NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Region 8
6274 East Avon-Lima Road, Avon, NY 14414-9516
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www.dec.ny.gov

July 2, 2020

Mr. Lewis Norry
3750 Monroe Avenue Associates, LLC
c/o the Cabot Group
130 Linden Oaks
Rochester, New York 14625

Dear Mr. Norry:

Subject: 3750 Monroe Avenue, Site #C828187
Pilot Test Work Plan for Interim Remedial Measure – Source Treatment;
March 25, 2020
Town of Pittsford, Monroe County

The New York State Departments of Environmental Conservation (DEC) and Health (NYSDOH; collectively referred to as the Departments), have completed their review of the document entitled *"Pilot Test Work Plan for Interim Remedial Measure – Source Treatment"* (the Work Plan) dated March 25, 2020 and prepared by LaBella Associates, D.P.C. for the 3750 Monroe Avenue site located in the Town of Pittsford, Monroe County.

The Work Plan is hereby approved with the following modifications and clarifications:

1. At a minimum, groundwater quality parameters will be measured at MW-25 (or other location approved by the Departments) both prior to and 4-weeks after the primary source treatment injection under the building.
2. In addition to monitoring well GPMW-14, groundwater quality parameters and samples for VOC analysis will be collected from downgradient monitoring well GPMW-22 (or other location approved by the Departments), to better assess the effectiveness of the pilot study.
3. The Departments understand that the injected material may not be compatible with other remedial technologies for a limited period of time. Temporarily incompatible technologies include in-situ chemical oxidation and liquified activated carbon. This issue will be considered in greater detail if the pilot-study material is evaluated for full-scale implementation.
4. The Departments understand that the pilot study results will be used to either prepare an Interim Remedial Measures Work Plan or to inform the evaluation of remedial alternatives in the alternatives analysis.
5. The groundwater contaminant plume shown on Figure 1 of the Work Plan does not appear to be an accurate representation of the groundwater data. This figure will be corrected in all future submittals.
6. The Work Plan injections will not start until groundwater samples are collected for analysis of emerging contaminants [1,4-Dioxane and per- and polyfluoroalkyl substance (PFAS)] in accordance with a DEC approved work plan. A work plan to undertake Emerging Contaminant sampling at the above-referenced site was requested in a letter dated May 10, 2019. The requested work plan has not been submitted. The DEC considers this lack of

response to represent 3750 Monroe Avenue Associates, LLC declining to undertake the requested sampling.

1,4-Dioxane and PFASs are appropriately investigated as part of the implementation of a complete remedial program in accordance with the requirements of DER-10 Technical Guidance for Site Investigation and Remediation (DER-10) due to regulation by the DEC of hazardous wastes under Environmental Conservation Law (ECL) Article 27, Title 13. Testing for PFASs and 1,4-dioxane is required at all sites during the implementation of the remedial program.

The purpose of this correspondence is to notify 3750 Monroe Avenue Associates, LLC that the DEC intends to proceed with the Emerging Contaminant sampling at the Site. The DEC is authorized to collect these samples pursuant to Section 27-1309 (3)/(4) of the Environmental Conservation Law (ECL). Any costs incurred by the DEC for this testing will be recoverable by the DEC as provided by the ECL, the State Finance Law, and any other applicable provision of state and/or federal law; the DEC reserves its right to seek to recover these costs or initiate enforcement as may be appropriate.

If 3750 Monroe Avenue Associates, LLC has reconsidered its position, please notify me at frank.sowers@dec.ny.gov within **ten (10) days of the date of this letter** to discuss the scope of the required sampling and process going forward. Otherwise, the DEC will proceed with Emerging Contaminant sampling at the site based on the authority cited above.

Please attach a copy of this letter to the approved Work Plan.

Per 6 NYCRR Part 375-1.6, please notify me in writing by **July 22, 2020** which of the following options you will choose to address these comments:

- Implement the modified Work Plan;
- invoke dispute resolution;
- withdraw the Work Plan (if the work plan is withdrawn, DEC will still proceed with Emerging Contaminant sampling); or
- terminate the Brownfield Cleanup Agreement.

DEC seeks to resolve outstanding differences in a mutually agreeable manner which addresses the requirements of the Brownfield Cleanup Agreement, Part 375, and all applicable laws, regulations and guidance. As such, please contact me at (585) 226-5357 or via email at frank.sowers@dec.ny.gov prior to July 22, 2020 (July 13, 2020 for the Emerging Contaminant sampling) to informally discuss any questions or concerns regarding these comments.

Sincerely,

Frank Sowers

Frank Sowers, P.E.
Professional Engineer 1

ec:

Dan Noll	Dudley Loew	Dan O'Brien
David Pratt	Dan Tucholski	Mike Cruden
John Frazer	Jared Pristach	Justin Deming

March 25, 2020

Mr. Frank Sowers
Division of Environmental Remediation
New York State Department of Environmental Conservation – Region 8
6274 East Avon-Lima Road
Avon, New York 14414

Re: Pilot Test Work Plan for Interim Remedial Measure – Source Treatment
BCP Site # C828187
3750 Monroe Avenue
Pittsford (T), New York
LaBella Project No. 213131

Dear Mr. Sowers:

LaBella Associates, D.P.C. (LaBella) is pleased to submit this Pilot Test Work Plan to assess a potential source treatment interim remedial measure (IRM) at BCP Site #C828187 located at 3750 Monroe Avenue in the Town of Pittsford, County of Monroe, New York, herein referred to as "the Site."

PILOT TEST APPROVAL REQUEST

Norry Development and LaBella are investigating the effectiveness of chemical injection as a way to complete a source treatment at the Site. A pilot test will be completed to assess the optimal horizontal spacing and most effective treatment compound for source treatment. The results will support the full scale design for the IRM. The pilot test is detailed below.

Background

LaBella completed a Remedial Investigation (RI) at the Site to characterize the nature and extent of contamination. The subsurface (i.e., depths greater than 1-foot) at the Site has been characterized and the results are included in the RI Report dated October 2019. Subsurface investigation indicates that there is a primary source area of chlorinated solvents beneath the building, with some migration to an area located just to the northwest of the building (referred to herein as the "downgradient source area"). This chlorinated solvent plume appears to be migrating towards the northern boundary of the Brownfield Cleanup Program (BCP) boundary, which is a 9.37-acre area within the entire 41.90-acre property.

Purpose/Objectives

The overall purpose of this pilot test is to evaluate a potential source area treatment method. The objectives are:

1. Assess the ability to place the volume/mass of treatment chemical into the subsurface formation (i.e. determination of appropriate radius of influence); and
2. Assess the ability of the treatment chemical to create reducing conditions in the treatment zone.

This information will be utilized to design a full-scale treatment including the horizontal spacing, dosing, and chemical formulation.

Downgradient Source Treatment Injection

After evaluation of several different source treatment products, LaBella would like to assess the effectiveness of Provect-IR50 during this pilot test. This is an in-situ chemical reduction (ISCR) for managing source areas. LaBella anticipates performing injections at five (5) locations in the vicinity of the downgradient source area, as shown on Figure 1. The following procedure will be utilized for each injection:

1. The proposed injection point will be marked in the field based on the proposed locations in Figure 1. In the event that a location is physically obstructed, the location may be moved in order to properly perform the work.
2. A *Dig Safe New York* stakeout will be conducted at the Site to locate subsurface utilities in the areas where the injections will take place.
3. Prior to injection, low-flow groundwater sampling will be conducted to assess groundwater quality parameters (total iron, total manganese, dissolved iron, dissolved manganese, sulfate, nitrate, nitrite, TOC, methane/ethane/ethane, DHC, dissolved oxygen, and oxidation-reduction potential) at GPMW-14.
4. LaBella will utilize a Geoprobe 6620 DT direct push rig or equivalent to inject a slurry of Provect-IR50 into each location. Provectus recommends (based on stoichiometric demand and pore space) that each injection consist of approximately 305 gallons of Provect-IR50 slurry (600 lb. of Provect-IR50 mixed with approximately 237 gallons of water).
5. The treatment zone will be between 7-feet and 25-feet BGS. The Provectus-IR50 slurry will be injected within this zone with actual injections occurring at the following depths: 24', 22', 20', 18', 16', 14', 12', 10', and 8' BGS. Injection points will be recorded using a handheld global positioning system (GPS).
6. At each injection point, LaBella will monitor and record injection pressure and approximate flow rate of each injection (elapsed time divided by injection volume). Each injection point will include an injection log (see Attachment 1).
7. After the injection work, up to five (5) soil borings will be advanced to approximately 25-feet BGS to assess the distribution of the treatment chemical in the subsurface. Specifically, a visual assessment of the treatment chemical distribution will be completed. The soil boring cores will be photo-documented and included in the pilot study report.
8. Approximately four (4) weeks after injections take place, LaBella will collect a groundwater sample from on-Site monitoring well GPMW-14 to assess the effectiveness of the pilot study in creating conditions conducive to ISCR and as a secondary assessment, any reduction of the chlorinated solvent plume. Low-flow groundwater sampling will be collected to collect the following groundwater quality parameters: DO, ORP, pH, specific conductance, turbidity, and temperature. One (1) groundwater sample will be collected and will be analyzed for the following:
    - United State Environmental Protection Agency (USEPA) Target Compound List (TCL) and NYSDEC Commissioner Policy 51 (CP-51) VOCs using USEPA Method 8260.

    The groundwater quality parameters (e.g DO, ORP, etc.) and the VOC sample results will be compared to pre-pilot test sampling work.

A copy of the Material Safety Data Sheet for Provect-IR is included as Attachment 1.

Primary Source Treatment Injection (If Necessary)

In addition to the Downgradient Source Treatment Injection, LaBella would like to assess the effectiveness of EZVI-CH4 during this pilot test. This is an ISCR technology for DNPAL/source area destruction designed to rapidly reduce source mass and mass flux of organic constituents of interest in soil and groundwater. LaBella anticipates performing an injection at one (1) location beneath the Site building in the vicinity of the primary source area, as shown on Figure 1. The primary source treatment injection will follow the same procedure as the downgradient source treatment injection, with the

following modifications:

1. LaBella plans to utilize a Geoprobe 6620 DT direct push rig to inject EZVI-CH4 product into one (1) boring location. LaBella anticipates that approximately 300 gallons of EZVI-CH4 will be injected into the indoor location.
2. The treatment zone will be between 6-feet and 25-feet BGS. The EZVI-CH4 product will be injected within this zone with actual injections occurring approximately every 3- to 5-feet below the ground surface. Injection points will be recorded using a handheld GPS.
3. Due to the limitations of injecting beneath an occupied building, soil borings will not be advanced after injection work is completed. Instead, LaBella will utilize existing groundwater monitoring wells to conduct a visual assessment of the treatment chemical distribution.

A copy of the Material Safety Data Sheets for EZVI-CH4 are included as Attachment 1.

Injection Documentation and Air Monitoring

As part of the pilot study, LaBella will document all work and air monitoring. LaBella's on-Site representative will collect photo documentation of the work, note injection volumes, and detail any issues encountered with injection specific to site conditions. Daily reports will be prepared detailing work performed as part of this pilot test. Additionally, LaBella's on-Site representative will conduct air monitoring during all intrusive work. All air monitoring will be conducted in accordance with the Community Air Monitoring Plan (CAMP) in place as part of LaBella's Remedial Investigation (RI) work plan for the Site.

Pilot Study Report

At the conclusion of the work, LaBella will prepare a Pilot Study Report detailing the findings of the pilot study. This report will include final injection locations, injection volumes, issues that occurred during the work, post-injection sampling results (if conducted), and recommendations for the IRM Work Plan. The findings of this Pilot Study Report will be used to develop the full IRM Work Plan for source treatment at the Site. This report will include any recommended adjustments to injection volumes, frequency, and placement based on actual Site conditions. LaBella will provide a copy of this report to NYSDEC upon its completion.

The Pilot Study Report will be prepared in accordance with the Quality Control (QC) Plan in place as part of LaBella's RI work plan for the Site.

CERTIFICATION

I, Daniel P. Noll, certify that I am currently a NYS-registered Professional Engineer and that this Pilot Test Work Plan was prepared in accordance with all applicable statues and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

If you have any questions, or require additional information, please do not hesitate to contact me at (585) 295-6611. We would like to perform the pilot testing in the next two months, so we ask for your review and approval as quickly as possible. Thank you.

Respectfully submitted,

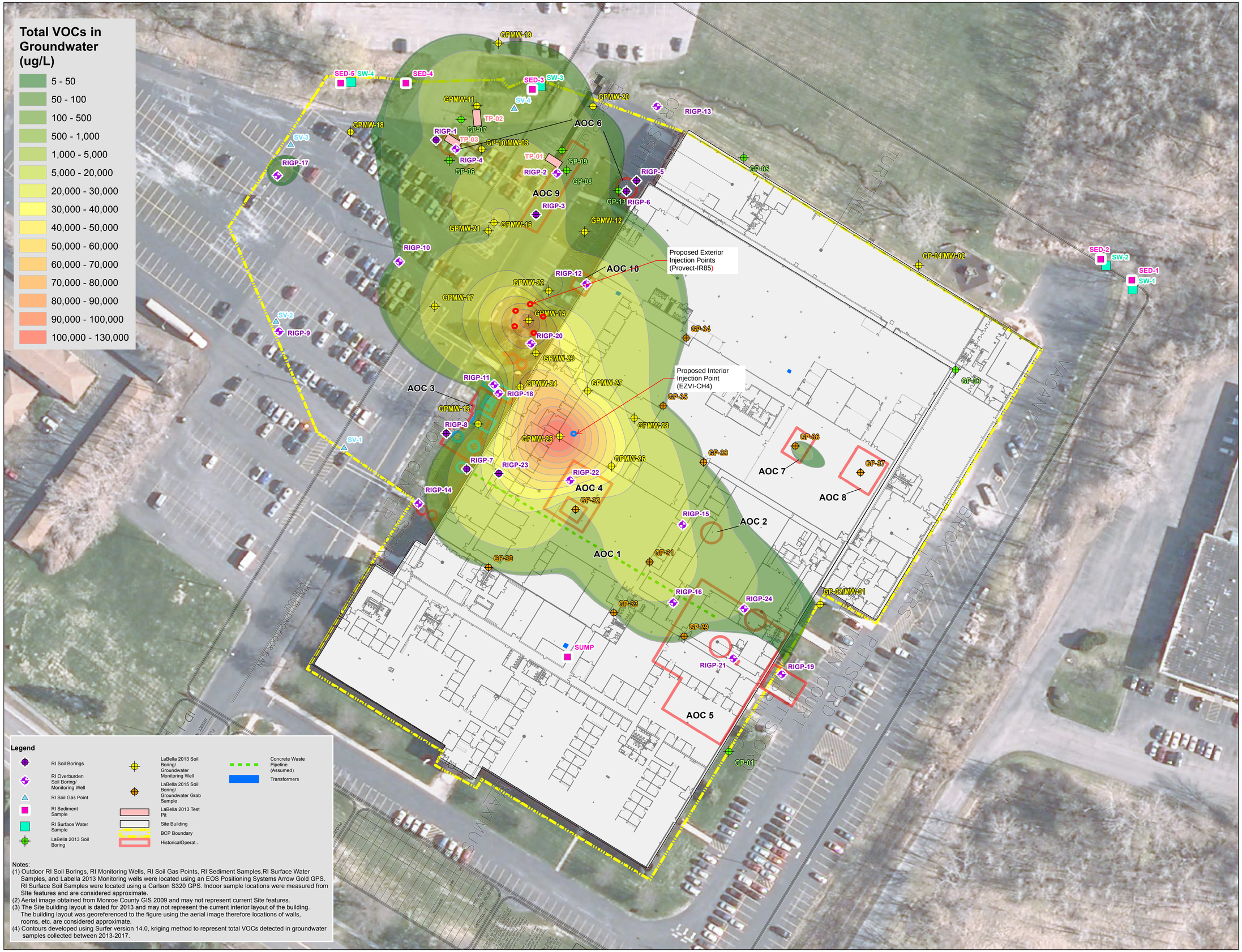
LABELLA ASSOCIATES, D.P.C.

Daniel P. Noll, PE
Project Manager

Attachment

J:\NORRY MANAGEMENT CORP\213131 - BCP APPLICATION 3750 MONROE AVE\REPORTS\PILOT TEST WORK PLAN\213131 PILOT TEST WP_03.25.20.DOCX

FIGURES



Notes:
(1) Outdoor RI Soil Borings, RI Monitoring Wells, RI Soil Gas Points, RI Sediment Samples,RI Surface Water Samples, and Labella 2013 Monitoring wells were located using an EOS Positioning Systems Arrow Gold GPS. RI Surface Soil Samples were located using a Carlson S320 GPS. Indoor sample locations were measured from Site features and are considered approximate.
(2) Aerial image obtained from Monroe County GIS 2009 and may not represent current Site features.
(3) The Site building layout is dated for 2013 and may not represent the current interior layout of the building. The building layout was georeferenced to the figure using the aerial image therefore locations of walls, rooms, etc. are considered approximate.
(4) Contours developed using Surfer version 14.0, kriging method to represent total VOCs detected in groundwater samples collected between 2013-2017.

Path: J:\Norry Management Corp\213131 - BCP Application 3750 Monroe Ave\Drawings\RI Report\Fig 7A VOC Isopleth Groundwater.mxd

LaBella
Powered by partnership.

Remedial Investigation Report

3750 Monroe Avenue Pittsford, New York

3750 Monroe Avenue Associates, LL

Proposed IRM Injection Locations

N
W E
S

0 40 80
1 inch = 40 feet
Intended to print on ARCH D

213131

FIGURE 1

ATTACHMENT 1 – PROVECT-IR AND EZVI-CH4 SAFETY DATA SHEETS (SDS)

SDS DATE: July, 2016

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Emulsified Zero Valent Iron (antimethanogenic)
SYNONYMS: EZVI /EZVI-CH4™
PRODUCT CODES:

MANUFACTURER: Provectus Environmental Products, Inc
ADDRESS: 2871 W. Forest Road, #2
Freeport, IL 61032

EMERGENCY PHONE: (815) 650-2230
CHEMTREC PHONE: (800) 424-9300 (Domestic)
OTHER CALLS:
FAX PHONE:

CHEMICAL NAME: Emulsified Zero Valent Iron (EZVI/EZVI-CH4™)
CHEMICAL FAMILY:
CHEMICAL FORMULA:

PRODUCT USE: Soil & Groundwater Remediation (DNAPL contamination)
PREPARED BY: Provectus Environmental Products, Inc.
SECTION 1 NOTES:

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT:	CAS NO.	% WT	% VOL	SARA 313 REPORTABLE
Iron (Fe)	7439-89-6	5 – 20	NA	NA
Sorbitan Trioleate	26266-58-0	1 – 5	NA	NA
Food Grade Veg Oil	8001-22-7	30 – 40	NA	NA
Potable Water	7732-18-5	40 – 50	NA	NA
Yeast Extracts*	8013-01-2	0.5 – 5	NA	NA

*(some formulations contain - e.g. EZVI-CH4™)

	ppm	mg/m3
OSHA PEL-TWA:	NA	NA
OSHA PEL STEL :	NA	NA
OSHA PEL CEILING:	NA	NA
ACGIH TLV-TWA:	NA	NA
ACGIH TLV STEL:	NA	NA
ACGIH TLV CEILING:	NA	NA

SECTION 2 NOTES:

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

ROUTES OF ENTRY:

EYES: YES

SKIN: NO

INGESTION: YES

INHALATION: NO

ACUTE HEALTH HAZARDS: NONE KNOWN
CHRONIC HEALTH HAZARDS: NONE KNOWN
MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: NONE KNOWN
CARCINOGENICITY
OSHA: NA **ACGIH:** NA **NTP:** NA **IARC:** NA **OTHER:** NA

SECTION 3 NOTES:

SECTION 4: FIRST AID MEASURES

EYES: In case of eye contact, rinse opened eye for 15 minutes with water, then consult physician.

SKIN: In case of skin contact, immediately wash affected area(s) with soap & water and rinse thoroughly.

INGESTION: After swallowing seek immediate medical advice. Make physician aware that the following symptoms may occur; stomach cramps, nausea, gastric or intestinal disorders.

INHALATION: NA

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS:

SECTION 4 NOTES:

SECTION 5: FIRE-FIGHTING MEASURES

FLAMMABLE LIMITS IN AIR, UPPER: NA
(% BY VOLUME) LOWER: NA

FLASH POINT:
F: >482 ºF
C: >250 ºC
METHOD USED: Closed Cup

AUTOIGNITION TEMPERATURE:
F: >760 ºF
C: >404 ºC

NFPA HAZARD CLASSIFICATION
HEALTH: 1 FLAMMABILITY: 2 REACTIVITY: 1
OTHER:

HMIS HAZARD CLASSIFICATION
HEALTH: 1 FLAMMABILITY: 2 REACTIVITY: 1
PROTECTION:

EXTINGUISHING MEDIA: Extinguishing Powder

SPECIAL FIRE FIGHTING PROCEDURES: DO NOT use water, CO2, or halogenated extinguishers.

UNUSUAL FIRE AND EXPLOSION HAZARDS: NA

HAZARDOUS DECOMPOSITION PRODUCTS: NA

SECTION 5 NOTES:

SECTION 6: ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE MEASURES:
Personal Safety Measures: Wear protective equipment, keep unprotected persons away, ensure adequate ventilation
Environmental Safey Measures: NA
Spill/Cleanup Safety Measures: Dispose of collected waste and contaminated materials as directed in Section 7.

SECTION 6 NOTES:

SECTION 7: HANDLING AND STORAGE

HANDLING AND STORAGE: Spilled material should be contained and recovered into drums
OTHER PRECAUTIONS: Store in cool, dry, ventilated area. Do Not store near halogens, oxidizers or acidic materials. Keep ignition sources away and ensure good ventilation.

SECTION 7 NOTES:

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Block off handling or spill area from unprotected persons

VENTILATION : Ensure area is adequately ventilated.

RESPIRATORY PROTECTION: NA

EYE PROTECTION: safety goggles/splash shield

SKIN PROTECTION: tyvec suit with rubberized gloves (neoprene)

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: slip resistant footwear

WORK HYGIENIC PRACTICES: Surfaces covered with EZVI can become VERY slippery. Exercise additional care when handling/cleaning up to avoid slip and fall injury.

EXPOSURE GUIDELINES: NA

SECTION 8 NOTES:

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Black/Dark Gray viscous material
ODOR: cooking oil odor
PHYSICAL STATE: liquid

pH AS SUPPLIED:
pH (Other):
BOILING POINT:
F: >572 ºF
C: >300 ºC
MELTING POINT:
F: NA
C: NA
FREEZING POINT:
F: - 4 ºF
C: - 20 ºC
VAPOR PRESSURE (mmHg):
@
F: NA
C: NA
VAPOR DENSITY (AIR = 1):
@
F: NA
C: NA
SPECIFIC GRAVITY (H2O = 1): 1.05 – 1.13

EVAPORATION RATE: NA

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (con't)

SOLUBILITY IN WATER: Insoluble
PERCENT SOLIDS BY WEIGHT: 5 – 20 %
PERCENT VOLATILE:
BY WT/ BY VOL @
F: NA
C: NA
VOLATILE ORGANIC COMPOUNDS (VOC):
WITH WATER: NA **LBS/GAL**
WITHOUT WATER: NA LBS/GAL
VISCOSITY: ~ 1100 cps (@ 75 ºF)

SECTION 9 NOTES:

SECTION 10: STABILITY AND REACTIVITY

	STABLE	UNSTABLE
STABILITY:	X	

CONDITIONS TO AVOID (STABILITY): AVOID IMPROPER HANDLING & STORAGE CONDITIONS
INCOMPATIBILITY (MATERIAL TO AVOID): HALOGENS, ACIDS, OXIDIZERS
HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:
HAZARDOUS POLYMERIZATION: NA
CONDITIONS TO AVOID (POLYMERIZATION): NA
SECTION 10 NOTES:

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION: NA

SECTION 11 NOTES:

SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION: NA

SECTION 12 NOTES: Used for environmental cleanup of contaminated soils and groundwater. EZVI is biodegradeable in the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Place waste into appropriate containers

RCRA HAZARD CLASS: NA
SECTION 13 NOTES:

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION
- PROPER SHIPPING NAME: Emulsified Zero Valent Iron (EZVI)
- HAZARD CLASS: NA
- ID NUMBER: NA
- PACKING GROUP: NONE
- LABEL STATEMENT:

WATER TRANSPORTATION
- PROPER SHIPPING NAME: Emulsified Zero Valent Iron (EZVI)
- HAZARD CLASS: NA
- ID NUMBER: NA
- PACKING GROUP: NONE
- LABEL STATEMENTS:

AIR TRANSPORTATION
- PROPER SHIPPING NAME: Emulsified Zero Valent Iron (EZVI)
- HAZARD CLASS: NA
- ID NUMBER: NA
- PACKING GROUP: NONE
- LABEL STATEMENTS:

OTHER AGENCIES:
SECTION 14 NOTES:

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

TSCA (TOXIC SUBSTANCE CONTROL ACT): NA

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT): NA

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT): NA

311/312 HAZARD CATEGORIES: NA

313 REPORTABLE INGREDIENTS: NA

STATE REGULATIONS: NA

INTERNATIONAL REGULATIONS: NA

SECTION 15 NOTES:

SECTION 16: OTHER INFORMATION

OTHER INFORMATION: NA

PREPARATION INFORMATION: NA

DISCLAIMER: The information contained herein relates only to the specific material identified. Provectus believes that such information is accurate and reliable but no representation, guarantee or warranty, express or implied, is made as to the accuracy, reliability, or completeness of the information. Provectus urges individuals receiving this information to make their own determination as to the suitability and completeness of the information for their particular application.

Safety Data Sheet (SDS)

OSHA HazCom 2012 Standard 29 CFR 1910.1200. Prepared to GHS Rev03.

Printing date 01/25/2016 Reviewed on 01/23/2016

* 1 Identification

· **Product identifier**

· **Trade name: Provect-IR ISCR Reagent (Antimethanogenic)**
· **Product description**
Remediation product for the treatment of soil, sediment and groundwater. Not for use in potable water sources.

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Provectus Environmental Products, Inc.
2871 W. Forest Road - Suite 2
Freeport, IL 61032
Phone: 815-650-2230
Fax: 815-650-2230
www.provectusenvironmental.com
· **Emergency telephone number:** 815-650-2230

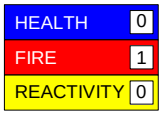
* 2 Hazard(s) identification

· **Classification of the substance or mixture**
The product is not classified according to the Globally Harmonized System (GHS).

· **Label elements**
· **GHS label elements** Non-Regulated Material
· **Hazard pictograms** Non-Regulated Material
· **Signal word** Non-Regulated Material
· **Hazard statements** Non-Regulated Material
· **Hazard description:**
CONTAINMENT HAZARD: Any vessel that contains wetted reagent must be vented due to potential pressure build up from fermentation gases.
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 0
Fire = 1
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = 0
Fire = 1
Reactivity = 0

3 Composition/information on ingredients

	Proprietary	40 to 90%
7439-89-6	iron	5 to 90%
4075-81-4	calcium dipropionate	0 to 4%

· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

8013-01-2	Yeast extracts	STOT SE 3, H335	0.5 to 5%

(Contd. on page 2)

Safety Data Sheet (SDS)

OSHA HazCom 2012 Standard 29 CFR 1910.1200. Prepared to GHS Rev03.

Printing date 01/25/2016 Reviewed on 01/23/2016

Trade name: Provect-IR ISCR Reagent

(Contd. of page 1)

9000-30-0	Guar gum	STOT SE 3, H335; Eye Irritant 2B, H320; Combustible Dust	0 to 5%
7757-83-7	sodium sulfite	Acute Toxicity 4, H302	0 to 2%

· ***Additional information:*** Product contains red yeast rice

4 First-aid measures

· ***Description of first aid measures***
· ***After inhalation:*** Remove person to fresh air. If signs/symptoms continue, get medical attention.
· ***After skin contact:*** Wash off with soap and water. Get medical attention if irritation develops.
· ***After eye contact:*** Flush with water for 5 minutes
· ***After swallowing:***
Rinse mouth with water and afterwards drink plenty of milk or water. Call a poison control center or doctor immediately for treatment advice.
· ***Most important symptoms and effects, both acute and delayed*** No further relevant information available.
· ***Indication of any immediate medical attention and special treatment needed***
No further relevant information available.

5 Fire-fighting measures

· ***Extinguishing media***
· ***Suitable extinguishing agents:***
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· ***Special hazards arising from the substance or mixture*** No further relevant information available.
· ***Advice for firefighters***
· ***Protective equipment:*** No special measures required.

* 6 Accidental release measures

· ***Personal precautions, protective equipment and emergency procedures*** Not required.
· ***Environmental precautions:*** Do not allow to enter sewers or potable water sources.
· ***Methods and material for containment and cleaning up:***
Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. Sweep or vacuum up spillage and place in vented container.
· ***Reference to other sections***
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

* 7 Handling and storage

· ***Precautions for safe handling*** No special measures required.
· ***Information about protection against explosions and fires:*** Combustible material

· ***Conditions for safe storage, including any incompatibilities***
· ***Storage:***
· ***Requirements to be met by storerooms and receptacles:***
CONTAINMENT HAZARD: Any vessel that contains wetted reagent must be vented due to potential pressure build up from fermentation gases.
· ***Information about storage in one common storage facility:*** Not required.
· ***Further information about storage conditions:***
Keep tightly closed in a dry and cool place. Keep away from open flames, hot surfaces and sources of ignition. Any material that is wetted must be vented due to potential pressure build up from fermentation gases.

(Contd. on page 3)

Safety Data Sheet (SDS)

OSHA HazCom 2012 Standard 29 CFR 1910.1200. Prepared to GHS Rev03.

Printing date 01/25/2016 Reviewed on 01/23/2016

Trade name: Provect-IR ISCR Reagent

(Contd. of page 2)

· ***Specific end use(s)*** No further relevant information available.

* 8 Exposure controls/personal protection

· ***Additional information about design of technical systems:*** No further data; see section 7.

· ***Control parameters***
· ***Components with occupational exposure limits:***
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
· ***Additional information:***
Dry or powdered ingredients are combustible. Dispersal of finely divided dust from products into air may form mixtures that are ignitable and explosive. Minimize airborne dust generation and eliminate sources of ignition.

· ***Exposure controls***
· ***Personal protective equipment:***
· ***General protective and hygienic measures:***
The usual precautionary measures for handling chemicals should be followed.
· ***Breathing equipment:*** Not required.
· ***Protection of hands:*** Not required.
· ***Eye protection:*** Not required.

* 9 Physical and chemical properties

· ***Information on basic physical and chemical properties***
· ***General Information***
· ***Appearance:***

Form:	Solid
Color:	Brown to Green
· ***Odor:***	Pleasant
· ***Odor threshold:***	Not determined.
· ***pH-value:***	Not applicable.
· ***Change in condition***	
Melting point/Melting range:	Not determined.
Boiling point/Boiling range:	Undetermined.
· ***Flash point:***	Not applicable.
· ***Flammability (solid, gaseous):***	Not determined.
· ***Ignition temperature:***	
Decomposition temperature:	Not determined.
· ***Auto igniting:***	Product is not self-igniting.
· ***Danger of explosion:***	Dry or powdered ingredients are combustible. Dispersal of finely divided dust from products into air may form mixtures that are ignitable and explosive. Minimize airborne dust generation and eliminate sources of ignition.
· ***Explosion limits:***	
Lower:	Not determined.
Upper:	Not determined.
· ***Vapor pressure:***	Not applicable.
· ***Density:***	Not determined.

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· **Relative density** Not determined.
· **Vapor density** Not applicable.
· **Evaporation rate** Not applicable.

· **Solubility in / Miscibility with**
Water: Soluble.

· **Partition coefficient (n-octanol/water):** Not determined.

· **Viscosity:**
Dynamic: Not applicable.
Kinematic: Not applicable.

· **Solvent content:**
Organic solvents: 0.0 %

Solids content: 100.0 %
· **Other information** No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.
· **Chemical stability** Product is stable under normal conditions.
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

* 11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**
· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** Product dust may cause eye irritation.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product is not subject to classification according to internally approved calculation methods for preparations:
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**
None of the ingredients is listed.
· **NTP (National Toxicology Program)**
None of the ingredients is listed.
· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.

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· ***Persistence and degradability*** No further relevant information available.
· ***Bioaccumulative potential*** No further relevant information available.
· ***Mobility in soil*** No further relevant information available.
· ***Additional ecological information:***
· ***General notes:*** Water hazard class 1 (Self-assessment): slightly hazardous for water
· ***Results of PBT and vPvB assessment***
· ***PBT:*** Not applicable.
· ***vPvB:*** Not applicable.
· ***Other adverse effects*** No further relevant information available.

13 Disposal considerations

· ***Waste treatment methods***
· ***Recommendation:*** Smaller quantities can be disposed of with household waste.

· ***Uncleaned packaging:***
· ***Recommendation:*** Disposal according to official regulations municipal.
· ***Recommended cleansing agent:*** Water, if necessary with cleansing agents.

* 14 Transport information

· ***UN-Number***
· ***DOT, ADR, ADN, IMDG, IATA*** Non-Regulated Material
· ***UN proper shipping name***
· ***DOT, ADR, ADN, IMDG, IATA*** Non-Regulated Material
· ***Transport hazard class(es)***

· ***DOT, ADR, ADN, IMDG, IATA***
· ***Class*** Non-Regulated Material
· ***Packing group***
· ***DOT, ADR, IMDG, IATA*** Non-Regulated Material
· ***Environmental hazards:***
· ***Marine pollutant:*** No
· ***Special precautions for user*** Not applicable.
· ***Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code*** Not applicable.
· ***UN "Model Regulation":*** -

15 Regulatory information

· ***Safety, health and environmental regulations/legislation specific for the substance or mixture***
· ***Sara***

· ***Section 355 (extremely hazardous substances):***

None of the ingredients is listed.

· ***Section 313 (Specific toxic chemical listings):***

None of the ingredients is listed.

· ***TSCA (Toxic Substances Control Act):***

7439-89-6	iron
4075-81-4	calcium dipropionate
8013-01-2	Yeast extracts
9000-30-0	Guar gum
7757-83-7	sodium sulfite

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· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.
· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.
· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.
· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**
None of the ingredients is listed.
· **TLV (Threshold Limit Value established by ACGIH)**
None of the ingredients is listed.
· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **GHS label elements** Non-Regulated Material
· **Hazard pictograms** Non-Regulated Material
· **Signal word** Non-Regulated Material
· **Hazard statements** Non-Regulated Material

· **National regulations:**

The product is subject to be labeled according with the prevailing version of the regulations on hazardous substances.

· **State Right to Know**

	Proprietary	40-90%
7439-89-6	iron	5-90%
4075-81-4	calcium dipropionate	2-12%
8013-01-2	Yeast extracts STOT SE 3, H335	≤ 2.5%
9000-30-0	Guar gum STOT SE 3, H335; Eye Irrit. 2B, H320; Combustible Dust	≤ 2.5%
7757-83-7	sodium sulfite Acute Tox. 4, H302	≤ 2.5%

All ingredients are listed.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Date of preparation / last revision** 01/23/2016 / 4
· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association

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ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
Acute Tox. 4: Acute toxicity, Hazard Category 4
Eye Irrit. 2B: Serious eye damage/eye irritation, Hazard Category 2B
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

· **** Data compared to the previous version altered.***