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May 31, 2023

Ms. Kim Kuhn
Bureau of Land and Waste Management
SC Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201

RE: Sitewide Groundwater Monitoring Report
Shakespeare Composite Structures Site, Newberry, South Carolina
SCDHEC VCC Number 14-6271-RP

SCANNED

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JUN 01 2023

**SITE ASSESSMENT,
REMEDICATION, &
REVITALIZATION**

Dear Ms. Kuhn:

On behalf of Signify North America Corporation (Signify), please find enclosed one hard copy and one DVD of the Sitewide Groundwater Monitoring Report for the Shakespeare Composite Structures Site located in Newberry, South Carolina. This report contains data from the 2022 sitewide groundwater monitoring event, including potentiometric maps, trichloroethylene (TCE) isoconcentration maps, groundwater gradient and flow rate calculations, limited comparisons between the 2022 data and groundwater data collected during previous investigative efforts, a summary of the 2021-2022 groundwater pilot study results, a comparison of the analytical results for samples obtained using both conventional groundwater sampling techniques and passive diffusion bags (PDBs) performed at selective monitoring wells, and an estimation of plume volumetrics. Conclusions drawn from the 2022 monitoring event data are also included in the report.

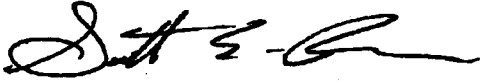
The following recommendations/requests and next step actions are also offered in the conclusions section of the report:

- Groundwater Pilot Study: Both in situ chemical oxidation (ISCO) and in situ enhanced reductive dechlorination (ISERD) should be retained as potential treatment technologies and for remedial alternatives development in the upcoming feasibility study (FS).
- Chemicals of Concern (COCs): The COCs which are being carried through from the remedial investigation (RI), through the sitewide groundwater monitoring event, and into the FS are TCE, cis-1,2-dichloroethene (DCE), and vinyl chloride (VC).
- Low-flow Purging Compared with PDB Sample Collection: Signify would like to incorporate the use of PDBs for future groundwater sampling events. Where it is critical that other groundwater natural attenuation or remediation parameters besides VOCs need to be sampled, it is recommended that low-flow groundwater sampling continue to be performed.
- Plume Volumetrics: The Earth Volumetric Studio (EVS) software was used to develop a 3-D model depicting the extent of TCE impact in groundwater beneath the site. Updating of this model as remedial efforts are implemented can be used to depict changes in plume dimensions.
- Initiation of Feasibility Study Phase: Based on the sitewide groundwater monitoring event data and the pilot study results, Signify recommends proceeding with the feasibility study phase. Signify anticipates that the FS will be completed by the end of 2023.

If you have questions regarding this Report, please feel free to contact me, or Dave Oliphant of AECOM at 864-380-6950, at your convenience.

Sincerely,

AECOM Technical Services, Inc.

A handwritten signature in black ink, appearing to read 'Scott E. Ross', with a stylized flourish at the end.

Scott E. Ross, P.G.
Project Manager
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cc: Mr. Emil Filc – Signify North America Corporation
Mr. Dave Oliphant – AECOM

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PM Copy

Site Wide Groundwater Monitoring Report

Former Shakespeare Composite Structures Site
19845 US Highway 76
Newberry, SC

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SITE ASSESSMENT,
REMEDICATION, &
REVITALIZATION

RP-VCC-14-6271-RP

Site ID # 51025

Prepared for:

Signify North America Corporation

May 2023

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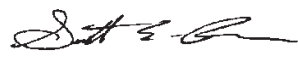
Quality information

Prepared by



David Oliphant, CHMM
Sr. Project Manager

Checked by



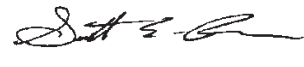
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List of Acronyms

AECOM	AECOM Technical Services, Inc.
AFCEE	Air Force Center for Engineering and the Environment
BRA	Baseline Risk Assessment
bgs	below ground surface
BSTS	bench-scale treatability study
BTEX	benzene, toluene, ethylbenzene, and xylenes
cells/mL	cells per milliliter
cis-1,2-DCE	cis-1,2 – dichloroethane
COCs	chemical of concerns
CVOCs	chlorinated volatile organic compounds
<i>DHB</i>	<i>Dehalobacter spp.</i>
<i>DHC</i>	<i>Dehalococcoides</i>
DO	dissolved oxygen
DPT	direct push technology
ERD	enhanced reductive dichlorination
EVS	Earth Volumetric Studio
FS	feasibility study
ft	feet or foot
ft/ft	feet per foot
ft/day	feet per day
ft/yr	feet per year
IDW	investigation derived waste
ISB	in situ bioremediation
ISCR	in situ chemical reduction
ISCO	in situ chemical oxidation
K	hydraulic conductivity
KMnO ₄	potassium permanganate
LDPE	low-density polyethylene
µg/L	micrograms per liter
MCL	maximum contaminant level
mg/L	milligrams per liter
ml	milliliter
msl	mean sea level
mV	millivolts
ORP	oxidation reduction potential
Pace	Pace Analytical Services, Inc.
PCE	tetrachloroethene
PDB	passive diffusion bag
PENAC	Philips Electronics North America Corporation

List of Acronyms (cont'd.)

PS	Pilot Study
QAPP	Quality Assurance Project Plan
redox	oxygen reduction
RI	Remedial Investigation
ROI	radius of influence
RPD	relative percent difference
RP-VCC	responsible party-voluntary cleanup contract
SC	specific conductance
SCDHEC	South Carolina Department of Health and Environmental Control
Signify	Signify North America, Inc.
S.U.	standard units (for pH)
TCE	trichloroethene
TCL	target compound list
TDS	total dissolved solids
USEPA	United States Environmental Protection Agency
VC	vinyl chloride