REMEDIAL ACTION PLAN
FORMER ROSEMERGY'S STORE/GARAGE
USTIF CLAIM NUMBER: 2011-0082(S)
1623 ROUTE 590
LACKAWAXEN TWP., PIKE CO.
PENNSYLVANIA

FOR

LOCHGEN, LP
731 WELCOME LAKE ROAD
HAWLEY, PENNSYLVANIA 18428

Project Number: 11-17788-03

July 15, 2015

BY

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EXECUTIVE SUMMARY

The following is an Executive Summary of this submittal that was prepared by Converse Consultants (Converse). Please refer to the appropriate sections of the report for a complete discussion of these issues. In the event of a conflict between this Executive Summary and the report, or an omission in the Executive Summary, the report shall prevail.

Converse Consultants (Converse), on behalf of Lochgen, LP, submits this Remedial Action Plan (RAP) for the Former Rosemergy's Store/Garage Property at 1623 State Route 590, Lackawaxen Township, Pennsylvania (Property). The RAP was prepared to address impacted media at the Facility in accordance with the requirements of *25 Pennsylvania Code Chapter 245* (§245). *Subchapter D: Corrective Action Process for Owners and Operators of Storage Tanks and Storage Tank Facilities and Other Responsible Parties*; and the remediation standards that are promulgated in *25 Pennsylvania Code Chapter 250* (§250)*: Administration of the Land Recycling Program.*

At the time this Report was submitted, the Facility was a gas station and convenience store. The use of properties that are adjacent to the Facility is primarily residential. The NRMSC SHS (used aquifer, TDS < 2500), as defined in Act 2: Section 303 and §250*:* Subchapter C, is the cleanup standard that is selected for soil and groundwater beneath the Site.

A release of petroleum product was discovered during the closure of USTs in July 2011.

The Former Rosemergy's Property is located in Lackawaxen Township, Pennsylvania. The area in the immediate vicinity of the Property is primarily flat. One building is present at the Facility. The Facility is served by public water and sewer.

Initial site Characterization activities were completed during the period of July 2011 to August 2014. Site Characterization is documented in the Site Characterization Report prepared by Converse Consultants that was submitted to PADEP dated August 7, 2014 (2014 SCR).

Topography, hydrology, and water level data indicate that groundwater flow beneath the Property generally consists of westward and southeastward components.

Converse recommends dual-phase extraction and treatment as the current remedy for

the Former Rosemergy's Store/Garage property. Current groundwater concentrations indicate that contamination has migrated beyond the property boundary at levels that exceed the NRMSC SHSs. After remedial activities are complete, at least four (4) rounds of groundwater samples (eight rounds if required by PADEP) will be collected from all POC monitoring wells and other important monitoring wells to demonstrate attainment.

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1.0 INTRODUCTION

Converse Consultants (Converse), on behalf of Lochgen LP, submits this Remedial Action Plan (RAP) for the former Rosemergy's Store/Garage Property located at 1623 State Route 590, Lackawaxen Township, Pike County, Pennsylvania (Property) in accordance with *25 Pennsylvania Code Chapter 245* (§245). Appendix A: Figure 1 presents the location of the Facility relative to area roads and features.

A release of petroleum product was discovered during a Phase II Environmental Site Assessment conducted by Bluestone Environmental related to sale of the property in June 2011.

Initial Site Characterization activities were completed during the period of July 2011 to August 2014. Initial Site Characterization is documented in the Site Characterization Report prepared by Converse Consultants that was submitted to PADEP dated August 7, 2014 (*2014 SCR*). Initial site characterization activities included:

1. Completion of a Site-Specific Health and Safety Plan.
2. Completion of a Sensitive Receptor Survey for the area surrounding the Property.
3. Collection of water samples from potable supply wells located on adjacent properties.
4. Assessment of the soil vapor to indoor air pathway via soil vapor sampling and indoor air sampling.
5. Completion of a Soil Sample Collection Program using a Geoprobe Direct-Push soil sampling system. Twenty (20) soil borings (soil borings SB-8 through SB-27) were completed at the Property to assess the levels of residual petroleum constituents in soil.
6. Installation and development of sixteen (16) groundwater monitoring wells (monitoring well MW-1 through MW-16) at the site to assess the extent of the impacted groundwater plume. The groundwater monitoring wells were installed to depths of approximately 15 feet below grade (fbg) and were screened across the water table that was encountered during drilling.
7. Completion of multiple rounds of groundwater sample collection from the monitoring wells. At least two rounds of groundwater sample collection were collected from each monitoring well.
8. Completion of two (2) rounds of sample collection from the nearest on-lot supply wells located on adjacent properties.

Additional site characterization activities were completed by Converse Consultants from August 2014 through March 2015. The additional site characterization activities documented in this report include:

1. A dual-phase extraction (DPE) event to treat impacted groundwater at the Site.
2. Completion of a second round of indoor air sampling at the cabin adjacent to the Site.
3. Reinstallation/replacement of the destroyed groundwater monitoring well MW-5.
4. A pilot test of the DPE system proposed for use at the Site.
5. Continued quarterly groundwater sample collection and reporting.

2.0 DOCUMENTATION AND ADMINISTRATIVE SUMMARY

2.1 PRIMARY CONTACTS

Responsible Parties

Lochgen LP
731 Welcome Lake Road
Hawley, Pennsylvania 18428
(570) 685-8061
Primary Contact: Mr. George Korb

USTIF/ICF Contact

ICF International
4000 Vine Street
Middletown, Pennsylvania 17057
(570) 586-2617
Primary Contact: Ms. Linda Melvin

Consultant

Converse Consultants
2738 West College Avenue
State College, Pennsylvania 16801
(814) 234-3223
Primary Contact: David W. Swetland, P.G.

Pennsylvania Department of Environmental Protection (PADEP) Staff Contact

PADEP – Northeast Region
2 Public Square
Wilkes Barre, Pennsylvania 15222
(570) 830-3028
Primary Contact: Ms. Rebecca Albert

2.2 SITE USE DESIGNATION

For the purpose of this submission, a "Property" is defined as a parcel of land that is defined by metes and bounds that are set forth in the deed for that land and is the originating property of the constituents of concern (COC) that are assessed by the Site Characterization and addressed during Remedial Action. As presented in §250.1, a Site is defined as "the extent of contamination originating within the property boundaries and all areas in close proximity to the contamination necessary for the implementation of remediation activities to be conducted under the act". More

than one (1) Site can be located within the property boundaries of a Facility and a Site can extend beyond the property boundaries of a Facility.

One (1) Site was identified during the Site Characterization. The Site extends beyond the boundary of the Property and includes soil and groundwater that are circumscribed by the monitoring wells and UST area at the Site.

Appendix A: Figure 2 presents cultural features that are located on and the general area of the Site. The Property has historically been utilized to service, store, and fuel vehicles. An active UST system that includes a fuel island with canopy and USTs that store unleaded gasoline is currently located at the Property. The current use of the Property meets the definition of a Nonresidential Property as promulgated in *Act 2 of 1995: Pennsylvania Land Recycling and Environmental Remediation Standards Act (*Act 2), *Section103*. The use of properties that are adjacent to the Site consists primarily of commercial, residential, and undeveloped land. The current use of surrounding properties meet the definition of nonresidential and residential property as promulgated in *Act 2, Section 103*. The foreseeable future use of the Property is for Nonresidential purposes.

Constituent concentrations in the soil and groundwater were evaluated with respect to the Nonresidential Medium Specific Concentration (NRMSC) Statewide Health Standards (SHSs) that are promulgated in §250*:* Subchapter C.

§250.302(a) and 407(a) stipulate that the point of compliance (POC) "is the property boundary that existed at the time the contamination was discovered". Data indicate that compounds of concern (COCs) extend beyond the downgradient POC at concentrations greater than the RMSC SHS.

2.3 SELECTED STANDARD

245.310(a)(26) requires the identification of the remediation standard that has or will be attained. Act 2 requires that the attainment of one (1) or a combination of three (3) cleanup standards be demonstrated by scientifically recognized principles, standards, and procedures. The cleanup standards include the Background Standard (BGS), the Statewide Health Standard (SHS), and the Site Specific

Standard (SSS). §250 promulgates cleanup criteria for three (3) specific media: soil not in the zone of groundwater saturation (unsaturated soil); soil in the zone of groundwater saturation (saturated soil); and groundwater. Act 2 also requires that the Remediator notify PADEP which standard(s) will be used to demonstrate attainment.

Attainment of the following remediation standards at the Site is currently anticipated: **Soil** - Nonresidential medium specific (NRMSC) Statewide Health Standard (SHS) **Groundwater** - NRMSC SHS

2.4 DEED ACKNOWLEDGEMENT AND UNIFORM ENVIRONMENTAL COVENANT ACT

Act 2: Section 303(g) requires that "persons attaining and demonstrating compliance with the Statewide Health Standard considering residential exposure factors for a regulated substance shall not be subject to the deed acknowledgment requirements of" the sections of Pennsylvania Law (P.L.) specified in Act 2: Section 303(g), but "the deed acknowledgment requirements shall apply where nonresidential exposure factors were used to comply with the Statewide health standard". Act 2: Section 304(m) requires that "persons attaining and demonstrating compliance with the site-specific standard for a regulated substance shall be subject to the deed acknowledgment requirements of" the sections of Pennsylvania Law (P.L.) that are specified in Act 2: Section 304(m). A deed acknowledgment is currently anticipated for the Property that is the subject of this Report.

The Pennsylvania Uniform Environmental Covenants Act (UECA: Act 68 of 2007) requires a covenant on the real property if an engineering control or institutional control is necessary to demonstrate attainment of an Act 2 standard. Engineering controls can include, but are not limited to, slurry walls, liner systems, caps, leachate collection systems, and groundwater recovery trenches. Institutional controls are measures taken to limit or prohibit certain activities that may interfere with the integrity of a remedial action or result in exposure to regulated substances at a property. The covenant can act as the deed acknowledgement. At this point in time the use of covenants is not anticipated for the Site.

2.5 RELEASE REPORTING

2.5.1 Submissions to PADEP

§245.305(a) requires that 'the owner or operator of storage tanks and storage tank facilities shall notify the appropriate regional office of the Department as soon as practicable, but not later than 24 hours, after the confirmation of a reportable release" and §245.305(c) requires that "the notice required by subsection (a) shall be by telephone". A release of product was identified at the Property in July 2011. Based on documentation provided by Bluestone Environmental, PADEP was notified of the release from the UST system.

§245.305(d) requires that "within 15 days of the notice required by subsection (a), the owner or operator shall provide written notification to the Department and to each municipality in which the reportable release occurred, and each municipality where the release has impacted environmental media or water supplies, buildings or sewer or other utility lines". No information on municipal notification was provided to Converse. Based on documentation provided by Bluestone Environmental, PADEP was notified of the release from the UST system. Converse will notify the municipality (Lackawaxen Township) of the release.

§245.305(e) requires that "the owner or operator shall provide written notification to the Department and each impacted municipality of new impacts to environmental media or water supplies, buildings, or sewer or other utility lines discovered after the initial written notification required by subsection (d). Written notification under this subsection shall be made within 15 days of the discovery of the new impact". The impacts assessed in this report are considered to be the result of the reported release. No new impact was identified during the characterization activities discussed in this report.

2.5.2 Submissions to the Municipality

As presented in Section 2.5.1, municipal notification requirements are specified in §245.305(d) and (e). Lackawaxen Township, Pike County, Pennsylvania is the municipality in which the release occurred and where impacted media have been identified. Converse will notify the municipality of the release.

2.6 COMMUNITY INVOLVEMENT

§245 does not require the development or implementation of a community involvement plan.

2.7 FEDERAL, STATE, AND LOCAL PERMITS OR APPROVALS

No other Federal, State, or Local permit is anticipated.

2.8 ADDITIONAL NOTIFICATION AND COMMUNICATIONS

No additional notification to a public or private entity was made.

2.9 OFF-FACILITY ACCESS AGREEMENTS

§250.410(c) requires that "when a person proposes a remedy that relies on access to properties owned by third parties, for remediation or monitoring, documentation of cooperation or agreement shall be submitted as part of the cleanup plan".

Documentation of off-Property access was provided in the *SCR*.

2.10 AQUIFER USE DETERMINATION

The aquifer beneath and in the area of the Facility is considered to be used and currently planned for use (§250.403(b)) and to contain less than 2,500 milligrams per liter (mg/l) of total dissolved solids.

2.11 AFFECTED OR DIMINISHED WATER SUPPLY

Act 32 of 1989: Storage Tank and Spill Prevention Act (*Act 32*) requires that any responsible party who affects or diminishes a water supply as a result of a release must restore or replace the affected or diminished water supply at no cost to the owner of the supply.

No affected or diminished water supply was identified during the course of the investigation that is documented in this Report.

2.12 PREVIOUSLY SUBMITTED REPORTS AND PADEP RESPONSES

2.12.1 General

The following documents provided to Converse, were previously submitted to PADEP, and are incorporated herein by reference. Copies of PADEP documents that were submitted in response are also listed below, if available.

2.12.2 Previous Reports, Approval Requests, and Notifications

1. *Work Plan, Additional Supplemental Site Characterization, Former Rosemergy's Convenient Store, 1623 Route 590, Hawley, Pennsylvania*, dated September, 25, 2013, prepared by Converse Consultants.
2. *SCR Submittal Date Extension Request, USTIF Claim Number: 2011-0082(S), Rosemergy's Convenience Store, Hawley, Pennsylvania,* dated March 13, 2014, prepared by Converse Consultants.
3. *SCR Submittal Date Extension Request (update), USTIF Claim Number: 2011-0082(S), Rosemergy's Convenience Store, Hawley, Pennsylvania,* dated March 13, 2014, prepared by Converse Consultants.
4. *Site Characterization Report, Former Rosemergy's Store/Garage, USTIF Claim Number: 2011-0082(S), Lackawaxen Twp., Pike Co., Pennsylvania*, dated August 7, 2014, prepared by Converse Consultants.
5. *RAP Submittal Date Extension Request (update), USTIF Claim Number: 2011-0082(S), Rosemergy's Convenience Store, Hawley, Pennsylvania,* dated May 28, 2014, prepared by Converse Consultants.

2.12.3 PADEP Letters and Responses

1. *Storage Tanks Program* - Northeast Regional Office, Notice of Violation (NOV), Rosemergy's Garage Facility, Facility ID No. 52-01926, dated July 15, 2011.
2. *Storage Tanks Program* - Northeast Regional Office, Notice of Violation (NOV), Rosemergy's Garage Facility, Facility ID No. 52-01926, dated September 6, 2013, signed by Mr. David McGovern.
3. *ECB - Storage Tanks Program* - Northeast Regional Office, RAP Alternative Timeframe Approval Letter, Rosemergy's Garage Facility, Facility ID No. 52-01926, dated July 15, 2011, signed by Ms. Susan E. Thomas.

2.13 FIELD ACTIVITY CHRONOLOGY

As documented in the *SCR*, the Site Characterization field activities were completed during the period of May 2012 through August 2014. The events and activities completed since August 2014 are summarized in the following chronology of events:

Date	**Field Activity**
September 16-17, 2014:	Collection of groundwater samples from monitoring wells MW-1R through MW-16 (except MW-5 and MW-6). A nearby proxy well was used (DPE-4) in place of the destroyed MW-5. Treatment of event for groundwater in monitoring wells MW-3 and MW-5.
December 3-4, 2014:	Collection of groundwater samples from monitoring wells MW-1R through MW-16 (except MW-5 and MW-6). A nearby proxy well was used (DPE-4) in place of the destroyed MW-5.
December 17, 2014:	Second round of indoor air sampling.
February 5, 2015:	Reinstallation of groundwater monitoring well MW-5 using hollow stem auger drilling methods.
March 25, 2015:	Collection of groundwater samples from monitoring wells MW-1R through MW-15 (except MW-6).
June 25-26, 2015:	Collection of groundwater samples from monitoring wells MW-1R through MW-16 (except MW-6).

3.0 FACILITY DESCRIPTION

3.1 SITE LOCATION

The Former Rosemergy's Store/Garage consists of two parcels of land that occupy approximately 1.8 acres of land at 1623 Route 590, Lackawaxen Twp., Pike County, Pennsylvania. The Property is located along the north side of Hamlin Highway (PA 590) approximately 600 feet east of the intersection of Hamlin Highway and Woodloch Drive (N41° 30' 05.49", W75° 05' 49.05"). Appendix A: Figure 1 presents the location of the Property relative to area roads and features.

3.2 FACILITY SETTING

Although the site is relatively flat, hills are located northeast and west of the site. The Narrowsburg USGS topographic quadrangle map indicates that the site is located at an elevation of approximately 1290 feet above mean sea level. With respect to topography, the site is located near the saddle point that separates surface flow to the north towards Little Teedyuskung Lake from surface flow to the southeast and east towards creeks that drain into the Lackawaxen River.

The site is located approximately 1,200 feet south of Little Teedyuskung Lake. The lake drains into West Falls Creek which passes approximately 1,100 feet northeast of the site. West Falls Creek flows southeast to the Lackawaxen River. The site is located approximately 2,200 feet northeast and northwest, respectively, of two (2) small creeks that drain south into the Lackawaxen River. The Lackawaxen River is located approximately 7,500 feet south of the site and flows from west to east (towards the Delaware River). No surface water body is present within the boundaries of the Property.

Use of properties in the immediate area of the Site consists primarily of residential use.

3.3 FACILITY DESCRIPTION AND OPERATIONS

Appendix A: Figure 2 presents cultural features and the boundaries of the Property. The Property is currently owned by Lochgen, LP. The Property is currently operated as a retail motor fuel distribution and convenience store. The active UST systems that

are used to store and dispense unleaded gasoline at the Property are shown on Figure 2.

The Property is generally flat and is covered with pavement (concrete or asphalt). The area of the former release is covered by pavement. One slab on grade building is located at the Property. The Property and surrounding areas are served by public water and public sewers, however not all residences are hooked up to the public systems.

4.0 SUMMARY OF PREVIOUS INVESTIGATIONS AND INTERIM REMEDIAL ACTIVITIES

4.1 GENERAL

The site began as an automotive repair station with retail gasoline sales around 1965. The site was operated as both an automotive repair station and retail gasoline station until April 2000, by Mr. Robert Rosemergy, Jr. At that time, the Rosemergy Estate took ownership of the property, until February 2002, when Ms. Hoadley and her brother, Charles Rosemergy became heirs of the Estate. The facility was out-of-service from April 2000 until February 2002. In February 2002, retail gasoline sales resumed at the site. A convenience store was added in October 2002. The retail gasoline sales continued until March 2010.

Prior to UST closure activities in 2011, there were two (2) 2,000-gallon single wall STIP-3 underground storage tanks (USTs) used to store gasoline. There was also a 1,000-gallon single wall STIP-3 UST used to store on-road diesel fuel. The three (3) tanks were installed in April 1988 and upgraded to Pennsylvania Department of Environmental Protection (PADEP) Storage Tank Requirements in December 1998 by Fowler Oil Company. The product transfer lines were single wall steel construction, with the European style suction pumps located in the dispensing units. During the upgrade in 1998, a TLS-300 Veeder-Root Monitoring System was installed, and connected to each of the three (3) tanks, with each tank having its own monitoring probe. Also at that time, overfill protection and spill buckets were installed at each tank. The overfill protection was in the form of an audible alarm located on the front of the building.

4.2 PHASE II ESA

The release of petroleum product to the environment was first identified during a limited Phase II Environmental Assessment (Phase II) of the property on June 28th, 2011. The Phase II was being conducted as part of a property transaction by Bluestone Environmental for Woodloch Real Estate (Woodloch). Locations, boring logs and analytical data from the Phase II ESA are included as Exhibit C of the *2012 Bluestone Work Plan* (a copy of which is included in the *SCR*). The contents of this Section of the report are from the referenced Work Plan.

On June 28, 2011, Bluestone mobilized to the site with a Geoprobe unit to conduct a limited Phase II assessment of the property. Three (3) soil borings were placed around the tank system and pump island. The first boring was placed approximately 6-feet off the southeastern side of the pump island. The first sample sleeve showed a potential release of petroleum fuel at 4-feet below grade. Screening of the soil sample sleeve with a Photo Ionization Detector (PID) indicated that the highest PID reading (approximately 1,800 units) was observed at the 4-foot interval. A sample for laboratory analysis was collected at 4-feet below grade. The last several inches of the 0 to 4 foot sample encountered shallow ground water. A solid 4-foot rod was dropped down to 8-feet below grade and a 1" piece of slotted screen was dropped down the boring and left in place for 30 minutes. After 30 minutes, a grab sample of the groundwater was removed with a ½" bailer. The water had a very strong petroleum odor. The laboratory results confirmed that the groundwater was impacted by petroleum constituents.

A second boring was placed approximately 75 feet east of the pump island. The second boring was completed at a depth of 8-feet below grade. Continuous screening of the soil with the PID indicated the highest PID response (35 units) at approximately 4-feet below. A soil sample for laboratory analysis was collected at 4-feet below grade.

The third boring was placed approximately 20-feet southwest of the pump island. The third boring was completed at a depth of 12-feet below grade. Continuous screening of the soil indicated the highest PID response was at approximately 8-feet below grade. A soil sample for laboratory analysis was collected from the third boring at 8-feet below grade.

The samples were placed on ice and sent to Fairway Laboratories, Inc. (Fairway) for analysis. Bluestone received the analytical data from Fairway on July 5, 2011. The soil and groundwater analytical data confirmed a release of petroleum to the soils and groundwater at the property.

4.3 UST SYSTEMS CLOSURE

On September 12, 2011, the three underground storage tanks (USTS) were removed from the Former Rosemergy's Store/Garage. The tank systems were closed by excavation and removal of the USTs and components. Site assessment results during

UST closure identified "obvious, extensive contamination." A copy of the submitted UST closure report can be found in Exhibit B of *2012 Bluestone Work Plan*.

As expected, Tank 001 was a 2,000 gallon capacity containing unleaded gasoline; Tank 002 was a 2,000 gallon capacity containing unleaded gasoline, and Tank 003 was a 1000 gallon containing diesel fuel. An amended "Storage Tanks Registration/Permitting Application Form" was submitted by Bluestone to PADEP on October 14, 2011.

Prior to removal, all useable liquids were removed by FCC Environmental of Wilmington, Delaware. A total of 1247 gallons of gasoline and diesel fuel was disposed of off-site. All liquids and sludges were removed during the on-site cleaning process. The bottoms were drummed, secured, and stored on site. The waste material was disposed of by Cycle-Chem, Inc. Lewisberry, PA. The USTs associated with the removal were recycled at Mike's Scrap yard, Scranton, PA. Disposal receipts are included in the closure report.

Based on the tank handling information, all three tanks were inspected. All three USTS were identified as in good to excellent condition. The associated underground piping was removed and was also in good condition.

Site assessment information generated during the removal and closure process indicated evidence of soil contamination throughout the excavation area. The heaviest contamination and highest field PID readings were identified directly below the pump island. The island contained three dispensers. The heaviest soil contamination appeared to be under the center pump dispenser, Dispenser #2. Dispenser #2 was connected to unleaded gasoline tank 002. The likely source of the release was the dispenser or piping connections under the dispenser. The leak appeared to be a slow release (chronic problem) that occurred over a multiple year period. There were no containment sumps under the dispensing units.

Approximately 100± tons of soil was removed from under the pump islands. The soil was stockpiled on polyethylene sheeting for off-site disposal.

Groundwater was encountered at a depth of 9 to 10 feet below ground surface in the

UST excavation. The water that accumulated within the tank excavation pit had a visible petroleum sheen.

4.4 ADDITIONAL HISTORICAL DOCUMENTS

4.4.1 Previous Phase II ESA

A Phase II assessment was conducted in April 1996 by F.X. Browne for Woodloch as part of a potential property transaction. As a follow up to the F.X. Browne report, Hydrotech Inc. was hired by Mr. Ralph Westgate of Fowler Oil Company to complete an additional investigation around the results found in the F. X. Browne report. At this time, there is limited information on the work completed by Hydrotech, Inc. Copies of the site diagram, along with groundwater sample results are included in Exhibit A - Attachment F of the *2012 Bluestone Work Plan*. Also, additional soil samples were collected by Hydrotech, Inc. on July 5, 1996. A copy of the F. X. Browne report, Hydrotech Site Maps and the sample results from the samples collected on July 5, 1996 can be found in Exhibit A - Attachment F of the *2012 Bluestone Work Plan.*

4.4.2 Utility Line Excavation

In December of 2002, Aqua PA (local water company) was installing a domestic water line on the southern side of PA Route 590. During excavation activities for the water line, suspected contaminated soil was encountered and excavation activities were stopped. PADEP was notified and Mr. Tom Coar responded to the site. A copy of Mr. Coar's report can be found in Exhibit A - Attachment D of the *2012 Bluestone Work Plan*. Austin James Associates, Inc. responded to the site on March 11, 2003 to collect soil samples in an effort to investigate the suspected release encountered by Aqua PA. A copy of the sample results can be found in Exhibit A - Attachment D of the *2012 Bluestone Work*. At that time, there was no further work completed at the site, and the sample results did not confirm a release from the property.

4.5 INTERIM REMEDIAL MEASURES

As previously documented, soil removal was completed as part of the UST closure activities. No additional interim remedial measures have been completed to date.

5.0 SITE CHARACTERIZATION SUMMARY

5.1 GENERAL

The Site Characterization field activities documented in the SCR included the following primary tasks:

1. Completion of a Site-Specific Health and Safety Plan.
2. Completion of a Sensitive Receptor Survey for the area surrounding the Property.
3. Collection of water samples from potable supply wells located on adjacent properties.
4. Assessment of the soil vapor to indoor air pathway via soil vapor sampling and indoor air sampling.
5. Completion of a Soil Sample Collection Program using a Geoprobe Direct-Push soil sampling system. Twenty (20) soil borings (soil borings SB-8 through SB-27) were completed at the Property to assess the levels of residual petroleum constituents in soil.
6. Installation and development of sixteen (16) groundwater monitoring wells (monitoring well MW-1 through MW-16) at the site to assess the extent of the impacted groundwater plume. The groundwater monitoring wells were installed to depths of approximately 15 feet below grade (fbg) and were screened across the water table that was encountered during drilling.
7. Completion of multiple rounds of groundwater sample collection from the monitoring wells. At least two rounds of groundwater sample collection were collected from each monitoring well.
8. Completion of two (2) rounds of sample collection from the nearest on-lot supply wells located on adjacent properties.

Appendix A: Figure 2 presents the groundwater monitoring well locations. Appendix A Figure 4B presents the locations of soil borings. Appendix A: Figure 4A presents the location of vapor monitoring points and indoor air samples. Odyssey Environmental of Harrisburg, Pennsylvania provided the drilling installation services for the soil borings, soil vapor points, and monitoring wells. The initial soil borings, monitoring wells, and soil borings were supervised by Bluestone Environmental. Subsequent field activities were directed and supervised by Converse personnel.

5.2 SOIL

A total of 20 soil borings were installed to a depth of fifteen (15) feet below ground surface (bgs). Borings were numbered SB-008 through SB-027 (Designations SB-001 through SB-007 were not used to avoid confusion with historical assessment activities). The soil borings were drilled and sampled similar to the methods that are described in *ASTM Standard D 6282-98*. At each boring location two-inch diameter direct-push soil cores were used to collect soil samples continuously from grade to the bottom of the boring.

Levels of at least one (1) short list petroleum constituent exceeded the NRMSC SHSs in all soil samples except the soil sample collected from SB-15. Soil boring SB-15 was the easternmost boring located near the Jensen property boundary.

With respect to the vertical distribution of contaminants in the overburden soil, the highest PID readings were encountered at the approximate depth of the water table smear zone that was encountered at depths of approximately 4 feet to 9 feet below grade. The distribution of analytes in soil indicates that the impacted unsaturated zone soil was removed as part of the UST closure activities. No residual source area is indicated to be present in the unsaturated zone. The distribution of contaminants in saturated soil corresponds to the migration of groundwater from the former source area.

In general, the highest concentrations of analytes were detected in soil samples that were collected west of the former UST excavation (soil borings SB-20 through SB-24). The area west of the UST excavation is also the area where the highest PID readings were observed during the soil borings. Appendix A: Figure 4B shows the highest PID concentration recorded in each of the soil borings.

5.3 GROUNDWATER SAMPLING EVENTS

Groundwater sample collection events (GSCEs) were conducted in May and June of 2012 from monitoring wells MW-1 through MW-6. GSCEs were also conducted in November and December of 2013 from monitoring wells MW-1 through MW-9 (excluding MW-6 which was destroyed during site development), and MW-12. A GSCE was conducted in February 2014 at newly-installed monitoring wells MW-10 and MW-11 only. A GSCE was conducted in March 2014 from monitoring wells MW-

1 through MW-12 (except MW-6, and MW-3, MW-4, and MW-7 which were inaccessible due to site conditions). Another GSCE was conducted in April 2014 at newly-installed monitoring wells MW-13 through MW-16 only.

Further GSCEs were conducted in June, September, and December, 2014, and in March and June 2015 at monitoring wells MW-1 through MW-16 (except MW-6 and wells that were inaccessible due to site conditions on a day a GSCE took place). MW-5 was reinstalled in February 2015 and was sampled during the March and June 2015 GSCEs. Appendix A: Figure 2 presents the locations of the monitoring wells.

Converse conducts LNAPL monitoring during each quarterly GSCE. LNAPL monitoring is conducted with clear bailers or with an interface probe. As defined, no measurable LNAPL thickness was observed during the referenced sampling events.

5.4 GROUNDWATER LABORATORY ANALYSIS AND RESULTS

Groundwater samples from the Site were analyzed for the unleaded gasoline, diesel, and kerosene indicator compounds by the methods that are published on the 2008 Petroleum Short List that is part of the Technical Guidance Manual published by PADEP. The samples were submitted to Fairway Laboratories of Altoona, Pennsylvania for analysis.

CONSTITUENTS OF CONCERN (COCs)	
CONSTITUENTS	**CASRN**
Benzene	71-43-2
Cumene (Isopropylbenzene)	98-82-8
Ethylbenzene	100-41-4
MTBE (Methyl tert-butyl ether)	1634-04-4
Naphthalene	91-20-3
Toluene	108-88-3
Xylene (Total)	1330-20-7
1,2,4-Trimethylbenzene	95-63-6
1,3,5-Trimethylbenzene	108-67-8

The most recent quarterly groundwater sample collection events were conducted in December 2014 and March 2015. Appendix A: Figure 6A through 9A present the

distribution of naphthalene, TMBs, benzene, and MTBE in groundwater for the December 2014 GSCE. Appendix A: Figure 6B through 9B and 10A present the distribution of naphthalene, TMBs, benzene, and MTBE in groundwater for the March 2015 GSCE. Appendix B: Table 2 presents a historical summary of the analytical data for all documented GSCEs that have been conducted at the Site. Copies of the laboratory data and chains of custody are included in Appendix C.

The following COCs were identified in groundwater monitoring wells from the overburden aquifer at concentrations that were greater than the respective RMSC SHSs during the December 2014 GSCE monitoring period:

- Benzene (594 micrograms per liter [μg/L]), Ethylbenzene (2740 μg/L), Methyl tert-butyl ether (MTBE, 57.4 μg/L), Naphthalene (652 μg/L), Xylenes (14200 μg/L), 1,2,4-Trimethylbenzene (TMB, 1700 μg/L), and 1,3,5-TMB (594 μg/L) in monitoring well MW-1.
- Benzene (1320 μg/L), Ethylbenzene (1330 μg/L), MTBE (32.7 μg/L), Naphthalene (235 μg/L), 1,2,4-TMB (721 μg/L), and 1,3,5-TMB (201 μg/L) in monitoring well MW-2.
- Benzene (318 μg/L) and MTBE (2560 μg/L) in monitoring well MW-3.
- Benzene (2130 μg/L) in monitoring well MW-4.
- Benzene (6120 μg/L), Ethylbenzene (800 μg/L), MTBE (192 μg/L), Naphthalene (222 μg/L), 1,2,4-TMB (300 μg/L), and 1,3,5-TMB (158 μg/L) in monitoring well MW-7.
- Benzene (19.2 μg/L) in monitoring well MW-9.
- Benzene (13.4 μg/L) in monitoring well MW-10.
- Benzene (19.3 μg/L) in monitoring well MW-11
- Benzene (108 μg/L) and 1,2,4-TMB (18.9 μg/L) in monitoring well MW-13.
- Benzene (71.6 μg/L) and 1,2,4-TMB (25.6 μg/L) in monitoring well MW-14.
- Benzene (71 μg/L) and 1,2,4-TMB (25.7 μg/L) in monitoring well MW-15.
- Benzene (11.6 μg/L) in monitoring well MW-16.
- Benzene (1440 μg/L), Ethylbenzene (1520 μg/L), Naphthalene (518 μg/L), Toluene (2270 μg/L) 1,2,4-TMB (963 μg/L), and 1,3,5-TMB (865 μg/L) in dual phase extraction well DPE-4 (proxied for MW-5).

The following COCs were identified in groundwater monitoring wells from the overburden aquifer at concentrations that were greater than the respective RMSC SHSs during the March 2015 GSCE monitoring period:

- Benzene (4500 μg/L), Ethylbenzene (1650 μg/L), Naphthalene (107 μg/L), Toluene (5620 μg/L), 1,2,4-TMB (981 μg/L) and 1,3,5-TMB (279 μg/L) in monitoring well MW-1.
- Benzene (22.8 μg/L) and 1,2,4-TMB (15.8 μg/L) in monitoring well MW-2.
- MTBE (30.9 μg/L) in monitoring well MW-3.
- Benzene (6.6 μg/L) in monitoring well MW-4.
- Benzene (3960 μg/L), Ethylbenzene (2740 μg/L), MTBE (33.5 μg/L), Naphthalene (331 μg/L), Toluene (13600 μg/L), 1,2,4-TMB (1680 μg/L) and 1,3,5-TMB (437 μg/L) in monitoring well MW-5.
- Benzene (884 μg/L) and 1,2,4-TMB (50μg/L) in monitoring well MW-7.
- Benzene (14.7 μg/L) in monitoring well MW-8.
- Benzene (853 μg/L) in monitoring well MW-9.
- Benzene (13.9 μg/L) in monitoring well MW-10.
- Benzene (32.1 μg/L) in monitoring well MW-11.
- Benzene (26.2 μg/L) in monitoring well MW-12.
- Benzene (62.9 μg/L) and 1,2,4-TMB (21.3 μg/L) in monitoring well MW-14.
- Benzene (29.1 μg/L) in monitoring well MW-15.

The laboratory results indicate that petroleum constituents in the groundwater are present beneath the Property and the adjacent Woodloch property (to the south) at levels that exceed the RMSC SHSs. UST closure data and the analytical data indicate that the petroleum product released at the site was unleaded gasoline. The highest levels of gasoline constituents have been detected in monitoring wells west of the former leaking UST system consistent with the local direction of groundwater flow indicated by water level data.

UST closure information and soils data indicate that impacted unsaturated zone soil was removed for off-site disposal. The source of the current groundwater plume is residual unleaded gasoline constituents in the soil smear zone located at the top of the

water table. As the new UST systems at the Property are located outside of the impacted groundwater plume, no potential source area of additional petroleum product has been identified in the area of the release. Buried petroleum refuse related to the garage operation that was identified north of the building (and remediated under a separate case number with PADEP) is also located outside of the area currently impacted by the unleaded gasoline release.

As previously discussed, the principal direction of contaminant transport beneath the site is to the west. Groundwater level data and the observed distribution of contaminants also indicate a component of flow to the southeast. The impacted groundwater plume has not migrated to the west or southeast beyond the current monitoring well network at levels that exceed the RMSC SHSs.

5.5 GROUNDWATER SUMMARY

The historical groundwater analytical data indicate that petroleum constituents in groundwater are consistently detected at levels that exceed standards in MW-1, MW-2, MW-5, and MW-7 in the vicinity of the former UST systems (however Benzene and 1,2,4-TMB are detected in the majority of wells at the Site). MW-1 has historically had the highest levels of contaminants. The analytical data and hydrogeology suggest that impacted groundwater within the overburden is migrating beyond the Facility boundary at levels that exceed the NRMSC SHSs.

5.6 SOIL VAPOR PATHWAY

Potential migration of soil vapors to the site building was assessed using two (2) soil vapor points that were located between the source area and the building. Each soil vapor point was sampled twice. No compound exceeded the residential MSC_{SG} ($RMSC_{SG}$) or nonresidential MSC_{SG} ($NRMSC_{SG}$) in the soil gas samples (2 rounds) collected from the two (2) soil vapor points VP-1 and VP-2 that were installed between the release area and the convenience store building.

Potential migration towards the nearest downgradient residence (cabin southeast of the property) was assessed using air samples. Two (2) rounds of air samples were completed. Samples were collected inside the structure and outside the structure (ambient air). Gasoline constituents were detected in the indoor air sample but were

not present at levels that exceed the RMSC SHSs for indoor air that are published by PADEP.

5.7 ON-LOT SUPPLY WELLS

Appendix A: Figure 13 presents the locations of the nearby properties with on-lot water supply wells. Supply well samples were collected from the Woodloch Property and the Rosemergy Property in December 2013 and February 2014. The Jensen Property has not provided access for the collection of water samples. Samples were analyzed by Fairway labs of Altoona, Pennsylvania for the unleaded gasoline constituents on the 2008 PADEP Petroleum Short list.

No unleaded gasoline constituent was detected in the on-lot supply well samples at a concentration that exceeded the laboratory quantitation limits (LQLs) or the RMSC SHSs.

5.8 SENSITIVE RECEPTOR SURVEY

A receptor survey was performed to identify receptors (current and future) that may be exposed to the contaminant release. The receptor survey for the Property included the following components:

- Review of Pennsylvania Ground Water Information System (PaGWIS) data base for the Site vicinity.
- Review of local water use information.
- A PNDI search for the Property.
- Review of previous receptor surveys.
- Reconnaissance of the Site vicinity.

With the exception of the buildings, residential supply wells on the adjacent properties, and potential receptors based on site use (employees, visitors, and construction workers), no potential receptor was identified during the site reconnaissance. The nearest surface water body is located approximately 1200 feet from the Property. The site building and nearest off-Property residence do not have basements.

6.0 GENERAL FACILITY GEOLOGY

The Facility is located in the Glaciated Low Plateau Section of the Appalachian Plateaus Physiographic Province of Pennsylvania. The Pennsylvania Department of Environmental Resources, Bureau of Topographic and Geologic Survey, *Geologic Map of Pennsylvania, 1981* indicates that the bedrock that underlies the Facility consists of Devonian-age, Long Run and Walcksville Members (Dclw) of the Catskill Formation. The Long Run and Walcksville Members (Dclw) of the Catskill Formation (undivided) consist of cyclic sequences of gray to grayish-red to greenish-gray sandstone, siltstone, and claystone in fining upward cycles. No outcrop was observed in the immediate vicinity of the Site. Consistent with regional structure, bedrock is expected to strike roughly northeast-southwest with gentle dips of bedding to the southeast and northwest.

The area of the Site was covered by the Wisconsinan Glaciation. Approximately 50 percent of the ground surface is estimated to be covered by gray to grayish red sandy till. The layer of till is reported to vary from thin to thick. The till is reported to be draped over bedrock and is not expected to have been reworked into glacial landforms.

Soil borings were completed during site characterization activities. Borings indicate that unconsolidated deposits that consist mainly of a mix of silty sands and silts with varying amounts of gravel (some of which could be described as till) are located beneath the site to the maximum depth of the soil borings that was 21 feet below grade. Appendix E presents well logs that detail the material that was penetrated during the drilling of the monitoring wells that were installed by Converse. Bedrock was not encountered in the borings.

7.0 GENERAL FACILITY HYDROGEOLOGY

7.1 GENERAL

Field and published data indicate that aquifers are present in the unconsolidated deposits (water table aquifer) and in the bedrock beneath the Property. The site characterization activities indicate that the unconsolidated overburden beneath the Property has been impacted by the release of gasoline. Appendix A: Figure 2 presents the locations of the monitoring wells.

With respect to topography, the site is located near the saddle point that separates surface flow to the north towards Little Teedyuskung Lake from surface flow to the southeast and east towards creeks that drain into the Lackawaxen River.

The depth to groundwater in monitoring wells that are completed within the unconsolidated overburden ranges from approximately 0.5 feet to 13 feet below grade.

7.2 RELATIVE ELEVATION SURVEY

Kiley Associates, LLC of Lakeville, Pennsylvania, a Pennsylvania licensed surveyor, completed the survey to provide the data necessary to assess the direction of groundwater flow in the water table aquifer at and in the area of the Property. The survey provided elevations of the top of casing and a reliable horizontal location of each well. The location and top of casing (TOC) elevation for each well was measured relative to the 1983 North American Datum (NAD83) using the State Plane Coordinate System. The TOC elevations and the measured groundwater levels in each well were then used to calculate groundwater elevations at each data point. Appendix B: Table 1 presents a tabulated summary of the elevation survey data, depth to water data, and calculated groundwater relative elevation data.

7.3 DEPTHS TO WATER

In the absence of nearby pumping wells, observed changes in the water level elevation is generally the result of seasonal fluctuations in groundwater levels as affected, primarily, by precipitation and infiltration. The thickness of the water table aquifer unit beneath the Property is at least 10 feet.

Data indicate that the water table may be at elevations equal to or higher than the maximum depth below grade of cultural features such as basements and utility trenches. These data indicate that cultural features are a potential, preferential pathway for groundwater movement. In particular, water levels on the south side of Route 590 are at elevations that could impact or be impacted by utility trenches.

Groundwater elevation data for the overburden aquifer suggest an area of groundwater mounding in the southeast corner of the site, in the general area of the former UST area adjacent to monitoring well MW-5. This is a common feature of backfilled excavations. The majority of the Site is currently covered with relatively impermeable asphalt and/or concrete.

Groundwater levels were measured in the overburden monitoring wells at the Site at depths that ranged from approximately 0.1 feet to 13 feet below grade (location dependent) during the periods of May 2012 to March 2015. A maximum change of approximately 5.8 feet in the depth to the water table at individual monitoring well locations was measured during these periods.

7.4 DIRECTION OF GROUNDWATER FLOW

7.4.1 Lateral Groundwater Flow

Groundwater elevation data indicate that flow within unconsolidated overburden across the Site is anomalously to the west (away from the major streams and rivers). Appendix A: Figure 5A and 5B present Groundwater Elevation Contour Maps for the unconsolidated overburden that depict the calculated groundwater relative elevations at the monitoring wells for the two (2) most recent full sample collection events. Appendix B: Table 1 presents a tabulated summary of the relative elevation survey data, depth to water data, and calculated groundwater relative elevation data.

7.4.2 Vertical Groundwater Flow

The petroleum impact was encountered at the top of the groundwater table in the unconsolidated overburden aquifer. Soil screening data conducted by Bluestone indicates that levels of contamination decrease beneath the groundwater smear zone. As vertical movement of the impacted groundwater was not indicated for the Site, no quantitative evaluation of vertical groundwater movement was conducted.

8.0 SITE CONCEPTUAL MODEL

8.1 GENERAL

The site was developed as an automotive repair station with retail gasoline sales in approximately 1965. The site operated as both an automotive repair station and retail gasoline station until April 2000. The facility was out-of-service from April 2000 until February 2002. In February 2002, retail gasoline sales resumed at the site. A convenience store was also added in October 2002. The retail gasoline sales continued until March 2010.

The release of petroleum to the environment was first identified during a limited Phase II Environmental Assessment (Phase II) of the property on June 28th, 2011. The three (3) underground storage tanks (USTS) were removed from the Former Rosemergy's Convenient Store Facility in September 2011. Site Assessment Information generated during the removal and closure process indicated evidence of soil contamination throughout the excavation area. The heaviest contamination and highest field PID readings were identified directly below the pump island. The island contained three dispensers. The heaviest soil contamination appeared to be under the center (unleaded gasoline) dispenser. The likely source of the release was the dispenser or piping connections under the dispenser. The leak appeared to be a slow release (chronic problem) that occurred over a multiple year period. There were no containment sumps under the dispensing units.

Approximately 100± tons, was removed from under the pump islands for off-site disposal as part of the UST closure activities. Soil borings completed since the USTs were removed have encountered widespread saturated zone soil that has been impacted by the release of gasoline, however no residual impacted soil appears to be present in the unsaturated zone. Groundwater samples collected from monitoring wells at the Site indicate that the residual petroleum constituents within the uppermost saturated soils represent the source area for the current impacted groundwater plume. In general, the highest concentrations in groundwater are associated with the highest levels of gasoline constituents detected in saturated soil.

The release of product impacted the shallow overburden (water table) aquifer beneath the Property. Groundwater mounding in the area of the former UST

excavation effects groundwater transport beneath the Site. Flow within the shallow overburden aquifer flows toward the west with a component of flow to the south-southeast. The impacted groundwater extends beneath Route 590 to property owned by Woodloch. Although the Former Rosemergy Property is currently owned by Woodloch, it was not owned by Woodloch at the time that the release was discovered

8.2 CONSTITUENTS OF CONCERN

For the purpose of this evaluation, the following indicator compounds were detected in groundwater during the site characterization and are considered to be the constituents of concern (COCs) at the Site.

CONSTITUENTS OF CONCERN (COCs)	
CONSTITUENTS	**CASRN**
Benzene	71-43-2
Cumene (Isopropylbenzene)	98-82-8
Ethylbenzene	100-41-4
MTBE (Methyl tert-butyl ether)	1634-04-4
Naphthalene	91-20-3
Toluene	108-88-3
Xylene (Total)	1330-20-7
1,2,4-Trimethylbenzene	95-63-6
1,3,5-Trimethylbenzene	108-67-8

8.3 FATE AND TRANSPORT IN THE UNSATURATED SOIL ZONE

The *2002 LRP TGM*: Section IV.A.1.(a) identifies that fate and transport analysis should be conducted for the unsaturated zone if constituents of concern (COCs) in the unsaturated zone are identified at concentrations greater than the Soil to Groundwater Numeric Value (SGNV) MSC SHS.

Site characterization activities indicate that unsaturated zone soil is not currently a potential source area.

8.4 FATE AND TRANSPORT IN THE SATURATED SOIL ZONE

PADEP, 2002: Section (IV)(A)(2) provides guidance for fate and transport analysis in the saturated zone if constituents in the saturated soil zone are identified at concentrations greater than the MSC SHS. Fate and transport models usually evaluate constituent fate and transport in saturated soil as a function of constituent fate and transport in groundwater at the source area. Fate and transport from this source term is evaluated in the following Section.

8.5 FATE AND TRANSPORT IN GROUNDWATER

8.5.1 General

Data indicate:

1. A release of product (unleaded gasoline) impacted soil and groundwater at the Property. The release is indicated to have been a slow release over a long time that may have begun as early as 1995.
2. Impacted unsaturated zone soils were remediated during UST closure activities.
3. The groundwater plume has been delineated both vertically and laterally.
4. An assessment of aquifer properties indicates that median transport velocities are expected to be extremely slow. This assessment is supported by the numerous excavations and boreholes that have been completed below the water table with minimal visible water infiltration.
5. As the UST systems have been moved to the far side of the Property and impacted unsaturated soil has been removed for off-site disposal, no source area for additional petroleum impact is located in the area of the impacted groundwater plume.

8.5.2 Qualitative Analysis

It is also our opinion that the qualitative fate and transport analysis presented below presents a reasonable assessment of solute fate and transport at the Site based on the current data.

Benzene and MTBE are present in groundwater beneath the Site. Both Benzene and MTBE are extremely soluble in groundwater, have low organic carbon coefficients (Koc), and are resistant (under some circumstances) to biologic attenuation. Benzene and MTBE are generally at the leading edge of a solute plume and are the most distally distributed solutes. At the former Rosemergy Store/Garage, benzene and MTBE have

been detected in off-Property monitoring wells at levels that exceed the RMSC SHS. MTBE, however, has traveled the furthest distance from the source area. MTBE has been detected in monitoring well MW-16 located southeast of the former source area at the distal edge of the plume.

Contaminant concentrations seemed to be stable or decreasing prior to the constructions activities at the Property in the second quarter of 2014. In addition to construction disturbing groundwater flow patterns during the construction process, the construction introduced an unpaved buffer long the southern property boundary that appears to have increased infiltration in the southeast corner of the property. Additional groundwater sample collections are required to establish trends, however the current data suggests that the change in flow patterns has increased the groundwater elevation throughout the contaminant plume. The increase in water level elevations corresponds to an increase in contaminant concentrations in downgradient monitoring wells. At least one (1) additional groundwater sample collection event should be completed before any assessment of long term trends is attempted. After contaminant concentrations have adjusted to changing conditions at the property, a numerical evaluation of contaminant fate and transport can be completed.

8.6 CONCEPTUAL MODEL OF GROUNDWATER FLOW

Field data indicate that unconsolidated deposits are laterally extensive and serve as an aquifer beneath the Site. Groundwater in the area of the former UST system was encountered at a depth of approximately 4 feet below grade. The depth to groundwater indicates that the potential for preferential contaminant transport pathways exists at the site.

With respect to topography, the site is located near the saddle point that separates surface flow to the north towards Little Teedyuskung Lake from surface flow to the southeast and east towards creeks that drain into the Lackawaxen River. The site is located approximately 1,200 feet south of Little Teedyuskung Lake. The lake drains into West Falls Creek which passes approximately 1,100 feet northeast of the site. West Falls Creek flows southeast to the Lackawaxen River. The site is located approximately 2,200 feet northeast and northwest, respectively, of two (2) small creeks that drain south into the Lackawaxen River. The Lackawaxen River is located

approximately 7,500 feet south of the site and flows from west to east (towards the Delaware River). The distribution of contaminants at the Site indicate that flow in the area of the former USTS is to the west with a minor component of flow to the south-southeast.

Available geographical and historical data and the previously completed cross-section for the Site (See *SCR*) indicate:

1. The primary surface water discharge boundary in the area of the Site is the Lackawaxen River and its tributaries.
2. No distinct confining unit was evident in the subsurface that was evaluated by this study.
3. The overburden consists of a poorly stratified mixture of silty sands and silts, with varying amounts of gravel, and occasional clayey horizons. Bedrock was not encountered during site characterization activities that investigated to a depth of approximately 21 feet below grade.
4. The water table is indicated to be shallow and located just below the depth of utilities at the Site. Although data indicates that the distribution of contaminants is consistent with groundwater flow predicted from contour maps, utilities could potentially serve as preferential pathways during periods of high water levels.
5. Groundwater mounding within the unconsolidated overburden occurs at the eastern end of the former UST area.
6. Although groundwater is shallow, experience with open holes and excavations indicate that very little water is available in the shallow overburden. Measurements of aquifer properties indicate very slow groundwater transport velocities.

9.0 REMEDIAL ALTERNATIVES ANALYSIS

9.1 GENERAL

Although the release may be more than 13 years old, significant concentrations of unleaded gasoline constituents are currently present in the area surrounding the former USTs. Attenuation of the impacted groundwater plume has been limited by the relatively low permeability of soils in the area of the release, limited infiltration due to the presence of asphalt at the surface, and the extensive residual source area that consists of fine grained soils with sorbed contaminant mass in the zone of groundwater fluctuation (aka soil smear zone) zone. Recent construction activities have mobilized some of the residual hydrocarbon mass.

Remedial measures will be required to reduce the contaminant mass in groundwater and in the soil smear zone. Remedial alternatives are discussed in this Section that may be utilized to facilitate the demonstration of the selected standards.

9.2 REMEDIAL TECHNOLOGIES

9.2.1 Excavation and Off-Site Disposal of Soil

Excavation and off-site disposal of petroleum impacted soil is usually the most cost effective solution for small and easily accessible releases to soil. The soil can generally be disposed of at a nearby permitted landfill or soil recycling facility. The removal of the soil source area can in some instances cause a rapid reduction of the impacted groundwater plume.

Impacted unsaturated zone soil that was accessible was removed during the removal of the UST systems. Although saturated zone soils could be excavated for off-property disposal, the excavation activities would present significant challenges with respect to management of water as depth increases, temporary loss of site use, maintenance of utilities, and restoration of the site. In addition, previous experience at similar sites indicates that the contaminant migration to the southeast would increase (at least in the short term) due to the large open excavation and the inability of the remedial measure to remove the residual source area beneath Route 590. Based on the logistical concerns and the likelihood of increasing downgradient contaminant migration to the southeast, excavation and removal of residual impacted soil is not currently retained as a viable remedial alternative.

9.2.2 Groundwater Pump and Treat

Groundwater pump and treat is an effective means of establishing hydraulic control over impacted groundwater plumes and targeting specific zones of groundwater recovery. Although it is effective in establishing control over a plume, pumping large volumes of water over a period of many years is typically required to produce a significant reduction in contaminant concentrations within the plume.

The fine grained soils would make pump and treat technologies a poor choice for the Site unless it was combined with other technologies. Groundwater and pump and treat is not retained as a viable remedial alternative unless it is incorporated with other technologies.

9.2.3 Air Sparging

Air sparging uses compressed air or oxygen that is injected below the water table to strip volatile contaminants from the adjacent soil and groundwater. The oxygen introduced into the aquifer provides the added benefit of stimulating natural biodegradation that is typically oxygen limited within soil impacted by petroleum compounds. The contaminated soil vapor is extracted above the water table and treated ex-situ. Ex-situ treatment of the petroleum impacted vapor is usually completed using granular activated carbon (GAC). Air sparging is often limited by the presence of low permeability strata.

The shallow groundwater table would make the effective recovery of vapor problematic. Air sparging is not retained as a viable remedial technology.

9.2.4 Oxygen Enhancements

In the presence of sufficient oxygen and nutrients, naturally occurring organisms are capable of degrading significant volumes of petroleum constituents. Several methods can be used to increase the oxygen content of the impacted media. These methods include biosparging (similar to air sparging but at lower velocities that do not strip off volatiles) and various oxygen releasing compounds that are commercially available to enhance biodegradation. In some settings, hydrocarbon degrading organisms must also be introduced into the impacted media to increase the rate of biodegradation to an acceptable level. Biodegradation "cocktails" that include nutrients, oxygen source, and

petroleum degrading bacteria are commercially available. Designing an efficient means of distributing the enhancements throughout the impacted media can be a challenge in some geologic settings. One (1) advantage to these technologies is that no ex-situ treatment of contaminants is required. Pilot scale studies and/or microcosm studies are often recommended to increase the likelihood of success.

The size of the residual source area and the limited permeability would make the distribution of oxygen enhancements a challenge. Oxygen enhancements are not currently retained as a viable remedial technology at this Site.

9.2.5 Dual-Phase/Multi-Phase Extraction

Dual-phase extraction (DPE) involves the simultaneous extraction of impacted water and soil vapor using a moderate to high vacuum blower or liquid ring pump. In certain cases, the liquid and vapor may be extracted using separate pumps and/or blowers. Extraction of the soil vapor and water together promotes the stripping off of volatiles into the vapor phase which can then be treated more efficiently using GAC or an alternative technology. Dual-phase extraction is one of the few technologies that can be used effectively in low permeability strata. Dual-phase extraction has proven to be particularly effective in shallow low permeability aquifers that are located beneath pavement or another low permeability cover. The system can also be used to pump warm air into the ground to promote the degradation of less volatile (naphthalene, cumene) petroleum constituents. In high permeability strata and large applications the cost of equipment and the volume of water generated become problematic.

The Site is well suited for dual-phase extraction. The Federal Remedial Technologies Screening Matrix rates dual phase extraction as above average (effectiveness demonstrated at pilot scale and full scale) for non-halogenated VOCs. Dual-phase extraction is retained as a viable remedial technology.

9.2.6 In-Situ Chemical Oxidation

In-Situ Chemical Oxidation (ISCO) involves the introduction of a strong oxidizing agent (permanganate, ozone, hydrogen peroxide/fenton, persulfate, etc.) into the impacted media to chemically break down contaminants into less harmful constituents. ISCO is often used with recalcitrant compounds that are not easily addressed with other

remedial technologies. One advantage of ISCO is that it generally acts on the order of weeks to months to rapidly reduce contaminant concentrations. As the destruction of contaminants is completed in-situ, no additional infrastructure is generally required to complete the remediation.

Drawbacks to the use of ISCO include the heat that is generated during the oxidative reaction and safety concerns for site personnel that may be exposed to strong oxidizing agents. Assessing the amount of oxidant that will be required (based on contaminant level and soil oxidant demand) and the best means of distributing the oxidant through the impacted zone can be complex. The oxidants are typically introduced into the ground during short-term events. The effectiveness of the treatment is generally not known for a period of weeks and months afterwards. If additional treatment is required, additional mobilization and injection events are required and additional costs are incurred.

Permanganate is not applicable due to its general inability to breakdown benzene within its window of activity in the subsurface. Ozone, persulfate, and hydrogen peroxide/fenton's reagent are potential oxidants, however care must be exercised to manage the potential corrosive impacts of these oxidants or their potential activation compounds at active facilities.

One additional drawback is that chemical oxidation does not address the unsaturated zone or smear zone. In some cases, soil blending (not applicable to this Site) or flooding of the smear zone can be employed to address unsaturated zone contamination. ISCO is typically used to rapidly reduce high concentrations of target compounds.

The Federal Remedial Technologies Screening Matrix rates ISCO as average (limited effectiveness demonstrated at pilot scale and full scale) for non-halogenated VOCs. As the low permeability strata at the property may preclude efficient distribution of the oxidants, ISCO is not retained as a viable technology for this Site.

9.2.7 Natural Attenuation

Natural attenuation refers to the natural reduction in contaminant concentration over time as the result of biodegradation, chemical reactions, dilution, volatilization, etc. Although natural attenuation does not involve active remediation, long term monitoring and analysis are generally required. Fate and transport modeling is used to estimate the time that the natural attenuation will require to meet the selected standard.

Given the age of the release and the limited degradation that has been occurred over the past thirteen years, natural attenuation is not a suitable choice for the Site.

10.0 REMEDIAL ACTION PLAN

10.1 REMEDY SELECTION

Site characterization and supplemental site characterization activities have established the following facts:

- A release from a former regulated UST system impacted soil and groundwater in the area of the former USTs.
- Unsaturated soil that exceeded the RMSC SHSs was excavated and removed from the property as part of UST closure activities.
- Current and historical groundwater analytical data indicates that groundwater with constituent concentrations that exceed the RMSC SHSs has migrated beyond the property boundary.
- Attenuation of the plume has been limited by a large low permeability smear zone and the asphalt surface.
- The impacted groundwater is located at depths of approximately 1 to 7 feet below ground surface.

Based on these facts, the remedy selected for the Property is additional groundwater monitoring coupled with dual-phase extraction to extract and treat groundwater and soil vapor from the shallow overburden aquifer and smear zone. In anticipation of the recommended remedial measures, subgrade piping and dual phase extraction (DPE) wells were installed during site development activities in 2014.

Dual-phase extraction involves the simultaneous extraction of impacted water and soil vapor using a moderate to high vacuum blower or liquid ring pump. In certain cases, the liquid and vapor may be extracted using separate pumps and/or blowers. Extraction of the soil vapor and water together promotes the stripping off of volatiles into the vapor phase which can then be treated more efficiently using GAC or an alternative technology. Dual-phase extraction is one of the few technologies that can be used effectively in low permeability strata. Dual-phase extraction has proven to be particularly effective in shallow low permeability aquifers that are located beneath pavement or another low permeability cover. The system can also be used to pump warm air into the ground to promote the degradation of less volatile (naphthalene, cumene) petroleum constituents.

10.2 REDEVELOPMENT ACTIVITIES

The site is located along a major local road within an area of Pike County that has become a seasonal tourist destination. The Former Rosemergy's Property was undergoing redevelopment during the period of site characterization. Redevelopment activities included demolition of the former residence, expansion of the former garage building into a modern convenience store and real estate office, grading and paving of the site, installation of new petroleum USTs and dispensers in the northwest corner of the property (outside of the area impacted by the former UST system), and installation of a stormwater management system.

The new owner of the property (Woodloch) requested that Converse install any remedial equipment that might be required for site remediation prior to the completion of final grading and paving activities. As the site characterization was not complete, Converse informed Woodloch that any remedial design and installation activities would be based on an incomplete characterization and could not be guaranteed to be the only measures that would be required to address the contamination at the Site. Woodloch asked Converse to install components of a remedial system based on a screening of remedial alternatives and preliminary design that was conducted by Converse.

Based on experience with unleaded gasoline releases that had been successfully remediated by Converse in similar geologic settings in northern Pennsylvania, Converse designed subsurface components for a dual phase extraction (DPE) remedial system that could be utilized to address the impacted media that had been encountered at the Site. The subsurface components that were included in the preliminary design and subsequently installed during development activities included: eight (8) DPE wells to 15 feet below grade completed within 24" road vaults; retrofit of two (2) existing monitoring wells with 24" road vaults; and schedule 80 PVC piping installed to all of the 24" road vaults that was stubbed up along the side of the building. Based on Converse recommendations, Woodloch also planned for a future remediation shed (with specific electrical requirements for 3 phase service) during development.

10.3 PILOT TEST

10.3.1 GENERAL

Converse used a trailer mounted rotary phase blower system to conduct a pilot test on

the DPE wells during March 2013. The vapor wells for the partially installed dual-phase extraction system provided a means for conducting a pilot test of vapor and groundwater extraction. Short-term pilot tests were completed on dual-phase extraction system wells DPE-3, DPE-6, and DPE-7. A pilot test was also conducted using three wells simultaneously: DPE-1, DPE-4, and DPE-5. The location of existing DPE components is shown on Figure 3. Site features and monitoring well locations are shown on Figure 2. The data summary sheets and summary charts from the pilot test activities are included as Appendix D.

10.3.2 DPES WELL CONSTRUCTION

The DPE wells were constructed similar to the requirements that are described in the PADEP 383-3000-001: *Pennsylvania Groundwater Monitoring Guidance Manual, December 1, 2001* (*2001 GM Guidance Manual*) and *ASTM Standard D 5092-04*. Well and Boring Logs were prepared that present a summary of well construction and descriptions of the materials and the field screening results that were encountered during the installation of the wells and soil borings at the Site.

The wells were developed by Converse personnel using a submersible pump or disposable bailer to remove fine-grained material and to initiate hydraulic communication with the aquifer. Converse personnel field monitored the development water for pH, temperature, and specific conductivity. Potentially impacted development water was treated on-site using granular activated carbon and discharged to the ground surface in the vicinity of the well.

The DPE wells were installed using hollow stem auger drilling methods to depths of approximately 15 feet below grade. The DPE wells were screened with approximately 12.5 feet of 2-inch diameter, schedule 40 polyvinyl chloride (PVC), 0.020-inch factory slotted, flush threaded screen. The borehole above the screened interval was cased with 2-inch diameter, schedule 40, flush threaded PVC riser. The annular space between the borehole and the well screen was filled with appropriate sand to approximately ½-foot above the screened interval and the remaining annular space was filled with bentonite and concrete.

10.3.3 DPES MOBILIZATION AND HOOK-UP

Converse mobilized a trailer mounted dual-phase extraction system (DPES) to the Site. Basic components of the DPES consist of a Roots Universal RAI blower with 7.5 horse power (hp) motor, knockout drum with three (3) level sensors, ¾ hp water transfer pump, ½ hp heat exchanger unit, and electronic control panel. Treatment units consist of two (2) 160-pound granular activated carbon (GAC) vapor treatment vessels (in series) and two (2) 200-pound GAC water treatment vessels (in series). Vacuum gauges, pressure gauges, and temperature gauges are used to monitor system operation. System vacuum is controlled by an air-mix valve located at the blower inlet.

The well heads consist of 2-inch PVC riser. 2-inch flexible PVC hose was used to connect the trailer mounted DPES to the well head. A temporary one-inch drop pipe within a 2-inch manifold was used extract soil vapor and groundwater at the well head. The 2-inch manifold contains a sample port that can be used to monitor vacuum, introduce entrainment air, and collect air samples at the well head.

10.3.4 TESTS AND MONITORING

The primary pilot test tasks were as follows:

1. Initial monitoring of water levels to establish antecedent conditions.
2. Single well extraction tests at DPE wells DPE-3, DPE-6, and DPE-7.
3. A multi-well test utilizing simultaneous extraction at DPE-1, DPE-4, and DPE-5.
4. Data tabulation and analysis.

The pilot testing was conducted on March 11 and 12, 2015. During the pilot testing, the following parameters were monitored:

1. Vacuum in the DPE well being tested, in inches of mercury (inHg).
2. Airflow from the DPE well being tested, in cubic feet per minute (cfm).
3. Groundwater extraction rate from the DPE well being tested, in gallons per minute (gpm).

4. Groundwater levels in the piezometers and DPE wells not being tested at that time, in feet below top of casing (ft-toc).
5. Measured temperature of the intake air before entering the blower and the temperature of the air after exiting the blower (before entering the heat exchanger), in degrees Fahrenheit (°F).
6. Vacuum in the piezometers and DPE wells not being tested at that time, in inches of mercury (inHg).

In addition to the above measurements, two (2) quick-pull air quality samples were collected. Both samples were collected during the multi-well extraction test. One (1) sample of the influent air was collected after one (1) hour of extraction and a second influent sample was collected at the end of the test.

10.3.5 TEST RESULTS

General

Dual phase extraction was achieved during each single well test and during the multi-phase test. DPE at the site was easily achieved at vacuums of 6 to 7 inHg. The volume of air and groundwater generated by the system was consistent with the initial design of the DPE system. Vacuum data collected during the tests at nearby extraction wells indicate that soil vapor can be extracted from the treatment cell using the current array of DPE wells. Water level data indicates that the zone of influence of each extraction well will typically overlap. Although groundwater can be extracted from entire treatment cell using the current DPE array, the predicted drawdown from the short term pilot test raises concerns about the amount of drawdown that will be achieved within the treatment cell. The short term pilot test data predicts that drawdown may be as little as 0.5 feet in portions of the treatment cell, however during long term extraction the drawdown would be expected to exceed the initial predictions. As the majority of the contaminant mass is extracted via the vapor phase, a long term lack of drawdown would significantly prolong the amount of time that the DPE system would be required to run to remove sufficient contaminant mass to meet applicable cleanup standards.

The data summary sheets and summary charts from the pilot test activities are included as Appendix D. A detailed discussion of the pilot test results is provided below.

Dual-Phase Extraction System Well DPE-3

Dual-phase extraction system well DPE-3 was tested over a period of 130 minutes. Before testing commenced, the measured starting water level was 3.30 ft-toc (eastern end of treatment cell) and the total well depth was 14 ft-toc. The dual phase extraction drop pipe was set at 12.5 ft-toc.

The DPE system operated at approximately at gradually increasing vacuums of 7 inHg, 10 inHg, and 12 inHg. The temperature rise across the blower was measured as a function of vacuum at the blower. A temperature rise of approximately 130 degrees was measured for a vacuum of 12 inHg. The airflow was less than 10 cfm until the vacuum was increased to 10 inHg. The average airflow from the DPE well at the conclusion of the test was measured at 15 cfm. The total flow through the blower system at the end of the test (including extracted air and "make-up air") was measured at 120 cfm.

The average groundwater recovery rate from DPE-3 during the course of the pilot test was approximately 1.5 gallons per minute (about 180 gallons in 120 minutes), although the rate was as high as 2.5 gallons per minute during later portions of the test. The groundwater recovery rate was potentially impacted by snowmelt and proximity to the former UST excavation backfill. Both the snowmelt and temporary groundwater storage within the former UST excavation are considered to be transient conditions.

No vacuum was recorded in nearby monitoring points during the pilot test at DPE-3. As the water level in the nearest monitoring points was above the screened interval, it would not have been possible to measure vacuum at the nearest monitoring locations.

Drawdown was not observed in the nearest monitoring points. Snowmelt during the test was so significant that the water level in monitoring well MW-4 rose during the test. As the test was conducted nearest to the snowmelt recharge area in the southeast corner of the property, the high groundwater recovery rate from DPE-3 and the lack of drawdown in adjacent wells is not considered to be typical of normal conditions.

Dual-Phase Extraction System Well DPE-6

Dual-phase extraction system well DPE-6 was tested over a period of 90 minutes.

Before testing commenced, the measured starting water level was 10.35 ft-toc (western end of treatment cell) and the total well depth was 13.4 ft-toc. The dual phase extraction drop pipe was set at 12.5 ft-toc.

The DPE system operated at approximately 7 inHg (gauge malfunctioned, vacuum is based on temperature rise across blower) for the majority of the test. The average airflow from the DPE well was measured at 15 cfm while the average total airflow out of the system was 160 cfm (again due to the amount of make-up air being added to the system to keep the generated vacuum from exceeding the blower capacity).

The average groundwater recovery rate from DPE-6 during the course of the pilot test was approximately 0.3 gallons per minute (about 30 gallons in 90 minutes).

A magnehelic vacuum gauge was used to periodically monitor vacuum in the nearby monitoring wells and other DPE wells not being tested. Vacuums of 0.1 inH2O or less were observed in MW-1R and DPE-5, while a much larger vacuum (9 to 13 inH2O) was recorded in MW-7.

Dual-Phase Extraction System Well DPE-7

Dual-phase extraction system well DPE-7 was tested over a period of 90 minutes. Before testing commenced, the measured starting water level was 5.56 ft-toc and the total well depth was 14 ft-toc. The dual phase extraction drop pipe was set at 12.5 ft-toc.

The DPE system operated at approximately 7 inHg (gauge malfunctioned, vacuum is based on temperature rise across blower) for the majority of the test. The average airflow from the DPE well was measured at 15 cfm while the average total airflow out of the system was 160 cfm (again due to the amount of make up air being added to the system to keep the generated vacuum from exceeding the blower capacity).

The average groundwater recovery rate from DPE-6 during the course of the pilot test was approximately 0.2 gallons per minute (about 20 gallons in 90 minutes).

A magnehelic vacuum gauge was used to periodically monitor vacuum in the nearby

monitoring wells and other DPE wells not being tested. Vacuums of 0.1 inH2O or less were observed in MW-5 and DPE-4, while a larger vacuum (0.3 to 0.6 inH2O) was recorded in DPE-5 and DPE-8.

Multi-well Test (DPE-1, DPE-4, and DPE-5)

Dual-phase wells DPE-1, DPE-4, and DPE-5 were tested for a period of approximately 180 minutes.

Based on the temperature rise across the blower, the DPE system operated at approximately 7 inHg for the majority of the test. The average airflow from the wells was measured at 37.5 cfm while the average airflow out of the system was 165 cfm; this is due to make-up air being added to the system to keep the generated vacuum from exceeding the blower capacity.

The multi-well test induced a drawdown of at least 0.1 feet in DPE-2 DPE-7, DPE-8, MW-1R, and MW-5 by the end of the test. The largest drawdown, greater than 0.25 feet, was observed in DPE-7. The rate of groundwater extraction was approximately 1.3 gallons per minute over the course of the test (230 gallons over 180 minutes).

A magnehelic vacuum gauge was used to periodically monitor vacuum in the nearby monitoring wells and other DPE wells not being tested. Vacuums of approximately 2.5 inH2O were observed in DPE-7 and DPE-8 by the end of the test.

Grab air samples were collected after 1 hour and at the conclusion of the test. Air samples were collected prior to the treatment system.

Groundwater drawdown

The radius of influence for groundwater extraction was approximately 27 feet based on the multi-well test. Drawdown of 1 foot is predicted at a distance of approximately 12 feet from a vertical DPE well. Based on the pilot test data, a DPE well spacing of approximately 20 feet would be required to achieve a drawdown of 2 feet throughout the treatment plume.

Groundwater extraction rate

Groundwater extraction for each pilot test can be calculated based on the gallons of water treated per increment of time. Groundwater extraction rates ranged from about 2.5 gallons per minute towards the end of the DPE-3 test to less than 0.25 gallons per minute for the DPE-6 test. The DPE-3 test was impacted by significant snowmelt (and possibly proximity to the former excavation) on the day of the test and is not considered to be representative. The rate during the multi-well test was approximately 1.3 gallon per minute from the 3 wells. Based on the test data, water extraction rates of 0.25 to 0.5 gallons per minute per well should be expected during start-up of the system. Groundwater extraction rates typically drop significantly during continuous operation of the system, however transient infiltration events due to snowmelt and heavy rain can cause sudden increases in the volume of water extracted.

Vapor extraction zone of influence

The radius of influence for vapor extraction was approximately 24 feet based on the multi-well test. This is based on a 7 inHg vacuum test. Higher vacuums will increase the radius of influence for vapor recovery. Based on the pilot test data, a DPE well spacing of 45 feet or less (at higher vacuum) would be required to achieve vapor withdrawal throughout the treatment cell. The test data indicates that the current DPE spacing is sufficient to recover vapor from the treatment cell.

Vapor extraction rate

The vapor extraction rate for each DPE wellhead varied from approximately 10 cfm to 15 cfm. The vapor extraction rate measured at the Site is consistent with other DPE systems that have been operated in northern Pennsylvania. The vapor extraction rate indicates that a blower that can produce 125 cfm at 12 inHg will be sufficient for the current system of DPE extraction wells.

Air Quality Data

The influent air samples were collected to assist with the calculations of carbon usage and changeout frequency. The samples were collected using single use disposable tubing and quick-pull 0.5 -liter summa canisters. The samples were tested utilizing the TO-15 method for unleaded gasoline compounds and a select list of other gasoline compounds. Results of air quality samples are included in Appendix C. Although the

air samples provide an initial estimate of carbon loading, vapor concentrations typically increase for several months after system start-up.

10.3.6 SUMMARY

Evaluation of the data obtained during the pilot test indicate the following:

- The Roots universal RAI blower with 7.5 hp 230V 3-phase motor capable of delivering 60 to 140 cfm at 12" Hg was successful in achieving dual-phase extraction from all individual and multiple DPE wells.
- The estimated groundwater extraction rates from the current system could be easily handled by a DPE system using granular activated carbon (GAC) to treat groundwater as total system flow will not exceed 10 gallons per minute during normal conditions.
- The radius of influence for recovering soil vapor was calculated to be approximately 24-feet utilizing a modest vacuum of 7 inHg. The test indicates that the current DPE wells could be used without modification to recover soil vapor from the treatment cell.
- Although groundwater can be extracted from entire treatment cell using the current DPE array, the predicted drawdown from the short term pilot test raises concerns about the amount of drawdown that will be achieved within the treatment cell.
- Each DPE well produced approximately 10 cubic feet per minute (CFM) to 15 CFM during the tests. At that flow rate, a modestly sized blower capable of 125 scfm at 12 inHg could be utilized with the current array of DPE wells.
- The granular activated carbon (GAC) effectively removed gasoline constituents from the air and soil during the course of the tests.

10.4 REMEDIAL SYSTEM CONCEPTUAL DESIGN

Based on the site characterization and our understanding of the aquifer properties and pilot test results, it is Converse's opinion that DPE will be the most effective means of rapidly reducing contaminant mass beneath the Property in pursuit of a relief from further liability in accordance with Chapters 245 and 250. It has been our experience that the current DPE components that are installed at the Property (combined with an appropriate extraction and treatment system) would, under normal circumstances, remove more than 95% of the contaminant mass over the next 3.5 to 5 years. Given the perceived limitations of the current system to provide drawdown throughout the treatment cell, this approach would rely upon normal seasonal fluctuations and dry

periods to expose the majority of the smear zone to the vapor extraction component of the system.

It is our opinion that a revised system that provides additional drawdown throughout the treatment cell could reduce the time required to operate the remedial system to approximately 2 years. It is our understanding, that PADEP and USTIF are looking for a system that will remediate the impacted media in the most efficient manner based on current conditions at the property.

After considering the configuration of the current DPE components, site characterization data, and hydrologic constraints, it is our opinion that completion and start-up of the current DPE system will provide the greatest short term benefit, as any further design modification and testing would delay the start of the remedial system until Spring of 2016. Additional monitoring locations (piezometers completed to 15 feet with 13' of screen) will be added within the treatment cell to allow assessment of drawdown during the initial 6 to 12 months of operation. Suggested piezometer locations are shown on Figure 14. Any required modifications to the remedial system will be based on drawdown and contaminant mass reduction during the initial 6 to 12 months of operation. Criteria for evaluation of the system modifications will include cost effectiveness.

As the recent construction has temporarily mobilized contaminants and changed the pattern of infiltration at the Property, we propose to assess the current pattern of surface water infiltration and meet with the owner's representatives to find ways to minimize infiltration in the southeast corner of the Property.

10.5 DUAL-PHASE EXTRACTION SYSTEM

The initial DPE design incorporated ten (10) DPE wells connected with two (2) 2-inch schedule 80 piping runs (5 DPE wells per piping run). The results of the pilot test indicate that the current DPE configuration will treat impacted soil vapor and groundwater throughout the planned treatment cell. As discussed previously, additional monitoring components (piezometers) will be incorporated during the initial 6 to 12 month period to assess water level drawdown within the treatment cell and the rate of contaminant mass reduction. The system may require modification at the end of the

initial period. The selected system is discussed in the following sections.

DPE COMPONENTS

No alteration to the current DPE well array is proposed at this point in time. A DPE well head that will allow for simultaneous recovery of water and soil vapor will be constructed within each of the ten (10) DPE system road vaults. The 2-inch DPE wells are hooked to the 2-inch system piping beneath each well head. A one-inch drop tube will be installed at each wellhead to a depth of approximately 12.5 feet to serve as the DPE extraction point. Separate shut off valves for the drop tube and 2-inch well will allow wells to be used for dual-phase extraction or soil vapor extraction only. Air valves at the top of the 2-inch casing will allow air to be added at the wellhead to facilitate entrainment of the groundwater and soil vapor. A cap at the top of the well head allows water levels to be collected through the 1" drop pipe. Sample ports will be available at each wellhead to check vacuum and collect vapor measurements. Figure 3B shows a typical wellhead configuration.

The 2-inch schedule 80 piping that is currently stubbed up along the east side of the building will be continued to the location of the treatment shed. The approximate location of the shed is shown on Figure 3. The shed will be a heated "amish" type wooden shed constructed of 2x4 lumber with an asphalt shingle roof. Typically a 10 foot by 14 foot shed is sufficient to house the treatment system. The shed will be mobilized to the site with remedial system components, piping, heater, and electrical components already installed.

DPE TREATMENT SYSTEM

The DPE treatment system will consist of a timer/control panel, one aqueous phase knockout drum, a ¾ hp liquid phase transfer pump, a positive displacement rotary-lobe blower system (as previously described), a ½ hp heat exchanger, an 800-pound vapor phase granular activated carbon (GAC) treatment unit, two (2) 200-pound vapor phase GAC polishing units, and two (2) 200-pound aqueous phase GAC units. Bag type sediment filters will be added to the treatment stream as needed to protect the GAC units. As previously discussed, a motor and blower combination that can produce at least 125 scfm at 12 inHg will be utilized. The blower motor will require a 230 volt 3-phase electrical service. A schematic of the proposed DPE remedial system is included

as Figure 3C. Current conditions indicate that explosion proof components are not required.

System piping prior to the blower will be Schedule 40 and Schedule 80 PVC. Sample ports will be constructed of brass. Piping within 3 feet of the blower and between the blower and heat exchanger will be black steel, heavy gauge copper, or high temperature reinforced automotive type tubing rated for 225 degrees F. Connections between the air canisters will be "quick connect" pressure fittings.

A tangential-inlet, steel knockout drum will be located upstream of the blower, and will enhance the condensation of the water vapor entrained in the extracted soil vapor. The vapor phase will be drawn through the blower and passed through one (1) 800 pound GAC unit and two (2) 200-pound GAC units (or similar) arranged in series for treatment prior to discharge. The air discharge will be vented to the atmosphere above the roofline of the building. Water that collects in the knockout drums will be pumped through the liquid phase GAC canisters for treatment prior to discharge. The treated water will be discharged to the infiltration gallery (pending approval) or in accordance with another approved method identified during the permit process. The 230V 3-phase electric will be taken from the overhead pole that is located at the southeast corner of the property via subgrade piping that was installed during site development activities. Telephone will be utilized (or Wi-Fi) to allow remote monitoring of the treatment system.

SYSTEM INSTALLATION

Subject to subcontractor availability, we estimate that it will take 3 to 5 weeks to get the DPES system permitted, installed, and started.

Trench width will be kept to a minimum (approximately 24") to avoid unnecessary disturbance of the area. Trench margins in asphalt, if applicable, will be saw cut. Trench depth is anticipated to be 40 inches. Existing piping was installed approximately 30 inches below unfinished grade (prior to paving) and is expected to be approximately 32 to 36 inches below pavement at the Site. Trenches will be backfilled with native material and compacted with the backhoe bucket. Soil vapor screening will be used to segregate any impacted soil for subsequent testing and off-site disposal.

Permits/approvals are required for the air and water discharges from the DPES. Converse will comply with PADEP/EPA discharge permits and approvals.

Startup of the system will be initiated after permits and approvals are in place and the system has been installed and tested. The DPE system will be monitored on a daily basis for the first five (5) days of operation (system start-up) and as needed during the first month of operation. Converse emergency contact information will be printed on the exterior of the treatment shed. The telephone/wifi monitoring system that will be installed in the shed will notify the Converse service representative when the system shuts down or issues a fault code. Faults that are reported to Converse include excessive water pressure, vapor back pressure (adjusted to blower specs), high temperature conditions, high water in the knockout drum, and water on the floor of the shed. High vacuum is precluded by a vacuum relief valve installed above the blower.

An untreated air sample will be collected from the DPES for laboratory analysis (method TO-15) at the end of the first month of operation and on a quarterly basis thereafter. The air samples will be analyzed for common unleaded gasoline constituents. Air data will be used to calculate carbon loading and the mass of contaminant removed. Influent and effluent air is monitored during maintenance visits with a PID.

Based on the performance of the system at start-up, Converse will adjust the performance of the DPES to operate within the physical constraints imposed by the geology and hydrogeology of the site. Converse will analyze the initial performance data of the DPES to assess the efficacy of the remedial system. If significant modifications are necessary, Converse will modify the design to meet the performance needs of the project.

SYSTEM OPERATION AND MAINTENANCE (O&M)

Remedial System Inspection Schedule

Converse will monitor the remedial system daily for the first week of operation and as needed during the first month of operation. Thereafter, the system will be monitored at least twice per month. Monitoring will be more frequent if dictated by equipment maintenance schedules but will not exceed one (1) visit per week. As discussed, telephone/ Wi-Fi based monitoring will be incorporated in the system controls.

Air Discharge Monitoring and Maintenance

PADEP does not generally require the sample collection and laboratory analysis of the air discharge from the type of source proposed herein. Converse will monitor the air discharge from the vapor phase GAC units using a photoionization detector (PID). As needed, the influent will be assessed with an LEL meter to maintain safety. The GAC canisters will have a manifold to allow for the screening of the air discharge between the units and at the discharge from the final canister. The field screening readings will be recorded and included in subsequent reports.

When field screening indicates breakthrough from the main vapor phase GAC unit (defined as effluent readings greater than 50% of influent readings or greater than 50 units on the PID), arrangements will be made for on-site replacement of the carbon. The 200-pound polishing units will be replaced on an as-needed basis. The spent GAC will be tested and returned to the carbon supplier for appropriate disposition.

Groundwater Discharge Monitoring and Maintenance

The aqueous phase GAC canisters will require more frequent replacement during the first six-months of operation of the DPES. Change-out frequency will depend on the flow rate of the DPES and the concentration of hydrocarbon constituents in the water/condensate. The first unit will be changed out when discharge concentrations exceed 75% of the RMSC SHSs for any constituent or at a suitable time predicted to avoid exceedance of applicable discharge criteria.

The water/condensate discharge will be sampled monthly and analyzed for the hydrocarbon constituents required by PADEP. The laboratory results will be included in subsequent reports. Additional monitoring requirements may be imposed by PADEP dependent on the type of discharge/permit.

SOIL GAS AND GROUNDWATER MONITORING PROGRAM

Soil Gas

Soil gas at the extraction points will be routinely monitored for VOCs, O_2, CO_2, and LEL during the scheduled site inspections. The readings provide useful information about biodegradation, contaminant mass reduction, and progress towards remedial goals. The field readings will be recorded and included in subsequent reports. Analysis of the

soil gas will be proposed as needed to effect proper monitoring of the DPES and to meet regulatory requirements.

Groundwater

Groundwater monitoring wells will continue to be sampled on a quarterly basis. No additional groundwater monitoring is anticipated as the result of the installation and operation of the DPES. The DPES influent will be monitored (head space monitoring with PID) at start-up and on a bi-weekly basis during system operation. As the treatment system works ex-situ, we anticipate that the monitoring wells that have been temporarily converted to DPE wells will continue to serve as valid groundwater monitoring points.

ASSESSMENT OF REMEDIAL SYSTEM EFFECTIVENESS

The DPES will be operated until field screening of the soil gas and the laboratory analysis of groundwater samples from the monitoring wells consistently indicate that the residual source area has been remediated sufficiently to demonstrate attainment of the selected standard. If applicable, soil samples will be collected in accordance with regulatory requirements to demonstrate attainment of the soil standards.

10.6 POTENTIAL DESIGN SUPPLEMENT

As discussed previously, pilot test data indicate that drawdown in areas of the treatment cell may be less than 1.0 foot. Limited drawdown over extended time periods within the treatment cell will significantly increase the time required to remediate the impacted area. Although seasonal fluctuations of the water table and extended periods of extraction system operation are sometimes sufficient to produce the desired drawdown, additional technologies are available to increase drawdown in the treatment cell and potentially reduce the time required to reach remedial goals.

Converse identified three alternatives for increasing drawdown in the treatment cell. The three (3) alternatives that were considered included:

1. Additional DPE wells tied into the existing DPE system.
2. A separate system of vertical extraction wells.
3. The use of horizontal extraction wells screened beneath the treatment cell.

While all three alternatives will be evaluated if it is deemed necessary to enhance the DPE system, a preliminary discussion of one of the alternatives is presented in Appendix F.

10.7 ATTAINMENT DEMONSTRATION FOR GROUNDWATER

A minimum of eight (8) consecutive quarterly groundwater sample collection events (GSCEs) will be collected from all of the monitoring wells and the supply well. The analytical data for groundwater will be evaluated as stipulated in §250.302, §250.704, and §250.707(b)(2)(i). Attainment of the NRMSC SHS will be evaluated at the on-property POC wells (currently MW-3, MW-4, MW-12, MW-13, MW-14, and MW-15) and off-property wells (MW-8 through MW-11 and MW-16) to demonstrate attainment.

If a compound is identified at a concentration greater than the NRMSC SHSs at one (1) or more of the POC or off-property wells, additional measures may be required to demonstrate attainment. If analytical data indicate that groundwater will not meet the attainment requirements for NRMSC SHSs, further evaluation of applicable standards and remedial alternatives will be completed.

10.8 DOCUMENTATION

Converse will document the results of the proposed Site activities in the quarterly remedial action progress reports (RAPRs) that are submitted to PADEP. The documentation will include drawings, field measurements, and laboratory results. A remedial action completion report will be submitted after constituent levels have been reduced sufficiently to demonstrate attainment of the selected standards.

11.0 QUALIFICATIONS

Mr. David Swetland, P.G. was the primary Converse person responsible for the preparation of this Report.

Mr. Swetland has more than twenty-six (26) years of experience conducting remedial investigations and providing environmental consulting services. Mr. Swetland has been a Geologist at Converse's State College, Pennsylvania office since 1991.

Mr. Orion Cook, P.E. is responsible for the review of engineering design, specifications, and technologies. Mr. Cook has twelve (12) years of professional engineering experience throughout the southwest and northeast United States.

David Swetland, P.G.
Senior Geologist

Orion Cook, P.E.
Project Engineer

AFFIX SEAL(s)
HERE (if applicable)

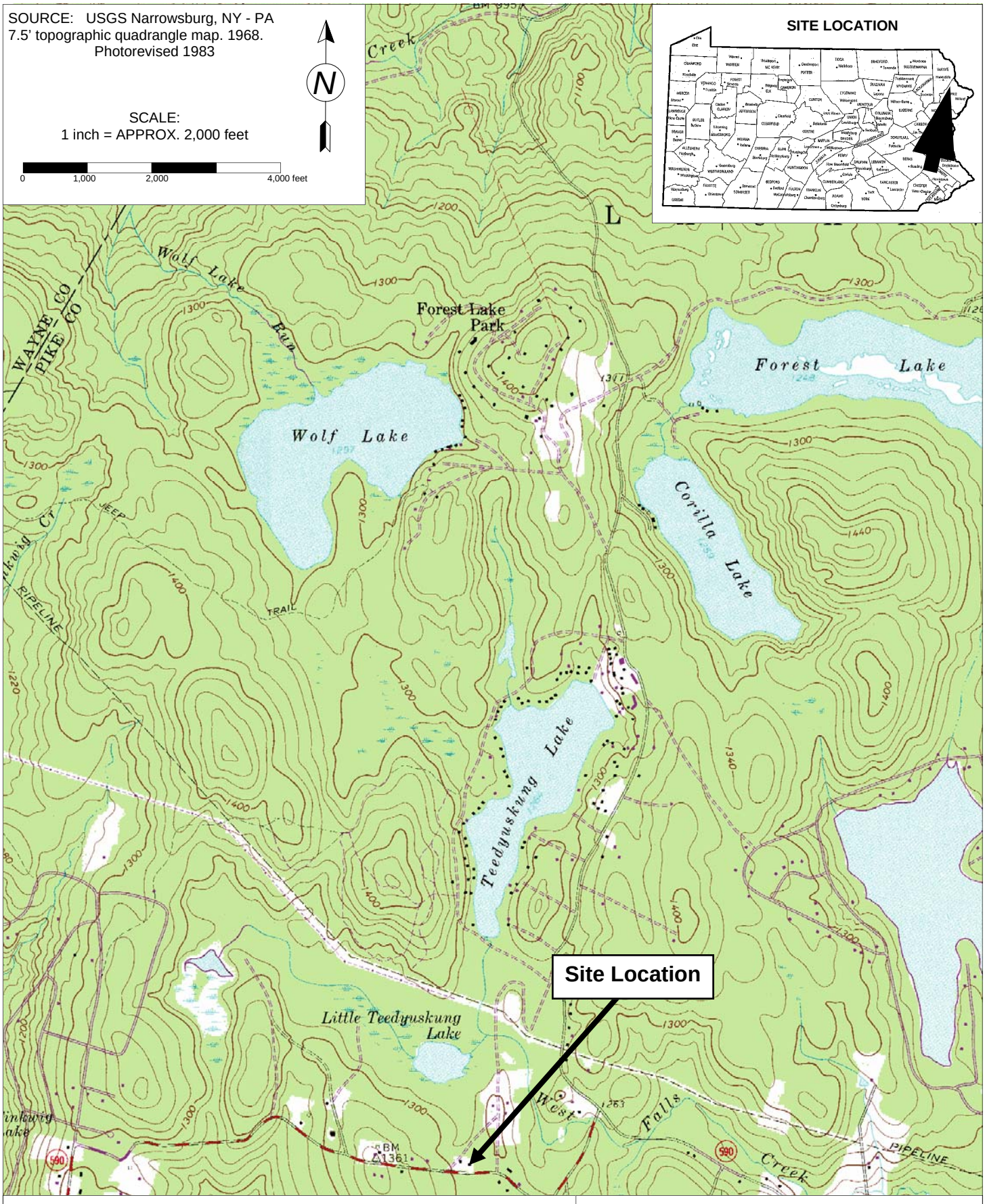


FIGURE 1: LOCATION MAP

ROSEMERGY SITE
HAMLIN HIGHWAY (PA 590)
HAWLEY, PIKE COUNTY, PENNSYLVANIA

Converse Project Number 11-17829-01 **Revised 01/09/13**

CONVERSE CONSULTANTS
2738 West College Avenue
State College, PA 16801
(814) 234-3223

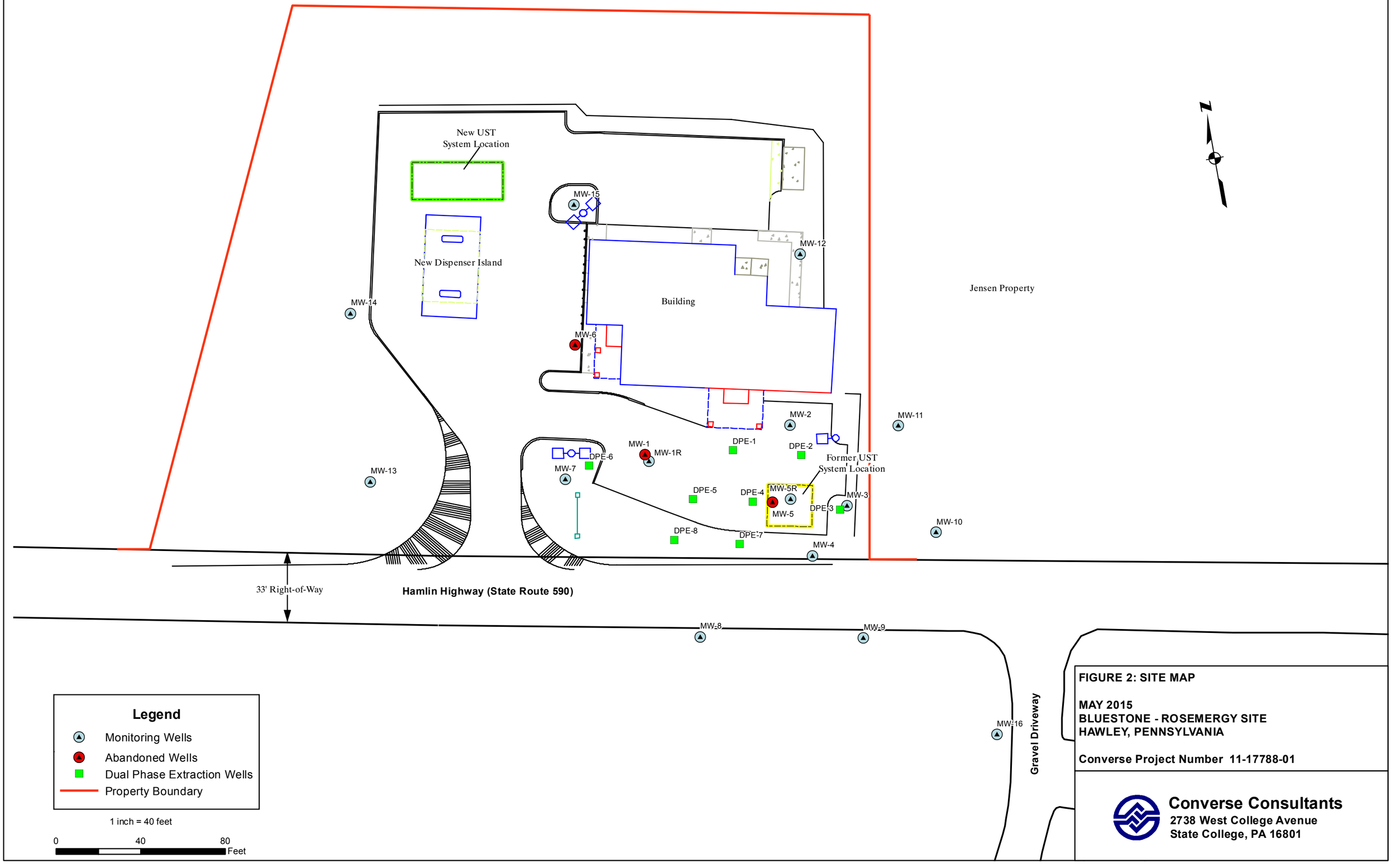


FIGURE 2: SITE MAP

MAY 2015
BLUESTONE - ROSEMERGY SITE
HAWLEY, PENNSYLVANIA

Converse Project Number 11-17788-01

Converse Consultants
2738 West College Avenue
State College, PA 16801

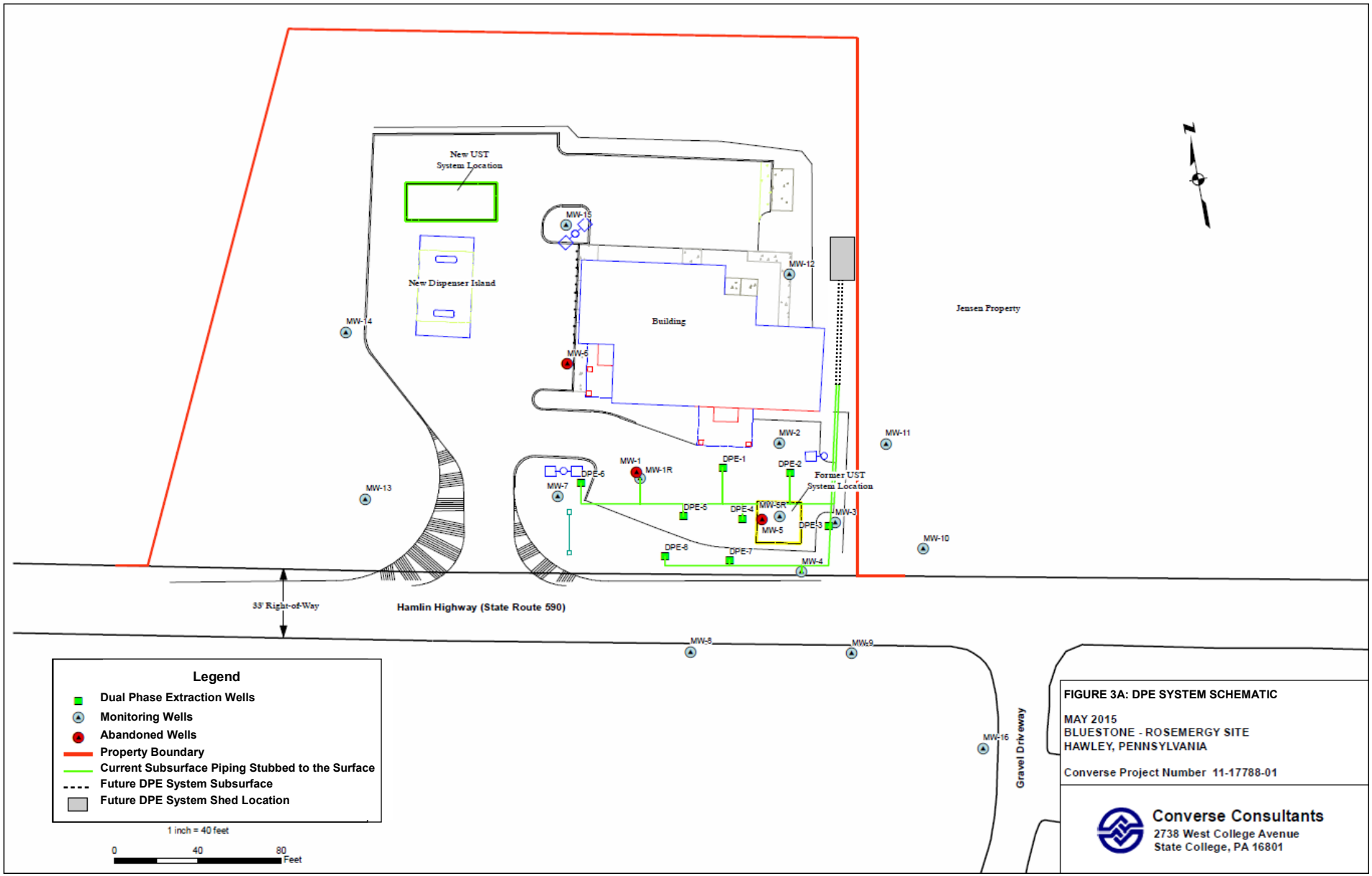


FIGURE 3A: DPE SYSTEM SCHEMATIC

MAY 2015
BLUESTONE - ROSEMERGY SITE
HAWLEY, PENNSYLVANIA

Converse Project Number 11-17788-01

Converse Consultants
2738 West College Avenue
State College, PA 16801

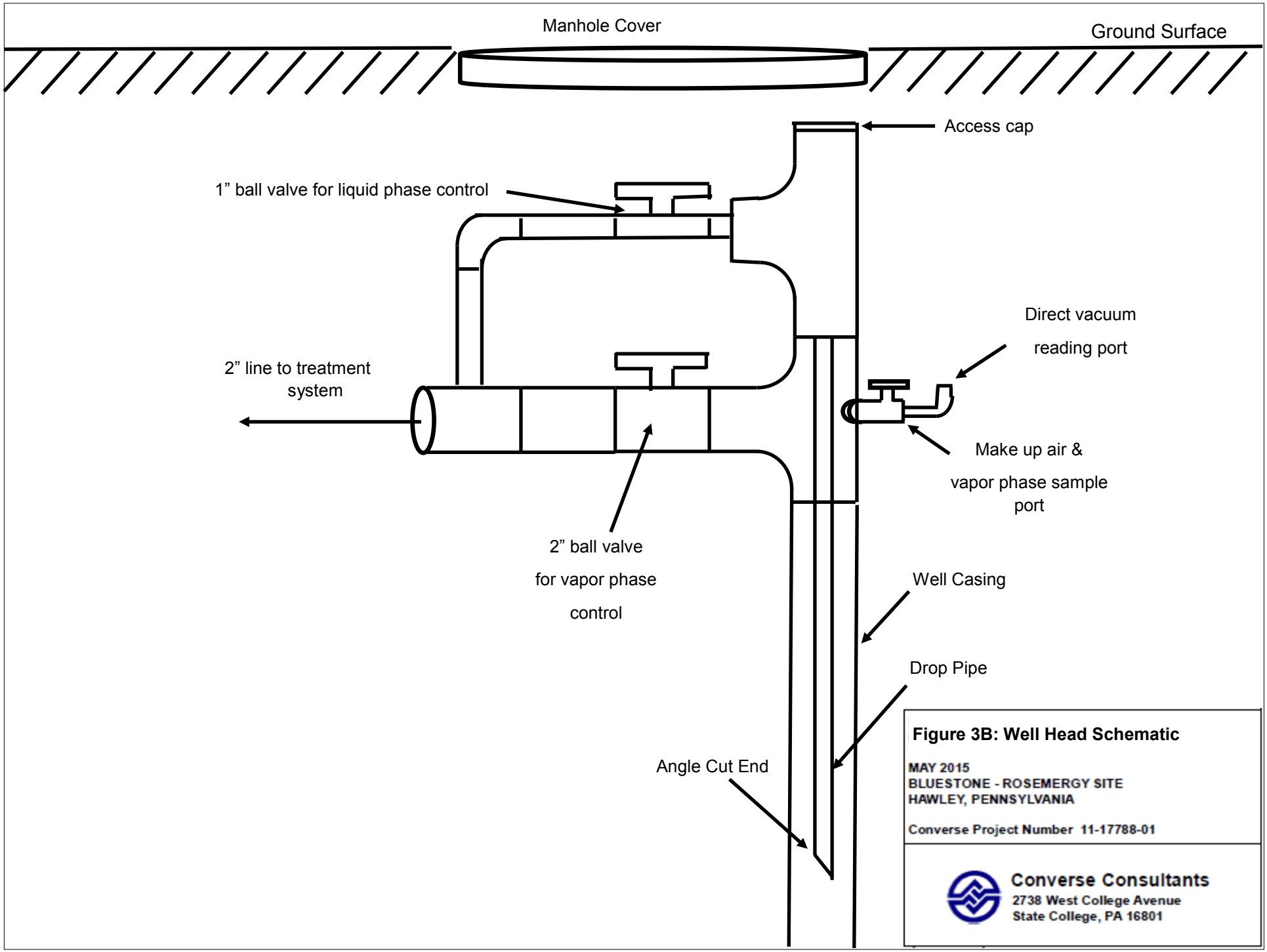


Figure 3B: Well Head Schematic

MAY 2015
BLUESTONE - ROSEMERGY SITE
HAWLEY, PENNSYLVANIA

Converse Project Number 11-17788-01

Converse Consultants
2738 West College Avenue
State College, PA 16801

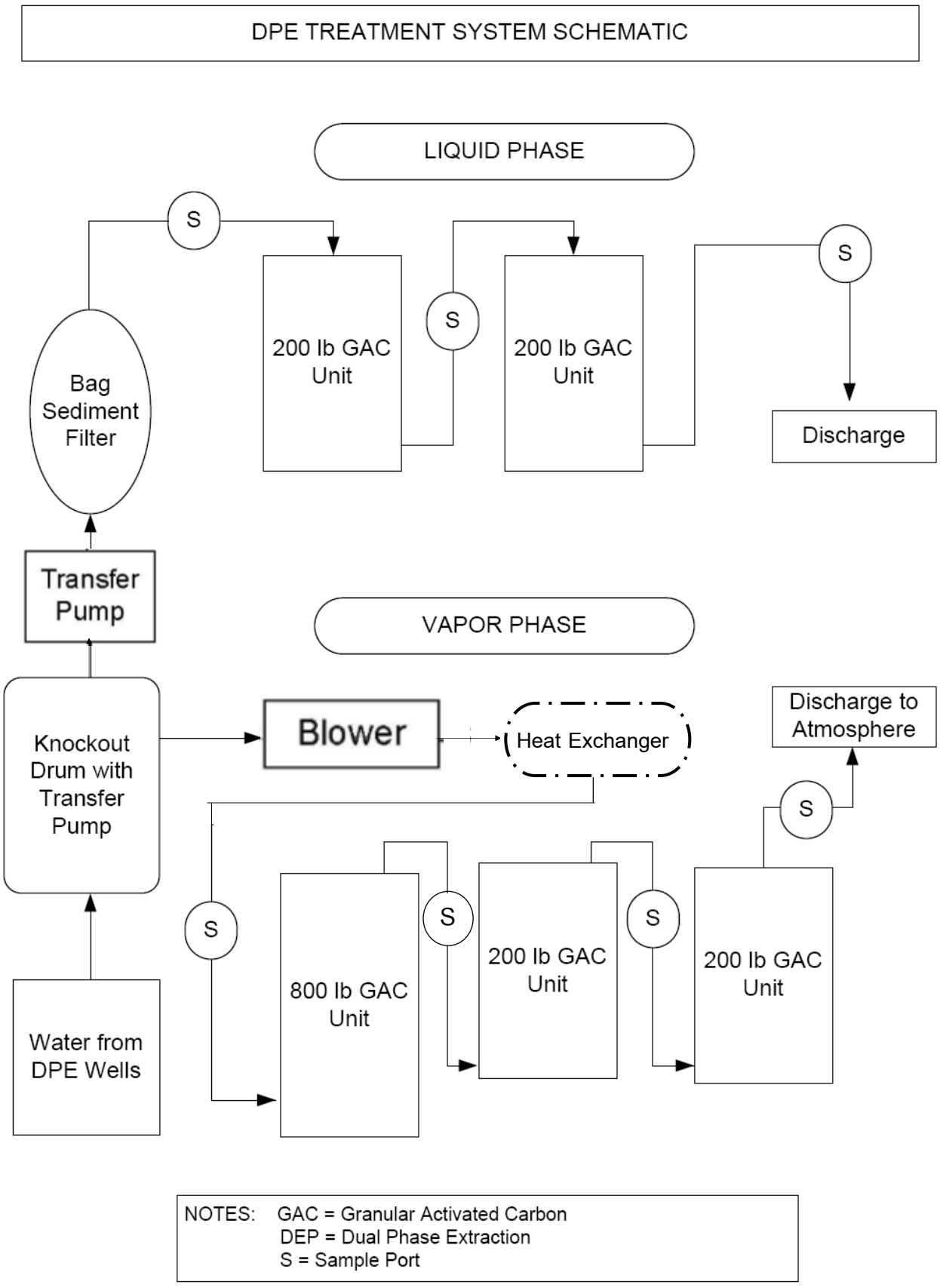


FIGURE 3C - DPE TREATMENT SYSTEM SCHEMATIC

FORMER ROSEMERGY'S PROPERTY
LACKAWAXEN TWP., PIKE CO., PENNSYLVANIA

CONVERSE PROJECT NUMBER 111-17788-02

CONVERSE CONSULTANTS
2738 West College Avenue
State College, PA 16801
(814) 234-3223

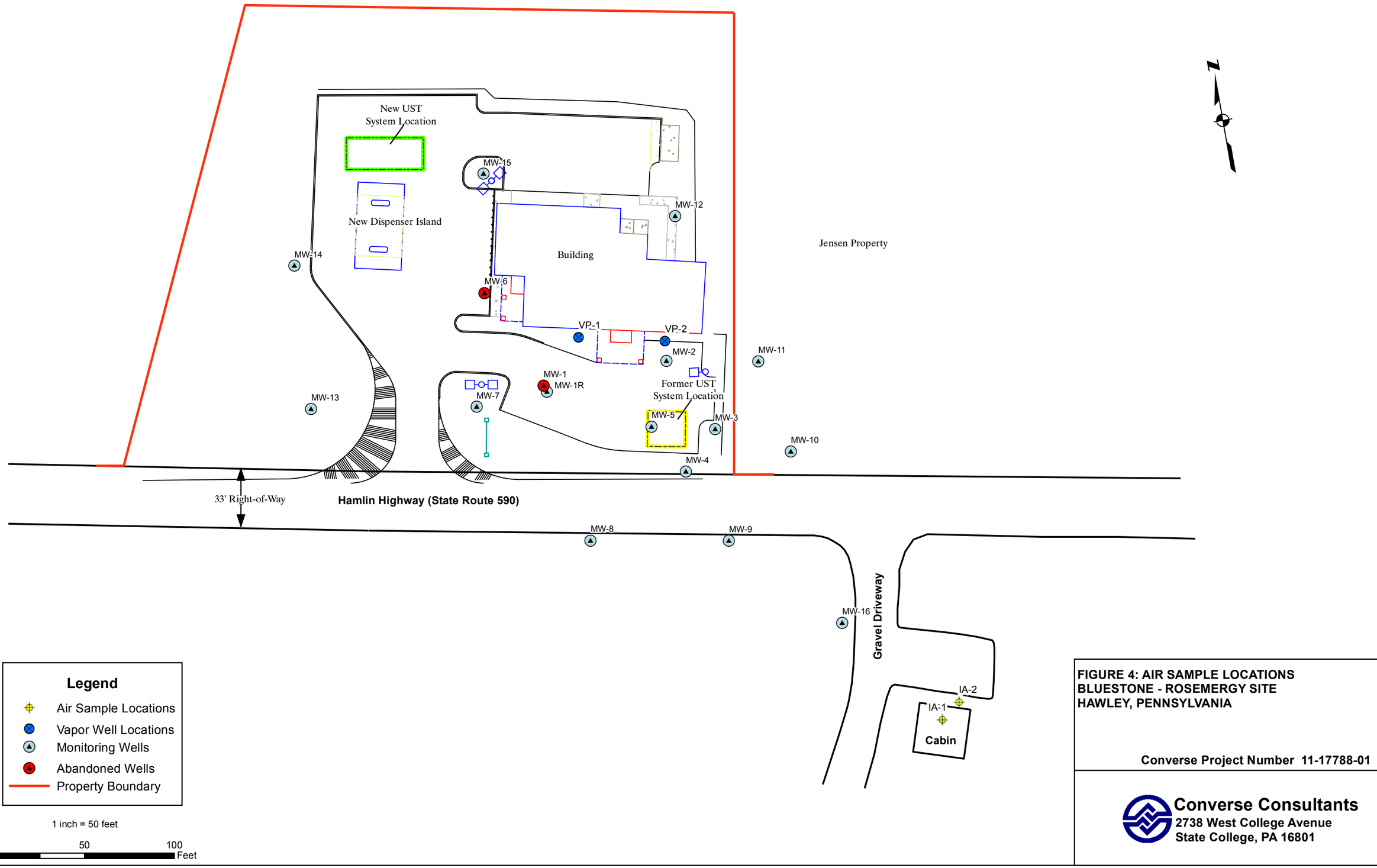


FIGURE 4: AIR SAMPLE LOCATIONS
BLUESTONE - ROSEMERGY SITE
HAWLEY, PENNSYLVANIA

Converse Project Number 11-17788-01

Converse Consultants
2738 West College Avenue
State College, PA 16801

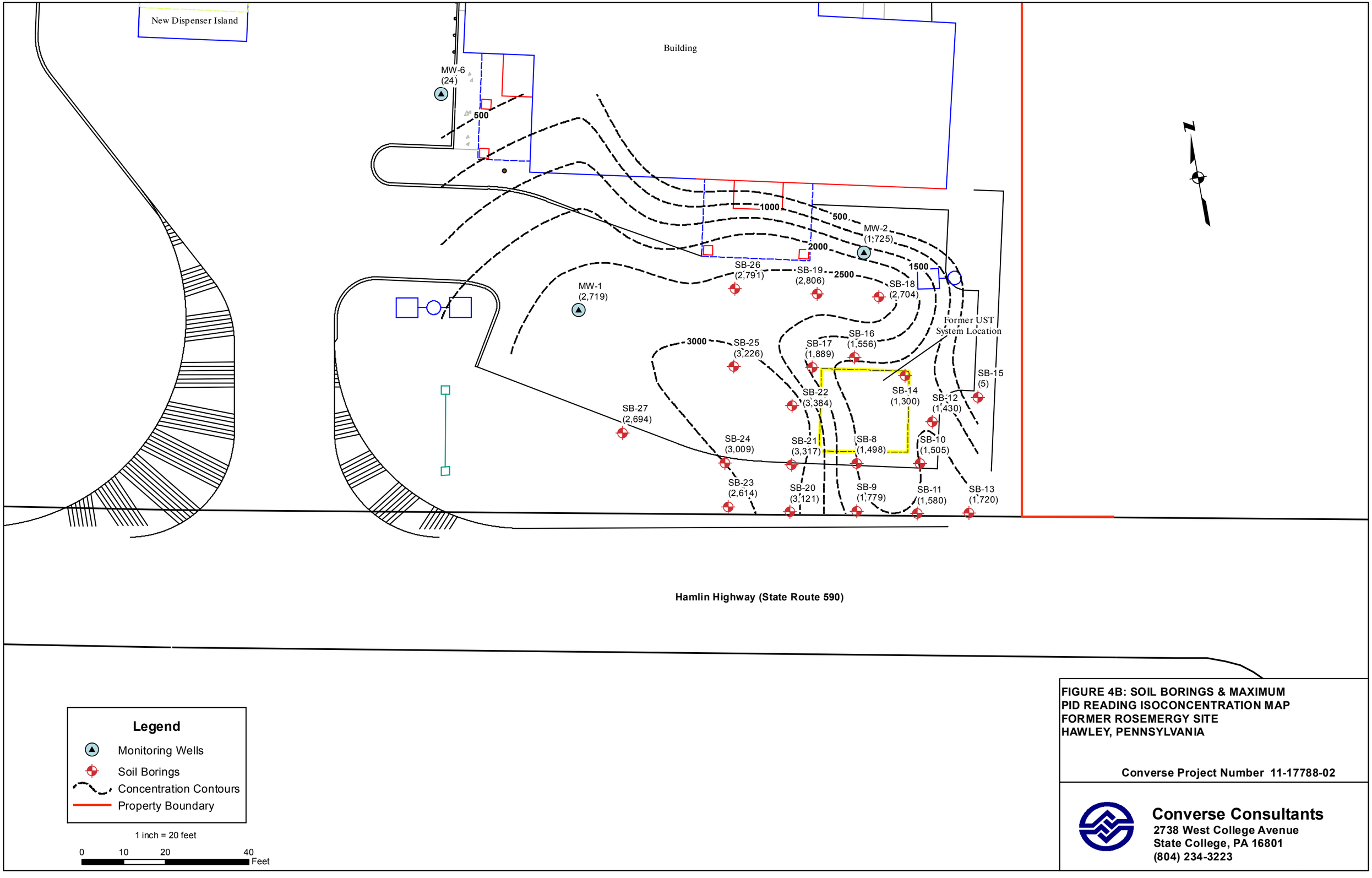
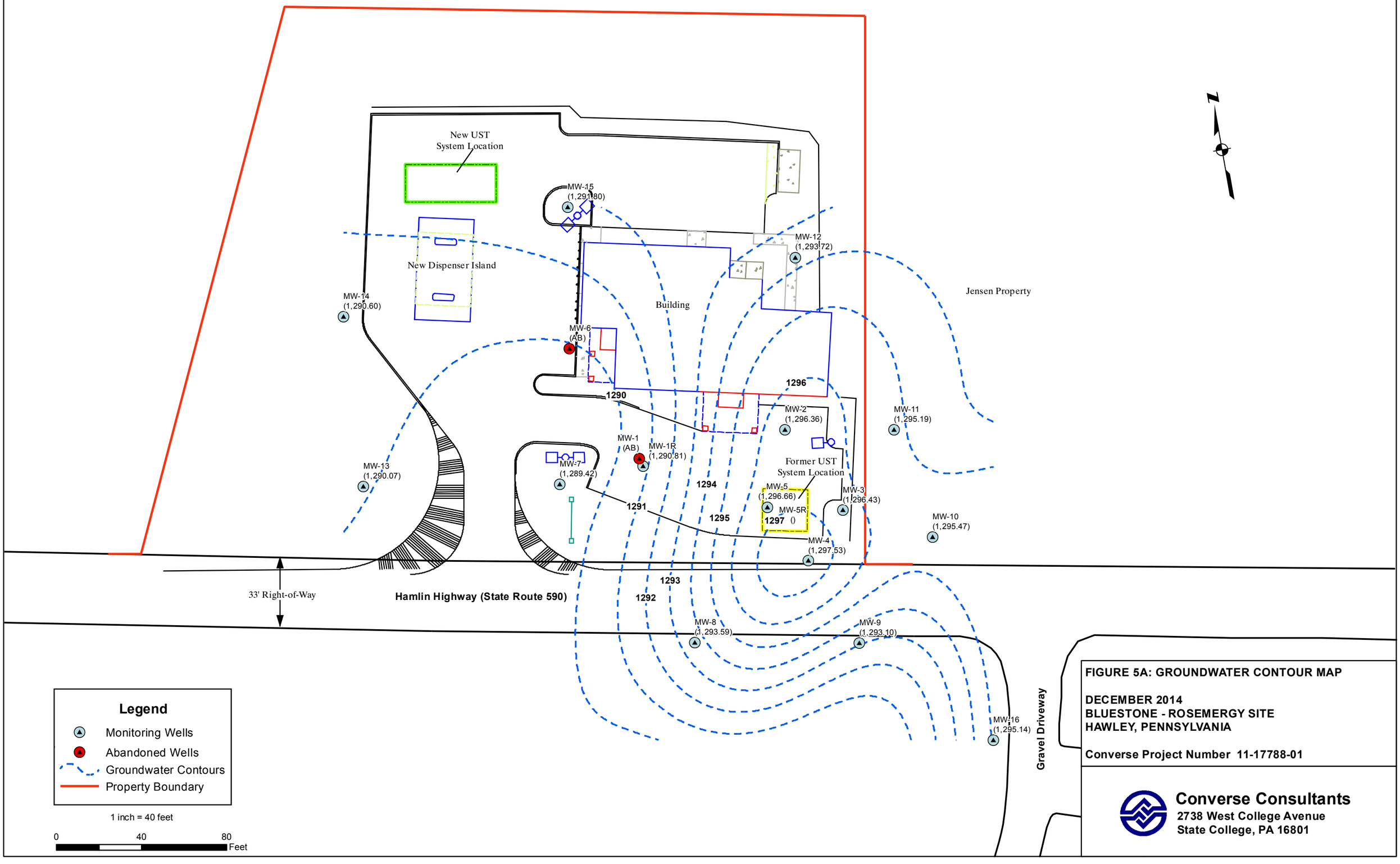


FIGURE 4B: SOIL BORINGS & MAXIMUM PID READING ISOCONCENTRATION MAP
FORMER ROSEMERGY SITE
HAWLEY, PENNSYLVANIA

Converse Project Number 11-17788-02

Converse Consultants
2738 West College Avenue
State College, PA 16801
(804) 234-3223


New UST
System Location
New Dispenser Island
Building
MW-15
(1,291.80)
MW-12
(1,293.72)
MW-14
(1,290.60)
MW-6
(AB)
Jensen Property
1296
1290
MW-2
(1,296.36)
MW-11
(1,295.19)
MW-1
(AB)
MW-1R
(1,290.81)
MW-7
(1,289.42)
MW-13
(1,290.07)
Former UST
System Location
1294
MW-5
(1,296.66)
MW-3
(1,296.43)
1291
1295
MW-5R
1297 ()
MW-10
(1,295.47)
MW-4
(1,297.53)
1293
1292
33' Right-of-Way
Hamlin Highway (State Route 590)
MW-8
(1,293.59)
MW-9
(1,293.10)
MW-16
(1,295.14)
Gravel Driveway
Legend
Monitoring Wells
Abandoned Wells
Groundwater Contours
Property Boundary
1 inch = 40 feet
0
40
80
Feet
FIGURE 5A: GROUNDWATER CONTOUR MAP
DECEMBER 2014
BLUESTONE - ROSEMERGY SITE
HAWLEY, PENNSYLVANIA
Converse Project Number 11-17788-01
Converse Consultants
2738 West College Avenue
State College, PA 16801

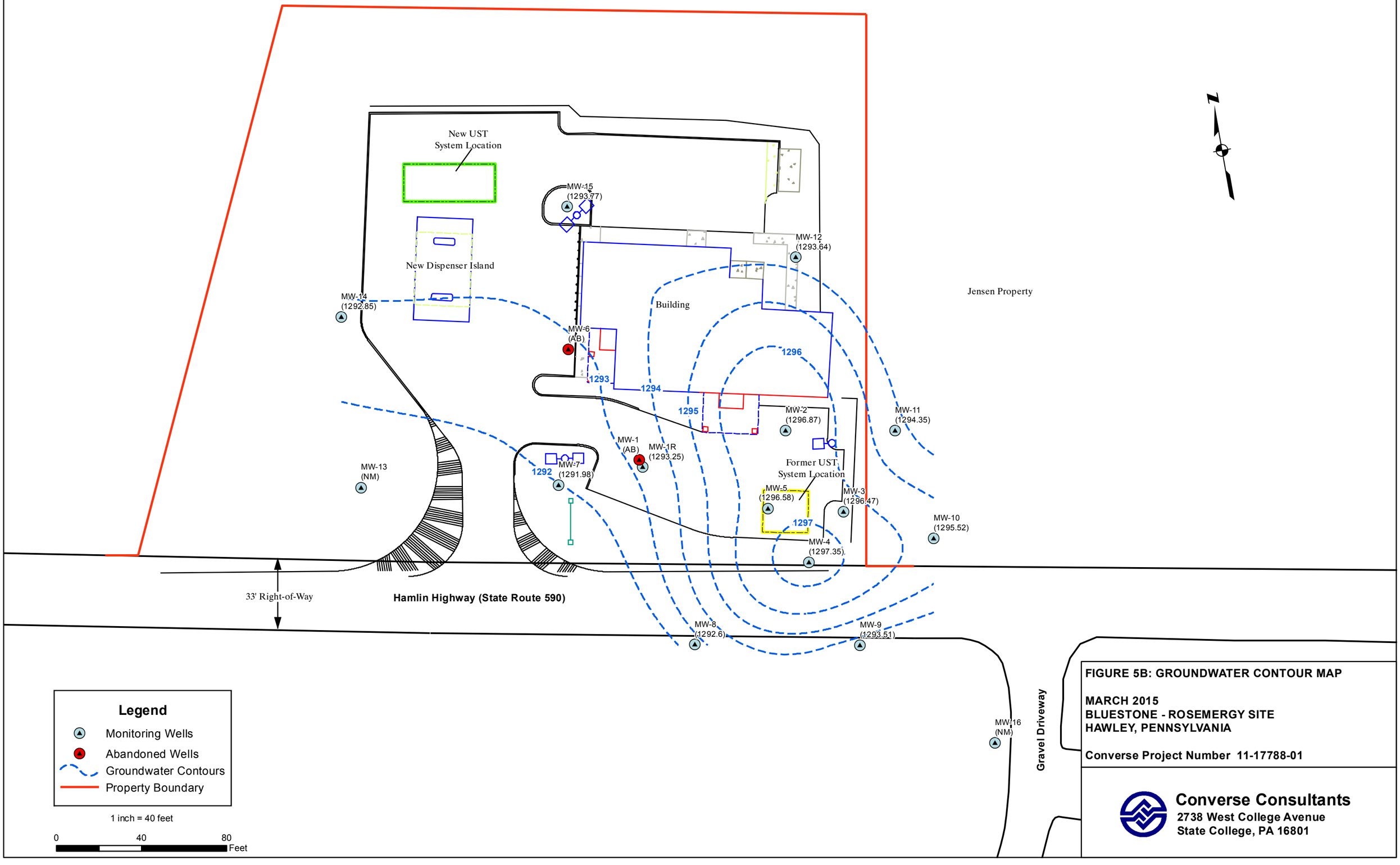


FIGURE 5B: GROUNDWATER CONTOUR MAP

MARCH 2015
BLUESTONE - ROSEMERGY SITE
HAWLEY, PENNSYLVANIA

Converse Project Number 11-17788-01

Converse Consultants
2738 West College Avenue
State College, PA 16801

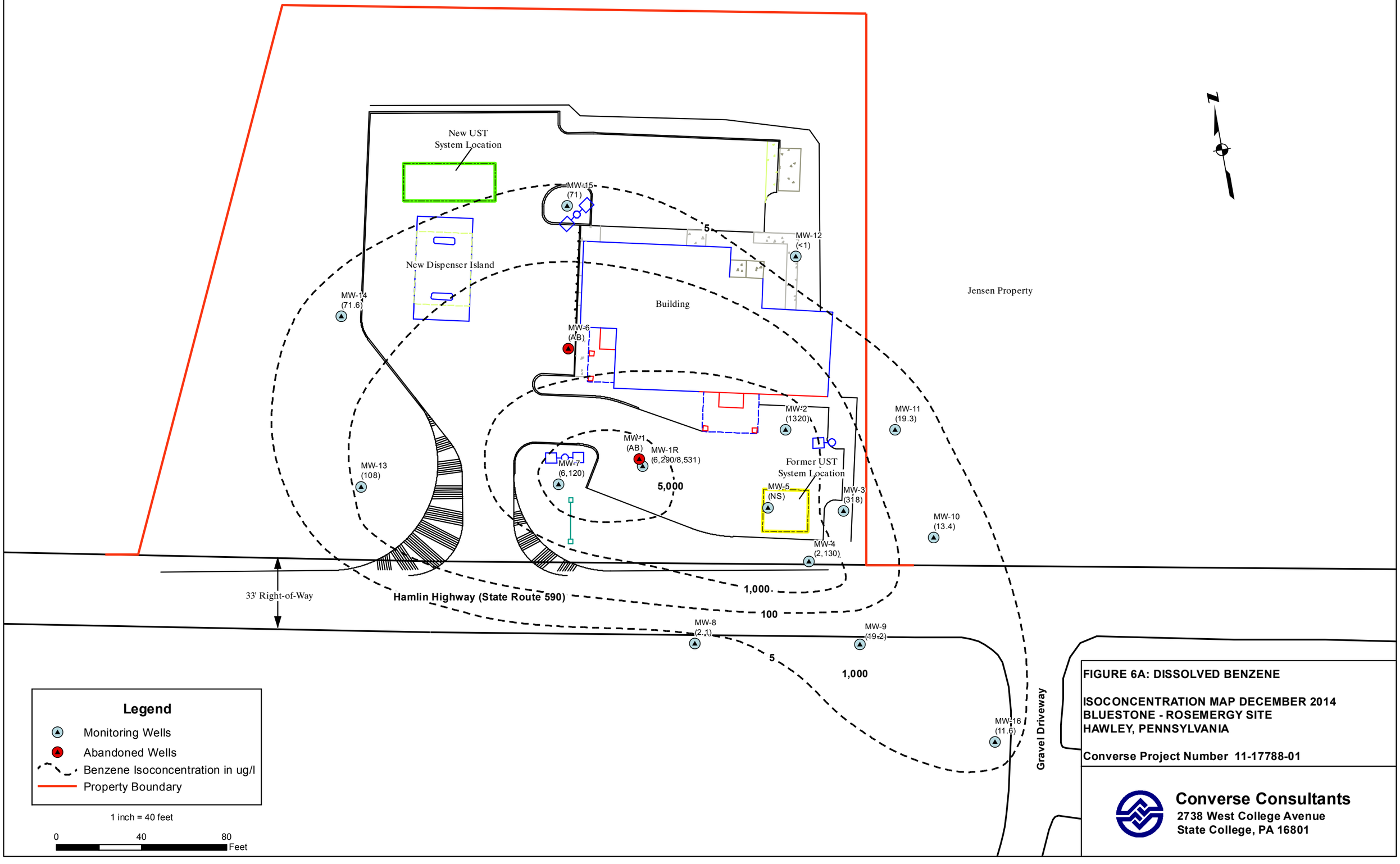
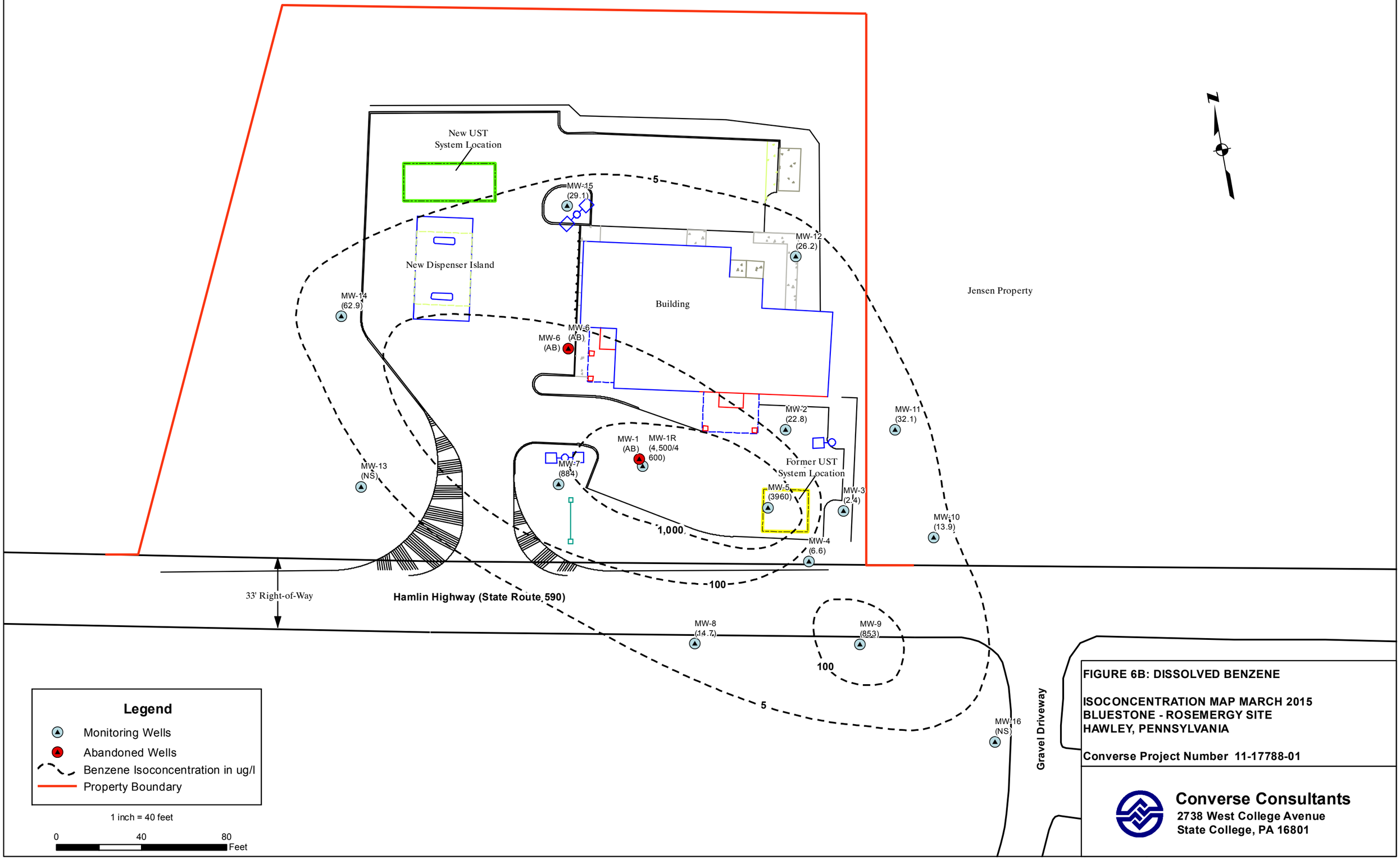


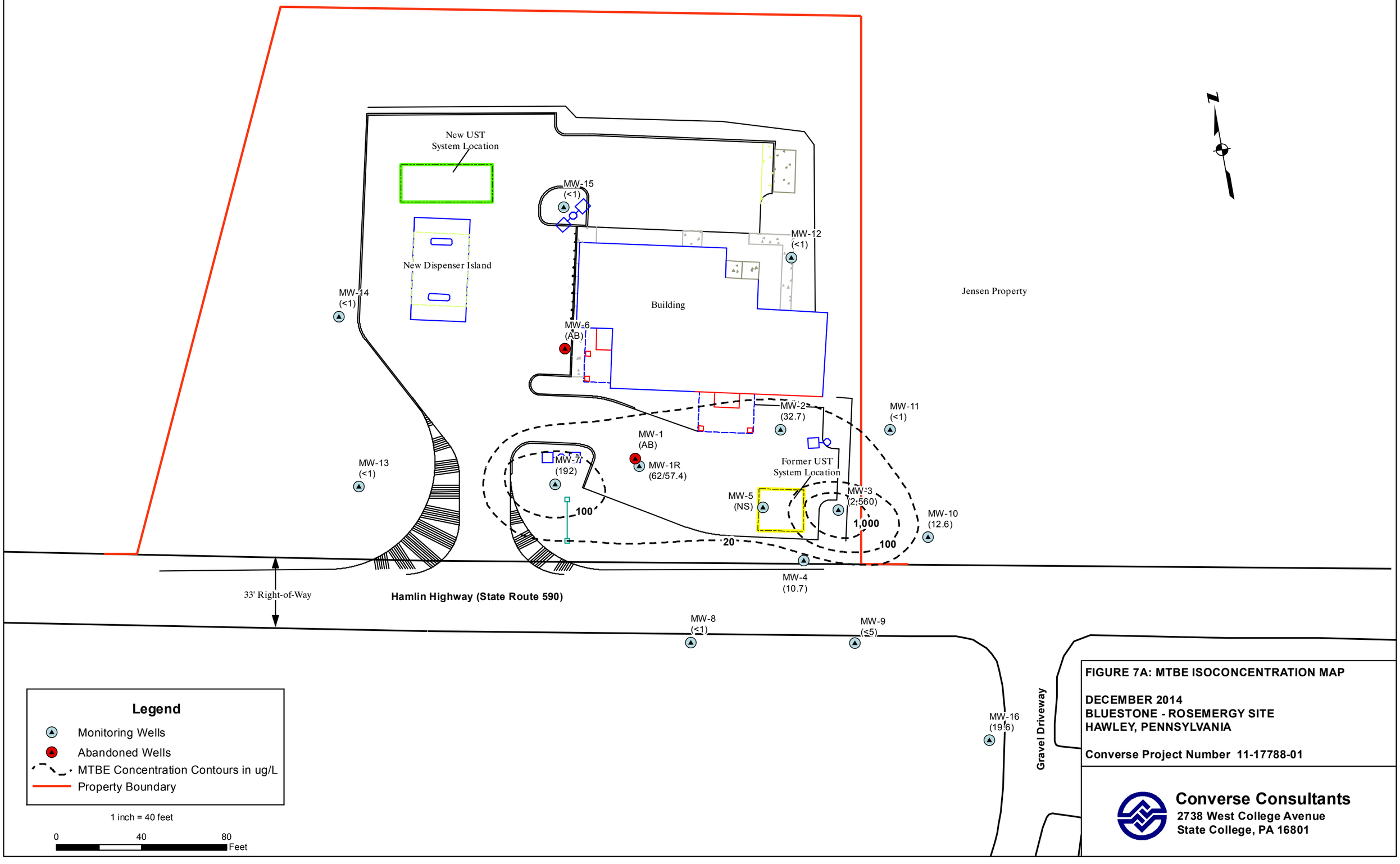
FIGURE 6A: DISSOLVED BENZENE

ISOCONCENTRATION MAP DECEMBER 2014
BLUESTONE - ROSEMERGY SITE
HAWLEY, PENNSYLVANIA

Converse Project Number 11-17788-01

Converse Consultants
2738 West College Avenue
State College, PA 16801


New UST
System Location
New Dispenser Island
Building
Former UST
System Location
MW-15
(29.1)
MW-12
(26.2)
MW-14
(62.9)
MW-6
(AB)
MW-2
(22.8)
MW-11
(32.1)
MW-1
(AB)
MW-1R
(4,500/4
600)
MW-7
(884)
MW-13
(NS)
MW-5
(3960)
MW-3
(2.4)
MW-10
(13.9)
MW-4
(6.6)
MW-8
(14.7)
MW-9
(853)
MW-16
(NS)
5
1,000
100
100
5
33' Right-of-Way
Hamlin Highway (State Route 590)
Jensen Property
Gravel Driveway
N
Legend
Monitoring Wells
Abandoned Wells
Benzene Isoconcentration in ug/l
Property Boundary
1 inch = 40 feet
0
40
80
Feet
FIGURE 6B: DISSOLVED BENZENE
ISOCONCENTRATION MAP MARCH 2015
BLUESTONE - ROSEMERGY SITE
HAWLEY, PENNSYLVANIA
Converse Project Number 11-17788-01
Converse Consultants
2738 West College Avenue
State College, PA 16801


New UST
System Location
New Dispenser Island
MW-15
(<1)
MW-12
(<1)
MW-14
(<1)
Building
MW-6
(AB)
Jensen Property
MW-2
(32.7)
MW-11
(<1)
MW-1
(AB)
MW-1R
(62/57.4)
MW-7
(192)
MW-13
(<1)
Former UST
System Location
MW-5
(NS)
MW-3
(2,560)
MW-10
(12.6)
100
1,000
20
100
MW-4
(10.7)
33' Right-of-Way
Hamlin Highway (State Route 590)
MW-8
(<1)
MW-9
(<5)
MW-16
(19.6)
Gravel Driveway
N
Legend
Monitoring Wells
Abandoned Wells
MTBE Concentration Contours in ug/L
Property Boundary
1 inch = 40 feet
0
40
80
Feet
FIGURE 7A: MTBE ISOCONCENTRATION MAP
DECEMBER 2014
BLUESTONE - ROSEMERGY SITE
HAWLEY, PENNSYLVANIA
Converse Project Number 11-17788-01
Converse Consultants
2738 West College Avenue
State College, PA 16801

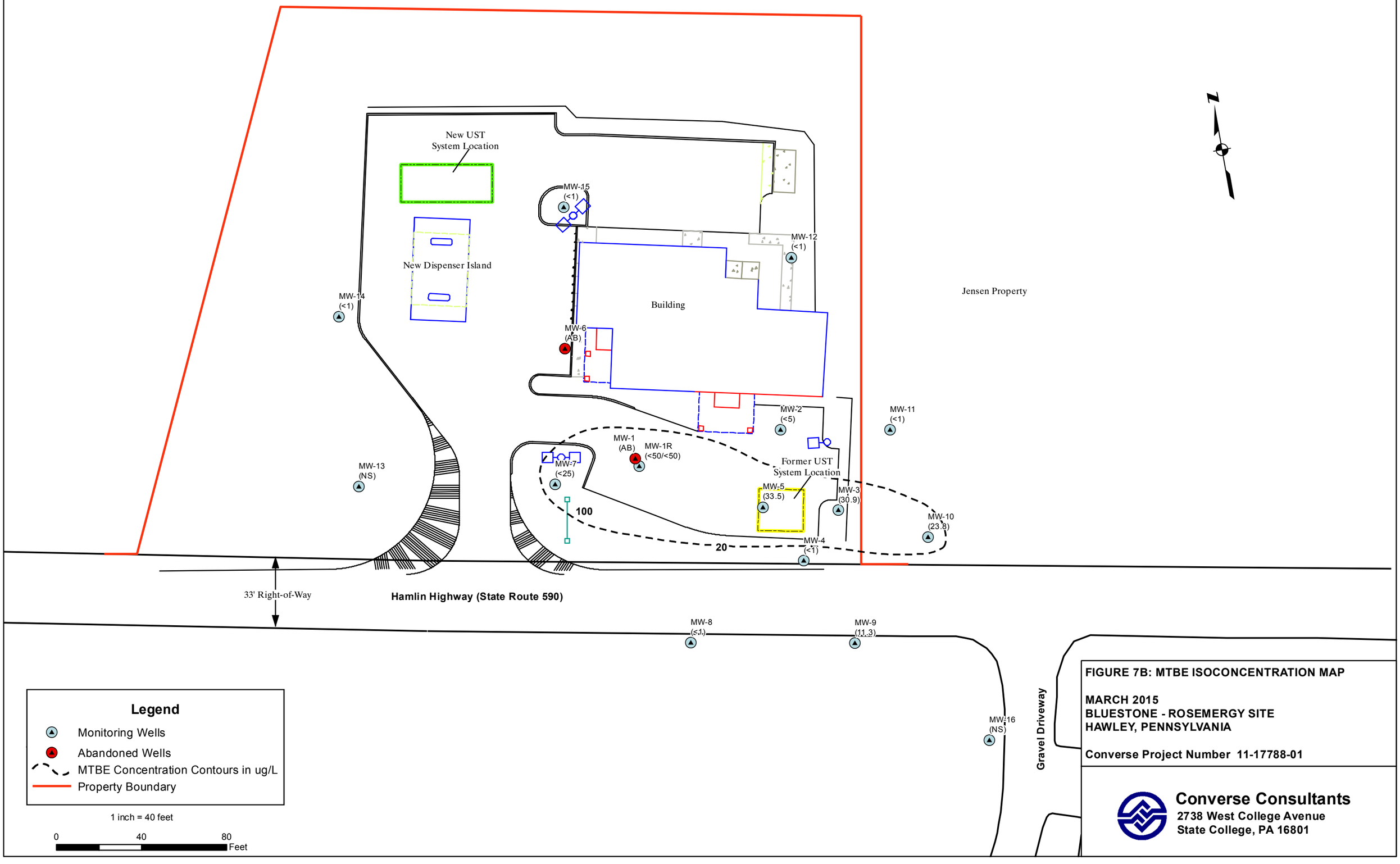


FIGURE 7B: MTBE ISOCONCENTRATION MAP

MARCH 2015
BLUESTONE - ROSEMERGY SITE
HAWLEY, PENNSYLVANIA

Converse Project Number 11-17788-01

Converse Consultants
2738 West College Avenue
State College, PA 16801

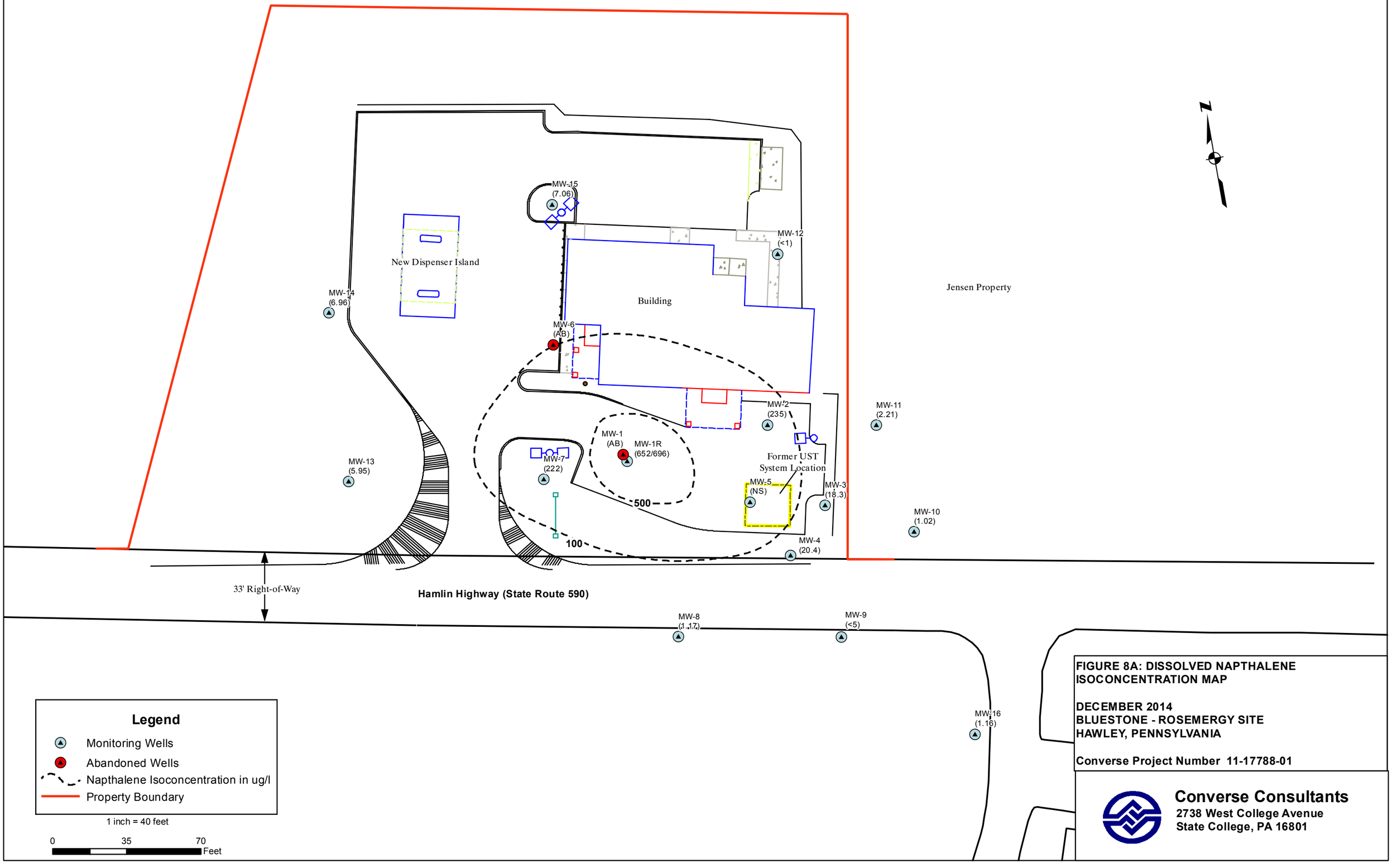


FIGURE 8A: DISSOLVED NAPTHALENE ISOCONCENTRATION MAP

DECEMBER 2014
BLUESTONE - ROSEMERGY SITE
HAWLEY, PENNSYLVANIA

Converse Project Number 11-17788-01

Converse Consultants
2738 West College Avenue
State College, PA 16801

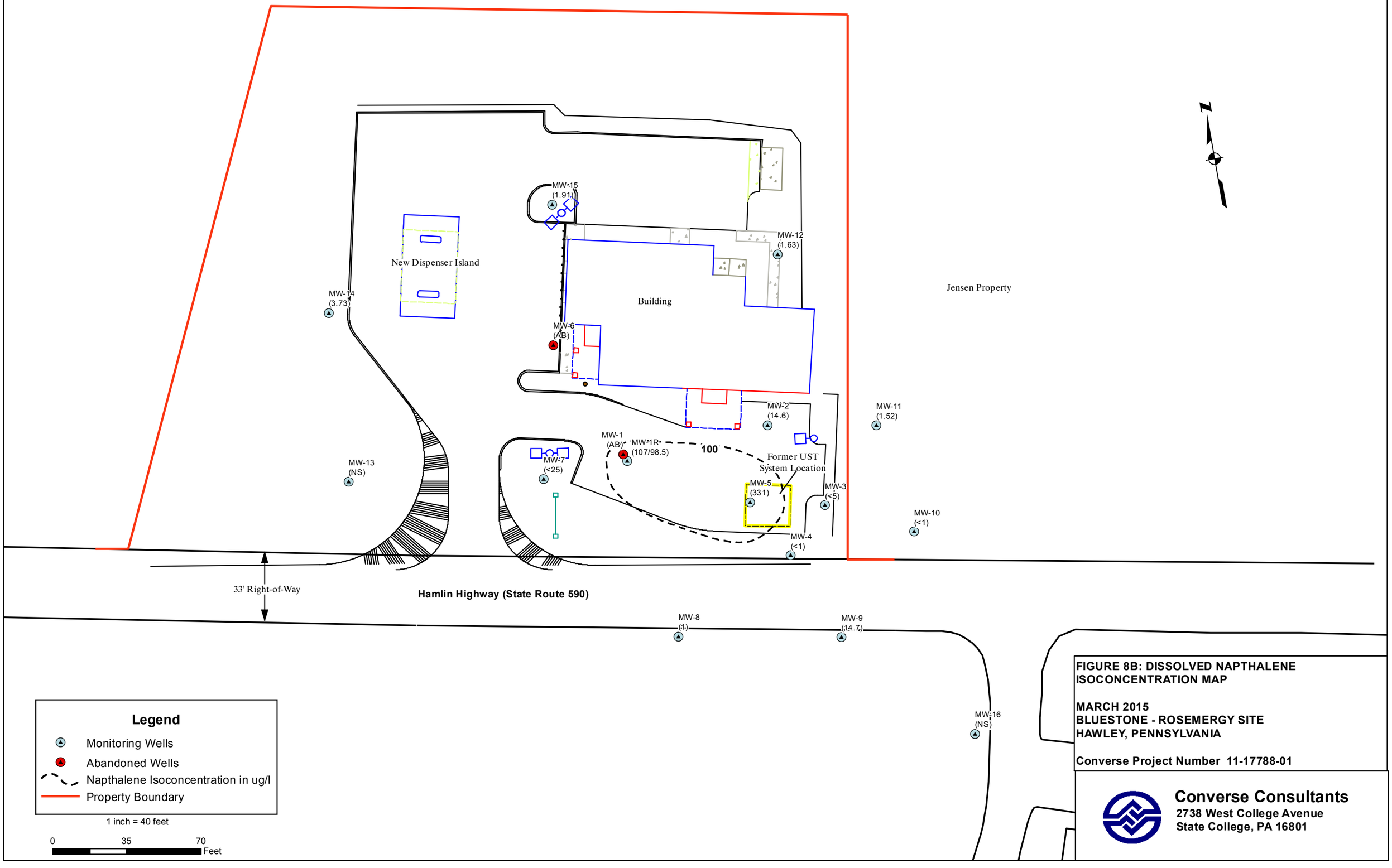


FIGURE 8B: DISSOLVED NAPTHALENE ISOCONCENTRATION MAP

MARCH 2015
BLUESTONE - ROSEMERGY SITE
HAWLEY, PENNSYLVANIA

Converse Project Number 11-17788-01

Converse Consultants
2738 West College Avenue
State College, PA 16801

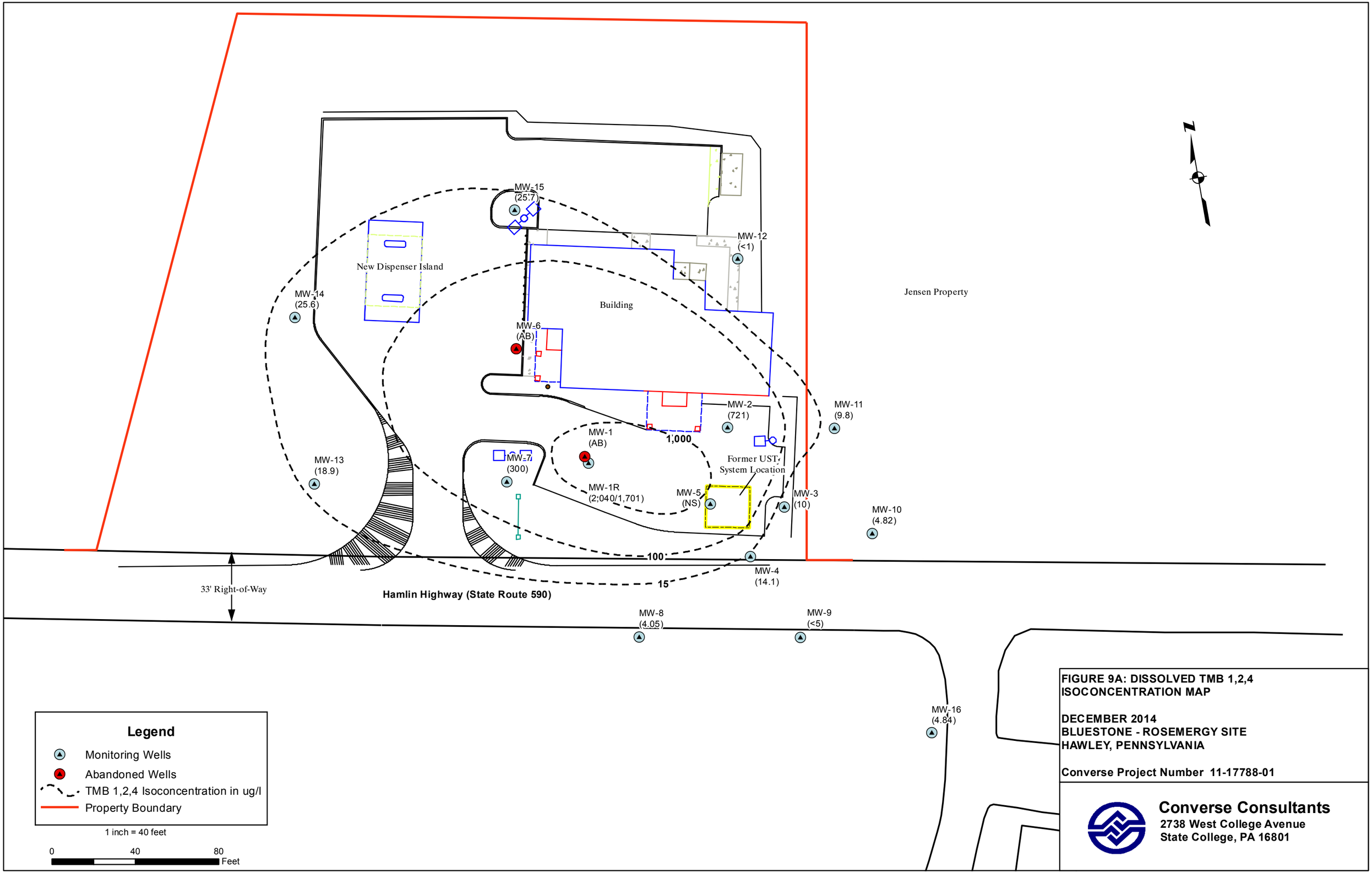


FIGURE 9A: DISSOLVED TMB 1,2,4 ISOCONCENTRATION MAP

DECEMBER 2014
BLUESTONE - ROSEMERGY SITE
HAWLEY, PENNSYLVANIA

Converse Project Number 11-17788-01

Converse Consultants
2738 West College Avenue
State College, PA 16801

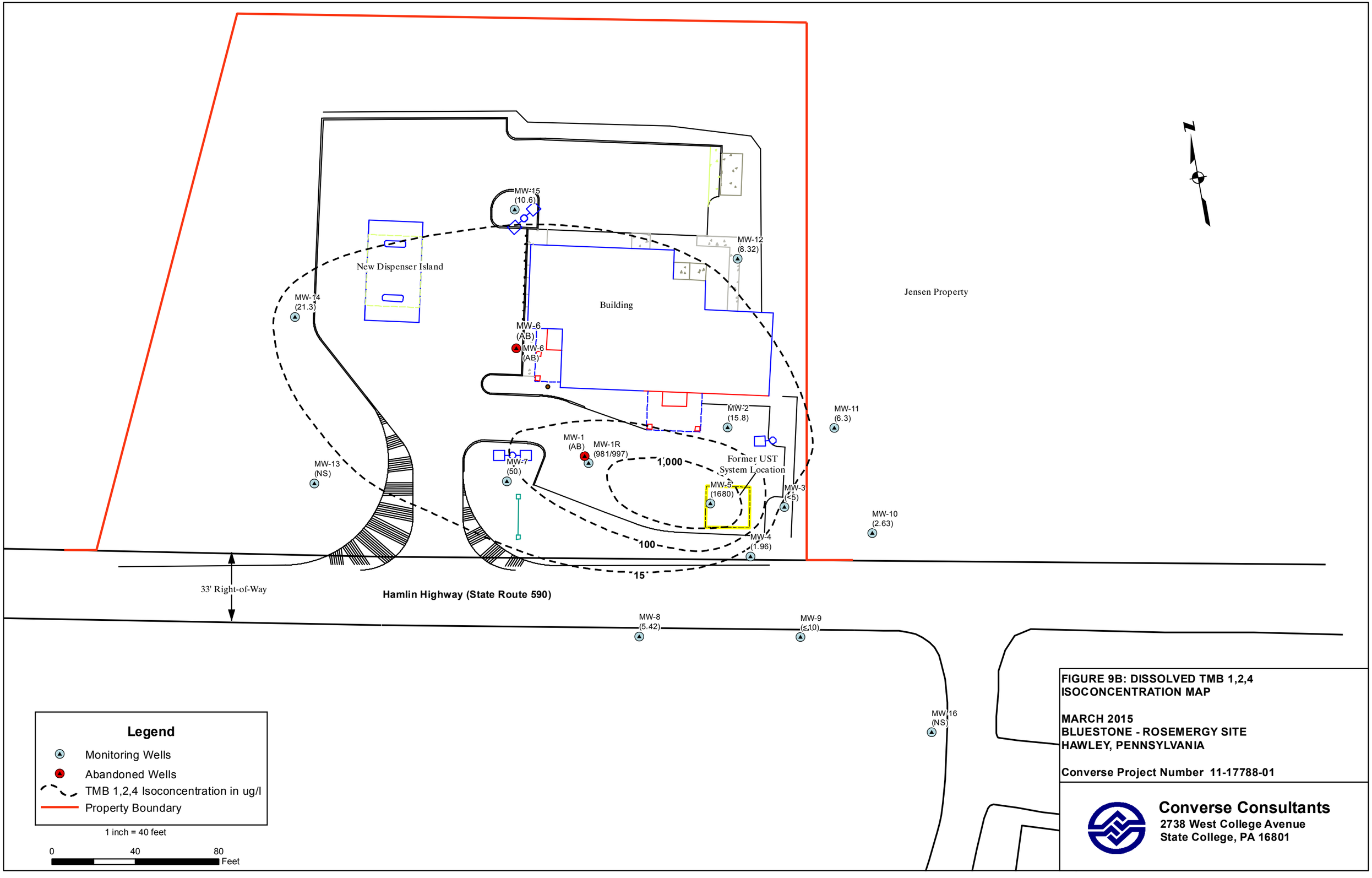


FIGURE 9B: DISSOLVED TMB 1,2,4 ISOCONCENTRATION MAP

MARCH 2015
BLUESTONE - ROSEMERGY SITE
HAWLEY, PENNSYLVANIA

Converse Project Number 11-17788-01

Converse Consultants
2738 West College Avenue
State College, PA 16801

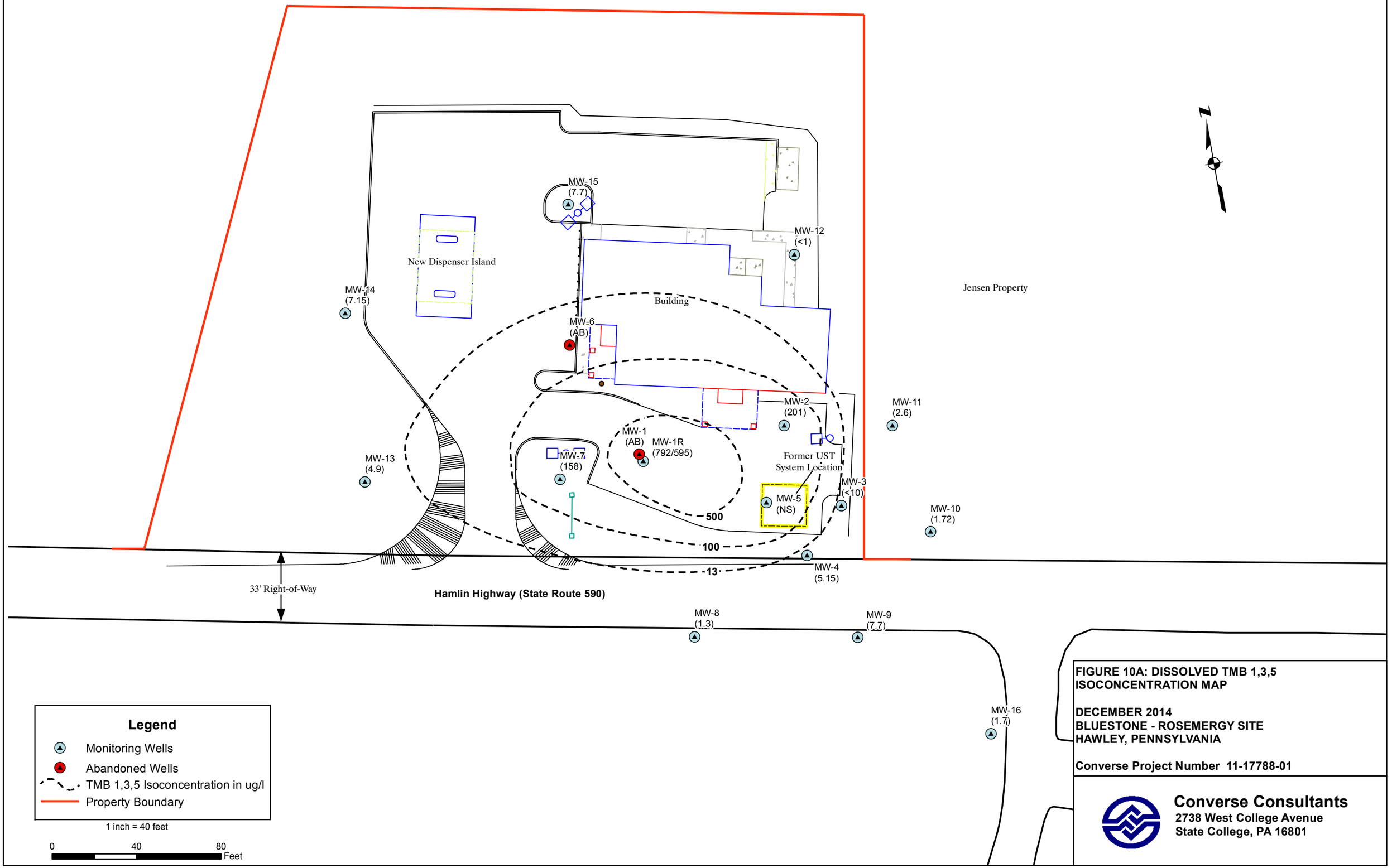


FIGURE 10A: DISSOLVED TMB 1,3,5 ISOCONCENTRATION MAP

DECEMBER 2014
BLUESTONE - ROSEMERGY SITE
HAWLEY, PENNSYLVANIA

Converse Project Number 11-17788-01

Converse Consultants
2738 West College Avenue
State College, PA 16801

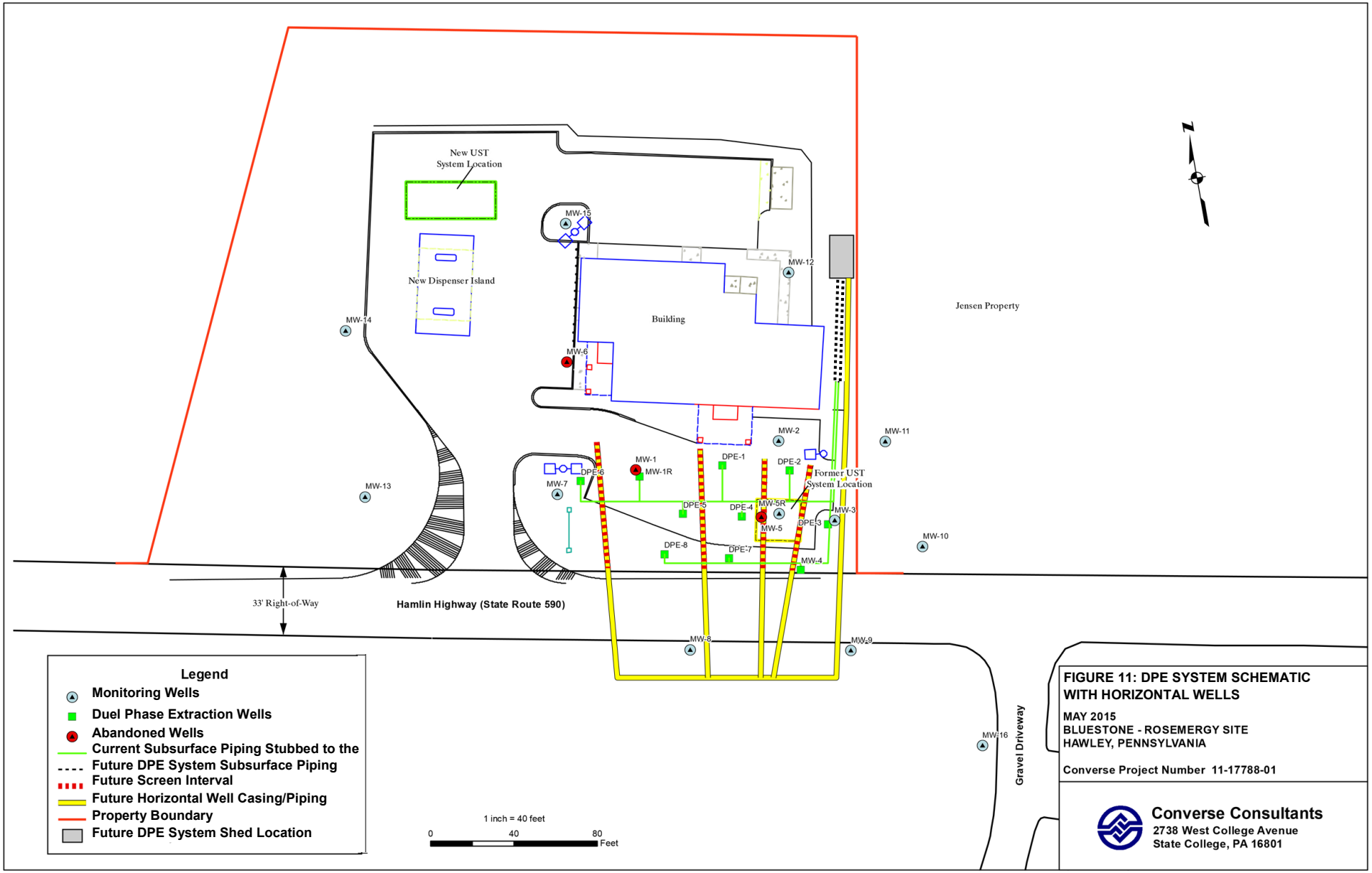


FIGURE 11: DPE SYSTEM SCHEMATIC WITH HORIZONTAL WELLS

MAY 2015
BLUESTONE - ROSEMERGY SITE
HAWLEY, PENNSYLVANIA

Converse Project Number 11-17788-01

Converse Consultants
2738 West College Avenue
State College, PA 16801

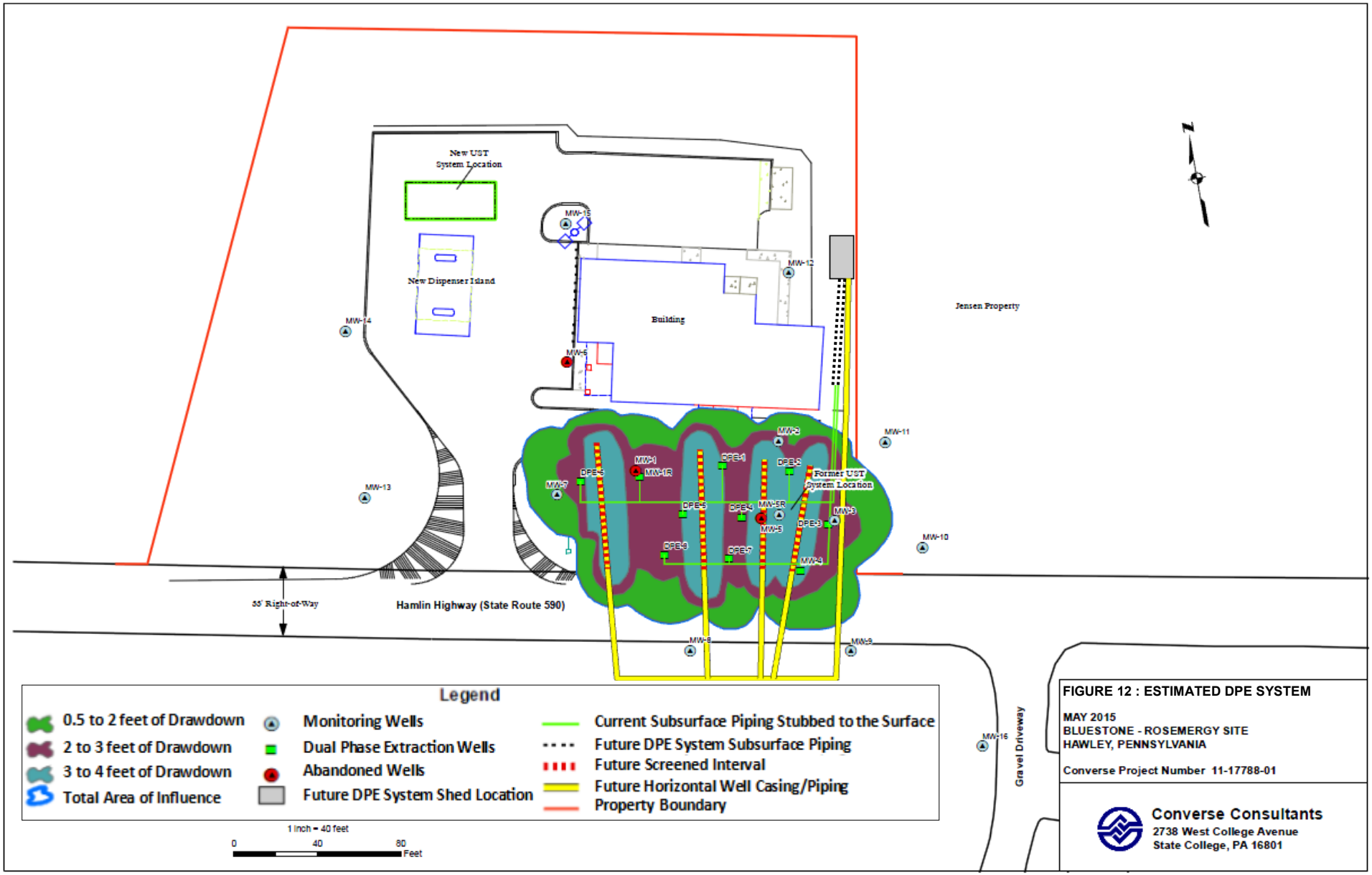
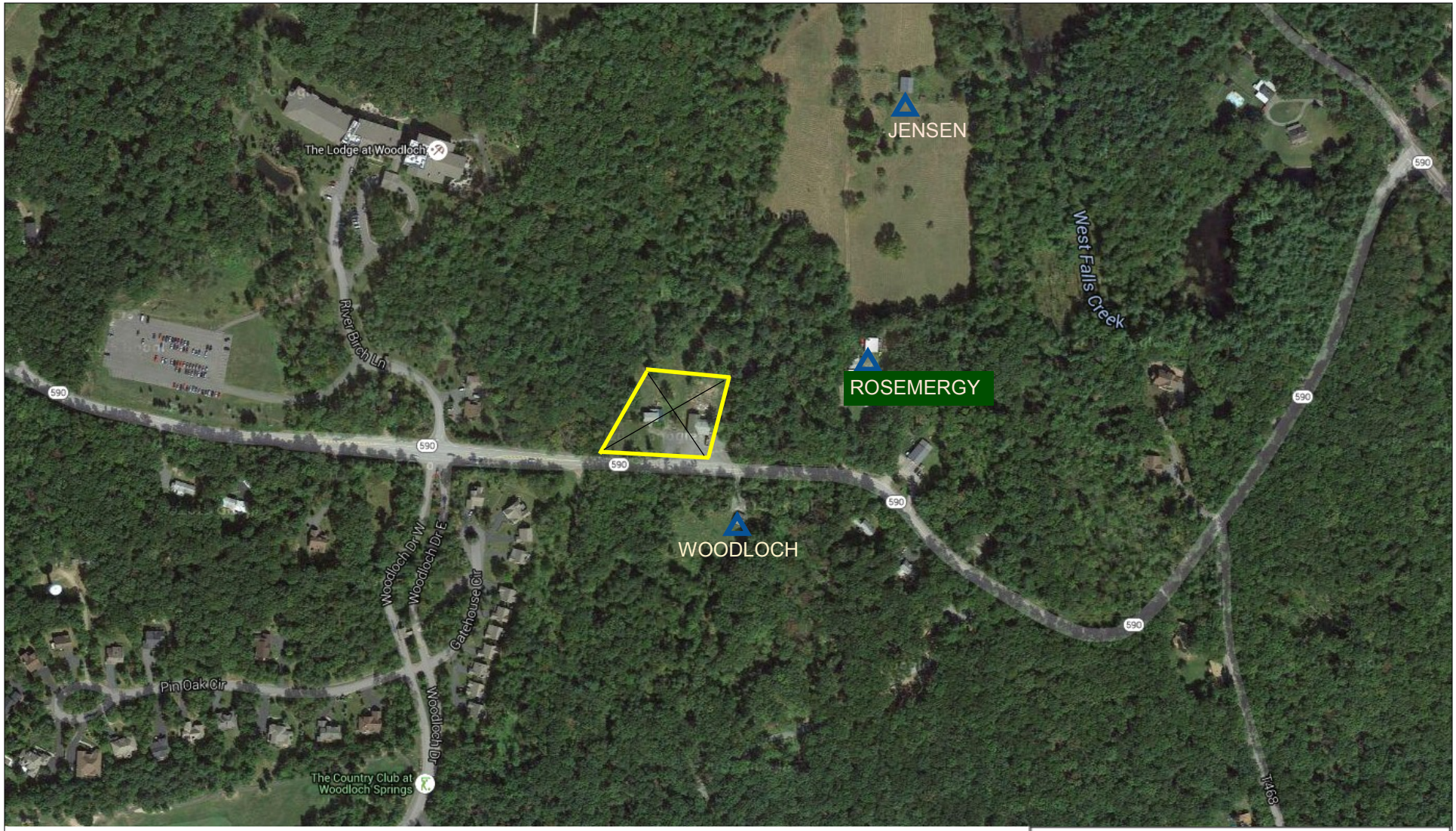


FIGURE 12 : ESTIMATED DPE SYSTEM

MAY 2015
BLUESTONE - ROSEMERGY SITE
HAWLEY, PENNSYLVANIA

Converse Project Number 11-17788-01

Converse Consultants
2738 West College Avenue
State College, PA 16801



Legend

- Approximate Supply Well Location
- Site Location

200 ft

FIGURE 13: ON-LOT SUPPLY WELL LOCATIONS
DECEMBER 2014
BLUESTONE - ROSEMERGY SITE
HAWLEY, PENNSYLVANIA

Converse Project Number 11-17788-01

Converse Consultants
2738 West College Avenue
State College, PA 16801

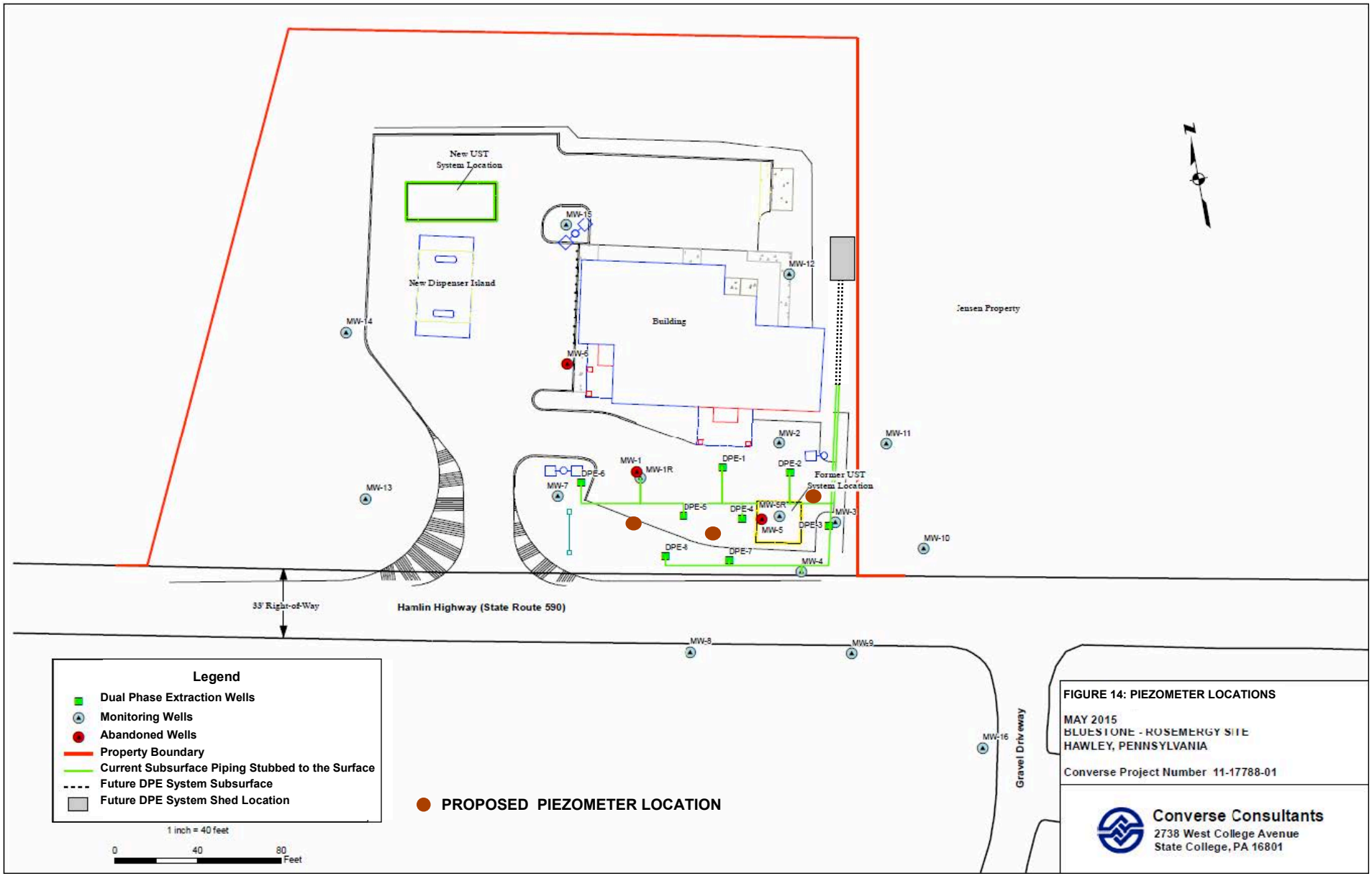

New UST System Location
New Dispenser Island
Building
Jensen Property
MW-15
MW-12
MW-14
MW-6
MW-2
MW-11
MW-1
MW-1R
DPE-1
DPE-2
DPE-6
MW-7
Former UST System Location
DPE-5
DPE-4
MW-5R
MW-5
MW-3
DPE-3
MW-13
MW-10
DPE-8
DPE-7
MW-4
33' Right-of-Way
Hamlin Highway (State Route 590)
MW-8
MW-9
MW-16
Gravel Driveway
Legend
Dual Phase Extraction Wells
Monitoring Wells
Abandoned Wells
Property Boundary
Current Subsurface Piping Stubbed to the Surface
Future DPE System Subsurface
Future DPE System Shed Location
1 inch = 40 feet
0
40
80
Feet
PROPOSED PIEZOMETER LOCATION
FIGURE 14: PIEZOMETER LOCATIONS
MAY 2015
BLUESTONE - ROSEMERGY SITE
HAWLEY, PENNSYLVANIA
Converse Project Number 11-17788-01
Converse Consultants
2738 West College Avenue
State College, PA 16801

TABLE 1
GROUNDWATER ELEVATION DATA
FORMER ROSEMERGY'S CONVENIENT STORE
1623 ROUTE 590
HAWLEY, PA
11-17788-02

WELL	TWD	SI	TOCG	TOC	DATE	DTW	GW ELEV
MW-1	14.70	3-14.7	-0.48	1300.57	5/8/12	5.30	1295.27
(2)					6/17/12	6.52	1294.05
					5/14/13	IA	IA
					12/11/13	AB	AB
MW-1R	14.61	4-14.61	-0.28	1298.25	11/8/13	10.89	1287.36
					12/11/13	9.90	1288.35
					2/4/14	7.82	1290.43
					3/7/14	7.73	1290.52
					4/29/14	NS	NC
					6/12/14	6.35	1291.90
					9/17/14	7.49	1290.76
					12/3/14	7.44	1290.81
					3/25/15	5.00	1293.25
MW-2	14.40	3-14.4	-0.67	1299.67	5/8/12	3.18	1296.49
(2)					6/17/12	5.61	1294.06
					5/14/13	3.51	1296.16
					11/8/13	8.62	1291.05
					12/11/13	5.70	1293.97
					2/4/14	NS	NC
					3/7/14	4.87	1294.80
					4/29/14	NS	NC
					6/12/14	NS	NC
					9/17/14	5.27	1294.40
					12/3/14	3.31	1296.36
					3/25/15	2.80	1296.87
MW-3	14.21	3-14.21	-0.37	1298.61	5/8/12	2.13	1296.48
(2)					6/17/12	3.45	1295.16
					5/14/13	2.71	1295.90
					11/8/13	6.73	1291.88
					12/11/13	3.82	1294.79
					2/4/14	NS	NC
					3/7/14	NS	NC
					4/29/14	NS	NC
					6/12/14	3.49	1295.12
					9/17/14	4.14	1294.47
					12/3/14	2.18	1296.43
					3/25/15	2.14	1296.47

TABLE 1
GROUNDWATER ELEVATION DATA
FORMER ROSEMERGY'S CONVENIENT STORE
1623 ROUTE 590
HAWLEY, PA
11-17788-02

WELL	TWD	SI	TOCG	TOC	DATE	DTW	GW ELEV
MW-4	14.56	3-14.56	-0.56	1299.05	5/8/12	2.45	1296.60
(2)					6/17/12	3.96	1295.09
					5/14/13	3.19	1295.86
					11/8/13	7.36	1291.69
					12/11/13	4.41	1294.64
					2/4/14	NS	NC
					3/7/14	NS	NC
					4/29/14	NS	NC
					6/12/14	3.64	1295.41
					9/17/14	4.20	1294.85
					12/3/14	1.52	1297.53
					3/25/15	1.70	1297.35
MW-5	14.68	3-14.68	-0.26	1299.36	5/8/12	2.65	1296.71
(2)					6/17/12	3.90	1295.46
					5/14/13	3.18	1296.18
					11/8/13	7.82	1291.54
					12/11/13	4.42	1294.94
					2/4/14	NS	NC
					3/7/14	3.83	1295.53
					4/29/14	NS	NC
					3/25/15	2.78	1296.58
MW-6	15.30	3-15.3	-0.51	1301.21	5/8/12	5.74	1295.47
(2)					6/17/12	7.98	1293.23
					5/14/13	6.08	1295.13
					11/8/13	AB	AB
MW-7	14.99	5-14.99	-0.57	1298.58	11/8/13	12.48	1286.10
					12/11/13	12.59	1285.99
					2/4/14	NS	NC
					3/7/14	NS	NC
					4/29/14	NS	NC
					6/12/14	7.73	1290.85
					9/17/14	9.19	1289.39
					12/3/14	9.16	1289.42
					3/25/15	6.60	1291.98
MW-8	14.62	4-14.62	-0.39	1295.27	11/8/13	6.24	1289.03
					12/11/13	3.14	1292.13
					2/4/14	3.52	1291.75
					3/7/14	3.05	1292.22
					4/29/14	NS	NC
					6/12/14	2.80	1292.47
					9/17/14	3.06	1292.21
					12/3/14	1.68	1293.59
					3/25/15	2.67	1292.60

TABLE 1
GROUNDWATER ELEVATION DATA
FORMER ROSEMERGY'S CONVENIENT STORE
1623 ROUTE 590
HAWLEY, PA
11-17788-02

WELL	TWD	SI	TOCG	TOC	DATE	DTW	GW ELEV
MW-9	14.65	4-14.62	-0.37	1293.91	11/8/13	3.96	1289.95
					12/11/13	1.14	1292.77
					2/4/14	1.82	1292.09
					3/7/14	1.12	1292.79
					4/29/14	NS	NC
					6/12/14	1.43	1292.48
					9/17/14	1.89	1292.02
					12/3/14	0.81	1293.10
					3/25/15	0.40	1293.51
MW-10	14.25	5-14.25	-0.41	1297.61	11/8/13	NI	NC
					12/11/13	NI	NC
					2/4/14	3.13	1294.48
					3/7/14	2.72	1294.89
					4/29/14	NS	NC
					6/12/14	3.04	1294.57
					9/17/14	3.84	1293.77
					12/3/14	2.14	1295.47
					3/25/15	2.09	1295.52
MW-11	14.73	5-14.73	-0.25	1298.35	11/8/13	NI	NC
					12/11/13	NI	NC
					2/4/14	3.68	1294.67
					3/7/14	3.22	1295.13
					4/29/14	NS	NC
					6/12/14	3.47	1294.88
					9/17/14	4.01	1294.34
					12/3/14	3.16	1295.19
					3/25/15	4.00	1294.35
MW-12	14.65	4-14.65	-0.81	1297.44	11/8/13	9.40	1288.04
					12/11/13	5.46	1291.98
					2/4/14	5.55	1291.89
					3/7/14	5.18	1292.26
					4/29/14	NS	NC
					6/12/14	4.93	1292.51
					9/17/14	5.44	1292.00
					12/3/14	3.72	1293.72
					3/25/15	3.80	1293.64

TABLE 1
GROUNDWATER ELEVATION DATA
FORMER ROSEMERGY'S CONVENIENT STORE
1623 ROUTE 590
HAWLEY, PA
11-17788-02

WELL	TWD	SI	TOCG	TOC	DATE	DTW	GW ELEV
MW-13	14.93	5.75-14.93	-0.2	1303.84	11/8/13 12/11/13 2/4/14 3/7/14	WNI	
					4/29/14	11.53	1292.31
					6/12/14	12.64	1291.20
					9/17/14	11.34	1292.50
					12/3/14	13.77	1290.07
					3/25/15	NS	NS
MW-14	18.65	5-18.65	-0.3	1304.54	11/8/13 12/11/13 2/4/14 3/7/14	WNI	
					4/29/14	11.37	1293.17
					6/12/14	12.73	1291.81
					9/17/14	14.52	1290.02
					12/3/14	13.94	1290.60
					3/25/15	11.69	1292.85
MW-15	14.86	5-14.86	-0.3	1301.14	11/8/13 12/11/13 2/4/14 3/7/14	WNI	
					4/29/14	6.45	1294.69
					6/12/14	8.41	1292.73
					9/17/14	9.73	1291.41
					12/3/14	9.34	1291.80
					3/25/15	7.37	1293.77
MW-16	14.69	5-14.69	-0.3	1295.24	11/8/13 12/11/13 2/4/14 3/7/14	WNI	
					4/29/14	0.708	1294.53
					6/12/14	1.47	1293.77
					9/17/14	2.52	1292.72
					12/3/14	0.10	1295.14
					3/25/15	NS	NS

(2) = Diameter of Well Casing in Inches.
TWD = Total Well Depth in feet below grade.
SI = Screened Interval in feet below grade.
TOCG = Top of Well Casing relative to Grade.
+ = Approximate feet above grade.
- = Approximate feet below grade.
TOC = Top of Well Casing.
NI = Not Installed
DTW = Measured Depth to Groundwater from TOC.
GW ELEV = Calculated Groundwater Elevation.
NM = Well not measured.
NA = Not Applicable.
IA = Inaccessible.
NS = Not Sampled.
AB = Abandoned or Destroyed

TABLE 2
GROUNDWATER ANALYTICAL DATA
FORMER ROSEMERGY'S CONVENIENT STORE
1623 ROUTE 590
HAWLEY, PA
11-17788-02

Sample ID (Depth)	Statewide Health Standards	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1
	Residential										
Sampling Date	Groundwater	5/8/12	6/7/12	11/8/13	12/11/13	2/4/14	3/7/14	6/12/14	9/17/14	12/3/14	3/25/15
Matrix	Used Aquifers	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Units	<2,500 TDS	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
VOLATILE ORGANIC COMPOUNDS											
1,3,5-Trimethylbenzene	13	**1,030**	**736**	**310/646**	**643/625**	NS	**618/662**	**365**	**389**	**792/594**	**279/294**
1,2,4-Trimethylbenzene	15	**2,310**	**2,580**	**978/1,020**	**2,100/2,050**	NS	**1,900/2,100**	**1,300**	**1,490**	**3,040/1,700**	**981/997**
Benzene	5	**3,930**	**5,680**	**6,410/,6620**	**7,400/7,610**	NS	**7,740/8,210**	**7,170**	**6,330**	**6290/8,530**	**4,500/4,600**
Toluene	1,000	**13,600**	**10,900**	**15,700/16,100**	**9,960/10,000**	NS	**12,900/14,500**	**10,200**	**5,860**	**7,980/13,900**	**5,620/5,830**
Ethylbenzene	700	**2,450**	**2,720**	**1,540/1,580**	**2,380/2,350**	NS	**2,710/2,760**	**1,770**	**2,480**	**4,530/2,740**	**1,650/1,650**
Xylenes (total)	10,000	**11,800**	**12,200**	8,980/9,060	5,550/5,390	NS	**14,000/14,400**	8640	**11,000**	8,300/**14,200**	9,130/9,150
Isopropylbenzene	840	**1,210**	395	111/405	387/386	NS	336/364	213	233	482/394	158/158
Methyl tert-butyl ether	20	**68.6**	**<50**	**195/269**	**162/166**	NS	**<100/<100**	82	<100	**62/57.4**	<50/<50
Naphthalene	100	**881**	**276**	**265/693**	**424/450**	NS	**194/209**	**254**	**319**	**652/696**	**107**/98.5

Sample ID (Depth)	Statewide Health Standards	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2
	Residential										
Sampling Date	Groundwater	5/8/12	6/17/12	11/8/13	12/11/13	2/4/14	3/7/14	6/12/14	9/17/14	12/3/14	3/25/15
Matrix	Used Aquifers	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Units	<2,500 TDS	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
VOLATILE ORGANIC COMPOUNDS											
1,3,5-Trimethylbenzene	13	**635**	**687**	**406**	**401**	NS	**255**	NS	**112/195**	**201**	<5
1,2,4-Trimethylbenzene	15	**1,820**	**1,940**	**1,200**	**1,110**	NS	**612**	NS	**279/585**	**721**	**15.8**
Benzene	5	**791**	**272**	**273**	**164**	NS	**115**	NS	**50/1,040**	**1,320**	**22.8**
Toluene	1,000	**1,520**	**1,460**	958	514	NS	298	NS	**3090/3,830**	**5,720**	16.1
Ethylbenzene	700	**765**	**752**	**828**	634	NS	391	NS	424/**831**	**1,330**	18.2
Xylenes (total)	10,000	4,060	3,470	1,380	875	NS	586	NS	1070/2,110	3,060	29.6
Isopropylbenzene	840	**1,020**	**246**	**3,227**	255	NS	153	NS	97.1/190	187	<5
Methyl tert-butyl ether	20	**32.6**	<20	**<50**	<10	NS	<10	NS	<10/**27.7**	**32.7**	<5
Naphthalene	100	**898**	**145**	**240**	**265**	NS	**160**	NS	**159/344**	**235**	14.6

NS - Not Sampled
All concentrations in micrograms per liter (ug/L)
WD - Well Destroyed

TABLE 2 (Continued)
GROUNDWATER ANALYTICAL DATA
FORMER ROSEMERGY'S CONVENIENT STORE
1623 ROUTE 590
HAWLEY, PA
11-17788-02

Sample ID (Depth)	Statewide Health Standards	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3
Sampling Date	Groundwater	5/8/12	6/17/12	11/8/13	12/11/13	2/4/14	3/7/14	6/12/14	9/17/14	12/3/14	3/25/15
Matrix	Used Aquifers	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Units	<2,500 TDS	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
VOLATILE ORGANIC COMPOUNDS											
1,3,5-Trimethylbenzene	13	<10	<10	<5	<2	NS	NS	<10	**22.4**	<10	<5
1,2,4-Trimethylbenzene	15	<10	<10	5.15	<2	NS	NS	**38.5**	**87.1**	10	<5
Benzene	5	**273**	**236**	**91**	**88.4**	NS	NS	**788**	**476**	**318**	2.4
Toluene	1,000	86.4	<10	<5	<2	NS	NS	62.8	109	<10	<5
Ethylbenzene	700	12.2	<10	<5	3.24	NS	NS	56.8	145	11.1	<5
Xylenes (total)	10,000	49.2	<20	<10	7.24	NS	NS	122	541	<20	<10
Isopropylbenzene	840	<10	11	12.6	6.88	NS	NS	44.4	50.4	17.9	<5
Methyl tert-butyl ether	20	**768**	**684**	**375**	**348**	NS	NS	**1,180**	**1,190**	**2,560**	**30.9**
Naphthalene	100	<10	<10	<5	2.5	NS	NS	<10	26	18.3	<5

Sample ID (Depth)	Statewide Health Standards	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4
Sampling Date	Groundwater	5/8/12	6/17/12	11/8/13	12/11/13	2/4/14	3/7/14	6/12/14	9/17/14	12/3/14	3/25/15
Matrix	Used Aquifers	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Units	<2,500 TDS	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
VOLATILE ORGANIC COMPOUNDS											
1,3,5-Trimethylbenzene	13	**594**	**590**	**736**	**703**	NS	NS	**358**	**128**	5.15	1.16
1,2,4-Trimethylbenzene	15	**1,400**	**2,210**	**2,000**	**2,750**	NS	NS	**1,250**	**445**	14.1	1.96
Benzene	5	**4,120**	**2,460**	**3,040**	**1,000**	NS	NS	**301**	**225**	**2,130**	**6.6**
Toluene	1,000	**19,700**	**9,210**	**2,860**	**5,550**	NS	NS	**2,060**	864	65.6	10.1
Ethylbenzene	700	**1,420**	**2,000**	**2,290**	**2,250**	NS	NS	**1,050**	452	87	2.92
Xylenes (total)	10,000	9,440	**10,400**	5,540	**10,900**	NS	NS	4,720	2,070	62	12.5
Isopropylbenzene	840	728	228	433	387	NS	NS	**178**	65.6	43.9	<1
Methyl tert-butyl ether	20	14.8	**<50**	**56.9**	<10	NS	NS	<20	<20	10.7	<1
Naphthalene	100	**1,090**	**244**	**604**	**404**	NS	NS	**205**	73.6	20.4	<1

NS - Not Sampled
All concentrations in micrograms per liter (ug/L)
WD - Well Destroyed

TABLE 2 (Continued)
GROUNDWATER ANALYTICAL DATA
FORMER ROSEMERGY'S CONVENIENT STORE
1623 ROUTE 590
HAWLEY, PA
11-17788-02

Sample ID (Depth)	Statewide Health Standards	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5
Sampling Date	Groundwater	5/8/12	6/17/12	11/8/13	12/11/13	2/4/14	3/7/14	6/12/14	3/25/15
Matrix	Used Aquifers	Water	Water	Water	Water	Water	Water	Water	Water
Units	<2,500 TDS	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
VOLATILE ORGANIC COMPOUNDS									
1,3,5-Trimethylbenzene	13	**155**	**14.7**	<10	<2	NS	<2	WD	**437**
1,2,4-Trimethylbenzene	15	**427**	**36.2**	13.6	<2	NS	<2	WD	**1,680**
Benzene	5	**14.4**	4.3	**89.5**	2.44	NS	<2	WD	**3,960**
Toluene	1,000	116	14.1	<10	<2	NS	<2	WD	**13,600**
Ethylbenzene	700	107	14.6	80.7	<2	NS	<2	WD	**2,740**
Xylenes (total)	10,000	403	38.7	<20	<4	NS	<4	WD	9,460
Isopropylbenzene	840	51.8	<10	25.3	<2	NS	<2	WD	197
Methyl tert-butyl ether	20	<5	<10	12.7	2.82	NS	<2	WD	**33.5**
Naphthalene	100	94.4	<10	<10	<2	NS	<2	WD	**331**

Sample ID (Depth)	Statewide Health Standards	MW-6	MW-6	MW-6
Sampling Date	Groundwater	5/8/12	6/17/12	3/7/14
Matrix	Used Aquifers	Water	Water	Water
Units	<2,500 TDS	(ug/L)	(ug/L)	(ug/L)
VOLATILE ORGANIC COMPOUNDS				
1,3,5-Trimethylbenzene	13	<1	<1	AB
1,2,4-Trimethylbenzene	15	<1	<1	AB
Benzene	5	<1	1.15	AB
Toluene	1,000	<1	2.55	AB
Ethylbenzene	700	<1	<1	AB
Xylenes (total)	10,000	<2	<2	AB
Isopropylbenzene	840	<1	<1	AB
Methyl tert-butyl ether	20	<1	<1	AB
Naphthalene	100	<1	<1	AB

NS - Not Sampled
All concentrations in micrograms per liter (ug/L)
WD - Well Destroyed

TABLE 2 (Continued)
GROUNDWATER ANALYTICAL DATA
FORMER ROSEMERGY'S CONVENIENT STORE
1623 ROUTE 590
HAWLEY, PA
11-17788-02

Sample ID (Depth)	Statewide Health Standards	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7
Sampling Date	Groundwater	11/8/13	12/11/13	2/4/14	3/7/14	6/12/14	9/17/14	12/3/14	3/25/15
Matrix	Used Aquifers	Water	Water	Water	Water	Water	Water	Water	Water
Units	<2,500 TDS	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
VOLATILE ORGANIC COMPOUNDS									
1,3,5-Trimethylbenzene	13	8.5	12.1	NS	NS	<20	**56.2**	**158**	<25
1,2,4-Trimethylbenzene	15	5.22	6.44	NS	NS	**40.4**	**153**	**300**	**50**
Benzene	5	**7,480**	**5,100**	NS	NS	**390**	**2,200**	**6,120**	**884**
Toluene	1,000	62.7	54.8	NS	NS	<20	66.4	296	300
Ethylbenzene	700	34.3	30.9	NS	NS	<20	299	**800**	120
Xylenes (total)	10,000	31.8	33.3	NS	NS	96.8	436	1,120	293
Isopropylbenzene	840	43	54.9	NS	NS	<20	51.8	167	<25
Methyl tert-butyl ether	20	**546**	**449**	NS	NS	<20	**48.4**	**192**	<25
Naphthalene	100	43.7	78.9	NS	NS	<20	65.4	**222**	<25

Sample ID (Depth)	Statewide Health Standards	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8
Sampling Date	Groundwater	11/8/13	12/11/13	2/4/14	3/7/14	6/12/14	9/17/14	12/3/14	3/25/15
Matrix	Used Aquifers	Water	Water	Water	Water	Water	Water	Water	Water
Units	<2,500 TDS	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
VOLATILE ORGANIC COMPOUNDS									
1,3,5-Trimethylbenzene	13	<2	<1	NS	<1	<1	5.16	1.3	1.55
1,2,4-Trimethylbenzene	15	<2	<1	NS	<1	<1	**19.4**	4.05	5.42
Benzene	5	<2	<1	NS	<1	<1	**8.76**	2.1	**14.7**
Toluene	1,000	<2	<1	NS	<1	<1	13	3.62	35.2
Ethylbenzene	700	<2	<1	NS	<1	<1	18.8	3.56	7.47
Xylenes (total)	10,000	<4	<2	NS	<2	<2	90.5	17.3	37.2
Isopropylbenzene	840	<2	<1	NS	<1	<1	2.57	<1	<1
Methyl tert-butyl ether	20	2.7	<1	NS	<1	<1	<1	<1	<1
Naphthalene	100	<2	<1	NS	<1	<1	3.64	1.17	1

NS - Not Sampled
All concentrations in micrograms per liter (ug/L)
WD - Well Destroyed

TABLE 2 (Continued)
GROUNDWATER ANALYTICAL DATA
FORMER ROSEMERGY'S CONVENIENT STORE
1623 ROUTE 590
HAWLEY, PA
11-17788-02

Sample ID (Depth)	Statewide Health Standards	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9
Sampling Date	Groundwater	11/8/13	12/11/13	2/4/14	3/7/14	6/12/14	9/17/14	12/3/14	3/25/15
Matrix	Used Aquifers	Water	Water	Water	Water	Water	Water	Water	Water
Units	<2,500 TDS	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
VOLATILE ORGANIC COMPOUNDS									
1,3,5-Trimethylbenzene	13	<2	<1	NS	<1	<1	8.68	7.7	<10
1,2,4-Trimethylbenzene	15	<2	<1	NS	<1	<1	**36.1**	<5	<10
Benzene	5	**13**	**16.9**	NS	**96.1**	**58.3**	**82.9**	**19.2**	**853**
Toluene	1,000	<2	<1	NS	<1	2.24	39.8	<5	80.9
Ethylbenzene	700	<2	<1	NS	3.18	1.96	41	9.7	66
Xylenes (total)	10,000	<4	<2	NS	<2	<2	165	17.4	66
Isopropylbenzene	840	<2	<1	NS	5.48	5.73	9.87	<5	38.9
Methyl tert-butyl ether	20	8	2.94	NS	9.41	5.88	5.1	<5	11.3
Naphthalene	100	<2	<1	NS	<1	<1	8.05	<5	14.7

Sample ID (Depth)	Statewide Health Standards	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10
Sampling Date	Groundwater	11/8/13	12/11/13	2/4/14	3/7/14	6/12/14	9/17/14	12/3/14	3/25/15
Matrix	Used Aquifers	Water	Water	Water	Water	Water	Water	Water	Water
Units	<2,500 TDS	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
VOLATILE ORGANIC COMPOUNDS									
1,3,5-Trimethylbenzene	13	WNI	WNI	<2	<1	<1	<1	1.72	<1
1,2,4-Trimethylbenzene	15	WNI	WNI	<2	<1	<1	<1	4.82	2.63
Benzene	5	WNI	WNI	<0.24	<1	<1	<1	**13.4**	**13.9**
Toluene	1,000	WNI	WNI	<2	<1	<1	<1	14.2	14.6
Ethylbenzene	700	WNI	WNI	<2	<1	<1	<1	7.21	3.71
Xylenes (total)	10,000	WNI	WNI	<4	<2	<2	<2	32	17
Isopropylbenzene	840	WNI	WNI	<2	<1	<1	<1	1.16	<1
Methyl tert-butyl ether	20	WNI	WNI	<2	<1	<1	11.5	12.6	23.8
Naphthalene	100	WNI	WNI	<2	<1	<1	<1	1.02	<1

NS - Not Sampled
All concentrations in micrograms per liter (ug/L)
WD - Well Destroyed

TABLE 2 (Continued)
GROUNDWATER ANALYTICAL DATA
FORMER ROSEMERGY'S CONVENIENT STORE
1623 ROUTE 590
HAWLEY, PA
11-17788-02

Sample ID (Depth)	Statewide Health Standards	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11
Sampling Date	Groundwater	11/8/13	12/11/13	2/4/14	3/7/14	6/12/14	9/17/14	12/3/14	3/25/15
Matrix	Used Aquifers	Water	Water	Water	Water	Water	Water	Water	Water
Units	<2,500 TDS	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
VOLATILE ORGANIC COMPOUNDS									
1,3,5-Trimethylbenzene	13	WNI	WNI	<2	<1	<1	<1	2.6	1.8
1,2,4-Trimethylbenzene	15	WNI	WNI	<2	<1	<1	<1	9.8	6.3
Benzene	5	WNI	WNI	0.3	<1	<1	<1	**19.3**	**32.1**
Toluene	1,000	WNI	WNI	<2	<1	<1	<1	20.3	50.5
Ethylbenzene	700	WNI	WNI	<2	<1	<1	<1	10	12
Xylenes (total)	10,000	WNI	WNI	<4	<2	<2	<2	47	53
Isopropylbenzene	840	WNI	WNI	<2	<1	<1	<1	1.56	1.47
Methyl tert-butyl ether	20	WNI	WNI	<2	<1	<1	<1	<1	<1
Naphthalene	100	WNI	WNI	<2	<1	<1	<1	2.21	1.52

Sample ID (Depth)	Statewide Health Standards	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12
Sampling Date	Groundwater	11/8/13	12/11/13	2/4/14	3/7/14	6/12/14	9/17/14	12/3/14	3/25/15
Matrix	Used Aquifers	Water	Water	Water	Water	Water	Water	Water	Water
Units	<2,500 TDS	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
VOLATILE ORGANIC COMPOUNDS									
1,3,5-Trimethylbenzene	13	<2	<1	NS	<1	<1	6.74	<1	2.32
1,2,4-Trimethylbenzene	15	<2	<1	NS	<1	<1	**19.9**	<1	8.32
Benzene	5	2.12	<1	NS	<1	1.43	**20.4**	<1	**26.2**
Toluene	1,000	6.64	<1	NS	<1	3.12	24.9	<1	59.8
Ethylbenzene	700	<2	<1	NS	<1	1.48	18.9	<1	12.1
Xylenes (total)	10,000	4.1	<2	NS	<2	6.35	82.6	<2	60
Isopropylbenzene	840	<2	<1	NS	<1	<1	3.45	<1	1.08
Methyl tert-butyl ether	20	<2	<1	NS	<1	<1	<1	<1	<1
Naphthalene	100	<2	<1	NS	<1	<1	1.26	<1	1.63

NS - Not Sampled
All concentrations in micrograms per liter (ug/L)
WD - Well Destroyed

TABLE 2 (Continued)
GROUNDWATER ANALYTICAL DATA
FORMER ROSEMERGY'S CONVENIENT STORE
1623 ROUTE 590
HAWLEY, PA
11-17788-02

Sample ID (Depth)	Statewide Health Standards	MW-13	MW-13	MW-13	MW-13	MW-13
Sampling Date	Groundwater	4/29/14	6/12/14	9/17/14	12/3/14	12/3/14
Matrix	Used Aquifers	Water	Water	Water	Water	Water
Units	<2,500 TDS	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
VOLATILE ORGANIC COMPOUNDS						
1,3,5-Trimethylbenzene	13	<1	<1	<1	4.9	NS
1,2,4-Trimethylbenzene	15	<1	<1	<1	**18.9**	NS
Benzene	5	<1	<1	<1	**108**	NS
Toluene	1,000	66.1	102	1.81	120	NS
Ethylbenzene	700	<1	<1	<1	30.5	NS
Xylenes (total)	10,000	<2	<2	3.61	133	NS
Isopropylbenzene	840	<1	<1	<1	3.32	NS
Methyl tert-butyl ether	20	<1	<1	<1	<1	NS
Naphthalene	100	<1	<1	<1	5.95	NS

Sample ID (Depth)	Statewide Health Standards	MW-14	MW-14	MW-14	MW-14	MW-14
Sampling Date	Groundwater	4/29/14	6/12/14	9/17/14	12/3/14	12/3/14
Matrix	Used Aquifers	Water	Water	Water	Water	Water
Units	<2,500 TDS	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
VOLATILE ORGANIC COMPOUNDS						
1,3,5-Trimethylbenzene	13	<1	<1	<1	7.15	6.21
1,2,4-Trimethylbenzene	15	<1	<1	<1	**25.6**	**21.3**
Benzene	5	<1	<1	<1	**71.6**	**62.9**
Toluene	1,000	<1	<1	<1	65.1	95.6
Ethylbenzene	700	<1	<1	<1	30.8	28.2
Xylenes (total)	10,000	<2	<2	2.19	137	147
Isopropylbenzene	840	<1	<1	<1	4.43	2.93
Methyl tert-butyl ether	20	<1	<1	<1	<1	<1
Naphthalene	100	<1	<1	<1	6.96	3.73

NS - Not Sampled
All concentrations in micrograms per liter (ug/L)
WD - Well Destroyed

TABLE 2 (Continued)
GROUNDWATER ANALYTICAL DATA
FORMER ROSEMERGY'S CONVENIENT STORE
1623 ROUTE 590
HAWLEY, PA
11-17788-02

Sample ID (Depth)	Statewide Health Standards	MW-15	MW-15	MW-15	MW-15	MW-15
Sampling Date	Groundwater	4/29/14	6/12/14	9/17/14	12/3/14	12/3/14
Matrix	Used Aquifers	Water	Water	Water	Water	Water
Units	<2,500 TDS	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
VOLATILE ORGANIC COMPOUNDS						
1,3,5-Trimethylbenzene	13	<1	<1	<1	7.7	3.06
1,2,4-Trimethylbenzene	15	<1	<1	<1	**25.7**	10.6
Benzene	5	<1	<1	<1	**71**	**29.1**
Toluene	1,000	<1	2.35	<1	57.2	61.2
Ethylbenzene	700	<1	<1	<1	31	13.4
Xylenes (total)	10,000	<2	2.94	4.25	135	68
Isopropylbenzene	840	<1	<1	<1	4.7	1.23
Methyl tert-butyl ether	20	<1	<1	<1	<1	<1
Naphthalene	100	<1	<1	<1	7.06	1.91

Sample ID (Depth)	Statewide Health Standards	MW-16	MW-16	MW-16	MW-16	MW-16
Sampling Date	Groundwater	4/29/14	6/12/14	9/17/14	12/3/14	12/3/14
Matrix	Used Aquifers	Water	Water	Water	Water	Water
Units	<2,500 TDS	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
VOLATILE ORGANIC COMPOUNDS						
1,3,5-Trimethylbenzene	13	<1	<1	7	1.7	NS
1,2,4-Trimethylbenzene	15	<1	<1	**26.9**	4.84	NS
Benzene	5	<1	<1	**19.6**	**11.6**	NS
Toluene	1,000	<1	<1	26.4	14.6	NS
Ethylbenzene	700	<1	<1	32.4	7.72	NS
Xylenes (total)	10,000	<2	<2	138	34.1	NS
Isopropylbenzene	840	<1	<1	4.18	1.1	NS
Methyl tert-butyl ether	20	9.18	3.02/3.42	**29.9**	19.5	NS
Naphthalene	100	<1	<1	1.81	1.16	NS

NS - Not Sampled
All concentrations in micrograms per liter (ug/L)
WD - Well Destroyed

TABLE 2 (Continued)
GROUNDWATER ANALYTICAL DATA
FORMER ROSEMERGY'S CONVENIENT STORE
1623 ROUTE 590
HAWLEY, PA
11-17788-02

Sample ID (Depth)	Statewide Health Standards	DPE-4	DPE-4	DPE-4	DPE-4
Sampling Date	Groundwater	6/12/14	9/17/14	12/3/14	3/25/15
Matrix	Used Aquifers	Water	Water	Water	Water
Units	<2,500 TDS	(ug/L)	(ug/L)	(ug/L)	(ug/L)
VOLATILE ORGANIC COMPOUNDS					
1,3,5-Trimethylbenzene	13	**686**	**545**	**865**	NS
1,2,4-Trimethylbenzene	15	**2,270**	**1,820**	**963**	NS
Benzene	5	**7,300**	**1,760**	**1,440**	NS
Toluene	1,000	**8,650**	**4,930**	**2,270**	NS
Ethylbenzene	700	**2,590**	**2,200**	**1,520**	NS
Xylenes (total)	10,000	**12,800**	**16,900**	8,470	NS
Isopropylbenzene	840	322	337	443	NS
Methyl tert-butyl ether	20	**447**	<20	<20	NS
Naphthalene	100	**502**	**681**	**518**	NS

NS - Not Sampled
All concentrations in micrograms per liter (ug/L)
WD - Well Destroyed

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-17788-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	12/18/14 10:32
Project Manager: Orion Cook	Number of Containers:	32	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Sample Type	Date Sampled	Date Received
MW-1R	4L05107-01	Water	Grab	12/03/14 12:15	12/05/14 14:40
MW-2	4L05107-02	Water	Grab	12/03/14 11:02	12/05/14 14:40
MW-3	4L05107-03	Water	Grab	12/03/14 10:36	12/05/14 14:40
MW-4	4L05107-04	Water	Grab	12/03/14 10:08	12/05/14 14:40
MW-5	4L05107-05	Water	Grab	12/03/14 11:46	12/05/14 14:40
MW-7	4L05107-06	Water	Grab	12/03/14 12:51	12/05/14 14:40
MW-8	4L05107-07	Water	Grab	12/04/14 09:58	12/05/14 14:40
MW-9	4L05107-08	Water	Grab	12/04/14 10:39	12/05/14 14:40
MW-10	4L05107-09	Water	Grab	12/03/14 15:29	12/05/14 14:40
MW-11	4L05107-10	Water	Grab	12/03/14 14:52	12/05/14 14:40
MW-12	4L05107-11	Water	Grab	12/04/14 09:11	12/05/14 14:40
MW-13	4L05107-12	Water	Grab	12/03/14 14:16	12/05/14 14:40
MW-14	4L05107-13	Water	Grab	12/03/14 13:55	12/05/14 14:40
MW-15	4L05107-14	Water	Grab	12/03/14 13:21	12/05/14 14:40
MW-16	4L05107-15	Water	Grab	12/03/14 16:22	12/05/14 14:40
MW-1M	4L05107-16	Water	Grab	12/03/14 12:15	12/05/14 14:40

Fairway Laboratories, Inc.

Reviewed and Submitted by:

Michael P. Tyler
Laboratory Director

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The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-17788-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	12/18/14 10:32
Project Manager: Orion Cook	Number of Containers:	32	

Client Sample ID: **MW-1R** **Date/Time Sampled:** 12/03/14 12:15

Laboratory Sample ID: **4L05107-01 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	792		50.0	ug/l	12/12/14 01:25	EPA 8260B	mtc	
1,2,4-Trimethylbenzene	3040		50.0	ug/l	12/12/14 01:25	EPA 8260B	mtc	
Benzene	6290		500	ug/l	12/13/14 08:07	EPA 8260B	mtc	
Toluene	7980		500	ug/l	12/13/14 08:07	EPA 8260B	mtc	
Ethylbenzene	4530		50.0	ug/l	12/12/14 01:25	EPA 8260B	mtc	
Xylenes (total)	8300		1000	ug/l	12/13/14 08:07	EPA 8260B	mtc	
Isopropylbenzene	482		50.0	ug/l	12/12/14 01:25	EPA 8260B	mtc	
Methyl tert-butyl ether	62.0		50.0	ug/l	12/12/14 01:25	EPA 8260B	mtc	
Naphthalene	652		50.0	ug/l	12/12/14 01:25	EPA 8260B	mtc	
Surrogate: 4-Bromofluorobenzene		*102 %*	*70-130*		*12/12/14 01:25*	*EPA 8260B*	mtc	
Surrogate: 1,2-Dichloroethane-d4		*103 %*	*70-130*		*12/12/14 01:25*	*EPA 8260B*	mtc	
Surrogate: Fluorobenzene		*101 %*	*70-130*		*12/12/14 01:25*	*EPA 8260B*	mtc	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-17788-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	12/18/14 10:32
Project Manager: Orion Cook	Number of Containers:	32	

Client Sample ID: **MW-2** **Date/Time Sampled:** 12/03/14 11:02

Laboratory Sample ID: **4L05107-02 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	201		10.0	ug/l	12/13/14 02:26	EPA 8260B	mtc	
1,2,4-Trimethylbenzene	721		10.0	ug/l	12/13/14 02:26	EPA 8260B	mtc	
Benzene	1320		100	ug/l	12/15/14 21:16	EPA 8260B	mtc	
Toluene	5720		100	ug/l	12/15/14 21:16	EPA 8260B	mtc	
Ethylbenzene	1330		100	ug/l	12/15/14 21:16	EPA 8260B	mtc	
Xylenes (total)	3060		20.0	ug/l	12/13/14 02:26	EPA 8260B	mtc	
Isopropylbenzene	187		10.0	ug/l	12/13/14 02:26	EPA 8260B	mtc	
Methyl tert-butyl ether	32.7		10.0	ug/l	12/13/14 02:26	EPA 8260B	mtc	
Naphthalene	235		10.0	ug/l	12/13/14 02:26	EPA 8260B	mtc	
Surrogate: 4-Bromofluorobenzene		*102 %*	*70-130*		*12/13/14 02:26*	*EPA 8260B*	mtc	
Surrogate: 1,2-Dichloroethane-d4		*104 %*	*70-130*		*12/13/14 02:26*	*EPA 8260B*	mtc	
Surrogate: Fluorobenzene		*97.0 %*	*70-130*		*12/13/14 02:26*	*EPA 8260B*	mtc	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-17788-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	12/18/14 10:32
Project Manager: Orion Cook	Number of Containers:	32	

Client Sample ID: **MW-3** **Date/Time Sampled:** 12/03/14 10:36

Laboratory Sample ID: **4L05107-03 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	<10.0		10.0	ug/l	12/16/14 00:06	EPA 8260B	MTC	
1,2,4-Trimethylbenzene	10.0		10.0	ug/l	12/16/14 00:06	EPA 8260B	MTC	
Benzene	318		10.0	ug/l	12/16/14 00:06	EPA 8260B	MTC	
Toluene	<10.0		10.0	ug/l	12/16/14 00:06	EPA 8260B	MTC	
Ethylbenzene	11.1		10.0	ug/l	12/16/14 00:06	EPA 8260B	MTC	
Xylenes (total)	<20.0		20.0	ug/l	12/16/14 00:06	EPA 8260B	MTC	
Isopropylbenzene	17.9		10.0	ug/l	12/16/14 00:06	EPA 8260B	MTC	
Methyl tert-butyl ether	2560		50.0	ug/l	12/16/14 22:07	EPA 8260B	MTC	
Naphthalene	18.3		10.0	ug/l	12/16/14 00:06	EPA 8260B	MTC	
Surrogate: 4-Bromofluorobenzene		*98.3 %*	*70-130*		*12/16/14 00:06*	*EPA 8260B*	MTC	
Surrogate: 1,2-Dichloroethane-d4		*135 %*	*70-130*		*12/16/14 00:06*	*EPA 8260B*	MTC	2n
Surrogate: Fluorobenzene		*92.5 %*	*70-130*		*12/16/14 00:06*	*EPA 8260B*	MTC	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-17788-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	12/18/14 10:32
Project Manager: Orion Cook	Number of Containers:	32	

Client Sample ID: **MW-4** **Date/Time Sampled:** 12/03/14 10:08

Laboratory Sample ID: **4L05107-04 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	7.70		5.00	ug/l	12/15/14 19:23	EPA 8260B	MTC	
1,2,4-Trimethylbenzene	<5.00		5.00	ug/l	12/15/14 19:23	EPA 8260B	MTC	
Benzene	19.2		5.00	ug/l	12/15/14 19:23	EPA 8260B	MTC	
Toluene	<5.00		5.00	ug/l	12/15/14 19:23	EPA 8260B	MTC	
Ethylbenzene	9.70		5.00	ug/l	12/15/14 19:23	EPA 8260B	MTC	
Xylenes (total)	17.4		10.0	ug/l	12/15/14 19:23	EPA 8260B	MTC	
Isopropylbenzene	<5.00		5.00	ug/l	12/15/14 19:23	EPA 8260B	MTC	
Methyl tert-butyl ether	<5.00		5.00	ug/l	12/15/14 19:23	EPA 8260B	MTC	
Naphthalene	<5.00		5.00	ug/l	12/15/14 19:23	EPA 8260B	MTC	
Surrogate: 4-Bromofluorobenzene		*108 %*	*70-130*		*12/15/14 19:23*	*EPA 8260B*	MTC	
Surrogate: 1,2-Dichloroethane-d4		*140 %*	*70-130*		*12/15/14 19:23*	*EPA 8260B*	MTC	2n
Surrogate: Fluorobenzene		*93.3 %*	*70-130*		*12/15/14 19:23*	*EPA 8260B*	MTC	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-17788-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	12/18/14 10:32
Project Manager: Orion Cook	Number of Containers:	32	

Client Sample ID: **MW-5** **Date/Time Sampled:** 12/03/14 11:46

Laboratory Sample ID: **4L05107-05 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	865		20.0	ug/l	12/12/14 02:40	EPA 8260B	mtc	
1,2,4-Trimethylbenzene	963		100	ug/l	12/15/14 19:42	EPA 8260B	mtc	
Benzene	1440		20.0	ug/l	12/12/14 02:40	EPA 8260B	mtc	
Toluene	2270		100	ug/l	12/15/14 19:42	EPA 8260B	mtc	
Ethylbenzene	1520		100	ug/l	12/15/14 19:42	EPA 8260B	mtc	
Xylenes (total)	8470		200	ug/l	12/15/14 19:42	EPA 8260B	mtc	
Isopropylbenzene	443		20.0	ug/l	12/12/14 02:40	EPA 8260B	mtc	
Methyl tert-butyl ether	<20.0		20.0	ug/l	12/12/14 02:40	EPA 8260B	mtc	
Naphthalene	518		20.0	ug/l	12/12/14 02:40	EPA 8260B	mtc	
Surrogate: 4-Bromofluorobenzene		*107 %*	*70-130*		*12/12/14 02:40*	*EPA 8260B*	mtc	
Surrogate: 1,2-Dichloroethane-d4		*102 %*	*70-130*		*12/12/14 02:40*	*EPA 8260B*	mtc	
Surrogate: Fluorobenzene		*97.2 %*	*70-130*		*12/12/14 02:40*	*EPA 8260B*	mtc	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-17788-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	12/18/14 10:32
Project Manager: Orion Cook	Number of Containers:	32	

Client Sample ID: **MW-7** **Date/Time Sampled:** 12/03/14 12:51

Laboratory Sample ID: **4L05107-06 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	158		20.0	ug/l	12/12/14 03:18	EPA 8260B	mtc	
1,2,4-Trimethylbenzene	300		20.0	ug/l	12/12/14 03:18	EPA 8260B	mtc	
Benzene	6120		250	ug/l	12/13/14 08:45	EPA 8260B	mtc	
Toluene	296		20.0	ug/l	12/12/14 03:18	EPA 8260B	mtc	
Ethylbenzene	800		20.0	ug/l	12/12/14 03:18	EPA 8260B	mtc	
Xylenes (total)	1120		40.0	ug/l	12/12/14 03:18	EPA 8260B	mtc	
Isopropylbenzene	167		20.0	ug/l	12/12/14 03:18	EPA 8260B	mtc	
Methyl tert-butyl ether	192		20.0	ug/l	12/12/14 03:18	EPA 8260B	mtc	
Naphthalene	222		20.0	ug/l	12/12/14 03:18	EPA 8260B	mtc	
Surrogate: 4-Bromofluorobenzene		*98.8 %*	*70-130*		*12/12/14 03:18*	*EPA 8260B*	mtc	
Surrogate: 1,2-Dichloroethane-d4		*101 %*	*70-130*		*12/12/14 03:18*	*EPA 8260B*	mtc	
Surrogate: Fluorobenzene		*103 %*	*70-130*		*12/12/14 03:18*	*EPA 8260B*	mtc	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-17788-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	12/18/14 10:32
Project Manager: Orion Cook	Number of Containers:	32	

Client Sample ID: **MW-8** **Date/Time Sampled:** 12/04/14 09:58

Laboratory Sample ID: **4L05107-07 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	1.30		1.00	ug/l	12/10/14 21:37	EPA 8260B	wlm	
1,2,4-Trimethylbenzene	4.05		1.00	ug/l	12/10/14 21:37	EPA 8260B	wlm	
Benzene	2.10		1.00	ug/l	12/10/14 21:37	EPA 8260B	wlm	
Toluene	3.62		1.00	ug/l	12/10/14 21:37	EPA 8260B	wlm	
Ethylbenzene	3.56		1.00	ug/l	12/10/14 21:37	EPA 8260B	wlm	
Xylenes (total)	17.3		2.00	ug/l	12/10/14 21:37	EPA 8260B	wlm	
Isopropylbenzene	<1.00		1.00	ug/l	12/10/14 21:37	EPA 8260B	wlm	
Methyl tert-butyl ether	<1.00		1.00	ug/l	12/10/14 21:37	EPA 8260B	wlm	
Naphthalene	1.17		1.00	ug/l	12/10/14 21:37	EPA 8260B	wlm	
Surrogate: 4-Bromofluorobenzene		*102 %*	*70-130*		*12/10/14 21:37*	*EPA 8260B*	wlm	
Surrogate: 1,2-Dichloroethane-d4		*118 %*	*70-130*		*12/10/14 21:37*	*EPA 8260B*	wlm	
Surrogate: Fluorobenzene		*113 %*	*70-130*		*12/10/14 21:37*	*EPA 8260B*	wlm	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-17788-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	12/18/14 10:32
Project Manager: Orion Cook	Number of Containers:	32	

Client Sample ID: **MW-9** **Date/Time Sampled:** 12/04/14 10:39

Laboratory Sample ID: **4L05107-08 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	5.15		5.00	ug/l	12/12/14 08:08	EPA 8260B	mtc	
1,2,4-Trimethylbenzene	14.1		5.00	ug/l	12/12/14 08:08	EPA 8260B	mtc	
Benzene	2130		50.0	ug/l	12/15/14 21:35	EPA 8260B	mtc	
Toluene	65.6		5.00	ug/l	12/12/14 08:08	EPA 8260B	mtc	
Ethylbenzene	87.0		5.00	ug/l	12/12/14 08:08	EPA 8260B	mtc	
Xylenes (total)	62.0		10.0	ug/l	12/12/14 08:08	EPA 8260B	mtc	
Isopropylbenzene	43.9		5.00	ug/l	12/12/14 08:08	EPA 8260B	mtc	
Methyl tert-butyl ether	10.7		5.00	ug/l	12/12/14 08:08	EPA 8260B	mtc	
Naphthalene	20.4		5.00	ug/l	12/12/14 08:08	EPA 8260B	mtc	
Surrogate: 4-Bromofluorobenzene		*95.0 %*	*70-130*		*12/12/14 08:08*	*EPA 8260B*	mtc	
Surrogate: 1,2-Dichloroethane-d4		*98.8 %*	*70-130*		*12/12/14 08:08*	*EPA 8260B*	mtc	
Surrogate: Fluorobenzene		*99.7 %*	*70-130*		*12/12/14 08:08*	*EPA 8260B*	mtc	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-17788-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	12/18/14 10:32
Project Manager: Orion Cook	Number of Containers:	32	

Client Sample ID: **MW-10** **Date/Time Sampled:** 12/03/14 15:29

Laboratory Sample ID: **4L05107-09 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	1.72		1.00	ug/l	12/11/14 01:43	EPA 8260B	wlm	
1,2,4-Trimethylbenzene	4.82		1.00	ug/l	12/11/14 01:43	EPA 8260B	wlm	
Benzene	13.4		1.00	ug/l	12/11/14 01:43	EPA 8260B	wlm	
Toluene	14.2		1.00	ug/l	12/11/14 01:43	EPA 8260B	wlm	
Ethylbenzene	7.21		1.00	ug/l	12/11/14 01:43	EPA 8260B	wlm	
Xylenes (total)	32.0		2.00	ug/l	12/11/14 01:43	EPA 8260B	wlm	
Isopropylbenzene	1.16		1.00	ug/l	12/11/14 01:43	EPA 8260B	wlm	
Methyl tert-butyl ether	12.6		1.00	ug/l	12/11/14 01:43	EPA 8260B	wlm	
Naphthalene	1.02		1.00	ug/l	12/11/14 01:43	EPA 8260B	wlm	
Surrogate: 4-Bromofluorobenzene		*103 %*	*70-130*		*12/11/14 01:43*	*EPA 8260B*	wlm	
Surrogate: 1,2-Dichloroethane-d4		*116 %*	*70-130*		*12/11/14 01:43*	*EPA 8260B*	wlm	
Surrogate: Fluorobenzene		*110 %*	*70-130*		*12/11/14 01:43*	*EPA 8260B*	wlm	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-17788-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	12/18/14 10:32
Project Manager: Orion Cook	Number of Containers:	32	

Client Sample ID: **MW-11** **Date/Time Sampled:** 12/03/14 14:52

Laboratory Sample ID: **4L05107-10 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	2.64		1.00	ug/l	12/10/14 19:05	EPA 8260B	wlm	
1,2,4-Trimethylbenzene	9.79		1.00	ug/l	12/10/14 19:05	EPA 8260B	wlm	
Benzene	19.3		1.00	ug/l	12/10/14 19:05	EPA 8260B	wlm	
Toluene	20.3		1.00	ug/l	12/10/14 19:05	EPA 8260B	wlm	
Ethylbenzene	10.0		1.00	ug/l	12/10/14 19:05	EPA 8260B	wlm	
Xylenes (total)	47.0		2.00	ug/l	12/10/14 19:05	EPA 8260B	wlm	
Isopropylbenzene	1.56		1.00	ug/l	12/10/14 19:05	EPA 8260B	wlm	
Methyl tert-butyl ether	<1.00		1.00	ug/l	12/10/14 19:05	EPA 8260B	wlm	
Naphthalene	2.21		1.00	ug/l	12/10/14 19:05	EPA 8260B	wlm	
Surrogate: 4-Bromofluorobenzene		*103 %*	*70-130*		*12/10/14 19:05*	*EPA 8260B*	wlm	
Surrogate: 1,2-Dichloroethane-d4		*117 %*	*70-130*		*12/10/14 19:05*	*EPA 8260B*	wlm	
Surrogate: Fluorobenzene		*113 %*	*70-130*		*12/10/14 19:05*	*EPA 8260B*	wlm	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-17788-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	12/18/14 10:32
Project Manager: Orion Cook	Number of Containers:	32	

Client Sample ID: **MW-12** **Date/Time Sampled:** 12/04/14 09:11

Laboratory Sample ID: **4L05107-11 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	<1.00		1.00	ug/l	12/10/14 23:31	EPA 8260B	wlm	
1,2,4-Trimethylbenzene	<1.00		1.00	ug/l	12/10/14 23:31	EPA 8260B	wlm	
Benzene	<1.00		1.00	ug/l	12/10/14 23:31	EPA 8260B	wlm	
Toluene	<1.00		1.00	ug/l	12/10/14 23:31	EPA 8260B	wlm	
Ethylbenzene	<1.00		1.00	ug/l	12/10/14 23:31	EPA 8260B	wlm	
Xylenes (total)	<2.00		2.00	ug/l	12/10/14 23:31	EPA 8260B	wlm	
Isopropylbenzene	<1.00		1.00	ug/l	12/10/14 23:31	EPA 8260B	wlm	
Methyl tert-butyl ether	<1.00		1.00	ug/l	12/10/14 23:31	EPA 8260B	wlm	
Naphthalene	<1.00		1.00	ug/l	12/10/14 23:31	EPA 8260B	wlm	
Surrogate: 4-Bromofluorobenzene		*99.5 %*	*70-130*		*12/10/14 23:31*	*EPA 8260B*	wlm	
Surrogate: 1,2-Dichloroethane-d4		*116 %*	*70-130*		*12/10/14 23:31*	*EPA 8260B*	wlm	
Surrogate: Fluorobenzene		*113 %*	*70-130*		*12/10/14 23:31*	*EPA 8260B*	wlm	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-17788-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	12/18/14 10:32
Project Manager: Orion Cook	Number of Containers:	32	

Client Sample ID: **MW-13** **Date/Time Sampled:** 12/03/14 14:16

Laboratory Sample ID: **4L05107-12 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	4.89		1.00	ug/l	12/10/14 19:43	EPA 8260B	wlm	
1,2,4-Trimethylbenzene	18.9		1.00	ug/l	12/10/14 19:43	EPA 8260B	wlm	
Benzene	108		1.00	ug/l	12/10/14 19:43	EPA 8260B	wlm	
Toluene	120		5.00	ug/l	12/11/14 19:12	EPA 8260B	wlm	
Ethylbenzene	30.5		1.00	ug/l	12/10/14 19:43	EPA 8260B	wlm	
Xylenes (total)	133		2.00	ug/l	12/10/14 19:43	EPA 8260B	wlm	
Isopropylbenzene	3.32		1.00	ug/l	12/10/14 19:43	EPA 8260B	wlm	
Methyl tert-butyl ether	<1.00		1.00	ug/l	12/10/14 19:43	EPA 8260B	wlm	
Naphthalene	5.95		1.00	ug/l	12/10/14 19:43	EPA 8260B	wlm	
Surrogate: 4-Bromofluorobenzene		*103 %*	*70-130*		*12/10/14 19:43*	*EPA 8260B*	wlm	
Surrogate: 1,2-Dichloroethane-d4		*113 %*	*70-130*		*12/10/14 19:43*	*EPA 8260B*	wlm	
Surrogate: Fluorobenzene		*111 %*	*70-130*		*12/10/14 19:43*	*EPA 8260B*	wlm	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-17788-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	12/18/14 10:32
Project Manager: Orion Cook	Number of Containers:	32	

Client Sample ID: **MW-14** **Date/Time Sampled:** 12/03/14 13:55

Laboratory Sample ID: **4L05107-13 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	7.15		1.00	ug/l	12/10/14 20:21	EPA 8260B	wlm	
1,2,4-Trimethylbenzene	25.6		1.00	ug/l	12/10/14 20:21	EPA 8260B	wlm	
Benzene	71.6		1.00	ug/l	12/10/14 20:21	EPA 8260B	wlm	
Toluene	65.1		1.00	ug/l	12/10/14 20:21	EPA 8260B	wlm	
Ethylbenzene	30.8		1.00	ug/l	12/10/14 20:21	EPA 8260B	wlm	
Xylenes (total)	137		2.00	ug/l	12/10/14 20:21	EPA 8260B	wlm	
Isopropylbenzene	4.43		1.00	ug/l	12/10/14 20:21	EPA 8260B	wlm	
Methyl tert-butyl ether	<1.00		1.00	ug/l	12/10/14 20:21	EPA 8260B	wlm	
Naphthalene	6.96		1.00	ug/l	12/10/14 20:21	EPA 8260B	wlm	
Surrogate: 4-Bromofluorobenzene		*103 %*	*70-130*		*12/10/14 20:21*	*EPA 8260B*	wlm	
Surrogate: 1,2-Dichloroethane-d4		*113 %*	*70-130*		*12/10/14 20:21*	*EPA 8260B*	wlm	
Surrogate: Fluorobenzene		*112 %*	*70-130*		*12/10/14 20:21*	*EPA 8260B*	wlm	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-17788-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	12/18/14 10:32
Project Manager: Orion Cook	Number of Containers:	32	

Client Sample ID: **MW-15** **Date/Time Sampled:** 12/03/14 13:21

Laboratory Sample ID: **4L05107-14 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	7.73		1.00	ug/l	12/10/14 20:59	EPA 8260B	wlm	
1,2,4-Trimethylbenzene	25.7		1.00	ug/l	12/10/14 20:59	EPA 8260B	wlm	
Benzene	71.0		1.00	ug/l	12/10/14 20:59	EPA 8260B	wlm	
Toluene	57.2		1.00	ug/l	12/10/14 20:59	EPA 8260B	wlm	
Ethylbenzene	31.0		1.00	ug/l	12/10/14 20:59	EPA 8260B	wlm	
Xylenes (total)	135		2.00	ug/l	12/10/14 20:59	EPA 8260B	wlm	
Isopropylbenzene	4.70		1.00	ug/l	12/10/14 20:59	EPA 8260B	wlm	
Methyl tert-butyl ether	<1.00		1.00	ug/l	12/10/14 20:59	EPA 8260B	wlm	
Naphthalene	7.06		1.00	ug/l	12/10/14 20:59	EPA 8260B	wlm	
Surrogate: 4-Bromofluorobenzene		*102 %*	*70-130*		*12/10/14 20:59*	*EPA 8260B*	wlm	
Surrogate: 1,2-Dichloroethane-d4		*115 %*	*70-130*		*12/10/14 20:59*	*EPA 8260B*	wlm	
Surrogate: Fluorobenzene		*112 %*	*70-130*		*12/10/14 20:59*	*EPA 8260B*	wlm	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-17788-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	12/18/14 10:32
Project Manager: Orion Cook	Number of Containers:	32	

Client Sample ID: **MW-16** **Date/Time Sampled:** 12/03/14 16:22

Laboratory Sample ID: **4L05107-15 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	1.70		1.00	ug/l	12/10/14 22:15	EPA 8260B	wlm	
1,2,4-Trimethylbenzene	4.84		1.00	ug/l	12/10/14 22:15	EPA 8260B	wlm	
Benzene	11.6		1.00	ug/l	12/10/14 22:15	EPA 8260B	wlm	
Toluene	14.6		1.00	ug/l	12/10/14 22:15	EPA 8260B	wlm	
Ethylbenzene	7.72		1.00	ug/l	12/10/14 22:15	EPA 8260B	wlm	
Xylenes (total)	34.1		2.00	ug/l	12/10/14 22:15	EPA 8260B	wlm	
Isopropylbenzene	1.10		1.00	ug/l	12/10/14 22:15	EPA 8260B	wlm	
Methyl tert-butyl ether	19.5		1.00	ug/l	12/10/14 22:15	EPA 8260B	wlm	
Naphthalene	1.16		1.00	ug/l	12/10/14 22:15	EPA 8260B	wlm	
Surrogate: 4-Bromofluorobenzene		*102 %*	*70-130*		*12/10/14 22:15*	*EPA 8260B*	wlm	
Surrogate: 1,2-Dichloroethane-d4		*115 %*	*70-130*		*12/10/14 22:15*	*EPA 8260B*	wlm	
Surrogate: Fluorobenzene		*110 %*	*70-130*		*12/10/14 22:15*	*EPA 8260B*	wlm	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-17788-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	12/18/14 10:32
Project Manager: Orion Cook	Number of Containers:	32	

Client Sample ID: **MW-1M** **Date/Time Sampled:** 12/03/14 12:15

Laboratory Sample ID: **4L05107-16 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	594		10.0	ug/l	12/12/14 09:12	EPA 8260B	mtc	
1,2,4-Trimethylbenzene	1700		250	ug/l	12/13/14 09:22	EPA 8260B	mtc	
Benzene	8530		250	ug/l	12/13/14 09:22	EPA 8260B	mtc	
Toluene	13900		250	ug/l	12/12/14 09:12	EPA 8260B	mtc	
Ethylbenzene	2740		250	ug/l	12/13/14 09:22	EPA 8260B	mtc	
Xylenes (total)	14200		500	ug/l	12/13/14 09:22	EPA 8260B	mtc	
Isopropylbenzene	394		10.0	ug/l	12/12/14 09:12	EPA 8260B	mtc	
Methyl tert-butyl ether	57.4		10.0	ug/l	12/12/14 09:12	EPA 8260B	mtc	
Naphthalene	696		10.0	ug/l	12/12/14 09:12	EPA 8260B	mtc	
Surrogate: 4-Bromofluorobenzene		*102 %*	*70-130*		*12/12/14 09:12*	*EPA 8260B*	mtc	
Surrogate: 1,2-Dichloroethane-d4		*96.6 %*	*70-130*		*12/12/14 09:12*	*EPA 8260B*	mtc	
Surrogate: Fluorobenzene		*100 %*	*70-130*		*12/12/14 09:12*	*EPA 8260B*	mtc	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-17788-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	12/18/14 10:32
Project Manager: Orion Cook	Number of Containers:	32	

Notes

2n The surrogate value is not within the indicated range, results are considered to be estimated.

Definitions

If surrogate values are not within the indicated range, then the results are considered to be estimated.

Reporting limits are adjusted accordingly when samples are analyzed at a dilution due to the matrix.

The following analyses are to be performed immediately upon sampling: pH, sulfite, chlorine residual, dissolved oxygen, filtration for ortho phosphorus, and ferrous iron. The date and time reported reflect the time the samples were analyzed at the laboratory.

MBAS, calculated as LAS, mol wt 348

If the solid sample weight for VOC analysis does not fall within the 3.5-6.5 gram range, the results are considered estimated values.

Samples collected by Fairway Laboratories' personnel are done so in accordance with Standard Operating Procedures established by Fairway Laboratories.

* P indicates analysis performed by Fairway Laboratories, Inc. at the Pennsdale location. This location is PaDEP Chapter 252 certified.

< Represents "less than" - indicates that the result was less than the reporting limit.

MDL Method Detection Limit - is the lowest or minimum level that provides 99% confidence level that the analyte is detected. Any reported result values that are less than the RL are considered estimated values.

RL Reporting Limit - is the lowest or minimum level at which the analyte can be quantified.

[CALC] Indicates a calculated result. Calculations use results from other analyses performed under accredited methods.

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-17788-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	12/18/14 10:32
Project Manager: Orion Cook	Number of Containers:	32	

Terms & Conditions

Services provided by Fairway Laboratories Inc. are limited to the terms and conditions stated herein, unless otherwise agreed to in a formal contract.

CHAIN OF CUSTODY Fairway Laboratories Inc. ("Fairway," "us" or "we") will initiate a chain-of-custody/request for analysis upon sample receipt unless the client includes a completed form with the received sample(s). Upon request, Fairway will provide chain-of-custody forms for use.

CONFIDENTIALITY Fairway maintains confidentiality in all of our client interactions. The client's consent will be required before releasing information about the services provided.

CONTRACTS All contracts are subject to review and approval by Fairway's legal council. Each contract must be signed by a corporate officer.

PAYMENT/BILLING Unless otherwise set forth in a signed contract or purchase order, terms of payment are "NET 30 Days." The time allowed for payment shall begin based on the invoice date. A 1.5% per month service charge may be added to all unpaid balances beyond the initial 30 days. In its sole discretion, Fairway reserves the right to request payment before services and hold sample results for payment of due balances. We will not bill a third party without prior agreement among all parties acknowledging and accepting responsibility for payment.

SAMPLE COLLECTION AND SUBMISSION Clients not requesting collection services from Fairway are responsible for proper collection, preservation, packaging, and delivery of samples to the laboratory in accordance with current law and commercial practice. Fairway shall have no responsibility for sample integrity prior to the receipt of the sample(s) and/or for any inaccuracy in test or analyses results as a result of the failure of the client or any third party to maintain the integrity of samples prior to delivery to Fairway. All samples submitted must be accompanied by a completed chain of custody or similar document clearly noting the requested analyses, dates/time sampled, client contact information, and trail of custody.

SUBCONTRACTING Some analyses may require subcontracting to another laboratory. Unless the client indicates otherwise, this decision will be made by Fairway. Subcontracted work will be identified on the final report in accordance with NELAC requirements.

RETURN OF RESULTS Fairway routinely provides faxed or verbal results within 10 working days of receipt of sample(s) and a hard copy of the data results is routinely received via US Postal Service within 15 working days. At the request of the client, Fairway may offer expedited return of sample results. Surcharges may apply to rush requests. All rush requests must be pre-approved by Fairway. We reserve the right to charge an archive retrieval fee for results older than one (1) year from the date of the request. All records will be maintained by Fairway for 5 years, after which, they will be destroyed.

SAMPLE DISPOSAL Fairway will maintain samples for four (4) weeks after the sample receipt date. Fairway will dispose of samples which are not and/or do not contain hazardous wastes (as such term is defined by applicable federal or state law), unless prior arrangements have been made for long-term storage. Fairway reserves the right to charge a disposal fee for the proper disposal of samples found or suspected to contain hazardous waste. A return shipping charge will be invoiced for samples returned to the client at their request.

HAZARD COMMUNICATION The client has the responsibility to inform the laboratory of any hazardous characteristics known or suspected about the sample, and to provide information on hazard prevention and personal protection as necessary or otherwise required by applicable law.

WARRANTY AND LIMITATION OF LIABILITY For services rendered, Fairway warrants that it will apply its best scientific knowledge and judgment and to employ its best level of effort consistent with professional standards within the environmental testing industry in performing the analytical services requested by its clients. We disclaim any other warranties, expressed or implied by law. Fairway does not accept any legal responsibility for the purposes for which client uses the test results.

LITIGATION All costs associated with compliance to any subpoena for documents, for testimony in a court of law, or for any other purpose relating to work performed by Fairway Laboratories, Inc. shall be invoiced by Fairway and paid by client. These costs shall include, but are not limited to, hourly charges for the persons involved, travel, mileage, and accommodations and for any and all other expenses associated with said litigation.

Fairway Laboratories, Inc.

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SAMPLING, CHAIN OF CUSTODY AND ANALYSES RECORD FOR SOIL, GROUNDWATER AND AIR MONITORING

PA 1 of 3

SAMPLING PLACE Rossmoyne
OWNER Woodloch
ADDRESS Hawley PA
PROJECT NAME Rossmoyne

CC FIELD REP. TJT
DATE 12/(3&4)/14
WEATHER Cloudy/misty 30s-40s
PROJECT NO. 11-17768.62
ATTENTION DWS or OBC

4L05107 #1

FIRM RESPONSIBLE FOR SAMPLING
Converse Consultants
2738 West College Avenue
State College, Pennsylvania 16801
814-234-3223
Fax 814-234-3255

	STATION NO. OR SAMPLE IDENT.	TIME	DEPTH TO WATER (FEET) DATUM	PURGING METHOD / SAMPLE DEPTH (FT.) INTERVAL	AMOUNT PURGED (GALS)	SAMPLING METHOD	CONTAINER DESCRIPTION: 40 ml HCl	pH	SPECIFIC CONDUCTANCE (μ mohs/cm.)	TEMP. °C	ANALYSIS REQUEST / COMMENTS
1	MW-1R	12:15	7.44	Pump	3.5	Pump	2	5.7	505	14.4	(2008 PADEP Unleaded Gas
2	MW-2	11:02	3.31		5.5			6.6	941	13.0	Short List)
3	MW-3	10:36	2.18		5.8			6.2	948	9.6	
4	MW-4	10:08	1.52		6.3			7.3	210	7.4	
5	MW-5	11:46	2.70		5.8			7.1	2860	12.4	
6	MW-7	12:51	9.16		3			6.2	952	14.0	
7 (12/4)	MW-8	9:58	1.68		6.25			6.9	1775	9.9	
8 (12/4)	MW-9	10:39	0.81		6.7			6.6	2360	9.3	
9	MW-10	3:29	2.14		5.9			6.4	1101	9.8	
10	MW-11	2:52	3.18		5.6			6.4	526	10.6	
11 (12/4)	MW-12	9:11	3.72		5.3			6.4	440	10.8	
12	MW-13	2:16	13.77		0.3			6.5	478	12.2	
13	MW-14	1:55	13.94		2.3			5.4	91	13.2	

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)
	12-5-14		DSA 12/8/14 1250
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)
DSA 12/5/14	12/5/14	1340	1340 12/5/14
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)
1440 12/5/14	12/5/14	1440	

RECEIVING LABORATORY
ADDRESS
DATE RECEIVED TIME
ALL SAMPLES REC'D. INTACT ☐ YES ☐ NO
LIST SAMPLES MISSING/DAMAGED
ACCEPTED BY

1/92

DISTRIBUTION: *WHITE*—WITH SHIPMENT TO LAB. *CANARY*—CONVERSE. *PINK*—RETAINED BY FIELD REP.

SAMPLING, CHAIN OF CUSTODY AND ANALYSES RECORD FOR SOIL, GROUNDWATER AND AIR MONITORING PA

SAMPLING PLACE Rosemont
OWNER
ADDRESS
PROJECT NAME Rosemont
CC FIELD REP.
DATE See Page 1
WEATHER
PROJECT NO.
ATTENTION 4L05/04 #2

FIRM RESPONSIBLE FOR SAMPLING
Converse Consultants
2738 West College Avenue
State College, Pennsylvania 16801
814-234-3223
Fax 814-234-3255

	STATION NO. OR SAMPLE IDENT.	TIME	DEPTH TO WATER (FEET) DATUM	PURGING METHOD / SAMPLE DEPTH (FT.) INTERVAL	AMOUNT PURGED (GALS)	SAMPLING METHOD	CONTAINER DESCRIPTION: 40 mL HCl	pH	SPECIFIC CONDUCTANCE (μ mohs/cm.)	TEMP. °C	ANALYSIS REQUEST / COMMENTS
14	MW-15	1:21	9.34	Pump	2.7	Pump	2	5.8	302	13.4	(2006 PADEP Unleaded Gas
15	MW-16	4:22	0.1	↓	7.0	↓	↓	6.2	981	9.4	Short List
16	MW-1N	12:15	7.44	↓	3.5	↓		5.7	505	14.4	↓

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)
	12-5-14		DSA 12/5/14
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)
DSA	12/5/14	1340	12/5/14 1340
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)
	12/5/14	1440	12/5/14 1440

RECEIVING LABORATORY 1250
ADDRESS
DATE RECEIVED TIME
ALL SAMPLES REC'D. INTACT ☐ YES ☐ NO
LIST SAMPLES MISSING/DAMAGED
ACCEPTED BY

1/92

DISTRIBUTION: *WHITE*—WITH SHIPMENT TO LAB. *CANARY*—CONVERSE. *PINK*—RETAINED BY FIELD REP.

Chain of Custody Receiving Document

Page 3 of 3

Receiver: MS

Date/Time of this check: 12/5/14 15:16 Client: Converse Lab # 4405107 #3 4604 RE 12514

Received on ICE? Y ☐ * **Sample Temperature when delivered to the Lab:** 0.2 **Acceptable?** Y ☐ * **or In cool down process?** ☐ *

Custody Seals? Y Intact? Y

COC/Labels on bottles agree? Y ☐ * Correct containers for all the analysis requested? Y ☐ * Matrix: water

COC #	Number and Type of BOTTLES										Comments
	Poly Non-Pres.	Poly H2SO4	Poly HNO3	Amber H2SO4	Amber Non-Pres.	Poly NaOH	VOCS (Head space?) HCL	Other ☐ *	Properly Preserved ☐ *	Bacti	
1							2		Y		
↓							↓		↓		
16							2		Y		

* DEVIATION PRESENT:	CLIENT CALLED:	CLIENT RESPONSE:
☹ No Ice ( )	YES ( )	Proceed with analysis; qualify data ( )
☹ Not at Proper Temperature ( )	By Whom:	Will Resample ( )
☹ Wrong Container ( )		Provided Information ( )
☹ Missing Information: ( )	_____ Date: _____	No Response; Proceed and qualified ( )
		Client Contact: _____ Date: _____

* Comments: _____

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(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-777-88-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	04/07/15 16:57
Project Manager: Orion Cook	Number of Containers:	28	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Sample Type	Date Sampled	Date Received
MW-1R	5C27037-01	Water	Grab	03/25/15 12:21	03/27/15 14:30
MW-2	5C27037-02	Water	Grab	03/25/15 10:31	03/27/15 14:30
MW-3	5C27037-03	Water	Grab	03/25/15 10:55	03/27/15 14:30
MW-4	5C27037-04	Water	Grab	03/25/15 16:56	03/27/15 14:30
MW-5	5C27037-05	Water	Grab	03/25/15 11:23	03/27/15 14:30
MW-7	5C27037-06	Water	Grab	03/25/15 11:51	03/27/15 14:30
MW-8	5C27037-07	Water	Grab	03/25/15 14:48	03/27/15 14:30
MW-9	5C27037-08	Water	Grab	03/25/15 15:15	03/27/15 14:30
MW-10	5C27037-09	Water	Grab	03/25/15 16:28	03/27/15 14:30
MW-11	5C27037-10	Water	Grab	03/25/15 15:24	03/27/15 14:30
MW-12	5C27037-11	Water	Grab	03/25/15 14:15	03/27/15 14:30
MW-14	5C27037-12	Water	Grab	03/25/15 13:13	03/27/15 14:30
MW-15	5C27037-13	Water	Grab	03/25/15 13:42	03/27/15 14:30
MW-1M	5C27037-14	Water	Grab	03/25/15 12:21	03/27/15 14:30
TRIP BLANK	5C27037-15	Water	Trip Blank	03/25/15 00:00	03/27/15 14:30

Fairway Laboratories, Inc.

Reviewed and Submitted by:

Michael P. Tyler
Laboratory Director

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-777-88-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	04/07/15 16:57
Project Manager: Orion Cook	Number of Containers:	28	

Client Sample ID: **MW-1R** **Date/Time Sampled:** 03/25/15 12:21

Laboratory Sample ID: **5C27037-01 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	279		50.0	ug/l	04/01/15 19:40	EPA 8260B	wlm	
1,2,4-Trimethylbenzene	981		50.0	ug/l	04/01/15 19:40	EPA 8260B	wlm	
Benzene	4500		50.0	ug/l	04/01/15 19:40	EPA 8260B	wlm	
Toluene	5620		100	ug/l	04/03/15 00:50	EPA 8260B	wlm	
Ethylbenzene	1650		50.0	ug/l	04/01/15 19:40	EPA 8260B	wlm	
Xylenes (total)	9130		100	ug/l	04/01/15 19:40	EPA 8260B	wlm	
Isopropylbenzene	158		50.0	ug/l	04/01/15 19:40	EPA 8260B	wlm	
Methyl tert-butyl ether	<50.0		50.0	ug/l	04/01/15 19:40	EPA 8260B	wlm	
Naphthalene	107		50.0	ug/l	04/01/15 19:40	EPA 8260B	wlm	
Surrogate: 4-Bromofluorobenzene		*101 %*	*70-130*		*04/01/15 19:40*	*EPA 8260B*	wlm	
Surrogate: 1,2-Dichloroethane-d4		*100 %*	*70-130*		*04/01/15 19:40*	*EPA 8260B*	wlm	
Surrogate: Fluorobenzene		*101 %*	*70-130*		*04/01/15 19:40*	*EPA 8260B*	wlm	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-777-88-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	04/07/15 16:57
Project Manager: Orion Cook	Number of Containers:	28	

Client Sample ID: **MW-2** **Date/Time Sampled:** 03/25/15 10:31

Laboratory Sample ID: **5C27037-02 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	<5.00		5.00	ug/l	04/01/15 19:12	EPA 8260B	wlm	
1,2,4-Trimethylbenzene	15.8		5.00	ug/l	04/01/15 19:12	EPA 8260B	wlm	
Benzene	22.8		5.00	ug/l	04/01/15 19:12	EPA 8260B	wlm	
Toluene	16.1		5.00	ug/l	04/01/15 19:12	EPA 8260B	wlm	
Ethylbenzene	18.2		5.00	ug/l	04/01/15 19:12	EPA 8260B	wlm	
Xylenes (total)	29.6		10.0	ug/l	04/01/15 19:12	EPA 8260B	wlm	
Isopropylbenzene	<5.00		5.00	ug/l	04/01/15 19:12	EPA 8260B	wlm	
Methyl tert-butyl ether	<5.00		5.00	ug/l	04/01/15 19:12	EPA 8260B	wlm	
Naphthalene	14.6		5.00	ug/l	04/01/15 19:12	EPA 8260B	wlm	
Surrogate: 4-Bromofluorobenzene		*96.7 %*	*70-130*		*04/01/15 19:12*	*EPA 8260B*	wlm	
Surrogate: 1,2-Dichloroethane-d4		*100 %*	*70-130*		*04/01/15 19:12*	*EPA 8260B*	wlm	
Surrogate: Fluorobenzene		*99.1 %*	*70-130*		*04/01/15 19:12*	*EPA 8260B*	wlm	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-777-88-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	04/07/15 16:57
Project Manager: Orion Cook	Number of Containers:	28	

Client Sample ID: **MW-3** **Date/Time Sampled:** 03/25/15 10:55

Laboratory Sample ID: **5C27037-03 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	<5.00		5.00	ug/l	03/31/15 19:52	EPA 8260B	wlm	
1,2,4-Trimethylbenzene	<5.00		5.00	ug/l	03/31/15 19:52	EPA 8260B	wlm	
Benzene	2.40		0.70	ug/l	03/31/15 19:52	EPA 8260B	wlm	2m
Toluene	<5.00		5.00	ug/l	03/31/15 19:52	EPA 8260B	wlm	
Ethylbenzene	<5.00		5.00	ug/l	03/31/15 19:52	EPA 8260B	wlm	
Xylenes (total)	<10.0		10.0	ug/l	03/31/15 19:52	EPA 8260B	wlm	
Isopropylbenzene	<5.00		5.00	ug/l	03/31/15 19:52	EPA 8260B	wlm	
Methyl tert-butyl ether	30.9		5.00	ug/l	03/31/15 19:52	EPA 8260B	wlm	
Naphthalene	<5.00		5.00	ug/l	03/31/15 19:52	EPA 8260B	wlm	
Surrogate: 4-Bromofluorobenzene		*95.3 %*	*70-130*		*03/31/15 19:52*	*EPA 8260B*	wlm	
Surrogate: 1,2-Dichloroethane-d4		*94.3 %*	*70-130*		*03/31/15 19:52*	*EPA 8260B*	wlm	
Surrogate: Fluorobenzene		*102 %*	*70-130*		*03/31/15 19:52*	*EPA 8260B*	wlm	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-777-88-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	04/07/15 16:57
Project Manager: Orion Cook	Number of Containers:	28	

Client Sample ID: **MW-4** **Date/Time Sampled:** 03/25/15 16:56

Laboratory Sample ID: **5C27037-04 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	1.16		1.00	ug/l	03/31/15 07:42	EPA 8260B	mtc	
1,2,4-Trimethylbenzene	1.96		1.00	ug/l	03/31/15 07:42	EPA 8260B	mtc	
Benzene	6.60		1.00	ug/l	03/31/15 07:42	EPA 8260B	mtc	
Toluene	10.1		1.00	ug/l	03/31/15 07:42	EPA 8260B	mtc	
Ethylbenzene	2.92		1.00	ug/l	03/31/15 07:42	EPA 8260B	mtc	
Xylenes (total)	12.5		2.00	ug/l	03/31/15 07:42	EPA 8260B	mtc	
Isopropylbenzene	<1.00		1.00	ug/l	03/31/15 07:42	EPA 8260B	mtc	
Methyl tert-butyl ether	<1.00		1.00	ug/l	03/31/15 07:42	EPA 8260B	mtc	
Naphthalene	<1.00		1.00	ug/l	03/31/15 07:42	EPA 8260B	mtc	
Surrogate: 4-Bromofluorobenzene		*101 %*	*70-130*		*03/31/15 07:42*	*EPA 8260B*	mtc	
Surrogate: 1,2-Dichloroethane-d4		*95.9 %*	*70-130*		*03/31/15 07:42*	*EPA 8260B*	mtc	
Surrogate: Fluorobenzene		*81.2 %*	*70-130*		*03/31/15 07:42*	*EPA 8260B*	mtc	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-777-88-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	04/07/15 16:57
Project Manager: Orion Cook	Number of Containers:	28	

Client Sample ID: **MW-5** **Date/Time Sampled:** 03/25/15 11:23

Laboratory Sample ID: **5C27037-05 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	437		25.0	ug/l	03/31/15 21:16	EPA 8260B	wlm	
1,2,4-Trimethylbenzene	1680		25.0	ug/l	03/31/15 21:16	EPA 8260B	wlm	
Benzene	3960		250	ug/l	04/01/15 18:44	EPA 8260B	wlm	
Toluene	13600		250	ug/l	04/01/15 18:44	EPA 8260B	wlm	
Ethylbenzene	2740		25.0	ug/l	03/31/15 21:16	EPA 8260B	wlm	
Xylenes (total)	9460		500	ug/l	04/01/15 18:44	EPA 8260B	wlm	
Isopropylbenzene	197		25.0	ug/l	03/31/15 21:16	EPA 8260B	wlm	
Methyl tert-butyl ether	33.5		25.0	ug/l	03/31/15 21:16	EPA 8260B	wlm	
Naphthalene	331		25.0	ug/l	03/31/15 21:16	EPA 8260B	wlm	
Surrogate: 4-Bromofluorobenzene		*100 %*	*70-130*		*03/31/15 21:16*	*EPA 8260B*	wlm	
Surrogate: 1,2-Dichloroethane-d4		*95.0 %*	*70-130*		*03/31/15 21:16*	*EPA 8260B*	wlm	
Surrogate: Fluorobenzene		*105 %*	*70-130*		*03/31/15 21:16*	*EPA 8260B*	wlm	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-777-88-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	04/07/15 16:57
Project Manager: Orion Cook	Number of Containers:	28	

Client Sample ID: **MW-7** **Date/Time Sampled:** 03/25/15 11:51

Laboratory Sample ID: **5C27037-06 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	<25.0		25.0	ug/l	03/31/15 21:44	EPA 8260B	wlm	
1,2,4-Trimethylbenzene	50.0		25.0	ug/l	03/31/15 21:44	EPA 8260B	wlm	
Benzene	884		25.0	ug/l	03/31/15 21:44	EPA 8260B	wlm	
Toluene	300		25.0	ug/l	03/31/15 21:44	EPA 8260B	wlm	
Ethylbenzene	120		25.0	ug/l	03/31/15 21:44	EPA 8260B	wlm	
Xylenes (total)	293		50.0	ug/l	03/31/15 21:44	EPA 8260B	wlm	
Isopropylbenzene	<25.0		25.0	ug/l	03/31/15 21:44	EPA 8260B	wlm	
Methyl tert-butyl ether	<25.0		25.0	ug/l	03/31/15 21:44	EPA 8260B	wlm	
Naphthalene	<25.0		25.0	ug/l	03/31/15 21:44	EPA 8260B	wlm	
Surrogate: 4-Bromofluorobenzene		*96.0 %*	*70-130*		*03/31/15 21:44*	*EPA 8260B*	wlm	
Surrogate: 1,2-Dichloroethane-d4		*96.4 %*	*70-130*		*03/31/15 21:44*	*EPA 8260B*	wlm	
Surrogate: Fluorobenzene		*103 %*	*70-130*		*03/31/15 21:44*	*EPA 8260B*	wlm	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-777-88-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	04/07/15 16:57
Project Manager: Orion Cook	Number of Containers:	28	

Client Sample ID: **MW-8** **Date/Time Sampled:** 03/25/15 14:48

Laboratory Sample ID: **5C27037-07 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	1.55		1.00	ug/l	03/31/15 08:20	EPA 8260B	mtc	
1,2,4-Trimethylbenzene	5.42		1.00	ug/l	03/31/15 08:20	EPA 8260B	mtc	
Benzene	14.7		1.00	ug/l	03/31/15 08:20	EPA 8260B	mtc	
Toluene	35.2		1.00	ug/l	03/31/15 08:20	EPA 8260B	mtc	
Ethylbenzene	7.47		1.00	ug/l	03/31/15 08:20	EPA 8260B	mtc	
Xylenes (total)	37.2		2.00	ug/l	03/31/15 08:20	EPA 8260B	mtc	
Isopropylbenzene	<1.00		1.00	ug/l	03/31/15 08:20	EPA 8260B	mtc	
Methyl tert-butyl ether	<1.00		1.00	ug/l	03/31/15 08:20	EPA 8260B	mtc	
Naphthalene	1.00		1.00	ug/l	03/31/15 08:20	EPA 8260B	mtc	
Surrogate: 4-Bromofluorobenzene		*100 %*	*70-130*		*03/31/15 08:20*	*EPA 8260B*	mtc	
Surrogate: 1,2-Dichloroethane-d4		*99.9 %*	*70-130*		*03/31/15 08:20*	*EPA 8260B*	mtc	
Surrogate: Fluorobenzene		*83.2 %*	*70-130*		*03/31/15 08:20*	*EPA 8260B*	mtc	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-777-88-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	04/07/15 16:57
Project Manager: Orion Cook	Number of Containers:	28	

Client Sample ID: **MW-9** **Date/Time Sampled:** 03/25/15 15:15

Laboratory Sample ID: **5C27037-08 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	<10.0		10.0	ug/l	03/31/15 20:20	EPA 8260B	wlm	
1,2,4-Trimethylbenzene	<10.0		10.0	ug/l	03/31/15 20:20	EPA 8260B	wlm	
Benzene	853		10.0	ug/l	03/31/15 20:20	EPA 8260B	wlm	
Toluene	80.9		10.0	ug/l	03/31/15 20:20	EPA 8260B	wlm	
Ethylbenzene	66.0		10.0	ug/l	03/31/15 20:20	EPA 8260B	wlm	
Xylenes (total)	66.0		20.0	ug/l	03/31/15 20:20	EPA 8260B	wlm	
Isopropylbenzene	38.9		10.0	ug/l	03/31/15 20:20	EPA 8260B	wlm	
Methyl tert-butyl ether	11.3		10.0	ug/l	03/31/15 20:20	EPA 8260B	wlm	
Naphthalene	14.7		10.0	ug/l	03/31/15 20:20	EPA 8260B	wlm	
Surrogate: 4-Bromofluorobenzene		*96.0 %*	*70-130*		*03/31/15 20:20*	*EPA 8260B*	wlm	
Surrogate: 1,2-Dichloroethane-d4		*94.1 %*	*70-130*		*03/31/15 20:20*	*EPA 8260B*	wlm	
Surrogate: Fluorobenzene		*103 %*	*70-130*		*03/31/15 20:20*	*EPA 8260B*	wlm	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-777-88-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	04/07/15 16:57
Project Manager: Orion Cook	Number of Containers:	28	

Client Sample ID: **MW-10** **Date/Time Sampled:** 03/25/15 16:28

Laboratory Sample ID: **5C27037-09 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	<1.00		1.00	ug/l	03/31/15 09:36	EPA 8260B	mtc	
1,2,4-Trimethylbenzene	2.63		1.00	ug/l	03/31/15 09:36	EPA 8260B	mtc	
Benzene	13.9		1.00	ug/l	03/31/15 09:36	EPA 8260B	mtc	
Toluene	14.6		1.00	ug/l	03/31/15 09:36	EPA 8260B	mtc	
Ethylbenzene	3.71		1.00	ug/l	03/31/15 09:36	EPA 8260B	mtc	
Xylenes (total)	17.0		2.00	ug/l	03/31/15 09:36	EPA 8260B	mtc	
Isopropylbenzene	<1.00		1.00	ug/l	03/31/15 09:36	EPA 8260B	mtc	
Methyl tert-butyl ether	23.8		1.00	ug/l	03/31/15 09:36	EPA 8260B	mtc	
Naphthalene	<1.00		1.00	ug/l	03/31/15 09:36	EPA 8260B	mtc	
Surrogate: 4-Bromofluorobenzene		*101 %*	*70-130*		*03/31/15 09:36*	*EPA 8260B*	mtc	
Surrogate: 1,2-Dichloroethane-d4		*97.8 %*	*70-130*		*03/31/15 09:36*	*EPA 8260B*	mtc	
Surrogate: Fluorobenzene		*81.4 %*	*70-130*		*03/31/15 09:36*	*EPA 8260B*	mtc	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-777-88-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	04/07/15 16:57
Project Manager: Orion Cook	Number of Containers:	28	

Client Sample ID: **MW-11** **Date/Time Sampled:** 03/25/15 15:24

Laboratory Sample ID: **5C27037-10 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	1.80		1.00	ug/l	03/31/15 10:14	EPA 8260B	mtc	
1,2,4-Trimethylbenzene	6.30		1.00	ug/l	03/31/15 10:14	EPA 8260B	mtc	
Benzene	32.1		1.00	ug/l	03/31/15 10:14	EPA 8260B	mtc	
Toluene	50.5		1.00	ug/l	03/31/15 10:14	EPA 8260B	mtc	
Ethylbenzene	12.0		1.00	ug/l	03/31/15 10:14	EPA 8260B	mtc	
Xylenes (total)	52.7		2.00	ug/l	03/31/15 10:14	EPA 8260B	mtc	
Isopropylbenzene	1.47		1.00	ug/l	03/31/15 10:14	EPA 8260B	mtc	
Methyl tert-butyl ether	<1.00		1.00	ug/l	03/31/15 10:14	EPA 8260B	mtc	
Naphthalene	1.52		1.00	ug/l	03/31/15 10:14	EPA 8260B	mtc	
Surrogate: 4-Bromofluorobenzene		*101 %*	*70-130*		*03/31/15 10:14*	*EPA 8260B*	mtc	
Surrogate: 1,2-Dichloroethane-d4		*98.0 %*	*70-130*		*03/31/15 10:14*	*EPA 8260B*	mtc	
Surrogate: Fluorobenzene		*81.9 %*	*70-130*		*03/31/15 10:14*	*EPA 8260B*	mtc	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-777-88-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	04/07/15 16:57
Project Manager: Orion Cook	Number of Containers:	28	

Client Sample ID: **MW-12** **Date/Time Sampled:** 03/25/15 14:15

Laboratory Sample ID: **5C27037-11 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	2.32		1.00	ug/l	03/31/15 02:00	EPA 8260B	mtc	
1,2,4-Trimethylbenzene	8.32		1.00	ug/l	03/31/15 02:00	EPA 8260B	mtc	
Benzene	26.2		1.00	ug/l	03/31/15 02:00	EPA 8260B	mtc	2b
Toluene	59.8		1.00	ug/l	03/31/15 02:00	EPA 8260B	mtc	
Ethylbenzene	12.1		1.00	ug/l	03/31/15 02:00	EPA 8260B	mtc	
Xylenes (total)	60.0		2.00	ug/l	03/31/15 02:00	EPA 8260B	mtc	
Isopropylbenzene	1.08		1.00	ug/l	03/31/15 02:00	EPA 8260B	mtc	
Methyl tert-butyl ether	<1.00		1.00	ug/l	03/31/15 02:00	EPA 8260B	mtc	
Naphthalene	1.63		1.00	ug/l	03/31/15 02:00	EPA 8260B	mtc	
Surrogate: 4-Bromofluorobenzene		*99.9 %*	*70-130*		*03/31/15 02:00*	*EPA 8260B*	mtc	
Surrogate: 1,2-Dichloroethane-d4		*92.2 %*	*70-130*		*03/31/15 02:00*	*EPA 8260B*	mtc	
Surrogate: Fluorobenzene		*81.2 %*	*70-130*		*03/31/15 02:00*	*EPA 8260B*	mtc	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-777-88-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	04/07/15 16:57
Project Manager: Orion Cook	Number of Containers:	28	

Client Sample ID: **MW-14** **Date/Time Sampled:** 03/25/15 13:13

Laboratory Sample ID: **5C27037-12 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	6.21		1.00	ug/l	03/31/15 10:52	EPA 8260B	mtc	
1,2,4-Trimethylbenzene	21.3		1.00	ug/l	03/31/15 10:52	EPA 8260B	mtc	
Benzene	62.9		1.00	ug/l	03/31/15 10:52	EPA 8260B	mtc	
Toluene	95.6		5.00	ug/l	03/31/15 20:19	EPA 8260B	mtc	
Ethylbenzene	28.2		1.00	ug/l	03/31/15 10:52	EPA 8260B	mtc	
Xylenes (total)	147		2.00	ug/l	03/31/15 10:52	EPA 8260B	mtc	
Isopropylbenzene	2.93		1.00	ug/l	03/31/15 10:52	EPA 8260B	mtc	
Methyl tert-butyl ether	<1.00		1.00	ug/l	03/31/15 10:52	EPA 8260B	mtc	
Naphthalene	3.73		1.00	ug/l	03/31/15 10:52	EPA 8260B	mtc	
Surrogate: 4-Bromofluorobenzene		*103 %*	*70-130*		*03/31/15 10:52*	*EPA 8260B*	mtc	
Surrogate: 1,2-Dichloroethane-d4		*97.7 %*	*70-130*		*03/31/15 10:52*	*EPA 8260B*	mtc	
Surrogate: Fluorobenzene		*81.9 %*	*70-130*		*03/31/15 10:52*	*EPA 8260B*	mtc	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-777-88-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	04/07/15 16:57
Project Manager: Orion Cook	Number of Containers:	28	

Client Sample ID: **MW-15** **Date/Time Sampled:** 03/25/15 13:42

Laboratory Sample ID: **5C27037-13 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	3.06		1.00	ug/l	03/31/15 11:30	EPA 8260B	mtc	
1,2,4-Trimethylbenzene	10.6		1.00	ug/l	03/31/15 11:30	EPA 8260B	mtc	
Benzene	29.1		1.00	ug/l	03/31/15 11:30	EPA 8260B	mtc	
Toluene	61.2		1.00	ug/l	03/31/15 11:30	EPA 8260B	mtc	
Ethylbenzene	13.4		1.00	ug/l	03/31/15 11:30	EPA 8260B	mtc	
Xylenes (total)	68.0		2.00	ug/l	03/31/15 11:30	EPA 8260B	mtc	
Isopropylbenzene	1.23		1.00	ug/l	03/31/15 11:30	EPA 8260B	mtc	
Methyl tert-butyl ether	<1.00		1.00	ug/l	03/31/15 11:30	EPA 8260B	mtc	
Naphthalene	1.91		1.00	ug/l	03/31/15 11:30	EPA 8260B	mtc	
Surrogate: 4-Bromofluorobenzene		*101 %*	*70-130*		*03/31/15 11:30*	*EPA 8260B*	mtc	
Surrogate: 1,2-Dichloroethane-d4		*102 %*	*70-130*		*03/31/15 11:30*	*EPA 8260B*	mtc	
Surrogate: Fluorobenzene		*82.8 %*	*70-130*		*03/31/15 11:30*	*EPA 8260B*	mtc	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-777-88-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	04/07/15 16:57
Project Manager: Orion Cook	Number of Containers:	28	

Client Sample ID: **MW-1M** **Date/Time Sampled:** 03/25/15 12:21

Laboratory Sample ID: **5C27037-14 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	294		50.0	ug/l	04/01/15 20:08	EPA 8260B	wlm	
1,2,4-Trimethylbenzene	997		50.0	ug/l	04/01/15 20:08	EPA 8260B	wlm	
Benzene	4600		50.0	ug/l	04/01/15 20:08	EPA 8260B	wlm	
Toluene	5830		100	ug/l	04/03/15 01:17	EPA 8260B	wlm	
Ethylbenzene	1650		50.0	ug/l	04/01/15 20:08	EPA 8260B	wlm	
Xylenes (total)	9150		100	ug/l	04/01/15 20:08	EPA 8260B	wlm	
Isopropylbenzene	158		50.0	ug/l	04/01/15 20:08	EPA 8260B	wlm	
Methyl tert-butyl ether	<50.0		50.0	ug/l	04/01/15 20:08	EPA 8260B	wlm	
Naphthalene	98.5		50.0	ug/l	04/01/15 20:08	EPA 8260B	wlm	
Surrogate: 4-Bromofluorobenzene		*102 %*	*70-130*		*04/01/15 20:08*	*EPA 8260B*	wlm	
Surrogate: 1,2-Dichloroethane-d4		*99.5 %*	*70-130*		*04/01/15 20:08*	*EPA 8260B*	wlm	
Surrogate: Fluorobenzene		*101 %*	*70-130*		*04/01/15 20:08*	*EPA 8260B*	wlm	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-777-88-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	04/07/15 16:57
Project Manager: Orion Cook	Number of Containers:	28	

Client Sample ID: **TRIP BLANK** **Date/Time Sampled:** 03/25/15 00:00

Laboratory Sample ID: **5C27037-15 (Water/Trip Blank)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	<1.00		1.00	ug/l	03/31/15 12:45	EPA 8260B	mtc	
1,2,4-Trimethylbenzene	<1.00		1.00	ug/l	03/31/15 12:45	EPA 8260B	mtc	
Benzene	<1.00		1.00	ug/l	03/31/15 12:45	EPA 8260B	mtc	
Toluene	<1.00		1.00	ug/l	03/31/15 12:45	EPA 8260B	mtc	
Ethylbenzene	<1.00		1.00	ug/l	03/31/15 12:45	EPA 8260B	mtc	
Xylenes (total)	<2.00		2.00	ug/l	03/31/15 12:45	EPA 8260B	mtc	
Isopropylbenzene	<1.00		1.00	ug/l	03/31/15 12:45	EPA 8260B	mtc	
Methyl tert-butyl ether	<1.00		1.00	ug/l	03/31/15 12:45	EPA 8260B	mtc	
Naphthalene	<1.00		1.00	ug/l	03/31/15 12:45	EPA 8260B	mtc	
Surrogate: 4-Bromofluorobenzene		*99.8 %*	*70-130*		*03/31/15 12:45*	*EPA 8260B*	mtc	
Surrogate: 1,2-Dichloroethane-d4		*98.7 %*	*70-130*		*03/31/15 12:45*	*EPA 8260B*	mtc	
Surrogate: Fluorobenzene		*82.9 %*	*70-130*		*03/31/15 12:45*	*EPA 8260B*	mtc	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-777-88-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	04/07/15 16:57
Project Manager: Orion Cook	Number of Containers:	28	

Notes

2b	The spike recovery was outside acceptance limits for the MS and/or MSD. Data accepted based on acceptable LCS recovery.
2m	This analysis has been reported to the MDL; therefore it is an estimated value.

Definitions

If surrogate values are not within the indicated range, then the results are considered to be estimated.

Reporting limits are adjusted accordingly when samples are analyzed at a dilution due to the matrix.

The following analyses are to be performed immediately upon sampling: pH, sulfite, chlorine residual, dissolved oxygen, filtration for ortho phosphorus, and ferrous iron. The date and time reported reflect the time the samples were analyzed at the laboratory.

MBAS, calculated as LAS, mol wt 348

If the solid sample weight for VOC analysis does not fall within the 3.5-6.5 gram range, the results are considered estimated values.

Unless otherwise noted, all results for solids are reported on a dry weight basis.

Samples collected by Fairway Laboratories' personnel are done so in accordance with Standard Operating Procedures established by Fairway Laboratories.

*	P indicates analysis performed by Fairway Laboratories, Inc. at the Pennsdale location. This location is PaDEP Chapter 252 certified.
<	Represents "less than" - indicates that the result was less than the reporting limit.
MDL	Method Detection Limit - is the lowest or minimum level that provides 99% confidence level that the analyte is detected. Any reported result values that are less than the RL are considered estimated values.
RL	Reporting Limit - is the lowest or minimum level at which the analyte can be quantified.
[CALC]	Indicates a calculated result. Calculations use results from other analyses performed under accredited methods.

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-777-88-02	**Reported:**
State College PA, 16801	Collector:	CLIENT	04/07/15 16:57
Project Manager: Orion Cook	Number of Containers:	28	

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Services provided by Fairway Laboratories Inc. are limited to the terms and conditions stated herein, unless otherwise agreed to in a formal contract.

CHAIN OF CUSTODY Fairway Laboratories Inc. ("Fairway," "us" or "we") will initiate a chain-of-custody/request for analysis upon sample receipt unless the client includes a completed form with the received sample(s). Upon request, Fairway will provide chain-of-custody forms for use.

CONFIDENTIALITY Fairway maintains confidentiality in all of our client interactions. The client's consent will be required before releasing information about the services provided.

CONTRACTS All contracts are subject to review and approval by Fairway's legal council. Each contract must be signed by a corporate officer.

PAYMENT/BILLING Unless otherwise set forth in a signed contract or purchase order, terms of payment are "NET 30 Days." The time allowed for payment shall begin based on the invoice date. A 1.5% per month service charge may be added to all unpaid balances beyond the initial 30 days. In its sole discretion, Fairway reserves the right to request payment before services and hold sample results for payment of due balances. We will not bill a third party without prior agreement among all parties acknowledging and accepting responsibility for payment.

SAMPLE COLLECTION AND SUBMISSION Clients not requesting collection services from Fairway are responsible for proper collection, preservation, packaging, and delivery of samples to the laboratory in accordance with current law and commercial practice. Fairway shall have no responsibility for sample integrity prior to the receipt of the sample(s) and/or for any inaccuracy in test or analyses results as a result of the failure of the client or any third party to maintain the integrity of samples prior to delivery to Fairway. All samples submitted must be accompanied by a completed chain of custody or similar document clearly noting the requested analyses, dates/time sampled, client contact information, and trail of custody.

SUBCONTRACTING Some analyses may require subcontracting to another laboratory. Unless the client indicates otherwise, this decision will be made by Fairway. Subcontracted work will be identified on the final report in accordance with NELAC requirements.

RETURN OF RESULTS Fairway routinely provides faxed or verbal results within 10 working days of receipt of sample(s) and a hard copy of the data results is routinely received via US Postal Service within 15 working days. At the request of the client, Fairway may offer expedited return of sample results. Surcharges may apply to rush requests. All rush requests must be pre-approved by Fairway. We reserve the right to charge an archive retrieval fee for results older than one (1) year from the date of the request. All records will be maintained by Fairway for 5 years, after which, they will be destroyed.

SAMPLE DISPOSAL Fairway will maintain samples for four (4) weeks after the sample receipt date. Fairway will dispose of samples which are not and/or do not contain hazardous wastes (as such term is defined by applicable federal or state law), unless prior arrangements have been made for long-term storage. Fairway reserves the right to charge a disposal fee for the proper disposal of samples found or suspected to contain hazardous waste. A return shipping charge will be invoiced for samples returned to the client at their request.

HAZARD COMMUNICATION The client has the responsibility to inform the laboratory of any hazardous characteristics known or suspected about the sample, and to provide information on hazard prevention and personal protection as necessary or otherwise required by applicable law.

WARRANTY AND LIMITATION OF LIABILITY For services rendered, Fairway warrants that it will apply its best scientific knowledge and judgment and to employ its best level of effort consistent with professional standards within the environmental testing industry in performing the analytical services requested by its clients. We disclaim any other warranties, expressed or implied by law. Fairway does not accept any legal responsibility for the purposes for which client uses the test results.

LITIGATION All costs associated with compliance to any subpoena for documents, for testimony in a court of law, or for any other purpose relating to work performed by Fairway Laboratories, Inc. shall be invoiced by Fairway and paid by client. These costs shall include, but are not limited to, hourly charges for the persons involved, travel, mileage, and accommodations and for any and all other expenses associated with said litigation.

Fairway Laboratories, Inc.

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

5027037 #1 #1

SAMPLING, CHAIN OF CUSTODY AND ANALYSES RECORD FOR SOIL, GROUNDWATER AND AIR MONITORING **PA**

SAMPLING PLACE Rosemergy
OWNER Woodloch
ADDRESS Hawley, PA
PROJECT NAME Rosemergy

CC FIELD REP. TDI
DATE 3/25/15
WEATHER Rainy, 30s
PROJECT NO. 11-17768-02
ATTENTION DWS or OBC

FIRM RESPONSIBLE FOR SAMPLING
Converse Consultants
2738 West College Avenue
State College, Pennsylvania 16801
814-234-3223
Fax 814-234-3255

	STATION NO. OR SAMPLE IDENT.	TIME	DEPTH TO WATER (FEET) DATUM	PURGING METHOD / SAMPLE DEPTH (FT.) INTERVAL	AMOUNT PURGED (GALS)	SAMPLING METHOD	CONTAINER DESCRIPTION: 40 ml VOA	pH	SPECIFIC CONDUCTANCE (μ mohs/cm.)	TEMP. °C	ANALYSIS REQUEST / COMMENTS
1	MW-1R	12:21	5.00	Pump	4.7	Pump	12	5.3	1270	5.0	(2008 PADEP Unleaded Gas
2	MW-2	10:31	2.80		5.6			6.8	3870	5.8	Short List)
3	MW-3	10:55	2.14		5.8			7.4	216	4.5	
4	MW-4	4:56	1.70		6.2			7.0	2360	2.7	
5	MW-5	11:23	2.78		5.8			6.5	9860	3.5	
6	MW-7	11:51	6.60		4.1			6.4	371	7.4	
7	MW-8	2:46	2.67		5.8			6.6	2880	5.0	
8	MW-9	3:13	0.40		6.9			6.6	1530	4.5	
9	MW-10	4:28	2.09		5.9			5.8	1165	4.5	
10	MW-11	3:54	4.00		5.2			6.0	616	5.5	
11	MW-12	2:15	3.80		5.2			5.9	3050	5.1	
12	MW-14	1:13	11.69		3.4			5.1	1086	7.7	
13	MW-15	1:42	7.37		3.6			5.7	812	6.0	

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)
[signature]	3/27/15		DSA [signature] 3/27/15 1320
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)
DSA [signature]	3/27/15	1320	[signature] 3/27/15 1320
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)
[signature]	3/27/15	1430	CB 3/27 14:36

RECEIVING LABORATORY
ADDRESS
DATE RECEIVED TIME
ALL SAMPLES REC'D. INTACT ☐ YES ☐ NO
LIST SAMPLES MISSING/DAMAGED
ACCEPTED BY

1/92

DISTRIBUTION: *WHITE*—WITH SHIPMENT TO LAB. *CANARY*—CONVERSE. *PINK*—RETAINED BY FIELD REP.

Page 2/2 5C27037 #2 #2

SAMPLING, CHAIN OF CUSTODY AND ANALYSES RECORD FOR SOIL, GROUNDWATER AND AIR MONITORING **PA**

SAMPLING PLACE Rosemergy
OWNER
ADDRESS See Page 1
PROJECT NAME

CC FIELD REP.
DATE See Page 1
WEATHER
PROJECT NO.
ATTENTION

FIRM RESPONSIBLE FOR SAMPLING
Converse Consultants
2738 West College Avenue
State College, Pennsylvania 16801
814-234-3223
Fax 814-234-3255

	STATION NO. OR SAMPLE IDENT.	TIME	DEPTH TO WATER (FEET) DATUM	PURGING METHOD / SAMPLE DEPTH (FT.) INTERVAL	AMOUNT PURGED (GALS)	SAMPLING METHOD	CONTAINER DESCRIPTION: 40 mL HCl	pH	SPECIFIC CONDUCTANCE (µ mohs/cm.)	TEMP. °C	ANALYSIS REQUEST / COMMENTS
14	MW-1M	12:21	5.00	Pump	4.7	Pump	2	5.3	1270	5.0	See Page 1

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)
[signature]	3/27/15		[signature] 3/27/15 1250
[signature]	3/27/15	1320	[signature] 3/27/15 1320
[signature]	3/27/15	1430	[signature] 3/27 14:30

RECEIVING LABORATORY
ADDRESS
DATE RECEIVED TIME
ALL SAMPLES REC'D. INTACT ☐ YES ☐ NO
LIST SAMPLES MISSING/DAMAGED
ACCEPTED BY

1/92

DISTRIBUTION: *WHITE*—WITH SHIPMENT TO LAB. *CANARY*—CONVERSE. *PINK*—RETAINED BY FIELD REP.

Chain of Custody Receiving Document

Receiver: CB

Date/Time of this check: 3/27 14:40 Client: CONVERSE Lab # 502703 7 #3

Received on ICE? Y ☐ * **Sample Temperature when delivered to the Lab:** 0.6 **Acceptable?** Y ☐ * **or In cool down process?** ☐ *

Custody Seals? Y Intact? Y

COC/Labels on bottles agree? Y ☐* Correct containers for all the analysis requested? Y ☐ * Matrix: WATER

COC #	Number and Type of BOTTLES										Comments
	Poly Non-Pres.	Poly H2SO4	Poly HNO3	Amber H2SO4	Amber Non-Pres.	Poly NaOH	VOCS (Head space?)	Other ☐ *	Properly Preserved ☐ *	Bacti	
1							2 HCl				
↓							↓		N/A		
14											
TRIP							1 HCl		N/A		

* DEVIATION PRESENT:	CLIENT CALLED:	CLIENT RESPONSE:
☹ No Ice ( )	YES ( )	Proceed with analysis; qualify data ( )
☹ Not at Proper Temperature ( )	By Whom:	Will Resample ( )
☹ Wrong Container ( )		Provided Information ( )
☹ Missing Information: ( )	_____ Date: _____	No Response; Proceed and qualified ( )
		Client Contact: _____ Date: _____

* Comments: TRIP BLANK NOT ON COC.

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

March 30, 2015

Orion Cook
Converse Consultants
2738 West College Avenue
State College, PA 16801

Project Location: Rosemergy, PA
Client Job Number:
Project Number: [none]
Laboratory Work Order Number: 15C0792

Enclosed are results of analyses for samples received by the laboratory on March 19, 2015. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Aaron L. Benoit
Project Manager

Table of Contents

con-test® ANALYTICAL LABORATORY

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Converse Consultants
2738 West College Avenue
State College, PA 16801
ATTN: Orion Cook

REPORT DATE: 3/30/2015

PURCHASE ORDER NUMBER:

PROJECT NUMBER: [none]

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 15C0792

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Rosemergy, PA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
Inf 1H	15C0792-01	Soil Gas	Influent Air	EPA TO-15	
Inf End	15C0792-02	Soil Gas	Influent Air	EPA TO-15	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

EPA TO-15

Qualifications:

L-03

Laboratory fortified blank/laboratory control sample recovery is outside of control limits. Reported value for this compound is likely to be biased on the low side.

Analyte & Samples(s) Qualified:

Naphthalene

15C0792-01[Inf 1H], 15C0792-02[Inf End], B118069-BLK1, B118069-BS1

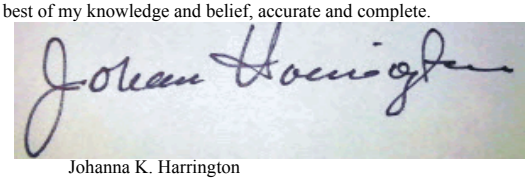
RL-02

Elevated reporting limit due to high concentration of non-target compounds. Requested reporting limit not met.

Analyte & Samples(s) Qualified:

15C0792-01[Inf 1H], 15C0792-02[Inf End]

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Johanna K. Harrington
Manager, Laboratory Reporting

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

ANALYTICAL RESULTS

Project Location: Rosemergy, PA
Date Received: 3/19/2015
Field Sample #: Inf 1H
Sample ID: 15C0792-01
Sample Matrix: Soil Gas
Sampled: 3/12/2015 14:01

Sample Description/Location: Influent Air
Sub Description/Location:
Canister ID: 1569
Canister Size: 0.4 liter
Flow Controller ID: 5067
Sample Type: Grab

Work Order: 15C0792
Initial Vacuum(in Hg): -18
Final Vacuum(in Hg): -2
Receipt Vacuum(in Hg): -2.6
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

Sample Flags: RL-02

Analyte	ppbv Results	ppbv RL	Flag/Qual	ug/m3 Results	ug/m3 RL	Dilution	Date/Time Analyzed	Analyst
Benzene	1900	40		6100	130	800	3/27/15 9:43	WSD
Ethylbenzene	740	40		3200	170	800	3/27/15 9:43	WSD
Isopropylbenzene (Cumene)	ND	100		ND	500	800	3/27/15 9:43	WSD
Methyl tert-Butyl Ether (MTBE)	78	40		280	140	800	3/27/15 9:43	WSD
Naphthalene	ND	40	L-03	ND	210	800	3/27/15 9:43	WSD
Toluene	3000	40		11000	150	800	3/27/15 9:43	WSD
1,2,4-Trimethylbenzene	240	40		1200	200	800	3/27/15 9:43	WSD
1,3,5-Trimethylbenzene	86	40		420	200	800	3/27/15 9:43	WSD
m&p-Xylene	2200	80		9700	350	800	3/27/15 9:43	WSD
o-Xylene	590	40		2600	170	800	3/27/15 9:43	WSD

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	102	70-130	3/27/15 9:43
4-Bromofluorobenzene (4)	110	70-130	3/27/15 9:43

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ANALYTICAL RESULTS

Project Location: Rosemergy, PA
Date Received: 3/19/2015
Field Sample #: Inf End
Sample ID: 15C0792-02
Sample Matrix: Soil Gas
Sampled: 3/12/2015 14:01

Sample Description/Location: Influent Air
Sub Description/Location:
Canister ID: 1571
Canister Size: 0.4 liter
Flow Controller ID: 5066
Sample Type: Grab

Work Order: 15C0792
Initial Vacuum(in Hg): -27
Final Vacuum(in Hg): -2
Receipt Vacuum(in Hg): -5.5
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

Sample Flags: RL-02

Analyte	ppbv Results	ppbv RL	Flag/Qual	ug/m3 Results	ug/m3 RL	Dilution	Date/Time Analyzed	Analyst
Benzene	3000	40		9700	130	800	3/27/15 11:24	WSD
Ethylbenzene	1300	40		5800	170	800	3/27/15 11:24	WSD
Isopropylbenzene (Cumene)	150	100		740	500	800	3/27/15 11:24	WSD
Methyl tert-Butyl Ether (MTBE)	ND	40		ND	140	800	3/27/15 11:24	WSD
Naphthalene	ND	40	L-03	ND	210	800	3/27/15 11:24	WSD
Toluene	4200	40		16000	150	800	3/27/15 11:24	WSD
1,2,4-Trimethylbenzene	290	40		1400	200	800	3/27/15 11:24	WSD
1,3,5-Trimethylbenzene	120	40		610	200	800	3/27/15 11:24	WSD
m&p-Xylene	3700	80		16000	350	800	3/27/15 11:24	WSD
o-Xylene	860	40		3700	170	800	3/27/15 11:24	WSD

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	104	70-130	3/27/15 11:24
4-Bromofluorobenzene (4)	112	70-130	3/27/15 11:24

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Sample Extraction Data

Prep Method: TO-15 Prep-EPA TO-15

Lab Number [Field ID]	Batch	Pressure Dilution	Pre Dilution	Pre-Dil Initial mL	Pre-Dil Final mL	Default Injection mL	Actual Injection mL	Date
15C0792-01 [Inf 1H]	B118069	2	200	5	1000	400	200	03/26/15
15C0792-02 [Inf End]	B118069	2	200	5	1000	400	200	03/26/15

con-test® ANALYTICAL LABORATORY
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QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv Results	ppbv RL	ug/m3 Results	ug/m3 RL	Spike Level ppbv	Source Result	%REC		%REC Limits	RPD	RPD Limit	Flag/Qual
Batch B118069 - TO-15 Prep												
Blank (B118069-BLK1)					Prepared & Analyzed: 03/26/15							
Benzene	ND	0.025										
Ethylbenzene	ND	0.025										
Isopropylbenzene (Cumene)	ND	0.064										
Methyl tert-Butyl Ether (MTBE)	ND	0.025										
Naphthalene	ND	0.025										L-03
Toluene	ND	0.025										
1,2,4-Trimethylbenzene	ND	0.025										
1,3,5-Trimethylbenzene	ND	0.025										
m&p-Xylene	ND	0.050										
o-Xylene	ND	0.025										
Surrogate: 4-Bromofluorobenzene (1)	*7.88*				*8.00*		*98.5*		*70-130*			
LCS (B118069-BS1)					Prepared & Analyzed: 03/26/15							
Benzene	3.80				5.00		76.0		70-130			
Ethylbenzene	4.33				5.00		86.6		70-130			
Isopropylbenzene (Cumene)	7.99				9.38		85.1		70-130			
Methyl tert-Butyl Ether (MTBE)	4.35				5.00		87.0		70-130			
Naphthalene	2.68				5.00		**53.6**	*	70-130			L-03
Toluene	4.29				5.00		85.8		70-130			
1,2,4-Trimethylbenzene	4.39				5.00		87.8		70-130			
1,3,5-Trimethylbenzene	4.32				5.00		86.3		70-130			
m&p-Xylene	9.25				10.0		92.5		70-130			
o-Xylene	4.27				5.00		85.4		70-130			
Surrogate: 4-Bromofluorobenzene (1)	*8.21*				*8.00*		*103*		*70-130*			

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
L-03	Laboratory fortified blank/laboratory control sample recovery is outside of control limits. Reported value for this compound is likely to be biased on the low side.
RL-02	Elevated reporting limit due to high concentration of non-target compounds. Requested reporting limit not met.

con-test® ANALYTICAL LABORATORY
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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA TO-15 in Air	
Benzene	AIHA,FL,NJ,NY,VA,ME
Ethylbenzene	AIHA,FL,NJ,NY,VA,ME
Isopropylbenzene (Cumene)	AIHA,NJ,NY,ME
Methyl tert-Butyl Ether (MTBE)	AIHA,FL,NJ,NY,VA,ME
Naphthalene	NY,ME
Toluene	AIHA,FL,NJ,NY,VA,ME
1,2,4-Trimethylbenzene	AIHA,NJ,NY,ME
1,3,5-Trimethylbenzene	AIHA,NJ,NY,ME
m&p-Xylene	AIHA,FL,NJ,NY,VA,ME
o-Xylene	AIHA,FL,NJ,NY,VA,ME

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2016
MA	Massachusetts DEP	M-MA100	06/30/2015
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2015
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2016
RI	Rhode Island Department of Health	LAO00112	12/30/2015
NC	North Carolina Div. of Water Quality	652	12/31/2015
NJ	New Jersey DEP	MA007 NELAP	06/30/2015
FL	Florida Department of Health	E871027 NELAP	06/30/2015
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2015
WA	State of Washington Department of Ecology	C2065	02/23/2016
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2015
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2015

con-test ANALYTICAL LABORATORY
www.contestlabs.com
Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com
39 SPRUCE ST
EAST LONGMEADOW, MA 01028

AIR SAMPLE CHAIN OF CUSTODY RECORD

15C0792

DOC#284
Rev. Feb 2014

Company Name: Converse Consultants
Address: 2738 W College Ave
State College PA 16801
Attention: DWS or OBC
Project Location: Rosemary
Sampled By: OBC

Telephone: (814) 234-3223
Project #: 11-17788-02
Client PO #:

DATA DELIVERY (check one):
☐FAX ☐EMAIL ☐WEBSITE CLIENT
Fax #:
Email:
Format: ☐EXCEL ☐PDF ☐GIS KEY ☐OTHER

Proposal Provided? (For Billing purposes)
☐yes proposal date

Field ID	Sample Description	Media	Lab #	Date Sampled Start Date Time	Date Sampled Stop Date Time	ONLY USE WHEN USING PUMPS Total Minutes Sampled	Flow Rate M³/Min. or L/Min.	Volume Liters or M³	Matrix Code*	ANALYSIS REQUESTED: PAIDP (with Gas Short List)	"Hg Initial pressure	"Hg Final pressure	"Hg Lab Receipt Pressure	Summa Canister ID	Flow Controller ID
Inf IH	Influent Air	S	BC 1569 01	3-12-15 14:00	3-12-15 14:01				SG	X	-19	-2	-2.2	BC 1569	5067
Inf End	" "	S	BC 1571 02	3-12-15 16:00	3-12-15 16:01				SG	X	-21	-2	-5.5	BC 1571	5066

2400

Please fill out completely, sign, date and retain the yellow copy for your record.

Summa canisters and flow controllers must be returned within 14 days of receipt or rental fees will apply.

For summa canister and flow controller information please refer to Con-Test's Air Media Agreement.

Laboratory Comments:

CLIENT COMMENTS:

Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Received by: 3/19/15 11:27

Turnaround **
☐ 7-Day
☐ 10-Day
☐ Other
RUSH *
☐ *24-Hr ☐ *48-Hr
☐ *72-Hr ☐ *4-Day
*Approval Required

Special Requirements
Regulations:
Data Enhancement/RCP? ☐Y ☐N
Enhanced Data Package ☐Y ☐N
(Surchage Applies)
Required Detection Limits:
Other:

*Matrix Code:
SG= SOIL GAS
IA= INDOOR AIR
AMB=AMBIENT
SS = SUB SLAB
D = DUP
BL = BLANK
O = other

**Media Codes:
S=summa can
T=tedlar bag
P=PUF
T=tube
F= filter
C=cassette
O = Other

** TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT. NELAC & AIHA-LAP, LLC Accredited/WBE/DBE Certified

FedEx ® Tracking

790141028345

Ship (P/U) date :
Tues 3/17/2015

STATE COLLEGE, PA US

Delivered

Signed for by: KMCGEE

Actual delivery :
Thur 3/19/2015 11:27 am

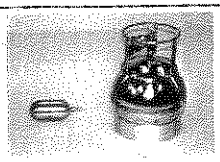
East Longmeadow, MA US

Travel History

Date/Time	Activity	Location
3/19/2015 - Thursday		
11:27 am	Delivered	East Longmeadow, MA
5:57 am	On FedEx vehicle for delivery	CHICOPEE, MA
5:51 am	At local FedEx facility	CHICOPEE, MA
12:41 am	Departed FedEx location	WILLINGTON, CT
3/18/2015 - Wednesday		
8:06 pm	Arrived at FedEx location	WILLINGTON, CT
5:54 am	Departed FedEx location	HAGERSTOWN, MD
1:58 am	Arrived at FedEx location	HAGERSTOWN, MD
3/17/2015 - Tuesday		
8:47 pm	Left FedEx origin facility	DUNCANSVILLE, PA
5:42 pm	Arrived at FedEx location	DUNCANSVILLE, PA
11:36 am	Picked up	DUNCANSVILLE, PA

Shipment Facts

Tracking number	790141028345	**Service**	FedEx Ground
Weight	7 lbs / 3.18 kgs	**Dimensions**	17x10x10 in.
Total pieces	1	**Packaging**	Package
Special handling section	Package Returns Program		



www.contestlabs.com

con-test ANALYTICAL LABORATORY

39 Spruce St.
East Longmeadow, MA.
01028
P: 413-525-2332
F: 413-525-6405

AIR Only Receipt Checklist

CLIENT NAME: Converse Consultants RECEIVED BY: KB DATE: 3/19/15

1) Was the chain(s) of custody relinquished and signed? Yes (No)

2) Does the chain agree with the samples? (Yes) No

If not, explain:

3) Are all the samples in good condition? (Yes) No

If not, explain:

4) Are there any samples "On Hold"? Yes (No) Stored where:

5) Are there any RUSH or SHORT HOLDING TIME samples? Yes (No)

Who was notified _____ Date _____ Time _____

6) Location where samples are stored: Air Lab

Permission to subcontract samples? Yes No
(Walk-in clients only) if not already approved
Client Signature: _____

7) Number of cans Individually Certified or Batch Certified? _____

Containers received at Con-Test

		# of Containers	Types (Size, Duration)
Summa Cans (TO-14/TO-15/APH)		2	0.4L
Tedlar Bags			
TO-17 Tubes			
Regulators		2	Grab
Restrictors			
Hg/Hopcalite Tube (NIOSH 6009)			
(TO-4A/ TO-10A/TO-13) PUFs			
PCB Florisil Tubes (NIOSH 5503)			
Air cassette			
PM 2.5/PM 10			
TO-11A Cartridges			
Other			

Unused Summas/PUF Media:

Unused Regulators:

1) Was all media (used & unused) checked into the WASP? Y KB

2) Were all returned summa cans, Restrictors & Regulators and PUF's documented as returned in the Air Lab Inbound/Outbound Excel Spreadsheet? Y

Laboratory Comments:
1569 1571 5067 5066

Login Sample Receipt Checklist

(Rejection Criteria Listing - Using Sample Acceptance Policy)

Any False statement will be brought to the attention of Client

Question	Answer (True/False) T/F/NA	Comment
1) The coolers'/boxes' custody seal, if present, is intact.	NA	
2) The cooler or samples do not appear to have been compromised or tampered with.	T	
3) Samples were received on ice.	F	
4) Cooler Temperature is acceptable.	NA	
5) Cooler Temperature is recorded.	NA	
6) COC is filled out in ink and legible.	T	
7) COC is filled out with all pertinent information.	T	
8) Field Sampler's name present on COC.	T	
9) Samples are received within Holding Time.	T	
10) Sample containers have legible labels.	T	
11) Containers/media are not broken or leaking and valves and caps are closed tightly.	T	
12) Sample collection date/times are provided.	T	
13) Appropriate sample/media containers are used.	T	
14) There is sufficient volume for all requsted analyses, including any requested MS/MSDs.	T	
15) Trip blanks provided if applicable.	NA	

Who notified of False statements?

Log-In Technician Initials: KB

Date/Time: 3/19/15 11:27

Date/Time:

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PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-17788-01	**Reported:**
State College PA, 16801	Collector:	CLIENT	04/02/15 09:29
Project Manager: Orion Cook	Number of Containers:	10	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Sample Type	Date Sampled	Date Received
INF 3W	5C13099-01	Water	Grab	03/12/15 14:05	03/13/15 17:20
INF DPE7	5C13099-02	Water	Grab	03/12/15 12:35	03/13/15 17:20
EFF	5C13099-03	Water	Grab	03/12/15 14:45	03/13/15 17:20

Fairway Laboratories, Inc.

Reviewed and Submitted by:

Michael P. Tyler
Laboratory Director

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-17788-01	**Reported:**
State College PA, 16801	Collector:	CLIENT	04/02/15 09:29
Project Manager: Orion Cook	Number of Containers:	10	

Client Sample ID: **INF 3W** **Date/Time Sampled:** 03/12/15 14:05

Laboratory Sample ID: **5C13099-01 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Metals by EPA 200 Series Methods								
Iron, Dissolved	9.27		0.0200	mg/l	03/25/15 08:48	EPA 200.7/4.4	rab	6a
Iron	93.0		0.100	mg/l	03/31/15 07:07	EPA 200.7/4.4	rab	
Manganese, Dissolved	121		1.00	mg/l	03/26/15 09:26	EPA 200.7/4.4	rab	6a
Manganese	120		1.00	mg/l	03/31/15 07:16	EPA 200.7/4.4	rab	
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	133		5.00	ug/l	03/19/15 13:00	EPA 8260B	mtc	
1,2,4-Trimethylbenzene	524		5.00	ug/l	03/19/15 13:00	EPA 8260B	mtc	
Benzene	530		5.00	ug/l	03/19/15 13:00	EPA 8260B	mtc	
Toluene	1050		50.0	ug/l	03/21/15 01:55	EPA 8260B	mtc	
Ethylbenzene	443		5.00	ug/l	03/19/15 13:00	EPA 8260B	mtc	
Xylenes (total)	1870		100	ug/l	03/21/15 01:55	EPA 8260B	mtc	
Isopropylbenzene	66.5		5.00	ug/l	03/19/15 13:00	EPA 8260B	mtc	
Methyl tert-butyl ether	33.4		5.00	ug/l	03/19/15 13:00	EPA 8260B	mtc	
Naphthalene	172		5.00	ug/l	03/19/15 13:00	EPA 8260B	mtc	
Surrogate: 4-Bromofluorobenzene		*104 %*	*70-130*		*03/19/15 13:00*	*EPA 8260B*	mtc	
Surrogate: 1,2-Dichloroethane-d4		*99.1 %*	*70-130*		*03/19/15 13:00*	*EPA 8260B*	mtc	
Surrogate: Fluorobenzene		*86.6 %*	*70-130*		*03/19/15 13:00*	*EPA 8260B*	mtc	
Conventional Chemistry Parameters by SM/EPA Methods								

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www.fairwaylaboratories.com

Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-17788-01	**Reported:**
State College PA, 16801	Collector:	CLIENT	04/02/15 09:29
Project Manager: Orion Cook	Number of Containers:	10	

Client Sample ID: **INF 3W** **Date/Time Sampled:** 03/12/15 14:05

Laboratory Sample ID: **5C13099-01 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Conventional Chemistry Parameters by SM/EPA Methods								
Total Dissolved Solids	6440		200	mg/l	03/16/15 14:51	SM20-2540C	arr	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-17788-01	**Reported:**
State College PA, 16801	Collector:	CLIENT	04/02/15 09:29
Project Manager: Orion Cook	Number of Containers:	10	

Client Sample ID: **INF DPE7** **Date/Time Sampled:** 03/12/15 12:35

Laboratory Sample ID: **5C13099-02 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Metals by EPA 200 Series Methods								
Iron, Dissolved	0.0658		0.0200	mg/l	03/25/15 08:56	EPA 200.7/4.4	rab	6a
Iron	76.7		0.100	mg/l	03/31/15 07:34	EPA 200.7/4.4	rab	
Manganese, Dissolved	56.5		0.200	mg/l	03/26/15 09:32	EPA 200.7/4.4	rab	6a
Manganese	53.5		1.00	mg/l	03/31/15 07:43	EPA 200.7/4.4	rab	2b
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	<5.00		5.00	ug/l	03/19/15 13:46	EPA 8260B	mtc	
1,2,4-Trimethylbenzene	22.4		5.00	ug/l	03/19/15 13:46	EPA 8260B	mtc	
Benzene	386		5.00	ug/l	03/19/15 13:46	EPA 8260B	mtc	
Toluene	593		5.00	ug/l	03/19/15 13:46	EPA 8260B	mtc	
Ethylbenzene	59.0		5.00	ug/l	03/19/15 13:46	EPA 8260B	mtc	
Xylenes (total)	216		10.0	ug/l	03/19/15 13:46	EPA 8260B	mtc	
Isopropylbenzene	7.40		5.00	ug/l	03/19/15 13:46	EPA 8260B	mtc	
Methyl tert-butyl ether	25.0		5.00	ug/l	03/19/15 13:46	EPA 8260B	mtc	
Naphthalene	30.4		5.00	ug/l	03/19/15 13:46	EPA 8260B	mtc	
Surrogate: 4-Bromofluorobenzene		*99.9 %*	*70-130*		*03/19/15 13:46*	*EPA 8260B*	mtc	
Surrogate: 1,2-Dichloroethane-d4		*98.6 %*	*70-130*		*03/19/15 13:46*	*EPA 8260B*	mtc	
Surrogate: Fluorobenzene		*86.5 %*	*70-130*		*03/19/15 13:46*	*EPA 8260B*	mtc	
Conventional Chemistry Parameters by SM/EPA Methods								

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-17788-01	**Reported:**
State College PA, 16801	Collector:	CLIENT	04/02/15 09:29
Project Manager: Orion Cook	Number of Containers:	10	

Client Sample ID: **INF DPE7** **Date/Time Sampled:** 03/12/15 12:35

Laboratory Sample ID: **5C13099-02 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Conventional Chemistry Parameters by SM/EPA Methods								
Total Dissolved Solids	1940		200	mg/l	03/16/15 14:51	SM20-2540C	arr	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-17788-01	**Reported:**
State College PA, 16801	Collector:	CLIENT	04/02/15 09:29
Project Manager: Orion Cook	Number of Containers:	10	

Client Sample ID: EFF **Date/Time Sampled:** 03/12/15 14:45

Laboratory Sample ID: 5C13099-03 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
1,3,5-Trimethylbenzene	<1.00		1.00	ug/l	03/16/15 21:18	EPA 8260B	mtc	
1,2,4-Trimethylbenzene	<1.00		1.00	ug/l	03/16/15 21:18	EPA 8260B	mtc	
Benzene	<1.00		1.00	ug/l	03/16/15 21:18	EPA 8260B	mtc	
Toluene	<1.00		1.00	ug/l	03/16/15 21:18	EPA 8260B	mtc	
Ethylbenzene	<1.00		1.00	ug/l	03/16/15 21:18	EPA 8260B	mtc	
Xylenes (total)	<2.00		2.00	ug/l	03/16/15 21:18	EPA 8260B	mtc	
Isopropylbenzene	<1.00		1.00	ug/l	03/16/15 21:18	EPA 8260B	mtc	
Methyl tert-butyl ether	<1.00		1.00	ug/l	03/16/15 21:18	EPA 8260B	mtc	
Naphthalene	<1.00		1.00	ug/l	03/16/15 21:18	EPA 8260B	mtc	
Surrogate: 4-Bromofluorobenzene		*99.9 %*	*70-130*		*03/16/15 21:18*	*EPA 8260B*	mtc	
Surrogate: 1,2-Dichloroethane-d4		*91.2 %*	*70-130*		*03/16/15 21:18*	*EPA 8260B*	mtc	
Surrogate: Fluorobenzene		*85.5 %*	*70-130*		*03/16/15 21:18*	*EPA 8260B*	mtc	

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-17788-01	**Reported:**
State College PA, 16801	Collector:	CLIENT	04/02/15 09:29
Project Manager: Orion Cook	Number of Containers:	10	

Notes

2b	The spike recovery was outside acceptance limits for the MS and/or MSD. Data accepted based on acceptable LCS recovery.
6a	Sample for dissolved metal analysis was filtered at the laboratory.

Definitions

If surrogate values are not within the indicated range, then the results are considered to be estimated.

Reporting limits are adjusted accordingly when samples are analyzed at a dilution due to the matrix.

The following analyses are to be performed immediately upon sampling: pH, sulfite, chlorine residual, dissolved oxygen, filtration for ortho phosphorus, and ferrous iron. The date and time reported reflect the time the samples were analyzed at the laboratory.

MBAS, calculated as LAS, mol wt 348

If the solid sample weight for VOC analysis does not fall within the 3.5-6.5 gram range, the results are considered estimated values.

Unless otherwise noted, all results for solids are reported on a dry weight basis.

Samples collected by Fairway Laboratories' personnel are done so in accordance with Standard Operating Procedures established by Fairway Laboratories.

*	P indicates analysis performed by Fairway Laboratories, Inc. at the Pennsdale location. This location is PaDEP Chapter 252 certified.
<	Represents "less than" - indicates that the result was less than the reporting limit.
MDL	Method Detection Limit - is the lowest or minimum level that provides 99% confidence level that the analyte is detected. Any reported result values that are less than the RL are considered estimated values.
RL	Reporting Limit - is the lowest or minimum level at which the analyte can be quantified.
[CALC]	Indicates a calculated result. Calculations use results from other analyses performed under accredited methods.

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Converse	Project:	ROSEMERGY'S	
2738 West College Avenue	Project Number:	11-17788-01	**Reported:**
State College PA, 16801	Collector:	CLIENT	04/02/15 09:29
Project Manager: Orion Cook	Number of Containers:	10	

Terms & Conditions

Services provided by Fairway Laboratories Inc. are limited to the terms and conditions stated herein, unless otherwise agreed to in a formal contract.

CHAIN OF CUSTODY Fairway Laboratories Inc. ("Fairway," "us" or "we") will initiate a chain-of-custody/request for analysis upon sample receipt unless the client includes a completed form with the received sample(s). Upon request, Fairway will provide chain-of-custody forms for use.

CONFIDENTIALITY Fairway maintains confidentiality in all of our client interactions. The client's consent will be required before releasing information about the services provided.

CONTRACTS All contracts are subject to review and approval by Fairway's legal council. Each contract must be signed by a corporate officer.

PAYMENT/BILLING Unless otherwise set forth in a signed contract or purchase order, terms of payment are "NET 30 Days." The time allowed for payment shall begin based on the invoice date. A 1.5% per month service charge may be added to all unpaid balances beyond the initial 30 days. In its sole discretion, Fairway reserves the right to request payment before services and hold sample results for payment of due balances. We will not bill a third party without prior agreement among all parties acknowledging and accepting responsibility for payment.

SAMPLE COLLECTION AND SUBMISSION Clients not requesting collection services from Fairway are responsible for proper collection, preservation, packaging, and delivery of samples to the laboratory in accordance with current law and commercial practice. Fairway shall have no responsibility for sample integrity prior to the receipt of the sample(s) and/or for any inaccuracy in test or analyses results as a result of the failure of the client or any third party to maintain the integrity of samples prior to delivery to Fairway. All samples submitted must be accompanied by a completed chain of custody or similar document clearly noting the requested analyses, dates/time sampled, client contact information, and trail of custody.

SUBCONTRACTING Some analyses may require subcontracting to another laboratory. Unless the client indicates otherwise, this decision will be made by Fairway. Subcontracted work will be identified on the final report in accordance with NELAC requirements.

RETURN OF RESULTS Fairway routinely provides faxed or verbal results within 10 working days of receipt of sample(s) and a hard copy of the data results is routinely received via US Postal Service within 15 working days. At the request of the client, Fairway may offer expedited return of sample results. Surcharges may apply to rush requests. All rush requests must be pre-approved by Fairway. We reserve the right to charge an archive retrieval fee for results older than one (1) year from the date of the request. All records will be maintained by Fairway for 5 years, after which, they will be destroyed.

SAMPLE DISPOSAL Fairway will maintain samples for four (4) weeks after the sample receipt date. Fairway will dispose of samples which are not and/or do not contain hazardous wastes (as such term is defined by applicable federal or state law), unless prior arrangements have been made for long-term storage. Fairway reserves the right to charge a disposal fee for the proper disposal of samples found or suspected to contain hazardous waste. A return shipping charge will be invoiced for samples returned to the client at their request.

HAZARD COMMUNICATION The client has the responsibility to inform the laboratory of any hazardous characteristics known or suspected about the sample, and to provide information on hazard prevention and personal protection as necessary or otherwise required by applicable law.

WARRANTY AND LIMITATION OF LIABILITY For services rendered, Fairway warrants that it will apply its best scientific knowledge and judgment and to employ its best level of effort consistent with professional standards within the environmental testing industry in performing the analytical services requested by its clients. We disclaim any other warranties, expressed or implied by law. Fairway does not accept any legal responsibility for the purposes for which client uses the test results.

LITIGATION All costs associated with compliance to any subpoena for documents, for testimony in a court of law, or for any other purpose relating to work performed by Fairway Laboratories, Inc. shall be invoiced by Fairway and paid by client. These costs shall include, but are not limited to, hourly charges for the persons involved, travel, mileage, and accommodations and for any and all other expenses associated with said litigation.

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1 of 2

SAMPLING, CHAIN OF CUSTODY AND ANALYSES RECORD FOR SOIL, GROUNDWATER AND AIR MONITORING PA

SAMPLING PLACE Rosemeady
OWNER [redacted]
ADDRESS Hawley, PA
PROJECT NAME

CC FIELD REP. OSC - TJT
DATE 3-12-15
WEATHER Sunny 40s
PROJECT NO. 11-17788-01
ATTENTION OSC

#1
SC13099

FIRM RESPONSIBLE FOR SAMPLING
Converse Consultants
2738 West College Avenue
State College, Pennsylvania 16801
814-234-3223
Fax 814-234-3255

	STATION NO. OR SAMPLE IDENT.	TIME	DEPTH TO WATER (FEET) DATUM	PURGING METHOD / SAMPLE DEPTH (FT.) INTERVAL	AMOUNT PURGED (GALS)	SAMPLING METHOD	CONTAINER DESCRIPTION: 500mL A.H.C.	1L NP	40mL HCL	pH	SPECIFIC CONDUCTANCE (μ mohs/cm.)	TEMP. °C	ANALYSIS REQUEST / COMMENTS
1	Inf SW	2:05	NA	NA	NA	grab	1	1	2				TDS, Total & Dissolved Fe & Mn
2	Inf DP7	12:35	↓	↓	↓	↓	1	1	2				
3	Eff	2:45	↓	↓	↓	↓	0	0	2				2008 Unlocked Gas short list
													Not field filtered

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)
[signature]	3/13/15	13:10	[signature]
[signature]	3/13	17:20	RECEIVED BY (SIGNATURE)
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)
	3-13-15	17:20	[signature]

RECEIVING LABORATORY
ADDRESS Fairway Labs
DATE RECEIVED TIME
ALL SAMPLES REC'D. INTACT ☐ YES ☐ NO
LIST SAMPLES MISSING/DAMAGED
ACCEPTED BY

1/92

DISTRIBUTION: *WHITE*—WITH SHIPMENT TO LAB. *CANARY*—CONVERSE. *PINK*—RETAINED BY FIELD REP.

Chain of Custody Receiving Document

Page 2 of 2 #2

Receiver: CM

Date/Time of this check: 3-13-15 17:40 Client: Converse Lab # SC13099

Received on ICE? Y ☐ * **Sample Temperature when delivered to the Lab:** 14 **Acceptable?** Y ☐ * **or In cool down process?** ☐ *

Custody Seals? Y Intact? Y

COC/Labels on bottles agree? Y ☐* Correct containers for all the analysis requested? Y ☐ * Matrix: water

COC #	Number and Type of BOTTLES										Comments
	Poly Non-Pres.	Poly H2SO4	Poly HNO3	Amber H2SO4	Amber Non-Pres.	Poly NaOH	VOCS (Head space?)	Other ☐ *	Properly Preserved ☐ *	Bacti	
1	1		1				2 VOA		Y		
2	1		1				↓		↓		
3							↓		↓		

*** DEVIATION PRESENT:**
- ☹ **No Ice** ( )
- ☹ **Not at Proper Temperature** ( )
- ☹ **Wrong Container** ( )
- ☹ **Missing Information:** ( )

CLIENT CALLED:
YES ( )
By Whom:
_____ **Date:** _____

CLIENT RESPONSE:
- **Proceed with analysis; qualify data** ( )
- **Will Resample** ( )
- **Provided Information** ( )
- **No Response; Proceed and qualified** ( )

Client Contact: _____ **Date:** _____

* Comments: _____

This is a date sensitive document and may not be current after March 13, 2015.

Former Rosemergy's, Hawley, PA - Triple Well Test - DPE-1, 4, and 5

11-17788-03

DATE 3/12/15	TIME	IN HG	TEMP IN (°F)	TEMP OUT (°F)	SCFM (In) X 10	SCFM (Out) X 10	GALLONS TREATED	SCFM Well Head(s)	Make Up Air
Initial	1:00 PM	15*	50	60	0	0	74846.4	0.00	0
	1:10 PM	20.5	50	132	3.5	16	74846.4	4.58	>50
	1:20 PM	20.5	50	138	3.5	16	74862.9	4.58	>50
	1:30 PM	21.0	52	140	3.5	16	74884.2	4.58	>50
	1:40 PM	21.5	52	140	3.5	16	74884.2	4.58	>50
	1:50 PM	21.5	52	140	3.5	16	74884.2	4.58	>50
	2:00 PM	21.5	52	140	3.5	16	74893.2	4.58	>50
	2:10 PM	21.5	52	140	3.5	16	74921.3	4.58	>50
	2:20 PM	21.0	52	140	3.75	16.5	74921.3	4.58	>50
	2:30 PM	21.0	52	140	3.75	16.5	74921.3	4.58	>50
	2:40 PM	21.0	52	140	3.75	16.5	74921.3	4.58	>50
	2:51 PM	21.0	54	140	3.75	16.5	74960.0	4.58	>50
	3:00 PM	21.0	54	140	3.75	16.5	74960.0	4.58	>50
	3:10 PM	21.0	54	140	3.75	16.5	74960.0	4.58	>50
	3:20 PM	21.0	54	140	3.75	17	74960.0	4.58	>50
	3:30 PM	21.0	54	140	3.75	17	74960.0	4.58	>50
	3:40 PM	21.0	54	140	3.75	17	74998.0	4.58	>50
	3:50 PM	21.0	54	140	4	17	74998.0	4.58	>50
	4:00 PM	21.0	54	140	4	17	74998.0	4.58	>50
Final	4:13 PM	15.0	50	100	0	0	75080.5	0	0

*Gauge broke, cannot repair or replace

Former Rosemergy's, Hawley, PA - Triple Well Test - DPE-1, 4, and 5

11-17788-03

MONITORING WELL	DISTANCE TO TEST WELL (appx. ft)	TIME	WATER LEVEL (ft)	VACUUM (in H2O)
MW-1R	22	1:00 PM	8.48	0
		1:15 PM	8.46	0
		1:28 PM	8.46	0
		1:44 PM	8.49	0
		2:00 PM	8.5	0
		2:15 PM	8.5	0
		2:30 PM	8.51	0.1
		2:45 PM	8.52	0
		3:01 PM	8.52	0.1
		3:16 PM	8.54	0.1
		3:31 PM	8.55	0.1
		3:46 PM	8.54	0.1
		3:56 PM	8.55	0.1
DPE-2	27	1:00 PM	4.28	0
		1:13 PM	4.27	0
		1:27 PM	4.29	0
		1:43 PM	4.3	0
		1:58 PM	4.31	0
		2:13 PM	4.33	0
		2:27 PM	4.36	0
		2:42 PM	4.37	0
		2:57 PM	4.37	0.1
		3:15 PM	4.37	0
		3:27 PM	4.37	0
		3:45 PM	4.35	0
		3:53 PM	4.37	0
DPE-8	21	1:00 PM	7.31	0
		1:18 PM	7.33	1.7
		1:32 PM	7.34	1.9
		1:47 PM	7.4	2
		2:02 PM	7.4	2.2
		2:17 PM	7.43	2
		2:32 PM	7.41	2.4
		2:47 PM	7.46	2.5
		3:02 PM	7.47	2.6
		3:17 PM	7.49	2.1
		3:32 PM	7.49	2.2
		3:47 PM	7.51	2.4
		3:58 PM	7.5	2.5

DPE-7	19	1:00 PM	6	0
		1:16 PM	5.53	1.3
		1:31 PM	5.56	1.7
		1:46 PM	5.53	1.7
		2:04 PM	5.67	1.9
		2:19 PM	5.69	2.2
		1:34 PM	5.7	2.2
		2:49 PM	5.75	2.4
		3:04 PM	5.94	2.5
		3:19 PM	5.77	2.3
		3:34 PM	5.78	2.5
		3:49 PM	5.82	2.5
		4:00 PM	5.8	2.6
MW-5	12.5	1:00 PM	4.82	0.1
		1:12 PM	4.77	0.1
		1:30 PM	4.77	0.1
		1:42 PM	4.78	0.1
		1:59 PM	4.79	0.1
		2:12 PM	4.82	0.1
		2:28 PM	4.85	0.1
		2:42 PM	4.85	0.1
		3:00 PM	4.87	0.1
		3:12 PM	4.88	0.1
		3:29 PM	4.9	0.1
		3:42 PM	4.91	0.1
		3:55 PM	4.9	0.1

Former Rosemergy's, Hawley, PA - DPE-3

11-17788-03

DATE 3/11/15	TIME	IN HG	TEMP IN (°F)	TEMP OUT (°F)	SCFM (In) X 10	SCFM (Out) X 10	GALLONS TREATED	SCFM Well Head(s)	Make Up Air
Initial	3:30 PM	0	52	35	0	0	74664.3	0.00	0
	3:50 PM	7	52	138	<1	16	74664.3	1.25	>50
	4:10 PM	7	55	150	<1	16	74664.3	1.25	>50
	4:30 PM	7	55	153	<1	16	74676.0	1.25	>50
	4:50 PM	9	56	150	<1	15	74695.7	1.70	>50
	5:00 PM	10	55	160	1	15	74695.7	1.70	>50
	5:15 PM	10	58	165	1	15	74733.9	1.70	>50
	5:33 PM	12	59	171	1.5	12	74776.5	2.10	>50
	5:45 PM	12	59	184	1.5	12	74776.5	2.10	>50
	6:00 PM	12	55	185	1.5	12	74820.5	2.10	>50
Final	6:05 PM	0	55	140	0	0	74846.3	0.00	0
Note: no vacuum or water level dradown observed in nearby wells									

Former Rosemergy's, Hawley, PA - DPE-3

11-17788-03

MONITORING WELL	DISTANCE TO TEST WELL (appx. ft)	TIME	WATER LEVEL (ft)	VACUUM (in H2O)
MW-3	15	3:50 PM	4.89	0
		4:06 PM	4.95	0
		4:25 PM	4.89	0
		4:40 PM	4.91	0
		4:55 PM	4.94	0
		5:10 PM	4.9	0
		5:25 PM	4.91	0
		5:40 PM	4.92	0
		5:57 PM	4.89	0
MW-4	21	3:50 PM	2.37	0
		4:09 PM	2.17	0
		4:27 PM	2.11	0
		4:42 PM	2.01	0
		4:57 PM	2.00	0
		5:12 PM	2.00	0
		5:27 PM	2.00	0
		5:42 PM	2.00	0
		5:59 PM	1.99	0
MW-5	28	3:50 PM	5.74	0
		4:05 PM	5.7	0
		4:23 PM	5.7	0
		4:38 PM	5.63	0
		4:53 PM	5.67	0
		5:08 PM	5.68	0
		5:23 PM	5.74	0
		5:38 PM	5.68	0
		5:56 PM	5.68	0
DPE-2	28	3:50 PM	5.32	0
		4:08 PM	5.22	0
		4:22 PM	5.25	0
		4:37 PM	5.25	0
		4:52 PM	5.23	0
		5:07 PM	5.23	0
		5:22 PM	5.25	0
		5:37 PM	5.23	0
		5:55 PM	5.21	0

Former Rosemergy's, Hawley, PA - DPE-6

11-17788-03

DATE 3/12/15	TIME	IN HG	TEMP IN (°F)	TEMP OUT (°F)	SCFM (In) X 10	SCFM (Out) X 10	GALLONS TREATED	SCFM Well Head(s)	Make Up Air
Initial	8:44 AM	0	31	15	0	0	74846.3	0.00	0
	9:00 AM	10	31	95	1.5	16	74846.3	3.30	>50
	9:10 AM	16*	31	120	1.5	16	74846.3	2.50	>50
	9:20 AM	17	35	130	1.5	16	74846.3	2.50	>50
	9:30 AM	17	40	135	1.5	16	74846.3	2.50	>50
	9:40 AM	18	41	138	1.5	16	74846.3	2.50	>50
	9:50 AM	18	45	138	1.5	16	74846.3	2.50	>50
	10:00 AM	19	47	140	1.5	16	74846.3	2.50	>50
	10:12 AM	18	50	142	1.5	16	74846.3	2.50	>50
	10:20 AM	18	50	142	1.5	16	74846.3	2.50	>50
	10:30 AM	19	50	144	1.5	16	74846.3	2.50	>50
Final	10:34 AM	10	50	130	0	0	74846.3	0	0
* Gauge malfunction, continued with test									

Former Rosemergy's, Hawley, PA - DPE-6

11-17788-03

MONITORING WELL	DISTANCE TO TEST WELL (appx. ft)	TIME	WATER LEVEL (ft)	VACUUM (in H2O)
MW-7	5.5	8:44 AM	10.32	0
		9:08 AM	10.51	13
		9:23 AM	10.56	12
		9:38 AM	10.65	12
		9:53 AM	10.68	10
		10:11 AM	10.71	9
		10:20 AM	10.61	10
MW-1R	34	8:44 AM	8.50	0
		9:14 AM	8.48	0
		9:27 AM	8.52	0.1
		9:42 AM	8.51	0
		9:57 AM	8.50	0
		10:13 AM	8.52	0
		10:23 AM	8.50	0
DPE-8	52	8:44 AM	7.34	0
		9:12 AM	7.37	0
		9:29 AM	7.37	0
		9:36 AM	7.33	0
		9:51 AM	7.34	0
		10:17 AM	7.33	0
		10:27 AM	7.31	0
DPE-5	50.5	8:44 AM	6.82	0
		9:10 AM	6.78	0
		9:26 AM	6.78	0
		9:41 AM	6.78	0.1
		9:55 AM	6.77	0
		10:15 AM	6.76	0
		10:25 AM	6.75	0

Former Rosemergy's, Hawley, PA - DPE-7

11-17788-03

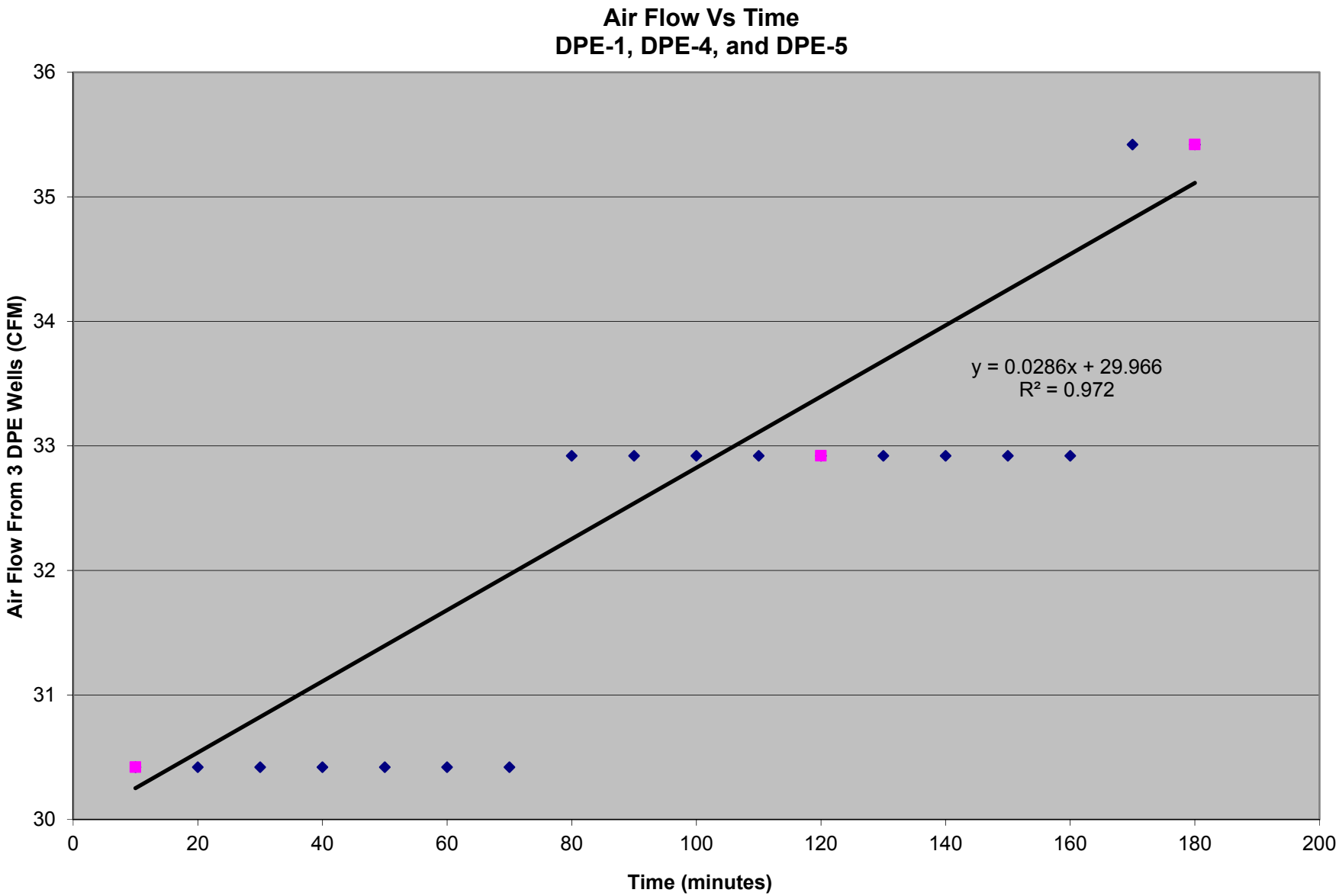
DATE 3/11/15	TIME	IN HG	TEMP IN (°F)	TEMP OUT (°F)	SCFM (In) X 10	SCFM (Out) X 10	GALLONS TREATED	SCFM Well Head(s)	Make Up Air
Initial	10:49 AM	10*	50	30	0	0	74846.3	0.00	0
	10:55 AM	18	50	110	1.5	16	74846.3	3.30	>50
	11:00 AM	18	50	135	1.5	16	74846.3	2.50	>50
	11:10 AM	18	50	140	1.5	16	74846.3	2.50	>50
	11:20 AM	18	52	145	1.5	16	74846.3	2.50	>50
	11:30 AM	18	52	145	1.5	16	74846.3	2.50	>50
	11:40 AM	18	55	145	1.5	16	74846.3	2.50	>50
	11:50 AM	18	55	146	1.5	16	74846.3	2.50	>50
	12:00 PM	19	56	146	1.5	16	74846.3	2.50	>50
	12:10 PM	19	56	146	1.5	16	74846.3	2.50	>50
	12:20 PM	19	56	147	1.5	16	74846.3	2.50	>50
Final	12:30 PM	19	56	148	1.5	16	74846.3	2.50	>50
	12:35 PM	0	56	140	0	0	74846.3	0	0

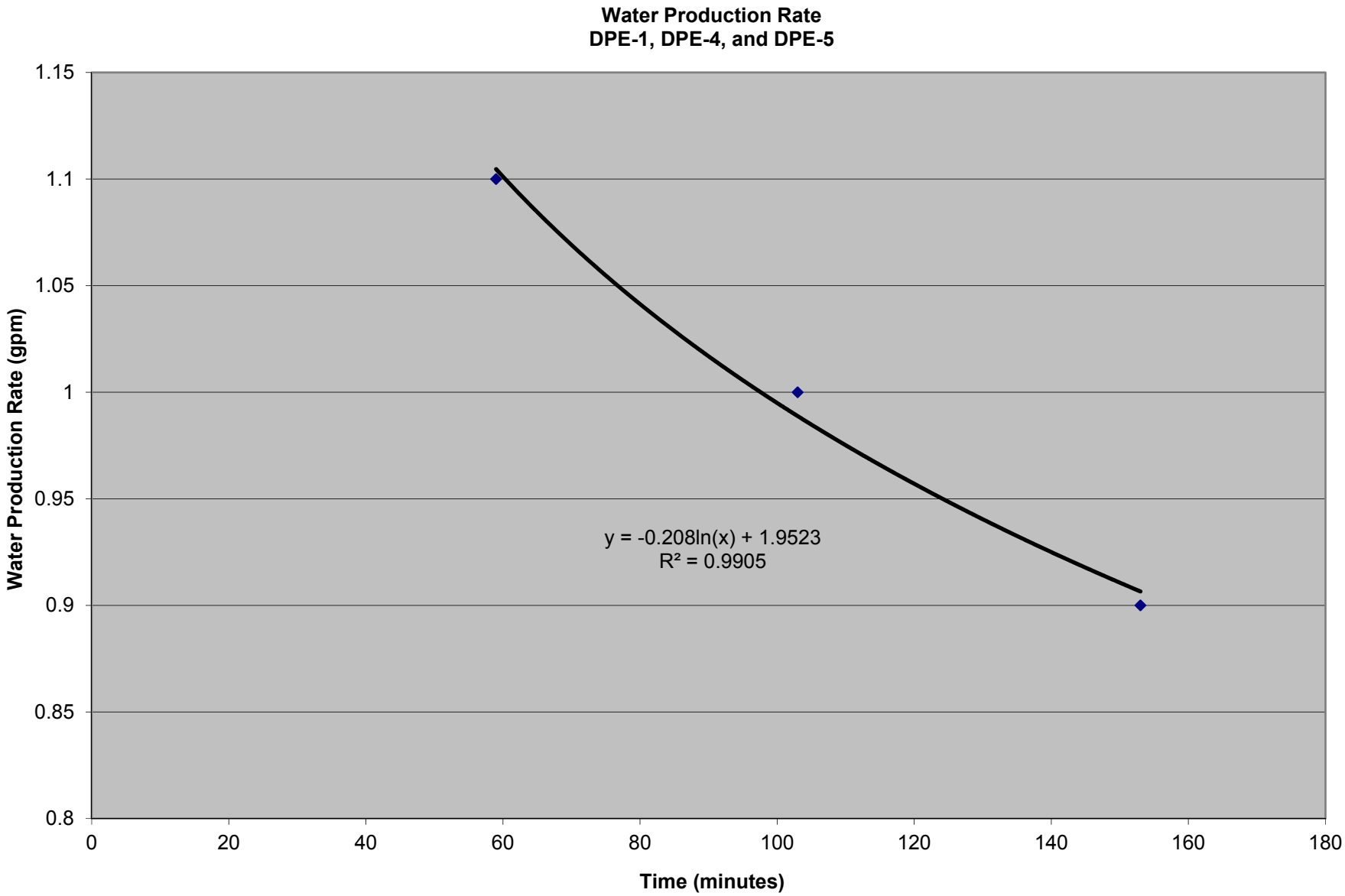
*Gauge broken, cannot repair or replace

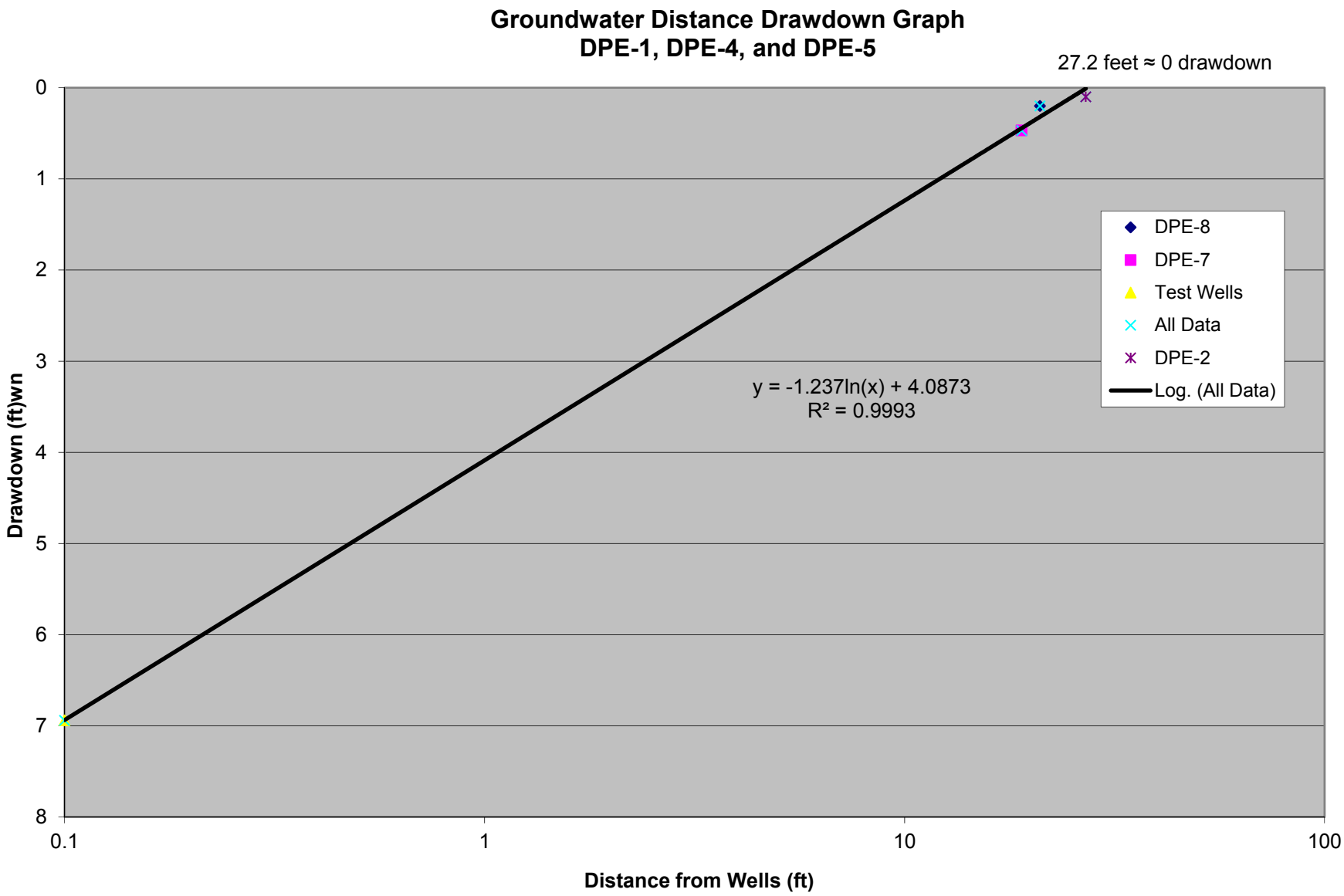
Former Rosemergy's, Hawley, PA - DPE-7

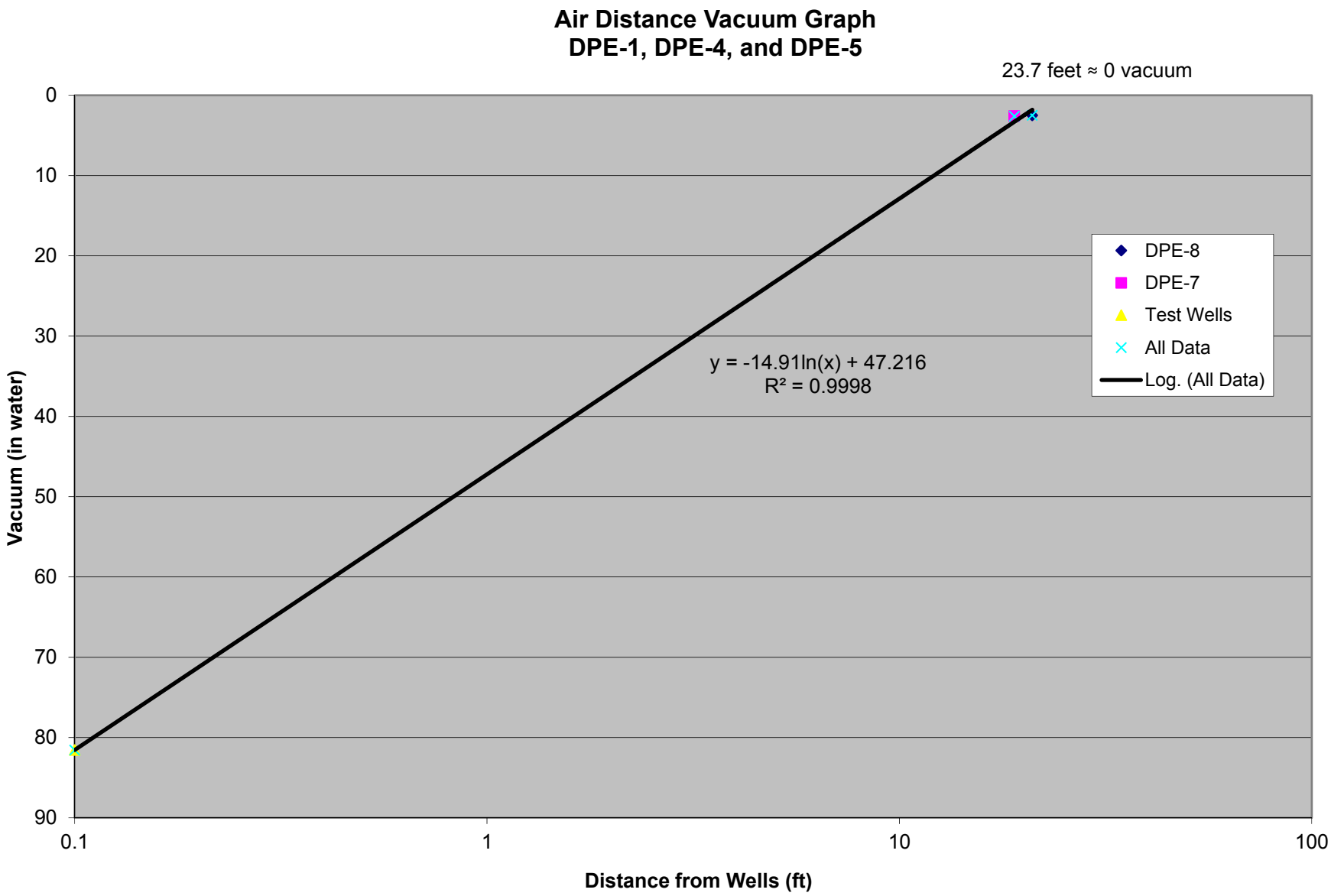
11-17788-03

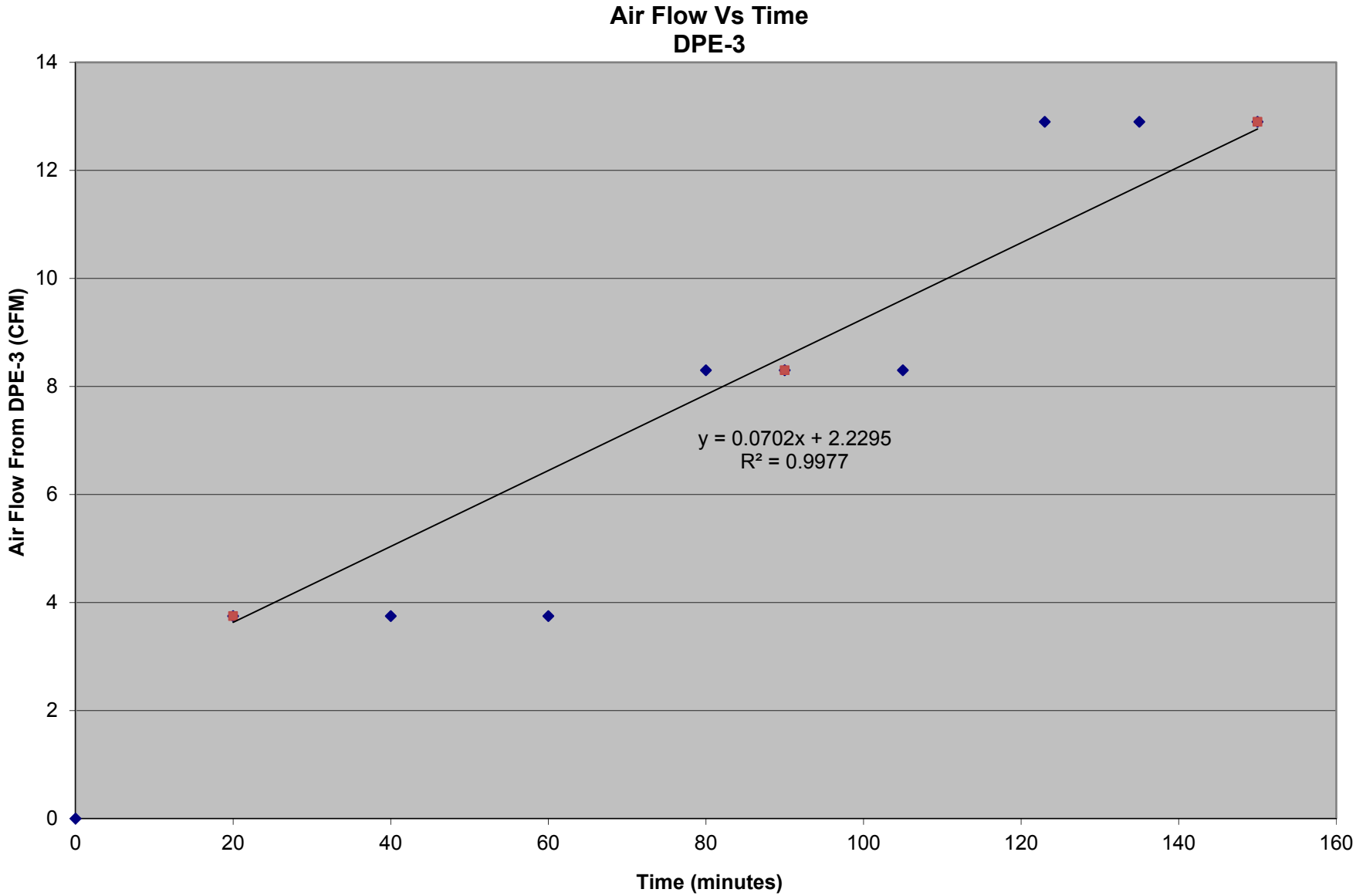
MONITORING WELL	DISTANCE TO TEST WELL (appx. ft)	TIME	WATER LEVEL (ft)	VACUUM (in H2O)
DPE-4	21	10:49 AM	4.41	0
		11:09 AM	4.37	0.1
		11:25 AM	4.41	0
		11:41 AM	4.44	0.1
		11:56 AM	4.46	0
		12:11 PM	4.51	0
		12:26 PM	4.53	0
DPE-5	23	10:49 AM	6.75	0
		11:11 AM	6.75	0.3
		11:26 AM	6.75	0.4
		11:43 AM	6.76	0.3
		11:57 AM	6.75	0.2
		12:12 PM	6.75	0.3
		12:27 PM	6.75	0.3
DPE-8	23	10:49 AM	7.31	0
		11:12 AM	7.32	0.6
		11:28 AM	7.31	0.4
		11:44 AM	7.32	0.5
		11:59 AM	7.32	0.4
		12:14 PM	7.3	0.5
		12:29 PM	7.31	0.5
MW-5	28	10:49 AM	4.75	0
		11:08 AM	4.82	0.1
		11:24 AM	4.8	0
		11:39 AM	4.8	0.1
		11:57 AM	4.8	0
		12:09 PM	4.79	0
		12:24 PM	4.77	0.1

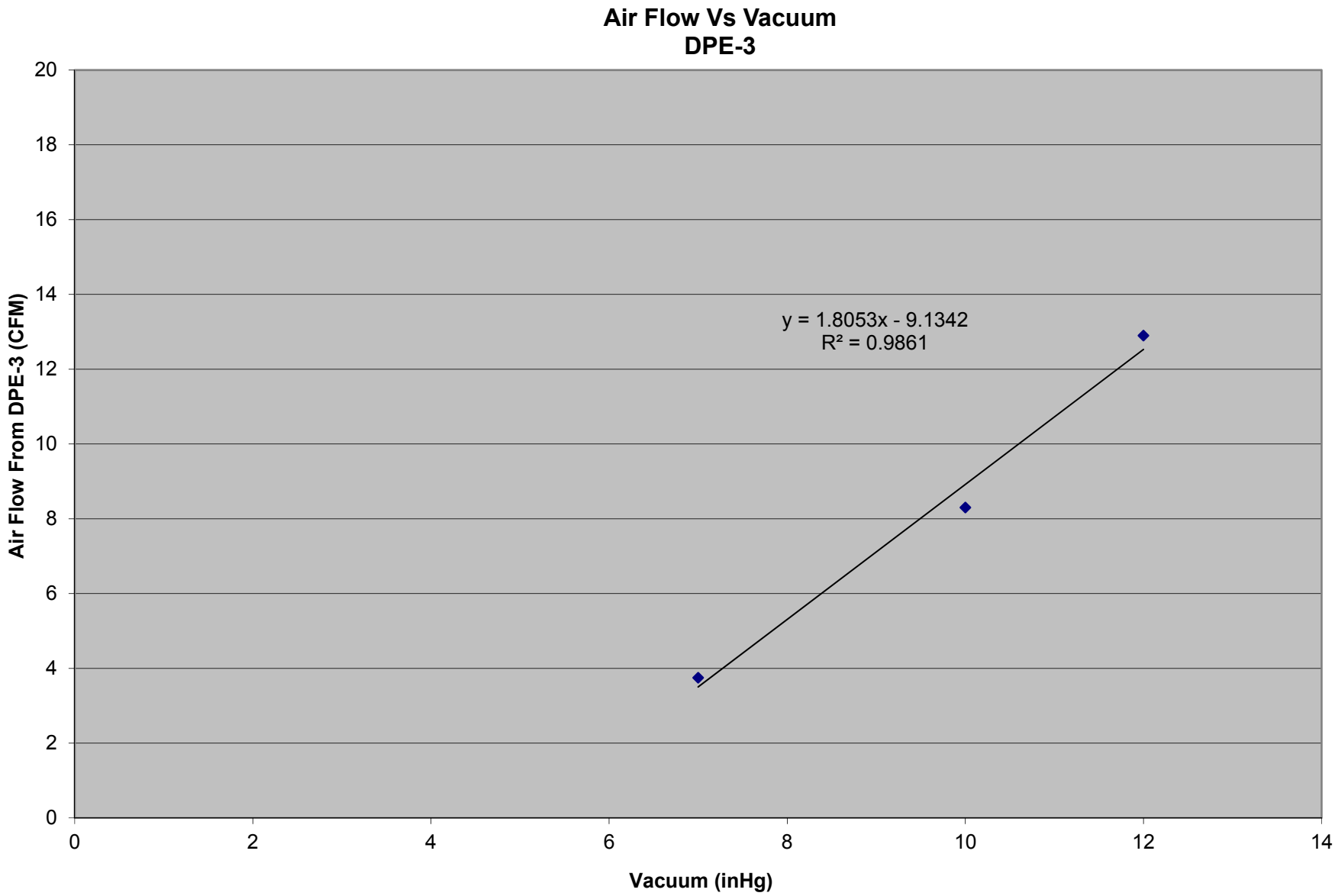

Air Flow Vs Time
DPE-1, DPE-4, and DPE-5
Air Flow From 3 DPE Wells (CFM)
Time (minutes)
y = 0.0286x + 29.966
R² = 0.972
36
35
34
33
32
31
30
0
20
40
60
80
100
120
140
160
180
200

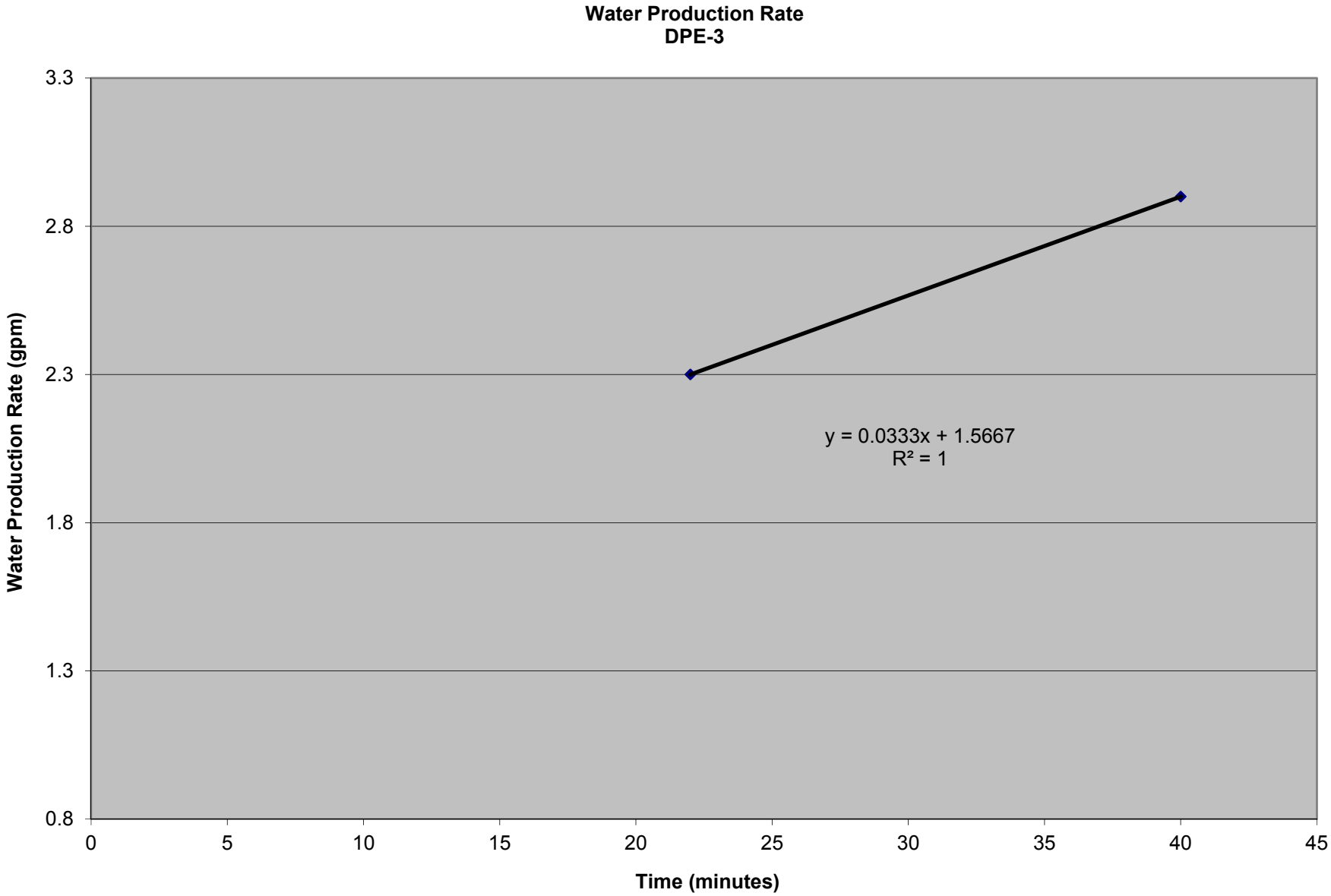

Water Production Rate
DPE-1, DPE-4, and DPE-5
Water Production Rate (gpm)
1.15
1.1
1.05
1
0.95
0.9
0.85
0.8
0
20
40
60
80
100
120
140
160
180
Time (minutes)
y = -0.208ln(x) + 1.9523
R² = 0.9905

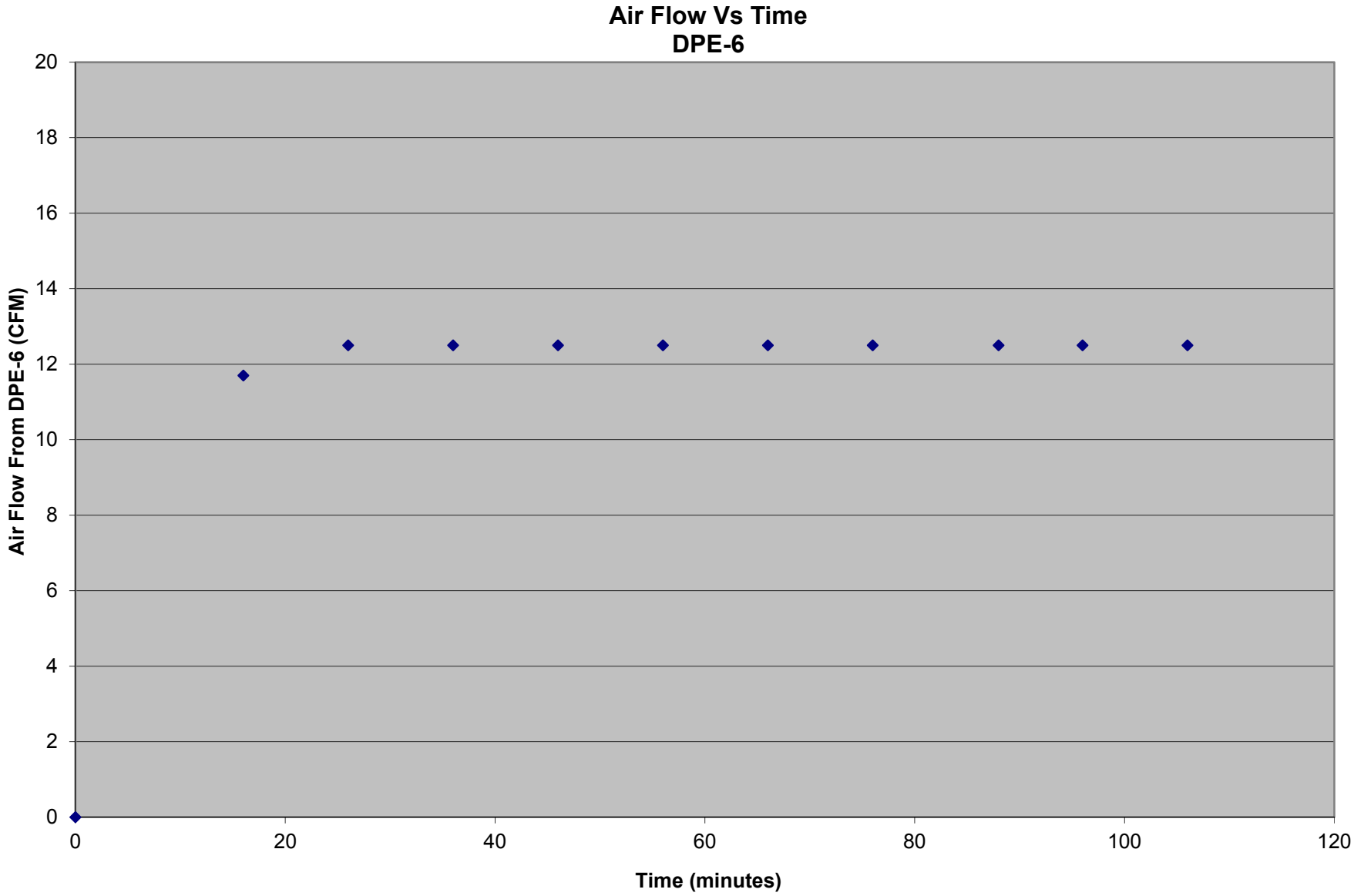

Groundwater Distance Drawdown Graph
DPE-1, DPE-4, and DPE-5
27.2 feet ≈ 0 drawdown
0
1
2
3
4
5
6
7
8
Drawdown (ft)wn
0.1
1
10
100
Distance from Wells (ft)
DPE-8
DPE-7
Test Wells
All Data
DPE-2
Log. (All Data)
y = -1.237ln(x) + 4.0873
R² = 0.9993

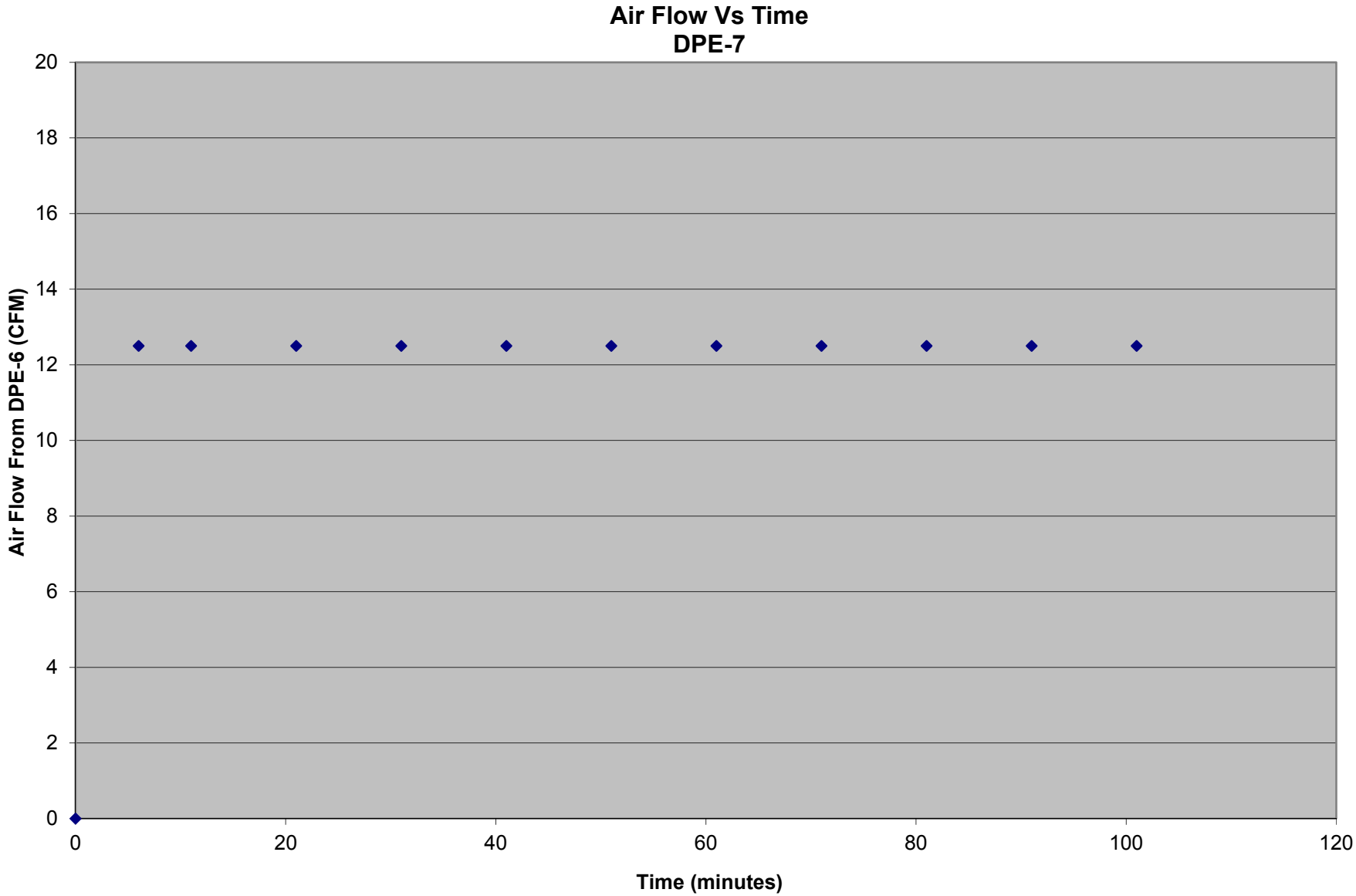

Air Distance Vacuum Graph
DPE-1, DPE-4, and DPE-5
23.7 feet ≈ 0 vacuum
0
10
20
30
40
50
60
70
80
90
Vacuum (in water)
0.1
1
10
100
Distance from Wells (ft)
y = -14.91ln(x) + 47.216
R² = 0.9998
DPE-8
DPE-7
Test Wells
All Data
Log. (All Data)


Air Flow Vs Time
DPE-3
Air Flow From DPE-3 (CFM)
Time (minutes)
y = 0.0702x + 2.2295
R² = 0.9977
0
2
4
6
8
10
12
14
0
20
40
60
80
100
120
140
160


Air Flow Vs Vacuum
DPE-3
y = 1.8053x - 9.1342
R² = 0.9861
Air Flow From DPE-3 (CFM)
Vacuum (inHg)
0
2
4
6
8
10
12
14
16
18
20


Water Production Rate
DPE-3
Water Production Rate (gpm)
3.3
2.8
2.3
1.8
1.3
0.8
0
5
10
15
20
25
30
35
40
45
Time (minutes)
y = 0.0333x + 1.5667
R² = 1


Air Flow Vs Time
DPE-6
Air Flow From DPE-6 (CFM)
20
18
16
14
12
10
8
6
4
2
0
0
20
40
60
80
100
120
Time (minutes)

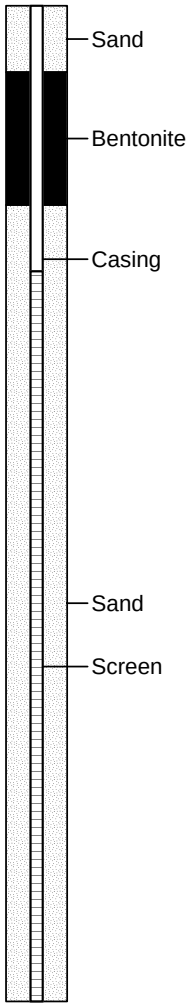

Air Flow Vs Time
DPE-7
Air Flow From DPE-6 (CFM)
20
18
16
14
12
10
8
6
4
2
0
0
20
40
60
80
100
120
Time (minutes)

CONVERSE CONSULTANTS 2738 West College Avenue State College, PA 16801	WELL LOG	BORING NO.: MW-1R
PROJECT: FORMER ROSEMERGY'S CONVENIENCE STORE LOCATION: Hawley, PA		SHEET 1 OF 1
CLIENT: Lochglen LP		PROJ. NO.: 11-17788-02
BORING CONTRACTOR: Odyssey Environmental, Inc. DRILLING RIG:		ELEVATION: 1,290 +/-

GROUNDWATER DATA					Boring	Screen	Casing				DATUM: Feet AMSL
DATE	TIME	DEPTH	CASING	Type	HSA	PVC	PVC				DATE START: 10/29/13
10/30/13	8:12am	12.11'	14.61'	Dia.	8"	2"	2"				DATE FINISH: 10/29/13
				Length	15'	11'	4'				DRILLER: Zach & Luke
				Slot		0.01"					CONVERSE REP.: OBC

Depth in Feet	Sample No.	Blow Counts	Recovery In Feet	PID Readings	USCS	DESCRIPTION
0						See soil log of MW-1.
1						
2						
3						Soil had a strong petroleum odor and registered above 10 on the PID. Soil was containerized for proper disposal.
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						End of boring.
16						
17						
18						
19						
20						

MW-1R



Converse Consultants
2738 West College Avenue
State College, PA 16801
814-234-3223

WELL NUMBER MW-5

CLIENT Woodloch
PROJECT NAME Rosemergy
PROJECT NUMBER 11-17788-03
PROJECT LOCATION The Market at Woodloch
DATE STARTED 2/10/15 **COMPLETED** 2/10/15
GROUND ELEVATION 1295 ft **HOLE SIZE** 2 inches
DRILLING CONTRACTOR Odyssey Environmental
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger 2"
AT TIME OF DRILLING ---
LOGGED BY TJT **CHECKED BY** OBC
AT END OF DRILLING ---
NOTES PID readings > 10. Cuttings drummed and disposed of properly.
AFTER DRILLING --- No water level was taken

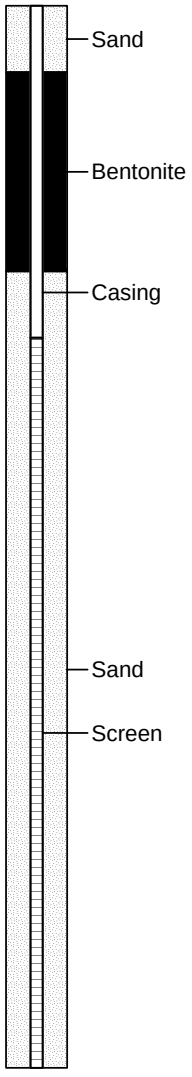
DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM
0.0						Casing Top Elev: 1295 (ft) Casing Type: Sand
				Gravel Fill and Asphalt		Concrete Seal
				1.2	1293.8	
		SP		(SP) GRAVELLY SAND, dry, light brown		Bentonite Seal
				2.0	1293.0	
2.5		CL		(CL) GRAVELLY SANDY CLAY, dry, light brown		
				3.4	1291.6	
		CL-ML		(CL-ML) SILTY CLAY, wet, olive-brown		
5.0				5.0	1290.0	
		CL		(CL) CLAY, saturated, olive-brown		
				6.6	1288.4	
7.5		CL		(CL) SANDY CLAY WITH GRAVEL, saturated, grayish-brown		Screen
10.0						
12.5				12.3	1282.7	
		ML		(ML) GRAVELLY SILT, wet but not saturated, yellowish-brown		
				14.0	1281.0	
		ML		(ML) CLAYEY SILT WITH GRAVEL, dry, yellow-brown to dark brown		
				14.7	1280.3	

Bottom of borehole at 14.7 feet.

CONVERSE CONSULTANTS 2738 West College Avenue State College, PA 16801	WELL LOG	BORING NO.: MW-7
PROJECT: FORMER ROSEMERGY'S CONVENIENCE STORE LOCATION: Hawley, PA		SHEET 1 OF 1
CLIENT: Lochglen LP		PROJ. NO.: 11-17788-02
BORING CONTRACTOR: Odyssey Environmental, Inc. DRILLING RIG:		ELEVATION: 1,290 +/-

GROUNDWATER DATA					Boring	Screen	Casing				DATUM: Feet AMSL
DATE	TIME	DEPTH	CASING	Type	HSA	PVC	PVC				DATE START: 10/29/13
10/29/13	3:52pm	Dry	15.62'	Dia.	8"	2"	2"				DATE FINISH: 10/29/13
10/30/13	8:45am	Dry	14.99'	Length	16'	11'	5'				DRILLER: Zach & Luke
				Slot		0.01"					CONVERSE REP.: OBC

Depth in Feet	Sample No.	Blow Counts	Recovery In Feet	PID Readings	USCS	DESCRIPTION
0						ASPHALT.
1	7.1					GRAVEL FILL.
2				0		Silty SAND with gravel, red, dry.
3	7.2					
4				0		Sandy SILT, some gravel, light brown, damp.
5	7.3					
6				0		
7	7.4					
8				0		Silty SAND, some gravel, light brown, damp.
9	7.5					
10				0		
11	7.6					
12				7.2		
13	7.7					Saturated, more sand.
14				13.8		
15	7.8					Damp, cobble.
16						End of boring.
17						
18						
19						
20						



CONVERSE CONSULTANTS
2738 West College Avenue
State College, PA 16801

WELL LOG

BORING NO.: MW-8

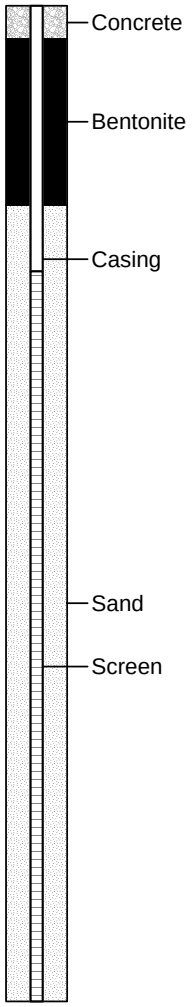
PROJECT: FORMER ROSEMERGY'S CONVENIENCE STORE LOCATION: Hawley, PA
CLIENT: Lochglen LP
BORING CONTRACTOR: Odyssey Environmental, Inc. DRILLING RIG:

SHEET 1 OF 1
PROJ. NO.: 11-17788-02
ELEVATION: 1,290 +/-
DATUM: Feet AMSL
DATE START: 10/28/13
DATE FINISH: 10/28/13
DRILLER: Zach & Luke
CONVERSE REP.: OBC

GROUNDWATER DATA					Boring	Screen	Casing			
DATE	TIME	DEPTH	CASING	Type	HSA	PVC	PVC			
10/28/13	3:52pm	7.76'	14.62'	Dia.	8"	2"	2"			
10/29/13	8:56am	6.82'		Length	5"	11'	4'			
10/30/13	9:01am	6.79'		Slot		0.01"				

Depth in Feet	Sample No.	Blow Counts	Recovery In Feet	PID Readings	USCS	DESCRIPTION
0						ORGANICS.
1	8.1					Brown, silty SAND, damp.
2				0		Light brown, sandy SILT, very damp.
3	8.2					
4				0		
5	8.3					Gravel.
6				0		Silty SAND, some gravel.
7	8.4					
8				0		Saturated.
9	8.5					Rock. Refusal.
10				0		Brown, sandy SILT with clay, damp.
11	8.6					
12				0		
13	8.7					
14				0		
15	8.8					End of boring.
16						
17						
18						
19						
20						

MW-8



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CONVERSE CONSULTANTS
2738 West College Avenue
State College, PA 16801

WELL LOG

BORING NO.: MW-9

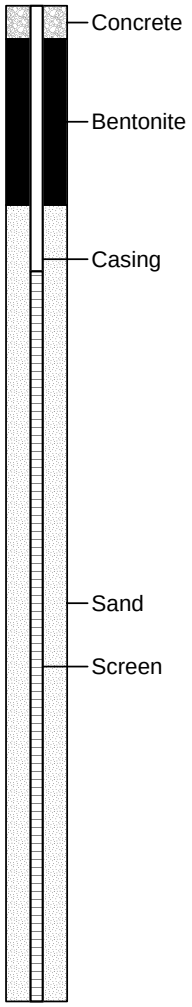
PROJECT: FORMER ROSEMERGY'S CONVENIENCE STORE LOCATION: Hawley, PA
CLIENT: Lochglen LP
BORING CONTRACTOR: Odyssey Environmental, Inc. DRILLING RIG:

SHEET 1 OF 1
PROJ. NO.: 11-17788-02
ELEVATION: 1,290 +/-
DATUM: Feet AMSL
DATE START: 10/29/13
DATE FINISH: 10/29/13
DRILLER: Zach & Luke
CONVERSE REP.: OBC

GROUNDWATER DATA					Boring	Screen	Casing			
DATE	TIME	DEPTH	CASING	Type	HSA	PVC	PVC			
10/29/13	11:38am	14.13'	14.65'	Dia.	8"	2"	2"			
10/30/13	9:20am	5.13'		Length	15'	11'	4'			
				Slot		0.01"				

Depth in Feet	Sample No.	Blow Counts	Recovery In Feet	PID Readings	USCS	DESCRIPTION
0						ORGANICS.
1	9.1					Dark brown SILT, damp. Gravel, dry.
2				0		Light brown, silty SAND with gravel, very damp.
3	9.2					
4				0		Less damp, reddish-brown.
5	9.3					
6				0		Very damp, saturated.
7	9.4					
8				0		Gravel layer, hard drilling. Dark brown, sandy SILT, with gravel,
9	9.5					Cobble.
10				0		Very dense.damp.
11	9.6					
12				0		
13	9.7					
14				0		
15	9.8					End of boring.
16						
17						
18						
19						
20						

MW-9



07-17-2014 \\Cc-penn\Shared\PROJECTS\2011\11-17788 Rosemergy USTIF site\11-17788-02 Lochgen Workplan\Well Logs\11-17788-02 MW-9.bor

CONVERSE CONSULTANTS 2738 West College Avenue State College, PA 16801	WELL LOG	BORING NO.: MW-10

PROJECT: FORMER ROSEMERGY'S CONVENIENCE STORE LOCATION: Hawley, PA | SHEET 1 OF 1

CLIENT: Lochglen LP | PROJ. NO.: 11-17788-02

BORING CONTRACTOR: Odyssey Environmental, Inc. DRILLING RIG: 7822DT | ELEVATION: 1,290 +/-

DATUM: Feet AMSL

DATE START: 1/21/14

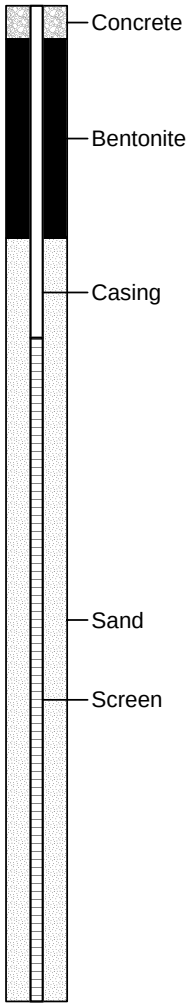
DATE FINISH: 1/21/14

DRILLER: Zach & Luke

CONVERSE REP.: OBC

GROUNDWATER DATA					Boring	Screen	Casing			
DATE	TIME	DEPTH	CASING	Type	HSA	PVC	PVC			
1/21/14	1:35pm	3.02'	14.25'	Dia.	8"	2"	2"			
1/21/14	2:06pm	2.74'		Length	15'	10"	5'			
				Slot		0.01"				

Depth in Feet	Sample No.	Blow Counts	Recovery In Feet	PID Readings	USCS	DESCRIPTION
0					OL	TOP SOIL ORGANICS.
1	10.1					Silty SAND, brown, damp.
2				0		
3	10.2					
4				0		
5	10.3				SM	---more silt.
6				0		
7	10.4					
8				0		---very saturated
9	10.5					
10				0		Sandy SILT, brown, damp, with clay.
11	10.6					
12				0	ML	---hard, dry.
13	10.7					
14				0		
15	10.8					End of boring.
16						
17						
18						
19						
20						



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CONVERSE CONSULTANTS 2738 West College Avenue State College, PA 16801	WELL LOG	BORING NO.: MW-11

PROJECT: FORMER ROSEMERGY'S CONVENIENCE STORE LOCATION: Hawley, PA | SHEET 1 OF 1

CLIENT: Lochglen LP | PROJ. NO.: 11-17788-02

BORING CONTRACTOR: Odyssey Environmental, Inc. DRILLING RIG: 7822DT | ELEVATION: 1,290 +/-

DATUM: Feet AMSL

DATE START: 1/21/14

DATE FINISH: 1/21/14

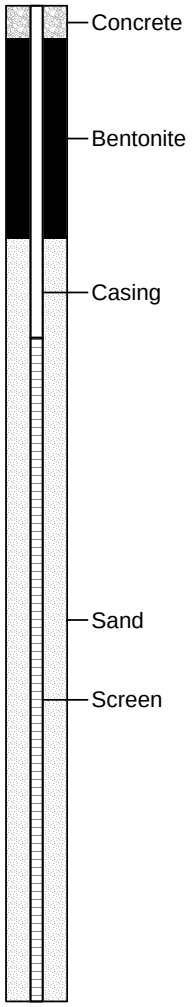
DRILLER: Zach & Luke

CONVERSE REP.: OBC

GROUNDWATER DATA					Boring	Screen	Casing			
DATE	TIME	DEPTH	CASING	Type	HSA	PVC	PVC			
1/21/14	12:59pm	6.32'	14.73'	Dia.	8"	2"	2"			
1/21/14	2:08pm	2.95'		Length	15'	10"	5'			
				Slot		0.01"				

Depth in Feet	Sample No.	Blow Counts	Recovery In Feet	PID Readings	USCS	DESCRIPTION
0					OL	TOP SOIL ORGANICS, damp.
1	11.1					
2				0	ML	Sandy SILT, reddish brown, damp.
3	11.2					
4				0		
5	11.3				CL	Silty CLAY, gray, damp.
6				0		
7	11.4					Sandy SILT, brown, damp.
8				0		
9	11.5					Silty GRAVEL layer.
10				0		
11	11.6				ML	
12				0		---some cobbles.
13	11.7					
14				0		
15	11.8					End of boring.
16						
17						
18						
19						
20						

MW-11



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CONVERSE CONSULTANTS
2738 West College Avenue
State College, PA 16801

WELL LOG

BORING NO.: MW-12

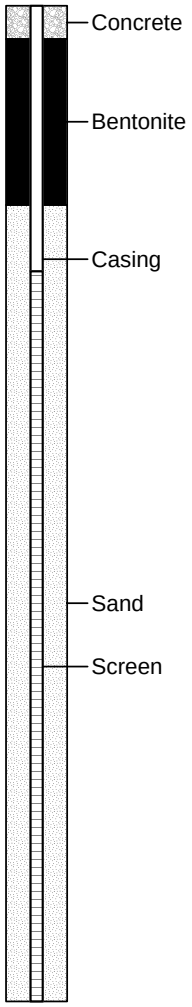
PROJECT: FORMER ROSEMERGY'S CONVENIENCE STORE LOCATION: Hawley, PA
CLIENT: Lochglen LP
BORING CONTRACTOR: Odyssey Environmental, Inc. DRILLING RIG:

SHEET 1 OF 1
PROJ. NO.: 11-17788-02
ELEVATION: 1,290 +/-
DATUM: Feet AMSL
DATE START: 10/28/13
DATE FINISH: 10/28/13
DRILLER: Zach & Luke
CONVERSE REP.: OBC

GROUNDWATER DATA					Boring	Screen	Casing			
DATE	TIME	DEPTH	CASING	Type	HSA	PVC	PVC			
10/29/13	11:38am	14.13'	14.65'	Dia.	8"	2"	2"			
10/30/13	9:20am	5.13'	5.13'	Length	15'	11'	4'			
				Slot		0.01"				

Depth in Feet	Sample No.	Blow Counts	Recovery In Feet	PID Readings	USCS	DESCRIPTION
0						Red GRAVEL, dry.
1	12.1					Silty SAND with gravel, dry.
2				0		Poorly-graded, dry.
3	12.2					SILT.
4				0		Light brown, silty SAND, damp.
5	12.3					
6				0		
7	12.4					Saturated.
8				0		
9	12.5					
10				0		
11	12.6					Dark brown.
12				0		
13	12.7					Hard, dry.
14				0		
15	12.8					End of boring.
16						
17						
18						
19						
20						

MW-12



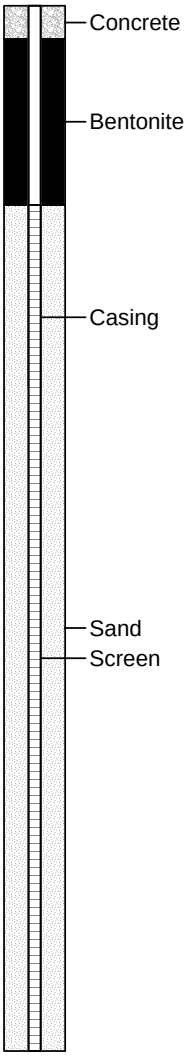
07-17-2014 \\Cc-penn\Shared\PROJECTS\2011\11-17788 Rosemergy USTIF site\11-17788-02 Lochgen Workplan\Well Logs\11-17788-02 MW-12.bor

CONVERSE CONSULTANTS 2738 West College Avenue State College, PA 16801	WELL LOG	BORING NO.: MW-13
PROJECT: FORMER ROSEMERGY'S CONVENIENCE STORE LOCATION: Hawley, PA		SHEET 1 OF 1
CLIENT: Lochglen LP		PROJ. NO.: 11-17788-02
BORING CONTRACTOR: Odyssey Environmental, Inc. DRILLING RIG:		ELEVATION:

GROUNDWATER DATA					Boring	Screen	Casing				DATUM:
DATE	TIME	DEPTH	CASING	Type	HSA	PVC	PVC				DATE START: 4/17/14
4/17/14		10'		Dia.	4"	2"	2"				DATE FINISH: 4/17/14
				Length	15.75'						DRILLER: Zach
				Slot							CONVERSE REP.: MK

Depth in Feet	Sample No.	Blow Counts	Recovery In Feet	PID Readings	USCS	DESCRIPTION
0						Dark brown SILT with some gravel fill
2	13.1		4.0/5.0			Gray silty CLAY with brown mottles ---moist ---2 inches gray sandstone cobble
4						Brown SILT with gray and red mottles ---dry
5				0		
7	13.2		5.0/5.0			
9						Gray clayey SILT with some fine sand ---wet
10				0		
11						Brown SILT with red and gray mottles ---dry
12	13.3		5.0/5.0			
13						Brown silty SAND and gravel ---dry
15				0		---wet
17	13.4		4.0/5.0			
20						

MW-13



CONVERSE CONSULTANTS
2738 West College Avenue
State College, PA 16801

WELL LOG

BORING NO.: MW-14

PROJECT: FORMER ROSEMERGY'S CONVENIENCE STORE LOCATION: Hawley, PA

SHEET 1 OF 1

CLIENT: Lochglen LP

PROJ. NO.: 11-17788-02

BORING CONTRACTOR: Odyssey Environmental, Inc. DRILLING RIG:

ELEVATION:

DATUM:

DATE START: 4/17/14

DATE FINISH: 4/17/14

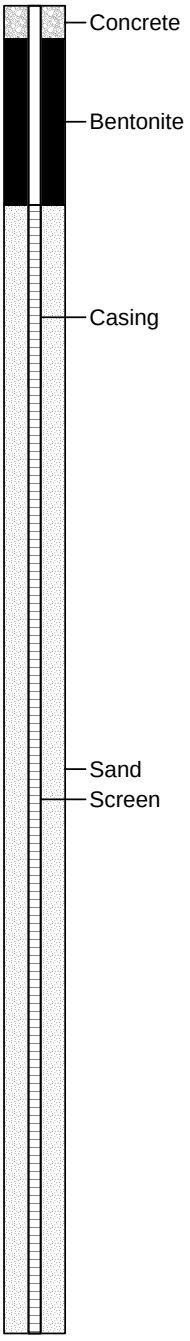
DRILLER: Zach

CONVERSE REP.: MK

GROUNDWATER DATA					Boring	Screen	Casing			
DATE	TIME	DEPTH	CASING	Type	HSA	PVC	PVC			
4/17/14		15-18'		Dia.	4"	2"	2"			
				Length	21'					
				Slot						

Depth in Feet	Sample No.	Blow Counts	Recovery In Feet	PID Readings	USCS	DESCRIPTION
0						Dark brown, silty fine SAND
						Fine SANDSTONE
1						Clayey SILT ---some brown and gray mottling
2	14.1		2.0/5.0			
3						
4						Gray, fine SANDSTONE
5				0		Dark brown SILT ---some red mottling
6						
7	14.2		5.0/5.0			
8						Dark brown SILT with some gravel ---red and gray mottling,dark brown, some gravel ---rock at 14' --moist ---water at 15 to 18'
9						
10				0		
11						
12	14.3		4.0/5.0			
13						
14						
15				0		
16						
17	14.4					
18						
19						
20						

MW-14



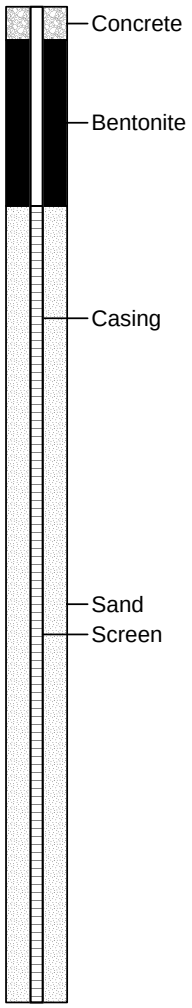
CONVERSE CONSULTANTS 2738 West College Avenue State College, PA 16801	WELL LOG	BORING NO.: MW-15

PROJECT: FORMER ROSEMERGY'S CONVENIENCE STORE LOCATION: Hawley, PA | SHEET 1 OF 1
CLIENT: Lochglen LP | PROJ. NO.: 11-17788-02
BORING CONTRACTOR: Odyssey Environmental, Inc. DRILLING RIG: | ELEVATION:

GROUNDWATER DATA					Boring	Screen	Casing				DATUM:
DATE	TIME	DEPTH	CASING	Type	HSA	PVC	PVC				DATE START: 4/17/14
4/17/14		10'		Dia.	4"	2"	2"				DATE FINISH: 4/17/14
				Length	15'						DRILLER: Zach
				Slot							CONVERSE REP.: MK

Depth in Feet	Sample No.	Blow Counts	Recovery In Feet	PID Readings	USCS	DESCRIPTION
0						Dark brown SILT ---some sandstone cobbles
1						Brown and gray mottled CLAYEY SILT
2	15.1		4.0/5.0			
3						Reddish-brown SILT
4						
5				0		
6						
7						Brown fine SAND with gravel and cobbles ---wet to moist
8	15.2		5.0/5.0			
9						
10				0		
11						
12						
13	15.3		3.0/5.0			
14						
15						
16						
17						
18						
19						
20						

MW-15



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CONVERSE CONSULTANTS 2738 West College Avenue State College, PA 16801	WELL LOG	BORING NO.: MW-16

PROJECT: FORMER ROSEMERGY'S CONVENIENCE STORE LOCATION: Hawley, PA | SHEET 1 OF 1

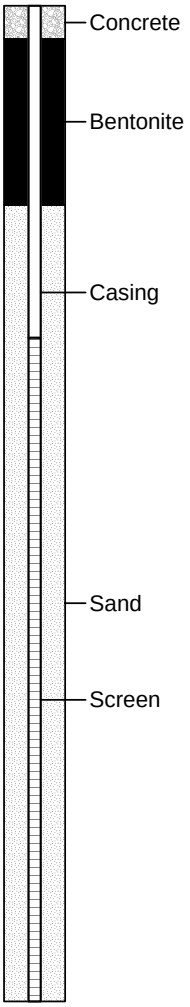
CLIENT: Lochglen LP | PROJ. NO.: 11-17788-02

BORING CONTRACTOR: Odyssey Environmental, Inc. DRILLING RIG: | ELEVATION:

GROUNDWATER DATA					Boring	Screen	Casing				DATUM:
DATE	TIME	DEPTH	CASING	Type	HSA	PVC	PVC				DATE START: 4/16/14
4/16/14	4:45pm	7'		Dia.	4"	2"	2"				DATE FINISH: 4/16/14
4/16/14	4:55pm	10'		Length	15'						DRILLER: Zach
				Slot							CONVERSE REP.: MK

Depth in Feet	Sample No.	Blow Counts	Recovery In Feet	PID Readings	USCS	DESCRIPTION
0	16.1		2.0/5.0			Brown, silty, fine sandy GRAVEL ---dry
5	16.2		2.5/5.0	0		Brown, silty, fine SAND ---dry Brown, fine SAND ---wet Brown, sandy SILT ---dry
10	16.3		3.0/5.0	0		Brown, fine, sandy GRAVEL ---wet Fine, silty SAND, some gravel pockets of clay, brown with some green and red mottling
15						End of boring
20						

MW-16



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Soil Boring # 008; Soil Boring Log

Bluestone Environmental Inc.,				SOIL BORING LOGS	
Project: Rosemergy's Convenient Store				**Date Started**: 13 March 2012	
Client: Ms. Jan Hoadley				**Date Finished**: 13 March 2012	
Purpose: Site Characterization					
Contractor: Bluestone Environmental Inc.,				Boring Number: **SB - 008**	
Driller: Odyssey Environmental				**Job Number**:	
Geologist: David Swetland				Sheet: **1**	
Time Log	**Begin**	**Finish**	**Depth**	S.W.L. TOC/GL Elevation TOC Surface	
	1040	1110	15' ft bgs		

Depth (feet)	**Sample/ Sleeve #**	**Blow Counts**	**Visual Log Description**	**Lithologic Description**	**Notes**
0 1 2 3 4 5	1		Recovered: low recovery PID : 0.9 ppm @ 6'' of sub base	0-5' bgs mostly gravel and stone @ 6'' of sub base, brown-silty sand/ gravel;	
5 6 7 8 9 10	2		Recovered: 40% PID: 1498 ppm @10', 1291 @ 15'	5'-10' bgs Top 2' gray/brown wet slity sand, bottom half of sand more silty and wet	
10 11 12 13 14 15	3		Recovered: Full PID: 1472 ppm @ 10'-12'.5'', 240 ppm @12'.5''-15'	10'-12'.5''- sandy, gray wet; 12'.5"-15' - Glacial fill, bottom slity and wet Pebble size: ¾ to 1mm	Sampled @ 5-7' bgs
15 16 17 18 19 20					

Soil Boring # 009; Soil Boring Log

Bluestone Environmental Inc.,	SOIL BORING LOGS
Project: Rosemergy's Convenient Store	**Date Started**: 13 March 2012
Client: Ms. Jan Hoadley	**Date Finished**: 13 March 2012
Purpose: Site Characterization	
Contractor: Bluestone Environmental Inc.,	Boring Number: **SB - 009**
Driller: Odyssey Environmental	**Job Number**:
Geologist: David Swetland	Sheet: **1**

Time Log	Begin	Finish	Depth		
	1110	1145	15' ft bgs	S.W.L. Elevation TOC	TOC/GL Surface

Depth (feet)	Sample/ Sleeve #'s	Blow Counts	Visual Log Description	Lithologic Description	Notes
0 1 2 3 4 5	1		Recovered: 3" PID : 720 ppm @ 2-4'	0-6" asphalt sub base @ 6''-3' red brown sand @ 3'-5' silty gray sand	
5 6 7 8 9 10	2		Recovered: 5'.5" PID: 1779 ppm @ 0-2', 1750 ppm @ 2-5'	5-7' silty sand, wet 7-10' brown, sandy, small wet gravel	
10 11 12 13 14 15 16 17 18 19 20	3		PID: 1410 ppm @ 15-17', 35 ppm @ 18-20'	10-12' - very wet, brown and sandy 12-13' - sandy, wet, brown with rock 13-15' - brown, silty glacial till	Sample collected @ 10' bgs

Soil Boring # 010; Soil Boring Log

Bluestone Environmental Inc.,				SOIL BORING LOGS	
Project: Rosemergy's Convenient Store				**Date Started**: 13 March 2012	
Client: Ms. Jan Hoadley				**Date Finished**: 13 March 2012	
Purpose: Site Characterization					
Contractor: Bluestone Environmental Inc.,				Boring Number: **SB - 010**	
Driller: Odyssey Environmental				**Job Number**:	
Geologist: David Swetland				Sheet: **1**	
Time Log	**Begin**	**Finish**	**Depth**	S.W.L. Elevation TOC	TOC/GL Surface
	1145	1225	15' feet bgs		

Depth (feet)	**Sample/ Sleeve #'s**	**Blow Counts**	**Visual Log Description**	**Lithologic Description**	**Notes**
0 1 2 3 4 5	1		Recovered: 40" PID: 1380 ppm @ 4-5'	0-6"- sub base/asphalt 6"-4'- reddish glacial till; small, hard, dry gravel 4'-5'- sandy brown/gray, wet	
5 6 7 8 9 10	2		Recovered: 40" PID: 1400 ppm @ 5-7' and 1505 ppm @ 7-10'	5-7'- very wet, sandy, gray; some gravel 7-10' - brownish gray, some gravel, sandy silt, till	
10 11 12 13 14 15	3		Recovered: 4' PID: 650 ppm @ 10.6"-13', 370 ppm @ 14-15'	10-10.6" - sandy, wet, gravel 10.6"-13' - hard 13-14'- loose sandy gray/brown 14-15'- brownish till, gravel, some clay, sandy	Sample collected @ 8-10' bgs @ 1210
15 16 17 18 19 20					

Soil Boring # 011; Soil Boring Log

Bluestone Environmental Inc.,				SOIL BORING LOGS	
Project: Rosemergy's Convenient Store				**Date Started**: 13 March 2012	
Client: Ms. Jan Hoadley				**Date Finished**: 13 March 2012	
Purpose: Site Characterization					
Contractor: Bluestone Environmental Inc.,				Boring Number: **SB - 011**	
Driller: Odyssey Environmental				**Job Number**:	
Geologist: David Swetland				Sheet: **1**	
Time Log	**Begin**	**Finish**	**Depth**	S.W.L. TOC/GL Elevation TOC Surface	
	1225	1250	15' feet bgs		

Depth (feet)	**Sample/ Sleeve #'s**	**Blow Counts**	**Visual Log Description**	**Lithologic Description**	**Notes**
0 1 2 3 4 5	1		Recovered: 36" PID: 1480 ppm @ 3'-5'	0-6" – asphalt, sub base material 6"- 3' – brownish till, small gravel, hard 3'-5' – grayish/brown sandy silt, some clay; small amount of organic material; most/wet	
5 6 7 8 9 10	2		Recovered: 30" PID: 1580 ppm @ 5-6' and 826 ppm @ 6-10'	5-6' – silty, sandy, gray; some gravel, wet 6-10' – brownish, sandy till; hard, wet	
10 11 12 13 14 15	3		Recovered: 40" PID: 1151 ppm @ 0-2.5' and 220 ppm @ 2.5'-5'	10'-12'.5" – brownish/gray till, hard, sandy, wet with some gravel 12'.5"-15' – brownish/gray till, hard, wet	Sample collected @ 6'-8' bgs @ 1235
15 16 17 18 19 20					

Soil Boring # 012; Soil Boring Log

Bluestone Environmental Inc.,				SOIL BORING LOGS	
Project: Rosemergy's Convenient Store				**Date Started**: 13 March 2012	
Client: Ms. Jan Hoadley				**Date Finished**: 13 March 2012	
Purpose: Site Characterization					
Contractor: Bluestone Environmental Inc.,				Boring Number: **SB - 012**	
Driller: Odyssey Environmental				**Job Number**:	
Geologist: David Swetland				Sheet: **1**	
Time Log	**Begin**	**Finish**	**Depth**	S.W.L. Elevation TOC	TOC/GL Surface
	1250	1335	15' feet bgs		

Depth (feet)	**Sample/ Sleeve #'s**	**Blow Counts**	**Visual Log Description**	**Lithologic Description**	**Notes**
0 1 2 3 4 5	1		Recovered: 40" PID: 355 ppm @ 3'.5"-5'	0-1' – asphalt sub bsae 1'-3.5' – brownish gray till, some gravel 3'.5"-5' – dry down to 4.5"-5'	
5 6 7 8 9 10	2		Recovered: 36" PID: 1060 ppm @ 5'-7'.5" and 1430 ppm @ 7'.5"-10'	5'-7'.5" – grayish, silty, sandy, wet, some gravel 7'.5"-10' – grayish, brownish till, silt, sandy, wet	
10 11 12 13 14 15	3		Recovered: 40" PID: 152 ppm @ 10'-12'.5" and 10 ppm @	10'-11'.5" – grayish brown, silty sand with gravel, wet 11.5"-15' – brownish till with gravel, wet	Sample collected @ 8-10 bgs @1310
15 16 17 18 19 20					

Soil Boring # 013; Soil Boring Log

Bluestone Environmental Inc.,				SOIL BORING LOGS	
Project: Rosemergy's Convenient Store				**Date Started**: 13 March 2012	
Client: Ms. Jan Hoadley				**Date Finished**: 13 March 2012	
Purpose: Site Characterization					
Contractor: Bluestone Environmental Inc.,				Boring Number: **SB - 013**	
Driller: Odyssey Environmental				**Job Number**:	
Geologist: David Swetland				Sheet: **1**	
Time Log	**Begin**	**Finish**	**Depth**	S.W.L. Elevation TOC	TOC/GL Surface
	-	-	15' feet bgs		

Depth (feet)	**Sample/ Sleeve #'s**	**Blow Counts**	**Visual Log Description**	**Lithologic Description**	**Notes**
0 1 2 3 4 5	1		Recovered: 30" PID: 194 ppm @ 0.6"-5'	0-6" – asphalt sub bsae 6"-5' – reddish till, some gravel, wet @ 4.5'	
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5 6 7 8 9 10	2		Recovered: 40" PID: 1720 ppm @ 5-7.5" and 1490 ppm @ 7.5"-10'	5'-7'.5" – sandy till, brownish gray 7'.5"-10' – silty clay, somce sand, reddish brown	
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10 11 12 13 14 15	3		Recovered: 54" PID: 485 ppm @ 10'-12'.5" and 260 ppm @ 12'.5"-15'	10'-12'.5" – wet silty till, brownish, gravel, some sand and clay 12'.5"-15' – wet silty till, brownish, some gravel, less sand, clay tightly packed	Sample collected @ 5'-7' bgs
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15 16 17 18 19 20					
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Soil Boring # 014; Soil Boring Log

Bluestone Environmental Inc.,				SOIL BORING LOGS	
Project: Rosemergy's Convenient Store				**Date Started**: 13 March 2012	
Client: Ms. Jan Hoadley				**Date Finished**: 13 March 2012	
Purpose: Site Characterization					
Contractor: Bluestone Environmental Inc.,				Boring Number: **SB - 014**	
Driller: Odyssey Environmental				**Job Number**:	
Geologist: David Swetland				Sheet: **1**	
Time Log	**Begin**	**Finish**	**Depth**	S.W.L. TOC/GL Elevation TOC Surface	
	1350	1420	15' feet bgs		

Depth (feet)	**Sample/ Sleeve #'s**	**Blow Counts**	**Visual Log Description**	**Lithologic Description**	**Notes**
0 1 2 3 4 5	1		Recovered: 36" PID: 11 ppm @ 3'.5"-5'	0-6" – sub base/asphalt 6"-3'.5" – reddish till, stone, gravel 3'.5"-5' – grayish/brown, sandy, stone, gravel	
5 6 7 8 9 10	2		Recovered: 48" PID: 1300 ppm @ 5'-7'.5" and 540 ppm @ 7'.5"-10'	5'-7'.5" – brownish till, sandy, silt-less 7'.5"-10' – brownish till, less sandy, more silt and clay	
10 11 12 13 14 15	3		Recovered: 40" PID: 125 ppm @ 10'-12' and 17ppm @ 12'.5"-15'	10'-12' - brownish till, tight silt, clay, wet 12'-12.5 – rock, sandstone, light gray color 12'.5"-15 – sandy, wet, some silt	Sample collected @ 5'-7' bgs
15 16 17 18 19 20					

Soil Boring # 015; Soil Boring Log

Bluestone Environmental Inc.,				SOIL BORING LOGS	
Project: Rosemergy's Convenient Store				**Date Started**: 13 March 2012	
Client: Ms. Jan Hoadley				**Date Finished**: 13 March 2012	
Purpose: Site Characterization					
Contractor: Bluestone Environmental Inc.,				Boring Number: **SB - 015**	
Driller: Odyssey Environmental				**Job Number**:	
Geologist: David Swetland				Sheet: **1**	
Time Log	**Begin**	**Finish**	**Depth**	S.W.L. TOC/GL Elevation TOC Surface	
	1420	1445	15' feet bgs		

Depth (feet)	**Sample/ Sleeve #'s**	**Blow Counts**	**Visual Log Description**	**Lithologic Description**	**Notes**
0 1 2 3 4 5	1		Recovered: 36" PID: 5 ppm @ 3'.5"-5'	0-6" – sub base, asphalt 6"-3'.5" – reddish till, gravel, some silt 3'.5"-5' – grayish/brown, sandy silt, some gravel	
5 6 7 8 9 10	2		Recovered: 48" PID: 0.0 ppm @ 5'-6'.5" and 0.4 ppm @ 6'.5"-10'	5'-6'.5" – wet, sandy, silt, some gravel 6'.5"-10' – brownish/gray till with silt, sand, and hard, wet clay	
10 11 12 13 14 15	3		Recovered: 60" PID: 0 ppm @ 10-13' and 0.4 ppm @ 13'-15'	10'-13' – brownish/reddish till, gravel, some dry sand 13'-15' – brownish till, some silt, clay, little sand	Sample collected @ 5'-7' bgs @ 1440
15 16 17 18 19 20					

Soil Boring # 016; Soil Boring Log

Bluestone Environmental Inc.,				SOIL BORING LOGS
Project: Rosemergy's Convenient Store				**Date Started**: 13 March 2012
Client: Ms. Jan Hoadley				**Date Finished**: 13 March 2012
Purpose: Site Characterization				
Contractor: Bluestone Environmental Inc.,				Boring Number: **SB - 016**
Driller: Odyssey Environmental				**Job Number**:
Geologist: David Swetland				Sheet: **1**
Time Log	**Begin**	**Finish**	**Depth**	S.W.L. TOC/GL Elevation TOC Surface
	1445	1520	15' feet bgs	

Depth (feet)	**Sample/ Sleeve #'s**	**Blow Counts**	**Visual Log Description**	**Lithologic Description**	**Notes**
0 1 2 3 4 5	1		Recovered: 30" PID:569 ppm @ 4'.5" bgs	0-1' – asphalt sub base 1'-3'.5" brownish/reddish till, gravel, some sand, dry 3'.5"-5' – gray/brown sand, silt, little clay, wet	
5 6 7 8 9 10	2		Recovered: 40" PID:1382 ppm @ 5-7'.5" bgs and 1556 ppm @ 7'.5"-10' bgs	5'-7'.5" gray/brownish, silty, sand, wet, some gravel 7'.5"-10' – brownish till, some sand @ 4', wet silt and tight clay material	
10 11 12 13 14 15	3		Recovered: 40" PID:1504 ppm @ top, 225 ppm @ bottom, 0-5' bgs	10-15' – brownish till, sandy silt dry/tight	Sample collected @ 8'-10' bgs @ 1515
15 16 17 18 19 20					

Soil Boring # 017; Soil Boring Log

Bluestone Environmental Inc.,				SOIL BORING LOGS	
Project: Rosemergy's Convenient Store				**Date Started**: 13 March 2012	
Client: Ms. Jan Hoadley				**Date Finished**: 13 March 2012	
Purpose: Site Characterization					
Contractor: Bluestone Environmental Inc.,				Boring Number: **SB - 017**	
Driller: Odyssey Environmental				**Job Number**:	
Geologist: David Swetland				Sheet: **1**	
Time Log	**Begin**	**Finish**	**Depth**	S.W.L. Elevation TOC	TOC/GL Surface
	1520	1600	15' feet bgs		

Depth (feet)	Sample/ Sleeve #'s	Blow Counts	Visual Log Description	Lithologic Description	Notes
0 1 2 3 4 5	1		Recovered: 30" PID: 384 ppm @ 4'-5' bgs	0-1' – asphalt sub base material 1'-4' – reddish till with gravel silt, some sandy stone 4'-5' – gray/brownish sandy silt	
5 6 7 8 9 10	2		Recovered: 40" PID: 1635 ppm @ 5'-7'.5" bgs and 1889 ppm @ 7'.5"-10' bgs	5'-7'.5" – wet, sandy, more silt, loose material; grayish/brown 7'.5"-10 – wet, sandy, more silt/clay/tight material	
10 11 12 13 14 15	3		Recovered: 36" PID: 684 ppm @ 10'-13'.5" and 164 ppm @ 13'.5"-15' bgs	10'-13'.5" – brownish, wet, sandy/silt till with clay 13'.5"-15' – brownish wet fill, tight with clay	Sampled @ 8'-10' @ 1545
15 16 17 18 19 20					

Soil Boring # 018; Soil Boring Log

Bluestone Environmental Inc.,				SOIL BORING LOGS
Project: Rosemergy's Convenient Store				**Date Started**: 14 March 2012
Client: Ms. Jan Hoadley				**Date Finished**: 14 March 2012
Purpose: Site Characterization				
Contractor: Bluestone Environmental Inc.,				Boring Number: **SB - 018**
Driller: Odyssey Environmental				**Job Number**:
Geologist: David Swetland				Sheet: **1**
Time Log	**Begin**	**Finish**	**Depth**	S.W.L. TOC/GL Elevation TOC Surface
	0800	0830	15' feet bgs	

Depth (feet)	Sample/ Sleeve #'s	Blow Counts	Visual Log Description	Lithologic Description	Notes
0 1 2 3 4 5	1		Recovered: 40" PID: 184 ppm @ 3'.5"-5"	0-6" – sub base asphalt 6"-3'.5" – reddish till, dry, gravel 3'.5"-5' – grayish/brown, sandy, some silt, clay, wet @ 4'.5"	Changed over geo-probe to larger boring
5 6 7 8 9 10	2		Recovered: 54" PID: 1265 ppm @ 5'-7'.5" bgs and 2704 @ 7'.5"-10' bgs	5'-7'.5" – brownish gray sand, silty, clay; wet 7'.5"-10' – brownish gray sand, silt, clay, tight and wet	
10 11 12 13 14 15	3		Recovered: 60" PID: 1960 ppm @ 10'-12'.5" bgs and 20.1"	10'-12'.5" – brownish/gray sand, silt, clay, wet tight 12'.5"-15' – brownish till, some gravel	Sample collected @ 0815 @ 8'-10'bgs
15 16 17 18 19 20					

Soil Boring # 019; Soil Boring Log

Bluestone Environmental Inc.,				SOIL BORING LOGS	
Project: Rosemergy's Convenient Store				**Date Started**: 14 March 2012	
Client: Ms. Jan Hoadley				**Date Finished**: 14 March 2012	
Purpose: Site Characterization					
Contractor: Bluestone Environmental Inc.,				Boring Number: **SB - 019**	
Driller: Odyssey Environmental				**Job Number**:	
Geologist: David Swetland				Sheet: **1**	
Time Log	**Begin**	**Finish**	**Depth**	S.W.L. TOC/GL Elevation TOC Surface	
	0830	0850	15' feet bgs		

Depth (feet)	**Sample/ Sleeve #'s**	**Blow Counts**	**Visual Log Description**	**Lithologic Description**	**Notes**
0 1 2 3 4 5	1		Recovered: 36" PID: 47.5 ppm @ 0-6" bgs	0-6" – asphalt sub base 6"-3'.5" – reddish till, gravel, some silt 3'.5"-5' – black/gray sand, moist, some silt	In front of building door
5 6 7 8 9 10	2		Recovered: 56" PID: 2806 ppm @ 5'-7'.5" bgs and 2325 ppm @ 7'.5"-10' bgs	5'-7'.5" – Gray/brown sand, silt, little clay, some gravel 7'-10' – brownish sand, silt, little clay, some gravel	
10 11 12 13 14 15	3		Recovered: 48" PID: 2348 ppm @ 10'-12' and 704 ppm 12'-15' bgs	10'-12' – brownish sandy, silt, more clay, moist 12'-15' – brownish till, gravel, tight, some sand	Sample collected @ 5'-7' bgs @0840
15 16 17 18 19 20					

Soil Boring # 020; Soil Boring Log

Bluestone Environmental Inc.,				SOIL BORING LOGS	
Project: Rosemergy's Convenient Store				**Date Started**: 14 March 2012	
Client: Ms. Jan Hoadley				**Date Finished**: 14 March 2012	
Purpose: Site Characterization					
Contractor: Bluestone Environmental Inc.,				Boring Number: **SB - 020**	
Driller: Odyssey Environmental				**Job Number**:	
Geologist: David Swetland				Sheet: **1**	
Time Log	**Begin**	**Finish**	**Depth**	S.W.L. TOC/GL Elevation TOC Surface	
	0850	0918	15' feet bgs		

Depth (feet)	**Sample/ Sleeve #'s**	**Blow Counts**	**Visual Log Description**	**Lithologic Description**	**Notes**
0 1 2 3 4 5	1		Recovered: PID: 3121 ppm @ 2'.5"-5'	0-6" – substrate asphalt 6"-2'.5" – reddish till, gravel 2'.5"-5' – grayish/brown sand, silt, some clay' moist at 4'.5" bgs	
5 6 7 8 9 10	2		Recovered: 48" PID: 2817 ppm @ 5'-6' bgs and 2894 ppm @ 6'-10' bgs	5'-6' – grayish/brown sand, silt, some clay 6'-10' – brownish sand, silt, clay, some gravel, moist and wet	
10 11 12 13 14 15	3		Recovered: 36" PID: 1910 ppm @ 10'-14' bgs and 804 ppm @14'-15' bgs	10'-14' – brownish sand, silt, clay, tight gravel, moist 14'-15' – brownish till, tight, some gravel, moist	Sample collected @ 4'-5' bgs @ 0910
15 16 17 18 19 20					

Soil Boring # 021; Soil Boring Log

Bluestone Environmental Inc.,				SOIL BORING LOGS	
Project: Rosemergy's Convenient Store				**Date Started**: 14 March 2012	
Client: Ms. Jan Hoadley				**Date Finished**: 14 March 2012	
Purpose: Site Characterization					
Contractor: Bluestone Environmental Inc.,				Boring Number: **SB - 021**	
Driller: Odyssey				**Job Number**:	
Geologist: David Swetland				Sheet: **1**	
Time Log	**Begin**	**Finish**	**Depth**	S.W.L. Elevation TOC	TOC/GL Surface
	0918	0950	11'.5" feet bgs		

Depth (feet)	**Sample/ Sleeve #'s**	**Blow Counts**	**Visual Log Description**	**Lithologic Description**	**Notes**
0 1 2 3 4 5	1		Recovered: 36" PID: 3289 ppm 2'-5' bgs	0-6" – asphalt sub base 6"-2' – reddish fill, gravel, dry 2'-5' – grayish/brown sandy, silt, some organics; wet @ 4.5 bgs, some gravel	About 15' back from SB-020
5 6 7 8 9 10	2		Recovered: 40" PID: 3317 ppm @ 5'-6' bgs and 2296 ppm @ 6'-10'	5'-6' – grayish brown sandy silt, some gravel 6'-10' – brownish sand, silty clay, very wet, some gravel, tight	
10 11 12 13 14 15	3		Recovered: 12" PID: 2313 ppm @ 10'-11'.5" bgs	10'-11.5" – brownish, sandy, silty, some clay, gravel, wet	Refusal @ 11.5 bgs Sample collected from 5'-7' bgs @0935
15 16 17 18 19 20					

Soil Boring # 022; Soil Boring Log

Bluestone Environmental Inc.,				SOIL BORING LOGS
Project: Rosemergy's Convenient Store				**Date Started**: 14 March 2012
Client: Ms. Jan Hoadley				**Date Finished**: 14 March 2012
Purpose: Site Characterization				
Contractor: Bluestone Environmental Inc.,				Boring Number: **SB - 022**
Driller: Odyssey				**Job Number**:
Geologist: David Swetland				Sheet: **1**
Time Log	**Begin**	**Finish**	**Depth**	S.W.L. TOC/GL Elevation TOC Surface
	0950	1015	16' feet bgs	

Depth (feet)	Sample/ Sleeve #'s	Blow Counts	Visual Log Description	Lithologic Description	Notes
0 1 2 3 4 5	1		Recovered: 36" PID: 3261 ppm @ 4.5 bgs	0-6" – sub base asphalt 6"-2.5' – reddish till, gravel, some sand, dry 2'.5"-5' – grayish/brown sand silt, some clay, wet; @ 4'.5"bgs some gravel	
5 6 7 8 9 10	2		Recovered:36" PID: 3384 ppm @ 0-2'.5" and 1683 ppm @ 2'.5"-5' bgs	5'-10' – gray/brown, wet sand, silt, clay, some gravel	
10 11 12 13 14 15	3		Recovered:10' PID:1730 ppm @ 0-6" bgs	10'-16' – brown sand, silt, more clay' tigh and moist	Recovery refusal @ 11' Sample collected @ 5'-7' bgs @ 1000
15 16 17 18 19 20					

Soil Boring # 023; Soil Boring Log

Bluestone Environmental Inc.,				SOIL BORING LOGS	
Project: Rosemergy's Convenient Store				**Date Started**: 14 March 2012	
Client: Ms. Jan Hoadley				**Date Finished**: 14 March 2012	
Purpose: Site Characterization					
Contractor: Bluestone Environmental Inc.,				Boring Number: **SB - 023**	
Driller: Odyssey				**Job Number**:	
Geologist: David Swetland				Sheet: **1**	
Time Log	**Begin**	**Finish**	**Depth**	S.W.L. TOC/GL Elevation TOC Surface	
	1015	1035	15' feet bgs		

Depth (feet)	**Sample/ Sleeve #'s**	**Blow Counts**	**Visual Log Description**	**Lithologic Description**	**Notes**
0 1 2 3 4 5	1		Recovered: 36" PID: 2614 ppm @0-2'.5" and 2544 @ 4'-5' bgs	0-6" – asphalt sub base 6"-2'.5" – reddish till, geavel, dry, some silt 2'.5"-5' – brownish sand, silt, gravel, some clay, and wet @ 2614ppm	15' west of SB-020 alongside RT. 590
5 6 7 8 9 10	2		Recovered: 40" PID: 2486 @ 2'.5" bgs	0-7'.5" – brownish sand/silt, gravel, some clay	
10 11 12 13 14 15	3		Recovered: 60" PID: 341 ppm @ 0-2" bgs and 56 ppm @ 4'-5' bgs	10'-12' – Brownish, very wet sandy silt with clay; some gravel 12'-14' – brownish till, very tight, some gravel, dry 14'-15' – brownish sandy silt, some clay, wet	Sample collected 5'-7' bgs @1030
15 16 17 18 19 20					

Soil Boring # 024; Soil Boring Log

Bluestone Environmental Inc.,				SOIL BORING LOGS	
Project: Rosemergy's Convenient Store				**Date Started**: 14 March 2012	
Client: Ms. Jan Hoadley				**Date Finished**: 14 March 2012	
Purpose: Site Characterization					
Contractor: Bluestone Environmental Inc.,				Boring Number: **SB - 024**	
Driller: Odyssey				**Job Number**:	
Geologist: David Swetland				Sheet: **1**	
Time Log	**Begin**	**Finish**	**Depth**	S.W.L. TOC/GL Elevation TOC Surface	

Depth (feet)	**Sample/ Sleeve #'s**	**Blow Counts**	**Visual Log Description**	**Lithologic Description**	**Notes**
0 1 2 3 4 5	1		Recovered: 36" PID: 819 ppm @ 3'.5"-5' bgs	0-6" – asphalt sub base 6"-3'.5" – reddish till with gravel, dry 3'.5" – gray/brown sand, silty, some wet clay @4'.5"	
5 6 7 8 9 10	2		Recovered: 36" PID: 3009 ppm @ 0-2'.5" bgs and 2516 ppm @ 2'.5"-5' bgs	5'-7'.5" – brownish gray sand, silt, with some clay; wet, gravel, some organics 7'.5"-10' – brownish/gray sand, silty, some clay and wet gravel	
10 11 12 13 14 15	3		Recovered: 30" PID: 2079 ppm @ 0-2'.5" bgs and 571 ppm @ 2'.5"-5' bgs	10'-12'.5" – brownish sand, silt, some clay, wet, some gravel 12'.5"-15' – brownish till, hard, tight, some gravel, dry	Sample collected @ 5'-7' bgs @ 1045
15 16 17 18 19 20					

Soil Boring # 025; Soil Boring Log

Bluestone Environmental Inc.,				SOIL BORING LOGS	
Project: Rosemergy's Convenient Store				**Date Started**: 14 March 2012	
Client: Ms. Jan Hoadley				**Date Finished**: 14 March 2012	
Purpose: Site Characterization					
Contractor: Bluestone Environmental Inc.,				Boring Number: **SB - 025**	
Driller: Odyssey				**Job Number**:	
Geologist: David Swetland				Sheet: **1**	
Time Log	**Begin**	**Finish**	**Depth**	S.W.L. TOC/GL Elevation TOC Surface	
	1100	1120	15' feet bgs		

Depth (feet)	**Sample/ Sleeve #'s**	**Blow Counts**	**Visual Log Description**	**Lithologic Description**	**Notes**
0 1 2 3 4 5	1		Recovered: 36" PID: 2719 ppm @ 3'.5-5' bgs	0-6" – asphalt sub base 6"-3'.5" – reddish till, gravel, dry 3'.5"-5' – grayish sand, silt, some organics, clay and moist at 4'.5" bgs	
5 6 7 8 9 10	2		Recovered: 36" PID: 3226 ppm @ 0-2'.5" bgs and 2250 ppm @ 7'.5"-10" bgs	5'-7'.5" – grayish brown sand, silty, more clay, some gravel, moist 7'.5"-10' – brownish, sandy silt; tight, more clay, some gravel	
10 11 12 13 14 15	3		Recovered: 48" PID: 2261 ppm @ 0-1' bgs 420 ppm @ 1'-5' bgs	10'-11' – brownish, sandy silt with clay, tight moist, some gravel 11'-15' – brownish till, very tight, dry, some gravel	Sample collected @ 5'-7' bgs @ 1115
15 16 17 18 19 20					

Soil Boring # 026; Soil Boring Log

Bluestone Environmental Inc.,				SOIL BORING LOGS
Project: Rosemergy's Convenient Store				**Date Started**: 14 March 2012
Client: Ms. Jan Hoadley				**Date Finished**: 14 March 2012
Purpose: Site Characterization				
Contractor: Bluestone Environmental Inc.,				Boring Number: **SB - 026**
Driller: Odyssey				**Job Number**:
Geologist: David Swetland				Sheet: **1**
Time Log	**Begin**	**Finish**	**Depth**	S.W.L. TOC/GL Elevation TOC Surface
	1120	1145	15' feet bgs	

Depth (feet)	Sample/ Sleeve #'s	Blow Counts	Visual Log Description	Lithologic Description	Notes
0 1 2 3 4 5	1		Recovered: 24" PID: 13.6 ppm @ 1'-5' bgs	0-1' – asphalt sub base 1'-5' – brownish/red till, gravel; larger sandstone rock, dry	
5 6 7 8 9 10	2		Recovered: 40" PID: 2635 ppm @ 0-2'.5" bgs, and 2791 ppm @ 2'.5" bgs	5'-7'.5" – brownish/gray sand, moist, some silt and clay; gravel 7'.5"-10" – brownish sand, moist, silt and clay; some gravel	
10 11 12 13 14 15	3		Recovered: recovery PID: 2761 ppm @ 0-2' bgs and 50.6 ppm @ 2'-5' bgs	10'-12' – brownish sand, silty, with some clay and gravel; moist 12'-15' – brown till, very tight with some gravel; dry	Sample collected @ 8'-10' bgs 1140
15 16 17 18 19 20					

Soil Boring # 027; Soil Boring Log

Bluestone Environmental Inc.,				SOIL BORING LOGS	
Project: Rosemergy's Convenient Store				**Date Started**: 14 March 2012	
Client: Ms. Jan Hoadley				**Date Finished**: 14 March 2012	
Purpose: Site Characterization					
Contractor: Bluestone Environmental Inc.,				Boring Number: **SB - 027**	
Driller: Odyssey				**Job Number**:	
Geologist: David Swetland				Sheet: **1**	
Time Log	**Begin**	**Finish**	**Depth**	S.W.L. TOC/GL Elevation TOC Surface	
	1145	1200	15' feet bgs		

Depth (feet)	**Sample/ Sleeve #'s**	**Blow Counts**	**Visual Log Description**	**Lithologic Description**	**Notes**
0 1 2 3 4 5	1		Recovered: 40" PID: 39.3 ppm @ 4'-5' bgs	0-6" – asphalt sub base 6"-4' – brownish sand, silt with gravel; hand till dry 4'-5' – brownish/gray sand, less clay, wet at bottom	5 feet east of island in parking lot
5 6 7 8 9 10	2		Recovered: 48" PID: 2694 ppm @ 0-2'.5" bgs and 2601 ppm @ 2'.5"-5' bgs	5'-10' – brownish sand, silt, some clay and gravel; some gravel, wet	
10 11 12 13 14 15	3		Recovered: 40" PID: 2359 ppm @ 0-2' bgs and 369 ppm @ 2'-5'	10'-12' – brown till, tight with some gravel' wet 12'-15' – brownish sandy till, with some clay, wet; drier than top, tight material	Sample collected at 5'-7' bgs @ 1200
15 16 17 18 19 20					

Soil Boring # MW1; Soil Boring Log

Bluestone Environmental Inc.,				SOIL BORING LOGS	
Project: Rosemergy's Convenient Store				**Date Started**: 14 March 2012	
Client: Ms. Jan Hoadley				**Date Finished**: 14 March 2012	
Purpose: Site Characterization					
Contractor: Bluestone Environmental Inc.,				Boring Number: **SB – MW1**	
Driller: Odyssey				**Job Number**:	
Geologist: David Swetland				Sheet: **1**	
Time Log	**Begin**	**Finish**	**Depth**	S.W.L. Elevation TOC	TOC/GL Surface
	1240	1630	14' feet bgs		

Depth (feet)	**Sample/ Sleeve #'s**	**Blow Counts**	**Visual Log Description**	**Lithologic Description**	**Notes**
0 1 2 3 4 5	1		Recovered: 48" PID: 14.8 ppm @ 0-6" bgs	0-6" – asphalt sub base 6"-5' – brown sand with silt, some gravel; slighty moist at 5'	
5 6 7 8 9 10	2		Recovered: 36" PID: 2719 ppm @ 10' bgs	Brownish/gray sand; rock frag @ 8'; moist throughout	Depths not recorded
10 11 12 13 14 15	3		Recovered: refused @ 14' PID: 2261 ppm @ 13' bgs and 19.5 ppm @ 14' bgs	Brown sand, wet throughout	Depths not recorded 1345 – augured to 20' bgs 1430 – spoke to Dave Swetland and decided to set screen @ 15' bgs, up to 3' bgs 1600 – used 2 bags of sand to backfill to 15' bgs and 8 bags of sand to fill well to 2' bgs 1630 – off site; Odyssey completed concrete clean up
15 16 17 18 19 20					

Soil Boring # MW2; Soil Boring Log

Bluestone Environmental Inc.,				SOIL BORING LOGS	
Project: Rosemergy's Convenient Store				**Date Started**: 15 March 2012	
Client: Ms. Jan Hoadley				**Date Finished**: 15 March 2012	
Purpose: Site Characterization					
Contractor: Bluestone Environmental Inc.,				Boring Number: **SB – MW2**	
Driller: Odyssey				**Job Number**:	
Geologist: David Swetland				Sheet: **1**	
Time Log	**Begin**	**Finish**	**Depth**	S.W.L. Elevation TOC	TOC/GL Surface
	0730	0830	20' feet bgs		

Depth (feet)	**Sample/ Sleeve #'s**	**Blow Counts**	**Visual Log Description**	**Lithologic Description**	**Notes**

0 1 2 3 4 5	1		Recovered: 24” PID: 98.4 ppm @ 4’-5’ bgs	0-5” – asphalt sub base 6”-5’ – reddish till with gravel, loose material	In front of store building; soil boring down to 20’ bgs
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5 6 7 8 9 10	2		Recovered: 40” PID: 1187 ppm @ 0-2’.5” bgs and 1725 ppm @ 2’.5”-5’	0-7’.5” – grayish sandy silt, some gravel and clay 7’.5”-10’ – some organic material/wood, wet at top and throughout	
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10 11 12 13 14 15	3		Recovered: 36” PID: 24.5 ppm @ 12’-13’ bgs	10’-12’ – gray/brown sand, silt, some clay, wet 12’-13’ – brown till, tight, some gravel	Refusal @ 13’ bgs w/geo probe; switched rig to augers 0830 – switched rig to augers to drill out well 0915 – drilled to 15’ bgs 0930 – Dave Swetland on site; 0945 – screen set and began sand pack 1030 – sand packed to 2’bgs; used a total of 8 bags of sand 1035 – set up on MW-3 and began auger
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15 16 17 18 19 20					
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Soil Boring # MW6; Soil Boring Log

Bluestone Environmental Inc.,				SOIL BORING LOGS	
Project: Rosemergy's Convenient Store				**Date Started**: 19 March 2012	
Client: Ms. Jan Hoadley				**Date Finished**: 19 March 2012	
Purpose: Site Characterization					
Contractor: Bluestone Environmental Inc.,				Boring Number: **SB – MW6**	
Driller: Odyssey				**Job Number**:	
Geologist: David Swetland				Sheet: **1**	
Time Log	**Begin**	**Finish**	**Depth**	S.W.L. Elevation TOC	TOC/GL Surface
	0830	-	20' feet bgs		

Depth (feet)	**Sample/ Sleeve #'s**	**Blow Counts**	**Visual Log Description**	**Lithologic Description**	**Notes**
0 1 2 3 4 5	1		Recovered: 40" PID: 20.8 ppm @ 1'-1'.5" bgs	0-1' – back fill/ sub base stone 1'-1'.5" – brownish till , tight, some gravel, dry	Location moved 10' west due to possible addition to building in future Geoprobe boring to 15'
5 6 7 8 9 10	2		Recovered: 55" PID: 24.1 ppm @ top of boring, 19.7ppm @ bottom	5'-9'.5" – brownish till, dry, tight, some gravel, fine sand, and stone; gray/brown in color 9'.5"-10' – brown sandy material with small gravel; moist	
10 11 12 13 14 15	3		Recovered: 24" PID: 20.7 ppm@ top of boring and 10.4 @ bottom	10'-15' – brown fine sand; some clay; wet gravel	
15 16 17 18 19 20	4		Recovered: 12' PID: 10.8 ppm @ 0-1bgs	15'-16' – brown fine sand, wet, some gravel	Refusal @ 16' Set well @ 18' bgs w/ 15' of screen

DESIGN SUPPLEMENT DISCUSSION

Of the three alternatives considered, Converse preliminarily identified horizontal extraction wells as the most suitable for the project site. Given the small radius of influence of vertical wells with respect to the desired water level drawdown, each horizontal well can perform the task of multiple vertical extraction wells. They also offer the advantage of minimizing site disturbance and potential loss of use/revenue for the Property owner. In addition, the hydrogeology of the treatment cell dictates that most of the groundwater would enter the cell from the east or south as these are the directions where water levels are higher and less impermeable surface is present. The use of horizontal wells allows inflow from one (or more) of these directions to potentially be cut-off completely at the depth of the horizontal well.

A preliminary horizontal well design based on technical considerations is shown on Figure 11. The selected design utilizes four (4) north-south wells that are closely spaced along the southern boundary to maximize drawdown in the southeastern area of the treatment cell. Pending PENNDOT permits, the wells could be installed under the roadway from a linear trench located south of Route 590. The piping that connects the horizontal wells would be joined within the trench at a depth of approximately 48 inches below grade and the piping run to the shed would be drilled beneath the roadway (at a similar depth of 4 to 5 feet) using the same horizontal drilling methods. Preferably, the horizontal wells and screen will be 2" or 3" PVC installed within blind holes that do not daylight on the Property. If necessary based on drilling conditions, the wells could be installed within holes that daylight north of the building. Numerous alternative horizontal well configurations could be utilized pending PENNDOT access and the analysis of future data. The piping that connects the horizontal wells and treatment shed would be 2" diameter PVC, or similar, material. Predicted drawdown for the preliminary design supplement is shown on Figure 12. Analysis of the preliminary design supplement indicates that a horizontal well system could provide approximately 2 to 4 feet of drawdown (or more) throughout the treatment cell. Access points (manholes) to the horizontal wells shown in the design supplement would be installed at the drilling locations south of the highway.

For the north-south well configuration presented in Figure 4, the installation depths of the horizontal wells would vary from 12 feet below grade at the eastern end to 16 feet below grade at the western end. The variation in depth is required to provide consistent drawdown as the smear zone, like the water table, dips down to the west.

Horizontal wells were considered because:

1. Each horizontal well can take the place of at least five (or more) vertical wells that would be required to provide the same drawdown over the same interval of the treatment cell.
2. Horizontal wells installed north-south across the treatment cell would preclude water from the east and west from entering the bulk of the treatment cell.
3. The geography of the Site provides for the convenient use of horizontal wells - as the Woodloch property across the highway would provide a suitable area from which to install the wells without impacting any of the current operations on the Property.
4. If needed, the wells could be installed to daylight at a treatment location behind the building.

To minimize potential subsurface equipment, the horizontal wells could be evacuated using a shed based vacuum source. The blower specified for the DPE system is not capable of handling the air and soil vapor from both the vertical and horizontal wells. The horizontal wells could be evacuated using a separate blower that is capable of at least 15 inHg and 150 cfm or the DPE blower could be upgraded to a larger positive displacement blower (capable of 15 inHg and 250 scfm) or liquid ring pump that is capable of 26 inHg and 250 cfm. If necessary, the liquid ring system is recommended as the increased vacuum adds functionality with respect to stripping of contaminants adsorbed to soil particles and requires less manipulation to extract water from the maximum depth of the horizontal wells.

With the exception of additional electronic controls, the supplemental system would not require any additional treatment equipment or require any change to the maintenance and monitoring schedule. Installation of the supplemental system would require approximately 3 to 6 weeks plus additional system calibration and start-up time.