

MONITORING REPORT
FOR THE
MARKET STREET CITGO
POP SHOPPE # 124

WILMINGTON, NORTH CAROLINA
FEBRUARY 20, 2013

UST Incident # 32113

Land Use: Commercial by surrounding use.

Prop. Owner: Mid-State Petroleum, Inc.
P. O. Box 16048
High Point, North Carolina 27261
(336) 841-3000

Site Operator: Pop Shoppe # 124
6980 Market Street
Wilmington, North Carolina 28411
(910) 791-4451

Sampling Date: December 20, 2012
January 17, 2013

Nat. of Release: Suspected petroleum surface spillage from diesel dispenser
infiltrating subsurface

Coordinates: Latitude(North): 34 15' 52.95"N
Longitude(West): 77 49' 34.16"W

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ARM Project No.: 0359



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**MONITORING REPORT
FOR THE
Market Street Citgo
Pop Shoppe # 124
WILMINGTON, NORTH CAROLINA
NC INCIDENT # 32113**

**PREPARED FOR:
MID-STATE PETROLEUM, INC.
HIGH POINT, NORTH CAROLINA**

FEBRUARY 20, 2013

1.0 SITE SUMMARY

Extensive soil and groundwater contamination were identified by Sunoco prior to the transfer of the UST system on the site to Mid-State Petroleum, Inc. in 1994. A release of free product was initially discovered in pre-existing monitoring wells MW-7 and MW-17, as part of a semi-annual monitoring event (October 22, 2003) performed by ATC Associates of North Carolina, P.C (ATC). The monitoring event was in reference to NCDENR incident # 10148. As per ATC's February 4, 2004 correspondence to the Division, spills have occurred on the site, and it was their opinion that these surface spills could be the cause of the impacts to the subsurface through infiltration through the concrete covering the parking lot. Following the identification of free product in MW-7, and MW-17, ARM was contracted to conduct a Phase II Limited Site Assessment. Groundwater contamination was identified in several of the wells above State action limits. None of the contaminant concentrations were found to exceed NC gross contaminant limits. In addition, an AFVR was performed at the site on March 11, 2004 to reduce the levels of free phase product in MW-7 and MW-17. Approximately 2,005 gallons of petroleum and petroleum contaminated groundwater were removed from MW-7 and MW-17. MW-17 has been consistently monitored for the presence of free product and recovery efforts have been ongoing. No free product has been identified in any of the other existing monitoring wells. As part of the November 2011 monitoring, a series of soil borings (B-1, B-2, B-3, B-4) were drilled to just above the groundwater table to determine the potential location for the newly installed monitoring wells. The two new Type II replacement monitoring wells AMW-4, and AMW-5 which was constructed at the boring B-2 location, were installed at the request of the Division. The wells were installed in an attempt to delineate the plume to the east, and to potentially discern the diesel plume from the gasoline plume to the south-southeast. Monitoring wells AMW-1 through AMW-5, MW-3R, MW-7, and VMW-8 were sampled as part of that monitoring event and the receptor survey was updated.

Prior to the May 1, 2012 monitoring event, MW-17 was times in February, March, and April of 2012 to verify the absence of free product. All three gauging events revealed no measurable free product. Following the three gauging events of MW-17, and as part of the monitoring event, AMW-1, AMW-2, AMW-3, AMW-5, MW-3R,

MW-7, VMW-8 and MW-17 were sampled for EPA Method 602 plus naphthalene. AMW-4 was not sampled, the well was bailed dry and did not recharge within seven days of collecting other samples. The State requested that AMW-3 be sampled per EPA Method 625 to confirm the previous concentration of bis(2-ethylhexyl)phthalate. The well was gauged, purged, and sampled; however, the recharge volume was not adequate to collect the volume of sample for the 625 analysis. The well did not recharge enough volume within seven days of the initial gauging.

This monitoring event commenced on December 20, 2012 and included the gauging, purging, and sampling of wells AMW-1, AMW-2, AMW-3, AMW-4, AMW-5, MW-3R, MW-7, MW-17 and VMW-8. All wells were sampled for EPA Method 602 plus naphthalene. The State requested that AMW-3 be sampled per EPA Method 625 to confirm the previous concentration of bis(2-ethylhexyl)phthalate. The well was gauged, purged, and sampled; however, the recharge volume was not of adequate to collect the quantity of sample for the 625 analysis which would allow for an accurate dilution factor for reporting accuracy, as was the case with the 10/14/11 data.

Due to the inability of AMW-3 to recharge, an additional Type II monitoring well, AMW-3R, was installed to a depth of 13 feet below the land surface. The new well was installed on January 16, 2013 and is located in the immediate vicinity of AMW-3 to east/northeast. The well was gauged, purged, and allowed to stabilize for 24 hours. The well was again gauged, purged of three well volumes, and sampled. The sample was transported to the laboratory and analyzed per EPA Method 625.

2.0 SUMMARY OF SAMPLING RESULTS

2.1 Summary of Analytical Results and Free Product Thicknesses (Refer to Tables 1-3 and Appendices A and B)

As summarized on the referenced tables, monitoring events have been conducted on 3/19/04, 6/15/04, 1/27/11, 10/14/11, and 5/1/12. The most recent sampling event was conducted on 12/20/12 at the request of the Division. A Historical Groundwater Table Elevation Summary is provided in Table 1. As shown in Table 2, six monitoring wells identified as AMW-1, AMW-2, AMW-3, AMW-4, AMW-5, MW-7, and MW-17 were found to contain non-compliant hydrocarbon compounds above NCAC 02L Groundwater Quality Standards. All six wells revealed non-compliant benzene. Non-compliant naphthalene concentrations were found in AMW-1, AMW-2, AMW-3, AMW-4, AMW-5, and MW-17. Naphthalene concentrations in MW-7 are compliant at 2.80 ppb down from 7.55 ppb in May 2012. All other compounds found in AMW-1, AMW-2, AMW-3, AMW-4, AMW-5, MW-7, and MW-17 were below NCAC 02L Standards. MW-3R and VMW-8 were found to be complaint for all compounds as analyzed per EPA Method 602 plus Naphthalene. As part of this monitoring, all of the wells sampled were analyzed per EPA Method 602 plus Naphthalene. AMW-3 was to be sampled

and analyzed per EPA Method 625; however, the well did not recharge.

The newly installed monitoring well, AMW-3R was found to be compliant for all EPA Method 625 compounds when sampled on January 17, 2013. The bis(2-ethylhexyl)phthalate concentration was found to be <5 ug/L.

Comparison of historical and most recent analytical results indicate that increases and decreases in petroleum hydrocarbon concentrations have occurred over time, with an overall decrease from the onset of monitoring. Benzene concentrations have slightly increased in AMW-1, AMW-5, MW-7, and MW-17, and have decreased in AMW-2, AMW-3, and AMW-4. Naphthalene concentrations decreased in all wells where concentrations were detected since the last monitoring event. All other compounds were found to be compliant. All compounds were found to be compliant in MW-3R and VMW-8 and newly installed AMW-3R. No free product was observed in any of the wells gauged as part of this monitoring event.

Results of Well Gauging

(Refer to Tables 1 and 3)

Historical and recent gauging data is presented in Table 1. Free product has not been found in MW-7 since June, 2004. Also, no measurable amounts of product have been detected in MW-17 since January of 2011. Depth to the groundwater table, as measured on 12/20/12, ranges from 8.89 to 11.76 feet. Depth to the potentiometric surface at VMW-8 was measured at 12.25 feet. Well sampling information found in Table 3.

AMW-3R depth to water was found to be 10.05 feet below the land surface.

Sampling Methods and Results

(Refer to Tables 2 and 3, Appendix A)

As part of this monitoring event, nine monitoring wells were to be sampled (AMW-1, AMW-2, AMW-3, AMW-4, AMW-5, MW-3R, MW-7, MW-17 and VMW-8). All samples were to be analyzed per EPA Method 602 plus naphthalene, and AMW-3 was also to be analyzed per EPA Method 625. It should be noted that monitoring well AMW-3 contained a limited quantity of groundwater and only three VOA sample vials were collected. AMW-3 did not recharge with adequate sample volume to analyze per EPA Method 625.

Review of historical analytical results indicate that decreases and increases have occurred over time in the non-compliant wells. However, AMW-2, AMW-3, and AMW-4 revealed decreases in non-compliant benzene and naphthalene concentrations for this event. Xylenes concentrations in all wells remain compliant. AMW-1 revealed a slight increase in benzene from 1.41 to 2.27 ppb and a decrease in naphthalene from 12.0 to 10.5 ppb. AMW-5

revealed an increase in benzene from 100 ppb to 203 ppb and a decrease in naphthalene from 104 ppb to 93.8 ppb. MW-7 was found to be compliant for naphthalene at 2.80 ppb with a slight increase in benzene at 3.29 ppb from previous concentration of 2.16 ppb. MW-17 revealed an increase in benzene from 73.1 ppb to 107 and a decrease in naphthalene down to 505 ppb from 578 ppb. All other compounds in AMW-1, AMW-2, AMW-3, AMW-4, AMW-5, MW-7, MW-17 were found to be compliant.

Overall, benzene and naphthalene concentrations have diminished in AMW-1, AMW-2, AMW-3, AMW-4, AMW-5, MW-7, and MW-17 over time. All other compounds have been found to be compliant with fluctuation over time.

MW-3R and telescoping well VMW-8 continue to remain compliant. Newly installed well, AMW-3R revealed compliant concentrations.

A Groundwater Sample Results Summary is provided in Table 2. Laboratory results are provided in Appendix A. A Monitoring Well Sampling Record is provided in Table 3.

2.2 Proximity of the Plume to the Nearest Receptor (Refer to Figure 3)

Sensitive receptors of contamination, as defined by the NCDENR, include groundwater supply wells and subsurface building structures, as well as any potential for adverse impact to humans, plants, or animals. A water supply well survey was conducted by ARM for the LSA in 2004. Four potable, two non-potable, and two inactive water supply wells were identified within 1,000 foot radius of the site.

Surrounding well survey questionnaires were sent to the property owners within the 500 foot radius of the site. Of the 17 surveys that were mailed to the property owners, nine were completed and returned. The owner of the properties located across Market Street to the east/northeast are on a water supply well (Mr. C.E. Nixon). Mr. Nixon indicated that the Stone Garden and Nixon's Oyster Plant (currently Ogden Oysters), located at 6955 Market Street, have an active water supply well, and are not connected to a municipal or community water supply. He also stated that the water is not used for drinking, but the Oyster Plant uses the water for shell stock and seafood wash down, and the water is sampled by the State annually. We contacted the personnel at the Stone Garden, and they stated that they use the water for hand washing and for irrigation. They also stated that they do not drink the water from the well, and they have an off-site supplied drinking water source (e.g. water cooler).

One additional four inch well was identified within the 1,000 foot radius of the site. The well is located to the rear of the O'Leary's Automotive Repair Shop

(formerly Econo-Lube/Lube-N-Tune) located at 6905 Market Street. The manager stated that they do not drink the water, but are not connected to the city/county water.

The properties within the city limits are supplied potable water by the City of Wilmington. Two potable water supply wells have been identified by ATC as part of their assessment of the property for Sunoco. Those wells are indicated as PW-2, and PW-4 on Figure 3. Following this surrounding well survey, two additional potable wells were found to be active. The wells are inventoried as follows:

WELL ID	BUSINESS NAME	LOCATION
PW-2	Enoch Chapel Missionary Baptist Church	7011 Market St.
PW-4	Mr. Store It (Formerly Coastal Storage)	6947 Market St.
W-1	Stone Garden/Ogden Oysters(Formerly Nixon Oyster Plant)	6955 Market St.
W-2	O'Leary's Automotive Repair (Former Lube-N-Tune)	6905 Market St.

Note: PW-4 was in the process of being connected to the City of Wilmington water line through cooperation with ATC as part of Sunoco's remediation. This information has been provided from the previously submitted LSA report. This well survey was updated by ARM on 10/13/2011; however, based on the current site ranking (I190), the above mentioned wells should have been connected the public water supply.

2.3 Description of Current Plume Size (Refer to Figures 4 and 5)

As indicated by the most recent sampling data, it appears that the petroleum hydrocarbons benzene and naphthalene continues to impact groundwater at the site. The benzene plume appears essentially delineated to the northwest with low concentrations remaining to the west and north. The delineation exception is along the eastern and southeastern portion of the property toward Military Cutoff Road. Figure 4 depicts the benzene concentrations. Xylene has been compliant for the past two monitoring events; therefore a figure is not presented. The Naphthalene plume appears delineated to the north, west and south, with the highest concentration in the vicinity of MW-17 and to the eastern property line adjacent to Military Cutoff Road. It appears to be delineated to the northwest and in the vicinity of MW-7. Figure 5 depicts the naphthalene concentrations as of this monitoring event. A free product plume map was not prepared due to no measurable free product encountered during this monitoring event.

2.4 Groundwater Flow Direction (Refer to Figures 6 and 7)

As presented on Figures 6 and 7, the historical and present groundwater flow

appears to be consistently toward the east and southeast under the site.

2.5 Predictive Rate of Contaminant Transport

As shown on Figures 6 and 7, an overall groundwater flow toward the east southeast was identified within the area of investigation. A hydraulic gradient (dh/dl) of 0.07% was calculated (from the previous monitoring report Figure 6) between AMW-3 and MW-7. No other aquifer data has been collected or calculated for this incident. The groundwater contamination is expected to continue migrating with groundwater flow direction. Based on the historical and most recent sampling data, it appears that contaminant concentrations have been fluctuating over time and natural attenuation appears to be occurring. In addition, tank/line tightness tests were conducted in 2009 and 2010. No evidence of diesel leakage from the tank or lines was found. No additional tightness testing has been done.

3.0 CONCLUSIONS AND RECOMMENDATIONS

Two monitoring events were conducted on 3/19/04 and 6/15/04 for completion of the Phase II limited Site Assessment. The first monitoring event occurred in October of 2011 and this is the third monitoring event at the request of the Division.

As part of this monitoring event, nine monitoring wells were scheduled to be sampled. Upon completing of this event, all ^(nine) eight wells were sampled, AMW-1, AMW-2, AMW-3, AMW-5, MW-3R, MW-7, MW-17, and VMW-8, were sampled for EPA Method 602 plus naphthalene. AMW-3 was to be sampled for 625; however, the well did not recharge adequate sample volume for analysis preparation. - AMW-4

Due to the inability of AMW-3 to recharge, an additional Type II monitoring well, AMW-3R, was installed to a depth of 13 feet below the land surface. The new well was installed on January 16, 2013 and is located in the immediate vicinity of AMW-3 to east/northeast. The well was gauged, purged, and allowed to stabilize for 24 hours. The well was again gauged, purged of three well volumes, and sampled. The sample was transported to the laboratory and analyzed per EPA Method 625. AMW-3R revealed compliant concentrations of all compounds including bis(2-ethylhexyl)phthalate.

Comparison of historical and most recent analytical results indicate that increases and decreases in petroleum hydrocarbon concentrations have occurred over time. Benzene and naphthalene concentrations continue to fluctuate; however, over time the non-compliant concentrations have been reduced. All other compounds have been found to be compliant with xylene reduced in all wells to compliant levels. MW-3R and VMW-8 continue to be compliant. The free product in historically found in MW-17 remains absent and no other free product has been identified on the site.

Based on the findings of this monitoring event it is recommended and requested that

the site be closed with the execution of a Notice of Residual Petroleum (NRP). This recommendation is based on the following:

1. Free product continues to be absent;
2. All compounds continue to be below gross contaminant limits for all wells and;
3. The confirmation of the absence bis(2-ethylhexyl)phthalate in the vicinity of AMW-3 through the installation of AMW-3R.

4.0 REFERENCES

Applied Resource Management, PC (2004), Limited Site Assessment Report, Pop Shoppe # 124, Wilmington, North Carolina, Applied Resource Management, PC

North Carolina Department of Environmental and Natural Resources, 2000. Ground Water Section Guidelines for the Investigation and Remediation of Soil and Ground Water.

TABLES

**TABLE 1 (PAGE 1 OF 4)
HISTORICAL GROUNDWATER TABLE ELEVATIONS SUMMARY**

**MARKET STREET CITGO/POP SHOPPE 124
MID-STATE PETROLEUM, INC.
6980 MARKET STREET
WILMINGTON, NORTH CAROLINA
All Measurements In Feet**

WELL I.D.	DATE GAUGED	TOP OF CASING ELEVATION	DEPTH TO WATER	PRODUCT THICKNESS	WATER TABLE ELEVATION
AMW-1	3/19/04	100.00	6.48	NMT	93.52
	3/22/04	100.00	6.74	NMT	93.26
	6/15/04	100.00	9.01	NMT	90.99
	2/23/09	100.00	10.07	NMT	89.93
	2/17/10	100.00	5.87	NMT	94.13
	7/27/10	100.00	10.30	NMT	89.70
	1/27/11	100.00	10.35	NMT	89.65
	10/14/11	100.00	10.80	NMT	89.20
	5/1/12	100.00	12.32	NMT	87.68
12/20/12	100.00	10.95	NMT	89.05	
AMW-2	3/19/04	100.01	6.93	NMT	93.08
	3/22/04	100.01	7.23	NMT	92.78
	6/15/04	100.01	9.54	NMT	90.47
	2/23/09	100.01	10.06	NMT	89.95
	2/17/10	100.01	6.11	NMT	93.90
	7/27/10	100.01	10.51	NMT	89.50
	1/27/11	100.01	10.33	NMT	89.68
	10/14/11	100.01	10.75	NMT	89.26
	5/1/12	100.01	12.22	NMT	87.79
12/20/12	100.01	10.89	NMT	89.12	
AMW-3	3/19/04	100.32	6.12	NMT	94.20
	3/22/04	100.32	5.95	NMT	94.37
	6/15/04	100.32	8.60	NMT	91.72
	2/23/09	100.32	8.72	NMT	91.60
	2/17/10	100.32	NM	NM	100.32
	7/27/10	100.32	NM	NM	100.32
	1/27/11	100.32	8.79	NMT	91.53
	10/14/11	100.32	8.50	NMT	91.82
	5/1/12	100.32	9.17	NMT	91.15
12/20/12	100.32	8.98	NMT	91.34	
AMW-3R	1/16/13	NE	10.07	NMT	NE
	1/17/13	NE	10.05	NMT	NE

NMT = No Measurable Thickness NM = Not measured NF = Not Found D = Destroyed NG= Not Gauged
NE = Not Established

A free product specific gravity adjustment of 0.77 was used.
MW-3R installed by other contractor in 2007 to replace MW-3.

**TABLE 1 (PAGE 2 OF 4)
HISTORICAL GROUNDWATER TABLE ELEVATIONS SUMMARY**

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MID-STATE PETROLEUM, INC.
6980 MARKET STREET
WILMINGTON, NORTH CAROLINA
All Measurements In Feet**

WELL I.D.	DATE GAUGED	TOP OF CASING ELEVATION	DEPTH TO WATER	PRODUCT THICKNESS	WATER TABLE ELEVATION
AMW-4	10/14/11	99.83	11.72	NMT	88.11
	5/1/12	99.83	12.93	NMT	86.90
	12/20/12	99.83	11.67	NMT	88.16
AMW-5	10/14/11	100.00	9.92	NMT	90.08
	5/1/12	100.00	11.64	NMT	88.36
	12/20/12	100.00	10.23	NMT	89.77
MW-2	3/19/04	99.76	NM	NM	NM
	3/22/04	99.76	7.18	NMT	92.58
	6/15/04	99.76	9.54	NMT	90.22
	2/23/09	99.76	NM	NM	NM
	2/17/10	99.76	NM	NM	NM
	7/27/10	99.76	NM	NM	NM
	1/27/11	99.79	D/NF	D/NF	D/NF
	5/1/12	99.79	D/NF	D/NF	D/NF
12/20/12	99.79	D/NF	D/NF	D/NF	
MW-3	3/19/04	100.15	NM	NM	NM
	3/22/04	100.15	6.41	NMT	93.74
	6/15/04	100.15	8.54	NMT	91.61
	2/23/09	100.15	D/NF	D/NF	D/NF
	2/17/10	100.15	D/NF	D/NF	D/NF
	7/27/10	100.15	D/NF	D/NF	D/NF
	12/20/12	100.15	D/NF	D/NF	D/NF
MW-3R	1/27/11	NM	10.54	NMT	NM
	10/14/11	100.55	10.98	NMT	89.57
	5/1/12	100.55	12.33	NMT	88.22
	12/20/12	100.55	11.13	NMT	89.42
VMW-8	3/19/04	99.72	NM	NM	99.72
	6/15/04	99.72	10.64	NMT	89.08
	2/15/05	99.72	11.94	NMT	87.78
	2/23/09	99.72	NM	NM	NM
	2/17/10	99.72	NM	NM	NM
	7/27/10	99.72	NM	NM	NM
	1/27/11	99.72	11.57	NMT	88.15
	10/14/11	99.72	12.20	NMT	87.52
	5/1/12	99.72	13.69	NMT	86.03
12/20/12	99.72	12.25	NMT	87.47	

NMT = No Measurable Thickness NM = Not measured NF = Not Found D = Destroyed NG= Not Gauged
A free product specific gravity adjustment of 0.77 was used.
MW-3R installed by other contractor in 2007 to replace MW-3.

**TABLE 1 (PAGE 3 OF 4)
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WELL I.D.	DATE GAUGED	TOP OF CASING ELEVATION	DEPTH TO WATER	PRODUCT THICKNESS	WATER TABLE ELEVATION
MW-7	1/27/11	NM	10.54	NMT	NM
	10/14/11	100.55	10.98	NMT	89.57
	3/11/04	99.63	7.18	0.53	92.86
	3/15/04	99.63	7.16	0.06	92.52
	3/19/04	99.63	NG	NG	NG
	3/22/04	99.63	7.58	0.06	92.10
	6/15/04	99.63	9.85	NMT	89.78
	2/23/09	99.63	10.03	NMT	89.60
	4/29/09	99.63	10.92	NMT	88.71
	2/17/10	99.63	6.00	NMT	93.63
	7/27/10	99.63	10.43	NMT	89.20
	1/27/11	99.63	10.23	NMT	89.40
	10/14/11	99.63	10.75	NMT	88.88
	5/1/12	99.63	12.33	NMT	87.30
	12/20/12	99.63	10.90	NMT	88.73
MW-17	3/11/04	99.91	7.65	1.31	92.26
	3/15/04	99.91	7.39	0.71	92.52
	3/19/04	99.91	NG	NG	99.91
	3/22/04	99.91	7.81	0.65	92.10
	6/15/04	99.91	9.87	0.62	90.04
	2/15/05	99.91	10.00	0.23	89.91
	4/11/06	99.91	9.96	0.29	89.95
	4/18/06	99.91	9.95	Trace	89.96
	4/28/06	99.91	9.90	NMT	90.01
	7/12/06	99.91	9.92	NMT	89.99
	7/21/06	99.91	9.87	NMT	90.04
	8/23/06	99.91	10.23	NMT	89.68
	8/30/06	99.91	10.48	NMT	89.43
	9/6/06	99.91	9.92	NMT	89.99
	10/11/06	99.91	8.91	NMT	91.00
	1/12/07	99.91	8.47	0.23	91.44
	6/25/07	99.91	12.63	0.35	87.28
3/1/08	99.91	14.32	0.18	85.59	

NMT = No Measurable Thickness

NM = Not measured

NF = Not Found

D = Destroyed

NG= Not Gauged

A free product specific gravity adjustment of 0.77 was used.

MW-3R installed by other contractor in 2007 to replace MW-3.

**TABLE 1 (PAGE 4 OF 4)
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WILMINGTON, NORTH CAROLINA
All Measurements In Feet**

WELL I.D.	DATE GAUGED	TOP OF CASING ELEVATION	DEPTH TO WATER	PRODUCT THICKNESS	WATER TABLE ELEVATION
MW-17 (Continued)	2/23/09	99.91	10.41	0.10	89.50
	4/29/09	99.91	11.15	0.34	88.76
	2/17/10	99.91	7.56	1.57	92.35
	7/27/10	99.91	11.44	1.56	88.47
	1/27/11	99.91	11.28	0.49	88.63
	10/14/11	99.91	11.79	Trace	88.12
	2/24/12	99.91	12.43	NMT	87.48
	3/22/12	99.91	12.76	NMT	87.15
	4/24/12	99.91	13.01	NMT	86.90
	5/1/12	99.91	13.00	NMT	86.91
	12/20/12	99.91	11.76	NMT	88.15
MW-21*	6/15/04	99.11	8.72	NMT	90.39
	2/15/05	99.11	9.50	0.60	89.61
	2/23/09	NF/D	NF/D	NF/D	NF/D

NMT = No Measurable Thickness NM = Not measured NF = Not Found D = Destroyed
NG= Not Gauged

A free product specific gravity adjustment of 0.77 was used.
MW-3R installed by other contractor in 2007 to replace MW-3.
*= MW-21 was last measured on 2/15/05. Well not found or has been destroyed due to road construction activities along Military Cutoff Road.

**TABLE 2 (PAGE 1 OF 3)
GROUNDWATER SAMPLE RESULTS SUMMARY**

**POP SHOPPE 124
MID-STATE PETROLEUM COMPANY, INC.
6980 MARKET STREET
WILMINGTON, NORTH CAROLINA**

ANALYTE	GROSS CONTAMINANT LIMITS	NCAC 2L LIMIT	AMW-1					AMW-2					AMW-3					AMW-3R	AMW-4				AMW-5				MW-2	
			3/19/04	1/27/11	10/14/11	5/1/12	12/20/12	3/19/04	1/27/11	10/14/11	5/1/12	12/20/12	3/19/04	1/27/11	10/14/11	5/1/12	12/20/12	1/17/13	10/14/11	5/1/12	12/20/12	10/14/11	5/1/12	12/20/12	6/15/04	1/27/11		
EPA METHOD 602 (Concentrations in ppb)																												
BENZENE	5,000	1	NS	18.0	8.62	1.41	2.27	604.0	1.44	3.88	3.98	2.30	68.0	NS	5.41	4.25	2.58	NA	396	DRY**	243	339	100	203	2,440.0	D/NF		
TOLUENE	260,000	600	NS	BQL	0.807 J	0.294 J	0.352 J	196.0	BQL	ND	1.32	ND	152.0	NS	ND	ND	ND	NA	99.8	DRY**	31.7	57.5	4.20	11.2	152.0	D/NF		
ETHYLBENZENE	84,500	600	NS	3.91	0.910 J	ND	ND	3,012.0	19.1	48.6	34.1	15.6	48.0	NS	9.24	6.15	6.98	NA	22.4 J	DRY**	22.2	34.5	23.7	35.5	1,525.0	D/NF		
XYLENES (MIXED)	85,500	500	NS	BQL	1.95 J	ND	1.07 J	236.0	4.54	5.19	2.12	ND	88.0	NS	ND	ND	ND	NA	639	DRY**	468	668	192.4	173	722.0	D/NF		
MTBE	20,000	20	NS	8.35+	5.15	1.22 J	1.88 J	BQL	4.23	8.32	11.0	11.4	BQL	NS	ND	ND	ND	NA	ND	DRY**	ND	13.6	1.86 J	ND	BQL	D/NF		
NAPHTHALENE	6,000	6	NS	NA	14.7	12.0	10.5	NA	NA	22.0	14.8	14.8	NA	NS	118	98.6	47.7	NA	623	DRY**	486	223	104	93.8	NA	D/NF		
DIISOPROPYL ETHER	70,000	70	NS	BQL	ND	ND	ND	NA	BQL	ND	ND	ND	NA	NS	ND	ND	ND	NA	ND	DRY**	ND	1.98	ND	ND	NA	D/NF		
ALL OTHER COMPOUNDS	Varies	Varies	NS	BQL	ND	NA	NA	BQL	BQL	ND	NA	NA	BQL	NS	ND	NA	NA	NA	ND	DRY**	NA	ND	NA	NA	BQL	D/NF		
EPA METHOD 625BN (Concentrations in ppb)																												
BIS(2-ETHYLHEXYL) PHTHALATE	170	3	NS	BQL	11.7	NA	NA	BQL	58.6	72.7	NA	NA	BQL	NA	1,430*	DRY**	DRY**	<5	ND	NA	NA	ND	NA	NA	BQL	D/NF		
DIETHYLPHthalATE	NE	6,000	NS	6.86	ND	NA	NA	BQL	BQL	ND	NA	NA	BQL	NA	ND*	DRY**	DRY**	<5	ND	NA	NA	ND	NA	NA	BQL	D/NF		
NAPHTHALENE	6,000	6	NS	87.3	10.1	NA	NA	357.7	14.3	17.5	NA	NA	15.8	NA	540*	DRY**	DRY**	<5	692	NA	NA	332	NA	NA	658.0	D/NF		
ACENAPHTHENE	2,120	80	NS	BQL	ND	NA	NA	BQL	BQL	ND	NA	NA	BQL	NA	57.1 J*	DRY**	DRY**	<5	ND	NA	NA	ND	NA	NA	BDL	D/NF		
PYRENE	200	200	NS	BQL	ND	NA	NA	BQL	BQL	ND	NA	NA	BQL	NA	47.9 J*	DRY**	DRY**	<5	ND	NA	NA	ND	NA	NA	BDL	D/NF		
FLUORENE	990	300	NS	BQL	ND	NA	NA	BQL	BQL	ND	NA	NA	7.4	NA	269*	DRY**	DRY**	<5	ND	NA	NA	ND	NA	NA	BDL	D/NF		
PHENANTHERENE	410	200	NS	BQL	ND	NA	NA	BQL	BQL	ND	NA	NA	11.2	NA	341*	DRY**	DRY**	<5	ND	NA	NA	ND	NA	NA	BDL	D/NF		
2-METHYL-NAPHTHALENE	12,500	30	NS	BQL	ND	NA	NA	224.7	BQL	ND	NA	NA	43.2	NA	ND*	DRY**	DRY**	<5	ND	NA	NA	ND	NA	NA	218.7	D/NF		
ALL OTHER COMPOUNDS	Varies	Varies	NS	BQL	ND	NA	NA	BQL	BQL	ND	NA	NA	BDL	NA	ND*	DRY**	DRY**	<5-<25	ND	NA	NA	ND	NA	NA	BDL	D/NF		

BQL = Below Quantitation Limits ppb = parts per billion BDL = Below Detection Limits NS = Not sampled D/NF = Destroyed or not found, not sampled
 ND = Not Detected NA = Not Analyzed

Shaded areas indicate concentrations above NCAC 2L Groundwater Quality Standards.
 Boxed and light red shaded area represents concentration above Gross Contaminant Limits.
 Monitoring wells MW-2, MW-3, and MW-21 were found to be destroyed due to previous road construction activity.

+Typographical correction 10/25/11
 * "AMW-3: EPA 625 - The DL and LOQ/CL for this sample have been adjusted based on sample volume. The limits are elevated due to low sample volume." per Laboratory Case Narrative page 4 of 31.
 ** Well purged and did not recharge within 7 days to allow for adequate sample volumes.
 AMW-3R was installed 1/16/2013 to a depth of 13' to allow for adequate sample volume for the analysis of EPA Method 625BN to confirm contaminant concentrations of 10/14/11.

**TABLE 2 (PAGE 2 OF 3)
GROUNDWATER SAMPLE RESULTS SUMMARY**

**POP SHOPPE 124
MID-STATE PETROLEUM COMPANY, INC.
6980 MARKET STREET
WILMINGTON, NORTH CAROLINA**

ANALYTE	GROSS CONTAMINANT LIMITS	NCAC 2L LIMIT	MW-3		MW-3R			MW-7				MW-17			MW-21		VMW-8					
			6/15/04	1/27/11	1/27/11	10/14/11	5/1/12	12/20/12	1/27/11	10/14/11	5/1/12	12/20/12	10/14/11	5/1/12	12/20/12	6/15/04	1/27/11	6/15/04	1/27/11	10/14/11	5/1/12	12/20/12
<i>EPA METHOD 602 (Concentrations in ppb)</i>																						
BENZENE	5,000	1	0.6	D	BQL	ND	ND	ND	7.95	4.33	2.16	3.29	NS	73.1	107	47.0	D	BDL	BQL	ND	ND	ND
TOLUENE	260,000	600	BDL	D	BQL	ND	ND	ND	BQL	0.287 J	ND	0.236 J	NS	31.3	25.7	22.5	D	BDL	BQL	ND	ND	ND
ETHYLBENZENE	84,500	600	0.9	D	BQL	ND	ND	ND	1.27	1.13	ND	1.07	NS	49.7	43.2	5.5	D	BDL	BQL	ND	ND	ND
XYLENES (MIXED)	85,500	500	BDL	D	BQL	ND	ND	ND	BQL	ND	ND	0.586 J	NS	352.1	307.6	580.5	D	BDL	BQL	ND	ND	ND
MTBE	20,000	20	BDL	D	BQL	ND	ND	ND	12.6	14.0	12.2	8.74	NS	19.9	18.0	BQL	D	BDL	BQL	ND	ND	ND
NAPHTHALENE	6,000	6	NA	D	BQL	ND	ND	ND	NA	12.3	7.55	2.80	NS	578	505	NA	D	NA	NA	ND	ND	ND
DIISOPROPYL ETHER	70,000	70	NA	D	BQL	ND	ND	ND	NA	ND	0.694 J	ND	NS	ND	ND	NA	D	NA	BQL	ND	ND	ND
ALL OTHER COMPOUNDS	Varies	Varies	BDL	D	BQL	NA	ND	ND	BQL	ND	NA	NA	NS	NA	NA	BQL	D	BDL	BQL	ND	NA	ND
<i>EPA METHOD 625BN (Concentrations in ppb)</i>																						
BIS(2-ETHYLHEXYL) PHTHALATE	170	3	BDL	D	BQL	ND	ND	NA	BQL	ND	NA	NA	NS	NA	NA	BQL	D	BDL	BQL	ND	ND	NA
DIETHYLPHTHALATE	NE	6,000	BDL	D	BQL	ND	ND	NA	BQL	ND	NA	NA	NS	NA	NA	BQL	D	BDL	BQL	ND	ND	NA
NAPHTHALENE	6,000	6	BDL	D	BQL	ND	ND	NA	BQL	9.12	NA	NA	NS	NA	NA	678.8	D	BDL	BQL	ND	ND	NA
ACENAPHTHENE	2,120	80	BDL	D	BQL	ND	ND	NA	BQL	ND	NA	NA	NS	NA	NA	BDL	D	BDL	BQL	ND	ND	NA
PYRENE	200	200	BDL	D	BQL	ND	ND	NA	BQL	ND	NA	NA	NS	NA	NA	BDL	D	BDL	BQL	ND	ND	NA
FLUORENE	990	300	BDL	D	BQL	ND	ND	NA	BQL	ND	NA	NA	NS	NA	NA	BDL	D	BDL	BQL	ND	ND	NA
PHENANTHERENE	410	200	BDL	D	BQL	ND	ND	NA	BQL	ND	NA	NA	NS	NA	NA	BDL	D	BDL	BQL	ND	ND	NA
2-METHYL-NAPHTHALENE	12,500	30	BDL	D	BQL	ND	ND	NA	BQL	ND	NA	NA	NS	NA	NA	306.9	D	BDL	BQL	ND	ND	NA
ALL OTHER COMPOUNDS	Varies	Varies	BDL	D	BQL	ND	ND	NA	BQL	ND	NA	NA	NS	NA	NA	BDL	D	BDL	BQL	ND	ND	NA

BQL = Below Quantitation Limits ppb = parts per billion BDL = Below Detection Limits NS = Not sampled D/NF = Destroyed or not found
 ND = Not Detected NA = Not Analyzed

Shaded areas indicate concentrations above NCAC 2L Groundwater Quality Standards.
 Boxed and light red shaded area represents concentration above Gross Contaminant Limits.
 Monitoring wells MW-2, MW-3, and MW-21 were found to be destroyed due to previous road construction activity.
 +Typographical correction 10/25/11

* "AMW-3: EPA 625 - The DL and LOQ/CL for this sample have been adjusted based on sample volume. The limits are elevated due to low sample volume." per Laboratory Case Narrative page 4 of 31.

**TABLE 2 (PAGE 3 OF 3)
GROUNDWATER SAMPLE RESULTS SUMMARY**

**POP SHOPPE 124
MID-STATE PETROLEUM COMPANY, INC.
6980 MARKET STREET
WILMINGTON, NORTH CAROLINA**

HYDROCARBON FRACTION STANDARD RANGES	ANALYTICAL HYDROCARBON FRACTION RANGE	02L STAND ARD	AMW-1*		AMW-2*		AMW-3*		MW-2*		MW-3*		MW-3R*		MW-7*		MW-21*		VMW-8*	
			LAB. RESULT CONC.	FINAL CONC.	LAB. RESULT CONC.	FINAL CONC.	LAB. RESULT CONC.	FINAL CONC.	LAB. RESULT CONC.	FINAL CONC.	LAB. RESULT CONC.	FINAL CONC.	LAB. RESULT CONC.	FINAL CONC.	LAB. RESULT CONC.	FINAL CONC.	LAB. RESULT CONC.	FINAL CONC.	LAB. RESULT CONC.	FINAL CONC.
DATE SAMPLED			3/18/04		3/18/04		3/19/04		6/15/04		6/15/04		1/27/11		1/27/11		6/15/04		6/15/04	
MADEP VPH FOR LOW BOILING POINT FUELS (Concentrations in ppb)																				
C5-C8 ALIPHATICS	C5-C8 ALIPHATICS (VPH)	400	NS	NS	1,190 ^J	1,190 ^J	BQL	BQL	5,560	5,560	BDL	BDL	NA	NA	NA	NA	BDL	BDL	BDL	BDL
C9-C18 ALIPHATICS	C9-C12 ALIPHATICS (VPH)	700	NS	NS	1,169 ^J	1,169 ^J	BQL	BQL	4,200	4,200	BDL	BDL	NA	NA	NA	NA	1,840	1,840	BDL	BDL
C9-C22 AROMATICS	C9-C10 AROMATICS (VPH)	200	NS	NS	2,730 ^J	2,730 ^J	BQL	BQL	2,380	2,380	BDL	BDL	NA	NA	NA	NA	1,610	1,610	BDL	BDL
MADEP EPH AND VPH FOR MEDIUM/HIGH BOILING POINT FUELS (Concentrations in ppb)																				
C5-C8 ALIPHATICS	C5-C8 ALIPHATICS (VPH)	400	NS	NS	1,190 ^J	1,190 ^J	BQL	BQL	5,560	5,560	BDL	BDL	NA	NA	NA	NA	BDL	BDL	BDL	BDL
C9-C18 ALIPHATICS	C9-C12 ALIPHATICS (VPH)	700	NS	NS	1,169 ^J	4,269 ^J	BQL	7,600	4,200	4,400	BDL	BDL	NA	NA	NA	NA	1,840	2,140	BDL	BDL
	C9-C18 ALIPHATICS (EPH)		NS		3,100	7,600	200		BDL		NA		NA		300		BDL			
C19-C36 ALIPHATICS	C19-C36 ALIPHATICS (EPH)	10,000	NS	NS	100	100	3,500	3,500	BDL	BDL	BDL	BDL	NA	NA	NA	NA	BDL	BDL	BDL	BDL
C9-C22 AROMATICS	C9-C10 AROMATICS (VPH)	200	NS	NS	2,730 ^J	5,330 ^J	BQL	7,500	2,380	4,380	BDL	BDL	NA	NA	NA	NA	1,610	4,310	BDL	BDL
	C11-C22 AROMATICS (EPH)		NS		2,600	7,500	2,000		BDL		NA		NA		2,700		BDL			

^J = Estimated Concentration

Shaded areas indicate concentrations above NCAC 2L Groundwater Quality Standards.

NS = Not Sampled

NA = Not Analyzed

BQL = Below Quantitation Limits

BDL = Below Method Detection Limit

* = Monitoring wells (including newly installed AMW-4 and AMW-5) not sampled for MADEP analysis during sampling event of 10/14/11 or the previous event of 1/27/11.

Monitoring wells MW-2, MW-3, and MW-21 were found to be destroyed due to previous road construction activity.

**TABLE 3
MONITORING WELL SAMPLING RECORD**

**MARKET STREET CITGO
POP SHOPPE # 124
6980 MARKET STREET
WILMINGTON, NORTH CAROLINA**

SAMPLED ON 12/20/12 AND 1/17/13*

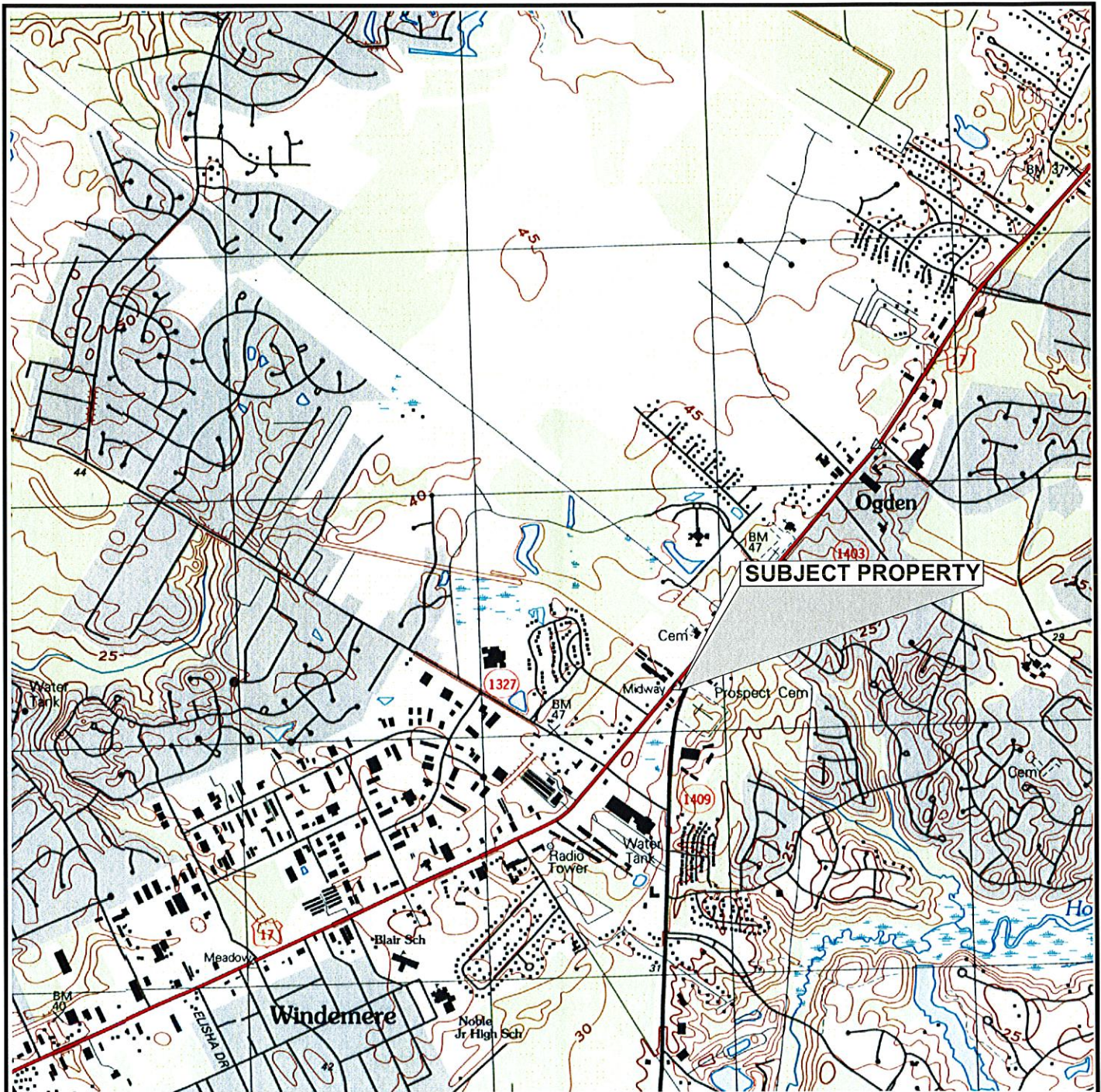
WELL ID	WELL DEPTH (ft)	DEPTH TO WATER (ft)	WELL DIAMETER (in)	BAILS REQUIRED	BAILS REMOVED
AMW-1	15.0	10.95	2	8	8
AMW-2	14.0	10.89	2	7	7
AMW-3	9.5	8.98	2	1.5	1.5
AMW-4	13.5	11.67	2	2	2
AMW-5	13.0	10.23	2	7	7
MW-2	13.0	D	4	D	D
MW-3	13.0	D	4	D	D
MW-3R	15.0	11.13	2	8	8
MW-7	27.0	10.90	4	32	32
MW-17	15.0	11.76	2	7	7
MW-21	15.0	D	2	D	D
VMW-8	35.0	12.25	2	45	45
AMW-3R*	13.2'	10.05	2	9	9

All Measurements Recorded In Feet

NS = Not sampled

MW-2, MW-3, and MW-21 were found to be destroyed due to previous road construction activities.

FIGURES



Adapted from USGS Topographic Map
 "Scotts Hill, N.C.," 1997

Contour Interval = 5 Feet



TITLE:

Site Vicinity Map

FIGURE:

1

JOB:

0359

SCALE:

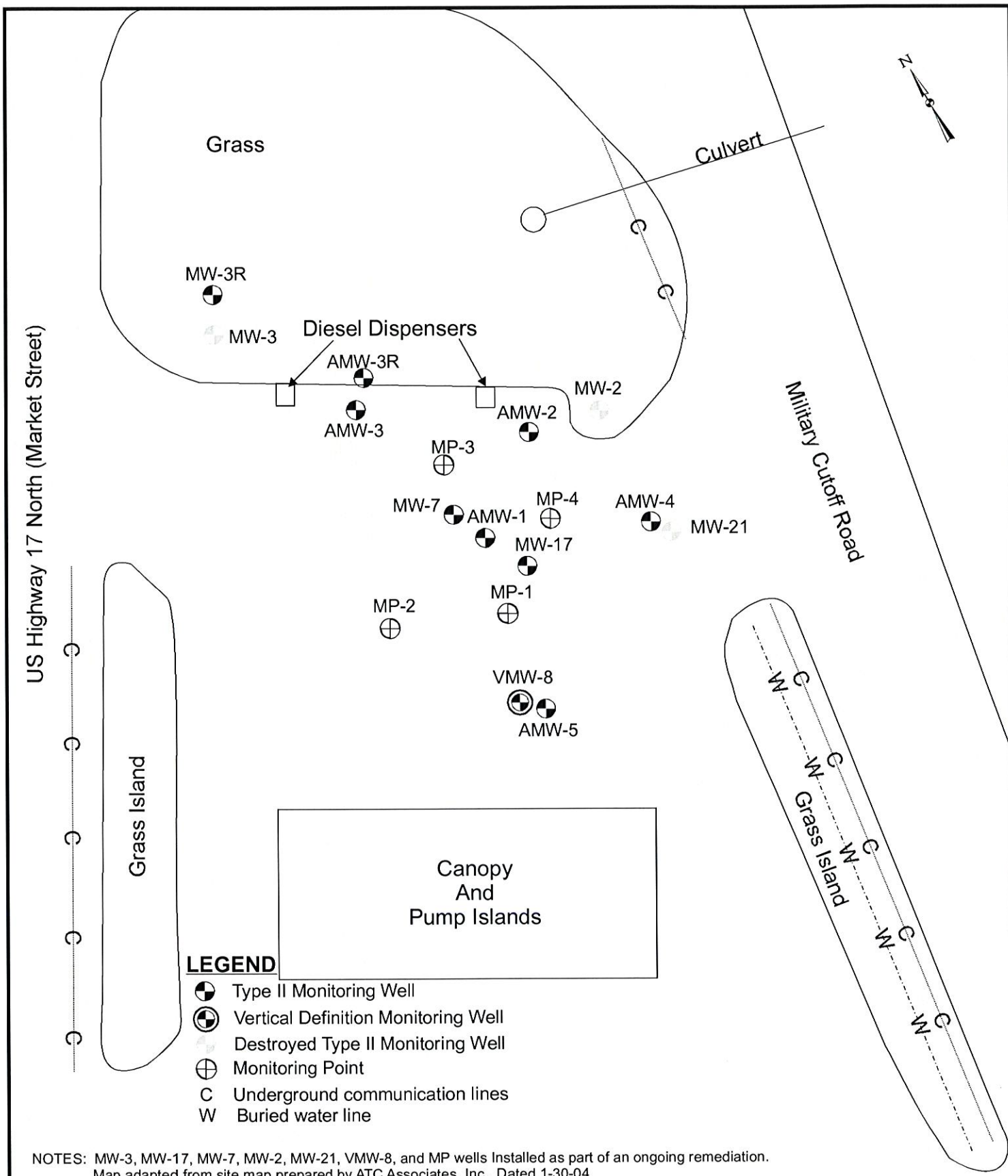
1" = 2,000'

DATE:


10/31/11

DRAWN BY:

EFC



NOTES: MW-3, MW-17, MW-7, MW-2, MW-21, VMW-8, and MP wells Installed as part of an ongoing remediation.
 Map adapted from site map prepared by ATC Associates, Inc., Dated 1-30-04.

 <p>Applied Resource Management, P.C. Hampstead, NC 28443</p>	TITLE: Site Map With Monitoring Well Locations			FIGURE:
	JOB: 0359	SCALE: 1" = 30'	DATE: 1/30/13	DRAWN BY: EFC/JLZ

2

1,500' Radius



LEGEND

- ★ Potable water supply well location
- ★ Well locations on city water metered property.
- ★ Inactive well location.

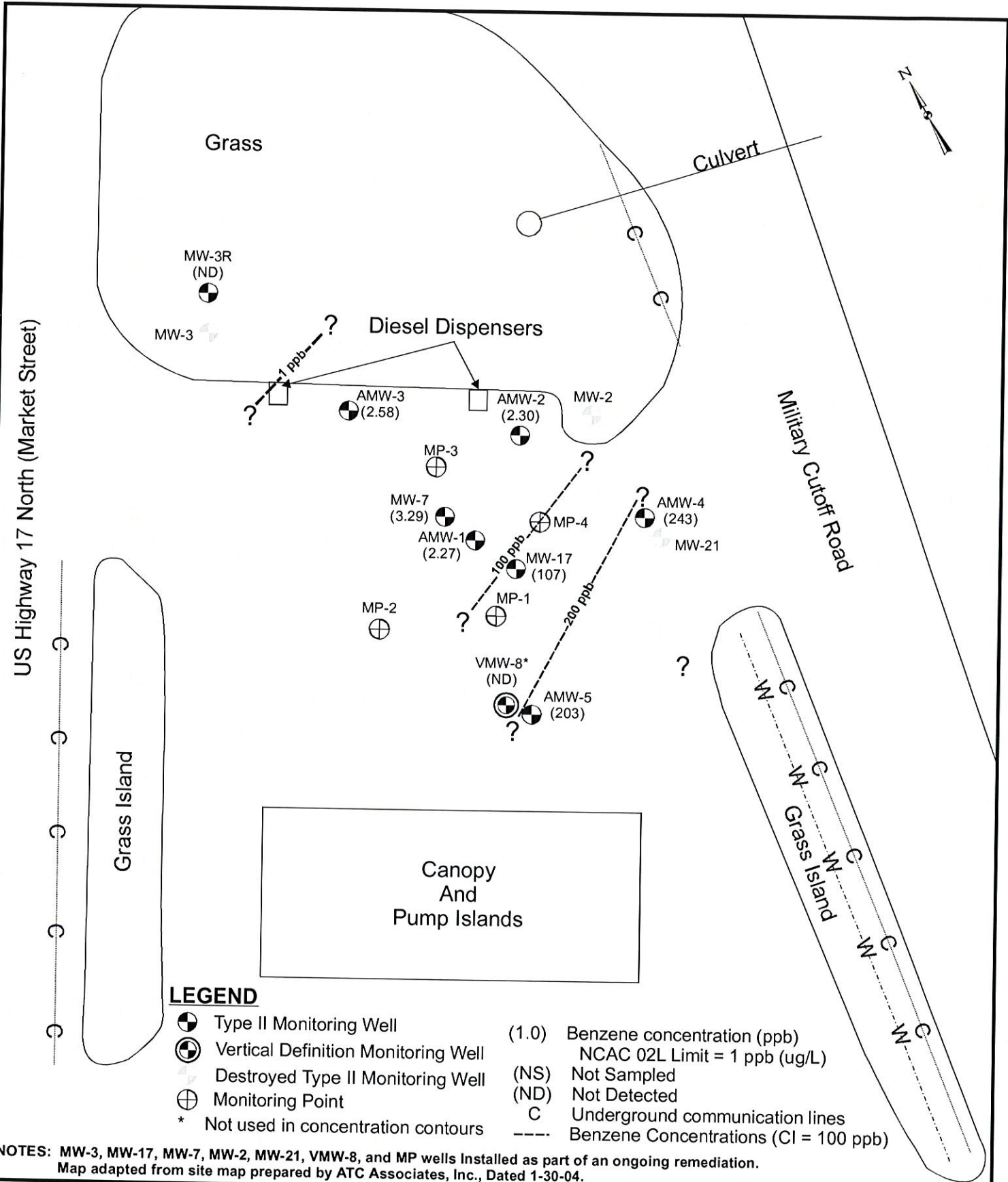
NOTE: Adapted from New Hanover County GIS website tax map, and ATC Associates Map date 01-20-2004.



TITLE:		Surrounding Well Location Map	
JOB:	SCALE:	DATE:	DRAWN BY:
0359	1" = 400'	10/24/11	EFC

FIGURE:


3

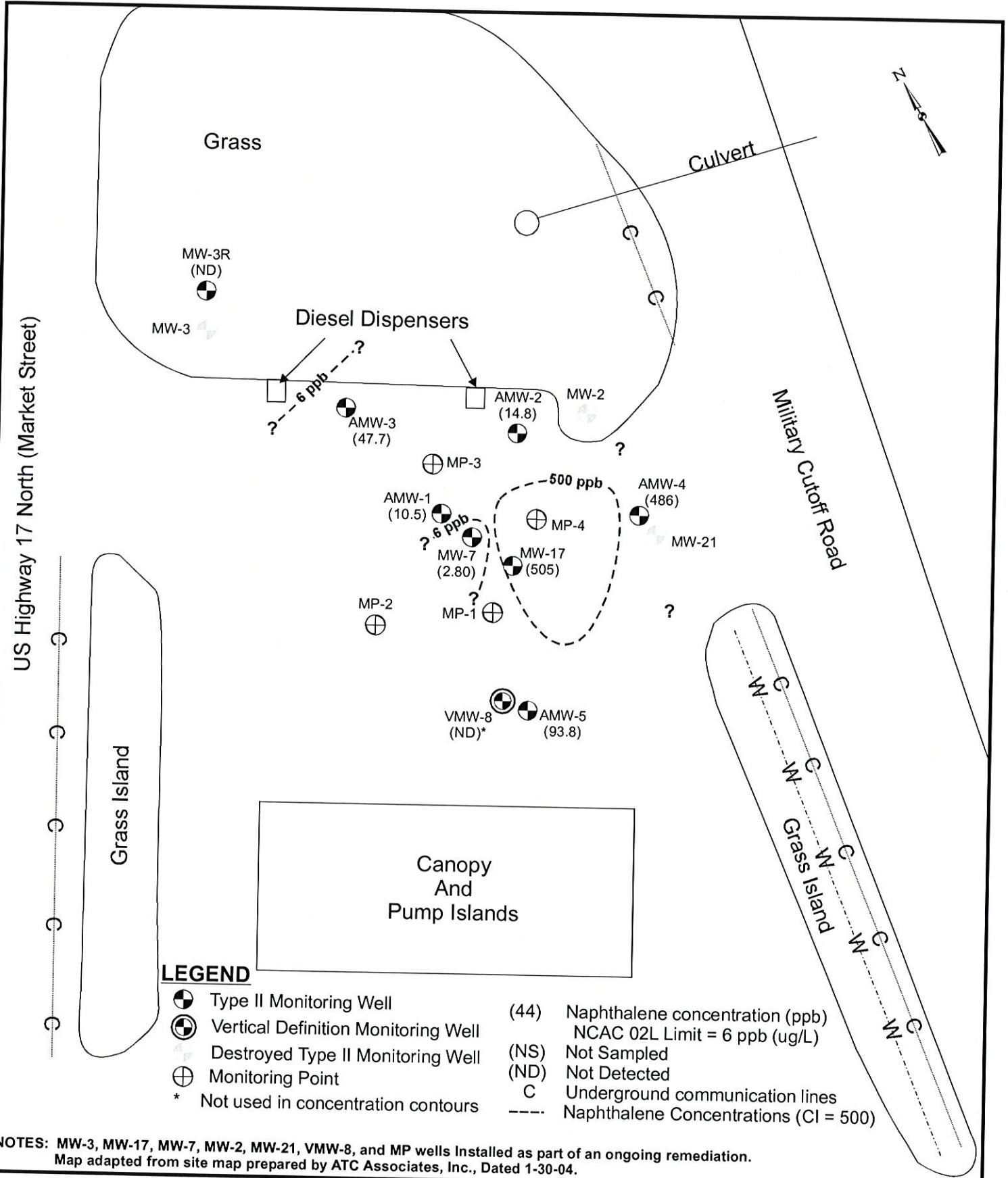


LEGEND

- Type II Monitoring Well
- ⊕ Vertical Definition Monitoring Well
- ☐ Destroyed Type II Monitoring Well
- ⊕ Monitoring Point
- * Not used in concentration contours
- (1.0) Benzene concentration (ppb)
NCAC 02L Limit = 1 ppb (ug/L)
- (NS) Not Sampled
- (ND) Not Detected
- C Underground communication lines
- Benzene Concentrations (CI = 100 ppb)

NOTES: MW-3, MW-17, MW-7, MW-2, MW-21, VMW-8, and MP wells Installed as part of an ongoing remediation.
Map adapted from site map prepared by ATC Associates, Inc., Dated 1-30-04.

 <p>Applied Resource Management, P.C. Hampstead, NC 28443</p>	TITLE: Benzene Concentrations In Groundwater As Of 12/20/12			FIGURE: 4
	JOB: 0359	SCALE: 1" = 30'	DATE: 1/7/13	



Applied Resource
Management, P. C.
Hampstead, NC 28443

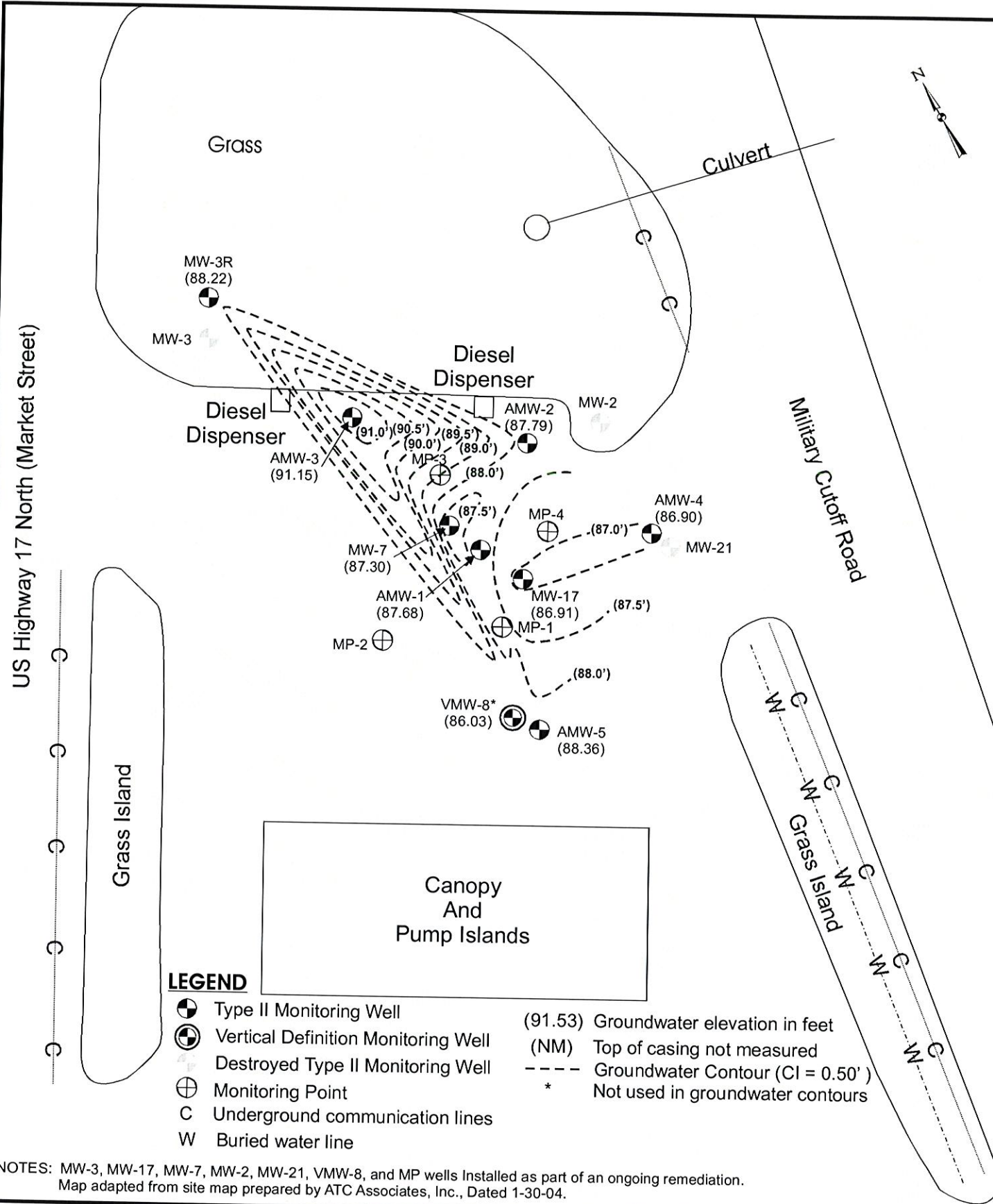


TITLE: Naphthalene Concentrations
In Groundwater As Of 12/20/12

FIGURE:

JOB: 0359	SCALE: 1" = 30'	DATE: 1/7/13	DRAWN BY: EFC/JLZ
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5

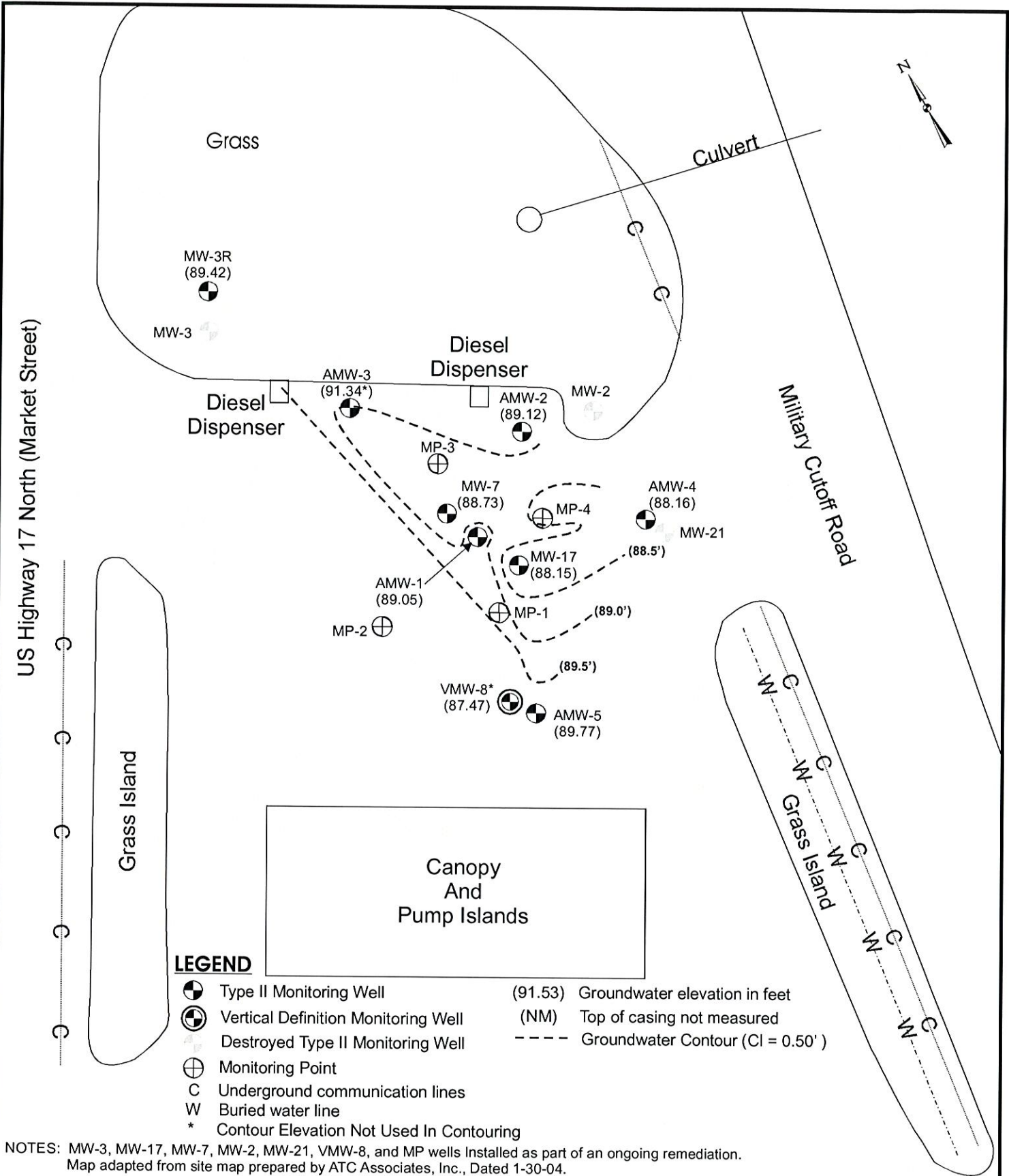


LEGEND


- Type II Monitoring Well
- ⊕ Vertical Definition Monitoring Well
- ⊕ Destroyed Type II Monitoring Well
- ⊕ Monitoring Point
- C Underground communication lines
- W Buried water line
- (91.53) Groundwater elevation in feet
- (NM) Top of casing not measured
- Groundwater Contour (CI = 0.50')
- * Not used in groundwater contours

NOTES: MW-3, MW-17, MW-7, MW-2, MW-21, VMW-8, and MP wells Installed as part of an ongoing remediation.
 Map adapted from site map prepared by ATC Associates, Inc., Dated 1-30-04.

 <p>Applied Resource Management, P.C. Hampstead, NC 28443</p>	TITLE: Groundwater Contours As Of 5/1/12			FIGURE: 6
	JOB: 0359	SCALE: 1" = 30'	DATE: 12/7/13	



NOTES: MW-3, MW-17, MW-7, MW-2, MW-21, VMW-8, and MP wells Installed as part of an ongoing remediation.
 Map adapted from site map prepared by ATC Associates, Inc., Dated 1-30-04.

 <p>Applied Resource Management, P.C. Hampstead, NC 28443</p>	TITLE: Groundwater Contours As Of 12/20/12			FIGURE: 7
	JOB: 0359	SCALE: 1" = 30'	DATE: 1/7/13	

APPENDIX A



Laboratory Report of Analysis

To: Joe Zuncich
APPLIED RESOURCE MANAGEMENT
P.O. Box 882
Hampstead, NC 28443

Report Number: 31204082
Client Project: Market St. Citgo

Dear Joe Zuncich,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or services performed during this project, please call Michael D. Page at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.

Handwritten signature of Michael D. Page

Digitally signed by: Michael Page
Date: 2013.01.04 16:07:08 -05'00'

Michael D. Page
Project Manager
michael.page@sgs.com

Date

Print Date: 01-04-2013

N.C. Certification # 181

ANALYTICAL PERSPECTIVES IS NOW PART OF SGS, THE WORLD'S LEADING INSPECTION, VERIFICATION, TESTING AND CERTIFICATION COMPANY.

Laboratory Qualifiers

Report Definitions

DL	Method, Instrument, or Estimated Detection Limit per Analytical Method
CL	Control Limits for the recovery result of a parameter
LOQ	Reporting Limit
DF	Dilution Factor
RPD	Relative Percent Difference
LCS(D)	Laboratory Control Spike (Duplicate)
MS(D)	Matrix Spike (Duplicate)
MB	Method Blank

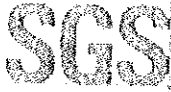
Qualifier Definitions

*	Recovery or RPD outside of control limits
B	Analyte was detected in the Lab Method Blank at a level above the LOQ
U	Undetected (Reported as ND or < DL)
V	Recovery is below quality control limit. The data has been validated based on a favorable signal-to-noise and detection limit
A	Amount detected is less than the Lower Method Calibration Limit
J	Estimated Concentration.
O	The recovery of this analyte in the OPR is above the Method QC Limits and the reported concentration in the sample may be biased high
E	Amount detected is greater than the Upper Calibration Limit
S	The amount of analyte present has saturated the detector. This situation results in an underestimation of the affected analyte(s)
Q	Indicates the presence of a quantitative interference. This situation may result in an underestimation of the affected analyte(s)
I	Indicates the presence of a qualitative interference that could cause a false positive or an overestimation of the affected analyte(s)
DPE	Indicates the presence of a peak in the polychlorinated diphenylether channel that could cause a false positive or an overestimation of the affected analyte(s)
TIC	Tentatively Identified Compound
EMPC	Estimated Maximum possible Concentration due to ion ratio failure
ND	Not Detected
K	Result is estimated due to ion ratio failure in High Resolution PCB Analysis
P	RPD > 40% between results of dual columns
D	Spike or surrogate was diluted out in order to achieve a parameter result within instrument calibration range

Samples requiring manual integrations for various congeners and/or standards are marked and dated by the analyst. A code definition is provided below:

M1 Mis-identified peak

Note Results pages that include a value for "Solids (%)" have been adjusted for moisture content.



Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
AMW-1	31204082001	12/20/2012 09:17	12/20/2012 14:50	Water
AMW-2	31204082002	12/20/2012 09:32	12/20/2012 14:50	Water
AMW-3	31204082003	12/20/2012 10:15	12/20/2012 14:50	Water
AMW-4	31204082004	12/20/2012 08:40	12/20/2012 14:50	Water
AMW-5	31204082005	12/20/2012 09:05	12/20/2012 14:50	Water
MW-3R	31204082006	12/20/2012 08:55	12/20/2012 14:50	Water
MW-7	31204082007	12/20/2012 10:19	12/20/2012 14:50	Water
VMW-8	31204082008	12/20/2012 09:54	12/20/2012 14:50	Water
MW-17	31204082009	12/20/2012 09:36	12/20/2012 14:50	Water
Trip Blank (Not on COC)	31204082010	12/20/2012 00:00	12/20/2012 14:50	Water

Print Date: 01/04/2013

N.C. Certification # 201

5500 Business Dr. US 28405 Wilmington, NC Tel: 910 352 1903 Fax: 910 350 1557 www.sgs.com

Member of the SGS Group (SES SA)



Results of AMW-1

Client Sample ID: AMW-1
Client Project ID: Market St. Citgo
Lab Sample ID: 31204082001-A
Lab Project ID: 31204082

Collection Date: 12/20/2012 09:17
Received Date: 12/20/2012 14:50
Matrix: Water

Results by EPA 602

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Benzene	2.27		0.221	1.00	ug/L	1	12/27/2012 2:59
Diisopropyl Ether	ND	U	0.224	1.00	ug/L	1	12/27/2012 2:59
Ethyl Benzene	ND	U	0.256	1.00	ug/L	1	12/27/2012 2:59
tert-Butyl methyl ether (MTBE)	1.88	J	0.433	2.00	ug/L	1	12/27/2012 2:59
Naphthalene	10.5		1.00	1.00	ug/L	1	12/27/2012 2:59
Toluene	0.352	J	0.233	1.00	ug/L	1	12/27/2012 2:59
m,p-Xylene	1.07	J	0.509	2.00	ug/L	1	12/27/2012 2:59
o-Xylene	ND	U	0.534	2.00	ug/L	1	12/27/2012 2:59
Surrogates							
a,a,a-Trifluorotoluene	110			85.0-115	%	1	12/27/2012 2:59

Batch Information

Analytical Batch: VGC2269
Analytical Method: EPA 602
Instrument: GC3
Analyst: MDY

Prep Batch: VXX4476
Prep Method: EPA 602 PREP
Prep Date/Time: 12/26/2012 14:43
Prep Initial Wt./Vol: 40 mL
Prep Extract Vol: 40 mL



Results of AMW-2

Client Sample ID: AMW-2
Client Project ID: Market St. Citgo
Lab Sample ID: 31204082002-A
Lab Project ID: 31204082

Collection Date: 12/20/2012 09:32
Received Date: 12/20/2012 14:50
Matrix: Water

Results by EPA 602

Table with 8 columns: Parameter, Result, Qual, DL, LOQ/CL, Units, DF, Date Analyzed. Rows include Benzene, Diisopropyl Ether, Ethyl Benzene, tert-Butyl methyl ether (MTBE), Naphthalene, Toluene, m,p-Xylene, and o-Xylene.

Surrogates

Table with 8 columns: Parameter, Result, Qual, DL, LOQ/CL, Units, DF, Date Analyzed. Row: a,a,a-Trifluorotoluene, 110, %, 1, 12/28/2012 18:45

Batch Information

Analytical Batch: VGC2300
Analytical Method: EPA 602
Instrument: GC3
Analyst: MDY

Prep Batch: VXX4477
Prep Method: EPA 602 PREP
Prep Date/Time: 12/28/2012 09:22
Prep Initial Wt./Vol.: 40 mL
Prep Extract Vol: 40 mL

Results of AMW-3

Client Sample ID: **AMW-3**
 Client Project ID: **Market St. Citgo**
 Lab Sample ID: 31204082003-B
 Lab Project ID: 31204082

Collection Date: 12/20/2012 10:15
 Received Date: 12/20/2012 14:50
 Matrix: Water

Results by EPA 602

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Benzene	2.58		0.221	1.00	ug/L	1	01/3/2013 17:51
Diisopropyl Ether	ND	U	0.224	1.00	ug/L	1	01/3/2013 17:51
Ethyl Benzene	6.98		0.256	1.00	ug/L	1	01/3/2013 17:51
tert-Butyl methyl ether (MTBE)	ND	U	0.433	2.00	ug/L	1	01/3/2013 17:51
Naphthalene	47.7		8.00	8.00	ug/L	8	12/27/2012 2:26
Toluene	ND	U	0.233	1.00	ug/L	1	01/3/2013 17:51
m,p-Xylene	ND	U	0.509	2.00	ug/L	1	01/3/2013 17:51
o-Xylene	ND	U	0.534	2.00	ug/L	1	01/3/2013 17:51
Surrogates							
a,a,a-Trifluorotoluene	110			85.0-115	%	1	01/3/2013 17:51

Batch Information

Analytical Batch: VGC2259
 Analytical Method: EPA 602
 Instrument: GC3
 Analyst: MDY

Prep Batch: VXX4475
 Prep Method: EPA 602 PREP
 Prep Date/Time: 12/26/2012 14:43
 Prep Initial Wt./Vol.: 40 mL
 Prep Extract Vol: 40 mL

Analytical Batch: VGC2302
 Analytical Method: EPA 602
 Instrument: GC3
 Analyst: BWS

Prep Batch: VXX4480
 Prep Method: EPA 602 PREP
 Prep Date/Time: 01/03/2013 18:17
 Prep Initial Wt./Vol.: 40 mL
 Prep Extract Vol: 40 mL



Results of AMW-4

Client Sample ID: AMW-4
Client Project ID: Market St. Citgo
Lab Sample ID: 31204082004-A
Lab Project ID: 31204082

Collection Date: 12/20/2012 08:40
Received Date: 12/20/2012 14:50
Matrix: Water

Results by EPA 602

Table with 8 columns: Parameter, Result, Qual, DL, LOQ/CL, Units, DF, Date Analyzed. Rows include Benzene, Diisopropyl Ether, Ethyl Benzene, tert-Butyl methyl ether (MTBE), Naphthalene, Toluene, m,p-Xylene, and o-Xylene.

Surrogates

Table with 8 columns: Parameter, Result, Qual, DL, LOQ/CL, Units, DF, Date Analyzed. Row: a,a,a-Trifluorotoluene, 110, %, 1, 01/3/2013 18:24

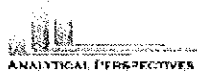
Batch Information

Analytical Batch: VGC2299
Analytical Method: EPA 602
Instrument: GC3
Analyst: MDY

Prep Batch: VXX4476
Prep Method: EPA 602 PREP
Prep Date/Time: 12/26/2012 14:43
Prep Initial Vol.: 40 mL
Prep Extract Vol: 40 mL

Analytical Batch: VGC2302
Analytical Method: EPA 602
Instrument: GC3
Analyst: EWS

Prep Batch: VXX4480
Prep Method: EPA 602 PREP
Prep Date/Time: 01/03/2013 18:17
Prep Initial Vol.: 40 mL
Prep Extract Vol: 40 mL



Results of AMW-5

Client Sample ID: AMW-5
Client Project ID: Market St. Citgo
Lab Sample ID: 31204082005-A
Lab Project ID: 31204082

Collection Date: 12/20/2012 09:05
Received Date: 12/20/2012 14:50
Matrix: Water

Results by EPA 602

Table with 8 columns: Parameter, Result, Qual, DL, LOQ/CL, Units, DF, Date Analyzed. Rows include Benzene, Diisopropyl Ether, Ethyl Benzene, tert-Butyl methyl ether (MTBE), Naphthalene, Toluene, m,p-Xylene, and o-Xylene.

Surrogates

Table with 8 columns: Parameter, Result, Qual, DL, LOQ/CL, Units, DF, Date Analyzed. Row: a,a,a-Trifluorotoluene, 110, U, 85.0-115, %, 1, 01/3/2013 18:57

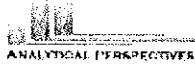
Batch Information

Analytical Batch: VGC2299
Analytical Method: EPA 602
Instrument: GC3
Analyst: MDY

Prep Batch: VXX4476
Prep Method: EPA 602 PREP
Prep Date/Time: 12/26/2012 14:43
Prep Initial Wt./Vol.: 40 mL
Prep Extract Vol: 40 mL

Analytical Batch: VGC2302
Analytical Method: EPA 602
Instrument: GC3
Analyst: BWS

Prep Batch: VXX4480
Prep Method: EPA 602 PREP
Prep Date/Time: 01/03/2013 18:17
Prep Initial Wt./Vol.: 40 mL
Prep Extract Vol: 40 mL



Results of MW-3R

Client Sample ID: **MW-3R**
Client Project ID: **Market St. Citgo**
Lab Sample ID: 31204082006-A
Lab Project ID: 31204082

Collection Date: 12/20/2012 08:55
Received Date: 12/20/2012 14:50
Matrix: Water

Results by EPA 602

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>DL</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Benzene	ND	U	0.221	1.00	ug/L	1	12/28/2012 19:51
Diisopropyl Ether	ND	U	0.224	1.00	ug/L	1	12/28/2012 19:51
Ethyl Benzene	ND	U	0.256	1.00	ug/L	1	12/28/2012 19:51
tert-Butyl methyl ether (MTBE)	ND	U	0.433	2.00	ug/L	1	12/28/2012 19:51
Naphthalene	ND	U	1.00	1.00	ug/L	1	12/28/2012 19:51
Toluene	ND	U	0.233	1.00	ug/L	1	12/28/2012 19:51
m,p-Xylene	ND	U	0.509	2.00	ug/L	1	12/28/2012 19:51
o-Xylene	ND	U	0.534	2.00	ug/L	1	12/28/2012 19:51

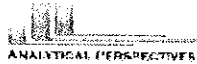
Surrogates

a,a,a-Trifluorotoluene	110			85.0-115	%	1	12/28/2012 19:51
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Batch Information

Analytical Batch: VGC2300
Analytical Method: EPA 602
Instrument: GC3
Analyst: MDY

Prep Batch: VXX4477
Prep Method: EPA 602 PREP
Prep Date/Time: 12/28/2012 09:22
Prep Initial Wt./Vol.: 40 mL
Prep Extract Vol: 40 mL



Results of MW-17

Client Sample ID: **MW-17**
Client Project ID: **Market St. Citgo**
Lab Sample ID: 31204082009-A
Lab Project ID: 31204082

Collection Date: 12/20/2012 09:36
Received Date: 12/20/2012 14:50
Matrix: Water

Results by EPA 602

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>DL</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Benzene	107		5.53	25.0	ug/L	25	12/26/2012 23:40
Diisopropyl Ether	ND	U	0.224	1.00	ug/L	1	01/3/2013 19:30
Ethyl Benzene	43.2		0.256	1.00	ug/L	1	01/3/2013 19:30
tert-Butyl methyl ether (MTBE)	18.0		0.433	2.00	ug/L	1	01/3/2013 19:30
Naphthalene	505		25.0	25.0	ug/L	25	12/26/2012 23:40
Toluene	25.7		5.83	25.0	ug/L	25	12/26/2012 23:40
m,p-Xylene	249		12.7	50.0	ug/L	25	12/26/2012 23:40
o-Xylene	58.6		13.4	50.0	ug/L	25	12/26/2012 23:40

Surrogates

a,a,a-Trifluorotoluene	110			85.0-115	%	1	01/3/2013 19:30
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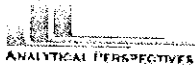
Batch Information

Analytical Batch: VGC2299
Analytical Method: EPA 602
Instrument: GC3
Analyst: MDY

Prep Batch: VXX4476
Prep Method: EPA 602 PREP
Prep Date/Time: 12/26/2012 14:43
Prep Initial Wt./Vol.: 40 mL
Prep Extract Vol: 40 mL

Analytical Batch: VGC2302
Analytical Method: EPA 602
Instrument: GC3
Analyst: BWS

Prep Batch: VXX4460
Prep Method: EPA 602 PREP
Prep Date/Time: 01/03/2013 18:17
Prep Initial Wt./Vol.: 40 mL
Prep Extract Vol: 40 mL



Results of Trip Blank (Not on COC)

Client Sample ID: Trip Blank (Not on COC)
Client Project ID: Market St. Citgo
Lab Sample ID: 31204082010-A
Lab Project ID: 31204082

Collection Date: 12/20/2012 00:00
Received Date: 12/20/2012 14:50
Matrix: Water

Results by EPA 602

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Benzene	ND	U	0.221	1.00	ug/L	1	12/28/2012 18:11
Diisopropyl Ether	ND	U	0.224	1.00	ug/L	1	12/28/2012 18:11
Ethyl Benzene	ND	U	0.256	1.00	ug/L	1	12/28/2012 18:11
tert-Butyl methyl ether (MTBE)	ND	U	0.433	2.00	ug/L	1	12/28/2012 18:11
Naphthalene	ND	U	1.00	1.00	ug/L	1	12/28/2012 18:11
Toluene	ND	U	0.233	1.00	ug/L	1	12/28/2012 18:11
m,p-Xylene	ND	U	0.509	2.00	ug/L	1	12/28/2012 18:11
o-Xylene	ND	U	0.534	2.00	ug/L	1	12/28/2012 18:11

Surrogates

a,a,a-Trifluorotoluene	110			85.0-115	%	1	12/28/2012 18:11
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Batch Information

Analytical Batch: VGC2300
Analytical Method: EPA 602
Instrument: GC3
Analyst: MDY

Prep Batch: VXX4477
Prep Method: EPA 602 PREP
Prep Date/Time: 12/28/2012 09:22
Prep Initial Wt./Vol.: 40 mL
Prep Extract Vol: 40 mL



ANALYTICAL PERSPECTIVES

CHAIN OF CUSTODY

SGS ANALYTICAL PERSPECTIVES
5500 Business Drive
Wilmington, NC 28405
+1 910 350 1903
WWW.SGS.COM

31204082

CLIENT: ARIM PC		PHONE NO: 910 2702919		SGS Reference #:		PAGE 1	
CONTACT: Joe Zameck		SITE / PWSID / WBS #:		RESERVES USED		OF 1	
PROJECT: Market St. Cdfso		CORNETTE@YANCO.COM		ANALYSIS REQUIRED			
REPORTS TO:		joe-arm@bell-south.net		602 + 1/20/12 HCL			
EMAIL: joe-arm@bell-south.net		QUOTE # VST 7757 FWD					
INVOICE TO: ARIM		P.O. NUMBER 28443					
PCBOX 882 Hampstead NC							
LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	# CONTAINERS	SAMPLE TYPE	REMARKS
	AMW-1	12/20/12	9:17	H ₂ O	3	C	Report to OZL
	AMW-2		9:32		3	C	Standard
	AMW-3		10:15		3	C	
	AMW-4		8:40		3	C	
	AMW-5		9:05		3	C	
	MW 3R		8:55		3	C	
	MW-7		10:19		3	C	
	VMW-8		9:54		3	C	
	MW-17		9:36		3	C	
COLLECTED/RELINQUISHED BY: (1)		DATE	TIME	RECEIVED BY:	REPORT LEVEL:	REQUESTED TURNAROUND TIME:	
[Signature]		12/20/12	14:50	Bourbon Hoag	<input type="checkbox"/> Level I <input type="checkbox"/> Level II <input type="checkbox"/> Level III <input type="checkbox"/> Level IV	<input type="checkbox"/> Standard <input checked="" type="checkbox"/> Trust Fund	
Relinquished By: (2)		Date	Time	Received By:	SPECIAL DELIVERABLES: State of Origin: <input type="checkbox"/> DoD <input type="checkbox"/> EDD: <input type="checkbox"/> Other: _____		
Relinquished By: (3)		Date	Time	Received By:	SPECIAL INSTRUCTIONS:		
Received For Laboratory By:		Date	Time	Received By:	Shipping Carrier: Client		
		Date	Time	Received By:	Shipping Ticket No: _____		
		Date	Time	Received By:	Notes: _____		

SGS-00055 (06/12)

ANALYTICAL PERSPECTIVES IS NOW PART OF SGS, THE WORLD'S LEADING INSPECTION, VERIFICATION, TESTING AND CERTIFICATION COMPANY.

White - Retained by Lab
Yellow - Retained by Client

SGS North America Inc.

Sample Receipt Checklist (SRC)

Client: ARM

Work Order No.: 31204082

- 1. Shipped
 Hand Delivered
- 2. COC Present on Receipt
 No COC
 Additional Transmittal Forms
- 3. Custody Tape on Container
 No Custody Tape
- 4. Samples Intact
 Samples Broken / Leaking
- 5. Chilled on Receipt Actual Temp.(s) in °C: 1.4°
 Ambient on Receipt
 Walk-in on Ice; Coming down to temp.
 Received Outside of Temperature Specifications
- 6. Sufficient Sample Submitted
 Insufficient Sample Submitted
- 7. Chlorine absent
 HNO3 < 2
 HCL < 2
 Additional Preservatives verified (see notes)
- 8. Received Within Holding Time
 Not Received Within Holding Time
- 9. No Discrepancies Noted
 Discrepancies Noted
 NCDENR notified of Discrepancies*
- 10. No Headspace present in VOC vials
 Headspace present in VOC vials >6mm

Notes: _____

Comments: _____

Inspected and Logged in by: BAH
Date: Thu-12/20/12 00:00



Environmental Chemists, Inc.

6602 Windmill Way • Wilmington, NC 28405
(910) 392-0223 (Lab) • (910) 392-4424 (Fax)
710 Bowsertown Road • Manteo, NC 27954
(252) 473-5702

ANALYTICAL & CONSULTING
CHEMISTS

NCDENR: DWQ CERTIFICATE #94. DLS CERTIFICATE #37729

Applied Resource Management

Post Office Box 882
Hampstead NC 28443
Attention: Ellen Cornette

Date of Report: Jan 29, 2013

Customer PO #:

Report #: 2013-00694

Report to: Ellen Cornette

Project ID:

Lab ID	Sample ID: AMW-3R	Collect Date/Time	Matrix	Sampled by
13-01600	Site:	1/17/2013 1:39 PM	Water	Ellen Cornette
Test	Method	Results	Date Analyzed	
1,2-Diphenylhydrazine	EPA 625	<5 µg/L	01/21/2013	
1,2,4-Trichlorobenzene	EPA 625	<5 µg/L	01/21/2013	
1,2-Dichlorobenzene	EPA 625	<5 µg/L	01/21/2013	
1,3-Dichlorobenzene	EPA 625	<5 µg/L	01/21/2013	
1,4-Dichlorobenzene	EPA 625	<5 µg/L	01/21/2013	
1-Methylnaphthalene	EPA 625	<5 µg/L	01/21/2013	
2,4-Dinitrotoluene	EPA 625	<5 µg/L	01/21/2013	
2,6-Dinitrotoluene	EPA 625	<5 µg/L	01/21/2013	
2-Chloronaphthalene	EPA 625	<5 µg/L	01/21/2013	
2-Methylnaphthalene	EPA 625	<5 µg/L	01/21/2013	
3,3'-Dichlorobenzidine	EPA 625	<10 µg/L	01/21/2013	
4-Bromophenyl phenyl ether	EPA 625	<5 µg/L	01/21/2013	
4-Chlorophenyl phenyl ether	EPA 625	<5 µg/L	01/21/2013	
Acenaphthene	EPA 625	<5 µg/L	01/21/2013	
Acenaphthylene	EPA 625	<5 µg/L	01/21/2013	
Anthracene	EPA 625	<5 µg/L	01/21/2013	
Benzidine	EPA 625	<10 µg/L	01/21/2013	
Benzo [a]pyrene	EPA 625	<5 µg/L	01/21/2013	
Benzo(a)anthracene	EPA 625	<5 µg/L	01/21/2013	
Benzo(b)fluoranthene	EPA 625	<5 µg/L	01/21/2013	
Benzo(g,h,i)perylene	EPA 625	<5 µg/L	01/21/2013	
Benzo(k)fluoranthene	EPA 625	<5 µg/L	01/21/2013	
Bis (chloromethyl) ether	EPA 625	<5 µg/L	01/21/2013	
Bis(2-Chloroethoxy)methane	EPA 625	<5 µg/L	01/21/2013	
Bis(2-Chloroethyl)ether	EPA 625	<5 µg/L	01/21/2013	
Bis(2-Chloroisopropyl)ether	EPA 625	<5 µg/L	01/21/2013	



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710 Bowsertown Road • Manteo, NC 27954
(252) 473-5702

ANALYTICAL & CONSULTING
CHEMISTS

NC DENR: DWQ CERTIFICATE #94. DLS CERTIFICATE #37729

Applied Resource Management

Post Office Box 882
Hampstead NC 28443
Attention: Ellen Cornette

Date of Report: Jan 29, 2013

Customer PO #:

Report #: 2013-00694

Report to: Ellen Cornette

Project ID:

Bis(2-ethylhexyl)phthalate	EPA 625	<5 µg/L	01/21/2013
Butylbenzylphthalate	EPA 625	<5 µg/L	01/21/2013
Chrysene	EPA 625	<5 µg/L	01/21/2013
Dibenzo(a,h)anthracene	EPA 625	<5 µg/L	01/21/2013
Diethylphthalate	EPA 625	<5 µg/L	01/21/2013
Dimethylphthalate	EPA 625	<5 µg/L	01/21/2013
Di-n-Butylphthalate	EPA 625	<5 µg/L	01/21/2013
Di-n-Octylphthalate	EPA 625	<5 µg/L	01/21/2013
Fluoranthene	EPA 625	<5 µg/L	01/21/2013
Fluorene	EPA 625	<5 µg/L	01/21/2013
Hexachlorobenzene	EPA 625	<5 µg/L	01/21/2013
Hexachlorobutadiene	EPA 625	<5 µg/L	01/21/2013
Hexachlorocyclopentadiene	EPA 625	<25 µg/L	01/21/2013
Hexachloroethane	EPA 625	<5 µg/L	01/21/2013
Indeno(1,2,3-cd)pyrene	EPA 625	<5 µg/L	01/21/2013
Isophorone	EPA 625	<5 µg/L	01/21/2013
Naphthalene	EPA 625	<5 µg/L	01/21/2013
Nitrobenzene	EPA 625	<5 µg/L	01/21/2013
N-nitroso-dimethylamine(NDMA)	EPA 625	<5 µg/L	01/21/2013
N-Nitroso-di-n-propylamine	EPA 625	<5 µg/L	01/21/2013
N-Nitroso-diphenylamine	EPA 625	<5 µg/L	01/21/2013
Phenanthrene	EPA 625	<5 µg/L	01/21/2013
Pyrene	EPA 625	<5 µg/L	01/21/2013

Comment:

Reviewed by: Manolo Oleguez / Jim Peiris

ENVIRONMENTAL CHEMISTS, INC

6602 Windmill Way
 Wilmington, NC 28405
 Phone: (910) 392-0223
 Fax (910) 392.4424
 EMAIL: ECHEMW@aol.com

Sample Collection and Chain of Custody

Client: ARM, PC

Collected By: Ellen Corneille

Sample Type: 1 = Influent, E = Effluent, W = Well, ST = Stream, SO = Soil, SL = Sludge Other: 13-00674

Sample Identification	LAB ID	NUMBER	Collection			Sample Type	Composite	Grab	Container (P or G)	Chlorine mg/L	PRESERVATION						ANALYSIS REQUESTED	
			DATE	TIME	TEMP						NONE	HCL	H ₂ SO ₄	HNO ₃	NaOH	THIO		OTHER
AMW-3R	1600		4/12/13	1339		W	C	P									625 B/N only	
							X	X										
							C	P										
							G	G										
							C	P										
							G	G										
							C	P										
							G	G										
							C	P										
							G	G										
							C	P										
							G	G										
							C	P										
							G	G										

Rust
1-chem

NOTICE - DECHLORINATION : Samples for Ammonia, TKN, Cyanide, Phenol, and Bacteria must be dechlorinated (0.2 ppm or less) in the field at the time of collection. See reverse side for instructions.

Transfer	Relinquished By:	Date/Time	Received By:	Date/Time
1.	<i>Ellen Corneille</i>	1355/1-17-13		
2.				

Temperature when Received: 49. Accepted: Rejected:
 Delivered By: *Ellen Corneille* Received By: *Ellen Corneille* Resample Requested:
 Comments: REPORT TO NCAC OZL Limits, need STD turnaround (2 week) Date: 1-17-13 Time: 155P

APPENDIX B



NON RESIDENTIAL WELL CONSTRUCTION RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION # 3314-A

1. WELL CONTRACTOR:

Ellen Cornette
Well Contractor (Individual) Name
Applied Resource Management, PC
Well Contractor Company Name
257 Transfer Station Road
Street Address
Hampstead NC 28443
City or Town State Zip Code

(910) 270-2919
Area code Phone number

2. WELL INFORMATION:

WELL CONSTRUCTION PERMIT# N/A
OTHER ASSOCIATED PERMIT#(if applicable) N/A
SITE WELL ID #(if applicable) N/A

3. WELL USE (Check One Box) Monitoring Municipal/Public
 Industrial/Commercial Agricultural Recovery Injection
 Irrigation Other (list use) _____
DATE DRILLED 1/16/13

4. WELL LOCATION:

Market St. Citao. 6980 Market Street
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)
CITY: Wilmington NC COUNTY New Hanover
TOPOGRAPHIC / LAND SETTING: (check appropriate box)
 Slope Valley Flat Ridge Other _____
LATITUDE 36 ° ' " DMS OR 34.265026 DD
LONGITUDE 77 ° ' " DMS OR -77.825939 DD
Latitude/longitude source: GPS Topographic map
(location of well must be shown on a USGS topo map and attached to this form if not using GPS)

5. FACILITY (Name of the business where the well is located.)
Pop Shoppe #124
Facility Name Facility ID# (if applicable)
6980 Market Street
Street Address
Wilmington NC 28411
City or Town State Zip Code
Joe Zuncich, ARM, PC
Contact Name
P.O. Box 882
Mailing Address
Hampstead NC 28443
City or Town State Zip Code

(910) 270-2919
Area code Phone number

6. WELL DETAILS:

a. TOTAL DEPTH: 14
b. DOES WELL REPLACE EXISTING WELL? YES NO
c. WATER LEVEL Below Top of Casing: 10.05 FT.
(Use "+" if Above Top of Casing)

d. TOP OF CASING IS 0 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. YIELD (gpm): _____ METHOD OF TEST _____

f. DISINFECTION: Type _____ Amount _____

g. WATER ZONES (depth):
Top 10' Bottom 14' Top _____ Bottom _____
Top _____ Bottom _____ Top _____ Bottom _____
Top _____ Bottom _____ Top _____ Bottom _____

7. CASING: Depth	Diameter	Thickness/Weight	Material
Top <u>0</u> Bottom <u>3</u> Ft. <u>2"</u>		<u>SCH40</u>	<u>PVC</u>
Top _____ Bottom _____ Ft. _____			
Top _____ Bottom _____ Ft. _____			

8. GROUT: Depth	Material	Method
Top <u>0.5</u> Bottom <u>1</u> Ft. <u>Neat Cement</u>		
Top <u>1</u> Bottom <u>2</u> Ft. <u>Bentonite</u>		
Top _____ Bottom _____ Ft. _____		

9. SCREEN: Depth	Diameter	Slot Size	Material
Top <u>3</u> Bottom <u>13.2</u> Ft. <u>2</u> in. <u>0.010</u> in. <u>PVC</u>			
Top _____ Bottom _____ Ft. _____ in. _____ in. _____			
Top _____ Bottom _____ Ft. _____ in. _____ in. _____			

10. SAND/GRAVEL PACK: Depth	Size	Material
Top <u>2</u> Bottom <u>14</u> Ft. <u>Coarse</u> <u>Sand</u>		
Top _____ Bottom _____ Ft. _____		
Top _____ Bottom _____ Ft. _____		

11. DRILLING LOG

Top	Bottom	Formation Description
/	/	See Attached Boring Log
/	/	
/	/	
/	/	
/	/	
/	/	
/	/	
/	/	
/	/	
/	/	

12. REMARKS:

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Ellen F. Cornette 1/30/13
SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE
Ellen F. Cornette
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

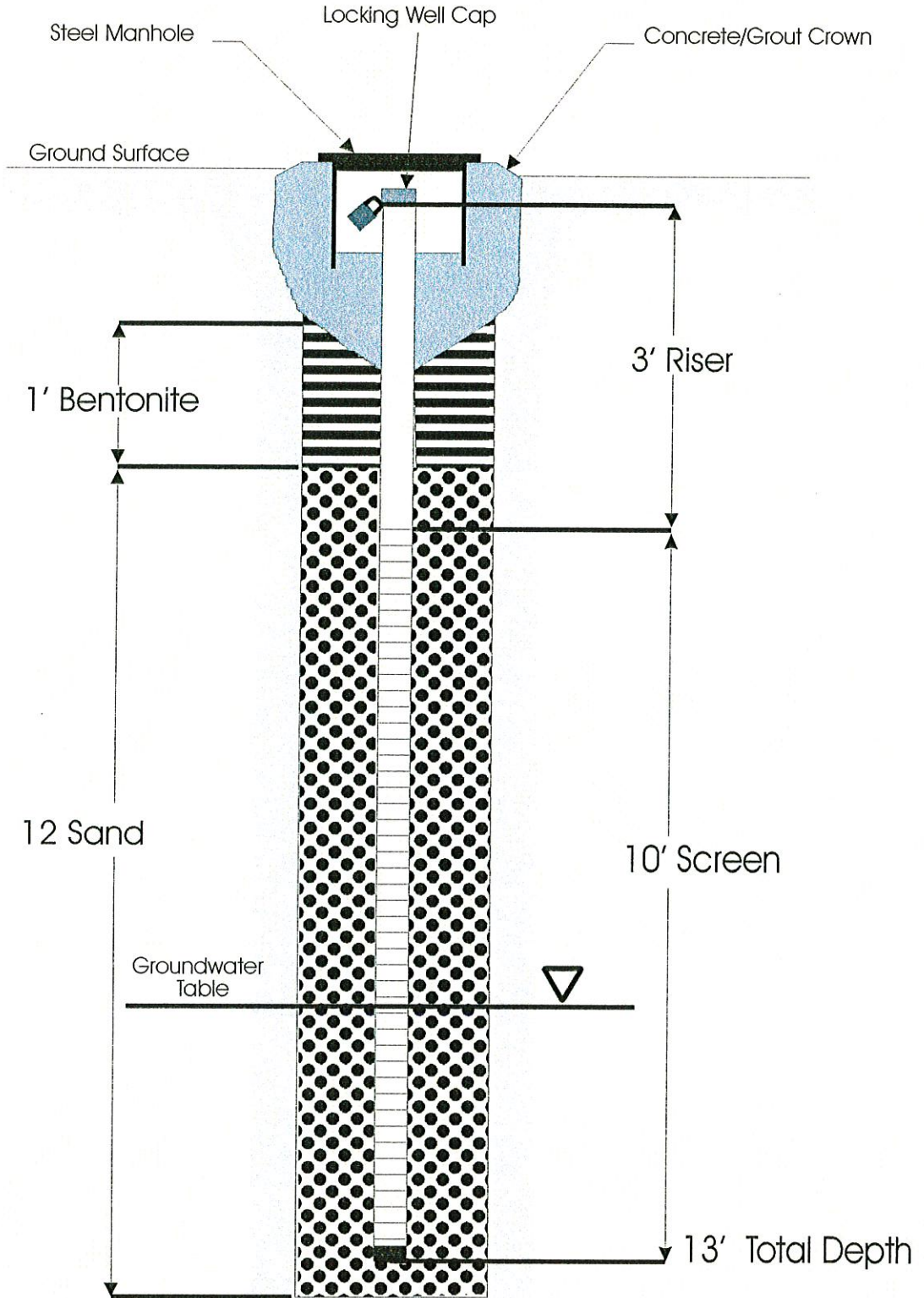
AMW-3R
BORING LOG

THE MARKET STREET CITGO/POP SHOPPE 124
6980 MARKET STREET
WILMINGTON, NC

DRILLED BY: ARM
LOGGED BY: E. Cornette
DATE: 1/15/13

Sample Depth	Description	Water Content	Blow Count
0-3"	Mulch and gray brown fine to medium sand. Slight hydrocarbon odor.	Low	Grab
3"-1'	Gray/brown, medium grained sand. Slight hydrocarbon odor.	Low	Grab
1'-5'	Dark brown to black, fine to medium grained sand with gray/brown, silty clay lense at five feet. Slight hydrocarbon odor.	Low	Grab
5'-8.5'	Dark brown, fine to medium grained sand. No hydrocarbon odor.	Low	Grab
8.5'-10'	Tan to light gray, medium grained sand. Hydrocarbon odor.	Moderate	Grab
10'-11.5'	Dark brown to black, massive sand. Hydrocarbon odor.	Moderate to High	Grab
11.5'-12'	Tan to light gray, medium grained sand. Slight hydrocarbon odor.	High	Grab
12'-14'	Dark brown to black, massive sand. Hydrocarbon odor.	High	Grab

AMW-3R



TITLE: Type II Monitoring Well Asbuilt

WELL ID:

JOB: 0359

SCALE: Not to scale

DATE: 1/7/13

DRAWN BY: EFC

AMW-3R

