided by the amount of LFG being generated. The amount of LFG generated is typically estimated with the EPA LandGEM model. The amount of LFG collected at Countywide is shown in Table 4.

LFG generation estimates were calculated using the United States Environmental Protection Agency (USEPA) Landfill Gas Emission Model (LandGEM), applying AP-42 default values k=0.04/year and L_0=100 m^3/Mg, historical annual waste receipts future project annual waste receipts. The LandGEM model is a "design tool," and was developed based upon operating conditions at a cross-section of landfills within the United States.

Based on the LandGEM model (which assumes normal methanogenic conditions) the LFG generation rate for Countywide in year 2007 was modeled to be approximately 4,221 scfm at 50 percent methane (see Appendix D). Actual LFG flow from the existing GCCS during the last week of October 2007 was approximately 5166 scfm at an average of 17.3 percent methane concentration (see Table 4).

Table 4
October 26, 2007 LFG Collection at the Flares

Blower / Flare #	De-rated Capacity (scfm)	CH4	N2	O2	H2	Actual Flow at Flare 10/26/07 (scfm)	Equivalent LFG flow at 50% CH4 (scfm)
1	2674	14.764	27.328	6.722	13.998	1804	818
4	3392	6.721	47.28	12.765	9.807	1249	318
5	1350	10.803	36.595	9.197	11.214	580	205
7	3000	37.027	10.696	1.994	6.832	1533	1281
Average		17.3	30.5	7.7	10.5	5166	2622

Note: the higher than normal hydrogen content of Countywide's LFG adds BTU's to the fuel allowing proper ignition.

Normalizing this actual flow to 50 percent methane (consistent with LandGEM) indicates the normalized flow of LFG was 2622 scfm at 50 percent methane. Therefore one would calculate that the LFG collection efficiency is approximately 62% (ie: 2622 divided by 4221). However, because much of Countywide has LFG temperature greater than 145 F due to an aluminum dross reaction, Cornerstone believes that the elevated temperatures have decreased the methane generating potential in these areas.

Therefore Cornerstone believes utilization of the LandGEM model is not appropriate for an accurate estimate of the LFG generation in this portion of Countywide. Since no system exists in the solid waste industry to model LFG generation with the conditions that this portion of Countywide is experiencing, we believe that evaluation of LFG collection efficiency must be conducted qualitatively by identifying if enough LFG collectors exist and considering quarterly surface emissions data.

Cornerstone believes that the high LFG temperature and the reaction slows LFG generation such that the 2007 LFG generation is less than 4221 scfm, the LFG collection efficiency is more than 62%, and is very likely near EPA's AP-42 of high estimate of 85%.

3.1.1 Are There Enough LFG Collectors?

To identify if enough LFG collectors exist, each collector's zone of influence was calculated (see Appendix C for radius of influence calculations). Several factors are considered when calculating the zone of influence, primarily:

- Liquid levels / available perforations for LFG collection,
- Depth to the first perforation and its affect on air intrusion,
- Vacuum applied to the collector, and
- Waste moisture.

Since some of these parameters are unknown and some are clearly understood, this leads to ranges being estimated for the zone of influence. Since the original LFG wellfield was designed many of these factors have changed, resulting in a slow decrease in the zone of influence over time. Figure 1 contains Cornerstone's estimate of the zone of LFG influence at Countywide. It is important to note that many assumptions go into the zone of influence calculation, thus Figure 1 should only be used for general planning purposes and for highlighting the largest areas without theoretical LFG collection.

Figure 1 shows several areas of Countywide that the existing LFG radius of influence may not completely cover. Selection of new wells locations to cover these areas is best

completed by considering recent surface emission monitoring (SEM) and odor surveys. Odors or SEM exceedances most likely occur in areas where there is a lack of LFG collection. Therefore, priority for wellfield expansion should be given to areas where odor findings and SEM exceedances coincide with areas that display a theoretical lack of LFG collection influence.

Cornerstone has proposed 10 new LFG wells and 4 new bubble suckers (refer to Figure 2). Selection of the locations for these new LFG collectors has taken into account the following:

- Inadequate zone of influence coverage,
- Accessible to a drill rig,
- Enough depth of waste to facilitate a new well,
- 3rd or 4th Quarter 2007 SEM exceedances (see Appendix E), and
- Recent odors.

In the area of the aluminum dross reaction, where significant settlement has occurred, Cornerstone proposes the installation of 4 more bubble suckers under the temporary geomembrane cover as the most effective way to minimize LFG emissions. Alternatively, repair of small portions of the temporary geomembrane cover may also be completed thus needing less bubble suckers than shown in Figure #2.

Countywide identified 27 LFG wells with 50 % of the screen blocked and will attempt to install pumps in those wells that are accessible. This installation of pumps along with the many liquid pumps already located at the site should lower liquid levels with time, thus ultimately increasing the future LFG zone of influence and the LFG collection efficiency.

4 CONCLUSIONS AND RECOMMENDATIONS

Cornerstone concludes that the Countywide GCCS is well operated and designed. Countywide has made numerous enhancements to the GCCS over the past 2 years and plans to continue this trend. Cornerstone concludes that additional improvements to the GCCS can continue to increase LFG collection, reliability, and functionality. Based upon the data review, field evaluation, and data analysis, the Countywide GCCS is capable of collecting more LFG, so we do NOT recommend changes to the blower or flare stations except for those already underway (ie: moving flare 4 and 6 off the waste and purchasing backup blowers).

Cornerstone recommends Countywide implement the following modifications to the GCCS:

- Continue to utilize bubble suckers to control shallow odors under the temporary geomembrane cover. Where possible, install a valve to limit vacuum to these devices as needed. This will reduce shallow air from entering the system and diluting the fuel such that makes the flares difficult to keep lit. Install 4 new bubble suckers as shown on Figure 2.

- Continue to install temperature resistant thermoplastics and metals at the appropriate locations so they are less impacted by the heat of reaction.

- Install ten (10) new LFG wells as shown in Figure 2.

- Repair laterals / header sags leading to the LFG wells listed in Table 1 and Table 3 so vacuum can be provided to these 22 LFG collectors.

- Abandon and replace LFG wells C1R, K1, PW-131, W-32, and W-1.

- Install liquid pumps in 27 LFG wells, if accessible, with greater than 50% of perforations blocked by liquid (section 2.2.3 of this report).

- Plan and implement contingencies necessary to make sure that the LFG routed to flare #6 (and others if deemed necessary) have adequate BTU value. Cornerstone recommends that supplementing with propane be given highest consideration for this contingency.

- Obtain one spare blower for each blower/flare stations 1, 4, 6, and 7.

- Continue to seal and repair rips and tears in the temporary geomembrane cover.

5 LIMITATIONS

This work product was undertaken in full conformity with generally accepted professional consulting principles and practices and to the fullest extent as allowed by law we expressly disclaim all warranties, express or implied, including warranties of merchantability or fitness for a particular purpose. The work product was completed in full conformity with the contract with our client and this document is solely for the use and reliance of our client (unless previously agreed upon that a third party could rely on the work product) and any reliance on this work product by an unapproved outside party is at such party's risk.

The work product herein (including opinions, conclusions, suggestions, etc.) was prepared based on the situations and circumstances as found at the time, location, scope and goal of our performance and thus should be relied upon and used by our client recognizing these considerations and limitations. Cornerstone shall not be liable for the consequences of any change in environmental standards, practices, or regulations following the completion of our work and there is no warrant to the veracity of information provided by third parties, or the partial utilization of this work product.

APPENDIX A

NOVEMBER 2007 WELL-FIELD DATA FROM LFG COLLECTORS WIHTOUT LANDTEC WELLHEADS

Countywide Recycling and Disposal Facility East Sparta, OH Stark County

88 Locations without Landtec Wellheads

Identification	Alias / Map Identification / Notes	Date	Time	Temp (F)	Flow (scfm)	Pressure (in H_20)
CNTY030R	Remote					
CNTY056R	Hardpiped; Remote (W-56R-M)					
CNTY05CD	Leachate Cleanout Tie-in					
CNTY061R	Hardpiped; Remote	11/21/2007	3:40	70	78	-3.0
CNTY121R	Hardpiped; Remote; Pump	11/20/2007	2:10		no vaccum	65.4
CNTY122R	Hardpiped; Remote; Pump	11/20/2007	2:20	198	NA	21.7
CNTY40HL	Hard Piped; Horizontal Collecter South Toe	11/21/2007	4:10	186	25	1.3
CNTYA01R	Hardpiped; Remote; Pump	11/20/2007	2:20	180	0	0.3
CNTYB001	Hardpiped; Remote (B-1)	11/20/2007	too much liquid / too hot- not sampled			
CNTYB02R	B2R					
CNTYDWW1	DWW-1 Vertical dewatering well	11/20/2007	1:43	88	0	-19.2
CNTYDWW2	DWW-2 Vertical dewatering well	11/20/2007	1:55	80	0	0.0
CNTYFD01	Hardpiped; Horiz. Collector Finger Drain	11/20/2007	12:50	145	198	-0.6
CNTYFD02	Hardpiped; Horiz. Collector Finger Drain	11/20/2007	1:24	166	41	-0.2
CNTYFD03	Hardpiped; Horiz. Collector Finger Drain	11/20/2007	4:15	168	108	-0.1
CNTYFD04	Hardpiped; Horiz. Collector Finger Drain	11/21/2007	8:50	188	65	-0.6
CNTYFD05	Hardpiped; Horiz. Collector Finger Drain	11/21/2007	8:25	168	62	-0.4
CNTYFD06	Hardpiped; Horiz. Collector Finger Drain	11/20/2007	5:23	118	54	-0.4
CNTYFD07	Horiz. Collector Finger Drain	11/20/2007	5:15	92	43	-0.4
CNTYH001	H-1	11/20/2007	too much liquid / too hot- not sampled			
CNTYHC1E	HC1E					
CNTYHC1W	HC1W					
CNTYLS01	LS-1 Leachate Sump					
CNTYLS02	LS-2 Leachate Sump					
CNTYLS04	LS-4 Leachate Sump					
CNTYLS05	LS-5 Leachate Sump					
CNTYLW06	LW-6 Leachate Well	11/21/2007	1:45	172	88	-3.6
CNTYLW07	LW-7 Leachate Well	11/21/2007	1:52	65	0	0.5
CNTYLW08	LW-8 Leachate Well	11/21/2007	1:59	68	Full of Condensate	
CNTYLW13	LW-13 Leachate Well	11/21/2007	2:01	76	Full of Condensate	6.0
CNTYLW14	LW-14 Leachate Well	11/21/2007	2:05	90	Full of Condensate	0.9
CNTYLW15	LW-15 Leachate Well	11/21/2007	2:15	86	56	-11.7
CNTYLW16	LW-16 Leachate Well					
CNTYLW17	LW-17 Leachate Well					
CNTYLW18	LW-18 Leachate Well					
CNTYLW19	LW-19 Leachate Well					
CNTYLW20	LW-20 Leachate Well					
CNTYLW21	LW-21 Leachate Well					
CNTYLW22	LW-22 Leachate Well					
CNTYLW23	LW-23 Leachate Well					
CNTYLW24	LW-24 Leachate Well	11/21/2007	2:22	160	63	-0.2
CNTYLW25	LW-25 Leachate Well	11/21/2007	2:30	156	88	-3.4
CNTYLW26	LW-26 Leachate Well	11/21/2007	2:38	194	16	-2.8
CNTYLW27	LW-27 Leachate Well	11/21/2007	2:42	172	14	-1.6
CNTYLW28	LW-28 Leachate Well	11/21/2007	2:49	142	Full of Condensate	0.8
CNTYLW29	LW-29 Leachate Well	11/21/2007	2:52	84	13	-0.2

Countywide Recycling and Disposal Facility East Sparta, OH Stark County

88 Locations without Landtec Wellheads

Identification	Alias / Map Identification / Notes	Date	Time	Temp (F)	Flow (scfm)	Pressure (in H_20)
CNTYN001	Remote (N-1)	11/21/2007	unable to determine - 2" remote well			
CNTYQ001	Hardpiped (Q-1)	11/21/2007	1:23	192	16	-3.8
CNTYT001	T-1					
CNTYW01R	W1R	11/21/2007	3:26	188	31	-0.3
CTYPW102	Hardpiped (PW-102)	11/20/2007	too much liquid / too hot- not sampled			
CTYPW104	Hardpiped (PW-104)					
CTYPW108	Hardpiped (PW-108)	11/21/2007	1:19	70	0	0.0
CTYPW115	Hardpiped (PW-115)	11/21/2007	11:13	202	32	-0.8
CTYPW116	Hardpiped; Remote (PW-116)	11/21/2007	11:24	178	58	-0.3
CTYPW117	PW-117	11/21/2007	10:12	190	21	-7.0
CTYPW118	Hardpiped (PW-118)	11/21/2007	4:00	186	56	-9.4
CTYPW119	Hardpiped (PW-119)	11/20/2007	4:54	192	26	-9.9
CTYPW120	PW-120	11/21/2007	8:33	180	0	-0.8
CTYPW123	Hardpiped (PW-123)					
CTYPW124	Hardpiped (PW-124)	11/21/2007	10:45	192	76	-0.8
CTYPW127	PW-127	11/21/2007	9:12	126	28	-0.5
CTYPW132	PW-132	11/21/2007	1:30	195	111	0.1
CTYPW133	Hardpiped; Remote (PW-133)	11/21/2007	9:54	178	13	-18.9
CTYPW134	Hardpiped; Remote (PW-134)	11/21/2007	10:05	160	75	-3.0
CTYPW135	PW-135	11/21/2007	10:19	194	51	-0.8
CTYPW136	Hardpiped; Remote (PW-136)	11/21/2007	11:05	206	12	-2.8
CTYPW137	Hardpiped; Remote (PW-137)	11/21/2007	1:17	192	11	-5.2
CTYPW138	Hardpiped; Remote (PW-138)	11/21/2007	1:30	196	14	-2.0
CTYPW141	PW-141	11/21/2007	9:42	122	58	-1.9
CTYPW142	PW-142	11/21/2007	10:26	195	60	-8.8
CTYPW143	PW-143	11/21/2007	11:30	196	33	-11.8
CTYPW147	Hardpiped (PW-147)	11/20/2007	12:30	147	18	-22.1
CTYPW148	Pump (PW-148)	11/20/2007	1:11	132	0	0.0
CTYPW149	Hardpiped; Pump (PW-149)	11/20/2007	1:34	150	52	-18.6
CTYPW150	Pump (PW-150)	11/20/2007	4:20	164	326	-9.2
CTYPW151	PW-151	11/20/2007	3:55	155	134	-17.8
CTYPW152	Pump (PW-152)	11/21/2007	8:43	150	250	-6.9
CTYPW153	Pump (PW-153)	11/20/2007	4:43	173	34	-2.8
CTYPW154	Hardpiped (PW-154)	11/20/2007	4:48	190	64	-9.8
CTYPW155	Hardpiped (PW-155)	11/20/2007	5:07	188	81	-6.6
CTYPW57R	Hardpiped; Remote (PW-57R)					
CTYW41R2	Hardpiped (PW-0041R(2))	11/21/2007	10:54	148	48	-1.2
CTYW43R2	Hardpiped (PW-43R(2))	11/20/2007	4:31	190	19	-6.9
CTYW56R2	Hardpiped; Remote (PW-56R(2))					
CTYW62R2	PW-62R(2)	11/21/2007	3:00	162	0	-0.3
CYPW106R	PW-106R	11/20/2007	5:03	188	NA	16.7
CYPW14R3	PW-14R(3)	11/20/2007	2:48	118	NA	-15.4
88	Total					

APPENDIX B

NOVEMBER 2007 COMPROMIZED WELLS

Countywide RDF East Sparta, OH
November 2007 Compromised LFG Wells

Device #	Device Common Name	Original Well Installation	Well Log Bore Depth	Total Well Pipe Installed (Solid and Perforated) (I+J)	Total Perforated Pipe	Bottom of Bore Elevation	Is there a pump in the well?	Date Depth Checked	Depth To Fluid	Depth To Bottom	Amount of fluid in well (S-R)	% Perfs Blocked (T/J)	DTB vs Well log bore depth	Comments
Id.	Id.	Date	FT	FT	FT	FT			FT	FT	FT	%	FT	
CTYPW119	PW-119	5/1/2006	75.0	78.0	60.0		N	11/9/2007	36.5	36.5	0	0%	42	Well is compromised at 36.5 but is still a producer and never shows up on the O2 list.
CTYPW315	PW-315	9/13/2006	70.0	75.0	50.0		N	11/9/2007	62	62	0	0%	13	no fluids. Sounder does not go past 62.0' A camera and or dummy will be sent down well to confirm a pinch or compromise.
CTYPW302	PW-302	9/12/2006	32.0	57.0	22.0		N	11/9/2007	44.8	44.8	0	0%	12	Sounder does not go past 44.8'. This well is in the active face and raised several times in the recent past. Well possibly compromised by heavy equipment.
CNTYK001	K1	11/1/2004	64.0	68.0	44.0	1107	N	11/8/2007	32	32	0	0%	36	Sounder does not go past 32 This well has been cameraed and a dummy sent down the well to confirm a pinched wel casing at 32.0'
CTYPW131	PW-131	6/5/2006	75.0	78.0	60.0		N	11/12/2007	45.9	45.9	0	0%	32	Sounder did not go past 45.9. A camera and or dummy will be sent down well casing to confirm a pinch or compromised well.
CNTY0032	W-32	3/1/1998	78.0	82.0	45.0	1110	N	11/9/2007	25.6	25.8	0.2	0%	56	Well will be investigated with a camera and dummy to confirm a compromised well casing.
CNTY0001	W-1	3/1/1998	43.0	47.0	25.0	1110	N	11/9/2007	21	21.6	0.6	2%	25	Sounder does not go past 21.6' A camera and dummy will be sent down well casing to confirm a pinch or compromised well.
CTYPW313	PW-313	11/27/2006	56.0	77.0	15.0		N	11/7/2007	56.8	59.4	2.6	17%	18	
CNTY0068	W-68	3/1/1998	75.0	79.0	44.0	1116	N	11/9/2007	52.2	60	7.8	18%	19	Sounder did not go past 60.0'. A camera and or dummy will be sent down well casing to confirm a pinch or compromised well.
CNTY0060	W-60	3/1/1998	101.0	110.0	79.0	1116	N	11/8/2007	77.3	91.1	13.8	17%	19	Sounder did not go past 91.1. A camera and or dummy will be sent down well casing to confirm a pinch or compromised well.
CNTYW42R	W-42R	6/13/2007	100.0	103.0	79.0		N	11/12/2007	45.9	62.9	17	22%	40	
CNTY0039	W-39	11/1/1998	81.0	81.0	62.0		N	11/8/2007	49.9	68.7	18.8	30%	12	Sounder did not go past 68.7'. A camera and or dummy will be sent down well casing to confirm a pinch or compromised well.
CNTY0038	W-38	11/1/1998	75.0	79.0	57.0		N	11/9/2007	46.3	68	21.7	38%	11	Sounder did not go past 68'. A camera and or dummy will be sent down well casing to confirm a pinch or compromised well.
CTYPW102	PW-102	5/25/2006	75.0	78.0	60.0		N	11/12/2007	5	37.4	32.4	54%	41	Well is compromised at 37.4' Well is a great producer, very hot, and spits liquids.
CTYPW132	PW-132	6/6/2006	118.0	121.0	103.0		N	11/12/2007	29.4	62.9	33.5	33%	58	Sounder does not go past 62.9' Will dummy to confirm a pinch or compromise. Well too hot to camera.
CTYW62R2	PW-62R(2)	4/19/2006	88.0	91.0	73.0		N	11/8/2007	29.8	69.5	39.7	54%	22	Sounder did not go past 69.5. A camera and or dummy will be sent down well casing to confirm a pinch or compromised well.
CTYPW142	PW-142	8/29/2006	109.0	111.0	91.0		N	11/12/2007	19.4	76.7	57.3	63%	34	Well is compromised at 76.7' Well is very hot and considered a spitter.
Remote wells that still have access W/O Pumps														
CTYPW115	PW-115	5/5/2006	75.0	78.0	60.0		N	11/8/2007	35.6	67.7	32.1	54%	10	Well is remoted uphill to the 18" header on the bowl. We still have access to the well casing. Will dummy well to confirm a pinch or compromise
CTYPW117	PW-117	5/4/2006	75.0	78.0	60.0		Y	11/12/2007	51	51.6	0.6	1%	26	Sounder does not go past 51.6'. Well will be dummied to confirmed. Too hot to camera.
CTYPW167	PW-167	11/10/2006	118.0	121.0	42.0		Y	11/9/2007	5.5	30	24.5	58%	91	Bottom is difficult to find. Sounder sticks like in a mucky substance. Pump installed in well is set at 95.0'
CNTYB02R	B2R	6/4/2007	75.0	78.0	54.0		Y	11/8/2007	33	63.2	30.2	56%	15	Sounder does not go past 63.2'. Pump in well.
CTYPW120	PW-120	4/29/2006	75.0	78.0	60.0		Y	11/12/2007	29.2	59.4	30.2	50%	19	Sounder does not go past 59.4'. Will dummy to confirm a pinch or compromise. Well too hot to camera.
CTYW43R2	PW-43R(2)	4/28/2006	100.0	102.0	84.0		Y	11/12/2007	37.5	90.2	52.7	63%	12	
Remote wells that still have access and have a pump installed														
CNTY121R	PW-121R	11/26/07	30.0	42.0	19.0		Y	11/12/2007	30.4	30.4	0	0%	12	Vertical portion of well casing still accessible. Will dummy well to confirm a pinch or compromise
Dewatering Wells, Leachate Sumps, and Leachate Wells														
CNTYDWW2	DWW2	11/25/2006	27.0	35.0	10.0		Y	11/9/2007	15.5	19.6	4.1	41%	15.4	
CNTYLS05	LS-5	6/25/2007	40.0	43.0	34.0		Y	11/12/2007	18.3	29.5	11.2	33%	13.5	Sounder will not pass pump

APPENDIX C

NOVEMBER 2007 WELL DATA

Countywide RDF East Sparta, OH
Well Log Asbuilt Information

Well Identification	Alias (Site plan designation)	Device #	Device Common Name	Total Well Pipe Installed (Solid and Perforated) (I+J)	Total Perforated Pipe	Bottom of Bore Elevation	Is there a pump in the well?	Date Depth Checked	Depth To Fluid	Depth To Bottom	Amount of fluid in well (S-R)	% Perfs Blocked (T/J)	DTB vs Well log bore depth	Comments	Calculated ROI
Id.	Id.	Date	FT	FT	FT	FT			FT	FT	FT	%	FT		
CTYPW303	PW-303	9/13/2006	40.0	45.0	25.0		N	11/12/2007	42.7	42.7	0	0%	2		63.08
CTYPW305	PW-305	9/13/2006	59.0	64.0	39.0		N	11/12/2007	63.6	63.6	0	0%	0		83.08
CTYPW169	PW-169	11/27/2006	79.0	61.0	15.0		N	11/8/2007	54.6	55	0.4	3%	6		143.08
CNTYS001	S1						N	11/8/2007	46	46	0	0%			63.08
CTYPW119	PW-119	5/1/2006	75.0	78.0	60.0		N	11/9/2007	36.5	36.5	0	0%	42	Well is compromised at 36.5' but is still a producer and never shows up on the O2 list.	83.08
CTYPW315	PW-315	9/13/2006	70.0	75.0	50.0		N	11/9/2007	62	62	0	0%	13	no fluids. Sounder does not go past 62.0' A camera and or dummy will be sent down well to confirm a pinch or compromise.	83.08
CTYPW302	PW-302	9/12/2006	32.0	57.0	22.0		N	11/9/2007	44.8	44.8	0	0%	12	Sounder does not go past 44.8'. This well is in the active face and raised several times in the recent past. Well possibly compromised by heavy equipment.	63.08
CNTYK001	K1	11/1/2004	64.0	68.0	44.0	1107	N	11/8/2007	32	32	0	0%	36	Sounder does not go past 32' This well has been cameraed and a dummy sent down the well to confirm a pinched well casing at 32.0'	83.08
CTYPW131	PW-131	6/5/2006	75.0	78.0	60.0		N	11/12/2007	45.9	45.9	0	0%	32	Sounder did not go past 45.9. A camera and or dummy will be sent down well casing to confirm a pinch or compromised well.	63.08
CNTY0032	W-32	3/1/1998	78.0	82.0	45.0	1110	N	11/9/2007	25.6	25.8	0.2	0%	56	Well will be investigated with a camera and dummy to confirm a compromised well casing.	143.08
CNTY0035	W-35	11/1/1998	64.0	64.0	46.0		N	11/9/2007	60.4	60.7	0.3	1%	3		63.08
CNTY0007	W-7	3/1/1998	29.0	38.0	14.0	1108	N	11/9/2007	30.8	31.1	0.3	2%	7		63.08
CNTY0001	W-1	3/1/1998	43.0	47.0	25.0	1110	N	11/9/2007	21	21.6	0.6	2%	25	Sounder does not go past 21.6' A camera and dummy will be sent down well casing to confirm a pinch or compromised well.	83.08
CTYPW111	PW-111	5/9/2006	60.0	62.0	44.0		N	11/8/2007	63.9	64.5	0.6	1%	-3		83.08
CTYPW312	PW-312	9/11/2006	63.0	68.0	43.0		N	11/7/2007	65.5	66.2	0.7	2%	2		83.08
CNTY0011	W-11	3/1/1998	46.0	44.0	25.0	1118	N	11/9/2007	38.6	39.7	1.1	4%	4		63.08
CTYPW304	PW-304	9/13/2006	42.0	47.0	22.0		N	11/9/2007	46.5	48	1.5	7%	-1		83.08
CTYPW311	PW-311	9/11/2006	64.0	69.0	44.0		N	11/9/2007	65.5	67.1	1.6	4%	2		83.08
CNTY0003	W-3	3/1/1998	29.0	33.0	12.0	1108	N	11/9/2007	30.7	32.9	2.2	18%	0		83.08
CTYPW326	PW-326	5/24/2007	117.0	120.0	96.0		N	11/9/2007	116.5	119	2.5	3%	1		83.08
CNTY0005	W-5	3/1/1998	31.0	35.0	13.0	1106	N	11/9/2007	32.2	34.7	2.5	19%	0		83.08
CTYPW170	PW-170	6/12/2007	37.0	40.0	18.0		N	11/9/2007	41	43.6	2.6	14%	-4		83.08
CTYPW313	PW-313	11/27/2006	56.0	77.0	15.0		N	11/7/2007	56.8	59.4	2.6	17%	18		143.08
CNTY0033	W-33	11/1/1998	52.0	52.0	34.0		N	11/9/2007	50.9	53.7	2.8	8%	-2		63.08
CTYPW109	PW-109	5/10/2006	35.0	37.0	19.0		N	11/9/2007	34.1	37.1	3	16%	0		83.08
CTYPW306	PW-306	9/13/2006	35.0	40.0	25.0		N	11/12/2007	36.8	40	3.2	13%	0		63.08
CNTY0009	W-9	11/1/1998	36.0	36.0	18.0		N	11/9/2007	32.3	35.8	3.5	19%	0		63.08
CTYPW110	PW-110	5/11/2006	29.0	31.0	13.0		N	11/9/2007	26.7	31.7	5	38%	-1		83.08
CTYPW112	PW-112	5/10/2006	75.0	77.0	59.0		N	11/8/2007	76.5	79.8	3.3	6%	-3		83.08
CTYPW331	PW-331	5/25/2007	117.0	130.0	96.0		N	11/9/2007	127.1	130.9	3.8	4%	-1		83.08
CNTY0004	W-4	3/1/1998	33.0	37.0	16.0	1107	N	11/9/2007	29.3	36.4	7.1	44%	1		83.08
CTYPW325	PW-325	5/21/2007	67.0	68.0	46.0		N	11/9/2007	63.8	71.5	7.7	17%	-4		83.08
CNTY0068	W-68	3/1/1998	75.0	79.0	44.0	1116	N	11/9/2007	52.2	60	7.8	18%	19	Sounder did not go past 60.0'. A camera and or dummy will be sent down well casing to confirm a pinch or compromised well.	123.08
CTYPW314	PW-314	9/15/2006	46.0	51.0	26.0		N	11/7/2007	43.8	51.7	7.9	30%	-1		83.08
CNTY0008	W-8	3/1/1998	30.0	34.0	15.0	1114	N	11/9/2007	24.3	32.9	8.6	57%	1		63.08
CNTYW12R	W-12R	6/5/2007	40.0	43.0	21.0		N	11/8/2007	32.3	41.2	8.9	42%	2		83.08
CNTYF002	F2	4/1/2005	65.0	68.0	44.0	1120	N	11/8/2007	55	65.4	10.4	24%	3		83.08
CTYPW307	PW-307	10/5/2006	62.0	64.0	42.0		N	11/12/2007	50.7	61.5	10.8	26%	3		83.08
CTYPW124	PW-124	6/3/2006	60.0	63.0	45.0		N	11/8/2007	45.5	56.4	10.9	24%	7		63.08
CTYPW328	PW-328	5/21/2007	79.0	80.0	58.0		N	11/7/2007	71.3	82.3	11	19%	-2		83.08
CTYPW107	PW-107	5/9/2006	61.0	66.0	45.0		N	11/8/2007	49.7	61.6	11.9	26%	4		83.08
CNTYA002	A2	11/1/2004	64.0	68.0	45.0	1124	N	11/8/2007	52.3	65	12.7	28%	3		83.08
CNTY0060	W-60	3/1/1998	101.0	110.0	79.0	1116	N	11/8/2007	77.3	91.1	13.8	17%	19	Sounder did not go past 91.1. A camera and or dummy will be sent down well casing to confirm a pinch or compromised well.	103
CTYPW113	PW-113	5/8/2006	75.0	78.0	60.0		N	11/8/2007	65.7	80.1	14.4	24%	-2		83.08
CNTY0069	W-69	3/1/1998	54.0	58.0	33.0	1120	N	11/12/2007	37	51.9	14.9	45%	6		83.08
CTYPW329	PW-329	5/24/2007	112.0	115.0	91.0		N	11/7/2007	98.3	113.3	15	16%	2		83.08
CNTYW13R	W-13R	6/7/2007	40.0	43.0	21.0		N	11/8/2007	26.5	42.5	16	76%	1		83.08
CTYPW101	PW-101	5/28/2006	75.0	78.0	60.0		N	11/12/2007	62.9	78.9	16	27%	-1		63.08
CNTYW42R	W-42R	6/13/2007	100.0	103.0	79.0		N	11/12/2007	45.9	62.9	17	22%	40		83.08
CTYPW310	PW-310	9/11/2006	69.0	90.0	49.0		N	11/9/2007	74	91.3	17.3	35%	-1		83.08
CNTYW58R	W-58R	6/13/2007	79.0	82.0	58.0		N	11/8/2007	64.3	82.4	18.1	31%	0		83.08
CTYPW127	PW-127	6/7/2006	75.0	78.0	60.0		N	11/8/2007	57.8	76	18.2	30%	2		63.08
CNTY0034	W-34	3/1/1998	77.0	81.0	43.0	1112	N	11/9/2007	55.6	73.9	18.3	43%	7		143.08
CTYPW125	PW-125	6/7/2006	75.0	78.0	60.0		N	11/9/2007	59	77.5	18.5	31%	1		63.08
CTYPW168	PW-168(M)	11/18/2006	88.0	93.0	68.0		N	11/8/2007	71.6	90.3	18.7	28%	3		83.08
CNTY0039	W-39	11/1/1998	81.0	81.0	62.0		N	11/8/2007	49.9	68.7	18.8	30%	12	Sounder did not go past 68.7'. A camera and or dummy will be sent down well casing to confirm a pinch or compromised well.	63.08
CNTY0036	W-36	3/1/1998	66.0	70.0	35.0	1115	N	11/9/2007	47.6	68.2	20.6	59%	2		123.08
CNTYV001	V1	11/1/2004	60.0	64.0	42.0	1130	N	11/8/2007	39.3	60.3	21	50%	4		83.08
CNTY0038	W-38	11/1/1998	75.0	79.0	57.0		N	11/9/2007	46.3	68	21.7	38%	11	Sounder did not go past 68'. A camera and or dummy will be sent down well casing to confirm a pinch or compromised well.	63.08
CNTYF001	F1-M	11/1/2004	56.0	60.0	39.0	1102	N	11/8/2007	35.4	57.7	22.3	57%	2		63.08

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Well Identification	Alias (Site plan designation)	Device #	Device Common Name	Total Well Pipe Installed (Solid and Perforated) (I+J)	Total Perforated Pipe	Bottom of Bore Elevation	Is there a pump in the well?	Date Depth Checked	Depth To Fluid	Depth To Bottom	Amount of fluid in well (S-R)	% Perfs Blocked (T/J)	DTB vs Well log bore depth	Comments	Calculated ROI
Id.	Id.	Date	FT	FT	FT	FT			FT	FT	FT	%	FT		
CNTY0059	W-59	3/1/1998	100.0	108.0	71.0	1115	N	11/8/2007	74.8	101	26.2	37%	7		123.08
CTYPW118	PW-118	5/2/2006	55.0	58.0	40.0		N	11/8/2007	24.9	51.3	26.4	66%	7		83.08
CTYPW309	PW-309	9/13/2006	63.0	88.0	43.0		N	11/9/2007	101.7	129.2	27.5	64%	-41		83.08
CNTYE001	E1	11/1/2004	65.0	70.0	45.0	1102	N	11/12/2007	37.2	65	27.8	62%	5		83.08
CYPW103R	PW-103R	5/30/2007	102.0	105.0	81.0		N	11/9/2007	75.2	103	27.8	34%	2		83.08
CTYPW330	PW-330	5/23/2007	120.0	123.0	99.0		N	11/9/2007	92.8	120.8	28	28%	2		83.08
CTYPW308	PW-308	9/12/2006	86.0	131.0	66.0		N	11/12/2007	100.9	129.1	28.2	43%	2		83.08
CTYPW160	PW-160	9/27/2006	117.0	119.0	97.0		N	11/8/2007	85.4	115.6	30.2	31%	3		83.08
CNTY002R	W-2R(M)	9/8/2006	83.0	85.0	65.0		N	11/9/2007	44.7	75.5	30.8	47%	10		83.08
CNTY0037	W-37	11/1/1998	79.0	79.0	62.0		N	11/9/2007	43.8	74.6	30.8	50%	4		63.08
CNTYD001	D1	11/1/2004	52.0	57.0	36.0	1117	N	11/12/2007	21	52.5	31.5	88%	5		63.08
CTYPW130	PW-130	6/10/2006	118.0	121.0	103.0		N	11/12/2007	84.4	115.8	31.4	30%	5		63.08
CTYPW162	PW-162	9/25/2006	100.0	102.0	80.0		N	11/8/2007	63.8	95.7	31.9	40%	6		83.08
CTYW57R2	W-57R(2)	6/8/2007	80.0	83.0	59.0		N	11/8/2007	49.7	81.9	32.2	55%	1		83.08
CTYPW156	PW-156	9/15/2006	109.0	112.0	89.0		N	11/8/2007	77.4	109.8	32.4	36%	2		83.08
CTYPW102	PW-102	5/25/2006	75.0	78.0	60.0		N	11/12/2007	5	37.4	32.4	54%	41	Well is compromised at 37.4' Well is a great producer, very hot, and spits liquids.	63.08
CTYPW104	PW-104	5/30/2006	75.0	78.0	60.0		N	11/12/2007	44.9	77.6	32.7	55%	0		63.08
CTYPW132	PW-132	6/6/2006	118.0	121.0	103.0		N	11/12/2007	29.4	62.9	33.5	33%	58	Sounder does not go past 62.9' Will dummy to confirm a pinch or compromise. Well too hot to camera.	63.08
CTYPW114	PW-114	5/6/2006	75.0	78.0	60.0		N	11/8/2007	43.6	77.6	34	57%	0		83.08
CTYW41R2	PW-0041R(2)	4/27/2006	78.0	73.0	55.0		N	11/8/2007	31.2	65.2	34	62%	8		63.08
CTYPW128	PW-128	6/8/2006	118.0	121.0	103.0		N	11/8/2007	80.9	115.4	34.5	33%	6		63.08
CNTYD02R	D2R	5/31/2007	120.0	123.0	99.0		N	11/9/2007	85.6	121.7	36.1	36%	1		83.08
CTYPW144	PW-144	8/31/2006	100.0	102.0	82.0		N	11/8/2007	58.3	96.4	38.1	46%	6		83.08
CTYPW324	PW-324	5/22/2007	120.0	123.0	99.0		N	11/9/2007	82.9	121.3	38.4	39%	2		83.08
CTYPW129	PW-129	6/9/2006	118.0	121.0	103.0		N	11/12/2007	75.5	114	38.5	37%	7		63.08
CTYW62R2	PW-62R(2)	4/19/2006	88.0	91.0	73.0		N	11/8/2007	29.8	69.5	39.7	54%	22	Sounder did not go past 69.5. A camera and or dummy will be sent down well casing to confirm a pinch or compromised well.	63.08
CTYPW159	PW-159	10/4/2006	117.0	117.0	97.0		N	11/8/2007	74.8	117.1	42.3	44%	0		83.08
CTYPW157	PW-157	9/16/2006	109.0	112.0	89.0		N	11/8/2007	65	108.2	43.2	49%	4		83.08
CNTYE02R	E2R	5/29/2007	120.0	123.0	99.0		N	11/9/2007	79.1	122.5	43.4	44%	1		83.08
CTYPW163	PW-163	9/26/2006	102.0	104.0	82.0		N	11/8/2007	54.3	97.8	43.5	53%	6		83.08
CTYPW158	PW-158	9/19/2006	115.0	117.0	95.0		N	11/8/2007	65.1	110.3	45.2	48%	7	Thick black tar sticks to sounder	83.08
CTYPW165	PW-165	10/2/2006	117.0	117.0	97.0		N	11/8/2007	73	118.3	45.3	47%	-1		83.08
CTYPW147	PW-147	9/1/2006	51.0	53.0	33.0		N	11/9/2007	10.3	56.3	46	139%	-3		83.08
CNTYW01R	W1R	6/1/2007	85.0	88.0	64.0		N	11/9/2007	33.5	82.3	48.8	76%	6		83.08
CNTY031R	W-31R	9/8/2006	90.0	92.0	72.0		N	11/8/2007	46.1	95	48.9	68%	-3		83.08
CTYPW105	PW-105	5/23/2006	60.0	78.0	60.0		N	11/8/2007	20.1	69.6	49.5	83%	8		63.08
CTYPW161	PW-161	9/26/2006	115.0	117.0	95.0		N	11/8/2007	64.3	115.7	51.4	54%	1		83.08
CNTYC02R	C2R	5/31/2007	120.0	123.0	99.0		N	11/9/2007	70.4	122.1	51.7	52%	1		83.08
CTYPW164	PW-164	10/3/2006	117.0	117.0	97.0		N	11/8/2007	59.8	113.8	54	56%	3		83.08
CTYPW166	PW-166	11/9/2006	115.0	122.0	95.0		N	11/8/2007	64.7	117.5	52.8	56%	5		103
CTYPW142	PW-142	8/29/2006	109.0	111.0	91.0		N	11/12/2007	19.4	76.7	57.3	63%	34	Well is compromised at 76.7'. Well is very hot and considered a spitter.	83.08
CNTY030R	W-30R(M)	9/9/2006	95.0	97.0	75.0		N	11/9/2007	29.8	92.9	63.1	84%	4		83.08
Remote wells that still have access W/O Pumps															63.08
CTYPW115	PW-115	5/5/2006	75.0	78.0	60.0		N	11/8/2007	35.6	67.7	32.1	54%	10	Well is remoted uphill to the 18" header on the bowl. We still have access to the well casing. Will dummy well to confirm a pinch or compromise	83.08
															63.08
CTYPW154	PW-154	9/7/2006	40.0	42.0	22.0		Y	11/12/2007	42.5	42.5	0	0%	-1		83.08
CTYPW117	PW-117	5/4/2006	75.0	78.0	60.0		Y	11/12/2007	51	51.6	0.6	1%	26	Sounder does not go past 51.6'. Well will be dummied to confirmed. Too hot to camera.	83.08
CTYPW149	PW-149	9/6/2006	49.0	51.0	31.0		Y	11/12/2007	50.6	51.1	0.5	2%	0		83.08
CTYPW155	PW-155	9/7/2006	38.0	42.0	22.0		Y	11/12/2007	34	37.9	3.9	18%	4		83.08
CTYPW57R	PW-57R	4/20/2006	82.0	85.0	67.0		Y	11/8/2007	69.1	79.2	10.1	15%	6		63.08
CTYPW152	PW-152	9/7/2006	40.0	42.0	22.0		Y	11/9/2007	31.3	42.6	11.3	51%	-1		83.08
CTYPW153	PW-153	9/7/2006	50.0	52.0	32.0		Y	11/12/2007	32.4	45.4	13	41%	7		83.08
CTYPW145	PW-145	8/30/2006	118.0	120.0	100.0		Y	11/8/2007	101.2	118.4	17.2	17%	2		83.08
CNTY061R	PW-61R	11/16/2006	64.0	67.0	42.0		Y	11/12/2007	45.1	63	**17.9**	43%	4		103
CYPW106R	PW-106R	6/7/2007	65.0	69.0	45.0		Y	11/9/2007	46.1	65.5	19.4	43%	4		83.08
CNTYC01R	C1R	6/6/2007	43.0	46.0	24.0		Y	11/9/2007	16.9	40.3	23.4	98%	6		83.08
CTYPW167	PW-167	11/10/2006	118.0	121.0	42.0		Y	11/9/2007	5.5	30	24.5	58%	91	Bottom is difficult to find. Sounder sticks like in a mucky substance. Pump installed in well is set at 95.0'	143.08
CTYPW150	PW-150	9/6/2006	48.0	50.0	30.0		Y	11/9/2007	27.7	52.5	24.8	83%	-3		83.08
CYPW14R3	W-14R(3)	6/12/2007	40.0	43.0	21.0		Y	11/9/2007	17.1	42.7	25.6	122%	0		83.08
CNTYB02R	B2R	6/4/2007	75.0	78.0	54.0		Y	11/8/2007	33	63.2	30.2	56%	15	Sounder does not go past 63.2'. Pump in well.	83.08
CTYPW120	PW-120	4/29/2006	75.0	78.0	60.0		Y	11/12/2007	29.2	59.4	30.2	50%	19	Sounder does not go past 59.4'. Will dummy to confirm a pinch or compromise. Well too hot to camera.	63.08
CTYPW148	PW-148	9/1/2006	51.0	53.0	33.0		Y	11/9/2007	14.6	48.2	33.6	102%	5		83.08
CTYPW151	PW-151	9/6/2006	41.0	43.0	23.0		Y	11/11/2007	6	40.3	34.3	149%	3		83.08
CTYPW141	PW-141	8/28/2006	112.0	114.0	94.0		Y	11/12/2007	69.5	113.8	44.3	47%	0		83.08
CTYPW146	PW-146	8/31/2006	118.0	120.0	100.0		Y	11/8/2007	70.9	117.5	46.6	47%	3		83.08
CTYW43R2	PW-43R(2)	4/28/2006	100.0	102.0	84.0		Y	11/12/2007	37.5	90.2	52.7	63%	12		63.08
CTYW56R3	W-56R(3)	6/11/2007	85.0	88.0	64.0		Y	11/8/2007	26.8	85.6	58.8	92%	2		83.08
CTYW56R2	PW-56R(2)	4/21/2006	100.0	102.0	84.0		Y	11/8/2007	28.2	94	65.8	78%	8		63.08
CTYPW123	PW-123	5/31/2006	75.0	78.0	60.0		Y	11/8/2007	5.8	68.6	62.8	105%	9		63.08
Remote wells that still have access and have a pump installed															63.08
CNTY121R	PW-121R	11/26/07	30.0	42.0	19.0		Y	11/12/2007	30.4	30.4	0	0%	12	Vertical portion of well casing still accessible. Will dummy well to confirm a pinch or compromise	83.08
CNTYA01R	PW-A1R	11/25/07	35.0	41.0	10.0		Y	11/9/2007	35.5	37.3	1.8	18%	4	Vertical portion of well casing still accessible	103

Countywide RDF East Sparta, OH
Well Log Asbuilt Information

Well Identification	Alias (Site plan designation)	Device #	Device Common Name	Total Well Pipe Installed (Solid and Perforated) (I+J)	Total Perforated Pipe	Bottom of Bore Elevation	Is there a pump in the well?	Date Depth Checked	Depth To Fluid	Depth To Bottom	Amount of fluid in well (S-R)	% Perfs Blocked (T/J)	DTB vs Well log bore depth	Comments	Calculated ROI
Id.	Id.	Date	FT	FT	FT	FT			FT	FT	FT	%	FT		
CNTY122R	PW-122R	11/14/06	38.0	43.5	25.0		Y	11/12/2007	24.3	38.1	13.8	55%	5	Vertical portion of well casing still accessible	63.08
CTYPW108	PW-108	5/22/2006	75.0	78.0	60.0		Y	11/8/2007	27.9	71.2	43.3	72%	7	Well is remoted uphill to the 18" header on the bowl. We still have access to the well casing	63.08
Dewatering Wells, Leachate Sumps, and Leachate Wells															63.08
CNTYLW20	LW-20	8/24/2007	35.0	38.0	20.0		Y	11/9/2007	33.6	34.9	1.3	6%	3.1		63.08
CNTYLW26	LW-26	8/16/2007	35.0	38.0	20.0		Y	11/12/2007	33.9	35.3	1.4	7%	2.7		63.08
CNTYLW27	LW-27	8/16/2007	35.0	38.0	20.0		Y	11/12/2007	33.2	34.6	1.4	7%	3.4		63.08
CNTYLW06	LW-6	8/14/2007	35.0	38.0	20.0		Y	11/12/2007	33.8	35.3	1.5	8%	2.7		63.08
CNTYLW07	LW-7	8/15/2007	35.0	38.0	20.0		Y	11/12/2007	33.3	35	1.7	9%	3.0		63.08
CNTYLW19	LW-19	8/23/2007	35.0	38.0	20.0		Y	11/9/2007	33.6	36.1	2.5	13%	1.9		63.08
CNTYLW23	LW-23	8/24/2007	35.0	38.0	20.0		Y	11/12/2007	33.9	36.5	2.6	13%	1.5		63.08
CNTYLW21	LW-21	8/24/2007	35.0	38.0	20.0		Y	11/12/2007	31.3	34.2	2.9	15%	3.8		63.08
CNTYLW22	LW-22	8/24/2007	35.0	38.0	20.0		Y	11/9/2007	33.6	37	3.4	17%	1.0		63.08
CNTYLW08	LW-8	8/15/2007	35.0	38.0	20.0		Y	11/12/2007	29.2	32.8	3.6	18%	5.2		63.08
CNTYDWW2	DWW2	11/25/2006	27.0	35.0	10.0		Y	11/9/2007	15.5	19.6	4.1	41%	15.4		83.08
CNTYLW13	LW-13	8/16/2007	35.0	38.0	20.0		Y	11/12/2007	30.2	34.4	4.2	21%	3.6		63.08
CNTYLW17	LW-17	8/23/2007	35.0	38.0	20.0		Y	11/9/2007	30.6	36.4	5.8	29%	1.6		63.08
CNTYLW16	LW-16	8/23/2007	35.0	38.0	20.0		Y	11/9/2007	30	36.6	6.6	33%	1.4		63.08
CNTYLW28	LW-28	8/16/2007	35.0	38.0	20.0		Y	11/12/2007	27.4	35.3	7.9	40%	2.7		63.08
CNTYLW18	LW-18	8/23/2007	35.0	38.0	20.0		Y	11/9/2007	28.6	36.5	7.9	40%	1.5		63.08
CNTYLW29	LW-29	8/15/2007	35.0	38.0	20.0		Y	11/12/2007	24.1	35.3	11.2	56%	2.7		63.08
CNTYLS05	LS-5	6/25/2007	40.0	43.0	34.0		Y	11/12/2007	18.3	29.5	11.2	33%	13.5	Sounder will not pass pump	63.08
CNTYLS04	LS-4	6/25/2007	40.0	43.0	34.0		Y	11/9/2007	26.8	39	12.2	36%	4.0		63.08
CNTYLW24	LW-24	8/15/2007	35.0	38.0	20.0		Y	11/12/2007	21.6	35.2	13.6	68%	2.8		63.08
CNTYLW25	LW-25	8/18/2007	35.0	38.0	20.0		Y	11/12/2007	20.6	35.1	14.5	73%	2.9		63.08
CNTYLW14	LW-14	8/21/2007	35.0	38.0	20.0		Y	11/12/2007	15.3	32.6	17.3	87%	5.4		63.08
CNTYLW15	LW-15	8/18/2007	35.0	38.0	20.0		Y	11/12/2007	16	34.3	18.3	92%	3.7		63.08
CNTYLS02	LS-2			0.0			Y	11/9/2007	5.5	25	19.5	0%			63.08
CNTYDWW1	DWW1	11/26/2006	42.0	42.0	19.0		Y	11/9/2007	11.8	36.1	24.3	128%	5.9		63.08
CNTYLS01	LS-1			0.0			Y	11/9/2007	18.7	48.5	29.8	0%		Thick black tar sticks to sounder	63.08
Remote Wells and Stingers															
CNTYP001	P1	11/1/2004	81.0	85.0	61.0	1113								Stinger	83.08
CNTYY001	Y1	11/1/2004	139.0	154.0	130.0	1100								Stinger	63.08
CNTYZ001	Z1	11/1/2004	139.0	146.0	120.0	1094								Stinger	83.08
CNTYH001	H1	4/1/2005	126.0	145.0	105.0	1139								Stinger	83.08
CNTYI001	I1	11/1/2004	138.0	152.0	117.0	1095								Stinger	83.08
CNTYJ001	J1-M	11/1/2004	135.0	149.0	114.0	1090								Stinger	83.08
CNTYU001	U1	11/1/2004	139.0	143.0	120.0	1091								Stinger	83.08
CNTYQ001	Q1	11/1/2004	139.0	201.0	129.0	1109								Stinger	63.08
CNTY056R	W-56R-M	4/21/2007	100.0	103.0	85.0									Stinger	83.08
CNTYN001	N1	11/1/2004	139.0	155.0	130.0	1097								Remote Well location	63.08
CNTYT001	T1	4/1/2005	116.0	120.0	106.0	1153								Remote Well location	63.08
CTYPW133	PW-133	8/26/2006	105.0	107.0	87.0									Remote Well location with vertical casing located in the Bowl	83.08
CTYPW134	PW-134	8/23/2006	80.0	83.0	60.0									Remote Well location with vertical casing located in the Bowl	83.08
CTYPW135	PW-135	8/25/2006	74.0	76.0	56.0									Remote Well location with vertical casing located in the Bowl	83.08
CTYPW136	PW-136	8/25/2006	74.0	76.0	56.0									Remote Well location with vertical casing located in the Bowl	83.08
CTYPW137	PW-137	8/23/2006	74.0	76.0	56.0									Remote Well location with vertical casing located in the Bowl	83.08
CTYPW138	PW-138	8/23/2006	109.0	111.0	91.0									Remote Well location with vertical casing located in the Bowl	83.08
CTYPW143	PW-143	8/29/2006	74.0	76.0	56.0									Remote Well location with vertical casing located in the Bowl	83.08
CTYPW116	PW-116	5/3/2006	75.0	65.0	60.0									Remote Well location with vertical casing located in the Bowl	63.08
CNTY0010	W-10	Nov-98	37.0	37.0	19.0									Remote Well	63.08
CNTYB001	B1	Nov-04	57.0	61.0	39.0	1126								Remote Well	83.08
CTYPW301	PW-301	9/12/2006	69.0	74.0	49.0									Remote Well	83.08
CNTY0006	W-6	Nov-98	30.0	30.0	12.0									Remote Well	63.08
23															

APPENDIX D

LANDGEM MODEL RESULTS

COMPUTATION SHEET

PROJECT TITLE:	Countywide Landfill LandGEM Gas Modling Results		PROJECT NO:	70187	
DESCRIPTION:	Landfill Gas Modeling Projections			SHEET:	2
				OF:	2
PREPARED BY:	KTK	DATE: 11/21/07	CHECKED BY: MSM	DATE:	12/3/07

Countywide Landfill

An estimate of landfill gas (LFG) generation rates for Landfill A was prepared under the following conditions:

- USEPA LandGEM Model Version 3.02 for LFG generation rates.
- L_0 = 100 m^3/Mg and k = 0.04/year.
- A permitted design capacity of approximately 39.2 million tons of municipal solid waste (MSW).
- Actual MSW intake rates from 1991 through 2005.
- Anticipated MSW intake rates for 2006

The peak rate of LFG generation was calculated to be 4,221 scfm in the year 2007 for existing
The proposed GCCS was designed to handle ***15,000*** scfm to be conservative.

Detailed results of the LFG generation rate calculations follow this discussion.

COMPUTATION SHEET

PROJECT TITLE: Countywide Landfill LandGEM Gas Modling Results PROJECT NO: 70187
DESCRIPTION: Landfill Gas Modeling Projections SHEET: 2
OF: 2
PREPARED BY: KTK DATE: 11/21/07 CHECKED BY: MSM DATE: 12/3/07

Year	*Landfill A Annual MSW Intake (ton/year)*	*Landfill A LFG Generation Rate (scfm)*
		Lo=100 k=0.04
1991	74,093	0
1992	362,031	36
1993	382,152	208
1994	476,749	383
1995	515,520	597
1996	551,520	821
1997	704,880	1,054
1998	767,520	1,351
1999	569,488	1,666
2000	613,909	1,874
2001	687,107	2,095
2002	789,130	2,343
2003	979,672	2,630
2004	1,074,034	2,997
2005	1,086,401	3,395
2006	1,200,000	3,783
2007	0	**4,211**
2008	0	4,046
2009	0	3,887
2010	0	3,735
2011	0	3,588
2012	0	3,447
2013	0	3,312
2014	0	3,182
2015	0	3,058
2016	0	2,938
2017	0	2,823
2018	0	2,712
2019	0	2,606
2020	0	2,503
2021	0	2,405
2022	0	2,311
2023	0	2,220
2024	0	2,133
2025	0	2,050
2026	0	1,969
2027	0	1,892
2028	0	1,818
2029	0	1,747
2030	0	1,678
2031	0	1,612
2032	0	1,549

APPENDIX E

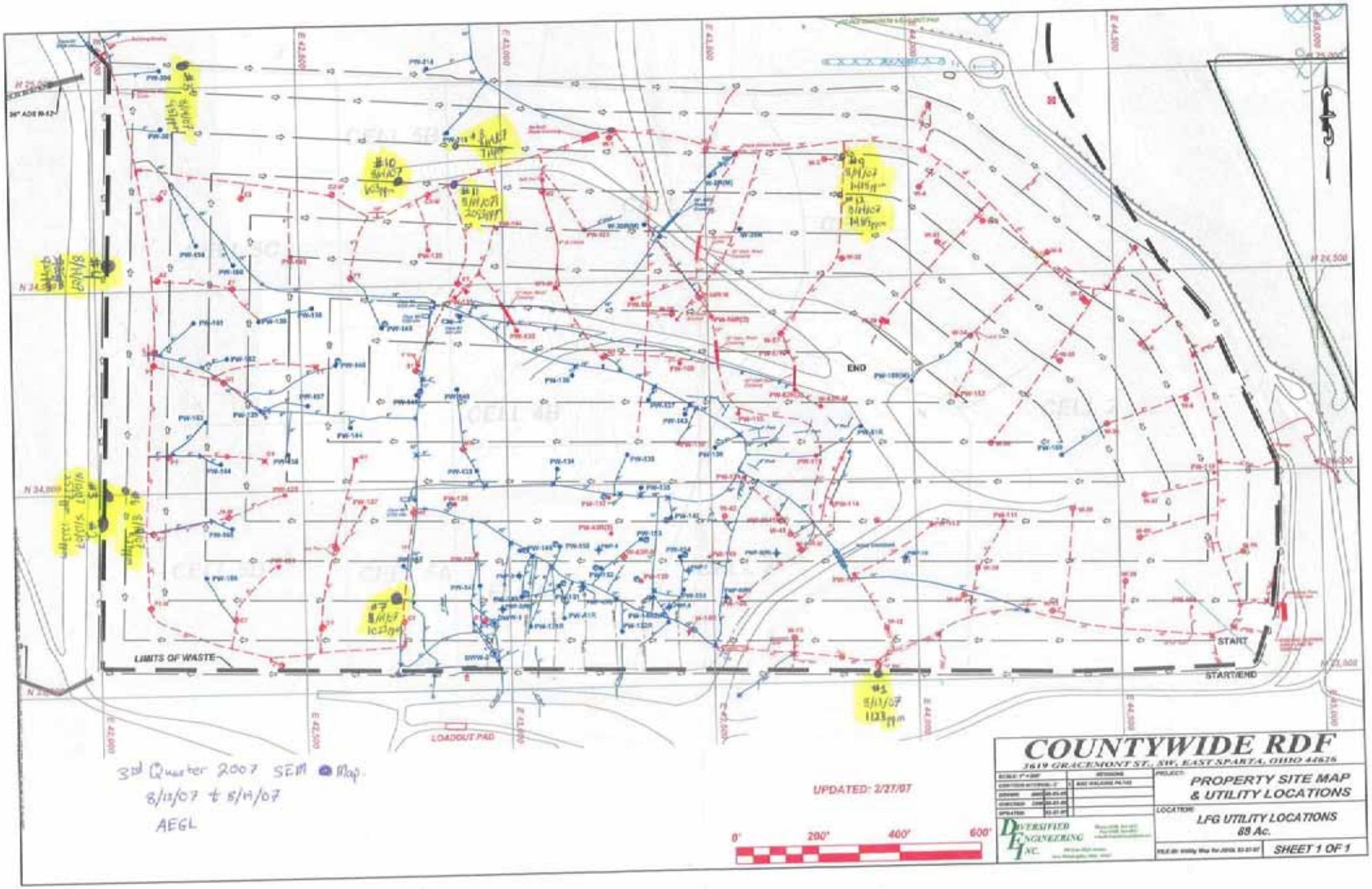
3RD & 4TH QUARTER SURFACE EMISSIONS RESULTS

Exceedance Summary

Surface Scan 3rd Quarter: 2007: Countywide RDF

Surface Scan Exceedance Number	Location	Initial Reading (ppm) August 13, 2007 and August 14, 2007	1st 10 Day Recheck (ppm) August 21, 2007	2nd 10 Day Recheck (ppm) August 31, 2007	1 Month Recheck (ppm) September 11, 2007	10 Day Remonitoring after 1 Month Recheck (ppm) September 17, 2007	Final Compliance Status
1	Perimeter loop in bare dirt	1123	0	N/A	1524.9	22.3	PASS
2	Perimeter loop west slope	1213	123	N/A	125.7	N/A	PASS
3	Perimeter loop west slope	2537	177	N/A	275.3	N/A	PASS
4	Perimteter loop below A2 in high patch of very green grass on the edge of a dead vegetation spot	955	39	N/A	236.4	N/A	PASS
5	Perimteter loop 20 feet upslope of PW306	588	1146	339.15	313.4	N/A	PASS
6	Directly above hit #3	524	2552	397	281	N/A	PASS
7	50 feet below PW167	1020	22	N/A	109.9	N/A	PASS
8	10 feet south of PW315	708	139	N/A	250	N/A	PASS
9	10 feet east of W3	1412	723	60.3	145.5	N/A	PASS
10	50 feet west of C2R	600	23	N/A	173.6	N/A	PASS
11	10 feet east of C2R	2070	111	N/A	92.4	N/A	PASS
12	75 feet north of W32	1486	133	N/A	75.2	N/A	PASS

Interpretations: You need 2 clean to make it right; 3 strikes (including your intital hit, don't need to be consecutive) and you FAIL



3rd Quarter 2007 SEM Map.
8/13/07 & 8/14/07
AEGL

UPDATED: 2/27/07

COUNTYWIDE RDF

1619 GRACEMONT ST., SW, EAST SPARTA, OHIO 44626

DIVERSIFIED ENGINEERING INC.

PROJECT: PROPERTY SITE MAP & UTILITY LOCATIONS

LOCATION: LFG UTILITY LOCATIONS 88 Ac.

SHEET 1 OF 1

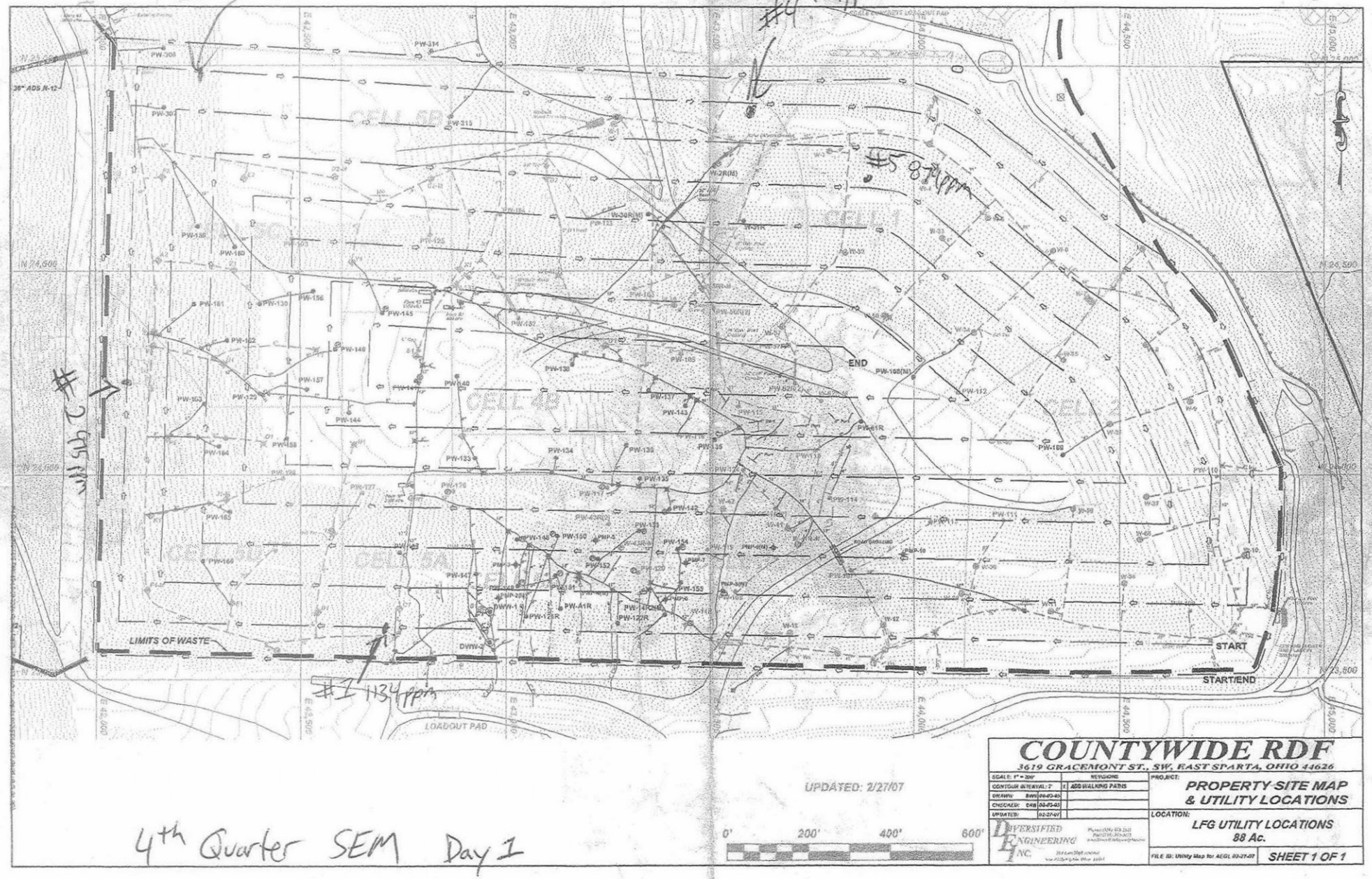
Sample Exceedance Summary

Surface Scan 4th Quarter

Surface Scan Exceedance Number	11/5/07 Initial Reading (ppm)	11/15/07 1st 10 Day Recheck (ppm)	11/21/07 2nd 10 Day Recheck (ppm)	12/4/07 1 Month Recheck (ppm)	12/15/07 10 Day Remonitoring after 1 Month Recheck (ppm)	Final Compliance Status
#1	**1103.7**	**1450.75**	**601**			Fail
#2	**944.7**	**865.2**	16	<500		Pass
#3	**1072.7**	226.2		<500		Pass
#4	**903.7**	**2260.2**	111	<500		Pass
#5	**848.7**	166.2		<500		Pass

Interpretations:

You need 2 clean to make it right; 3 strikes (including your intital hit, don't need to be consecutive) and you FAIL



UPDATED: 2/27/07

0' 200' 400' 600'

COUNTYWIDE RDF

3619 GRACEMONT ST., SW, EAST SPARTA, OHIO 44626

SCALE: 1" = 200'		REVISIONS
CONTOUR INTERVAL: 2'	1	ADD WALKING PATHS
DRAWN: BWS 06-05-03		
CHECKED: DAB 06-05-03		
UPDATED: 02-27-07		

DIVERSIFIED ENGINEERING INC.

PROJECT: **PROPERTY SITE MAP & UTILITY LOCATIONS**

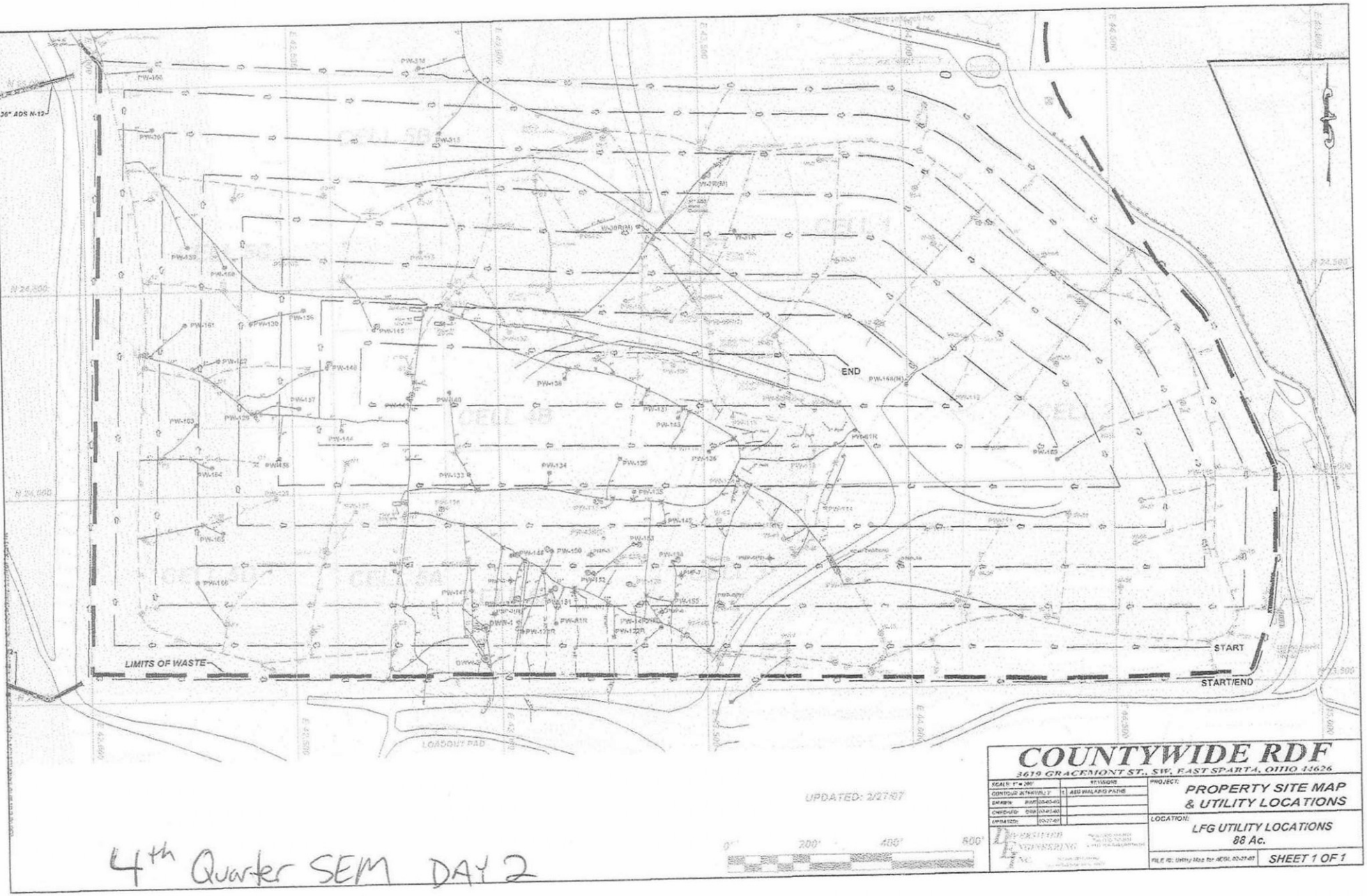
LOCATION: **LFG UTILITY LOCATIONS 88 Ac.**

FILE ID: Utility Map for AEGL 02-27-07

SHEET 1 OF 1

4th Quarter SEM Day 1

MAX Collins



COUNTYWIDE RDF

3619 GRACEMONT ST., SW, EAST SPARTA, OHIO 44626

SCALE: 1" = 200'	REVISIONS
CONTOUR INTERVAL: 2'	1 ADD WALKING PATHS
DRAWN: RWP 03-05-07	
CHECKED: DSB 03-05-07	
UPDATED: 02-27-07	

PROJECT: **PROPERTY SITE MAP & UTILITY LOCATIONS**

LOCATION: **LFG UTILITY LOCATIONS 88 Ac.**

FILE ID: Utility Map for 4QSL 02-27-07

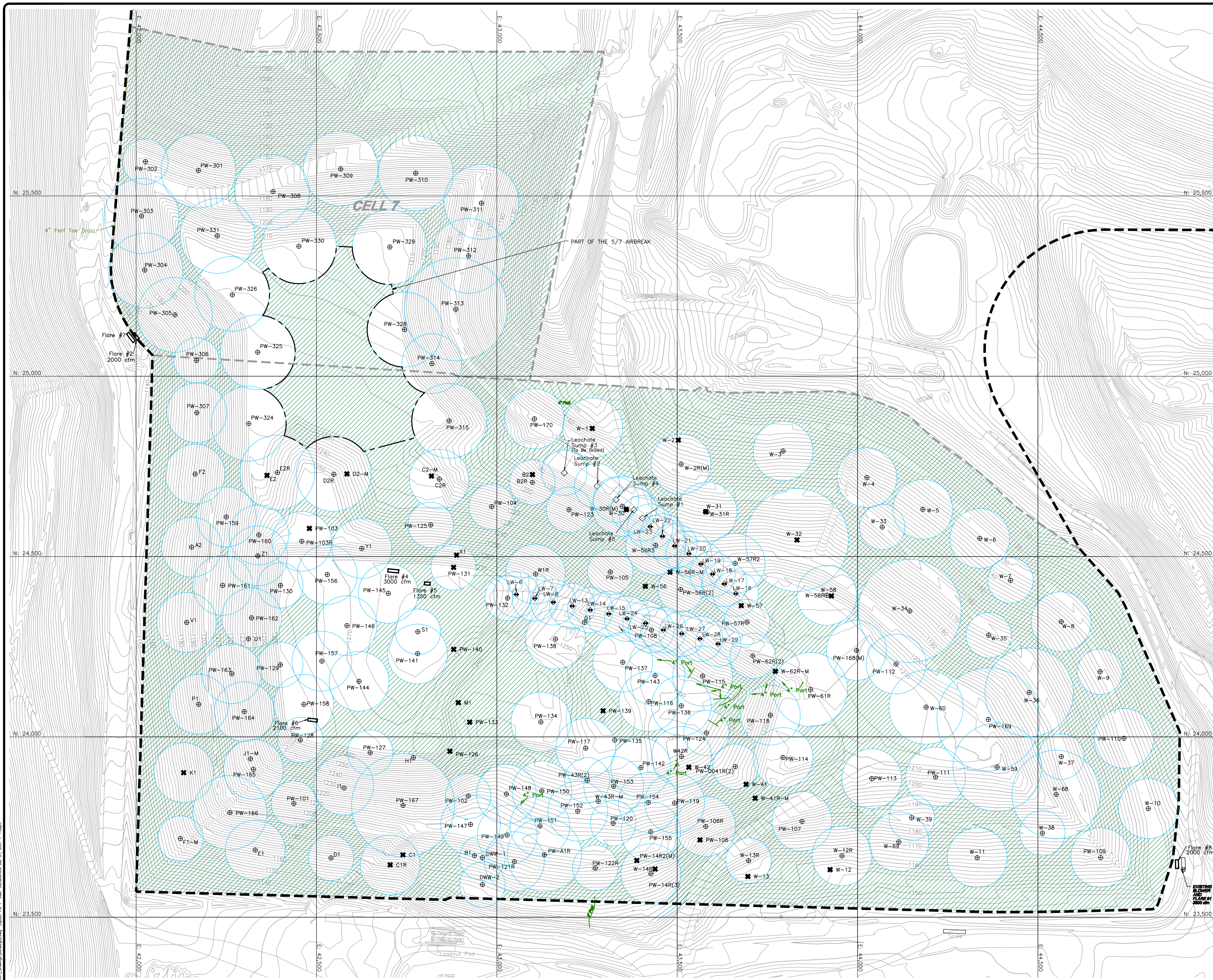
SHEET 1 OF 1

4th Quarter SEM DAY 2

No Hits

MAX Collins

F R S



LEGEND

- EXISTING SOLID WASTE BOUNDARY
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- 5/7 AIRBREAK BOUNDARY
- ⊕ GW-1 EXISTING LFG EXTRACTION WELL
- ✖ W-2 ABANDONED LFG EXTRACTION WELL
- 4" PORT EXISTING BUBBLE SUCKER
- UNIFLUENCED AREA
- RADII OF INFLUENCE

0 100 200
SCALE IN FEET

NOTE:
EXISTING CONTOURS OUTSIDE THE LIMIT OF WASTE WAS COMPLIED FROM AEROCON'S APRIL 18, 2006 AERIAL TOPO. EXISTING CONTOURS WITHIN THE LIMIT OF WASTE WAS COMPLIED FROM DIVERSIFIED ENGINEERING, INC. TOPOGRAPHICAL SURVEY DATED 3/08/07.

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY

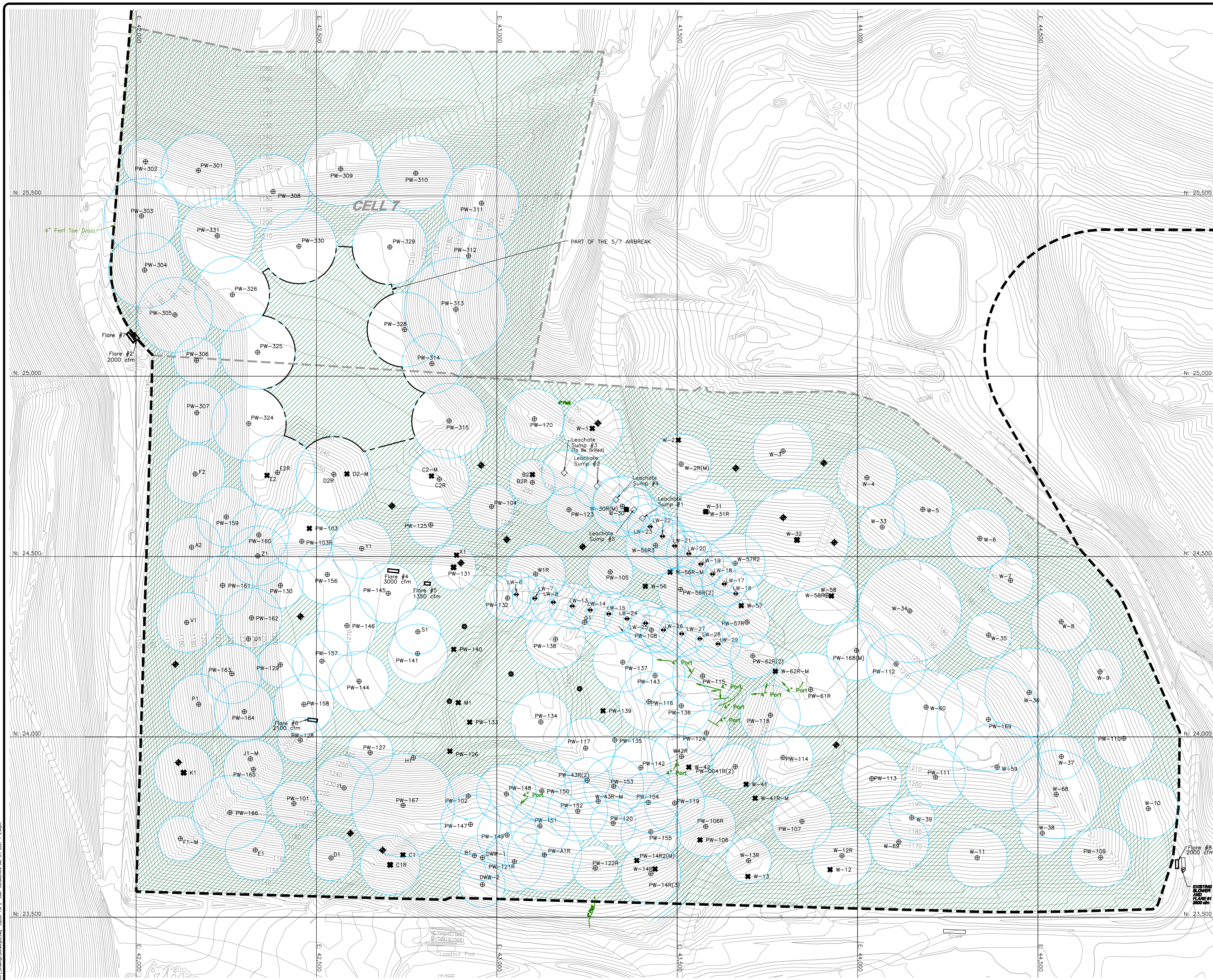
DATE OF ISSUE 12/06/07
DRAWN BY TSS
DESIGNED BY KTK
CHECKED BY MSM
APPROVED BY MSM

CORNERSTONE Environmental Group, LLC

COUNTYWIDE RDF
EAST SPARTA, OHIO

ESTIMATED RADIUS OF INFLUENCE OF EXISTING LFG SYSTEM

FIGURE NO. 1
PROJECT NO. 070187



LEGEND

	EXISTING SOLID WASTE BOUNDARY
1400	EXISTING 10' CONTOUR
	EXISTING 2' CONTOUR
	5/7 AIRBREAK BOUNDARY
⊕ GW-1	EXISTING LFG EXTRACTION WELL
✖ W-2	ABANDONED LFG EXTRACTION WELL
4" PORT	EXISTING BUBBLE SUCKER
	PROPOSED WELL
	PROPOSED BUBBLE SUCKER
	UNINFLUENCED AREA
	RADII OF INFLUENCE

NOTE:
EXISTING CONTOURS OUTSIDE THE LIMIT OF WASTE WAS COMPLIED FROM AEROCON'S APRIL 18, 2006 AERIAL TOPO. EXISTING CONTOURS WITHIN THE LIMIT OF WASTE WAS COMPLIED FROM DIVERSIFIED ENGINEERING, INC. TOPOGRAPHICAL SURVEY DATED 3/08/07.

0 100 200
SCALE IN FEET

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY

DATE OF ISSUE 12/06/07
DRAWN BY TSS
DESIGNED BY KTK
CHECKED BY MSM
APPROVED BY MSM

CORNERSTONE Environmental Group, LLC

COUNTYWIDE RDF
EAST SPARTA, OHIO

PROPOSED GAS COLLECTORS

FIGURE NO. 2
PROJECT NO. 070187

Appendix B
Boring Logs

American Environmental Group Ltd.

Well Log

PROJECT NAME COUNTYWIDE LANDFILL **DATE:** 4/14/2008

PROJECT# 6-07-309 / 1-08-301

Drilling

PW337 WELL NUMBER OR NAME

106 LINEAR FEET OF DRILLING

106 LINEAR FEET OF COMPLETION

0 FT LINEAR FEET OF ABANDONMENT

Time in: 11:10 Time out: 3:36 AM

Weather conditions: sunny

Site conditions: dry

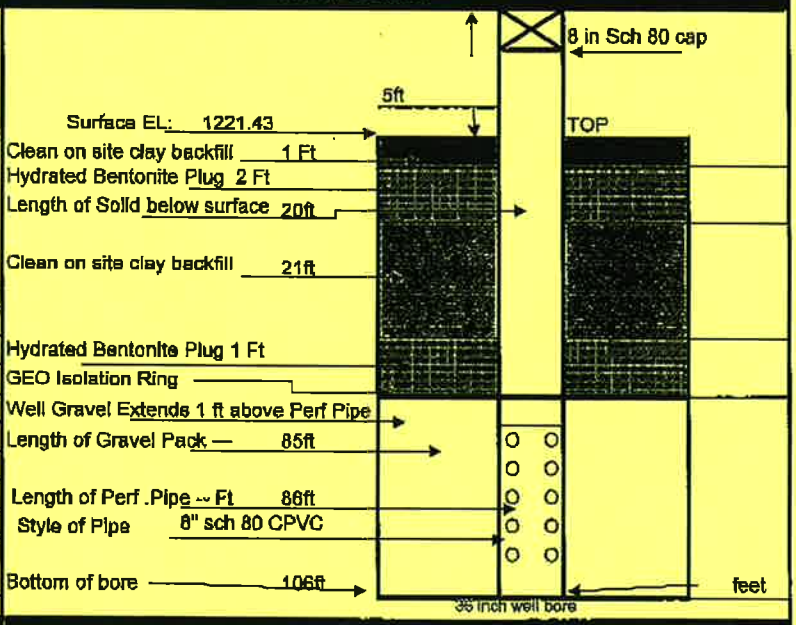
Rig hrs:

Northing: 24861 Easting: 42652.01

NOTES:

Total Benching Time: 0 hr

Well Asbuild



Monitoring Log

Time	OXYGEN	H2S	LEL / CO

Notes

Well Boring Log

Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
0-3	HHT	none	Dry	N/A
3-5	HHT	none	Dry	N/A
5-10	HHT	none	Dry	73
10-20	HHT	none	Dry	85
20-30	HHT	none	Dry	99
30-40	HHT	slight	Dry	106
40-50	HHT	slight	Dry	100
50-60	HHT	slight	Dry	103
60-70	HHT	slight	Dry	111
70-80	HHT	slight	Dry	104
80-90	HHT	slight	Dry	92
90-100	HHT	slight	Dry	100
100-106	HHT	slight	Dry	100
110-120				
120-130				
115-120				
120-125				

CLIENT REPRESENTATIVE DATE

NAME & TITLE

Wade Tufford 4/14/2008

AEGL SITE SUPERVISOR DATE

American Environmental Group Ltd.

Well Log

PROJECT NAME COUNTYWIDE LANDFILL **DATE:** 4/14/2008

PROJECT# 6-07-309 / 1-08-301

Drilling

PW336 WELL NUMBER OR NAME

98 LINEAR FEET OF DRILLING

98 LINEAR FEET OF COMPLETION

0 FT LINEAR FEET OF ABANDONMENT

Time in: 4:15 Time out: 7:00 AM

Weather conditions: sunny

Site conditions: dry

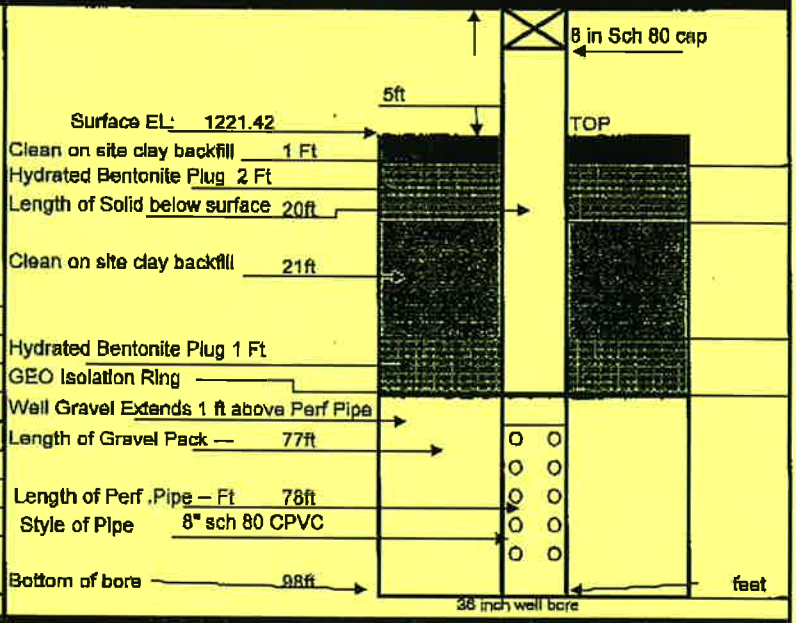
Rig hrs:

Northing: 24861 Easting: 42652.01

NOTES:

Total Benching Time: 0 hr

Well Asbuild



Monitoring Log

Time	OXYGEN	H2S	LEL / CO

Notes

Well Boring Log

Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
0-3	HHT	none	Dry	N/A
3-5	HHT	none	Dry	N/A
5-10	HHT	none	Dry	73
10-20	HHT	none	Dry	85
20-30	HHT	none	Dry	99
30-40	HHT	slight	Dry	106
40-50	HHT	slight	Dry	100
50-60	HHT	slight	Dry	103
60-70	HHT	slight	Dry	111
70-80	HHT	slight	Dry	104
80-90	HHT	slight	Dry	92
90-98	HHT	slight	Dry	100
100-106				
110-120				
120-130				
115-120				
120-125				

CLIENT REPRESENTATIVE DATE

Wade Tufford 4/14/2008

AEGL SITE SUPERVISOR DATE

NAME & TITLE

American Environmental Group Ltd.

Well Log

PROJECT NAME COUNTYWIDE LANDFILL **DATE:** 4/14/2008

PROJECT# 6-07-309 / 1-08-301

Drilling

PW333 WELL NUMBER OR NAME

106 LINEAR FEET OF DRILLING

106 LINEAR FEET OF COMPLETION

0 FT LINEAR FEET OF ABANDONMENT

Time In: 7:25 Time out: 10:45 AM

Weather conditions: sunny

Site conditions: dry

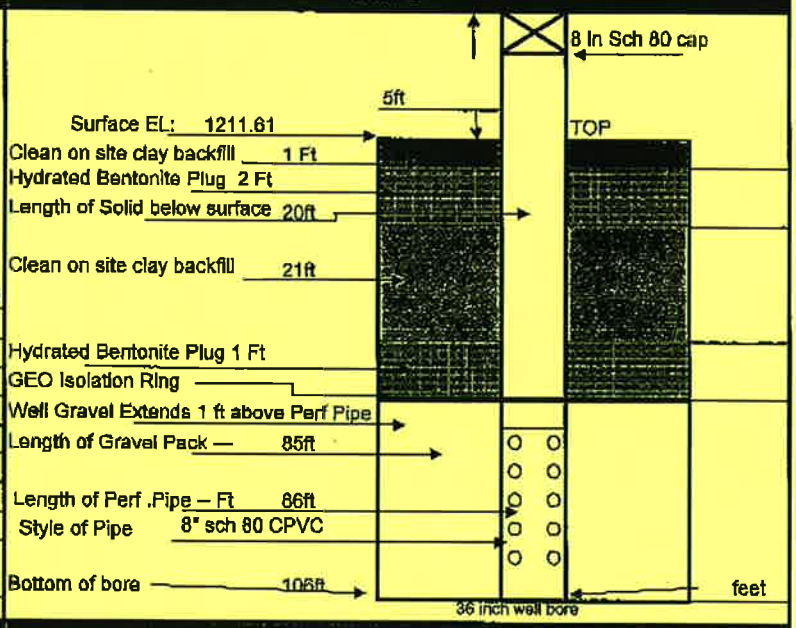
Rig hrs:

Northing: 25219.01 Easting: 42607.01

NOTES:

Total Benching Time: 0 hr

Well Asbuild



Monitoring Log

Time	OXYGEN	H2S	LEL / CO

Notes

Well Boring Log

Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
0-3	HHT	none	Dry	N/A
3-5	HHT	none	Dry	N/A
5-10	HHT	none	Dry	73
10-20	HHT	none	Dry	85
20-30	HHT	none	Dry	99
30-40	HHT	slight	Dry	106
40-50	HHT	slight	Dry	100
50-60	HHT	slight	Dry	103
60-70	HHT	slight	Dry	111
70-80	HHT	slight	Dry	104
80-90	HHT	slight	Dry	92
90-100	HHT	slight	Dry	100
100-106	HHT	slight	Dry	100
110-120				
120-130				
115-120				
120-125				

CLIENT REPRESENTATIVE DATE

NAME & TITLE

Wade Tufford 4/14/2008

AEGL SITE SUPERVISOR DATE

American Environmental Group Ltd.

Well Log

PROJECT NAME COUNTYWIDE LANDFILL **DATE:** 3/12/2008

PROJECT# 6-07-309 / 1-08-301

Drilling

PW173 WELL NUMBER OR NAME

110 LINEAR FEET OF DRILLING

110 LINEAR FEET OF COMPLETION

0 FT LINEAR FEET OF ABANDONMENT

Time In: 7:22 a.m. Time out: 12:00 p.m.

Weather conditions: Sunny

Site conditions: Muddy

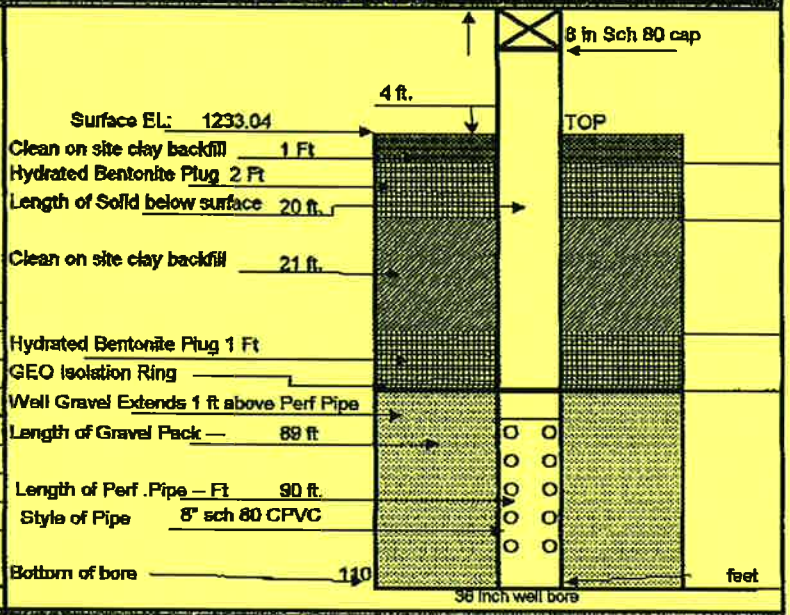
Rig hrs:

Northing: 24641.04 Easting: 42627.01

NOTES:

Total Benching Time: 0 hr

Well Asbuild



Monitoring Log

Time	OXYGEN	H2S	LEL / CO

Notes

Well Boring Log

Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
0-3	HHT	None	Dry	70
3-5	HHT	None	Dry	89
5-10	HHT	None	Wet	79
10-20	HHT	None	Wet	74
20-30	HHT	Moderate	Wet	92
30-40	HHT	Moderate	Wet	87
40-50	HHT	Moderate	Wet	91
50-60	HHT	Moderate	Wet	94
60-70	HHT	Moderate	Wet	101
70-80	HHT	Moderate	Wet	103
80-90	HHT	Moderate	Wet	105
90-100	HHT	Moderate	Wet	110
100-110	HHT	Moderate	Wet	108
110-120				
120-130				
115-120				
120-125				

CLIENT REPRESENTATIVE DATE

NAME & TITLE

Wade Tufford 3/12/2008

AEGL SITE SUPERVISOR DATE

American Environmental Group Ltd.

Well Log

PROJECT NAME COUNTYWIDE LANDFILL **DATE:** 3/7/2008

PROJECT# 6-07-309 / 1-08-301

Drilling

PW 174 WELL NUMBER OR NAME

100 LINEAR FEET OF DRILLING

100 LINEAR FEET OF COMPLETION

0 FT LINEAR FEET OF ABANDONMENT

Time in: 7:47 a.m. Time out: 12:00 p.m.

Weather conditions: Snow

Site conditions: Mud

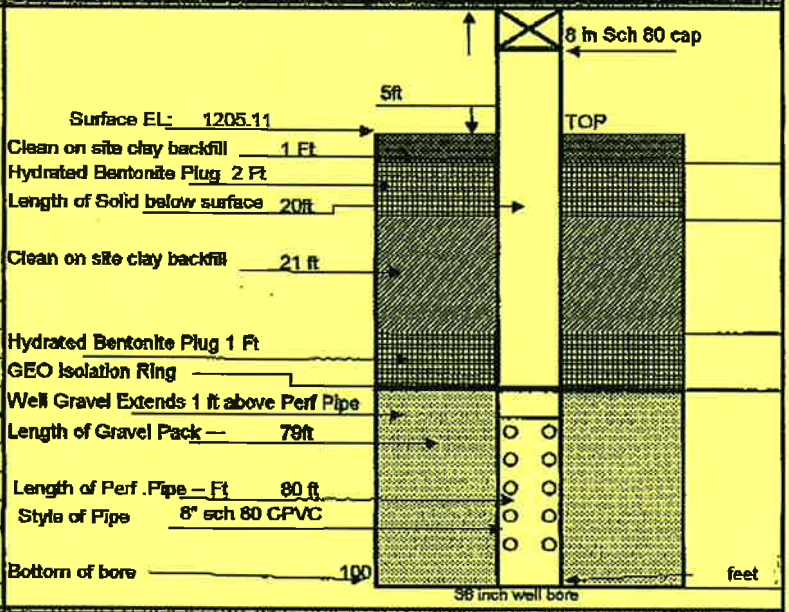
Rig hrs:

Northing: 24706.53 Easting: 42945

NOTES:

Total Benching Time: 0 hr

Well Asbuild



Monitoring Log

Time	OXYGEN	H2S	LEL / CO

Notes

Well Boring Log

Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
0-3	Dirt	None	Dry	N/A
3-5	HHT	None	Dry	N/A
5-10	HHT	None	Dry	70
10-20	HHT	Slight	Wet	80
20-30	HHT	Slight	Wet	85
30-40	HHT	Slight	Wet	90
40-50	HHT	Moderate	Wet	99
50-60	HHT	Moderate	Wet	90
60-70	HHT	Moderate	Wet	110
70-80	HHT	Moderate	Wet	120
80-90	HHT	Moderate	Wet	115
90-100	HHT	Moderate	Wet	121
100-110				
110-120				
120-130				
115-120				
120-125				

CLIENT REPRESENTATIVE DATE

NAME & TITLE

Wade Tufford 3/7/2008

AEGL SITE SUPERVISOR DATE

American Environmental Group Ltd.

Well Log

PROJECT NAME COUNTY WIDE LANDFILL **DATE:** thur 5/31/2007

PROJECT#

Drilling

D-2-R WELL NUMBER OR NAME

120 LINEAR FEET OF DRILLING

120 LINEAR FEET OF COMPLETION

0 FT LINEAR FEET OF ABANDONMENT

Time in: 6 30 AM Time out: 10 30 PM

Weather conditions: WARM SUNNY

Site conditions:

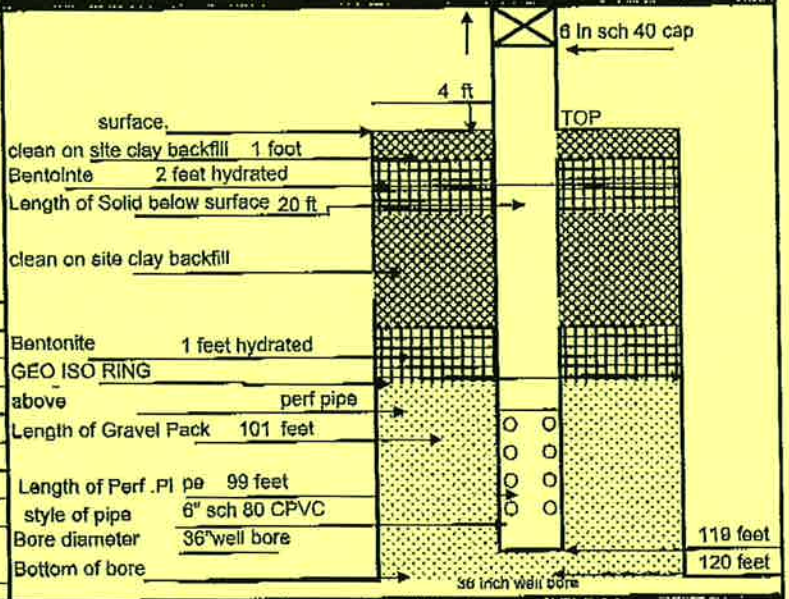
Rig hrs:

Service: Raidiator Grease

NOTES:

Total Benching Time: 1 hr

Well Asbuild



Monitoring Log

Time	OXYGEN	H2S	LEL / CO
6 30	20.9	0	0
7 30	20.9	0	0
8 30	20.9	0	0
9 30	20.9	0	0
10 30	20.9	0	0

Notes

Well Boring Log

Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
0-2	soil cover	none	dry	none
2-5	trash matress	slight	dry	none
5-10	trash paper	slight	dry	72
10 20	trash wood carpet	slight	dry	87
20-30	trash wood tire	moderate	dry	88
30-40	trash wood paper	moderate	dry	77
40-50	trash yard waste	moderate	dry	87
50-60	trash black dirt	moderate	dry	91
60-70	trash plastic	moderate	dry	99
70-80	trash black dirt	heavy	dry	109
80-90	trash black dirt	heavy	dry	123
90-100	trash mulch	heavy	moist	132
100-110	trash rags plastic	heavy	moist	125
110-120	trash black dirt	heavy	moist	132

6/4/07
CLIENT REPRESENTATIVE DATE

BEN Hale, Sr. Field Tech, GAI
NAME & TITLE

TIM BURGY SR. thur 5/31/2006
AEGL SITE SUPERVISOR DATE

American Environmental Group Ltd.

Well Log

PROJECT NAME COUNTY WIDE LANDFILL **DATE:** tue 5/29/2007

PROJECT#

Drilling

E-2-R WELL NUMBER OR NAME

120 LINEAR FEET OF DRILLING

120 LINEAR FEET OF COMPLETION

0 FT LINEAR FEET OF ABANDONMENT

Time in: 6 00 AM Time out: 5 30 PM

Weather conditions: WARM SUNNY

Site conditions:

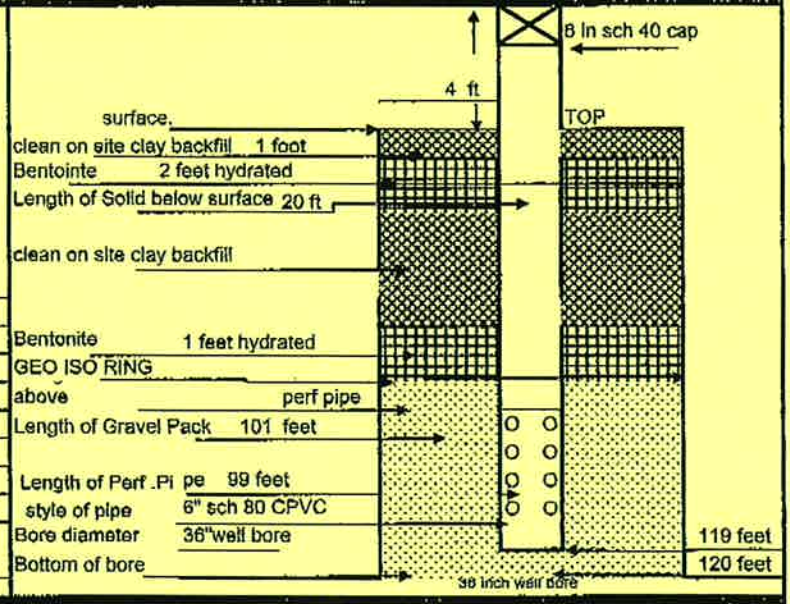
Rig hrs:

Service: Raidiator Grease

NOTES:

Total Benching Time: 0 hr

Well Asbuild



Monitoring Log

Time	OXYGEN	H2S	LEL / CO
7 00	20.9	0	0
8 00	20.9	0	0
9 00	20.9	0	0
10 00	20.9	0	0
11 00	20.9	0	0
12 00	20.9	0	0
1 00	20.9	0	0
2 00	20.9	0	0
3 00	20.9	0	0

Notes

Well Boring Log

Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
0-1	soil cover	none	dry	none
1-5	trash dirt mixed	heavy	dry	none
5-10	trash wood paper	moderate	dry	77
10 20	trash carpet	slight	dry	92
20-30	trash paper tire	slight	dry	103
30-40	trash carpet paper	moderate	dry	94
40-50	trash mulch	moderate	dry	117
50-60	trash metal pipe	moderate	dry	114
60-70	plastic mulch	moderate	dry	116
70-80	trash wood plastic	moderate	dry	127
80-90	trash black dirt	heavy	dry	129
90-100	trash wood plastic	moderate	moist	127
100-110	trash wood	heavy	wet	137
110-120	trash wood paper	heavy	wet	120

5/30/07
CLIENT REPRESENTATIVE DATE

Ben Hake Sr. Field Tech. GAL
NAME & TITLE

TIM BURGY SR. tue 5/29/2006
AEGL SITE SUPERVISOR DATE

American Environmental Group Ltd.

Well Log

PROJECT NAME COUNTY WIDE LANDFILL **DATE:** TUE 612/2007

PROJECT#

Drilling

pw 170 WELL NUMBER OR NAME

37 LINEAR FEET OF DRILLING

37 LINEAR FEET OF COMPLETION

0 FT LINEAR FEET OF ABANDONMENT

Time in: 1 00 AM Time out: 2 00 PM

Weather conditions: HOT SUNNY

Site conditions:

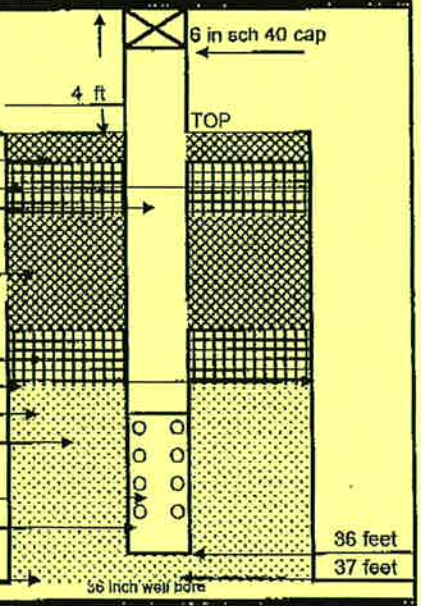
Rig hrs:

Service: Raldiator Grease

NOTES:

Total Benching Time: 0 hr

Well Asbuild



Monitoring Log

Time	OXYGEN	H2S	LEL / CO
1 00	20.9	0	0
2 00	20.9	0	0

Notes 7 00 am calabrate gas meter

Well Boring Log

Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
0-1	soil cover	none	moist	none
1-5	trash paper	none	dry	68
5-10	trash wood paper	moderate	dry	79
10 20	dirt wood plastic	moderate	moist	90
20-30	trash wood paper	moderate	dry	104
30-37	trash log	moderate	dry	96

6/13/07
CLIENT REPRESENTATIVE DATE

Ben Hale, Sr. Field Tech, GAI
NAME & TITLE

TIM BURGY SR. TUE 6/12/2007
AEGL SITE SUPERVISOR DATE

American Environmental Group Ltd.

Well Log

PROJECT NAME COUNTY WIDE LANDFILL **DATE:** THUR 5/31/2007

PROJECT#

Drilling

C-2-R WELL NUMBER OR NAME

120 LINEAR FEET OF DRILLING

120 LINEAR FEET OF COMPLETION

0 FT LINEAR FEET OF ABANDONMENT

Time in: 11 00 AM Time out: 5 30 PM

Weather conditions: WARM SUNNY

Site conditions:

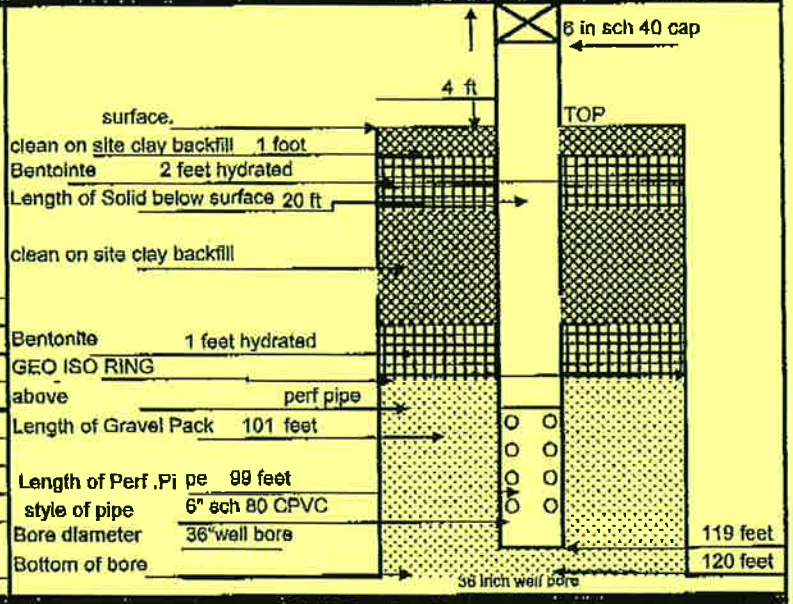
Rig hrs:

Service: Raidiator Grease

NOTES:

Total Benching Time: 1 hr

Well Asbuild



Monitoring Log

Time	OXYGEN	H2S	LEL / CO
11 00	20.9	0	0
12 00	20.9	0	0
1 00	20.9	0	0
2 00	20.9	0	0
3 00	20.9	0	0
4 00	20.9	0	0
5 00	20.9	0	0
5 30	20.9	0	0

Notes

Well Boring Log

Depth	Composition	Degree of Decomp.	Degree of Molsture	Temp
0-1	soil cover	none	dry	none
1-5	trash dirt mixed	heavy	dry	none
5-10	trash yard waste	moderate	dry	76
10 20	trash dirt wood	slight	dry	82
20-30	trash wire	slight	dry	96
30-40	trash wood paper	moderate	dry	108
40-50	trash wood rags	moderate	dry	118
50-60	trash metal	moderate	dry	126
60-70	trash black dirt	moderate	moist	133
70-80	trash black dirt	moderate	molst	139
80-90	trash paper wood	heavy	molst	138
90-100	trash plastic	heavy	wet	139
100-110	paper plastic	heavy	wet	141
110-120	trash wood	heavy	wet	138

6/4/07
CHENT REPRESENTATIVE DATE

BEN Hale, SR. Fidd Tech; GAI
NAME & TITLE

TIM BURGY SR. thur 5/30/2006
AEGL SITE SUPERVISOR DATE

American Environmental Group Ltd.

Well Log

PROJECT NAME COUNTY WIDE LANDFILL **DATE:** thur 5/24/2007

PROJECT#

Drilling

well -326 WELL NUMBER OR NAME

117 LINEAR FEET OF DRILLING

117 LINEAR FEET OF COMPLETION

0 FT LINEAR FEET OF ABANDONMENT

Time In: 6 30 AM Time out: 9 30 AM

Weather conditions: WARM SUNNY

Site conditions:

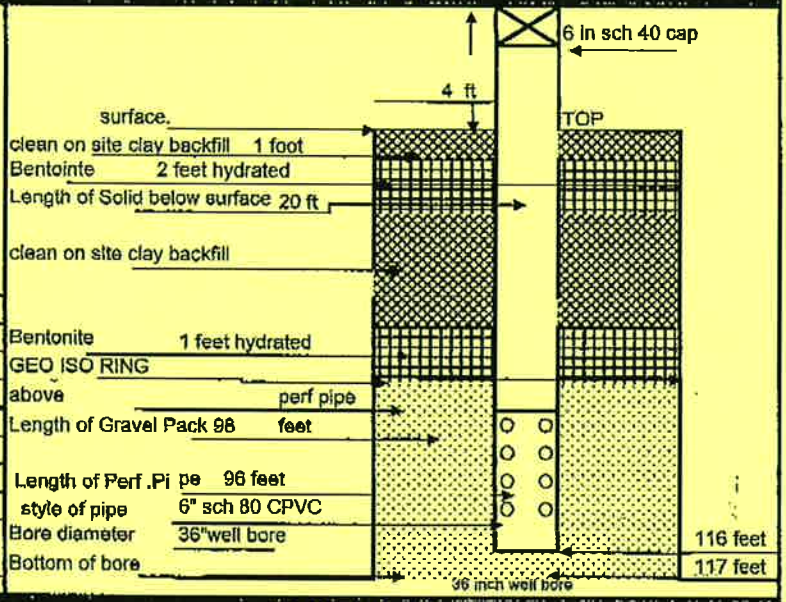
Rig hrs:

Service: Raidiator Grease

NOTES:

Total Benching Time: 0 hr

Well Asbuild



Monitoring Log

Time	OXYGEN	H2S	LEL / CO
6 30	20.9	0	0
7 30	20.9	0	0
8 30	20.9	0	0
9 30	20.9	0	0

Notes

Well Boring Log

Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
0-1	soil cover	none	dry	none
1-5	trash dirt mixed	slight	dry	none
5-10	trash paper	slight	dry	74
10 15	trash paper	slight	dry	77
15-20	wood rags plastic	slight	dry	83
20-30	trash paper wood	slight	dry	97
30-40	carpet wood tire	moderate	dry	120
40-50	trash dirt mixed	moderate	dry	124
50-60	trash paper rubber	moderate	dry	112
60-70	trash plastic mulch	moderate	dry	142
70-80	trash mulch	moderate	dry	144
80-90	trash paper mulch	moderate	dry	119
90-100	trash paper wood	moderate	dry	113
100-110	trash mulch	moderate	dry	105
110-117	trash paper	moderate	dry	108

5/25/07
CLIENT REPRESENTATIVE DATE

TIM BURGY SR. thur 5/24/2006
AEGL SITE SUPERVISOR DATE

NAME & TITLE

American Environmental Group Ltd.

Well Log

PROJECT NAME COUNTY WIDE LANDFILL **DATE:** MON 5/21/2007

PROJECT#

Drilling

well -328 WELL NUMBER OR NAME

79 LINEAR FEET OF DRILLING

79 LINEAR FEET OF COMPLETION

0 FT LINEAR FEET OF ABANDONMENT

Time In: 12 30 pm Time out: 3 30 PM

Weather conditions: WARM SUNNY

Site conditions:

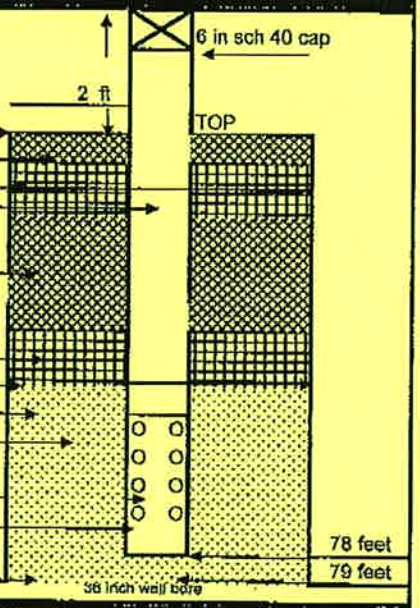
Rig hrs:

Service: Raidiator Grease

NOTES:

Total Benching Time: 1 hr

Well Asbuild



Monitoring Log

Time	OXYGEN	H2S	LEL / CO
12 30	20.9	0	0
1 30	20.9	0	0
2 30	20.9	0	0
3 30	20.9	0	0
	20.9	0	0

Notes

Well Boring Log

Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
0-3	soil cover	none	dry	none
3-5	trash dirt mixed	slight	dry	67
5-10	trash mulch plastic	heavy	dry	73
10 15	trash plastic wire	moderate	dry	81
15-20	trash wood rags	moderate	dry	80
20-25	trash carpet rags	moderate	dry	92
25-30	wood paper mulch	moderate	dry	96
30-35	trash wood paper	moderate	dry	100
35-40	paper wood rags	moderate	dry	105
40-45	trash metal wood	moderate	dry	108
45-50	trash wood rags	moderate	dry	110
50-55	trash wood plastic	moderate	dry	108
55-65	trash metal pipe	heavy	dry	105
65-75	trash black dirt	moderate	dry	109
75-79	trash paper rags	moderate	dry	104

5/22/07
CLIENT REPRESENTATIVE DATE

Ben Hale; Sr. Field Tech - GAI
NAME & TITLE

TIM BURGY SR. MON 5/21/2006
AEGL SITE SUPERVISOR DATE

American Environmental Group Ltd.

Well Log

PROJECT NAME COUNTYWIDE LANDFILL **DATE:** wend 10/4/2006

PROJECT#

Drilling

PW-159 WELL NUMBER OR NAME

118 LINEAR FEET OF DRILLING

118 LINEAR FEET OF COMPLETION

0 FT LINEAR FEET OF ABANDONMENT

Time in: 10 00 AM Time out: 3 00 PM

Weather conditions: cool thunderstorm

Site conditions: MUDDY

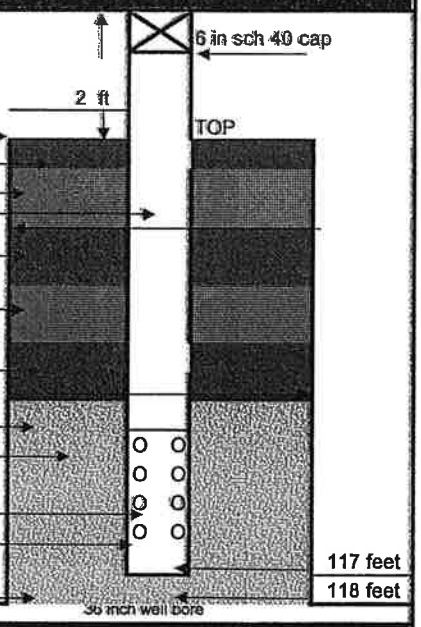
Rig hrs:

Service: Raidiator Grease

NOTES:

Total Benching Time: 2 hr

Well Asbuild



Monitoring Log

Time	OXYGEN	H2S	LEL / CO
7 00			
8 30			
9 00			
10 00	20.9	0	0
11 00	20.9	0	0
11 30	20.9	0	0
1 00	20.9	0	0
2 00	20.9	0	0
3 00	20.9	0	0
4 00			
5 00			
6 00			

Notes

Well Boring Log

Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
0-3	soil cover	none	dry	none
3-5	trash paper	slight	dry	67
5-10	trash paper	slight	dry	69
10 15	trash wire	slight	dry	69
15-20	trash paper	slight	dry	73
20-30	trash paper	slight	dry	79
30-40	trash paper	moderate	dry	87
40-50	trash paper	moderate	dry	93
50-60	trash black dirt	moderate	dry	93
60-70	trash wood paper	moderate	dry	101
70-80	trash wood dirt	moderate	dry	99
80-90	trash plastic	heavy	moist	106
90-100	trash black dirt	moderate	moist	108
100-110	trash black dirt	heavy	moist	115
115-118	trash black dirt	heavy	wet	117

Steven T. Evans 10-4-06
CLIENT REPRESENTATIVE DATE

TIM BURGY SR. wend 10/4/2006
AEGL SITE SUPERVISOR DATE

STEVEN T. EVANS LANDFILL GAS TECHNICIAN
NAME & TITLE

American Environmental Group Ltd.

Well Form

DATE: 06/07/06

PROJECT NAME: Countywide

PROJECT#: 1-06-017

DRILLING

PW-125 WELL NUMBER OR NAME

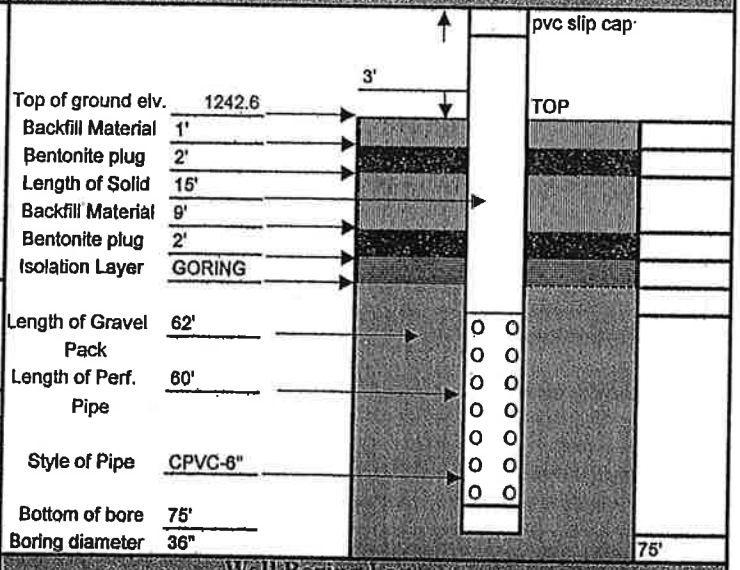
75' LINEAR FEET OF DRILLING

75' LINEAR FEET OF COMPLETION

0' LINEAR FEET OF ABANDONMENT

NOTES:

Well Asbuild



MONITORING LOG

Calibration date:

Time	OXYGEN	H2S	LEL / CO-	Date
07:00				
08:00	209	0	0 0	6-7-06
09:00	209	0	0 0	
10:00	209	0	0 0	
11:00	209	0	0 0	
12:00	209	0	0 0	
01:00				
02:00				
03:00				
04:00				
05:00				
06:00				

Notes

Well Boring Log

Depth	Composition	Degree of Comp.	Degree of Moisture	Temp
0-10	dirt trash tires	slight	damp	77
10-20	trash plastic wire	"	"	88
20-30	trash plastic paper	"	"	82
30-40	trash plastic paper	"	"	92
40-50	trash paper plastic	moderated	"	87
50-60	trash plastic wire	"	"	99
60-70	trash paper carpet	"	"	95
70-80	trash plastic paper	"	"	104
80-90				TD-75'
90-100				
100-110				
110-120				
120-130				
130-140				
140-150				

CLIENT REPRESENTATIVE DATE

NAME & TITLE

David Windland 06/07/06

AEGL SITE SUPERVISOR DATE

American Environmental Group Ltd.

Well Log

PROJECT NAME COUNTYWIDE LANDFILL **DATE:** wend 9/13/2006

PROJECT#

Drilling

PW-305 WELL NUMBER OR NAME

60 LINEAR FEET OF DRILLING

60 LINEAR FEET OF COMPLETION

0 FT LINEAR FEET OF ABANDONMENT

Time in: 9 45 AM Time out: 11 00 AM

Weather conditions: cool rain

Site condit ons wet very muddy

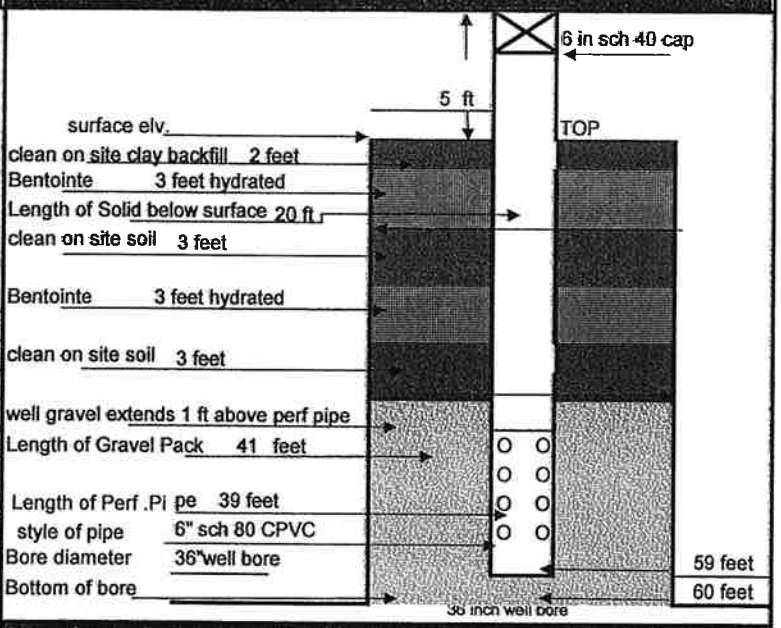
Rig hrs:

Service: Raidiator Grease

NOTES:

Total Benching Time: 0 hr

Well Asbuild



Monitoring Log

Time	OXYGEN	H2S	LEL / CO
7 00			
8 15			
9 00			
9 45	20.9	0	0
10 30	20.9	0	0
11 00	20.9	0	0
1 00			
2 00			
3 00			
4 00			
5 00			
6 00			

Notes

Well Boring Log

Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
0-3	soil cover	none	dry	none
3-5	trash dirt mixed	slight	dry	74
5-10	trash wood paper	slight	dry	77
10 15	trash wood paper	slight	dry	79
15-20	trash wood paper	slight	dry	83
20-25	trash wood paper	moderate	dry	93
25-30	trash dirt mixed	moderate	dry	91
30-35	trash dirt mixed	moderate	dry	93
35-40	trash dirt mixed	moderate	dry	95
40-45	trash wood paper	moderate	dry	94
45-50	trash wood paper	moderate	dry	90
50-55	trash wood paper	moderate	dry	88
55-60	trash wood paper	moderate	dry	86
		TD 60 FEET		

Ben Hale 9/14/06
CLIENT REPRESENTATIVE DATE

Ben Hale, Sr. Field Tech, GAI
NAME & TITLE

TIM BURGY SR. wend 9/13/2006
AEGL SITE SUPERVISOR DATE

American Environmental Group Ltd.

Well Log

PROJECT NAME COUNTYWIDE LANDFILL **DATE:** thru 10/5/2006

PROJECT#

Drilling

PW-307 WELL NUMBER OR NAME

63 LINEAR FEET OF DRILLING

63 LINEAR FEET OF COMPLETION

0 FT LINEAR FEET OF ABANDONMENT

Time in: 4 00 PM Time out: 6 30 PM

Weather conditions: COOL WINDY

Site conditions: MUDDY

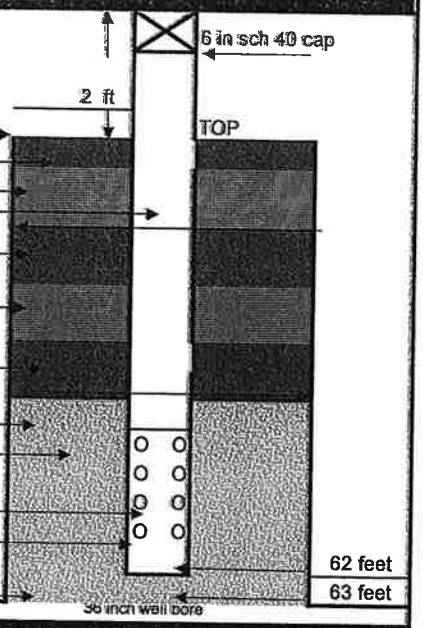
Rig hrs:

Service: Raidiator Grease

NOTES:

Total Benching Time: 3 hr

Well Asbuild



Monitoring Log

Time	OXYGEN	H2S	LEL / CO
7 00			
8 30			
9 00			
10 00			
11 00			
11 30			
1 00			
1 30			
3 00			
4 00	20.9	0	0
5 00	20.9	0	0
6 30	20.9	0	0

Notes

Well Boring Log

Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
0-4	soil cover	none	dry	none
4-5	trash dirt mixed	slight	dry	75
5-10	trash tire wood	slight	dry	84
10 15	trash paper wire	slight	dry	85
15-20	trash paper	slight	dry	83
20-25	trash plastic	slight	dry	85
25-30	trash black dirt	heavy	moist	87
30-35	trash wood paper	heavy	moist	99
35-40	trash wood wire	heavy	moist	103
40-45	trash carper wood	moderate	dry	106
45-50	trash wire dirt	moderate	dry	110
50-55	trash black dirt	heavy	dry	107
55-60	trash paper wood	heavy	dry	111
60-63	trash paper wood	heavy	dry	114
	TD 63 FEET			

Steven T. Evans 10-5-06
CLIENT REPRESENTATIVE DATE

TIM BURGY SR. thru 10/5/2006
AEGL SITE SUPERVISOR DATE

STEVEN T. EVANS LANDFILL GAS TECHNICIAN
NAME & TITLE

146

American Environmental Group Ltd.

Well Log

DATE: 11/27/06

PROJECT NAME: Countywide RDF

PROJECT#: 1-06-305

Drilling

PW-313 WELL NUMBER OR NAME

66 LINEAR FEET OF DRILLING

56 LINEAR FEET OF COMPLETION

____ LINEAR FEET OF ABANDONMENT

Time in: ____ Time out: ____

Weather Conditions: Clear

Site Conditions: Dry

Rig hrs: ____

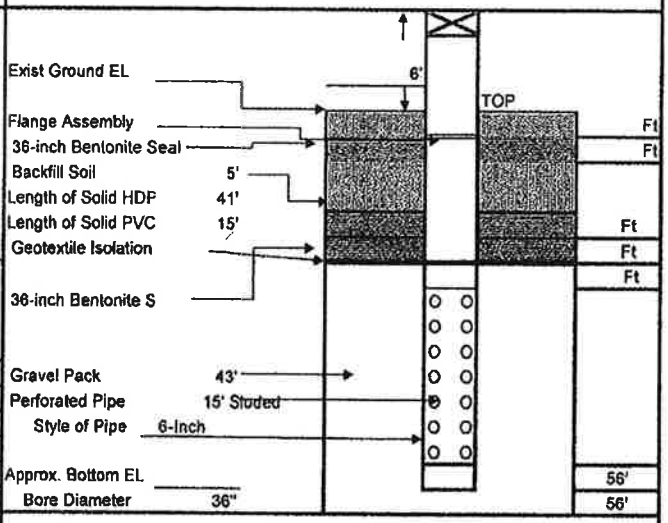
Service: Oil/ Raidiator/ Grease/

NOTES:

Northing

Easting

Well Asbuilt



Monitoring Log

Calibration Date 11/07/04

Time	OXYGEN	H2S	LEL / CO
7:00			
8:00			
9:00			
10:00			
11:00			
12:00			
1:00			
2:00			
3:00			
4:00			
5:00			
6:00			

Notes

Well Boring Log

Depth	Composition	Degree of Decomposition	Degree of Moisture	Waste Temp
0-2	CLAY			
2/10	HT PLASTIC STRING	SL	DRY	82
10/20	HHT TARPS	SL	DRY	84
20-30	HT TARPS CLOTHE	SL	DRY	90
30-40	HHT WOOD	SL	DRY	96
40-50	ARPET HHT PLASTI	MOD	MOIST	100
50-56	PLASTIC HHT WOOD	MOD	MOIST	99

American Environmental Group Ltd.

Well Log

PROJECT NAME COUNTYWIDE LANDFILL **DATE:** THRU 9/13/2006

PROJECT#

Drilling

PW-315 WELL NUMBER OR NAME

71 LINEAR FEET OF DRILLING

71 LINEAR FEET OF COMPLETION

0 FT LINEAR FEET OF ABANDONMENT

Time In: 1 00 pm Time out: 4 00 pm

Weather conditions: cool cloudy

Site conditions: very muddy

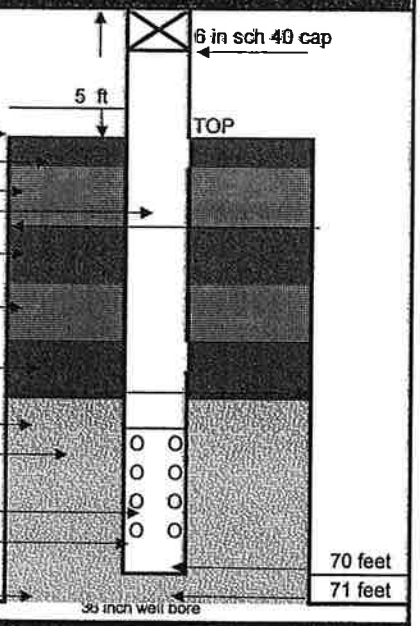
Rig hrs:

Service: Raidiator Grease

NOTES:

Total Benching Time: 0 hr

Well Asbuild



Monitoring Log

Time	OXYGEN	H2S	LEL / CO
7 30			
8 30			
9 30			
10 00			
10 30			
12 00			
1 00	20.9	0	0
2 00	20.9	0	0
3 00	20.9	0	0
4 00	20.9	0	0
5 00			
6 00			

Notes

40 feet newspaper 4/9/2006 good condition.

Well Boring Log

Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
0-1	soil cover	none	dry	none
1-5	trash dirt mixed	slight	dry	76
5-10	trash tires	slight	dry	87
10 15	trash bed springs	slight	dry	95
15-20	trash paper wood	slight	dry	90
20-25	trash paper wood	slight	dry	95
25-30	trash plastic	slight	dry	94
30-35	trash tires	slight	dry	98
35-40	paper wood	slight	dry	104
40-45	trash wood rags	moderate	dry	108
45-50	trash black dirt	moderate	dry	113
50-55	trash black dirt	moderate	dry	117
55-65	trash steel block	moderate	dry	115
65-71	trash wood paper	moderate	dry	114
	TD 71 FEET			

9/15/06
CLIENT REPRESENTATIVE DATE

Ben Hale, Sr. Field Tech; GAI
NAME & TITLE

TIM BURGY SR. thru 9/13/2006
AEGL SITE SUPERVISOR DATE

American Environmental Group Ltd.

Well Log

PROJECT NAME COUNTY WIDE LANDFILL **DATE:** tue 5/22/2007

PROJECT#

Drilling

well -324 WELL NUMBER OR NAME

120 LINEAR FEET OF DRILLING

120 LINEAR FEET OF COMPLETION

0 FT LINEAR FEET OF ABANDONMENT

Time in: 8 00 AM Time out: 5 30 PM

Weather conditions: WARM SUNNY

Site conditions:

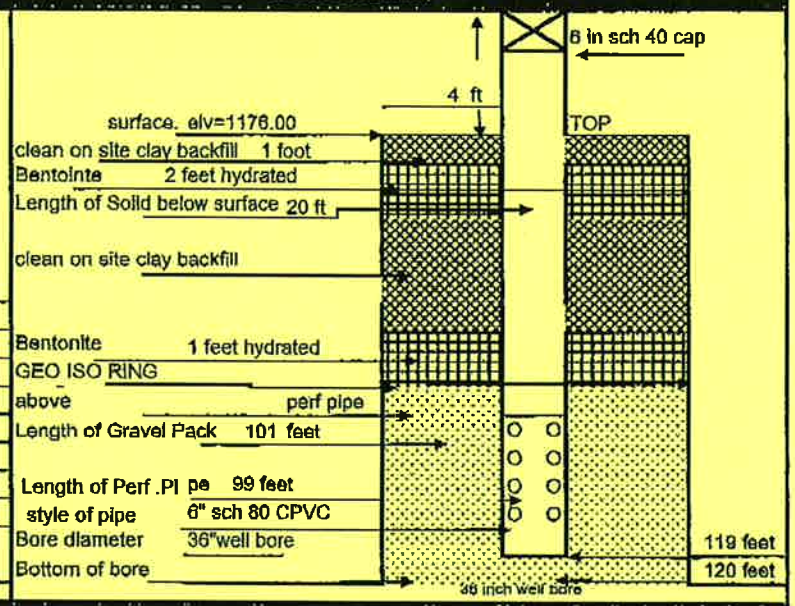
Rig hrs:

Service: Raidiator Grease

NOTES:

Total Benching Time: 0 hr

Well Asbuild



Monitoring Log

Time	OXYGEN	H2S	LEL / CO
8 00	20.9	0	0
9 00	20.9	0	0
10 00	20.9	0	0
11 00	20.9	0	0
12 00	20.9	0	0
1 00	20.9	0	0
3 30	20.9	0	0
4 30	20.9	0	0
5 30	20.9	0	0

Notes

Well Boring Log

Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
0-3	soil cover	none	dry	none
3-5	trash dirt mixed	slight	dry	none
5-10	trash wood paper	slight	dry	88
10 20	trash wood paper	slight	dry	110
20-30	trash paper wood	slight	dry	113
30-40	trash yard waste	moderate	dry	105
40-50	trash carpet wood	moderate	dry	132
50-60	trash black dirt	moderate	dry	124
60-70	trash wire paper	moderate	dry	118
70-80	trash black dirt	moderate	dry	122
80-90	trash black dirt	moderate	dry	137
90-100	trash black dirt	moderate	wet	129
100-110	trash paper wood	moderate	moist	129
110-120	trash paper wood	moderate	moist	128

Burgy Hall 5/23/07
CLIENT REPRESENTATIVE DATE

BEN Hale; Sr. Field Tech - GAI
NAME & TITLE

TIM BURGY SR. tue 5/22/2006
AEGL SITE SUPERVISOR DATE

American Environmental Group Ltd.

Well Log

PROJECT NAME COUNTY WIDE LANDFILL **DATE:** MON 6/4/2007

PROJECT#

Drilling

B-2-R WELL NUMBER OR NAME

75 LINEAR FEET OF DRILLING

75 LINEAR FEET OF COMPLETION

0 FT LINEAR FEET OF ABANDONMENT

Time In: 11 30 AM Time out: 3 30 PM

Weather conditions: WARM SUNNY

Site conditions:

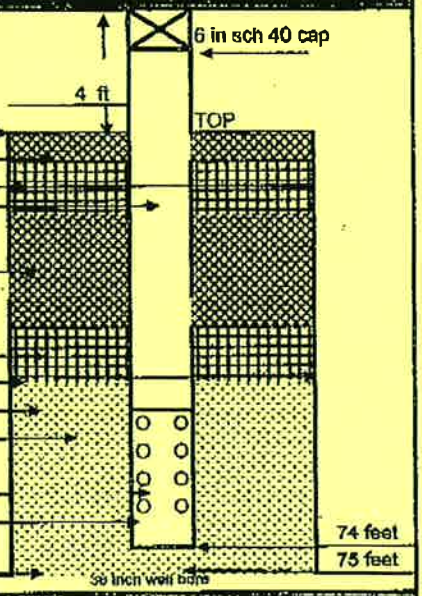
Rig hrs:

Service: Raidiator Grease

NOTES:

Total Benching Time: 0 hr

Well Asbuild



Monitoring Log

Time	OXYGEN	H2S	LEL / CO
11 30	20.9	0	0
12 30	20.9	0	0
1 30	20.9	0	0
2 30	20.9	0	0
3 30	20.9	0	0

Notes

Well Boring Log

Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
0-1	soil cover	none	dry	none
1-5	trash carpet	moderate	dry	102
5-10	trash bed springs	moderate	dry	144
10 20	trash paper	moderate	dry	157
20-30	trash black dirt	moderate	dry	151
30-40	trash paper	moderate	dry	151
40-50	trash black dirt	moderate	wet	145
50-60	trash plastic	heavy	Moist	151
60-70	trash muck	heavy	wet	156
70-75	wood muck	heavy	wet	163

6/5/07
CLIENT REPRESENTATIVE DATE

Ben Hale, Sr. Field Tech, GAT
NAME & TITLE

TIM BURGY SR. MON 6/4/2006
AEGL SITE SUPERVISOR DATE

Appendix C
Thermocouple Cut Sheets

T — Duplex Insulated Copper-Constantan Duplex ANSI Type T

ANSI Color Code: Positive Wire, Blue; Negative Wire, Red; Overall, Brown
OMEGA Engineering does not use reprocessed PFA or PVC in manufacturing thermocouple wire.

MOST POPULAR MODELS HIGHLIGHTED!

Insulation	AWG No.	Model Number	Price/ 1000'	SLE/ 1000'†††	Type Wire	Insulation: Conductor	Insulation: Overall	Max Temp °C	Max Temp °F	Nominal Size mm (inches)	Wt. kg/300 m† (lb/1000')
Glass	20	**GG-T-20**	**$365**	**$430**	Solid	Glass Braid	Glass Braid	260	500	1.5 x 2.4 (0.060 x 0.095)	4 (9)
	20	**GG-T-20S**	**460**	**550**	7 x 28	Glass Braid		260	500	1.5 x 2.5 (0.060 x 0.100)	4 (9)
	24	**GG-T-24**	**265**	**305**	Solid	Glass Braid		200	400	1.3 x 2.0 (0.050 x 0.080)	3 (5)
	24	**GG-T-24S**	**420**	**500**	7 x 32	Glass Braid		200	400	1.3 x 2.2 (0.050 x 0.085)	3 (5)
	26	**GG-T-26**	**230**	**280**	Solid	Glass Braid		200	400	1.1 x 1.9 (0.045 x 0.075)	2 (4)
	28	**GG-T-28**	**220**	**255**	Solid	Glass Wrap		200	400	1.0 x 1.4 (0.040 x 0.055)	2 (3)
	30	**GG-T-30**	**225**	**270**	Solid	Glass Wrap		150	300	0.9 x 1.3 (0.037 x 0.050)	2 (3)
Glass with Stainless Steel Overbraid	20	**GG-T-20-SB**	**710**	**850**	Solid	Glass	SS Braid Over Glass	482	900	2.2 x 3.0 (0.090 x 0.120)	6 (14)
	24	**GG-T-24-SB**	**495**	**595**	Solid			482	900	2.2 x 3.0 (0.085 x 0.117)	5 (11)
Kapton Polymide Tape	20	**KK-T-20**	**870**	**990**	Solid	Fused Polymide Tape	Fused Polymide Tape	316	600	1.5 x 2.5 (0.060 x 0.100)	5 (11)
	24	**KK-T-24**	**660**	**755**	Solid			316	600	1.3 x 1.9 (0.050 x 0.075)	3 (6)
	30	**KK-T-30**	**650**	**750**	Solid			316	600	1.0 x 1.4 (0.040 x 0.055)	3 (5)
PFA Glass	30	**TG-T-30**	**480**	**-**	Solid	PFA	Glass Braid	150	300	0.9 x 1.2 (0.034 x 0.047)	1 (2)
	36	**TG-T-36**	**550**	**-**	Solid			150	300	0.7 x 1.0 (0.028 x 0.038)	1 (2)
	40	**TG-T-40**	**620**	**-**	Solid			150	300	0.7 x 0.9 (0.026 x 0.035)	1 (2)
Neoflon PFA (High Performance)	20	**TT-T-20**	**455**	**515**	Solid	PFA	PFA	260	500	1.7 x 3.0 (0.068 x 0.116)	5 (11)
	20	**TT-T-20S**	**595**	**715**	7 x 28			260	500	1.9 x 3.2 (0.073 x 0.126)	5 (11)
	22	**TT-T-22S**	**580**	**695**	7 x 30			260	500	1.7 x 3.4 (0.065 x 0.133)	4 (9)
	24	**TT-T-24**	**370**	**415**	Solid			200	400	1.4 x 2.4 (0.056 x 0.092)	3 (7)
	24	**TT-T-24S**	**400**	**485**	7 x 32			200	400	1.6 x 2.6 (0.063 x 0.102)	3 (7)
	30	**TT-T-30††**	**390**	**430**	Solid			150	300	0.6 x 1.0 (0.024 x 0.040)	1 (2)
	36	**TT-T-36††**	**450**	**495**	Solid			150	300	0.5 x 0.8 (0.019 x 0.030)	1 (2)
	40	**TT-T-40††**	**590**	**650**	Solid			150	300	0.4 x 0.7 (0.017 x 0.026)	1 (2)
PFA Polymer w/Twisted and Shielded Conductors	20	**TT-T-20-TWSH**	**975**	**1125**	Solid	PFA Polymer	PFA Polymer and Shielding	260	500	3.7 (0.15)	9 (20)
	20S	**TT-T-20S-TWSH**	**1170**	**1405**	7 x 28			260	500	3.8 (0.15)	9 (20)
	24	**TT-T-24-TWSH**	**560**	**645**	Solid			260	500	2.7 (0.11)	4 (9)
	24S	**TT-T-24S-TWSH**	**670**	**805**	7 x 32			260	500	2.9 (0.12)	4 (9)
Neoflon FEP	20	**FF-T-20**	**430**	**540**	Solid	FEP	FEP	200	392	1.7 x 3.0 (0.068 x 0.116)	5 (11)
	24	**FF-T-24**	**335**	**345**	Solid			200	392	1.4 x 2.4 (0.056 x 0.092)	3 (7)
FEP Polymer w/Twisted and Shielded Conductors	20	**FF-T-20-TWSH**	**735**	**845**	Solid	FEP Polymer	FEP Polymer and Shielding	200	392	3.7 (0.15)	9 (20)
	20S	**FF-T-20S-TWSH**	**885**	**1060**	7 x 28			200	392	3.8 (0.15)	9 (20)
	24	**FF-T-24-TWSH**	**425**	**490**	Solid			200	392	2.7 (0.11)	4 (9)
	24S	**FF-T-24S-TWSH**	**505**	**610**	7 x 32			200	392	2.9 (0.12)	4 (9)
TFE Tape Polymer	20	**TFE-T-20**	**450**	**510**	Solid	TFE Tape Polymer	Fused TFE Tape Polymer	260	500	1.5 x 2.5 (0.060 x 0.100)	5 (11)
	20S	**TFE-T-20S**	**570**	**650**	7 x 28			260	500	1.5 x 2.7 (0.060 x 0.105)	5 (11)
	24	**TFE-T-24**	**315**	**350**	Solid			260	500	1.3 x 1.9 (0.050 x 0.075)	3 (6)
	24S	**TFE-T-24S**	**370**	**415**	7 x 32			260	500	1.3 x 2.2 (0.050 x 0.085)	3 (6)
Polyvinyl	24	**PP-T-24**	**265**	**305**	Solid	Polyvinyl	Polyvinyl	105	221	1.9 x 3 (0.075 x 0.120)	5 (10)
	24	**PP-T-24S**	**335**	**400**	7 x 32			105	221	1.9 x 3.1 (0.080 x 0.130)	5 (10)
	24	**PR-T-24**	**155**	**175**	Solid		Polyvinyl (Rip Cord)**	105	221	1.3 x 2.2 (0.050 x 0.086)	3 (5)

See Fused Tape Insulated TFE-T Series.
*** Two insulated leads bonded together, but with no overjacket.*
† Weight of spool and wire rounded to the next highest lb. (does not include packing material).
†† Overall color clear, ††† To order special limits of error wire, add "-SLE" to model number before spool length.
Ordering Example: TT-T-24-SLE-1000,** 1000' (300 m) of Type T duplex insulated special limits of error thermocouple wire, **$485.

ANSI color code shown | **To order IEC color code see page A-9**

Discount Schedule *(1000 ft spools only)*

3 to 4 spools	10%
5 to 9 spools	15%
10 to 19 spools	20%

SPOOL PRICING

STANDARD SPOOL LENGTHS

7.5 m (25')	***60 m (200')***
15 m (50')	***150 m (500')***
30 m (100')	***300 m (1000')***

FOR LONGER LENGTHS CONSULT SALES FOR PRICE AND DELIVERY!

To order standard length spools, multiply the 300 m or 1000' spool price by the multiplier and round to the nearest dollar.

Example: GG-K-20-50, 50' (15 m) spool of GG-K-20 wire = $410 x 0.1 = **$41**

Spool Pricing Guidelines
Multiply 300 m or 1000' spool price by multiplier and round to the nearest dollar. Consult Sales for price quote.
7.5 m or 25' = Price from Chart x 0.0625
15 m or 50' = Price from Chart x 0.1
30 m or 100' = Price from Chart x 0.175
60 m or 200' = Price from Chart x 0.3
150 m or 500' = Price from Chart x 0.5
300 m or 1000' = Price from Chart x 1.0

Note: Published prices are based on market value at time of printing and are subject to change due to Nickel surcharges, Chromium and precious-metal market fluctuations.

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• Flow and Level

Air Velocity Indicators, Doppler Flowmeters, Level Measurement, Magnetic Flowmeters, Mass Flowmeters, Pitot Tubes, Pumps, Rotameters, Turbine and Paddle Wheel Flowmeters, Ultrasonic Flowmeters, Valves, Variable Area Flowmeters, Vortex Shedding Flowmeters

• pH and Conductivity

Conductivity Instrumentation, Dissolved Oxygen Instrumentation, Environmental Instrumentation, pH Electrodes and Instruments, Water and Soil Analysis Instrumentation

• Data Acquisition

Auto-Dialers and Alarm Monitoring Systems, Communication Products and Converters, Data Acquisition and Analysis Software, Data Loggers Plug-in Cards, Signal Conditioners, USB, RS232, RS485 and Parallel Port Data Acquisition Systems, Wireless Transmitters and Receivers

• Pressure, Strain and Force

Displacement Transducers, Dynamic Measurement Force Sensors, Instrumentation for Pressure and Strain Measurements, Load Cells, Pressure Gauges, Pressure Reference Section, Pressure Switches, Pressure Transducers, Proximity Transducers, Regulators, Strain Gages, Torque Transducers, Valves

• Heaters

Band Heaters, Cartridge Heaters, Circulation Heaters, Comfort Heaters, Controllers, Meters and Switching Devices, Flexible Heaters, General Test and Measurement Instruments, Heater Hook-up Wire, Heating Cable Systems, Immersion Heaters, Process Air and Duct, Heaters, Radiant Heaters, Strip Heaters, Tubular Heaters

• *click here to go to the omega.com home page* •

Appendix D
Job Task Safety Analysis

Gas Well Drilling and Installation Activities JOB SAFETY ANALYSIS FOR COUNTYWIDE WORK ACTIVITIES		
Personal Protective Equipment (PPE)	**Selected**	**Comments**
Safety Shoes	X	As required
Hard Hat	X	As required
Safety Glasses With Side Shields	X	Project Specific
High Visibility Clothing or Traffic Vest	X	As required
Air Purifying Respirator	X	If site-specific monitoring indicated use is necessary
Supplied Air – Level B	X	If site-specific monitoring indicated use is necessary
Gloves	X	Nitrile, PVC or similar for potentially contaminated material. Heavy duty work gloves for material handling.
Other	X	Four-gas meter capable of monitoring O2, LEL, CO, and H2S and other meter(s) as directed by PHSO.

Potential Hazard	**Controls**
Chemical exposure: hydrogen sulfide, carbon monoxide, VOCs	Compliance with Section 6, Exposure Monitoring. Wash hands before eating or drinking. Hazard communication labels on all chemical containers. MSDSs onsite for all chemicals in use. Site-specific training must address chemicals, hazards, and proper handling. Safety glasses and nitrile gloves for chemical/contaminant contact, or PPE as required based on the meter readings. Maintaining combustible gas concentrations below 25% LEL will generally maintain VOC concentrations below action level. If instructed by PHSO, monitor for VOCs. If VOC concentrations in breathing zone in exclusion zone exceed action level of 10 ppm, cease operations and allow to dissipate. If combustible VOC concentrations in breathing zone in exclusion zone remain above the 10 ppm action level, provide additional active ventilation to reduce concentration below action level. If ventilation is not successful in reducing VOC concentrations in breathing zone in exclusion area below action level, implement Level B supplied air PPE. Review in tailgate meeting.
Contact with overhead structures or utilities	Survey location and ensure absence of obstructions and overhead utilities prior to setup. Equipment will not be allowed to come within 10 feet overhead power lines. Use spotter when working near utilities. Review in tailgate meeting.
Electric Shock	Compliance with Countywide Electrical Procedures. Portable electrical tools and all portable electrical equipment must be connected through ground fault circuit interrupters.

Drilling Activities Job Safety Analysis, cont.
Countywide RDF

Potential Hazard	Controls
Excavation collapse	Excavation conducted under the direction of the OSHA Excavation Competent Person. Slope per stability analysis. Inspect excavation daily. Use only properly trained workers for excavation activities. Manufactured protective systems to be used per OSHA requirements. Provide proper ingress and egress per OSHA requirements. Provide warning system when mobile equipment is operated near the edge of an excavation and the operator does not have a clear, direct view of the edge of the excavation. Dust control as needed. Place barricades and signs as required to warn and direct personnel not involved in the work. Cover or barricade and post wells, sumps, pits and holes as appropriate. Backfill temporary excavations as soon as possible.
Falling equipment	No workers under suspended loads.
Fire	No smoking during fueling. Equipment to be turned off during fueling. Allow gasoline-powered equipment to cool prior to fueling. Fire extinguisher rated 2A and 5BC (serviced annually and inspected monthly) in all fuel handling areas.
Fire/Explosion: methane, hydrogen, carbon monoxide, acetylene, hydrogen sulfide	No smoking near borehole. Monitoring of landfill gas in accordance with Section 6. If combustible gas concentration in atmosphere in exclusion zone exceeds 25% LEL, cease operations and allow to dissipate before resuming operations. If combustible gas concentration in atmosphere in exclusion zone remain above 25% LEL, provide additional active ventilation to reduce concentration below 25% LEL. Standby equipment and materials available for use in managing small fires. Extinguish small fires by smothering with soil from the stockpile maintained in close proximity to the drilling and excavation areas. If attempts to extinguish the fire are unsuccessful, implementation of the Incident Emergency Response Plan.
General hazards	Work performed in accordance with Countywide specific procedures and OSHA Regulations. Level D PPE, minimum. Establish exclusion zone in vicinity of borehole. Ground personnel limited to necessary personnel only. Unnecessary personnel will stay out of the drilling or excavation exclusion area. Particular attention paid to sloping site conditions. Operators to stay in enclosed cabs where available.
Lifting (musculoskeletal injuries)	If equipment is to be moved, an evaluation of potential pinch points and/or weight strain will be conducted. Clear area of all unnecessary equipment and slip/trip hazards. Additional help will be obtained by workers or mechanical assistance used onsite if equipment to be moved is unwieldy, has a weight >50 lbs or has to be moved by maneuvering through awkward positioning. Ensure gloves are available and used.
Lighting	Artificial lighting must provide a minimum of 5 ft-candles of even lighting in the work area for work conducted before sunrise and after twilight.
Noise	Use hearing protection when monitoring indicates that noise levels are equal to or greater than 85 decibels.

Drilling Activities Job Safety Analysis, cont.
Countywide RDF

Potential Hazard	Controls
Pinch hazards	Keep hands clear of all articulated or moving parts. Guards shall be maintained for all machinery representing a pinch hazard. Maintenance on equipment with articulating or moving parts shall be performed only after control keys have been put under control by competent mechanics/operators only. Ensure all hands are clear of potentially moving part before energizing equipment.
Risk of being struck by vehicles	Face line of danger with respect to being struck by vehicles. Eye contact with operator when walking up to or around heavy equipment. Stay out of swing range. Heavy Equipment equipped with functional backup alarm.
Rotating and/or moving equipment	Avoid loose fitting clothing or gloves around rotating equipment. Allow all moving parts to stop before handling
Slips/falls from equipment	Always use 3-point mount/dismount. Do not jump from equipment. Utilize approved mounting steps, brackets, hand-holds, or rails.
Struck by moving/mobile equipment	Operators required to have documented training and 1 years of experience operating the type of equipment to be used. Periodic safety inspection of equipment at frequency given in operator manual to be performed by operator. Functional backup alarms required on all mobile equipment. Operator manual onsite at all times. Workers will maintain a safe distance equivalent to the full, extended reach of all moving/mobile equipment. Approach mobile/moving equipment only after getting permission of the operator. Maintain visual contact with equipment operators at all times. Personnel shall not place themselves between Heavy Equipment and fixed objects.
Temperature stress	If temperature is above 80°F or below 40°F, administrative controls will be implemented (cooled or warmed drinks, routine breaks in heated or shaded area, provisions, for emergency heating or cooling).
Tipping over hazards	Load limits and capacities for loading and hauling equipment strictly adhered to. Always dump on level ground.
Vehicle Accidents	All Countywide traffic laws including speed limits and use of seat belts strictly adhered to. Only licensed drivers to operate vehicles. Vehicles and heavy equipment inspected at beginning of work shift. Vehicle and Equipment traffic must be controlled and directed.
Visibility	If condensation is produced in significant quantities to affect worker visibility, ventilation will be used to clear the area to ensure visibility is maintained.
Lightning	Operation of drilling rig will cease when driller recognizes conditions that present a risk of lightning, including visible lightning, audible thunder.

Approved By:

_____ _____
Project Coordinator Date

_____ _____
Site QA/QC Manager Date

_____ _____
PHSO Date

_____ _____
Contractor Superintendent Date

_____	_____
Contractor Superintendent	Date
_____	_____
Contractor Superintendent	Date

Appendix E
Odor Neutralizer MSDS Sheets

Clean World Industries – Sharpsville, PA – 724-962-0720

Material Safety Data Sheet **Date: 03/07/2004**

SECTION I—PRODUCT IDENTIFICATION

NAME: Lotus	**PRODUCT CODE - ONCL**

DOT CLASS: Non-regulated
UN NUMBER: NA
PROPER SHIPPING NAME: NA

HMIS RATING

HEALTH	1	FIRE	0	REACTIVITY	0

SECTION II - INGREDIENTS

ALL COMPONENTS APPEAR ON THE TSCA INVENTORY. COMPONENTS NOT LISTED IS EITHER NON-HAZARDOUS OR IN CONCENTRATIONS OF LESS THAN 1%.

Ingredient Name	CAS Number	Wt%	OSHA PEL	ACGIH TLV/TWA
Organic Essential Plant Oils	NA	40 to 60%	NA	NA
Ethoxylated Alcohol Surfac.	78330-21-9	40 to 50%	NA	NA
The product is non toxic, non flammable and completely biodegradable				

SECTION III – PHYSICAL CHARACTERISTICS

Boiling Point (deg F)	>212	**Appearance and Odor**	Clear, yellow, fragrant
Specific Gravity	.980	**Melting Point**	NA
pH	7.0 – 8.0	**Vapor Density**	No data
Vapor Pressure	No data	**Solubility**	Complete

SECTION IV – FIRE/EXPLOSION

Flash Point: deg F	>190
Flash Point Method Used:	PM closed cup
LEL	NA
UEL:	NA

Extinguishing Media: Water spray, carbon dioxide, and dry chemical powder**.**
Special Fire Fighting Procedures: None
Unusual Fire and Explosion Hazards: None known.

SECTION V – REACTIVITY DATA

Stable: X **Unstable:**
Incompatibility: Mix only with water
Hazardous Decomposition or By Products: Oxides of carbon
Hazardous Polymerization: Will not occur.

SECTION VI – HEALTH HAZARD DATA

Acute Health Affects

Routes of Entry:	**Inhalation:** No	**Absorption:** Yes	**Ingestion:** Yes	**Eyes:** Yes

Eyes: This product may cause eye irritation.
Skin Contact: Could cause mild skin irritation after prolonged contact.
Ingestion: Ingestion may result in stomach distress, nausea and vomiting.
Conditions to Avoid: Strong acids or alkali compounds.
Signs and Symptoms of Over Exposure: None Known
Aggravated Medical Conditions: None known, however persons with respiratory problems should avoid breathing mist from this product.

Emergency First Aid Procedures

Eye Contact: Rinse eyes with water for fifteen minutes, if irritation persists, see a physician.
Inhalation: Not a normal route of entry. If symptoms develop move to fresh air
Skin Contact: Wash the product off the skin with soap and water; if irritation develops seek the care of a physician.
Ingestion: Watch victim for any signs of illness, induce vomiting only if advised by a physician.

SECTION VII – SPILL OR LEAK PROCEDURE

Steps to be taken in case material is spilled or leaked:

Waste Disposal Method: Contain and collect material, place in proper container for reuse or disposal.
Dispose of materials in accordance with all federal, state and local laws.
Precautions To Be Taken In Handling and Storage: Keep away from children, food items and incompatible materials. Store in an area out of the direct sunlight, keep container closed when not in use, avoid storing in a damp environment. Always wash hands with soap and water before handling food or smoking. Use good chemical hygiene practices when working with any chemical.
Other Precautions: None

SECTION VIII – CONTROL MEASURES (PPE)

Respiratory Protection: None required for normal use.
Protective Gloves: Recommended. Disposable nitrite exam gloves are suitable for preventing prolonged contact with the skin.
Eye Protection: Safety glasses with side shields or splash goggles are recommended.
Other Protective Clothing: None required, however, avoid prolonged contact with the skin from soiled clothing.
Ventilation: Local exhaust should be sufficient. If used in a manner that creates a mist, mechanical ventilation may be necessary.

The information and recommendations contained in this Material Safety Data Sheet have been compiled from sources believed to be reliable and to represent current opinion on the subject when the MSDS was prepared. No warranty, guaranty or representation is made as to the correctness or sufficiency of the information. The user of this product must decide what safety measures are necessary to safely use this product, either alone or in combination with other products, and determine its environmental regulatory compliance obligations under any applicable federal, state and local laws.