

**PERIODIC REVIEW REPORT
FORMER ALLEGANY BITUMENS
BELMONT ASPHALT PLANT
BROWNFIELD CLEANUP PROGRAM
SITE # C902019**

5392 STATE ROUTE 19N
AMITY, ALLEGANY COUNTY, NEW YORK



Prepared for:
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Environmental Conservation
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1.0 Introduction and Overview

Stantec Consulting Services Inc. (Stantec) has prepared this Periodic Review Report (PRR) and the attached Institutional Control/Engineering Control (IC/EC) forms (see Appendix A) to summarize Site Management (SM) activities at the Former Allegany Bitumens Belmont Asphalt Plant located at 5392 State Route 19 in the Town of Amity, Allegany County, New York Brownfield Cleanup Program site (the Site) for the Reporting Period May 3, 2014 to May 3, 2015.

The PRR was prepared on behalf of Gray Rock Properties LLC (Gray Rock), the owner of the Site, to fulfill the PRR requirements of the Brownfield Cleanup Program (BCP) of the New York State Department of Environmental Conservation (NYSDEC, the Department). The Site was purchased by Gray Rock from Blades Holding Company, Inc. (Blades) during this reporting period. The Former Allegany Bitumens Belmont Asphalt Plant Site is identified by NYSDEC as BCP Site No. C902019.

The Site is a 5.4+ acre parcel located at 5392 State Route 19 in the Town of Amity, Allegany County, New York (see Figure 1).

1.1 SUMMARY OF SITE CONTAMINATION AND REMEDIAL HISTORY

On October 12, 2010, Blades and the Department entered into a Brownfield Cleanup Agreement (BCA) for the Site. Blades subsequently pursued a program of environmental investigation and cleanup activities at the Site primarily intended to address past releases of trichloroethene (TCE) used to test asphalt products in the Laboratory Building Area. During the Remedial Investigation, three Remedial Areas of Concern were identified; the Laboratory Building Area (RAOC-1), shallow petroleum impacts west of the asphalt storage tanks (RAOC-2), and petroleum impacts in the asphalt tank area (RAOC-3) (see Figure 2).

Interim Remedial Measures (IRMs) were implemented from September 2011 through May 2012. As part of the IRM, 1,635 tons of impacted soil in the laboratory source area (RAOC-1) was excavated from November 10, 2011 through November 22, 2011 and disposed of off-site. Sodium lactate material was placed in the excavation at RAOC-1 prior to backfill, to facilitate in-situ remediation of remaining chlorinated volatile organic compounds (CVOCs) in source-area soil and groundwater through enhanced reductive dechlorination (ERD). A semi-circular trench within the footprint of impacted groundwater at RAOC-1 was excavated and additional sodium lactate material was placed at the water table. Following the excavation of approximately 1,200 tons impacted soils in RAOC-3, agricultural-grade gypsum was placed in the excavation to treat residual petroleum impacts in the groundwater. Remedial activities were completed at RAOC-2 at the time of the IRM. Excavation of approximately 75 tons of shallow soil in RAOC-2 was conducted on December 13, 2011. No groundwater remediation was required.

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Following IRM implementation, Site grading was performed in accordance with the Remedial Action Work Plan from November 8, 2012 through November 20, 2012. This included: removal of a culvert pipe, closure of a culvert pipe in place, relocation a portion of a berm containing waste asphalt material, grading of the existing aggregate and sand stock piles, and disposal of two drums and a one-gallon container encountered during grading activities (see Figure 3). Top soil was placed, seeded and mulched in three areas on Site in June of 2013 (see Figure 4).

In November 2012, a supplemental sodium lactate injection program for RAOC-1 was implemented in accordance with the NYSDEC-approved Work Plan and was accomplished via injection of approximately 2,424 lbs. of sodium lactate into existing monitoring wells (BS-2R, MW-8, and MW-25) and 13 direct push injection points (see Figure 3). The lactate, which is purchased as a 60% aqueous solution was mixed onsite with water to create an estimated 3,330 gallons of working solution. As approved by NYSDEC, a second supplemental injection was performed in March 2015 in order promote enhanced reductive dechlorination in the area of MW-25, which was the only remaining well with exceedances of groundwater standards. The second supplemental injection program involved direct injection of approximately 728 lbs. of sodium lactate into BS-2R and MW-25. The sodium lactate was mixed on-Site with water to create an estimated 2,054 gallons of working solution.

Quarterly groundwater monitoring was conducted at RAOC-1 from March 2012 through December 2013 and semi-annual groundwater monitoring was performed from May 2014 to present to monitor the progress of the interim remedial measures (see Figure 2 for well locations).

Quarterly groundwater monitoring was conducted at MW-65 within RAOC-3 from March 2012 until December 2012 after which it was discontinued since sample results were either non-detect or below groundwater standards for four consecutive quarters indicating the prior remedial measures were effective.

1.2 SITE MANAGEMENT REQUIREMENTS

Site Management activities were implemented in accordance with the Department-approved Site Management Plan (SMP) and the Decision Document issued by the NYSDEC in December 2012. The SMP for the Site includes the following required Engineering and Institutional Controls (ECs/ICs).

- Investigation or mitigation may be required for future structures to minimize the potential for VOC vapors associated with residual impacted groundwater, to enter the building, in accordance with NYSDOH Guidance (Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006). Three approaches may be employed to address this requirement:

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- 1) prior to the construction of any enclosed structures, a Soil Vapor Intrusion (SVI) evaluation may be performed to determine whether any mitigation measures are necessary to eliminate potential exposure to vapors in the proposed structure;
 - 2) a sub-slab depressurization system, of a design approved by the NYSDEC and NYSDOH, may be installed during the construction of any proposed building or structure; or
 - 3) if an SVI evaluation is not conducted prior to construction and a sub-slab depressurization system is not installed during construction of a new building or structure, then a soil vapor intrusion evaluation needs to be conducted at the newly-constructed building or structure.
- The Site has a series of Institutional Controls in the form of site restrictions. Adherence to these Institutional Controls is required by the Environmental Easement. Site restrictions that apply to the Controlled Property are:
- The property may only be used for Commercial or Industrial use provided that the long-term Engineering and Institutional Controls included in the SMP are employed;
 - The property may not be used for a higher level of use, such as Unrestricted Residential or Restricted Residential use without additional remediation and amendment of the Environmental Easement, as approved by the NYSDEC;
 - All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;
 - The use of shallow groundwater underlying the property is prohibited without treatment rendering it safe for use; This restriction does not apply to non-impacted groundwater in the deeper aquifer in which the on-site water supply well is constructed;
 - The potential for vapor intrusion must be evaluated for any future buildings constructed on the site, and any potential impacts that are identified must be monitored or mitigated. Alternatively, in lieu of performing investigation, a vapor mitigation system could be pre-emptively installed at the time of building construction;
 - Vegetable gardens and farming on the property are prohibited; and
 - The site owner or remedial party will submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the Controlled Property are unchanged from the previous certification or that any changes to

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the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. NYSDEC retains the right to access such Controlled Property at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.

Due to changes in the groundwater sampling program as per NYSDEC approval, and the second supplemental injection program, the SMP for the Site was revised and is included in Appendix B.

1.3 EFFECTIVENESS OF THE REMEDIAL PROGRAM

Groundwater sampling events occurred on a quarterly basis from September 2012 through December 2013. In September of 2013 the NYSDEC approved a request to remove BS-3, MW-27 and MW-28D from the quarterly groundwater monitoring program and instead put them on a three year sampling frequency. In February 2014 the NYSDEC approved a request to reduce future groundwater sampling events to semi-annual events, and in February of 2015 the NYSDEC agreed that concentrations of CVOCs in wells BS-2R and MW-8 had been below groundwater standards in the prior year's sampling results. While NYSDEC did not require the wells to be sampled in May 2015, they requested for the wells to be sampled in the second semi-annual event in 2015 (Planned to be conducted in November 2015) to assess if the second sodium lactate injection had changed conditions. As a result, the latest groundwater sampling event was conducted in May of 2015 at MW-25 only. Groundwater contour maps are provided in Appendix C and groundwater purge forms for the reporting period are located in Appendix D.

Sample results from well MW-65 in RAOC-3 were "non-detect" for all VOC and SVOC analytes for the June 2012, September 2012, and December 2012 quarterly sampling events, and no petroleum product or sheen was observed in the well. Given three consecutive quarterly sampling events where MW-65 yielded non-detect results, and the prior event, March 2012, which exhibited concentrations that were either non-detect or below groundwater standards permission was granted by the NYSDEC to discontinue sampling and abandon the well. MW-65 was abandoned by Nothnagle Drilling on March 28, 2013 and no impacts were observed during abandonment.

In former source area well BS-2R and the furthest downgradient well (MW-8), concentrations of chlorinated volatile organic compounds (CVOCs) were once again below New York State Department of Environmental Conservation (NYSDEC) groundwater standards (Standards) in the November 2014 sampling round and they have been below the Standards since the Fall of 2013.

At the monitoring well just downgradient of the RAOC-1 source area (MW-25), concentrations have fluctuated above and below standards in recent rounds of groundwater sampling.



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Concentrations in this well have tended to be higher when the water level in the well was lower. During the November 2014 round of sampling, the water level was more than one foot lower than the late fall 2013 sampling event, and the concentrations were slightly above standards. This pattern has been observed with lower water levels and higher concentrations in late summer/fall for the past three years. When November 2014 data are compared to September 2012 and 2013 data; however, concentrations are noticeably decreasing. In September 2012, total CVOC concentrations were 415 µg/L, in September 2013 they were 90 µg/L, and in the November 2014 sampling event they were at 24 µg/L.

In order to continue to promote enhanced reductive dechlorination at MW-25, a second supplemental sodium lactate injection program was performed in this area in March 2015. The groundwater sample collected following the injection program in May 2015 was non-detect for CVOCs. This is the first time that non-detect has been achieved at this well.

NYSDEC electronic data deliverables (EDDs) for the November 2014 and May 2015 data were submitted in late May/early June 2015.

1.4 COMPLIANCE

The Site remained commercial/industrial land during the reporting period. The Site was purchased from Blades by Gray Rock in August 2014 and has been used to store A-Verdi shipping containers since that time. ICs required under the SMP remained in place and were effective. Compliance with the SMP for the Site was maintained throughout the reporting period. As a result of change in ownership of the Site, changes in the groundwater sampling program and the second supplemental injection program, the SMP for the Site was revised and is included in Appendix B.

1.5 RECOMMENDATIONS

No changes to the currently approved frequency of PRRs (currently annual) are recommended at this time. As noted in Sections 1.2 and 1.4, the SMP for the Site has been revised. The updated SMP is provided in Appendix B. It is recommended that the updated SMP be approved by the NYSDEC and the requirements specified within them continue to be fulfilled.

As noted in Section 1.3, there has been notable progress in groundwater quality based on the most recent sampling events. We recommend continued monitoring of the progress of the remedy through a semi-annual groundwater sampling event in November 2015, including wells BS-2R, MW-8 and MW-25. Contingent on the results, the need for continued monitoring should be re-evaluated. If no CVOCs are detected above NYSDEC groundwater standards in the November 2015 sampling event, it is recommended that sampling cease at all RAOC-1 wells. This would include the wells to be sampled in November 2015 (BS-2R, MW-8 and MW-25) and the wells planned to be sampled every three years as warranted (BS-3, MW-27, and MW-28D). If BS-2R, MW-8 and MW-25 are below standards in November 2015, sampling BS-3, MW-27, and MW-

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28D should not be necessary given the previous sampling results below groundwater standards. Otherwise, if the November 2015 sampling round yields results above standards, it is recommended that semiannual sampling continue at the wells with exceedances only, and that BS-3, MW-27, and MW-28D only be sampled if warranted.

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2.0 Remedy Performance, Effectiveness, and Protectiveness

RAOC-1

As noted in Section 1.2, supplemental sodium lactate injections occurred in RAOC-1 in November 2012 and March 2015 to address the sample results from September 2012 and November 2014, respectively. The groundwater sampling event conducted in May 2015 reported that CVOCs were not detected in well MW-25. See section 1.5 for further discussion and recommendations.

RAOC-2

As noted in Section 1.1 impacted soils were excavated in RAOC-2 during the IRM in December 2011. No further action was warranted for RAOC-2.

RAOC-3

As noted above in Section 1.3, sample results from well MW-65 were either non-detect or below groundwater standards for four consecutive quarters in 2012 indicating the prior remedial measures were effective. As a result the NYSDEC granted approval to discontinue sampling at MW-65 and abandon the well in 2013.

Site-Wide

Site grading occurred in November of 2012 and top soil placement and seeding occurred in June of 2013, see Section 1.1 for further discussion. The Site is currently utilized to store shipping containers and remains undeveloped, thus no vapor intrusion study or vapor intrusion mitigation system is required at this time.

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3.0 Compliance with IC/EC Requirements and Annual Site Inspection

During the reporting period, compliance with required Controls has been maintained:

- The Site is currently used for staging of shipping/storage containers and is otherwise undeveloped, thus no vapor intrusion study or vapor intrusion mitigation system is required at this time;
- The Site has remained commercial/industrial land;
- Activities, which included the second supplemental injection program in March 2015, were conducted in accordance with the SMP;
- No groundwater use has occurred at the Site; and
- No vegetable gardens or farming were performed on Site.

Forms certifying to the Department the continued presence and effectiveness of the controls described above are presented in Appendix A.

Per the SMP, a site-wide inspection was performed on May 1, 2015 and a copy of the Inspection Form is provided in Appendix E. At the time of the site visit, the site was utilized to store shipping containers and was otherwise undeveloped. At the time of the site visit, the silt fence surrounding the redistributed aggregate pile in the center of the Site had several areas where the fence needs maintenance and several rills as a result of storm water runoff were observed. Although not required by the SMP, it is recommended that the silt fencing be repaired or replaced to provide continued silt and sediment control and the rills be filled with gravel from a Department of Transportation approved source.

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4.0 Overall Conclusions and Recommendations

As noted in Sections 1.3 and 2.0, during the reporting period covered by this PRR (May 3, 2014 to May 1, 2015), the groundwater sampling events conducted in November 2014 and May 2015 reported that VOC reduction continued to occur in RAOC-1. It is recommended that groundwater monitoring continue beyond November 2015 only if exceedances of NYSDEC standards are found in the November 2015 sampling round.

Activities that have been performed on Site during the reporting period were performed in accordance with the SMP. In August of 2014 the Site was purchased by Gray Rock and has been used to store shipping/storage containers since that time. The Site is currently undeveloped, thus no vapor intrusion study or vapor intrusion mitigation system is required at this time. The Site has remained in compliance with the ICs as specified in the SMP and Decision Document issued by the NYSDEC in December 2012.

At the time of the site visit the silt fence surrounding the redistributed aggregate pile in the center of the Site had several areas where the fence needs maintenance and several rills as a result of storm water runoff were observed. Although not required by the SMP it is recommended that the silt fencing be repaired or replaced to provide continued silt and sediment control and the rills be filled with gravel from a NYS Department of Transportation approved source. The site owner has indicated they are experienced in this type of work and they plan to self-perform these tasks.

Due to change in ownership of the Site, changes in the groundwater sampling program and the second supplemental injection program, an addendum to the SMP for the Site has been prepared. Addendum No. 2 to the SMP is provided in Appendix B. It is recommended that the addendum to the SMP be approved by the NYSDEC and the requirements specified within the SMP and its addendum continue to be fulfilled.

TABLES

Table 1 - Water Level Summary
Former Allegany Bitumens Belmont Asphalt Plant
Amity, NY

Well ID	Ground Elevation (ft AMSL)	TOIC Elevation (ft AMSL)	Well Type	December 12, 2013		May 6, 2014		November 25, 2014		May 1, 2015	
				Water Level (ft BTOIC)	Water Elevation (ft AMSL)	Water Level (ft BTOIC)	Water Elevation (ft AMSL)	Water Level (ft BTOIC)	Water Elevation (ft AMSL)	Water Level (ft BTOIC)	Water Elevation (ft AMSL)
BS-2	1375.39	1378.06	Shallow	NM	NM	NM	NM	NM	NM	NM	NM
BS-2R	1374.70	1377.79	Shallow	9.17	1368.62	8.90	1368.89	9.61	1368.18	8.92	1368.87
BS-3	1376.00	1379.24	Shallow	10.48	1368.76	10.16	1369.08	10.84	1368.40	10.22	1369.02
BS-4	1375.28	1378.31	Shallow	NM	NM	NM	NM	NM	NM	NM	NM
MW-5	1367.57	1370.24	Shallow	NM	NM	NM	NM	NM	NM	NM	NM
MW-6	1372.72	1375.40	Shallow	NM	NM	NM	NM	NM	NM	NM	NM
MW-7	1375.64	1378.68	Shallow	NM	NM	NM	NM	NM	NM	NM	NM
MW-8	1365.91	1368.70	Shallow	2.98	1365.72	2.95	1365.75	3.08	1365.62	2.84	1365.86
MW-9	1368.80	1371.68	Shallow	NM	NM	NM	NM	NM	NM	NM	NM
MW-10	1370.90	1373.76	Shallow	NM	NM	NM	NM	NM	NM	NM	NM
MW-11	1369.87	1372.39	Shallow	NM	NM	NM	NM	NM	NM	NM	NM
MW-12	1378.46	1381.50	Shallow	NM	NM	NM	NM	NM	NM	NM	NM
MW-13	1371.24	1374.00	Shallow	NM	NM	NM	NM	NM	NM	NM	NM
MW-14	1363.62	1366.54	Shallow	NM	NM	NM	NM	NM	NM	NM	NM
MW-22	1365.66	1368.32	Shallow	NM	NM	NM	NM	NM	NM	NM	NM
MW-23	1374.46	1377.59	Shallow	NM	NM	NM	NM	NM	NM	NM	NM
MW-25	1376.07	1378.52	Shallow	10.20	1368.32	9.80	1368.72	11.26	1367.26	9.70	1368.82
MW-26	1373.07	1375.79	Shallow	NM	NM	NM	NM	NM	NM	NM	NM
MW-27	1372.76	1375.28	Shallow	7.47	1367.81	6.11	1369.17	7.20	1368.08	6.55	1368.73
MW-65	1371.40	1374.33	Shallow	NM	NM	NM	NM	NM	NM	NM	NM
MW-28D	1374.40	1377.17	Deep	17.40	1359.77	17.36	1359.81	17.80	1359.37	17.07	1360.10
WSW	1370.79	1371.01	Deep	10.91	1360.10	10.93	1360.08	10.94	1360.07	11.00	1360.01

Notes:
DTW Depth to water
ft AMSL Feet above mean sea level (NAVD 88)
ft BTOIC Feet below top of inner casing
NM Not measured
TOIC Top of inner casing

Table 2
Summary of Groundwater Field Parameters
Former Allegany Bitumens Belmont Asphalt Plant
Amity, NY

Sample Location		WSW	BS-2	BS-3	BS-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10
Sample Date		7-Dec-10	5-Jan-11	5-Jan-11	4-Jan-11	5-Jan-11	6-Jan-11	5-Jan-11	7-Jan-11	5-Jan-11	6-Jan-11
Purge Methodology		Low Flow	Volumetric	Volumetric	Volumetric	Low Flow	Volumetric	Volumetric	Low Flow	Low Flow	Low Flow
Purge Method		Grundfos Pump	Bailer	Bailer	Bailer	Peristaltic Pump	Bailer	Peristaltic Pump	Peristaltic Pump	Peristaltic Pump	Peristaltic Pump
Sampling Method		Grundfos Pump	Bailer	Bailer	Bailer	Peristaltic Pump	Bailer	Peristaltic Pump	Peristaltic Pump	Peristaltic Pump	Peristaltic Pump
Field Parameters	Units										
Conductivity	mS/cm	0.90	0.657	0.946	0.790	1.01	0.843	0.528	1.04	0.373	0.445
Dissolved Oxygen	mg/L	1.96	-	-	-	0.14	7.05	4.29	0.06	5.72	0.48
Oxidation Reduction Potential	mV	-201	142	105	260	-112	73	115	40	253	54
pH	S.U.	7.97	7.35	6.87	6.58	7.76	7.45	7.50	6.40	6.32	6.68
Temperature	deg c	11.22	7.44	8.81	7.59	4.17	8.28	8.43	4.33	4.12	5.84
Turbidity	NTU	6.77	>1000	>1000	>1000	16.2	210	4.14	3.84	0.00	1.00

Sample Location		MW-11	MW-12	MW-13	MW-14	MW-22	MW-23	MW-25	MW-26	MW-27	MW-28D
Sample Date		6-Jan-11	6-Jan-11	6-Jan-11	6-Jan-11	5-Jan-11	7-Jan-11	4-Jan-11	22-Feb-11	22-Feb-11	22-Feb-11
Purge Methodology		Low Flow	Volumetric	Volumetric	Volumetric	Low Flow	Volumetric	Volumetric	Low Flow	Low Flow	Volumetric
Purge Method		Peristaltic Pump	Peristaltic Pump	Bailer	Peristaltic Pump	Peristaltic Pump	Peristaltic Pump	Peristaltic Pump	Peristaltic Pump	Peristaltic Pump	Bailer
Sampling Method		Peristaltic Pump	Peristaltic Pump	Bailer	Peristaltic Pump	Peristaltic Pump	Peristaltic Pump	Peristaltic Pump	Peristaltic Pump	Peristaltic Pump	Bailer
Field Parameters	Units										
Conductivity	mS/cm	0.462	1.87	1.02	0.605	0.586	0.746	0.203	0.632	0.626	0.461
Dissolved Oxygen	mg/L	1.25	0.39	-	0.25	0.11	4.28	-	0.00	0.00	-
Oxidation Reduction Potential	mV	71	20	-58	-18	-60	145	246	18	98	79
pH	S.U.	6.75	6.45	6.91	6.98	7.46	6.65	9.08	6.45	6.56	7.18
Temperature	deg c	4.19	9.78	10.53	11.25	3.95	11.11	6.23	4.63	3.01	9.16
Turbidity	NTU	0.46	19.3	87.1	57.3	9.61	10.76	>1000 / 24.4 ¹	28.6	1.57	>1000

Sample Location		BS-2	BS-3	BS-4	MW-5	MW-6	MW-7	MW-8	MW-22	MW-23	MW-25
Sample Date		21-Apr-11	21-Apr-11	21-Apr-11	20-Apr-11	21-Apr-11	20-Apr-11	20-Apr-11	20-Apr-11	21-Apr-11	20-Apr-11
Purge Methodology		Volumetric	Volumetric	Volumetric	Low Flow	Volumetric	Volumetric	Low Flow	Low Flow	Volumetric	Volumetric
Purge Method		Bailer	Bailer	Bailer	Peristaltic Pump	Bailer	Bailer	Peristaltic Pump	Peristaltic Pump	Bailer	Bailer
Sampling Method		Bailer	Bailer	Bailer	Bailer	Bailer	Bailer	Peristaltic Pump	Peristaltic Pump	Bailer	Bailer
Field Parameters	Units										
Conductivity	mS/cm	0.500	0.919	0.687	1.45	0.737	0.144	0.9-0.999 ²	0.9-0.999 ²	0.424	0.089
Dissolved Oxygen	mg/L	-	-	-	0.00	-	-	0.00	0.00	-	-
Oxidation Reduction Potential	mV	138	140	149	-128	100	60	95	-37	136	105
pH	S.U.	7.12	6.85	6.84	7.22	7.40	7.66	6.42	7.1	6.78	6.50
Temperature	deg c	5.18	5.92	5.31	7.98	5.89	6.08	9.04	7.95	6.24	5.58
Turbidity	NTU	1224	>4000	>4000	9.1	38.9	3096	5.43	2.19	59.6	>4000

**Table 2
Summary of Groundwater Field Parameters
Former Allegany Bitumens Belmont Asphalt Plant
Amity, NY**

Sample Location		MW-8	MW-25	BS-2R	MW-8	MW-25	BS-2R	MW-25
Sample Date		5-May-14	5-May-14	5-May-14	25-Nov-14	25-Nov-14	25-Nov-14	4-May-15
Purge Methodology		Low Flow	Volumetric	Low Flow	Low Flow	Volumetric	Low Flow	Low Flow
Purge Method		Peristaltic Pump	Bailer	Peristaltic Pump	Peristaltic Pump	Bailer	Peristaltic Pump	Peristaltic Pump
Sampling Method		Peristaltic Pump	Bailer	Peristaltic Pump	Peristaltic Pump	Bailer	Peristaltic Pump	Peristaltic Pump
Field Parameters	Units							
Conductivity	mS/cm	0.81	0.445	0.870	1.58	1.25	1.30	0.560
Dissolved Oxygen	mg/L	0.13	9.91	1.47	0.16	9.27	0.37	2.90
Oxidation Reduction Potential	mV	-98.3	183.1	137.9	-59.8	109	8.9	-1.1
pH	S.U.	8.99	10.31 ⁸	10.62 ⁸	6.55	7.16	6.95	7.38
Temperature	deg c	7.7	9.5	10.2	7.6	12.8	12.1	9.5
Turbidity	NTU	0.93	127.1	1.11	10.82	147.0	4.46	6.12
Ferrous Iron ⁵	ppm	-	-	-	-	-	-	-
Total Iron ⁵	ppm	-	-	-	-	-	-	-

Notes:

- not measured
- deg c degrees Celsius
- mg/l milligrams per liter
- mS/cm milliSiemens per centimeter
- mV millivolts
- NTU nephelometric turbidity unit
- ppm parts per million
- S.U. standard units
- WSW water supply well

¹Turbidity at the time of sampling on 1/4/2011 for all parameters except metals was >1000 NTUs. The turbidity at the time of sampling on 1/5/2011 for metals was 28.4 NTUs.

²Conductivity reading could not be precisely determined. Reading was likely at the low point or high point of one of the instrument's sensor ranges. Sensor checked with calibration standard and it read precisely.

³Sample purging attempted with low flow methods and a flow cell prior to switching to use of a bailer once water levels dropped. Dissolved oxygen value listed represents last reading taken with flow cell, which may still be an overestimation of dissolved oxygen.

⁴Reading not recorded at time of sampling. Reading listed represents the last measurement taken during purging before the well went dry.

⁵Ferrous iron and total iron analyzed with a LaMotte Smart 3 Colorimeter on a filtered sample.

⁶Sample overrange of Lamotte Smart 3 Colorimeter, upper range of instrument is 5.0 ppm

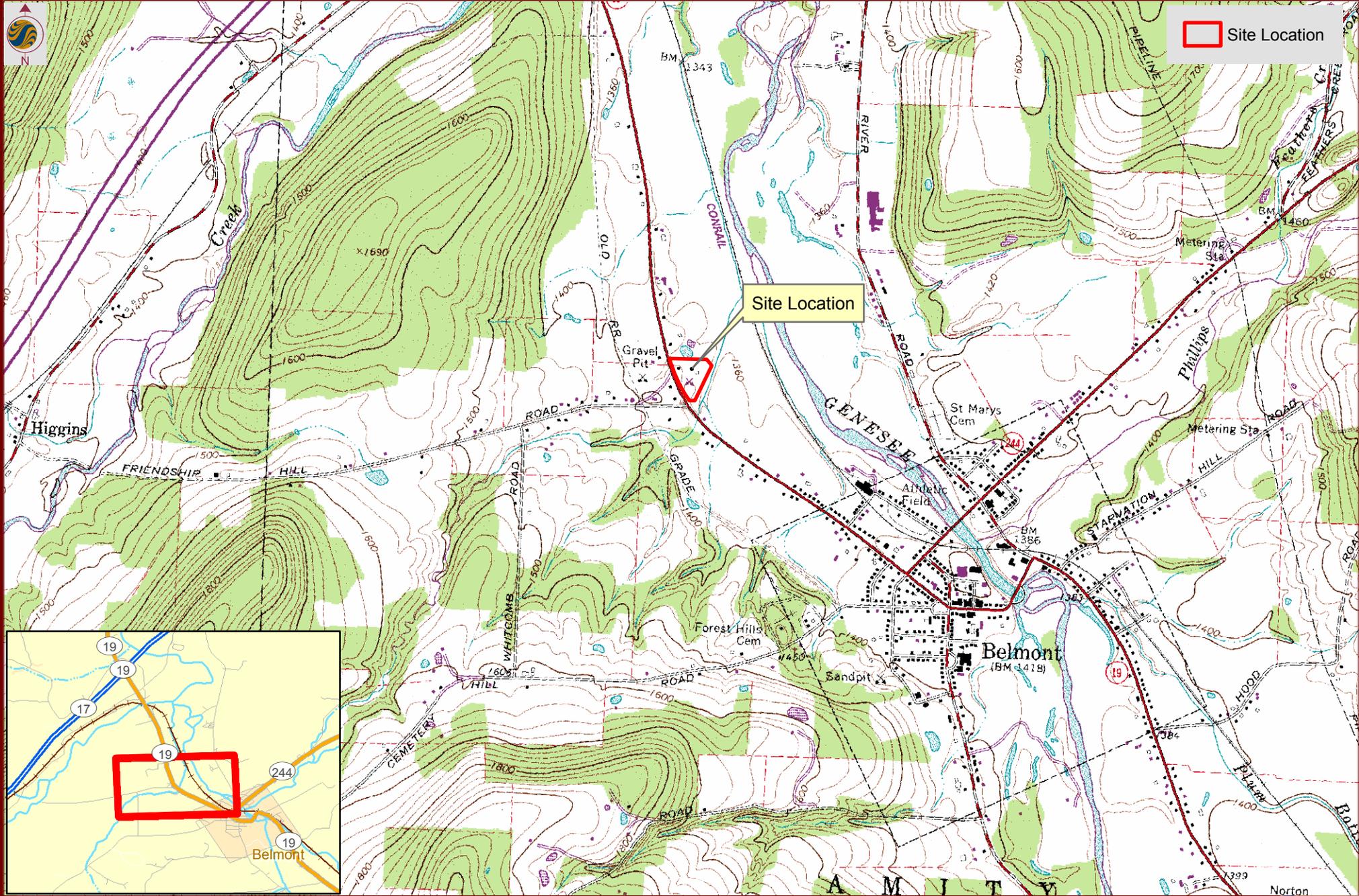
⁷Measured by Lab

⁸Malfunctioning pH Meter

Notes:

TOGS	NYSDEC TOGS 1.1.1 (Reissued June 1998 with errata in January 1999 and addenda in April 2000 and June 2004)
^A	TOGS 1.1.1 - Table 1 - Ambient Water Quality Standards and Guidance Values, Division of Water, Technical and Operational Guidance Series (TOGS 1.1.1); Guidance
^B	TOGS 1.1.1 - Table 1 - Ambient Water Quality Standards and Guidance Values, Division of Water, Technical and Operational Guidance Series (TOGS 1.1.1); Standards
6.5^A	Concentration exceeds the indicated standard.
15.2	Measured concentration was less than the applicable standard.
0.50 U	Laboratory reportable detection limit was greater than the applicable standard.
0.03 U	Analyte was not detected at a concentration greater than the laboratory reportable detection limit.
n/v	No standard/guideline value.
-	Parameter not analyzed / not available.
..	The principal organic contaminant standard for groundwater of 5 ug/L (described elsewhere in the TOGS table) applies to this substance.
p	Applies to the sum of cis- and trans-1,3-dichloropropene.
*	Indicates analysis is not within the quality control limits.
J	The reported result is an estimated value.
UJ	Indicates estimated non-detect.

FIGURES



Site Location

Site Location

Geographic Information Systems

Map Source : NYSGIS Clearinghouse Web Site Date: 5/15/2014 Cartographic Design By: Andrew Less Document Path: U:\190500593\drawing\PRR\Figure 1 Site Location Map.mxd



Stantec Consulting
 61 Commercial Street
 Rochester, NY 14614
 Phone 585.475.1440 Fax 585.272.1814
 www.stantec.com
 Copyright 2011

1 inch = 2,000 feet



Allegany Bitumens Belmont Asphalt Plant Site

FIGURE 1 : Site Location Map Showing USGS Topographic Information

APPENDIX A

IC/EC Certification Forms



Enclosure 2
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form



Site No. C902019 Site Details Box 1

Site Name Allegany Bitumens Belmont Asphalt Plant

Site Address: 5392 State Route 19 N Zip Code: 14813
City/Town: Belmont
County: Allegany
Site Acreage: 5.4

Reporting Period: May 03, 2014 to May 03, 2015

- | | YES | NO |
|---|-------------------------------------|-------------------------------------|
| 1. Is the information above correct? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| If NO, include handwritten above or on a separate sheet. | | |
| 2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?
See Attachment No. 1 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?
See Attachment No. 1 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form. | | |
| 5. Is the site currently undergoing development? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Box 2

- | | YES | NO |
|--|-------------------------------------|--------------------------|
| 6. Is the current site use consistent with the use(s) listed below?
Commercial and Industrial | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 7. Are all ICs/ECs in place and functioning as designed? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

Box 2A

8. Has any new information revealed that assumptions made in the Qualitative Exposure Assessment regarding offsite contamination are no longer valid?

YES NO

If you answered YES to question 8, include documentation or evidence that documentation has been previously submitted with this certification form.

9. Are the assumptions in the Qualitative Exposure Assessment still valid?
(The Qualitative Exposure Assessment must be certified every five years)

If you answered NO to question 9, the Periodic Review Report must include an updated Qualitative Exposure Assessment based on the new assumptions.

SITE NO. C902019

Box 3

Description of Institutional Controls

<u>Parcel</u>	<u>Owner</u>	<u>Institutional Control</u>
171.-1-59.2	Gray Rock Properties LLC	O&M Plan Ground Water Use Restriction Soil Management Plan Landuse Restriction Monitoring Plan Site Management Plan IC/EC Plan

This Control corresponds to the addition of a small 0.54 acre parcel (171.-1-59) that was added to the original BCP parcel (171.-1-60).

Institutional Controls:

- The property may only be used for Commercial or Industrial use provided that the long-term Engineering and Institutional Controls included in this SMP are employed.
- The property may not be used for a higher level of use, such as Unrestricted Residential or Restricted Residential use without additional remediation and amendment of the Environmental Easement, as approved by the NYSDEC;
- All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with this SMP;
- The use of the shallow groundwater underlying the property is prohibited without treatment rendering it safe for that use; This restriction does not apply to non-impacted groundwater in the deeper aquifer in which the on-site water supply well is constructed.
- The potential for vapor intrusion must be evaluated for any future buildings constructed on the site, and any potential impacts that are identified must be monitored or mitigated. Alternatively, in lieu of performing investigation, a vapor mitigation system could be pre-emptively installed at the time of building construction.
- Vegetable gardens and farming on the property are prohibited;
- The site owner or remedial party will submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. NYSDEC retains the right to access such Controlled Property at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.

171.-1-60	Gray Rock Properties LLC	Ground Water Use Restriction Soil Management Plan Landuse Restriction Monitoring Plan Site Management Plan IC/EC Plan O&M Plan
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Institutional Controls:

- The property may only be used for Commercial or Industrial use provided that the long-term Engineering and Institutional Controls included in this SMP are employed.
- The property may not be used for a higher level of use, such as Unrestricted Residential or Restricted Residential use without additional remediation and amendment of the Environmental Easement, as approved by the NYSDEC;
- All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with this SMP;
- The use of the shallow groundwater underlying the property is prohibited without treatment rendering it safe for that use; This restriction does not apply to non-impacted groundwater in the deeper aquifer in which the on-site water supply well is constructed.
- The potential for vapor intrusion must be evaluated for any future buildings constructed on the site, and any potential impacts that are identified must be monitored or mitigated. Alternatively, in lieu of performing investigation, a vapor mitigation system could be pre-emptively installed at the time of building construction.

- Vegetable gardens and farming on the property are prohibited;
- The site owner or remedial party will submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. NYSDEC retains the right to access such Controlled Property at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.

Box 4

Description of Engineering Controls

<u>Parcel</u>	<u>Engineering Control</u>
171.-1-59.2	Vapor Mitigation

Engineering Controls:

Investigation or mitigation may be required for future structures to minimize the potential for VOC vapors associated with residual impacted groundwater, to enter the building, in accordance with NYSDOH Guidance (Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006).

Three approaches may be employed to address this requirement:

- 1) prior to the construction of any enclosed structures, an SVI evaluation may be performed to determine whether any mitigation measures are necessary to eliminate potential exposure to vapors in the proposed structure;
- 2) a sub-slab depressurization system, of a design approved by the NYSDEC and NYSDOH, may be installed during the construction of any proposed building or structure; or
- 3) if a SVI is not conducted prior to construction and a sub-slab depressurization system is not installed during construction of a new building or structure, then a soil vapor intrusion evaluation needs to be conducted at the newly-constructed building or structure.

Soil vapor intrusion evaluations conducted at newly-constructed buildings should be conducted in accordance with the most recently-updated Guidance for Evaluating Soil Vapor Intrusion in the State of New York.

Procedures and methods for conducting a soil vapor intrusion evaluation should be submitted in a work plan for State Agency review and approval. The results of a soil vapor intrusion evaluation should be provided to the State Agencies for data review and interpretation. The State Agencies will provide a determination based on the review of the data and will make appropriate recommendations to address exposures, if any.

If a sub-slab depressurization system is recommended based on the results of a soil vapor intrusion evaluation either prior to or after construction of any structures in the specified area, the design of this system will be the responsibility of the owner. Generally, a typical system for new construction would consist of:

- a clean stone layer with slotted piping to facilitate collection of sub-slab vapors;
- a vapor retarding liner (such as 6 mil polyethylene sheeting or a spray-on liner such as Liquid Boot) to trap vapors in the stone layer and to prevent vapors from entering the structure through cracks and joints in the floor;
- header piping to connect horizontal piping to a depressurization fan; and
- a vent to the exterior above the building roof elevation/air intakes (see Figure 13 – schematic diagram of a typical system).

Post-installation sampling should be conducted to ensure that the system is operating effectively and reducing/minimizing exposures. System installation, post confirmation sampling, and monitoring shall be conducted in accordance with the NYSDOH Guidance.

Typical procedures for operating and maintaining a sub-slab depressurization system will be documented in the Operation and Maintenance Plan that will be developed if the design and construction of a SSDS become necessary. Procedures for monitoring the system will be included in the Monitoring Plan (Section 3 of this SMP) should the design and construction of a SSDS become necessary. The Monitoring Plan would also address severe condition inspections in the event that a severe condition, which may affect controls at the site, occurred.

171.-1-60	Vapor Mitigation
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Engineering Controls:

Investigation or mitigation may be required for future structures to minimize the potential for VOC vapors associated with residual impacted groundwater, to enter the building, in accordance with NYSDOH Guidance (Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006).

Three approaches may be employed to address this requirement:

- 1) prior to the construction of any enclosed structures, an SVI evaluation may be performed to determine whether any mitigation measures are necessary to eliminate potential exposure to vapors in the proposed structure;

2) a sub-slab depressurization system, of a design approved by the NYSDEC and NYSDOH, may be installed during the construction of any proposed building or structure; or

3) if a SVI is not conducted prior to construction and a sub-slab depressurization system is not installed during construction of a new building or structure, then a soil vapor intrusion evaluation needs to be conducted at the newly-constructed building or structure.

Soil vapor intrusion evaluations conducted at newly-constructed buildings should be conducted in accordance with the most recently-updated Guidance for Evaluating Soil Vapor Intrusion in the State of New York.

Procedures and methods for conducting a soil vapor intrusion evaluation should be submitted in a work plan for State Agency review and approval. The results of a soil vapor intrusion evaluation should be provided to the State Agencies for data review and interpretation. The State Agencies will provide a determination based on the review of the data and will make appropriate recommendations to address exposures, if any.

If a sub-slab depressurization system is recommended based on the results of a soil vapor intrusion evaluation either prior to or after construction of any structures in the specified area, the design of this system will be the responsibility of the owner. Generally, a typical system for new construction would consist of:

- a clean stone layer with slotted piping to facilitate collection of sub-slab vapors;
- a vapor retarding liner (such as 6 mil polyethylene sheeting or a spray-on liner such as Liquid Boot) to trap vapors in the stone layer and to prevent vapors from entering the structure through cracks and joints in the floor;
- header piping to connect horizontal piping to a depressurization fan; and
- a vent to the exterior above the building roof elevation/air intakes (see Figure 13 – schematic diagram of a typical system).

Post-installation sampling should be conducted to ensure that the system is operating effectively and reducing/minimizing exposures. System installation, post confirmation sampling, and monitoring shall be conducted in accordance with the NYSDOH Guidance.

Typical procedures for operating and maintaining a sub-slab depressurization system will be documented in the Operation and Maintenance Plan that will be developed if the design and construction of a SSDS become necessary. Procedures for monitoring the system will be included in the Monitoring Plan (Section 3 of this SMP) should the design and construction of a SSDS become necessary. The Monitoring Plan would also address severe condition inspections in the event that a severe condition, which may affect controls at the site, occurred.

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:
- a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;
 - b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and complete.
- YES NO

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:
- (a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;
 - (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;
 - (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;
 - (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and
 - (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.
- YES NO

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

IC CERTIFICATIONS
SITE NO. C902019

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1, 2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Joe Verdi at Gray Rock Properties LLC
14150 Route 31
Savannah, NY 13146
print name print business address

am certifying as Remedial Party (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

Joe Verdi
Signature of Owner, Remedial Party, or Designated Representative
Rendering Certification

6/29/15
Date

IC/EC CERTIFICATIONS

Box 7

Professional Engineer Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I PETER NIELSEN at STATTEC 61 COMMERCIAL ST ROCHESTER
print name print business address NY

am certifying as a Professional Engineer for the Remedial Party
(Owner or Remedial Party)

[Signature]
Signature of Professional Engineer, for the Owner
Remedial Party, Rendering Certification



6/17/15
Date

ATTACHMENT 1

**Documentation of Items 2 and 4 in Box 1
of the IC/EC Certification Form**

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION



60-Day Advance Notification of Site Change of Use, Transfer of Certificate of Completion, and/or Ownership

Required by 6NYCRR Part 375-1.11(d) and 375-1.9(f)

To be submitted at least 60 days prior to change of use to:

Chief, Site Control Section
New York State Department of Environmental Conservation
Division of Environmental Remediation, 625 Broadway
Albany NY 12233-7020

I. **Site Name:** Allegany Bitumens Belmont Asphalt Plant **DEC Site ID No.** C902019

II. **Contact Information of Person Submitting Notification:**

Name: Thomas Tuori, Harter Secrest & Emery LLP
Address1: 1600 Bausch & Lomb Place
Address2: Rochester, NY 14604-2711
Phone: 585-231-1449 E-mail: ttuori@hselaw.com

III. **Type of Change and Date:** Indicate the Type of Change(s) (check all that apply):

- Change in Ownership or Change in Remedial Party(ies)
 Transfer of Certificate of Completion (CoC)
 Other (e.g., any physical alteration or other change of use)

Proposed Date of Change (mm/dd/yyyy): Jul 1, 2014 (or sooner with DEC approval)

IV. **Description:** Describe proposed change(s) indicated above and attach maps, drawings, and/or parcel information.

Please see attached.

If "Other," the description must explain and advise the Department how such change may or may not affect the site's proposed, ongoing, or completed remedial program (attach additional sheets if needed).

V. **Certification Statement:** Where the change of use results in a change in ownership or in responsibility for the proposed, ongoing, or completed remedial program for the site, the following certification must be completed (by owner or designated representative; see §375-1.11(d)(3)(i)):

I hereby certify that the prospective purchaser and/or remedial party has been provided a copy of any order, agreement, Site Management Plan, or State Assistance Contract regarding the Site's remedial program as well as a copy of all approved remedial work plans and reports.

Name: Robert Blades Jr 5-29-14
(Signature) (Date)

Robert Blades, Jr. , Blades Holding Company, Inc.
(Print Name)

Address1: 7630 County Route 65, PO Box 12
Address2: Arkport, NY 14807
Phone: (607) 324-1049 E-mail: robertbladesJr@gmail.com

VI. **Contact Information for New Owner, Remedial Party, or CoC Holder:** If the site will be sold or there will be a new remedial party, identify the prospective owner(s) or party(ies) along with contact information. If the site is subject to an Environmental Easement, Deed Restriction, or Site Management Plan requiring periodic certification of institutional controls/engineering controls (IC/ECs), indicate who will be the certifying party (attach additional sheets if needed).

Prospective Owner Prospective Remedial Party Prospective Owner Representative

Name: Gray Rock Properties LLC, Attention: Joe Verdi
Address1: 14150 Route 31
Address2: Savannah, NY 13146
Phone: 315-365-2851 E-mail: joe@averdi.com

Certifying Party Name: Gray Rock Properties, LLC
Address1: 14150 Route 31
Address2: Savannah, NY 13146
Phone: 315-365-2851 E-mail: joe@averdi.com

VII. Agreement to Notify DEC after Transfer: If Section VI applies, and all or part of the site will be sold, a letter to notify the DEC of the completion of the transfer must be provided. If the current owner is also the holder of the CoC for the site, the CoC should be transferred to the new owner using DEC's form found at <http://www.dec.ny.gov/chemical/54736.html>. This form has its own filing requirements (see 6NYCRR Part 375-1.9(f)).

Signing below indicates that these notices will be provided to the DEC within the specified time frames. If the sale of the site also includes the transfer of a CoC, the DEC agrees to accept the notice given in VII.3 below in satisfaction of the notice required by VII.1 below (which normally must be submitted within 15 days of the sale of the site).

Within 30 days of the sale of the site, I agree to submit to the DEC:

1. the name and contact information for the new owner(s) (see §375-1.11(d)(3)(ii));
2. the name and contact information for any owner representative; and
3. a notice of transfer using the DEC's form found at <http://www.dec.ny.gov/chemical/54736.html> (see §375-1.9(f)).

Name: Robert Blades, Jr.

5-29-14

(Signature) (Date)

Robert Blades, Jr., Blades Holding Company, Inc.
(Print Name)

Address1: 7630 County Route 65, PO Box 12
Address2: Arkport, NY 14807
Phone: (607) 324-1049 E-mail: robertbladesJr@gmail.com

Section IV. Description

On or about July 1, 2014 (or sooner with DEC approval), Gray Rock Properties LLC will acquire the Allegany Bitumens Belmont Asphalt Plant BCP Site, DEC Site ID No. C902019. At the consummation of the transaction, Gray Rock Properties LLC will become the "Remedial Party" and assume responsibility for all Brownfield Cleanup Program requirements. Blades Holding Company, Inc., the BCP Applicant and Participant, will retain the Certificate of Completion.



Harter Secrest & Emery LLP

ATTORNEYS AND COUNSELORS

WWW.HSELAW.COM

September 12, 2014

Chief, Site Control Section
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, New York 12233-7020

Re: Post-Closing Changed of Ownership Notification
Allegany Bitumens Belmont Asphalt Plant, BCP Site No. C902019

To whom it may concern:

I am writing on behalf of Blades Holding Company, Inc. ("Blades"), the former owner of the Allegany Bitumens Belmont Asphalt Plant, Brownfield Cleanup Program Site No. C902019 (the "BCP Site"), to advise you that the transaction described in Blades' May 29, 2014 60-Advance Notification of Change in Ownership Form (the "60-Day Notice Form") was consummated on August 29, 2014. Please see below for information about the new owner of the BCP Site.

New owner: Gray Rock Properties LLC ("Gray Rock")

New owner's representative: Joe Verdi

Address: 14150 Route 31, Savannah, New York 13146

Phone number: (315) 365 -2851

E-mail: joe@averdi.com

As indicated on the 60-Day Notice Form, Gray Rock will be the new remedial party but Blades will retain the Certificate of Completion.

Please let me know if you have any questions about this submittal. All other correspondence regarding the BCP Site should be directed to Gray Rock.

Very truly yours,

Harter Secrest & Emery LLP

Thomas M. Tuori

DIRECT DIAL: 585.231.1449
EMAIL: TTUORI@HSELAW.COM

cc: David Szymanski, NYSDEC-Region 9
Martin Doster, NYSDEC-Region 9
Blades Holding Company, Inc.
Gray Rock Properties LLC
Mark T. Arbon, Esq., Sarofeen & Arbon, PLLC



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 2

290 BROADWAY

NEW YORK, NY 10007-1866

APR 21 2015

Chris Blades
Blades Holding Company, Inc.
P.O. Box 12
Arkport, NY 14807

Re: Underground Injection Control (UIC) Program Regulation
former Allegany Bitumens Belmont Asphalt Plant (Reference UICID: 13NY00306001)
5392 State Route 19
Amity, NY 14813
Allegany County
Authorization to Inject

Dear Mr. Blades:

This letter serves to inform you that the U.S. Environmental Protection Agency is in receipt of inventory information addressing wells authorized by rule located at the above-referenced facility in accordance with 40 Code of Federal Regulations (CFR) §144.26. The operation of three (3) monitoring wells converted to aquifer remediation wells (Underground Injection Control wells) at NYSDEC Brownfields Site No. C902019, is authorized by rule, pursuant to 40 CFR §144.24.

Should any conditions change in the operation of any of the wells listed above (such as injectate composition, closure of the well, injection of cooling water greater than 150 degrees Fahrenheit, construction of additional wells, etc.) you are required to notify this office within five (5) days. Any accidental spills into a well should be reported within twenty-four (24) hours after the event. Change in operation information should be addressed to:

Nicole Foley Kraft, Chief
Ground Water Compliance Section
United States Environmental Protection Agency
290 Broadway, 20th Floor
New York, NY 10007-1866
Re: 13NY00306001
Attn: Robert Ferri

Should you own or operate **other** facilities using underground injection wells, please use the enclosed inventory form (EPA Form 7520-16) and instructions, copy for multiple facilities, and submit them to the address listed above. These documents can also be found on the internet at:

<http://www.epa.gov/safewater/uic/pdfs/7520-16.pdf>

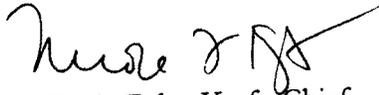
http://www.epa.gov/region02/water/compliance/supplemental_instructions_inventory.pdf

http://www.epa.gov/region02/water/compliance/wellclasstypetable_inventoryc_form

Failure to respond to this letter truthfully and accurately within the time provided may subject you to sanctions authorized by federal law. Please also note that all information submitted by you may be used in an administrative, civil judicial, or criminal action. In addition, making a knowing submission of materially false information to the U.S. Government may be a criminal offense.

Should you have any questions, please contact Robert Ferri of my staff at (212) 637-4227 or ferri.robert@epa.gov.

Sincerely,



Nicole Foley Kraft, Chief
Ground Water Compliance Section

Enclosure

cc: Jeffrey Konsella, Regional Water Engineer
NYSDEC, Region 9
270 Michigan Avenue
Buffalo, NY 14203-2999

Thomas E. Hull
Allegany County Health Dept.
7 Court Street
Belmont, NY 14813-1076

Robert J. Mahoney, P.G.
Stantec Consulting Services, Inc.
61 Commercial Street
Rochester, NY 14614

APPENDIX B

Addendum No. 2 to Site Management Plan



Stantec Consulting Services Inc.

61 Commercial Street, Suite 100

Rochester NY 14614-1009

Tel: (585) 475-1440

Fax: (585) 272-1814

June 30, 2015

File: 190500839

Mr. David Szymanski, EPS-1
New York State Department of Environmental Conservation – Region 9, Buffalo
Division of Environmental Remediation
270 Michigan Avenue
Buffalo, NY 14203-2999

**Reference: Brownfield Cleanup Program
Addendum No. 2 to Site Management Plan
Site #C902019
Former Allegany Bitumens Belmont Asphalt Plant
5392 State Route 19
Town of Amity, Allegany County, New York**

Dear Dave:

On behalf of Gray Rock Properties LLC (Gray Rock), Stantec Consulting Services Inc. (Stantec) has prepared this addendum to the previously approved Site Management Plan (Attachment 1) and Addendum Number 1 to the Site Management Plan (Attachment 2). This Addendum No. 2 was prepared due to changes in the groundwater sampling program as per NYSDEC approval and the supplemental injection program. Presented below are the proposed additions or revisions to the Site Management Plan.

Changes to Section 1.1.1

Blades Holding Company, Inc. (Blades) entered into a BCA with the NYSDEC to remediate a 5.44± acre property located in the Town of Amity, Allegany County, New York (Figure 1). This BCA required the Remedial Party, Blades, to investigate and remediate contaminated media at the site. A figure showing the site location and boundaries of this “site” is provided in Figure 2. The boundaries of the site are more fully described in the metes and bounds site description (see Appendix B) that is part of the Environmental Easement (see Appendix C). The Site was purchased from Blades by Gray Rock in August 2014.

After completion of the remedial work described in the Remedial Action Work Plan, some contamination was left in the subsurface at this site, which is hereafter referred to as ‘remaining contamination.’ The Site Management Plan (SMP) was prepared to manage remaining contamination at the site until the Environmental Easement is extinguished in accordance with ECL Article 71, Title 36. All reports associated with the site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State.

The October 2012 SMP and the June 2014 SMP Addendum No. 1 were prepared by Stantec Consulting Services Inc., on behalf of Blades. This June 2015 SMP Addendum No. 2 was prepared by Stantec on behalf of Gray Rock. The SMP and its Addenda were prepared in accordance with the requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, dated May 2010, and the guidelines provided by NYSDEC. This SMP addresses the means for implementing the Institutional Controls (ICs) and Engineering Controls (ECs) that are required by the Environmental Easement for the site.

Changes to Section 1.2.1

The site is located in the Town of Amity in Allegany County, New York and is identified as Parcel No. 171-1-60 on the Allegany County Tax Map. The site is an approximate 5.424-acre area. Land use in the surrounding area is dominated by agricultural uses. Agricultural fields occupy the adjacent property to the east. Houses, barns and single-family non-farm residences are located along Route 19 to the north and southeast of the property and along Friendship Hill Road (Tuckers Corner Road) to the west of the property. The property located immediately opposite the Site on the west side of Route 19 is owned by Blades, and is the site of a vehicle and equipment maintenance shop and small office building which are currently not in use (see Figure 3). The boundaries of the site are more fully described in Appendix B – Metes and Bounds.

Changes to Section 1.2.2

1.2.2.1 Past Uses and Ownership

The Site was used for agricultural purposes or was undeveloped prior to 1960. In March 1960, A.L. Blades and Sons, Inc. (now known as Blades Holding Company, Inc.) acquired the property and then conveyed the property to its affiliate Allegany Bitumens, Inc.

An asphalt plant was constructed at the Site by Allegany Bitumens, Inc. circa 1960 and was operated by Allegany Bitumens, Inc. and, after a 1995 merger, by A.L. Blades and Sons, Inc. until A.L. Blades and Sons, Inc. discontinued the asphalt plant operations in 2005. From 2005 until 2014 the facility was unoccupied, and the buildings and stationary asphalt manufacturing equipment were demolished or disassembled. The Site was purchased from Blades by Gray Rock in August of 2014 who has used the Site for shipping container storage.

Additions to Section 1.2.2.3

March 2015 Sodium Lactate Injection Program for RAOC-1

Based on the results of the November 2014 quarterly groundwater sampling event, it was decided to perform an additional injection of sodium lactate to enhance natural reductive dechlorination of chlorinated volatile organic compounds (CVOCs) in the area of RAOC-1. The Department approved the work on February 19, 2015. Placement of supplemental sodium lactate in the subsurface in RAOC-1 occurred on March 30 and 31st, 2015. The work was accomplished via direct injection of approximately 728 lbs. of lactate. The lactate, which is

purchased as a 60% aqueous solution was mixed onsite with water to create an estimated 2,054 gallons of working solution and injected into two existing monitoring wells (BS-2R and MW-25).

Revised Section 1.4.2

The effectiveness of these treatments has been assessed through a groundwater monitoring program using up to seven site monitoring wells (see Figure 10) from March 2012 through May 2015.

At the monitoring well just downgradient of the RAOC-1 source area (MW-25), concentrations have fluctuated above and below standards in recent rounds of groundwater sampling. Concentrations in this well have tended to be higher when the water level in the well was lower. During the November 2014 round of sampling, the water level was more than one foot lower than the late fall 2013 sampling event, and the concentrations were slightly above standards. This pattern has been observed with lower water levels and higher concentrations in late summer/fall for the past three years. When November 2014 data are compared to September 2012 and 2013 data; however, concentrations are noticeably decreasing. In September 2012, total CVOC concentrations were 415 µg/L, in September 2013 they were 90 µg/L, and in the November 2014 sampling event they were at 24 µg/L.

In order to continue to promote enhanced reductive dechlorination at MW-25, a second supplemental sodium lactate injection program was performed in this area in March 2015. The groundwater sample collected following the injection program in May 2015 was non-detect for CVOCs. This is the first time that non-detect has been achieved at this well.

Sample results from well MW-65 in RAOC-3 were "non-detect" for all VOC and SVOC analytes for the June 2012, September 2012, and December 2012 quarterly sampling events, and no petroleum product or sheen was observed in the well. Given three consecutive quarterly sampling events where MW-65 yielded non-detect results, and the prior event, March 2012, which exhibited concentrations that were either non-detect or below groundwater standards, permission was granted by the NYSDEC to discontinue sampling and abandon the well. MW-65 was abandoned on March 28, 2013 and no impacts were observed during abandonment.

Revised Section 2.2.2.2 Monitored Natural Attenuation for Groundwater

Groundwater sampling events occurred on a quarterly basis from September 2012 through December 2013. In September of 2013 the NYSDEC approved a request to remove BS-3, MW-27 and MW-28D from the quarterly groundwater monitoring program and instead put them on a three year sampling frequency. In February of 2014 the NYSDEC approved a request to reduce future groundwater sampling events to semi-annual events. In February of 2015 the NYSDEC agreed that concentrations of CVOCs in wells BS-2R and MW-8 had been below groundwater standards in the prior year's sampling results. While NYSDEC did not require the wells to be sampled in May 2015, they requested for the wells to be sampled in the second semiannual event in 2015 (Planned to be conducted in November 2015) to assess if the second sodium lactate injection had changed conditions. Groundwater monitoring activities to assess natural attenuation will continue on a semi-annual basis (See Table 9). Contingent on the results, the

need for continued monitoring should be re-evaluated. If no CVOCs are detected above NYSDEC groundwater standards in the November 2015 sampling event, it is recommended that sampling cease at all RAOC-1 wells. This would include the wells to be sampled in November 2015 (BS-2R, MW-8 and MW-25) and the wells planned to be sampled every three years as warranted (BS-3, MW-27, and MW-28D). Otherwise, if CVOCs are detected above NYSDEC groundwater standards, any well(s) in RAOC-1 with detections above standards will be sampled on a semi-annual basis for TCL VOCs until there are no exceedances for one year and three additional wells (BS-3, MW-27, and MW-28D) may be sampled in the future (every three years) if warranted.

Revised Table 8: Contact Numbers

MS. Stephanie Reynolds-Smith, Stantec Consulting Project Manager	(585) 413-5272
Mr. Joseph Verdi, Gray Rock Properties LLC, Site Owner	(315) 365-2851
Mr. David Szymanski, NYSDEC Project Manager	(716) 851-7220
Ms. Charlotte Bethoney, NYSDOH Project Manager	(518) 402-7860

Revised Section 3.1.2

This Monitoring Plan describes the methods to be used for:

- Sampling and analysis of all appropriate media (e.g., groundwater, indoor air, soil vapor, soils);
- Assessing compliance with applicable NYSDEC standards, criteria and guidance, particularly ambient groundwater standards and Part 375 SCOs for soil;
- Assessing achievement of the remedial performance criteria.
- Evaluating site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment; and
- Preparing the necessary reports for the various monitoring activities.

To adequately address these issues, this Monitoring Plan provides information on:

- Sampling locations, protocol, and frequency;
- Information on all designed monitoring systems (e.g., well logs);

- Analytical sampling program requirements;
- Reporting requirements;
- Quality Assurance/Quality Control (QA/QC) requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and
- Annual inspection and periodic certification.

Groundwater sampling events occurred on a quarterly basis from September 2012 through December 2013. In September of 2013 the NYSDEC approved a request to remove BS-3, MW-27 and MW-28D from the quarterly groundwater monitoring program and instead put them on a three year sampling frequency, if required (with the next potential event in June 2016). In February 2014 the NYSDEC approved a request to reduce future groundwater sampling events to semi-annual events, and in February of 2015 the NYSDEC agreed that concentrations of CVOCs in wells BS-2R and MW-8 had been below groundwater standards in the prior year's sampling results. While NYSDEC did not require the wells to be sampled in May 2015, they requested for the wells to be sampled in the second semiannual event in 2015 (planned to be conducted in November 2015) to assess if the second sodium lactate injection had changed conditions.

In general, if one year of sampling results show no unacceptable contraventions of standards/guidance, sampling will be discontinued. Trends in contaminant levels in air, soil, and/or groundwater in the affected areas, will be evaluated to determine if the remedy continues to be effective in achieving remedial goals. Monitoring programs are summarized in Table 9 and outlined in detail in Sections 3.2 and 3.3 below.

Revised Table 9: Monitoring and Inspection Schedule

Monitoring Program	Frequency*	Matrix	Analysis
RAOC-1 Groundwater monitoring (Well MW-25) (Wells BS-2R and MW-8) (Wells BS-3, MW-28D, MW-27)	Semi-annual sampling November 2015 with the frequency thereafter determined by review of the November 2015 results in combination with the previous one year of sampling results with no exceedances. Every three years (next event scheduled for May 2016) if warranted	Groundwater	TCL VOCs + TICs (Method 8260)

*The frequency of events will be conducted as specified until otherwise approved by NYSDEC and NYSDOH.

Closing

Should you have any questions or require further information, please call us at 585-475-1440.

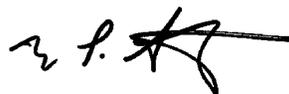
Sincerely,
STANTEC CONSULTING SERVICES INC.



Stephanie Reynolds-Smith
 Project Manager



Peter Nielsen, PE
 Senior Associate



Michael P. Storonsky
 Principal

cc: C. Bethoney (NYSDOH)
 J. Verdi (Gray Rock Properties, LLC)
 R. Blades (Blades Holding Company)
 T. Tuori (Harter Secrest & Emery, LLP)

Attachments:

Attachment 1 – Site Management Plan (October 2012)
 Attachment 2 – Addendum Number 1 to the Site Management Plan (June 2014)
 Updated Tables 5 and 10

Updated Tables 5 and 10

Notes:

- TOGS NYSDEC TOGS 1.1.1 (Reissued June 1998 with errata in January 1999 and addenda in April 2000 and June 2004)
- ^A TOGS 1.1.1 - Table 1 - Ambient Water Quality Standards and Guidance Values, Division of Water, Technical and Operational Guidance Series (TOGS 1.1.1): Guidance
- ^B TOGS 1.1.1 - Table 1 - Ambient Water Quality Standards and Guidance Values, Division of Water, Technical and Operational Guidance Series (TOGS 1.1.1): Standards
- 6.5^A** Concentration exceeds the indicated standard.
- 15.2 Measured concentration was less than the applicable standard.
- 0.50 U** Laboratory reportable detection limit was greater than the applicable standard.
- 0.03 U Analyte was not detected at a concentration greater than the laboratory reportable detection limit.
- n/v No standard/guideline value.
- Parameter not analyzed / not available.
- .. The principal organic contaminant standard for groundwater of 5 ug/L (described elsewhere in the TOGS table) applies to this substance.
- p Applies to the sum of cis- and trans-1,3-dichloropropene.
- * Indicates analysis is not within the quality control limits.
- J The reported result is an estimated value.
- UJ Indicates estimated non-detect.

Attachment 1

Site Management Plan

**Former Allegany Bitumens
Belmont Asphalt Plant
ALLEGANY COUNTY, NEW YORK**

Site Management Plan

NYSDEC Site Number: C902019

Prepared for:

Blades Holding Company, Inc.
P.O. Box 12
Arkport, New York 14807

Prepared by:

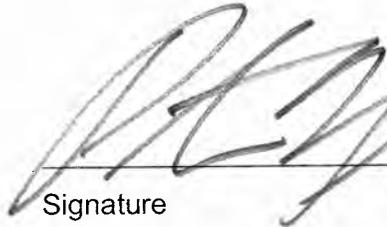
Stantec Consulting Services Inc.
61 Commercial Street
Rochester, New York 14614
(585) 413-5266

Revisions to Final Approved Site Management Plan:

Revision #	Submitted Date	Summary of Revision	DEC Approval Date
1	6/2/2014	Addendum No. 1 includes: Revised sections 1.2.2, 1.4.2, 1.4.3, 2.2.2.2, and 3.2.1, new Figure 13, new Figure 14, and updated Tables 5, 8, 9, 10 and 11	8/24/2014
2	6/2/2015	Addendum No. 2 includes: Revised sections 1.1.1, 1.2.1, 1.2.2, 1.2.2.1, 1.4.2, 2.2.2.2 and updated Tables 5, 8 and 10	

CERTIFICATIONS

I, Peter Nielsen, certify that I am currently a NYS registered professional engineer and that this Site Management Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.


Signature


Date 10/22/12

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SITE MANAGEMENT PLAN

1.0 INTRODUCTION AND DESCRIPTION OF REMEDIAL PROGRAM

1.1 INTRODUCTION

This document is required as an element of the remedial program at the Former Allegany Bitumens Belmont Asphalt Plant (hereinafter referred to as the “Site”) under the New York State (NYS) Brownfield Cleanup Program (BCP) administered by New York State Department of Environmental Conservation (NYSDEC). The site was remediated in accordance with Brownfield Cleanup Agreement (BCA) Index# C902019, which was executed on October 12, 2010 and last amended on May 30, 2012.

1.1.1 General

Blades Holding Company, Inc. (Blades) entered into a BCA with the NYSDEC to remediate a 5.44± acre property located in the Town of Amity, Allegany County, New York (Figure 1). This BCA required the Remedial Party, Blades, to investigate and remediate contaminated media at the site. A figure showing the site location and boundaries of this “site” is provided in Figure 2. The boundaries of the site are more fully described in the metes and bounds site description (see Appendix B) that is part of the Environmental Easement (see Appendix C).

After completion of the remedial work described in the Remedial Action Work Plan, some contamination was left in the subsurface at this site, which is hereafter referred to as ‘remaining contamination.’ This Site Management Plan (SMP) was prepared to manage remaining contamination at the site until the Environmental Easement is extinguished in accordance with ECL Article 71, Title 36. All reports associated with the site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State.

This SMP was prepared by Stantec Consulting Services Inc., on behalf of Blades, in accordance with the requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, dated May 2010, and the guidelines provided by NYSDEC. This SMP addresses the means for implementing the Institutional Controls (ICs) and Engineering Controls (ECs) that are required by the Environmental Easement for the site.

1.1.2 Purpose

The site contains contamination left after completion of the remedial action. Engineering Controls have been incorporated into the site remedy to control exposure to remaining contamination during the use of the site to ensure protection of public health and the environment. An Environmental Easement granted to the NYSDEC, and recorded with the Allegany County Clerk, will require compliance with this SMP and all ECs and ICs placed on the site. The ICs place restrictions on site use, and mandate operation, maintenance, monitoring and reporting measures for all ECs and ICs. This SMP specifies the methods necessary to ensure compliance with all ECs and ICs required by the Environmental Easement for contamination that remains at the site. This plan has been approved by the NYSDEC, and compliance with this plan is required by the grantor of the Environmental Easement and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

This SMP provides a detailed description of all procedures required to manage remaining contamination at the site after completion of the Remedial Action, including: (1) implementation and management of all Engineering and Institutional Controls; (2) media monitoring; (3) operation and maintenance of all treatment, collection, containment, or recovery systems; (4) performance of periodic inspections, certification of results, and submittal of Periodic Review Reports; and (5) defining criteria for termination of treatment system operations.

To address these needs, this SMP includes two plans: (1) an Engineering and Institutional Control Plan for implementation and management of EC/ICs; and (2) a Monitoring Plan for implementation of Site Monitoring. If future development warrants implementation of mitigation or remedial collection, containment, treatment, and recovery systems (including, where appropriate, preparation of an Operation and Maintenance Manual for complex systems) an Operation and Maintenance Plan will be developed with approval from NYSDEC.

This plan also includes a description of Periodic Review Reports for the periodic submittal of data, information, recommendations, and certifications to NYSDEC.

It is important to note that:

- This SMP details the site-specific implementation procedures that are required by the Environmental Easement. Failure to properly implement the SMP is a violation of the environmental easement, which is grounds for revocation of the Certificate of Completion (COC);
- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6NYCRR Part 375 and the BCA (Site #C902019) for the site, and thereby subject to applicable penalties.

1.1.3 Revisions

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. In accordance with the Environmental Easement for the site, the NYSDEC will provide a notice of any approved changes to the SMP, and append these notices to the SMP that is retained in its files.

1.2 SITE BACKGROUND

1.2.1 Site Location and Description

The site is located in the Town of Amity in Allegany County, New York and is identified as Parcel No. 171-1-60 on the Allegany County Tax Map. The site is an approximate 5.424-acre area. Land use in the surrounding area is dominated by agricultural uses. Agricultural fields occupy the adjacent property to the east. Houses, barns and single-family non-farm residences are located along Route 19 to the north and southeast of the property and along Friendship Hill Road (Tuckers Corner Road) to the west of the property. The property located immediately opposite the Site on the west side of Route 19 is also owned by Blades, and is the site of a vehicle and equipment maintenance shop and small office building which are currently not in use (see Figure 3). The boundaries of the site are more fully described in Appendix B – Metes and Bounds.

1.2.2 Site History

1.2.2.1 Past Uses and Ownership

The Site was used for agricultural purposes or was undeveloped prior to 1960. In March 1960, A.L. Blades and Sons, Inc. (now known as Blades Holding Company, Inc.) acquired the property and then conveyed the property to its affiliate Allegany Bitumens, Inc.

An asphalt plant was constructed at the Site by Allegany Bitumens, Inc. circa 1960 and was operated by Allegany Bitumens, Inc. and, after a 1995 merger, by A.L. Blades and Sons, Inc. until A.L. Blades and Sons, Inc. discontinued the asphalt plant operations in 2005. Since 2005, the facility has been unoccupied, and the buildings and stationary asphalt manufacturing equipment were recently demolished or disassembled.

1.2.2.2 Former Structures, Processes and Activities

Industrial Processes and Chemical Uses Associated with Former Asphalt Plant Operations at the Site

The Site was used as a hot mix asphalt manufacturing plant, and ancillary operations such as maintenance of plant equipment and as a laboratory for asphalt and aggregate testing.

Asphalt plant operations that involved the storage or use of significant quantities of petroleum products and asphalt materials included the following:

- hot-mix asphalt production, and
- operational equipment maintenance and related petroleum storage (motor oil, lubricating oil, and grease).

Ancillary operations involving the on-Site use of de minimis quantities of petroleum products or asphalt included:

- aggregate storage and handling,
- truck and heavy equipment parking,
- facility maintenance,
- laboratory testing operations, and
- office and administrative operations.

The primary heating fuel for plant operations was natural gas. A gas company metering and valve building was located between the western property boundary and the Route 19 roadway. This building has since been removed by the gas company.

Asphalt Production

One “batch” hot-mix asphalt production plant was formerly located on-Site. The manufacturing equipment was installed on reinforced concrete slabs, with independent structural footings for stationary equipment.

The former operational equipment included the following:

- a heater used to maintain heat in the plant’s liquid asphalt piping,
- two 20,000 gallon aboveground asphalt tanks,
- one 15,000 gallon aboveground asphalt tank,
- an electric heating system for the asphalt tanks,
- an aggregate dryer, fueled by a burner using natural gas,
- a dust collector for the aggregate dryer,
- material handling and conveyance systems,
- a heated asphalt mixing drum,
- a truck loading station,
- a scale house, and
- a control tower.

The only remaining features include the concrete slab floors for the control tower and maintenance garage (discussed below), and some of the subsurface re-enforced concrete foundations of the asphalt plant.

Aggregate materials (sand and gravel) obtained from NYSDOT-approved quarries were stockpiled to the south of the asphalt plant. The aggregate was sorted, weighed and mixed in accordance with NYSDOT or customer specifications. The aggregate was dried in a natural-gas-fired rotary dryer. The dryer was equipped with a fabric filter (“baghouse”) air emission control system. The baghouse dust was recycled into the production process. No waste dust was generated that required off-Site disposal. The dried aggregate was weighed and conveyed to the mixing drum.

Pre-heated liquid asphalt was dosed and applied to the aggregate via spray nozzles inside the rotating mixing drum. The hot asphalt mix was conveyed from the drum to the truck loading hopper. The loaded trucks were tarped and weighed prior to leaving the Site. All waste asphalt was either recycled back into the production process or placed on site.

The asphalt tanks had internal coils and external insulation utilizing individual electric heaters on each tank. The asphalt piping between the tanks and the plant was heated by a separate system including a stand-alone heater and circulating hot oil enclosed in insulated jacketing around the asphalt piping. The hot oil heater utilized fuel oil and/or natural gas. For a time it was disconnected and staged at the northern end of the property, but has since been removed from the property.

The three horizontal steel asphalt tanks formerly at the plant were essentially empty since the plant operations were discontinued in 2005. The asphalt tanks were located on concrete slabs and footings. The concrete slabs and base provided an impermeable barrier under the tanks, but no other engineered secondary containment was provided.

Maintenance Operations

Routine maintenance and minor repair of facility equipment was performed in a maintenance garage located east of the asphalt mixing operation equipment. The building was also utilized for garaging the asphalt plant loader and for storing construction-related equipment.

The maintenance garage was a single-story metal-sided building with a concrete slab-on-grade floor. There was no basement. The maintenance garage floor was in good structural condition with minor surficial oil staining. The floor is the only part of the structure remaining.

Small quantities of motor oil, hydraulic oil and used oil were stored in and dispensed from drums or 5-gallon containers stored in the oil product storage shed, which was adjacent to the northwest corner of the maintenance garage.

The maintenance garage restroom was located at the southwest corner of the garage building. The septic system for the restroom was located just south of the restroom.

Laboratory Operations

A former on-Site laboratory was present in the northwest corner of the property northwest of the asphalt manufacturing area. The laboratory had not been used since 2005. When the plant was operational, the laboratory was utilized for testing asphalt products for compliance with NYSDOT or client specifications.

Trichloroethylene (TCE) was used as a solvent in the testing operations. The solvent was used to remove asphalt from blacktop samples to allow for testing of the sand and gravel components of the blacktop. A NYSDOT test specification required the use of TCE for this purpose. Solvent use in the laboratory was largely replaced by an ignition oven process in the laboratory in the early 1980s, and thereafter the test process that involved TCE was very rarely used.

The minor amount of asphalt residue from each test that involved use of solvent was accumulated in a 5-gallon pail which when full was removed from the Site for off-Site disposal by an environmental services firm, which also removed and disposed of spent solvent. Blades installed a TCE distillation system in the lab in 1987, and thereafter no waste solvent material was generated from the use of TCE.

The laboratory building had its own septic system which reportedly received domestic sanitary waste from the sinks and toilet in the laboratory and from a bathroom in the adjacent scale house. The septic system was located in the area south of the lab building and east of the scale house.

1.2.2.3 Historical Environmental Activities and Reports

Historical environmental studies and reports prepared by Stantec include:

- Phase I/Phase II Environmental Site Assessment (performed December 2009 and reported July 2010);
- Remedial Investigation Work Plan (October 11, 2010);
- Monthly Progress Reports, starting November 2010;
- Interim Remedial Measures Work Plan (October 24, 2011);
- Remedial Investigation Report and Interim Remedial Measures Construction Completion Report (September, 2012);
- Remedial Alternative Analysis Report and Remedial Action Work Plan (Draft, August 27, 2012); and

- Final Engineering Report (to be completed).

Phase I Environmental Site Assessment

A Phase I ESA was completed by Stantec in December 2009 in connection with real estate due diligence activities. The Phase I ESA identified one recognized environmental condition (REC) at the Site:

- No records or knowledge of releases were identified during the Phase I ESA. However, given the potential for historic releases of TCE in the area of the laboratory building septic system and outdoor asphalt-paved pad attached to the east end of the laboratory building, that area was identified as an REC, and it was recommended that a soil boring program be conducted in that area.

Phase II Environmental Site Assessment

Based on the findings of the Phase I ESA, Stantec conducted a Phase II ESA in December 2009. Four soil test borings, one temporary monitoring well (BS-1) and three permanent monitoring wells (BS-2 through BS-4) were installed for the purposes of collecting soil and groundwater samples adjacent to, and downgradient from, the laboratory building and its septic system. The Phase II ESA test boring and monitoring locations are shown on Figure 2. Results indicated the presence of TCE and related VOCs in soil and groundwater at levels above NYSDEC's soil cleanup objectives and groundwater standards in an area northeast of the laboratory building.

Remedial Investigation

The RI investigation included subsurface explorations and soil and groundwater sampling and analysis in the laboratory area as well as other areas of the site (see Figure 2). The primary findings of the RI were as follows:

Laboratory Building Area

Chlorinated volatile organic compound (CVOC) impacts were further characterized and delineated in subsurface soil and shallow groundwater in the vicinity of the laboratory building. Exceedences of SCOs were reported for CVOCs in subsurface soil samples to the east and southeast of the laboratory building. TCE concentrations in soils ranged up to 35 ppm. The area of groundwater impacts extended beyond the limits of the soil impacts, and extended slightly beyond the northern property line. TCE concentrations in groundwater ranged up to 12 ppm.

West of the Asphalt Storage Tanks (MW-27 and B-31 area)

Low-level detections of petroleum VOCs were found in shallow soils in two test borings. Although the laboratory detections of contaminant compounds were below SCOs, elevated PID readings and significant “nuisance” petroleum odors were observed; accordingly, remedial action was also deemed warranted for this area. Groundwater samples from monitoring wells installed closest to this area did not indicate impacts.

Asphalt Tank Area (Test Pit TP-14 area)

Petroleum impacts were identified in shallow soil in the vicinity of the asphalt tanks. Low-level petroleum VOC detections below SCOs were observed immediately west of the asphalt tanks, where asphalt materials and soil with an oily appearance were observed at shallow depths accompanied by elevated PID readings. Due to significant “nuisance” petroleum odors and the presence of oil staining, this area was deemed to require remedial action. Groundwater impacts were not observed.

North and East Perimeter Berms

Portions of the perimeter soil berms or slopes along the east and north property lines were found to contain waste asphalt and asphalt/fill soil mixtures, as well as miscellaneous debris consisting of a variety of large and small pieces of wood, metal, plastic and rubber objects. A notable “lobe” of waste asphalt is present near the center of the eastern berm and extends westward toward the interior of the site.

Analysis of soil samples from test pits excavated in the berms did not detect Contaminants of Concern (COCs) at levels in excess of SCOs, with one exception: benzo(a)pyrene was detected in a sample from TP-10 at 4.1 part per million (ppm), versus the Commercial SCO of 1 ppm.

Interim Remedial Measures

Based on the RI findings, Blades performed Interim Remedial Measures (IRMs) to: 1) provide a timely response to the findings of the RI; 2) minimize the potential for further spread of contaminants; and 3) expedite preparation of the site for potential sale and re-development. An IRM Work Plan (IRM WP) was submitted to and approved by NYSDEC. The IRM WP designated the first three areas described above to be Remedial Areas of Concern (RAOCs), as follows:

- RAOC-1: Former Laboratory Area;
- RAOC-2: MW-27 and B-31 Area; and

- RAOC-3: Asphalt Tank Area.

The fourth area (North and East Perimeter Berms) was not designated to be an RAOC at that time. IRMs were not proposed for this area due to the lack of a threat to health or the environment. Nonetheless, this portion of the site was ultimately designated RAOC-4.

The IRMs for RAOCs 1 through 3 were performed between November 2011 and April 2012, with supplemental IRM activities continuing into May 2012. Field modifications to the IRMWP-proposed activities were approved by NYSDEC. The following summarizes the measures taken:

RAOC-1 - Former Laboratory Building Area

CVOC-impacted soil was excavated from the source area and disposed offsite. Confirmatory soil samples indicated that the excavation sufficiently removed impacted soil, i.e. no exceedences of applicable SCOs were observed in the analyzed samples.

Water was pumped from the excavation and treated with a granular activated carbon system and discharged onsite. Analyses of the system effluent indicated that the treatment sufficiently removed VOCs from the water prior to discharge.

To further address residual groundwater impacts, enhanced reductive dechlorination (ERD) was implemented through the application of sodium lactate solution into the source-area excavation prior to backfill.

Subsequent to backfill of the source area excavation, a series of trenches were excavated within the plume footprint beyond the source area to facilitate application of additional sodium lactate solution. The RAOC-1 excavations were backfilled with clean onsite soils.

Periodic groundwater monitoring was commenced with the first sampling event performed in March 2012 and a second event conducted in June 2012. The source-area total VOC concentrations in March and June 2012 were 54 and 36 micrograms per liter ($\mu\text{g/L}$; equivalent to parts per billion), respectively. These results were significantly lower than the pre-remediation (January 2011) VOC concentrations of 3,947-12,401 $\mu\text{g/L}$ total VOC concentrations reported in source-area wells in January 2011.

VOC levels in groundwater outside the source area were generally found at levels near or below NYSDEC groundwater standards. However, a downgradient well exhibited a slight increase in total VOCs, mostly due to an increase in the concentration

cis-1,2-DCE, a “daughter” product of the breakdown of TCE. This is likely indicative of the onset of ERD of TCE downgradient of the source area.

RAOC-2 – MW-27 and B-31 Area (West of Asphalt Tank Area)

Petroleum-impacted soil was excavated from RAOC-2 and disposed offsite. Confirmatory soil samples indicated that the excavation sufficiently removed impacted soil, i.e. no exceedences of SCOs were observed in the analyzed samples, with the exception of acetone, which was attributed to lab contamination.

RAOC-3 - Asphalt Tank Area

During excavation of the impacted soil in RAOC-3, it became evident that two distinct areas of impacted soil existed: a western portion (RAOC-3A) and an eastern portion (RAOC-3B and 3C). Impacts in the western portion included those originally observed at TP-14. Elevated PID readings, staining and petroleum product odors were observed at depths ranging down to approximately 4.5 ft bgs in RAOC-3A. Groundwater was not encountered within this excavation.

As excavation advanced in RAOC-3B, the water table was encountered at approximately 5 ft bgs and apparent petroleum product was observed within a deposit of coarse gravel and cobbles at depths from approximately 5 ft to 8 ft bgs. As the gravel was excavated, a floating layer of light non-aqueous phase liquid (LNAPL) developed on the water surface in the excavation.

IRM activities ceased at that time due in part to the onset of winter weather and because access to the southwestern portion of the excavation was restricted by the presence of the asphalt plant structure and associated concrete slabs and foundation piers. The asphalt plant was subsequently removed in March 2012 and additional excavation was then completed in the southwestern portion (designated RAOC-3C) in April 2012.

Impacted soil excavated from all three sub-areas of RAOC-3 was disposed of offsite. With the exception of one detection of acetone, which is a common laboratory artifact, results from confirmatory soil samples from the RAOC-3 excavations were below SCOs.

Sorbent pads and booms were used to absorb the LNAPL on the water accumulated in the excavation at RAOC-3B and RAOC-3C. A vacuum system was also used to remove product periodically from the surface of the water table; the water/product were containerized. Laboratory analysis of the LNAPL identified the material as motor (lube) oil. The water that accumulated in the excavation underlying the

LNAPL was sampled for VOCs, SVOCs and metals and it did not exhibit contaminants at concentrations in excess of NYSDEC's groundwater standards. Water and LNAPL were pumped from the RAOC-3B and RAOC-3C excavations. The water and product were transported offsite to a permitted treatment facility for treatment/disposal.

Geochemical conditions of a water sample from the RAOC-3B excavation indicated that placement of gypsum in the base of the excavation at the water table would create favorable conditions for anaerobic degradation of remaining petroleum residue by indigenous sulfate-reducing bacteria. Accordingly, granular agricultural-grade gypsum and fertilizer was added to the RAOC-3B and RAOC-3C excavations prior to backfill. The excavations in RAOC-3 were backfilled with non-impacted onsite overburden material and/or onsite aggregate.

RAOC-3B/3C groundwater monitoring commenced with a sampling event in March 2012, followed by a quarterly sampling event in June 2012. Only one VOC was detected in March 2012 and it was found at a concentration below the groundwater standard. No VOCs were detected in June 2012. No target SVOC compounds were detected in either round. The results indicated anaerobic, reducing groundwater conditions, with increased sulfate levels exist; these data are indicative of favorable conditions for continued successful breakdown of residual petroleum hydrocarbons.

Additional Activities

Additional activities were conducted in response to conditions encountered during demolition and dismantling of site structures and buildings. Environmental conditions encountered which warranted remedial action, and the actions taken include:

- The floor slab and bottom course of the masonry block walls of the oil storage shed were oil-stained. No impacts were observed in soil beneath the building. The impacted concrete slab and block materials were segregated and disposed of offsite at a permitted landfill;
- Surface soil beneath a discarded asphalt heater was observed to be oil stained. The soil was excavated and disposed offsite. Excavated soil was disposed offsite. Confirmatory bottom and sidewall samples did not have detections above SCOs. A small amount of water was pumped from the excavation when oil was observed to accumulate on the water surface. The water was sampled and disposed of at the Wellsville wastewater treatment plant; and

- Sampling of the maintenance garage septic system indicated petroleum-related VOCs were present at low levels in sludge contained in the underground septic tank, but no contaminants of concern were detected in a water sample from the adjacent dry well. The VOC concentrations in the sludge were low enough to allow for disposal of the waste at the Wellsville wastewater treatment plant. No impacts to the surrounding soil were observed or indicated by field screening for VOCs.

RAOC-4 Remedial Action

Since no significant impacts were found in soil or groundwater in RAOC-4, necessary remedial action was limited to removal and offsite disposal of surficial debris. This work was performed concurrently with the IRMs, primarily in April and May 2012.

1.2.3 Geologic Conditions

According to mapping prepared by the United States Department of Agriculture (USDA) Soil Conservation Service, as reported by Environmental Data Resources (EDR), the majority of the native soils on the subject property are identified as Chenango gravelly loam. This soil is described as deep, well drained to excessively drained sands and gravels. The Surficial Geologic Map of New York - Niagara Sheet (Cadwell, and others, 1986) indicates the overburden deposits beneath the subject property are fluvial sand and/or gravel along the western property line and recent alluvial deposits of the Genesee River floodplain beneath the eastern two thirds of the property.

Phase II and RI test pit and soil boring data indicate varying thicknesses of fill overlying a few to several feet of brown to yellowish brown silts/fine-grained sands and gravels. Below this are alternating layers of gray to brownish gray clayey silt/fine-grained sand and silty clay that gets finer with depth. A geologic cross-section for RAOC-1 is shown in Figure 4.

According to the Geologic Map of New York (Rickard and Fisher, 1970), bedrock underlying the subject property is identified as shale and siltstone of the Canadaway group. Based on a video survey of the site's water supply well, it appears that the top of bedrock is greater than 180 ft bgs. The video survey showed that the well is cased along its entire depth with the casing apparently driven into gravel, which forms the base of the well.

The water table at and just to the north of the Site is relatively shallow. During the RI, the water table was generally found to occur within 0 to 15 ft of ground surface.

Shallow overburden groundwater was found to flow toward the north, northeast, east and southeast from the northwest portions of the Site. A groundwater contour plan showing flow direction is included as Figure 5. Regional groundwater flow is expected to be toward the Genesee River, which is approximately 1,200 feet to the east of the site.

1.3 SUMMARY OF REMEDIAL INVESTIGATION FINDINGS

A Remedial Investigation (RI) was performed to characterize the nature and extent of contamination at the site. The results of the RI are described in detail in the Remedial Investigation Report and Interim Remedial Measures Construction Completion Report (draft, May 30, 2012).

Generally, the RI determined that there were three areas requiring remedial action. As described in Section 1.2.2.3, these included:

1. CVOC-impacted soil and groundwater in the laboratory building area;
2. Elevated PID readings and significant “nuisance” petroleum odors in shallow subsurface soils west of the asphalt storage tanks near MW-27 and B-31;
3. Elevated PID readings, “nuisance” petroleum odors and the presence of oil staining near the asphalt tanks at TP-14 in shallow subsurface soils; and

Fifteen of the sixteen soil samples analyzed from test pits in the perimeter soil berms did not exhibit exceedences of the Commercial SCOs, and the sixteenth sample exhibited only a single polycyclic aromatic hydrocarbon (PAH) at a level above the SCO. No groundwater impacts were observed. Accordingly no soil or groundwater remediation was deemed warranted for these areas.

Below is a summary of site conditions when the RI was performed in 2010-2011. RI sampling locations are shown on Figure 2. Tables 1-4 display analytical results screening against the appropriate NYSDEC criteria.

Soil Gas

A passive soil gas survey consisting of 28 sampling points was conducted at and downgradient of the laboratory source area and surrounding the oil house and maintenance garage. The PSG survey results showed the presence of CVOCs, especially TCE, centered around an area just northeast of the laboratory building and extending

toward the north. These results were used to help refine the positioning of the monitoring wells in the laboratory and downgradient areas.

The PSG results also showed two areas of petroleum related VOCs in the vicinity of the asphalt storage tanks and the maintenance garage. The PSG concentrations near the asphalt storage tanks were likely related to the impacts discovered at test pit TP-14. In the PSG area near the maintenance garage, no surface or subsurface soil impacts were noted based on laboratory analytical sampling results and field screening. For both areas with PSG petroleum VOC results, based on groundwater sampling results at nearby and downgradient monitoring well locations, there were no petroleum related exceedances in groundwater.

Soil

Surface Soil

Fourteen surface soil samples were collected from locations distributed across the Site and from targeted locations. All detections of VOCs, SVOCs, and pesticides were below Commercial SCOs (see Table 1). No PCBs were detected. The only metals detected above Commercial SCOs were calcium, iron and magnesium, which are common naturally-occurring metals whose presence was not considered to be site related.

Subsurface Soil from Test Pits

Twenty-three test pits were excavated across the Site, predominantly along the berms at the northern and eastern property boundaries. Materials encountered included aggregate stockpiles, native soils, solid and non-solidified asphalt materials, asphalt pieces with an oily appearance, PID readings up to 804 ppm and a strong odor (TP-14, 3 ft bgs), remnants of a small fire, and debris. The non-solidified material was not suitable for sale at the time of manufacture as it was identified to be “off-spec.” Nevertheless, it is essentially the same as solidified asphalt pavement that is placed in commerce for public uses or is generated during construction or demolition activities involving asphalt pavement. The material did not elicit a positive response on a PID and no VOC or SVOC groundwater impacts were observed in excavations where this material was present. Twenty-six subsurface soil samples were collected (see Table 2). No VOCs, pesticides, or PCBs were detected above Commercial SCOs. The only metals detected above these SCOs were considered to be naturally occurring and not site-related. The only exceedence of Part 375 Commercial SCOs for SVOCs was at the deepest interval reached (6-6.5 ft bgs) at TP-10, which is along the eastern bermed area. One PAH,

benzo(a)pyrene, exceeded its Commercial SCO. Pieces of asphalt were found throughout this test pit. At the base of the test pit, near where the sample was collected, there was an impenetrable hard surface that was most likely asphalt. Therefore, the PAH exceedence is believed to be related to the presence of the asphalt. Asphalt is a chemically- and physically-stable material that does not readily impart chemical constituents to the environment. It's use in construction of roadways, and for parking surfaces and driveways for industrial, commercial and residential applications are indicative of a lack of significant potential for adverse impact to human health, wildlife or the environment. In fact, asphalt is often used on environmental remediation sites as a cap to contain contaminant materials. Accordingly, the presence of asphalt is not considered to be of environmental concern.

Subsurface Soil from Soil Borings

A total of 38 subsurface soil samples were submitted from the RI and Phase II monitoring well and soil boreholes (see Table 3). Low concentrations of SVOCs were detected at samples submitted for SVOC analysis, all of which were below the Part 375 Commercial SCOs. No pesticides or PCBs were detected in the samples submitted for these analyses. Metals were detected in each of the five samples submitted for metals analysis. Exceedances of Part 375 Commercial SCOs were only reported for metals considered to be naturally occurring and not Site-related.

Among the samples analyzed for VOCs, many locations either had no detections or only low levels of methylene chloride, which is a common laboratory contaminant and not considered to be Site related. Among the other locations with detections, low levels of petroleum related VOCs were detected at 8-9 ft bgs in the soil sample from B/MW-10, which was just to the east of the asphalt storage tanks, and near the surface at B/MW-27 and B/MW-31, which were to the west of the asphalt storage tanks. The low level detection at B/MW-10 may have been related to the PSG results discussed above. The detections at B/MW-27 and B-31 reflect the elevated (41 to 58 parts per million [ppm]) PID readings and odors observed during the sampling of these intervals (0.3 to 1.1 ft bgs). All of the petroleum related VOC detections in the boring subsurface soil samples were nevertheless well below Part 375 Commercial SCOs.

Other locations with detections were predominantly CVOCs and these locations were in the vicinity of the laboratory building. The CVOCs reported at or near the water table are contoured on Figure 6 in plan view. Figure 4 shows a cross-section of the laboratory building area, including lithology, the water table, PID readings and soil sampling results. All subsurface soil sample results from the wells and soil borings were

well below the Commercial SCOs. The locations with the highest detections were on the east and southeast sides of the laboratory building and correspond to locations where elevated PID readings were observed and exceedances of Part 375 POGW SCOs occurred. These exceedances included: TCE at BS-2, BS-4, B-16, B/MW-23, and B-24; 1,1,1-trichloroethane (1,1,1-TCA) at B-24; and 1,1-dichloroethane (1,1-DCA) at B-16. In the laboratory source area, TCE concentrations ranged up to 35 ppm. Concentrations diminished significantly away from the vicinity of the laboratory building source area. The area with known exceedances was estimated to be approximately 55 ft in the north to south direction and 30 ft in the east to west direction. Based on PID readings and soil sampling results the estimated depth of the contaminated interval was approximately 4 to 15 ft bgs.

Site-Related Groundwater

A total of 34 Phase II ESA and RI groundwater samples were submitted for laboratory analysis. Results of laboratory analyses of groundwater samples from the Phase II ESA and RI are summarized in Table 4.

VOCs were detected in 18 of the 34 groundwater samples collected during the Phase II and RI, with exceedances in 11 samples. Detections were primarily for chlorinated ethenes and ethanes in samples collected from the vicinity of the laboratory building. In addition to chlorinated ethenes and ethanes, toluene was detected at low levels in BS-2 and BS-4; carbon disulfide was detected at a low level in deep overburden well MW-28D; and acetone and methylene chloride, which are common laboratory contaminants, were detected at MW-13. However, the only exceedances of Class GA standards were for the CVOCs.

During the December 2009 Phase II ESA, four locations were sampled in the vicinity of the laboratory building for VOCs. Three of these locations had exceedances for chlorinated ethenes and ethanes, with total chlorinated VOC concentrations ranging from 0.001 ppm to 2.2 ppm.

The first RI round of groundwater sampling was conducted in December 2010 for the on-Site water supply well and in January to February 2011 for the 18 shallow and one deep overburden monitoring wells. Chlorinated ethenes and ethanes were detected in six shallow overburden wells in the vicinity of the laboratory building, with exceedances at four of these locations (BS-2, BS-4, MW-23, and MW-25). Total chlorinated ethene and ethane concentrations ranged up to 12.4 ppm, with TCE comprising the majority of this total at 12 ppm. Figure 7 presents interpolated contours of these chlorinated VOC data in

the shallow overburden wells. Similar to the soils, the highest concentrations were east and southeast of the laboratory building. Concentrations diminished rapidly beyond the vicinity of the laboratory building. Downgradient concentrations to the north and downgradient along the eastern property line were low or non-detect.

As described above, the only VOC detected in the deep overburden well was a low level of carbon disulfide. No chlorinated VOCs were detected; therefore, the contamination existing in the shallow overburden had not migrated to the deep (40 ft bgs) overburden.

No VOCs were detected in the on-Site water supply well, which is cased to its open hole base at about 180 ft bgs.

The second RI round of groundwater sampling was conducted on April 20-21, 2011. Ten shallow overburden wells were sampled. Chlorinated VOCs were detected in six of the wells, with exceedances at four of these locations (BS-2, BS-4, MW-8, and MW-25). Total chlorinated ethene and ethane concentrations ranged up to 0.1 ppm, with TCE comprising the majority of this total at 0.091 ppm. Figure 8 presents interpolated contours of the chlorinated VOCs in shallow overburden wells. As with the first round of sampling, concentrations were highest east and southeast of the laboratory building. Downgradient concentrations in the area to the north and to the east diminished rapidly. VOC concentrations during the second round of sampling were generally lower than those observed during the first round of sampling. It was presumed that the reduction of VOC concentrations was related to the high water table at the time of sampling.

No SVOCs were detected among the eight wells sampled for these constituents.

No pesticides or PCBs were detected among the four wells sampled for these parameters.

Metals were detected in each of the four wells sampled for metals. Exceedances of metals standards were found for arsenic, iron, manganese, and sodium. The later three metals are considered common naturally occurring metals and are thus not considered to be of concern. Arsenic, in this case, is also considered to be naturally occurring and not Site related. Since arsenic was only detected in the site's water supply well, it was suspected that this is the result of a naturally occurring condition at depth. The Village of Belmont presents their public water supply sampling data on the internet at <http://www.belmontny.org/html/bforms.htm>. Review of their data indicates the Village reported arsenic at 50 parts per billion (ppb) in both 2005 and 2009 and they attributed their elevated arsenic levels to "Bedrock Minerals". Given this information, it was

concluded that the arsenic in the production well is a naturally occurring condition and that no further investigation was necessary.

Site-Related Soil Vapor Intrusion

Soil vapor intrusion sampling was not conducted because the site's buildings were unoccupied at the time that the RI was conducted. All site structures have since been demolished and removed from the site. Soil vapor intrusion sampling was not warranted at structures on neighboring properties because groundwater sampling results indicated that VOCs are not present in groundwater in the vicinity of these structures.

1.4 SUMMARY OF REMEDIAL ACTIONS

The site was remediated in accordance with the NYSDEC-approved Interim Remedial Measures Work Plan dated October 2011. The activities conducted during the IRM are described in detail in the Remedial Investigation Report and Interim Remedial Measures Construction Completion Report (draft, May 30, 2012). . Section 1.2.2.3 of this report also provides an overview of these activities.

The following is a summary of the Remedial Actions performed at the site:

1. Excavation of soil/fill at RAOCs 1 through 3 and the Heater Area, including soil/fill:
 - At RAOC-1 exceeding POGW SCOs listed in Table 3 to maximum depths ranging from approximately 10 to 14.5 ft bgs;
 - At RAOC-2 which exhibited nuisance characteristics to a depth of approximately 2 ft bgs;
 - At RAOC-3A which exhibited elevated PID readings and staining and petroleum odors to a depth of approximately 4.5 ft bgs;
 - At RAOC-3B and -3C where petroleum product was observed from approximately 5 to 8 ft bgs; and
 - At the Heater Area where petroleum odor, visual staining, and a sheen were observed to a depth of approximately 5 ft bgs.

2. Removal of groundwater in source areas, including:
 - At RAOC-1, de-watering of the source area groundwater during excavation with ex-situ treatment via on-site carbon drums and subsequent on-site treatment;
 - At RAOC-3B and -3C, dewatering of the source area groundwater and LNAPL during excavation, and off-site disposal; and
 - At the Heater Area, a small quantity of groundwater with a thin layer of oil, and off-site disposal.
3. In-situ biological treatment of groundwater, including:
 - Application of sodium lactate to the groundwater in the open excavation at RAOC-1 and to downgradient trenches within the plume area;
 - Placement of agricultural-grade gypsum and fertilizer in the RAOC-3B and -3C source area to enhance breakdown of petroleum compounds by sulfate-reducing bacteria; and
 - Groundwater monitoring;
4. Execution and recording of an Environmental Easement to restrict land use and prevent future exposure to any contamination remaining at the site;
5. Institutional Controls as detailed in Section 2.3; and
6. Development and implementation of a Site Management Plan for long-term management of remaining contamination as required by the Environmental Easement, which includes plans for: (1) Institutional and Engineering Controls, (2) monitoring, (3) operation and maintenance (if remedial or mitigation systems are warranted in the future) and (4) reporting.

1.4.1 Removal of Contaminated Materials from the Site

A list of the soil cleanup objectives (SCOs) for the primary contaminants of concern (COCs) and applicable land use for this site is provided in Tables 1 through 3. Commercial SCOs are applicable for this site.

A figure showing areas where excavation was performed is shown in Figure 9. These areas include:

- RAOC-1: Materials removed from RAOC-1 included soils and fill with PID readings above 5 ppm. The depth of the excavation ranged from 10 to 14.5 ft bgs. The excavation was approximately 4,800 square feet with an approximate sidewall length of 275 ft. In total, approximately 1,635 tons of impacted soil and fill excavated from RAOC-1 were transported off-site for proper disposal. The excavation was backfilled with clean shallow soils and clean on-site aggregate, with the approval of NYSDEC;
- RAOC-2: Materials removed from RAOC-2 included soils and fill with nuisance characteristics and elevated PID readings. The depth of the excavation was approximately 2 ft bgs. The excavation was approximately 628 square feet with an approximate sidewall length of 116 ft. In total, approximately 75 tons of impacted soil and fill excavated from RAOC-2 were transported off-site for proper disposal. The excavation was backfilled with clean on-site aggregate, with the approval of NYSDEC;
- RAOC-3:
 - Materials removed from RAOC-3A included soils and fill with elevated PID readings, staining, and petroleum product odors. The depth of the excavation was approximately 4.5 ft bgs.
 - Materials removed from RAOC-3B and -3C included LNAPL-impacted coarse gravel and cobbles at approximately 5 to 8 ft bgs.
 - In total, the excavation at RAOC-3 was approximately 3,400 square feet with an approximate sidewall length of 490 ft. Approximately 1,200 tons of impacted soil and fill excavated from RAOC-3 were transported off-site

for proper disposal. The excavation was backfilled with clean shallow soils and clean on-site aggregate, with the approval of NYSDEC.

- Heater Area:
 - Materials removed from the Heater Area included soils and fill with elevated PID readings, staining, and petroleum product odors. The depth of the excavation was approximately 5 ft bgs.
 - The excavation was approximately 410 square feet with an approximate sidewall length of 105 ft. In total, approximately 87 tons of impacted soil and fill excavated from the Heater Area were transported off-site for proper disposal. The excavation was backfilled with clean shallow soils and clean on-site aggregate, with the approval of NYSDEC.

1.4.2 Site-Related Treatment Systems

During the excavation programs at RAOC-1, RAOC-3B and -3C, and the Heater Area (see Figure 9), short-term groundwater and LNAPL recovery was conducted. This included:

- At RAOC-1, dewatering of the source area groundwater during excavation with ex-situ, on-site treatment using carbon drums, and subsequent on-site discharge after treatment;
- At RAOC-3B and -3C, dewatering of the source area groundwater and LNAPL during excavation, and off-site disposal; and
- At the Heater Area, dewatering of the source area groundwater and LNAPL during excavation, and off-site disposal.

Following the IRM excavation programs at RAOC-1 and RAOC-3B and -3C (see Figure 9), in-situ biological treatment of groundwater, included:

- Application of sodium lactate to the groundwater in the open excavation at RAOC-1 (110 gallons of 60% sodium lactate solution) and to downgradient

trenches within the plume area (55 gallons of 60% sodium lactate solution); and

- Placement of 28 tons of agricultural grade gypsum and 100 pounds of 10:10:10 fertilizer in RAOC-3B and -3C excavations to enhance breakdown of petroleum compounds by sulfate-reducing bacteria.

The effectiveness of these treatments has been assessed through a quarterly groundwater monitoring program using seven site monitoring wells (see Figure 9). At RAOC-1, monitoring wells BS-2R, BS-3, MW-8, MW-25, MW-27, and MW-28D were sampled after application of sodium lactate on a quarterly basis, in late March and late June 2012. Data are presented in Table 5 and total CVOC concentrations are contoured in Figure 10. The respective March and June 2012 source area concentrations of 54 and 36 $\mu\text{g/L}$ total VOCs in BS-2R are significantly lower than the 3,947 - 12,401 $\mu\text{g/L}$ total VOC concentrations that were reported in source area wells in January 2011. VOCs were generally found at low levels that are near or below standards outside the source area. However, at downgradient well MW-8, the concentration of total VOCs increased from 8.5 $\mu\text{g/L}$ pre-treatment to 19 $\mu\text{g/L}$ post-treatment; most of the increase was accounted for by the detection of cis-1,2-DCE at approximately 10 $\mu\text{g/L}$. The increase in concentration of cis-1,2-DCE, which is a breakdown product of TCE, likely indicates that the sodium lactate has been successful at enhancing reductive dechlorination of TCE downgradient of the source area. Over time as the reductive dechlorination progresses, total VOC concentrations are expected to decrease.

At RAOC-3, monitoring well MW-65 was also sampled in March and June 2012. The March sampling results showed a low level detection of one CVOC below its standard. No target compounds were detected in June. SVOC TICs were detected in both rounds, but at decreasing overall concentrations. These results indicate the gypsum application has been effective in remediating the groundwater in RAOC-3.

1.4.3 Remaining Contamination

Soils at the side and bottom of the RAOC-1 through RAOC-3 and Heater Area excavations met Commercial SCOs as demonstrated by the confirmatory sampling results presented in the IRM CCR. At RAOC-3, 2 to 3 cubic yards of impacted material was left in place surrounding the site's water supply well (see Figure 9) in order to avoid potentially damaging the well's casing. This impacted material consists of LNAPL-

impacted coarse gravel and cobbles at approximately 5 to 8 ft bgs. A confirmatory sample of similar material from a nearby sidewall (which was later excavated) did not show exceedances of Commercial SCOs. Thus, the 2-3 cubic yards of impacted material left in place surrounding the water supply well is not considered to be a concern, since the contaminant levels are anticipated to be at levels well below SCOs. In addition, the gypsum applied to the excavation should assist the biodegradation of the residual contaminants.

Groundwater at RAOC-1 has been shown to be impacted with chlorinated VOCs, especially TCE, at levels above NYSDEC standards (see Figure 10 and Table 5). However, it is anticipated that concentrations will decrease due to source removal and application of sodium lactate. Groundwater at RAOC-3 and the Heater Area has not been shown to exceed standards.

The only soils demonstrated to be in exceedence of the Commercial SCOs were from a sample taken at 6-6.5 ft bgs at TP-10 from beneath the berms along the eastern perimeter of the site (see Figure 11). In this sample, a single PAH, benzo(a)pyrene, was detected at 4.1 ppm, which exceeded the Commercial SCO of 1.0 ppm. Pieces of asphalt were found throughout this test pit. At the base of the test pit, near where the sample was collected, there was an impenetrable hard surface that was most likely asphalt pavement. Therefore, the PAH exceedence is believed to be related to the presence of the asphalt.

During the RI, portions of the perimeter soil berms or slopes along the east and north property lines as well as a “lobe” near the center of the eastern berm that extends westward toward the interior of the site were found to contain waste asphalt and asphalt/fill soil mixtures, as well as miscellaneous debris consisting of a variety of large and small pieces of wood, metal, plastic and rubber objects. These materials, where encountered were generally found at depths ranging from ground surface (i.e. just under the base of the berm) down to the deepest reach of the excavator (approximately 12 ft bgs); however the lack of SCO exceedences in every sample except one indicates that berm soils are largely devoid of COCs at levels in excess of cleanup standards.

Table 6 and Figure 11 summarize the results for soil sample locations where COCs may remain at levels that exceed the Commercial and Industrial SCOs after completion of Remedial Action.

2.0 ENGINEERING AND INSTITUTIONAL CONTROL PLAN

2.1 INTRODUCTION

2.1.1 General

Since remaining contaminated soil, groundwater and potentially soil vapor exists beneath the site, Engineering Controls and Institutional Controls (EC/ICs) are required to protect human health and the environment. This Engineering and Institutional Control Plan describes the procedures for the implementation and management of all EC/ICs at the site. The EC/IC Plan is one component of the SMP and is subject to revision by NYSDEC.

2.1.2 Purpose

This plan provides:

- A description of all EC/ICs on the site;
- The basic implementation and intended role of each EC/IC;
- A description of the key components of the ICs set forth in the Environmental Easement;
- A description of the features to be evaluated during each required inspection and periodic review;
- A description of plans and procedures to be followed for implementation of EC/ICs, such as the implementation of the Excavation Work Plan for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the site; and
- Any other provisions necessary to identify or establish methods for implementing the EC/ICs required by the site remedy, as determined by the NYSDEC.

2.2 ENGINEERING CONTROLS

2.2.1 Sub-slab Depressurization Systems

Investigation or mitigation may be required for future structures to minimize the potential for VOC vapors associated with residual impacted groundwater, to enter the building, in accordance with NYSDOH Guidance (*Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006*).

Three approaches may be employed to address this requirement:

1) prior to the construction of any enclosed structures, an SVI evaluation may be performed to determine whether any mitigation measures are necessary to eliminate potential exposure to vapors in the proposed structure;

2) a sub-slab depressurization system, of a design approved by the NYSDEC and NYSDOH, may be installed during the construction of any proposed building or structure; or

3) if a SVI is not conducted prior to construction and a sub-slab depressurization system is not installed during construction of a new building or structure, then a soil vapor intrusion evaluation needs to be conducted at the newly-constructed building or structure.

Soil vapor intrusion evaluations conducted at newly-constructed buildings should be conducted in accordance with the most recently-updated Guidance for Evaluating Soil Vapor Intrusion in the State of New York. Procedures and methods for conducting a soil vapor intrusion evaluation should be submitted in a work plan for State Agency review and approval. The results of a soil vapor intrusion evaluation should be provided to the State Agencies for data review and interpretation. The State Agencies will provide a determination based on the review of the data and will make appropriate recommendations to address exposures, if any.

If a sub-slab depressurization system is recommended based on the results of a soil vapor intrusion evaluation either prior to or after construction of any structures in the

specified area, the design of this system will be the responsibility of the owner.

Generally, a typical system for new construction would consist of:

- a clean stone layer with slotted piping to facilitate collection of sub-slab vapors;
- a vapor retarding liner (such as 6 mil polyethylene sheeting or a spray-on liner such as Liquid Boot) to trap vapors in the stone layer and to prevent vapors from entering the structure through cracks and joints in the floor;
- header piping to connect horizontal piping to a depressurization fan; and
- a vent to the exterior above the building roof elevation/air intakes (see Figure 13 – schematic diagram of a typical system).

Post-installation sampling should be conducted to ensure that the system is operating effectively and reducing/minimizing exposures. System installation, post confirmation sampling, and monitoring shall be conducted in accordance with the NYSDOH Guidance .

Typical procedures for operating and maintaining a sub-slab depressurization system will be documented in the Operation and Maintenance Plan that will be developed if the design and construction of a SSDS become necessary. Procedures for monitoring the system will be included in the Monitoring Plan (Section 3 of this SMP) should the design and construction of a SSDS become necessary. The Monitoring Plan would also address severe condition inspections in the event that a severe condition, which may affect controls at the site, occurred.

2.2.2 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when effectiveness monitoring indicates that the remedy has achieved the remedial action objectives identified by the NYSDEC's Decision Document for the site. The framework for determining when remedial processes are complete is provided in Section 6.6 of NYSDEC DER-10.

2.2.2.1 Sub-slab Depressurization System (SSDS)

If a SSDS is installed, operation will not be discontinued unless prior written approval is granted by the NYSDEC. In the event that monitoring data indicates that the

SSD system is no longer required, a proposal to discontinue the SSD system will be submitted by the property owner to the NYSDEC and NYSDOH.

2.2.2.2 Monitored Natural Attenuation for Groundwater

Groundwater monitoring activities to assess natural attenuation will continue on a quarterly basis for up to one year post-remediation, and potentially semi-annually or annually after that point, as needed with NYSDEC approval (See table 9), until residual groundwater concentrations are found to be consistently below NYSDEC standards or have become asymptotic at an acceptable level over an extended period. Monitoring will continue until permission to discontinue is granted in writing by the NYSDEC. If groundwater contaminant levels become asymptotic at a level that is not acceptable to the NYSDEC, additional source removal, treatment and/or control measures will be evaluated.

2.3 INSTITUTIONAL CONTROLS

A series of Institutional Controls is required by the Decision Document to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and, (3) limit the use and development of the site to Commercial or Industrial uses only. Adherence to these Institutional Controls on the site is required by the Environmental Easement and will be implemented under this Site Management Plan. These Institutional Controls are:

- Compliance with the Environmental Easement and this SMP by the Grantor and the Grantor's successors and assigns;
- All Engineering Controls must be operated and maintained as specified in this SMP;
- All Engineering Controls on the Controlled Property must be inspected annually as required for the Periodic Review Reports and after all severe weather conditions that may affect Engineering Controls and in a manner defined in Section 3.3 of this SMP.

- Groundwater and other environmental or public health monitoring must be performed as defined in this SMP; and
- Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in this SMP;

Institutional Controls identified in the Environmental Easement may not be discontinued without an amendment to or legal extinguishment of the Environmental Easement.

The site has a series of Institutional Controls in the form of site restrictions. Adherence to these Institutional Controls is required by the Environmental Easement. Site restrictions that apply to the Controlled Property are:

- The property may only be used for Commercial or Industrial use provided that the long-term Engineering and Institutional Controls included in this SMP are employed.
- The property may not be used for a higher level of use, such as Unrestricted Residential or Restricted Residential use without additional remediation and amendment of the Environmental Easement, as approved by the NYSDEC;
- All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with this SMP;
- The use of groundwater underlying the property for potable or process water is prohibited without necessary water quality treatment as determined by NYSDOH of County DOH.
- The potential for vapor intrusion must be evaluated for any future buildings constructed on the site, and any potential impacts that are identified must be monitored or mitigated. Alternatively, in lieu of performing investigation, a vapor mitigation system could be pre-emptively installed at the time of building construction.
- Vegetable gardens and farming on the property are prohibited;
- The site owner or remedial party will submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has

occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. NYSDEC retains the right to access such Controlled Property at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.

2.3.1 Excavation Work Plan

The site has been remediated to a degree that will allow for Restricted Commercial or Industrial use. Any future intrusive work that would potentially encounter or disturb the remaining contamination will be performed in compliance with the Excavation Work Plan (EWP) that is attached as Appendix A to this SMP. Any work conducted pursuant to the EWP must also be conducted in accordance with the procedures defined in a Health and Safety Plan (HASP) and Community Air Monitoring Plan (CAMP) prepared for the site. A sample HASP is attached as Appendix D to this SMP that is in current compliance with DER-10, and 29 CFR 1910, 29 CFR 1926, and all other applicable Federal, State and local regulations. Based on future changes to State and Federal health and safety requirements, and specific methods employed by future contractors, the HASP and CAMP will be updated and re-submitted with the notification provided in Section A-1 of the EWP. Any intrusive construction work will be performed in compliance with the EWP, HASP and CAMP, and will be included in the periodic inspection and certification reports submitted under the Site Management Reporting Plan (See Section 5).

The site owner and associated parties preparing the remedial documents submitted to the State, and parties performing this work, are completely responsible for the safe performance of all intrusive work, the structural integrity of excavations, proper disposal of excavation de-water, control of runoff from open excavations into remaining contamination, and for structures that may be affected by excavations (such as building foundations and bridge footings). The site owner will ensure that site development activities will not interfere with, or otherwise impair or compromise, the engineering controls described in this SMP.

2.3.2 Soil Vapor Intrusion Evaluation

Prior to the construction of any enclosed structures an SVI evaluation will be performed either prior to or after construction to determine whether any mitigation measures are necessary to eliminate potential exposure to vapors in the proposed structure. Alternatively, an SVI mitigation system may be installed as an element of the building foundation without first conducting an investigation. This mitigation system will include a vapor barrier and passive sub-slab depressurization system that is capable of being converted to an active system.

Prior to conducting an SVI investigation or installing a mitigation system, a work plan will be developed and submitted to the NYSDEC and NYSDOH for approval. This work plan will be developed in accordance with the most recent NYSDOH “Guidance for Evaluating Vapor Intrusion in the State of New York.” Measures to be employed to mitigate potential vapor intrusion will be evaluated, selected, designed, installed, and maintained based on the SVI evaluation, the NYSDOH guidance, and construction details of the proposed structure.

Preliminary (non-validated) SVI sampling data will be forwarded to the NYSDEC and NYSDOH for initial review and interpretation. Upon validation, the final data will be transmitted to the agencies, along with a recommendation for follow-up action, such as mitigation.

SVI sampling results, evaluations, and follow-up actions will also be summarized in the next Periodic Review Report.

2.4 INSPECTIONS AND NOTIFICATIONS

2.4.1 Inspections

Inspections of all remedial components installed at the site will be conducted at the frequency specified in the SMP Monitoring Plan schedule. A comprehensive site-wide inspection will be conducted annually, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether Engineering Controls continue to perform as designed;

- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- Achievement of remedial performance criteria;
- Sampling and analysis of appropriate media during monitoring events;
- If site records are complete and up to date; and
- Changes, or needed changes, to the remedial or monitoring system;

Inspections will be conducted in accordance with the procedures set forth in the Monitoring Plan of this SMP (Section 3). The reporting requirements are outlined in the Periodic Review Reporting section of this plan (Section 5).

If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs, an inspection of the site will be conducted within 5 days of the event to verify the effectiveness of the EC/ICs implemented at the site by a qualified environmental professional as determined by NYSDEC.

2.4.2 Notifications

Notifications will be submitted by the property owner to the NYSDEC as needed for the following reasons:

- 60-day advance notice of any proposed changes in site use that are required under the terms of the Brownfield Cleanup Agreement (BCA), 6NYCRR Part 375, and/or Environmental Conservation Law.
- 7-day advance notice of any proposed ground-intrusive activities pursuant to the Excavation Work Plan.
- Notice within 48-hours of any damage or defect to the foundations structures that reduces or has the potential to reduce the effectiveness of other Engineering Controls and likewise any action to be taken to mitigate the damage or defect.
- Verbal notice by noon of the following day of any emergency, such as a fire, flood, or earthquake that reduces or has the potential to reduce the effectiveness of Engineering Controls in place at the site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.

- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action shall be submitted to the NYSDEC within 45 days and shall describe and document actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the site or the responsibility for implementing this SMP will include the following notifications:

- At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser has been provided with a copy of the Brownfield Cleanup Agreement (BCA), and all approved work plans and reports, including this SMP
- Within 15 days after the transfer of all or part of the site, the new owner's name, contact representative, and contact information will be confirmed in writing.

2.5 CONTINGENCY PLAN

Emergencies may include injury to personnel, fire or explosion, environmental release, or serious weather conditions.

2.5.1 Emergency Telephone Numbers

In the event of any environmentally related situation or unplanned occurrence requiring assistance, the Owner or Owner's representative(s) should contact the appropriate party from the contact list below. For emergencies, appropriate emergency response personnel should be contacted. These emergency contact lists must be maintained in an easily-accessible location at the site.

Table 7: Emergency Contact Numbers

Medical, Fire, and Police:	911
One Call Center:	(800) 272-4480 (3-day notice required for utility mark-out)
Poison Control Center:	(800) 222-1222
Pollution Toxic Chemical Oil Spills:	(800) 424-8802
NYSDEC Spills Hotline	(800) 457-7362

Table 8: Contact Numbers

Mr. Michael P. Storonsky, Stantec Consulting Project Manager	(585) 413-5266
Mr. Robert Blades, Blades Holding Company, Site Owner	(607) 382-6069
Mr. Christopher Blades, Blades Holding Company, Site Owner	(607) 968-0090
Mr. Thomas Tuori, Harter Secrest & Emery	(585) 231-1449
Mr. Anthony Lopes, NYSDEC Project Manager	(716) 851-7220
Mr. Nathan Freeman, NYSDOH Project Manager	(518) 402-7860

* Note: Contact numbers are subject to change and should be updated as necessary

2.5.2 Map and Directions to Nearest Health Facility

Site Location: 5392 State Route 19, Belmont, NY

Nearest Hospital Name: Jones Memorial Hospital

Hospital Location: 191 N Main St, Wellsville, NY 14895

Hospital Telephone: (585) 593-1100

Directions to the Hospital:

1. Exiting site, turn right (south) onto Route 19 (go 10.1 mi.)
2. Turn left onto W. Madison St (go 75 ft)
3. Turn left onto Park Ave (go 0.12 mi)
4. Continue on W. Pearl St (go 197 ft)
5. Turn left on N. Main St (go 125 ft)
6. Arrive at 191 North Main St, Wellsville, NY on left

Total Distance: 11.03 miles

Total Estimated Time: 19 minutes

(see map next page)

Map Showing Route from the site to the Hospital:



2.5.3 Response Procedures

As appropriate, the fire department and other emergency response group will be notified immediately by telephone of the emergency. The emergency telephone number list is found at the beginning of this Contingency Plan (Table 7). The list will also be made readily available to all personnel at all times.

3.0 SITE MONITORING PLAN

3.1 INTRODUCTION

3.1.1 General

The Monitoring Plan describes the measures for evaluating the performance and effectiveness of the remedy to reduce or mitigate contamination at the site, and all affected site media identified below. Monitoring of other Engineering Controls is described as needed in Chapter 4, Operation, Monitoring and Maintenance Plan. This Monitoring Plan may only be revised with the approval of NYSDEC.

3.1.2 Purpose and Schedule

This Monitoring Plan describes the methods to be used for:

- Sampling and analysis of all appropriate media (e.g., groundwater, indoor air, soil vapor, soils);
- Assessing compliance with applicable NYSDEC standards, criteria and guidance, particularly ambient groundwater standards and Part 375 SCOs for soil;
- Assessing achievement of the remedial performance criteria.
- Evaluating site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment; and
- Preparing the necessary reports for the various monitoring activities.

To adequately address these issues, this Monitoring Plan provides information on:

- Sampling locations, protocol, and frequency;
- Information on all designed monitoring systems (e.g., well logs);
- Analytical sampling program requirements;
- Reporting requirements;
- Quality Assurance/Quality Control (QA/QC) requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and

- Annual inspection and periodic certification.

Quarterly monitoring of the groundwater remedy performance and overall reduction in on-site and off-site contamination will be conducted for up to the first year post-remediation. If four consecutive samples at a particular well show no unacceptable contraventions of standards/guidance, sampling will be discontinued. The frequency of sampling at impacted wells after the first year post-remediation is recommended to be semi-annual, but will be determined by NYSDEC. Note that wells BS-3 and MW-28D have been moved to an annual frequency as of September 2012 with NYSDEC approval. Trends in contaminant levels in air, soil, and/or groundwater in the affected areas, will be evaluated to determine if the remedy continues to be effective in achieving remedial goals. Monitoring programs are summarized in Table 9 and outlined in detail in Sections 3.2 and 3.3 below.

Table 9: Monitoring/Inspection Schedule

Monitoring Program	Frequency*	Matrix	Analysis
<p>RAOC-1 Groundwater monitoring</p> <p>(wells BS-2R, , MW-8, MW-25, MW-27,)</p> <p>(Wells BS-3, MW-28D)</p>	<p>Quarterly sampling for up to one year post-remediation. If four consecutive samples show no unacceptable contravention of standards/guidance, sampling will be discontinued. Semi-annual sampling after one year post-remediation (with NYSDEC approval) for wells that continue to show impacts.</p> <p>Annual post-remediation frequency for wells BS-3 and MW-28D based on results to date.</p>	<p>Groundwater</p>	<p>TCL VOCs + TICs (Method 8260),</p>

Table 9: Monitoring/Inspection Schedule (continued)

RAOC-3 Groundwater monitoring (well MW-65)	Quarterly sampling for up to one year post-remediation. If four consecutive samples show no unacceptable contravention of standards/guidance, sampling will be discontinued. Semi-annual sampling after one year post-remediation (with NYSDEC approval) if the well continues to show impacts.	Groundwater	TCL VOCs + TICs (Method 8260); TCL SVOCs + TICs (Method 8270);
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* The frequency of events will be conducted as specified until otherwise approved by NYSDEC and NYSDOH.

3.2 MEDIA MONITORING PROGRAM

3.2.1 Groundwater Monitoring

Groundwater monitoring in the vicinity of RAOC-1 and RAOC-3 will be performed on a periodic basis to assess the performance of the remedies.

The network of monitoring wells has been installed to monitor up-gradient, source area, and down-gradient groundwater conditions at the site as appropriate. The network of on-site and off-site wells has been designed based on proximity to the former RAOC-1 and RAOC-3 source areas. Well locations are displayed on Figure 9. Monitoring well construction logs are included in Appendix E. Six of the wells (BS-2R, BS-3, MW-8, MW-25, MW-27, and MW-65) are shallow overburden monitoring wells that have a range in screen placement from 3 to 16 ft bgs. One well (MW-28D) is a deeper overburden well that is screened from 30 to 40 ft bgs (see Figure 4). A typical groundwater flow pattern is displayed on Figure 5. Table 10 contains numerous rounds of water level data. Figure 10 displays contouring of the first round of post-remediation groundwater sampling for shallow CVOCs.

The monitoring wells to be sampled, the analytes to be tested for, and the frequency of sampling are listed in Table 9. The sampling frequency may be modified with the approval NYSDEC. The SMP will be modified to reflect changes in sampling plans approved by NYSDEC.

Deliverables for the groundwater monitoring program are specified below.

3.2.1.1 Sampling Protocol

All monitoring well sampling activities will be recorded in a field book and a groundwater-sampling log presented in Appendix F. Other observations (e.g., well integrity, etc.) will be noted on the well sampling log. The well sampling log will serve as the inspection form for the groundwater monitoring well network.

Prior to purging and sampling, the static water level will be measured in each well. The water level measurements will be used to develop a groundwater table contour map and provide groundwater flow directions. Water levels will be measured from surveyed PVC well risers using an audible water level indicator.

The monitoring wells will be purged and sampled utilizing EPA Region 2 low stress/low flow methods and a flow-through cell, provided there is enough water in the wells to carry out these procedures. General water quality field parameters (i.e., pH, temperature, specific conductance, oxidation reduction potential, dissolved oxygen and turbidity) will be monitored during purging. If there is not sufficient water in a well for low flow sampling procedures, the well will be purged and sampled with a dedicated polyethylene bailer. The well will be purged until three well volumes are removed, or until the well goes dry. Specific conductance, temperature and pH will be monitored and stabilized (10% over three well volumes) prior to sampling. Turbidity need not be stable, but a value of 50 NTU or less will be attempted. The wells will be sampled for the analytes listed in Table 9 by the analytical methods listed therein. The samples will be analyzed by a laboratory accredited pursuant to the New York State Department of Health Environmental Laboratory Accreditation Program (ELAP). Analytical reports will be prepared in accordance with the NYSDEC Analytical Services Protocol (ASP) Category B requirements. All analytical data will undergo a data usability evaluation (DUSR).

3.2.1.2 Monitoring Well Repairs, Replacement And Decommissioning

If biofouling or silt accumulation occurs in the on-site and/or off-site monitoring wells, the wells will be physically agitated/surged and redeveloped. Additionally, monitoring wells will be properly decommissioned and replaced (as per the Monitoring Plan), if an event renders the wells unusable.

Repairs and/or replacement of wells in the monitoring well network will be performed based on assessments of structural integrity and overall performance.

The NYSDEC will be notified prior to any repair or decommissioning of monitoring wells for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent periodic report. Well decommissioning without replacement will be done only with the prior approval of NYSDEC. Well abandonment will be performed in accordance with NYSDEC's "Groundwater Monitoring Well Decommissioning Procedures." Monitoring wells that are decommissioned because they have been rendered unusable will be reinstalled in the nearest available location, unless otherwise approved by the NYSDEC.

3.3 SITE-WIDE INSPECTION

Site-wide inspections will be performed on a regular schedule at a minimum of once a year. Site-wide inspections will also be performed after all severe weather conditions that may affect Engineering Controls or monitoring devices. During these inspections, an inspection form will be completed (Appendix G). The form will compile sufficient information to assess the following:

- Compliance with all ICs, including site usage;
- An evaluation of the condition and continued effectiveness of ECs;
- General site conditions at the time of the inspection;
- The site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection;
- Compliance with permits and schedules included in the Operation and Maintenance Plan; and
- Confirm that site records are up to date.

3.4 MONITORING QUALITY ASSURANCE/QUALITY CONTROL

All sampling and analyses will be performed in accordance with the requirements of the Quality Assurance Project Plan (QAPP) prepared for the site (Appendix H). Main Components of the QAPP include:

- QA/QC Objectives for Data Measurement;
- Sampling Program:
 - Sample containers will be properly washed, decontaminated, and appropriate preservative will be added (if applicable) prior to their use by the analytical laboratory. Containers with preservative will be tagged as such.
 - Sample holding times will be in accordance with the NYSDEC ASP requirements.
 - Field QC samples (e.g., trip blanks, coded field duplicates, and matrix spike/matrix spike duplicates) will be collected as necessary.
- Sample Tracking and Custody;
- Calibration Procedures:
 - All field analytical equipment will be calibrated immediately prior to each day's use. Calibration procedures will conform to manufacturer's standard instructions.
 - The laboratory will follow all calibration procedures and schedules as specified in USEPA SW-846 and subsequent updates that apply to the instruments used for the analytical methods.
- Analytical Procedures;
- Preparation of a Data Usability Summary Report (DUSR), which will present the results of data validation, including a summary assessment of laboratory data packages, sample preservation and chain of custody procedures, and a summary assessment of precision, accuracy, representativeness, comparability, and completeness for each analytical method.
- Internal QC and Checks;
- QA Performance and System Audits;

- Preventative Maintenance Procedures and Schedules;
- Corrective Action Measures.

3.5 MONITORING REPORTING REQUIREMENTS

Forms and any other information generated during regular monitoring events and inspections will be kept on file on-site. All forms, and other relevant reporting formats used during the monitoring/inspection events, will be (1) subject to approval by NYSDEC and (2) submitted at the time of the Periodic Review Report, as specified in Section 5.3 of this SMP.

All monitoring results will be reported to NYSDEC on a periodic basis in the Periodic Review Report. A letter report will also be prepared [if required by NYSDEC], subsequent to each sampling event. The report (or letter) will include, at a minimum:

- Date of event;
- Personnel conducting sampling;
- Description of the activities performed;
- Type of samples collected (e.g., sub-slab vapor, indoor air, outdoor air, etc);
- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation, etc.);
- Sampling results in comparison to appropriate standards/criteria;
- A figure illustrating sample type and sampling locations;
- Copies of all laboratory data sheets and the required laboratory data deliverables required for all points sampled (to be submitted electronically in the NYSDEC-identified format);
- Any observations, conclusions, or recommendations; and
- A determination as to whether groundwater conditions have changed since the last reporting event.

Data will be reported in hard copy or digital format as determined by NYSDEC. A summary of the monitoring program deliverables are summarized in Table 11 below.

Table 11: Schedule of Monitoring/Inspection Reports

Task	Reporting Frequency*
Annual Inspection/Periodic Review Report	Annual
Groundwater Monitoring	Quarterly

* The frequency of events will be conducted as specified until otherwise approved by NYSDEC

4.0 OPERATION AND MAINTENANCE PLAN

4.1 INTRODUCTION

The site remedy does not rely on any mechanical systems, such as sub-slab depressurization systems or air sparge/soil vapor extraction systems to protect public health and the environment. Therefore, the operation and maintenance of such components is not included in this SMP. Should a SSDS be designed, installed, and operated in accordance with the NYSDOH guidance document, an operation, maintenance and monitoring plan to monitor the effectiveness of the SSDS will be submitted to NYSDEC and appended to this SMP.

5. INSPECTIONS, REPORTING AND CERTIFICATIONS

5.1 SITE INSPECTIONS

5.1.1 Inspection Frequency

All inspections will be conducted at the frequency specified in the schedules provided in Section 3 Monitoring Plan. At a minimum, a site-wide inspection will be conducted annually. Inspections of remedial components will also be conducted when a breakdown of any treatment system component has occurred or whenever a severe condition has taken place, such as an erosion or flooding event that may affect the ECs.

5.1.2 Inspection Forms, Sampling Data, and Maintenance Reports

All inspections and monitoring events will be recorded on the appropriate forms for their respective system which are contained in Appendix F. Additionally, a general site-wide inspection form will be completed during the site-wide inspection (see Appendix G). These forms are subject to NYSDEC revision.

All applicable inspection forms and other records, including all media sampling data and system maintenance reports, generated for the site during the reporting period will be provided in electronic format in the Periodic Review Report.

5.1.3 Evaluation of Records and Reporting

The results of the inspection and site monitoring data will be evaluated as part of the EC/IC certification to confirm that the:

- EC/ICs are in place, are performing properly, and remain effective;
- The Monitoring Plan is being implemented;
- Operation and maintenance activities are being conducted properly; and, based on the above items,
- The site remedy continues to be protective of public health and the environment and is performing as designed in the RAWP and FER.

5.2 CERTIFICATION OF ENGINEERING AND INSTITUTIONAL CONTROLS

After the last inspection of the reporting period, a qualified environmental professional will prepare the following certification:

For each institutional or engineering control identified for the site, I certify that all of the following statements are true:

- The inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction;
- The institutional control and/or engineering control employed at this site is unchanged from the date the control was put in place, or last approved by the Department;
- Nothing has occurred that would impair the ability of the control to protect the public health and environment;
- Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control;
- Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;
- If a financial assurance mechanism is required under the oversight document for the site, the mechanism remains valid and sufficient for the intended purpose under the document;
- Use of the site is compliant with the environmental easement;
- The engineering control systems are performing as designed and are effective;
- To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program and generally accepted engineering practices; and
- The information presented in this report is accurate and complete.
- I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class “A” misdemeanor, pursuant to Section 210.45 of the Penal Law. I, _____,

of Stantec Consulting Services, Inc., 61 Commercial Street, Rochester, NY 14614, am certifying as Owner's Designated Site Representative for the site.

The signed certification will be included in the Periodic Review Report described below.

- No new information has come to my attention, including groundwater monitoring data from wells located at the site boundary, if any, to indicate that the assumptions made in the qualitative exposure assessment of off-site contamination are no longer valid; and

Every five years the following certification will be added:

- The assumptions made in the qualitative exposure assessment remain valid.

The signed certification will be included in the Periodic Review Report described below.

5.3 PERIODIC REVIEW REPORT

A Periodic Review Report will be submitted to the Department every year, beginning eighteen months after the Certificate of Completion is issued. In the event that the site is subdivided into separate parcels with different ownership, a single Periodic Review Report will be prepared that addresses the site described in Appendix B (Metes and Bounds). The report will be prepared in accordance with NYSDEC DER-10 and submitted within 45 days of the end of each certification period. Media sampling results will also be incorporated into the Periodic Review Report. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for the site;
- Results of the required annual site inspections and severe condition inspections, if applicable;
- All applicable inspection forms and other records generated for the site during the reporting period in electronic format;
- A summary of any discharge monitoring data and/or information generated during the reporting period with comments and conclusions;

- Data summary tables and graphical representations of contaminants of concern by media (e.g. groundwater, soil vapor), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends;
- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted electronically in a NYSDEC-approved format;
- A site evaluation, which includes the following:
 - The compliance of the remedy with the requirements of the site-specific RAWP, ROD or Decision Document;
 - The operation and the effectiveness of all treatment units, etc., including identification of any needed repairs or modifications;
 - Any new conclusions or observations regarding site contamination based on inspections or data generated by the Monitoring Plan for the media being monitored;
 - Recommendations regarding any necessary changes to the remedy and/or Monitoring Plan; and
 - The overall performance and effectiveness of the remedy.

The Periodic Review Report will be submitted, in hard-copy format, to the NYSDEC Central Office and Regional Office in which the site is located, and in electronic format to NYSDEC Central Office, Regional Office and the NYSDOH Bureau of Environmental Exposure Investigation.

5.4 CORRECTIVE MEASURES PLAN

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an institutional or engineering control, a corrective measures plan will be submitted to the NYSDEC for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the corrective measures plan until it is approved by the NYSDEC.

TABLES

Table 1
Summary of RI Analytical Results in Surface Soil
Site Management Plan
Former Allegany Bitumens Belmont Asphalt Plant
Amity, New York

Sample Location			SS-13	SS-14	SS-15
Sample Date			28-Oct-10	28-Oct-10	28-Oct-10
Sample ID			BA-SS13-S	BA-SS14-S	BA-SS15-S
Sample Depth			0 - 2 in	0 - 1 in	0 - 2 in
Sampling Company			STANTEC	STANTEC	STANTEC
Laboratory			TALBU	TALBU	TALBU
Laboratory Work Order			RTJ1956	RTJ1956	RTJ1956
Laboratory Sample ID			RTK0340-01	RTK0340-02	RTK0340-03
Sample Type	Units	6NYCRR			
General Chemistry					
Total Solids	%	n/v	80	94	90
Volatile Organic Compounds					
Acetone	µg/kg	500000 ^c _A	31 U	27 U	28 U
Benzene	µg/kg	44000 ^A	6.2 U	5.3 U	5.5 U
Bromodichloromethane	µg/kg	500000 ^c _A	6.2 U	5.3 U	5.5 U
Bromoform (tribromomethane)	µg/kg	500000 ^c _A	6.2 U	5.3 U	5.5 U
Bromomethane (Methyl bromide)	µg/kg	500000 ^c _A	6.2 U	5.3 U	5.5 U
Carbon Disulfide	µg/kg	500000 ^c _A	6.2 U	5.3 U	5.5 U
Carbon Tetrachloride (Tetrachloromethane)	µg/kg	22000 ^A	6.2 U	5.3 U	5.5 U
Chlorinated Fluorocarbon (Freon 113)	µg/kg	500000 ^c _A	6.2 U	5.3 U	5.5 U
Chlorobenzene (Monochlorobenzene)	µg/kg	500000 ^c _A	6.2 U	5.3 U	5.5 U
Chloroethane (Ethyl Chloride)	µg/kg	500000 ^c _A	6.2 U	5.3 U	5.5 U
Chloroform	µg/kg	350000 ^A	6.2 U	5.3 U	5.5 U
Chloromethane	µg/kg	500000 ^c _A	6.2 U	5.3 U	5.5 U
Cyclohexane	µg/kg	n/v	6.2 U	5.3 U	5.5 U
Dibromo-3-Chloropropane (DBCP), 1,2-	µg/kg	n/v	6.2 U	5.3 U	5.5 U
Dibromochloromethane	µg/kg	500000 ^c _A	6.2 U	5.3 U	5.5 U
Dichlorobenzene, 1,2-	µg/kg	500000 ^c _A	6.2 U	5.3 U	5.5 U
Dichlorobenzene, 1,3-	µg/kg	280000 ^A	6.2 U	5.3 U	5.5 U
Dichlorobenzene, 1,4-	µg/kg	130000 ^A	6.2 U	5.3 U	5.5 U
Dichlorodifluoromethane	µg/kg	n/v	6.2 U	5.3 U	5.5 U
Dichloroethane, 1,1-	µg/kg	240000 ^A	6.2 U	5.3 U	5.5 U
Dichloroethane, 1,2-	µg/kg	30000 ^A	6.2 U	5.3 U	5.5 U
Dichloroethylene, 1,1-	µg/kg	500000 ^c _A	6.2 U	5.3 U	5.5 U
Dichloroethylene, cis-1,2-	µg/kg	500000 ^c _A	6.2 U	5.3 U	5.5 U
Dichloroethylene, trans-1,2-	µg/kg	500000 ^c _A	6.2 U	5.3 U	5.5 U
Dichloropropane, 1,2-	µg/kg	500000 ^c _A	6.2 U	5.3 U	5.5 U
Dichloropropene, cis-1,3-	µg/kg	500000 ^c _A	6.2 U	5.3 U	5.5 U
Dichloropropene, trans-1,3-	µg/kg	500000 ^c _A	6.2 U	5.3 U	5.5 U
Ethylbenzene	µg/kg	390000 ^A	6.2 U	5.3 U	5.5 U
Ethylene Dibromide (Dibromoethane, 1,2-)	µg/kg	n/v	6.2 U	5.3 U	5.5 U
Hexanone, 2-	µg/kg	500000 ^c _A	31 U	27 U	28 U
Isopropylbenzene	µg/kg	500000 ^c _A	6.2 U	5.3 U	5.5 U
Methyl Acetate	µg/kg	n/v	6.2 U J	5.3 U J	5.5 U J
Methyl Ethyl Ketone (MEK)	µg/kg	500000 ^c _A	31 U	27 U	28 U
Methyl Isobutyl Ketone (MIBK)	µg/kg	500000 ^c _A	31 U	27 U	28 U
Methyl tert-butyl ether (MTBE)	µg/kg	500000 ^c _A	6.2 U	5.3 U	5.5 U
Methylcyclohexane	µg/kg	n/v	6.2 U	5.3 U	5.5 U
Methylene Chloride (Dichloromethane)	µg/kg	500000 ^c _A	7.5	9.0	8.2
Styrene	µg/kg	500000 ^c _A	6.2 U	5.3 U	5.5 U
Tetrachloroethane, 1,1,2,2-	µg/kg	500000 ^c _A	6.2 U	5.3 U	5.5 U
Tetrachloroethylene (PCE)	µg/kg	150000 ^A	6.2 U	5.3 U	5.5 U
Toluene	µg/kg	500000 ^c _A	6.2 U	5.3 U	5.5 U
Trichlorobenzene, 1,2,4-	µg/kg	500000 ^c _A	6.2 U	5.3 U	5.5 U
Trichloroethane, 1,1,1-	µg/kg	500000 ^c _A	6.2 U	5.3 U	5.5 U
Trichloroethane, 1,1,2-	µg/kg	500000 ^c _A	6.2 U	5.3 U	5.5 U
Trichloroethylene (TCE)	µg/kg	200000 ^A	6.2 U	5.3 U	5.5 U
Trichlorofluoromethane (Freon 11)	µg/kg	n/v	6.2 U	5.3 U	5.5 U
Vinyl chloride	µg/kg	13000 ^A	6.2 U	5.3 U	5.5 U
Xylenes, Total	µg/kg	500000 ^c _A	12 U	11 U	11 U
Total VOCs	µg/kg	500000 ^c _A	7.5	9.0	8.2

Notes:

- 6NYCRR NYSDEC 6 NYCRR Part 375 Soil Clean-up Objectives (SCOs)
- ^A NYSDEC 6 NYCRR Part 375 - Restricted Use SCO - Protection of Human Health - Commercial
- 6.5^A** Concentration exceeds the indicated standard.
- 15.2** Concentration was detected but did not exceed applicable standards.
- 0.50 U** Laboratory estimated quantitation limit exceeded standard.
- 0.03 U The analyte was not detected above the laboratory estimated quantitation limit.
- n/v No standard/guideline value.
- Parameter not analyzed / not available.
- ^c The SCOs for commercial use were capped at a maximum value of 500 mg/kg. See TSD Section 9.3.
- J Indicates estimated value.
- TALBU Test America Laboratories Inc., Buffalo New York
- in inches

Notes:

- 6NYCRR NYSDEC 6 NYCRR Part 375 Soil Clean-up Objectives (SCOs)
- ^A NYSDEC 6 NYCRR Part 375 - Restricted Use SCO - Protection of Human Health - Commercial
- 6.5^A** Concentration exceeds the indicated standard.
- 15.2** Concentration was detected but did not exceed applicable standards.
- 0.50 U** Laboratory estimated quantitation limit exceeded standard.
- 0.03 U The analyte was not detected above the laboratory estimated quantitation limit.
- n/v No standard/guideline value.
- Parameter not analyzed / not available.
- ^c The SCOs for commercial use were capped at a maximum value of 500 mg/kg. See TSD Section 9.3.
- D Reported result taken from diluted sample analysis.
- J Indicates estimated value.
- TALBU Test America Laboratories, Inc., Buffalo, NY
- ft feet

Table 3
Summary of RI Analytical Results in Subsurface Soil from Boring and Monitoring Well Locations
Site Management Plan
Former Allegany Bitumens Belmont Asphalt Plant
Amity, New York

Sample Location	Units	6NYCRR	B-31		B-32
			4-Feb-11 BA-B31-S 0.3 - 0.9 ft STANTEC TALBU 480-1342-1 480-1418-3	4-Feb-11 BA-B31-S2 8 - 9 ft STANTEC TALBU 480-1342-1 480-1418-4	7-Feb-11 BA-B32-S 6 - 8.4 ft STANTEC TALBU 480-1342-1 480-1441-1
General Chemistry					
Total Solids	%	n/v	-	-	-
Volatile Organic Compounds					
Acetone	µg/kg	500000 ^c 50 ^B	25 U	25 U	25 U
Acrylonitrile	µg/kg	n/v	-	-	-
Benzene	µg/kg	44000 ^A 60 ^B	5.0 U	5.0 U	5.0 U
Bromobenzene	µg/kg	n/v	-	-	-
Bromodichloromethane	µg/kg	500000 ^c 1000000 ^d	5.0 U	5.0 U	5.0 U
Bromoform (tribromomethane)	µg/kg	500000 ^c 1000000 ^d	5.0 U	5.0 U	5.0 U
Bromomethane (Methyl bromide)	µg/kg	500000 ^c 1000000 ^d	5.0 U	5.0 U	5.0 U
Butylbenzene, n-	µg/kg	500000 ^c 12000 ^B	-	-	-
Butylbenzene, tert-	µg/kg	500000 ^c 5900 ^B	-	-	-
Carbon Disulfide	µg/kg	500000 ^c 1000000 ^d	5.0 U	5.0 U	5.0 U
Carbon Tetrachloride (Tetrachloromethane)	µg/kg	22000 ^A 760 ^B	5.0 U	5.0 U	5.0 U
Chlorobenzene (Monochlorobenzene)	µg/kg	500000 ^c 1100 ^B	5.0 U	5.0 U	5.0 U
Chlorobromomethane	µg/kg	n/v	-	-	-
Chloroethane (Ethyl Chloride)	µg/kg	500000 ^c 1000000 ^d	5.0 U	5.0 U	5.0 U
Chloroform	µg/kg	350000 ^A 370 ^B	5.0 U	5.0 U	5.0 U
Chloromethane	µg/kg	500000 ^c 1000000 ^d	5.0 U	5.0 U	5.0 U
Chlorotoluene, 2-	µg/kg	n/v	-	-	-
Chlorotoluene, 4-	µg/kg	n/v	-	-	-
Cyclohexane	µg/kg	n/v	15	5.0 U	5.0 U
Cymene (p-Isopropyltoluene)	µg/kg	500000 ^c 1000000 ^d	-	-	-
Dibromo-3-Chloropropane (DBCP), 1,2-	µg/kg	n/v	5.0 U	5.0 U	5.0 U
Dibromochloromethane	µg/kg	500000 ^c 1000000 ^d	5.0 U	5.0 U	5.0 U
Dibromomethane (Methylene Bromide)	µg/kg	n/v	-	-	-
Dichlorobenzene, 1,2-	µg/kg	500000 ^c 1100 ^B	5.0 U	5.0 U	5.0 U
Dichlorobenzene, 1,3-	µg/kg	280000 ^A 2400 ^B	5.0 U	5.0 U	5.0 U
Dichlorobenzene, 1,4-	µg/kg	130000 ^A 1800 ^B	5.0 U	5.0 U	5.0 U
Dichlorobutene, trans-1,4-	µg/kg	n/v	-	-	-
Dichlorodifluoromethane	µg/kg	n/v	5.0 U	5.0 U	5.0 U
Dichloroethane, 1,1-	µg/kg	240000 ^A 270 ^B	5.0 U	8.0	5.0 U
Dichloroethane, 1,2-	µg/kg	30000 ^A 20 ^B	5.0 U	5.0 U	5.0 U
Dichloroethylene, 1,1-	µg/kg	500000 ^c 330 ^B	5.0 U	5.0 U	5.0 U
Dichloroethylene, cis-1,2-	µg/kg	500000 ^c 250 ^B	5.0 U	5.0 U	5.0 U
Dichloroethylene, trans-1,2-	µg/kg	500000 ^c 190 ^B	5.0 U	5.0 U	5.0 U
Dichloropropane, 1,2-	µg/kg	500000 ^c 1000000 ^d	5.0 U	5.0 U	5.0 U
Dichloropropane, 1,3-	µg/kg	500000 ^c 1000000 ^d	-	-	-
Dichloropropane, 2,2-	µg/kg	n/v	-	-	-
Dichloropropene, 1,1-	µg/kg	n/v	-	-	-
Dichloropropene, cis-1,3-	µg/kg	500000 ^c 1000000 ^d	5.0 U	5.0 U	5.0 U
Dichloropropene, trans-1,3-	µg/kg	500000 ^c 1000000 ^d	5.0 U	5.0 U	5.0 U
Diisopropyl Ether	µg/kg	n/v	-	-	-
Dioxane, 1,4-	µg/kg	130000 ^A 100 ^B	-	-	-

See last page for notes.

Table 3
Summary of RI Analytical Results in Subsurface Soil from Boring and Monitoring Well Locations
Site Management Plan
Former Allegany Bitumens Belmont Asphalt Plant
Amity, New York

Sample Location	Units	6NYCRR	B-31		B-32
			4-Feb-11 BA-B31-S 0.3 - 0.9 ft STANTEC TALBU 480-1342-1 480-1418-3	4-Feb-11 BA-B31-S2 8 - 9 ft STANTEC TALBU 480-1342-1 480-1418-4	7-Feb-11 BA-B32-S 6 - 8.4 ft STANTEC TALBU 480-1342-1 480-1441-1
Volatile Organic Compounds (cont'd)					
Ethanol	µg/kg	n/v	-	-	-
Ethyl Ether	µg/kg	n/v	-	-	-
Ethyl Tert Butyl Ether	µg/kg	n/v	-	-	-
Ethylbenzene	µg/kg	390000 ^A 1000 ^B	7.2	5.0 U	5.0 U
Ethylene Dibromide (Dibromoethane, 1,2-)	µg/kg	n/v	5.0 U	5.0 U	5.0 U
Hexachlorobutadiene	µg/kg	500000 ^c 1000000 ^d	-	-	-
Hexanone, 2-	µg/kg	500000 ^c 1000000 ^d	25 U	25 U	25 U
Isopropylbenzene	µg/kg	500000 ^c 1000000 ^d	5.0 U	5.0 U	5.0 U
Methyl Acetate	µg/kg	n/v	5.0 U *	5.0 U *	5.0 U *
Methyl Ethyl Ketone (MEK)	µg/kg	500000 ^c 120 ^B	25 U	25 U	25 U
Methyl Isobutyl Ketone (MIBK)	µg/kg	500000 ^c 1000000 ^d	25 U	25 U	25 U
Methyl tert-butyl ether (MTBE)	µg/kg	500000 ^c 930 ^B	5.0 U	5.0 U	5.0 U
Methylcyclohexane	µg/kg	n/v	34	5.0 U	5.0 U
Methylene Chloride (Dichloromethane)	µg/kg	500000 ^c 50 ^B	5.2	5.0 U	10
Naphthalene	µg/kg	500000 ^c 12000 ^B	-	-	-
Phenylbutane, 2- (sec-Butylbenzene)	µg/kg	500000 ^c 11000 ^B	-	-	-
Propylbenzene, n-	µg/kg	500000 ^c 3900 ^B	-	-	-
Styrene	µg/kg	500000 ^c 1000000 ^d	5.0 U	5.0 U	5.0 U
Tert Amyl Methyl Ether	µg/kg	n/v	-	-	-
Tert-Butyl Alcohol	µg/kg	n/v	-	-	-
Tetrachloroethane, 1,1,1,2-	µg/kg	n/v	-	-	-
Tetrachloroethane, 1,1,2,2-	µg/kg	500000 ^c 1000000 ^d	5.0 U	5.0 U	5.0 U
Tetrachloroethylene (PCE)	µg/kg	150000 ^A 1300 ^B	5.0 U	5.0 U	5.0 U
Tetrahydrofuran	µg/kg	n/v	-	-	-
Toluene	µg/kg	500000 ^c 700 ^B	5.0 U	5.0 U	5.0 U
Trichlorobenzene, 1,2,3-	µg/kg	n/v	-	-	-
Trichlorobenzene, 1,2,4-	µg/kg	500000 ^c 1000000 ^d	5.0 U	5.0 U	5.0 U
Trichlorobenzene, 1,3,5-	µg/kg	n/v	-	-	-
Trichloroethane, 1,1,1-	µg/kg	500000 ^c 680 ^B	5.0 U	5.0 U	5.0 U
Trichloroethane, 1,1,2-	µg/kg	500000 ^c 1000000 ^d	5.0 U	5.0 U	5.0 U
Trichloroethylene (TCE)	µg/kg	200000 ^A 470 ^B	5.0 U	5.0 U	5.0 U
Trichlorofluoromethane (Freon 11)	µg/kg	n/v	5.0 U	5.0 U	5.0 U
Trichloropropane, 1,2,3-	µg/kg	500000 ^c 1000000 ^d	-	-	-
Trichlorotrifluoroethane (Freon 113)	µg/kg	500000 ^c 1000000 ^d	5.0 U	5.0 U	5.0 U
Trimethylbenzene, 1,2,4-	µg/kg	190000 ^A 3600 ^B	-	-	-
Trimethylbenzene, 1,3,5-	µg/kg	190000 ^A 8400 ^B	-	-	-
Vinyl chloride	µg/kg	13000 ^A 20 ^B	5.0 U	5.0 U	5.0 U
Xylene, m & p-	µg/kg	500000 ^{c,p} 1600 ^p	-	-	-
Xylene, o-	µg/kg	500000 ^{c,p} 1600 ^p	-	-	-
Xylenes, Total	µg/kg	500000 ^c 1600 ^B	22	10 U	10 U
Total VOC	µg/kg	500000 ^c 1000000 ^d	83.4	8.0	10

Notes:

- ¹ Data collected during 2009 Phase II.
- 6NYCRR NYSDEC 6 NYCRR Part 375 Soil Clean-up Objectives (SCOs)
- ^A NYSDEC 6 NYCRR Part 375 - Restricted Use SCO - Protection of Human Health - Commercial
- ^B NYSDEC 6 NYCRR Part 375 - Restricted Use SCO - Protection of Groundwater
- 6.5^A** Concentration exceeds the indicated standard.
- 15.2** Concentration was detected but did not exceed applicable standards.
- 0.50 U** Laboratory estimated quantitation limit exceeded standard.
- 0.03 U The analyte was not detected above the laboratory estimated quantitation limit.
- n/v No standard/guideline value.
- Parameter not analyzed / not available.
- ^c The SCOs for commercial use were capped at a maximum value of 500 mg/kg. See TSD Section 9.3.
- ^d The SCOs for industrial use and the protection of groundwater were capped at a maximum value of 1000 mg/kg (Organics) and 10000 mg/kg (Inorganics). See 6 NYCRR Part 375 TSD Section 9.3.
- ^g For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the DEC/DOH rural soil survey, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.
- ^p The criterion is applicable to total xylenes, and the individual isomers should be added for comparison.
- * Indicates analysis is not within the quality control limits.
- D Reported result taken from diluted sample analysis.
- E Compound was over the calibration range.
- J Indicates estimated value.
- TALBU Test America Laboratories Inc., Buffalo, New York
- ft feet
- ND Not detected

Table 4
Summary of RI Analytical Results in Groundwater
Site Management Plan
Former Allegany Bitumens Belmont Asphalt Plant
Amity, New York

Sample Location Sample Date Sample ID Sampling Company Laboratory Laboratory Work Order Laboratory Sample ID Sample Type	Units	TOGS	Trip Blank		
			6-Jan-11 BA-TB010611-W STANTEC TALBU 480-548-1 480-689-8 Trip Blank	22-Feb-11 BA-TB-022211-W STANTEC TALBU 480-1891-1 480-1891-5 Trip Blank	20-Apr-11 BA-TB-042011-W STANTEC TALBU 480-4050-1 480-4050-1 Trip Blank
Volatile Organic Compounds					
Acetone	µg/L	50 ^A	10 U	10 U	10 U
Acrylonitrile	µg/L	5 ^{-B}	5.0 U	5.0 U	-
Benzene	µg/L	1 ^B	1.0 U	1.0 U	1.0 U
Bromobenzene	µg/L	5 ^{-B}	-	-	-
Bromodichloromethane	µg/L	50 ^A	1.0 U	1.0 U	1.0 U
Bromoform (tribromomethane)	µg/L	50 ^A	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	µg/L	5 ^{-B}	1.0 U	1.0 U	1.0 U
Butylbenzene, n-	µg/L	5 ^{-B}	-	-	-
Butylbenzene, tert-	µg/L	5 ^{-B}	-	-	-
Carbon Disulfide	µg/L	60 ^A	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride (Tetrachloromethane)	µg/L	5 ^B	1.0 U	1.0 U	1.0 U
Chlorinated Fluorocarbon (Freon 113)	µg/L	5 ^{-B}	-	-	1.0 U
Chlorobenzene (Monochlorobenzene)	µg/L	5 ^{-B}	1.0 U	1.0 U	1.0 U
Chlorobromomethane	µg/L	5 ^{-B}	1.0 U	1.0 U	-
Chloroethane (Ethyl Chloride)	µg/L	5 ^{-B}	1.0 U	1.0 U	1.0 U
Chloroform	µg/L	7 ^B	1.0 U	1.0 U	1.0 U
Chloromethane	µg/L	5 ^{-B}	1.0 U	1.0 U	1.0 U
Chlorotoluene, 2-	µg/L	5 ^{-B}	-	-	-
Chlorotoluene, 4-	µg/L	5 ^{-B}	-	-	-
Cyclohexane	µg/L	n/v	-	-	1.0 U
Cymene (p-Isopropyltoluene)	µg/L	5 ^{-B}	-	-	-
Dibromo-3-Chloropropane (DBCP), 1,2-	µg/L	0.04 ^B	1.0 U	1.0 U	1.0 U
Dibromochloromethane	µg/L	50 ^A	1.0 U	1.0 U	1.0 U
Dibromomethane (Methylene Bromide)	µg/L	5 ^{-B}	1.0 U	1.0 U	-
Dichlorobenzene, 1,2-	µg/L	3 ^B	1.0 U	1.0 U	1.0 U
Dichlorobenzene, 1,3-	µg/L	3 ^B	-	-	1.0 U
Dichlorobenzene, 1,4-	µg/L	3 ^B	1.0 U	1.0 U	1.0 U
Dichlorobutene, trans-1,4-	µg/L	n/v	5.0 U	50 U	-
Dichlorodifluoromethane	µg/L	5 ^{-B}	-	-	1.0 U
Dichloroethane, 1,1-	µg/L	5 ^{-B}	1.0 U	1.0 U	1.0 U
Dichloroethane, 1,2-	µg/L	0.6 ^B	1.0 U	1.0 U	1.0 U
Dichloroethylene, 1,1-	µg/L	5 ^{-B}	1.0 U	1.0 U	1.0 U
Dichloroethylene, cis-1,2-	µg/L	5 ^{-B}	1.0 U	1.0 U	1.0 U
Dichloroethylene, trans-1,2-	µg/L	5 ^{-B}	1.0 U	1.0 U	1.0 U
Dichloropropane, 1,2-	µg/L	1 ^B	1.0 U	1.0 U	1.0 U
Dichloropropane, 1,3-	µg/L	5 ^{-B}	-	-	-
Dichloropropane, 2,2-	µg/L	5 ^{-B}	-	-	-
Dichloropropene, 1,1-	µg/L	5 ^{-B}	-	-	-
Dichloropropene, cis-1,3-	µg/L	0.4 ^{pB}	1.0 U	1.0 U	1.0 U
Dichloropropene, trans-1,3-	µg/L	0.4 ^{pB}	1.0 U	1.0 U	1.0 U
Diisopropyl Ether	µg/L	n/v	-	-	-
Dioxane, 1,4-	µg/L	n/v	-	-	-
Ethanol	µg/L	n/v	-	-	-
Ethyl Ether	µg/L	n/v	-	-	-
Ethyl Tert Butyl Ether	µg/L	n/v	-	-	-
Ethylbenzene	µg/L	5 ^{-B}	1.0 U	1.0 U	1.0 U

See last page for notes.

Table 4
Summary of RI Analytical Results in Groundwater
Site Management Plan
Former Allegany Bitumens Belmont Asphalt Plant
Amity, New York

Sample Location Sample Date Sample ID Sampling Company Laboratory Laboratory Work Order Laboratory Sample ID Sample Type	Units	TOGS	Trip Blank		
			6-Jan-11 BA-TB010611-W STANTEC TALBU 480-548-1 480-689-8 Trip Blank	22-Feb-11 BA-TB-022211-W STANTEC TALBU 480-1891-1 480-1891-5 Trip Blank	20-Apr-11 BA-TB-042011-W STANTEC TALBU 480-4050-1 480-4050-1 Trip Blank
Volatiles Organic Compounds (cont'd)					
Ethylene Dibromide (Dibromoethane, 1,2-)	µg/L	0.0006 ^B	1.0 U	1.0 U	1.0 U
Hexachlorobutadiene	µg/L	0.5 ^B	-	-	-
Hexanone, 2-	µg/L	50 ^A	5.0 U	5.0 U	5.0 U
Iodomethane	µg/L	5 ^B	1.0 U	1.0 U	-
Isopropylbenzene	µg/L	5 ^B	-	-	1.0 U
Methyl Acetate	µg/L	n/v	-	-	1.0 U
Methyl Ethyl Ketone (MEK)	µg/L	50 ^A	10 U	10 U	10 U
Methyl Isobutyl Ketone (MIBK)	µg/L	n/v	5.0 U	5.0 U	5.0 U
Methyl tert-butyl ether (MTBE)	µg/L	10 ^A	-	-	1.0 U
Methylcyclohexane	µg/L	n/v	-	-	1.0 U
Methylene Chloride (Dichloromethane)	µg/L	5 ^B	1.0 U	1.0 U	1.0 U
Naphthalene	µg/L	10 ^B	-	-	-
Phenylbutane, 2- (sec-Butylbenzene)	µg/L	5 ^B	-	-	-
Propylbenzene, n-	µg/L	5 ^B	-	-	-
Styrene	µg/L	5 ^B	1.0 U	1.0 U	1.0 U
Tert Amyl Methyl Ether	µg/L	n/v	-	-	-
Tert-Butyl Alcohol	µg/L	n/v	-	-	-
Tetrachloroethane, 1,1,1,2-	µg/L	5 ^B	1.0 U	1.0 U	-
Tetrachloroethane, 1,1,2,2-	µg/L	5 ^B	1.0 U	1.0 U	1.0 U
Tetrachloroethylene (PCE)	µg/L	5 ^B	1.0 U	1.0 U	1.0 U
Tetrahydrofuran	µg/L	50 ^A	-	-	-
Toluene	µg/L	5 ^B	1.0 U	1.0 U	1.0 U
Trichlorobenzene, 1,2,3-	µg/L	5 ^B	-	-	-
Trichlorobenzene, 1,2,4-	µg/L	5 ^B	-	-	1.0 U
Trichlorobenzene, 1,3,5-	µg/L	5 ^B	-	-	-
Trichloroethane, 1,1,1-	µg/L	5 ^B	1.0 U	1.0 U	1.0 U
Trichloroethane, 1,1,2-	µg/L	1 ^B	1.0 U	1.0 U	1.0 U
Trichloroethylene (TCE)	µg/L	5 ^B	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (Freon 11)	µg/L	5 ^B	1.0 U	1.0 U	1.0 U
Trichloropropane, 1,2,3-	µg/L	0.04 ^B	1.0 U	1.0 U	-
Trimethylbenzene, 1,2,4-	µg/L	5 ^B	-	-	-
Trimethylbenzene, 1,3,5-	µg/L	5 ^B	-	-	-
Vinyl Acetate	µg/L	n/v	5.0 U	5.0 U	-
Vinyl chloride	µg/L	2 ^B	1.0 U	1.0 U	1.0 U
Xylene, m & p-	µg/L	5 ^B	-	-	-
Xylene, o-	µg/L	5 ^B	-	-	-
Xylenes, Total	µg/L	5 ^B	2.0 U	2.0 U	2.0 U
Total VOC	µg/L	n/v	ND	ND	ND

Notes:

- ¹ Data collected during 2009 Phase II.
- TOGS NYSDEC Technical and Operational Guideline Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guideline Values and Groundwater Effluent Limitations (Reissued June 1998 with errata in January 1999 and addenda in April 2000 and June 2004)
- ^A TOGS 1.1.1 - Table 1 - Ambient Water Quality Standards and Guidance Values, Division of Water, Technical and Operational Guidance Series (TOGS 1.1.1); Guidance
- ^B TOGS 1.1.1 - Table 1 - Ambient Water Quality Standards and Guidance Values, Division of Water, Technical and Operational Guidance Series (TOGS 1.1.1); Standards
- 6.5^A** Concentration exceeds the indicated standard.
- 15.2** Concentration was detected but did not exceed applicable standards.
- 0.50 U** Laboratory estimated quantitation limit exceeded standard.
- 0.03 U The analyte was not detected above the laboratory estimated quantitation limit.
- n/v No standard/guideline value.
- Parameter not analyzed / not available.
- .. The principal organic contaminant standard for groundwater of 5 ug/L (described elsewhere in the TOGS table) applies to this substance.
- ^p Applies to the sum of cis- and trans-1,3-dichloropropene.
- E Compound was over the calibration range.
- J Indicates estimated value.
- SPECTRUM Spectrum Analytical Inc., Agawam, MA
- TALBU Test America Laboratories Inc., Buffalo, NY
- ND Not detected
- * Subsequent to receipt of laboratory report and the Data Usability Summary Report, reporting limits for the diluted sample BA-MW13-W were recalculated by the laboratory based on the practical quantitation limit.

Table 4
Summary of RI Analytical Results in Groundwater
Site Management Plan
Former Allegany Bitumens Belmont Asphalt Plant
Amity, New York

Sample Location	Units	TOGS	B/MW-9		B/MW-10	B/MW-11	B/MW-12	B/MW-13	B/MW-14	B/MW-25	WSW	SS-RB	TP-RB
			5-Jan-11 BA-MW9-W STANTEC TALBU 480-548-1 480-548-5	5-Jan-11 BA-MW9-W/D STANTEC TALBU 480-548-1 480-548-6 Field Duplicate	6-Jan-11 BA-MW10-W STANTEC TALBU 480-548-1 480-689-1	6-Jan-11 BA-MW11-W STANTEC TALBU 480-548-1 480-633-7	6-Jan-11 BA-MW12-W STANTEC TALBU 480-548-1 480-689-3	6-Jan-11 BA-MW13-W STANTEC TALBU 480-548-1 480-689-4	6-Jan-11 BA-MW14-W STANTEC TALBU 480-548-1 480-689-2	4-Jan-11 BA-MW25-W STANTEC TALBU 480-548-1 480-548-2	7-Dec-10 BA-WSW-W STANTEC TALBU RTL0627 RTL0627-01	25-Oct-10 BA-SS-RB-W STANTEC TALBU RTJ1956 RTJ1956-10 Material Rinse Blank	26-Oct-10 BA-TP-RB-W STANTEC TALBU RTJ1956 RTJ1956-13 Material Rinse Blank
Semi-Volatile Organic Compounds (cont'd)													
Hexachloroethane	µg/L	5 ^{..B}	5.0 U	5.0 U	5.0 U	5.0 U J	5.0 U	5.0 U	5.0 U	5.0 U	5.7 U	4.8 U	5.0 U
Indeno(1,2,3-cd)pyrene	µg/L	0.002 ^A	5.0 U	5.0 U	5.0 U	5.0 U J	5.0 U	5.0 U	5.0 U	5.0 U	5.7 U	4.8 U	5.0 U
Isophorone	µg/L	50 ^A	5.0 U	5.0 U	5.0 U	5.0 U J	5.0 U	5.0 U	5.0 U	5.0 U	5.7 U	4.8 U	5.0 U
Methylnaphthalene, 2-	µg/L	n/v	5.0 U	5.0 U	5.0 U	5.0 U J	5.0 U	5.0 U	5.0 U	5.0 U	5.7 U	4.8 U	5.0 U
Naphthalene	µg/L	10 ^B	5.0 U	5.0 U	5.0 U	5.0 U J	5.0 U	5.0 U	5.0 U	5.0 U	5.7 U	4.8 U	5.0 U
Nitroaniline, 2-	µg/L	5 ^{..B}	10 U	10 U	10 U	10 U J	10 U	10 U	10 U	10 U	11 U	9.5 U	9.9 U
Nitroaniline, 3-	µg/L	5 ^{..B}	10 U	10 U	10 U	10 U J	10 U	10 U	10 U	10 U	11 U	9.5 U	9.9 U
Nitroaniline, 4-	µg/L	5 ^{..B}	10 U	10 U	10 U	10 U J	10 U	10 U	10 U	10 U	11 U	9.5 U	9.9 U
Nitrobenzene	µg/L	0.4 ^B	5.0 U	5.0 U	5.0 U	5.0 U J	5.0 U	5.0 U	5.0 U	5.0 U	5.7 U	4.8 U	5.0 U
Nitrophenol, 2-	µg/L	n/v	5.0 U	5.0 U	5.0 U	5.0 U J	5.0 U	5.0 U	5.0 U	5.0 U	5.7 U	4.8 U	5.0 U
Nitrophenol, 4-	µg/L	n/v	10 U	10 U	10 U	10 U J	10 U	10 U	10 U	10 U	11 U	9.5 U	9.9 U
N-Nitrosodi-n-Propylamine	µg/L	n/v	5.0 U	5.0 U	5.0 U	5.0 U J	5.0 U	5.0 U	5.0 U	5.0 U	5.7 U	4.8 U	5.0 U
n-Nitrosodiphenylamine	µg/L	50 ^A	5.0 U	5.0 U	5.0 U	5.0 U J	5.0 U	5.0 U	5.0 U	5.0 U	5.7 U	4.8 U	5.0 U
Pentachlorophenol	µg/L	1.0 ^B	10 U	10 U	10 U	10 U J	10 U	10 U	10 U	10 U	11 U	9.5 U	9.9 U
Phenanthrene	µg/L	50 ^A	5.0 U	5.0 U	5.0 U	5.0 U J	5.0 U	5.0 U	5.0 U	5.0 U	5.7 U	4.8 U	5.0 U
Phenol	µg/L	1.0 ^B	5.0 U	5.0 U	5.0 U	5.0 U J	5.0 U	5.0 U	5.0 U	5.0 U	5.7 U	4.8 U	5.0 U
Pyrene	µg/L	50 ^A	5.0 U	5.0 U	5.0 U	5.0 U J	5.0 U	5.0 U	5.0 U	5.0 U	5.7 U	4.8 U	5.0 U
Trichlorophenol, 2,4,5-	µg/L	n/v	5.0 U	5.0 U	5.0 U	5.0 U J	5.0 U	5.0 U	5.0 U	5.0 U	5.7 U	4.8 U	5.0 U
Trichlorophenol, 2,4,6-	µg/L	n/v	5.0 U	5.0 U	5.0 U	5.0 U J	5.0 U	5.0 U	5.0 U	5.0 U	5.7 U	4.8 U	5.0 U

Notes:
 TOGS NYSDEC Technical and Operational Guideline Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guideline Values and Groundwater Effluent Limitations (Reissued June 1998 with errata in January 1999 and addenda in April 2000 and June 2004)
^A TOGS 1.1.1 - Table 1 - Ambient Water Quality Standards and Guidance Values, Division of Water, Technical and Operational Guidance Series (TOGS 1.1.1); Guidance
^B TOGS 1.1.1 - Table 1 - Ambient Water Quality Standards and Guidance Values, Division of Water, Technical and Operational Guidance Series (TOGS 1.1.1); Standards
6.5^A Concentration exceeds the indicated standard.
15.2 Concentration was detected but did not exceed applicable standards.
0.50 U Laboratory estimated quantitation limit exceeded standard.
 0.03 U The analyte was not detected above the laboratory estimated quantitation limit.
 n/v No standard/guideline value.
 - Parameter not analyzed / not available.
 .. The principal organic contaminant standard for groundwater of 5 ug/L (described elsewhere in the TOGS table) applies to this substance.
 J Indicates estimated value.
 TALBU Test America Laboratories Inc., Buffalo, NY

Table 4
Summary of RI Analytical Results in Groundwater
Site Management Plan
Former Allegany Bitumens Belmont Asphalt Plant
Amity, New York

Sample Location			B/MW-9		B/MW-11	B/MW-25		WSW	SS-RB		TP-RB	
Sample Date			5-Jan-11	5-Jan-11	6-Jan-11	4-Jan-11	5-Jan-11	7-Dec-10	25-Oct-10	25-Oct-10	26-Oct-10	26-Oct-10
Sample ID			BA-MW9-W	BA-MW9-W/D	BA-MW11-W	BA-MW25-W	BA-MW25-W	BA-WSW-W	BA-SS-RB-W	BA-SS-RB-W	BA-TP-RB-W	BA-TP-RB-W
Sampling Company			STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory			TALBU	TALBU	TALBU	TALBU	TALBU	TALBU	TALBU	TALBU	TALBU	TALBU
Laboratory Work Order			480-548-1	480-548-1	480-548-1	480-548-1	480-548-1	RTL0627	RTJ1956	RTJ1956	RTJ1956	RTJ1956
Laboratory Sample ID			480-548-5	480-548-6	480-633-7	480-548-2	480-548-4	RTL0627-01	RTJ1956-10	RTJ1956-10RE1	RTJ1956-13	RTJ1956-13RE1
Sample Type	Units	TOGS		Field Duplicate					Material Rinse Blank	Material Rinse Blank	Material Rinse Blank	Material Rinse Blank
Polychlorinated Biphenyls												
Aroclor 1016	µg/L	0.09 ^B	0.50 U	0.50 U	0.50 U	0.50 U	-	0.50 U J	0.49 U	0.48 U J	0.50 U	0.50 U J
Aroclor 1221	µg/L	0.09 ^B	0.50 U	0.50 U	0.50 U	0.50 U	-	0.50 U	0.49 U	0.48 U J	0.50 U	0.50 U J
Aroclor 1232	µg/L	0.09 ^B	0.50 U	0.50 U	0.50 U	0.50 U	-	0.50 U	0.49 U	0.48 U J	0.50 U	0.50 U J
Aroclor 1242	µg/L	0.09 ^B	0.50 U	0.50 U	0.50 U	0.50 U	-	0.50 U	0.49 U	0.48 U J	0.50 U	0.50 U J
Aroclor 1248	µg/L	0.09 ^B	0.50 U	0.50 U	0.50 U	0.50 U	-	0.50 U	0.49 U	0.48 U J	0.50 U	0.50 U J
Aroclor 1254	µg/L	0.09 ^B	0.50 U	0.50 U	0.50 U	0.50 U	-	0.50 U	0.49 U	0.48 U J	0.50 U	0.50 U J
Aroclor 1260	µg/L	0.09 ^B	0.50 U	0.50 U	0.50 U	0.50 U	-	0.50 U	0.49 U	0.48 U J	0.50 U	0.50 U J
Aroclor 1262	µg/L	n/v	-	-	-	-	-	0.50 U	0.49 U	0.48 U J	0.50 U	0.50 U J
Aroclor 1268	µg/L	n/v	-	-	-	-	-	0.50 U	0.49 U	0.48 U J	0.50 U	0.50 U J

Notes:

TOGS NYSDEC Technical and Operational Guideline Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guideline Values and Groundwater Effluent Limitations (Reissued June 1998 with errata in January 1999 and addenda in April 2000 and June 2004)

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^B TOGS 1.1.1 - Table 1 - Ambient Water Quality Standards and Guidance Values, Division of Water, Technical and Operational Guidance Series (TOGS 1.1.1); Standards

6.5^A Concentration exceeds the indicated standard.

15.2 Concentration was detected but did not exceed applicable standards.

0.50 U Laboratory estimated quantitation limit exceeded standard.

0.03 U The analyte was not detected above the laboratory estimated quantitation limit.

n/v No standard/guideline value.

- Parameter not analyzed / not available.

- The standard for Iron and Manganese is 500 µg/L, which applies to the sum of these substances. As individual standards, the standard is 300 µg/L.

-- The principal organic contaminant standard for groundwater of 5 µg/L (described elsewhere in the TOGS table) applies to this substance.

B Indicates analyte was found in associated blank, as well as in the sample.

J Indicates estimated value.

TALBU Test America Laboratories Inc., Buffalo, NY

Table 5
Summary of Analytical Results for Groundwater in Existing Wells
Site Management Plan
Former Allegany Bitumens Belmont Asphalt Plant
Amity, NY

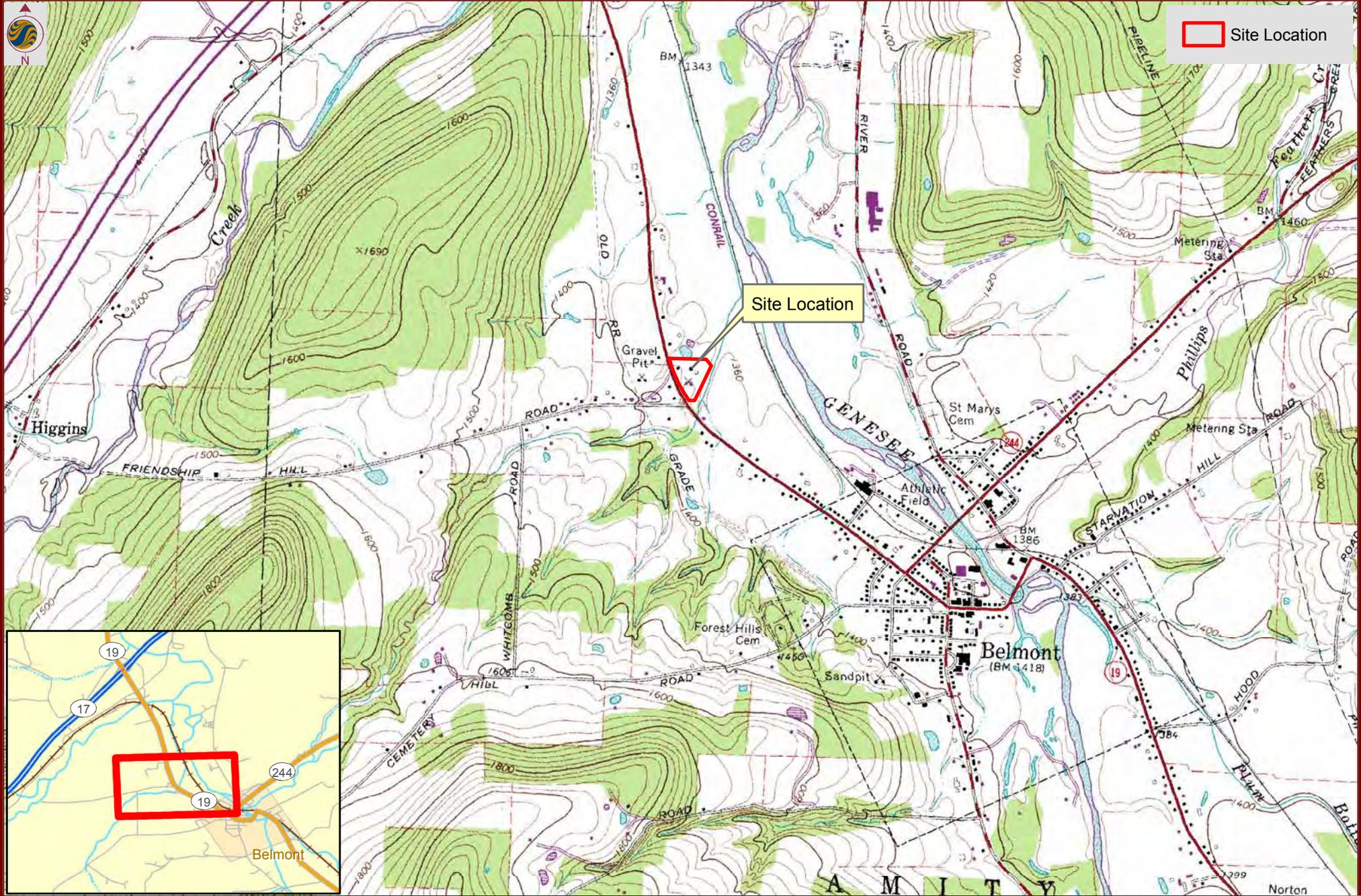
Sample Location			B/MW-25
Sample Date			4-Jan-11
Sample ID			BA-MW25-W
Sampling Company			STANTEC
Laboratory			TALBU
Laboratory Work Order			480-548-1
Laboratory Sample ID			480-548-2
Sample Type	Units	TOGS	

Pesticides			
Aldrin	µg/L	n/v	0.050 U
BHC, alpha-	µg/L	0.01 ^B	0.050 U
BHC, beta-	µg/L	0.04 ^B	0.050 U
BHC, delta-	µg/L	0.04 ^B	0.050 U
Campechlor (Toxaphene)	µg/L	0.06 ^B	0.50 U
Chlordane (Total)	µg/L	0.05 ^B	0.50 U
DDD (p,p'-DDD)	µg/L	0.3 ^B	0.050 U
DDE (p,p'-DDE)	µg/L	0.2 ^B	0.050 U
DDT (p,p'-DDT)	µg/L	0.2 ^B	0.050 U
Dieldrin	µg/L	0.004 ^B	0.050 U
Endosulfan I	µg/L	n/v	0.050 U
Endosulfan II	µg/L	n/v	0.050 U
Endosulfan Sulfate	µg/L	n/v	0.050 U
Endrin	µg/L	n/v	0.050 U
Endrin Aldehyde	µg/L	5- ^B	0.050 U
Heptachlor	µg/L	0.04 ^{AB}	0.050 U
Heptachlor Epoxide	µg/L	0.03 ^B	0.050 U
Lindane (Hexachlorocyclohexane, gamma)	µg/L	0.05 ^B	0.050 U
Methoxychlor (4,4'-Methoxychlor)	µg/L	35 ^B	0.050 U
Polychlorinated Biphenyls			
Aroclor 1016	µg/L	0.09 ^B	0.50 U
Aroclor 1221	µg/L	0.09 ^B	0.50 U
Aroclor 1232	µg/L	0.09 ^B	0.50 U
Aroclor 1242	µg/L	0.09 ^B	0.50 U
Aroclor 1248	µg/L	0.09 ^B	0.50 U
Aroclor 1254	µg/L	0.09 ^B	0.50 U
Aroclor 1260	µg/L	0.09 ^B	0.50 U

Notes:

- TOGS NYSDEC TOGS 1.1.1 (Reissued June 1998 with errata in January 1999 and addenda in April 2000 and June 2004)
- A TOGS 1.1.1 - Table 1 - Ambient Water Quality Standards and Guidance Values, Division of Water, Technical and Operational Guidance Series (TOGS 1.1.1); Guidance
- B TOGS 1.1.1 - Table 1 - Ambient Water Quality Standards and Guidance Values, Division of Water, Technical and Operational Guidance Series (TOGS 1.1.1); Standards
- 6.5^A** Concentration exceeds the indicated standard.
- 15.2 Concentration was detected but did not exceed applicable standards.
- 0.50 U** Laboratory estimated quantitation limit exceeded standard.
- 0.03 U The analyte was not detected above the laboratory estimated quantitation limit.
- n/v No standard/guideline value.
- Parameter not analyzed / not available.
- .. The principal organic contaminant standard for groundwater of 5 ug/L (described elsewhere in the TOGS table) applies to this substance.

FIGURES



Site Location

Site Location



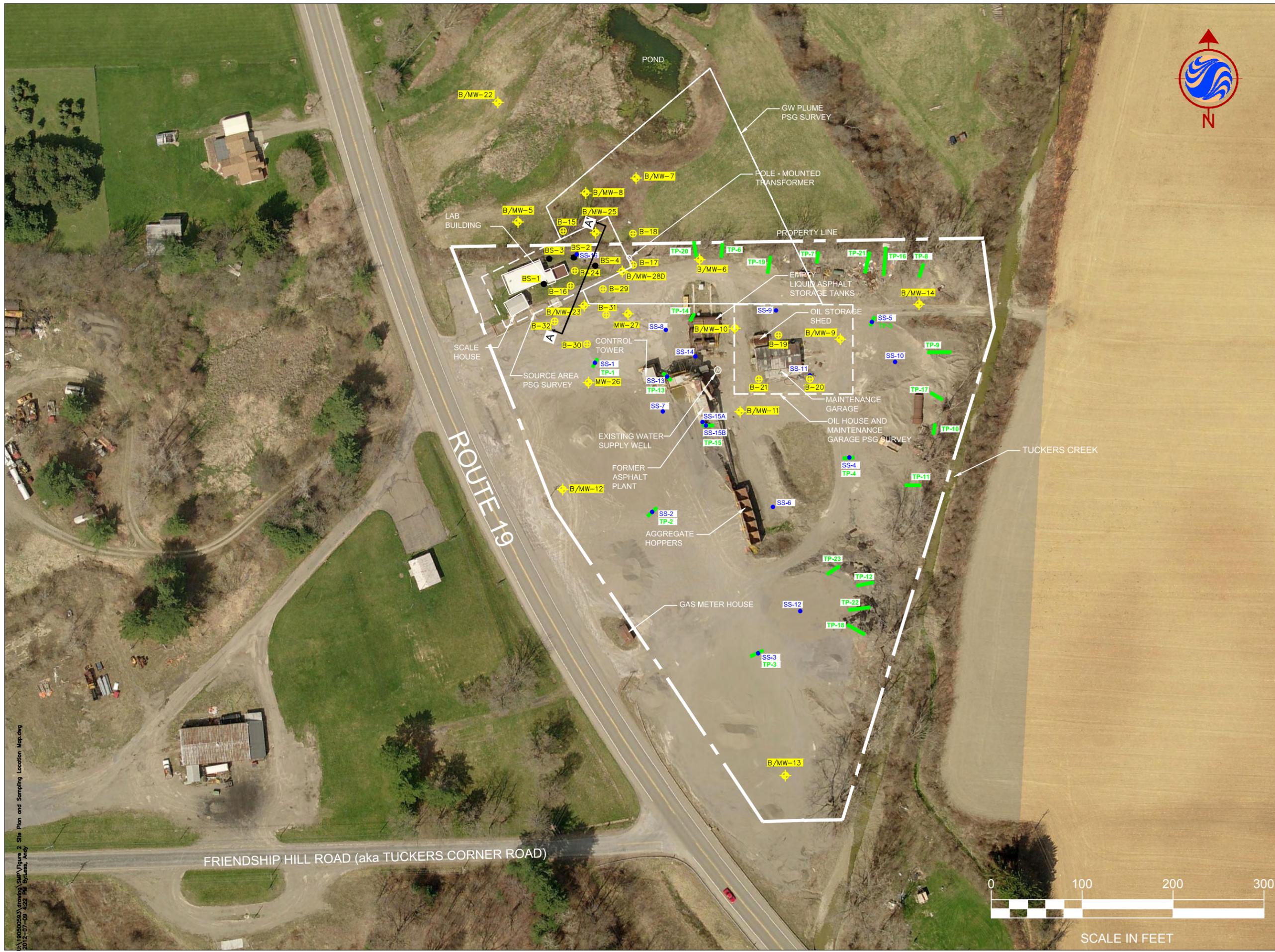
1 inch = 2,000 feet



Allegany Bitumens Belmont Asphalt Plant Site

FIGURE 1 : Site Location Map Showing USGS Topographic Information





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Consultants
 Legend

- PREVIOUS TEST BORING/WELL (2009 PHASE II ESA)
- ⊙ EXISTING WATER SUPPLY WELL
- ⊕ TEST BORING
- ⊕ RI TEST BORING/MONITORING WELL
- SURFACE SOIL SAMPLE
- ▬ TEST PIT

- Notes
- MAP REFERENCE : INFORMATION ON THIS MAP IS REFERENCED FROM MAP ENTITLED "PLAN OF LANDS OWNED BY: ALLEGANY BITUMENS, INC , SITUATE IN THE TOWN OF AMITY, COUNTY OF ALLEGANY, STATE OF NEW YORK, AND BEING A PORTION OF GREAT LOT # 18, TOWNSHIP #3, RANGE #2 OF THE ROBERT MORRIS RESERVE.
 - AERIAL MAPPING OBTAINED FROM PICTOMETRY ONLINE 1.10.1 PICTOMETRY INTERNATIONAL CORP DATED 04-19-2006.
 - PSG = PASSIVE SOIL GAS

RI REPORT	SRS	MPS	12.05
Issued	By	Appd.	YY.MM.DD

File Name: Figure 2 Site Plan and Sampling Location Map

Permit-Seal

Project/ Client
ALLEGANY BITUMENS
BELMONT ASPHALT PLANT

BLADES HOLDING COMPANY, INC.

Title
 SITE PLAN AND RI SAMPLE LOCATION MAP

Project No.	Scale
190500593	AS SHOWN
Drawing No.	Sheet
	Revision

FIG. 2 of

U:\p0400963\working\Site\Figure 2 Site Plan and Sampling Location Map.dwg
 2012-07-09 4:22 PM By: [unreadable]



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Legend

- PREVIOUS TEST BORING / SHALLOW WELL (2009 PHASE II ESA)
- ⊕ EXISTING WATER SUPPLY WELL
- ⊕ TEST BORING
- ⊕ RI TEST BORING / MONITORING WELL
- SURFACE SOIL SAMPLE
- ▭ TEST PIT
- CHLORINATED VOC GROUNDWATER CONTOUR (ug/L) (DASHED WHERE INFERRED)
- 6.6 JAN. - FEB. 2011 CHLORINATED VOC CONCENTRATION (ug/L)
- (1.3) DEC. 2009 CHLORINATED VOC CONCENTRATION (ug/L)

Notes

1. MAP REFERENCE : INFORMATION ON THIS MAP IS REFERENCED FROM MAP ENTITLED "PLAN OF LANDS OWNED BY: ALLEGANY BITUMENS, INC., SITUATE IN THE TOWN OF AMITY, COUNTY OF ALLEGANY, STATE OF NEW YORK, AND BEING A PORTION OF GREAT LOT # 18, TOWNSHIP #3, RANGE #2 OF THE ROBERT MORRIS RESERVE.
2. AERIAL MAPPING OBTAINED FROM PICTOMETRY ONLINE 1.10.1 PICTOMETRY INTERNATIONAL CORP DATED 04-19-2006.
3. * WITH THE EXCEPTION OF BS-1, WHICH WAS A TEMPORARY DEC. 2009 PHASE II WELL, ALL DATA CONTOURED ARE JAN TO FEB. 2011 RI DATA.
4. CONCENTRATIONS INCLUDE CHLORINATED ETHENES & ETHANES.
5. 5 ug/L CONTOUR SHOWN AS 5 ug/L IS THE GROUNDWATER STANDARD FOR MOST OF THE CONTAINMENTS OF CONCERN.

RI REPORT	SRS	MPS	12.05
Issued	By	Appd.	YY.MM.DD

File Name: Figure 7 Contour Map of Total VOC Concentrations in Groundwater-R811

Permit-Seal

Project/ Client

**ALLEGANY BITUMENS
BELMONT ASPHALT PLANT**

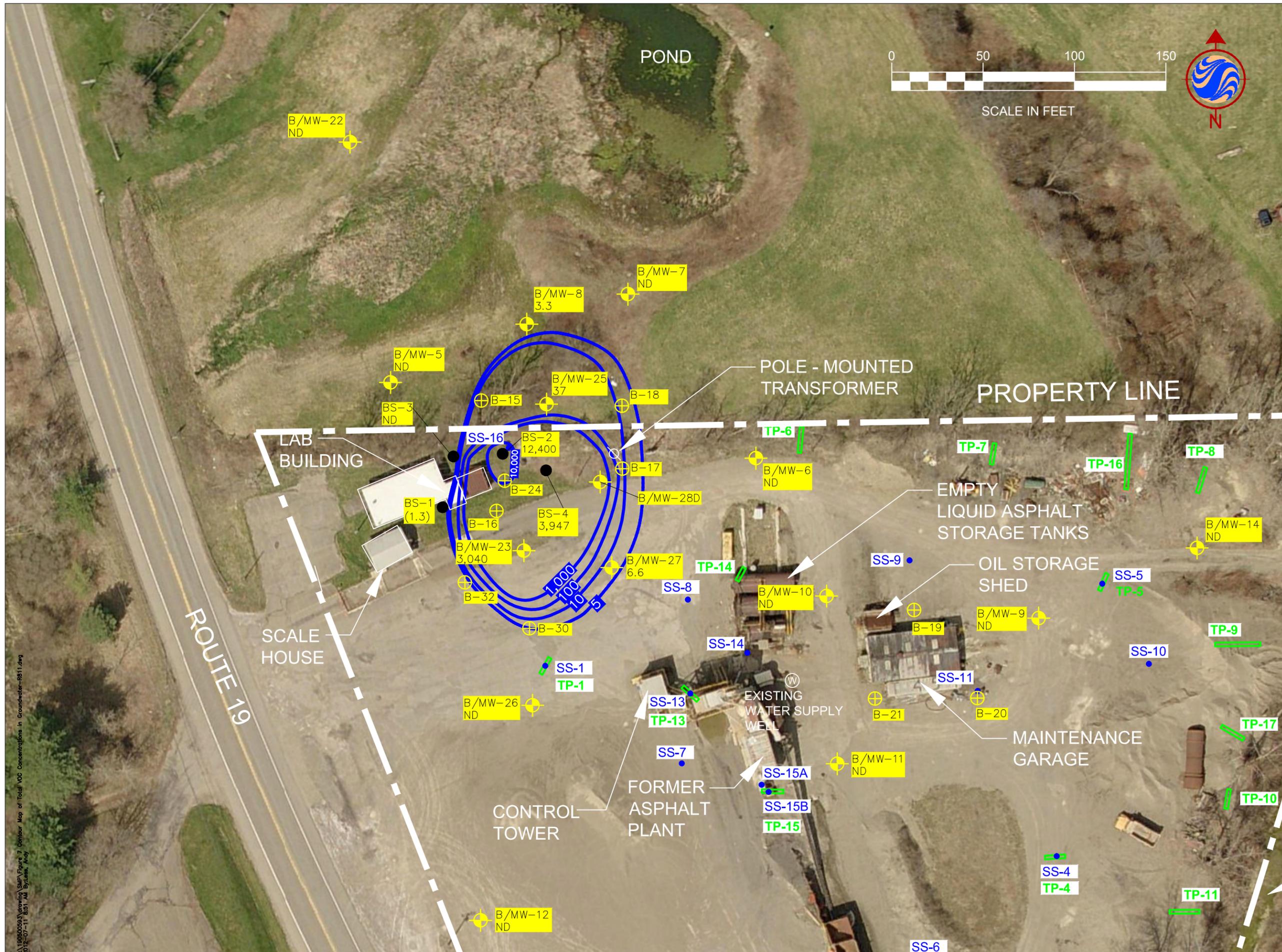
BLADES HOLDING COMPANY, INC.

Title

CONTOUR MAP OF
TOTAL CHLORINATED VOC
CONCENTRATIONS IN SHALLOW
GROUNDWATER (ug / L), JAN - FEB 2011 *

Project No.	Scale	
190500593	AS SHOWN	
Drawing No.	Sheet	Revision

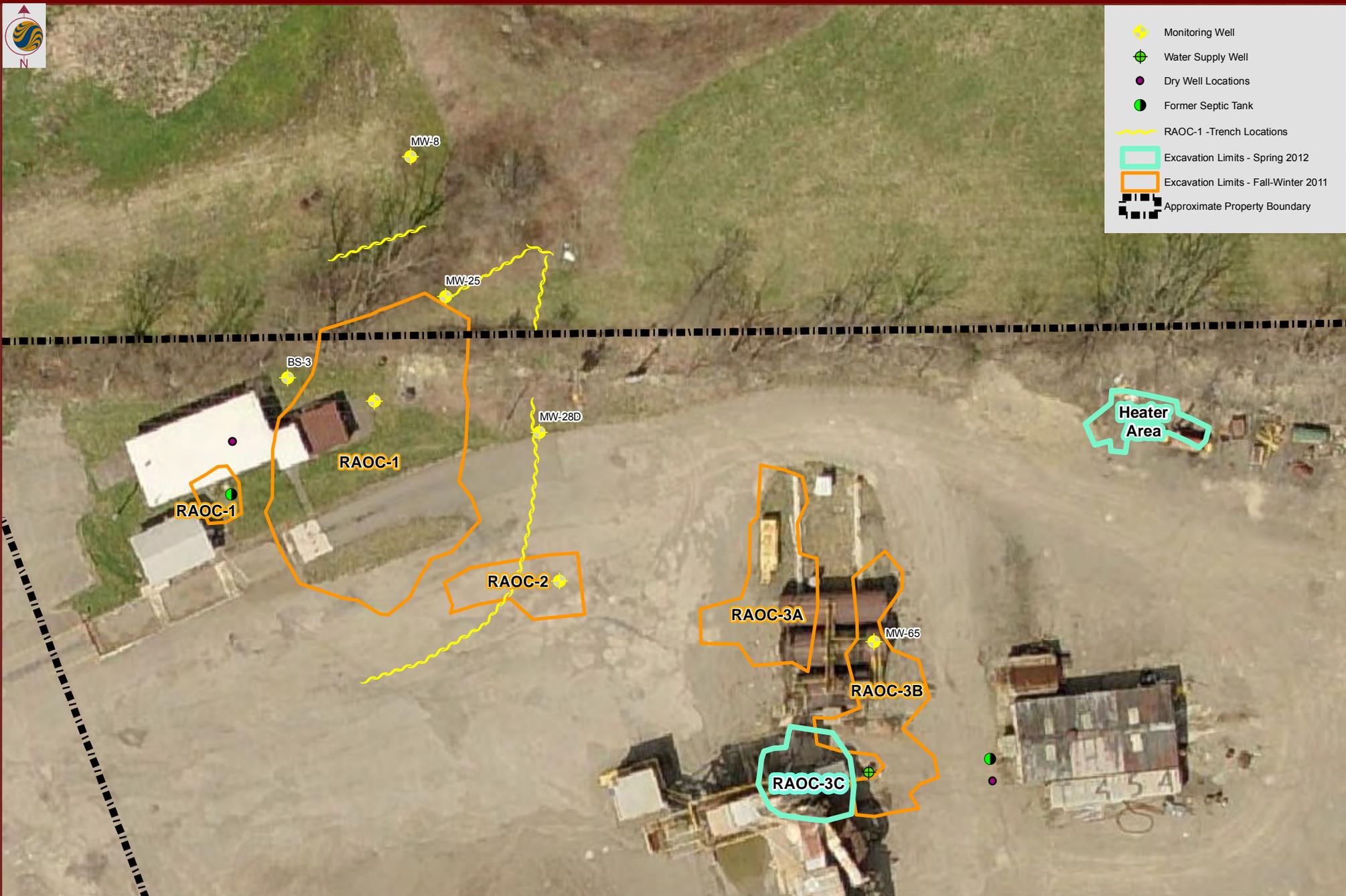
FIG. 7 of



D:\190500593\Drawing\SNP\Figure 7 Contour Map of Total VOC Concentrations in Groundwater-R811.dwg
 2012-07-11 8:51 AM D:\190500593\Drawing\SNP\Figure 7 Contour Map of Total VOC Concentrations in Groundwater-R811.dwg
 ORIGINAL SHEET - 22 X 34



-  Monitoring Well
-  Water Supply Well
-  Dry Well Locations
-  Former Septic Tank
-  RAOC-1 Trench Locations
-  Excavation Limits - Spring 2012
-  Excavation Limits - Fall-Winter 2011
-  Approximate Property Boundary



Stantec

Geographic Information Systems

Stantec Consulting
 61 Commercial Street
 Rochester, NY 14614
 Phone 585.475.1440 Fax 585.272.1814
 www.stantec.com
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Cartographic Design By: Travis Money

Date: 7/12/2012

Path: U:\190500593\GIS\MXD\Fig9_ExcavAreas-Trench&WellLocations-7-11-2012.mxd

1 inch = 40 feet



Former Allegany Bitumens Belmont Asphalt Plant Site

FIGURE 9: Excavation Areas, RAOC-1 Trench Locations & Well Locations



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Legend

- EXISTING WATER SUPPLY WELL
- ABANDONED MONITORING WELL
- MONITORING WELL
- CHLORINATED VOC GROUNDWATER CONTOUR (ug/L) (DASHED WHERE INFERRED)
- 6.6 MARCH 2012 CHLORINATED VOC CONCENTRATION (ug/L)

Notes

1. MAP REFERENCE : INFORMATION ON THIS MAP IS REFERENCED FROM MAP ENTITLED "PLAN OF LANDS OWNED BY: ALLEGANY BITUMENS, INC.", SITUATE IN THE TOWN OF AMITY, COUNTY OF ALLEGANY, STATE OF NEW YORK, AND BEING A PORTION OF GREAT LOT # 18, TOWNSHIP #3, RANGE #2 OF THE ROBERT MORRIS RESERVE.
2. AERIAL MAPPING OBTAINED FROM PICTOMETRY ONLINE 1.10.1 PICTOMETRY INTERNATIONAL CORP DATED 04-19-2006.
3. CONCENTRATIONS INCLUDE CHLORINATED ETHENES & ETHANES.
4. AT THE TIME OF GROUNDWATER SAMPLING, SEVERAL SITE STRUCTURES HAD BEEN OR WERE IN THE PROCESS OF BEING REMOVED.
5. 5 ug/L CONTOUR SHOWN AS 5 ug/L IS THE GROUNDWATER STANDARD FOR MOST OF THE CONTAINMENTS OF CONCERN.

SMP	SRS	MPS	YY.MM.DD
Issued	By	Appd.	

Permit-Seal

Project/Client

**ALLEGANY BITUMENS
 BELMONT ASPHALT PLANT**

BLADES HOLDING COMPANY, INC.

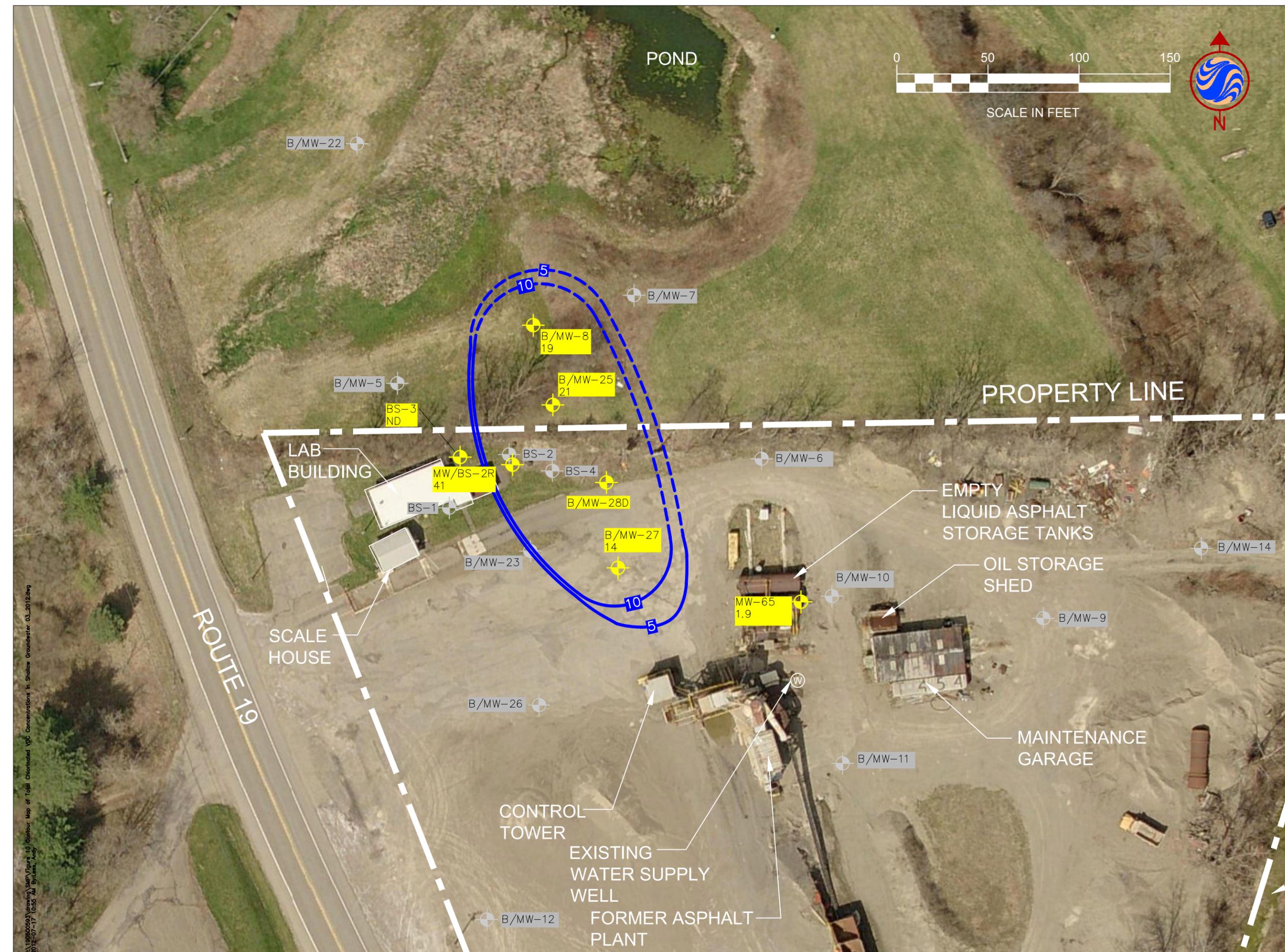
Title

CONTOUR MAP OF
 TOTAL CHLORINATED VOC
 CONCENTRATIONS IN SHALLOW
 GROUNDWATER (ug / L), MARCH 2012

Project No.	Scale	
190500593	AS SHOWN	
Drawing No.	Sheet	Revision

FIG. 10

of



U:\190500593\drawing\SMP\Figure 10 Contour Map of Total Chlorinated VOC Concentrations in Shallow Groundwater 03_2012.dwg
 2012-07-17 10:55 AM By:clm, any



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D = REPORTED RESULTS TAKEN FROM DILUTED SAMPLE ANALYSIS
 mg/kg = MILLIGRAM PER KILOGRAM

Notes

1. MAP REFERENCE : INFORMATION ON THIS MAP IS REFERENCED FROM MAP ENTITLED "PLAN OF LANDS OWNED BY: ALLEGANY BITUMENS, INC.", SITUATE IN THE TOWN OF AMITY, COUNTY OF ALLEGANY, STATE OF NEW YORK, AND BEING A PORTION OF GREAT LOT # 18, TOWNSHIP #3, RANGE #2 OF THE ROBERT MORRIS RESERVE.
 2. AERIAL MAPPING OBTAINED FROM PICTOMETRY ONLINE 1.10.1 PICTOMETRY INTERNATIONAL CORP DATED 04-19-2006.

SITE MANAGEMENT PLAN (SMP)	SRS	MPS	12.07
Issued	By	Appd.	YY.MM.DD

Permit-Seal

Project/Client

**ALLEGANY BITUMENS
 BELMONT ASPHALT PLANT**

BLADES HOLDING COMPANY, INC.

Title

LOCATION OF REMAINING SOIL CONTAMINATION ABOVE COMMERCIAL SCOs

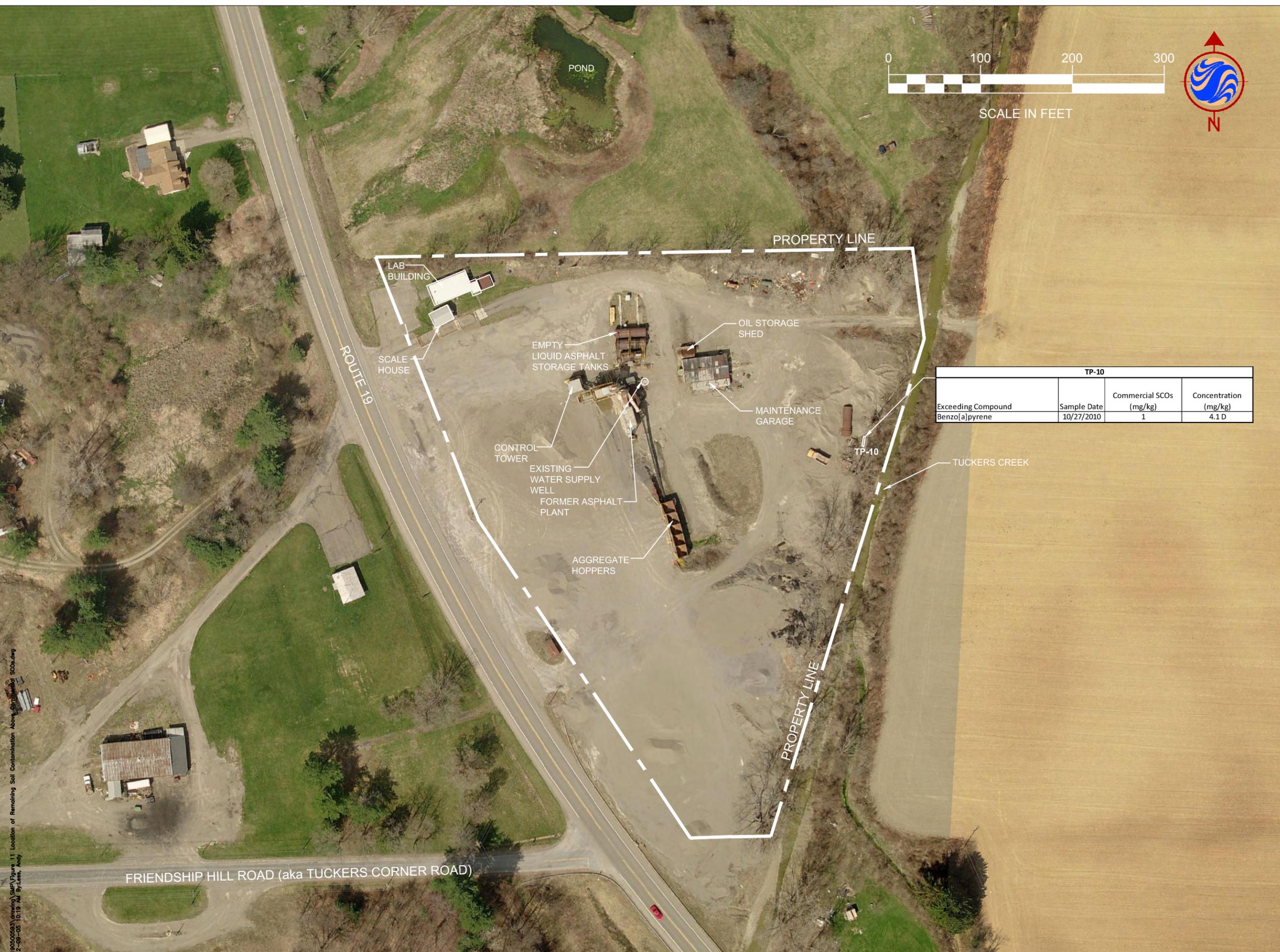
Project No.	Scale	
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Drawing No.	Sheet	Revision

FIG. 11

of



SCALE IN FEET



TP-10			
Exceeding Compound	Sample Date	Commercial SCOs (mg/kg)	Concentration (mg/kg)
Benzo[a]pyrene	10/27/2010	1	4.1 D

U:\190500593\drawing\SMP\Figure 11 Location of Remaining Soil Contamination Above Commercial SCOs.dwg
 2012-09-05 10:19 AM By: user, Andy

APPENDICES

Appendix A
Excavation Work Plan

A-4 MATERIALS EXCAVATION AND LOAD OUT

A qualified environmental professional or person under their supervision will oversee all invasive work and the excavation and load-out of all excavated material.

The owner of the property and its contractors are solely responsible for safe execution of all invasive and other work performed under this Plan.

The presence of utilities and easements on the site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this SMP is posed by utilities or easements on the site.

Loaded vehicles leaving the site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements).

A truck wash will be operated on-site. The qualified environmental professional will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the site until the activities performed under this section are complete.

Locations where vehicles enter or exit the site shall be inspected daily for evidence of off-site soil tracking.

The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the site are clean of dirt and other materials derived from the site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to site-derived materials.

Excavated soil and fill materials must be tested with regard to potential contaminant presence. If analytical results indicate contaminant concentrations are below Commercial SCOs, the soil can be reused on-site in accordance with Section A-7 of this Appendix. If the concentrations are elevated above Commercial SCOs, approval for reuse on site must be obtained from NYSDEC. If hazardous materials are encountered, they cannot be reused on-site and must be disposed properly at a permitted facility.

A-5 MATERIALS TRANSPORT OFF-SITE

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Material transported by trucks exiting the site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

All trucks will be washed prior to leaving the site. Truck wash waters will be collected and disposed of off-site in an appropriate manner.

Truck transport routes are as follows: trucks will enter and exit the site from Route 19. All trucks loaded with site materials will exit the vicinity of the site using only these approved truck routes. This is the most appropriate route and takes into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting off-site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport.

Trucks will be prohibited from stopping and idling in the neighborhood outside the project site.

Egress points for truck and equipment transport from the site will be kept clean of dirt and other materials during site remediation and development.

Queuing of trucks will be performed on-site in order to minimize off-site disturbance. Off-site queuing will be prohibited.

A-6 MATERIALS DISPOSAL OFF-SITE

All soil/fill/solid waste excavated and removed from the site will be considered as potentially-contaminated and regulated material and will be managed, transported and disposed in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. If exportation of soil/fill from this site is proposed (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to the

NYSDEC. Unregulated off-site management of materials from this site will not occur without formal NYSDEC approval.

Off-site disposal locations for excavated soils will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, i.e. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, C/D recycling facility, etc. Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report. This documentation will include: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Non-hazardous historic fill and contaminated soils taken off-site will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2. Material that does not meet Track 1 unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

A-7 MATERIALS REUSE ON-SITE

Impacted materials that will be re-used on-Site will need to be segregated based upon field screening, previous investigation findings, and/or additional pre-construction and/or construction sampling and analyses. The analyses will include TCL VOCs + TICs (Method 8260) and TCL SVOCs + TICs (Method 8270). The analysis results will be compared to Commercial SCOs. If concentrations are below Commercial SCOs, the soil can be reused on-Site. If the concentrations are elevated above Commercial SCOs, the results shall be shared with the NYSDEC and approval obtained prior to their specified reuse on-Site. It should be noted the NYSDEC may require highly impacted materials to be transported off-Site and disposed of at a permitted landfill facility. Impacted materials that are determined acceptable for re-use on-Site to backfill excavations should be covered with clean soil or an impervious surface. Staging and stockpiling management of materials should be conducted as described in the sections above.

Chemical criteria for on-site reuse of material have been approved by NYSDEC and are listed in Tables 1 through 3 and include VOC and SVOC levels less than Commercial SCOs. The qualified environmental professional will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material does not remain on-site. Contaminated on-site material, including historic fill and

contaminated soil, that is acceptable for re-use on-site will be placed below a demarcation layer, approved clean soil cover or impervious surface, and will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

Any demolition material proposed for reuse on-site will be sampled for asbestos and the results will be reported to the NYSDEC for acceptance. Concrete crushing or processing on-site will not be performed without prior NYSDEC approval. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the site will not be reused on-site.

A-8 FLUIDS MANAGEMENT

Sufficient data are available at this time such that it does not appear necessary to perform additional groundwater sampling prior to construction activities in areas outside the vicinity of RAOC-1. If excavation activities are proposed near or within RAOC-1 and are expected to extend to the depth of the water table, pre-construction sampling is recommended. In such cases, pre-construction sampling frequency and analyses would vary based on the location of proposed work in relation to the characterized areas and on the anticipated quantity and handling of groundwater.

Sampling of groundwater during construction efforts should also be considered if either of the following conditions are encountered:

- If conditions during construction are significantly different than those observed during pre-construction exploration, including unusual odors or visual observations such as stained soils, drums, containers, etc.; or
- If concerns such as sheens or free-product are identified within soil or groundwater.

In these situations, sampling frequency and analyses would vary based on the condition and quantity of groundwater encountered and handling options.

All liquids to be removed from the site, including excavation dewatering and groundwater monitoring well purge and development waters, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. Dewatering, purge and development fluids will not be recharged back to the land surface or subsurface of the site, but will be managed off-site.

Discharge of water generated during large-scale construction activities to surface waters (i.e. a local pond, stream or river) will be performed under a SPDES permit.

A-9 BACKFILL FROM OFF-SITE SOURCES

All materials proposed for import onto the site will be approved by the qualified environmental professional and will be in compliance with provisions in this SMP prior to receipt at the site.

The past use of the site proposed as a source of backfill materials must be known and material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the site.

All imported soils will meet the backfill and cover soil quality standards established in 6NYCRR 375-6.7(d). Based on an evaluation of the land use, protection of groundwater and protection of ecological resources criteria, the resulting soil quality standards are as defined in 6NYCRR 375-6.7 and 6.8 and include conformance with the lower of the Protection of Groundwater or Commercial SCOs. Analytical methods will be dictated by the past use of the site that is the source of the backfill and will be approved by NYSDEC prior to testing. Analytical testing frequencies will be as defined in Table 5.4(e)10 of DER-10 or as otherwise approved by NYSDEC.

Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this site, will not be imported onto the site without prior approval by NYSDEC. Solid waste will not be imported onto the site.

Trucks entering the site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

A-10 STORMWATER POLLUTION PREVENTION

Barriers and hay bale checks will be installed and inspected once a week and after every rainstorm event resulting in 0.25 inches or more of rainfall, as measured at the nearest U.S. Weather Service gauging station. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by NYSDEC. All

necessary repairs shall be made immediately. Accumulated sediments will be removed as required to keep the barrier and hay bale check functional. All undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate backfill materials. Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

Erosion and sediment control measures identified in the SMP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.

Silt fencing or hay bales will be installed around the entire perimeter of the construction area.

A-11 CONTINGENCY PLAN

If underground tanks or other previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition.

Sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for full a full list of analytes (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs), unless the site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone to NYSDEC's Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will be also included in the periodic reports prepared pursuant to Section 5 of the SMP.

A-12 COMMUNITY AIR MONITORING PLAN

The CAMP will follow the guidance provided in Appendix 1A of NYSDEC's DER-10, Generic Community Air Monitoring Plan (see Appendix I to the SMP). For each day of intrusive field work, a wind sock or flag will be used to monitor wind direction in the area of the work zone. Based upon the daily wind direction, one upwind and one downwind monitoring point will be identified, at the perimeter of the site or field work location. Locations will be adjusted on a daily or more frequent basis based on actual wind directions to provide upwind and downwind monitoring stations.

Real-time particulate monitoring and VOC monitoring will be carried out using equipment appropriate to both measure the types of contaminants known to be present and satisfy the requirements of DER-10's Generic Community Air Monitoring Plan. Prior to the commencement of field work each day, background measurements of particulate and VOC concentrations will be logged at the up- and downwind locations. The real-time readings will be used to observe the difference between upwind and downwind particulate and VOC levels. If at any time, the difference between the upwind and downwind particulate levels or VOC levels exceeds action levels, then work will be temporarily halted. The Contractor will then be required to implement dust suppression techniques or any other means necessary to control dusts and VOCs. Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers.

A-13 ODOR CONTROL PLAN

This odor control plan is capable of controlling emissions of nuisance odors off-site and on-site, if there are residents or tenants on the property. Specific odor control methods to be used on a routine basis will include limiting the area of open excavations and the size of soil stockpiles, and covering soil stockpiles. If nuisance odors are identified at the site boundary, or if odor complaints are received, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of any other complaints about the project. Implementation of all odor controls, including the halt of work, is the responsibility of the property owner's

Remediation Engineer, and any measures that are implemented will be discussed in the Periodic Review Report.

All necessary means will be employed to prevent on- and off-site nuisances. At a minimum, these measures will include: (a) limiting the area of open excavations and size of soil stockpiles; (b) shrouding open excavations with tarps and other covers; and (c) using foams to cover exposed odorous soils;. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-site disposal; (e) use of chemical odorants in spray or misting systems; and, (f) use of staff to monitor odors in surrounding neighborhoods.

If nuisance odors develop during intrusive work that cannot be corrected, or where the control of nuisance odors cannot otherwise be achieved due to on-site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering the excavation and handling areas in a temporary containment structure equipped with appropriate air venting/filtering systems.

A-14 DUST CONTROL PLAN

A dust suppression plan that addresses dust management during invasive on-site work will include, at a minimum, the items listed below:

- Dust suppression will be achieved through the use of a dedicated on-site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.
- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, un-vegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-site roads will be limited in total area to minimize the area required for water truck sprinkling.

A-15 OTHER NUISANCES

A plan will be developed and utilized by the contractor for all remedial work to ensure compliance with local noise control ordinances.

Appendix B
Metes and Bounds

“ENVIRONMENTAL EASEMENT DESCRIPTION” – C902019

ALL THAT TRACT OR PARCEL OF LAND SITUATE IN THE TOWN OF AMITY, COUNTY OF ALLEGANY, STATE OF NEW YORK, BEING A PORTION OF GREAT LOT NO.18, TOWNSHIP NO.3, RANGE NO.2 OF THE ROBERT MORRIS RESERVE AND BEING MORE PARTICULARLY BOUNDED AND DESCRIBED AS FOLLOWS: BEGINNING AT A POINT MARKED BY A 5/8" IRON REBAR WITH SURVEY CAP SET ON THE EASTERLY BOUNDS OF NEW YORK STATE ROUTE NO.19, SAID POINT BEING POSITIONED AT THE INTERSECTION OF THE SAID HIGHWAY BOUNDS AND THE DIVISION LINE BETWEEN THE LANDS HEREIN DESCRIBED, ON THE SOUTH AND LANDS DESCRIBED IN A DEED FROM CLYDE HANCHETT TO EDWARD HANCHETT, RECORDED IN LIBER 542 OF DEEDS AT PAGE 420, ON THE NORTH;

THENCE S 81°04'41" E AND ALONG THE SAID DIVISION LINE A DISTANCE OF 576.19 FEET TO A POINT MARKED BY A 5/8" IRON REBAR WITH SURVEY CAP SET ON THE WESTERLY EDGE OF AN EXISTING FARM ROAD WHICH EXTENDS IN A NORTHERLY DIRECTION TOWARD THE LANDS OF HANCHETT, SAID POINT BEING THE NORTHWESTERLY CORNER OF LANDS DESCRIBED IN A DEED FROM CARL W. AND ELIZABETH ANDREWS TO ROBERT L. AND DORA H. STOWELL, RECORDED IN LIBER 411 OF DEEDS AT PAGE 218, LANDS LATER CONVEYED BY EDWARD HANCHETT TO RALPH W. AND DARLENE A. KEESLER AS EVIDENCED BY A DEED RECORDED IN LIBER 593 OF DEEDS AT PAGE 420;

THENCE S 02°47'59" W AND PASSING THROUGH THE SAID LANDS OF KEESLER A DISTANCE OF 96.02 FEET TO A POINT MARKED BY A 5/8" IRON REBAR WITH SURVEY CAP SET;

THENCE S 26°14'08" W AND CONTINUING THROUGH THE LANDS OF KEESLER A DISTANCE OF 565.43 FEET TO A POINT MARKED BY A 5/8" IRON REBAR WITH SURVEY CAP SET IN THE DIVISION LINE BETWEEN THE LANDS OF KEESLER, ON THE NORTH AND LANDS ONCE REPUTEDLY OWNED BY LYLE AND HELEN BENJAMIN AS EVIDENCED BY A DEED RECORDED IN LIBER 384 OF DEEDS AT PAGE 70, ON THE SOUTH, LANDS NOW REPUTEDLY OWNED BY THEODORE F. AND LANA L. PHILLIPS AS EVIDENCED BY A DEED RECORDED IN LIBER 1232 OF DEEDS AT PAGE 159;

THENCE N 81°51'04" W ALONG THE DIVISION LINE BETWEEN THE LANDS OF KEESLER AND THE SAID LANDS OF BENJAMIN, NOW REPUTEDLY PHILLIPS A DISTANCE OF 40.17 FEET TO A 5/8" IRON REBAR WITH SURVEY CAP SET AT THE SOUTHWESTERLY CORNER OF THE ABOVE MENTIONED LANDS DESCRIBED IN A DEED TO STOWELL AND LATER CONVEYED TO KEESLER;

THENCE N 81°51'04" W AND ALONG THE DIVISION LINE BETWEEN THE LANDS HEREIN DESCRIBED, ON THE NORTH AND THE ABOVE MENTIONED LANDS OF BENJAMIN, NOW REPUTEDLY PHILLIPS A DISTANCE OF 45.56 FEET TO A POINT MARKED BY A 5/8" IRON REBAR WITH SURVEY CAP SET ON THE EASTERLY BOUNDS OF N.Y.S. ROUTE NO.19;

THENCE ALONG THE EASTERLY HIGHWAY BOUNDS OF N.Y.S. ROUTE NO.19 THE FOLLOWING TWO (2) COURSES AND DISTANCES:

1. N 24°26'18" W A DISTANCE OF 414.81 FEET TO A POINT;

2. N 10°52'03" W A DISTANCE OF 308.17 FEET TO THE POINT AND PLACE OF BEGINNING OF THE PARCEL HEREIN DESCRIBED.

CONTAINING 5.424+/- ACRES

Appendix C
Environmental Easement

**ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36
OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW**

THIS INDENTURE made this 28th day of May, 2012, between Owner **BLADES HOLDING COMPANY, INC.**, at P.O. Box 12, Arkport, New York (the "Grantor"), and The People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property located at the address of 5392 State Route 19, in the Town of Amity, County of Allegany and State of New York, known and designated on the tax map of the County Clerk of Allegany County as tax map parcel number: Section 171 Block 1 Lot 60, being the same as that property conveyed to Grantor by deeds dated March 2, 1960 and _____ and recorded in the Allegany County Clerk's Office in Liber 536, page 1063 and Liber _____, page _____, respectively. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 5.424± acres, and is hereinafter more fully described in the Land Title Survey dated May 18, 2012 prepared by B&R Surveying, P.L.L.C, which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation established for the Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

TABLE OF CONTENTS (continued)

Tables

- 1 - Health And Safety Data For Contaminants Of Concern
- 2 - Exposure Pathways And First Aid Response For Contaminants Of Concern
- 3 - Exposure Symptoms And First Aid For Heat Exposure
- 4 - Accident Report

Figures

- 1 - Site Location Map
- 2 - Directions and Map from the site to Jones Memorial Hospital, Wellsville, NY

Appendices

- Appendix A - Material Safety Data Sheets
Appendix B - On-Site Safety Meeting Forms

1.0 INTRODUCTION

The following Health and Safety Plan (HASP) describes personal safety protection standards and procedures to be followed by Stantec staff during implementation of the Site Management Plan (SMP) at the Former Allegany Bitumens Belmont Asphalt Plant site located in the Town of Amity, Allegany County, New York (Figure 1). This work could potentially include:

- oversight of:
 - soil excavation or grading;
 - excavation dewatering;
 - placement of material designed to facilitate in-situ remediation;
 - backfilling of excavations;
 - cover system or demarcation layer restoration;
 - transportation of excavated materials off-site;
 - transportation of excavation groundwater off-site or on-site treatment and discharge;
 - monitoring well repair; and
 - monitoring well decommissioning;
- conducting monitoring for a Community Air Monitoring Plan (CAMP);
- site inspection;
- subsurface soil sampling from excavations;
- sampling for waste disposal;
- monitoring well inspections, re-development, and repair; and
- groundwater elevation measurement and sampling.

This HASP establishes mandatory safety procedures and personal protection standards pursuant to the Occupational Safety and Health Administration (OSHA) regulations 29 Code of Federal Regulations (CFR) 1910.120. The HASP applies to all Stantec personnel conducting any site work, as defined in 29 CFR 1910.120(a). All personnel involved in the mentioned activities must familiarize themselves with this HASP, comply with its requirements and have completed the required health and safety training and medical surveillance program participation pursuant to 29 CFR 1910.120 prior to beginning any work on site.

THIS HASP IS FOR THE EXPRESS USE OF STANTEC EMPLOYEES. ALL OTHER CONTRACTORS TO BE WORKING IN THE EXCLUSION AREAS ARE REQUIRED BY LAW TO DEVELOP THEIR OWN HASP, AS WELL TO MEET ALL PERTINENT ASPECTS OF OSHA REGULATIONS. STANTEC RESERVES THE RIGHT TO STOP ANY SITE WORK WHICH IS DEEMED TO POSE A HEALTH AND SAFETY THREAT TO ITS STAFF.

1.1 *Background*

This project is being performed as part of a Brownfield Cleanup Program. The SMP was prepared to manage remaining contamination identified during prior investigations at the site.

Site Background

The Former Allegany Bitumens Belmont Asphalt Plant is a 5.4± acre parcel located at 5392 State Route 19 in the Town of Amity, Allegany County, New York. A hot-mix asphalt plant started operations at this location in approximately 1960. From about 1960 to 1995, Allegany Bitumens, Inc. operated the site. Allegany Bitumens was merged into Blades in 1995. Blades operated the site from 1995 till 2005, when operation at the site ceased. The operations at the asphalt plant included quality control testing at an on-site laboratory.

The subject property was previously improved with an asphalt plant, control tower, truck scale, scale house, office and laboratory building, oil storage building, maintenance shop

and maintenance garage, which were demolished or dismantled and removed from site in late 2011 through early 2012.

Land use in the surrounding area is dominated by agricultural uses. The northern limits of the Village of Belmont are located approximately one-half mile southeast of the property. Undeveloped wooded property is located to the southwest of the property along Tucker's Creek and its small tributaries.

Phase I and II Environmental Site Assessments were performed at the site in 2009. A Remedial Investigation (RI) was performed at the site in 2010-2011. These investigations revealed the presence of volatile organic compounds (VOCs) in soil and groundwater at levels exceeding applicable NYSDEC cleanup objectives and standards or guidance values. As a result, Interim Remedial Measures (IRMs) were performed from September 2011 to May 2012.

1.2 Site-Specific Chemicals of Concern

VOCs

The primary volatile compounds of concern that are documented to be present in the soil and groundwater at the Former Allegany Bitumens Belmont Asphalt Plant Site are listed in Table 1. Material Safety Data Sheets (MSDSs) for these compounds are presented in Appendix A. The air monitoring action levels will be based on one-half of the current Threshold Limit Value (TLV) or Permissible Exposure Limit (PEL) for 1,1-dichloroethene (1,1-DCE) with a margin of safety built into the action levels to account for the non-specificity of the field monitoring instruments. Exposure limits for less hazardous compounds will be satisfied by meeting the more stringent exposure limits for 1,1-DCE. Table 1 summarizes health and safety data for the volatile compounds of primary concern.

PAHs in Asphalt

The past use of the site for storage and production of asphalt products indicate it is likely that polycyclic aromatic hydrocarbons (PAHs), which are semi-volatile organic compounds that are components of asphalt, may be present in soil, or groundwater. Because the potential for encountering liquid asphalt at the site is low, and because the solubility of PAHs in water is low, the primary risk for exposure to PAHs at the site is likely to be from ingestion or inhalation of soil particles contaminated with PAHs.

The Department of Health and Human Services (DHHS) has determined that some PAHs may be carcinogens. Some people who have breathed or touched mixtures of PAHs and other chemicals for long periods of time have developed cancer. Some PAHs have caused cancer in laboratory animals when they breathed air containing them (lung cancer), ingested them in food (stomach cancer), or had them applied to their skin (skin cancer).

The Occupational Safety and Health Administration (OSHA) has set a limit of 0.2 milligrams of PAHs per cubic meter of air (0.2 mg/m³). Therefore, adherence to the provisions specified in the Community Air Monitoring Plan for the project (CAMP, Appendix I of the SMP to which this HASP is attached) for monitoring and suppression of fugitive dust during intrusive sampling or remedial activities, with the conservative action level of 150 micrograms per cubic meter for airborne dust, will achieve compliance with exposure limits for PAHs.

Table 1
Health and Safety Data for Volatile Contaminants of Concern

Compound	PEL/ TWA	Physical Description	Odor Threshold	Route of Exposure	Symptoms	Target Organs
1,1-Dichloroethane (1,1-DCA)	100 ppm	Colorless, oily liquid with a chloroform-like odor.	255 ppm	inhalation, ingestion, skin and/or eye contact	irritation skin; central nervous system depression; liver, kidney, lung damage	Skin, liver, kidneys, lungs, central nervous system
1,1-Dichloroethene (1,1-DCE)	1 ppm	Colorless liquid or gas (above 89°F) with a mild, sweet, chloroform-like odor.	35.5 ppm	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation eyes, skin, throat; dizziness, headache, nausea, dyspnea (breathing difficulty); liver, kidney disturbance; pneumonitis; [potential occupational carcinogen]	Eyes, skin, respiratory system, central nervous system, liver, kidneys
cis-1,2- Dichloroethene (cis- 1,2-DCE)	200 ppm	Colorless liquid (usually a mixture of the cis & trans isomers) with a slightly acrid, chloroform-like odor.	19.1 ppm	inhalation, ingestion, skin and/or eye contact	Irritation eyes, respiratory system; central nervous system depression	Eyes, respiratory system, central nervous system
Tetrachloroethene (PCE)	100 ppm	Colorless liquid with a mild chloroform-like odor.	6.17 ppm	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin, nose, throat, respiratory system; nausea; flush face, neck; dizziness, incoordination; headache, drowsiness; skin erythema (skin redness); liver damage; [potential occupational carcinogen]	Eyes, skin, respiratory system, liver, kidneys, central nervous system
1,1,1-trichloroethane (1,1,1-TCA)	350 ppm	Colorless liquid with a mild, chloroform-like odor.	22.4 ppm	inhalation, ingestion, skin and/or eye contact	irritation eyes, skin; headache, lassitude (weakness, exhaustion), central nervous system depression, poor equilibrium; dermatitis; cardiac arrhythmias; liver damage	Eyes, skin, central nervous system, cardiovascular system, liver

Trichloroethylene (TCE)	100 ppm	Colorless liquid with a chloroform-like odor.	1.36 ppm	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin; headache, visual disturbance, lassitude (weakness, exhaustion), dizziness, tremor, drowsiness, nausea, vomiting; dermatitis; cardiac arrhythmias, paresthesia; liver injury; [potential occupational carcinogen]	Eyes, skin, respiratory system, heart, liver, kidneys, central nervous system
Benzo(a)pyrene	0.2 mg/m ³	Black or dark-brown amorphous residue	0.2 mg/m ³ ^A	Inhalation, skin, ingestion and/or eye contact	Irritation eye, respiratory tract, skin; dermatitis, acne, blisters; Nausea, vomiting: [potential occupational carcinogen]	Respiratory system, skin, bladder, kidneys

Notes:

- PEL - permissible exposure limits
- TWA - time weighted average, 8-hour workday
- mg/m³ - milligrams per cubic meter.
- ppm - parts per million, in air
- ^A - threshold for coal tar pitch volatiles

2.0 STANTEC PERSONNEL ORGANIZATION

The following Stantec personnel will be involved in health and safety operations at the Former Allegany Bitumens Belmont Asphalt Plant Site:

2.1 *Project Manager*

Mr. Michael Storonsky, Managing Principal, is the Project Manager. Mr. Storonsky is responsible for ensuring that all Stantec procedures and methods are carried out, and that all Stantec personnel abide by the provisions of this Health and Safety Plan.

2.2 *Site Safety Officer/Field Team Leader*

The field team leader (FTL) and Site Safety Officer (SSO) will report directly to the Project Manager and will be responsible for the implementation of this HASP as well as daily calibration of Stantec's safety monitoring instruments. The FTL/SSO will keep a log book of all calibration data and instrument readings for the Site. The FTL/SSO will be determined at the time when the field work is scheduled.

2.3 *Health and Safety Coordinator*

Ms. Erin McCormick will be the Health and Safety Coordinator. Ms. McCormick will be responsible for overall coordination of Health and Safety issues on the project.

2.4 *Daily Meetings*

All Stantec personnel and contractors working within the exclusion zone will be required to read this document and sign off on the daily safety meeting form presented in Appendix B.

3.0 MEDICAL SURVEILLANCE REQUIREMENTS

3.1 *Introduction*

A. Hazardous waste site workers can often experience high levels of physical and chemical stress. Their daily tasks may expose them to toxic chemicals, physical hazards, biologic hazards, or radiation. They may develop heat stress while wearing protective equipment or working under temperature extremes, or face life-threatening emergencies such as explosions and fires. Therefore, a medical program is essential to: assess and monitor worker's health and fitness both prior to employment and during the course of the work; provide emergency and other treatment as needed; and keep accurate records for future reference. In addition, OSHA requires a medical evaluation for employees that may be required to work on hazardous waste sites and/or wear a respirator (29 CFR Part 1910.120 and 1910.134), and certain OSHA standards include specific medical surveillance requirements (e.g., 29 CFR Part 1926.62, Part 1910.95 and Parts 1910.1001 through 1910.1045).

3.2 *Medical Examinations*

A. All Stantec personnel working in areas of the site where site-related contaminants may be present shall have been examined by a licensed physician as prescribed in 29 CFR Part 1910.120, and determined to be medically fit to perform their duties for work conditions which require respirators. Employees will be provided with medical examinations as outlined below:

- Pre-job physical examination
- Annually thereafter if contract duration exceeds 1 year;
- Termination of employment;
- Upon reassignment in accordance with CFR 29 Part 1910.120(e)(3)(i)(C);
- If the employee develops signs or symptoms of illness related to workplace exposures;
- If the physician determines examinations need to be conducted more often than once a year; and
- When an employee develops a lost time injury or illness during the Contract period.

B. Examinations will be performed by, or under the supervision of a licensed physician, preferably one knowledgeable in occupational medicine, and will be provided without cost to the employee, without loss of pay and at a reasonable time and place. Medical surveillance protocols and examination and test results shall be reviewed by the Occupational Physician.

4.0 ON-SITE HAZARDS

4.1 *Chemical Hazards*

The primary potential chemical hazards on-site are expected to be exposure to the VOCs and SVOCs detailed in Table 1. Material safety data sheets for the documented VOCs are presented in Appendix A.

The soil and groundwater contaminants are volatile; therefore, any activity at the site which causes physical disturbance of the soil can potentially allow the release of contaminants into the air. For volatiles, this can include release of organic vapors into the air. Such an occurrence may be recognized by noticeable chemical odors. Field personnel should be aware of the odor threshold for these chemicals and their relation to the action levels and Permissible Exposure Limits.

Symptoms of overexposure to primary compounds of concern are detailed in Table 1. To prevent exposure to these chemicals, dermal contact will be minimized by using disposable surgical gloves with work gloves (as appropriate) when handling soil, groundwater equipment or samples. Real time, breathing zone levels of total VOCs will be monitored using a portable photoionization detector (PID). If ambient levels exceed action levels, all site activities will be performed using level C personal protection until ambient concentrations dissipate. Where levels exceed 50 ppm, work will cease and the project manager will be notified immediately. Intrusive work may also be halted where required by action levels detailed in the Community Air Monitoring Plan (CAMP), Appendix I of the SMP.

In addition, depending on seasonal conditions, disturbance of the site soils may cause the particulate contaminants to become airborne as dust. Therefore, particulates will be monitored as discussed in Section 6.1 and dust-suppression methods used where appropriate as discussed in Section 6.2, or in the CAMP.

Finally, aeration of the groundwater may cause volatilization of chemicals into the air, particularly VOCs. Table 2 below summarizes first aid instructions for exposure pathways for the compounds of concern.

Table 2

Exposure Pathways and First Aid Response for Contaminants of Concern

Substance	Exposure Pathways	First-Aid Instructions
VOCs and SVOCs listed in Table 1	Eye	irrigate immediately
	Dermal	soap wash promptly (soap flush immediately for 1,1-DCE and benzo(a)pyrene)
	Inhalation	respiratory support
	Ingestion	medical attention immediately

4.2 Physical Hazards

Hazards typically encountered at construction sites with drilling, excavation, grading or other earthwork-related activities will be a concern at this site. These hazards include slippery ground surfaces, holes, and operation of heavy machinery and equipment. Field team members will wear the basic safety apparel such as steel-toed shoes, hard hat and safety glasses during all appropriate activities.

Under no circumstances will Stantec personnel approach the borehole during active drilling operation. All field personnel working around the rig will be shown the location and operation of kill switches, which are to be tested daily. Stantec personnel will not enter excavations.

Multi-purpose fire extinguishers, functional and within annual inspection period, will be staged and readily accessible for use.

The use of electrical equipment in any established exclusion zones will be limited to areas verified as containing non-explosive atmospheres (<10% LEL) prior to operation, unless the equipment has been previously demonstrated or designed to be FM or UL rated as intrinsically safe. Care will be taken to avoid an ignition source while working in the presence of vapors.

Drilling and excavating contractors shall make all necessary contacts with utilities and/or underground utility locator hotlines prior to drilling or excavating, and shall meet OSHA requirements for distances between the drilling rig and overhead utilities. No drilling work will be carried out where the drill rig chassis has not been stabilized and the rig is not to be moved between locations with its boom in a vertical position.

4.2.1 Noise

The use of heavy machinery/equipment and operation may result in noise exposures, which require hearing protection. Exposure to noise can result in temporary hearing losses, interference with speech communication, interference with complicated tasks or permanent hearing loss due to repeated exposure to noise.

During the investigative activities, all Stantec field team members will use hearing protection when sound levels are in excess of 90 dB TWA.

4.2.2 Heat and Cold Stress Exposure

Heat is a potential threat to the health and safety of site personnel. The Site Safety Officer under the direction of the Project Manager will determine the schedule of work and rest. These schedules will be employed as necessary so that personnel do not suffer adverse effects from heat. Table 3 summarizes exposure symptoms and first aid instructions for heat stress. Non-caffeinated, thirst replenishment liquids will be available on-site.

Cold stress is also a potential threat to the health and safety of site personnel. Symptoms of cold stress include, shivering, blanching of the extremities, numbness or burning sensations, blue, purple or gray discoloration of hands and feet, frostbite, hypothermia, and loss of consciousness. Cold stress can be prevented by acclimatizing one's self to the cold, increasing fluid intake, avoiding caffeine and alcohol, maintaining proper salt and electrolyte intake, eating a well-balanced diet, wearing proper clothing, building heated enclosures to work in, and taking regular breaks to warm up. If any of the above symptoms are encountered the person should be removed from the cold area. Depending on the severity of the cold stress, 911 should be contacted and first aid administered. No fluids should be given to an unconscious person.

**Table 3
Exposure Symptoms and First Aid for Heat Exposure**

Hazard	Exposure Symptoms	First-Aid Instructions
Heat Stress	Fatigue, sweating, irritability	rest; take fluids
	Dizziness, disorientation, perspiration ceases, loss of consciousness	remove from hot area, activate 911, administer first aid, no fluids to be administered to unconscious victim.

4.2.3 Roadway Hazards

Field activities are planned to take place near active roadways. Where such work zones are established, personnel shall assure that protective measures including signage, cones, and shielding through use of vehicles parked at workmen perimeter, are in place. All contractors shall be responsible for meeting signage requirements of DOT. Fluorescent safety vests shall be worn by all personnel during activities in or adjacent to roadways and driveways.

4.2.4 Electrical Work

Site work involving electrical installation or energized equipment must be performed by a qualified electrician. All electrical work will be performed in accordance with the OSHA electrical safety requirements found in 29 CFR 1926.400 through 1926.449. Workers are not permitted to work near electrical power circuits unless the worker is protected against electric shock by de-energizing and grounding the circuit or by guarding or barricading the circuit and providing proper personal protective equipment. All electrical installations must comply with NEC regulations.

All electrical wiring and equipment used must be listed by a nationally recognized testing laboratory.

All electrical circuits and equipment must be grounded in accordance with the NEC regulations. The path to ground from circuits, equipment, and enclosures will be permanent and continuous. Ground fault circuit interrupters (GFCIs) are required on all 120-volt, single phase, 15- and 20-amp outlets in work areas that are not part of the permanent wiring of the building or structure. A GFCI is required when using an extension cord. GFCIs must be tested regularly with a GFCI tester.

Heavy-duty extension cords will be used; flat-type extension cords are not allowed. All extension cords must be the three-wire type, and designed for hard/extra hard usage. Electrical wire or cords passing through work areas must be protected from water and damage. Worn, frayed, or damaged cords and cables will not be used. Walkways and work spaces will be kept clear of cords and cables to prevent a tripping hazard. Extension cords and cables may not be secured with staples, hung from nails, or otherwise temporarily secured. Cords or cables passing through holes in covers, outlet boxes, etc., will be protected by bushings or fittings.

All lamps used in temporary lighting will be protected from accidental contact and breakage. Metal shell and paper-lined lamp holders are not permitted. Fixtures, lamp holders, lamps, receptacles, etc. are not permitted to have live parts. Workers must not have wet hands while plugging/unplugging energized equipment. Plugs and receptacles will be kept out of water (unless they are approved for submersion).

4.2.5 *Lock-Out/Tag-Out*

Before a worker sets up, services, or repairs a system where unexpected energizing (or release of stored energy) could occur and cause injury or electrocution, the circuits energizing the parts must be locked-out and tagged. Only authorized personnel will perform lock-out/tag-out procedures. All workers affected by the lock-out/tag-out will be notified prior to, and upon completion of, the lock-out/tag-out procedure.

Lock-out/tag-out devices must be capable of withstanding the environment to which they are exposed. Locks will be attached in such a way as to prevent other personnel from operating the equipment, circuit, or control, or from removing the lock unless they resort to excessive force. Tags will identify the worker who attached the device, and contain information, which warns against the hazardous condition that will result from the system's unauthorized start-up. Tags must be legible and understood by all affected workers and incidental personnel. The procedures for attaching and removing lock-out/tag-out devices include the steps outlined in the following table.

If maintenance work is required, the electrical supply to the equipment must be disconnected. Turning off the MAIN breaker using the disconnect switch will disconnect all power to the system. Once the disconnect switch has been turned off, the switch will be locked-out using the steps outlined below.

STEP	LOCK-OUT/TAG-OUT PROCEDURES
1	Disconnect the circuits and/or equipment to be worked on from all electrical energy sources.
2	Ensure that the system is completely isolated so that it cannot be operated at that shut-off point or at any other location.
3	Release stored electrical energy.
4	Block or relieve stored non-electrical energy.
5	Place a lock on each shut-off or disconnect point necessary to isolate all potential energy sources. Place the lock in such a manner that it will maintain the shut-off/disconnect in the off position.
6	Place a tag on each shut-off or disconnect point. The tag must contain a statement prohibiting the unauthorized re-start or re-connect of the energy source and the removal of the tag, and the identity of the individual performing the tag and lock-out.
7	Workers who will be working on the system must place their own lock and tag on <u>each</u> lock-out point.
8	A qualified person must verify the system cannot be re-started or re-connected, and de-energizing of the system has been accomplished.

Once the service or repairs have been made on the system:	
1	A qualified person will conduct an inspection of the work area, to verify that all tools, jumpers, shorts, grounds, etc., have been removed so that the system can then be safely re-energized.
2	All workers stand clear of the system.
3	Each lock and tag will be removed by the worker who attached it. If the worker has left the site, then the lock and tag may be removed by a qualified person under the following circumstances:
	a. The qualified person ensures the worker who placed the lock and tag has left the site; and
	b. The qualified person ensures the worker is aware the lock and tag has been removed before the worker resumes work on-site.

4.2.6 Ladders

One-third of worker deaths in construction result from falls. Many falls occur because ladders are not placed or used safely. Ladder use will comply with OSHA 1926.1053 through 1926.1060, including the following safety requirements.

STEP	PROPER LADDER USE PROCEDURE
1	Choose the right ladder for the task--the proper type and size, with a sufficient rating for the task.
2	Check the condition of the ladder before climbing. <ul style="list-style-type: none"> • Do not use a ladder with broken, loose, or cracked rails or rungs. • Do not use a ladder with oil, grease, or dirt on its rungs. • The ladder should have safety feet.
3	Place the ladder on firm footing, with a four-to-one pitch.
4	Support the ladder by: <ul style="list-style-type: none"> • Tying it off; • Using ladder outrigger stabilizers; or • Have another worker hold the ladder at the bottom. If another worker holds the ladder, they must: <ul style="list-style-type: none"> • Wear a hard hat; • Hold the ladder with both hands; • Brace the ladder with their feet; and • Not look up.
5	Keep the areas around the top and bottom of the ladder clear.
6	Extend the top of the ladder at least 36 inches (3 feet) above the landing.
7	Climb the ladder carefully - facing it - and use both hands. <ul style="list-style-type: none"> • Use a tool belt and hand-line to carry material to the top or bottom of the ladder. • Wear shoes in good repair with clean soles.
8	Inspect the ladder every day, prior to use, for the following problems: <ul style="list-style-type: none"> • Rail or rung damage • Broken feet • Rope or pulley damage • Rung lock defects or damage • Excessive dirt, oil, or grease If the ladder fails inspection, it must be removed from service and tagged with a "Do Not Use" sign.

Ladders with non-conductive side rails must be used when working near electrical conductors, equipment, or other sources. Ladders will not be used horizontally for platforms, runways, or scaffolds.

4.2.7 Hand and Power Tools

All hand and power tools will be maintained in a safe condition and in good repair. Hand and power tools will be used in accordance with 29 CFR 1926, Subpart I (1926.300 through 1926.307). Neither Stantec nor its subcontractors will issue unsafe tools, and workers are not permitted to bring unsafe tools on-site. All tools will

be used, inspected, and maintained in accordance with the manufacturer's instructions. Throwing tools or dropping tools to lower levels is prohibited. Hand and power tools will be inspected, tested, and determined to be in safe operating condition prior to each use. Periodic safety inspections of all tools will be conducted to assure that the tools are in good condition, all guards are in place, and the tools are being properly maintained. Any tool that fails an inspection will be immediately removed from service and tagged with a "Do Not Use" sign.

Workers using hand and power tools, who are exposed to falling, flying, abrasive, or splashing hazards will be required to wear personal protective equipment (PPE). Eye protection must always be worn when working on-site. Additional eye and face protection, such as safety goggles or face shields, may also be required when working with specific hand and power tools. Workers, when on-site, will wear hard hats. Additional hearing protection may be required when working with certain power tools. Workers using tools, which may subject their hands to an injury, such as cuts, abrasions, punctures, or burns, will wear protective gloves. Loose or frayed clothing, dangling jewelry, or loose long hair will not be worn when working with power tools.

Electric power-operated tools will be double insulated or grounded, and equipped with an on/off switch. Guards must be provided to protect the operator and other nearby workers from hazards such as in-going nip points, rotating parts, flying chips, and sparks. All reciprocating, rotating and moving parts of tools will be guarded if contact is possible. Removing machine guards is prohibited.

Abrasive wheels will only be used on equipment provided with safety guards. Safety guards must be strong enough to withstand the effect of a bursting wheel. Abrasive wheels will not be operated in excess of their rated speed. Work or tool rests will not be adjusted while the wheel is in motion. All abrasive wheels will be closely inspected and ring tested before each use, and any cracked or damaged wheels will be removed immediately and destroyed.

Circular saws must be equipped with guards that completely enclose the cutting edges and have anti-kickback devices. All planer and joiner blades must be fully guarded. The use of cracked, bent, or otherwise defective parts is prohibited. Chain saws must have an automatic chain brake or kickback device. The worker operating the chain saw will hold it with both hands during cutting operations. A chain saw must never be used to cut above the operator's shoulder height. Chain saws will not be re-fueled while running or hot. Power saws will not be left unattended.

Only qualified workers will operate pneumatic tools, powder-actuated tools, and abrasive blasting tools.

4.2.8 *Manual Lifting*

Back injuries are among the leading occupational injuries reported by industrial workers. Back injuries such as pulls and disc impairments can be reduced by using proper manual lifting techniques. Leg muscles are stronger than back muscles, so workers should lift with their legs and not with their back. Proper manual lifting techniques include the following steps:

STEP	PROPER MANUAL LIFTING PROCEDURE
1	Plan the lift before lifting the load. Take into consideration the weight, size, and shape of the load.
2	Preview the intended path of travel and the destination to ensure there are no tripping hazards along the path.
3	Wear heavy-duty work gloves to protect hands and fingers from rough edges, sharp corners, and metal straps. Also, keep hands away from potential pinch points between the load and other objects.
4	Get the load close to your ankles, and spread your feet apart. Keep your back straight and do not bend your back too far; instead bend at your knees.
5	Feel the weight; test it.
6	Lift the load smoothly, and let your legs do the lifting. If you must pivot, do not swing just the load; instead, move your feet and body with the load.

If the load is too heavy, then do not lift it alone. Lifting is always easier when performed with another person. Assistance should always be used when it is available.

4.2.9 *Weather-Related Hazards*

Weather-related hazards include the potential for heat or cold stress, electrical storms, treacherous weather-related working conditions, or limited visibility. These hazards correlate with the season in which site activities occur. Outside work will be suspended during electrical storms. In the event of other adverse weather conditions, the Site Safety Officer will determine if work can continue without endangering the health and safety of site personnel.

5.0 **SITE WORK ZONES**

The following work zones will be physically delineated by Stantec during the site activities.

5.1 **Control Zones**

Control boundaries will be established within the areas of site activities. Examples of boundary zones include the exclusion and decontamination zone. All boundaries will be dynamic, and will be determined by the planned activities for the day. The Field Team Leader will record the names of any visitors to the site.

5.2 **Exclusion Zone**

The controlled portion of the site will be delineated to identify the exclusion zone, wherein a higher level of personal protective equipment may be required for entry during intrusive activities. The limits of the exclusion zone will be designated at each work location appropriately. A decontamination zone will be located immediately outside the entrance to the exclusion zone. All personnel leaving the exclusion zone will be required to adhere to proper decontamination procedures.

A "super exclusion" zone will be established around boreholes which will not be entered by Stantec personnel at any time during any active drilling, slambar, cathead, silica sand dumping, or other related activities. The drilling contractor will be directed to stop such activity when Stantec site team members have a need to enter this zone.

5.3 Decontamination Zone

The decontamination zone will be located immediately outside the entrance to the exclusion zone on its apparent upwind side, if feasible, and will be delineated with caution tape and traffic cones as needed. This zone will contain the necessary decontamination materials for personnel decontamination. Decontamination procedures are outlined in Section 8.0 of this plan.

6.0 SITE MONITORING/ACTION LEVELS

6.1 Site Monitoring

Field activities associated with drilling, excavation, earthwork, grading and sampling may create potentially hazardous conditions due to the migration of contaminants into the breathing zone. These substances may be in the form of mists, vapors, dusts, or fumes that can enter the body through ingestion, inhalation, absorption, and direct dermal contact. Monitoring for VOCs and particulates will be performed to ensure appropriate personal protective measures are employed during site activities.

A separate Community Air Monitoring Plan (CAMP) has also been developed (Appendix I of the SMP) to protect the surrounding neighborhood.

Although the concentrations of anticipated contaminants in soil/groundwater should not present an explosive hazard, explosive environments or conditions may be encountered unexpectedly during the course of this project. Monitoring for explosivity in the atmosphere will be routinely conducted during site activities as a precautionary measure to ensure site personnel are not subjected to any dangerous conditions.

The following describes the conditions that will be monitored for during the investigation activities. All background and site readings will be logged, and all instrument calibrations, etc., will be logged.

Organic Vapor Concentrations - Organic vapors will be monitored continuously in the breathing zone in the work area with a portable photoionization detector (PID), such as a miniRAE Model 3000 with a 10.2 eV lamp. The instrument will be calibrated daily or as per the manufacturer's recommendations. PID readings will be used as the criteria for upgrading or downgrading protective equipment and for implementing additional precautions or procedures.

Split spoons or other soil sampling devices will be monitored using the PID at the time they are opened, with appropriate PPE to be used where soils exhibit measurable volatile organic compound levels.

Explosivity - Explosivity will be monitored continuously during active drilling, excavation or other earthwork-related operations. Measurements obtained from this monitoring instrument will also be used as criteria for implementation of work stoppage or site evacuation. A combination combustible gas/oxygen (CGO₂) instrument, calibrated per manufacturer's recommendations, will be used.

Particulates - Should subsurface conditions be observed to be dry, Stantec will perform particulate monitoring with an aerosol monitor such as the TSI DustTrak II, within the work

area to monitor personal exposures to particulates and to compare work area readings with downwind and upwind readings. The first readings of the day will be obtained prior to the commencement of work to obtain a daily background reading, and the instrument will be zeroed daily and calibrated to manufacturer's specifications. Readings will be recorded approximately every 30 minutes thereafter. If the work area particulate levels exceed the background levels by more than 0.15 mg/m^3 , the Contractor will be instructed to implement dust suppression measures.

6.2 Action Levels

During the course of any activity, as long as PID readings in the breathing zone are less than 5 ppm above background, Level D protection will be considered adequate. Level C protection will be required when VOC concentrations in ambient air in the work zone exceed 5 ppm total VOCs above background but remain below 50 ppm total VOCs.

If concentrations in the work zone exceed 50 ppm for a period of 5 minutes or longer, work will immediately be terminated by the Site Safety Officer. Options to allow continued drilling, excavation or earthwork would then be discussed amongst all parties. Supplied-air respiratory protection is generally required for earth-disturbance-related work to resume under these conditions. If Level B protection is not used, work may resume in Level C once monitoring concentrations have decreased below 50 ppm and conditions outlined in the CAMP are met.

If the monitoring of fugitive particulate levels within the work area exceeds 0.15 mg/m^3 above background, then the Contractor will be directed to implement fugitive dust control measures which may include use of engineering controls such as water spray at the borehole or in an excavation/grading area.

7.0 PERSONAL PROTECTIVE EQUIPMENT

Based on an evaluation of the hazards at the site, personal protective equipment (PPE) will be required for all personnel and visitors entering the exclusion zone(s). It is anticipated that all Stantec oversight work will be performed in Level D. All contractors will be responsible for selection and implementation of PPE for their personnel.

7.1 Protective Clothing/Respiratory Protection:

Protective equipment for each level of protection is as follows:

If PID readings are above 50 ppm, requiring an upgrade to Level B, site work will be halted pending review of conditions and options by Stantec and other involved parties.

When PID readings range between 5 and 50 ppm, upgrade to Level C:

Level C

- Full face, air purifying respirator with organic/HEPA cartridge;
- Disposable chemical resistant one-piece suit (Tyvek or Saranex, as appropriate);
- Inner and outer chemical resistant gloves;
- Hard hat;
- Steel-toed boots; and
- Disposable booties.

When PID readings range between background and 5 ppm use Level D:

Level D

- Safety glasses;
- Steel-toed boots;
- Protective cotton, latex or leather gloves depending on site duties;
- Hard hat; and
- Tyvek coverall (optional).

8.0 DECONTAMINATION

8.1 *Personnel Decontamination*

For complete decontamination, all personnel will observe the following procedures upon leaving the exclusion zone:

1. Remove outer boots and outer gloves and place in disposal drum.
2. If using a respirator, remove respirator, dispose of cartridges if necessary, and set aside for later cleaning.
3. Remove disposable chemical resistant suits and dispose of in drum.
4. Remove and dispose of inner gloves.

Decontamination solutions shall be supplied at the decontamination zone. The wash solution will consist of water and detergent such as Alconox or trisodium phosphate (TSP), and the rinse solution will consist of clean water.

Contaminated wash solutions shall be collected in drums for disposal. All other disposable health and safety equipment will be decontaminated and disposed of as non-hazardous waste.

8.2 *Equipment Decontamination*

If equipment is used during field activities, it will be properly washed or steam-cleaned prior to exiting the decontamination zone. Pre- or post-use rinsing using solvents will be done wearing appropriate PPE.

Monitoring instruments will be either wrapped in poly sheeting or carried by personnel not involved in handling contaminated materials, to reduce the need for decontamination. All instruments will be wet-wiped prior to removal from the work zone.

9.0 EMERGENCY PROCEDURES

The Site Safety Officer will coordinate emergency procedures and will be responsible for initiating emergency response activities. Emergency communications at the site will be conducted verbally and by means of an air or vehicle horn. All personnel will be informed of the location of the cellular telephone and horn. Three blasts on the air or vehicle horn will be used to signal distress.

9.1 *List of Emergency Contacts*

Ambulance: 911

Hospital: Jones Memorial Hospital, Wellsville, NY: (585) 593-1100

Fire Department: 911

Police: 911
Poison Control Center: (585) 222-1222
RG&E Utility Emergency: 911 or (800) 743-1702

9.2 Directions to Hospital

A map presenting directions to the hospital is included in the back of the document (Figure 2). The route shall be reviewed at the initial site safety meeting on site.

9.3 Accident Investigation and Reporting

A. All accidents requiring first aid, which occur incidental to activities onsite, will be investigated. The investigation format will be as follows:

- interviews with witnesses,
- pictures, if applicable, and
- necessary actions to alleviate the problem.

B. In the event that an accident or some other incident such as an explosion or exposure to toxic chemicals occurs during the course of the project, the Project Health and Safety Officer will be telephoned as soon as possible and receive a written notification within 24 hours. The report will include the following items:

- Name of injured;
- Name and title of person(s) reporting;
- Date and time of accident/incident;
- Location of accident/incident, building number, facility name;
- Brief summary of accident/incident giving pertinent details including type of operation ongoing at the time of the accident/incident;
- Cause of accident/incident;
- Casualties (fatalities, disabling injuries), hospitalizations;
- Details of any existing chemical hazard or contamination;
- Estimated property damage, if applicable;
- Nature of damage; effect on contract schedule;
- Action taken to insure safety and security; and
- Other damage or injuries sustained (public or private).

Where reportable injuries, hospitalizations or fatalities occur amongst Stantec personnel, the necessary document required by OSHA will be submitted within timeframes allowed by law.

The accident report form is illustrated in Table 4.

**TABLE 4
ACCIDENT REPORT**

Project Allegany Bitumens Belmont Asphalt Plant Site Date of Occurrence _____

Location 5392 State Route 19, Amity, NY, 14813

Type of Occurrence: (check all that Apply)

- | | |
|--|---|
| <input type="checkbox"/> Disabling Injury | <input type="checkbox"/> Other Injury |
| <input type="checkbox"/> Property Damage | <input type="checkbox"/> Equip. Failure |
| <input type="checkbox"/> Chemical Exposure | <input type="checkbox"/> Fire |
| <input type="checkbox"/> Explosion | <input type="checkbox"/> Vehicle Accident |
| <input type="checkbox"/> Other (explain) _____ | |
-

Witnesses to Accident/Injury:

_____	_____
_____	_____
_____	_____

Injuries:

Name of Injured _____

What was being done at the time of the accident/injury?

What corrective actions will be taken to prevent recurrence? _____

SIGNATURES

Health and Safety Officer _____ Date _____

Project Manager _____ Date _____

Reviewer _____ Date _____

Comments by reviewer _____

FIGURES

FIGURE 2

Directions and Map from the Site to Jones Memorial Hospital, Wellsville, NY

Directions to 191 N Main St, Wellsville, NY 14895-1150



Total Time: 19 mins, Total Distance: 11.03 mi

	Distance
A 1. Start at 5392 RT-19, AMITY going toward TUCKERS CORNER RD	go 0.74 mi
2. Continue on RT-19	go 10.09 mi
3. Turn L on W MADISON ST	go 75 ft
4. Turn L on PARK AVE	go 0.12 mi
5. Continue on W PEARL ST	go 197 ft
6. Turn L on N MAIN ST	go 125 ft
B 7. Arrive at 191 N MAIN ST, WELLSVILLE, on the L	

Time: 19 mins, Distance: 11.03 mi



When using any driving directions or map, it's a good idea to do a reality check and make sure the road still exists, watch out for construction, and follow all traffic safety precautions. This is only to be used as an aid in planning.

Figure 2 - Directions and Map from the site to Jones Memorial Hospital, Wellsville, NY

APPENDIX A
MATERIAL SAFETY DATA SHEETS



September 2005

NIOSH Publication Number 2005-149

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Enter search terms separated by spaces.

<h1>1,1-Dichloroethane</h1>					
Synonyms & Trade Names Asymmetrical dichloroethane; Ethylidene chloride; 1,1-Ethylidene dichloride					
CAS No. 75-34-3		RTECS No. <u>KI0175000</u>		DOT ID & Guide 2362 <u>130</u>	
Formula CHCl ₂ CH ₃		Conversion 1 ppm = 4.05 mg/m ³		IDLH 3000 ppm See: <u>75343</u>	
Exposure Limits NIOSH REL : TWA 100 ppm (400 mg/m ³) <u>See Appendix C</u> (Chloroethanes) OSHA PEL : TWA 100 ppm (400 mg/m ³)			Measurement Methods NIOSH 1003 ; OSHA 7 See: <u>NMAM</u> or <u>OSHA Methods</u>		
Physical Description Colorless, oily liquid with a chloroform-like odor.					
MW: 99.0	BP: 135°F	FRZ: -143°F	Sol: 0.6%	VP: 182 mmHg	IP: 11.06 eV
Sp.Gr: 1.18	FLP: 2°F	UEL: 11.4%	LEL: 5.4%		
Class IB Flammable Liquid: Fl.P. below 73°F and BP at or above 100°F.					
Incompatibilities & Reactivities Strong oxidizers, strong caustics					
Exposure Routes inhalation, ingestion, skin and/or eye contact					
Symptoms irritation skin; central nervous system depression; liver, kidney, lung damage					
Target Organs Skin, liver, kidneys, lungs, central nervous system					
Personal Protection/Sanitation (See protection codes) Skin: Prevent skin contact Eyes: Prevent eye contact			First Aid (See procedures) Eye: Irrigate immediately Skin: Soap flush promptly		

Wash skin: When contaminated
Remove: When wet (flammable)
Change: No recommendation

Breathing: Respiratory support
Swallow: Medical attention immediately

Respirator Recommendations

NIOSH/OSHA

Up to 1000 ppm:
(APF = 10) Any supplied-air respirator

Up to 2500 ppm:
(APF = 25) Any supplied-air respirator operated in a continuous-flow mode

Up to 3000 ppm:
(APF = 50) Any self-contained breathing apparatus with a full facepiece
(APF = 50) Any supplied-air respirator with a full facepiece

Emergency or planned entry into unknown concentrations or IDLH conditions:

(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:
(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister
Any appropriate escape-type, self-contained breathing apparatus

Important additional information about respirator selection

See also: [INTRODUCTION](#) See ICSC CARD: [0249](#)

Page last reviewed: February 3, 2009

Page last updated: February 3, 2009

Content source: [National Institute for Occupational Safety and Health \(NIOSH\) Education and Information Division](#)

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<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <h3 style="margin: 0;">Vinylidene chloride</h3> </div>					
<p>Synonyms & Trade Names 1,1-DCE; 1,1-Dichloroethene; 1,1-Dichloroethylene; VDC; Vinylidene chloride monomer; Vinylidene dichloride</p>					
CAS No. 75-35-4	RTECS No. KV9275000		DOT ID & Guide 1303 130P ☑ (inhibited)		
Formula $CH_2=CCl_2$	Conversion		IDLH Ca [N.D.] See: IDLH INDEX		
<p>Exposure Limits NIOSH REL : Ca See Appendix A OSHA PEL †: none</p>			<p>Measurement Methods NIOSH 1015 📄 ; OSHA 19 ☑ See: NMAM or OSHA Methods ☑</p>		
<p>Physical Description Colorless liquid or gas (above 89°F) with a mild, sweet, chloroform-like odor.</p>					
MW: 96.9	BP: 89°F	FRZ: -189°F	Sol: 0.04%	VP: 500 mmHg	IP: 10.00 eV
Sp.Gr: 1.21	FLP: -2°F	UEL: 15.5%	LEL: 6.5%		
<p>Class IA Flammable Liquid: Fl.P. below 73°F and BP below 100°F.</p>					
<p>Incompatibilities & Reactivities Aluminum, sunlight, air, copper, heat [Note: Polymerization may occur if exposed to oxidizers, chlorosulfonic acid, nitric acid, or oleum. Inhibitors such as the monomethyl ether of hydroquinone are added to prevent polymerization.]</p>					
<p>Exposure Routes inhalation, skin absorption, ingestion, skin and/or eye contact</p>					
<p>Symptoms irritation eyes, skin, throat; dizziness, headache, nausea, dyspnea (breathing difficulty); liver, kidney disturbance; pneumonitis; [potential occupational carcinogen]</p>					

Target Organs Eyes, skin, respiratory system, central nervous system, liver, kidneys

Cancer Site [in animals: liver & kidney tumors]

Personal Protection/Sanitation (See <u>protection codes</u>)	First Aid (See <u>procedures</u>)
Skin: Prevent skin contact	Eye: Irrigate immediately
Eyes: Prevent eye contact	Skin: Soap flush immediately
Wash skin: When contaminated	Breathing: Respiratory support
Remove: When wet (flammable)	Swallow: Medical attention immediately
Change: No recommendation	
Provide: Eyewash, Quick drench	

Respirator Recommendations

NIOSH

At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration:
 (APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
 (APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:
 (APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister
 Any appropriate escape-type, self-contained breathing apparatus

Important additional information about respirator selection

See also: INTRODUCTION See ICSC CARD: 0083

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Exposure Routes

inhalation, ingestion, skin and/or eye contact

Symptoms

Irritation eyes, respiratory system; central nervous system depression

Target Organs

Eyes, respiratory system, central nervous system

See also: [INTRODUCTION](#) See ICSC CARD: [0436](#)

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Tetrachloroethylene

Synonyms & Trade Names

Perchloroethylene, Perchloroethylene, Perk, Tetrachlorethylene

CAS No.	RTECS No.	DOT ID & Guide
127-18-4	KX3850000	1897 160

Formula	Conversion	IDLH
$\text{Cl}_2\text{C}=\text{CCl}_2$	1 ppm = 6.78 mg/m ³	Ca [150 ppm] See: 127184

Exposure Limits**NIOSH REL**

: Ca Minimize workplace exposure concentrations. [See Appendix A](#)

OSHA PEL

‡: TWA 100 ppm
C 200 ppm (for 5 minutes in any 3-hour period), with a maximum peak of 300 ppm

Physical Description

Colorless liquid with a mild, chloroform-like odor.

MW:	BP:	FRZ:	Sol:	VP:	IP:
165.8	250°F	-2°F	0.02%	14 mmHg	9.32 eV
Sp.Gr:	Fl.P:	UEL:	LEL:		
1.62	NA	NA	NA		

Noncombustible Liquid, but decomposes in a fire to hydrogen chloride and phosgene.

Incompatibilities & Reactivities

Strong oxidizers; chemically-active metals such as lithium, beryllium & barium; caustic soda; sodium hydroxide; potash

Exposure Routes

inhalation, skin absorption, ingestion, skin and/or eye contact

Measurement Methods

[NIOSH 1003](#) ;
[OSHA 1001](#) ;
See: [NMAM](#) or [OSHA Methods](#)

Symptoms

irritation eyes, skin, nose, throat, respiratory system; nausea; flush face, neck; dizziness, incoordination; headache, drowsiness; skin erythema (skin redness); liver damage; [potential occupational carcinogen]

Target Organs

Eyes, skin, respiratory system, liver, kidneys, central nervous system

Cancer Site

[in animals: liver tumors]

Personal Protection/Sanitation

(See protection codes)

Skin: Prevent skin contact

Eyes: Prevent eye contact

Wash skin: When contaminated

Remove: When wet or contaminated

Change: No recommendation

Provide: Eyewash, Quick drench

Respirator Recommendations

First Aid

(See procedures)

Eye: Irrigate immediately

Skin: Soap wash promptly

Breathing: Respiratory support

Swallow: Medical attention immediately

NIOSH

At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration:

(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode

(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:

(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister

Any appropriate escape-type, self-contained breathing apparatus

Important additional information about respirator selection

See also: [INTRODUCTION](#) See ICSC CARD: [0076](#) See MEDICAL TESTS: [0179](#)

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September 2005

NIOSH Publication Number 2005-149

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<h1>Methyl chloroform</h1>					
Synonyms & Trade Names Chlorothene; 1,1,1-Trichloroethane; 1,1,1-Trichloroethane (stabilized)					
CAS No. 71-55-6		RTECS No. KJ2975000		DOT ID & Guide 2831 160	
Formula CH ₃ CCl ₃		Conversion 1 ppm = 5.46 mg/m ³		IDLH 700 ppm See: 71556	
Exposure Limits NIOSH REL : C 350 ppm (1900 mg/m ³) [15-minute] See Appendix C (Chloroethanes) OSHA PEL †: TWA 350 ppm (1900 mg/m ³)				Measurement Methods NIOSH 1003 See: NMAM or OSHA Methods	
Physical Description Colorless liquid with a mild, chloroform-like odor.					
MW: 133.4	BP: 165°F	FRZ: -23°F	Sol: 0.4%	VP: 100 mmHg	IP: 11.00 eV
Sp.Gr: 1.34	FLP: ?	UEL: 12.5%	LEL: 7.5%		
Combustible Liquid, but burns with difficulty.					
Incompatibilities & Reactivities Strong caustics; strong oxidizers; chemically-active metals such as zinc, aluminum, magnesium powders, sodium & potassium; water [Note: Reacts slowly with water to form hydrochloric acid.]					
Exposure Routes inhalation, ingestion, skin and/or eye contact					
Symptoms irritation eyes, skin; headache, lassitude (weakness, exhaustion), central nervous system depression, poor equilibrium; dermatitis; cardiac arrhythmias; liver damage					
Target Organs Eyes, skin, central nervous system, cardiovascular system, liver					
Personal Protection/Sanitation (See protection codes) Skin: Prevent skin contact				First Aid (See procedures) Eye: Irrigate immediately	

Eyes: Prevent eye contact
Wash skin: When contaminated
Remove: When wet or contaminated
Change: No recommendation

Skin: Soap wash promptly
Breathing: Respiratory support
Swallow: Medical attention immediately

Respirator Recommendations
NIOSH/OSHA

Up to 700 ppm:

(APF = 10) Any supplied-air respirator*

(APF = 50) Any self-contained breathing apparatus with a full facepiece

Emergency or planned entry into unknown concentrations or IDLH conditions:

(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode

(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:

(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister
Any appropriate escape-type, self-contained breathing apparatus

Important additional information about respirator selection

See also: [INTRODUCTION](#) See ICSC CARD: [0079](#) See MEDICAL TESTS: [0141](#)

Page last reviewed: February 3, 2009

Page last updated: February 3, 2009

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Irritation eyes, skin; headache, visual disturbance, lassitude (weakness, exhaustion), dizziness, tremor, drowsiness, nausea, vomiting; dermatitis; cardiac arrhythmias, paresthesia; liver injury; [potential occupational carcinogen]

Target Organs

Eyes, skin, respiratory system, heart, liver, kidneys, central nervous system

Cancer Site

[in animals: liver & kidney cancer]

See also: [INTRODUCTION](#) See ICSC CARD: [0081](#) See MEDICAL TESTS: [0236](#)

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APPENDIX B
ON-SITE SAFETY MEETING FORMS

ON-SITE SAFETY MEETING

Project: Allegany Bitumens Belmont Asphalt Plant Site
Date: _____ Time: _____ Job No.: 190500593
Address: 5392 State Route 19, Amity, NY, 14813

Scope of Work: _____

Weather Temp: _____ Wind direction/speed: _____
Sky Conditions: _____ Humidity: _____
Weather Conditions affecting work: _____

Safety Topics Discussed

Protective Clothing/Equipment: Level D (steel toe boots, hard hat with overhead hazards, etc.)

Chemical Hazards: _____

Physical Hazardous: Slip/trip/fall; weather/heat/cold; overhead and noise hazards during drilling, earth moving, and excavating.

Personnel/Equipment Decontamination: Alconox solution and water rinse or high pressure wash

Personnel/Job Functions: _____

Emergency Procedures: Emergency will be signaled verbally or with air or vehicle horn. Appropriate authorities will be contacted and after event, accident reporting procedures will be followed, as appropriate.

Special Equipment: _____

Other: _____

Emergency Phone Numbers/Addresses

Ambulance: 911
Hospital: Jones Memorial Hospital (585) 593-1100
Police: 911
Fire Department: 911

On-Site Safety Meeting
ATTENDEES

Name Printed

Signature

Job Function

Meeting Conducted By: _____

Name Printed

Signature

Site Safety Officer
Team Leader

Appendix E

Monitoring Well Boring and Construction Logs

Monitoring Well: B/MW-28D

Project: Remedial Investigation
Client: Blades Holding Company Inc.
Location: 5392 Rt 19, Amity, NY
Number: 190500593.300
Field investigator: S. Reynolds-Smith
Contractor: Nothnagle Drilling

Drilling method: Macrocore / Hollow Stem Auger
Date started/completed: 01-Feb-2011
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a

SUBSURFACE PROFILE			SAMPLE DETAILS				WELL DETAILS		
Depth	Graphic Log	Lithologic Description	Depth (ft BGS)	Sample Number	Sample Type	Recovery (inches)	Vapour Concentration (ppm)	Well Diagram	Description
(m)	(ft)						PID ● 20 40 60 80 100		
		Ground Surface	0.00						
		SILTY TOPSOIL brown, trace clay, trace medium to coarse gravel, roots, moist to dry	0.90						
		SILTY CLAY yellowish brown, dry to moist	1.40						
2		coarse SAND AND fine GRAVEL brown, dry to moist	2.20	1	MC	28.8" 60%	● 0		
		SILTY CLAY yellowish brown, dry to moist	2.30						
		SAND brown, fine, few medium sand, dry	2.40						
1		No Recovery	4.00						
		fine to medium SAND AND medium GRAVEL brown, moist	4.40	2	MC	31.2" 65%	● 0		
		GRAVEL yellowish brown, angular, medium to coarse, moist	4.90						
		fine to medium, GRAVEL yellowish brown, few coarse sand, wet	5.30						
		CLAYEY SAND brown, wet	5.50						
2		CLAYEY SILT brown, wet	8.00	3	MC	39.6" 83%	● 0		
		CLAYEY SILT grayish brown	10.00						
3			12.00						
			14.80						
4		SILTY CLAY grayish brown, wet	16.00	4	MC	37.2" 78%	● 0		
		CLAYEY SILT grayish brown, wet	18.00						
5			20.00	5	MC	43.2" 90%	● 0		
		SILTY CLAY brown, wet	20.40						
6		CLAYEY SILT brown, wet	20.40				● 0		
			20.40				● 0		

← Concrete seal with Stickup casing

← Grout

Sand Pack Interval: 27.70 - 40.00 ft BGS
 Screen Interval: 30.00 - 40.00 ft BGS
 Well Seal Interval: 25.00 - 27.70 ft BGS

Notes:
 ft AMSL - feet above mean sea level
 ft BGS - feet below ground surface
 ft BTOC - feet below top of casing
 ft AGS - feet above ground surface
 ppm - parts per million
 n/a - not available
 MC - macrocore

Drawn By/Checked By: KP / SRS



Monitoring Well: B/MW-28D

Project: Remedial Investigation
Client: Blades Holding Company Inc.
Location: 5392 Rt 19, Amity, NY
Number: 190500593.300
Field investigator: S. Reynolds-Smith
Contractor: Nothnagle Drilling

Drilling method: Macrocore / Hollow Stem Auger
Date started/completed: 01-Feb-2011
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a

SUBSURFACE PROFILE			SAMPLE DETAILS				WELL DETAILS					
Depth (m)	Graphic Log	Lithologic Description	Depth (ft BGS)	Sample Number	Sample Type	Recovery (inches)	Vapour Concentration (ppm)	Well Diagram	Description			
7		CLAYEY SILT brown, wet	23.30	6	MC	43.2" 90%	PID ● 20 40 60 80 100 0 0 0 0 0 0 0 0 0 0					
24		SILTY CLAY brown, wet										
8		CLAYEY SILT brown, wet	26.00 26.30	7	MC	48" 100%						Bentonite Seal
		SILTY CLAY brown, wet	27.10									
		CLAYEY SILT brown, wet	27.70									
9		SILTY CLAY brown, wet	29.00									Sand Pack (#00N size)
		CLAYEY SILT brown, wet	30.20	8	MC	48" 100%						
10		SILTY CLAY brown, wet	33.10									
		CLAYEY SILT brown, wet	34.10	9	MC	48" 100%						
		SILTY CLAY brown, wet	34.70									
		CLAYEY SILT brown, wet	35.10									
11		SILTY CLAY brown, wet	36.00									
		CLAYEY SILT brown, wet	37.00									
		SILTY CLAY brown, wet	37.30									
12		CLAYEY SILT brown, wet	38.00	10	MC	42" 88%			PVC Screen (0.010 slot)			
		SILTY CLAY brown, wet										
13		End of Borehole	40.00									

Sand Pack Interval: 27.70 - 40.00 ft BGS
 Screen Interval: 30.00 - 40.00 ft BGS
 Well Seal Interval: 25.00 - 27.70 ft BGS

Notes:
 ft AMSL - feet above mean sea level
 ft BGS - feet below ground surface
 ft BTOC - feet below top of casing
 ft AGS - feet above ground surface
 ppm - parts per million
 n/a - not available
 MC - macrocore

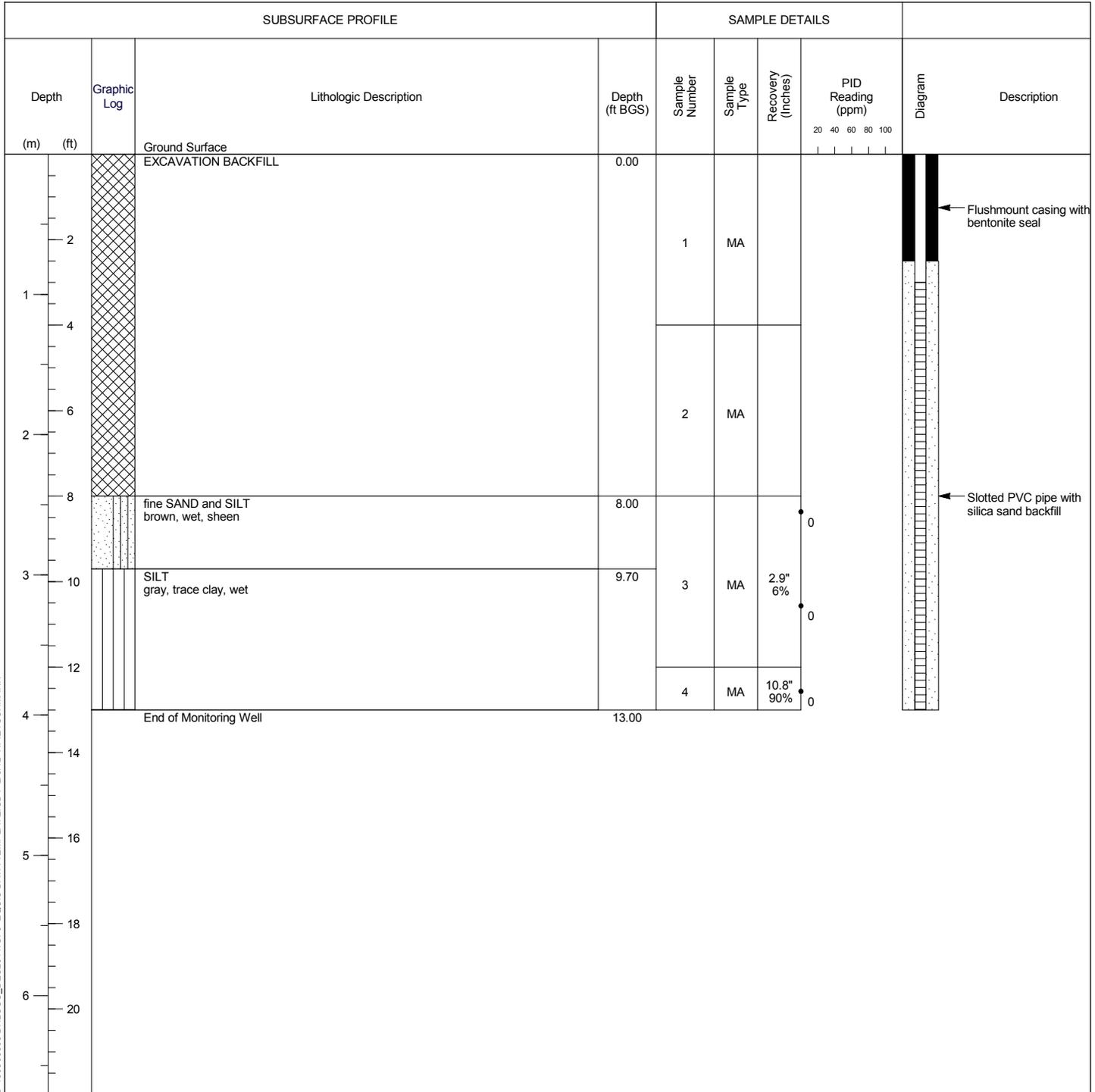
Drawn By/Checked By: KP / SRS



Monitoring Well: B/MW-65

Project: Belmont IRM
Client: Blades Holding Company Inc.
Location: 5392 Rt 19, Amity, NY
Number: 190500593.300
Field investigator: S. Reynolds-Smith
Contractor: TREC

Drilling method: Macrocore
Date started/completed: 26-Jan-2012
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a



STANTEC BOREHOLE AND WELL 190500593 BHL005_DEC2011.GPJ EQUUS DATA TEMPLATE.GDT 2/6/12 KPIETSCHMANN

Screen Interval: 3.00 - 13.00 ft BGS
 Sand Pack Interval: 2.50 - 13.00 ft BGS
 Well Seal Interval: 0.00 - 2.50 ft BGS

Notes:
 ft BGS - feet below ground surface
 n/a - not available

MA - Macrocore

Drawn By/Checked By: KP / SRS



Appendix F

Groundwater Monitoring Well Sampling Log Form

Appendix G
Site-wide Inspection Form



Annual Sitewide Inspection Form
Former Allegany Bitumens Belmont Asphalt Plant
Brownfield Cleanup Program Site # C902019
53992 State Route #19
Amity, Allegany County, New York

Stantec

Inspection Date: _____

Time Period Inspection Covers: _____

Inspector(s): _____ Weather: _____

- A. Describe the site usage (i.e. commercial or industrial purposes, or higher level usage [i.e. unrestricted, residential])? _____

- B. Describe general site conditions. _____

- C. Is the site currently undergoing development? If so, describe. _____

- D. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during the Reporting Period? _____

- E. Is the site being used for vegetable gardening or farming? _____
- F. Has groundwater monitoring been performed according to the schedule in the Site Management Plan (SMP)? _____

- G. Is groundwater being used on-site? ____ If so, is it being rendered safe for its intended use? Describe. _____

- H. Are there buildings on-site? _____
- I. If so, has the potential for vapor intrusion been evaluated or has a sub-slab depressurization system (SSDS) been installed? If a SSDS is present, has the SMP been modified to include a SSDS inspection schedule and form? _____

- J. Are soil covers in place on bermed areas as defined in SMP? _____
- K. Is vegetation on soil covers in place? _____
- L. Have any activities been conducted since the last inspection that necessitated site management activities be conducted, such as excavation in covered areas, confirmation sampling and a health and safety inspection? _____

- M. Is the site in compliance with permits and schedules included in the Operations and Maintenance Plan in the SMP? _____

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Former Allegany Bitumens Belmont Asphalt Plant
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- N. Have any federal, state, and/or local permits (e.g. building, discharge) been issued for or at the property during this Reporting Period? _____

- O. Has all reporting been performed per the schedules outlined in the SMP and are all site records up to date? _____
- P. Area all ICs/ECs in place and functioning as designed? _____
- Q. Has any new information revealed that assumptions made in the Qualitative Exposure Assessment regarding off-site contamination are no longer valid? _____
- R. Are the assumptions in the Qualitative Exposure Assessment still valid? _____

Appendix H

Quality Assurance Project Plan

APPENDIX H

**QUALITY ASSURANCE PROJECT PLAN
SITE MANAGEMENT PLAN
FORMER ALLEGANY BITUMENS BELMONT ASPHALT PLANT
5392 STATE ROUTE 19
TOWN OF AMITY, ALLEGANY COUNTY, NEW YORK**

September 2012

Prepared for:

**NEW YORK STATE DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
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Prepared on Behalf of:

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Summary Reports," revised 1997 and NYSDEC's DER-10 "Technical Guidance for Site Investigation and Remediation," May 2010 (DER-10).

2.0 Project Description

This QAPP pertains to the completion of field activities and subsequent laboratory and data analysis associated with the SMP at the Former Allegany Bitumens Belmont Asphalt Plant located at 5392 State Route 19 in the Town of Amity, Allegany County, New York. The remedial activities are described in detail in the IRM Work Plan.

Blades Holding Company, Inc. has entered into a Brownfield Cleanup Agreement with the NYSDEC. A Remedial Investigation, Interim Remedial Measures, and Remedial Actions have been conducted under this agreement. The objective of the proposed project is to implement the SMP to manage residual contamination.

2.1 Site Description

The Site is a 5.4± acre parcel located at 5392 State Route 19 in the Town of Amity, Allegany County, New York (see Figure 1). The property (Tax Parcel No. 171-1-60) was formerly occupied by a non-operational asphalt plant. Operations at this asphalt plant ceased in 2005 and the plant and all site structures were demolished or dismantled in 2011-2012. Redevelopment of the site is anticipated to involve a commercial or industrial use.

2.2 Previous Investigations

A Phase I ESA was completed by Stantec in December 2010 in connection with real estate due diligence activities. The Phase I ESA identified one recognized environmental condition associated with the subject property:

- A former on-site laboratory was located in the northwest corner of the Site. The laboratory was used for testing of aggregate and asphalt materials manufactured on site to determine whether the materials complied with NYSDOT or customer specifications. Trichloroethylene (TCE) was reportedly used as a solvent in the testing operations. Regular use of TCE at the site was reported to have been discontinued more than 10 years ago; however, a drum containing approximately 10 gallons of fresh (unused) TCE was present in the laboratory at the time of the Phase I ESA site visit.

The laboratory building had its own septic system, which reportedly received waste from the sinks and toilet in the laboratory. At the time of the site visit, several empty small- to medium-sized containers were present on an outdoor asphalt-paved pad attached to the east end of the laboratory building. Plant personnel indicated that the pad had not been used for outdoor storage of solvent or waste containers.

No records or knowledge of releases were identified during the Phase I ESA. However, given the potential for historic releases of TCE, it was recommended that a soil boring program be conducted in the area of the septic system.

Stantec conducted a Phase II ESA in December 2010. Four soil test borings and four temporary monitoring wells were installed for the purposes of collecting soil and groundwater samples adjacent to and downgradient from the former laboratory building

and its septic system. The Phase II ESA test boring and monitoring locations are shown on Figure 2. Results indicated the presence of TCE and related volatile organic compounds (VOCs) in an area northeast of the laboratory building. These VOCs were detected in shallow soil and groundwater at levels above NYSDEC's soil cleanup objectives and groundwater standards. Indications of soil contamination were encountered at depths of 5 to 10 feet below ground surface (bgs) in test borings BS-2 and BS-4, and TCE was detected in soil samples from these borings at concentrations of up to 37.5 parts per million (ppm). The water table at the site was encountered at depths of 9 to 10 feet below ground surface, and TCE was detected in BS-2 and BS-4 groundwater samples at concentrations of 0.6 to 2.1 ppm, respectively. Traces of TCE (0.001 to 0.008 ppm) were detected in the groundwater samples from the BS-1 and BS-3 locations.

A RI was performed by Stantec for the Site in accordance with a NYSDEC-approved RI Work Plan (October 2010). A detailed description of the RI program and findings is presented in the May 2012 RI report. The RI field program included several field sampling events conducted during the period October 2010 through November 2011. An abbreviated summary of the primary RI program elements is presented below:

- Physical Conditions Assessment and Hazardous Materials Survey – This was an assessment of the overall site conditions via additional literature and records search and a Site inspection of structures, equipment and stored materials.
- Assessment of Area Water Wells – A survey was performed to identify the location, use, and construction of private water supply wells in close proximity to the Site. Responses were obtained from most local residents, however several residents did not respond.
- Surface Soil Sampling – 14 surface soil samples were collected across the Site and analyzed for a variety of chemical parameters, depending on the area of concern.
- Test Pit Excavation and Subsurface Soil Sampling – 21 test pits were excavated across the site to assess subsurface conditions and facilitate subsurface soil sampling.
- Passive Soil Gas Survey – 28 soil gas samples were obtained from three investigation areas to assess the potential for VOCs to exist in shallow soil vapor.
- Assessment and Sampling of Existing Water Supply Well – The submersible pump and associated piping was removed from the onsite water supply well, the well bore was videotaped, and a groundwater sample was obtained and analyzed.
- Test Boring and Monitoring Well Installation, with Soil and Groundwater Sampling – 28 soil test borings were drilled and 16 groundwater monitoring wells were installed across the site. 34 subsurface soil samples and 19 groundwater samples (including three from previously-installed Phase II ESA wells) were initially submitted for laboratory analysis. Groundwater samples from 10 select wells were submitted and analyzed in a second sampling event.
- Ecological Survey – A qualitative exposure assessment of potential impacts to fish and wildlife resources was performed in accordance with DER-10. This included a site reconnaissance, a written request for review to the NYSDEC Natural Heritage Program, and an online search of the U.S. Fish and Wildlife Service database.

The site was remediated in accordance with the NYSDEC-approved Interim Remedial Measures and Remedial Action Work Plans respectively dated October 2011 and August 2012. The activities conducted during the IRM are described in detail in the Remedial Investigation Report and Interim Remedial Measures Construction Completion Report

(draft, May 30, 2012). The activities conducted during subsequent remedial actions will be described in detail in the Final Engineering Report.

The following is a summary of the Remedial Actions performed at the site:

- Excavation of soil/fill at RAOCs 1 through 3 and the Heater Area, including soil/fill:
 - At RAOC-1 exceeding POGW SCOs listed in Table 3 to maximum depths ranging from approximately 10 to 14.5 ft bgs;
 - At RAOC-2 which exhibited nuisance characteristics to a depth of approximately 2 ft bgs;
 - At RAOC-3A which exhibited elevated PID readings and staining and petroleum odors to a depth of approximately 4.5 ft bgs;
 - At RAOC-3B and -3C within which petroleum product was observed from approximately 5 to 8 ft bgs; and
 - At the Heater Area where petroleum odor, visual staining, and a sheen were observed to a depth of approximately 5 ft bgs.
- Removal of groundwater in source areas, including:
 - At RAOC-1, de-watering of the source area groundwater during excavation with ex-situ treatment via on-site carbon drums and subsequent on-site treatment;
 - At RAOC-3B and -3C, dewatering of the source area groundwater and LNAPL during excavation with off-site disposal; and
 - At the Heater Area, removal of accumulated groundwater with minor amounts of oil from the excavation and off-site disposal.
- In-situ biological treatment of groundwater, including:
 - Application of sodium lactate to the groundwater in the open excavation at RAOC-1 and to downgradient trenches within the plume area;
 - Placement of agricultural grade gypsum in RAOC-3B and -3C source area to enhance breakdown of petroleum compounds via sulfate-reducing bacteria; and
 - Groundwater monitoring;
- Execution and recording of an Environmental Easement to restrict land use and prevent future exposure to any contamination remaining at the site;
- Institutional Controls as detailed in the SMP; and
- Development and implementation of a Site Management Plan for long term management of remaining contamination as required by the Environmental Easement, which includes plans for: (1) Institutional and Engineering Controls, (2) monitoring, (3) operation and maintenance and (4) reporting.

3.0 Project Organization and Responsibility

This QAPP provides for designated qualified personnel to review products and provide guidance on QA matters. This QAPP also outlines the approach to be followed to ensure that products of sufficient quality are obtained. This structure will provide for direct and constant operational responsibility, clear lines of authority, and the integration of QA activities. The various QA functions of the project positions are explained in the following subsections.

Project Manager

The project manager will have overall responsibility for ensuring that the project meets the objectives and quality standards as presented in the SMP and this QAPP. He/She will be responsible for implementing the project and will have the authority to commit the resources necessary to meet project objectives and requirements. The project manager's primary function is to ensure that technical, financial, and scheduling objectives are achieved successfully. The project manager will provide the major point of contact and control for matters concerning the project. In addition, he/she will be responsible for technical quality control and project oversight.

Team Leaders

The project manager will be supported by a team leader or leaders who will be responsible for leading and coordinating the day-to-day activities of the various resource specialists under their supervision. The team leader is a highly experienced environmental professional who will report directly to the project manager.

Technical Staff

The technical staff (team members) for this project will be drawn from corporate resources and appropriately qualified subcontractors. The technical team staff will be used to gather and analyze data, and to prepare various task reports and support materials. All of the designated technical team members will be experienced professionals who possess the degree of specialization and technical competence required to effectively and efficiently perform the required work.

Project QA Director

The Project QA Director will be responsible for maintaining QA for the project.

Laboratory Director

The laboratory director will be responsible for all analytical work and works in conjunction with the QA unit. He/She maintains liaison with the QA officer regarding QA and custody requirements.

Laboratory Manager

The laboratory manager will maintain liaison with the laboratory director regarding QA elements of specific sample analyses tasks. He/She will report to the laboratory director and work in conjunction with the laboratory QA unit.

Laboratory QA Coordinator

The Laboratory QA officer will be responsible for overseeing the QA program within the laboratory and for maintaining all QC documentation. He/She reports directly to the laboratory director.

Laboratory Staff

Each member of the laboratory staff will perform an assigned QA or analytical function that is pertinent to and within the scope of his or her knowledge, experience, training, and aptitude. An individual will be assigned the responsibility for checking, reviewing, or otherwise verifying that a sample analysis activity has been correctly performed.

Laboratory Facilities

All laboratory work will be performed in accordance with guidelines established by NYSDEC, United States Environmental Protection Agency (USEPA), the Water Pollution Control Federation, and/or the American Society for Testing and Materials (ASTM). In case of conflict, these guidelines and protocols will be considered in the order shown (i.e., NYSDEC criteria is of primary precedence). In addition, QA and QC programs will be maintained for the instruments and the analytical procedures used. A NYSDOH ELAP certified laboratory capable of providing (NYSDEC Analytical Services Protocol (ASP) Category B deliverables will be identified to provide laboratory services for this project. The laboratory's preventative maintenance procedures will be provided and outlined in their Laboratory Quality Assurance Manual.

4.0 QA Objectives for Data Measurement

All measurements will be made to ensure that analytical results are representative of the media and conditions measured. Unless otherwise specified, all data will be calculated and reported in units consistent with other organizations who report similar data to allow comparability of databases among organizations.

The key considerations for the QA assessment of generated data are accuracy, precision, completeness, representativeness, and comparability. These characteristics are defined below:

Accuracy: Accuracy is the degree of agreement of a measurement or average of measurements with an accepted reference or "true" value and is a measure of bias in the system.

Precision: Precision is the degree of mutual agreement among individual measurements of a given parameter.

Completeness: Completeness is a measure of the amount of valid data obtained from a measurement system compared to the amount expected to be obtained under correct normal conditions.

Representativeness: Representativeness expresses the degree to which data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, a process condition, or an environmental condition.

Comparability: Comparability expresses the confidence with which one data set can be compared to another.

4.1 Goals

The QA/QC goal will focus on controlling measurement error within the limits established and will ultimately provide a database for estimating the actual uncertainty in the measurement data.

Target values for detection limit, percent spike recovery and percent "true" value of known check standards, and RPD of duplicates/replicates are provided in the referenced analytical procedures. It should be noted that target values are not always attainable. Instances may arise where high sample concentrations, non-homogeneity of samples, or matrix interferences preclude achievement of target detection limits or other quality control criteria. In such instances, the laboratory will report reasons for deviations from these detection limits or noncompliance with quality control criteria.

5.0 Sampling Procedures

The sampling of various environmental media will be completed as part of SMP activities. Table 1 presents the location, type, and analytical requirements of samples to be collected or potentially to be collected as part of the SMP Activities.

5.1 Sampling Protocol

The sampling and field procedures for sampling activities are described in the SMP:

The sample containers that will be or may be used are identified in Table 2. The sample containers will be labeled in accordance with Section 6.2. Sample handling, packaging and shipping procedures are presented in Section 6.3.

5.2 Field Quality Control Samples

Field quality control samples will consist of trip blanks, field blanks, field duplicates, matrix spikes and matrix spike duplicates, as shown on Table 3.

5.2.1 Field Duplicates

Field quality control samples will be collected to verify reproducibility of the sampling and analytical methods. Field duplicates will be obtained at a rate of one per 20 original field samples, as outlined in Table 3.

5.2.2 Trip Blanks

Trip blanks will be used to assess whether groundwater has been exposed to volatile constituents during sample storage and transport. The trip blanks for water samples will consist of a container filled by the laboratory with analyte-free water. The trip blanks will remain unopened throughout the sampling event and will only be analyzed for volatile organics. The trip blanks will be collected as outlined in Table 3.

5.2.3 Matrix Spike/Matrix Spike Duplicates

Matrix Spike/Matrix Spike Duplicates (MS/MSD) will be obtained to determine if the matrix is interfering with the sample analysis. MS/MSDs will be collected at a rate of one per 20 original field samples, as outlined on Table 3.

5.2.4 Rinse Blanks

Rinse blanks will be used to assess decontamination procedures for non-dedicated equipment. Rinse blanks will be collected as outlined in Table 3.

5.2.5 Laboratory Quality Control Checks

Internal laboratory quality control checks will be used to monitor data integrity. These checks include method (equipment) blanks, spike blanks, internal standards, surrogate samples, calibration standards, and reference standards.

5.3 Sample Containers

The volumes and containers required for the sampling activities are included in Table 2. Pre-washed sample containers will be provided by the laboratory. All bottles are to be prepared in accordance with EPA bottle washing procedures.

5.4 Decontamination

Dedicated and/or disposable sampling equipment will be used to the extent possible to minimize decontamination requirements and the possibility of cross-contamination.

Split spoon samplers and hand augers are examples of sampling equipment to be used at more than one location. The water level indicator will be decontaminated between locations by using the following decontamination procedures:

- Initial cleaning of any foreign matter with paper towels, if needed;
- Low phosphate detergent wash;
- De-ionized water rinse; and
- Air dry.

If a Geoprobe is used to install monitoring wells, the Geoprobe, Geoprobe rods, and Macrocore® samplers utilized to install borings will be decontaminated with a bucket wash consisting of a low phosphate detergent wash followed by water rinse. If a backhoe bucket, drill rig, augers, rods, split spoon samplers, and/or other related downhole equipment are used, they will be decontaminated using high pressure steam prior to initiating the excavation and well installation programs. This decontamination procedure will also be used on the downhole equipment between each boring. Steam cleaning will be performed in a designated on-site decontamination area. Throughout and after the cleaning processes, direct contact between the equipment and the ground surface will not be permitted. Decontamination waste water will be collected in 55-gallon drums. The drill rig and associated equipment will also be cleaned upon completion of the investigation prior to departure from the site using the following methods:

- Initial cleaning of all foreign matter; and
- Wash down with high pressure, high temperature spray to remove and/or volatilize organic contamination.

5.5 Levels of Protection/Site Safety

All sampling will be conducted under a documented Health and Safety Plan. On the basis of air monitoring, the level of protection may be downgraded or upgraded at the discretion of the site safety officer. Crew members will stand upwind of open boreholes or wellheads during the collection of samples, when possible.

All work will initially be conducted in Level D (refer to Site Specific Health and Safety Plan). Air purifying respirators (APRs) will be available if monitoring indicates an upgrade to Level C is appropriate.

6.0 Sample Custody

This section describes standard operating procedures for sample identification and chain-of-custody to be used for all field activities. The purpose of these procedures is to ensure that the quality of the samples is maintained during collection, transportation, storage, and analysis. All chain-of-custody requirements comply with standard operating procedures indicated in USEPA and NYSDEC sample-handling protocol.

Sample identification documents must be carefully prepared so that sample identification and chain-of-custody can be maintained and sample disposition controlled. Sample identification documents include:

- Field records,
- Sample label,
- Custody seals, and
- Chain-of-custody records.

6.1 Chain-Of-Custody

The primary objective of the chain-of-custody procedures is to provide an accurate written or computerized record that can be used to trace the possession and handling of a sample from collection to completion of all required analyses.

6.1.1 Sample Labels

Sample labels attached to, or affixed around, the sample container must be used to properly identify all samples collected in the field. To the extent possible, the sample labels are to be placed on the bottles so as not to obscure any QA/QC lot numbers on the bottles. Sample information must be printed in a legible manner using waterproof ink. Field identification must be sufficient to enable cross-reference with the field sampling records or sample logbook. For chain-of-custody purposes, all QC samples are subject to exactly the same custodial procedures and documentation as "real" samples.

6.1.2 Custody Seals

Custody seals are preprinted adhesive-backed seals often with security slots which are designed to break if the seals are disturbed. Sample shipping containers (coolers, cardboard boxes, etc., as appropriate) are sealed in as many places as necessary to ensure security. Seals must be signed and dated before use. On receipt at the laboratory, the custodian must check (and certify, by completing logbook entries) that seals on shipping containers are intact. Strapping tape should be placed over the seals to ensure that seals on shipping containers are not accidentally broken during shipment.

6.1.3 Chain-Of-Custody Record

The chain-of-custody record must be fully completed at least in duplicate by the field technician who has been designated by the project manager as being responsible for sample shipment to the appropriate laboratory for analysis. In addition, if samples are known to require rapid turnaround in the laboratory because of project time constraints or analytical concerns (e.g., extraction time or sample retention period limitations, etc.), the person completing the chain-of-custody record should note these constraints in the "Remarks" or other appropriate section of the custody record.

6.1.4 Field Custody Procedures

- As few persons as possible should handle samples.
- Sample bottles will be obtained pre-cleaned by the laboratory and shipped to the sampling personnel in charge of the field activities. Coolers or boxes containing cleaned bottles should be sealed with a custody tape seal during transport to the field or while in storage prior to use.
- The sample collector is personally responsible for the care and custody of samples collected until they are transferred to another person or dispatched properly under chain-of-custody rules.
- The sample collector will record sample data in a controlled field notebook and/or on appropriate field sampling records.

- The site team leader will determine whether proper custody procedures were followed during the fieldwork and decide if additional samples are required.

6.2 Documentation

6.2.1 Sample Identification

All containers of samples collected from the project will be identified using the following format on a label or tag fixed to the sample container:

BA-XX-Y

- BA - This set of initials indicates the Former Allegany Bitumens Belmont Asphalt Plant project.
- XX - These initials identify the sample. Actual sample locations will be recorded on the sampling record. Field duplicates, field blanks and rinsate blanks will be assigned unique sample numbers.
- Y - These initials identify the sample matrix in accordance with the following abbreviations:

W – Water Sample

S – Soil or Sediment Sample

A – Air

Each sample will be labeled, chemically preserved, if required, and sealed immediately after collection. To minimize handling of sample containers, labels will be filled out prior to sample collection to the extent possible. The sample label will be filled out using waterproof ink and will be firmly affixed to the sample containers. The sample label will give the following information:

- Name or initials of sampler;
- Date (and time, if possible) of collection;
- Sample number;
- Intended analysis; and
- Preservation performed.

6.2.2 Daily Logs

Daily logs and data forms are necessary to provide sufficient data and observations to enable participants to reconstruct events that occurred during the project. All daily logs will be kept in a notebook and consecutively numbered. All entries will be made in waterproof ink, dated, and signed. Sampling data will be recorded in the sampling records. All information will be completed in waterproof ink. Corrections will be made according to the procedures given at the end of this section.

6.3 Sample Handling, Packaging, and Shipping

The transportation and handling of samples must be accomplished in a manner that not only protects the integrity of the sample, but also prevents any detrimental effects due to the possible hazardous nature of samples. Regulations for packaging, marking, labeling,

and shipping hazardous materials are promulgated by the United States Department of Transportation (DOT) in the Code of Federal Regulations, 49 CFR 171 through 177.

All chain-of-custody requirements must comply with standard operating procedures in the NYSDEC and USEPA sample handling protocol. Field personnel will make arrangements for transportation of samples to the laboratory. When custody is relinquished to a shipper, field personnel will ensure that the laboratory custodian or project manager is aware of the expected time of arrival of the sample shipment and of any time constraints on sample analysis(es). All samples will be delivered to the laboratory in a timely manner to help ensure that holding times are followed.

7.0 Calibration Procedures and Frequency

All instruments and equipment used during sampling and analysis will be operated, calibrated, and maintained according to the manufacturer's guidelines and recommendations as well as criteria set forth in the applicable analytical methodology references.

7.1 Field Instruments

A calibration program will be implemented to ensure that routine calibration is performed on all field instruments. Field team members familiar with the field calibration and operations of the equipment will maintain proficiency and perform the prescribed calibration procedures outlined in the Operation and Field Manuals accompanying the respective instruments. Calibration records for each field instrument used on the project will be maintained on-site during the respective field activities and a copy will be kept in the project files.

7.1.1 Portable Total Organic Vapor Monitor

Any vapor monitor used will undergo routine maintenance and calibration prior to shipment to the project site. Daily calibration and instrument checks will be performed by a trained team member at the start of each day. Daily calibrations will be performed according to the manufacturer's specifications and are to include the following:

Battery check: If the equipment fails the battery check, recharge the battery.

- Gas standard: The gauge should display an accurate reading when a standard gas is used.
- Cleaning: If proper calibration cannot be achieved, then the instrument ports must be cleaned.

7.1.2 pH and Specific Conductance

The following steps should be observed by personnel engaged in groundwater sampling for pH and specific conductance:

- The operation of the instrument should be checked, and calibrated if needed, with fresh standard buffer solution (pH 4, pH 7 and pH 10) prior to each day's sampling.

- The specific conductance meter should be calibrated prior to each sampling event using a standard solution of known specific conductance.

More frequent calibrations may be performed as necessary to maintain analytical integrity. Calibration records for each field instrument used on the project should be maintained and a copy kept in the project files.

7.2 Laboratory Instruments

Laboratory calibration procedures are addressed in detail in the laboratory Quality Assurance Manual (QAM), which can be provided upon selection of a laboratory. All calibration procedures will be consistent with the method used for analysis.

8.0 Analytical Procedures

8.1 Field

On-site procedures for analysis of total organic vapor and other field parameters are addressed in the Remedial Investigation Work Plan.

8.2 Laboratory

Specific analytical methods for constituents of interest in soil and groundwater are listed in Table 2. The laboratory will maintain and have available for the appropriate operators standard operating procedures relating to sample preparation and analysis according to the methods stipulated in Table 2.

9.0 Data Reduction and Reporting

QA/QC requirements will be strictly adhered to during sampling and analytical work. All data generated will be reviewed by comparing and interpreting results from chromatograms (responses, stability of retention times), accuracy (mean percent recovery of spiked samples), and precision (reproducibility of results). Refer to Section 10 for a discussion of QA/QC protocol.

Data storage and documentation will be maintained using logbooks and data sheets that will be kept on file. Analytical QC will be documented and included in the analytical testing report. A central file will be maintained for the sampling and analytical effort after the final laboratory report is issued.

All calculations and data manipulations are included in the appropriate methodology references. Control charts and calibration curves will be used to review the data and identify outlying results. Prior to the submission of the report to the client, all data will be evaluated for precision, accuracy, and completeness. Sections 4.0, 8.0, and 13.0 of this document include some of the QC criteria to be used in the data evaluation process.

Laboratory reports will be reviewed by the laboratory supervisor, the QA officer, laboratory manager and/or director, and the project manager. Analytical reports will contain a data tabulation including results and supporting QC information will be provided. Raw data will be available for later inspection, if required, and maintained in the control job file.

All data will be reported to NYSDEC in electronic format in accordance with DER-10 and the NYSDEC's Environmental Data Submission requirements.

10.0 Internal Quality Control Checks

QC data are necessary to determine precision and accuracy and to demonstrate the absence of interferences and/or contamination of glassware and reagents. The procedures to be followed for internal quality control checks are consistent with NYSDEC ASP protocols.

11.0 Performance and System Audits

11.1 Field Audits

The Project QA Director may conduct episodic audits of the operations at the site to ensure that work is being performed in accordance with the work plan and associated standard operating practice. The audit will cover, but not necessarily be limited to, such areas as:

- Conformance to standard operating procedures
- Completeness and accuracy of documentation
- Chain of custody procedures
- Construction specifications

11.2 Laboratory Audits

In addition to any audits required by the NYSDEC, the Project QA Director may chose to audit the laboratory. These additional audits may take the form of performance evaluation samples or on-site inspections of the laboratory. Performance evaluation samples may be either blind samples or samples of known origin to the laboratory. Reasonable notice will be provided if the audit is to include an on-site inspection of the laboratory.

12.0 Preventive Maintenance

12.1 Field

Field personnel assigned to complete the work will be responsible for preventative maintenance of all field instruments. The field sampling personnel will protect the portable total organic vapor monitors, water quality meter, etc. by placing them in portable boxes and/or protective cases.

All field equipment will be subject to a routine maintenance program, prior to and after each use. The routine maintenance program for each piece of equipment will be in accordance with the manufacturer's operations and maintenance manual. All equipment will be cleaned and checked for integrity after each use. Necessary repairs will be performed immediately after any defects are observed, and before the item of equipment is used again. Equipment parts with a limited life (such as batteries, membranes and some electronic components) will be periodically checked and replaced or recharged as necessary according to the manufacturer's specifications.

12.2 Laboratory

The laboratory's preventative maintenance procedures can be provided as outlined in their Laboratory Quality Assurance Manual.

13.0 Data Assessment Procedures

Performance of the following calculations will be completed to evaluate the accuracy, precision and completeness of collected measurement data.

13.1 Precision

Precision of a particular analysis is measured by assessing its performance with duplicate or replicate samples. Duplicate samples are pairs of samples taken in the field and transported to the laboratory as distinct samples. Their identity as duplicates is sometimes not known to the laboratory and usually not known to bench analysts, so their usefulness for monitoring analytical precision at bench level is limited. For most purposes, precision is determined by the analysis of replicate pairs (i.e., two samples prepared at the laboratory from one original sample). Often in replicate analysis the sample chosen for replication does not contain target analytes so that quantification of precision is impossible. Replicate pairs of spiked samples, known as matrix spike/matrix spike duplicate samples, are used for precision studies. This has the advantage that two real positive values for a target analyte can be compared.

Precision is calculated in terms of Relative Percent Difference (RPD), which is expressed as follows:

$$RPD = \frac{(X_1 - X_2)}{(X_1 + X_2)/2} \times 100$$

where X_1 and X_2 represent the individual values found for the target analyte in the two replicate analyses or in the matrix spike/matrix spike duplicate analyses.

RPDs must be compared to the method RPD for the analysis. The analyst or his supervisor must investigate the cause of RPDs outside stated acceptance limits. This may include a visual inspection of the sample for non-homogeneity, analysis of check samples, etc. Follow-up action may include sample re-analysis or flagging of the data as suspect if problems cannot be resolved.

13.2 Accuracy

Accuracy of a particular analysis is measured by assessing its performance with "known" samples. These "knowns" can take the form of EPA or NBS traceable standards (usually spiked into a pure water matrix), or laboratory prepared solutions of target analytes into a pure water or sample matrix; or (in the case of GC or GC/MS analyses) solutions of surrogate compounds which can be spiked into every sample and are designed to mimic the behavior of target analytes without interfering with their determination. In each case the recovery of the analyte is measured as a percentage, corrected for analytes known to be present in the original sample if necessary, as in the case of a matrix spike analysis. For EPA or NBS supplied known solutions, this recovery is compared to the published data that accompany the solution. For prepared solutions, the recovery is compared to EPA-developed data or historical data as available. For surrogate compounds, recoveries are compared to USEPA CLP acceptable recovery tables. If recoveries do not meet required criteria, then the analytical data for the batch (or, in the case of surrogate compounds, for the individual sample) are considered potentially inaccurate.

For highly contaminated samples, recovery of matrix spike may depend on sample homogeneity. As a rule, analyses are not corrected for recovery of matrix spike or surrogate compounds.

13.3 Completeness

Completeness is a measure of the amount of valid data obtained from a measurement system compared to the total amount expected to be obtained under normal conditions. Completeness for each parameter is calculated as:

$$\text{Completeness} = \frac{\text{Number of successful analyses} \times 100}{\text{Number of requested analyses}}$$

Target value for completeness for all parameters is 100%. A completeness value of 95% will be considered acceptable. Incomplete results will be reported to the client project officer.

13.4 Representativeness

The characteristic of representativeness is not quantifiable. Subjective factors to be taken into account are as follows:

- The degree of homogeneity of a site;
- The degree of homogeneity of a sample taken from one point in a site; and
- The available information on which a sampling plan is based.

To maximize representativeness of results, sampling techniques and sample locations will be carefully chosen so that they provide laboratory samples representative of the site and the specific area.

14.0 Corrective Action

Corrective actions can be initiated as a result of performance and system audits, laboratory and interfield comparison studies, data validation, and/or a QA program audit. They may also be required as a result of a request from project representatives. All corrective action necessary to resolve analytical problems will be taken. Success or failure of corrective actions will be reported with an estimate of effect on data quality, if any.

Corrective actions may include altering procedures in the field, conducting subsequent audits, or modifying project protocol. Time and type of corrective action, if needed, will depend on the severity of the problem and relative overall project importance. The project manager is responsible for initiating corrective action and the team leader is responsible for its implementation in the correction of field non-conformance corrective actions.

15.0 Quality Assurance Reports

Upon completion of a project sampling effort, analytical and QC data will be included in a Data Usability Summary Report (DUSR) that summarizes the work and provides a data evaluation. A discussion of the usability of the results in the context of QA/QC procedures will be made, as well as a summation of the QA/QC activity. The DUSR will be performed in accordance with the

DEC's "Guidance for the Development of Data Usability Summary Reports," revised 1997 and DER-10.

Serious analytical problems will be reported. Time and type of corrective action, if needed, will depend on the severity of the problem and relative overall project importance. Corrective actions may include altering procedures in the field, conducting an audit, or modifying laboratory protocol. All corrective action will be implemented after notification of the project representatives.

QAPP
TABLES

TABLE 1
SAMPLE SUMMARY
Site Management Plan
Former Allegany Bitumens Belmont Asphalt Plant
Amity, New York

Sample Type	Sample Location	Sample Matrix	Analytical Parameters
Confirmatory Sidewall and Bottom Sampling	Various	Soil	TCL VOCs + TICs (USEPA Method 8260B)* TLC SVOCs + TICs (USEPA Method 8270B)*
Groundwater Monitoring	BS-2R	Groundwater	TCL VOCs + TICs (USEPA Method 8260B)
	BS-3	Groundwater	
	MW-8	Groundwater	
	MW-25	Groundwater	
	MW-27	Groundwater	
	MW-28D	Groundwater	
	MW-65	Groundwater	TCL VOCs + TICs (USEPA Method 8260B); TCL SVOCs + TICs (USEPA Method 8270B)

* Parameters may vary depending on sampling location.

Key:

- SVOCs = Semivolatile Organic Compounds
- TCL = Target Compound List
- TICs = Tentatively Identified Compounds
- USEPA = United State Environmental Protection Agency
- VOCs = Volatile Organic Compounds

TABLE 2
REQUIRED SAMPLE CONTAINERS, VOLUMES, PRESERVATION, AND HOLDING TIMES
Site Management Plan
Former Allegany Bitumens Belmont Asphalt Plant
Amity, New York

<u>Media</u>	<u>Type of Analysis</u>	<u>Method</u>	<u>Required Container(s)</u>	<u>Preferred Sample Volume</u>	<u>Preservation</u>	<u>Maximum Holding Time</u>
<i>Soil</i>	TCL VOCs + TICs	EPA 8260	(2) 2 oz.cwm	4 oz.	Cool 4°C	VTSR* + 10 days
	TCL SVOCs	EPA 8270	4 oz.cwm	4 oz.	Cool 4°C	VTSR* + 5 days
<i>Water</i>	TCL VOCs + TICs	EPA 8260	(3) 40 ml glass vials	120 ml	pH<2, HCl	VTSR* + 10 days
	TCL SVOCs + TICs	EPA 8270	(2) 1 L amber glass	2 L	None	VTSR* + 5 days
	TOC	SM 5310D	(2) 40 ml	80 ml	pH<2, HCl	28 days
	Nitrogen (nitrite, nitrate, nitrate-nitrite)	353.2	125 ml plastic bottle	125 ml	None	2 days
	Sulfate	300.0	60 ml plastic bottle	60 ml	None	28 days
	Total Na	6010	250 ml plastic bottle	250 ml	HNO ₃	180 days
Dissolved Mn and As	6010	250 ml plastic bottle	250 ml	HNO ₃	180 days	

Notes:

*Samples have to be received by the lab within 48 hours of the first sample being taken.

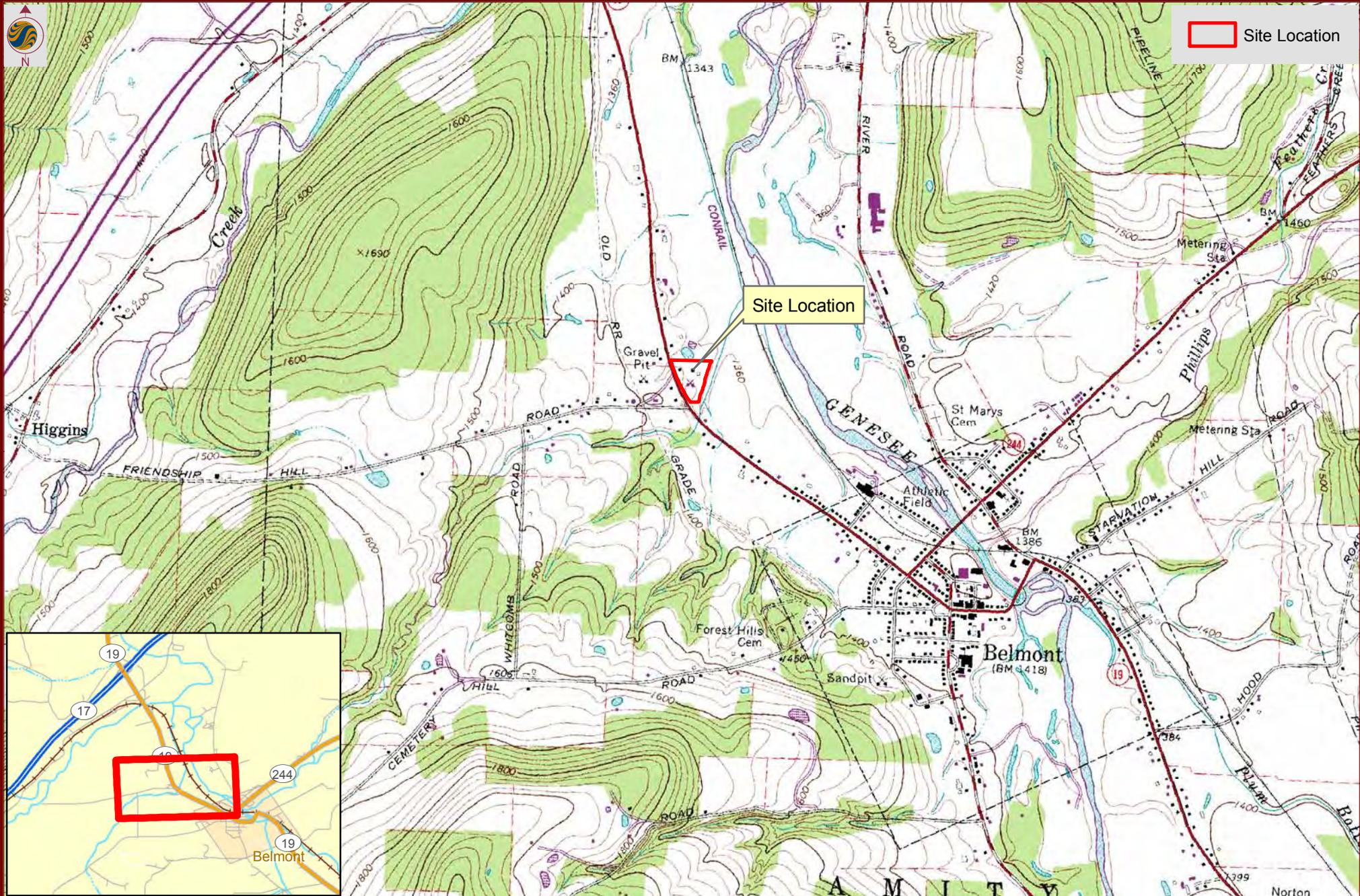
Key:

- cwm =clear wide mouth jar.
- EPA = U.S. Environmental Protection Agency.
- ml = milliliter.
- L = liter.
- SVOCs = Semivolatile organic compounds.
- TCL = Target compound list.
- VOCs = Volatile organic compounds.
- VTSR = Verified Time of Sample Receipt at laboratory.
- Mn = Manganese.
- Na = Sodium.
- As = Arsenic.
- TOC = Total Organic Carbon.

TABLE 3
SUMMARY OF QUALITY CONTROL CHECKS
 Site Management Plan
 Former Allegany Bitumens Belmont Asphalt Plant
 Amity, New York

Type of QC Check	Frequency	Min. Number Required	Remarks
<i>Laboratory Quality Control Guidelines</i>			
Method Blanks	1 per sample batch	1 or 5% of batch size	Batch may include samples from other projects
Reagent/Solvent Blanks	1 per lot	1	
Standard Reference Blanks	1 per sample batch	1 or 5% of batch size	Batch may include samples from other projects
Matrix Spike Blanks	1 per sample batch	1 or 5% of batch size	Batch may include samples from other projects
Matrix Spike/Matrix Spike Duplicate	1 per 20 field samples per media	1	
<i>Field Quality Control Guidelines</i>			
Field Duplicates	1 per 20 field samples per media	1	Sample to be selected based on field screening
Trip Blanks	1 per shipment for each cooler in which aqueous samples for VOC analysis are shipped	1	
Rinsate Blanks	1 per non-dedicated equipment set	1	
Laboratory Replicates	1 per batch	1	None planned but may be required to perform additional analyses on a sample

QAPP
FIGURES



Appendix I

Community Air Monitoring Plan

Appendix 1A
New York State Department of Health
Generic Community Air Monitoring Plan

Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical-specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or

overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed $150 \text{ mcg}/\text{m}^3$ above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than $150 \text{ mcg}/\text{m}^3$ above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within $150 \text{ mcg}/\text{m}^3$ of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009

Appendix 1B Fugitive Dust and Particulate Monitoring

A program for suppressing fugitive dust and particulate matter monitoring at hazardous waste sites is a responsibility on the remedial party performing the work. These procedures must be incorporated into appropriate intrusive work plans. The following fugitive dust suppression and particulate monitoring program should be employed at sites during construction and other intrusive activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.
2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Remedial activities may also include the excavation, grading, or placement of clean fill. These control measures should not be considered necessary for these activities.
3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM10) with the following minimum performance standards:
 - (a) Objects to be measured: Dust, mists or aerosols;
 - (b) Measurement Ranges: 0.001 to 400 mg/m³ (1 to 400,000 :ug/m³);
 - (c) Precision (2-sigma) at constant temperature: +/- 10 :g/m³ for one second averaging; and +/- 1.5 g/m³ for sixty second averaging;
 - (d) Accuracy: +/- 5% of reading +/- precision (Referred to gravimetric calibration with SAE fine test dust (mmd= 2 to 3 :m, g= 2.5, as aerosolized);
 - (e) Resolution: 0.1% of reading or 1g/m³, whichever is larger;
 - (f) Particle Size Range of Maximum Response: 0.1-10;
 - (g) Total Number of Data Points in Memory: 10,000;
 - (h) Logged Data: Each data point with average concentration, time/date and data point number
 - (i) Run Summary: overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number;
 - (j) Alarm Averaging Time (user selectable): real-time (1-60 seconds) or STEL (15 minutes), alarms required;
 - (k) Operating Time: 48 hours (fully charged NiCd battery); continuously with charger;
 - (l) Operating Temperature: -10 to 50° C (14 to 122° F);
 - (m) Particulate levels will be monitored upwind and immediately downwind at the working site and integrated over a period not to exceed 15 minutes.
4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the remedial party to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record keeping plan.
5. The action level will be established at 150 ug/m³ (15 minutes average). While conservative,

this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m³, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 ug/m³ above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see paragraph 7). Should the action level of 150 ug/m³ continue to be exceeded work must stop and DER must be notified as provided in the site design or remedial work plan. The notification shall include a description of the control measures implemented to prevent further exceedances.

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM₁₀ at or above the action level. Since this situation has the potential to allow for the migration of contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

- (a) Applying water on haul roads;
- (b) Wetting equipment and excavation faces;
- (c) Spraying water on buckets during excavation and dumping;
- (d) Hauling materials in properly tarped or watertight containers;
- (e) Restricting vehicle speeds to 10 mph;
- (f) Covering excavated areas and material after excavation activity ceases; and
- (g) Reducing the excavation size and/or number of excavations.

Experience has shown that the chance of exceeding the 150ug/m³ action level is remote when the above-mentioned techniques are used. When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. The evaluation of weather conditions is necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended. There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require additional monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.

Attachment 2

Addendum Number 1 to Site Management Plan



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June 2, 2014
File: 190500593

Mr. David Szymanski, EPS-1
New York State Department of Environmental Conservation – Region 9, Buffalo
Division of Environmental Remediation
270 Michigan Avenue
Buffalo, NY 14203-2999

**Reference: Brownfield Cleanup Program
Addendum No. 1 to Site Management Plan
Site #C902019
Former Allegany Bitumens Belmont Asphalt Plant
5392 State Route 19
Town of Amity, Allegany County, New York**

Dear Dave:

On behalf of Blades Holding Company, Inc. (Blades), Stantec Consulting Services Inc. (Stantec) has prepared this addendum to the previously approved Site Management Plan (Attachment 1). This addendum was prepared due to changes in the groundwater sampling program as per NYSDEC approval, grading activities at the Site, and the supplemental injection program. Presented below are the proposed additions or revisions to the Site Management Plan.

Additions to Section 1.2.2

November 2012 Sodium Lactate Injection Program for RAOC-1

Based on the results of the September 2012 quarterly groundwater sampling event Blades decided to perform an additional injection of sodium lactate to enhance natural reductive dechlorination of chlorinated volatile organic compounds (CVOCs) in the area of RAOC-1. A Work Plan describing the proposed work was submitted to the Department and approved on October 18, 2012. Placement of supplemental sodium lactate in the subsurface in RAOC-1 occurred on November 5 and 6, 2012. The work was performed in accordance with the NYSDEC-approved Work Plan and was accomplished via direct injection of approximately 2,424 lbs. of lactate. The lactate, which is purchased as a 60% aqueous solution was mixed onsite with water to create an estimated 3,330 gallons of working solution and injected into a series of 13 direct-push probe holes (see Figure 13) and three existing monitoring wells (BS-2R, MW-8, and MW-25).



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Final Site Grading

Final site grading was performed in accordance with the Remedial Action Work Plan during the period of November 8 through November 20, 2012. This included:

- Removed the 36-in culvert pipe on November 8, 2012.
- Performed in-place closure of the existing 30-in diameter culvert pipe on November 14, 2012. **Each end of the pipe was ‘bulkheaded’** then filled with a high-slump concrete material by filling from each end and three intermediate points where the pipe was exposed through excavation and holes were cut in the top. NYSDEC (Mr. Kevin Glaser) was present on the Site for a portion of this day.
- **Relocated a portion of the western berm “lobe” waste asphalt materials to the low-lying areas** in the central portion of the Site, involving placement and compaction of the material in lifts (see area of placement in Figure 13). An estimated 180 cubic yards of material was relocated during the period November 9 through November 15, 2012. Approval of this activity was received via e-mail from NYSDEC (Mr. Anthony Lopes) on October 11, 2012.
- A sample of the asphalt material was obtained for laboratory analysis when approximately half of the materials had been moved, due to photoionization detector (PID) readings of up to approximately 30 ppm observed during screening. Relocation efforts were suspended pending receipt of laboratory results, which ultimately indicated VOCs were not present in the sampled material (refer to Progress Report 26). The elevated readings may have been the result of instrument malfunction.
- Graded the existing aggregate stockpile across much of the Site (see approximate limits on Figure 4). Placement included the area of relocated asphalt materials. A minimum of one ft. of aggregate was placed over this area. The material was compacted with a vibratory roller.



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- Relocation of the sand stockpile located near the northeast corner of the Site onto a portion of the north berm both to homogenize the slope and cover a selected portion where asphalt-containing materials were present at the surface (see Figure 13). This work was performed on November 19 and 20, 2012.
- During Site grading activities on November 9, 2012, miscellaneous debris was encountered near **the base of the slope of the asphalt “lobe” located in the west central portion of the Site** (see Figure 13). These materials included a small crushed drum, miscellaneous trash and a one-gallon container of possible waste paint or paint-related material. A small amount of viscous liquid was observed to be leaking from the one-gallon container, and PID readings of up to approximately 150 parts per million (ppm) were observed in close proximity to the material. The drum, the one-gallon container and associated soil were segregated on and covered with poly sheeting for sampling and analysis for disposal purposes.
- Samples were obtained on November 19, 2012 by NYTECH of the material in the one-gallon container and the soil at the base of the slope where the drum and container were encountered. The one-gallon container material was submitted for disposal characterization analyses, including Target Compound List (TCL) semi-volatile organic compounds (SVOCs), Target Analyte List (TAL) metals, PCBs, pH, flash point, reactivity and TCLP VOCs. The soil at the base of the slope was also analyzed for TCLP VOCs, TCLP SVOCs, TCLP metals, pH, flash point and reactivity. NYSDEC (Mr. Kevin Glaser) was present on the Site for a portion of this day.
- Based on the flash point and toxicity characteristic leaching procedure (TCLP) VOC results for the one-gallon container material, the material was considered to be hazardous by characteristic. The container was over packed and removed from the site by New York Environmental Technologies, Inc. (NYTECH). The results of the soil sample from the base of the slope were either non-detect or non-hazardous. Therefore the presence of the one-gallon container did not impact the surrounding soil.



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- During further grading activities along the base of the same slope on November 12, 2012, a 55-gallon drum was exposed near the base of the soil slope. Since the nature of the drum and its contents were unknown the drum was left intact and undisturbed pending arrangements for a subcontractor to remove the drum, inspect the contents and sample as appropriate. On November 19, 2012, the drum was exposed through hand excavation by NYTECH. The drum was found to have no top and was partially filled with miscellaneous debris and a small amount of soil. PID screening did not indicate VOC presence. A sample of the soil was obtained and submitted for laboratory analysis for TCLP VOCs, TCLP SVOCs, TCLP metals, pH, flash point and reactivity. The results of the sample from the drum soil did not identify a contamination concern.

Topsoil was placed, seeded and mulched by LaForge on June 17, 2013 in three areas (see Figure 14). The topsoil was previously tested in November 2012. Metals compounds were detected but were within the naturally-occurring ranges. The topsoil, seeding and mulching were performed in the following areas:

- The large area at the eastern end of the north berm (Area 1 on Figure 14) – A small amount of surface regrading with a bulldozer and re-rolling of the slope was performed in the eastern portion prior to topsoil placement. Several cobble or boulder-sized chunks of asphalt up to 2 ft. in diameter were loosened during this grading, and they were segregated and removed from the site by LaForge.
- The small area at the west end of the north berm (Area 2 on Figure 14) – A minor amount of smoothing was performed with the backhoe prior to topsoil placement but a fairly steep slope was maintained.
- The small slope in the crushed stone backfill of RAOC-1, along the north property line near the tractor ramp on the property to the north (Area 3 on Figure 14).

An updated topographic survey was performed by B & R Surveying, PLLC on December 9, 2013 to identify the final site grading changes that took place at the Site. The updated topographic survey is attached (Attachment 2).



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Revised Section 1.4.2

The effectiveness of these treatments has been assessed through a groundwater monitoring program using up to seven site monitoring wells (see Figure 10) from March 2012 through May 2014.

During the two most recent groundwater sampling events, December 2013 and May 2014, contaminant concentrations in all wells sampled were below groundwater standards. In BS-2R, located in the former source area in RAOC-1, the only detected VOC was TCE, which decreased in concentration from 3.6 µg/L to 2.3 µg/L when compared to the last quarter.

In December 2013 and May 2014, CVOC concentrations at downgradient well MW-25 (2.1 µg/L and 1.9 µg/L, respectively) were below NYSDEC groundwater standards indicating the on-going success of the November 2012 sodium lactate injection.

Well MW-8, the furthest downgradient well, exhibited a decrease in CVOC concentrations during the December 2013 and May 2014 events compared to recent previous quarters and it was also below NYSDEC groundwater standards. TCE was not detected at this well during the March 2013, September 2013, December 2013, and May 2014 sampling events. Presence of the daughter product cis-1,2-DEC at this downgradient location indicates that the desired reductive dechlorination is continuing to occur.

Sample results from well MW-65 in RAOC-3 were “non-detect” for all VOC and SVOC analytes for the June 2012, September 2012, and December 2012 quarterly sampling events, and no petroleum product or sheen was observed in the well. Given three consecutive quarterly sampling events where MW-65 yielded non-detect results, and the prior event, March 2012, which exhibited concentrations that were either non-detect or below groundwater standards, permission was granted by the NYSDEC to discontinue sampling and abandon the well. MW-65 was abandoned on March 28, 2013 and no impacts were observed during abandonment.

Revised Section 1.4.3

Soils at the side and bottom of the RAOC-1 through RAOC-3 and Heater Area excavations met Commercial SCOs as demonstrated by the confirmatory sampling results presented in the IRM CCR. At RAOC-3, 2 to 3 cubic yards of impacted material was left in place surrounding the site’s water supply well (see Figure 9) in order to avoid potentially damaging the well’s casing. This impacted material consists of LNAPL-impacted



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Town of Amity, Allegany County, New York**

coarse gravel and cobbles at approximately 5 to 8 ft. bgs. A confirmatory sample of similar material from a nearby sidewall (which was later excavated) did not show exceedances of Commercial SCOs. Thus, the 2-3 cubic yards of impacted material left in place surrounding the water supply well is not considered to be a concern, since the contaminant levels are anticipated to be at levels well below SCOs. In addition, the gypsum applied to the excavation should assist the biodegradation of the residual contaminants.

The groundwater sampling event conducted in December 2013 and May 2014 reported that VOC concentrations in RAOC-1 were below the NYSDEC standards (see Table 5). Groundwater at RAOC-3 and the Heater Area has not been shown to exceed standards. Sample results from well MW-65 were either non-detect or below groundwater standards for four consecutive quarters indicating the prior remedial measures were effective. As a result the NYSDEC granted approval to discontinue sampling at MW-65 and abandon the well (see Table 5). The only soils demonstrated to be in exceedance of the Commercial SCOs were from a sample taken at 6-6.5 ft. bgs at TP-10 from beneath the berms along the eastern perimeter of the site (see Figure 11). In this sample, a single PAH, benzo(a)pyrene, was detected at 4.1 ppm, which exceeded the Commercial SCO of 1.0 ppm. Pieces of asphalt were found throughout this test pit. At the base of the test pit, near where the sample was collected, there was an impenetrable hard surface that was most likely asphalt pavement. Therefore, the PAH exceedance is believed to be related to the presence of the asphalt.

During the RI, portions of the perimeter soil berms or slopes along the east and north property lines as well as a **“lobe” near the center of the eastern berm that extends westward toward the interior of the site** were found to contain waste asphalt and asphalt/fill soil mixtures, as well as miscellaneous debris consisting of a variety of large and small pieces of wood, metal, plastic and rubber objects. These materials, where encountered were generally found at depths ranging from ground surface (i.e. just under the base of the berm) down to the deepest reach of the excavator (approximately 12 ft. bgs); however the lack of SCO exceedances in every sample except one indicates that berm soils are largely devoid of COCs at levels in excess of cleanup standards.

Table 6 and Figure 11 summarize the results for soil sample locations where COCs may remain at levels that exceed the Commercial and Industrial SCOs after completion of Remedial Action.



**Reference: Brownfield Cleanup Program
Addendum No. 1 to Site Management Plan
Site #C902019
Former Allegany Bitumens Belmont Asphalt Plant
5392 State Route 19
Town of Amity, Allegany County, New York**

Revised Table 8: Contact Numbers

Mr. Michael P. Storonsky, Stantec Consulting Project Manager	(585) 413-5266
Mr. Robert Blades, Blades Holding Company, Site Owner	(607) 382-6069
Mr. Christopher Blades, Blades Holding Company, Site Owner	(607) 968-0090
Mr. Thomas Tuori, Harter Secrest & Emery	(585) 231-1449
Mr. David Szymanski, NYSDEC Project Manager	(716) 851-7220
Mr. Nathan Freeman, NYSDOH Project Manager	(518) 402-7860

Revised Section 2.2.2.2 Monitored Natural Attenuation for Groundwater

Groundwater sampling events occurred on a quarterly basis from September 2012 through December 2013. In September of 2013 the NYSDEC approved a request to remove BS-3, MW-27 and MW-28D from the quarterly groundwater monitoring program and instead put them on a three year sampling frequency. In February of 2014 the NYSDEC approved a request to reduce future groundwater sampling events to semi-annual events. Groundwater monitoring activities to assess natural attenuation will continue on a semi-annual basis (See table 9). Contingent on the results, the need for continued monitoring should be re-evaluated. If no CVOCs are detected above NYSDEC groundwater standards for a one year period then monitoring should be discontinued. Otherwise, as per the revised SMP and approval from the NYSDEC, three wells in RAOC-1 (BS-2R, MW-8, and MW-25) will continue to be sampled on a semi-annual basis for TCL VOCs and three additional wells (BS-3, MW-27, and MW-28D) may be sampled in the future (every three years) if warranted.



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Revised Table 9: Monitoring and Inspection Schedule

Monitoring Program	Frequency*	Matrix	Analysis
RAOC-1 Groundwater monitoring (Wells BS-2R, MW-8, MW- 25,) (Wells BS-3, MW-28D, MW- 27)	Semi-annual sampling Every three years (next event in June 2016)	Groundwater	TCL VOCs + TICs (Method 8260)

Revised Section 3.2.1

Groundwater monitoring in the vicinity of RAOC-1 will be performed on a periodic basis to assess the performance of the remedies.

The network of monitoring wells has been installed to monitor up-gradient, source area, and down-gradient groundwater conditions at the site as appropriate. The network of on-site and off-site wells has been designed based on proximity to the former RAOC-1 source area. Well locations are displayed on Figure 10. Monitoring well construction logs are included in Appendix E. Five of the wells (BS-2R, BS-3, MW-8, MW-25, and MW-27) are shallow overburden monitoring wells that have a range in screen placement from 3 to 16 ft. bgs. One well (MW-28D) is a deeper overburden well that is screened from 30 to 40 ft. bgs (see Figure 5). A typical groundwater flow pattern is displayed on Figure 6. Table 10 contains the available rounds of water level data. Figure 11 displays contouring of the first round of post-remediation groundwater sampling for shallow CVOCs.



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The monitoring wells to be sampled, the analytes to be tested for, and the frequency of sampling are listed in Table 9. The sampling frequency may be modified with the approval NYSDEC. The SMP will be modified to reflect changes in sampling plans approved by NYSDEC.

Deliverables for the groundwater monitoring program are specified below.

Revised Table 11

Schedule of Monitoring/Inspection Reports

Task	Reporting Frequency*
Annual Inspection/Periodic Review Report	Annual
Groundwater Monitoring	Semi-Annual

Closing

Should you have any questions or require further information, please call me at 585-413-5266.

Sincerely,
STANTEC CONSULTING SERVICES INC.

Michael P. Storonsky
Project Manager

Peter Nielsen, PE
Senior Associate

cc: N. Freeman (NYSDOH)
R. Blades (Blades Holding Company)
T. Tuori (Harter Secrest & Emery, LLP)

Attachments:

- Attachment 1 – Site Management Plan
- Attachment 2 – Topographic Survey of Lands Located at No. 5392 State Route No. 19
- Figure 13 – Supplemental Sodium Lactate Injection Points and Final Site Grading
- Figure 14 – Top Soil Placement
- Updated Tables 5 and 10

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**Updated Topographic Survey of Lands Located at
No. 5392 State Route No. 19**

New Figure 13

New Figure 14

Updated Table 5

APPENDIX C

Groundwater Contour Maps

Water Levels
Belmont Asphalt Plant, Belmont NY

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APPENDIX E

Annual Sitewide Inspection Form



Annual Sitewide Inspection Form
 Former Allegany Bitumens Belmont Asphalt Plant
 Brownfield Cleanup Program Site # C902019
 53992 State Route #19
 Amity, Allegany County, New York

Stantec

Inspection Date: 5/11/2015

Time Period Inspection Covers: 5/3/2014 - 5/11/2015

Inspector(s): Katie Premo Weather: Mid-50s, Sunny

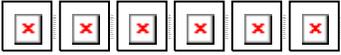
- A. Describe the site usage (i.e. commercial or industrial purposes, or higher level usage [i.e. unrestricted, residential]? Commercial / Industrial land used to store Verdi shipping containers
- B. Describe general site conditions. Undeveloped with partial asphalt, concrete gravel and vegetation cover. Verdi shipping containers on-site
- C. Is the site currently undergoing development? If so, describe. NO
- D. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during the Reporting Period? YES - Site was purchased by Gray Rock
- E. Is the site being used for vegetable gardening or farming? NO
- F. Has groundwater monitoring been performed according to the schedule in the Site Management Plan (SMP)? Change in number of wells sampled per NYSDDEC approval
- G. Is groundwater being used on-site? No If so, is it being rendered safe for its intended use? Describe. _____
- H. Are there buildings on-site? No
- I. If so, has the potential for vapor intrusion been evaluated or has a sub-slab depressurization system (SSDS) been installed? If a SSDS is present, has the SMP been modified to include a SSDS inspection schedule and form? Not Applicable
- J. Are soil covers in place on bermed areas as defined in SMP? Not Applicable - soil cover not required by SMP
- K. Is vegetation on soil covers in place? yes - Spruce south of MW-25, however will likely grow in later in the season
- L. Have any activities been conducted since the last inspection that necessitated site management activities be conducted, such as excavation in covered areas, confirmation sampling and a health and safety inspection? Injection program carried in March 2015 performed per DEC approval
- M. Is the site in compliance with permits and schedules included in the Operations and Maintenance Plan in the SMP? yes

- N. Have any federal, state, and/or local permits (e.g. building, discharge) been issued for or at the property during this Reporting Period? YES - Underground Injection Control (UIC) from EPA - UIC No. 13NY00306001
- O. Has all reporting been performed per the schedules outlined in the SMP and are all site records up to date? yes
- P. Are all ICs/ECs in place and functioning as designed? yes
- Q. Has any new information revealed that assumptions made in the Qualitative Exposure Assessment regarding off-site contamination are no longer valid? No
- R. Are the assumptions in the Qualitative Exposure Assessment still valid? yes

APPENDIX F
NYSDEC Approvals

Design with community in mind

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Ü Please consider the environment before printing this email.

ec: Mr. Martin Doster - NYSDEC
Mr. Anthony Lopes - NYSDEC
Mr. Michael Storonsky - Stantec Consulting Services, Inc.
Mr. Joe Verdi - Gray Rock Properties LLC
Mr. Robert Blades - Blades Holding Company
Thomas Tuori, Esq. - Harter Secrest & Emery, LLP