REPORT

WORK PLAN FOR CORRECTIVE MEASURES IMPLEMENTATION

SNPE Inc. / VanDeMark Chemical, Inc

Lockport, New York

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Project No. 093-89168

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Table of Contents

List of Figures

Appendices

1.0 INTRODUCTION

Golder Associates Inc. (Golder) under contract to SNPE Inc. (SNPE) and with the direct cooperation of the owner, VanDeMark Chemical Inc. (VDM), has prepared this Corrective Measures Implementation (CMI) Work Plan to address the coal tar residuals comprised of semi-volatile organic compounds in soil and bedrock for the Eighteen Mile Creek Bank area (Creek Bank Area) located to the south of the VanDeMark Lockport, NY facility. The facility is located in the north central sector of the City of Lockport city limits; as shown on Figure 1-1.

The New York State Department of Environmental Conservation (NYSDEC) negotiated a Corrective Measures Order (executed November 30, 2011) with VDM (as Site owner) and SNPE under the Resource Conservation and Recovery (RCRA) program that included the framework and schedule for the implementation of corrective measures that are discussed in this Work Plan (Appendix A).

1.1 Background

Subsequent to the investigation activities and interim corrective measures performed at the VanDeMark facility from 2006 through 2010, a Corrective Measures Study (CMS) was performed and summarized In "Focused Corrective Measures Study" report (VanDeMark Chemical, Golder Associates, April 2011).

The Focused CMS presents a detailed summary of the previous investigations and remedial activities performed at the VanDeMark Facility associated with coal tar impacts in the Creek Bank Area and also provides historical site background information and context (refer to Sections 1.1 and 2.0 of the Focused CMS).

The primary objective of the Focused CMS was the identification, justification and recommendation of the appropriate corrective measure(s) for the coal tar impacted Creek Bank Area based on technical, human health and environmental screening criteria. Three alternatives were selected and evaluated using these criteria. Alternative 1 included a comprehensive DNAPL collection and removal system keyed into the bedrock at the toe of the slope and removal of coal tar residuals to bedrock. This alternative included provisions for groundwater pumping and shoring of the slope if needed. Alternative 2 was proposed as a less intrusive DNAPL containment and passive collection system that would consist of a grout curtain installation for NAPL containment combined with installation of a shallow permeable collection trench and removal of shallow overburden coal tar accumulations. Alternative 3 was proposed as the least intrusive remedial approach and consisted of removal of shallow and exposed coal tar accumulations and routine visual monitoring of the Creek Bank area for evidence of new coal tar seeps.

The Focused CMS recommended Alternative 2 to meet the corrective action objectives of DNAPL capture/containment and provide a passive and reliable method for collection and removal of DNAPL. This alternative was selected as the most viable to meet remedial objectives while reducing the concerns

associated with adversely impacting adjacent slope stability and long term impacts to the Creek Bank area relative to the construction and operation in this challenging location.

In correspondence to Golder Associates dated May 5, 2011 (Appendix B), the NYSDEC accepted the recommendations of the Focused CMS for implementation of Alternative 2 with several modifications requested to the final design. These modifications included:

- Designing the stone collection trench to extend to the top of rock or a maximum of 5 feet below grade surface (bgs) if bedrock is greater than 5 feet bgs along the proposed trench alignment; and
- inclusion of a passive water treatment system for water exiting the trench that will reduce the turbidity and remove low levels of organic constituents.

1.1 Objective

The objective of this CMI Work Plan is to provide the design detail and information necessary to proceed with installation and construction of the Focused CMS Alternative 2 in the Creek Ban area. The primary purpose of the corrective measures is to restrict and contain migration of DNAPL exiting the fractured bedrock formation at or near the toe of the Creek Bank area slope and collect the DNAPL in a defined permeable trench for subsequent mechanical removal on an as needed basis. This objective will be achieved through installation of a continuous overburden and bedrock grout curtain and passive upgradient collection trench running parallel to the grout curtain.

This document presents the detailed design for the proposed corrective measures in the Creek Bank area. Information related to design analyses, operation and maintenance, health and safety requirements, construction quality assurance objectives, and schedule is presented. Specifications for the corrective measures are included on attached drawings.

2.0 CORRECTIVE MEASURES DESIGN

Data and observations collected during performance of the Interim Corrective Measures (ICMs) performed in 2007 and 2008 in the Creek Bank area (excavation of shallow coal tar residuals) and the findings from the DNAPL Assessment conducted in 2010 has been used to establish a design basis for corrective measures proposed in the Creek Bank Area.

2.1 Site Preparation

Initially, the selected remediation contractor will be required to clear and grub vegetation that remains along the proposed alignment of the grout curtain and associated DNAPL Collection trench. At a minimum, vegetation within approximately ten feet of the trench alignment will be removed to provide for safe access and equipment operation that will be necessary for access road stabilization as well as during drilling, associated grout injection and trench excavation. If required, selective additional selective tree removal may be needed above the toe of the slope to accommodate equipment access. These removals will be minimized to the extent feasible and only performed where they impact safe implementation of the work. Vegetation trimming and removal along the upper access path (to the east of the remedial area and extending to the former North Transit Road) will also be performed to provide clear, unobstructed access for equipment and materials transport.

Stabilization and reinforcement of the access path that extends from the former North Transit Road to the lower Creek Bank Area will be required as needed and determined by the remedial contractor. In particular, approximately 75 feet of the steeply sloped section of the path between test pit locations TP9 and TP10 (refer to Figure 2-1) has been significantly compromised by erosion and will require rebuilding improvements to handle equipment traffic necessary to complete the planned remedial activities. Stabilization will be performed with the placement of No.2 crushed stone or equivalent approved select structural backfill. All imported select fill and stone will be specified from virgin sources.

In conjunction with vegetation clearing and access path stabilization activities, erosion control measures including silt fencing and straw bales (refer to Figures 2-1 and 2-3 for location and installation details for proposed erosion control measures) will be installed along the south side of the proposed grout curtain alignment and access path where excavation or associated ground disturbance will occur. Erosion control measures will extend a minimum of 15 feet beyond the planned disturbance.

2.2 DNAPL Residuals Removal

The Focused CMS recommended the excavation and removal of accumulated shallow DNAPL (coal tar) residuals and impacted overburden material to the extent feasible in the Creek Bank Area as part of the overall remedial strategy. Due to slope stability and access concerns, the removal of coal tar residuals will be focused in the areas downgradient of the proposed grout curtain or shallow (i.e less than 3.5 to 4 feet below grade surface) in the vicinity of the toe of the slope.

The most extensive accumulations of coal tar residuals were observed during the June 2010 test pit investigation in test pits TP7 and TP8 at depths between 2 and 3.6 feet bgs. Refer to Figure 2-1 for the location and depth of coal tar residuals identified during the test pit investigation. In addition, lesser amounts of residuals were also noted nearer to the creek bank in TP1 and TP3. These areas were both previously excavated as part of the 2007 and 2008 ICMs, however further removal is warranted based on the observed quantity of residuals. In both locations, excavation and removal of visible accumulations of residuals will be completed to bedrock. Since the presence of coal tar was not detected in significant quantities in adjacent test pits (i.e., TP2, TP4, TP5, TP6 and TP9), the lateral extent of the excavations in the vicinity of TP1, TP3, TP7 and TP8 is planned to be approximately 10 feet beyond the limits of the impacted test pits. Figure 2-1 designates areas proposed for excavation and removal of residuals described above.

In the eastern portion of the proposed grout curtain alignment, along the upper reach of the test pit investigation area, a layer of coal tar residuals were noted in test pits TP10 and TP11 at depths of approximately 5 to 6 feet bgs. Since these test pits fall adjacent to or within the alignment of the proposed DNAPL collection trench, any coal tar residuals encountered during the excavation work to be performed for installation of the trench will be removed. If feasible, excavation of additional coal tar residuals by expanding the limits of the excavation in this area will be performed if it does not undermine the slope or impact the planned alignment and integrity of the grout curtain.

All excavated areas will be backfilled with virgin imported soil and topsoil materials except where these areas may intercept the planned DNAPL collection trench described in detail in Section 2.3 below and the required trench aggregate backfill is utilized. The imported fill will meet the backfill and cover soil quality standards established in 6NYCRR 375-6.8(a) for unrestricted residential use soil cleanup objectives. All imported materials will be sampled and tested in accordance with the recommendations of DER-10 (Section 5.4[e]).

Coordination of management and off-site transportation of coal tar residuals generated from these excavation activities will be the responsibility of the selected remedial contractor, however, all excavated coal tar residuals and impacted overburden soils disposal will be manifested directly through VanDeMark under two previously approved waste profiles. Coal tar residuals with solid debris (e.g., rock) less than six inches in diameter will be disposed of at Covanta Energy in Niagara Falls, New York. Coal tar residuals mixed with debris larger than six inches will be disposed of at Modern Landfill in Lewiston, New York. This disposal management approach will be consistent with the procedures utilized during the previous ICMs, most recently in 2011 during the In-Plant ICM.

2.3 DNAPL Collection Trench Installation

A passive DNAPL collection trench will be installed parallel and north of the proposed grout curtain alignment prior to installation of the grout curtain to prevent undermining and impacting the integrity of the installed grout curtain (refer to Figures 2-1 and 2-2 for alignment and construction details, respectively). The trench will be a minimum of 24 inches wide and extend from grade surface to the top of rock or a maximum of five feet bgs, where bedrock is deeper. The trench will be backfilled with coarse aggregate (washed), meeting the gradation specification provided on Figure 2-2. The southern edge of the trench will be located approximately 12-inches from the grout curtain. Approximately 6 inches below the top of the collection trench a layer of 6 oz. non-woven geotextile will be placed and will be covered with six inches of gravel for protection. A 3-inch diameter perforated drain line will be installed in the western end of the trench approximately six inches below the top of the trench to convey via gravity accumulated water out of the western end of the trench (see details on Figure 2-2). Upon exiting the collection trench the perforated pipe will transition to a solid pipe and be routed to a 4-foot diameter precast concrete sump that will contain a filter bed consisting of coarse sand mixed with granular activated carbon meeting the specifications provided on Figure 2-2 to remove solids and low concentrations of organic compounds that may be entrained in the trench drainage water. The precast filter sump will be four feet deep and accessed from the top through a 24-inch diameter watertight aluminum manway cover for maintenance and observation activities.

The filtered water will exit the filter sump via gravity through a 3-inch diameter drain pipe, flow to and terminate in a drain sump filled with washed coarse aggregate (as specified for collection trench) adjacent to and downgradient from the trench. The sump will enhance hydraulic connection to and allow for recharge of the drainage water into the Creek Bank overburden soils.

2.4 Grout Curtain Installation

Installation of a grout curtain is proposed across the impacted Creek Bank Area spanning approximately 300 linear feet as presented on the alignment shown on Figure 2-1. The grout curtain will be installed in the overburden soils and shallow bedrock subsequent to installation of the DNAPL Collection Trench and coal tar residuals removal activities (as previously described in Sections 2.2 and 2.3) to provide for the containment of DNAPL migrating from the fractured bedrock at or near the toe of the Creek Bank slope.

The grout curtain will utilize a homogenous, suspension grout mixture consisting of one or more of the following materials:

- Cement, Portland, type I or II;
- Bentonite;
- Flyash Class C or F, ASTM C618; and
- Water, free from contaminants or other deleterious materials.

The installed grout curtain will meet the following performance based specifications:

- Minimum Permeability: 1×10^{-6} cm/sec
- Minimum Unconfined Compressive Strength (overburden soils): 20 psi

The grout curtain installation technique may vary for the bedrock and overburden strata depending on site specific soil and bedrock characteristics. It is anticipated that the shallow bedrock (i.e., Power Glen Shale unit) grouting will be achieved by drilling vertical or angled boreholes approximately 10 feet into the rock formation and pressure grouting at a controlled pressure through a pneumatic packer. Spacing for the primary bedrock grout curtain holes is usually 20 feet or greater and intermediate holes are located midway between the primary borings. Additional intermediate borings are performed between holes in this fashion until the grout consumption indicates the rock to be saturated. Based on literature review of the Power Glen Shale, it is expected that a fine-grained grout mixture (e.g., micro-fine cement grout) will be more appropriate for this formation based on its characteristic integrity and relatively low permeability.

The overburden grouting technique may be accomplished utilizing several techniques, including direct pressure injection (permeation grouting) or jet grouting (with or without air or water), also referred to as soil stabilization using a soil-cement structure. Typically, spacing between the grout injection points in relatively permeable overburden is approximately 5 feet or less in order to achieve uniformity in the curtain and a factor of safety in grout overlap.

The final spacing and alignment of injection points will be dictated by the results of the field demonstration performance testing program that the remedial contractor must perform prior to selection and implementation of the full-scale grouting method(s).

The remedial contractor will submit details of the proposed field demonstration performance testing program, including the location and layout of the test pattern for the grout holes, grout mix parameters to be tested and variables to be monitored during the program (e.g., grout flow rate, volume, pressure, etc.). The test program will include details of the proposed quality control/quality assurance testing to demonstrate that the specified permeability and unconfined compressive strength performance criteria has been achieved as well as data that demonstrates the grout penetration radius or sufficient overlap of the grout has been defined to support final injection or boring spacing (as appropriate to the geologic unit).

Following completion of the field demonstration program, the contractor will summarize the performance demonstration data including: the drilling or injection logs from the test holes; grout mix parameters; grout flow, pressure and volumes tested; and the results of the quality control/quality assurance data from the field demonstration which support the recommendations for the proposed overburden and bedrock grouting methodology or methodologies.

Prior to initiating full-scale grouting operations, the remedial contractor will submit for approval a grouting implementation plan that will specify the spacing, location, depth and general sequence of installation to achieve the specified performance criteria. Grout hole or injection locations shall be dimensionally referenced and overlaid on the proposed curtain alignment.

The implementation plan shall also include the final grout mix specifications and the quality control and verification procedures to be employed during the execution of production work. Details of the in-situ permeability and unconfined compressive strength testing procedures will also be required as part of the implementation plan. It will be required that the contractor include testing areas along the grout curtain alignment that will allow for subsurface collection of in-situ samples to assess performance (i.e., permeability and compressive strength) that will not interfere with the integrity of the grout curtain. The contractor may submit alternate proposals for collection of performance data for consideration and based on accepted practice.

A grout spoil and waste management plan will be required from the remedial contractor for containment, management and disposal of waste spoils and residuals generated during the grout curtain installation, depending on the final method(s) selected for the overburden and bedrock grouting.

2.5 Quality Assurance and Performance Assessment

At the conclusion of the grout curtain installation, the remedial contractor shall provide documentation of the following parameters associated with the grout system installation:

- Time and date of beginning and completion of each grout injection/grout element;
- Boring logs for bedrock grouting, where applicable;
- Grout mix data, including mix proportions and unit weight density measurements;
- Injection pressure of grout (max., min and average where applicable);
- Flow rates and total volume of all grout mixtures employed;
- Top and bottom elevations of the grouted curtain; and
- Final layout/alignment of installed grout curtain elements surveyed and tied into the existing site survey.

In addition to the above installation data, the remedial contractor will provide a minimum of six subsurface samples (one per 50 feet of grout curtain alignment) of the final grout matrix collected after grout curing is deemed complete (typically after 28 days) for unconfined compressive strength and permeability testing by the engineer.

Groundwater elevation measurements will be also be collected from the upgradient and downgradient performance piezometers on a weekly basis for the first month after installation of the grout curtain and DNAPL Collection Trench to identify any short term impacts to the local groundwater elevations that may

be observed across the grout curtain. General aspects of the proposed long term performance monitoring provisions will be discussed in Section 3.

2.6 Site Restoration

At the conclusion of the remedial construction activities, the remedial contractor will be required to restore and re-vegetate disturbed areas of the Creek Bank Area to minimize erosion to the affected area. In general, outside the limits of the access path and collection trench footprint, the contractor shall backfill and re-grade all disturbed areas with imported virgin soils (see requirements for imported soil in Section 2.2) to restore the and enhance the natural drainage patterns along the creek bank and promote regeneration of native plant species in areas that were cleared of vegetation to perform the work. Natural erosion control matting (e.g., jute or equivalent) will be placed on all newly backfilled areas to hold soil materials in-place until vegetation is established. A plant seed mix consisting of native species appropriate for riparian areas will be required for seeding of these areas. The seeding mix will be submitted for review and approval of the engineer prior to placement.

The contractor will be required to inspect and maintain erosion control structures (i.e., silt fencing and straw bales) installed for the remedial work until vegetation as been established to the satisfaction of the engineer and VanDeMark.

3.0 MONITORING AND MAINTENANCE

The design features of the proposed Creek Bank Area corrective measures are intended to provide a reliable and low maintenance mechanism for the containment and collection of DNAPL, however routine monitoring and maintenance procedures will be implemented following completion of the remedial design as necessary to continue removal of any collected DNAPL and provide for continued management/operation of the collection trench water overflow system filtration system. A detailed Operations and Maintenance Plan (OMP) will be prepared within 45 days of completion of the remedial construction. The following is a brief summary of the activities that will be covered under the OMP.

3.1 Monitoring and Inspection

Quarterly inspections will be performed on the DNAPL collection trench and the collection trench drainage/filtration system. Evidence of DNAPL accumulation will be collected based on manual shallow excavation of the aggregate in the collection trench at two to four locations and approximations of the DNAPL accumulation rate will be prepared based on these observations. Visual observation of the drainage sump filter media and any evidence of excessive solids accumulation or washout will be noted. Evidence of erosion or disturbance of the collection trench and drainage system that might impact its integrity or performance will be documented as action items. Water level measurements and field screening data (turbidity, pH, Photoionization Detector (PID) headspace monitoring and visual observations of water samples from the piezometers will be collected. Collection and analysis of the groundwater from the piezometers for soluble semi-volatile organic compounds (SVOCs) will be performed semi-annually as part of these monitoring events.

3.2 Notifications and Reporting

The results of the inspections and monitoring events will be summarized in an annual report for submittal to the NYSDEC. The report will provide a proposed schedule for the DNAPL collection trench cleanout and drainage sump filter media replacement based on observed DNAPL and sediment accumulation rates, respectively. The report will also identify corrective actions, if any, that may be necessary to address damage to the corrective measures due to erosion or other factors that may impact their overall effectiveness and integrity.

4.0 HEALTH AND SAFETY REQUIREMENTS

This project involves a NYSDEC mandated corrective action and also may involve contact with hazardous substances, it will be necessary for the Contractor to comply with OSHA 1910.120 (HAZWOPER) regulations. A Health and Safety Plan is required to be developed by the Contractor and submitted prior to mobilization and initiation of any work activities.

Safety is of utmost importance to VanDeMark with any project undertaken. In addition to the OSHA 1910.120 requirements, any other pertinent federal, state or county requirements must be followed as well as VanDeMark's own Contractor Safety Procedures.

5.0 PROJECT SCHEDULE

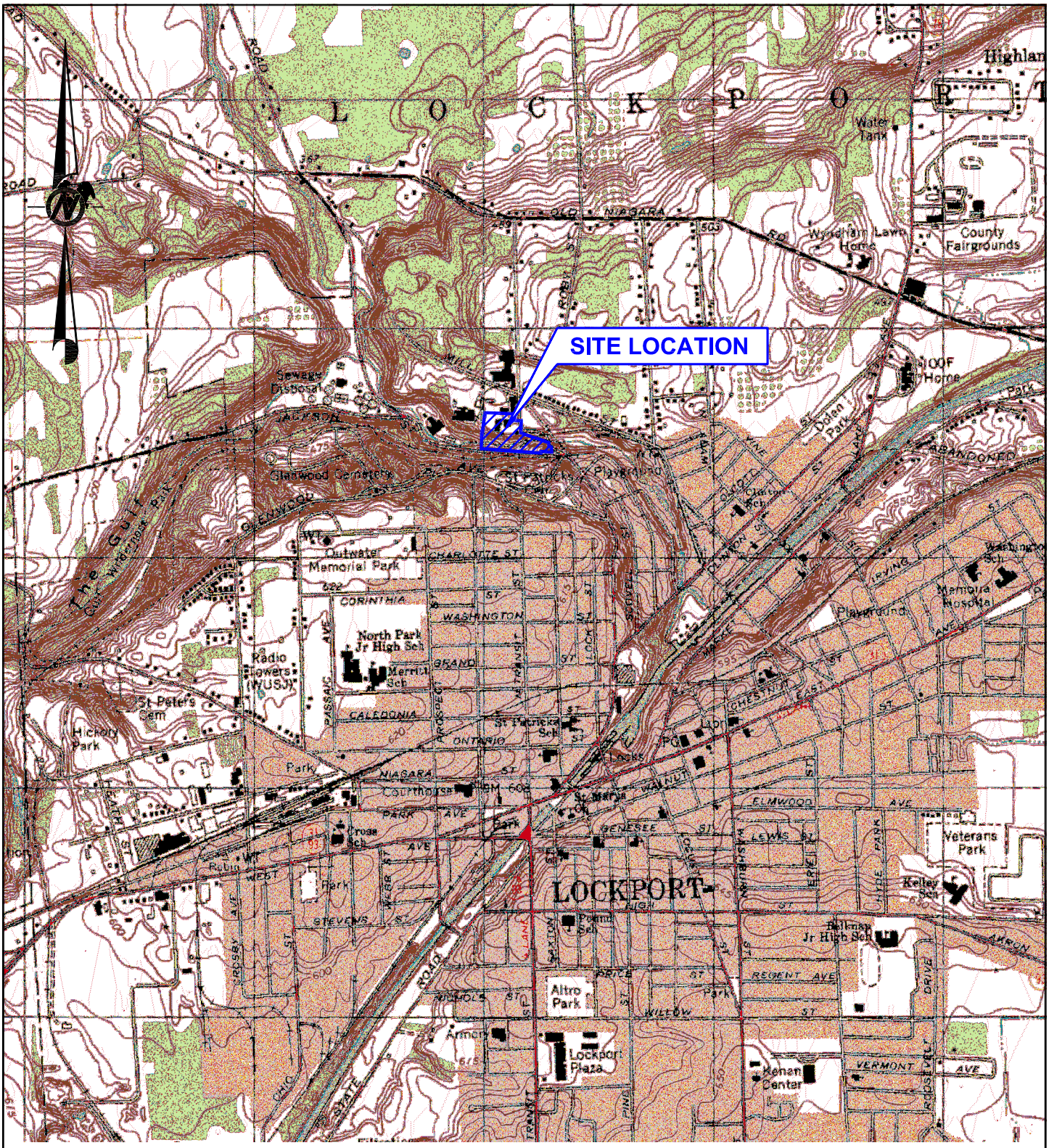
The construction activities for the proposed corrective measures are anticipated to require twelve weeks to perform. This estimate includes the time required to select a qualified remedial contractor using a competitive bidding process and contractor mobilization/demobilization.

The following schedule is proposed for implementing the design and installation of the corrective measures at the Creek Bank Area.

Activity	Submittal Period
Solicit contractor bids and award remedial contract	Within 45 days of written receipt of final Department approval of the Corrective Measures Implementation Work Plan
Selected contractor mobilizes and performs Field Demonstration Performance Test Program to select preferred grouting methods	Approximately 15 days after contract award and approval of Field Demonstration Work Plan
Begin implementation/construction of the Creek Bank Area Corrective Measures	Within 15 days of completion of (Weather permitting)
Complete Construction of the Creek Bank Area Corrective Measures	Approximately 70 days after construction begins.
Submittal Summary of Performance Assessment Testing and Certification Report	Within 45 days of completing construction.
Submit Operation and Maintenance Plan for Creek Bank Area Corrective Measures	Within 45 days of completing construction.

The time estimate presumes that the work to be performed is that identified in this Work Plan and supporting design documents without significant changes or modification. Major design changes may significantly impact the schedule. Any changes or modifications which are deemed appropriate based on material availability and/or interim construction activities will be reviewed with the NYSDEC at the earliest opportunity.

FIGURES



REFERENCES

1.) BASE MAP TAKEN FROM U.S.G.S. 7.5 MINUTE QUADRANGLE OF LOCKPORT, NEW YORK DATED 1980.

2000 0 2000
SCALE FEET

NJ Authorization #24GA28029100

Golder Associates
Buffalo, New York

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DATE	02/04/11
DESIGN	AML
CADD	GLS
CHECK	
REVIEW	

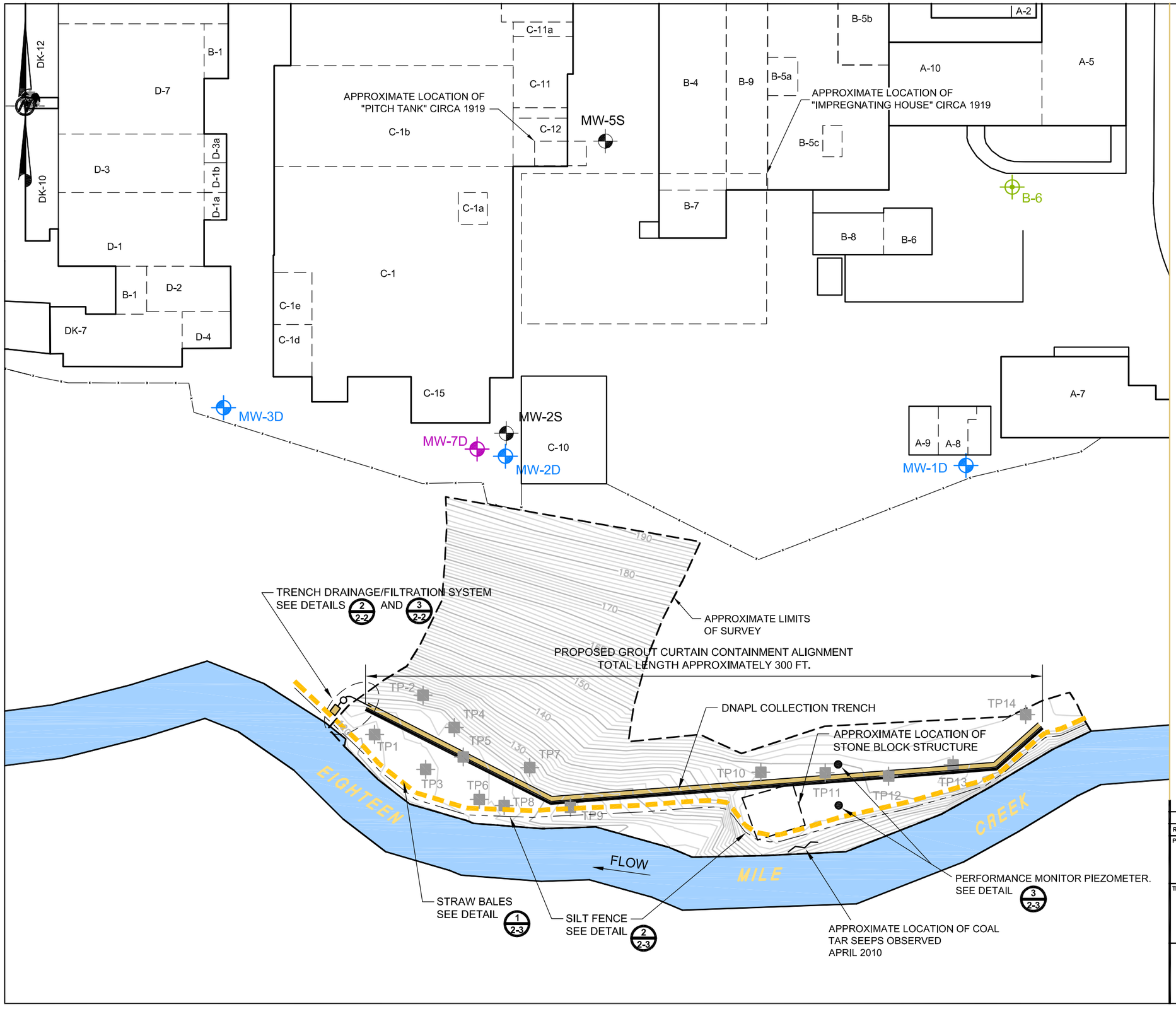
FILE No. 09389168A011
PROJECT No. 093-89168 REV. 0

TITLE

SITE LOCATION MAP

SNPE - VANDEMARK CHEMICAL

FIGURE 1-1



LEGEND

- FENCE
- SILT FENCE
- STRAW BALES
- PERFORMANCE MONITORING PIEZOMETER
- 1999 INVESTIGATION BORING
- 1999 INVESTIGATION OVERBURDEN MONITORING WELL
- 1999 INVESTIGATION BEDROCK MONITORING WELL
- 2006 BEDROCK MONITORING WELL
- TEST PIT LOCATIONS
- EIGHTEEN-MILE CREEK

REFERENCE

1.) TOPOGRAPHY SHOWN ON THIS PLAN WAS TAKEN FROM SURVEY FILE xve-vandemark base.dwg, DATED 06-21-2010.

2.) TEST PITS SHOWN ON THIS PLAN WHERE TAKEN FROM SURVEY FILE xve-vandemark base.dwg, DATED 06-21-2010.

3.) MAP DIGITIZED FROM HARD COPY OF FIGURE 1 ENTITLED "SITE PLAN," PREPARED BY BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC.

Test Pit No.	Coal Tar Description	Depth to Bedrock
TP-1	SEVERAL 6-INCH COAL TAR CHUNKS OBSERVED	4'
TP-2	NONE PRESENT	3'
TP-3	SEVERAL 6-INCH COAL TAR CHUNKS OBSERVED	5.5'
TP-4	A SMALL NUMBER OF 1-3-INCH TAR BALLS OBSERVED	4.5'
TP-5	SEVERAL FIST SIZE TAR BALLS OBSERVED	4'
TP-6	SEVERAL FIST SIZE TAR BALLS OBSERVED	4.7'
TP-7	SIGNIFICANT QUANTITIES OF TAR OBSERVED (APPROXIMATELY 5-10% OF EXCAVATED MATERIALS)	2.4'
TP-8	SIGNIFICANT QUANTITIES OF TAR OBSERVED (APPROXIMATELY 10% OF EXCAVATED MATERIALS)	3.6'
TP-9	NONE PRESENT	3.2'
TP-10	TAR OBSERVED BETWEEN 5 TO 7 FEET BGS (APPROXIMATELY 2% OF EXCAVATED MATERIALS)	>7'
TP-11	TAR VEIN OBSERVED BETWEEN 5 TO 6 FEET BGS.	>7'
TP-12	SEVERAL TAR BALLS OBSERVED AT TOP OF BEDROCK	5.6'
TP-13	DISPERSE TAR BALLS PRESENT (APPEAR TO BE PART OF NON-NATIVE FILL, NOT FROM FLOW)	>7'
TP-14	NONE PRESENT	6.5'

40 0 40
SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT
SNPE - VANDEMARK
CORRECTION MEASURES IMPLEMENTATION WORK PLAN
LOCKPORT, NEW YORK

TITLE
PROPOSED GROUT CURTAIN & DNAPL COLLECTION TRENCH ALIGNMENT

NJ Authorization #24GA28029100
Golder Associates
Mt. Laurel, New Jersey

PROJECT No.	093-89168		FILE No.	09389168A019	
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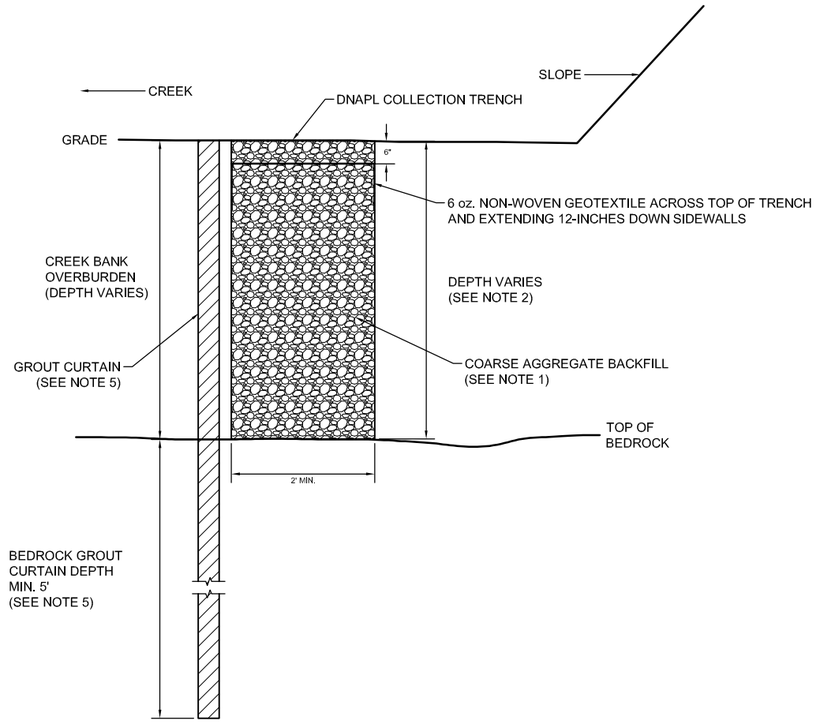
CHECK					
REVIEW					

FIGURE 2-1



1 / 2-2 DNAPL COLLECTION TRENCH DETAIL

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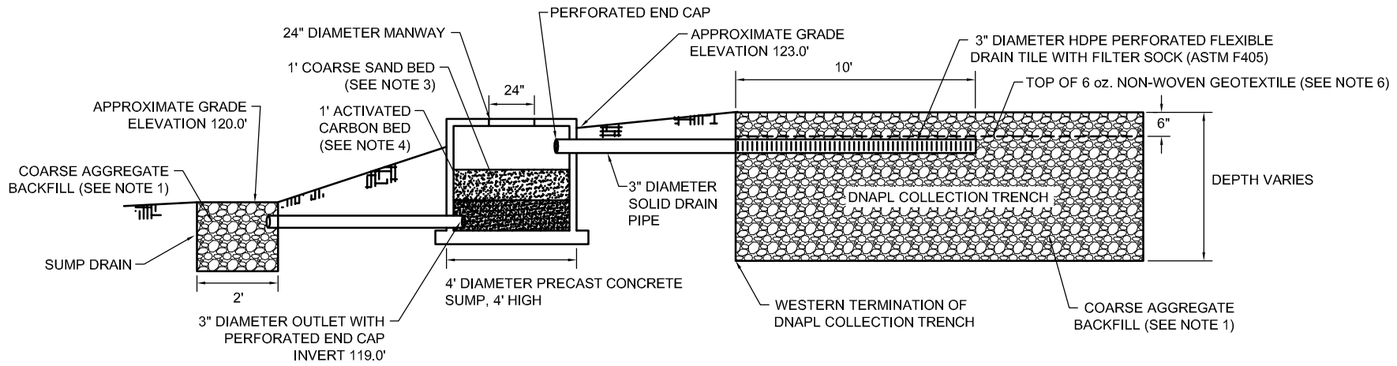

3 / 2-2 TRENCH DRAINAGE/FILTRATION SYSTEM PROFILE

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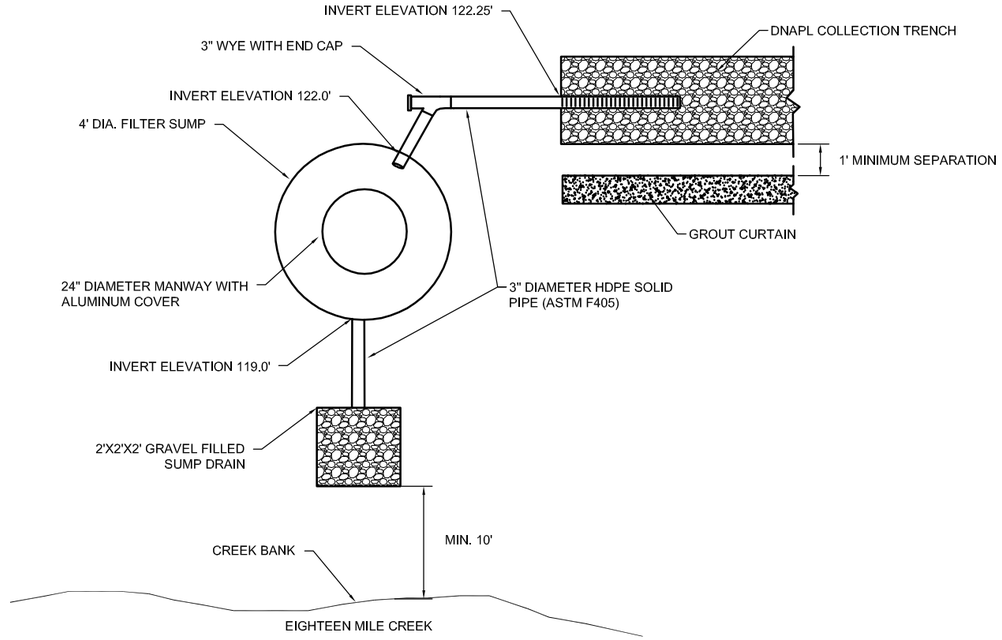

2 / 2-2 TRENCH DRAINAGE/FILTRATION SYSTEM PLAN

NOT TO SCALE

NOTES

1.) COARSE AGGREGATE FOR THE DNAPL EXTRACTION TRENCH AND SUMP DRAIN BACKFILL SHALL BE CLEAN (WASHED), SUBROUNDED OR ROUNDED STONE, FREE FROM SLAG, CINDERS OR OTHER DELETERIOUS MATERIAL. COARSE AGGREGATE SHALL MEET THE FOLLOWING GRADATION REQUIREMENTS:

Opening or Sieve Size	% Passing by Weight
1–1/2 inch	100
1 inch	90–100
1/2 inch	0–15

CONTRACTOR SHALL SUBMIT CERTIFICATION OF COMPLIANCE WITH THE GRADATION AND PERMEABILITY SPECIFICATIONS.

2.) DNAPL COLLECTION TRENCH WILL EXTEND FROM GRADE TO THE TOP OF BEDROCK. IF BEDROCK IS DEEPER THAN 5 FEET, TRENCH BOTTOM WILL TERMINATE AT 5 FEET BGS.

3.) COARSE WASHED SAND MEDIA FOR THE DRAINAGE SUMP SHALL HAVE AN EFFECTIVE PARTICLE SIZE (D10) OF 0.3 TO 0.5 mm WITH A UNIFORMITY COEFFICIENT (UC) OF <4 WITH NO MORE THAN 4% PASSING A 100 MESH SIEVE.

4.) ACTIVATED CARBON FOR THE DRAINAGE SUMP SHALL BE CALGON CARBSORB 30 OR EQUIVALENT EXHIBITING A MINIMUM HARDNESS OF 90, AN IODINE NUMBER OF 900 mg/g (MIN.) WITH LESS THAN 4% BY WEIGHT PASSING THROUGH A 30 MESH SIEVE.

5.) THE OPTIMUM OVERBURDEN AND BEDROCK GROUTING METHODS WILL BE DETERMINED BASED ON THE RESULTS OF THE CONTRACTOR'S FIELD DEMONSTRATION PROGRAM AS SPECIFIED IN THE WORK PLAN.

6.) 6 oz. NON-WOVEN GEOTEXTILE SHALL BE NEEDLE PUNCHED POLYPROPYLENE OR POLYESTER FABRIC AND HAVE THE FOLLOWING MINIMUM PROPERTIES:

THICKNESS: 80 mm
TENSILE STRENGTH: 170 lbs/in
PUNCTURE STRENGTH: 110 lbs
APPARENT OPENING SIZE: 70 (US SIEVE)

DRAFT

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT

SNPE - VANDEMARK
CORRECTION MEASURES IMPLEMENTATION WORK PLAN
LOCKPORT, NEW YORK

TITLE

GROUT CURTAIN & DNAPL COLLECTION TRENCH DETAILS

Golder Associates
Mt Laurel, New Jersey

PROJECT No.	093-89168		FILE No.	09389168A020	
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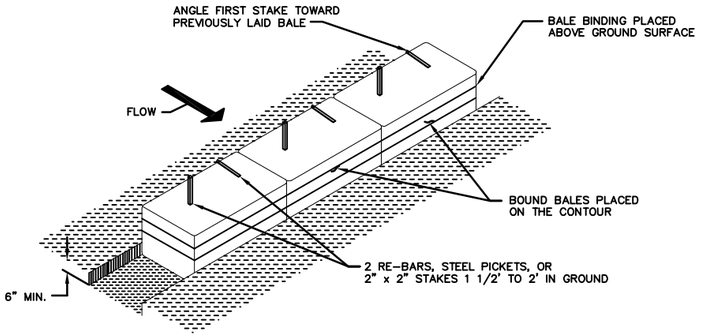
REVIEW					

FIGURE 2-2



1 / 2-3 **TYPICAL STRAW BALE DETAIL**

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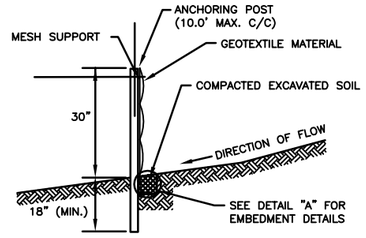
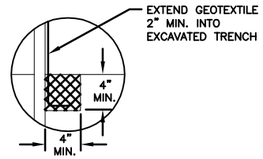


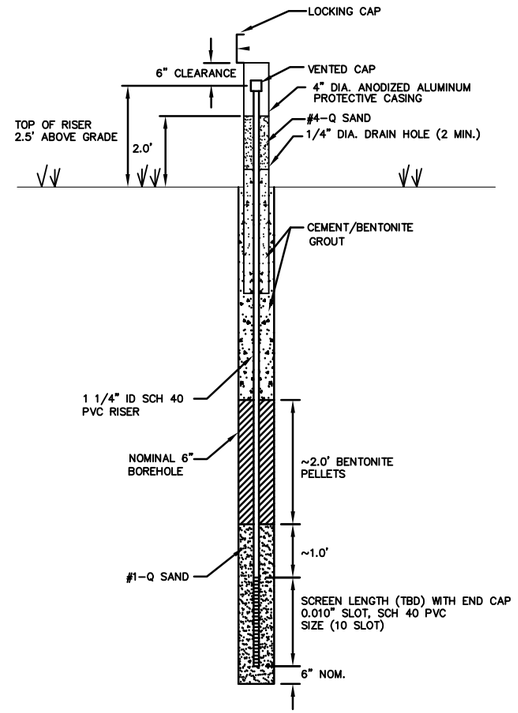
ELEVATION



DETAIL A

2 / 2-3 **TYPICAL SILT FENCE DETAIL**

NOT TO SCALE



3 / 2-3 **PIEZOMETER DETAIL**

NOT TO SCALE

DRAFT

NOTES

1.) DURING EXCAVATION FOR THE INTERCEPTOR TRENCH DENSE NON-AQUEOUS PHASE LIQUIDS (DNAPL) MAY BE ENCOUNTERED IN THE TRENCH SIDEWALLS. BASED ON THE QUANTITY OF DNAPL ENCOUNTERED, THE CONTRACTOR MAY BE REQUIRED TO INSTALL A CONTINGENCY DNAPL SUMP WITHIN AN EXCAVATED DEPRESSION IN THE TRENCH BASE AND AS SHOWN IN DETAIL 3 IN SHEET 4. THE NUMBER OF DNAPL SUMPS PLACED WITHIN THE TRENCH WILL BE BASED ON FIELD CONDITIONS; I.E. THE NUMBER AND EXTENT OF LOW POINTS ENCOUNTERED IN THE TOP OF THE GLACIOLACUSTRINE CLAY ALONG THE TRENCH.

2.) TEMPORARY EROSION CONTROL MEASURES SHALL BE INSTALLED WHERE NECESSARY DURING CONSTRUCTION ACTIVITIES AND IN ACCORDANCE WITH THE CONTRACTOR'S APPROVED SEDIMENTATION CONTROL PLAN.

3.) CONCRETE PAD SHALL BE CONSTRUCTED OF 3000 PSI (MIN.) CONCRETE WITH WELDED WIRE REINFORCEMENT.

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT

SNPE - VANDEMARK
CORRECTION MEASURES IMPLEMENTATION WORK PLAN
LOCKPORT, NEW YORK

TITLE

ANCILLARY DETAILS

Golder Associates
Mt Laurel, New Jersey

PROJECT No.	093-89168		FILE No.	09389168A021	
DESIGN	AML	02/27/12	SCALE	AS SHOWN	REV. 0
CADD	AML	02/29/12			
CHECK	PTM	02/29/12			
REVIEW					

FIGURE 2-3

APPENDIX A

ORDER ON CONSENT

STATE OF NEW YORK: DEPARTMENT OF ENVIRONMENTAL CONSERVATION

In the Matter of the Implementation of
Corrective Action for a Hazardous Waste
Management Facility, Pursuant to Article 27,
Titles 9 and 13 of the Environmental Conservation
Law of the State of New York by:

ORDER ON CONSENT
File No. 08-10
R9-20080205-5

Van De Mark Chemical, Inc.
One North Transit Road
Lockport, New York 14094-2399

SNPE, Inc.
103 Carnegie Center, Suite 300
Princeton, New Jersey 08540

Respondent(s)

WHEREAS:

1. The New York State Department of Environmental Conservation (the "Department") is responsible for enforcement of the Environmental Conservation Law of the State of New York ("ECL"). This Order is issued pursuant to the Department's authority under that law, including ECL 3-0301, ECL Article 27, Title 9, and ECL Article 71, Title 27.

2. Van De Mark Chemical, Inc. ("Van De Mark"), owns and operates property located at One North Transit Road, Lockport, New York 14094-2399 ("Facility"). Van De Mark was owned by SNPE, Inc. ("SNPE") from 2000 to 2007, and known as Isochem, Inc. from 2004 to 2007. Together, SNPE and Van De Mark will be referred to herein as "Respondents".

3. The Department maintains that Van De Mark conducted operations at the Facility that subject it to ECL Article 27, Title 9, and the regulations promulgated pursuant thereto. The Department further maintains that the Facility is a hazardous waste

management facility, as that term is defined at 6 NYCRR 370.2(b)(89), and is subject to the New York State laws and regulations governing hazardous waste.

4. The Department maintains that the Facility is subject to interim status and corrective action pursuant to the Federal Resource Conservation and Recovery Act ("RCRA") and the regulations promulgated thereunder. The Department received final delegation of RCRA authority from United States Environmental Protection Agency ("EPA") as of May 29, 1986.

5. On March 1, 1981, a Part A hazardous waste application under RCRA was submitted to the EPA by Van De Mark. The Facility has not received a Part B permit and is considered by the Department to be an interim status facility for purposes of 6 NYCRR 373-1.3.

6. A Draft Phase I/II Environmental Audit developed by Dames & Moore for SNPE, in 1999 revealed dense non-aqueous phase liquid (DNAPL) in monitoring well MW-2D.

7. In 2006, Van De Mark agreed to conduct a voluntary Site Assessment of the on-site monitoring wells and further inspection of the base of the escarpment/banks of Eighteen Mile Creek. As a result of the inspection activities, coal tar was discovered along Eighteen Mile Creek at the base of the Niagara Escarpment and below the plant site. The Respondents encountered coal tar in quantities and locations that the parties agreed required further investigatory and remedial efforts.

8. Pursuant to a Department-approved work plan and under Department oversight, Van De Mark began creek bank cleanup activities on August 13, 2007 and completed this phase of the work on August 27, 2007.

9. Respondents submitted a supplemental Eighteen Mile Creek bank cleanup plan on September 12, 2008 to address additional coal tar seeps and a further report on December 22, 2008 that described the second phase of cleanup work along the creek bank.

10. Respondents, in 2009 and 2010, submitted additional work plans and, with the Department's approval, continued to perform additional remediation of the previously unanticipated levels of coal tar at the Facility.

11. The Department and Respondents agree that the goal of this Order is to implement further corrective action to address the coal tar contamination associated with the Facility and Eighteen Mile Creek and to develop and execute a related operation and maintenance plan for the Facility, including the plant site.

12. Pursuant to ECL Section 71-2727(3), the Commissioner of the Department may issue orders requiring corrective action, including corrective action beyond the facility boundary where necessary to protect human health and the environment, for all releases of hazardous waste or constituents from any Area of Concern (AOC) or solid waste management unit (SWMU) at any treatment, storage or disposal facility which is either permitted or seeking a permit under Title 7 of 9 of Article 27 of the Chapter, or which has interim status according to regulations adopted thereunder, regardless of the time at which the waste was placed in the unit.

13. Pursuant to 6 NYCRR 373-1.2(e), an enforceable document, such as an Order on Consent, can be issued in lieu of a post-closure permit, subject to the requirements in 6 NYCRR 373-3.7(k).

14. Respondents consent to the issuance of this Order to fulfill their obligation under ECL Article 27, Title 9 and ECL 71-2727(3)(b) to perform corrective measures

implementation and operations and maintenance monitoring at the Facility and agree to be bound by its terms. Respondents reserve all rights and defenses they may have regarding liability or responsibility for conditions at the Facility, except that Respondents consent to and agree not to contest the authority or jurisdiction of the Department to enforce this Order, except as provided in Section V.C., and agree not to contest the validity of this Order or its terms. Respondents have consented to the issuance of this Order in good faith without trial or adjudication of any issue of fact or law.

I. Corrective Action

A. Respondents shall implement the Interim Corrective Measures (ICM) work plan, dated February 2011, and approved by the Department on May 5, 2011, within forty-five days of the effective date of this Order. Said ICM requires removal of coal tar located at the plant site portion of the Facility.

B. Respondents shall submit a Corrective Measures Implementation (CMI) work plan that provides sufficient detail of the corrective measures alternative approved by the Department, with modifications, in its letter dated May 5, 2011. This approval was in response to Respondents' Focused Corrective Measures study (CMS) which Respondents submitted in April 2011. This CMI Work Plan will address any identified coal tar impacts to Eighteen Mile Creek adjacent to the Facility. The CMI Work Plan shall be submitted within sixty days of the effective date of this Order.

C. Respondents shall submit an Operation and Maintenance Plan (OMP) that monitors the effectiveness and maintenance of the remedial system installed at the base of the Niagara Escarpment and groundwater/DNAPL monitoring associated with the selected corrective action at the Facility. Based upon the results of the OMP, the Department may

require additional corrective action at the Plant Site and/or enhancements to the remedial system installed at the base of the Niagara Escarpment.

II. Financial Assurances

A. Providing Financial Assurance: By sixy (60) days from Effective Date of Order , Respondents shall provide an estimate of financial assurance for (a) corrective measures implementation activities necessary to implement and successfully complete the CMI n to address coal tar contamination at the Facility and (b) activities necessary to implement the OMP at the Facility. Respondents must provide financial assurance in accordance with 6 NYCRR 373-3.8, or comply with requirements of 6 NYCRR 373.3.8. Respondents shall add the words, "and/or corrective action" wherever the words, "closure/post closure" appear in financial assurance instrument wording. Respondents shall thereafter modify the sentence stating that the wording of the financial assurance instrument is identical to the wording provided in the regulations by adding the phrase, "with the exception of including the words, and/or corrective action."

B. Modification of Amount of Financial Assurance:

1. On an annual basis, beginning one year after the effective date of this Order, Respondents must submit to the Department a corrective action cost estimate for (a) the Corrective Measures Implementation Work Plan; and (b) the Operation and Maintenance Plan, all of which are required by Paragraph I of this Order. The Department will review each cost estimate and notify Respondents, in writing, of the Department's approval, rejection, or modification of the cost estimate. If the Department does not approve the cost estimate, the Department will notify the Respondents in writing of the estimate's deficiencies and specify a due date for submittal of a revised cost estimate.

2. If the cost estimate is greater than the amount of financial assurance then in effect, the Respondents must, within sixty (60) days from the date of the submission of the new cost estimate, provide additional financial assurance in accordance with 6 NYCRR Section 373-3.8, in an amount that is the difference between the new cost estimate and the existing financial assurance then in effect.

3. If the estimated cost is less than the amount of financial assurance then in effect, Respondents may, at the same time that Respondents submit the annual cost estimate, or at any other time agreed to by the Department, submit a written proposal to the Department to reduce the amount of the financial assurance provided under this Section so that the amount of the financial assurance is equal to the estimated cost of the remaining work to be performed. The written proposal shall specify, at a minimum, the cost of the remaining work to be performed and the basis upon which such cost was calculated. In the event that the Department requires additional information concerning the remaining work to be performed, the department shall notify Respondents in writing. Respondents shall have fifteen (15) days after receiving the Department's notification that additional information is needed to submit in writing a revised proposal that addresses all of the additional information requested by the Department. If Respondents provide sufficient information to the Department concerning the cost of the remaining work to be performed, the Department shall issue a written decision within sixty (60) days regarding the amount of financial assurance required under this Order. After receiving the Department's written decision, Respondents may reduce the amount of the financial assurance only in accordance with, and to the extent permitted by, such written decision. If Respondents elect to satisfy the requirement of 6 NYCRR 373-3.8 by establishing a closure/post-closure

trust fund and the value of the fund is greater than the cost of the remaining work, the Department will instruct the trustee to release such excess funds to the Respondents.

4. In the event of a dispute, Respondents may invoke the dispute resolution mechanism provided in Section VII of this Order. Respondents shall not be required to post additional financial assurance or be entitled to reduce the amount of financial assurance, or seek a release of funds, until a final decision is rendered by the Director or his designee.

C. Liability Requirements:

Respondents must have and maintain liability coverage in accordance with 6 NYCRR 373-3.8(h).

D. Adjustment for Inflation:

While this Order remains in effect, the financial assurance, including financial assurance for corrective action, will be subject to adjustment for inflation as provided for in 6 NYCRR 373-3.8(c)(2) and Section 373-3.8(e)(2).

III. Stipulated Penalties:

1. Respondents' failure to comply with any term of this Order constitutes a violation of this Order and the ECL. If the Department determines that Respondents have failed to comply with this Order, the Department shall notify Respondents in writing. Payment of any penalty shall not in any way alter Respondents' obligation to comply with any term of this Order or to complete performance under the terms of this Order. The payment of stipulated penalties as set forth below shall not limit the Department's right to seek such other relief as may be authorized by law.

2. Respondents shall be liable for payment to the Department of the sums set forth below as stipulated penalties for each day, or part thereof, that Respondents are in violation of the terms of this Order. All penalties begin to accrue on the first day Respondents are in violation of the terms of this Order and continue to accrue through the final day of correction of any violation, less those days the matter was subject to Dispute Resolution. Such sums shall be due and payable within fifteen (15) days after receipt of notification from the Department assessing the penalties. If such payment is not received within fifteen (15) days after Respondents receive such notification from the Department, interest shall be payable at the annual rate of nine (9) per centum on the overdue amount from the day on which is was due through, and including, date of payment. Penalties shall be paid by certified check or money order, made payable to "New York State Department of Environmental Conservation" and be delivered personally or by certified mail, return receipt requested, to the Regional Attorney, Office of General Counsel, NYSDEC, 270 Michigan Avenue, Buffalo, New York 14203-2915. Payment of the penalties shall not in any way alter Respondents' obligation to complete performance under the terms of this Order. Stipulated penalties shall be due and payable pursuant to the following schedule:

Period of Non-Compliance	Penalty Per-Day
First through 15th day	$ 500
16th through 30th day	$1, 500
31st day and thereafter	$4,500

IV. Submissions

A. All reports and submissions required by this Order shall be made to the Regional Hazardous Materials Engineer at the address provided in Paragraph X.

Respondents shall be responsible for the content of any submissions made pursuant to this Order.

B. The Department shall review each of the submissions Respondents make pursuant to this Order to determine whether it was prepared, and whether the work done to generate the data and other information in the submission was done, in accordance with this Order and with generally accepted technical/scientific principles. The Department shall notify Respondents in writing of its approval or disapproval of each submission. All Department approved submissions shall be incorporated into and become an enforceable part of this Order. Approval by the Department shall not be unreasonably withheld or delayed by the Department.

C. If the Department disapproves a submission, it shall so notify Respondents in writing and specify the reasons for is disapproval. Within sixty days, unless the notice specifies a different deadline, after receiving written notice that Respondents' submission has been disapproved, Respondents shall make a revised submission to the Department that addresses all the Department's stated reasons for disapproving the first submission. After receipt of the revised submission, the Department shall notify Respondents in writing of its approval or disapproval. If the Department approves the revised submission, it shall be incorporated into and become an enforceable part of this Order. If the Department disapproves the revised submission, the Department and Respondents will conduct good faith negotiations to resolve the issue between them during the course of the next twenty-one days. If the issues are not resolved to the Department's satisfaction, the Department shall so notify Respondents in writing within such twenty-one day period and Respondents shall be in violation of this Order, unless it has invoked the dispute resolution mechanism

set forth below in Paragraph VI within thirty days of receipt of the Department's written notice that issues have not been resolved.

D. The Department may request that Respondents modify and/or amplify and expand a submission upon the Department's request to do so if the Department reasonably determines, as a result of reviewing data generated by an activity required under this Order or as a result of reviewing any other data or facts, that further work is necessary.

V. Reservation of Rights

A. Nothing contained in this Order shall be construed as barring, diminishing, adjudicating or in any way affecting any of the Department's civil, criminal, or administrative rights or authorities including, but not limited to nor exemplified by, the right to recover natural resource damages against any party, including Respondents and Respondents' defenses thereto.

B. Nothing contained in this Order shall be construed to prohibit the Commissioner or the Commissioner's designee from exercising any summary abatement powers pursuant to ECL 71-0301.

C. Except as specifically set forth herein, nothing in this Order shall be construed as a waiver by Respondents of any rights, claims, defenses, or agreements it now has or may have in the future regarding the Facility.

VI. Dispute Resolution

A. The Parties shall use their reasonable best effort and negotiate in good faith to resolve any disputes regarding this Order.

B. If any dispute shall arise between Respondents and the Department regarding the implementation or interpretation of any provision of this Order or any

revised submittal, Respondents may invoke the dispute resolution procedures contained in this Section.

C. In order to invoke these procedures, within 30 days of receipt of notice of the Department's action or determination, Respondents must submit a written request to meet with the Director of the Division of Materials Management ("the Director") to discuss the Department's action or determination. The Director or the Director's designated agent must contact Respondents to schedule a meeting within 14 days thereafter. At the meeting, Respondents shall be given an opportunity to present their response to the Department's action or determination, and the Director shall have the authority to modify and/or withdraw such action or determination. The Director shall notify Respondents, in writing, of his or her specific comments as soon as reasonably practicable after the meeting.

D. Upon receipt of such notification, Respondents shall take whatever action is required under this Order as modified by the Director's comments (if any) pursuant to a schedule determined following the meeting with the Director. If Respondents fail to take the required action, Respondents shall be in violation of this Order and the Department may take any action or pursue whatever rights it has pursuant to any provision of statutory or common law.

E. The invocation of dispute resolution procedures under this Paragraph shall not, of itself, extend, postpone, or affect in any way any obligation of Respondents under this Order, except that payment of stipulated penalties with respect to the disputed matter shall be stayed pending resolution of the dispute pursuant to this Paragraph. Notwithstanding the stay of payment set forth above, stipulated penalties shall accrue from

the first day of noncompliance with any applicable provision of this Order. In the event Respondents do not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Paragraph IV above. The Director, in his or her sole discretion, may waive stipulated penalties when Respondents do not prevail on the disputed issue if the Director determines that Respondents had a reasonable basis for believing they would prevail on the disputed issue.

F. The Director's written specific comments shall be the Department's final agency action for purposes of Article 78 of the CPLR. Nothing in this Order shall diminish or otherwise affect Respondents' statutory rights of appeal with respect to the Department's final decision.

VII. Entry Upon Facility

Respondents hereby consent to the entry upon Facility and upon areas in the vicinity of the Facility that are under the control of Respondents upon reasonable notice and at times reasonable under the circumstances by any duly designated employee, consultant, contractor, or agent of the Department or any State Agency having jurisdiction for purposes of inspection, sampling, and testing to ensure Respondents' compliance with this Order. The Department shall abide by the security, health and safety rules in effect at the Facility. The Department may be accompanied by an employee, consultant, contractor, or agent of Respondents.

VIII. Indemnification

Respondents shall indemnify and hold the Department, the State of New York, and its representatives and employees harmless for all claims, suits, actions for damages, and costs of every name and description arising out of or resulting from the fulfillment or

attempted fulfillment of this Order by Respondents' employees, servants, agents, successors, and assigns.

IX. Modification

A. The terms of this Order constitute the complete and entire Order the Department issued to Respondents covering corrective measures investigation, implementation, and monitoring at the Facility. No term, condition, understanding, or Order purporting to modify or vary any term of this Order shall be binding unless made in writing and subscribed by the party to be bound. No informal advice, guidance, suggestion, or comment by the Department regarding any report, proposal, plan, specification, schedule, or any other submissions shall be construed as relieving Respondents of their obligation to obtain such formal approvals as may be required by this Order.

B. If Respondents desire that any provision of this Order be changed, Respondents shall make timely written application to the Department setting forth reasonable grounds for the relief sought. Copies of such written application shall be delivered or mailed to the Regional Materials Management Engineer, and the Regional Attorney, at the respective addresses provided in paragraph X.

X. Communications

All written communications required by this Order shall be transmitted by United States Postal Service, by private courier service, or by hand delivery.

1. Communication from Respondents shall be sent to:

Regional Materials Management Engineer
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203-2915

Regional Attorney
270 Michigan Avenue
Buffalo, New York 14203-2915

2. Communications to Respondents shall be sent to:

Pamela Cook
Van De Mark, Inc.
One North Transit Road
Lockport, New York 14094-2399

Richard A. Martin
Orrick, Herrington & Sutcliffe, LLP
51 West 52nd Street
New York, New York 10019-0142

and to

David Flynn
Phillips Lytle, LLP
3400 HSBC Center
Buffalo, New York 14203

B. The Department and Respondents reserve the right to designate additional or different addresses for communication on written notice to the other given in accordance with this Section.

XI. Termination and Satisfaction

The provisions of this Order shall be deemed satisfied and the obligations of the Respondents under this Order shall terminate upon Respondents' receipt of a written statement from DEC that Respondents have completed, to DEC's satisfaction, all the terms and conditions of this Consent Order. At any time after Respondents complete all of the tasks required by this Order, including the tasks in Paragraph I, Sections A, B, and C, and coal tar is not emanating from the base of the escarpment for a period of three (3) years, Respondents may request in writing that DEC provide Respondents with a statement of completion. Within ninety (90) days after such request by Respondents, DEC will use its best efforts to provide Respondents with a statement of completion, or a written statement as to the basis for a refusal to provide Respondents with such statement of completion. At

any time after Respondents' receipt of a written statement of refusal to provide Respondents with a statement of completion, Respondents may submit a notice of dispute and trigger the dispute resolution procedures provided in Section VI of this Order. If Respondents disagree with the decision issued under the dispute resolution procedures of this Order, Respondents may then seek judicial review of the DEC determination concerning Termination and Satisfaction. DEC and Respondents agree that the determination of the dispute resolution proceeding concerning Termination and Satisfaction (i.e., whether Respondents have completed all of the tasks required by this Order) shall be deemed final agency action and subject to judicial review. The need for additional post-closure care monitoring, and post-closure financial assurance, while independently enforceable by the Department, shall not be a prerequisite to termination of this Order

XII. Notification of Proposed Transfer

A. Within thirty (30) days after the effective date of this Order, Respondents shall file a copy of this Order with the Niagara County Clerk, Lockport, New York to give notice of this Order to all parties who may acquire an interest in the Site. Respondents shall provide the Department with a certification by the Niagara County Clerk indicating that a copy of the Order has been filed with the Office of the Niagara County Clerk, in Lockport, New York.

B. Within thirty (30) days after the effective date of this Order, Respondents shall file a deed notice with the Niagara County Clerk, Lockport, New York whereby the Facility is restricted to use for commercial or industrial purposes and groundwater at the

Facility shall not be used for potable water purposes; Said notice shall further state that the site has a possibility of residual coal tar contamination.

C. If Respondents propose to convey the whole or any part of Respondents' ownership interest in the Site during the term of this Order, Respondents shall, not fewer the sixty (60) days before the date of conveyance, notify the Department in writing of the identity of the transferee and of the nature and proposed date of the conveyance, and shall notify the transferee in writing, with a copy to the Department of the applicability to them of this Order and all attachments, and 6 NYCRR Part 373-3.

D. Respondents, through their successors and assigns, shall retain liability for fulfilling the terms of this order throughout the duration of the Order, even if during the duration of the Order, Respondents, or their successors and assigns, convey or transfer the whole or any part of their interest in the Site.

XIII. Miscellaneous

A. Respondents hereby certify that they have fully and accurately disclosed or made available to the Department all relevant information known to Respondents and all relevant information in the possession or control of its officers, directors, employees, contractors, and agents which relates to, identifies or describes contamination at the Facility relative to coal tar and DNAPL, along Eighteen Mile Creek.

B. The Department shall have the right to obtain split samples, duplicate samples, or both, of all substances and materials sampled by Respondents pursuant to this Order, and the Department also shall have the right to take its own samples. Respondents shall make available to the Department the results of all sampling, tests or other data generated by Respondents with respect to implementation of this Order or conducted

independently by Respondents. Respondents shall have the right to obtain split samples, duplicate samples, or both of all substances and materials sampled by the Department, and the Department shall make available to Respondents the results of all sampling, tests or other data generated by the Department with respect to this Order.

C. Respondents shall obtain all permits, easements, rights-of-way, rights-of-entry, approvals, or authorizations necessary to perform its obligations under this Order.

D. Respondents and Respondents' successors (including successors-in-title) and assigns shall be bound by this Order. Any change in ownership or corporate status of Respondents including, but not limited to, any transfer of assets or real or personal property, shall in no way alter Respondents' responsibilities under this Order. Respondents shall require that its employees, servants, and agents comply with the relevant provision of this Order in the performance of their designated duties on behalf of Respondents.

E. Respondents shall be responsible for ensuring that its contractors and subcontractors perform the work in satisfaction of the requirements of this Order.

F. Respondents shall notify the Department at least 10 working days in advance of the commencement of any field activities to be conducted pursuant to this Order.

G. All references to days in this Order are to calendar days unless otherwise specified. If a deadline falls on a weekend or holiday, such deadline shall automatically be extended until the next business day.

H. The Paragraph headings set forth in this Order are included for convenience of reference only and shall be disregarded in the construction and interpretation of any of the provisions of this Order.

I. The Effective Date of this Order shall be the date that the Commissioner or his designee signs the Order. The Department will provide Respondents (or Respondents' counsel) with a fully executed copy of this Order as soon as practicable after the Commissioner or his designee signs it.

J. In the event of an inconsistency between the provisions of any attachment or appendix of this Order and any term, condition, or provision contained in Paragraph I through XII of this Order, the term, condition, or provision contained in that Paragraph, and not that in any attachment or appendix of this Order, shall control.

K. Respondents and Respondents' corporate successors and assigns hereby affirmatively waive any right they had, have, or may have to make a claim against New York state pursuant to Article 12 of the Navigation Law with respect to the Site, and further release and hold harmless the New York State Environmental Protection and Spill Compensation Fund from any and all legal or equitable claims, suits, causes of action, or demands whatsoever that any of same has or may have with respect to the Facility.

L. The terms of any Orders on Consent Respondents have entered into with DEC pertaining to the Facility shall continue in full force and effect unless they conflict with or are otherwise addressed by the terms of this Order, in which case terms of this Order shall control.

M. Respondents shall not suffer any penalty under this Order or be subject to any proceeding or action if it cannot comply with any requirement hereof because of war,

riot, or any other event beyond the reasonable control of Respondents. Respondents shall, within 10 business days of when they obtain knowledge of any such condition, notify the Department in writing. Respondents shall include in such notice the measures taken and to be taken by Respondents to prevent or minimize any delays and shall request an appropriate extension or modification of this Order. Failure to give such notice within such ten-business day period constitutes a waiver of any claim that a delay is not subject to penalties.

Dated: Nov. 30, 2011
Buffalo, New York

Joseph J. Martens
Commissioner
New York State Department of
Environmental Conservation

By: Abby M. Snyder
Regional Director

CONSENT BY RESPONDENT

Respondent hereby consents to the issuing and entering of this Order, waives its right to a hearing herein as provided by law, and agrees to be bound by this Order.

By: Michael A. Kucharski

Title: President & CEO

Date: October 20, 2011

STATE OF NEW YORK)
) ss:
COUNTY OF)

On the 20th day of October, in the year 2011, before me, the undersigned, personally appeared Michael A. Kucharski, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her capacity, and that by his/her signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

Ann Marie Werth
NOTARY PUBLIC

ANN MARIE WERTH
Notary Public, State of New York
Qualified in Niagara County
My Commission Expires 6/30/2014

CONSENT BY RESPONDENT

Respondent hereby consents to the issuing and entering of this Order, waives its right to a hearing herein as provided by law, and agrees to be bound by this Order.

By: SCHWARTZ FRANCOIS

Title: CHAIRMAN

Date: NOV. 17th 2011

STATE OF NEW YORK)
) ss:
COUNTY OF New York

On the 17 day of NOVEMBER, in the year 2011, before me, the undersigned, personally appeared SCHWARTZ Francois, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her capacity, and that by his/her signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

NOTARY PUBLIC

DEBORAH JOHNSON
Notary Public, State of New York
No. 01JO6022712
Qualified in Kings County
Commission Expires April 5, 2015

GROUPE SNPE

November 2, 2011

Le Directeur Délégué
Financier et Juridique

Dan Slick
ChayseChem Inc.
301 Oxford Valley Rd, Suite 704 B
Yardley,PA 19067

N° 11 – 81 DFJ

Dear Dan,

You will find enclosed the Consent Decree with the State of New York signed by me as chairman of SNPE Inc.

I hope this signature could be validated.

Waiting to hear from you.

Yours,

F. SCHWARTZ

P.J.

SNPE · S.A. au capital de 263 675 130 € · 712 013 432 RCS Paris · APE 7010 Z · N° TVA FR 10 712 013 432
12, quai Henri IV · 75181 Paris Cedex 04 · France · Téléphone +33(0) 1 48 04 66 66 · Fax +33(0) 1 48 04 67 22 · http://www.snpe.com

APPENDIX B

NYSDEC MAY 6, 2011 CMS ACCEPTANCE LETTER

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 9
270 Michigan Avenue, Buffalo, New York 14203-2915
Phone: (716) 851-7220 • **Fax:** (716) 851-7226
Website: www.dec.ny.gov

Joe Martens
Commissioner

May 6, 2011

Patrick Martin, P.E., BCEE
Senior Consultant
Golder Associates Inc.
2430 North Forest Road
Getzville, New York 14068

VanDeMark Chemical Facility, Lockport, New York
Site No. 932149
Focused Corrective Measure Study

Dear Mr. Martin:

The New York State Department of Environmental Conservation (the "Department') has reviewed the Focused Corrective Measures Study (CMS) dated April 2011. This report was submitted in response to the Department's November 24, 2010 letter. The following are the Department's comments.

General Comments:

The Department accepts the Focused CMS report's recommendation for implementing Alternative 2 for the coal tar along Eighteen Mile Creek, notwithstanding some comments below. This alternative consists of installation of an overburden and bedrock grout curtain containment system. VanDeMark shall submit a Corrective Measures Implementation (CMI) Plan that incorporates the Department's comments and provides specific design detail. The CMI should be submitted to the Department within forty-five (45) days after the execution of the Order. It is the Department's goal to have the remedial system operational by the fall of 2011.

Specific Comments:

In Section 2.3 there is reference to the ICM as described in Section 1. The Department could not find a reference in Section 1 that describes an ICM in the plant area. The report can either add the ICM description to Section 1 or delete the reference in Section 2.3.

In Section 2.4 the report states that based on natural conditions the waters will not support fish propagation. This statement should be deleted as the Department's Fish and Wildlife Division would have to determine the accuracy of the statement. Additionally, it is probably not an accurate statement as the intermittent flow in the creek is mostly a man made issue due to the canal. This statement should be removed from the report.

Alternative 2 Technical Analysis - The first line of page 18 where it states the stone trench will be 2 ft. or less deep is not consistent with the Figure 5-1 detail where it indicates the stone trench will be a minimum of 2 ft. deep. The Department requires that the stone trench extend, at a minimum, to top of rock not to exceed a depth of 5 ft. BGS.

The Department is concerned about the water quality leaving the stone trench. Therefore, the Department requires that the design of the trench includes a system to reduce turbidity and a passive treatment system that will remove organic groundwater constituents, should they be present.

Upon execution of the Order on Consent, this Focused CMS will become an appendix of the Order. If you have any questions, please call me at (716) 851-7220.

Sincerely,

Stanley Radon, CPG
Senior Engineering Geologist

SR:lg

ecc: Mr. Dennis Weiss, NYSDEC
Mr. David Stever, NYSDEC
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Ms. Pamela Cook, VanDeMark Chemical

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