ECM

environmental compliance monitoring, inc.

2015 PERIODIC REVIEW REPORT
GROUND WATERTEM MONITORING ANNUAL REPORT
JANUARY 2015 – DECEMBER 2015

FORMER KAY FRIES SITE
STONY POINT, NEW YORK
SITE NO. 344023

SUBMITTED TO:

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1.0 INTRODUCTION

This *Periodic Review Report* (PRR) has been prepared by Environmental Compliance Monitoring, Inc. (ECM) on behalf of Evonik Corporation (Evonik) for the Former Kay Fries, Inc. site, located in Stony Point, New York and incorporating the period January 2015 through December 2015. Submission of the PRR was completed as part of the current New York State Department of Environmental Conservation (NYSDEC) monitoring and reporting requirements for the site; Site No. 344023.

The site is located at the terminus of Kay-Fries Drive, east of Route 9W in Stony Point, Rockland County (Figure 1). The portions of the site property subject to this PRR are referred to as Operable Unit 1 (OU1), located to the east of the railroad tracks and Operable Unit 2 (OU2) located to the west of the railroad tracks (Figure 2). During 1990, site investigations were conducted within the OU1 and OU2 sections of the site. The results of the OU1 investigation revealed contaminated soil associated with former process chemical storage tanks, which required downgradient monitoring wells be installed that indicated the presence of benzene and chlorinated solvents in shallow ground water. An OU1 Record of Decision (ROD) executed in 1994 by the NYSDEC required the installation of three ground water recovery trenches and a ground water treatment system (GWTS) to address the identified area of ground water contamination.

Based upon the successful remediation conducted from 1995 through 2013 and the relatively low compound concentrations remaining at the site, a ground water monitoring program combined with the MW-31 in-situ remediation was proposed to evaluate ground water quality conditions.

The NYSDEC approved suspension of the GWTS as a result of significantly decreased contaminant levels impacting groundwater below the OU1 section of the site. The current long term ground water monitoring program within OU1 was proposed in lieu of continued GWTS operation to evaluate ground water quality conditions. The NYSDEC approved permanent cessation of the GWTS in their 2012 PRR – Requested Modifications letter dated August 12, 2013 (Final NYSDEC PRR approval letter dated October 15, 2013). Subsequently, in their letter dated August 15, 2013, the NYSDEC approved the GWTS Decommissioning Plan dated August 2, 2013.

During 2015, the long term ground water monitoring program within OU1 consisted of semi-annual monitoring of MW-31, MW-36, and MW-71, annual monitoring of MW-24 and PZ-23, and every fifth

quarter of MW-40, MW-43, TB-9, and MW-54 (OU2). The results are presented in Section 5.3 of this PRR.

Relative to the OU2 section of the site, three phases of remedial investigation were conducted from 1994 through 1995. The findings of the investigation were submitted to the NYSDEC within one report, titled *Final Remedial Investigation Report, Operable Unit Two* (dated June 23, 1997), summarizing the comprehensive results of the three investigative phases conducted within OU2. The findings of the OU2 investigations concluded that two volatile organic compounds (VOCs; tetrachloroethene [PCE] and 1,1,1-trichloroethane [TCA]) were the only compounds reported above the NYSDEC – Ground Water Quality Criteria (GWQC) in ground water and that the PCE and TCA levels were naturally attenuating.

In the ROD issued for OU2 in November 1997, the NYSDEC determined that the installation of a ground water interceptor sump and treatment via aeration was the most appropriate remedial action for VOCs impacting ground water within OU-2. The interceptor sump commenced operation and effectively reduced VOC levels during December 2000 through May 2004. Due to the effective operation of the interceptor sump, the NYSDEC approved closure of the interceptor sump on a permanent basis in the NYSDEC letter dated July 8, 2004. The OU2 interceptor sump will be decommissioned with the OU1 GWTS as presented in the OU1 and OU2 GWTS Decommissioning Plan dated August 2, 2013, and approved by the NYSDEC in their letter dated August 15, 2013.

The NYSDEC response to the 2014 PRR required the continued monitoring of one well (MW-54) every fifth quarter within the OU-2 section of the site relative to the PCE reported in ground water above the GWQC. The 2015 OU2 monitoring program was conducted during December 2015 and the results are presented in Section 5.4 of this PRR.

2.0 SITE OVERVIEW

2.1 KAY FRIES PROPERTY

The former Kay Fries Inc., facility is located in Stony Point in Rockland County, New York. The site occupies approximately 85 acres to the east of Route 9W at the town's southern boundary. The property is bounded on the north by Cedar Pond Brook and on the east by Minisceongo Creek; both are tidally-influenced tributaries of the Hudson River Estuary. The surrounding area west of the site is generally commercial and residential; large industrial complexes are located to the north and south of the site. Directly south of the property is the Haverstraw municipal landfill.

Operations as a specialty chemical plant reportedly began at the site by predecessor companies to Dynamit-Nobel of America (DNA) during the 1930s. During 1987, DNA sold the site to Universal Process Equipment (UPE). UPE sold the central portion of the facility to Insl-X Products Corporation (Insl-X), which manufactured industrial paints and coatings. Products were manufactured in one main building at the site. Two underground storage tanks (USTs) were located in the northern section of the building, which were used to store solvents for paint additives. Drummed waste solvents and paints were stored in a partially enclosed corrugated steel building in the southern portion of the facility. The property was sold by DNA during 1988 after relocation of production activities. Site environmental investigation and remedial investigations of these activities were initiated during 1981. Based upon the site investigation findings, remedial alternatives were evaluated during the late 1980s, which selected ground water recovery and treatment as the remedial alternative for the site.

2.2 SITE REMEDIAL PROGRAM

The ground water recovery system at the former Kay Fries site consisted of three recovery trenches. Trench 1 was installed as an Interim Remedial Measure (IRM) during August 1994. Trenches 2 and 3 were installed during June 1995 as part of the final remedy required in the ROD for Operable Unit 1, dated April 14, 1994.

Based upon the successful remediation conducted from 1995 through 2013 and the relatively low compound concentrations remaining at the site, a ground water monitoring program was proposed to evaluate ground water quality conditions over time.

During 2012, the NYSDEC approved suspension and decommissioning of the GWTS, Trench 1 and Trench 2 as a result of significantly decreased contaminant levels impacting ground water below the OU1 section of the site. Subsequently, the NYSDEC approved the GWTS Decommissioning Plan in their letter dated August 15, 2013.

Based on the favorable results of long term monitoring data, and adjacent property redevelopment activities proposed for the area of Trench 3 during 2006, Evonik requested decommissioning of Trench 3 in correspondence to the NYSDEC dated March 9, 2006. The NYSDEC subsequently approved the request for Trench 3 closure in their correspondence dated August 3 and August 28, 2006, and closure activities were completed during July 2007.

2.3 CURRENT SITE STATUS AND REMEDY

During a site meeting with the NYSDEC on May 19, 2011, Evonik and ECM outlined the current conditions of the GWTS and the requirements to upgrade the antiquated control panel, replace the carbon vessels and equipment (i.e., pumps and level controls) that would be necessary to re-activate the GWTS, and projected cost for the upgrades. Based upon the successful remediation conducted from 1995 through the present and the relatively low compound concentrations remaining at the site, a ground water monitoring program to evaluate ground water quality conditions over time was proposed in lieu of GWTS upgrade and continued operation.

The NYSDEC conditionally approved the proposed ground water monitoring program and enhanced in-situ remediation surrounding MW-31 in their NYSDEC e-mail sent April 23, 2012. On August 2, 2013, a GWTS Decommissioning and Closure Workplan inclusive of the OU2 interceptor sump was submitted to the NYSDEC. The decommissioning and closure workplan was subsequently approved by the NYSDEC. The GWTS decommissioning and Closure is anticipated to occur during 2016.

3.0 EVALUATION OF REMEDY PERFORMANCE, EFFECTIVENESS AND PROTECTIVENESS

The OU1 GWTS was effectively processing ground water from three Recovery Trenches 1, 2, and 3 and was compliant with the NYSDEC effluent discharge criteria from inception of operation during 1995 through 2010. As a result of effective GWTS operations, a significant reduction in contaminant levels has been achieved. A comparative review of historical analytical data from the investigative results during 1990 and 1991 which reported significantly higher concentrations of benzene (67,000 µg/L) and chlorobenzene (260 µg/L) in the source area well (TB-9) have been successfully reduced to not detected levels in TB-9 and downgradient of Trench 1. The total VOC concentration affecting ground water quality surrounding MW-31 upgradient of Trench 2 have also been reduced approximately 85 percent from the initial investigation during 1990. The low level VOCs remaining in ground water will not impact environmental receptors as there are no receptors downgradient east of the site.

During the 2015 monitoring period, synoptic water level measurements were collected and ground water monitoring was conducted as required by the site monitoring program.

4.0 INSTITUTIONAL AND ENGINEERING CONTROL PLAN COMPLIANCE REPORT

Currently, there are no institutional controls recorded for the site. The institutional control for the site will be a Deed Restriction and/or Environmental Easement that will be included as an addendum to the Site Management Plan (SMP) to be submitted to the NYSDEC under separate cover during 2016.

The engineering control to mitigate ground water at the site previously entailed the GWTS and recovery network, which effectively processed and treated ground water from the recovery trenches. As a result of the successful GWTS operations (1995 through 2010), the compound concentrations have decreased to marginal levels in the upgradient wells across the site and have remained below the NYSDEC GWQC with minor exceptions, in the downgradient wells.

5.0 MONITORING PLAN COMPLIANCE REPORT

5.1 GROUND WATER FLOW

During this reporting period and as required by the site monitoring program, synoptic water level measurements were collected from the site wells and piezometers within OU1 and OU2 on September 18, 2015. The synoptic water level-elevation data is compiled and summarized in Appendix A, and ground water elevation contour maps for OU1 and OU2 are presented as Figures 3 and 4.

Ground water flow direction upgradient of Recovery Trenches 1 and 2 is consistent with ground water flow patterns historically observed within OU1. Ground water flow is oriented primarily to the east. The ground water flow patterns within OU2 during the same period are oriented primarily to the east/northeast and is consistent with previous flow patterns observed for this section of the site.

5.2 GROUND WATER MONITORING PROGRAM

5.2.1 Long Term Ground Water Monitoring Program

The long-term ground water monitoring program for the OU1 portion of the site was approved by the NYSDEC during January 1997. The monitoring program originally consisted of sampling nine monitoring wells: TB-9, TB-23, MW-28, MW-31, MW-35, MW-41, MW-43, MW-49, and MW-61. Wells MW-35, MW-41 and MW-49 were removed from the monitoring program in 2002 following an extended period of non-detected results for all VOC constituents. Starting in the first semi-annual 2007 monitoring period, semi-annual sampling of MW-40 was added to the monitoring program to assess ground water quality upgradient of the former Trench 3 subsequent to Trench 3 closure. Based upon effective GWTS operations and decreasing VOC levels reported below the OU1 section of the site, several wells were proposed to be eliminated from the monitoring program in previous PRRs. The current 2015 long term ground water monitoring program entailed sampling MW-31, MW-36, and MW-71 (semi-annually), PZ-23 and MW-24 (annually) and TB-9, MW-40, and MW-43 (every fifth quarter). Monitoring Well MW-54 within the OU2 portion of the site is monitored every fifth quarter.

The wells from commencement of the monitoring program were analyzed for NYSDEC Target Compound List (TCL) VOCs plus 15 library search compounds, including a search for Methyl Isobutyl Ketones [MIBK] and 1,4-dioxane (TCL-VOC+15). A summary of the monitoring program wells, sample frequency, and analytical parameters is presented in Section 5.2.4.

A combined ground water monitoring program consisting of the long term ground water monitoring wells previously discussed and the MW-31 in-situ post-application wells were included in the monitoring program to evaluate the response and effectiveness of the RegenOx® and ORC Advanced® treatment to ground water quality conditions.

The OU1 MW-31 In-Situ WP (March 2012) presented the details of the proposed subsurface application of RegenOx® combined with ORC Advanced® to enhance ground water remediation in the area proximal to MW-31. As part of the NYSDEC Workplan approval, and as proposed and approved by the NYSDEC in the MW-24 and MW-71 Delineation Results Report, MW-24 sampling was included in the annual monitoring program (September 2015).

The MW-31 In-Situ WP proposed installation of three delineation monitoring wells, MW-70, MW-71 and MW-72, during July 2012 to assess the effectiveness of the in-situ remediation. The three wells were installed up-gradient (MW-71) and cross-gradient (MW-70 and MW-72) of MW-31. During the December 2012 post-application sampling of MW-71 (up-gradient well), DNAPL was observed within the well. The DNAPL was reported to the NYSDEC in an e-mail dated March 18, 2013, entitled *MW-31 Workplan Results Summary*. The Results Summary stated that the DNAPL would be gauged and sampled to assess the composition of the material.

Based on the chlorinated VOCs reported in MW-24 and DNAPL in MW-71, the NYSDEC requested a delineation workplan to assess the extent of the VOCs and DNAPL proximal to MW-24 and MW-71, respectively. The MW-24 and MW-71 Delineation Workplan was submitted to the NYSDEC on August 2, 2013. The NYSDEC approved the MW-71 and MW-24 Delineation Workplan in their letter dated August 26, 2013.

The results of the MW-24 and MW-71 delineation program were submitted to the NYSDEC on August 8, 2014 and subsequently approved by the NYSDEC in their letter dated October 9, 2014.

Based on the results, the delineation of VOCs reported in MW-24 has been completed and annual monitoring of MW-24 and downgradient well PZ-23 was proposed concurrent with the OU1 long term ground water monitoring program. The MW-24 and PZ-23 monitoring was conducted on September18, 2015 in accordance with the ground water monitoring program summary presented in Section 5.2.4 below. The results are presented in Sections 5.3 and 5.4 of this PRR.

5.2.2 Current Ground Water Monitoring Program

Based on the results of the long-term ground water monitoring program presented in the 2014 PRR, the NYSDEC approved the following 2015 ground water monitoring program for the OU1 and OU2 wells:

Long Term Ground Water Monitoring Program		
Monitoring Well	**Frequency**	**Analytical Program**
Operable Unit 1		
MW-31	Semi-Annual	TCL-VOC+15 w/search MIBK, 1,4-dioxane
MW-36	Semi-Annual	TCL-VOC+15 w/search MIBK, 1,4-dioxane
MW-71	Semi-Annual	TCL-VOC+15 w/search MIBK, 1,4-dioxane
PZ-23	Annually, September	TCL-VOC+15 w/search MIBK, 1,4-dioxane
MW-24	Annually, September	TCL-VOC+15 w/search MIBK, 1,4-dioxane
TB-9	Every 5th Quarter	TCL-VOC+15 w/search MIBK, 1,4-dioxane
MW-40	Every 5th Quarter	TCL-VOC+15 w/search MIBK, 1,4-dioxane
MW-43	Every 5th Quarter	TCL-VOC+15 w/search MIBK, 1,4-dioxane
Operable Unit 2		
MW-54	Every 5th Quarter	TCL-VOC+15 w/search MIBK, 1,4-dioxane

5.3 OU1 MONITORING RESULTS

The 2015 sampling of the aforementioned OU1 wells were performed during March, September and December 2015. The wells were analyzed for TCL-VOCs+15 and a search for MIBK and 1,4-dioxane. The laboratory analysis was performed by Test America (TA) Laboratories of Edison, New Jersey, a New York State certified laboratory (NYSDEC Certification #11452). The results of the March, September, and December 2015 ground water monitoring events for OU1 are summarized on Tables 1 through 3 and depicted on Figure 5. The analytical data package is included in Appendix B.

5.3.1 March 2015 Monitoring Results

Semi-annual ground water sampling was conducted on March 17th, 2015. The sampling results are presented on Table 1 and depicted on Figure 5. Two wells (MW-43 and MW-72) were sampled during March 2015 in accordance with the 2014 PRR, however, the NYSDEC approved a reduced frequency for MW-43 (from quarterly to every 5th quarter; December 2015), and discontinue sampling MW-72 in their

2014 PRR approval letter dated June 16, 2015. The results of the March sampling event are presented below.

Review of the analytical results indicated that out of the seven wells analyzed for TCL-VOC+15 (MW-31, MW-36, MW-37, MW-43, MW-70, MW-71, and MW-72) only two wells, MW-31 and MW-71, reported select VOCs above the NYSDEC-GWQC. The results are summarized below.

a. Three VOCs were reported above the GWQC in MW-31: benzene, chlorobenzene, and chloroethane. Review of the historical summary of VOCs reported in MW-31 (Table 4) is indicative of these target compounds being historically detected above their respective GWQC in this well.

b. A review of the results from the downgradient wells (MW-36 and MW-43) indicated VOCs were not detected above the laboratory Method Detection Level (MDL) during March, consistent with previous sampling events indicating that compounds of concern reported in MW-31 are not migrating downgradient to MW-36. The VOC levels (not detectable) reported in MW-43 downgradient of Trench 1 is consistent with previous sampling events with several minor exceptions (Table 5).

c. A review of the results for monitoring well MW-72 (Table 1) indicated VOCs were not detected above the laboratory MDL, consistent with previous sampling events. Since the VOC results in MW-72 have been reported below the GWQC, the NYSDEC approved discontinued sampling of MW-72 in their 2014 PRR approval letter dated June 16, 2015.

d. A review of the results from upgradient well MW-71 (Table 6) indicated chlorobenzene was reported above the GWQC, consistent with previous sampling events. Benzene was reported below the GWQC in MW-71 for the first time since inception of the monitoring program in this well.

5.3.2 September 2015 Monitoring Results

The annual ground water monitoring event was conducted on September 18th, 2015. The September 2015 event included monitoring wells PZ-23, MW-24, MW-31, MW-36, and MW-71. The analytical results are presented on Table 2 and depicted on Figure 5. Review of the analytical results indicated that out of

the five wells analyzed for TCL-VOC+15, three wells, MW-24, MW-31, and MW-71, were reported with select VOCs above the NYSDEC-GWQC. The results are summarized below.

a. As proposed in the MW-24 and MW-71 Delineation Results Report and approved by the NYSDEC in their letter dated October 9, 2014, sampling of MW-24 and downgradient PZ-23 would be conducted during September of each calendar year to monitor MW-24 and downgradient well PZ-23 concurrent with the long term ground water monitoring program. Review of the MW-24 results indicated that the VOCs historically reported in MW-24 (chlorobenzene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, trichloroethene [TCE], and vinyl chloride) were reported above the GWQC during the September 2015 sampling event (Table 2). The concentrations reported in MW-24 were consistent with previous results (generally remained within the 10 to 50 microgram per liter [µg/L] range; Table 7).

b. The PZ-23 results (downgradient east of MW-24; Table 2; Figure 5) were reported as not detected or below the NYSDEC GWQC indicating that the levels reported in MW-24 are not substantially migrating downgradient to the east.

c. Three VOCs (benzene, chlorobenzene, and chloroethane) were reported in MW-31 above the GWQC (Table 2; Figure 5), at concentrations consistent with previous sampling events. During 2014 and 2015 these three compounds have been the only VOCs reported in MW-31, albeit at overall lower concentrations than historically detected (Table 4).

d. The VOC results from downgradient well MW-36 (Table 2; Figure 5) were reported as not detected or below the GWQC, indicating that the impacts observed in MW-31 are not migrating downgradient and remain localized in the area of MW-31.

e. A review of the results from upgradient well MW-71 (Table 2; Figure 5) indicated benzene and chlorobenzene concentrations were above the GWQC, consistent with previous sampling events (Table 6).

5.3.3 December 2015 Monitoring Results

The fifth quarter monitoring program was conducted on December 16, 2015. The sampling results are presented on Table 3 and depicted on Figure 5. The every fifth quarter event consisted of sampling TB-9, MW-40, and MW-43. The results are summarized below.

a. The 2013 PRR proposed to discontinue sampling of monitoring well TB-9. The NYSDEC PRR approval letter requested continued monitoring once every fifth quarter as a result of seasonal fluctuations in the sample results. The well was sampled during December 2015 and the results were reported as not detected or below the NYSDEC GWQC (Table 3). The December event represents the sixth sampling event that the TB-9 results were reported as not detected or below the GWQC (September 2012 – December 2015; Table 8).

b. A review of the MW-40 sample results (Table 3) indicated benzene, chlorobenzene and xylenes were reported above the GWQC consistent with previous sample events. The concentrations reported in MW-40 have fluctuated but remain marginally above the GWQC (Table 9).

c. The MW-43 VOC results were reported as not detected or below the GWQC, with the exception of one VOC (1,2-dichloroethane) reported at an estimated concentration marginally above the GWQC (Table 3; Figure 5).

5.3 OU2 MONITORING RESULTS

The NYSDEC required continued ground water monitoring of MW-54 every fifth quarter within the OU2 section of the site due to the concentrations of tetrachloroethene (PCE) exceeding the GWQC. The sampling was conducted during the December 2015 event. A review of the MW-54 results indicated PCE at 9.5 µg/L, above the GWQC of 5.0 µg/L (Table 3; Figure 6). However, the MW-54 PCE result indicates a decreasing trend from the previous two sampling events during September 2013 (15 µg/L) and September 2014 (13 µg/L).

6.0 OPERATION AND MAINTENANCE PLAN COMPLIANCE REPORT

Operation and maintenance activities were not conducted during the January 2015 through December 2015 period, as a result of the GWTS cessation, as discussed above.

7.0 TECHNICAL CONCLUSIONS AND RECOMMENDATIONS

The site monitoring plan activities conducted during January through December 2015 monitoring period are summarized below.

1. The site wide ground water monitoring program was conducted during March, September, and December 2015.

2. This Periodic Review Report was prepared for the period January through December 2015.

7.1 OPERABLE UNIT 1

The results of the monitoring events conducted during January through December 2015 has documented the continued decreasing trend of the low level VOCs concentrations in the OU1 wells with minor fluctuation in the reported results. The results in five of the eight wells (MW-36, MW-43, MW-72, TB-9, and PZ-23) reported levels below or not detected above the GWQC since the inception of the revised monitoring program during 2012. Monitoring well MW-43 has reported only two target VOCs marginally above the GWQC during this same period (Table 5).

Three VOCs (benzene, chlorobenzene, chloroethane) were reported in MW-31 during the two sampling events (March and September) in 2015. Overall, the concentration of these three VOC remained consistent with minor fluctuation of the levels during the period. However, the absence of compounds of concern downgradient of MW-31 (in MW-36; Figure 5) and cross-gradient (in MW-72; Figure 5) document that the reported VOCs are localized to the area around MW-31 and are not substantially migrating downgradient to the east.

Monitoring Well MW-40, located upgradient of the former Trench 3, contained benzene, chlorobenzene and xylenes concentrations marginally above the GWQS during the December 2015 sampling event (Table 3; Figure 5). The VOC concentrations in MW-41 have historically remained consistent .

The VOC concentrations reported in MW-24 are localized to the area proximal to MW-24 (Figure 5). As presented in the MW-24 and MW-71 Delineation Program Results Report (dated August 8, 2014), the presence of the degradation compounds (cis-1,2-dichloroethene, trans-1,2-dichloroethane, and vinyl

chloride) is an indicator that anaerobic reductive dechlorination is occurring in the area proximal to MW-24. As such, a decreasing trend in VOCs is expected over time. Additionally, the absence of these VOCs further downgradient of MW-24 in PZ-23 (Figure 5) document that the reported VOCs are localized to the area around MW-24 and not migrating downgradient to the east.

Upgradient well MW-71 results indicated chlorobenzene above the GWQC during March 2015 (Table 1) and benzene and chlorobenzene above the GWQC during September 2015 (Table 2). These two VOCs remain the only compounds detected in MW-71 since the inception of the monitoring program during 2012. The concentrations observed in MW-71 have remained generally consistent with slight fluctuations over time (Table 6).

Monitoring well TB-9 results were reported as not detected or below the NYSDEC GWQC. The December 2015 event represents the sixth sampling event that the TB-9 results were reported as not detected or below the GWQC (Table 8).

Based upon the information presented herein, the conclusions and recommendations for the OU1 section of the site are presented below.

1. Relative to MW-31 and MW-71, the benzene, chlorobenzene, and chloroethane results remain consistent during the monitoring period with recent sampling events. Historically, the MW-31 results for chlorinated compounds 1,1,1 trichloroethane and 1,1-dichloroethane (Table 4) has demonstrated a substantial decrease to concentrations below the GWQC (neither compound has been detected above the laboratory MDL during the last three sampling events). The overall chloroethane concentrations remain moderate with some fluctuations noted. This trend is a strong indicator that natural reductive dechlorination processes are occurring, resulting in the documented absence of the original chlorinated compounds and temporary increase in the chloroethane as a daughter product.

   The VOC concentrations reported in the MW-71 ground water samples have been limited to benzene (13 µg/L) and chlorobenzene (17 to 160 µg/L), above the NYSDEC GWQC. The presence of only these two VOC compounds in MW-71 is an indication that the DNAPL is not highly water soluble, as previously characterized by Dakota Technologies, Inc. during the MW-71 delineation program. Additionally, VOC concentrations have been reported as not detected in down-gradient well MW-36, which further supports that the DNAPL is not contributing to VOCs in ground water down-gradient to

the east. It is recommended that sampling of MW-31, MW-36, and MW-71 be continued on a semi-annual basis (March and September) during 2016.

2. As presented in the MW-24 and MW-71 Delineation Program Results Report (dated August 8, 2014), the MW-24 VOCs have been effectively delineated and it is anticipated that a decreasing trend will occur over time. Therefore, it is proposed to continue to sample MW-24 and down-gradient well PZ-23 annually.

3. For monitoring well TB-9 (upgradient of Trench 1), VOC results have been reported below or not detected above the GWQC since June 2012 (six monitoring events through December 2015; Table 8). The NYSDEC requested TB-9 continue to be sampled every fifth quarter due to seasonal fluctuation of VOC levels. Therefore, it is recommended that sampling of TB-9 be conducted during September 2016 and if the VOC levels are reported below the NYSDEC GWQC, sampling of TB-9 will be discontinued during 2017.

Based on the VOC levels reported during the monitoring period, it is proposed to continue the long term monitoring program as presented below.

Long Term Monitoring Program
Operable Unit 1
Former Kay Fries Site
Evonik Corporation, Stony Point, New York

Monitoring Well	***Frequency***	***Analytical Program***
TB-9	September 2016[a]	TCL-VOC+15 w/search MIBK, 1,4-dioxane
MW-31	Semi-Annual, March, September	TCL-VOC+15 w/search MIBK, 1,4-dioxane
MW-36	Semi-Annual, March, September	TCL-VOC+15 w/search MIBK, 1,4-dioxane
MW-71	Semi-Annual, March, September	TCL-VOC+15 w/search MIBK, 1,4-dioxane
PZ-23	Annually, September	TCL-VOC+15 w/search MIBK, 1,4-dioxane
MW-24	Annually, September	TCL-VOC+15 w/search MIBK, 1,4-dioxane
MW-40	Every 5th Quarter, March 2017	TCL-VOC+15 w/search MIBK, 1,4-dioxane
MW-43	Every 5th Quarter, March 2017	TCL-VOC+15 w/search MIBK, 1,4-dioxane

a – If VOC results are reported below the GWQC during September 2016 event, discontinue sampling of TB-9.

4. During 2016, collect synoptic water level measurements from the wells within OU1 during September to coincide with the annual ground water monitoring program.

7.2 OPERABLE UNIT 2

The December 2015 sampling event within OU2 indicated that only PCE was reported above the GWQC within MW-54 (Table 3; Figure 6). The PCE concentration reported in MW-54 (9.5 µg/L) was consistent with the previous PCE levels although decreasing from the previous two sampling events (September 2013 and September 2014 reported at 15 µg/L and 13 µg/L, respectively). No other VOCs were reported at concentrations in excess of their respective NYSDEC GWQC. It is proposed to continue sampling of MW-54 every fifth quarter as part of the long term ground water monitoring program for the site.

The OU2 monitoring program is presented below.

Long Term Monitoring Program Operable Unit 2 Former Kay Fries Site Evonik Corporation, Stony Point, New York		
Monitoring Well	***Frequency***	***Analytical Program***
MW-54	Every 5th Quarter, March 2017	Tetrachloroethene (PCE)

TABLES

Table 1
Analytical Summary of Monitoring Results - OU1; March 2015
Former Kay Fries Site – Evonik Corporation – Stony Point, New York
ECM Project #1192

	Operable Unit 1							
Sample Identification	MW-31	MW-36	MW-43	MW-71	MW-72	Trip Blank	Field Blank	GWQC
Sample Date	3/17/2015	3/17/2015	3/17/2015	3/17/2015	3/17/2015	3/17/2015	3/17/2015	(ug/L)
Laboratory Identification	460-91910-6	460-91910-3	460-91910-2	460-91910-7	460-91910-4	460-91910-1	460-91910-5	
TCL Volatile Organics								
1,1,1-Trichloroethane	ND <0.28	ND <0.28	ND <0.28	1.3	ND <0.28	ND <0.28	ND <0.28	5
1,1-Dichloroethane	ND <0.24	ND <0.24	ND <0.24	0.43 J	4.2	ND <0.24	ND <0.24	5
1,1-Dichloroethene	ND <0.34	ND <0.34	ND <0.34	ND <0.34	1.8	ND <0.34	ND <0.34	5
1,2-Dichloroethane	ND <0.25	ND <0.25	0.44 J	ND <0.25	ND <0.25	ND <0.25	ND <0.25	0.6
Benzene	***11***	ND <0.19	0.20 J	1.0	0.40 J	ND <0.19	ND <0.19	1
Bromodichloromethane	ND <0.15	ND <0.15	ND <0.15	0.27 J	ND <0.15	ND <0.15	ND <0.15	50
Chlorobenzene	***89***	0.40 J	2.9	***17***	0.77 J	ND <0.24	ND <0.24	5
Chloroethane	***250***	ND <0.37	ND <0.37	ND <0.37	ND <0.37	ND <0.37	ND <0.37	50
Chloroform	ND <0.22	ND <0.22	ND <0.22	3.1	ND <0.22	ND <0.22	ND <0.22	7
Dibromochloromethane	ND <0.22	ND <0.22	ND <0.22	3.2	ND <0.22	ND <0.22	ND <0.22	50
Toluene	2.1	ND <0.25	ND <0.25	ND <0.25	ND <0.25	ND <0.25	ND <0.25	5
Total VOC	352.1	0.4	3.54	26.3	7.17	0	0	NA
Total VOC TICs	29	0	0	0	0	0	0	500

NOTES:

All results reported in micrograms per liter (ug/L).

GWQC :Ground Water Quality Criteria; NYSEDEC, T.O.G.S. 1.1.1 (June 1998; June 2004)
*TICs :Tentatively Identified Compounds
ND<1.0 :Compound Not Detected at indicated method detection limit.
BOLD :Concentration reported above the listed GWQC
J :Estimated value greater than the Method Detection Limit but lower than the reporting limit.
NA :No applicable GWQC.
NT :Not Tested.

Table 2
Analytical Summary of Monitoring Results - OU1; September 2015
Former Kay Fries Site – Evonik Corporation – Stony Point, New York
ECM Project #1192

Sampling Location	Operable Unit 1					
Sample Identification	PZ-23	MW-24	MW-31	MW-36	MW-71	GWQC
Sample Date	9/18/2015	9/18/2015	9/18/2015	9/18/2015	9/18/2015	(ug/L)
Laboratory Identification	460-101534-1	460-101534-4	460-101534-3	460-101534-2	460-101534-5	
TCL Volatile Organics						
1,1-Dichloroethane	ND <0.24	ND <0.241	ND <0.24	ND <0.24	1	5
1,4-Dioxane	190	ND <8.7	ND <8.7	ND <8.7	ND <8.7	NA
Benzene	ND <0.090	0.96 J	***18***	ND <0.090	***13***	1
Chlorobenzene	ND <0.24	***58***	***230***	ND <0.24	***160***	5
Chloroethane	ND <0.37	ND <0.37	***230***	ND <0.37	1.5	50
cis-1,2-Dichloroethene	ND <0.26	***47***	ND <0.26	ND <0.26	ND <0.26	5
Ethylbenzene	ND <0.30	ND <0.30	ND <0.30	ND <0.30	0.47 J	5
Toluene	ND <0.25	ND <0.25	0.81 J	ND <0.25	0.39 J	5
trans-1,2-Dichloroethene	ND <0.18	***30***	ND <0.18	ND <0.18	ND <0.18	5
Trichloroethene	ND <0.22	***11***	ND <0.22	ND <0.22	ND <0.22	5
Vinyl Chloride	ND <0.060	***8***	ND <0.060	ND <0.060	ND <0.060	5
Xylenes, Total	ND <0.28	ND <0.28	0.39 J	ND <0.28	1.1 J	5
Total VOCs	190.0	154.96	479.2	0	177.46	NA
Total VOC TICs	20	0	90	0	38	500
Metals						
Iron	NT	NT	3,720	19,100	NT	NA
Manganese	NT	NT	778	682	NT	NA

NOTES:

All results reported in micrograms per liter (ug/L).

GWQC :Ground Water Quality Criteria; NYSEDEC, T.O.G.S. 1.1.1 (June 1998; June 2004)

*TICs :Tentatively Identified Compounds

ND<1.0 :Compound Not Detected at indicated method detection limit.

BOLD :Concentration reported above the listed GWQC

J :Estimated value greater than the Method Detection Limit but lower than the reporting limit.

NA :No applicable GWQC.

NT :Not Tested

Table 3
Analytical Summary of Monitoring Results for OU1 & OU2 - December 2015
Former Kay Fries Site – Evonik Corporation – Stony Point, New York
ECM Project #1192

Sampling Location	Operable Unit 1			Operable Unit 2	
Sample Identification	TB-9	MW-40	MW-43	MW-54	GWQC
Sample Date	12/16/2015	12/16/2015	12/16/2015	12/16/2015	(ug/L)
Laboratory Identification	460-106505-4	460-106505-2	460-106505-1	460-106505-3	
TCL Volatile Organic Compounds (VOCs)					
1,1,1-Trichloroethane	ND <0.28	ND <0.28	ND <0.28	0.30 J	5
1,1-Dichloroethane	0.26 J	ND <0.24	ND <0.24	ND <0.24	5
1,2-Dichloroethane	ND <0.25	ND <0.25	***0.61 J***	ND <0.25	0.6
1,4-Dioxane	ND <8.7	20 J	36 J	ND <8.7	NA
MIBK	ND <0.63	ND <0.63	ND <0.63	ND <0.63	50
Acetone	13 *	11 *	12 *	13 *	50
Benzene	ND <0.090	***2.6***	ND <0.090	ND <0.090	1
Chlorobenzene	ND <0.24	***10***	ND <0.24	ND <0.24	5
Chloroform	ND <0.22	ND <0.22	ND <0.22	0.61 J	7
Tetrachloroethene	ND <0.12	ND <0.12	ND <0.12	***9.5***	5
Toluene	ND <0.25	1.3	ND <0.25	ND <0.25	5
Xylenes, Total	ND <0.28	***12***	ND <0.28	ND <0.28	5
Total VOCs	13.26	56.9	48.61	23.41	NA
Total VOC TICs	0	317.5	0	0	500

NOTES:

All results reported in micrograms per liter (ug/L).

GWQC :Ground Water Quality Criteria; NYSEDEC, T.O.G.S. 1.1.1 (June 1998; June 2004)
*TICs :Tentatively Identified Compounds
ND<1.0 :Compound Not Detected at indicated method detection limit.
BOLD :Concentration reported above the listed GWQC
J :Estimated value greater than the Method Detection Limit but lower than the reporting limit.
NA :No applicable GWQC.
NT :Not Tested
* :Laboratory Control Sample or Laboratory Control Sample Duplicate is outside acceptance limits.

Table 4
Historical Summary of Detected Volatile Organic Compounds Monitoring Well MW-31(ug/L)
Former Kay Fries Site
Evonik Corporation, Stony Point , New York
ECM Project No.1192

Volatile Organics	Dec-90	Feb-97	May-97	Aug-97	Nov-97	May-98	Aug-98	May-99	Nov-99	May-00	Nov-00	May-01	Nov-01	Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04	Oct-05	Jun-06	Oct-06	Apr-07	Oct-07	Apr-08	Apr-09	Dec-09	Jun-10	Nov-10	Apr-11	Aug-11	Jun-12	Aug-12	Dec-12	Mar-13	Jun-13	Sep-13	Jan-14	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Sep-15	GWQC
1,1,1 Trichloroethane	**310**	**17**	**80**	ND	ND	4.5	ND	ND	ND	ND	1.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,1-Dichloroethane	**1,700**	**1300**	**1500**	**570**	**98**	**200**	**87**	**19**	1	**43**	1.8	**6.6**	ND	ND	ND	**12**	ND	**12**	ND	ND	ND	ND	**36**	ND	ND	ND	ND	ND	ND	1.7J	0.31J	0.85J	ND	ND	3	**190**	0.59 J	ND	ND	0.49 J	0.20 J	ND	ND	ND	5
Benzene	ND	**89**	**84**	**130**	**61**	**21**	**42**	**8.1**	**29**	**27**	**35**	**7.5**	**31**	**28**	**41**	**26**	**55**	**14**	**46**	**28**	**16**	**27**	**26**	**14**	**27**	**33**	**38**	**14**	**28**	**32**	**22**	**14**	**13**	0.2 J	0.15 J	**61**	**33**	**42**	**34**	**20**	**32**	**32**	**11**	**18**	1
Chlorobenzene	**55**	**160**	**180**	**210**	**81**	**41**	**110**	**18**	**49**	**66**	**84**	**27**	**72**	ND	**140**	**110**	**270**	**53**	**200**	**250**	**110**	**230**	**100**	**190**	**150**	**190**	**200**	**160**	**220**	**210**	**240**	**210**	**230**	1.5	ND	**200**	**270**	**200**	**180**	**240**	**250**	**180**	**89**	**230**	5
Chloroethane	**780**	**370**	**290**	**390**	**240**	**120**	**460**	**59**	**190**	**99**	**500**	**50**	**350**	**1000**	**900**	**550**	**570**	**270**	**150**	**5.7**	**190**	**18**	**670**	3.6	**440**	**820**	**750**	**110**	**250**	**540**	**260**	**350**	**320**	4	ND	**1,100**	**210**	**1,100**	**1,500**	**330**	**470**	**760**	**250**	**230**	5
Toluene	**7**	1.9	2.4	1.9	1.8	ND	ND	ND	0.5	ND	ND	ND	ND	**76**	ND	ND	1.4	ND	0.7	1	ND	0.9	ND	0.9	ND	3.2	ND	ND	0.73J	0.91J	0.79J	0.51J	0.66J	ND	ND	4.9 J	1.1	3.9	1.1 J	0.54 J	1.5 B	ND	2.1	0.81 J	5
Vinyl Chloride	ND	**11**	ND	**8.8**	**2.9**	**2.5**	**2.3**	ND	ND	ND	**3.2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**3.3 J**	ND	ND	ND	ND	0.19 J	ND	ND	ND	2

Notes:
GWQC - NYSDEC Ground Water Quality Criteria
ND = Compound Not Detected Above Laboratory Method Detection Limit (MDL).
Bold: Result Exceeds NYSDEC GWQC.
J: Estimated value greater than the MDL but lower than the Reporting Limit (RL).
B: Compound was found in the blank and sample

Table 5
Historical Summary of Detected Volatile Organic Compounds Monitoring Well MW-43 (ug/L)
Former Kay Fries Site
Evonik Corporation, Stony Point, New York
ECM Project No. 1192

Volatile Organics	Apr-07	Oct-07	Apr-08	Apr-09	Dec-09	Jun-10	Nov-10	Apr-11	Aug-11	Jun-12	Sep-12	Dec-12	Mar-13	Sep-13	Jan-14	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Dec-15	GWQC
Benzene	ND	ND	0.7	**1.1**	0.92	ND	0.36 J	0.63 J	ND	0.23 J	ND	0.33J	ND	ND	0.64 J	ND	ND	ND	0.21 J	0.20 J	ND	1
Chlorobenzene	ND	ND	**39**	**74**	**67**	2.4	**5.3**	**19**	0.65 J	4.3	0.78 J	**13**	ND	0.34 J	**21**	ND	ND	ND	2.0	2.9	ND	5
1,2-Dichlorethane	ND	ND	**2.5**	**3.0**	**3.0**	0.6J	**0.82 J**	**2.3**	**0.89 J**	**0.99J**	ND	**1.5**	0.38 J	ND	**2.1**	0.23 J	ND	0.35 J	**0.85 J**	0.44 J	**0.61 J**	0.6

Notes:
GWQC: NYSDEC Ground Water Quality Criteria
ND: Compound Not Detected Above Laboratory Method Detection Limit (MDL).
Bold: Result exceeds NYSDEC GWQC.
J: Estimated value greater than the Method Detection Limit but lower than the reporting limit.

Table 6
Historical Summary of Detected Volatile Organic Compounds Monitoring Well MW-71 (ug/L)
Former Kay Fries Site
Evonik Corporation, Stony Point, New York
ECM Project No. 1192

Volatile Organics	Aug-12	Dec-12	Mar-13	Jun-13	Sep-13	Jun-14	Sep-14	Mar-15	Sep-15	GWQC
Benzene	**13**	**19**	**15**	**11**	**12**	**11**	**7.6**	1	**13**	1
Chlorobenzene	**200**	**210**	**180**	**120**	**190**	**160**	**120**	**17**	**160**	5

Notes:
GWQC: NYSDEC Ground Water Quality Criteria.
ND: Compound Not Detected
Bold: Compound Reported Above GWQC

Table 7
Historical Summary of Detected Volatile Organic Compounds Monitoring Well MW-24 (ug/L)
Former Kay Fries Site
Evonik Corporation, Stony Point, New York
ECM Project #1192

Sample ID	MW-24	MW-24	MW-24	MW-24	MW-24	MW-24	MW-24	MW-24	
Volatile Organics	August 2011	August 2012	December 2012	July 2013	September 2013	March 2014	September 2014	September 2015	GWQC
Benzene	**1.7**	0.93 J	**1.3**	**1.1**	0.37 J	ND<0.080	0.41 J	0.96 J	1
Chlorobenzene	**43**	**41**	**55**	**46**	**24**	**25**	**21**	**58**	5
Cis-1,2-dichloroethene	**20**	**31**	**48**	**34**	**38**	**49**	**32**	**47**	5
Trans-1,2-dichloroethene	**10**	**18**	**29**	**19**	**20**	**30**	**19**	**30**	5
Trichloroethene (TCE)	**32**	**28**	**29**	**20**	**35**	**27**	**25**	**11**	5
Vinyl chloride	**6.7**	**9.3**	**18**	**6.4**	**2.3**	**4.3**	**2.4**	**8**	2

Notes:
GWQC: NYSDEC Ground Water Quality Criteria
ND: Compound Not Detected
Bold: Compound Reported Above GWQC
J: Estimated value greater than the Method Detection Limit but lower than the reporting limit.

Table 8
Historical Summary of Detected Volatile Organic Compounds Monitoring Well TB-9 (ug/L)
Former Kay Fries Site
Evonik Corporation, Stony Point, New York
ECM Project No. 1192

Volatile Organics	1990 Investigation	Feb-97	May-97	Aug-97	Nov-97	May-98	Aug-98	May-99	Nov-99	May-00	Nov-00	May-01	Nov-01	Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04	Oct-05	Jun-06	Oct-06	Apr-07	Oct-07	**Apr-08**	**Apr-09**	**Dec-09**	Jun-10	**Nov-10**	**Apr-11**	**Aug-11**	**Jun-12**	**Sep-12**	**Dec-12**	**Mar-13**	**Sep-13**	**Sep-14**	**Dec-15**	GWQC
Benzene	**67,000**	**12**	**14**	**13**	**18**	**12**	**5.8**	**8.1**	**7.2**	**4.2**	0.3	**4.4**	0	**2.2**	0.08	**1.8**	**1.9**	0	**1.2**	**2.5**	**1.9**	**2.7**	0.9	**1.9**	0.8	0.52J	0.55 J	0.26J	0.28 J	0.14	ND	0.39 J	0.11 J	ND	ND	0.17 J	ND	ND	1
Chlorobenzene	**76**	2.2	4.1	4	**5.1**	**5.8**	4.4	**6**	**5**	4.7	2	**5.9**	2.1	3.1	**5.2**	**5.8**	**5.8**	**5.8**	**6.9**	**6.6**	**10**	**9**	**7**	**6.2**	3.9	**6.2**	**6.7**	3.5	**6.5**	3.7	ND	**9.1**	4.7	1.1	0.98 J	4.9	3.0	ND	5
Xylene (Total)	**340**	**8.4**	ND	ND	ND	ND	ND	ND	0.5	3.2	1.4	0.4	ND	2.1	ND	1	ND	0.4	0.9	ND	ND	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5

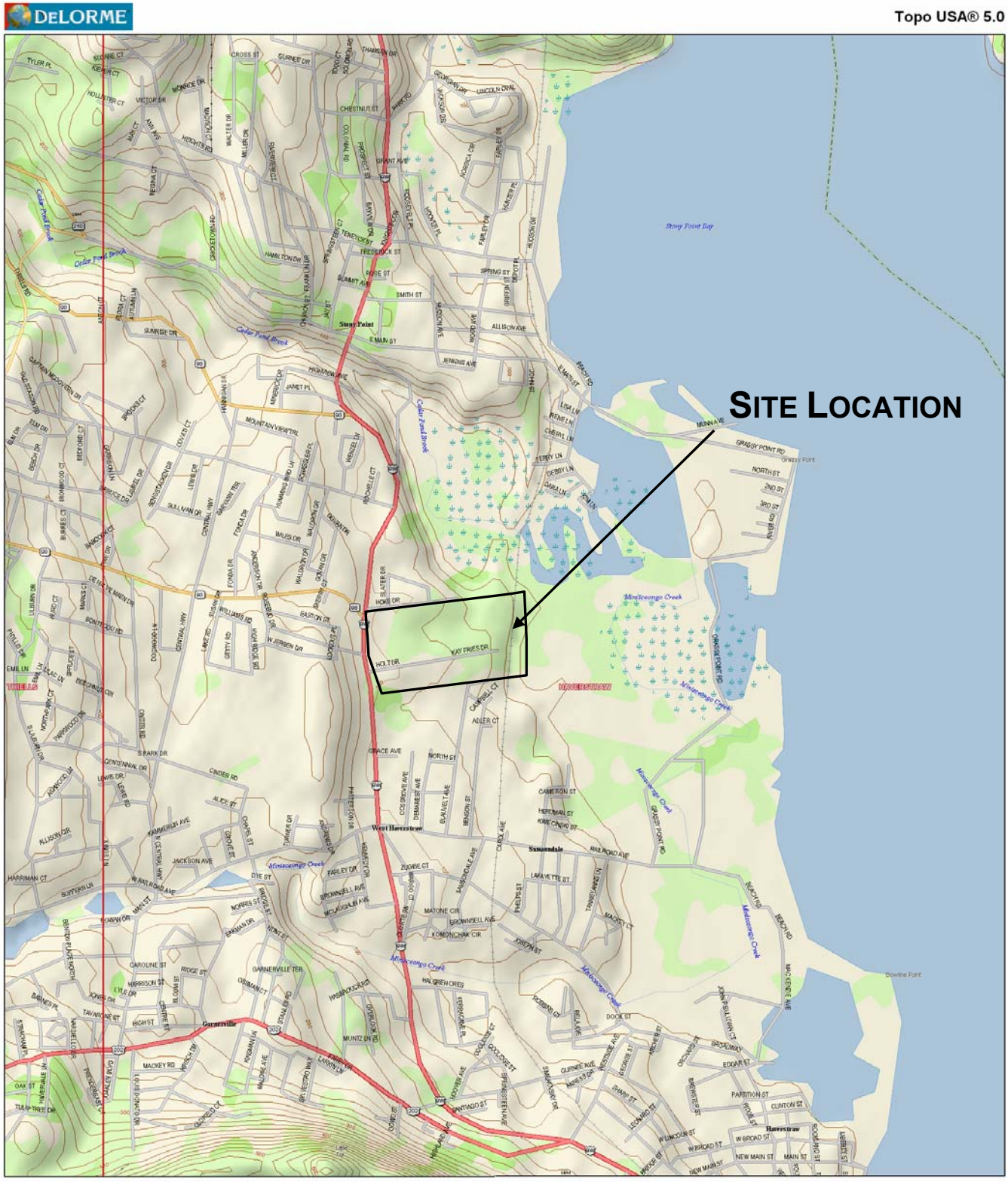
Notes:
GWQC - NYSDEC Ground Water Quality Criteria
ND: Compound Not Detected above laboratory Method Detection Limit (MDL).
Bold: Result exceeds NYSDEC GWQS.
J: Estimated value greater than the MDL but lower than the Reporting Limit (RL).

Table 9
Historical Summary of Detected Volatile Organic Compounds for Monitoring Well MW-40 (ug/L)
Former Kay Fries Site
Evonik Corporation, Stony Point, New York
ECM Project No. 1192

Volatile Organics	Feb-92	Oct-05	Apr-07	Oct-07	Apr-08	Apr-09	Jun-10	Apr-11	Aug-11	Jun-12	Sep-12	Mar-13	Sep-13	Jun-14	Dec-14	Dec-15	GWQC
Benzene	**25**	**6.7**	**9.1**	**5.6**	**4.5**	**6.4**	**2**	0.2J	**4**	**1.5**	**2.7**	**1.6**	0.28J	**1.6**	**2.1**	**2.6**	1
Chlorobenzene	**6**	**18**	**9**	**7.7**	**10**	**8**	**2.4**	4.5	**8.8**	**8.2**	**10**	3.1	**5.8**	**14**	**9.2**	**10**	5
Toluene	**44**	2.4	3.4	3.8	1.3	2.8	0.69J	0.91J	ND	0.55J	0.89J	ND	0.66J	0.69 J	1.1	1.3	5
Xylene	**7**	**10**	**16**	**9.4**	**12**	**10**	**5.6**	ND	ND	2.7	**6.2**	**5.5**	3.5	**6.7**	**17**	**12**	5

Notes:
GWQC: NYSDEC Ground Water Quality Criteria.
ND: Compound Not Detected above laboratory Method Detection Limit (MDL).
Bold: Result exceeds NYSDEC GWQC.

FIGURES



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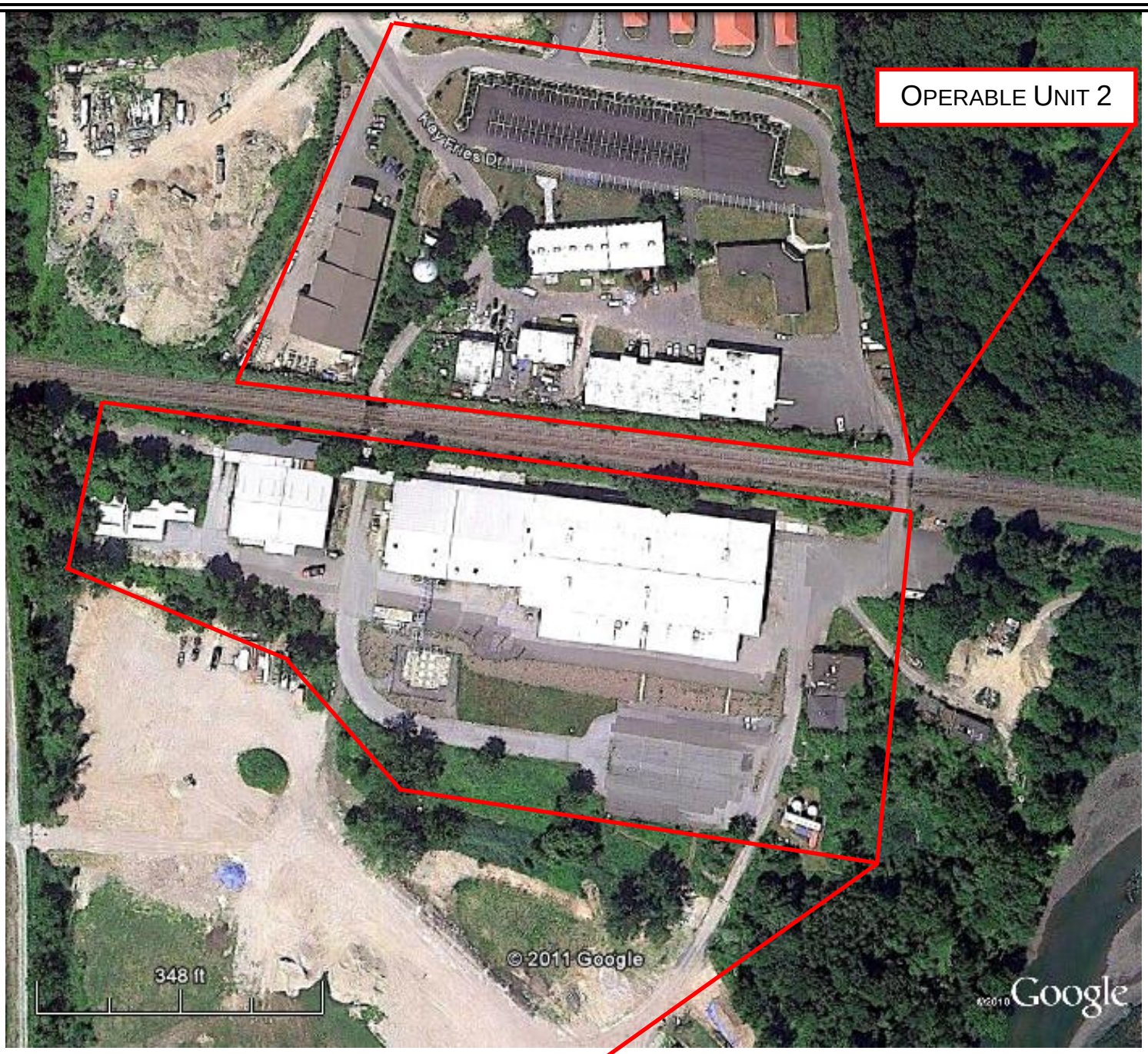
United States Department of the Interior
Geological Survey - 7.5 minute Quadrangle
Haverstraw, N.Y

FIGURE 1
SITE LOCATION MAP
FORMER KAY FRIES SITE
STONY POINT, NEW YORK

↑ North	Scale: 1" = 4,000'	Date: 3/15/11	ECM Project # 1192



Source: "Stony Point, NY." **Google Earth**. 2011. March 15, 2011.

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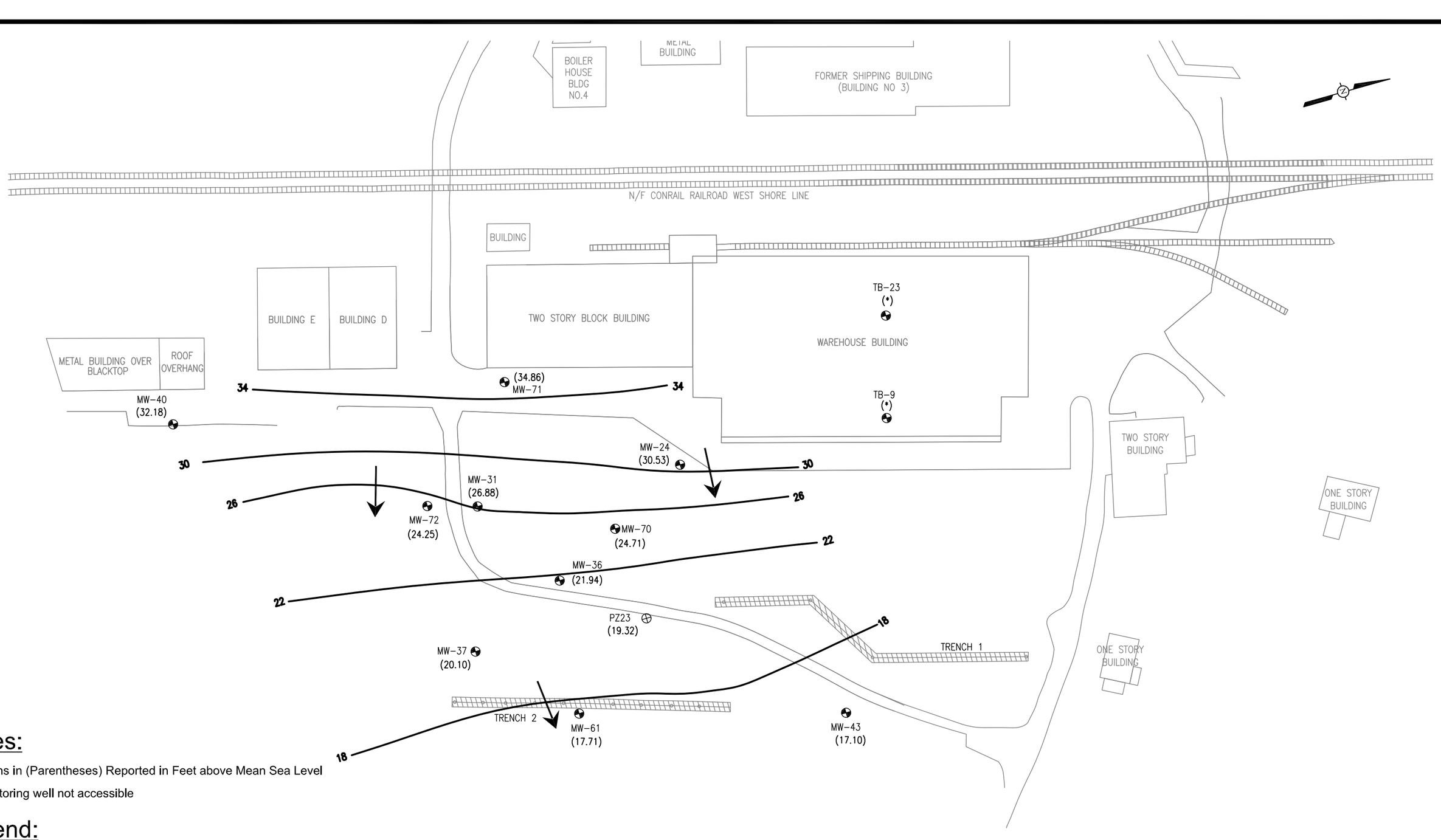
FIGURE 2
OPERABLE UNIT 1 AND 2 LOCATION MAP
FORMER KAY FRIES SITE
STONY POINT, NEW YORK

North →	Scale: As Shown	Date: 3/15/11	ECM Project # 1192



Notes:

Elevations in (Parentheses) Reported in Feet above Mean Sea Level

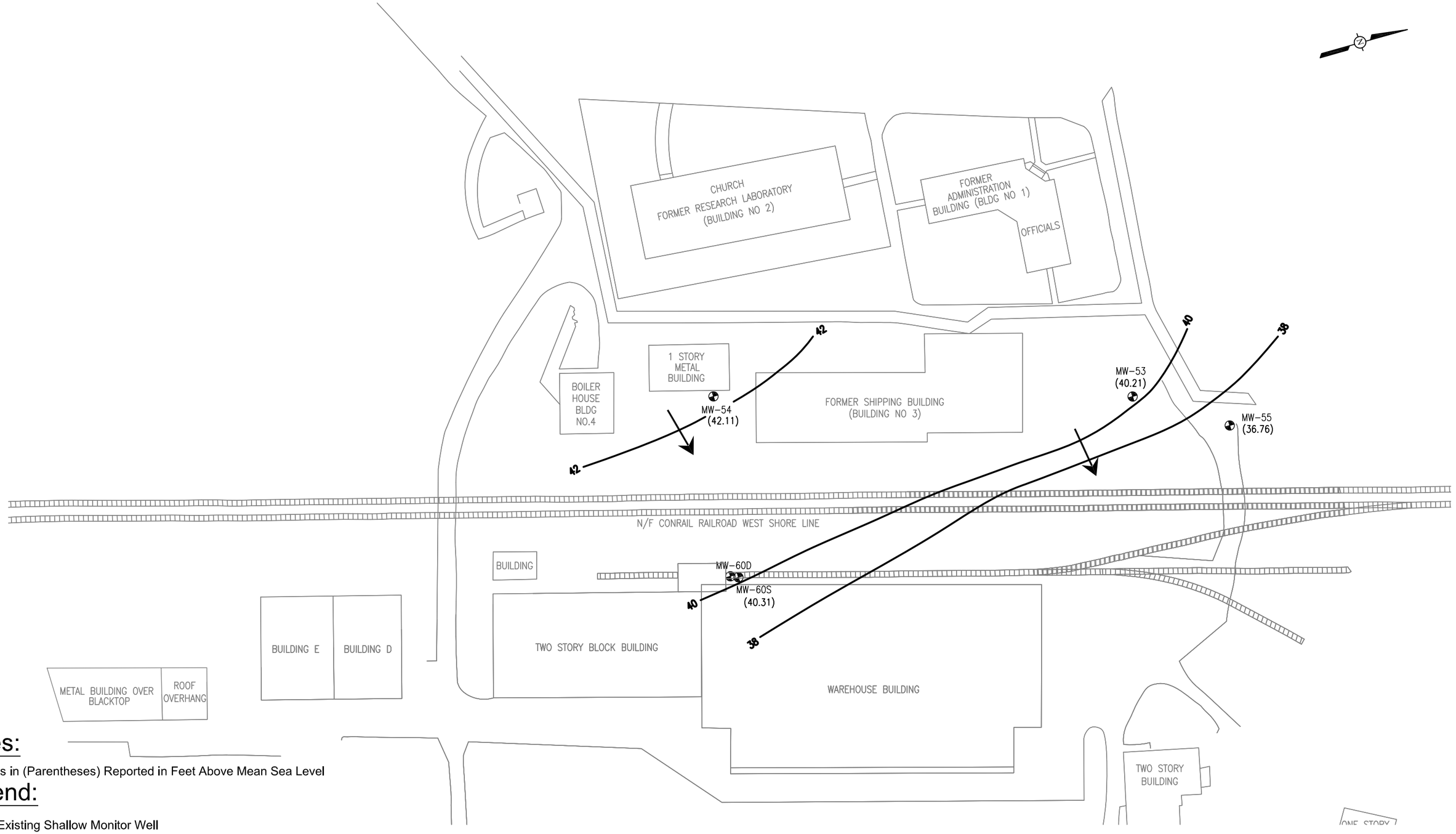
(*) monitoring well not accessible

Legend:

- Existing Shallow Monitor Well
- Existing Piezometer
- Ground Water Flow Direction

SCALE:	CHECKED BY:		
1" = 64'	CB	Former Kay Fries Site 50 Holt Drive Stony Point, NY	ECM environmental compliance monitoring, inc. 349 Route 206, Hillsborough, New Jersey, 08844 908-874-0990
DATE:	PROJECT NO:		
3/2015	1192		

FIGURE 3
OPERABLE UNIT-1
GROUND WATER CONTOUR MAP
SEPTEMBER 2015



Notes:

Elevations in (Parentheses) Reported in Feet Above Mean Sea Level

Legend:

Existing Shallow Monitor Well

Ground Water Flow Direction

SCALE:	CHECKED BY:	
1" = 64'	CB	Former Kay Fries Site 50 Holt Drive Stony Point, NY
DATE:	PROJECT NO:	
3/2015	1192	

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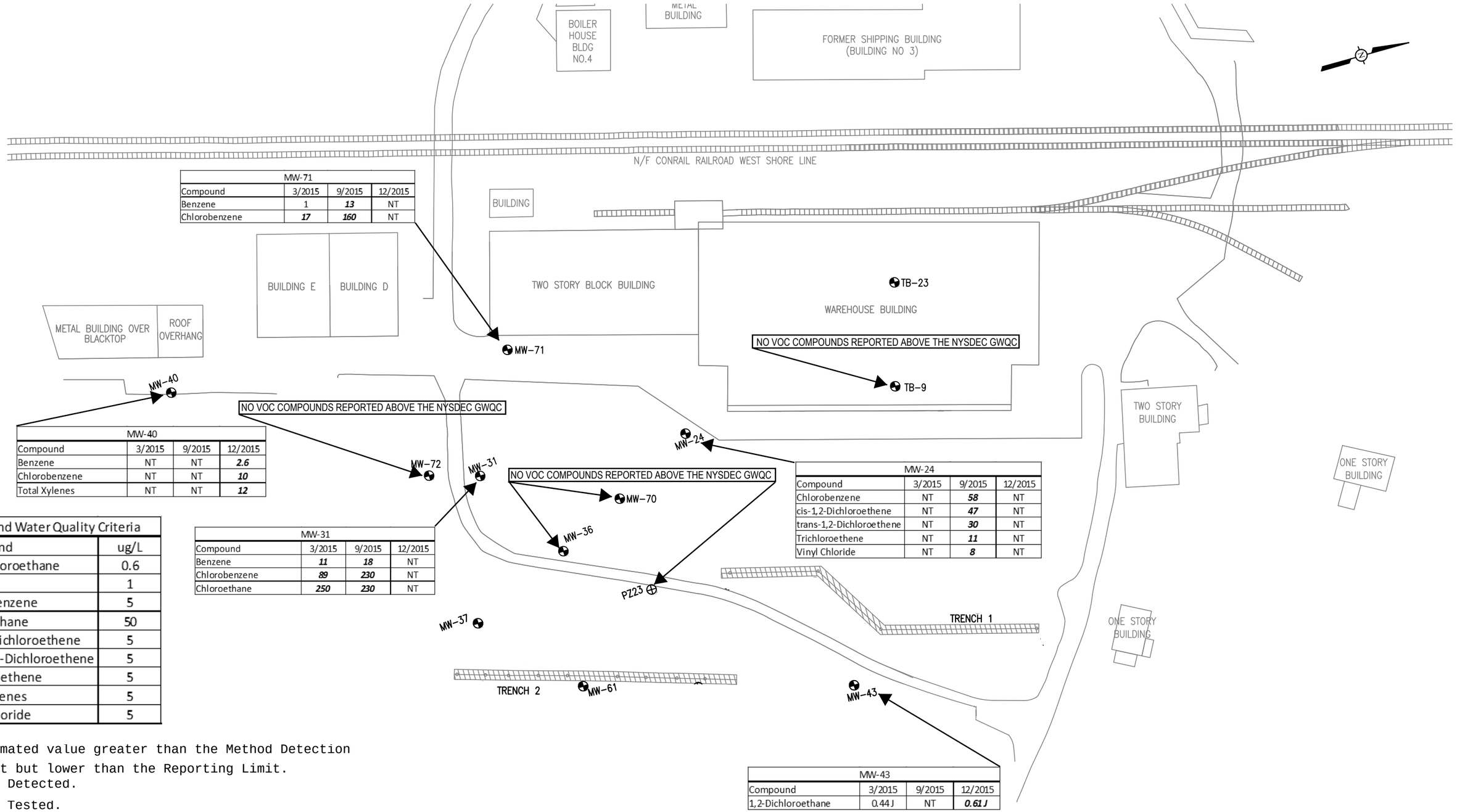
FIGURE 4
OPERABLE UNIT-2
GROUND WATER CONTOUR MAP
SEPTEMBER 2015



MW-71			
Compound	3/2015	9/2015	12/2015
Benzene	1	***13***	NT
Chlorobenzene	***17***	***160***	NT

MW-40			
Compound	3/2015	9/2015	12/2015
Benzene	NT	NT	***2.6***
Chlorobenzene	NT	NT	***10***
Total Xylenes	NT	NT	***12***

MW-31			
Compound	3/2015	9/2015	12/2015
Benzene	***11***	***18***	NT
Chlorobenzene	***89***	***230***	NT
Chloroethane	***250***	***230***	NT

MW-24			
Compound	3/2015	9/2015	12/2015
Chlorobenzene	NT	***58***	NT
cis-1,2-Dichloroethene	NT	***47***	NT
trans-1,2-Dichloroethene	NT	***30***	NT
Trichloroethene	NT	***11***	NT
Vinyl Chloride	NT	***8***	NT

MW-43			
Compound	3/2015	9/2015	12/2015
1,2-Dichloroethane	0.44 J	NT	***0.61 J***

Ground Water Quality Criteria	
Compound	ug/L
1,2-Dichloroethane	0.6
Benzene	1
Chlorobenzene	5
Chloroethane	50
cis-1,2-Dichloroethene	5
trans-1,2-Dichloroethene	5
Trichloroethene	5
Total Xylenes	5
Vinyl Chloride	5

Notes:

J: Estimated value greater than the Method Detection Limit but lower than the Reporting Limit.

ND: Not Detected.

NT: Not Tested.

Legend:

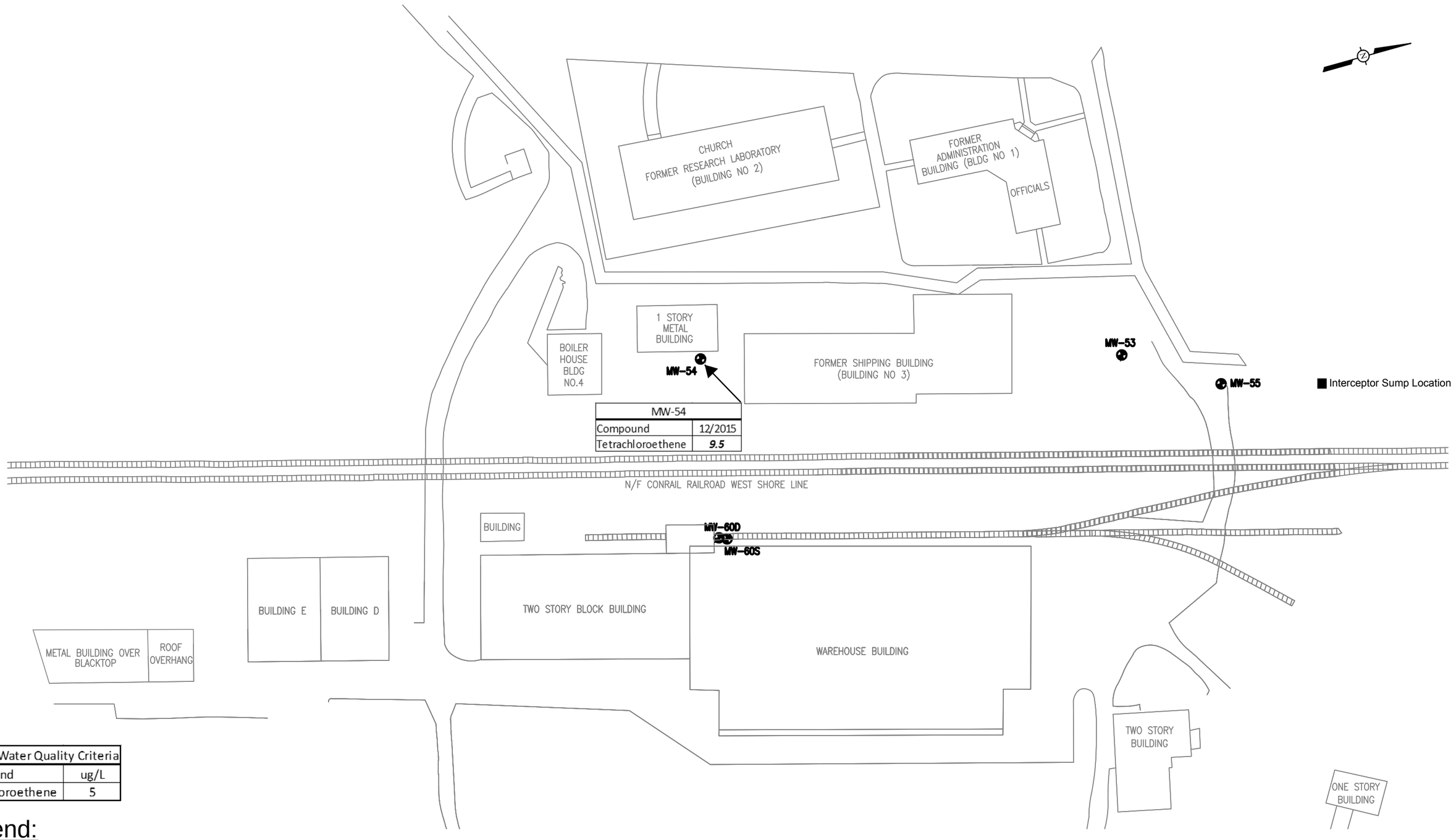
- Existing Shallow Monitor Well
- Existing Piezometer

SCALE:	CHECKED BY:
1" = 64'	CB
DATE:	PROJECT NO:
01/2015	-1192

Former Kay Fries Site
50 Holt Drive
Stony Point, NY

ECM
environmental compliance monitoring, inc.
349 Route 206, Hillsborough, New Jersey, 08844 908-874-0990

FIGURE 5
Analytical Results Summary for OU1
March, September, and December 2015



Ground Water Quality Criteria	
Compound	ug/L
Tetrachloroethene	5

Legend:

- Existing Shallow Monitor Well

SCALE: 1" = 64'	CHECKED BY: CB
DATE: 1/2013	PROJECT NO: 1192

Former Kay Fries Site
50 Holt Drive
Stony Point, NY

ECM
environmental compliance monitoring, inc.
349 Route 206, Hillsborough, New Jersey, 08844 908-874-0990

FIGURE 6
ANALYTICAL RESULTS SUMMARY
OPERABLE UNIT-2
December 2015

APPENDICES

APPENDIX A
SUMMARY OF GROUND WATER LEVEL MEASUREMENTS AND SURVEY DATA

Evonik Degussa Corporation, Former Kay Fries Site, Stony Point, NY
Quarterly Water Level Measurements
ECM Project #1192
September 18th, 2015

Well/Piezometer Number	PVC Elevation (Ft MSL) [a]	Depth to Water (Feet from top of PVC)	Groundwater Elevation (Ft MSL)	Survey Data [a]	
				Northing	Easting
PZ-23	24.82	5.50	19.32	10190.24	10553.66
TB-9	47.27	*	--	10733.06	10416.77
TB-23	53.75	*	--	10751.22	10349.58
MW-24	44.63	14.10	30.53	10555.56	10423.25
MW-31	34.13	7.25	26.88	10370.44	10411.13
MW-36	22.94	1.00	21.94	10423.01	10494.34
MW-37	21.80	1.70	20.10	10333.40	10534.38
MW-40	43.13	10.95	32.18	10131.86	10268.20
MW-43	24.94	7.84	17.10	10638.58	10675.72
MW-61	20.77	3.06	17.71	10415.92	10615.94
MW-70	31.11	6.40	24.71	10421.61	10322.10
MW-71	43.71	8.85	34.86	10421.61	10322.10
MW-72	37.95	13.70	24.25	10314.62	10395.72
OU-2					
MW-53	53.31	13.10	40.21	11020.53	10189.13
MW-54	57.21	15.10	42.11	10671.28	10090.66
MW-55	53.66	16.90	36.76	11101.93	10233.91
MW-60S	50.06	9.75	40.31	10639.42	10243.82

Notes:

* Well Not Accessible

APPENDIX B
ANALYTICAL DATA PACKAGE
MARCH, SEPTEMBER, AND DECEMBER 2015