WEST VIRGINIA

DEPARTMENT OF ENVIRONMENTAL PROTECTION

STATEMENT OF BASIS

THE CHEMOURS COMPANY
(Formerly E.I. DuPont de Nemours & Co., Inc.)
BELLE, WEST VIRGINIA

EPA ID NO. WVD 005012851

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Table of Contents

I. Introduction

The West Virginia Department of Environmental Protection (DEP) has prepared this Statement of Basis (SB) to solicit public comment on its proposed remedy for the Plant Area of The Chemours Company (Belle) Facility located in Belle, West Virginia (Facility). DEP's proposed remedy for the Plant Area consists of land and groundwater use restrictions implemented through institutional controls (ICs) and groundwater monitored natural attenuation (MNA).

The Facility is subject to the United States Environmental Protection Agency's (EPA) Corrective Action program under the Solid Waste Disposal Act, as amended, commonly referred to as the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Section 6901, et seq. The Corrective Action program requires that facilities subject to certain provisions of RCRA investigate and address releases of hazardous waste and hazardous constituents, usually in the form of soil or groundwater contamination, that have occurred at or from their properties.

DEP is providing a thirty-(30) day public comment period on this SB. DEP may modify its proposed remedy based on comments received during this period. DEP will announce its selection of a final remedy (Final Remedy) for the Plant Area of the Facility in a Final Decision and Response to Comments (Final Decision) after the public comment period has ended.

DEP will issue the Final Decision selecting the Final Remedy after considering all comments received during the comment period, consistent with applicable RCRA requirements and regulations. If the Final Remedy is substantially unchanged from the one proposed in the SB, DEP will issue the Final Decision and inform all persons who submitted written comments or requested notice of the Final Decision. If the Final Decision is significantly different from the one proposed, DEP will issue a public notice explaining the new decision and will reopen the comment period. In the Response to Comments section attached to the Final Decision, DEP will respond in writing to each comment received.

Information on the Corrective Action program as well as a fact sheet for the Facility can be found at: https://www.epa.gov/hwcorrectiveactionsites/hazardous-waste-cleanup-chemours-belle-plant-formerly-dupont-belle-west.

II. Facility Background

A. Site History

The Facility is located at 901 West Dupont Avenue, Belle, West Virginia, on approximately 723 acres (105 acre Plant Area and 618 acre Mountain Area). It is situated in the floodplain of the Kanawha River, northwest of the town of Belle in Kanawha County, West Virginia and is eight miles southeast of Charleston, West Virginia, along Route 60 (Figure 1). The Facility is located on the north bank of the Kanawha River in a mixed industrial/residential area and is divided into two areas based on topography and land use: the Plant Area and the Mountain Area. This SB focuses on the Plant Area, an active industrial facility. DEP issued final remedy for the Mountain Area in July 2014.

The first documented land use at the Facility was as a farm and orchard in the early 1920s. E.I. du Pont de Nemours and Company (DuPont) purchased the Facility in April 1925 and began construction of the nation's first commercial ammonia plant. The Facility began manufacturing ammonia in April 1926, under the name of Lazote, Inc., using a process of high pressure and temperature catalytic synthesis.

The availability of high-pressure technology and local coal supplies quickly led to the development of other chemical process units at the Facility. Coal and air were processed to extract chemical building blocks such as hydrogen, carbon monoxide, and carbon dioxide for ammonia. Methanol was produced from natural gas. Methanol, ammonia, air, and water became the essential raw materials for reactions to create many combinations of chemical intermediate products. Historically, the Facility was owned and operated by DuPont. Certain tenants have also previously operated at the plant and some continue to operate currently. DuPont spun off its Performance Chemicals Business, including the Facility, into a separate business entity known as The Chemours Company (Chemours) which began operating as an independent company on July 1, 2015. The Facility is currently owned by Chemours and continues to produce a wide variety of industrial, agricultural, and biochemical products and intermediates.

B. Site Geology

The geology of the Plant Area of the Belle Facility is characterized by 1 to 30 feet of surficial fill

underlain by unconsolidated, Pleistocene-age Kanawha River terrace deposits. The Kanawha Formation bedrock underlies the terrace deposits. The Kanawha River terrace deposits are characterized by three distinct stratigraphic sequences. The uppermost sequence contains sand and sandy-clay beds that range in thickness from 5 to 18 feet. This sequence consists of upper sand beds that become progressively finer with depth, grading to sandy clay. These upper sand beds are contiguous with the upper fill material and are often observed to blend in with the boiler ash and cinders that comprise fill material. In many areas of the Facility, this sand sequence is absent or has been replaced with fill material.

The middle stratigraphic sequence is a clay and silty-clay unit. The clay and silty-clay unit is absent in the vicinity of Simmons Creek but increases to 35 feet thick under the central portion of the Plant Area. The lower stratigraphic sequence of the Kanawha River terrace deposits is a sand and gravel unit. This sequence averages 10 to 15 feet in thickness and was deposited on top of the bedrock unit. Depth to bedrock beneath the Plant Area averages 52 feet bgs.

The bedrock underlying the Kanawha River terrace deposits belongs to the Kanawha Formation of the Pennsylvanian-age Pottsville series. The War Eagle Sandstone, a member of the Kanawha Formation, is present beneath the site underlying the Kanawha River terrace deposits. The War Eagle Sandstone unit is a fine- to coarse-grained, micaceous sandstone.

C. Hydrogeology and Hydrology

Groundwater

The Plant Area of the Facility is underlain by two overburden aquifer flow zones and one bedrock aquifer. The upper aquifer, a water-table aquifer, is designated the shallow overburden aquifer. This aquifer occurs in the saturated portion of the fill, sand, and sandy-clay just above the clay and silty-clay unit described above. The clay and silty-clay unit separates the shallow overburden aquifer from the deep overburden aquifer that occurs in the lower sand and gravel unit of the river terrace deposits. The deep overburden aquifer is completely saturated. The bedrock aquifer is a confined aquifer in the War Eagle Sandstone and underlies the deep overburden aquifer. The shallow overburden aquifer is discontinuous at the site.

Based on the subsurface information, two large areas located in central portions of the site are lacking the sand or granular fill materials that would comprise the shallow overburden flow zone. Depth to groundwater in the shallow overburden aquifer ranges from 3 to 18 feet. The hydraulic conductivity of the shallow overburden aquifer varies depending on the grain size of the aquifer material. The hydraulic conductivity ranges from 0.44 feet per day in the clayey sand to 4.0 feet per day in the fill and fly ash. The average horizontal hydraulic gradient across the site within the shallow overburden aquifer is 0.008 feet/foot in a south-southwestern flow direction toward the Kanawha River. The shallow overburden aquifer has the potential to discharge to the Kanawha River. The deep overburden aquifer is confined by the overlying clay unit. This aquifer occurs in all areas beneath the Plant Area at a depth ranging from 35 to 52 feet. The deep overburden aquifer is hydraulically connected to the underlying bedrock aquifer, to Simmons Creek, and to the Kanawha River. Because the clay unit does not exist in the Simmons Creek area, only one aquifer—a combined shallow and deep overburden aquifer—exists at this location.

Groundwater generally flows west-southwest toward the Kanawha River in the deep overburden aquifer. The deep overburden appears to discharge to the Kanawha River. Historical water-level elevations in deep overburden wells indicate that the horizontal gradient can be very flat at certain times with an average horizontal gradient of 0.003 feet/foot. Kanawha River pool-level changes may account for the flat gradients in the near bank area. The bedrock (War Eagle Sandstone) aquifer, a confined aquifer, underlies the deep overburden aquifer. The top of the War Eagle Sandstone aquifer appears at a depth of 52 to 56 feet. Groundwater flow in this fractured bedrock aquifer in the vicinity of the site is southwest toward the Kanawha River where it discharges. The hydraulic conductivity measured in the War Eagle Sandstone aquifer ranges from 0.0023 to 107 feet per day, depending on the extent of secondary permeability. This aquifer also extends underneath the Mountain Area.

Hydrology

Surface-water runoff from the Plant Area is collected in storm sewers and discharged through National Pollutant Discharge Elimination System (NPDES)-permitted outfalls to Simmons Creek or to the Kanawha River. Simmons Creek receives surface-water runoff and untreated non-contact cooling water and flows across the Plant Area near the former Methylene

Dianiline process area (MDA Area) before discharging to the Kanawha River. The Kanawha River has an average pool elevation of 590 feet mean sea level as it flows northwest past the Plant Area. The natural drainage of Simmons Creek was modified within the Plant Area during construction of the adjacent manufacturing areas. The majority of Simmons Creek in the Plant Area now consists of a narrow, man-made channel constructed with concrete, sheet-pile, or rip-rap walls. Portions of the creek bottom are also concrete-lined, while the banks above the channel walls are primarily covered with rip-rap.

The reach of Simmons Creek within the Plant Area was described as low quality ecological habitat due to its channelized environment, lack of riparian buffer, and poor quality substrate in the 316(a) thermal variance studies that were conducted as part of the Belle Plant Area NPDES program (URS, 2006 and 2012). Minimal vegetation is growing within sediment accumulated in the channel bottom and in rip-rap areas within this reach of Simmons Creek.[1]

The Kanawha River in the vicinity of the site is within Zone 1 and was historically classified by the State of West Virginia as Category B (for the propagation and maintenance of fish and other aquatic life) and Category C (for water contact recreation). However, in 2015, DEP re-designated Zone 1 of the Kanawha River as Category A (waters protected as a drinking-water source). DEP verbally stated that Simmons Creek is a Category A, B, and C stream.

III. Summary of Environmental History

In September 1998, EPA issued a Corrective Action Permit (the Permit) to the Facility (Permit No. WVD 005 012 851). The Permit was renewed in March 2014 by DEP. The Corrective Action portion of the permit requires DuPont (now Chemours) to conduct investigations to determine whether corrective measures at seven areas of concerns (AOCs) and 192 solid waste management units (SWMUs) are necessary. Most of these SWMUs and all AOCs (184 areas in total) are located in the Plant Area. The remaining 15 SWMUs are located in the Mountain Area. Forty-five SWMUS and AOCs and site-wide groundwater were identified in the RCRA Facility Investigation (RFI) and recommended for evaluation in the CMS. Four additional areas were identified after the RFI was completed and are evaluated in the CMS to determine whether additional investigation or remedial action is warranted. A description and summary of the RFI for each SWMU and AOC is presented in Table 1.

Complete details, including sampling data, can be found in the individual reports listed in the Index to the Administrative Record (AR) presented as Attachment 1 and located in the AR. Sampling included surface and subsurface soil, sediment, groundwater, surface water, pore water, soil vapors, and indoor air at the Facility. Chemicals of Concerns (COCs) include volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polycyclic aromatic hydrocarbons (PAHs) and metals (e.g., arsenic).

[1] The description of Simmons Creek ecological habitat has been updated from the RFI Reports and the CMS Report. While the habitat is low-quality, some ecological habitat does exist within the area.

A. RCRA Facility Investigations

Chemours has conducted numerous investigations and submitted multiple reports under the Permit. During the Phase I RFI, groundwater monitoring wells were installed near the manufacturing areas, including the former Coke Plant and the Benzol Process Area, and along the Kanawha River. Surface soil, subsurface soil and groundwater samples were collected and analyzed. The results of the Phase I RFI identified three locations in the Plant Area where organic compounds were detected in groundwater and additional investigation was recommended. These three locations included the former Sodium Styrene Sulfonate process area (SSS Area), the MDA Area, and the former Small Lots Manufacturing process area (SLM Area) (Figure 2).

The Phase II RFI targeted the three locations within the Plant Area where organic compounds were detected in groundwater, the former SSS Area, the MDA Area, and the SLM Area. Thirteen hydropunch locations were installed, and 11 soil samples and 13 groundwater samples were collected and analyzed. Elevated concentrations of organic compounds were detected in the shallow overburden aquifer and soil near the former SSS Area. Limited areas of impact were also observed in groundwater near the former MDA Area and at the SLM Area. In July 2004, dual phase extraction (DPE) systems were put in place as interim remedial measures (IRMs) at the former Benzol Process Area and at the former SSS Area to treat impacted soils and groundwater at these areas. Over time, groundwater analytical results demonstrated the effectiveness of the DPE systems via a trend of reduced concentrations and decreased removal. EPA and DEP approved the permanent shutdown of the DPE systems in the former SSS Area and the former Benzol Process Area in 2016 and 2017, respectively.

The Phase IIIA RFI in 2008 focused primarily on assessing the northern part of the Mountain Area; however, additional sampling and analysis to evaluate current groundwater quality was completed at the Plant Area. The results of sampling conducted during the Phase IIIA RFI indicated that detectable concentrations of VOCs, SVOCs, metals and pesticides were still present in groundwater at the Plant Area.

During the Phase IV RFI, fieldwork was completed in several mobilizations during 2012, 2013, and 2014 which included collection of both soil and groundwater samples at the Plant Area. Constituents detected in groundwater were compared to the lower of the Federal Maximum Contaminant Level (MCL) or the EPA Regional Screening Levels (RSLs) for tap water. The RSLs are based on a cancer risk of 1×10^{-6} or a hazard quotient (HQ) of 0.1 for non-carcinogens. Additionally, groundwater sample results from shallow overburden monitoring wells located along the Kanawha River were screened for interaction of groundwater with surface water. Detected constituents in these monitoring wells were compared to screening levels equivalent to ten times the surface water quality criteria.

Soil concentrations were compared to EPA Industrial RSLs for composite worker soil. Similar to groundwater, the RSLs were based on a cancer risk of 1×10^{-6} or a HQ of 0.1 (for non-carcinogens). Soil concentrations (for inorganic constituents, PAHs, and dioxins/furans) in fill materials were also compared to site-specific release/delineation criteria. Soil concentrations for inorganic constituents in native soil materials were also compared to statewide background concentrations.

In addition to the RFI, supplemental investigations were conducted for surface water, pore water, and indoor air. Pore water studies were performed for the Kanawha River in 2015 and 2016 to determine whether Facility-related constituents in shallow-aquifer groundwater had migrated to the river. Reports summarizing the results of the pore water studies were submitted to EPA and DEP in May 2016 and February 2017. In addition, two vapor intrusion (VI) studies were conducted at the Plant Area in March 2017 and February 2018. Reports summarizing these studies were submitted to the EPA and DEP in October 2017 and February 2019. The RFI for the Plant Area was deemed complete and approved by EPA on September 3, 2019. Upon completion of the RFI, Chemours was required to submit a Corrective Measures Study (CMS) work plan for the Plant Area, pursuant to Part II, Condition D.1 and Attachment D of the Permit.

Environmental data collected as part of the RFI were used to conduct a human health exposure assessment. As part of the human health exposure assessment, potentially complete exposure pathways for, surface soil, subsurface soil, and groundwater were evaluated for potential receptors identified based on current and reasonably anticipated future land and water use. These include current/future on-site industrial workers, current/future on-site construction/excavation workers, and recreational users of the Kanawha River. As presented in the sections B, C and D below, based on an evaluation of site-specific exposure conditions, no significant potentially complete exposure pathways for human health or the environment were identified for the Plant Area, including groundwater discharge to the Kanawha River. Sections B and C below are excerpted from the Comprehensive RFI Report and represent summaries of data evaluations performed in 2015 (the best comprehensive source of information for the site). The RSL values shown were current in 2015 but may have been subject to revision since. However, any changes to RSLs are relatively minor, remaining within the same order of magnitude.

B. Soil

Surface Soil

During the RFI and other applicable on-site investigations, up to 47 surface soil samples were collected across the Plant Area and analyzed for a combination of VOCs, SVOCs, metals, pesticides/polychlorinated biphenyls (PCBs), and dioxins/furans. Constituents detected in surface soil were compared to the EPA Industrial RSLs or composite worker soil. Results showed that SVOCs (benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene benzo(k)fluoranthene, dibenz (a, h) anthracene, indeno (1,2,3-cd) pyrene), dioxins, and metals (arsenic and cobalt) were detected above the screening criteria and 95% Upper Tolerance Limit (UTLs) (for historical fill) or statewide background values.

PAH exceedances were observed at SWMUs 54, 58, 191, and 192 and AOCs E and G. Of the PAHs, benzo(a)pyrene most frequently exceeded the screening criteria. Benzo(a)pyrene concentrations at these locations ranged between 0.73 mg/kg and 250 mg/kg. The highest benzo(a)pyrene concentration was observed at SWMU 54. Dioxin/furans were identified at

SWMU 192. The total TEQ of 2,3,7,8-TCDD exceeded the EPA Industrial RSL for composite worker soil and 95% UTL.

Of the detected metals, arsenic most frequently exceeded the screening criteria. Arsenic exceedances were observed at SWMUs 72 and 191 and AOC E. Arsenic concentrations above the historical fill 95% UTL ranged between 22.5 mg/kg and 54.5 mg/kg. The highest concentration was observed at SWMU 72.

Subsurface Soil

Up to 68 subsurface soil samples were collected across the Plant Area during the RFI and other applicable on-site investigations. Soil samples were analyzed for a combination of VOCs, SVOCs, metals, pesticides/PCBs, and dioxins/furans and the results were compared to EPA Industrial RSLs for composite worker soil. VOCs (ethylbenzene, formaldehyde, and xylenes), SVOCs (1-methylnaphthalene, 2-methylnaphthalene, benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz (a, h) anthracene, indeno (1,2,3-tcd) pyrene, and naphthalene) and metals (antimony, arsenic, cobalt, and mercury) were detected above screening criteria and 95% UTLs or statewide background values.

VOC exceedances were limited to the SLM Area (for ethylbenzene and xylenes) and at SWMU 192 (for formaldehyde).

PAH exceedances were observed at SWMUs 54, 58, 191 and 192, and AOCs E and G. Similar to surface soil, of the PAHs, benzo(a)pyrene most frequently exceeded the screening criteria. Benzo(a)pyrene concentrations were greater than the 95% UTL at eight locations. Benzo(a)pyrene concentrations at these locations ranged between 1.8 mg/kg and 170 mg/kg. The highest benzo(a)pyrene concentration was observed at AOC E.

For detected metals, arsenic most frequently exceeded the screening criteria. Arsenic exceedances were limited to SWMU 121 where it was detected at a maximum concentration of 34.5 mg/kg in subsurface soil.

C. Site-Wide Groundwater

During the Phase IV RFI, groundwater sampling was conducted at over 35 existing Plant Area monitoring wells and samples were analyzed for VOCs, SVOCs, metals and formaldehyde. Eleven VOCs, 28 SVOCs, and 16 inorganics were detected in the shallow overburden monitoring wells sampled. Of the organic constituents, formaldehyde was the most frequently detected. Formaldehyde concentrations ranged between 21 µg/L and 1,700 µg/L. The greatest exceedances of the tap water RSL (0.43 µg/L) were observed in the former Benzol Process Area. Formaldehyde is produced in the Glycol Process Area at the northeast portion of the Facility. Formaldehyde was also a common raw material used at several other processes across the plant.

In addition to formaldehyde, six other VOCs (benzene, cis-1,2-dichloroethene, ethylbenzene, toluene, trichloroethene, and xylenes) were detected above tap water RSLs or MCLs. Benzene exceedances of the tap water RSL (0.45 µg/L) and the MCL (5 µg/L) were observed in monitoring well locations associated with three areas: the former Benzol Process

Area, the former SSS Area, and the former MDA Area. The maximum detected concentration of benzene (190,000 µg/L) was observed in monitoring wells located in the former SSS Area. In the former Benzol Process Area, benzene concentrations ranged between 26 µg/L to 27,000 µg/L. Benzene was detected at a concentration of 8 µg/L in the former MDA Area.

1,4-Dioxane was the most frequently detected SVOC. 1,4-Dioxane concentrations ranged between 1 µg/L and 5 µg/L, with the maximum detected concentration located in the former SSS Area. The tap water RSL is 0.46 µg/L. In addition to 1,4-dioxane, several other SVOCs (mostly PAHs) exceeded tap water RSLs. Of the SVOCs, naphthalene exceeded the tap water RSL by the greatest margin. Naphthalene concentrations ranged between 0.3 µg/L and 4,500 µg/L, with the maximum detected concentration observed in monitoring wells located in the former Benzol Process Area. The tap water RSL for naphthalene is 0.17 µg/L.

Several metals were detected in shallow overburden groundwater above screening criteria (lower of tap water RSL and MCL): antimony, arsenic, barium, cadmium, cobalt, copper, lead, mercury, nickel, selenium, thallium, vanadium, and zinc. Arsenic was most frequently detected above the tap water RSL (0.052 µg/L) and MCL (10 µg/L). Arsenic concentrations ranged between 1.0 µg/L and 105 µg/L.

Twelve deep overburden monitoring wells were sampled during the Phase IV RFI. Similarly, as compared to shallow overburden groundwater, more halogenated VOCs were detected above screening criteria in deep overburden groundwater. Six halogenated VOCs were detected above tap water RSLs and MCLs (where applicable): 1,1,2-trichloroethane was detected at maximum concentration of 2 µg/L (MCL is 5 µg/L); 1-1-dichloroethane was detected at maximum concentration of 9 µg/L (tap water RSL is 2.7 µg/L); 1,1-dichloroethene was detected at maximum concentration of 16 µg/L, which was above the MCL of 7 µg/L, but below the tap water RSL of 28 µg/L; 1,2-dichloroethane was detected at maximum concentration of 6 µg/L, which was above the tap water RSL of 0.17 µg/L, but below the MCL of 5 µg/L; trichloroethene was detected at maximum concentration of 4 µg/L, which was above the tap water RSL of 0.28 µg/L, but below the MCL of 5 µg/L; vinyl chloride was detected at a maximum concentration of 4 µg/L, which was above the tap water RSL (0.019 µg/L) and the MCL (2 µg/L).

Formaldehyde concentrations in deep overburden groundwater ranged between 20 µg/L and 6,100 µg/L. The tap water RSL is 0.43 µg/L.

Similar to shallow overburden groundwater, 1,4-dioxane was the most frequently detected SVOC in deep wells. 1,4-Dioxane concentrations ranged between 3 J µg/L and 130 µg/L. The tap water RSL is 0.78 µg/L.

Source zones identified during the RFI have been remediated at the Facility through a series of IMs. Two DPE systems were operated for over ten years; two injection wells were plugged and abandoned; most of the process sewer system was upgraded and moved above ground; and an impacted trench and sump system was closed. These IMs have removed significant sources of COCs, and two groundwater monitoring events conducted at the Facility in 2017 and 2020 have not shown evidence of any significant remaining source areas or source migration outside of the Facility boundaries.

D. Vapor Intrusion

A VI investigation was conducted in 2017 and 2018 at the Facility in order to determine if VI poses a potential risk to human health. Eleven buildings were evaluated and 99 samples (sub-slab gas and indoor air) were collected during two sampling events. Outdoor (ambient) air samples were also collected during each event. Samples were analyzed for site-related VOCs which included benzene, carbon tetrachloride, chlorobenzene, chloroform, ethyl benzene, methylene chloride, naphthalene, toluene, trichloroethene, vinyl chloride, and xylenes and compared to vapor intrusion screening levels. Results from the investigation showed that no unacceptable exposure was identified. Estimated risks were within EPA's acceptable risk range: hazard indices (HIs) by target organ did not exceed 1, and potential total cumulative cancer risk estimates were within EPA's acceptable cancer risk range (1×10^{-6} to 1×10^{-4}).

E. 2021 CMS Findings

Since the completion of the 2015 RFI, additional investigations and groundwater monitoring have been conducted at the Belle Plant (see list below). the site-wide data sets were derived from the following investigations:

Post 2015 Investigations	Number of Samples				
	Soil	Groundwater	Indoor Air	Sub-Slab Soil Gas	Ambient Outdoor Air
2021 Deferred Unit Investigation (AECOM, 2021a)	4	8	--	--	--
2020 Plant Area Groundwater Sampling Event (AECOM, 2021b)	--	38	--	--	--
2018 Glycolic Area Expansion Soil Sampling Event (AECOM, 2018)	29	--	--	--	--
2018 Vapor Intrusion (VI) Investigation (AECOM, 2019b)	--	--	28	--	4
2017 Plant Area Groundwater Sampling Event (AECOM, 2017c)	--	43	--	--	--
2017 Vapor Intrusion (VI) Investigation (AECOM, 2017b)	--	--	30	33	7
Totals	**33**	**89**	**58**	**33**	**11**

The post-2015 investigations analytical results were combined with the 2002-2015 RFI Phases II through IV data to generate plant-wide data sets for soil, vadose zone soil (greater than 1 foot bgs), historic fill material, groundwater, Simmons Creek ditch sediment, sub-slab soil gas, and indoor air. The Site-wide data sets were re-screened in 2021 as part of the CMS to update the constituents of concern (COCs) for the Plant Area using current screening levels and medium-specific data (AECOM, 2021c). Table 2 summarizes the 2021 site-wide COCs.

As shown in Table 2, the sub-slab soil gas and indoor re-screen results are consistent with the findings of the 2017 and 2018 VI investigations (AECOM, 2017b and 2019b). The 2021 re-screen of the ditch sediment results did not change the 2015 RFI conclusions for the ditch sediment exposure medium (AECOM, 2021c).

Weighted average groundwater concentrations were calculated in the 2021 CMS using perimeter well data and were loaded into a groundwater flux model to derive site-specific surface water concentrations. The modeled surface water concentrations were compared to the minimum of EPA and DEP drinking water and surface water screening levels that are protective of human and ecological receptors that are likely to be present in the Kanawha River due to its Category A, B, and C classifications. No cross-transfer migration pathway COCs were identified for human and aquatic receptors (AECOM, 2021c).

Onsite groundwater is not currently used for potable purposes; however, 2021 groundwater screening levels used in the CMS include those that are protective of the potable use exposure pathway. An environmental covenant is planned for the site to prohibit potable use of groundwater until it meets resource restoration standards, to the best extent practicable.

The 2021 CMS Report re-screen of the site-wide data identified soil and groundwater COCs at the Plant Area. Section IV outlines the Corrective Action Objectives for soils and groundwater that are planned for the Plant Area of the Facility to protect human health and the environment.

IV. Corrective Action Objectives

DEP has identified the following Corrective Action Objectives for soils and groundwater at the Plant Area of the Facility to protect human health and environment:

1. <u>Soils</u>

DEP has determined that exposure to soils may pose a potential unacceptable risk to current/future industrial workers and construction/excavation workers. Therefore, DEP's Corrective Action Objective for soils at the Plant Area of the Facility is to prevent unacceptable exposure to hazardous constituents remaining in soils by requiring compliance with and maintenance of land use restrictions, including a Soil Management Plan.

2. Groundwater

DEP expects final remedies to return groundwater to its maximum beneficial use within a timeframe that is reasonable given the circumstances of the facility. For facilities where aquifers are either currently used for water supply or have the potential to be used for water supply, DEP will use MCLs as the cleanup standards for groundwater, or for contaminants that do not have an MCL, tap water RSLs.

Therefore, DEP's Corrective Action Objective for groundwater at the Plant Area of the Facility is to restore the groundwater to drinking water standards (MCLs or tap water RSLs, as applicable), and until such time that drinking water standards are restored, to prevent unacceptable exposure to the hazardous constituents remaining in the groundwater by requiring compliance with and maintenance of groundwater use restrictions, including a Groundwater Monitoring Plan.

3. Surface Water[2]

DEP expects final remedies to protect surface water to its maximum beneficial use. At a minimum, all waters in the State are designated for Category A (Water Supply, Public), Category B (Propagation and Maintenance of Fish and Other Aquatic Life), and Category C (Water Contact Recreation) unless a site-specific variance exists as listed in 47 CSR 2, Section 7.2. DEP will use the minimum standard established for these uses in 47 CSR 2, Appendix E for surface water. For contaminants that do not have a Category B standard established in 47 CSR 2, Appendix E, safe concentration values will be established per 47 CSR 2, Section 9.

Therefore, DEP's Corrective Action Objective for groundwater at the Plant Area of the Facility is to protect the surface-water standards in the Kanawha River and Simmons Creek, to prevent unacceptable exposure to the hazardous constituents remaining in the groundwater by requiring compliance with groundwater migration to surface-water screening levels.

V. Proposed Remedy

1. Soils

DEP's proposed remedy for soils at the Plant Area of the Facility is land use restrictions implemented through Institutional Controls (ICs), as outlined in subsection 3, below.

2. Groundwater and Surface Water

IMs, including a DPE system, operated at the Facility for over ten years, which significantly reduced the sources of groundwater contamination. Over that time, groundwater monitoring has shown no evidence of any significant source areas or source migration extending outside the Facility boundaries. However, contaminant levels in some groundwater wells are still above MCLs or tap water RSLs, as applicable. DEP anticipates that following the source removal performed during the IM phase, natural attenuation may be sufficient to ultimately achieve drinking water standards.

Following the discontinuation of IMs, DEP's proposed remedy for groundwater at the Plant Area of the Facility is MNA until the minimum of EPA and DEP drinking water standards (MCLs or tap water RSLs) and surface-water screening levels are met and compliance with and maintenance of groundwater use restrictions, as outlined in subsection 3 below, while contaminants remain above levels creating an unacceptable risk of exposure.

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[2] Correction Action Objectives (CAOs) for surface water in the CMS Report were included within the groundwater CAOs as the groundwater to surface water migration exposure pathway. Specific surface-water CAOs have been added to the SB.

If DEP determines, after evaluating groundwater monitoring data, that active groundwater remediation is necessary to protect human health and the environment, DEP has the authority to require such additional corrective action, provided all public participation requirements are met.

3. Land and Groundwater Use Restrictions

DEP's proposed remedy requires land and groundwater use restrictions to restrict activities that may result in exposure to those contaminants at the Plant Area of the Facility.

DEP proposes that the restrictions be implemented and maintained through ICs. ICs are non- engineered instruments, such as administrative and legal controls, that minimize the potential for human exposure to contamination and/or protect the integrity of a remedy by limiting land or resource use.

DEP is proposing the following land and groundwater use restrictions be implemented through ICs at the Plant Area of the Facility:

a) The Plant Area shall not be used for residential purposes.

b) Groundwater at the Plant Area shall not be used for any purpose, unless EPA or DEP provide prior written approval, other than to conduct the maintenance and monitoring activities required by DEP and in accordance with a DEP approved Groundwater Monitoring Plan.

c) All earthmoving activities at the Plant Area, including excavation, drilling, and construction activities, shall be conducted in accordance with a DEP approved Soil Management Plan that includes appropriate Personal Protective Equipment requirements sufficient to meet DEP's acceptable risk and complies with all applicable Occupational Safety and Health Administration (OSHA) requirements.

The land and groundwater use restrictions necessary to protect human health and the environment at the Plant Area will be implemented through enforceable ICs such as a permit, order, and/or an environmental covenant pursuant to the West Virginia Uniform Environmental Covenants Act (WV Code Chapter 20 Article 22B).

If DEP determines that additional maintenance and monitoring activities, institutional controls, or other corrective actions are necessary to protect human health or the environment, DEP and EPA have the authority to require and enforce such additional corrective actions through an enforceable mechanism which may include a permit, order, or environmental covenant, provided any necessary public participation requirements are met.

VI. Evaluation of Proposed Remedy

This section provides a description of the criteria DEP used to evaluate the proposed remedy consistent with EPA guidance, "Corrective Action for Releases from Solid Waste Management Units at Hazardous Waste Management Facilities; Proposed Rule," 61 Federal Register 19431, May 1, 1996. The criteria are applied in two phases. In the first phase, DEP evaluates three decision threshold criteria as general goals. In the second phase, for those remedies which meet the threshold criteria, DEP then evaluates seven balancing criteria to determine which proposed remedy alternative provides the best relative combination of attributes.

A. Threshold Criteria

1. **Protect Human Health and the Environment** - The proposed remedy satisfies this criterion. IMs have significantly reduced the sources of contamination, and DEP proposes MNA for groundwater until drinking water levels are achieved. Engineering controls are currently in place to restrict access to the site and prevent disturbance of soil and waste to prevent exposure. The controls include a fence and security controls, an excavation permitting program, and an established health and safety plan. Warning signs are posted along the perimeter fencing and at every gate, these signs provide notice regarding access restrictions. Land and groundwater use restrictions will prohibit future uses that would pose an unacceptable risk through an environmental covenant or other enforceable mechanism.

2. **Achieve Media Cleanup Objectives -** DEP's proposed remedy meets the cleanup objectives appropriate for the expected current and reasonably anticipated future land use. In the short term, the proposed remedy includes MNA as a remedial component as well as restrictions that will prohibit use of groundwater at the Facility until MCLs or RSLs for tap water are met. No on-site receptors exist for groundwater. The use restrictions will eliminate future unacceptable exposures to both soil and groundwater.

3. **Control the Source of Releases** - In its RCRA Corrective Action proposed remedies, DEP seeks to eliminate or reduce further releases of hazardous wastes or hazardous constituents that may pose a threat to human health and the environment. Source zones at the Plant Area have been identified and remediated through a series of IMs. Two DPE systems were operated for over 10 years; two injection wells were plugged and abandoned; most of the process sewer system was upgraded and moved aboveground; and an impacted trench and sump system were closed. These IMs have removed significant sources of COCs, and ongoing groundwater monitoring at the site has not shown evidence of any significant remaining source areas or source migration. Current controls and the proposed remedy eliminate exposure, potential future releases, and unacceptable risk.

B. Balancing/Evaluation Criteria

1. **Long-Term Reliability and Effectiveness -** The proposed remedy of containment will maintain protection of human health and the environment over time by controlling exposure

to the hazardous constituents remaining in soils and groundwater. The long-term effectiveness is high, as ICs and groundwater monitoring are readily implementable and easily maintained.

2. **Reduction of Toxicity, Mobility, or Volume of Waste -** Several IMs have been completed at the Facility, including injection well closure, process sewer upgrades, trench and sump system closure, and DPE. These active remediation technologies have addressed source areas and have been documented as reducing impacts to site soil and groundwater.

3. **Short-Term Effectiveness -** The Plant Area of the Facility is enclosed by fencing, which restricts access. Groundwater is not used for any purposes other than monitoring or maintenance; therefore, the proposed remedy's short-term effectiveness is high.

4. **Implementability -** DEP's proposed remedy is readily implementable. The remedy will be implemented using existing monitoring wells and existing controls. DEP proposes that the ICs be implemented through an enforceable mechanism such as a permit and/or environmental covenant pursuant to the West Virginia Uniform Environmental Covenants Act. Therefore, DEP does not anticipate any regulatory constraints in implementing its proposed remedy.

5. **Cost -** The total cost for the proposed remedy ranges from $90,000 for initial costs and to $1.05 million for Operation and Maintenance (O&M) cost. Initial costs include Corrective Measure Implementation (CMI) Plan development and establishing the environmental covenant. O&M costs include inspections, maintenance, and long-term groundwater monitoring. This cost range should be considered an order-of-magnitude estimate. Cost estimates will be updated during the development of the CMI Plan when more information is available.

6. **Community Acceptance -** Community acceptance of DEP's proposed remedy will be evaluated based on comments received during the public comment period and will be described in the Final Decision.

7. **State/Support Agency Acceptance -** DEP has prepared this proposed remedy for the Plant Area of the Facility. Furthermore, EPA has provided input on this proposed remedy and been involved throughout the investigation process.

VII. Financial Assurance

The Facility owner or operator will be required to demonstrate and maintain financial assurance for completion of the remedy in accordance with DEP's requirements.

VIII. Public Participation

Interested persons are invited to comment on DEP's proposed remedy. The public comment period will last thirty (30) calendar days from the date that notice of the start of the comment period is published in a local newspaper. Comments may be submitted by mail, fax, e-mail, or phone to Dr. Kenan Cetin at the address listed below.

A public hearing will be held upon request. Requests for a public hearing should be made to Dr. Kenan Cetin of the DEP Office (304-389-2103). A hearing will not be scheduled unless one is requested.

DEP may modify the proposed remedy based on new information and/or public comments. Therefore, the public is encouraged to review the AR and to comment on the proposed remedy presented in this document.

The AR contains all the information considered by DEP for the proposed remedy at this Facility. The AR is available to the public for review and can be found at the following location:

West Virginia Department of Environmental Protection 131A Peninsula Street
Wheeling, WV 26003
Contact: Kenan Cetin, Ph.D.
Phone: (304) 238-1220
Email: kenan.cetin@wv.gov

Attachment 1	Administrative Record File Index of Documents
Table 1	RFI Summary of Plant Area SWMUs and AOCs
Table 2	2021 Site-Wide Constituents of Concern from Corrective Measure Study Re-Screen
Figure 1	Belle Plant Area Location Map
Figure 2	Belle Plant Area CMS SWMUs and AOCs

ATTACHMENT 1

STATEMENT OF BASIS
ADMINISTRATIVE RECORD FILE INDEX OF DOCUMENTS

Kearney, A.T., Inc. March 1991. RCRA Facility Assessment for DuPont Belle Facility. Prepared for EPA Region 3.

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DuPont CRG. 1999. *Current Conditions Report*. DuPont Belle Plant, Belle, West Virginia. February 26, 1999.

DuPont CRG. 2004. *Technical Memorandum Belle Groundwater Model*. DuPont Belle Plant, Belle, West Virginia. May 2004.

DuPont CRG. 2009. *Phase IIIA RFI Report*. DuPont Belle Plant, Belle, West Virginia. September 2009.

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AECOM. 2015. Comprehensive RCRA Facility Investigation Report. Chemours Belle Plant Area, Belle, West Virginia. December 1, 2015.

AECOM. 2017b. Vapor Intrusion Investigation Report. Chemours Belle Plant Area. Belle, West Virginia. October 2017.

AECOM. 2017c. 2017 Plant Area Groundwater Summary Report. Belle Plant Area. Belle, West Virginia. May 2017.

AECOM. 2019a. Corrective Measures Study Work Plan. Chemours Belle Plant Area. Belle, West Virginia. December 2019.

AECOM. 2019b. Vapor Intrusion Investigation Report. Chemours Belle Plant Area. Belle, West Virginia. February 2019.

AECOM. 2021a. Plant Area Deferred Unit Investigation Report. Chemours Belle Plant Area. Belle, West Virginia. September 2021.

AECOM. 2021b. 2020 Plant Area Groundwater Summary Report. Belle Plant Area. Belle, West Virginia. May 2021.

AECOM. 2021c. Corrective Measures Study Report. Belle Plant Area. Belle, West Virginia. October 2021.

Chemours. 2021. Plant Area Deferred Unit Investigation Work Plan. Chemours Belle Plant Area. Belle, West Virginia. March 2021.

Table 1
RFI Summary of Plant Area SWMUs and AOCs
Chemours Belle Plant Area
Belle, WV

SWMU/AOC/ Area	SWMU/AOC/Area Name	RFI Summary
AOC A	Former Benzol Process portion of AOC A	• No significant potential exposure pathway identified • All buildings and support equipment associated with the process area have been removed, and the area is currently covered by gravel • Release delineated and DPE system installed as IRM • EPA approved shutdown of DPE system after overall trend of reduced influent concentrations and subsequent decreased mass removal
AOC B	Southwest Groundwater Seep	• Release delineated and DPE system installed as IRM • EPA approved shutdown of DPE system after overall trend of reduced influent concentrations and subsequent decreased mass removal • No significant potential exposure pathway identified
AOC E	Underground Fuel Storage Tanks	• No significant potential exposure pathway identified • Tanks were closed under UST program, and the area is currently covered by gravel
AOC G	Sulfuric Acid Spill	• Spill flowed to Kanawha River. Much of the impacted soil and fill were excavated and disposed of. • No significant potential exposure pathway identified
SWMU 24	OSD Indoor Trench and Sump System	• Deferred unit - not accessible during RFI. • Affected media identified during CMS data gap investigation.
SWMU 31	OSD Trench and Sump System	• Deferred unit - not accessible during RFI. • CMS data gap investigation unit.
SWMU 32	Former OSD Hazardous Waste Storage Tank (ID No. 3A)	• SWMU 32-35 were aboveground storage tanks closed in 1981. • A spill was identified and 800 cubic yards impacted material removed • No significant potential exposure pathway identified
SWMU 33	Former OSD Hazardous Waste Storage Tank (ID No. 3B)	• SWMU 32-35 were aboveground storage tanks closed in 1981. • A spill was identified and 800 cubic yards impacted material removed • No significant potential exposure pathway identified
SWMU 34	Former OSD Hazardous Waste Storage Tank (ID No. 3C)	• SWMU 32-35 were aboveground storage tanks closed in 1981. • A spill was identified and 800 cubic yards impacted material removed • No significant potential exposure pathway identified
SWMU 35	Former OSD Hazardous Waste Storage Tank (ID No. 3D)	• SWMU 32-35 were aboveground storage tanks closed in 1981. • A spill was identified and 800 cubic yards impacted material removed • No significant potential exposure pathway identified
SWMU 38	Vazo Trench and Sump System	• Deferred unit - not accessible during RFI. • Affected media identified during CMS data gap investigation.
SWMU 54	Ag-Mature SBU Brine Treatment System-Former Raw Waste Storage Tank	• No significant potential exposure pathway identified • PAHs detected consistent with historical fill • Additional SWMU-releated release of PAHs also indicated
SWMU 58	Ag-Mature SBU Brine Treatment System-Ammonia Stripper	• No significant potential exposure pathway identified • Release to soil and benzene release to groundwater are indicated
SWMU 64	Former MDA Tar Storage Tank (see Former MDA Area)	• No significant potential exposure pathway identified • All structures dismantled; area currently covered with asphalt
SWMU 67	Former MDA Trench and Sump System (see Former MDA Area)	• No significant potential exposure pathway identified • All structures dismantled; area currently covered with asphalt
SWMU 72	Former MDA Deep Well Storage Tank	• Tank removed, but concrete pad remains, and a small building on the pad. • No significant potential exposure pathway identified
SWMU 79	Former PACM Unloading/ Loading Area	• Release of formaldehyde, copper, and cobalt to soil likely related to historical fill • No significant potential exposure pathway identified • Area covered with gravel, asphalt, and concrete pads

Table 1
RFI Summary of Plant Area SWMUs and AOCs
Chemours Belle Plant Area
Belle, WV

SWMU/AOC/ Area	SWMU/AOC/Area Name	RFI Summary
SWMU 97	Methacrylate Trench and Sump System (see SLM Area)	• No significant potential exposure pathway identified • Within Small Lots Manufacturing Area
SWMU 105	SLM Indoor Trench and Sump System (see SLM Area)	• No significant potential exposure pathway identified • Within Small Lots Manufacturing Area
SWMU 106	SLM Outdoor Trench and Sump System (see SLM Area)	• No significant potential exposure pathway identified • Within Small Lots Manufacturing Area
SWMU 109	SLM Satellite Accumulation Areas (see SLM Area)	• No significant potential exposure pathway identified • Within Small Lots Manufacturing Area
SWMU 115	C&P West Trench and Sump System	• No significant potential exposure pathway identified • Currently manages surface runoff; undergoes quarterly inspections
SWMU 121	HCO Oil Storage Tank	• No significant potential exposure pathway identified • Tank and pad have been removed. Area is currently covered with gravel.
SWMU 122	HCO Waste Lubricating Oil Collection Sumps	• No significant potential exposure pathway identified • IRM was completed to close and backfill sump system. Area is currently covered with gravel.
SWMU 145	WCS Facility Sewer Lines	• No significant potential exposure pathway identified • Extensive system runs throughout the site • Part of a system to collect sanitary and process wastewater for conveyance to on-site water treatment plant.
SWMU 146	WCS Pumping Station	• Part of a system to collect sanitary and process wastewater for conveyance to on-site water treatment plant.
SWMU 147	WCS Pumping Station	• No significant potential exposure pathway identified • Release documented • Part of a system to collect sanitary and process wastewater for conveyance to on-site water treatment plant.
SWMU 148	WCS Pumping Station (#4)	• Part of a system to collect sanitary and process wastewater for conveyance to on-site water treatment plant. • No significant potential exposure pathway identified
SWMU 149	WCS Pumping Station (see SLM Area)	• No significant potential exposure pathway identified • Part of a system to collect sanitary and process wastewater for conveyance to on-site water treatment plant. • Within Small Lots Manufacturing Area
SWMU 150	WCS #11 Pumping Station	• Part of a system to collect sanitary and process wastewater for conveyance to on-site water treatment plant.
SWMU 151	WCS Pumping Station	• No significant potential exposure pathway identified • Release documented • Part of a system to collect sanitary and process wastewater for conveyance to on-site water treatment plant.
SWMU 152	WCS Pumping Station	• Part of a system to collect sanitary and process wastewater for conveyance to on-site water treatment plant. • Deferred unit - not accessible during RFI. • Affected media identified during CMS data gap investigation.
SWMU 153	WCS Pumping Station	• Part of a system to collect sanitary and process wastewater for conveyance to on-site water treatment plant.
SWMU 154	WCS Pumping Station	• No significant potential exposure pathway identified • Release documented • Part of a system to collect sanitary and process wastewater for conveyance to on-site water treatment plant.
SWMU 155	WCS Pumping Station	• No significant potential exposure pathway identified • Release documented • Part of a system to collect sanitary and process wastewater for conveyance to on-site water treatment plant.

Table 1
RFI Summary of Plant Area SWMUs and AOCs
Chemours Belle Plant Area
Belle, WV

SWMU/AOC/ Area	SWMU/AOC/Area Name	RFI Summary
SWMU 156	WCS Pumping Station	• Part of a system to collect sanitary and process wastewater for conveyance to on-site water treatment plant. • No significant potential exposure pathway identified
SWMU 157	WCS Pumping Station	• Part of a system to collect sanitary and process wastewater for conveyance to on-site water treatment plant. • Deferred unit - not accessible during RFI. • Affected media identified during CMS data gap investigation.
SWMU 158	WCS Pumping Station	• Part of a system to collect sanitary and process wastewater for conveyance to on-site water treatment plant. • No significant potential exposure pathway identified
SWMU 183	Former Injection Well No. 2	• Closed in accordance with state requirements as IRM • Listed in permit as No Further Action • IRM as part of final remedy for site
SWMU 184	Former Injection Well No. 3	• Closed in accordance with state requirements as IRM • Listed in permit as No Further Action • IRM as part of final remedy for site
SWMU 191	Inactive Disposal Area 8	• No significant potential exposure pathway identified. • Area is currently covered by gravel and asphalt and is used as a parking area for trailers and a railyard.
SWMU 192	Inactive Disposal Area 9	• Underlies 6 acres of main process area • Currently covered with gravel and asphalt • No significant potential exposure pathway identified
Former MDA Area	Former Methylene Dianaline Area (see SWMUs 64 and 67)	• No significant potential exposure pathway identified • All structures dismantled; area currently covered with asphalt
Former SSS Process Area	Former SSS Process Area with Dual-phase Extraction System IRM	• DPE system installed as IRM • EPA approved shutdown of DPE system after overall trend of reduced influent concentrations and subsequent decreased mass removal • No significant potential exposure pathway identified
SLM Area	Small Lots Manufacturing Area (see SWMUs 97, 105, 106, 109, and 149)	• No significant potential exposure pathway identified
DMAc Spill Area	Dimethylacetamide (DMAc) release to soil near the Off-Spec DMAc Storage Tank	• Impacted soils were excavated and disposed of off-site • Groundwater infiltrating into excavation was pumped out and treated for several months • Subsequent soil samples showed analytical results below action levels
Methanol Spill Area	Methanol release	• This release traveled through containment (underground pipe) and into the river. There is no report of any material released to soil or groundwater on-site.
AN-52 Spill Area	AN-52 release	• Approximately 5 pounds released to soil • No record of soil removal • Address as part of site-wide groundwater monitoring proposed as part of the final remedy
AOC East Truck Unloading Area	East Truck Unloading Area	• Construction in this area was planned but not completed • Pre-excavation samples had exceedances of industrial worker screening criteria for benzene, ethylbenzene, and xylenes in subsurface soil – 4’ and deeper • Downgradient wells show no detections of these compounds in most recent sampling events (2017 and 2020)
	Site-Wide Groundwater	• No significant potential exposure pathway identified

Table 2
2021 Site-Wide Constituents of Concern from Corrective Measure Study Re-Screen
Chemours Belle Plant Area
Belle, WV

Constituent of Concern (COC)	Screening Level (SL)	SL Type	Units	Detects (Frequency)	Detections Range (Min-Max)	Maximum Detected Result	Maximum Result Location	95 Percent Upper Confidence Limit (UCL)	Exposure Point Concentration	Type of COC
Soil										
Arsenic	3	RSL_IND	mg/kg	143/143	2.15 to 54.5	54.5	SWMU72-1 0.5-1 Feet	13.14	13.14	Direct Contact
Benzene	5.1	RSL_IND	mg/kg	92/187	0.0007 to 13000	13000	SSS-HP-3 8-10 Feet	873.5	873.5	Direct Contact
Benzo(A)Pyrene	2.1	RSL_IND	mg/kg	97/175	0.005 to 1200	1200	SSS-HP-3 8-10 Feet	6.002	6.002	Direct Contact
Benzo(B)Fluoranthene	21	RSL_IND	mg/kg	125/175	0.004 to 1200	1200	SSS-HP-3 8-10 Feet	46.11	46.11	Direct Contact
Dibenz(A,H)Anthracene	2.1	RSL_IND	mg/kg	69/175	0.004 to 210	210	SSS-HP-3 8-10 Feet	7.849	7.849	Direct Contact
Mercury	4.6	RSL_IND	mg/kg	132/134	0.013 to 78	78	MDA-HP-4 1-3 Feet	4.971	4.971	Direct Contact
TCDD TEQ	2.2E-05	RSL_IND	mg/kg	37/37	2.88E-07 to 3.62E-04	3.6E-04	SWMU192-2-1 0.5-1 Feet	8.1E-05	8.1E-05	Direct Contact
Historical Fill										
None	COCs were below either SLs or historical fill background UTLs									
Vadose Zone Soil (Soil greater than 1 foot bgs)										
Arsenic	5.8	SL_MCL	mg/kg	105/105	2.15 to 51.7	51.7	SSS-HP-3 8-10 Feet	11.39	11.39	GW Protection
Benzene	0.052	SL_MCL	mg/kg	77/159	0.0007 to 13000	13000	SSS-HP-3 8-10 Feet	1033	1033	GW Protection
Benzo(A)Pyrene	4.8	SL_MCL	mg/kg	54/128	0.005 to 1200	1200	SSS-HP-3 8-10 Feet	58.53	58.53	GW Protection
Mercury	2	SL_MCL	mg/kg	103/105	0.013 to 78	78	MDA-HP-4 1-3 Feet	5.522	5.522	GW Protection
Methylene Chloride	0.026	SL_MCL	mg/kg	19/159	0.002 to 21	21	SSS-HP-2 22-24 Feet	1.184	1.184	GW Protection
Toluene	13.8	SL_MCL	mg/kg	52/159	0.001 to 3700	3700	SSS-HP-3 8-10 Feet	319.5	319.5	GW Protection
Sub-Slab Soil Gas										
None	COCs were below either SLs or hunan health risk thresholds									
Indoor Air										
None	COCs were below either SLs or hunan health risk thresholds									
Ditch Sediment										
None	COCs were eliminated due to re-screen or lines of evidence review									
Groundwater										
1,2-Dichloroethane	0.17	RSL_Tap	ug/L	6/144	3 to 8.1	8.1	MW-31-DO	0.808	0.808	Direct Contact
1,4-Dichlorobenzene	0.48	RSL_Tap	ug/L	5/186	3 to 15	15	SLM-HP-1	1.087	1.087	Direct Contact
1,4-Dioxane	0.46	RSL_Tap	ug/L	37/130	1 to 75	75	MW-33-DO	6.778	6.778	Direct Contact
2,4-Dimethylphenol	36	RSL_Tap	ug/L	19/120	0.7 to 1600	1600	SWMU148-1	90.67	90.67	Direct Contact
2-Methylnaphthalene	3.6	RSL_Tap	ug/L	33/119	0.1 to 2200	2200	MW-24-SO	124.1	124.1	Direct Contact
2-Methylphenol (O-Cresol)	93	RSL_Tap	ug/L	13/119	0.8 to 3200	3200	SWMU148-1	167	167	Direct Contact
2-Propanol	41	RSL_Tap	ug/L	1/1	53 to 53	53	MW-70-SO	--	53	Direct Contact
4-Methylphenol (P-Cresol)	190	RSL_Tap	ug/L	19/119	0.5 to 9600	9600	SWMU148-1	516.3	516.3	Direct Contact
4,4'-Methylenedianiline	0.047	RSL_Tap	ug/L	1/2	100 to 100	100	MW-70-SO	--	100	Direct Contact
Acetonitrile	13	RSL_Tap	ug/L	1/136	100 to 100	100	SWMU148-1	--	100	Direct Contact
Acetophenone	190	RSL_Tap	ug/L	19/119	0.5 to 8300	8300	MW-31-SO	475.6	475.6	Direct Contact
Aldrin	0.00092	RSL_Tap	ug/L	2/42	0.064 to 0.107	0.107	MW-70-SO	0.00428	0.00428	Direct Contact
Alpha-BHC	0.0072	RSL_Tap	ug/L	6/42	0.0035 to 0.072	0.072	HP-70	0.011	0.011	Direct Contact
Aniline	13	RSL_Tap	ug/L	8/119	1 to 420	420	SWMU148-1	29.06	29.06	Direct Contact

Table 2
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Belle, WV

Constituent of Concern (COC)	Screening Level (SL)	SL Type	Units	Detects (Frequency)	Detections Range (Min-Max)	Maximum Detected Result	Maximum Result Location	95 Percent Upper Confidence Limit (UCL)	Exposure Point Concentration	Type of COC
Groundwater										
Antimony	0.78	RSL_Tap	ug/L	40/103	0.42 to 70.3	70.3	AOC-G-1	4.462	4.462	Direct Contact
Arsenic	10	MCL	ug/L	83/110	0.69 to 3710	3710	SWMU148-2	125	125	Direct Contact
Barium	2000	MCL	ug/L	110/110	16 to 35200	35200	MW-31-SO	3758	3758	Direct Contact
Benzene	5	MCL	ug/L	63/146	0.5 to 190000	190000	MW-31-SO	37526	37526	Direct Contact
Benzo(A)Anthracene	0.03	RSL_Tap	ug/L	28/120	0.1 to 620	620	SWMU148-1	31.95	31.95	Direct Contact
Benzo(A)Pyrene	0.2	MCL	ug/L	25/120	0.1 to 530	530	SWMU148-1	0.893	0.893	Direct Contact
Benzo(B)Fluoranthene	0.25	RSL_Tap	ug/L	30/120	0.1 to 500	500	SWMU148-1	26.19	26.19	Direct Contact
Benzo(K)Fluoranthene	2.5	RSL_Tap	ug/L	22/120	0.1 to 230	230	SWMU148-1	12.1	12.1	Direct Contact
Beryllium	4	MCL	ug/L	28/103	0.24 to 211	211	SWMU153-1	19.14	19.14	Direct Contact
Bis(2-Chloroethoxy)Methane	5.9	RSL_Tap	ug/L	1/120	27 to 27	27	MW-31-SO	--	27	Direct Contact
Butyl Benzyl Phthalate	16	RSL_Tap	ug/L	1/120	52 to 52	52	MW-33-DO	--	52	Direct Contact
Cadmium	5	MCL	ug/L	23/110	0.4 to 85.9	85.9	MW-18-SO	6.691	6.691	Direct Contact
Carbon Tetrachloride	0.46	RSL_Tap	ug/L	6/144	3 to 130	130	MW-70-SO	4.367	4.367	Direct Contact
Chlorobenzene	100	MCL	ug/L	17/144	3 to 23000	23000	SLM-2-GW	1191	1191	Direct Contact
Chloroform	0.22	RSL_Tap	ug/L	6/144	1 to 77	77	MDA-3	2.244	2.244	Direct Contact
Chrysene	25	RSL_Tap	ug/L	28/120	0.12 to 590	590	SWMU148-1	30.51	30.51	Direct Contact
Cobalt	0.6	RSL_Tap	ug/L	55/103	0.75 to 7130	7130	AOC-G-1	675.2	675.2	Direct Contact
Copper	1300	MCL	ug/L	81/103	1.6 to 315000	315000	SWMU148-2	19118	19118	Direct Contact
Cyanide	0.15	RSL_Tap	ug/L	10/22	4.1 to 193	193	HP-70	60.74	60.74	Direct Contact
Dibenz(A,H)Anthracene	0.025	RSL_Tap	ug/L	9/120	0.1 to 63	63	SWMU148-1	3.242	3.242	Direct Contact
Dibenzofuran	0.79	RSL_Tap	ug/L	25/119	0.8 to 880	880	SWMU148-1	50.86	50.86	Direct Contact
Dieldrin	0.0018	RSL_Tap	ug/L	3/42	0.0064 to 0.115	0.115	HP-34	0.0126	0.0126	Direct Contact
Dimethyl Formamide	6.1	RSL_Tap	ug/L	1/1	8 to 8	8	MW-33-DO	--	8	Direct Contact
Ethylbenzene	1.5	RSL_Tap	ug/L	38/144	0.9 to 1700	1700	SLM-11	107.5	107.5	Direct Contact
Fluoranthene	80	RSL_Tap	ug/L	34/120	0.1 to 1700	1700	SWMU148-1	85.15	85.15	Direct Contact
Formaldehyde	0.39	RSL_Tap	ug/L	69/83	10 to 16000	16000	AOCE-3 8.0-9.0	1546	1546	Direct Contact
Heptachlor	0.0014	RSL_Tap	ug/L	7/42	0.0024 to 0.36	0.36	MW-31-SO	0.0525	0.0525	Direct Contact
Heptachlor Epoxide	0.0014	RSL_Tap	ug/L	1/42	0.0065 to 0.0065	0.0065	MW-28-SO	--	0.0065	Direct Contact
Indeno(1,2,3-CD)Pyrene	0.25	RSL_Tap	ug/L	21/120	0.1 to 270	270	SWMU148-1	0.575	0.575	Direct Contact
Iron	1400	RSL_Tap	ug/L	7/7	824 to 103000	103000	SLM-HP-3	160785	103000	Direct Contact
Lead	15	MCL	ug/L	88/110	0.11 to 17400	17400	SWMU148-2	1341	456.842064	Direct Contact
Manganese	43	RSL_Tap	ug/L	7/7	132 to 10100	10100	SLM-HP-3	10447	10100	Direct Contact
Mercury	2	MCL	ug/L	45/110	0.037 to 231	231	SWMU150-1	19.1	19.1	Direct Contact
Methylene Chloride	5	MCL	ug/L	3/144	130 to 28000	28000	MW-31-SO	641.8	641.8	Direct Contact
Naphthalene	0.12	RSL_Tap	ug/L	52/120	0.1 to 15000	15000	SWMU148-1	2410	2410	Direct Contact
N-Dioctyl Phthalate	20	RSL_Tap	ug/L	2/120	38 to 52	52	K-4	--	52	Direct Contact
Nickel	39	RSL_Tap	ug/L	68/103	1.7 to 13600	13600	AOC-G-1	1192	1192	Direct Contact

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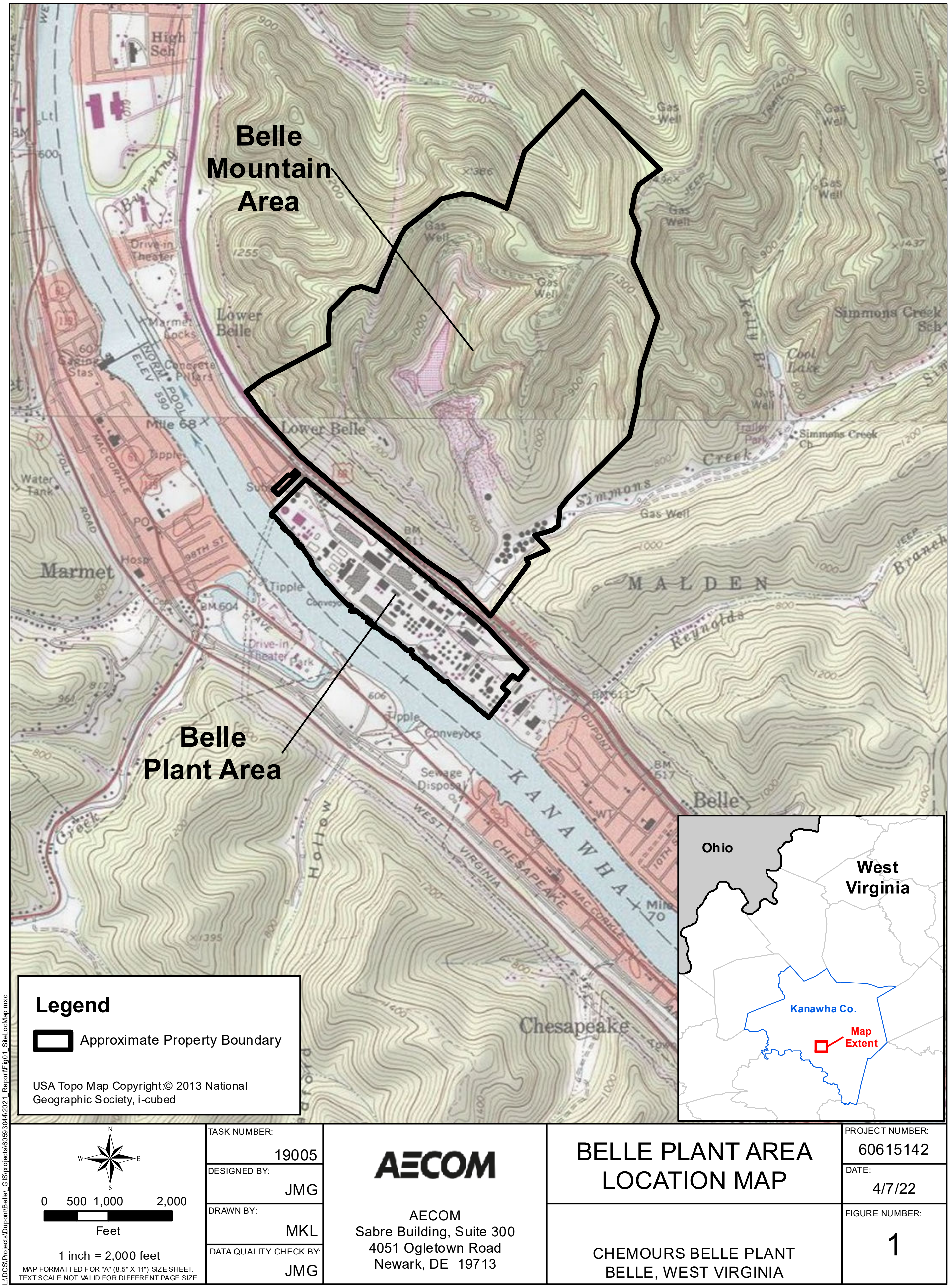
Chemours Belle Plant Area
Belle, WV

Constituent of Concern (COC)	Screening Level (SL)	SL Type	Units	Detects (Frequency)	Detections Range (Min-Max)	Maximum Detected Result	Maximum Result Location	95 Percent Upper Confidence Limit (UCL)	Exposure Point Concentration	Type of COC
Groundwater										
Nitrite	200	RSL_Tap	ug/L	2/17	420 to 450	450	MW-72-SO	411.5	411.5	Direct Contact
O-Toluidine	4.7	RSL_Tap	ug/L	2/102	4 to 190	190	SWMU148-1	14.77	14.77	Direct Contact
Phenol	580	RSL_Tap	ug/L	22/120	0.6 to 14000	14000	SWMU148-1	744.4	744.4	Direct Contact
Phorate	0.3	RSL_Tap	ug/L	2/22	0.62 to 0.63	0.63	HP-4	--	0.63	Direct Contact
Phosphorus	0.04	RSL_Tap	ug/L	7/7	117 to 4500	4500	MDA-HP-1	3261	3261	Direct Contact
Pyrene	12	RSL_Tap	ug/L	35/120	0.1 to 1400	1400	SWMU148-1	70.31	70.31	Direct Contact
Pyridine	2	RSL_Tap	ug/L	6/119	23 to 910	910	MW-31-SO	37.08	37.08	Direct Contact
Thallium	0.02	RSL_Tap	ug/L	28/103	0.15 to 102	102	K-4	1.264	1.264	Direct Contact
Toluene	1000	MCL	ug/L	32/144	1 to 26000	26000	MW-31-SO	1432	1432	Direct Contact
Trichloroethene	5	MCL	ug/L	1/144	6 to 6	6	HP-6	--	6	Direct Contact
Vanadium	8.6	RSL_Tap	ug/L	68/103	1.1 to 3500	3500	SWMU158-1	490.4	490.4	Direct Contact
Vinyl Chloride	0.019	RSL_Tap	ug/L	3/144	0.5 to 0.51	0.51	MW-31-DO	0.25	0.25	Direct Contact
Xylenes	19	RSL_Tap	ug/L	43/144	0.9 to 7000	7000	SLM-11	189.3	189.3	Direct Contact
Zinc	600	RSL_Tap	ug/L	98/103	4.3 to 97600	97600	SWMU148-2	8586	8586	Direct Contact

Notes:

-- = no value
COC = Constituent of Concern
MCL = maximum contaminant level
mg/kg = milligram per kilogram
RSL_IND - EPA Industrial Soil Regional Screening Level
RSL_Tap = EPA Tap Water Regional Screening Level;
SL_MCL = Soil-to-Groundwater Screening Level, Protective of MCL
TCDD TEQ = 2,3,7,8-Tetrachlorodibenzo-p-dioxin toxicity equivalence
ug/L = microgram per liter
UTL = upper tolerance limit



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TASK NUMBER: 19005

DESIGNED BY: JMG

DRAWN BY: MKL

DATA QUALITY CHECK BY: JMG

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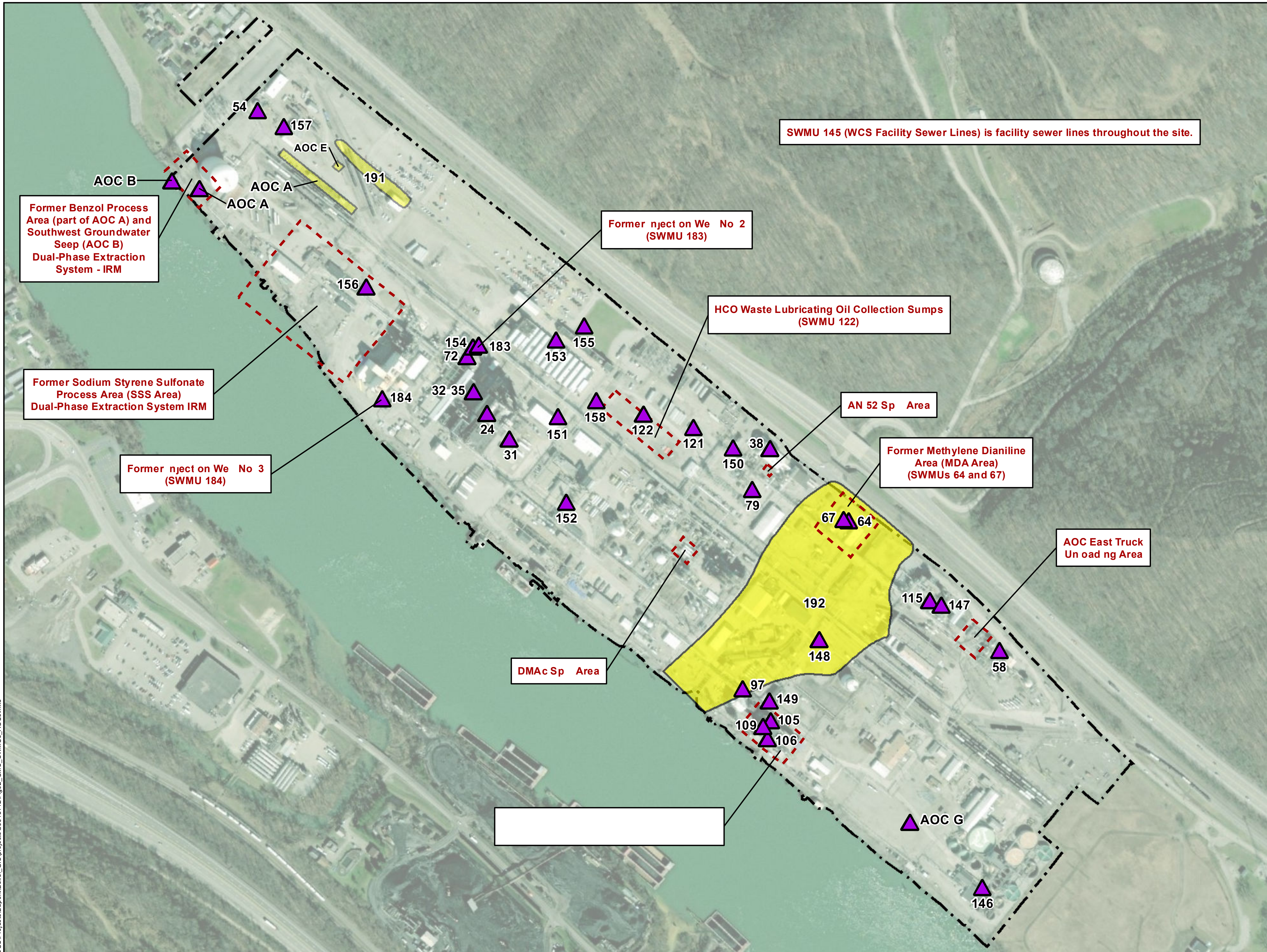
BELLE PLANT AREA LOCATION MAP

CHEMOURS BELLE PLANT
BELLE, WEST VIRGINIA

PROJECT NUMBER: 60615142

DATE: 4/7/22

FIGURE NUMBER: 1



Legend

- SWMU/AOC
- SWMU/AOC (Area)
- Area of Interest
- Belle Plant Boundary (Approximate)

2020 Vivid World Imagery Information:
Collection Date - March 3, 2020; Source - Maxar;
Resolution - 0.5 Meter;
Service Layer Credits - ESRI, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.

0 200 400 800
Feet
1 inch = 400 feet

MAP FORMATTED FOR "B" (11" X 17") SIZE SHEET.
TEXT SCALE NOT VALID FOR DIFFERENT PAGE SIZE.

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BELLE PLANT AREA CMS SWMUs AND AOCs

CHEMOURS BELLE PLANT
BELLE, WEST VIRGINIA

FILE NUMBER: 19005	PROJECT NUMBER: 60615142
DESIGNED BY: M. MCBRIDE	DATE: 4/7/2022
DRAWN BY: C.DUFFY/M.LAYTON	FIGURE NUMBER: 2
DATA QUALITY CHECK BY: M. MCBRIDE	

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